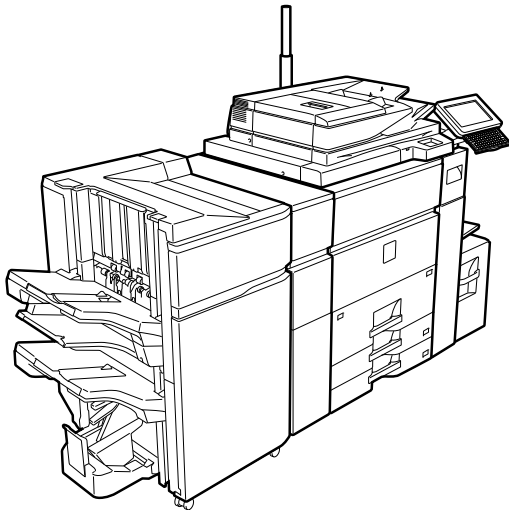


# SERVICE MANUAL



## DIGITAL MULTIFUNCTION- AL SYSTEM

### e-STUDIO907 e-STUDIO1057 MODEL e-STUDIO1207

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## 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 diode 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

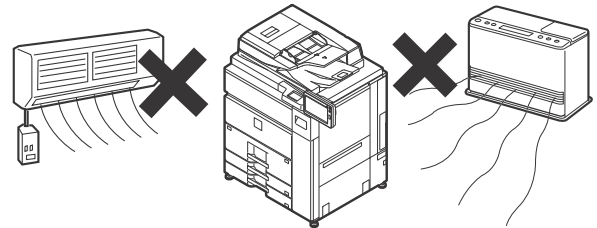
- 1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.  
Avoid complex wiring, which may lead to a fire or an electric shock.  
It may cause a fire or an electric shock.
- 2) If there is any abnormality such as a smoke or an abnormal smell, 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.

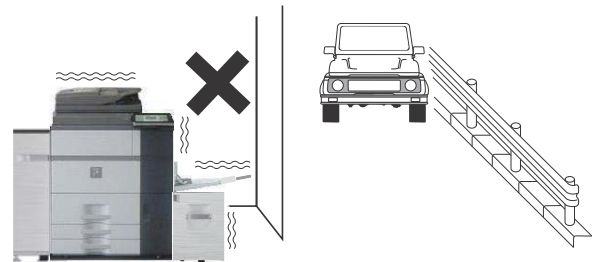
### 3. Note for installing site

Do not install the machine at the following sites.

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

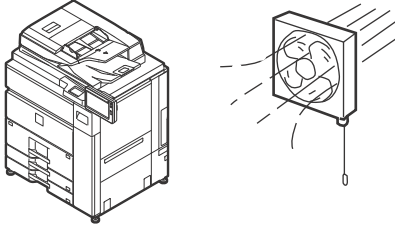


- 2) **Place of much vibrations**  
It may cause a breakdown.



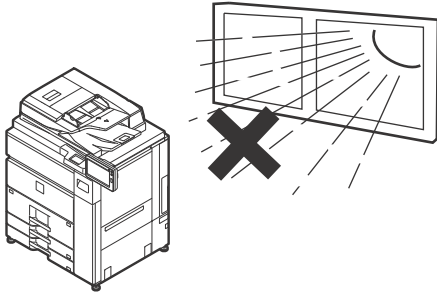
3) **Poorly ventilated place**

An 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. When using special paper such as glossy paper, unique smell or gas may be generated. Provide an additional duct to exhaust the smell and gas from the exhaust section of the machine as needed. (There is no setting for the exclusive-use duct.)



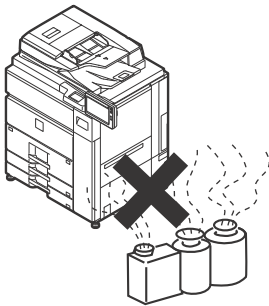
4) **Place of direct sunlight.**

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



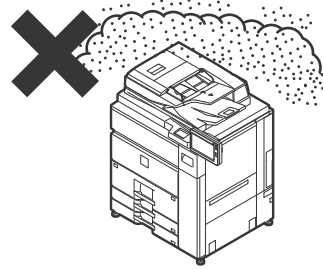
5) **Place which is full of organic gases such as ammonium**

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.



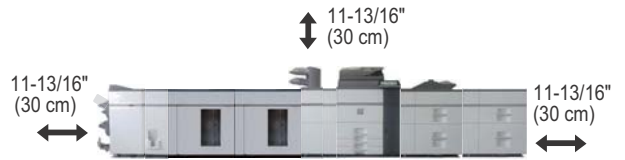
6) **Place of much dust**

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



7) **Place near a wall**

Some machine require intake and exhaust of air. If intake and exhaust of air are not properly performed, copy dirt or a breakdown may be resulted.

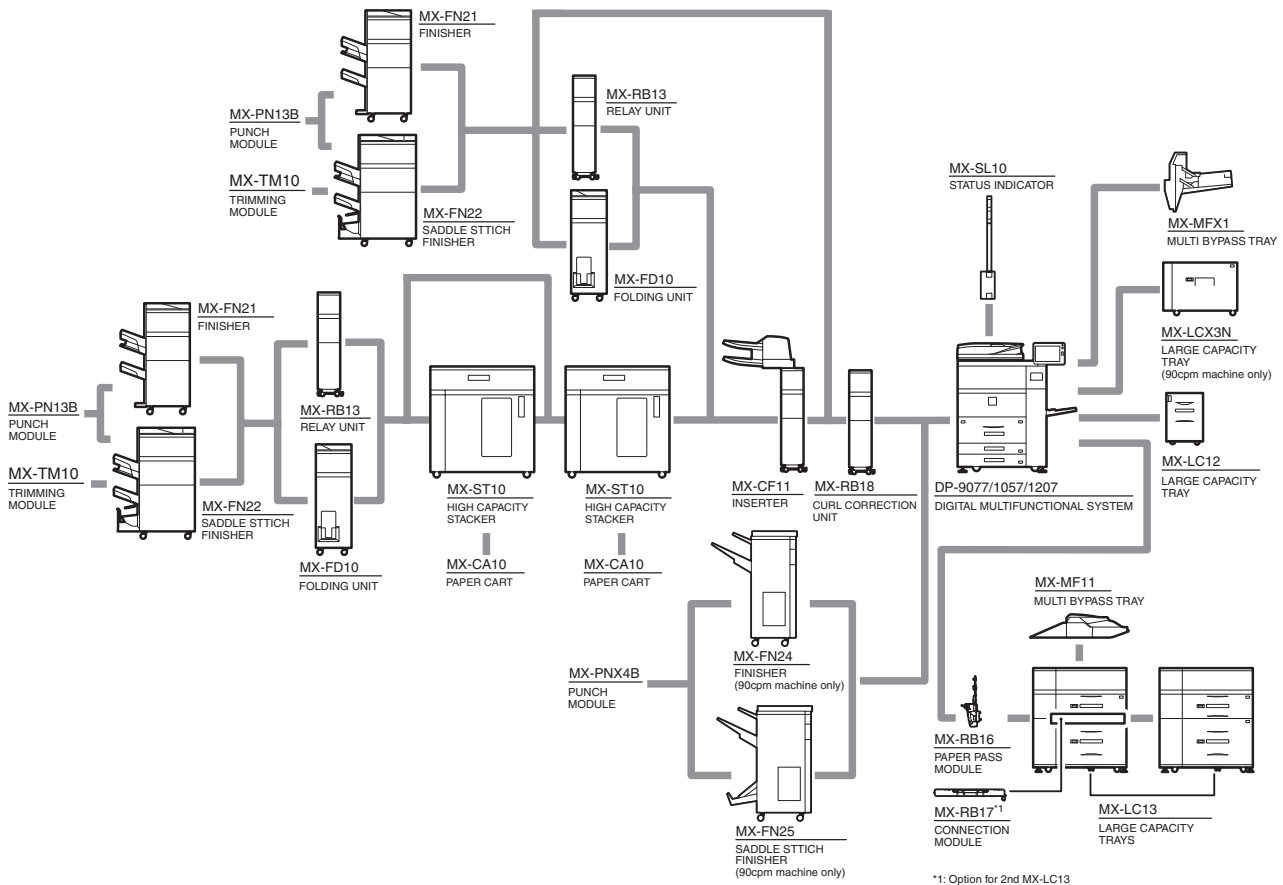


When installing the machine, make sure that the sides and back of the machine are at least 11-13/16" (30 cm) away from any walls.

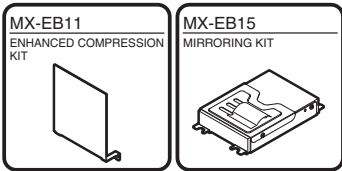
There is a portion currently expressed with the illustration of a conventional model in this manual.

# [1] PRODUCT OUTLINE

## 1. System diagram



\*1: Option for 2nd MX-LC13



## [2] SPECIFICATIONS

### 1. Basic specifications

#### A. Engine specification

|                     |  |
|---------------------|--|
| Photoconductor type | OPC (Drum diameter: $\phi$ 120mm)                                  |
| Recording system    | Electronic photo system (Laser)                                    |
| Developing system   | Dry type 2-component magnetic brush development                    |
| Charging system     | Wire charging system   |
| Transfer system     | Transfer belt system   |
| Cleaning system     | Counter blade  |
| Fusing system       | Heat roller  |
| Toner supply system | Toner continuous run   |
| Waste toner process | Without toner recycle system/<br>Toner collection container system |

#### B. Engine speed (ppm)

<Tray 1 - 4, LCC, LCT>

For heavy paper, the speed is same as that for plain paper, except for the items below.

| Paper   | 90cpm machine | 105cpm machine | 120cpm machine |
|---|---------------|----------------|----------------|
| 469mm x 318mm, Extra                                      | 41            | 48             | 49             |
| 12" x 18" (A3W)   | 42            | 49             | 51             |
| SRA3  | 43            | 49             | 52             |
| 440mm x 312mm   | 44            | 50             | 53             |
| A3, 11" x 17", 8K   | 47            | 52             | 54             |
| B4, 8.5" x 14", 8.5" x 13",<br>8.5" x 13.4", 8.5" x 13.5" | 50            | 58             | 66             |
| A4R, B5R, 8.5" x 11"R,<br>7.25" x 10.5"R, 16KR            | 58            | 67             | 76             |
| 318mm x 234mm   | 69            | 78             | 88             |
| 9" x 12" (A4W)  | 70            | 80             | 89             |
| SRA4  | 71            | 81             | 90             |
| 312mm x 220mm   | 72            | 83             | 92             |
| A4, B5, 8.5" x 11", 16K                                   | 90            | 105            | 120            |
| A5R, 5.5" x 8.5"R   | 90            | 105            | 120            |
| Heavy paper (A4, B5, 8.5" x 11", 16K)                     | 65            | 72             | 81             |
| Heavy paper (A5R, 5.5" x 8.5"R)                           | 65            | 72             | 81             |
| Heavy paper (318mm x 234mm)                               | 65            | 72             | 81             |
| Heavy paper (9" x 12" (A4W))                              | 65            | 72             | 81             |
| Heavy paper (SRA4)  | 65            | 72             | 81             |
| Heavy paper (312mm x 220mm)                               | 65            | 72             | 81             |
| OHP (11" X 17", A4) (Face-up)                             | 65            | 72             | 81             |
| OHP (A4R, 11" X 17"R) (Face-up)                           | 58            | 67             | 76             |
| OHP (Other) (Face-up)                                     | 41            | 48             | 55             |

<Manual paper feed, LCT manual paper feed>

For heavy paper, the speed is same as that for plain paper, except for the items below.

| Paper   | 90cpm machine | 105cpm machine | 120cpm machine |
|---|---------------|----------------|----------------|
| 469mm x 318mm, Extra                                      | 41            | 48             | 49             |
| 12" x 18" (A3W)   | 42            | 49             | 51             |
| SRA3  | 43            | 49             | 52             |
| 440mm x 312mm   | 44            | 50             | 53             |
| A3, 11" x 17", 8K   | 47            | 52             | 54             |
| B4, 8.5" x 14", 8.5" x 13",<br>8.5" x 13.4", 8.5" x 13.5" | 50            | 58             | 66             |
| A4R, B5R, 8.5" x 11"R,<br>7.25" x 10.5"R, 16KR            | 58            | 67             | 76             |
| 318mm x 234mm   | 69            | 78             | 88             |
| 9" x 12" (A4W)  | 70            | 80             | 89             |
| SRA4  | 71            | 81             | 90             |
| 312mm x 220mm   | 72            | 83             | 92             |
| A4, B5, 8.5" x 11", 16K                                   | 90            | 105            | 120            |
| A5R, 5.5" x 8.5"R   | 90            | 105            | 120            |
| Heavy paper (A4, B5, 8.5" x 11", 16K)                     | 65            | 72             | 81             |

| Paper                                   | 90cpm machine | 105cpm machine | 120cpm machine |
|---|---------------|----------------|----------------|
| Heavy paper (A5R, 5.5" x 8.5"R)         | 65            | 72             | 81             |
| Heavy paper (318mm x 234mm)             | 65            | 72             | 81             |
| Heavy paper (SRA4/A4W)                  | 65            | 72             | 81             |
| Heavy paper (SRA3)                      | 41            | 48             | 55             |
| Heavy paper (312mm x 220mm)             | 65            | 72             | 81             |
| Heavy paper (Postcard (High)) (Face-up) | 47            | 54             | 64             |
| OHP (11" x 17", A4) (Face-up)           | 65            | 72             | 81             |
| OHP (A4R, 11" x 17"R) (Face-up)         | 58            | 67             | 76             |
| OHP (Other) (Face-up)                   | 41            | 48             | 55             |

\* For the items below, same as for the plain paper.

Thin paper/Recycled paper (Standard paper)/Color paper (Standard paper)

#### C. Printable range

|                 |   |
|-----------------|---|
| Max. print size | 310 X 462.5mm   |
| Void area       | Lead edge: 4mm or less  |
| Image loss      | Rear edge: 4 mm or less<br>FR total: 5.0mm or less<br>(each side 2.5mm or less)<br>(unprintable if 310mm or more) |

The printable area must be as large as the A3 / 11 X 17 page dimension + flap for fastening + cropped mark (310 X 462.5mm) by PCL / PS driver.

#### D. Engine resolution

| Resolution                   | Copy  | Writing<br>1200dpi x 1200dpi,<br>600dpi x 600dpi      |              |            |
|------------------------------|-------|---|--------------|------------|
|                              | Print | Writing<br>600 x 600dpi (Default)<br>1,200 x 1,200dpi |              |            |
| Gradation<br>(256 levels *2) | Copy  | Writing   |              |            |
|                              |       | 1200 x 1200dpi  | 1bit         |            |
|                              |       | 600dpi x 600dpi                                       | 4bit         |            |
|                              | Print | Writing   |              |            |
|                              |       | PCL   | 600 x 600dpi | 1bit, 4bit |
|                              |       | PS  | 600 x 600dpi | 1bit, 4bit |
|                              |       | 1,200 x 1,200dpi                                      | 1bit         |            |

\*2: Dither process is executed by an 8bit input.

#### E. Scanner section

##### (1) Resolution/Gradation

|                           |        | Monochrome   | Color |
|---------------------------|--------|--|-------|
| Scanning Resolution (dpi) | Platen | 600 x 600dpi<br>600 x 400dpi<br>600 x 300dpi (default)                   | -     |
|                           | DSPF   | 600 x 600dpi<br>600 x 400dpi<br>600 x 300dpi (default)                   | -     |
| Exposure lamp             |        | White LED  |       |
| Reading gradation         |        | 10bit  |       |
| Output gradation          |        | BW: Binary (1bit)<br>Gray scale: 8bit<br>Full Color: each color RGB 8bit |       |

##### (2) Document table

|  |  |
|--|--|
| Type                                   | Document table fixed system (Flat bed)   |
| Scanning area                          | 297 x 432mm  |
| Original standard position             | Left top reference   |
| Detection                              | Yes  |
| Detection size                         | Automatic detection (One type of detection unit to be switched for software destination) |
| Dehumidifying heater (Scanner section) | Supplied as a service parts  |

## F. Document feeder

|   |  |   |
|---|--|---|
| Type  | DSPF (Duplex single pass feeder)   |   |
| Scan speed  | Monochrome (A4/8.5" x 11")   | Color (A4/8.5" x 11")   |
| Copy  | Single: 120-sheet/min. (600 x 300dpi, 1bit)<br>60-sheet/min. (600 x 600dpi, 1bit)<br>Double: 200-page/min. (600 x 300dpi, 1bit)<br>100-page/min. (600 x 600dpi, 1bit)  | N/A   |
| FAX   | Single: 120-sheet/min. (200 x 200dpi, 1bit)<br>Double: 200-page/min.(200 x 200dpi, 1bit)   | N/A   |
| Internet FAX  | Single: 120-sheet/min. (200 x 200dpi, 1bit)<br>Double: 200-page/min. (200 x 200dpi, 1bit)  | N/A   |
| Scanner   | Single: 120-sheet/min. (200 x 200dpi, 1bit)<br>Double: 200-page/min. (200 x 200dpi, 1bit)  | Single: 120-sheet/min. (200 x 200dpi, 8bit)<br>Double: 200-page/min. (200 x 200dpi, 8bit) |
| Original setup direction  | Upward standard (1 to N feeding standard)  |   |
| Original standard position  | Center standard (Rear one-side standard for random feeding)  |   |
| Original transport method   | Sheet-through method   |   |
| Original size   | Standard size<br>Inch-1: 11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", 5.5" x 8.5"R, A3, B4, A4, B5, B5R<br>Inch-2: 11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", 5.5" x 8.5"R, A3, B4, A4, B5, B5R<br>Inch-3: 11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", 5.5" x 8.5"R, A3, B4, A4, B5, B5R<br>AB-1: 11" x 17", 8.5" x 14", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R<br>AB-2: 11" x 17", 8.5" x 13", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R<br>AB-3: 11" x 17", 8.5" x 13", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R, 8K, 16K, 16KR<br>AB-4: 11" x 17", 8.5" x 13.4", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R<br>AB-5: 11" x 17", 8.5" x 13.5", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5, A5R<br>Long paper<br>1000 mm (Monochrome binary only) |   |
| Mix paper feed<br>(Same series, same width paper)                 | Enabled  |   |
| Random feeding (feeding of<br>different types / different widths) | Enabled<br>Only the following combinations of 2 size types are allowed:<br>A3 and B4; B4 and A4R; A4 and B5; B5 and A5; and 11-inch and 8.5-inch. AMS available.   |   |
| Original copy weight  | Single:<br>Thin paper: 9 - 13 lb bond (38 - 49 g/m <sup>2</sup> )<br>Plain paper: 13 lb bond - 110 lb index (50 - 205 g/m <sup>2</sup> )<br>* Thin paper mode (80-sheet/min. (A4, 8.5" x 11")) is set up for the thin paper.<br>Duplex: 13 - 110 lb bond (52 - 205 g/m <sup>2</sup> )  |   |
| Max. loading capacity of documents                                | Max. 250-sheets (80g/m <sup>2</sup> , 21 lbs bond), or max. 32.5mm (1-9/32 inch) of the document load height.  |   |
| Un-acceptable originals for feeding.                              | OHP, second original paper, tracing paper, carbon paper, thermal paper, paper with wrinkles, folds, or breakage, pasted paper, cutout document, document printed with ink ribbon, documents with perforation other than 2- or 3-holes (Perforated document by punch unit is allowed.)  |   |
| Detection   | Yes  |   |
| Paper detection size  | Auto detection (Refer to "Original size")  |   |
| Paper feeding direction   | Right hand feeding   |   |
| Finish stamp  | Option   |   |

## G. Paper feed section

### (1) Basic specifications

|                      |               |   |
|----------------------|---------------|---|
| Type                 | Standard      | 4-stage paper feed tray + Multi bypass tray   |
|                      | Full option   | 4-stage paper feed tray + Multi bypass tray + 2-stage large capacity trays + 2-stage large capacity trays |
| Dehumidifying heater | Service parts |   |

| Tray                               |                                   | Tray 1 (Left side)  | Tray 2 (Right side)      | Tray 3                    | Tray 4     |
|------------------------------------|-----------------------------------|---|--------------------------|---------------------------|------------|
| Paper capacity                     | Plain paper (80g/m <sup>2</sup> ) | 1,200 sheets  | 800 sheets               | 500 sheets                | 500 sheets |
| Paper size                         |                                   | Refer to "Size of paper which can be fed".  |                          |                           |            |
| Paper size detection               |                                   | No  |                          | Yes                       |            |
| Paper type settings                |                                   | Refer to "Size of paper which can be fed".  |                          |                           |            |
| Changing of paper size             |                                   | User/Service man selection *1   |                          | User selection            |            |
| Cassette handle                    |                                   | Normal grasp/reverse grasp support  |                          |                           |            |
| Handle lock mechanism              |                                   | Yes   |                          |                           |            |
| Default Paper Size Setting         | Inch series                       | 8.5" x 11"  | 8.5" x 11"               | 11" x 17"                 | 11" x 17"  |
|                                    | AB series                         | A4  | A4                       | A3                        | A3         |
| Paper remaining quantity detection |                                   | Paper empty, 100%/33%/6%  | Paper empty, 100%/50%/9% | Paper empty, 100%/67%/33% |            |
| Paper size display                 |                                   | Yes   |                          |                           |            |
| Tray rising / falling time         | Rising                            | 12 seconds or less<br>Without paper, from tray insertion to paper empty detection |                          | —                         |            |
|                                    | Falling                           | Self-weight falling   |                          | —                         | —          |

\*1: A4/8.5" x 11" can be selected by the user. B5 size is selected by the serviceman.



## (2) Extra paper capacity

| Paper type            | Tray 1 (Left side) | Tray 2 (Right side) | Tray 3 | Tray 4 |
|-----------------------|--------------------|---------------------|--------|--------|
| Postcard              | N/A                | N/A                 | N/A    | N/A    |
| Envelope              | N/A                | N/A                 | N/A    | N/A    |
| OHP                   | N/A                | N/A                 | N/A    | Yes    |
| Heavy paper 1 106-176 | N/A                | N/A                 | Yes    | Yes    |
| Heavy paper 2 177-220 | N/A                | N/A                 | Yes    | Yes    |
| Heavy paper 3 221-256 | N/A                | N/A                 | N/A    | N/A    |
| Heavy paper 4 257-300 | N/A                | N/A                 | N/A    | N/A    |
| Label sheet           | N/A                | N/A                 | N/A    | Yes    |
| Tab paper             | N/A                | N/A                 | N/A    | Yes    |
| Glossy paper          | N/A                | N/A                 | N/A    | N/A    |
| Others                | N/A                | N/A                 | N/A    | Yes    |

## (3) Size of paper which can be fed

|               |                                    | Tray 1 | Tray 2 | Tray 3 | Tray 4 |
|---------------|------------------------------------|--------|--------|--------|--------|
| Paper size    | 12" x 18" (A3W)                    | -      | -      | Yes    | Yes    |
|               | 11" x 17"                          | -      | -      | Yes    | Yes    |
|               | 8.5" x 14" (216 x 356)             | -      | -      | Yes    | Yes    |
|               | 8.5" x 13.5" (216 x 343)           | -      | -      | Yes    | Yes    |
|               | 8.5" x 13.4" (216 x 340)           | -      | -      | Yes    | Yes    |
|               | 8.5" x 13" (216 x 330)             | -      | -      | Yes    | Yes    |
|               | 8.5" x 11"                         | Yes    | Yes    | Yes    | Yes    |
|               | 8.5" x 11"R                        | -      | -      | Yes    | Yes    |
|               | 5.5" x 8.5"                        | -      | -      | -      | -      |
|               | 5.5" x 8.5"R                       | -      | -      | -      | Yes    |
|               | 7.25" x 10.5"R                     | -      | -      | Yes    | Yes    |
|               | 9" x 12" (A4W)                     | -      | -      | Yes    | Yes    |
|               | A3                                 | -      | -      | Yes    | Yes    |
|               | B4                                 | -      | -      | Yes    | Yes    |
|               | A4                                 | Yes    | Yes    | Yes    | Yes    |
|               | A4R                                | -      | -      | Yes    | Yes    |
|               | B5                                 | Yes    | -      | Yes    | Yes    |
|               | B5R                                | -      | -      | Yes    | Yes    |
|               | A5R                                | -      | -      | -      | Yes    |
|               | SRA3                               | -      | -      | -      | -      |
|               | SRA4                               | -      | -      | -      | -      |
|               | 318mm x 234mm                      | -      | -      | -      | -      |
|               | 312mm x 220mm                      | -      | -      | -      | -      |
| 469mm x 318mm | -                                  | -      | -      | -      |        |
| 440mm x 312mm | -                                  | -      | -      | -      |        |
| 8K            | -                                  | -      | Yes    | Yes    |        |
| 16K           | -                                  | -      | Yes    | Yes    |        |
| 16KR          | -                                  | -      | Yes    | Yes    |        |
| Postcard      | -                                  | -      | -      | -      |        |
| Envelope      | -                                  | -      | -      | -      |        |
| Custom *1     | No                                 | No     | No     | Yes    |        |
| Paper type    | Thin paper                         | No     | No     | No     | No     |
|               | Standard paper                     | Yes    | Yes    | Yes    | Yes    |
|               | Recycled paper (Standard paper)    | Yes    | Yes    | Yes    | Yes    |
|               | Color paper (Standard paper)       | Yes    | Yes    | Yes    | Yes    |
|               | Letter head paper (Standard paper) | Yes    | Yes    | Yes    | Yes    |
|               | Pre printed (Standard paper)       | Yes    | Yes    | Yes    | Yes    |
|               | Pre punched (Standard paper)       | Yes    | Yes    | Yes    | Yes    |
|               | Heavy paper 1 106-176              | No     | No     | Yes    | Yes    |
|               | Heavy paper 2 177-220              | No     | No     | Yes    | Yes    |
|               | Heavy paper 3 221-256              | No     | No     | No     | No     |
|               | Heavy paper 4 257-300              | No     | No     | No     | No     |
|               | Envelope                           | No     | No     | No     | No     |
|               | OHP Transparency                   | No     | No     | No     | Yes    |
|               | Label sheet                        | No     | No     | No     | Yes    |
|               | Tab sheet *2                       | No     | No     | No     | Yes    |
|               | Glossy paper                       | No     | No     | No     | No     |
|               | Embossed paper                     | No     | No     | No     | No     |
|               | User type 1 - 11                   | Yes    | Yes    | Yes    | Yes    |

Type: Weight

Thin paper: 52-59g/m<sup>2</sup> 13 - 16 lbs bond

Standard paper: 60-105g/m<sup>2</sup> 16 - 28 lbs bond

Heavy paper 1: 106-176g/m<sup>2</sup> 28 lbs bond - 65 lbs index

Heavy paper 2: 177-220g/m<sup>2</sup> 65 lbs index - 80 lbs Cover

Heavy paper 3: 221-256g/m<sup>2</sup> 80 lbs bond - 140 lbs index

Heavy paper 4: 257-300g/m<sup>2</sup> 140 lbs index - 110 lbs Cover

\*1: Custom size range

|                               |   | AB series (mm) |      | Inch series (Inch) |      |
|-------------------------------|---|----------------|------|--------------------|------|
|                               |   | Min.           | Max. | Min.               | Max. |
| Tray 4                        | X | 148            | 457  | 5.875              | 18   |
|                               | Y | 100            | 305  | 4.0                | 12   |
| Manual paper feed (Main unit) | X | 182            | 457  | 5.5                | 18   |
|                               | Y | 100            | 305  | 4.0                | 12   |
| LCT *3                        | X | 182            | 470  | 7.2                | 18.5 |
|                               | Y | 182            | 320  | 7.2                | 12.5 |
| Manual paper feed (LCT)       | X | 140            | 470  | 5.5                | 18.5 |
|                               | Y | 100            | 320  | 4.0                | 12.5 |

\*2: Supported tab width for tab paper is as follows:

A4 tab width: 12 - 20mm, 8.5" x 11" tab width: 6.1 - 17mm

\*3: For the second series LCT, postcards cannot be used.

## H. Paper exit section

### (1) Machine paper exit section

|                             |   |
|-----------------------------|---|
| Paper exit section          | Machine paper exit section  |
| Setting                     | Service parts   |
| Paper exit method           | Face-down/face-up paper exit  |
| Paper exit capacity         | 250-sheet (80g/m <sup>2</sup> paper)  |
| Paper exit paper size/ kind | A3W, A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard, 12" x 18", 11" x 17", 8.5" x 14", 8.5" x 13.5", 8.5" x 13.4", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 7.25" x 10.5"R, 5.5" x 8.5"R, 9" x 12"<br>* Paper of 305mm or more in the main scanning direction cannot be discharged. |
| Remaining paper detection   | No  |
| Exit paper full detection   | Yes   |
| Contents                    | Paper exit tray, Paper exit tray mounting plate, Left lower cabinet, Paper exit section cabinet, Paper full sensor, Roller  |

### (2) Machine decurler

|                |   |
|----------------|---|
| Type           | Follower sponge roller                            |
| Decurl setting | Manual level 1 - 9 (Decurl amount: Small → Large) |
| Paper weight   | Refer to "Size of paper which can be discharged". |
| Productivity   | Same speed as the machine (No speed loss)         |

### (3) Size of paper which can be discharged

|            |                       | Duplex section/ machine decurler | Reverse section |
|------------|-----------------------|----------------------------------|-----------------|
| Paper type | Thin paper            | No                               | Yes             |
|            | Standard paper        | Yes                              | Yes             |
|            | Recycled paper        | Yes                              | Yes             |
|            | Color paper           | Yes                              | Yes             |
|            | Letter head paper     | Yes                              | Yes             |
|            | Pre printed           | Yes                              | Yes             |
|            | Pre punched           | Yes                              | Yes             |
|            | Heavy paper 1 106-176 | Yes                              | Yes             |
|            | Heavy paper 2 177-220 | Yes                              | Yes             |
|            | Heavy paper 3 221-256 | No                               | No              |
|            | Heavy paper 4 257-300 | No                               | No              |
|            | Tab sheet             | No                               | Yes             |
|            | OHP                   | No                               | No              |

|                                |                              | Duplex section/<br>machine<br>decurler | Reverse section |
|--------------------------------|------------------------------|--|-----------------|
| Paper type                     | Label sheet                  | No                                     | No              |
|                                | Glossy paper                 | Yes                                    | Yes             |
| Paper size                     | 12" x 18" (A3W)              | 305 x 457                              | Yes             |
|                                | Ledger (11" x 17")           | 279 x 432                              | Yes             |
|                                | Legal (8.5" x 14")           | 216 x 356                              | Yes             |
|                                | Asian legal (8.5" x 13.5")   | 216 x 343                              | Yes             |
|                                | Mexican legal (8.5" x 13.4") | 216 x 340                              | Yes             |
|                                | Foolscap (8.5" x 13")        | 216 x 330                              | Yes             |
|                                | Letter (8.5" x 11")          | 279 x 216                              | Yes             |
|                                | Letter R (8.5" x 11"R)       | 216 x 279                              | Yes             |
|                                | Invoice (5.5" x 8.5")        | 216 x 140                              | No              |
|                                | Invoice R (5.5" x 8.5"R)     | 140 x 216                              | Yes             |
|                                | Executive R (7.25" x 10.5"R) | 184 x 266                              | Yes             |
|                                | 9" x 12" (A4W)               | 305 x 229                              | Yes             |
|                                | A3                           | 297 x 420                              | Yes             |
|                                | B4                           | 257 x 364                              | Yes             |
|                                | A4                           | 297 x 210                              | Yes             |
|                                | A4-R                         | 210 x 297                              | Yes             |
|                                | B5                           | 257 x 182                              | Yes             |
|                                | B5-R                         | 182 x 257                              | Yes             |
|                                | A5                           | 210 x 148                              | No              |
|                                | A5-R                         | 148 x 210                              | Yes             |
|                                | SRA3                         | 320 x 450                              | Yes             |
|                                | SRA4                         | 320 x 225                              | Yes             |
|                                | 318mm x 234mm                | 318 x 234.75                           | Yes             |
|                                | 312mm x 220mm                | 312.5 x 220                            | Yes             |
|                                | 469mm x 318mm                | 318 x 469.5                            | Yes             |
|                                | 440mm x 312mm                | 312.5 x 440                            | Yes             |
|                                | 8K                           | 270 x 390                              | Yes             |
| 16K                            | 270 x 195                    | Yes                                    |                 |
| 16K-R                          | 195 x 270                    | Yes                                    |                 |
| Postcard                       | 100 x 148                    | No                                     |                 |
| Monarch                        | 98 x 191                     | No                                     |                 |
| COM10                          | 105 x 241                    | No                                     |                 |
| DL                             | 110 x 220                    | No                                     |                 |
| C5                             | 229 x 162                    | No                                     |                 |
| Special - Custom size          |                              | No                                     |                 |
| Special - Uncertain paper size |                              | No                                     |                 |

## I. Operation panel

### (1) Display device

|                                |  |
|--------------------------------|--|
| Size                           | 10.1 inch  |
| Type                           | Dot matrix LCD, touch panel (multi-touch no support) |
| Display dot number             | 1,024 x 600 dots (WSVGA)                             |
| Color                          | Yes  |
| LCD drive display area (W x D) | 222.72mm x 125.28mm (CMO 10.1 inch)                  |
| LCD back-light                 | LED lamp back-light system                           |
| LCD brightness adjustment      | Yes (Backlight light quantity adjustment)            |
| Angle/position adjustment      | Swig mechanism, with tilt mechanism, free stop       |

## J. Controller board

|                               |  |
|-------------------------------|--|
| CPU                           | ARM11/600MHz   |
| SOC                           | Intel Atom D525 1.8GHz   |
| Interface                     |  |
| Ethernet                      | 1port  |
| Interface                     | 10Base-T, 100Base-TX, 1000Base-T   |
| Support Protocol              | TCP/IP (IPv4, IPv6), IPX/SPX, EtherTalk  |
| USB 2.0 (high speed) (host)   | Front : 1port<br>Rear : 1port (N/A)  |
| USB 2.0 (high speed) (device) | 1port  |
| USB-HUB (host)                | Internal: 4port<br>• For Front USB Port<br>• For Rear USB Port<br>• For Keyboard<br>• For IC card reader |
| ACRE expansion I/F            | Yes  |
| Serial I/F (for coin vendor)  | 1port  |
| Memory                        | See the section "Memory/Hard disk".  |
| Memory slot                   | 4 slot   |

## K. Memory/Hard disk

| SD Card | ICU (Main Reus) PWB | ICU (SUB Reus) PWB | SOC       |           | HDD*1 |
|---------|---------------------|--------------------|-----------|-----------|-------|
|         | Slot1               | Slot1              | Slot1     | Slot2     |       |
| 4GB     | 1GB (STD)           | 1GB (STD)          | 2GB (STD) | 1GB (STD) | 1TB   |

\*1: HDD capacity depends on procurement and sourcing status.

|                       |                              |
|-----------------------|------------------------------|
| Memory area (SD card) | Boot/Program area            |
|                       | FAX data storage area<br>1GB |

## L. Warm-up time

|   |                 |
|---|-----------------|
| Warm-up time *1<br>(Time for the operation panel to be ready for printing from turning on the power switch) | 210sec.         |
| Pre heat  | Yes             |
| Jam recovery time *2  | 30 sec. or less |

\*1: Result may change depending on conditions.

\*2: Conditions: Leave the machine for 60 sec. after door open, standard condition, Polygon stops.

## 2. Copy functions

### A. First copy time

| Platen/DSPF | 90cpm machine       | 105cpm machine      | 120cpm machine      |
|-------------|---------------------|---------------------|---------------------|
| Platen      | 4.0 seconds or less | 3.2 seconds or less | 3.2 seconds or less |
| DSPF        | 6.3 seconds or less | 5.5 seconds or less | 5.5 seconds or less |

## 3. Printer function

### A. PDL emulation/Font

| PDL (Command)            |     | Installed font   | Option font              |
|--------------------------|-----|--|--------------------------|
| PCL5e/PCL6 compatibility | STD | European outline font = 80 styles<br>Line printer font (BMP) = 1 style | Barcode font = 28 styles |
| Postscript 3             | STD | European outline font = 136 styles                                     | -                        |

## 4. Image send function

### A. Image send function (Push send from the main unit)

#### (1) Support image

| Mode    | Compression method/<br>Compression rate (Color scanner)   |
|---------|---|
| Scanner | Black-White (Binary):<br>Non-compression, MH, MMR<br>Color (Gray scale): Low compression,<br>Medium compression, High compression |

#### (2) Specification of Addresses

| Mode  | Image send   |
|---|--|
| Address specification                                   | Specification by individual/group/<br>direct address entry.<br>Selection from LDAP server<br>Entry from externally-connected<br>keyboard                 |
| Number of individual address key<br>registration        | Total (number of key):<br>Maximum 2000   |
| Number of group (1 key) address<br>registration         | Number of Group (1 key) address<br>registration: maximum 500<br>Number of Group key registration:<br>6000 (Total address number<br>included in 2000 key) |
| Program   | 48 items + preset 1 item (Group/<br>Individual)  |
| Direct entry of addresses                               | Entry by option keyboard (MX-KB13)<br>or soft keyboard   |
| Chain dial  | Yes (pause key) (Fax only)   |
| Resend  | Call up nearest 50 addresses.<br>(Except for Desktop (when direct<br>input), USB memory, Broadcast.)   |
| Destination confirmation                                | Yes  |
| Shortcut for address selection<br>(quick key)           | Use the 10-key to call up registered<br>numbers of addresses.  |
| Disable registering destination<br>from operation panel | Yes  |
| Disable registering destination on<br>web page          | Yes  |
| Disable [Resend] on Fax/Image<br>send mode              | Yes  |
| Disable selection from address<br>book                  | Yes  |
| Disable direct entry transmission                       | Yes  |
| Disable broadcast transmission                          | Yes  |
| Disable PC-Fax/Internet Fax<br>sending                  | Yes  |

#### (3) Specification of Multiple Addresses

| Mode                           | Image send             |
|--------------------------------|------------------------|
| Broadcast                      | Yes (500 destinations) |
| Request of serial transmission | Yes                    |

\* Broadcast transmission is allowed. (Monochrome only)

#### (4) Transmission function

| Mode                             | Image send   |
|----------------------------------|--|
| Memory transmission              | Yes (Max. 100 destinations)  |
| Scaled transmission              | Enable only from a fixed-form size to<br>a fixed-form size             |
| Long original transmission       | Yes<br>Maximum of 1000mm (single side<br>only/black-white binary only) |
| Restriction on transmission size | Scanner, internet FAX only   |
| Stamp                            | No   |

| Mode                         | Image send         |
|------------------------------|--------------------|
| Large capacity original mode | Yes                |
| Scanning of thin paper       | Yes                |
| Mixed originals feeder       | Yes (Random + MIX) |
| Preview                      | No                 |
| Side erase                   | Yes                |
| Original count               | Yes                |

#### (5) Other Functions

| Mode                        | Image send             |
|-----------------------------|------------------------|
| Time specification          | Yes                    |
| Page partition transmission | Yes                    |
| Card shot                   | Yes (Ratio: 63 - 400%) |

#### (6) Registration-related settings

| Mode   | Image send   |
|--|--|
| Individual/group *1<br>E-mail<br>FTP<br>Desktop<br>SMB | 2000 destinations<br>Use of LDAP allowed<br>Up to 500 registered addresses for each<br>group dial.<br>Registered name in 36 characters                                       |
| Address book registration<br>from Resend screen        | Yes  |
| Program  | Registration of addresses (individual/<br>group), settings (density, image quality,<br>resolution, original) and special functions<br>in one set is allowed. (48 + preset 1) |
| Quick key (short cut<br>registration) *2               | Yes (0001 – 2000)  |
| Readout/read-in of data<br>registered in other models  | Yes (by the address book conversion<br>utility)  |
| Import/export of address book                          | Yes (By storage backup)  |

\*1: Since scan uses the common address book,  
the number of addresses allowed for registration is the sum  
total of all modes.

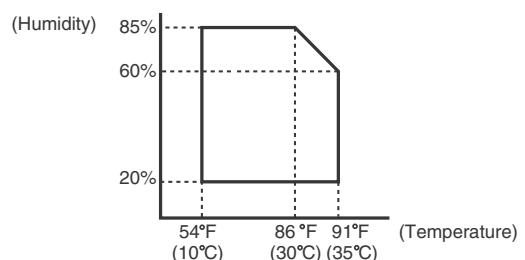
\*2: Quick key is the function to select an address based on the  
registered number of each address within the book for address  
selection. Users should be able to select a quick key number.

## 5. External dimension and weight

|   |   |
|---|---|
| Outer dimension<br>(W x D x H)<br>(Included operation panel)                    | 1,084mm x 790mm x 1,237mm<br>(Operation panel default position)<br>1,084mm x 780mm x 1,237mm<br>(When the operation panel is put down.) |
| Dimension occupied<br>by the machine<br>(When the bypass tray is<br>extended)   | 1,240mm x 878mm<br>(When the bypass tray is extended/Max.<br>value with the operation panel is tilted. )                                |
| Weight<br>Main Unit (including<br>photoreceptor / not<br>including consumables) | 295kg   |

## 6. Ambient conditions

### A. Environment conditions



## [3] CONSUMABLE PARTS

### 1. Supply system table

| No. | Item            | Content            | Life  | Model name  | Remarks              |
|-----|-----------------|--------------------|-------|-------------|----------------------|
| 1   | Toner cartridge | Toner cartridge x1 | 120K  | PS-ZT1207UK | Life: A4 6% document |
| 2   | Developer       | Developer x1       | 1000K | D-1207      |                      |
| 3   | Drum            | OPC drum x1        | 1000K | OD-1207     |                      |

\* The toner life may vary depending on the document density and temperature and humidity.

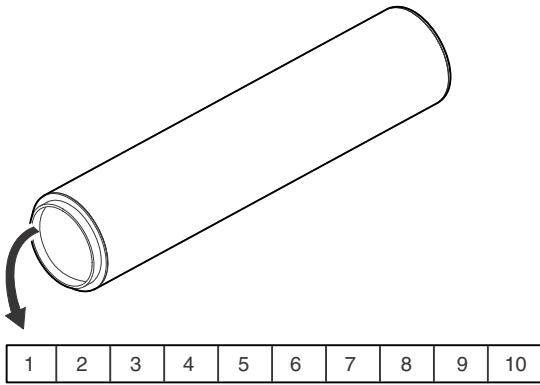
### 2. Maintenance parts list

| No. | Item                       | Contents   | Piece | Life              | Model Name     |
|-----|----------------------------|--|-------|-------------------|----------------|
| 1   | Heat Roller Kit            | Upper Heat Roller Unit                                 | x1    | 1000K             | HR-KIT-1207    |
|     |                            | Lower Heat Roller Unit                                 | x1    |                   |                |
| 2   | Fuser Maintenance Kit      | Fusing Separation Pawl (Upper)                         | x6    | 500K              | FM-KIT-1207    |
|     |                            | Fusing Separation pawl (Lower)                         | x4    |                   |                |
|     |                            | Fusing Front Paper Guide (Upper)                       | x1    |                   |                |
| 3   | Web Cleaning kit           | Web Roller   | x1    | 500K              | CW-KIT-1207    |
|     |                            | Cleaning Roller Bearing                                | x2    |                   |                |
|     |                            | Web Backup Roller                                      | x1    |                   |                |
|     |                            | Web Backup Roller Bearing                              | x2    |                   |                |
|     |                            | Web Guide Shaft  | x1    |                   |                |
|     |                            | Web Guide Shaft Bearing                                | x2    |                   |                |
| 4   | Main Charger Kit           | Charger Wire   | x2    | 500K              | MC-KIT-1207    |
|     |                            | Screen Grid  | x1    |                   |                |
|     |                            | Charger Cleaner  | x1    |                   |                |
|     |                            | Charger Cushion  | x4    |                   |                |
|     |                            | Cleaner Base Guide                                     | x1    |                   |                |
| 5   | Cleaning Blade Kit         | Cleaning Blade   | x1    | 500K              | BL-KIT-1207    |
|     |                            | SUB Blade  | x1    |                   |                |
|     |                            | Duct sheet   | x1    |                   |                |
|     |                            | Side Seal F  | x1    |                   |                |
|     |                            | Side Seal R  | x1    |                   |                |
|     |                            | Drum Separation Pawl                                   | x4    |                   |                |
| 6   | Developer Maintenance Kit  | Doctor Cover Unit/DV Seal                              | x1    | 1000K             | DM-KIT-1207    |
|     |                            | DV Side Seal F   | x1    |                   |                |
|     |                            | DV Side Seal R   | x1    |                   |                |
|     |                            | DV Box Filter  | x1    |                   |                |
|     |                            | DV Toner Filter  | x1    |                   |                |
| 7   | Transfer Belt Kit          | Transfer Belt  | x1    | 1000K             | TB-KIT-1207    |
|     |                            | Transfer Roller  | x1    |                   |                |
|     |                            | Transfer Cleaning Blade                                | x1    |                   |                |
|     |                            | Ball Bearing   | x4    |                   |                |
| 8   | Paper Dust Removing Unit   | Paper Dust Removing Unit                               | x1    | 500K              | PAPER-DUST-REM |
| 9   | Toner collection container | Toner collection container (with cap)                  | x1    | 500K              | PS-TB1207      |
| 10  | Filter Kit                 | Ozone filter   | x1    | 500K<br>/6 months | FLTR-KIT-1207  |
|     |                            | Outlet Filter  | x1    |                   |                |
| 11  | Staple Cartridge           | Staple Cartridge                                       | x3    | 5,000x3           | MX-SCX2        |
| 12  | Staple Cartridge           | Staple Cartridge                                       | x3    | 5,000x3           | MX-SCX1        |
| 13  | Staple Cartridge           | Staple Cartridge                                       | x3    | 5,000x3           | AR-SC2         |
| 14  | Staple Cartridge           | Staple Cartridge                                       | x4    | 2,000x4           | MX-SCX3        |
| 15  | WEB Cleaning Unit          | WEB Cleaning Unit (For servicing rotation)             | x1    | ---               | WEB-CLEANING-U |
| 16  | Fusing Unit                | Fusing Unit (For servicing rotation: Heater lamp 240V) | x1    | ---               | FUSER-UNIT     |
| 17  | Transfer unit              | Transfer Unit (For servicing rotation)                 | x1    | 500K              | TRANSFER-UNIT  |

### 3. Production number identification

#### A. Photoconductor drum

##### (1) Photoconductor drum



The lot number is in 10 digits. Each digit indicates the following content.

This number is printed on the inside wall of the tube.

- 1: Number  
2 for this mode.
- 2: Alphabet  
Indicates the model code. It is B for this model.
- 3: Number  
Indicates the end digit of the production year.
- 4: Number or X, Y, or Z  
Indicates the production month.  
X means October, Y November, and Z December.
- 5/6: Number  
Indicates the production day.
- 7/8/9: Production management number in the production factory.
- 10: Alphabet  
Production place code.

#### B. Developer



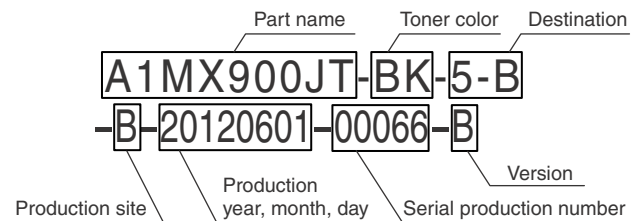
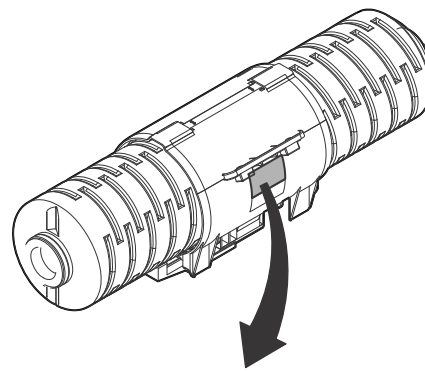
The lot number is in 8 digits, and each digit indicates the following content.

This number is printed on the right lower section of the back surface of the developer bag.

- 1: Alphabet  
Indicates the production factory.
- 2: Number  
Indicates the production year.
- 3/4: Number  
Indicates the production month.
- 5/6: Number  
Indicates the production day.
- 7: Hyphen
- 8: Number  
Indicates the production lot.

#### C. Toner cartridge

The label with the management number on it is attached to the side of the toner cartridge.

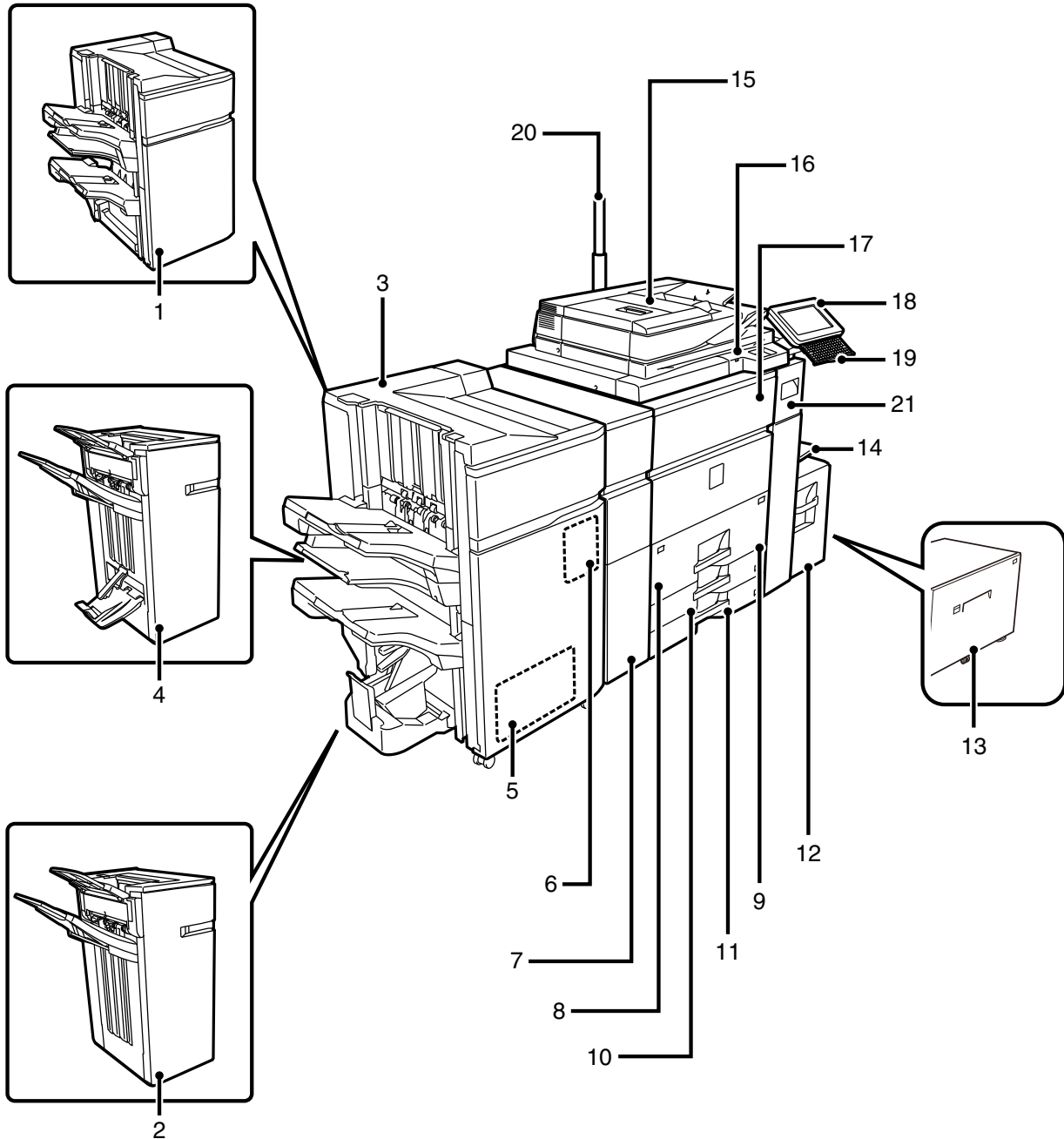


(Example) Produced on June 1st, 2012, 66th item.

## [4] EXTERNAL VIEW AND INTERNAL STRUCTURE

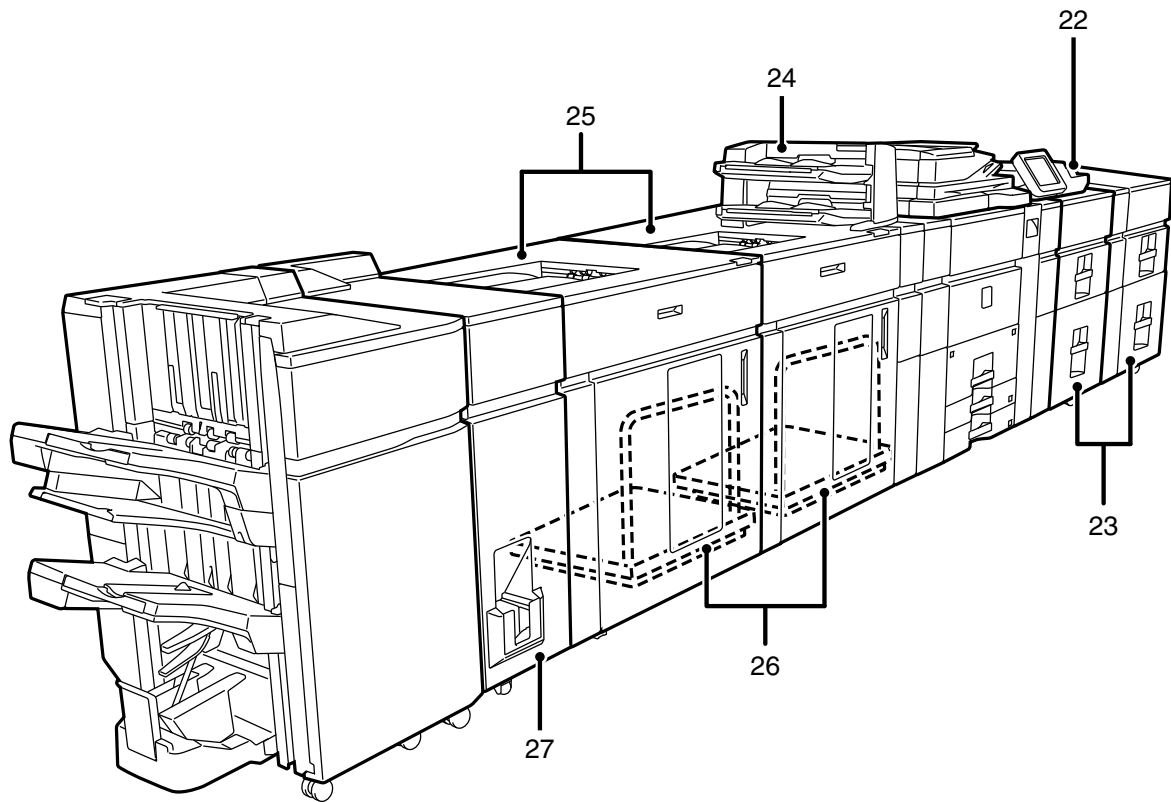
### 1. Identification of each section and functions

#### A. Exterior



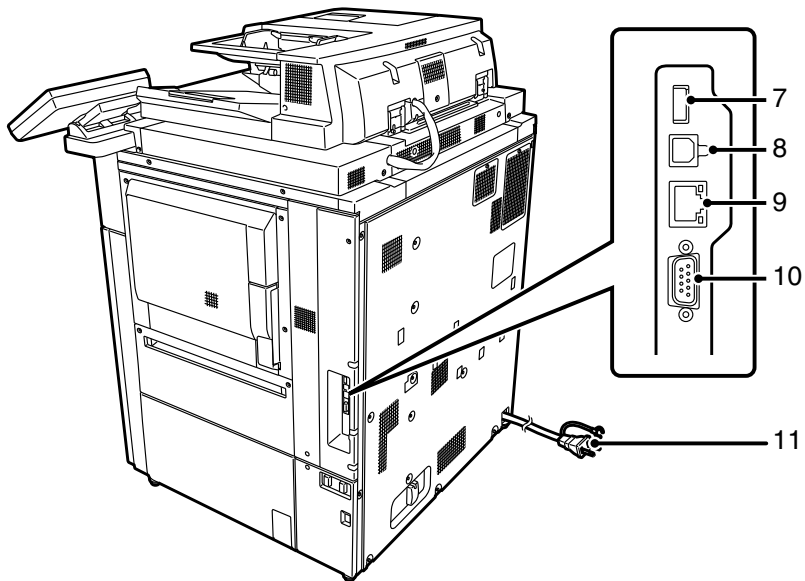
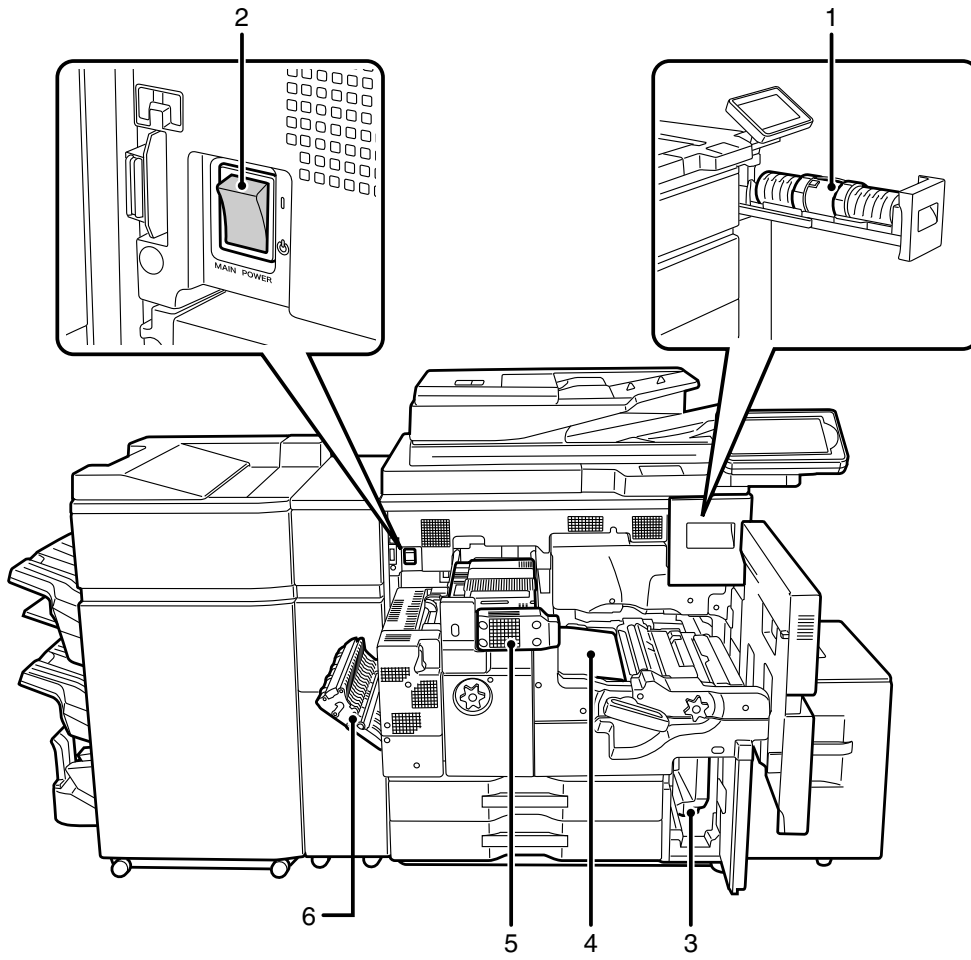
| No. | Name                   | Function / Operation  | Note                 |
|-----|------------------------|---|----------------------|
| 1   | Finisher               | This can be used to staple output. The optional punch module can be installed to punch holes in output. (100-sheet stapling)  | * Peripheral device. |
| 2   | Finisher               | This can be used to staple output. The optional punch module can be installed to punch holes in output. (50-sheet stapling)   | * Peripheral device. |
| 3   | Saddle stitch finisher | The output is folded at the center. The saddle stitch function staples output at the centerline. (100-sheet stapling)         | * Peripheral device. |
| 4   | Saddle stitch finisher | The output is folded at the center. The saddle stitch function staples output at the centerline. (50-sheet stapling)          | * Peripheral device. |
| 5   | Trimming module        | An extended section when performing center stapling can be cut out.   | * Peripheral device. |
| 6   | Punch module           | This is used to punch holes in output. Requires the finisher (large capacity) or the saddle stitch finisher (large capacity). | * Peripheral device. |
| 7   | Decurler unit          | Corrects curl of printed paper properly.  | * Peripheral device. |
| 8   | Tray 1 (left side)     | This holds paper. Up to 1200 sheets of paper can be loaded. (80g/m <sup>2</sup> )   |                      |
| 9   | Tray 2 (right side)    | This holds paper. Up to 800 sheets of paper can be loaded. (80g/m <sup>2</sup> )  |                      |

| No. | Name                      | Function / Operation  | Note                 |
|-----|---------------------------|---|----------------------|
| 10  | Tray 3                    | This holds paper. Up to 500 sheets of paper can be loaded. (80g/m <sup>2</sup> )  |                      |
| 11  | Tray 4                    | This holds paper. Up to 500 sheets of paper can be loaded. (80g/m <sup>2</sup> )  |                      |
| 12  | A4 LCC                    | This holds paper. Up to 3500 sheets of paper can be loaded. (80g/m <sup>2</sup> )   | * Peripheral device. |
| 13  | A3 LCC                    | This holds paper. Up to 3000 sheets of paper can be loaded. (80g/m <sup>2</sup> )   | * Peripheral device. |
| 14  | Bypass tray               | Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, be sure to pull out the bypass tray extension. This tray cannot be installed when the large-capacity 2-stage paper feed tray is installed. |                      |
| 15  | Automatic document feeder | This automatically feeds and scans multiple originals. Both sides of 2-sided originals can be automatically scanned.  |                      |
| 16  | USB connector (A type)    | A USB device such as a USB memory is connected to this connector. Be sure to use a USB cable of the shield type.  |                      |
| 17  | Front cover               | Open this cover when a paper jam occurs in the transport unit or in order to turn ON/OFF the main power switch.   |                      |
| 18  | Operation panel           | This is used to select functions and enter the number of copies.  |                      |
| 19  | Keyboard                  | This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel.  | * Peripheral device. |
| 20  | Status indicator          | The machine status is indicated by the LED.   | * Peripheral device. |
| 21  | Toner tray                | Pull out this tray when replacing the toner cartridge.  |                      |



| No. | Name                  | Function / Operation  | Note                 |
|-----|-----------------------|---|----------------------|
| 22  | Bypass tray           | Use this tray to feed paper manually. When loading paper larger than 8-1/2" x 11"R or A4R, be sure to pull out the bypass tray extension. This tray cannot be installed when the large-capacity 2-stage paper feed tray is installed. | * Peripheral device. |
| 23  | Large capacity trays  | This holds paper. Up to 5000 sheets of paper can be loaded.<br>Upper stage tray: 2500 sheets<br>Lower stage tray: 2500 sheets (80g/m <sup>2</sup> )   | * Peripheral device. |
| 24  | Inserter              | Paper loaded in the inserter can be inserted into output from the machine as covers and inserts.  | * Peripheral device. |
| 25  | High capacity stacker | This holds paper. Up to 5250 sheets of paper can be loaded.<br>Upper stage tray: 250 sheets<br>Lower stage tray: 5000 sheets (80g/m <sup>2</sup> )  | * Peripheral device. |
| 26  | Paper cart            | This cart is attached to the large capacity stacker.  |                      |
| 27  | Folding unit          | When outputting different paper sizes such as A3 and A4, the larger size paper can be Z-folded to align with the smaller size paper.  | * Peripheral device. |

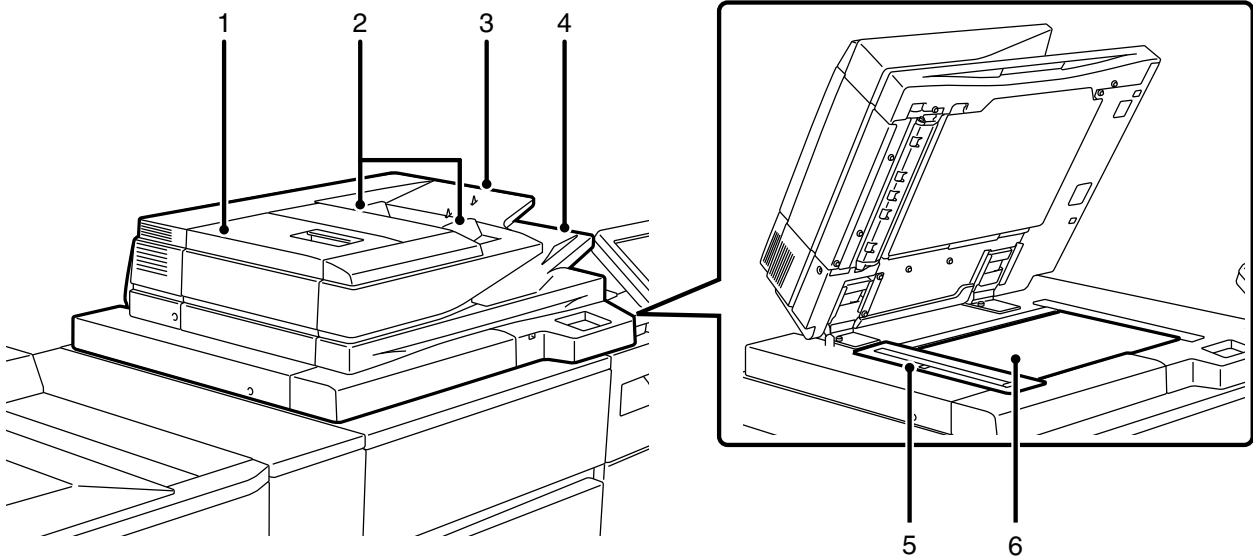
**B. Inside and connectors**





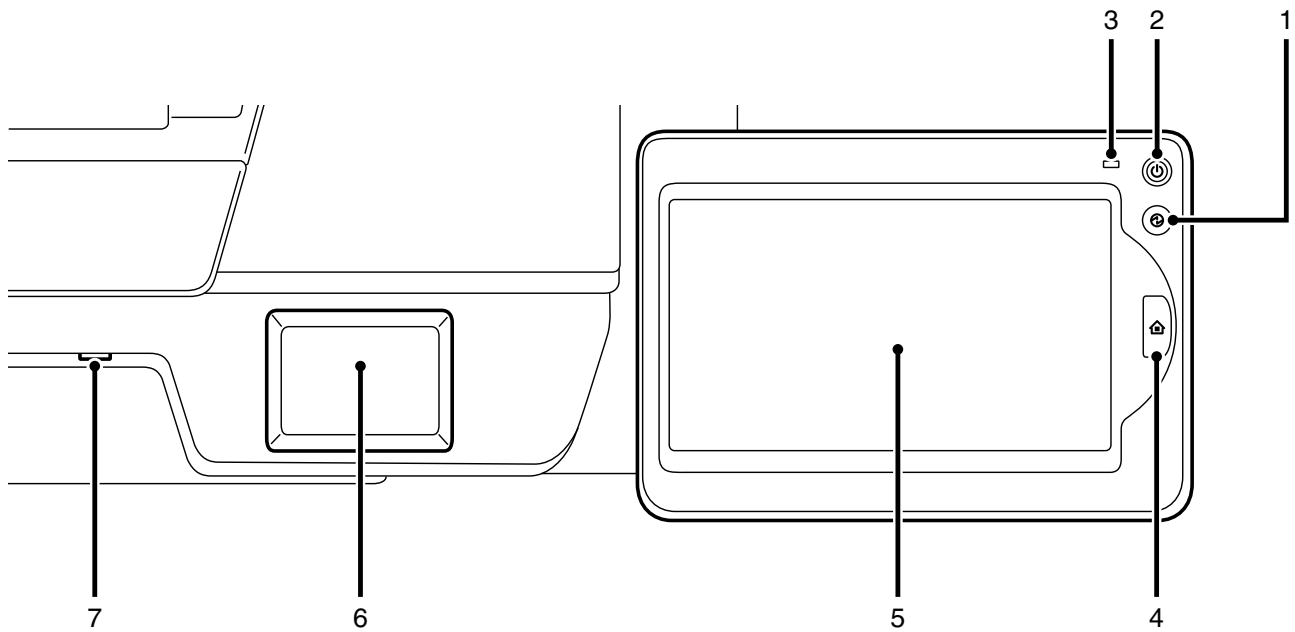
| No. | Name                          | Function / Operation  | Note   |
|-----|-------------------------------|---|--|
| 1   | Toner cartridge               | These contain toner for printing. When the toner runs out in the cartridge, replace the cartridge with a new cartridge.           |  |
| 2   | Main power switch             | This is used to power on the machine. When using the fax or Internet fax functions, keep this switch in the "on" position.        |  |
| 3   | Toner collection container    | This collects excess toner that remains after printing.   |  |
| 4   | Transfer belt                 | Toner images are overlaid on the transfer belt.   |  |
| 5   | Fusing unit                   | Heat is applied here to fuse the transferred image onto the paper.  |  |
| 6   | Paper reversing section cover | This is used when 2-sided printing is performed. Open this cover to remove a paper misfeed.                                       |  |
| 7   | USB connector (A type)        | N/A   |  |
| 8   | USB connector (B type)        | A computer can be connected to this connector to use the machine as a printer. For the USB cable, use a shielded cable.           |  |
| 9   | LAN connector                 | Connect the LAN cable to this connector when the machine is used on a network. For the LAN cable, use a shielded type cable.      |  |
| 10  | Service-only connector        | This connector is for use only by service technicians. Connecting a cable to this connector may cause the machine to malfunction. | <b>Important note for service technicians:</b><br>The cable connected to the service connector must be less than 118" (3 m) in length. |
| 11  | Power plug                    |   |  |

### C. Automatic document feeder and document glass



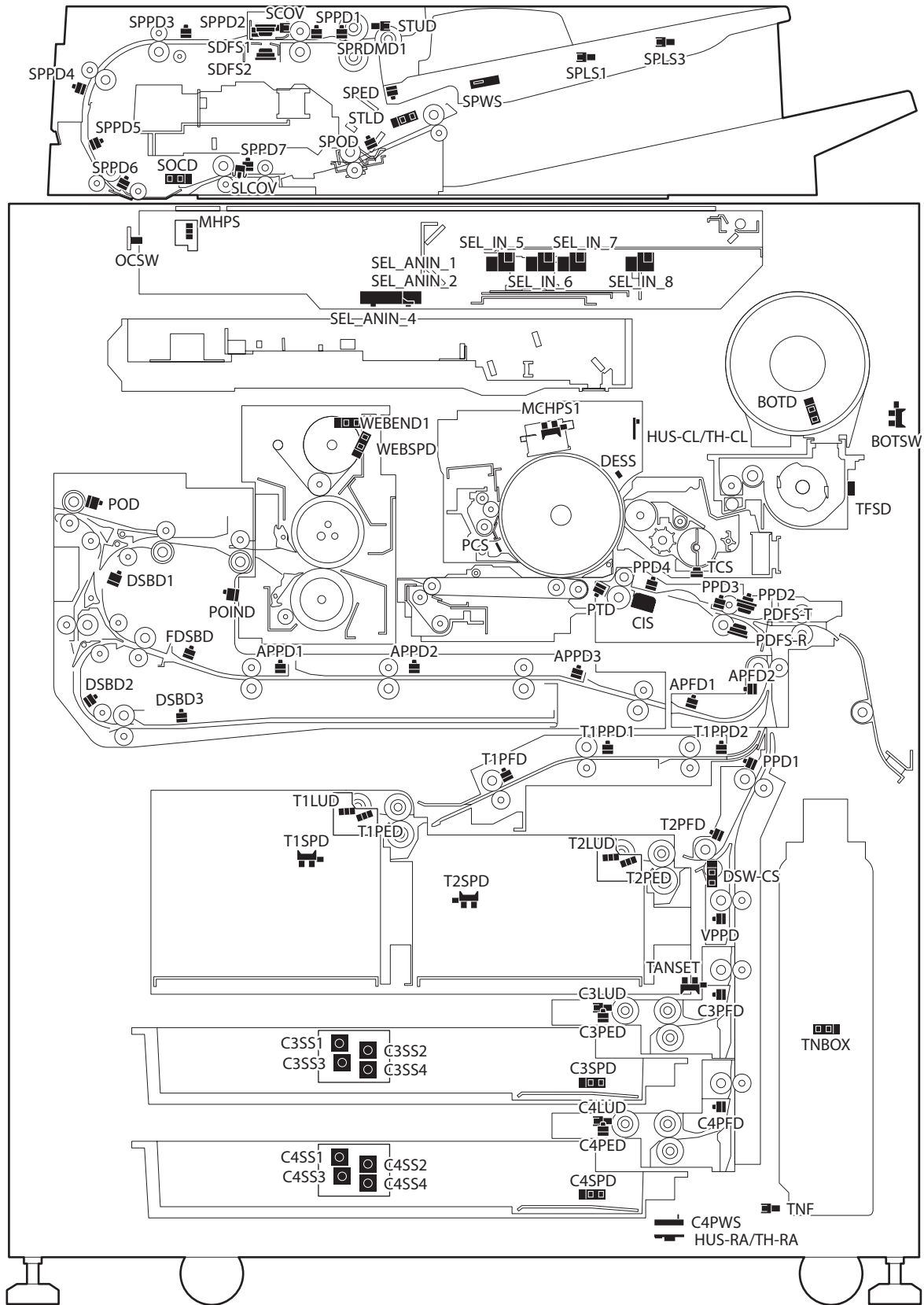
| No. | Name                        | Function / Operation  |
|-----|-----------------------------|---|
| 1   | Document feeding area cover | Open to remove a misfed original.   |
| 2   | Original guides             | These help ensure that the original is scanned correctly. Adjust the guides to the width of the original. |
| 3   | Document feeder tray        | Place originals in this tray. 1-sided originals must be placed face up.                                   |
| 4   | Original exit tray          | Originals are delivered to this tray after scanning.  |
| 5   | Scanning area               | Originals placed in the document feeder tray are scanned here.  |
| 6   | Document glass              | Use this to scan a book or other thick original that cannot be fed through the automatic document feeder. |

## D. Operation panel



| No. | Name                         | Function/Operation   |
|-----|------------------------------|--|
| 1   | [POWER SAVE] key / indicator | Use this key to put the machine into auto power shut-off mode to save energy. The [POWER SAVE] key blinks when the machine is in auto power shut-off mode.   |
| 2   | [POWER] key                  | Use this key to turn the machine power on and off.   |
| 3   | Main power indicator         | This lights up when the machine's main power switch is in the "on" position.   |
| 4   | [HOME] key / indicator       | Touch this key to display the home screen. Frequently used settings can be registered in the home screen to enable quick and easy operation of the machine.  |
| 5   | Touch panel                  | Messages and keys appear in the touch panel display. Touch the displayed keys to perform a variety of operations. When a key is touched, a beep sounds and the selected item is highlighted. This provides confirmation as you perform an operation. |
| 6   | IC card holder               | When an IC card is set to this holder with the IC card reader/writer installed, the user authentication can be made.   |
| 7   | USB connector (A type)       | Supports USB 2.0 (Hi-Speed). This is used to connect a USB device such as USB memory to the machine.   |

## E. Sensors

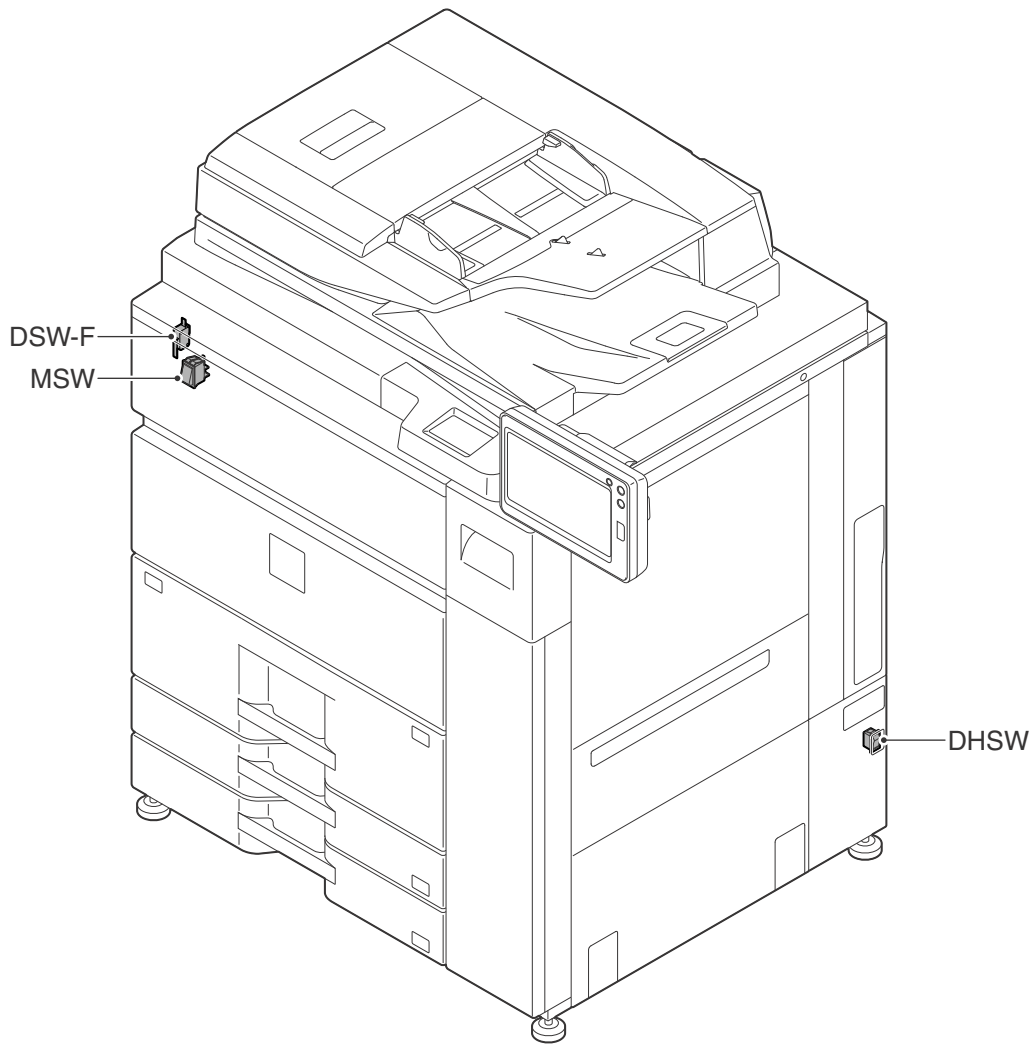


| Signal name | Name                        | Type            | Function / Operation             | Active condition | Note |
|-------------|-----------------------------|-----------------|----------------------------------|------------------|------|
| APFD1       | ADU paper entry detection 1 | Reflection type | Detects the ADU paper pass.      |                  |      |
| APFD2       | ADU paper entry detection 2 | Reflection type | Detects the ADU paper pass.      |                  |      |
| APPD1       | ADU transport detection 1   | Reflection type | Detects the ADU paper transport. |                  |      |
| APPD2       | ADU transport detection 2   | Reflection type | Detects the ADU paper transport. |                  |      |
| APPD3       | ADU transport detection 3   | Reflection type | Detects the ADU paper transport. |                  |      |

| Signal name      | Name  | Type                        | Function / Operation   | Active condition              | Note     |
|------------------|---|-----------------------------|--|-------------------------------|----------|
| BOTD             | Toner cartridge rotation detection          | Transmission type           | Detects toner cartridge rotation   |                               |          |
| BOTSW            | Toner tray detection                        | Transmission type           | Detects the toner tray.  |                               |          |
| C3LUD            | Cassette 3 upper limit detection            | Transmission type           | Detects lift up of the cassette 3.   |                               |          |
| C3PED            | Cassette 3 paper presence detection         | Reflection type             | Detects the cassette 3 paper presence.   |                               |          |
| C3PFD            | Cassette 3 paper entry detection            | Reflection type             | Detects the cassette 3 paper pass.   |                               |          |
| C3SPD            | Cassette 3 remaining quantity detection     | Transmission type           | Detects the cassette 3 remaining quantity.   |                               |          |
| C3SS1            | Cassette 3 size detection 1                 | Tact switch                 | Detects the cassette 3 paper size. Detects insertion of the cassette 3 by detecting one of cassette 3 size detection 1 to 4. |                               | PWB unit |
| C3SS2            | Cassette 3 size detection 2                 | Tact switch                 |  |                               |          |
| C3SS3            | Cassette 3 size detection 3                 | Tact switch                 |  |                               |          |
| C3SS4            | Cassette 3 size detection 4                 | Tact switch                 |  |                               |          |
| C4LUD            | Cassette 4 upper limit detection            | Transmission type           | Detects lift up of the cassette 4.   |                               |          |
| C4PED            | Cassette 4 paper presence detection         | Reflection type             | Detects the cassette 4 paper presence.   |                               |          |
| C4PFD            | Cassette 4 paper entry detection            | Reflection type             | Detects the cassette 4 paper pass.   |                               |          |
| C4PWS            | Cassette 4 width detection                  | Volume resistor             | Detects the cassette 4 width.  |                               |          |
| C4SPD            | Cassette 4 remaining quantity detection     | Transmission type           | Detects the cassette 4 remaining quantity.   |                               |          |
| C4SS1            | Cassette 4 size detection 1                 | Tact switch                 | Detects the cassette 4 paper size. Detects insertion of the cassette 4 by detecting one of cassette 4 size detection 1 to 4. |                               | PWB unit |
| C4SS2            | Cassette 4 size detection 2                 | Tact switch                 |  |                               |          |
| C4SS3            | Cassette 4 size detection 3                 | Tact switch                 |  |                               |          |
| C4SS4            | Cassette 4 size detection 4                 | Tact switch                 |  |                               |          |
| CIS              | Image position sensor                       | Contact image sensor        | Detects the paper edge position in the off-center direction in the PS section.   |                               |          |
| DESS             | Surface potential sensor                    | Surface potential sensor    | Detects the surface potential of the photoconductor.   |                               |          |
| DSBD1            | Duplex reverse detection 1                  | Reflection type             | Detects the duplex reverse paper pass.   |                               |          |
| DSBD2            | Duplex reverse detection 2                  | Reflection type             | Detects the duplex reverse paper pass.   |                               |          |
| DSW-CS           | Cassette right door open/close detection    | Transmission type           | Detects the cassette right door open/close.  |                               |          |
| FDSBD            | Face down reverse detection                 | Reflection type             | Detects face down reverse paper pass.  |                               |          |
| HUS-CL/<br>TH-CL | Temperature humidity sensor 2               | Temperature humidity sensor | Detects temperature and humidity in the machine.   |                               |          |
| HUS-RA/<br>TH-RA | Temperature humidity sensor 1               | Temperature humidity sensor | Detects the temperature and humidity under the installation environment.   |                               |          |
| MCHPS1           | MC cleaner home position detection          | Transmission type           | Detects the MC cleaner home position.  |                               |          |
| MHPS             | Scanner home position sensor                | Photo interrupter           | Scanner home position detection.   |                               |          |
| OCSW             | Original cover SW                           | Photo interrupter           | Document size detection trigger.   | L when the DSPF unit is open. |          |
| PCS              | Procon sensor                               | Reflection type             | Detects the ID density.  |                               |          |
| PDFS-R           | Double feed sensor (receiving)              | Supersonic sensor           | Detects paper double feed.   | 105/120cpm machine only       |          |
| PDFS-T           | Double feed sensor (transmitting)           | Supersonic sensor           |  | 105/120cpm machine only       |          |
| POD              | Paper exit detection                        | Reflection type             | Detects paper exit.  |                               |          |
| POIND            | Paper exit paper entry detection            | Reflection type             | Detects the paper pass at the paper exit port.   |                               |          |
| PPD1             | Transport detection 1                       | Reflection type             | Detects paper transport in the transport path.   |                               |          |
| PPD2             | Transport detection 2                       | Reflection type             | Detects paper transport in the transport path.   |                               |          |
| PPD3             | Transport detection 3                       | Reflection type             | Detects paper transport in the transport path.   |                               |          |
| PPD4             | Transport detection 4                       | Reflection type             | Detects paper transport in the transport path.   |                               |          |
| PTD              | PS section paper lead edge detection sensor | Reflection type             | Detects a shift at the paper lead edge in the PS section.  | 105/120cpm machine only       |          |
| SCOD             | DSPF open/close sensor                      | Transmission type           | Detects open/close of the DSPF unit.   | H when the DSPF unit is open. |          |
| SDFS1            | DSPF double feed sensor (transmitting)      | Supersonic sensor           | Detects double feed.   |                               |          |
| SDFS2            | DSPF double feed sensor (receiving)         | Supersonic sensor           | Detects double feed.   |                               |          |
| SEL_ANIN_1       | Main scanning document size sensor 1        | Reflection type             | Detects the main scanning document size.   |                               |          |
| SEL_ANIN_2       | Main scanning document size sensor 2        | Reflection type             | Detects the main scanning document size.   |                               |          |

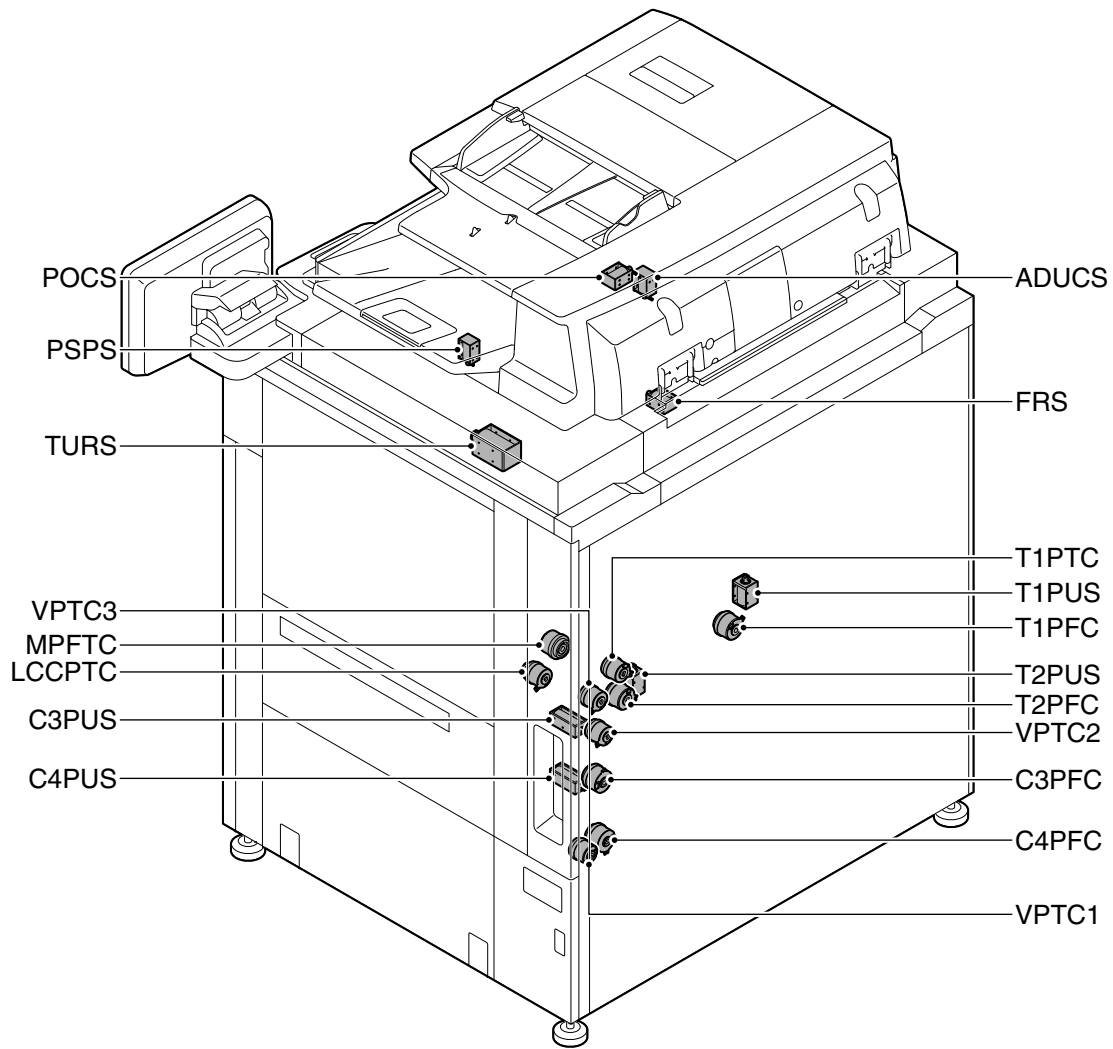
| Signal name | Name  | Type                   | Function / Operation                                     | Active condition                    | Note     |
|-------------|---|------------------------|--|-------------------------------------|----------|
| SEL_ANIN_4  | Main scanning document size sensor 4          | Reflection type        | Detects the main scanning document size.                 |                                     |          |
| SEL_IN_5    | Sub scanning document size sensor 5           | Reflection type        | Detects the sub scanning document size.                  |                                     |          |
| SEL_IN_6    | Sub scanning document size sensor 6           | Reflection type        | Detects the sub scanning document size.                  |                                     |          |
| SEL_IN_7    | Sub scanning document size sensor 7           | Reflection type        | Detects the sub scanning document size.                  |                                     |          |
| SEL_IN_8    | Sub scanning document size sensor 8           | Reflection type        | Detects the sub scanning document size.                  |                                     |          |
| SLCOV       | DSPF lower door open/close sensor             | Transmission type      | Detects open/close of the lower door.                    | L when the lower door is open.      |          |
| SPED        | DSPF document empty sensor                    | Reflection type        | Detects document empty on the document tray.             | L when paper is detected.           |          |
| SPLS1       | DSPF document length detection short sensor   | Transmission type      | Detects the length of the document on the document tray. | H when paper is detected.           |          |
| SPLS3       | DSPF document length detection1 long sensor   | Transmission type      | Detects the length of the document on the document tray. | H when paper is detected.           |          |
| SPOD        | DSPF paper exit sensor                        | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD1       | DSPF document pass sensor 1                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD2       | DSPF document pass sensor 2                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD3       | DSPF document pass sensor 3                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD4       | DSPF document pass sensor 4                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD5       | DSPF document pass sensor 5                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD6       | DSPF document pass sensor 6                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPPD7       | DSPF document pass sensor 7                   | Reflection type        | Detects document pass.                                   | L when paper is detected.           |          |
| SPRDMD1     | DSPF document random sensor                   | Reflection type        | Detects the paper size in random paper feed.             | L when paper is detected.           |          |
| SPWS        | DSPF document width sensor                    | Volume resistor        | Detects the width of the document.                       |                                     |          |
| SOCD        | DSPF upper door open/close sensor             | Transmission type      | Detects open/close of the upper door.                    | L when the upper door is open.      |          |
| STLD        | DSPF document tray lower limit sensor         | Transmission type      | Detects the lower limit of the DSPF document tray.       | H when the lower limit is detected. |          |
| STUD        | DSPF document tray upper limit sensor         | Transmission type      | Detects the upper limit of the DSPF document tray.       | H when the upper limit is detected. |          |
| T1LUD       | Cassette 1 upper limit detection              | Photo interrupter      | Detects lift up of the cassette 1 and paper presence.    |                                     | PWB unit |
| T1PED       | Cassette 1 paper presence detection           | Photo interrupter      |  |                                     |          |
| T1PFD       | Cassette 1 paper entry detection              | Reflection type        | Detects the cassette 1 paper pass.                       |                                     |          |
| T1PPD1      | Cassette 1 transport detection 1              | Reflection type        | Detects the cassette 1 paper transport.                  |                                     |          |
| T1PPD2      | Cassette 1 transport detection 2              | Reflection type        | Detects the cassette 1 paper transport.                  |                                     |          |
| T1SPD       | Cassette 1 remaining quantity detection       | Transmission type      | Detects the cassette 1 remaining quantity.               |                                     |          |
| T2LUD       | Cassette 2 upper limit detection              | Photo interrupter      | Detects lift up of the cassette 2 and paper presence.    |                                     | PWB unit |
| T2PED       | Cassette 2 paper presence detection           | Photo interrupter      |  |                                     |          |
| T2PFD       | Cassette 2 paper entry detection              | Reflection type        | Detects the cassette 2 paper pass.                       |                                     |          |
| T2SPD       | Cassette 2 remaining quantity detection       | Transmission type      | Detects the cassette 2 remaining quantity.               |                                     |          |
| TANSET      | Tandem presence detection                     | Transmission type      | Detects insertion of the tandem tray.                    |                                     |          |
| TCS         | Toner density sensor                          | Permeability sensor    | Detects the toner density.                               |                                     |          |
| TFSD        | Toner hopper remaining quality sensor         | Permeability detection | Toner remaining quantity detection signal                |                                     |          |
| TNBOX       | Toner collection container presence detection | Transmission type      | Detects presence of the toner collection container.      |                                     |          |
| TNF         | Toner collection container full detection     | Transmission type      | Detects the toner collection container full.             |                                     |          |
| VPPD        | Vertical transport detection                  | Reflection type        | Detects paper transport in the vertical transport path.  |                                     |          |
| WEBEND1     | Web end detection                             | Transmission type      | Detects the web end.                                     |                                     |          |
| WEBSPD      | Web near end detection                        | Transmission type      | Detects the web near end.                                |                                     |          |

## F. Switches



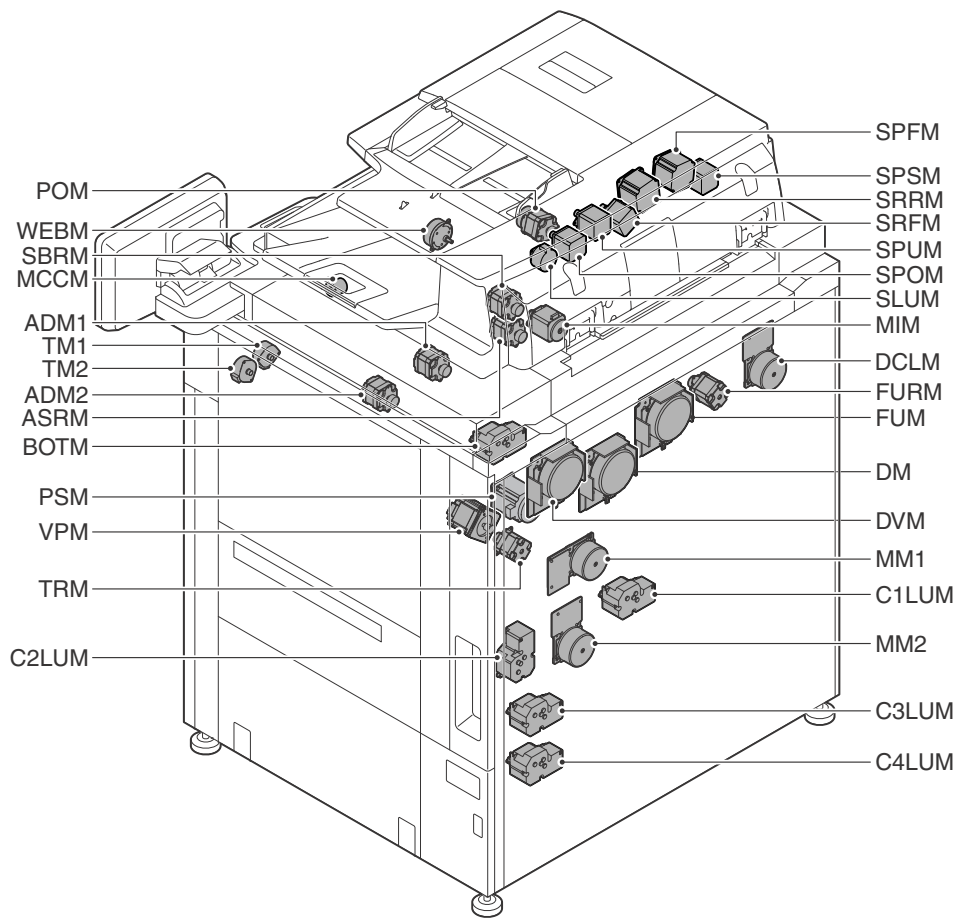
| Signal name | Name                        | Type          | Function / Operation                                |
|-------------|-----------------------------|---------------|---|
| DHSW        | Dehumidifying heater switch | Seesaw switch | Turns ON/OFF the power of the dehumidifying heater. |
| DSW-F       | Front door switch           | Micro switch  | Detects open/close of the front door.               |
| MSW         | Main switch                 | Rocker switch | Turns ON/OFF the power of the machine.              |

## G. Clutches and solenoids



| Signal name | Name                                     | Type                     | Function / Operation   |
|-------------|--|--------------------------|--|
| ADUCS       | Duplex select gate solenoid              | Electromagnetic solenoid | Select gate solenoid for transport in the ADU section                      |
| C1PFC       | Cassette 1 paper transport clutch        | Electromagnetic clutch   | Controls ON/OFF of the paper feed roller in the Tray 1 paper feed section. |
| C1PTC       | Horizontal transport clutch              | Electromagnetic clutch   | Controls ON/OFF of the transport roller.                                   |
| C1PUS       | Cassette 1 paper pickup solenoid         | Electromagnetic solenoid | Paper pickup solenoid (Tray 1)   |
| C2PFC       | Cassette 2 paper transport clutch        | Electromagnetic clutch   | Controls ON/OFF of the paper feed roller in the Tray 2 paper feed section. |
| C2PUS       | Cassette 2 paper pickup solenoid         | Electromagnetic solenoid | Paper pickup solenoid (Tray 2)   |
| C3PFC       | Cassette 3 paper transport clutch        | Electromagnetic clutch   | Controls ON/OFF of the paper feed roller in the Tray 3 paper feed section. |
| C3PUS       | Cassette 3 paper pickup solenoid         | Electromagnetic solenoid | Paper pickup solenoid (Tray 3)   |
| C4PFC       | Cassette 4 paper transport clutch        | Electromagnetic clutch   | Controls ON/OFF of the paper feed roller in the Tray 4 paper feed section. |
| C4PUS       | Cassette 4 paper pickup solenoid         | Electromagnetic solenoid | Paper pickup solenoid (Tray 4)   |
| FRS         | Lower pawl separation solenoid           | Electromagnetic solenoid | Controls the lower pawl separation solenoid.                               |
| LCCPTC      | LCC transport clutch                     | Electromagnetic clutch   | Controls ON/OFF of the transport roller.                                   |
| MPFTC       | Manual transport clutch                  | Electromagnetic clutch   | Controls ON/OFF of the transport roller.                                   |
| POCS        | Face-up/face-down select gate solenoid   | Electromagnetic solenoid | Face-up/face-down select gate solenoid                                     |
| PSPS        | Separation solenoid                      | Electromagnetic solenoid | Drives the separation pawl of the OPC drum.                                |
| TURS        | Transfer separation solenoid             | Electromagnetic solenoid | Controls of the transport roller separation.                               |
| VPTC1       | Vertical transport clutch (Lower)        | Electromagnetic clutch   | Controls ON/OFF of the vertical transport roller.                          |
| VPTC2       | Vertical transport clutch (Intermediate) | Electromagnetic clutch   | Controls ON/OFF of the vertical transport roller.                          |
| VPTC3       | Vertical transport clutch (Upper)        | Electromagnetic clutch   | Controls ON/OFF of the vertical transport roller.                          |

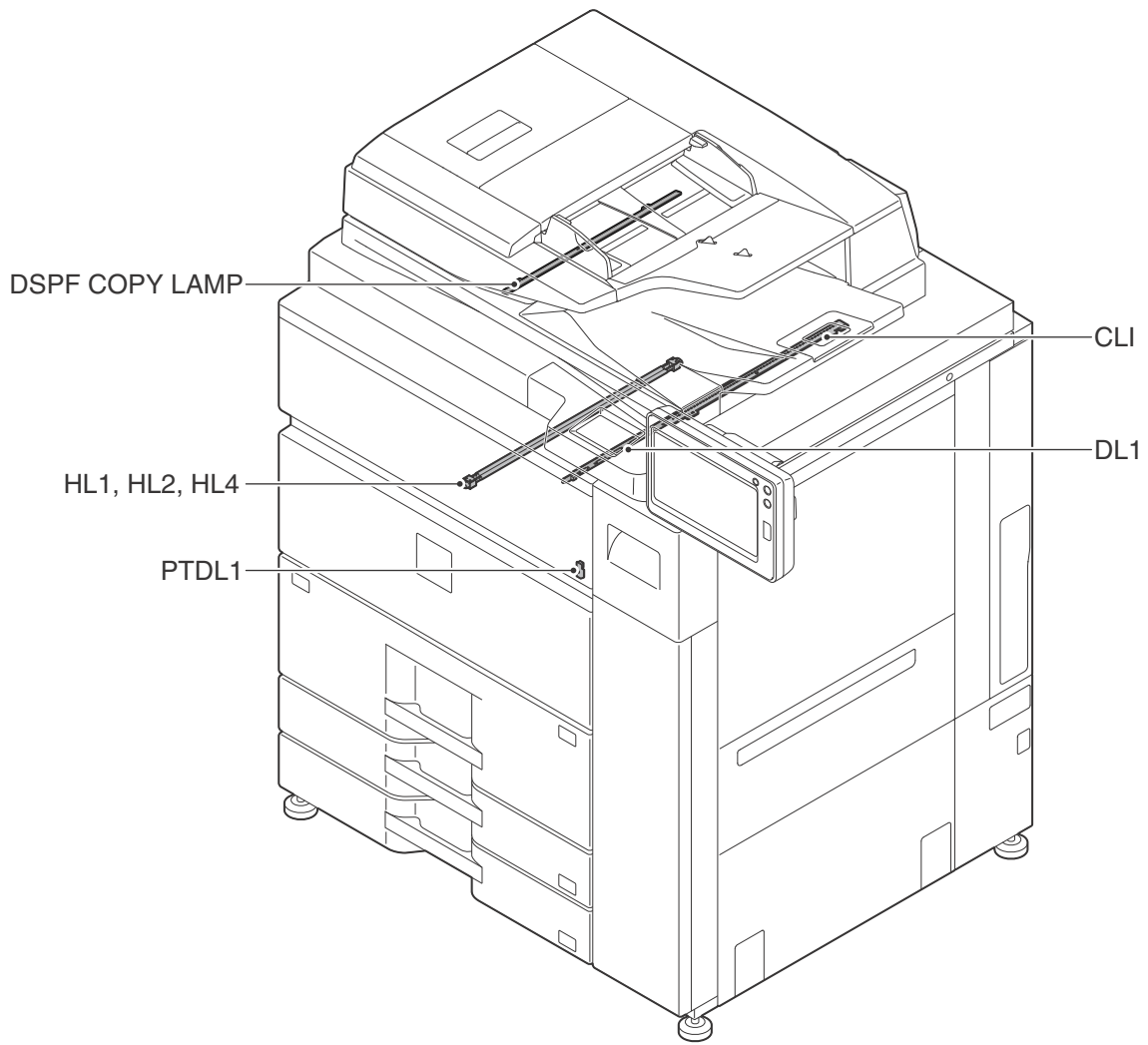
## H. Drive motors



| Signal name | Name                         | Type               | Function / Operation  |
|-------------|------------------------------|--------------------|---|
| ADM1        | ADU transport motor 1        | Stepping motor     | Drives the ADU transport roller 1.  |
| ADM2        | ADU transport motor 2        | Stepping motor     | Drives the ADU transport roller 2.  |
| ASRM        | ADU reverse motor            | Stepping motor     | Drives the ADU reverse roller.  |
| BOTM        | Toner cartridge motor        | DC brush motor     | Transports toner.   |
| C1LUM       | Paper lift up motor (Tray 1) | DC brush motor     | Drives the paper tray lift. (This is the same as the T1LUM in the circuit diagram.) |
| C2LUM       | Paper lift up motor (Tray 2) | DC brush motor     | Drives the paper tray lift. (This is the same as the T2LUM in the circuit diagram.) |
| C3LUM       | Paper lift up motor (Tray 3) | DC brush motor     | Drives the paper tray lift.   |
| C4LUM       | Paper lift up motor (Tray 4) | DC brush motor     | Drives the paper tray lift.   |
| DCLM        | Decurler motor               | DC brushless motor | Drives the decurler roller.   |
| DM          | Drum motor                   | DC brushless motor | Drives the drum.  |
| DVM         | Developing motor             | DC brushless motor | Drives the developing roller.   |
| FUM         | Fusing motor                 | DC brushless motor | Drives the fusing roller.   |
| FURM        | Fusing rear motor            | Stepping motor     | Drives the fusing rear roller.  |
| MCCM        | Main charger cleaning motor  | DC brush motor     | Cleans the main charger.  |
| MIM         | Scanner motor                | Stepping motor     | Drives the copy lamp unit.  |
| MM1         | Paper feed motor 1           | DC brushless motor | Drives the paper feed section 1.  |
| MM2         | Paper feed motor 2           | DC brushless motor | Drives the paper feed section 2.  |
| POM         | Paper exit motor             | Stepping motor     | Drives the paper exit roller.   |
| PSM         | PS motor                     | Stepping motor     | Drives the PS roller.   |
| SBRM        | Paper exit reverse motor     | Stepping motor     | Drives the paper exit reverse roller.   |
| SLUM        | DSPF lift-up motor           | PM stepping motor  | Lifts up and move down the document tray.   |
| SPFM        | DSPF transport motor         | Stepping motor     | Drives the transport roller.  |
| SPOM        | DSPF paper exit motor        | Stepping motor     | Drives the paper exit roller.   |
| SPSM        | DSPF PS motor                | Stepping motor     | Drives the PS roller.   |
| SPUM        | DSPF paper feed motor        | Stepping motor     | Drives the paper feed roller.   |
| SRFM        | DSPF scan transport motor    | Stepping motor     | Drives the scan transport roller.   |
| SRRM        | DSPF PS motor                | Stepping motor     | Drives the PS roller.   |
| TM1         | Toner motor 1                | Stepping motor     | Transports toner.   |
| TM2         | Toner motor 2                | Stepping motor     | Transports toner.   |
| TRM         | Transport motor              | Stepping motor     | Drives the transport roller.  |
| VPM         | Vertical transport motor     | Stepping motor     | Drives the vertical transport roller.   |
| WEBM        | Web motor                    | Synchronous motor  | Drives the fusing roller cleaning.  |

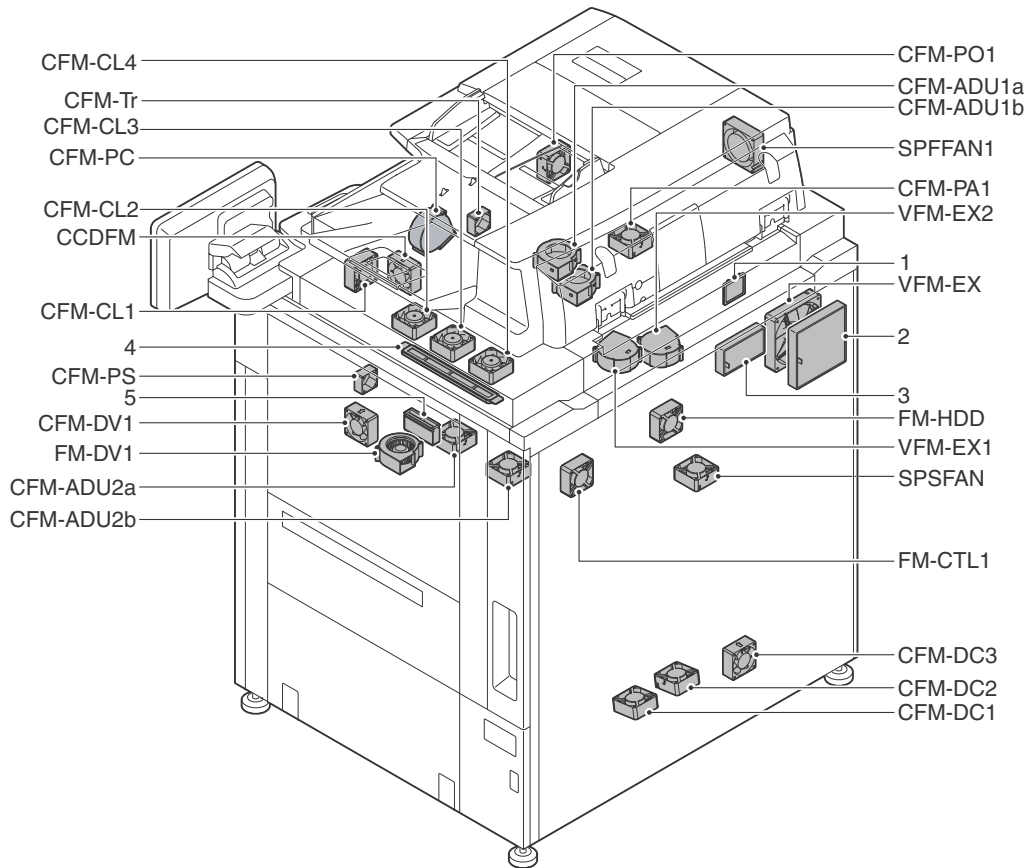


## I. Lamps



| Signal name    | Name                                  | Type         | Function / Operation  | Note                               |
|----------------|---------------------------------------|--------------|---|------------------------------------|
| CLI            | Scanner lamp                          | LED          | Radiates lights onto a document for the CCD to scan the document image. |                                    |
| DL1            | Discharge lamp                        | Fuse lamp    | Discharging the OPC drum.   |                                    |
| DSPF COPY LAMP | DSPF copy lamp                        | LED          | Radiates lights onto a document for the CCD to scan the document image. |                                    |
| HL1, HL2, HL4  | Upper heater lamp                     | Halogen lamp | Heats the upper heat roller.  | "HL4": Europe, other desitnations. |
| PTDL1          | Transfer section front discharge lamp | LED          | Discharges the OPC drum surface of the transfer section front.          |                                    |

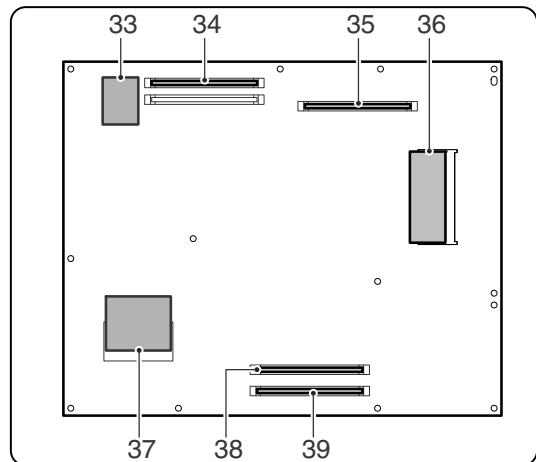
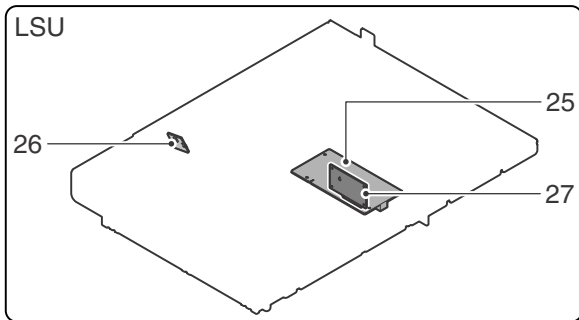
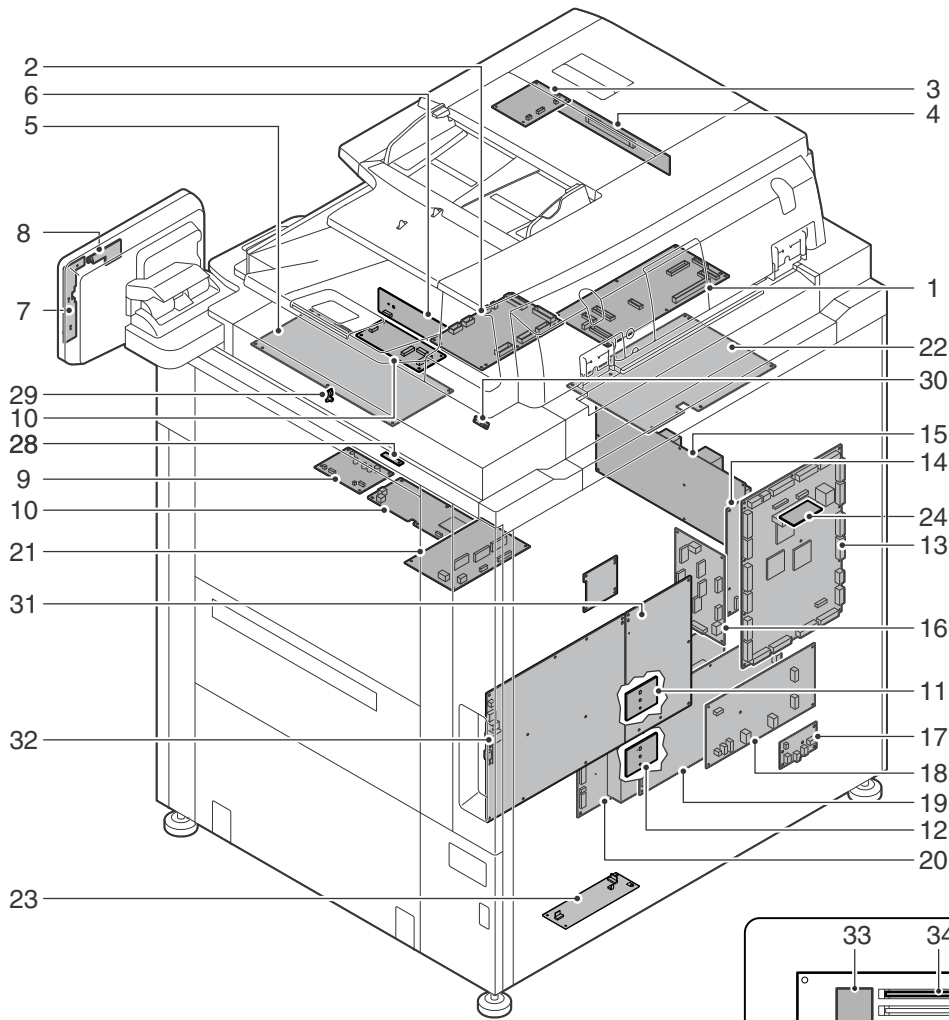
## J. Fans and Filters



| Signal name | Name                            | Type                  | Function / Operation                        | Trouble code |
|-------------|---------------------------------|-----------------------|---|--------------|
| CCDFM       | CCD cooling fan                 | Fan motor             | Cools the CCD and the CL inverter.          | L2-10        |
| CFM-ADU1a   | Reverse transport cooling fan   | Sirocco fan           | Cools paper in the reverse section.         | L4-38        |
| CFM-ADU1b   | Reverse cooling fan             | Sirocco fan           | Cools the reverse section.                  | L4-39        |
| CFM-ADU2a   | ADU section paper cooling fan 1 | Axial-flow fan (□60)  | Cools paper in the ADU section.             | L4-48        |
| CFM-ADU2b   | ADU section paper cooling fan 2 | Axial-flow fan (□60)  | Cools paper in the ADU section.             | L4-49        |
| CFM-CL1     | Process cooling fan 1           | Axial-flow fan (□60)  | Cools the process section.                  | L4-50        |
| CFM-DC1     | Power cooling fan 1             | Axial-flow fan (□60)  | Cools the power section.                    | L4-32        |
| CFM-CL2     | Process cooling fan 2           | Axial-flow fan (□60)  | Cools the process section.                  | L4-51        |
| CFM-CL3     | Process cooling fan 3           | Axial-flow fan (□60)  | Cools the process section.                  | L4-52        |
| CFM-CL4     | Process cooling fan 4           | Axial-flow fan (□60)  | Cools the process section.                  | L4-53        |
| CFM-DC2     | Power cooling fan 2             | Axial-flow fan (□60)  | Cools the power section.                    | L4-32        |
| CFM-DC3     | Power cooling fan 3             | Axial-flow fan (□60)  | Cools the power section.                    | L4-47        |
| CFM-DV1     | Developing cooling fan 1        | Axial-flow fan (□60)  | Cools the developing section.               | L4-46        |
| CFM-PA1     | Paper cooling fan               | Axial-flow fan (□60)  | Cools paper in the paper exit section.      | L4-43        |
| CFM-PC      | Process section cooling fan     | Sirocco fan           | Cools the process section.                  | L4-58        |
| CFM-PS      | PS cooling fan                  | Axial-flow fan (□40)  | Cools the PS section. (120/105cpm machines) | L4-54        |
| CFM-PO1     | Polygon cooling fan             | Axial-flow fan (□60)  | Cools the polygon section.                  | L4-34        |
| CFM-Tr      | Process cooling fan             | Axial-flow fan (□40)  | Cools the process section.                  | L4-55        |
| FM-CTL1     | CTL cooling fan                 | Axial-flow fan (□60)  | Cools the controller section.               | L4-30        |
| FM-DV1      | Toner suction fan               | Sirocco fan           | Sucks toner.                                | L4-36        |
| FM-HDD      | HDD cooling fan                 | Axial-flow fan (□60)  | Cools the HDD.                              | L4-30        |
| SPFFAN1     | DSPF motor cooling fan 1        | Fan motor             | Cools the DSPF motor.                       | U5-16        |
| SPSFAN      | Sub power supply cooling fan    | Axial-flow fan (□60)  | Cools the sub power supply.                 | L4-28        |
| VFM-EX      | Machine exhaust fan 1           | Axial-flow fan (□120) | Discharges heat from the fusing section.    | L4-31        |
| VFM-EX1     | Ozone exhaust fan 1             | Sirocco fan           | Discharges ozone.                           | L4-40        |
| VFM-EX2     | Ozone exhaust fan 2             | Sirocco fan           | Discharges ozone.                           | L4-41        |

| No. | Name           | Function / Operation                               |
|-----|----------------|--|
| 1   | Dust cover     | Collects dust in sucked air.                       |
| 2   | Exhaust filter | Sucks dust in exhaust air.                         |
| 3   | Ozone filter   | Decomposes ozone generated in the process section. |
| 4   | Toner filter   | Prevents toner dispersion.                         |
| 5   | DVBOX filter   | Prevents toner dispersion.                         |

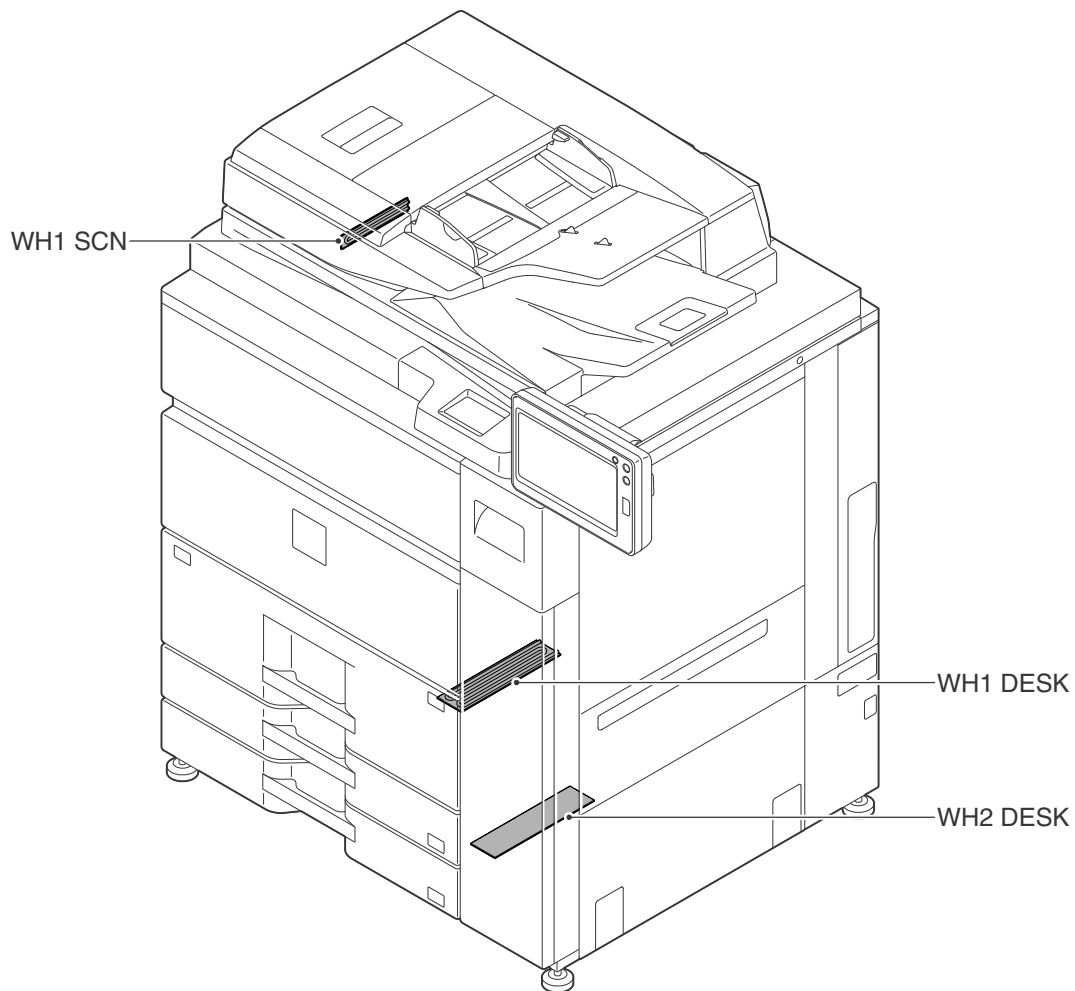
## K. PWB



| No. | Name                                  | Function / Operation  |
|-----|---------------------------------------|---|
| 1   | DSPF cnt PWB                          | Controls the DSPF.  |
| 2   | DSPF driver PWB                       | Drives the DSPF motor.  |
| 3   | Double feed detection PWB (DSPF)      | Detects double feed of a document.                                  |
| 4   | DSPF CCD PWB                          | DSPF (back) scanning CCD.   |
| 5   | SCNCNT PWB                            | Controls the scanner.   |
| 6   | CCD PWB                               | Scanner (front) read CCD.   |
| 7   | KEY PWB                               | Outputs the key operation signal.                                   |
| 8   | POWER LAMP PWB                        | Power display lamp  |
| 9   | Double feed detection PWB (Main unit) | Detects double feed of paper.                                       |
| 10  | PEDcis PWB                            | Detects the paper edge.   |
| 11  | Size detection PWB                    | Detects the paper size in the tray 3.                               |
| 12  | Side detection PWB                    | Detects the paper size in the tray 4.                               |
| 13  | PCU PWB                               | Controls the engine section.  |
| 14  | HL PWB                                | Controls the heater lamp.   |
| 15  | SUB PWB                               | Supplies the power for the MFPC PWB/brushless motor of the machine. |
| 16  | Driver PWB (paper exit)               | Drives the paper exit system transport motor.                       |

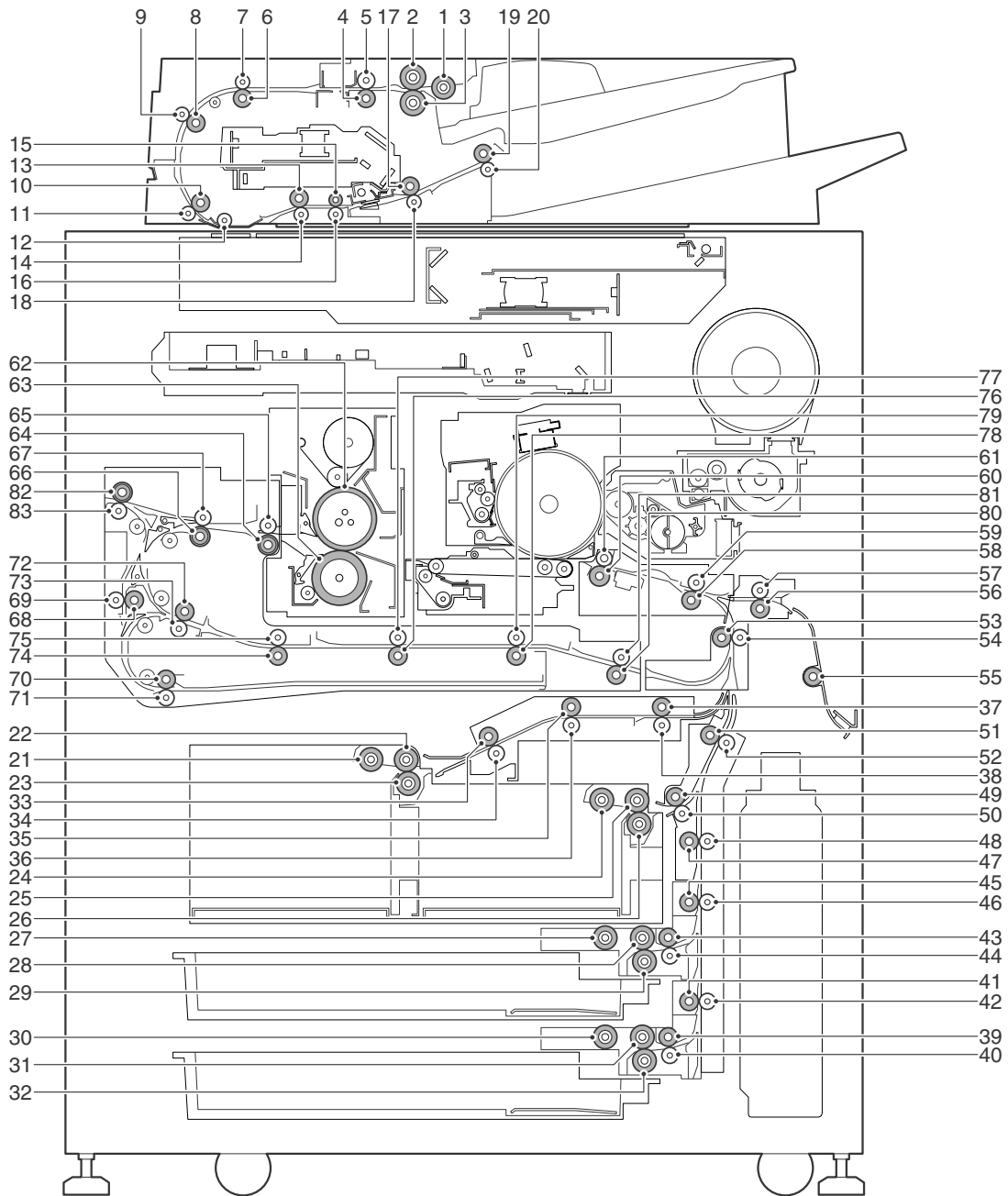
| No. | Name                       | Function / Operation   |
|-----|----------------------------|--|
| 17  | WH PWB (option)            | Controls on/off of the dehumidifying heater.   |
| 18  | AC PWB                     | Controls the power on the primary side.  |
| 19  | Option power               | Supplies power for the option.   |
| 20  | Main power                 | Supplies the power for the machine.  |
| 21  | Driver PWB (Paper feed)    | Drives the paper feed system transport motor.  |
| 22  | High voltage PWB           | Outputs the main charger voltage, the developing bias voltage, the transfer voltage, and the transfer belt cleaning voltage. / Outputs the bias voltage for transfer cleaning brush. |
| 23  | AC terminal PWB            | Interfaces the AC power for the option. (90cpm machine for Europe)   |
| 24  | PCU-Flash PWB              | PCU program ROM PWB.   |
| 25  | LSU PWB                    | Controls the LSU.  |
| 26  | BD PWB                     | Detects the laser synchronous signal.  |
| 27  | LD PWB                     | Controls lighting the laser. (4 beams)   |
| 28  | High voltage PS PWB        | Prevents against leakage of the transfer current.  |
| 29  | PTDL PWB                   | Discharge the OPC drum surface before transfer.  |
| 30  | Process control sensor PWB | Detects the toner density on the drum.   |
| 31  | Mother PWB                 | Controls power energy saving and relays the MFPC connect signal.   |
| 32  | MFPC PWB                   | Controls the image-related items and controls all over the machine.  |
| 33  | SD card memory             | Stores the Main Reus program data.   |
| 34  | DIMM 1                     | Main Reus memory (1GB)   |
| 35  | DIMM 3                     | Sub Reus memory (1GB)  |
| 36  | Sub Reus Flash memory      | Stores the Sub Reus program data.  |
| 37  | CF card memory             | Stores the SOC program data.   |
| 38  | SOCKET 1                   | SOC memory (2GB)   |
| 39  | SOCKET 2                   | SOC memory (1GB)   |

## L. Heater



| Signal name | Name  | Function / Operation                       | Note    |
|-------------|---|--|---------|
| WH1 DESK    | Dehumidifying heater (Paper feed tray 1, 2) | Dehumidifies paper. (Paper feed tray 1, 2) | Option. |
| WH1 SCN     | Scanner dehumidifying heater                | Dehumidifies the scanner unit.             | Option. |
| WH2 DESK    | Dehumidifying heater (Paper feed tray 3, 4) | Dehumidifies paper. (Paper feed tray 3, 4) | Option. |

## M. Roller



| No. | Name                        | Function / Operation  |
|-----|-----------------------------|---|
| 1   | Document pickup roller      | Picks up a document and transport it to the paper feed roller.  |
| 2   | Paper feed roller           | Performs paper feed operation of a document.  |
| 3   | Separation roller           | Separates a document, preventing double feed.   |
| 4   | No. 1 resist roller (Drive) | Performs resist of document transport.  |
| 5   | No. 1 resist roller (Idle)  | Apply a pressure to a document and the resist roller to give transport drive of the resist roller to the document.        |
| 6   | Transport roller 1 (Drive)  | Transports document from No. 1 resist roller to No.2 resist roller.   |
| 7   | Transport roller 1 (Idle)   | Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document. |
| 8   | Transport roller 2 (Drive)  | Transports document from the transport roller 1 to No.2 resist roller.  |
| 9   | Transport roller 2 (Idle)   | Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document. |
| 10  | No. 2 resist roller (Drive) | Synchronizes the document lead edge and the scan start position.  |
| 11  | No. 2 resist roller (Idle)  | Apply a pressure to a document and the resist roller to give transport drive of the resist roller to the document.        |
| 12  | Platen roller               | Apply a pressure to document to prevent fluctuation in the document operation.  |
| 13  | Transport roller 3 (Drive)  | Transports document from the platen roller to the transport roller 4.   |
| 14  | Transport roller 3 (Idle)   | Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document. |
| 15  | Transport roller 4 (Drive)  | Transport document from the transport roller 3 to the transport roller 5.   |
| 16  | Transport roller 4 (Idle)   | Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document. |
| 17  | Transport roller 5 (Drive)  | Transport document from the transport roller 4 to the paper exit roller.  |
| 18  | Transport roller 5 (Idle)   | Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document. |

| No. | Name  | Function / Operation  |
|-----|---|---|
| 19  | Paper exit roller (Drive)                             | Discharges document.  |
| 20  | Paper exit roller (Idle)                              | Applies a pressure to document and the transport roller to provide a transport power of the transport roller to document.   |
| 21  | Paper pickup roller<br>(Tandem No. 1 paper feed tray) | Feeds paper to the paper feed roller.   |
| 22  | Paper feed roller<br>(Tandem No. 1 paper feed tray)   | Feeds paper to the paper transport section.   |
| 23  | Separation roller<br>(Tandem No. 1 paper feed tray)   | Separates paper to prevent double feed.   |
| 24  | Paper pickup roller<br>(Tandem No. 2 paper feed tray) | Feeds paper to the paper feed roller.   |
| 25  | Paper feed roller<br>(Tandem No. 2 paper feed tray)   | Feeds paper to the paper transport section.   |
| 26  | Separation roller<br>(Tandem No. 2 paper feed tray)   | Separates paper to prevent double feed.   |
| 27  | Paper pickup roller<br>(No. 3 paper feed tray)        | Feeds paper to the paper feed roller.   |
| 28  | Paper feed roller<br>(No. 3 paper feed tray)          | Feeds paper to the paper transport section.   |
| 29  | Separation roller<br>(No. 3 paper feed tray)          | Separates paper to prevent double feed.   |
| 30  | Paper pickup roller<br>(No. 4 paper feed tray)        | Feeds paper to the paper feed roller.   |
| 31  | Paper feed roller<br>(No. 4 paper feed tray)          | Feeds paper to the paper transport section.   |
| 32  | Separation roller<br>(No. 4 paper feed tray)          | Separates paper to prevent double feed.   |
| 33  | Transport roller 8 (Drive)                            | Transports paper from the tandem No. 1 paper feed tray to the transport roller 9.   |
| 34  | Transport roller 8 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 35  | Transport roller 9 (Drive)                            | Transports paper from the transport roller 8 to the transport roller 10.  |
| 36  | Transport roller 9 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 37  | Transport roller 10 (Drive)                           | Transports paper from the transport roller 9 to the transport roller 11.  |
| 38  | Transport roller 10 (Idle)                            | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 39  | Transport roller 1 (Drive)                            | Transports paper from the paper feed tray 4 to the transport roller 2.  |
| 40  | Transport roller 1 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 41  | Transport roller 2 (Drive)                            | Transports paper from the transport roller 1 to the transport roller 2.   |
| 42  | Transport roller 2 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 43  | Transport roller 3 (Drive)                            | Transports paper from the paper feed tray 3 to the transport roller 4.  |
| 44  | Transport roller 3 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 45  | Transport roller 4 (Drive)                            | Transports paper from the transport roller 2 and the transport roller 3 to the transport roller 5.  |
| 46  | Transport roller 4 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 47  | Transport roller 5 (Drive)                            | Transports paper from the transport roller 4 to the transport roller 7.   |
| 48  | Transport roller 5 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 49  | Transport roller 6 (Drive)                            | Transports paper from the tandem No. 2 paper feed tray to the transport roller 7.   |
| 50  | Transport roller 6 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 51  | Transport roller 7 (Drive)                            | Transports paper from the transport roller 5 and the transport roller 6 to the transport roller 11.   |
| 52  | Transport roller 7 (Idle)                             | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 53  | Transport roller 11 (Drive)                           | Transports paper from the transport roller 7 and the transport roller 10 to the transport roller 14.  |
| 54  | Transport roller 11 (Idle)                            | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 55  | Transport roller 12 (Drive)                           | Transports paper from the paper feed option to the transport roller 13.   |
| 56  | Transport roller 13 (Drive)                           | Transports paper from the transport roller 12 to the transport roller 14.   |
| 57  | Transport roller 13 (Idle)                            | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 58  | Transport roller 14 (Drive)                           | Transports paper from the transport roller 11 and the transport roller 13 to the PS roller.   |
| 59  | Transport roller 14 (Idle)                            | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 60  | PS roller (Drive)                                     | Transports paper to the transfer section.<br>Controls the paper transport timing to adjust relative relations between images and paper.   |
| 61  | PS roller (Idle)                                      | Applies a pressure to paper and the transport roller to provide a transport power of the PS roller to paper.  |
| 62  | Upper heat roller                                     | Heats toner on paper, and press and fuse paper.   |
| 63  | Lower heat roller                                     | Applies a pressure to the upper heat roller.  |
| 64  | Transport roller 15 (Drive)                           | Transports paper from the upper and lower heat rollers to the transport roller 16.  |
| 65  | Transport roller 15 (Idle)                            | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 66  | Transport roller 16 (Drive)                           | Transports paper from the transport roller 15 to the paper exit roller when discharging paper in face-up./<br>Transports paper from the transport roller 15 to the reverse roller 2 when discharging paper in face-down./<br>Transports paper from the transport roller 15 to the transport roller 17 when duplex printing. |
| 67  | Transport roller 16 (Idle)                            | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |
| 68  | Decurler roller (Drive)                               | Decurls paper transported from the transport roller 16 in duplex printing, and transports paper to the reverse roller 1.  |
| 69  | Decurler follower roller (Idle)                       | Applies a pressure to paper and the decurler unit, decurling the paper and providing transport power of the transport roller.   |
| 70  | Reverse roller 1 (Drive)                              | Transports paper from the transport roller 17 to the reverse roller 2 when duplex printing.   |
| 71  | Reverse roller 1 (Idle)                               | Applies a pressure to paper and the transport roller to provide a transport power of the reverse roller to paper.   |
| 72  | Reverse roller 2 (Drive)                              | Transports paper from the reverse roller 1 to the transport roller 18 when duplex printing /<br>Switches back paper that was transported from the transport roller 16, and transports it to the transport roller when discharging paper in face-down.   |
| 73  | Reverse roller 2 (Idle)                               | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.   |

| <b>No.</b> | <b>Name</b>                 | <b>Function / Operation</b>   |
|------------|-----------------------------|---|
| 74         | Transport roller 18 (Drive) | Transports paper from the reverse roller 2 to the transport roller 19 when duplex printing.                         |
| 75         | Transport roller 18 (Idle)  | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. |
| 76         | Transport roller 19 (Drive) | Transports paper from the transport roller 18 to the transport roller 20 when duplex printing.                      |
| 77         | Transport roller 19 (Idle)  | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. |
| 78         | Transport roller 20 (Drive) | Transports paper from the transport roller 19 to the transport roller 21 when duplex printing.                      |
| 79         | Transport roller 20 (Idle)  | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. |
| 80         | Transport roller 21 (Drive) | Transports paper from the transport roller 20 to the transport roller 11 when duplex printing.                      |
| 81         | Transport roller 21 (Idle)  | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. |
| 82         | Paper exit roller (Drive)   | Discharges paper that was transported from the transport roller 16 or the reverse roller 2.                         |
| 83         | Paper exit roller (Idle)    | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. |

# [5] ADJUSTMENTS

## 1. 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.

There is, however, no need to perform all the adjustments. Perform only the necessary adjustments.

Unnecessary adjustments can be omitted.

If adjustments are omitted, the sequence of adjustments must be observed in ascending order. Failure to follow this procedure may result in improper adjustment or failure of operation.

## 2. Adjustment item list

| Job No | Adjustment item list   |        | Simulation  |            |
|--------|--|--------|---|------------|
| ADJ1   | High voltage values adjustment   | ADJ 1A | Main charger grid voltage adjustment  | 8-2        |
|        |  | ADJ 1B | Developing bias voltage adjustment  | 8-1        |
|        |  | ADJ 1C | Transfer current adjustment   | 8-6        |
|        |  | ADJ 1D | Photoconductor dark potential adjustment  | 44-3       |
| ADJ2   | Developing unit adjustment   | ADJ 2A | Developing doctor gap adjustment  |            |
|        |  | ADJ 2B | Developing roller main pole position adjustment   |            |
|        |  | ADJ 2C | Toner density control reference value setting   | 25-2       |
| ADJ3   | Print image distortion, position, magnification ratio adjustment (Manual adjustment)                   | ADJ 3A | Print image distortion manual adjustment (LSU parallelism adjustment)   | 64-2       |
|        |  | ADJ 3B | Print image magnification ratio manual adjustment (Main scanning direction)   | 50-10      |
|        |  | ADJ 3C | Print image lead edge void area manual adjustment/Front-rear void area, rear edge void area manual adjustment   | 50-5       |
| ADJ4   | Scan image distortion adjustment (OC mode)   | ADJ 4A | Scanner (reading) unit parallelism adjustment   |            |
|        |  | ADJ 4B | Scan image sub scanning direction distortion adjustment   |            |
|        |  | ADJ 4C | Scan image main scanning direction distortion adjustment  |            |
| ADJ5   | Scan image distortion adjustment (DSPF mode)   | ADJ 5A | DSPF level adjustment   |            |
|        |  | ADJ 5B | DSPF skew adjustment (Front surface mode)   | 64-2       |
|        |  | ADJ 5C | DSPF skew adjustment (Back surface mode)  |            |
| ADJ6   | Scan image focus adjustment  | ADJ 6A | Image focus adjustment (Document table mode/ DSPF front surface mode)   |            |
|        |  | ADJ 6B | Image focus adjustment (DSPF back surface mode)   |            |
| ADJ7   | Scan image magnification ratio adjustment  | ADJ 7A | Main scanning direction image magnification ratio adjustment (Document table mode)  | 48-1, 48-5 |
|        |  | ADJ 7B | Sub scanning direction image magnification ratio adjustment (Document table mode)   | 48-1, 48-5 |
|        |  | ADJ 7C | Main scanning direction image magnification ratio adjustment (DSPF front surface mode)  | 48-1, 48-5 |
|        |  | ADJ 7D | Main scanning direction image magnification ratio adjustment (DSPF back surface mode)   | 48-1, 48-5 |
|        |  | ADJ 7E | Sub scanning direction image magnification ratio adjustment (DSPF mode)   | 48-1, 48-5 |
| ADJ8   | Print/scan image off-center, lead edge position adjustment (Manual adjustment)                         | ADJ 8A | Print image off-center, lead edge position manual adjustment (Software adjustment) (90cpm machine)  | 50-10      |
|        |  | ADJ 8B | Print image off-center, lead edge position manual adjustment (Software adjustment) (105/120cpm machine)   | 50-10      |
|        |  | ADJ 8C | Paper feed off-center manual adjustment (Manual paper feed unit) (MX-MF11) (Mechanical adjustment)  | 50-10      |
|        |  | ADJ 8D | Paper feed off-center manual adjustment (No.1 - 4 paper feed unit in main unit) (Mechanical adjustment)   | 50-10      |
|        |  | ADJ 8E | Paper feed off-center manual adjustment (LCC) (Mechanical adjustment)   | 50-10      |
|        |  | ADJ 8F | Scan image off-center manual adjustment (Document table mode)   | 50-12      |
|        |  | ADJ 8G | Scan image off-center manual adjustment (DSPF (Front surface) mode)   | 50-12      |
|        |  | ADJ 8H | Scan image off-center manual adjustment (DSPF (Back surface) mode)  | 50-12      |
| ADJ9   | Print/scan image lead edge position, off-center, magnification ratio adjustment (Automatic adjustment) | ADJ 9A | Print image magnification ratio automatic adjustment (Main scanning direction) (Corresponding to ADJ3B)   | 50-28      |
|        |  | ADJ 9B | Print image off-center automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A)<br>Print image lead edge position automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A) NOTE: For the 90cpm machine. For the 105/120cpm machines, the adjustment is inhibited. | 50-28      |
|        |  | ADJ 9C | Scan image magnification ratio automatic adjustment (Sub scanning direction) (Document table mode) (Corresponding to ADJ7B)<br>Scan image off-center automatic adjustment (Document table mode) (Corresponding to ADJ8A)  | 50-28      |
|        |  | ADJ 9D | Scan image magnification ratio automatic adjustment (Sub scanning direction) (DSPF mode) (Corresponding to ADJ7E)<br>Scan image off-center automatic adjustment (DSPF mode) (Corresponding to ADJ8G/ADJ8H)<br>Scan image lead edge reference position automatic adjustment (DSPF mode) (Corresponding to ADJ9C)           | 50-28      |



| Job No         | Adjustment item list   |         |   | Simulation |  |             |
|----------------|--|---------|---|------------|--|-------------|
| ADJ10          | Image position, image loss, and void area adjustment   | ADJ10A  | Copy mode image loss void area adjustment (Document table mode)   | 50-1       |  |             |
|                |  | ADJ10B  | Document scan position adjustment (Scanner scanning position adjustment when scanning the front surface in the DSPF mode) | 53-8       |  |             |
|                |  | ADJ10C  | Copy mode image loss adjustment (DSPF mode)   | 50-6       |  |             |
|                |  | ADJ10D  | Image send mode, image loss adjustment  | 50-27      |  |             |
| ADJ11/<br>SET1 | Gray balance/density adjustment  |         | Note before execution of the image quality adjustment   |            |  |             |
|                |  |         | Copy image quality check  |            |  |             |
|                |  |         | Printer image quality check   |            |  |             |
|                |  | ADJ 11A | Scanner calibration (CCD calibration)   |            | 63-3 (63-5)  |             |
|                |  | SET1    | Gray balance adjustment target setup  | 1A         | Copy gray balance adjustment target setup  | 63-7/8/11   |
|                |  |         |   | 1B         | Printer gray balance adjustment target setup   | 67-26/27/28 |
|                |  | ADJ 11B | Copy/Printer gray balance and density adjustment (Automatic adjustment) (Basic adjustment)                                |            | 46-74  |             |
|                |  | ADJ 11C | Copy quality adjustment (Basic adjustment)  | 11C (1)    | Copy gray balance and density adjustment (Automatic adjustment)  | 46-24       |
|                |  |         |   | 11C (2)    | Copy gray balance and density adjustment (Manual adjustment)   | 46-16       |
|                |  | ADJ 11D | Copy/Image send/image quality adjustment (Individual adjustment)  | 11D (1)    | Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)                              | 46-2        |
|                |  |         |   | 11D (2)    | Copy gray balance, gamma adjustment (No need to adjust normally)   | 46-10       |
|                |  |         |   | 11D (3)    | Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)   | 46-16       |
|                |  |         |   | 11D (4)    | Automatic monochrome (Copy/Scan) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)  | 46-19       |
|                |  |         |   | 11D (5)    | Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan) mode (No need to adjust normally) (Background density adjustment in the scanning section) | 46-32       |
|                |  |         |   | 11D (6)    | Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)  | 46-63       |
|                |  |         |   | 11D (7)    | Monochrome (Copy/Scan) mode color document reproduction adjustment (No need to adjust normally)  | 46-37       |
|                |  |         |   | 11D (8)    | Monochrome copy/color scan mode sharpness adjustment (No need to adjust normally)  | 46-60       |
|                |  |         |   | 11D (9)    | Copy high density image density reproduction setting (Normally unnecessary to the setting change)  | 46-23       |
|                |  |         |   | 11D (10)   | DSPF mode (Copy/Scan) density adjustment (No need to adjust normally)  | 46-9        |
|                |  |         |   | 11D (11)   | Automatic gray balance adjustment by the user (Copy gray balance automatic adjustment ENABLE setting and adjustment)   | 26-53       |
|                |  |         |   | 11D (12)   | Copy gamma, gray balance adjustment for each dither (Automatic adjustment)   | 46-54       |
|                |  |         |   | 11D (13)   | Dropout color adjustment (Normally not required)   | 46-55       |
|                |  |         |   | 11D (14)   | Watermark adjustment (Normally not required)   | 46-66       |
|                |  | ADJ 11E | Printer image quality adjustment (Basic adjustment)   | 11E (1)    | Printer gray balance adjustment (Automatic adjustment)   | 67-24       |
|                |  |         |   | 11E (2)    | Printer gray balance adjustment (Manual adjustment)  | 67-25       |
|                |  | ADJ 11F | Printer image quality adjustment (Individual adjustment)  | 11F (1)    | Printer density adjustment (Low density section density adjustment) (No need to adjust normally)   | 67-36       |
|                |  |         |   | 11F (2)    | Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)  | 67-34       |
| 11F (3)        | Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)   |         |   | 67-54      |  |             |
| 11F (4)        | Automatic gray balance adjustment by the user (Printer gray balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change) |         |   | 26-53      |  |             |
| ADJ12          | Image send, mode, image quality adjustment   | ADJ12A  | Color image send mode, image density and gradation adjustment (by each mode)  | 46-4       |  |             |
|                |  | ADJ12B  | Monochrome image send mode, image density and gradation adjustment (by each mode)   | 46-5       |  |             |
|                |  | ADJ12C  | Image send mode, image color balance adjustment   | 46-8       |  |             |

| Job No | Adjustment item list  |        |   | Simulation |
|--------|---|--------|---|------------|
| ADJ14  | Setting of the auto exposure mode operating conditions in copy, scan                      |        |   | 46-19      |
| ADJ15  | Paper size detection adjustment   | ADJ15A | Manual paper feed tray paper width sensor adjustment  | 40-2       |
|        |   | ADJ15B | Paper feed tray 4 paper width sensor adjustment       | 40-12      |
|        |   | ADJ15C | DSPF paper feed tray document width sensor adjustment | 53-6       |
| ADJ16  | Document size detection adjustment (Document table mode)                                  |        |   | 41-2       |
| ADJ17  | Touch panel coordinate adjustment   |        |   | 65-1       |
| ADJ18  | Waste toner full detection adjustment   |        |   | 30-1       |
| ADJ19  | Fusing paper guide position adjustment (Manual adjustment of fusing paper guide position) |        |   |            |
| ADJ20  | Decurler roller adjustment  |        |   |            |
| ADJ21  | DSPF CCD calibration  | ADJ21A | DSPF shading adjustment                               | 63-2       |
|        |   | ADJ21B | CCD gamma adjustment (CCD calibration) (DSPF mode)    | 63-3       |

### 3. Details of adjustment

## ADJ 1 High voltage values adjustment

#### (Note)

To check and adjust the output voltage, use the unit which can measure an effective value of 1000M $\Omega$  or more internal impedance. In addition, use a high voltage probe as well. (FLUKE87FLUKE80K-40 is recommended.)

### 1-A Main charger grid voltage adjustment

This adjustment is needed in the following situations:

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

- 1) Enter the Sim. 8-2 mode.
- 2) Select the output mode to be adjusted with the scroll button.

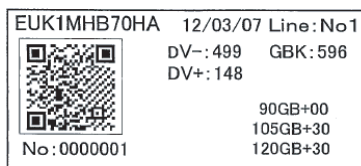
| Item/Display | Content                                    | Setting range | Default       |                    | Monitor connector |         | Actual output voltage |                    |
|--------------|--|---------------|---------------|--------------------|-------------------|---------|-----------------------|--------------------|
|              |  |               | 90cpm machine | 105/120cpm machine | Connector         | Pin No. | 90cpm machine         | 105/120cpm machine |
| A GB_K       | Main charger grid voltage adjustment value | 200-1000      | 575           | 605                | CN3               | 7       | -595 +/- 5 V          | -625 +/- 5 V       |

- 3) Enter the adjustment value with 10-key, and press [OK] button. The adjustment value is set.

#### Remark:

Normally when the default value is set, the specified voltage is outputted.

The adjustment value of each color mode is specified on the label attached to the high voltage PWB. Enter that value.



GBK:XXX

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

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

CAUTION: Note that the adjustment value may differ depending on the high voltage PWB.

CAUTION: The default values specified for each model must be changed as follows:

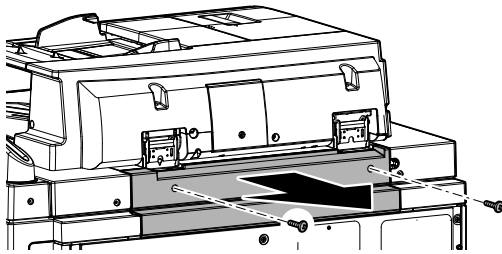
90cpm machine: + 0

105/120cpm machine: + 30

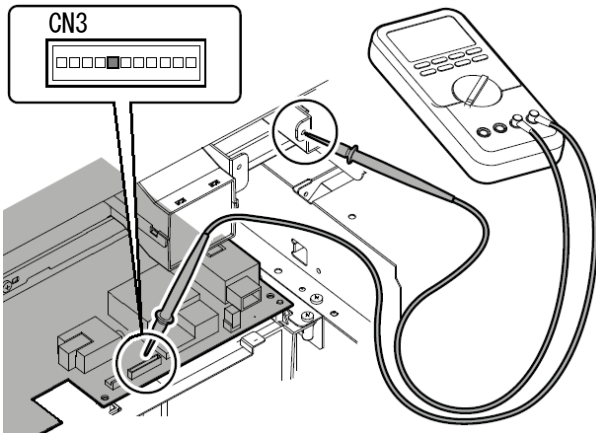
When [EXECUTE] button is pressed, the adjustment value is saved and the developing bias voltage is outputted simultaneously.

When the output voltage must be checked to be normal or not or when an adjustment is required while checking the output voltage, follow the procedures below:

- 1) Remove the upper rear cover of the machine



- 2) Attach the digital multi-meter between the connector CN3 pin (7) on the high voltage pwb and GND.



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

The main charger voltage is outputted for 10sec.

**Note:**

Perform this procedure timely as extended charge output will stress the photoconductor.

- 4) Check the output voltage with the digital multi-meter.

If the output voltage is outside the specified range described in the above table, perform procedures 2 thru 4 until the specified value is reached.

**NOTE:**

If the specified voltage is not obtained by changing the adjustment value, one of the following parts may be defective.

- High voltage PWB
- PCU PWB
- OPC drum unit
- High voltage circuit electrode

## 1-B Developing bias voltage adjustment

This adjustment is needed in the following situations:

- \* The high voltage PWB has been replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- 1) Enter the Sim. 8-1 mode. .
- 2) Select the output mode to be adjusted with the scroll button.

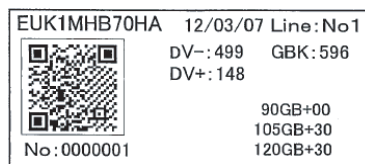
| Item/Display | Content    | Setting range                    | Default | Monitor connector |         | Actual output voltage |              |
|--------------|------------|----------------------------------|---------|-------------------|---------|-----------------------|--------------|
|              |            |                                  |         | Connector         | Pin No. |                       |              |
| A            | DVB_K      | Developing bias adjustment value | 0-750   | 496               | CN3     | 11                    | -500 +/- 5 V |
| B            | DVB_K_PLUS | Reverse developing bias voltage  | 0-250   | 164               | CN3     | 11                    | +150 +/- 5 V |

- 3) Enter the adjustment value with 10-key, and press [OK] button.  
The adjustment value is set.

**Remark:**

Normally when the default value is set, the specified voltage is outputted.

The adjustment value of each color mode is specified on the label attached to the high voltage PWB. Enter that value.



DV-:XXX DV+:XXX

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

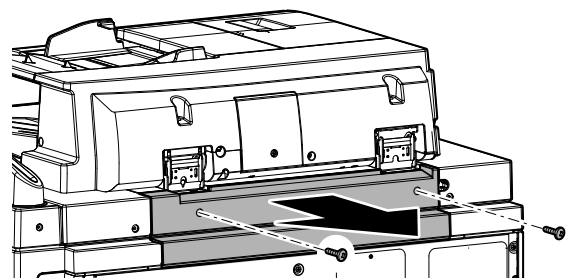
When [EXECUTE] key is pressed again, the output is stopped.

**CAUTION:** Note that the adjustment value may differ depending on the high voltage PWB.

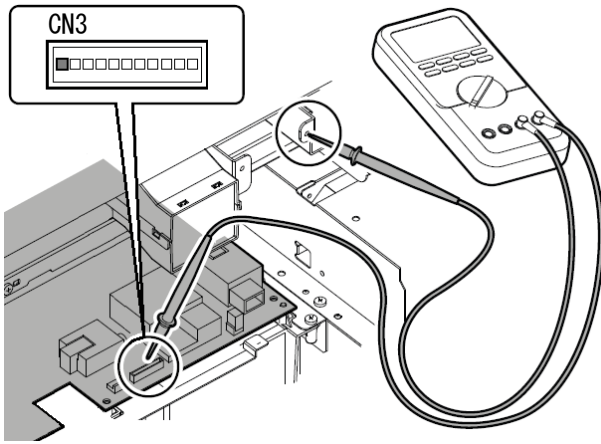
When [EXECUTE] button is pressed, the adjustment value is saved and the developing bias voltage is outputted simultaneously.

When the output voltage must be checked to be normal or not or when an adjustment is required while checking the output voltage, follow the procedures below:

- 1) Remove the upper rear cover of the machine



- Attach the digital multi-meter between the connector CN3 pin (11) on the high voltage pwb and GND.



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

The DV BIAS voltage is outputted for 30sec.

- Check the output voltage with the digital multi-meter.  
If the output voltage is outside the specified range described in the above table, perform procedures 2 thru 4 until the specified value is reached.

**NOTE:**

If the specified voltage is not obtained by changing the adjustment value, one of the following parts may be defective.

- High voltage PWB
- PCU PWB
- Development unit
- High voltage circuit electrode

### 1-C Transfer current adjustment

This adjustment is needed in the following situations:

- \* The high voltage PWB has been replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- Enter the Sim. 8-6 mode.
- Select the output mode to be adjusted with the scroll button.

| Item/Display  | Description of item   |                    | Setting range | Default       |                    | Actual output current |                    |
|---------------|-----------------------|--------------------|---------------|---------------|--------------------|-----------------------|--------------------|
|               |                       |                    |               | 90cpm machine | 105/120cpm machine | 90cpm machine         | 105/120cpm machine |
| A THV+ (FACE) | THV (Transfer) output | Front surface mode | 0-255         | 142           | 174                | 45 +/- 1μA            | 55 +/- 1μA         |
| B THV+ (BACK) |                       | Back surface mode  | 0-255         | 112           | 142                | 35 +/- 1μA            | 45 +/- 1μA         |

- Enter the adjustment value with 10-key, and press [OK] button.  
The adjustment value is set.

Normally when the default value is set, the specified voltage is outputted.

When [EXECUTE] button is pressed, the adjustment value is saved and the transfer voltage is outputted simultaneously.

Since the actual output cannot be checked, if it is presumed to be abnormal even though the adjustment value is set to the default value, replace the high voltage pwb.

### 1-D Photoconductor dark potential adjustment

This adjustment is needed in the following situations:

- \* When the photoconductor drum is replaced.
- \* When the front surface potential sensor is replaced.
- \* When the main charger unit is replaced.
- \* When the main high voltage PWB is replaced.
- \* When the photoconductor unit (process unit) is disassembled.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* Before executing the image adjustment

- Enter the Sim.44-3 mode.
- Select the adjustment mode.

- **INI DARK VO:**  
When the OPC drum is replaced, select this mode.
- **DARK VO:**  
In the other cases, select this mode.

- Press [EXECUTE] key.  
[EXECUTE] button is highlighted, and the OPC drum is rotated to start the OPC drum dark potential adjustment operation.  
After completion of the adjustment, [EXECUTE] button returns to the normal display.

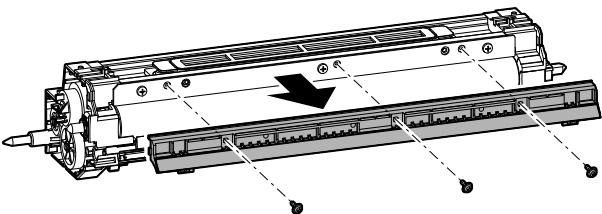
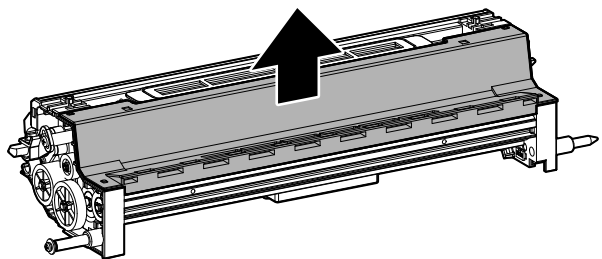
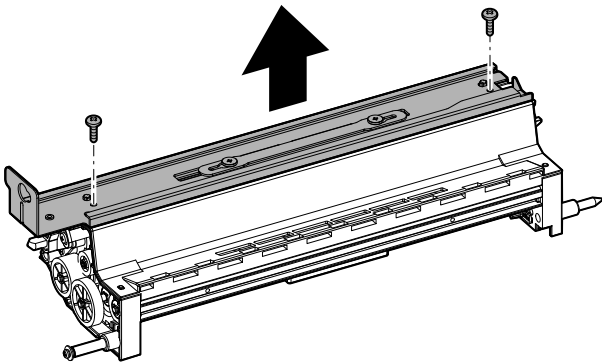
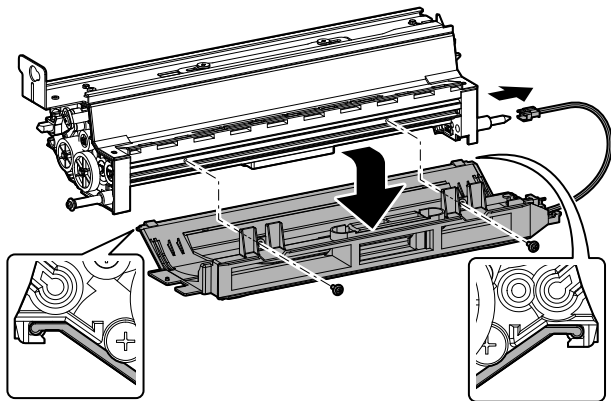
The main charger grid voltage is automatically corrected until the OPC drum dark potential becomes the specified value.

## ADJ 2 Developing unit adjustment

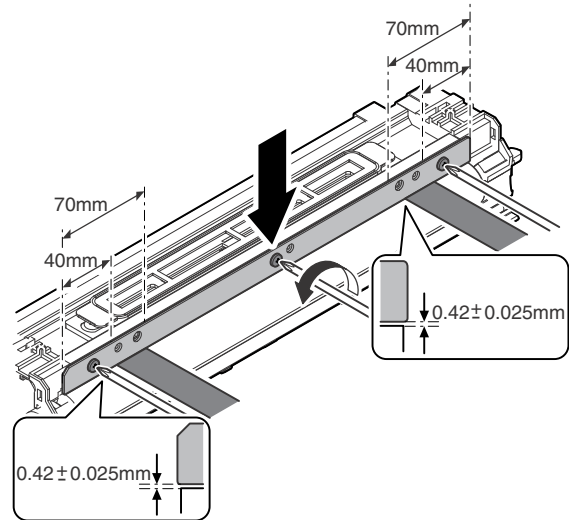
### 2-A Developing doctor gap adjustment

The check and the adjustment are required in the following cases:

- \* When the developing unit is disassembled.
  - \* When the print image density is too low.
  - \* When there is a thin spot on a print image.
  - \* When the print image density is uneven.
  - \* When there is abnormally much toner dispersion.
- 1) Remove the developing unit from the machine, and remove the cover and the guide as shown in the figure below.



- 2) Loosen the developing doctor blade fixing screw.



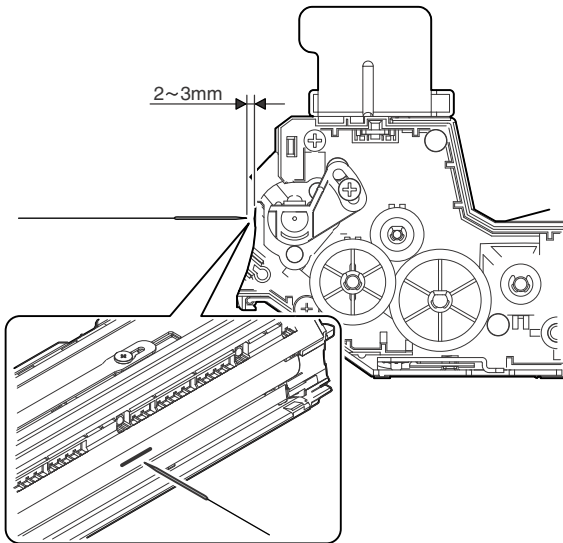
- 3) Insert a thickness gauge of 0.42mm into the gap of 40mm - 70mm from the edge of the developing doctor blade.
- 4) Push the developing doctor blade in the direction of the developing roller (arrow direction), and tighten the fixing screw of the developing doctor blade. (Perform the similar procedure for the front frame and the rear frame.)
- 5) Check to confirm that the doctor gap is in the range of  $0.42 \pm 0.025$  mm at two positions in 40mm - 70mm from the both sides of the developing doctor blade. When inserting the thickness gauge, be sure not to scratch the developing doctor blade and the developing roller.

### 2-B Developing roller main pole position adjustment

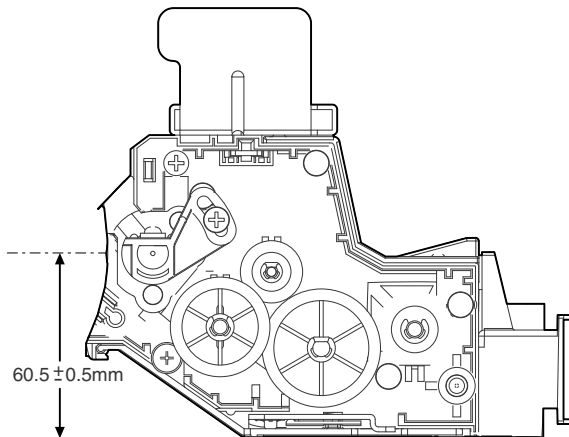
The check and the adjustment are required in the following cases:

- \* When the developing unit is disassembled.
  - \* When the print image density is too low.
  - \* When there is a thin spot on a print image.
  - \* When the print image density is uneven.
  - \* When there is abnormally much toner dispersion.
- 1) Place the developing unit on a flat surface.
  - 2) Remove developer from the developing roller.
  - 3) Put a string on a needle or a pin. (Do not use a paper clip, which cannot provide an accurate position.)

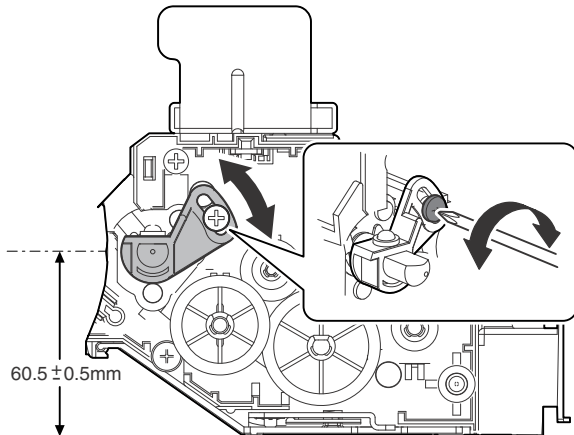
- 4) Hold the string, and put the needle closer to the developing roller.



- 5) With the needle 2 - 3mm apart from the developing roller, mark the intersect of the extended line and the developing roller surface. (Do not bring the needle into contact with the developing roller.)



- 6) Measure the height of the marking position, and check to confirm that it is  $60.5 \pm 0.5\text{mm}$ .  
If the height is not in the above range, adjust the developing roller main pole position by the following procedure. Loosen the fixing screw of the developing roller main pole adjustment plate, and move the adjustment plate in the arrow direction to make an adjustment.



Repeat the procedures 4 thru 6 until the developing roller main pole position is within the specified range.

After completion of the adjustment of the developing roller main pole position, tighten the fixing screw of the developing roller main pole adjustment plate.

## 2-C Toner density control reference value setting

This adjustment is required in the following case:

- \* When developer is replaced.

### Note:

Never execute this adjustment unless developer is replaced.

Select the most suitable simulation mode according to the maintenance case.

### [Setting with the Sim. 25-2 mode]

- 1) Enter an input of Sim. 25-2 with the front cover open.
- 2) After entering the input, close the front cover.
- 3) Open the toner cartridge tray.
- 4) Press [EXECUTE] key.

[EXECUTE] key is highlighted, and the developing roller rotates. The toner density is detected by the toner density sensor, and the output value is displayed.

After execution of the above operation for about 3min, the average value of the toner density sensor detection levels is set (saved) as the reference toner density control value.

After completion of the reference toner density control value setting, [EXECUTE] key returns to the normal display. This indicates completion of the setting.

When setting of the reference toner density control value has failed, [EE-EU], [EE-EL] or [EE-EC] is displayed.

### <<Error display list (AUTO DEVE ADJUSTMENT)>>

| Error display | Error name     | Detail of error   | Remark   |
|---------------|----------------|---|--|
| EE-EL         | EL abnormality | The sensor output level is less than 26, or the control voltage level exceeds 197.            | In case of an error, the humidity area, the execution transition target, and the execution control voltage are not registered. |
| EE-EU         | EU abnormality | The sensor output level exceeds 200, or the control voltage level is less than 49.            |  |
| EE-EC         | EC abnormality | The sample level is not $120 \pm 5$ when the automatic density adjustment is being performed. |  |

# ADJ 3 Print image distortion, position, magnification ratio adjustment (Manual adjustment)

## 3-A Print image distortion manual adjustment (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:

- \* ADJ3C Adjust the print image off-center (print engine section)

- 1) Enter the Sim.64-2 mode.
- 2) Set the conditions as shown below.

| Item | Display Item                                | Description   | Set value              |
|------|---|---|------------------------|
| A    | PRINT PATTERN<br>(1 - 22, 53 - 58, 71 - 78) | Used to specify the print pattern.<br>(* For details, refer to the following descriptions.) | 5                      |
| B    | DOT1<br>(DOT1>=2 IF A : 2, 11)              | Used to set the print dot number. (Self print pattern: for m by n)                          | 1                      |
| C    | DOT2<br>(DOT2 <= 100 IF A : 59)             | Used to set the empty dot number. (Self print pattern: for m by n)                          | 254                    |
| D    | DENSITY<br>(FIXED "255" IF A : 9)           | Used to specify the print gradation.  | 255                    |
| E    | RESOLUTION (DPI)                            | Used to select the resolution. (600DPI, 1200DPI)  | 1                      |
| F    | MULTI COUNT                                 | Number of print   | 1                      |
| G    | EXPOSURE<br>(2 to 8<br>IF A :<br>14 to 19)  | Used to specify the exposure mode   | 8<br>(STANDARD DITHER) |
|      | THROUGH                                     | No process (Through)  |                        |
|      | CHAR/PIC                                    | Text/Printed Photo  |                        |
|      | CHAR/PRPIC                                  | Text/Photograph   |                        |
|      | CHAR  | Text  |                        |
|      | PRINT PIC                                   | Printed Photo   |                        |
|      | PRINT PAPER                                 | Photograph  |                        |
|      | MAP   | Map   |                        |
|      | STANDARD DITHER                             | Dither without correction   |                        |

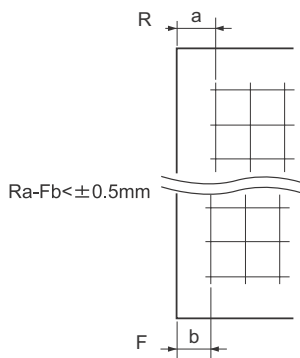
The paper feed tray with A3 (11 X 17) paper in it is selected.

- 3) Press [EXECUTE] button.  
The grid pattern image is outputted.
- 4) Check the printed grid pattern for distortions.

### [Check Method 1]

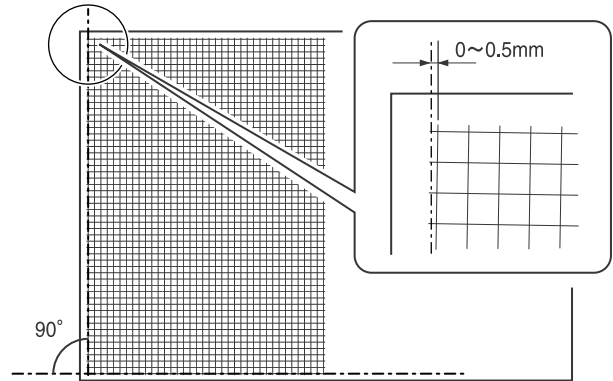
Compare the front frame side and rear frame side of the printed paper in terms of the distance between the outer end of the grid pattern image and the edge of the paper.

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



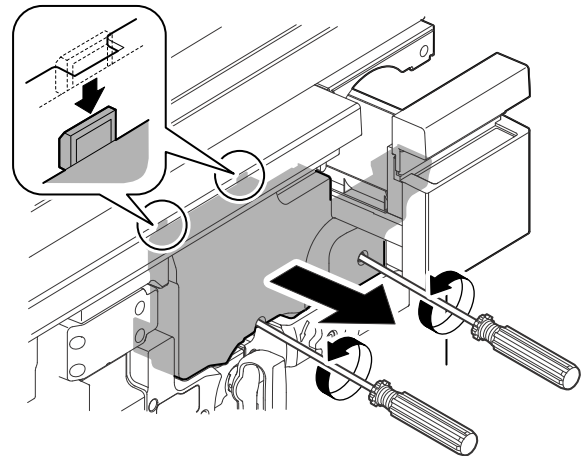
### [Check Method 2]

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.

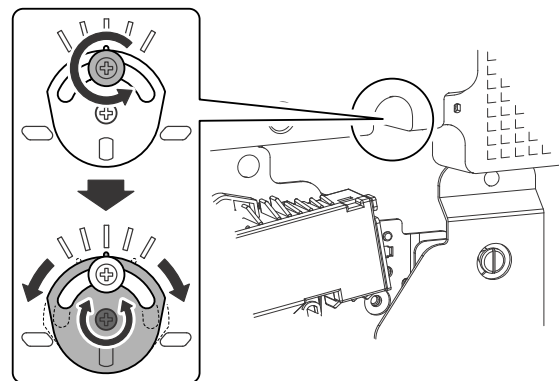


Carry out the following work if the situation is unsatisfactory.

- 5) Open the front cabinet. Remove the toner cartridge unit.
- 6) Remove the process cover.



- 7) Loosen the fixing screw of the print image distortion adjustment cam. Adjust the angle of the print image distortion adjustment cam to set the print image distortion to the minimum.



When the vertical line image is tilted to the left with the front frame side as the reference, turn the print image distortion adjustment cam clockwise to change the angle.

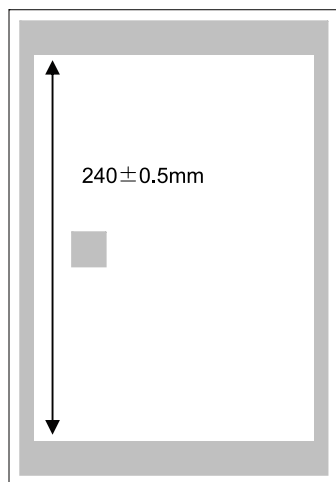
When the vertical line image is tilted to the right with the front frame side as the reference, turn the print image distortion adjustment cam counterclockwise to change the angle.

Repeat steps 3 to 7 until an acceptable result is obtained.

### 3-B Print image magnification ratio manual adjustment (Main scanning direction)

This adjustment is needed in the following situations:

- \* LSU (write) unit has been replaced.
  - \* U2 trouble has occurred.
  - \* The PCU PWB has been replaced.
  - \* The EEPROM of the PCU PWB has been replaced.
- 1) Enter the Sim.50-10 mode.  
The check pattern is printed out.
  - 2) Select A4 (11 X 8.5) paper.
  - 3) Press [EXECUTE] key.  
The check pattern is printed out.
  - 4) Check that the inside dimension of the printed half tone is  $240 \pm 0.5\text{mm}$ .



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

- 5) Change the set value of set item A.  
When the set value is changed by 1, the dimension is changed by 0.1mm.  
When the set value is increased, the main scanning direction image magnification ratio in the main scanning direction is increased. When the set value is decreased, the main scanning direction image magnification ratio in the main scanning direction is decreased.  
Repeat procedures 3 thru 5 until a satisfactory result is obtained.

### 3-C Print image lead edge void area manual adjustment/Front-rear void area, rear edge void area manual adjustment

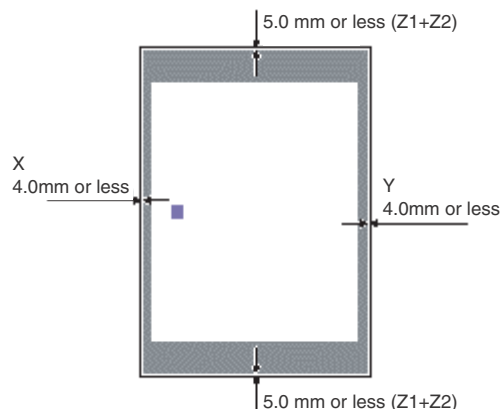
This adjustment is needed in the following situations:

- \* When the resist roller section is disassembled.
- \* When the LSU is replaced or removed.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- 1) Enter the Sim. 50-5 mode.  
The adjustment pattern is printed.
- 2) Press [EXECUTE] key.  
The adjustment pattern is printed.

Check the adjustment pattern to confirm that the following items are the standard values.

|       |                        | Standard adjustment value |
|-------|------------------------|---------------------------|
| X     | Lead edge void area    | 4.0mm or less             |
| Y     | Rear edge void area    | 4.0mm or less             |
| Z1/Z2 | FRONT / REAR void area | 5.0 mm or less (Z1+Z2)    |



#### (Note)

Check by feeding from all the paper feed trays.

If the above conditions are not satisfied or the adjustment value is set to an optional value, perform the following procedures.

- 3) Select the adjustment item with the scroll key.

| Display/Item | Content  | Setting range | Default value | Remark   |
|--------------|--|---------------|---------------|--|
| A DEN-C      | (Void quantity) Printer print lead edge adjustment value               | 1 - 99        | 30            | Adjustment value to fit the print lead edge in the printer mode. When the adjustment value is decreased by 1, the printer print start position is shifted to the lead edge in the paper transport direction by 0.1mm.    |
| B DEN-B      | (Void quantity) Sub scanning direction print area adjustment value     | 1 - 99        | 30            | Void quantity generated at the paper rear edge. When the adjustment value of B (DEN-B) is decreased by 1, the sub scanning direction print area adjustment value is decreased in the paper transport direction by 0.1mm. |
| C FRONT/REAR | (Void quantity) FRONT / REAR void quantity adjustment                  | 1 - 99        | 20            | Adjustment of the void quantity generated at the right and left edges of paper. When the value is increased, the void quantity is increased.   |
| D DENB-MFT   | (Sub scanning direction print area) Manual paper feed correction value | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the manual feed is adjusted for the adjustment value of item B (DEN-B), this value is changed.  |
| E DENB-CS1   | (Sub scanning direction print area) Cassette 1 correction value        | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 1 is adjusted for the adjustment value of item B (DEN-B), this value is changed.   |
| F DENB-CS2   | (Sub scanning direction print area) Cassette 2 correction value        | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 2 is adjusted for the adjustment value of item B (DEN-B), this value is changed.   |



| Display/Item | Content   | Setting range | Default value | Remark  |
|--------------|---|---------------|---------------|---|
| G            | DENB-CS3<br>(Sub scanning direction print area)<br>Cassette 3 correction value                      | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 3 is adjusted for the adjustment value of item B (DEN-B), this value is changed.              |
| H            | DENB-CS4<br>(Sub scanning direction print area)<br>Cassette 4 correction value                      | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the cassette 4 is adjusted for the adjustment value of item B (DEN-B), this value is changed.              |
| I            | DENB-LC<br>(Sub scanning direction print area)<br>LCC/LCT/LCT manual paper feed<br>correction value | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the LCC/LCT/LCT manual feed is adjusted for the adjustment value of item B (DEN-B), this value is changed. |
| J            | DENB_ADU<br>(Sub scanning direction print area)<br>ADU correction vaule                             | 1 - 99        | 55            | Adjustment of the void quantity generated at the rear edge of paper. When only the ADU is adjusted for the adjustment value of item B (DEN-B), this value is changed.                     |
| K            | DENB-HV<br>(Sub scanning direction print area)<br>Heavy paper correction value                      | 1 - 99        | 50            | Adjustment of the void quantity generated at the rear edge of paper. When only the heavy paper is adjusted for the adjustment value of item B (DEN-B), this value is changed.             |
| L            | MULTI COUNT<br>Print quantity   | 1 - 999       | 1             |   |
| M            | PAPER<br>Cassette select  | 1 - 99        | 3             |   |
| N            | DUPLEX<br>Duplex print select   | 0 - 1         | 1             |   |

- 4) Enter the adjustment value with 10-key, and press [OK] key or [EXECUTE] key.  
When [EXECUTE] key is pressed, the adjustment pattern is printed.  
When the adjustment value is changed by 1, it is changed by about 0.1mm.  
Repeat procedures 2 thru 4 until the conditions of procedure 2) are satisfied.

## ADJ 4 Scan image distortion adjustment (OC mode)

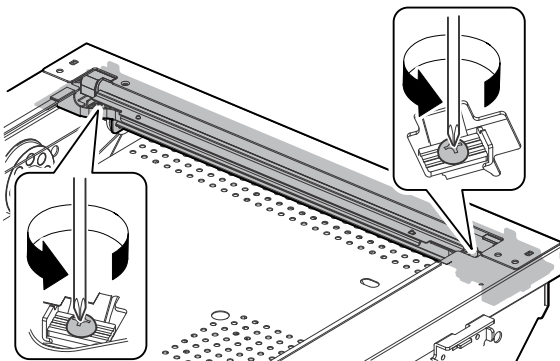
This adjustment is needed in the following situations:

- \* The scanner (reading) section has been disassembled.
- \* When a distortion is produced in copy and scan images.

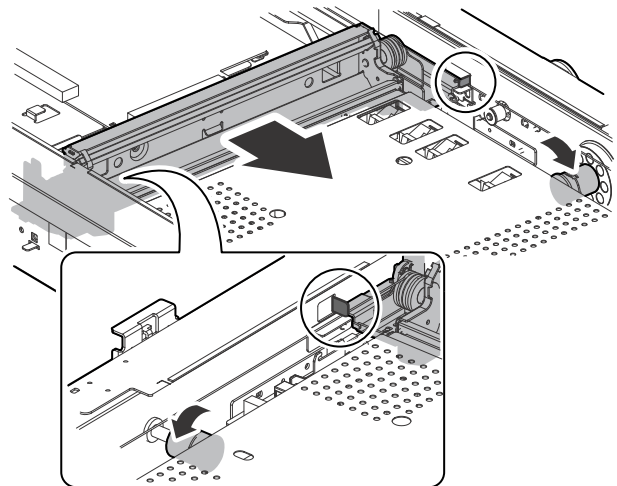
### 4-A Scanner (reading) unit parallelism adjustment

Before execution of this procedure, remove the document table glass.

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

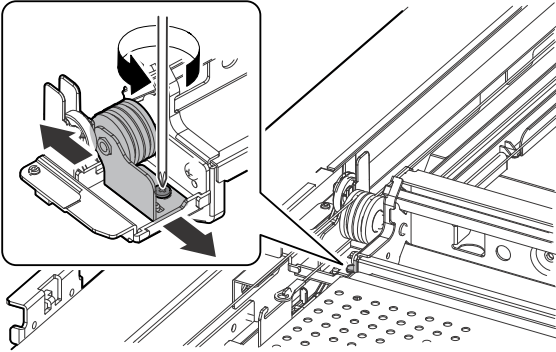


- 2) Manually turn the scanner drive pulley, to move the scanner unit B until it is in contact with the stopper.  
If the scanner unit B is in contact with the stoppers at the front and the rear frames simultaneously, the parallelism of the scanner unit B is proper.



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

- Loosen the fixing screw of the pulley angle on the front frame side of the scanner unit B.

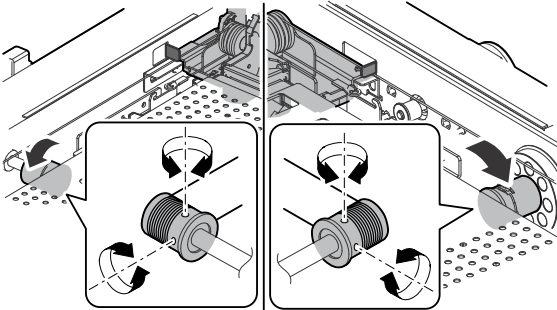


- Adjust the pulley angle position on the front frame side of the scanner unit B so that the scanner unit B is in contact with the stoppers on the front and the rear frames of the scanner unit B simultaneously.

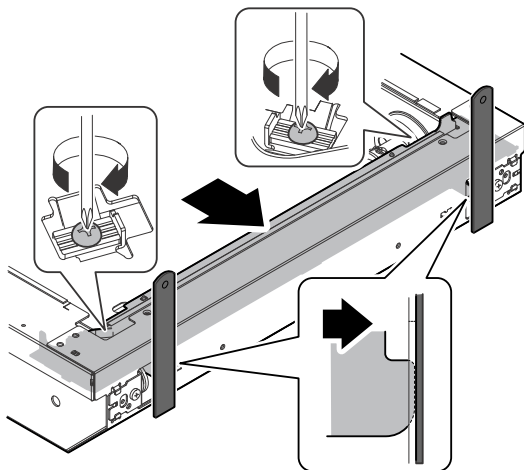
- Fix the pulley angle on the front frame side of the scanner unit B. If the adjustment result is unsatisfactory, perform the following procedure.

Loosen the fixing screws of the scanner unit drive pulley on the side of of the mirror assembly that does not contact the stopper.

Adjust so that the scanner unit B is in contact with the stoppers on the front and the rear frames simultaneously when the scanner unit drive pulley is manually turned without moving the scanner unit drive shaft. (Change the relative position of the scanner unit drive pulley and the drive shaft.) Fix the fixing screws of the scanner unit drive pulley.

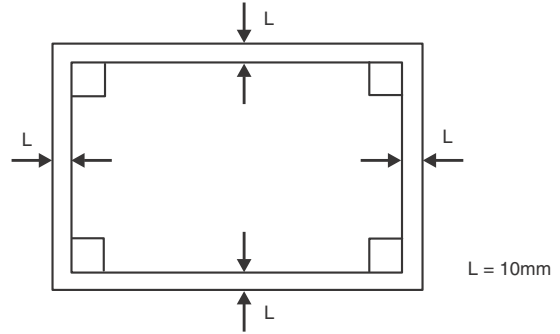


- With the scanner unit B in contact with the stoppers simultaneously, fit the edge of the scanner unit A and the right edge of the frame (top of the Mylar), and secure the scanner unit A with the screw.

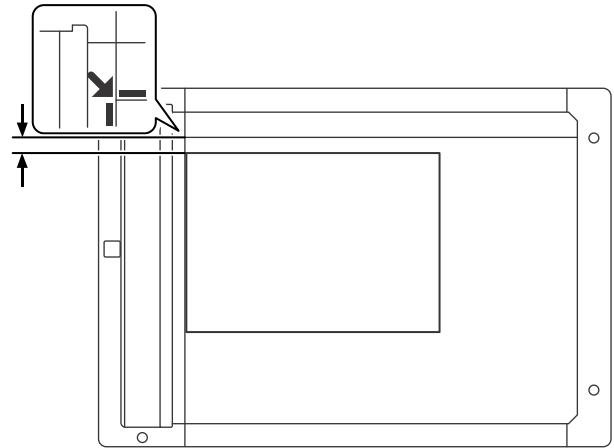


#### 4-B Scan image sub scanning direction distortion adjustment

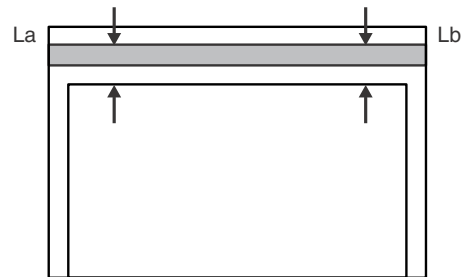
- Make a test chart (a rectangular pattern with four right angles) on A3 (11 X 17) paper as shown below.



- Set the test chart made in the procedure 1) on the document table so that the test charts is shifted toward you by 30mm from the document set reference position. With the document cover open, make a copy on A3 (11" X 17") paper.

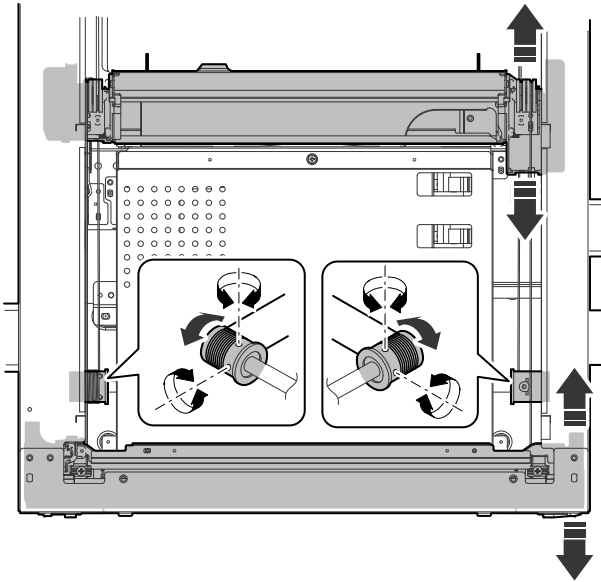


- Check for any distortion in the sub scanning direction. If  $L_a = L_b$ , there is no distortion.



- 4) If there is a distortion in the sub scanning direction, perform the following procedure.

Loosen either one of the fixing screws of the scanner unit drive pulley. (Either one in the front frame side or the rear frame side will do.)



- 5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to adjust the parallelism of the scanner unit A and B. (Change the relative positions of the scanner unit drive pulley and the drive shaft.)

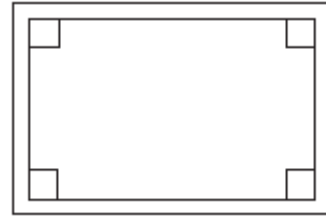
Tighten the fixing screw of the scanner unit drive pulley.

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

If a distortion in the sub scanning direction cannot be removed in the above procedures, perform "ADJ 4C Scan image overall distortion adjustment."

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

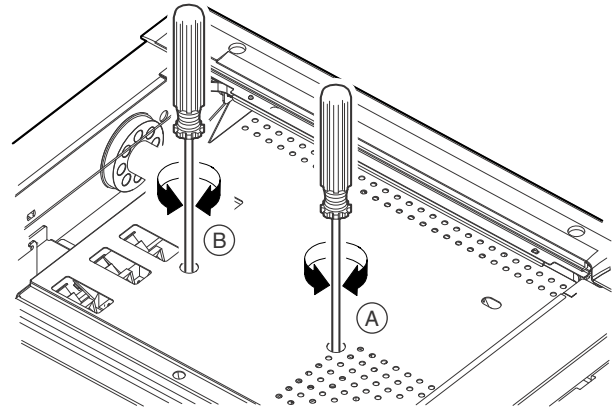
- 3) Check for any distortion in the main scanning direction. If the four angles of the copy image (rectangle) is right angles, there is no distortion. (Work completed)



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

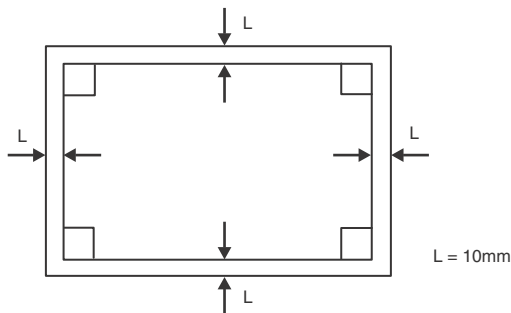
**(Left side distortion adjustment)**

- 1) Turn the horizontal level adjustment screw of the CCD unit. (There are two adjustment screws in the front (A) and at the back (B). Be sure to use only the screw in the front (A)) (When adjusting with the screw at the back (B), use a great care for generation of shades of images.)



**4-C Scan image main scanning direction distortion adjustment**

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



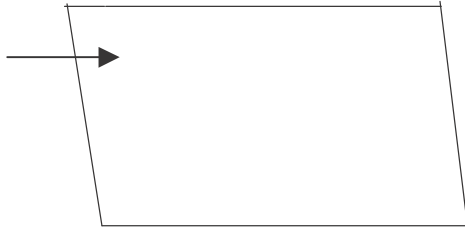
**If the left side inclines to the left:**

Turn the CCD unit horizontal adjustment screw (A) clockwise. (When adjusting the adjustment screw (B) on the front frame side, turn the screw counterclockwise. When adjusting the adjustment screw on the rear frame side, turn the screw counterclockwise.)



**If the left side inclines to the right:**

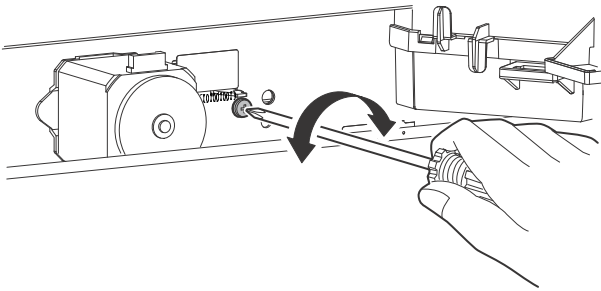
Turn the CCD unit horizontal adjustment screw (A) clockwise. (When adjusting the adjustment screw (B) on the front frame side, turn the screw clockwise. When adjusting the adjustment screw on the rear frame side, turn the screw clockwise.)



- 2) Make a copy of the distortion check test chart, and check for any distortion on the left side. Repeat the above procedures until the distortion on the left side is minimized. Variation 0.7/260mm, 0.5 revolution

**(Right side distortion adjustment)**

- 1) Change the balance of the scanner rail height on the rear frame side.



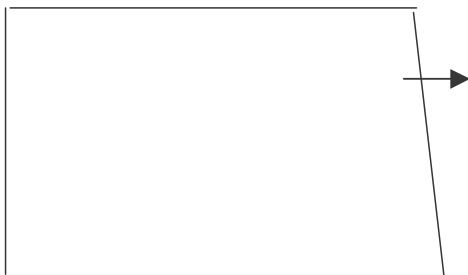
Remove the rear upper cabinet. Loosen the scanner rail fixing screw (red screw) on the left side when viewed from the front to change the height balance of the left and right sides of the scanner rail. There are two fixing screws (red screws) of the scanner rail.

**(NOTE)**

There is a scanner rail also on the front frame side, and its height balance can be adjusted. However, it is not advisable to adjust it because many parts must be removed for the adjustment.

**When the right side inclines to the right:**

Lift the level of the left side of the rear frame scanner rail. (When viewed from the rear frame side)



**When the right side inclines to the left:**

Lower the level of the left side of the rear frame scanner rail. (When viewed from the rear frame side)



- 2) Make a copy of the distortion check test chart, and check for any distortion on the right side. Repeat the above procedures until the distortion on the right side is minimized.

**Note:**

The right side distortion adjustment and the left side distortion adjustment affect each other. When, therefore, one of the adjustments is performed, be sure to check the other distortion and repeat the adjustment procedures until the both distortions are minimized.

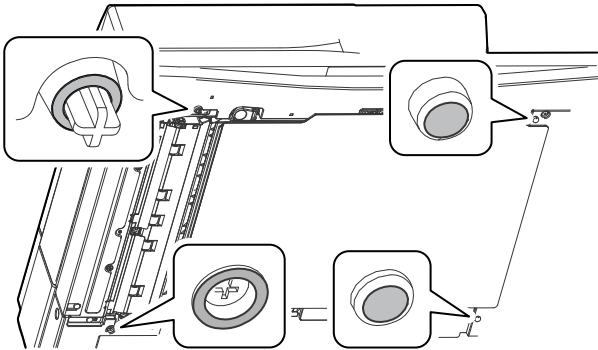
## ADJ 5 Scan image distortion adjustment (DSPF mode)

### 5-A DSPF level adjustment

This adjustment is required in the following cases:

- \* When the DSPF section is disassembled.
- \* The DSPF unit has been replaced.

- 1) Check the contact pressures between the four projections (2 on the front side and 2 on the rear side of the DSPF unit) and the cover top and the glass surface of the document table of the machine.



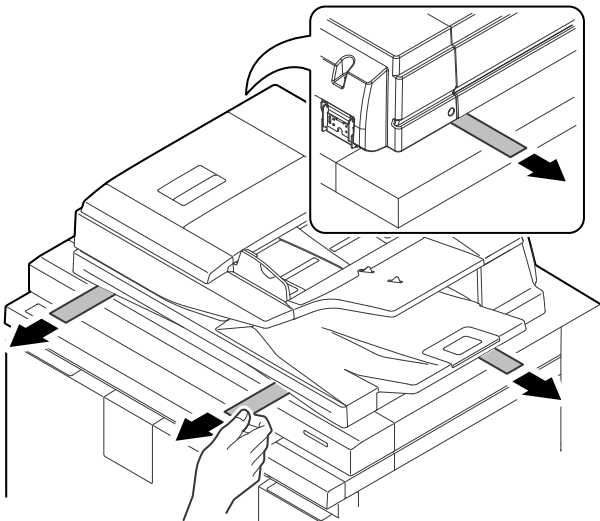
#### (Check procedure)

Insert paper between the projections of the DSPF unit and the cover top and the glass surface of the document table, and pull out the paper slowly. Feel and check to confirm that the resistances at the four contacts are the same level.

Allowable range: Front frame side 0mm

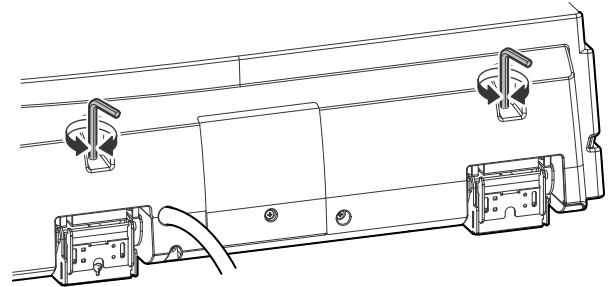
Rear frame side 0 - 1mm

- \* Check the contact pressure with the unit from which the OC mat is removed.



If not, perform the following procedure.

- 2) Turn the DSPF unit level adjustment screw on the rear side of the DSPF unit to adjust the horizontal level (front and rear, left and right).



#### (Adjustment procedure)

|  |   |
|--|---|
| When the front frame side is higher and the rear frame side is lower | Turn the DSPF rear frame height adjustment screws R and L clockwise.        |
| When the front frame side is lower and the rear frame side is higher | Turn the DSPF rear frame height adjustment screws R and L counterclockwise. |
| When the right side is higher and the left side is lower             | Turn the DSPF rear frame height adjustment screw R counterclockwise.        |
| When the right side is lower and the left side is higher             | Turn the DSPF rear frame height adjustment screw L counterclockwise.        |

Repeat the above procedures until a satisfactory result is obtained.

## 5-B DSPF skew adjustment (Front surface mode)

This adjustment is required in the following cases:

- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.
- \* When there is a distortion (skew) on a front surface scan image of the DSPF unit.

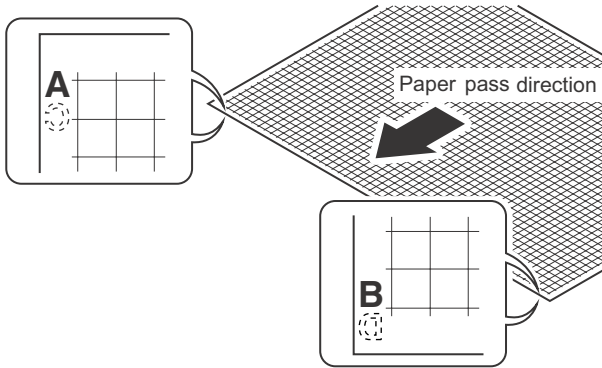
1) Enter the Sim. 64-2 mode.

2) Set the conditions as shown below:

The self print pattern 5 (grid pattern) of Sim. 64-2 is printed in the duplex print mode.

| Display/Item |  | Content  |                              | Setting range  |   | Set value |   |
|--------------|--|--|------------------------------|--|---|-----------|---|
| A            | PRINT PATTERN (1 - 22, 53 - 58, 71 - 78) | Select of print pattern<br>(For details, refer to the following) |                              | 1 - 22, 53-58, 71-78<br>(1-22, 53-58, 71-78 Printable) |   | 5         |   |
| B            | DOT1 (DOT1>=2 IF A: 2, 11)               | Print dot number setting<br>(Self print pattern: For m by n)     |                              | Pattern 2, 11: 2-255<br>Other than the above: 1-255    |   | 1         |   |
| C            | DOT2 (DOT2<=100 IF A: 59)                | Empty dot number setting<br>(Self print pattern: For m by n)     |                              | Pattern 59: 0-100<br>Other than the above: 0-255       |   | 254       |   |
| D            | DENSITY (FIXED "255" IF A: 9)            | Select of print gradation  |                              | Pattern 9: 255 fixed<br>Other than the above: 1-255    |   | 255       |   |
| E            | RESOLUTION (DPI)                         | Select of resolution. (600DPI, 1200DPI)                          |                              | 0 (600DPI) - 1 (1200DPI)                               |   | 1         |   |
| F            | MULTI COUNT                              | Print quantity   |                              | 1 - 999  |   | 1         |   |
| G            | EXPOSURE<br>(2-8 IF A: 14-19)            | THROUGH  | Select of exposure<br>mode   | No process (through)                                   | Pattern 14-19: 2-8<br>Other than the above: 1-8 | 1         | 8 (STANDARD<br>DITHER)  |
|              |  | CHAR/PIC   |                              | Text/Printed Photo                                     |   | 2         |   |
|              |  | CHAR/PRPIC   |                              | Text/ Photograph                                       |   | 3         |   |
|              |  | CHAR   |                              | Text   |   | 4         |   |
|              |  | PRINT PIC  |                              | Printed Photo  |   | 5         |   |
|              |  | PRINT PAPER  |                              | Photograph   |   | 6         |   |
|              |  | MAP  |                              | Map  |   | 7         |   |
|              |  | STANDARD DITHER  |                              | Dither without correction                              |   | 8         |   |
| H            | PAPER                                    | MFT  | Select of paper feed<br>tray | Manual paper feed                                      | 1-8   | 1         | Select a paper feed<br>tray with A3 (11 X 17)<br>paper in it. |
|              |  | CS1  |                              | Cassette 1   |   | 2         |   |
|              |  | CS2  |                              | Cassette 2   |   | 3         |   |
|              |  | CS3  |                              | Cassette 3   |   | 4         |   |
|              |  | CS4  |                              | Cassette 4   |   | 5         |   |
|              |  | LCC1   |                              | LCC1   |   | 6         |   |
|              |  | LCC2   |                              | LCC2   |   | 7         |   |
|              |  | LCC3   |                              | LCC3   |   | 8         |   |
| I            | DUPLEX                                   | YES  | Select of duplex print       | Yes  | 0-1   | 0         | 0   |
|              |  | NO   |                              | No   |   | 1         |   |
| J            | PAPER TYPE                               | PLAIN  | Select of paper type         | Plain paper  | 1-4   | 1         | 1 (PLAIN)   |
|              |  | HEAVY  |                              | Heavy paper  |   | 2         |   |
|              |  | OHP  |                              | OHP  |   | 3         |   |
|              |  | ENVELOPE   |                              | Envelope   |   | 4         |   |

- 3) Select a paper feed tray with A3 (11 X 17) paper in it.
- 4) Press [EXECUTE] button.  
The grid pattern image is printed.
- 5) Check to confirm that the printed grid pattern is virtually in parallel with the paper edges, and put the position marks A and B on the front and the rear side of the front surface and the back surface of paper.



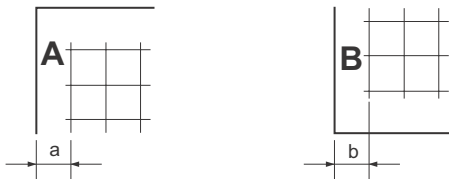
- 6) Make a copy of the adjustment pattern made in the above procedure on A3 (11 X 17) paper in the DSPF duplex mode, and check for any image distortion (skew). (Set the adjustment pattern so that the marked side is on the lead edge side.)

Check in one of the following methods:

**[Check method 1]**

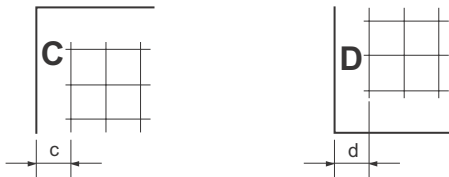
(Front side)

Condition that should be satisfied:  $|a-b| \leq 1 \text{ mm}$



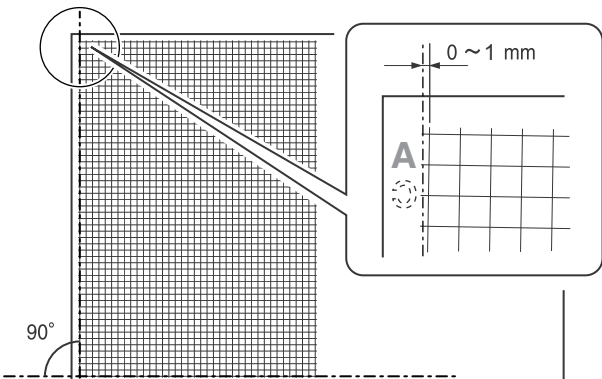
(Back side)

Condition that should be satisfied:  $|c-d| \leq 1 \text{ mm}$



**[Check method 2]**

Check to confirm that the right angle degrees of the print lines in the main scanning direction are within 1.0mm with the paper longitudinal direction print line as the reference.

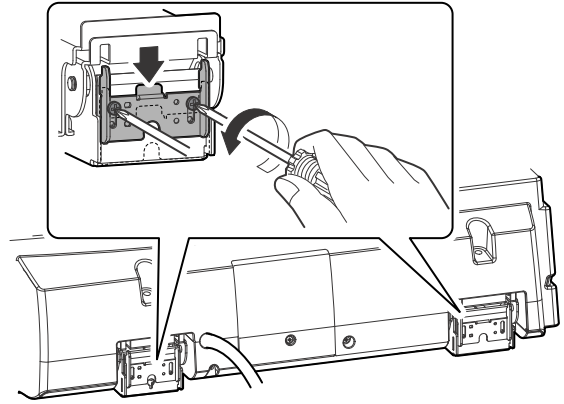


If the front surface copy image satisfies the above condition the back surface copy image does not, go to "ADJ 5C DSPF skew adjustment (Back surface mode)."

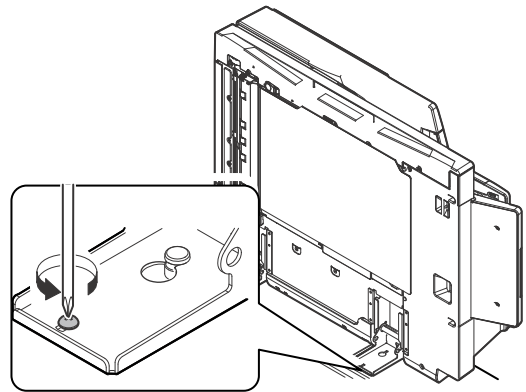
If the front surface copy image does not satisfy the above condition, perform the following procedure.

- 7) Loosen the hinge section screw, and lower two metal plates which lock the DSPF.

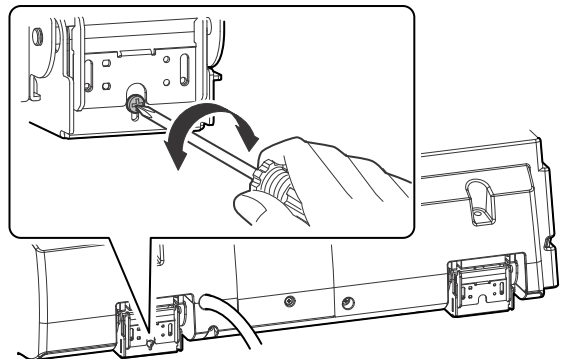
Then the DSPF unit can be opened at an angle of 90 degrees.



- 8) Open the DSPF unit, and loosen the hinge section fixing screw on the right side of the DSPF unit.



- 9) Turn the DSPF skew adjustment screw on the left side when viewed from the rear frame to minimize the skew.



|   |   |
|---|---|
| When the main scanning direction print line inclines to the left (Adjustment pattern $a < b$ )  | Turn the DSPF skew adjustment screw counterclockwise. |
| When the main scanning direction print line inclines to the right (Adjustment pattern $a > b$ ) | Turn the DSPF adjustment screw clockwise.             |

Repeat the procedures 6 thru 9 until a satisfactory result is obtained.

## 5-C DSPF skew adjustment (Back surface mode)

This adjustment is required in the following cases:

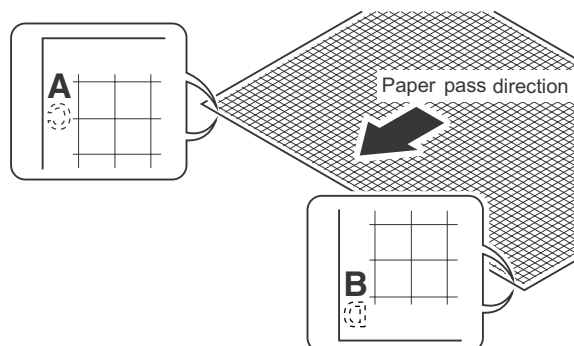
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.
- \* When there is a distortion (skew) on the back surface scan image of the DSPF unit.

- 1) Enter the Sim. 64-2 mode.
- 2) Set the adjustment values as shown below.

The self print pattern 5 (Grid pattern) of Sim. 64-2 is printed in the duplex print mode.

| Display/Item |  | Content  |                           | Setting range  |   | Set value |   |
|--------------|--|--|---------------------------|--|---|-----------|---|
| A            | PRINT PATTERN (1 - 22, 53 - 58, 71 - 78) | Select of print pattern<br>(For details, refer to the following) |                           | 1 - 22, 53 - 58, 71 - 78<br>(1 - 22, 53 - 58, 71 - 78 printable) |   | 1         |   |
| B            | DOT1 (DOT1>=2 IF A: 2, 11)               | Print dot number setting<br>(Self print pattern: For m by n)     |                           | Pattern 2, 11: 2 - 255<br>Other than the above: 1 - 255          |   | 1         |   |
| C            | DOT2 (DOT2<=100 IF A: 59)                | Empty dot number setting<br>(Self print pattern: For m by n)     |                           | Pattern 59: 0 - 100<br>Other than the above: 0 - 255             |   | 254       |   |
| D            | DENSITY (FIXED "255" IF A: 9)            | Select of print gradation  |                           | Pattern 9: 255 Fixed<br>Other than the above: 1 - 255            |   | 255       |   |
| F            | MULTI COUNT                              | Print quantity   |                           | 1 - 999  |   | 1         |   |
| G            | EXPOSURE<br>(2-8 IF A: 14-19)            | THROUGH  | Select of exposure mode   | No process (through)   | Pattern 14 - 19: 2 - 8<br>Other than the above: 1 - 8 | 1         | 8 (STANDARD DITHER)                                     |
|              |  | CHAR/PIC   |                           | Text/Printed Photo   |   | 2         |   |
|              |  | CHAR/PRPIC   |                           | Text/ Photograph   |   | 3         |   |
|              |  | CHAR   |                           | Text   |   | 4         |   |
|              |  | PRINT PIC  |                           | Printed Photo  |   | 5         |   |
|              |  | PRINT PAPER  |                           | Photograph   |   | 6         |   |
|              |  | MAP  |                           | Map  |   | 7         |   |
|              |  | STANDARD DITCH   |                           | Dither without correction  |   | 8         |   |
| H            | PAPER                                    | MFT  | Paper feed tray selection | Manual paper feed  | 1 - 8   | 1         | Select a paper feed tray with A3 (11 X 17) paper in it. |
|              |  | CS 1   |                           | Cassette 1   |   | 2         |   |
|              |  | CS 2   |                           | Cassette 2   |   | 3         |   |
|              |  | CS 3   |                           | Cassette 3   |   | 4         |   |
|              |  | CS 4   |                           | Cassette 4   |   | 5         |   |
|              |  | LCC1   |                           | LCC1   |   | 6         |   |
|              |  | LCC2   |                           | LCC2   |   | 7         |   |
|              |  | LCC3   |                           | LCC3   |   | 8         |   |
| I            | DUPLEX                                   | YES  | Select of duplex print    | Yes  | 0 - 1   | 0         | 0   |
|              |  | NO   |                           | No   |   | 1         |   |
| J            | PAPER TYPE                               | PLAIN  | Select of paper type      | Plain paper  | 1 - 4   | 1         | 1 (PLAIN)   |
|              |  | HEAVY  |                           | Heavy paper  |   | 2         |   |
|              |  | OHP  |                           | OHP  |   | 3         |   |
|              |  | ENVELOPE   |                           | Envelope   |   | 4         |   |

- 3) Select a paper feed tray with A3 (11 X 17) paper in it.
- 4) Press [EXECUTE] button.  
The grid pattern image is printed.
- 5) Check to confirm that the printed grid pattern is virtually in parallel with the paper edges, and put the position marks A and B on the front and the rear side of the front surface and the back surface of paper.





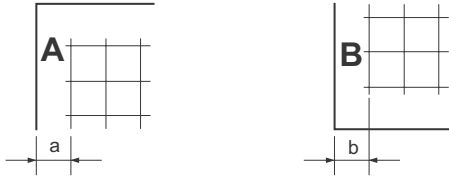
- 6) Make a copy of the adjustment pattern made in the above procedure on A3 (11 X 17) paper in the DSPF duplex mode, and check for any image distortion (skew). (Set the adjustment pattern on the DSPF paper feed tray so that the marked side is on the lead edge side.)

Check in one of the following methods:

**[Check method 1]**

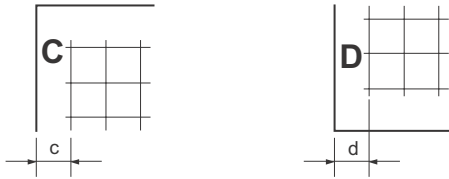
(Front side)

Condition that should be satisfied:  $|a-b| \leq 1 \text{ mm}$



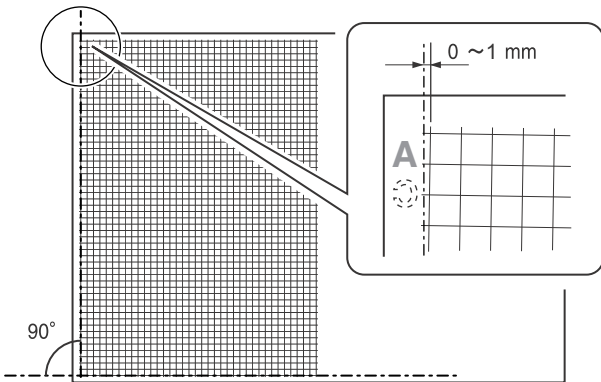
(Back side)

Condition that should be satisfied:  $|c-d| \leq 1 \text{ mm}$



**[Check method 2]**

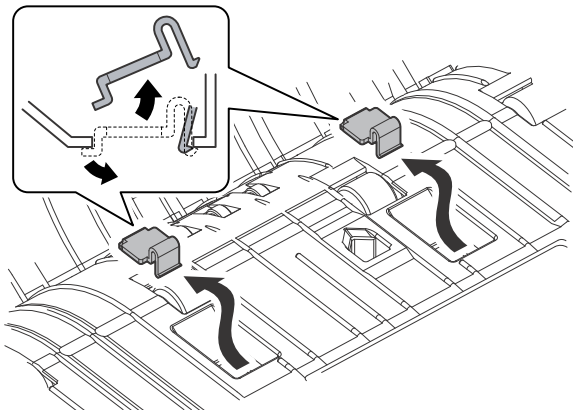
Check to confirm that the right angle degrees of the print lines in the main scanning direction are within 1.0mm with the paper longitudinal direction print line as the reference.



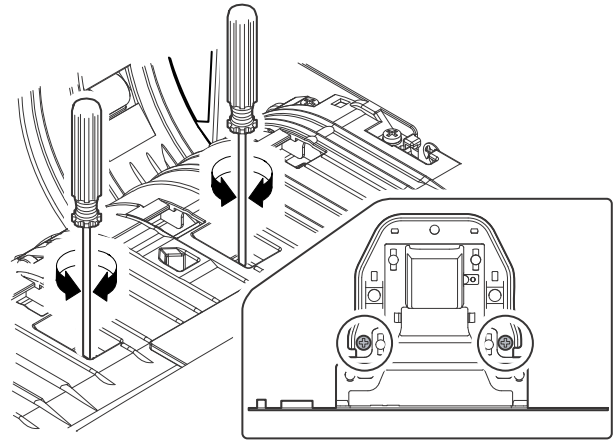
If the back surface copy image satisfies the above condition the front surface copy image does not, go to "ADJ 5B DSPF skew adjustment (Front surface mode)."

If the back surface copy image does not satisfy the above condition, perform the following procedure.

- 7) Open the upper cover of the DSPF unit, and remove the protection cap.



- 8) Turn the DSPF skew adjustment screw on the CCD unit to minimize the skew.



When the adjustment screw is turned by 180 degrees, the skew is changed by about 0.5mm.

|   |   |
|---|---|
| When the main scanning direction print line inclines to the left (Adjustment pattern $c < d$ )  | Turn the DSPF skew adjustment screw A counterclockwise, or turn the adjustment screw B clockwise. |
| When the main scanning direction print line inclines to the right (Adjustment pattern $c > d$ ) | Turn the DSPF adjustment screw A clockwise, or turn the adjustment screw B counterclockwise.      |

**Note:**

Turn the DSPF skew adjustment screw within the range of one turn (360 degrees) clockwise or counterclockwise. If the screw is turned further than 1 turn, an image may not be copied.

Note that the DSPF skew adjustment screws A and B must be adjusted equally.

For example, If screw a is turned clockwise and the adjustment doesn't work, shouldn't screw a be turned back to the original position and then screw B be turned in the opposite direction.

Repeat the procedures 6 thru 9 until a satisfactory result is obtained.

## ADJ 6 Scan image focus adjustment

### 6-A Image focus adjustment (Document table mode/ DSPF front surface mode)

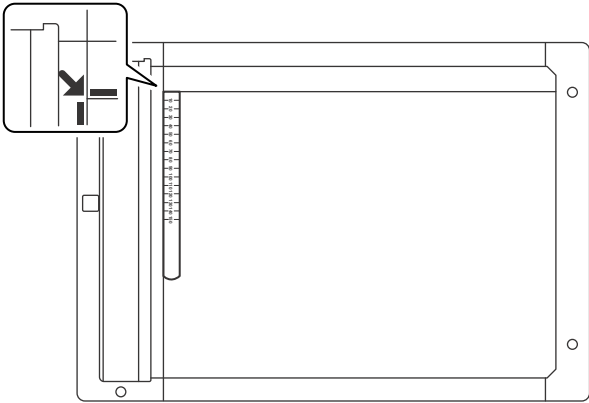
This adjustment is needed in the following situations:

- \* The CCD unit has been removed from the machine.
- \* The CCD unit has been replaced.
- \* When the focus of a copy and a scan image in the document table mode or in the DSPF front surface mode is improper.
- \* When the copy magnification ratio of a copy or a scan image in the main scanning direction is improper.

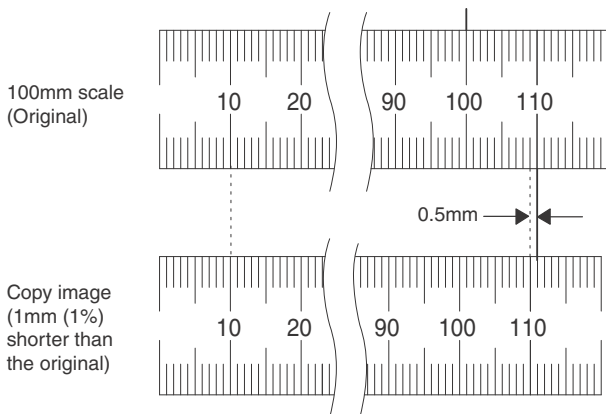
- 1) Enter the Sim. 48-1 mode.
- 2) Set the adjustment item of CCD (MAIN) and SPF (MAIN) to 50 (default).

Select the adjustment item with the scroll button, and enter the adjustment value with 10-key and press [OK] key.

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



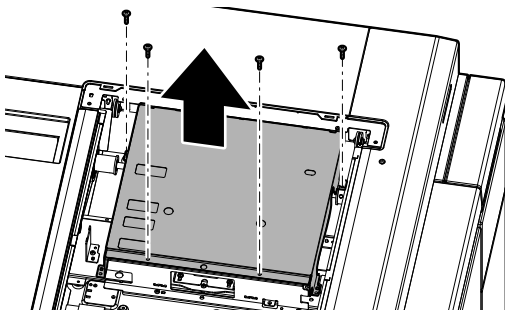
- 4) Make a normal copy on A4 paper.  
Press [CLOSE] key to jump from the simulation mode to the copy mode, and make a copy.
- 5) Compare the scale image length on the copy paper and the actual scale length.  
If the copy magnification ratio is within the specification ( $100 \pm 0.5\%$ ) and the resolution is satisfactory, the adjustment is not required.



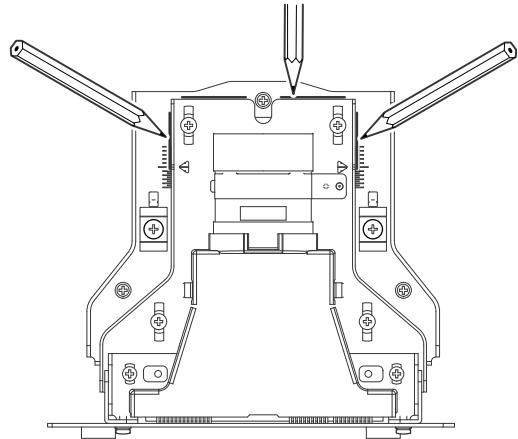
Example: Fit the scale of 10mm with that on the copy scale image, and compare them.

If the copy magnification ratio is not within the specified range, perform the following procedure.

- 6) Remove the document table glass.  
7) Remove the dark box cover.

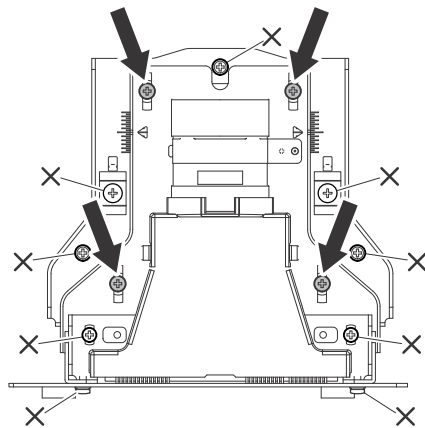


- 8) To prevent the optical axis shift of the CCD unit, mark on the CCD unit base as shown in the figure below.



Perform this procedure when replacing the CCD unit, too.

- 9) Loosen the CCD unit fixing screw.



Never loosen the screws marked with X.

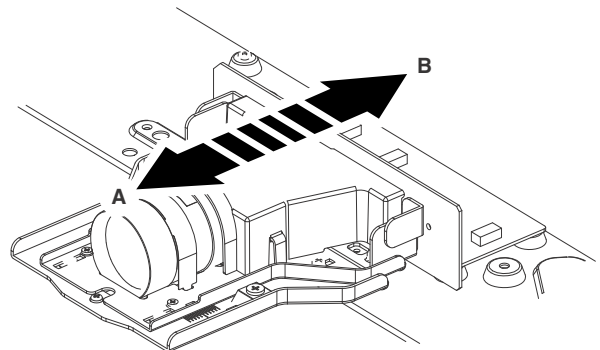
If one of these screws is loosened, the CCD unit base position and angle may be changed. In this case, the adjustment cannot be made in the field, and the whole scanner unit may have to be replaced.

- 10) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the mounting position.

When the copy image is longer than the original, move the unit in the direction of B. If the copy image is shorter than the original, move the unit in the direction of A.

One scale of mark-off line corresponds to a change of 0.2%. At that time, fix the CCD unit so that it is in parallel with the scales on the front and the rear frame side of the CCD unit base.

Fix so that the CCD unit is in parallel with the marked line made in the procedure 9).



- 11) Fix the CCD unit, and make a normal duplex copy on A4 (11 X 8.5) paper in the DSPF mode in the similar way as the procedures 3 and 4. Check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ) and that a satisfactory resolution is obtained.  
Repeat the procedures 9 thru 11 until the above conditions are satisfied.

**Note:**

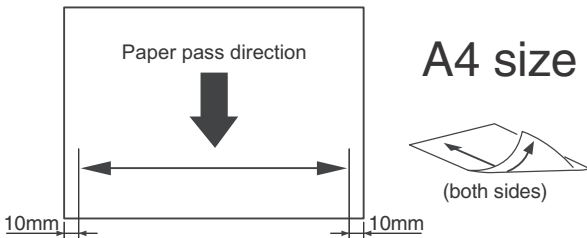
Check to confirm that the copy magnification ratio is adjusted within the specified range ( $100 \pm 0.5\%$ ) by changing the CCD unit fixing position when the adjustment value of Sim. 48-1 is 50 on the optical system structure and that the satisfactory result is obtained.  
Check the document off-center.

**6-B Image focus adjustment (DSPF back surface mode)**

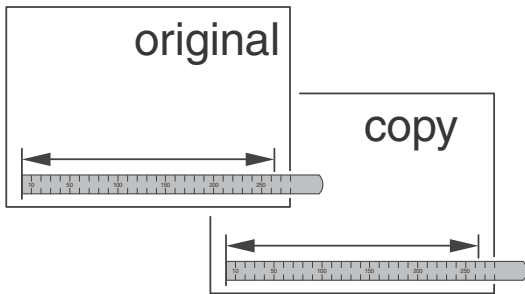
This adjustment is needed in the following situations:

- \* When the DSPF CCD unit is disassembled.
- \* When the DSPF CCD unit is replaced.
- \* When the focus of a copy or a scan image in the DSPF back surface mode is improper.
- \* When the copy magnification ratio of a copy or a scan image in the main scanning direction in the DSPF back surface mode is improper.

- 1) Enter the Sim. 48-1 mode.
- 2) Set the adjustment item of SPFB (MAIN) to 50 (default).  
Select the adjustment item with the scroll button, and enter the adjustment value with 10-key and press [OK] key.
- 3) Make an adjustment chart with A4 (11 X 8.5) paper as shown below.  
Draw a line at 10mm inside from the paper edge in parallel with the paper transport direction.



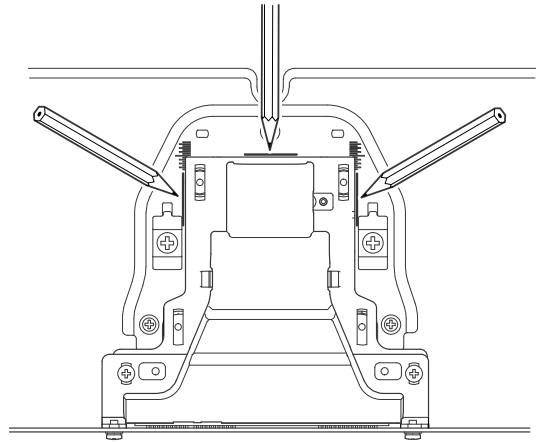
- 4) Place the adjustment chart on the DSPF document tray so that the drawn line comes on the lower side.
- 5) Make a normal duplex copy on A4 (11 X 8.5) paper in the DSPF mode.
- 6) Measure the length of the image on the copy paper (back surface) and the adjustment chart image.  
If the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ) and the resolution is satisfactory, the adjustment is not required.



If the copy magnification ratio is not within the specified range, perform the following procedure.

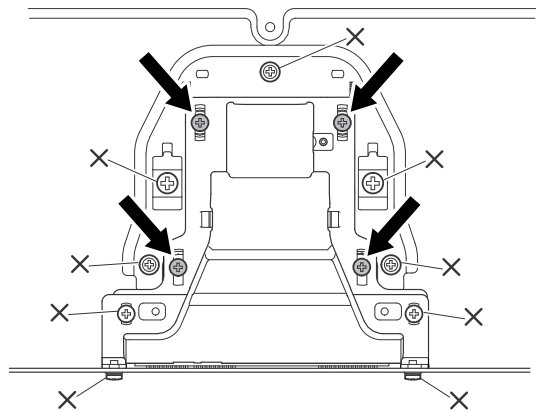
- 7) Remove the DSPF optical unit.  
For disassembly, refer to "[C] DSPF" section.

- 8) To prevent the optical axis shift of the DSPF optical unit, mark the DSPF CCD unit base as shown in the figure below.



This procedure must be performed when replacing the DSPF CCD unit, too.

- 9) Loosen the fixing screw of the DSPF optical unit.



Never loosen the screws marked with X.

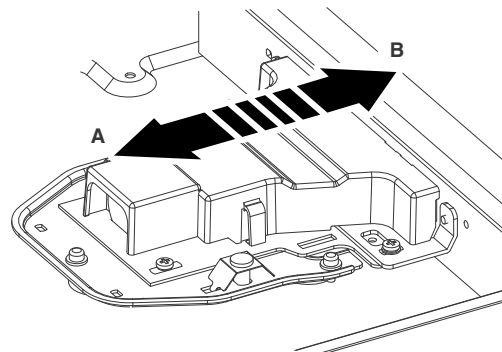
If one of these screws is loosened, the CCD unit base position and angle may be changed. In this case, the adjustment cannot be made in the field, and the whole DSPF optical unit must be replaced.

- 10) Slide the DSPF CCD unit in the arrow direction (CCD sub scanning direction) to change the mounting position.

If the copy image is longer than the original, shift the unit in the direction of B. If the copy image is shorter than the original, shift the unit in the direction of A.  
Each line of the scale corresponds to a change of 0.2 %.

At that time, secure so that the DSPF CCD unit is in parallel with the scales on the front and the back frame sides of the DSPF CCD unit.

Secure so that the DSPF CCD unit is in parallel with the marked line made in the procedure 8).



- Assemble the DSPF optical unit to the DSPF unit, and make a normal duplex copy on A4 (11 X 8.5) paper in the DSPF duplex mode. Check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ) and the resolution is satisfactory.

Repeat the procedures 4 thru 11 until the above conditions are satisfied.

**Note:**

Check to confirm that the copy magnification ratio is adjusted within the specified range ( $100 \pm 0.5\%$ ) by changing the CCD unit fixing position when the adjustment value of Sim. 48-1 is 50 on the optical system structure and that the satisfactory result is obtained.

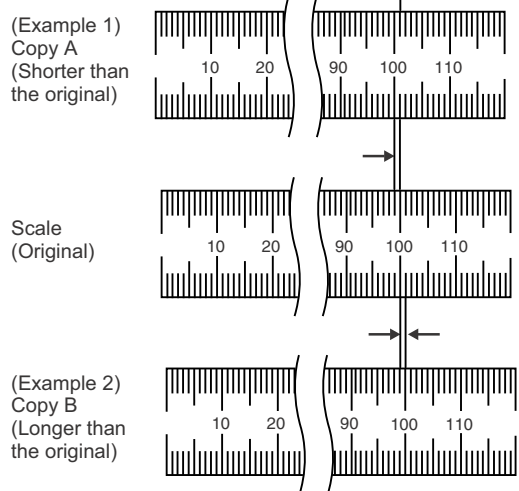
Check the document off-center.

- Make a normal copy in the document table mode, and check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ )

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

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



When the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ), this adjustment is not required.

When the copy magnification ratio is not within the specified range ( $100 \pm 0.5\%$ ), perform the following procedure.

- Change the CCD (MAIN) adjustment value of Sim. 48-1. When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased. A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%. Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ( $100 \pm 0.5\%$ ).

## ADJ 7 Scan image magnification ratio adjustment

### 7-A Main scanning direction image magnification ratio adjustment (Document table mode)

This adjustment is required in the following cases:

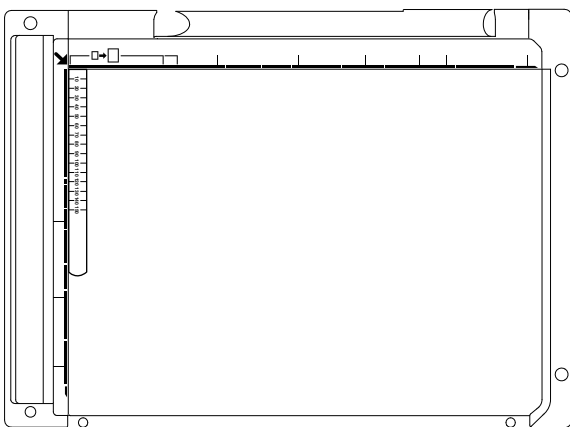
- \* When the copy magnification ratio of a scan image in the main scanning direction in the document table mode is improper.
- \* When the CCD unit is replaced.
- \* When the scanner motor unit is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

**(Note)**

If the image magnification ratio adjustment value in the main scanning direction is changed from the default, moire may be generated easily. Therefore, it is not advisable to change the value unless it is definitely required.

Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been properly adjusted.

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



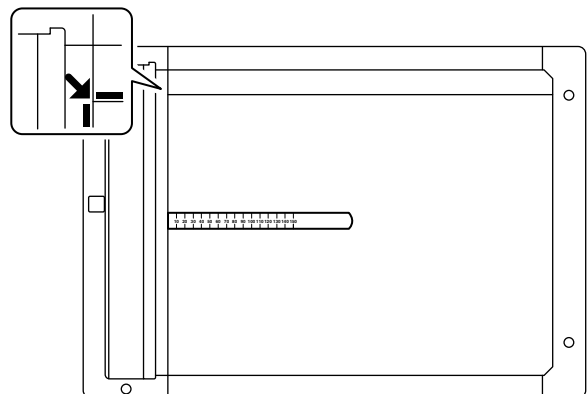
- Enter the Sim. 48-1 mode.

### 7-B Sub scanning direction image magnification ratio adjustment (Document table mode)

This adjustment is required in the following cases:

- \* When the copy magnification ratio of a scan image in the sub scanning direction in the document table mode is improper.
- \* When the scanner motor unit is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

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

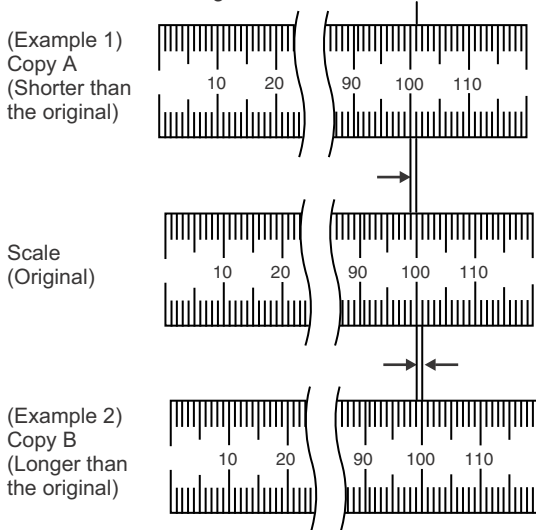


- 2) Enter the Sim. 48-1 mode.
- 3) Make a normal copy in the document table mode, and check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ )

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

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



When the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ), this adjustment is not required.

When the copy magnification ratio is not within the specified range ( $100 \pm 0.5\%$ ), perform the following procedure.

- 4) Change the CCD (SUB) adjustment value of Sim. 48-1.  
Enter the adjustment value with 10-key, and press [OK] button or [START] button.

When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased.

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

Repeat the procedures 3 and 4 until the scan image magnification ratio is within the specified range ( $100 \pm 0.5\%$ ).

### 7-C Main scanning direction image magnification ratio adjustment (DSPF front surface mode)

This adjustment is required in the following cases:

- \* When the copy magnification ratio of a scan image in the main scanning direction in the DSPF front surface mode is improper.
- \* When the CCD unit is replaced.
- \* When the scanner motor unit is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.
- \* When the MFP control PWB is replaced.
- \* When the EEPROM on the MFP control PWB is replaced.

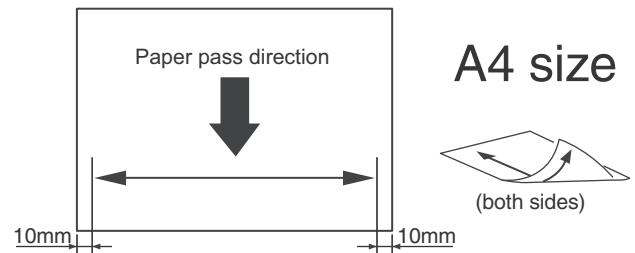
#### (Note)

If the image magnification ratio adjustment value in the main scanning direction is changed from the default, moire may be generated easily. Therefore, it is not advisable to change the value unless it is definitely required.

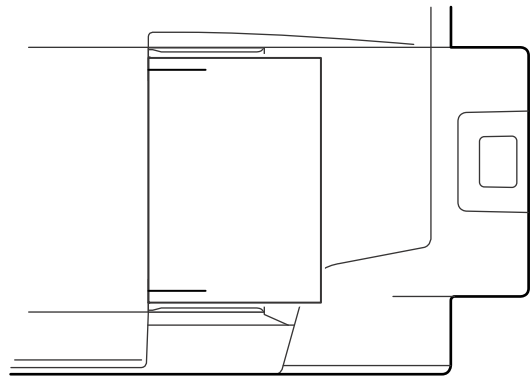
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown below.

Draw a line at about 10mm from the paper edge in parallel with the paper transport direction.



- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the upper side.

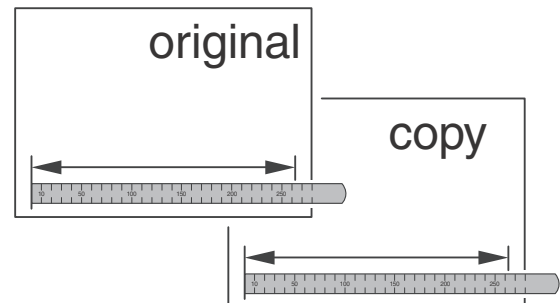


- 3) Enter the Sim. 48-1 mode.
- 4) Make a normal copy on A4 (11 X 8.5) paper in the DSPF duplex mode, and check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ )

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

$$= (\text{Copy size} - \text{Original size}) / \text{Original size} \times 100 (\%)$$



When the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ), this adjustment is not required.

When the copy magnification ratio is not within the specified range ( $100 \pm 0.5\%$ ), perform the following procedure.

- 5) Change the SPF (MAIN) adjustment value of Sim. 48-1.  
Enter the adjustment value with 10-key, and press [OK] button or [START] button.

When the adjustment value is increased, the scan image magnification ratio in the main scanning direction is increased.

A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%.

Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ( $100 \pm 0.5\%$ ).

## 7-D Main scanning direction image magnification ratio adjustment (DSPF back surface mode)

This adjustment is required in the following cases:

- \* When the copy magnification ratio of the scan image in the main scanning direction in the DSPF back surface mode is improper.
- \* When the CCD unit is replaced.
- \* When the scanner motor unit is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.
- \* When the MFP control PWB is replaced.
- \* When the EEPROM on the MFP control PWB is replaced.

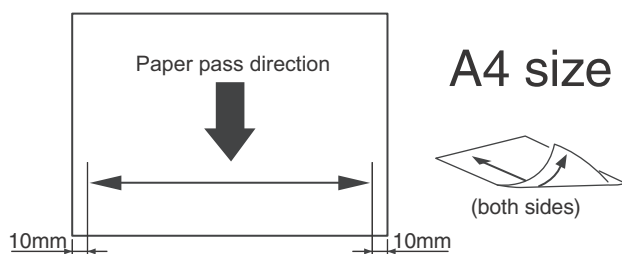
### (Note)

If the image magnification ratio adjustment value in the main scanning direction is changed from the default, moire may be generated easily. Therefore, it is not advisable to change the value unless it is definitely required.

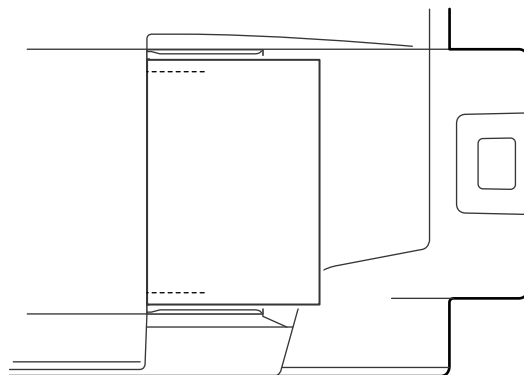
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown below.

Draw a line at about 10mm from the paper edge in parallel with the paper transport direction.



- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the lower side.



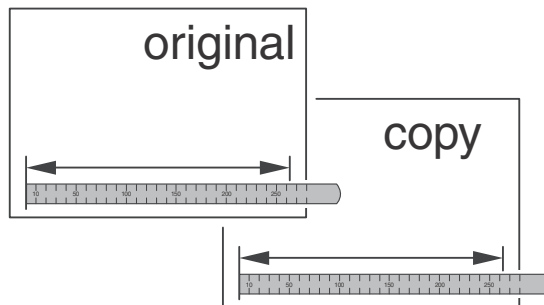
- 3) Enter the Sim. 48-1 mode.

- 4) Make a normal copy on A4 (11 X 8.5) paper in the DSPF duplex mode, and check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ).

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

### Copy magnification ratio

$$= (\text{Copy size} - \text{Original size}) / \text{Original size} \times 100 (\%)$$



When the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ), this adjustment is not required.

When the copy magnification ratio is not within the specified range ( $100 \pm 0.5\%$ ), perform the following procedure.

- 5) Change the SPFB (MAIN) adjustment value of Sim. 48-1. Enter the adjustment value with 10-key, and press [OK] button or [START] button.

When the adjustment value is increased, the scan image magnification ratio in the main scanning direction is increased.

A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.02%.

Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ( $100 \pm 0.5\%$ ).

## 7-E Sub scanning direction image magnification ratio adjustment (DSPF mode)

This adjustment is required in the following cases:

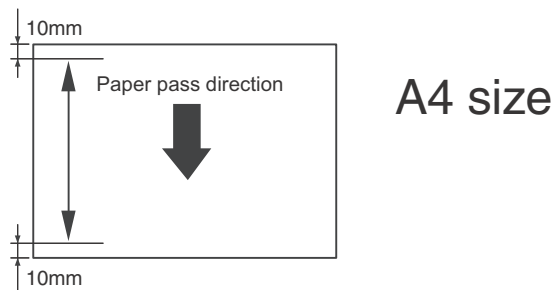
- \* When the copy magnification ratio of the scan image in the sub scanning direction in the DSPF mode is improper.
- \* When the CCD unit is replaced.
- \* When the scanner motor unit is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.
- \* When the MFP control PWB is replaced.
- \* When the EEPROM on the MFP control PWB is replaced.

### (Note)

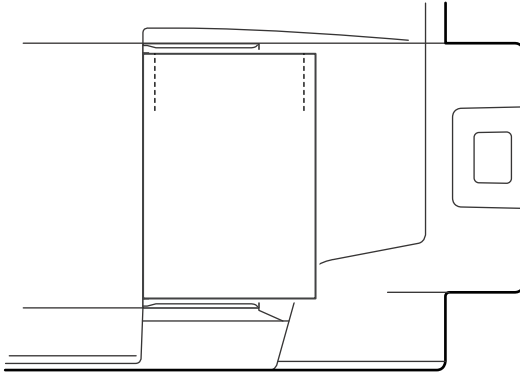
Before execution of this adjustment, check to confirm that the focus adjustment (CCD unit mounting position adjustment) has been normally completed.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown below.

Draw a line at about 10mm from the paper edge in the right angle with the paper transport direction.



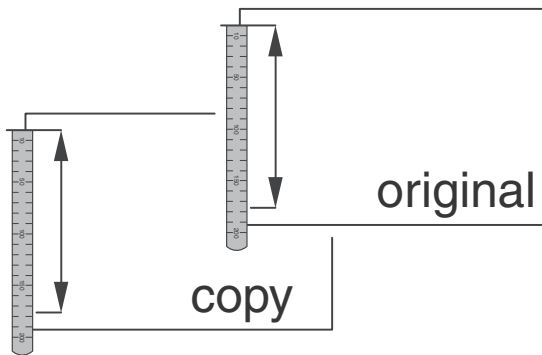
- 2) Place the adjustment chart on the DSPF document tray so that the drawn line is on the lower side.



- 3) Enter the Sim. 48-1 mode.
- 4) Make a normal copy on A4 (11 X 8.5) paper in the DSPF duplex mode, and check to confirm that the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ )  
Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

**Copy magnification ratio**

$$= (\text{Copy size} - \text{Original size}) / \text{Original size} \times 100 (\%)$$



When the copy magnification ratio is within the specified range ( $100 \pm 0.5\%$ ) and the resolution is satisfactory, this adjustment is not required.

When the copy magnification ratio is not within the specified range ( $100 \pm 0.5\%$ ), perform the following procedure.

- 5) Change the SPF (SUB) adjustment value of Sim. 48-1  
Enter the adjustment value with 10-key, and press [OK] button or [START] button.  
When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is increased.  
A change in the adjustment value by 1 corresponds to a change in the scan image magnification ratio by about 0.1%.  
Repeat the procedures 4 and 5 until the scan image magnification ratio is within the specified range ( $100 \pm 0.5\%$ ).

**(Enlargement/reduction scan image magnification ratio correction)**

When the scan image magnification ratio is set to 100%, the ratio is within the specified range but when the scan image magnification ratio is set to reduction or enlargement, the ratio is unsatisfactory, use Sim. 48-5 to adjust the scan image magnification ratio for reduction or enlargement.

Only the scan image magnification ratio in the sub scanning direction can be adjusted.

**(Adjustment procedure)**

- 1) Enter the Sim. 48-5 mode.
- 2) Select a mode to be adjusted with the scroll button

| Display/Item | Content  | Setting range | Default |
|--------------|--|---------------|---------|
| A MR (HI)    | Scanner motor rotating speed (100% 300dpi mode)                    | 1 - 99        | 50      |
| B MR (MID)   | Scanner motor rotating speed (100% 600dpi mode)                    | 1 - 99        | 50      |
| C MR (LO)    | Scanner motor rotating speed (Enlargement 600dpi mode)             | 1 - 99        | 50      |
| D SPF (HI)   | Document feed (SPF) motor rotating speed (100% 300dpi mode)        | 1 - 99        | 50      |
| E SPF (MID)  | Document feed (SPF) motor rotating speed (100% 600dpi mode)        | 1 - 99        | 50      |
| F SPF (LO)   | Document feed (SPF) motor rotating speed (Enlargement 600dpi mode) | 1 - 99        | 50      |

- 3) Enter the adjustment value with 10-key, and press [OK] button.  
When the adjustment value is increased, the scan image magnification ratio in the sub scanning direction is decreased.
- 4) Select the copy mode, and make a copy at the maximum enlargement ratio and the maximum reduction ratio. Check the scan image magnification ratio.  
(Make a copy in the mode corresponding to the adjustment mode.)  
Repeat the above procedures until the satisfactory scan image magnification ratio is obtained.

**ADJ 8 Print/scan image off-center, lead edge position adjustment (Manual adjustment)**

The off-center adjustment is made by the mechanical method or by the software method with Sim. 50-10.

Basically the software method with Sim. 50-10 is used for the adjustment. If the software method cannot be performed, the mechanical method is used.

Since the mechanical method of the off-center adjustment provides lower accuracy, it is advisable to perform the mechanical method of the off-center adjustment first and then to perform the software method of the off-center adjustment with Sim. 50-10.

For the 105/120cpm machines, since the offcenter and the lead edge position are adjusted by the automatic centering adjustment where the paper edge position is detected, there is basically no need to execute Sim. 50-10 adjustment items B - Y.

For the adjustment procedures, refer to 8-B.

**(Classification of off-center adjustments)**

- 1) The software method with the simulation (Print image off-center)
- 2) The method by changing the forward/backward direction of the paper feed unit (Paper off-center)
- 3) The software method with the simulation (Scan image off-center)

**(NOTE)**

When the manual paper feed unit (MX-MFX1) is installed, use this unit as the reference of the off-center adjustment.

The paper off-center of the manual paper feed unit (MX-MFX1) is used as the reference to perform the print image off-center adjustment and the other paper feed unit off-center adjustment.

This is because the manual paper feed unit (MX-MFX1) cannot perform the off-center adjustment mechanically.

| SIM | Item content | Display item  | Min. value   | Max. value   | Default value |                    | Item         |    |
|-----|--------------|---|--------------|--------------|---------------|--------------------|--------------|----|
|     |              |   |              |              | 90cpm machine | 105/120cpm machine |              |    |
| 50  | 10           | Main scan print magnification ratio   | BK-MAG       | 60           | 140           | 100                | 100          | A  |
|     |              | (Print off center) Manual paper feed adjustment value   | MAIN-MFT     | 1            | 99            | 50                 | 50           | B  |
|     |              | (Print off center) Tray 1 adjustment value  | MAIN-CS1     | 1            | 99            | 50                 | 50           | C  |
|     |              | (Print off center) Tray 2 adjustment value  | MAIN-CS2     | 1            | 99            | 50                 | 50           | D  |
|     |              | (Print off center) Tray 3 adjustment value  | MAIN-CS3     | 1            | 99            | 50                 | 50           | E  |
|     |              | (Print off center) Tray 4 adjustment value  | MAIN-CS4     | 1            | 99            | 50                 | 50           | F  |
|     |              | (Print off center) LCC adjustment value   | MAIN-LCC     | 1            | 99            | 50                 | 50           | G  |
|     |              | Print off center adjustment value (LCT1)  | MAIN-LCT1    | 1            | 99            | 50                 | 50           | H  |
|     |              | Print off center adjustment value (LCT2)  | MAIN-LCT2    | 1            | 99            | 50                 | 50           | I  |
|     |              | Print off center adjustment value (LCT3)  | MAIN-LCT3    | 1            | 99            | 50                 | 50           | J  |
|     |              | Print off center adjustment value (LCT4)  | MAIN-LCT4    | 1            | 99            | 50                 | 50           | K  |
|     |              | Print off center adjustment value (LCT_manual feed)   | MAIN-LCT-MFT | 1            | 99            | 50                 | 50           | L  |
|     |              | (Print off center) ADU adjustment value   | MAIN-ADU     | 1            | 99            | 50                 | 50           | M  |
|     |              | (Lead edge adjustment registration motor ON timing) Tray 1 adjustment value                           | SUB-CS12     | 1            | 99            | 50                 | 50           | N  |
|     |              | (Lead edge adjustment registration motor ON timing) Desk adjustment value                             | SUB-CS34     | 1            | 99            | 50                 | 50           | O  |
|     |              | (Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value                          | SUB-LC       | 1            | 99            | 50                 | 50           | P  |
|     |              | (Lead edge adjustment registration motor ON timing) Manual paper feed adjustment value                | SUB-MFT      | 1            | 99            | 50                 | 50           | Q  |
|     |              | (Lead edge adjustment registration motor ON timing) ADU adjustment value                              | SUB-ADU      | 1            | 99            | 50                 | 50           | R  |
|     |              | (Lead edge adjustment registration motor ON timing) Main unit tray adjustment value (Heavy paper A)   | SUB-CS-HV-A  | 1            | 99            | 45                 | 50           | S  |
|     |              | (Lead edge adjustment registration motor ON timing) Main unit tray adjustment value (OHP)             | SUB-HV-OHP   | 1            | 99            | 50                 | 50           | T  |
|     |              | (Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value (Heavy paper A)          | SUB-LC-HV-A  | 1            | 99            | 45                 | 50           | U  |
|     |              | (Lead edge adjustment registration motor ON timing) LCC/LCT adjustment value (Heavy paper B)          | SUB-LC-HV-B  | 1            | 99            | 45                 | 50           | V  |
|     |              | (Lead edge adjustment registration motor ON timing) Manual feed tray adjustment value (Heavy paper A) | SUB-MFT-HV-A | 1            | 99            | 45                 | 50           | W  |
|     |              | (Lead edge adjustment registration motor ON timing) Manual feed tray adjustment value (Heavy paper B) | SUB-MFT-HV-B | 1            | 99            | 45                 | 50           | X  |
|     |              | (Lead edge adjustment registration motor ON timing) ADU adjustment value (Heavy paper A)              | SUB-ADU-HV-A | 1            | 99            | 45                 | 50           | Y  |
|     |              | Number of print   | MULTI COUNT  | 1            | 999           | 1                  | 1            | Z  |
|     |              | Tray selection  | PAPER        | 1            | 9             | 3                  | 3            | AA |
|     |              | Duplex print selection  | DUPLEX       | 0            | 1             | 1                  | 1            | AB |
|     |              | Print position correction_Reference correction amount (Off-center direction)                          | MAIN-STD     | 1            | 99            | 50                 | 50           | AC |
|     |              | Print position correction_Reference correction amount (Transport direction)                           | SUB-STD      | 1            | 99            | 50                 | 50           | AD |
|     |              | Print position correction_Back surface shift correction amount (Transport direction)                  | SFT          | 0            | 3             | 1                  | 1            | AE |
|     |              | Print position correction_Correction control ON/OFF switch (Off-center direction)                     | SWT1         | 0(OFF)       | 1(ON)         | 0(OFF)*            | 1(ON)        | AF |
|     |              | Print position correction_Correction control ON/OFF switch (Transport direction)                      | SWT2         | 0(OFF)       | 1(ON)         | 0(OFF)*            | 1(ON)        | AG |
|     |              | Print position correction_Correction control mode select switch                                       | SWT3         | 0(OFF)       | 1(ON)         | 0(OFF)*            | 0(OFF)       | AH |
|     |              | Print position correction_Correction control mode select switch (Off-center direction)                | SWT4         | 0(OFF)       | 1(ON)         | 0(OFF)*            | 0(OFF)       | AI |
|     |              | Print position correction_POS adjustment mode select switch   | SWT5         | 0 (STANDARD) | 1(POS)        | 0 (STANDARD)*      | 0 (STANDARD) | AJ |

Heavy paper A: Heavy paper 1 - 2, Embossed paper, Label sheet, Tab sheet, Glossy paper

Heavy paper B: Heavy paper 3 - 4

\* Except 90cpm machine



## 8-A Print image off-center, lead edge position manual adjustment (Software adjustment) (90cpm machine)

This adjustment is required in the following cases:

- \* When the LSU is replaced or removed.
- \* When the paper feed tray is replaced.
- \* When the paper feed tray section is disassembled.
- \* When "ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)" is performed.
- \* When the manual paper feed tray is replaced.
- \* When the manual paper feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the resist roller section is disassembled.
- \* When the U2 trouble occurs.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

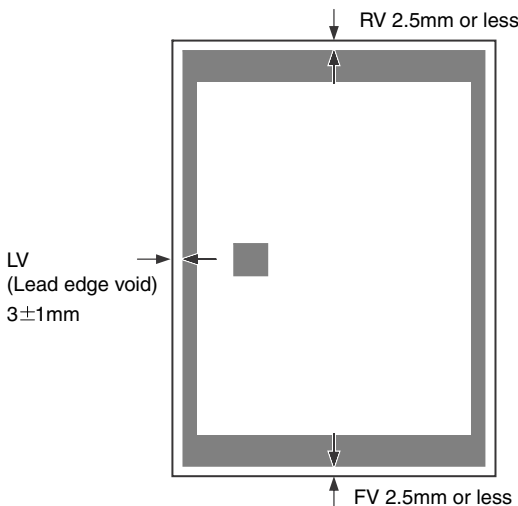
### (Note)

Before execution of this adjustment, check to confirm that the following item is properly adjusted.

"ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)" has been properly adjusted.

- 1) Enter the Sim. 50-10 mode.
- 2) Select a paper feed source of the adjustment target with the scroll button.
- 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2).
- 4) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 5) Check the image position on the adjustment pattern.

Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.



RV: REAR VOID AREA  
 FV: FRONT VOID AREA  
 $RV + FV \leq 5.0\text{mm}$   
 $RV = 2.5\text{mm or less}$   
 $FV = 2.5\text{mm or less}$

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

- 6) Enter the adjustment value, and press [EXECUTE] button.  
When [EXECUTE] button is pressed, the adjustment pattern is printed.  
When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.  
A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.  
Repeat the procedures 4 thru 6 until the conditions of the procedure 5) are satisfied.

## 8-B Print image off-center, lead edge position manual adjustment (Software adjustment) (105/120cpm machine)

This adjustment is required in the following cases:

- \* When the LSU is replaced or removed.
- \* When the paper feed tray is replaced.
- \* When the paper feed tray section is disassembled.
- \* When "ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)" is performed.
- \* When the manual paper feed tray is replaced.
- \* When the manual paper feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the resist roller section is disassembled.
- \* When the U2 trouble occurs.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.
- \* Since the 105/120-sheet machine is provided with the automatic centering adjustment, the values of SUB-\*\*\* and MAIN=\*\* of SIM50-10: (B - Y) are not basically changed.

If, however, it is required to adjust the balance of the off-center position, the values of the above items are changed.

Because the off-center position is adjusted by detecting the paper edge position in the automatic centering adjustment (automatic off-center position adjustment).

### (Note)

Before execution of this adjustment, check to confirm that the following item is properly adjusted.

ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction) has been properly adjusted.

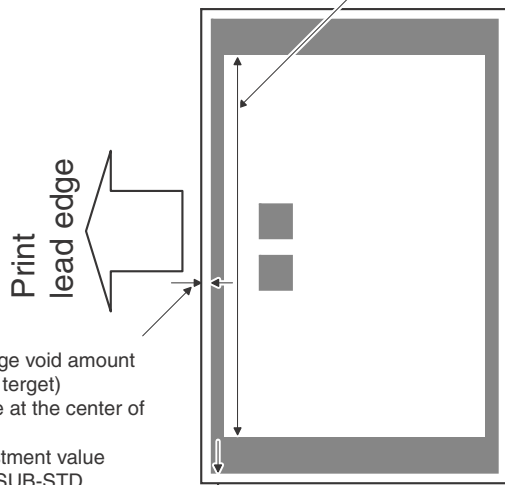
- 1) Enter the Sim. 50-10 mode.
- 2) Select a paper feed source "3" (CS2).
- 3) Set A4 (11 X 8.5) paper on the CS2 paper feed tray.
- 4) Change SWT5 to "1" and press [EXECUTE] button. (Either of SWT1 or SWT2 should be "1.")  
The adjustment pattern is printed.

### NOTE:

Since the paper position is detected by the CIS and the lead edge sensor during printing, it must be an adjustment value for the printed adjustment pattern.

- 5) Check to confirm that the inside dimension of the printed half-tone pattern is  $240 \pm 0.5\text{mm}$ .  
If the above condition is not satisfied, follow and repeat the procedures of ADJ3B until a satisfactory result is obtained.
- 6) Measure the void area size of the adjustment pattern in the front/rear frame direction (F side void amount) and that in the transport direction (Lead edge void amount).  
Check to confirm that all the following conditions are satisfied.

Main scanning magnification ratio ( $240 \pm 0.5\text{mm}$ )  
 Measure the dimension near the inner frame line  
 and the paper lead edge in parallel with the line.  
 ⇒ Adjustment value A : BK-MAG



- Lead edge void amount (3.0mm target)  
 Measure at the center of paper.  
 ⇒ Adjustment value  
 AD : SUB-STD

- F side void amount (2.0mm target)  
 Measure at a position near the paper lead edge.  
 ⇒ Adjustment value  
 AC : MAIN-STD

### Calculation and input procedures of adjustment values

(Example) Lead edge void amount

- Measure by visual inspection.  
 → Measurement result: 3.5mm
- Calculate the shift amount.  
 The target value is the specification value (center value) of 3mm.  
 \* For the F side void amount, the target is 2mm.  
 →  $[3 - 3.5 = -0.5 \text{ (mm)}]$
- Calculate the adjustment value.  
 Subtract 5 from the shift amount of -0.5mm.  
 \* For the shift amount of 0.1mm, the adjustment value is varied by 1.  
 → When the current value is 50:  
 $[50 - 5 = 45]$
- Enter the adjustment value for SUB-STD.  
 → Enter the [45].

- Enter MAIN-STD (F side void) and SUB-STD (Lead edge void), and press OK button.  
 Enter the calculated adjustment values for the shift amount to MAIN-STD/SYB-STD, and press OK button. (The cursor can be used instead of the button.)

- After entering the adjustment values, print again and check to confirm that the avoid amounts are adjusted to the target range.

- Change SWT5 to "0" and terminate the adjustment.  
 \* If SWT5 is remained to "1," the automatic centering adjustment may malfunction.

### Automatic centering adjustment

#### \* General

The automatic centering adjustment is the print position correction control where the paper edge position is detected by sensors to correct variations in printing positions on the front and back surface of paper caused by different trays and paper types, shifting the print position to the proper position.

#### \* Automatic centering adjustment item

| SIM 50-10 | Item     | Content   | Default value |               |
|-----------|----------|---|---------------|---------------|
| AC        | MAIN-STD | Automatic centering adjustment_ Reference correction amount (Offcenter direction)           | 50            | -             |
| AD        | SUB-STD  | Automatic centering adjustment_ Reference correction amount (Transport direction)           | 50            | -             |
| AE        | SFT      | Automatic centering adjustment_ Back surface shift correction amount (Transport direction)  | 1             | -             |
| AF        | SWT1     | Automatic centering adjustment_ Correction control ON/OFF switch (Offcenter direction)      | 1             | ON            |
| AG        | SWT2     | Automatic centering adjustment_ Correction control ON/OFF switch (Transport direction)      | 1             | ON            |
| AH        | SWT3     | Automatic centering adjustment_ Correction control mode select switch                       | 0             | Standard mode |
| AI        | SWT4     | Automatic centering adjustment_ Correction control mode select switch (Offcenter direction) | 0             | Standard mode |
| AJ        | SWT5     | Automatic centering adjustment_ POS adjustment mode select switch                           | 0             | OFF           |

#### \* MAIN-STD/SUB-STD

This is the reference correction amount of the automatic centering adjustment, and is applied to all the trays and all the paper types.

#### \* SFT

Shift correction amount for an increase in the magnification ratio on the back surface. The printing position in the transport direction on the back surface is shifted.

The amount increases by 0.1mm in the transport direction for 1 scale of the SFT table.

SFT table

|                               |             | SIM adjustment value |               |     |     |
|-------------------------------|-------------|----------------------|---------------|-----|-----|
|                               |             | 0                    | 1             | 2   | 3   |
|                               |             | Not Limited          | SW1 (default) | SW2 | SW3 |
| Transport direction size (mm) | 216 or less | 0                    | 2             | 4   | 6   |
|                               | 297 or less | 0                    | 3             | 6   | 9   |
|                               | Or above    | 0                    | 4             | 8   | 12  |

#### \* SWT1/SWT2

Automatic centering adjustment correction control ON/OFF switch

#### \* SWT3

Correction control mode select switch

0: Standard mode (Correction control on the front/back surfaces independent from each other)

1: Front/back register priority mode (In order to correct by superposing the front and back surfaces, the back surface is corrected according to a shift on the front surface.)

\* SWT4

Correction control mode select switch (Offcenter direction)

0: Standard mode (The paper position under registration state is detected to shift the printing position properly.)

The printing position is corrected according to the paper position detected previously.

1: Real time correction mode (The paper position under registration state is detected to shift the printing position properly. The printing position is corrected according to the paper position detected currently.)

**NOTE:**

Since, in the real time correction mode, the paper under registration state is remained for correction of the printing position, the CPM is reduced.

\* SWT5

When the ADJ8B print image offcenter adjustment and the manual lead edge position adjustment (software adjustment) are executed, the switch is turned ON and the edge detection point (sensor reading value) which is used as the reference point for correction control is acquired.

Normally set to "0" and changed to "1" only when the above adjustment is executed.

**8-C Paper feed off-center manual adjustment (Manual paper feed unit) (MX-MF11) (Mechanical adjustment)**

This adjustment is needed in the following situations:

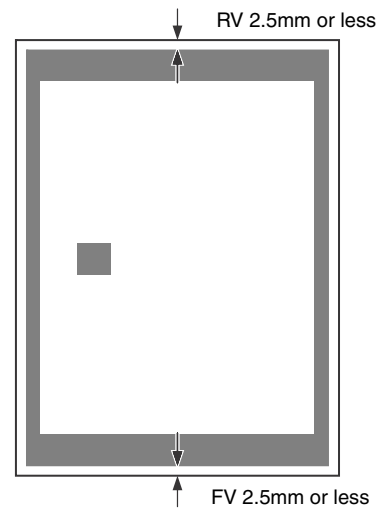
- \* When the manual paper feed tray is replaced.
- \* When the manual paper feed tray is disassembled.

- 1) Enter the Sim. 50-10 mode.
- 2) Select a paper feed source for an adjustment target with the scroll button.
- 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2.
- 4) Enter 50 as default value of off-center adjustment, and press [OK] button.
- 5) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 6) Check that the adjustment pattern image is printed in the correct position.  
When the adjustment pattern is printed virtually at the center, go to the procedure 10).  
If not, go to the procedure 7).
- 7) Turn the manual paper feed unit off-center adjustment screw to adjust the off-center.  
Adjust so that the adjustment pattern is virtually at the center.



When the off-center adjustment screw is turned clockwise, the paper position is shifted to the rear frame side. When it is turned counterclockwise, the paper is shifted to the front frame side.

- 8) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 9) Check the image position on the adjustment pattern.  
Perform the procedures 7 thru 9 until the adjustment pattern comes virtually at the center.
- 10) When the adjustment pattern comes virtually to the center by the adjustment, perform the fine adjustment with the simulation. (90cpm machine only)  
Enter the adjustment value, and press [EXECUTE] button.  
The adjustment pattern is printed.  
When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.  
A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.
- 11) Check that the adjustment pattern image is printed in the correct position.  
Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.



RV: REAR VOID AREA  
FV: FRONT VOID AREA  
 $RV + FV \leq 5.0 \text{ mm}$   
 $RV = 2.5\text{mm or less}$   
 $FV = 2.5\text{mm or less}$

Perform the procedures 10 and 11 until the above conditions are satisfied.

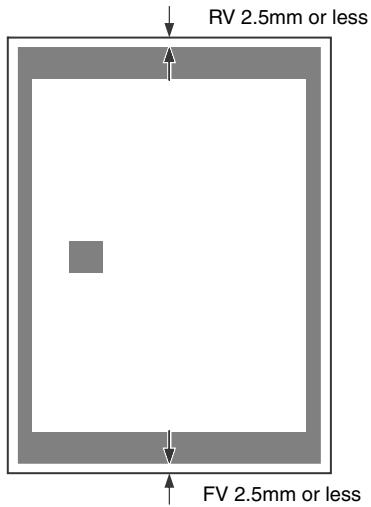
**8-D Paper feed off-center manual adjustment (No.1 - 4 paper feed unit in main unit) (Mechanical adjustment)**

This adjustment is needed in the following situations:

- \* When the paper feed tray section is replaced.
  - \* When the paper feed tray section is disassembled.
- 1) Enter the Sim. 50-10 mode.
  - 2) Select a paper feed source for an adjustment target with the scroll button.
  - 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2).
  - 4) Enter 50 as default value of off-center adjustment, and press [OK] button.
  - 5) Press [EXECUTE] key.  
The adjustment pattern is printed.
  - 6) Check that the adjustment pattern image is printed in the correct position.

When the adjustment pattern is printed virtually at the center, go to the procedure 10).

If not, go to the procedure 7).

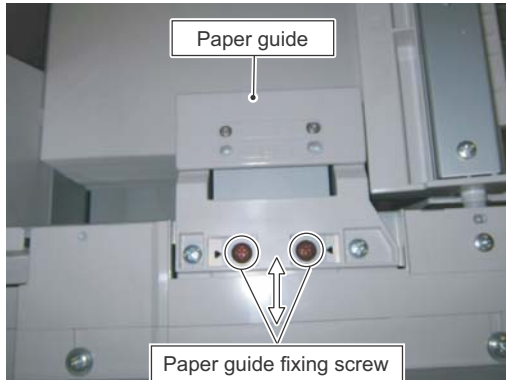


- 7) Shift the paper feed tray paper guide position and the paper feed tray base plate back and forth to adjust the off-center. Adjust so that the adjustment pattern comes virtually to the center.

**(No. 1 paper feed tray)**

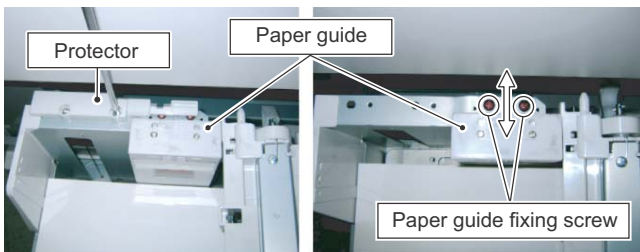
**\* Front frame side**

Loosen the paper guide fixing screw, and shift the paper guide position back and forth.



**\* Rear frame side**

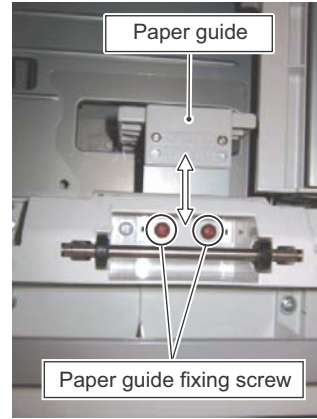
After removing the protector, loosen the paper guide fixing screw and shift the paper guide position back and forth.



**(No. 2 paper feed tray)**

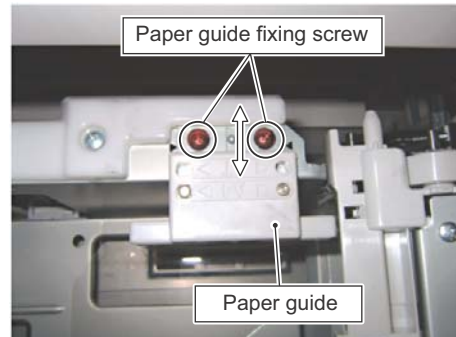
**\* Front frame side**

Loosen the paper guide fixing screw, and shift the paper guide position back and forth.



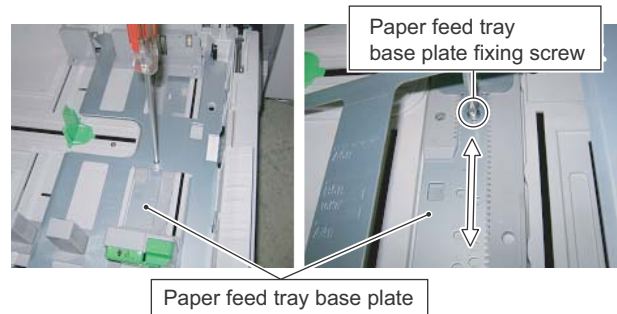
**\* Rear frame side**

Loosen the paper guide fixing screw, and shift the paper guide position back and forth.



**(No. 3 paper feed tray / No. 4 paper feed tray)**

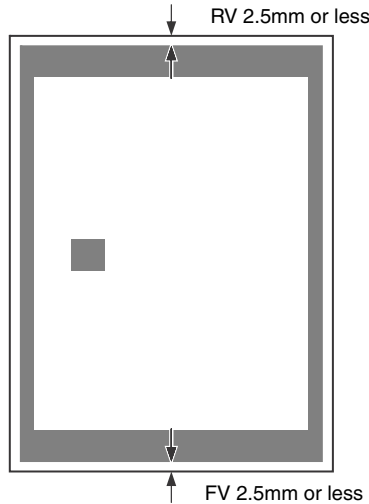
Loosen the paper feed tray base plate fixing screw, and shift the paper feed tray base plate position back and forth.



- 8) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 9) Check that the adjustment pattern image is printed in the correct position.  
Perform the procedures 7 thru 9 until the adjustment pattern comes virtually at the center.

- 10) When the adjustment pattern comes virtually to the center by the adjustment, perform the fine adjustment with the simulation. (90cpm machine only)
- Enter the adjustment value, and press [EXECUTE] button.
- The adjustment pattern is printed.
- When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.
- A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.

- 11) Check that the adjustment pattern image is printed in the correct position.
- Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.



RV: REAR VOID AREA  
 FV: FRONT VOID AREA  
 $RV + FV \leq 5.0\text{mm}$   
 $RV = 2.5\text{mm or less}$   
 $FV = 2.5\text{mm or less}$

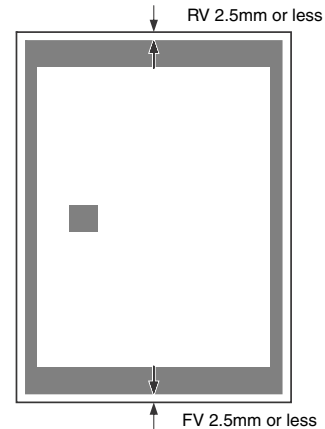
Perform the procedures 10 and 11 until the above conditions are satisfied.

### 8-E Paper feed off-center manual adjustment (LCC) (Mechanical adjustment)

This adjustment is needed in the following situations:

- \* When the paper feed tray section is replaced.
  - \* When the paper feed tray section is disassembled.
- 1) Enter the Sim. 50-10 mode.
  - 2) Select a paper feed source for an adjustment target with the scroll button.
  - 3) Set A4 (11 X 8.5) or A3 (11 X 17) paper on the paper feed tray selected in the procedure 2.
  - 4) Enter 50 as default value of off-center adjustment, and press [OK] button.
  - 5) Press [EXECUTE] key.
- The adjustment pattern is printed.

- 6) Check that the adjustment pattern image is printed in the correct position.
- When the adjustment pattern is printed virtually at the center, go to the procedure 10).
- If not, go to the procedure 7).



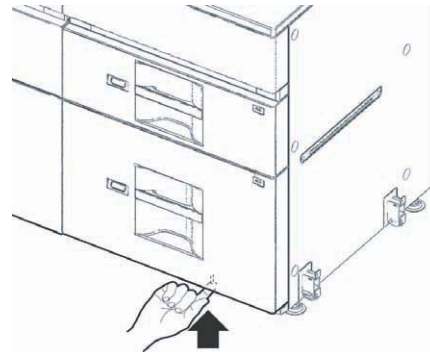
- 7) Shift the paper feed tray paper guide position and the paper feed tray base plate back and forth to adjust the off-center.
- Adjust so that the adjustment pattern is virtually at the center.

#### a) In the case of MX-LC13

Since the off-center adjustment has been made at shipping, there is normally no need to adjust. If the center is shifted, however, adjust with the simulation. If the shift is not recovered, perform the following steps to adjust.

- 1) Manually pull out the cassette.

Push the shaft at the bottom of the front cabinet to release the lock, and pull out the cassette.

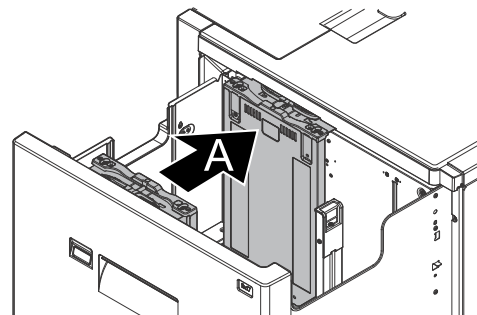


#### a. When shifted to the front side

When shifting the line of printing from the center of the paper in the direction A of arrow as shown below:

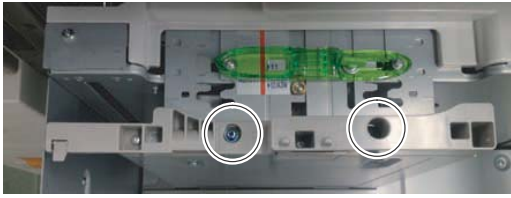
- 1) Loosen the blue off-center adjustment screws (each 2pcs.), and move the side plate by the dimension shifted in the direction A (R side), and tighten the blue screws.

MEMO: The side cabinet front moves in conjunction with the side cabinet rear.

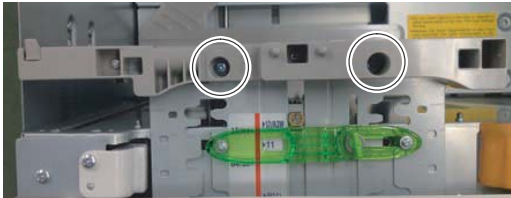


- Set a sheet of paper on the paper feed base tray. Check that the front regulation plate is at the marked center, and push it in contact with the front regulation plate. Loosen the blue screw of the rear regulation plate.

[R side]

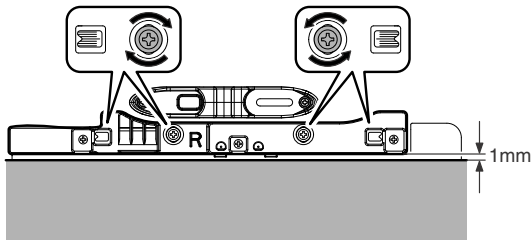


[F side]



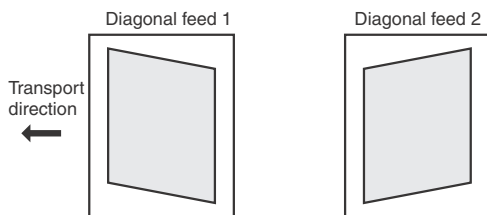
- Use the mark of the rear regulation plate, and fix the blue screw at the position so that the clearance between paper and the rear regulation plate is evenly 1mm.

**NOTE:** The positions of the regulation plates are even to the right and left marks.



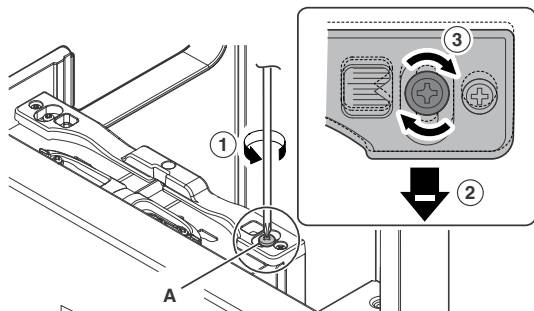
#### b. Diagonal feed adjustment

- Press the lock button on the front cabinet and lower the paper feed base tray to the paper supply position. Pull out the tray.
- Adjust the diagonal feed.



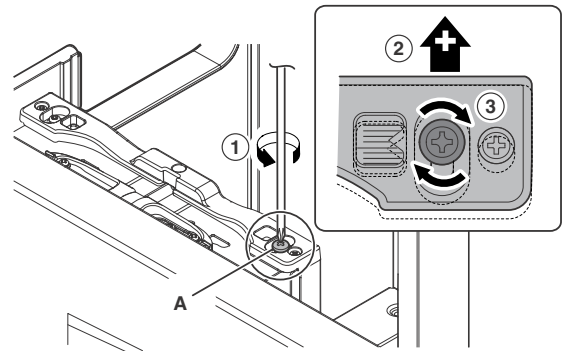
#### In the case of diagonal feed 1

Loosen the blue screw (A) on the front regulation plate. Referring to the degree of diagonal feed, move the regulation plate in the direction of (-) and fix the blue screw.



#### In the case of diagonal feed 2

Loosen the blue screw (A) on the front regulation plate. Referring to the degree of diagonal feed, move the regulation plate in the direction of (+) and fix the blue screw.



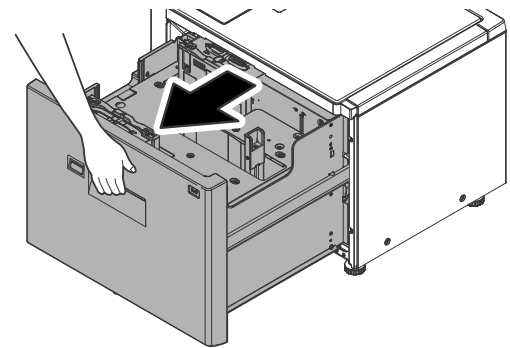
- Set a sheet of paper on the paper feed base tray and adjust the regulation plate width.

**NOTE:** After completion of the adjustment, check that the front regulation plate and the rear regulation plate are in parallel to each other.

**NOTE:** When installing this machine in a place of low atmospheric pressure, check and conform to the adjustment contents in the MX-LC13 Service Manual.

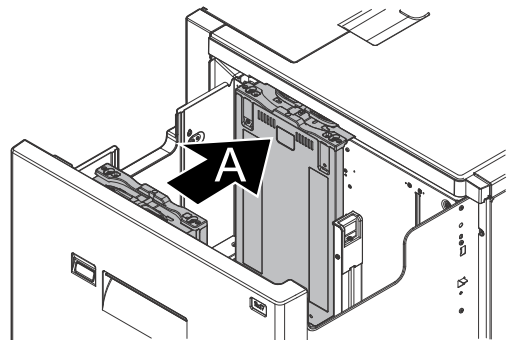
#### b) In the case of the MX-LCX3N

- Pull out the paper feed tray until it stops.

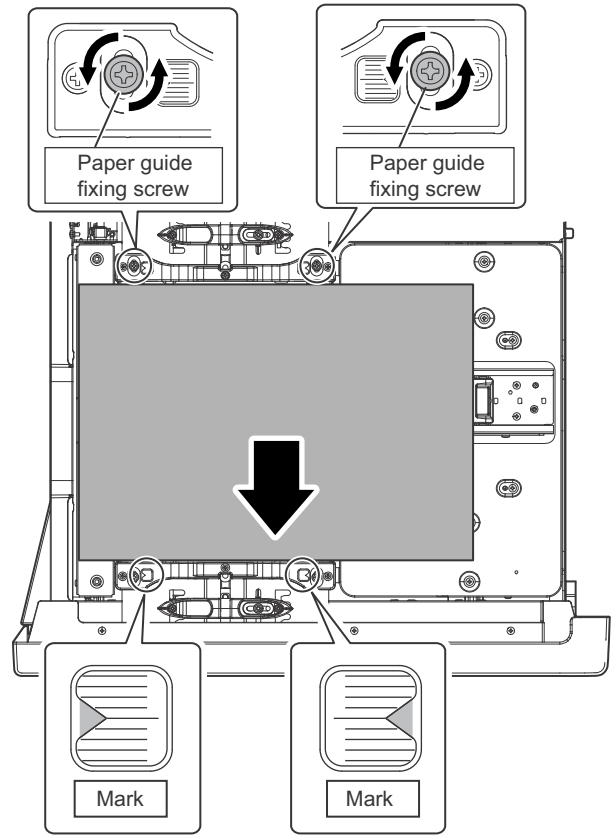
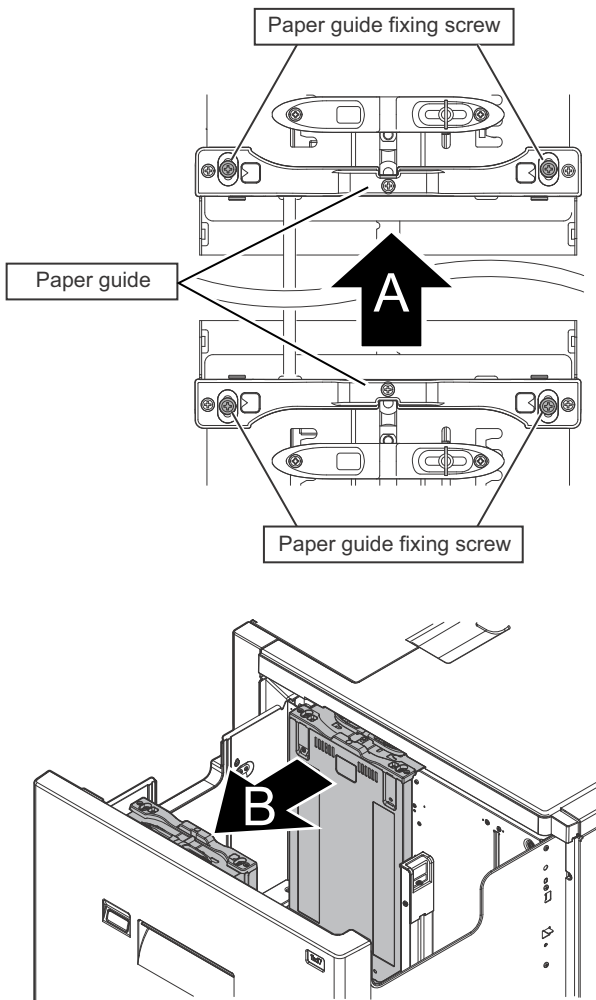


- Loosen the front/rear paper guide fixing screw, and change the paper size guide adjustment plate positions back and forth to match paper size.

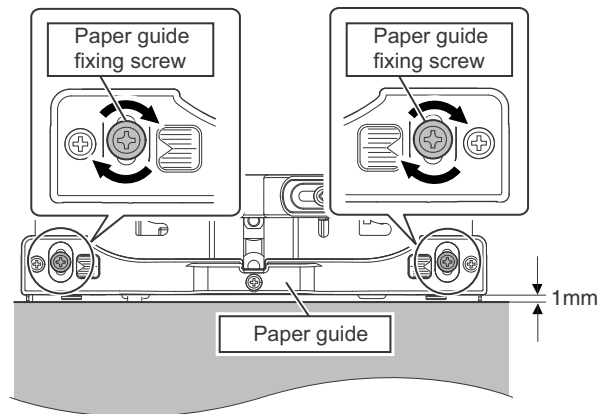
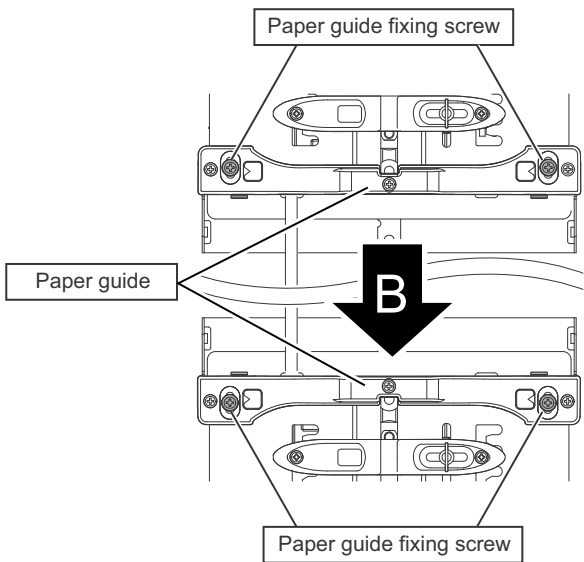
Adjust so that the paper guide fixing positions at the left and the right are aligned evenly (Check with the marks.)



c) Set a sheet of paper on the paper feed tray.



- d) Check to confirm that the front frame side paper guide fixing positions on the right and the left are set evenly by checking the marks, and align paper to the front frame side paper guide.
- e) Loosen the rear frame side paper guide fixing screw.
- f) Adjust so that the clearances between the right and left edges of paper and the paper guide are 1mm by using the paper guide marks on the rear frame side, and secure the rear frame side paper guide.

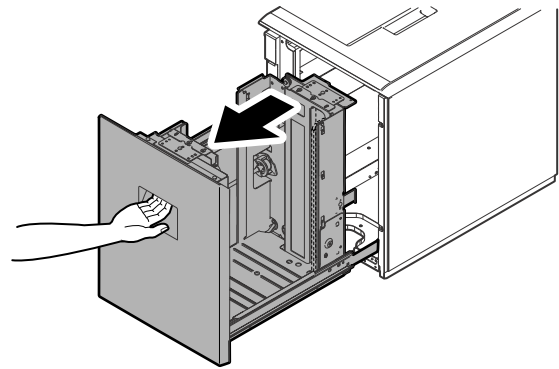
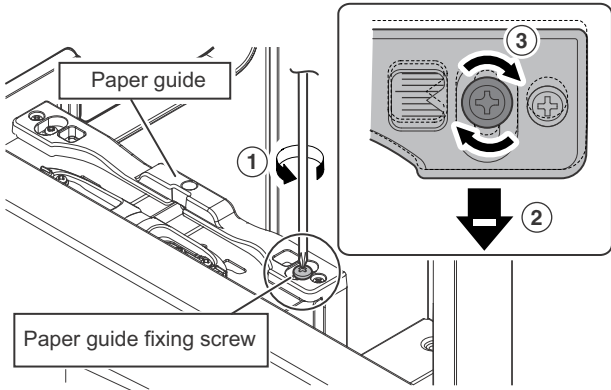


**(Note)**

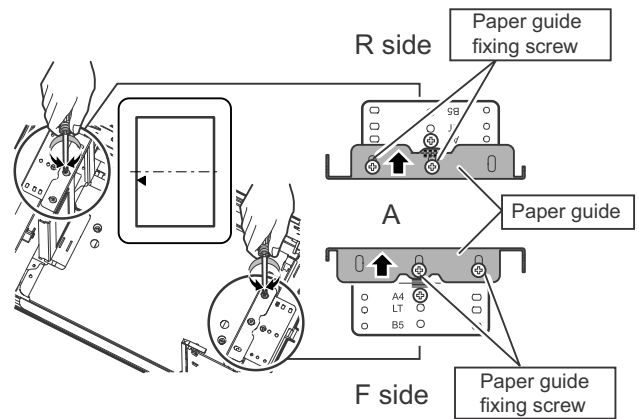
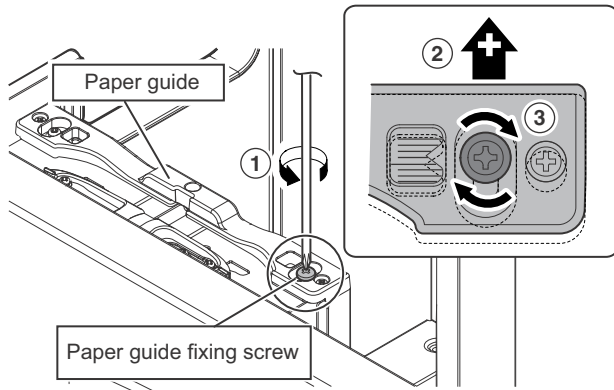
When the paper guide position is changed, the following procedures (skew check and adjustment) must be performed.

If paper skew is generated though the procedures c thru f have been executed, shift the front frame side paper guide fixing position back and forth to adjust for skew.

c) Then pull out the paper feed tray again until it stops.

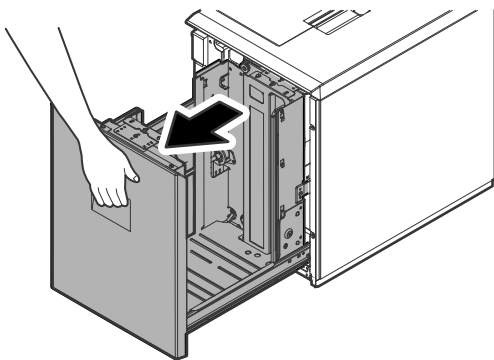


d) Loosen the front/rear paper guide fixing screw, and shift the paper guides on the front and the rear sides back and forth.

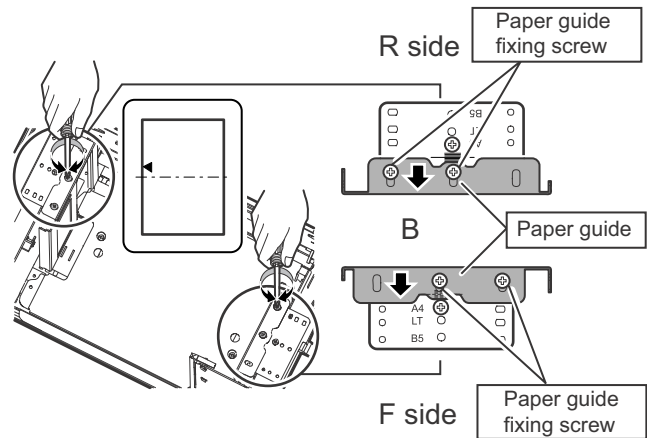
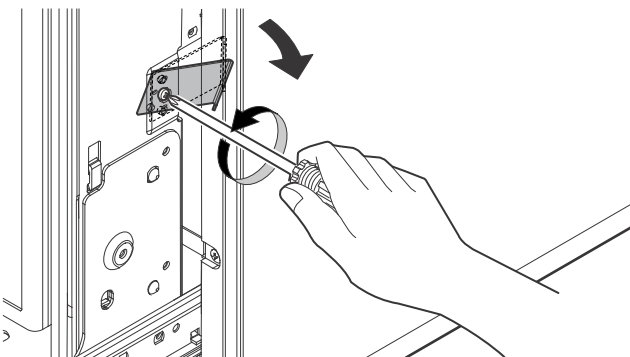
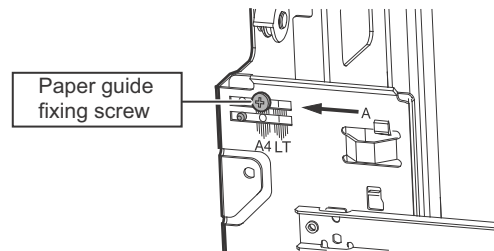


c) **In the case of MX-LC12**

a) Pull out the paper feed tray until it stops.



b) Loosen the stopper fixing screw on the lower right side of the paper feed tray to disable the stopper function.



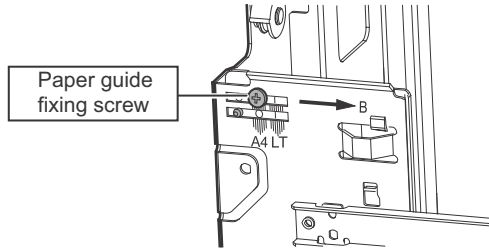


## 8-F Scan image off-center manual adjustment (Document table mode)

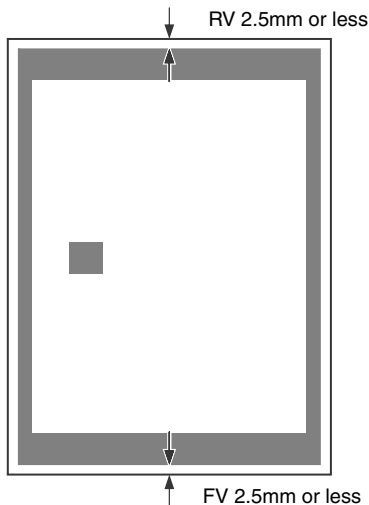
This adjustment is required in the following cases:

- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When the CCD unit is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.

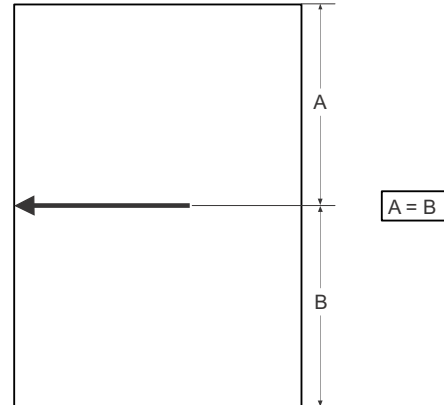


- e) Shift the auxiliary paper guide back and forth by the same amount as the change in the paper guide position.
  - f) Tighten the fixing screws of the paper guide and the auxiliary paper guide.
  - g) Push the paper feed tray in enough to reattach the stopper plate. Once the stopper plate has been reattached, confirm its operation.
- 8) Press [EXECUTE] key.  
The adjustment pattern is printed.
  - 9) Check that the adjustment pattern image is printed in the correct position.  
Perform the procedures 7 thru 9 until the adjustment pattern is center aligned.
  - 10) When the adjustment pattern is center aligned, perform the fine adjustment by simulation if necessary. (90cpm machine only)  
Enter the adjustment value, and press [EXECUTE] button.  
The adjustment pattern is printed.  
When the adjustment value is increased, the image is shifted to the front frame side. When the adjustment value is decreased, the image is shifted to the rear frame side.  
A change in the adjustment value by 1 corresponds to a shift by about 0.1mm.
  - 11) Check that the adjustment pattern image is printed in the correct position.  
Measure the void area sizes of the adjustment pattern on the front edge and the rear edge, and check that the sizes satisfy all the following conditions.

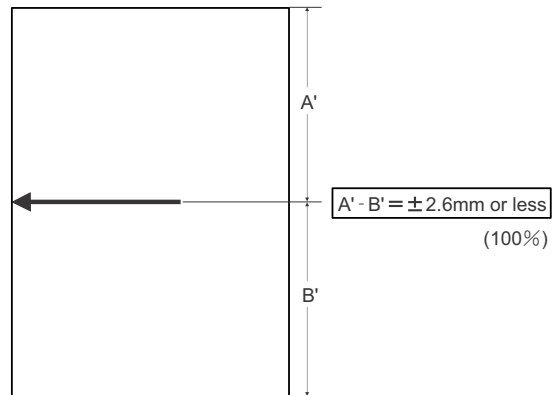


RV: REAR VOID AREA  
FV: FRONT VOID AREA  
 $RV + FV \leq 5.0\text{mm}$   
 $RV = 2.5\text{mm or less}$   
 $FV = 2.5\text{mm or less}$

Perform the procedures 10 and 11 until the above conditions are satisfied.



- 2) Set the adjustment chart on the document table, and make a copy.
- 3) Check the copy image center position.  
If  $A - B = \pm 2.6\text{mm}$  or less, the adjustment is not required.



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

- 4) Enter the Sim. 50-12 mode.
- 5) Select the adjustment mode OC with the scroll key.
- 6) Enter the adjustment value with 10-key, and press [OK] key.

The set value is set.

When the set value is increased, the scan image position is shifted to the front side.

A change in the adjustment value by 1 corresponds to the scan image position by about 0.1mm.

Press [CLOSE] key to jump from the simulation mode to the copy mode.

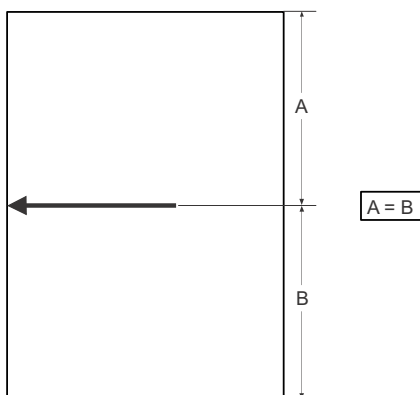
Repeat the procedures 2 thru 6 until the above conditions are satisfied.

## 8-G Scan image off-center manual adjustment (DSPF (Front surface) mode)

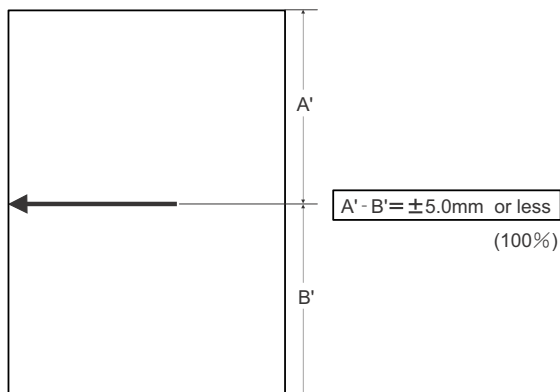
This adjustment is required in the following cases:

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

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.



- 2) Set the adjustment chart on the DSPF unit and make a copy in the duplex copy mode.
- 3) Check the image center position on the copy front surface.  
If  $A-B = \pm 5.0\text{mm}$  or less, the adjustment is not required.



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

- 4) Enter the Sim. 50-12 mode.
- 5) Select the adjustment mode SPF (SIDE 1) with the scroll key.
- 6) Enter the adjustment value with 10-key, and press [OK] key.  
The set value is set.

When the set value is increased, the scan image position is shifted to the front side.

A change in the adjustment value by 1 corresponds to the scan image position by about 0.1mm.

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

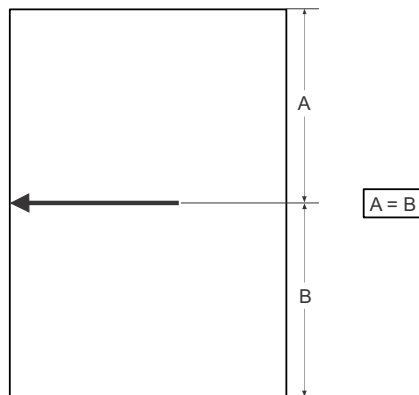
Repeat the procedures 2 thru 6 until the above conditions are satisfied.

## 8-H Scan image off-center manual adjustment (DSPF (Back surface) mode)

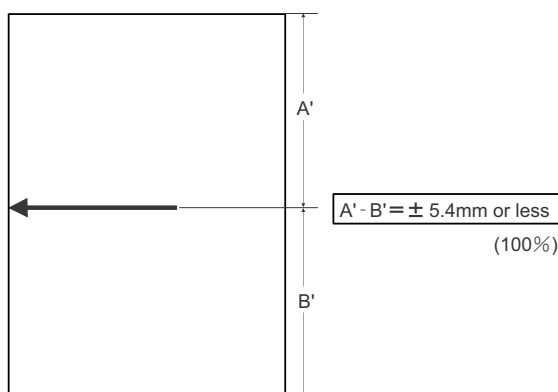
This adjustment is required in the following cases:

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

- 1) Make an adjustment chart on A4 (11 X 8.5) paper as shown in the figure below.



- 2) Set the adjustment chart on the DSPF unit and make a copy in the duplex copy mode.
- 3) Check the image center position on the copy back surface.  
If  $A-B = \pm 5.4\text{mm}$  or less, the adjustment is not required.



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

- 4) Enter the Sim. 50-12 mode.
- 5) Select the adjustment mode SPF (SIDE 2) with the scroll key.
- 6) Enter the adjustment value with 10-key, and press [OK] key.  
The set value is set.

When the set value is increased, the scan image position is shifted to the front side.

A change in the adjustment value by 1 corresponds to the scan image position by about 0.1mm.

Press [CLOSE] key to jump from the simulation mode to the copy mode and make a copy.

Repeat the procedures 2 thru 6 until the above conditions are satisfied.

## ADJ 9 Print/scan image lead edge position, off-center, magnification ratio adjustment (Automatic adjustment)

The following adjustment items can be automatically performed with Sim. 50-28.

- \* ADJ 3B Print image magnification ratio manual adjustment (Main scanning direction)
- \* ADJ 3C Print image lead edge void area manual adjustment/ Front-rear void area, rear edge void area manual adjustment
- \* ADJ 7B Sub scanning direction image magnification ratio adjustment (Document table mode)
- \* ADJ 7E Sub scanning direction image magnification ratio adjustment (DSPF mode)
- \* ADJ8F Scan image off-center manual adjustment (Document table mode)
- \* ADJ8G Scan image off-center manual adjustment (DSPF (Front surface) mode)
- \* ADJ8H Scan image off-center manual adjustment (DSPF (Back surface) mode)
- \* ADJ 9C Copy mode image loss adjustment (DSPF mode)

**Automatic adjustment items of Sim. 50-28 and the corresponding manual adjustment items, simulation**

| Automatic adjustment items | Corresponding manual adjustment items, simulation  |
|----------------------------|--|
| OC ADJ                     | (Corresponding to ADJ8F)<br>(Corresponding to ADJ7B)<br>(Corresponding to Sim.50-1 RRCA)   |
| BK-MAG ADJ                 | (Corresponding to ADJ3B)   |
| SPF ADJ                    | (Corresponding to ADJ9C)<br>(Corresponding to ADJ8G)<br>(Corresponding to ADJ8H)<br>(Corresponding to ADJ7E)   |
| SETUP/PRINT ADJ            | (Corresponding to ADJ3C)<br>(Corresponding to ADJ8A)<br><br>NOTE: Only for the 90cpm machine<br>For the 105/120cpm machines, the automatic adjustment is inhibited.<br>Execute ADJ3C and ADJ8B (manual adjustments). |

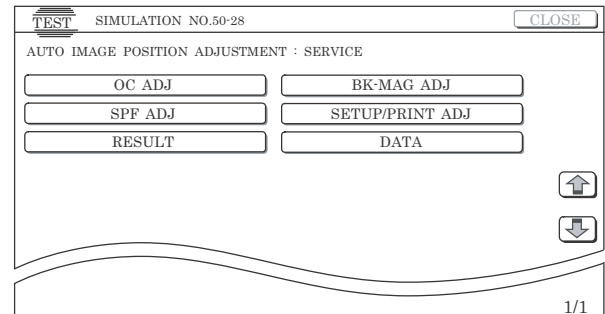
(Sim. 50-28 mode menu)

| Section | Adjustment item | Adjustment menu  |  |
|---------|-----------------|--|--|
| Scanner | OC              | Scan image lead edge reference position adjustment<br>Scan image off-center adjustment<br>Sub scanning direction scan image magnification ratio adjustment |  |
|         | DSPF            | SIDE1 (Front surface)  | Scan image lead edge reference position adjustment<br>Scan image off-center adjustment<br>Sub scanning direction scan image magnification ratio adjustment |
|         |                 | SIDE2 (Back surface)   | Scan image lead edge reference position adjustment<br>Scan image off-center adjustment<br>Sub scanning direction scan image magnification ratio adjustment |
|         |                 | OC ADJ   |  |
|         |                 | SPF ADJ (DSPF)   |  |

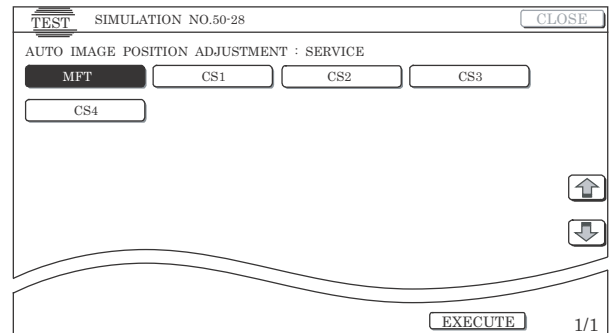
| Section | Adjustment item                   | Adjustment menu  |
|---------|-----------------------------------|--|
| Engine  | —                                 | Main scanning direction print image magnification ratio adjustment |
|         | CS (Common to paper feed trays)   | Print image lead edge position adjustment                          |
|         | CS1                               | Print image off-center adjustment                                  |
|         | CS2                               | Print image off-center adjustment                                  |
|         | CS3                               | Print image off-center adjustment                                  |
|         | CS4                               | Print image off-center adjustment                                  |
|         | ADU                               | Print image off-center adjustment                                  |
|         |                                   | Print image lead edge position adjustment                          |
|         | MFT                               | Print image off-center adjustment                                  |
|         | LCC1 (LCC)                        | Print image off-center adjustment                                  |
|         | LCC2                              | Print image off-center adjustment                                  |
| LCC3    | Print image off-center adjustment |  |
|         |                                   | BK-MAG ADJ   |
|         |                                   | SETUP/PRINT ADJ  |

### 9-A Print image magnification ratio automatic adjustment (Main scanning direction) (Corresponding to ADJ3B)

- 1) Enter the Sim. 50-28 mode.



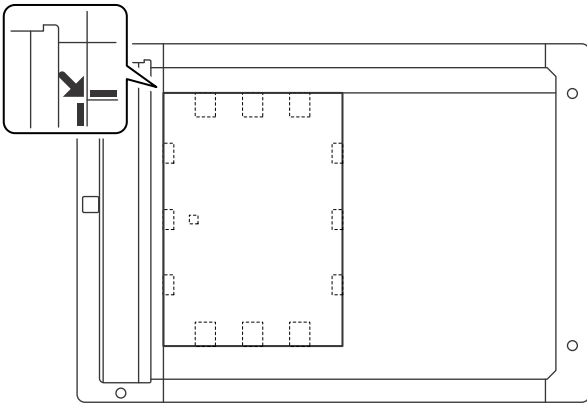
- 2) Press [BK-MAG ADJ] button to select [BK-MAG ADJ] mode.
- 3) Select the paper feed tray with A4/11 X 8.5 paper init with the paper feed tray button. (A4/11 X 8.5)



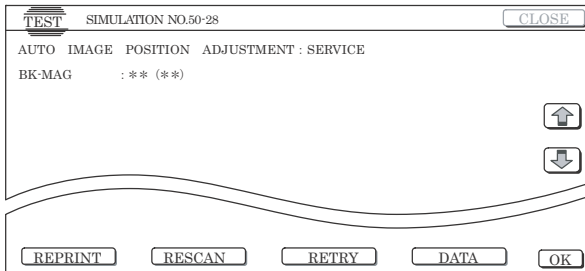
- 4) Press [EXECUTE] key.  
The adjustment pattern is printed.

- Set the adjustment pattern on the document table. (No need to take care of the setting direction.)

**Note:** Set the adjustment pattern so that it fits precisely with the document guide.



- Press [EXECUTE] key.  
The automatic adjustment is executed.



- Press [OK] key.  
The adjustment result becomes valid.

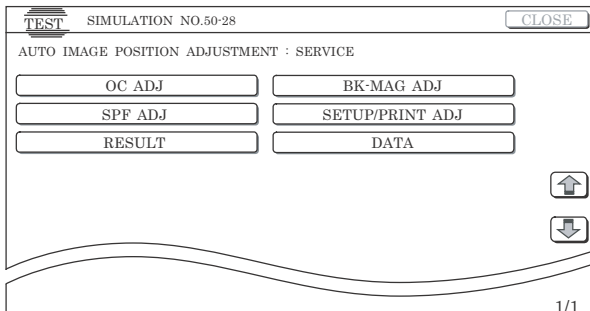
### 9-B Print image off-center automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A)

**Print image lead edge position automatic adjustment (Each paper feed tray, duplex mode) (Corresponding to ADJ3C/8A)**

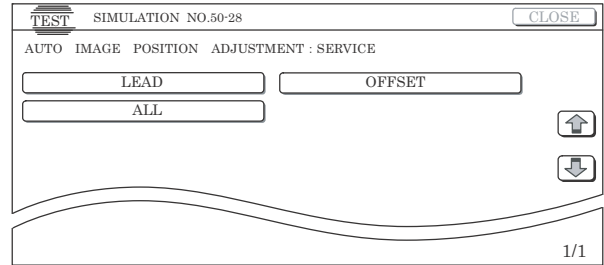
**NOTE:** For the 90cpm machine. For the 105/120cpm machines, the adjustment is inhibited.

NOTE: This adjustment is used only for the 90cpm machine.  
For the 105/120cpm machines, use ADJ3C and ADJ8C.

- Enter the Sim. 50-28 mode.



- Press [SETUP/PRINT ADJ] button to select [SETUP/PRINT ADJ] mode.
- Press [ALL] button to select [ALL] mode.



**Note:**

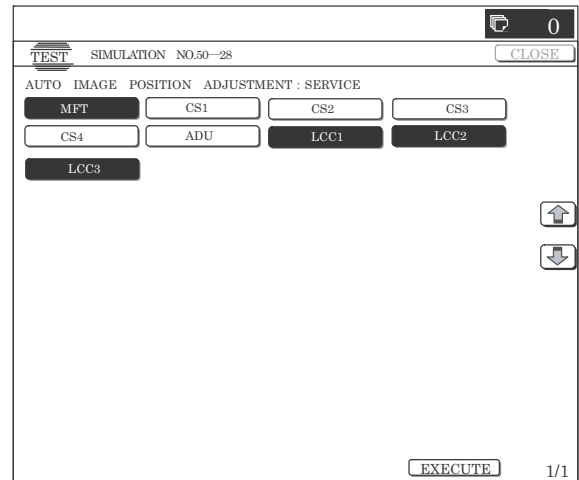
The adjustment can be performed individually in the [LEAD] mode or in the [OFFSET] mode.

LEAD: Print image lead edge image position adjustment

OFFSET: Print image off-center adjustment

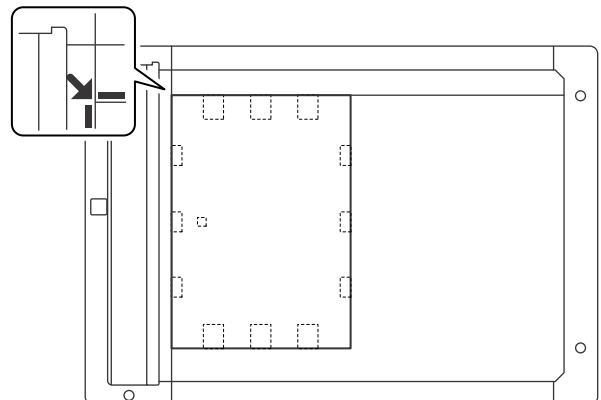
When [ALL] is selected, the above two adjustments are performed simultaneously.

- Select the paper feed tray to be adjusted.

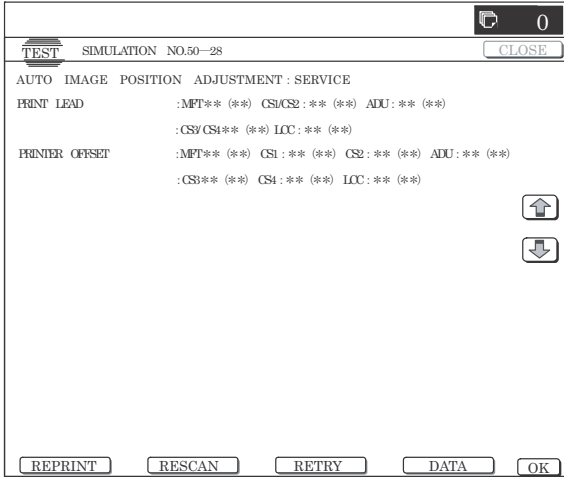


- Press [EXECUTE] key.  
The adjustment pattern is printed.
- Set the adjustment pattern on the document table. (No need to take care of the setting direction.)

**Note:** Set the adjustment pattern so that it fits precisely with the document guide.



- 7) Press [EXECUTE] key.  
The automatic adjustment is executed.



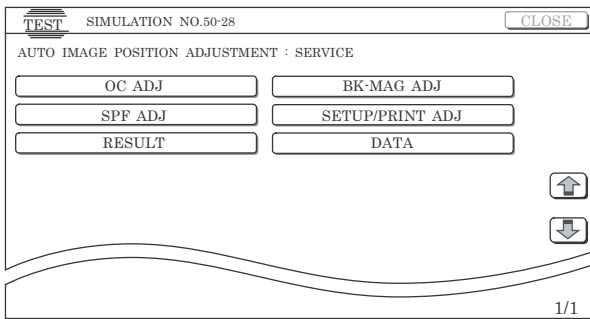
- 8) Press [OK] button.  
The adjustment result becomes valid.  
Perform the procedures 4 thru 7 for each paper feed tray.

### 9-C Scan image magnification ratio automatic adjustment (Sub scanning direction) (Document table mode) (Corresponding to ADJ7B)

#### Scan image off-center automatic adjustment (Document table mode) (Corresponding to ADJ8A)

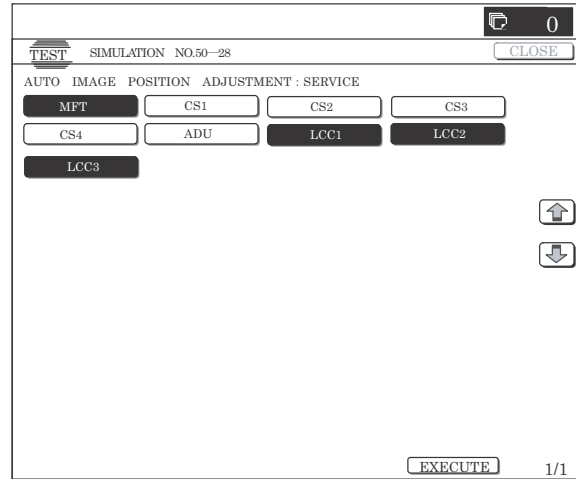
#### Scan image lead edge reference position automatic adjustment (Document table mode) (Corresponding to SIM 50-1 RRCA)

- 1) Enter the Sim. 50-28 mode.

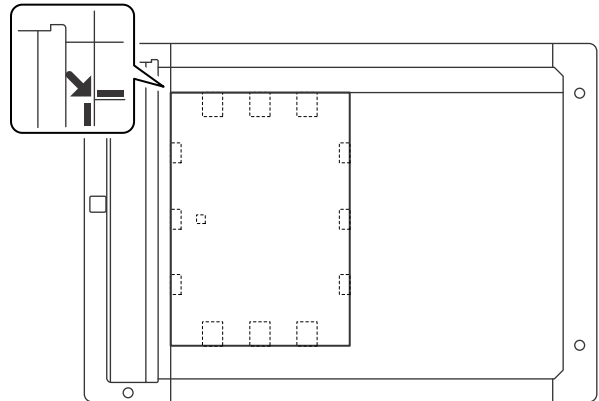


- 2) Press [OC ADJ] button to select [OC ADJ] mode.

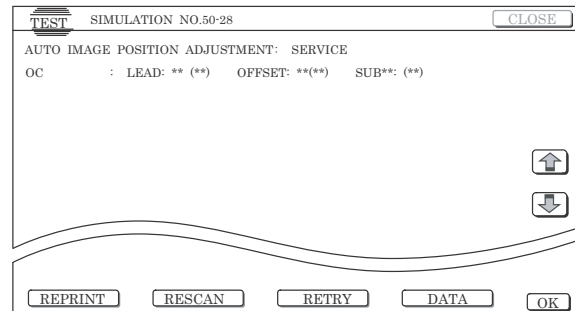
- 3) Select the paper feed tray with A4/11 X 8.5 paper in it with the paper feed tray button. (A4/11 X 8.5)



- 4) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 5) Set the adjustment pattern on the document table. (No need to take care of the setting direction.)  
**Note:** Set the adjustment pattern so that it fits precisely with the document guide.



- 6) Press [EXECUTE] key.  
The automatic adjustment is executed.



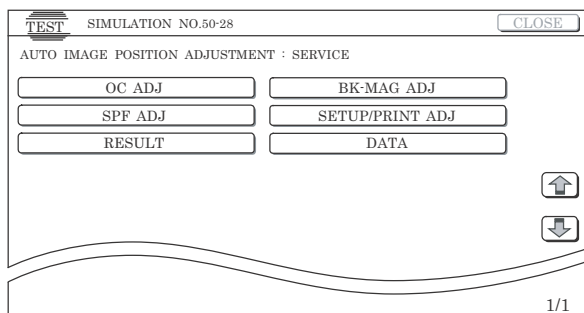
- 7) Press [OK] button.  
The adjustment result becomes valid.

## 9-D Scan image magnification ratio automatic adjustment (Sub scanning direction) (DSPF mode) (Corresponding to ADJ7E)

### Scan image off-center automatic adjustment (DSPF mode) (Corresponding to ADJ8G/ADJ8H)

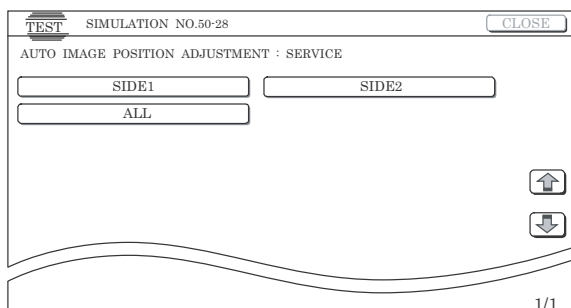
### Scan image lead edge reference position automatic adjustment (DSPF mode) (Corresponding to ADJ9C)

- 1) Enter the Sim. 50-28 mode.

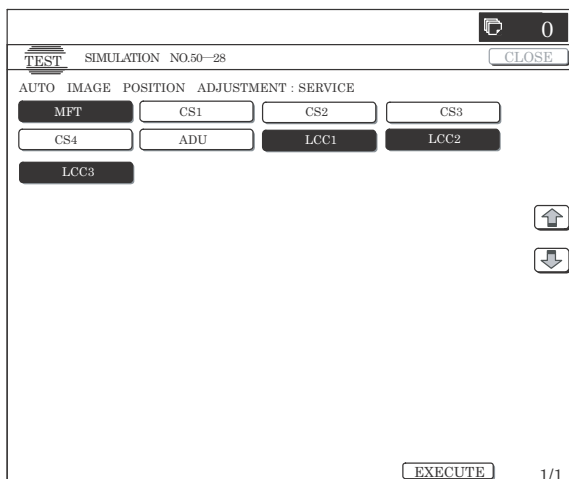


- 2) Press [SPF ADJ] button to select [SPF ADJ] mode.
- 3) Select an item (front, rear, both) to be adjusted.

| Item  | Content                            |
|-------|------------------------------------|
| SIDE1 | SPF adjustment front surface       |
| SIDE2 | SPF adjustment back surface        |
| ALL   | SPF adjustment front/rear surfaces |

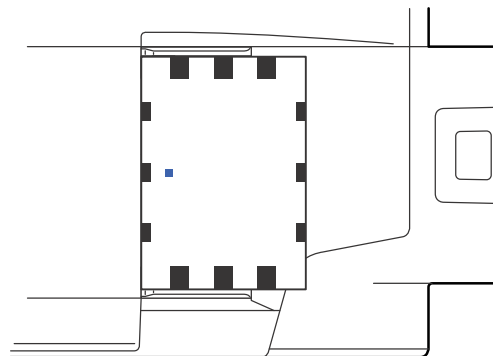


- 4) Select the paper feed tray with A4/11 X 8.5 paper in it with the paper feed tray button. (A4/11 X 8.5)

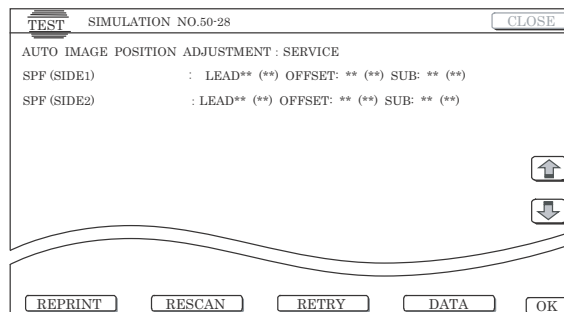


- 5) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 6) Set the adjustment pattern on the DSPF tray in either direction.  
**(Placing the adjustment pattern)**  
Placing manner of the adjustment pattern differs depending on the adjustment mode. Refer to the description below and set the adjustment pattern properly.

| Adjustment mode  | Placing the adjustment pattern                               |
|--|--|
| SIDE1 or first time of ALL (Front surface mode adjustment) | Place with the adjustment pattern print surface facing up.   |
| SIDE2 or second time of ALL (Back surface mode adjustment) | Place with the adjustment pattern print surface facing down. |



- 7) Press [EXECUTE] key.  
The automatic adjustment selected in the procedure 3) is executed.  
If [ALL] mode is selected in the procedure 3), perform the procedures 6 and 7 again.



- 8) Press [OK] button.  
The adjustment result becomes valid.

# ADJ 10 Image position, image loss, and void area adjustment

## 10-A Copy mode image loss void area adjustment (Document table mode)

This adjustment is needed in the following situations:

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

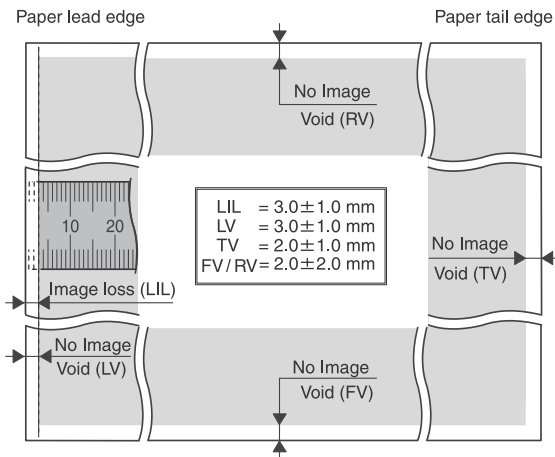
**NOTE:**

Before execution of this adjustment, the following adjustment must have been completed:

- \* ADJ3A Print engine image distortion adjustment (LSU parallelism adjustment)
- \* ADJ3B Print engine image magnification adjustment (Main scanning direction)
- \* ADJ3C Print engine image off-center adjustment
- \* ADJ3D Printer mode lead edge void area adjustment, print engine front/rear void area adjustment, rear edge void edge area adjustment

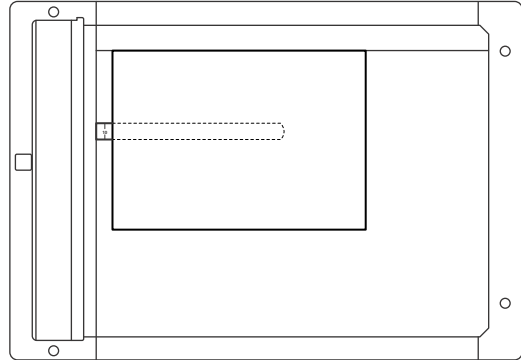
Standard image loss, void area

|         |                      |             |
|---------|----------------------|-------------|
| LV :    | Lead edge void area  | 3.0 ± 1.0mm |
| TV :    | Rear edge void area  | 2.0 ± 1.0mm |
| FV/RV : | FRONT/REAR void area | 2.0 ± 2.0mm |
| FV+RV:  | 4.0mm or less        |             |
| LIL :   | Lead edge image loss | 3.0 ± 1.0mm |



- 1) Place a scale on the document table as shown below.  
Set the scale so that it is in parallel with the scanning direction and the scale tip is in close contact with the document guide plate.

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



- 2) Enter the Sim. 50-1 mode.
- 3) Set the items RRCA, LEAD, and SIDE to the default values.

| Item                              | Display/Item | Content               | Setting range                              | Default              |        |    |
|-----------------------------------|--------------|-----------------------|--|----------------------|--------|----|
| Lead edge adjustment value        | A            | RRCA (ADJUSTMENT)     | Document lead edge reference position (OC) | 10 - 99              | 50     |    |
|                                   | B            | RRCB (ADJUSTMENT)     | Resist motor ON timing adjustment          | Main unit paper feed | 1 - 99 | 50 |
|                                   | C            | RRCB-ADU (ADJUSTMENT) |  |                      |        |    |
| Image loss quantity setting value | D            | LEAD (IMAGE LOSS)     | Lead edge image loss quantity setting      | 0 - 99               | 30     |    |
|                                   | E            | SIDE (IMAGE LOSS)     | Side image loss quantity setting           | 0 - 99               | 20     |    |
| Void quantity setting             | F            | DEN-A (VOID)          | Print lead edge void quantity adjustment   | 1 - 99               | 35     |    |
|                                   | G            | DEN-B (VOID)          | Print rear edge void quantity adjustment   | 1 - 99               | 35     |    |
|                                   | H            | FRONT/REAR (VOID)     | FRONT/REAR void quantity adjustment        | 1 - 99               | 35     |    |

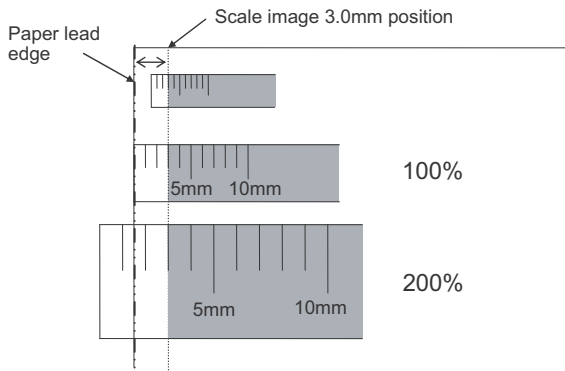
- 4) Perform the image lead edge reference position adjustment.  
Press [CLOSE] key to shift from the simulation mode to the copy mode. Make a copy at 100% and at 200% in the document mode.

If the lead edge section from 3.0mm position of scale in the copy images of both 100% and 200% is not copied, the adjustment value of RRCA is proper.

If the above conditions are not satisfied, change the adjustment value of RRCA to adjust.

(Adjust the adjustment value of RRCA so that the lead edge section from 3.0mm position of scale is not copied for different copy magnification ratios.)

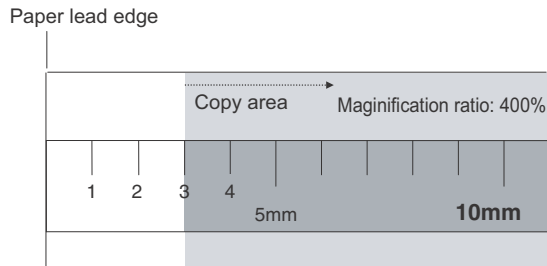
Repeat the above procedures until a satisfactory result is obtained.



- 5) Lead edge image loss adjustment

The lead edge image loss is set to the standard level if the following adjustment items are adjusted to the default values.

If they are not the standard level or are set to optional values, change and adjust them.



Void area: 3.0mm Image loss: 3.0mm

| Display /Item | Content               |                                 | Adjustment range | Default | Standard adjustment value |
|---------------|-----------------------|---------------------------------|------------------|---------|---------------------------|
| LEAD          | Image loss adjustment | Lead edge image loss adjustment | 0-99             | 30      | $3.0 \pm 1.0\text{mm}$    |
| SIDE          |                       | Side image loss adjustment      | 0-99             | 20      | $2.0 \pm 2.0\text{mm}$    |

To change the adjustment value, enter the desired adjustment value and press [OK] key.

When the adjustment value is increased, the image loss becomes greater.

When the adjustment value is decreased, the image loss becomes smaller.

(Change rate for change in the adjustment value: 0.1mm/step)

## 10-B Document scan position adjustment (Scanner scanning position adjustment when scanning the front surface in the 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.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* U2 trouble has occurred.
- \* When the DSPF section is disassembled.
- \* The DSPF unit has been replaced.

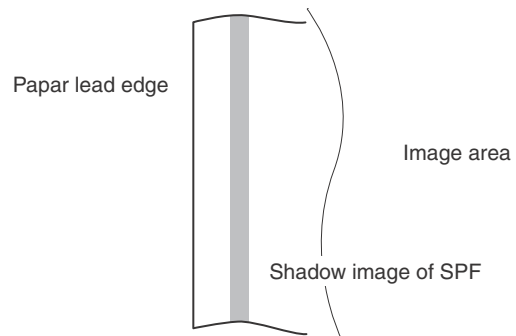
This adjustment is used to adjust the scanner reading position when scanning the front surface in the DSPF mode.

If this adjustment is improper, the scanner stop position is shifted to the specified position, and a shade of the document table may be copied in the lead edge section of the scan image in the DSPF (front surface) mode.

### (Note)

After completion of this adjustment, be sure to perform the "ADJ9C copy mode image loss adjustment (DSPF mode)".  
(The value of "SIDE2" in Sim. 50-6 is adjusted.)

Make a copy of white paper in the DSPF (front surface) mode, and check to confirm that no shade is printed in the lead edge section of the copy image.



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

### (In the case of the manual adjustment)

- 1) Enter the Sim. 53-8 mode.
- 2) Press the manual button to select the manual mode.
- 3) Enter the adjustment value with 10-key, and press [OK] button.  
When the adjustment value is increased, the scanner reading position when scanning the front surface in the DSPF mode is shifted further from the scanner home position.  
When the adjustment value is changed by 1, the scanner reading position when scanning the front surface in the DSPF mode is shifted by 0.1mm.
- 4) Select the copy mode, and check the adjustment result.  
Repeat the above procedures until a satisfactory result is obtained.

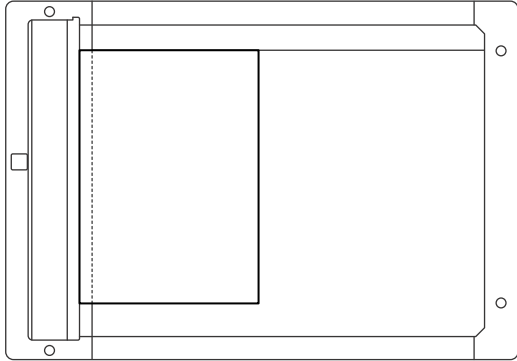


**(In the case of the automatic adjustment)**

- 1) Make a copy on A4 (11 X 8.5) paper in the sky shot mode. (All black copy is made.)
- 2) Set the copy paper so that the all black surface of the copy paper is overlapped with the document guide at the left edge of the document table, and close the DSPF unit.

**NOTE:**

If copy paper is not set in a overlapped state, the SPF scanning position is shifted by the lead edge void quantity.



- 3) Enter the Sim. 53-8 mode.
- 4) Press the auto button to select the auto mode.
- 5) Press [EXECUTE] key.  
[EXECUTE] button is highlighted, and the scanner reading position adjustment when scanning the front surface in the DSPF mode is automatically performed.  
After completion of the adjustment, the adjustment value is displayed and [EXECUTE] button returns to the normal display. When an error occurs, MEASUREMENT DISTANCE/RRCA "--" is displayed.  
In this case, the adjustment is made in the manual mode.
- 6) Select the copy mode, and check the adjustment result.  
Repeat the procedures 2 thru 4 until a satisfactory result is obtained.

**10-C Copy mode image loss adjustment (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.
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* U2 trouble has occurred.
- \* When the DSPF section is disassembled.
- \* The DSPF unit has been replaced.

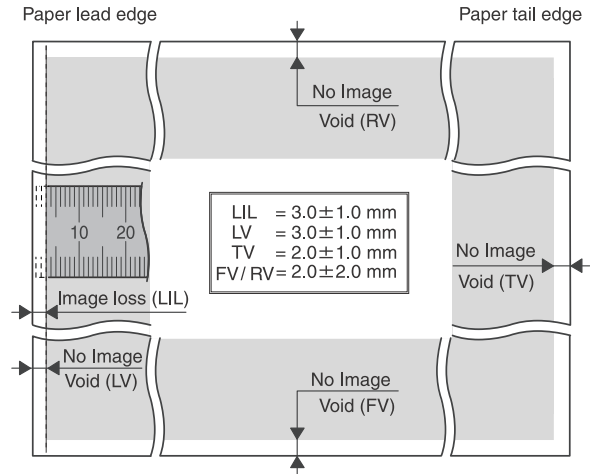
**NOTE:**

Before execution of this adjustment, the following adjustment must have been completed:

- \* ADJ3A Print engine image distortion adjustment (LSU parallelism adjustment)
- \* ADJ3B Print engine image magnification ratio adjustment (Main scanning direction)
- \* ADJ3C Print engine image off-center adjustment
- \* ADJ3D Printer mode lead edge void area adjustment/ Print engine front/rear void area and rear edge void area adjustment
- \* ADJ9A Copy mode image loss/ void area adjustment (Document table mode)

**Standard image loss, void area**

|        |                      |             |
|--------|----------------------|-------------|
| LV:    | Lead edge void area  | 3.0 ± 1.0mm |
| TV:    | Rear edge void area  | 2.0 ± 1.0mm |
| FV/RV: | FRONT/REAR void area | 2.0 ± 2.0mm |
| FV+RV: | 4.0mm or less        |             |
| LIL:   | Lead edge image loss | 3.0 ± 1.0mm |



- 1) Enter the Sim. 50-6 mode.

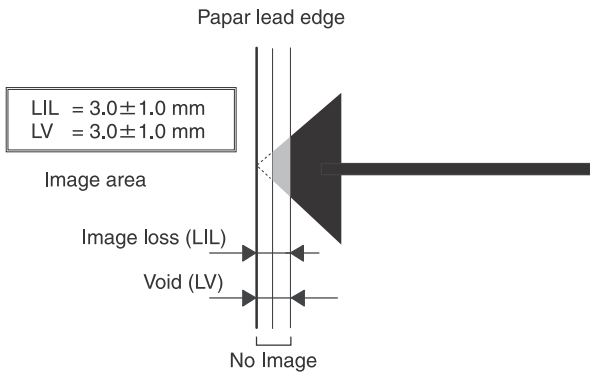
| Display/Item |                                   | Content  | Default |
|--------------|-----------------------------------|--|---------|
| A            | SIDE1                             | Front surface document scanning start position (CCD) | 50      |
| B            | SIDE2                             | Back surface document scanning start position (CCD)  | 50      |
| C            | Image loss quantity setting SIDE1 | LEAD_EDGE (SIDE1)                                    | 20      |
| D            |                                   | FRONT_REAR (SIDE1)                                   | 20      |
| E            |                                   | TRAIL_EDGE (SIDE1)                                   | 30      |
| F            | Image loss quantity setting SIDE2 | LEAD_EDGE (SIDE2)                                    | 30      |
| G            |                                   | FRONT_REAR (SIDE2)                                   | 20      |
| H            |                                   | TRAIL_EDGE (SIDE2)                                   | 20      |

**(Leading edge image loss adjustment)**

- 1) Adjust the lead edge image loss adjustment values (LEAD\_EDGE) of the front and back surfaces as shown below: (Standard setting values)  
C: LEAD\_EDGE (SIDE1) : 20  
F: LEAD\_EDGE (SIDE2) : 30  
Set "C: LEAD\_EDGE (SIDE1)" and "F: LEAD\_EDGE (SIDE2)" to 30. (Enter the adjustment value with 10-key, and press [OK] button.

- Use the DSPF to make a duplex copy at 100%. Check to confirm that the lead edge image loss is  $3.0 \pm 1.0$ mm on the front surface and the back surface.

Press [CLOSE] button in the simulation mode to jump to the copy mode. Make a duplex copy and check the adjustment result.



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

- Change the adjustment values of SIDE1 and SIDE2 and make an adjustment.

(Change the adjustment values of SIDE1 and SIDE2, and press [OK] key.)

SIDE1: DSPF front surface lead edge scanning position adjustment value

SIDE2: DSPF back surface lead edge scanning position adjustment value

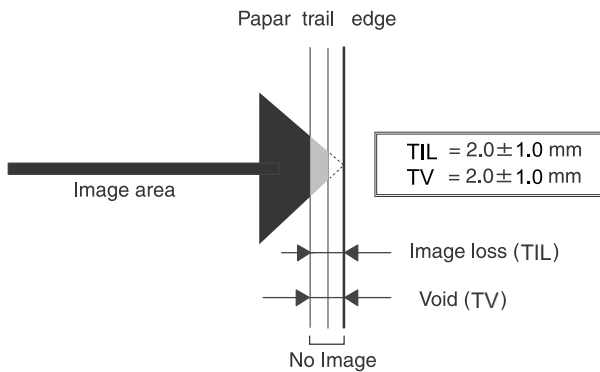
(Change rate for change in the adjustment value: 0.1mm/step)

Repeat the procedures 2 and 3 until a satisfactory result is obtained.

**(Rear edge image loss adjustment)**

- Use the DSPF at the magnification ratio of 100%, and make a duplex copy. Check to confirm that the rear edge image loss is  $2.0 \pm 1.0$ mm on the front surface and the back surface.

Press [CLOSE] button in the simulation mode to jump to the copy mode. Make a duplex copy and check the adjustment result.



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

- Change the adjustment value of TRAIL\_EDGE and make an adjustment.

(Enter the adjustment value of TRAIL\_EDGE with 10-key, and press [OK] button.)

Repeat the above adjustments until an acceptable result is obtained.

**(FRONT/REAR frame image loss adjustment)**

- Set the adjustment values of the front surface and the back surface to 20.

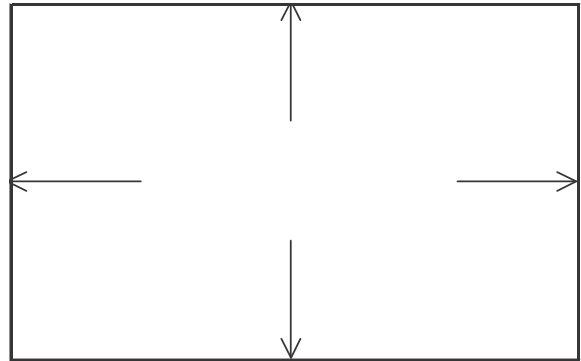
(Enter 20 for the adjustment values of FRONT\_REAR (SIDE1) and FRONT\_REAR (SIDE2), and press [OK] key.)

**10-D Image send mode, image loss adjustment**

This adjustment is needed in the following situations:

- \* When shading is copied on the scanned image in the image send mode.
- \* 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.
- \* When the DSPF section is disassembled.
- \* The DSPF unit has been replaced.

- Use A3 (11X17) paper and make a chart shown below.



Write arrow marks on the four sides of the front surface and the back surface.

- Scan the chart made in the procedure 1) by the SCAN to USB mode, SCAN to PC mode, and SCAN to e-MAIL mode in the following modes.

- \* Original table mode
- \* DSPF mode (Duplex mode)

- Open the scanned image file on PC, and check every edge of the arrow marks to confirm that the image loss is "0".

(If there is no void on the arrow marks, it is judged that the image loss is "0".)

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

- Enter the Sim. 50-27 mode.
- Press [SCANNER] button, and select the image send mode and the image loss adjustment mode.

6) Select a mode to be adjusted with the scroll button

|   | Display/Item |                  | Content                | Setting range                                       | Default |         |
|---|--------------|------------------|------------------------|---|---------|---------|
| Image send mode image loss adjustment (Except for FAX, copy mode) | A            | Image loss       | LEAD_EDGE (OC)         | OC lead edge image loss quantity setting            | 0-100   | 0 (0mm) |
|   | B            | quantity setting | FRONT_REAR (OC)        | OC side image loss quantity setting                 | 0-100   | 0 (0mm) |
|   | C            | OC               | TRAIL_EDGE (OC)        | OC rear edge image loss quantity setting            | 0-100   | 0 (0mm) |
|   | D            | Image loss       | LEAD_EDGE (SPF_SIDE1)  | Front surface lead edge image loss quantity setting | 0-100   | 0 (0mm) |
|   | E            | quantity setting | FRONT_REAR (SPF_SIDE1) | Front surface side image loss quantity setting      | 0-100   | 0 (0mm) |
|   | F            | SPF SIDE1        | TRAIL_EDGE (SPF_SIDE1) | Front surface rear edge image loss quantity setting | 0-100   | 0 (0mm) |
|   | G            | Image loss       | LEAD_EDGE (SPF_SIDE2)  | Back surface lead edge image loss quantity setting  | 0-100   | 0 (0mm) |
|   | H            | quantity setting | FRONT_REAR (SPF_SIDE2) | Back surface side image loss quantity setting       | 0-100   | 0 (0mm) |
|   | I            | SPF SIDE2        | TRAIL_EDGE (SPF_SIDE2) | Back surface rear edge image loss quantity setting  | 0-100   | 0 (0mm) |

7) Enter the adjustment value with 10-key, and press [OK] button. When the adjustment value is increased, the image loss becomes greater. (Change rate for a change in the adjustment value: 0.1mm/step)

Repeat the above procedures until a satisfactory result is obtained.

## ADJ 11 Gray balance/density adjustment

### (1) Note before execution of the gray balance/density adjustment

\* Requisite conditions before execution of the gray balance/density adjustment

Before execution of the gray balance/density adjustment, check to insure that the adjustments which affect the gray balance/density have been completed properly.

**(Though the following items affect the gray balance/density, there is no need to adjust them frequently. When, however, a trouble occurs, they must be checked and adjusted.)**

1) The following items must be adjusted properly.

| Job No | Adjustment item                 |         | Simulation                                      |             |
|--------|---------------------------------|---------|---|-------------|
| ADJ 1  | High voltage values adjustment  | ADJ 1A  | Main charger grid voltage adjustment            | 8-2         |
|        |                                 | ADJ 1B  | Developing bias voltage adjustment              | 8-1         |
|        |                                 | ADJ 1C  | Transfer current adjustment                     | 8-6         |
|        |                                 | ADJ 1D  | Photoconductor dark potential adjustment        | 44-3        |
| ADJ 2  | Developing unit adjustment      | ADJ 2A  | Developing doctor gap adjustment                |             |
|        |                                 | ADJ 2B  | Developing roller main pole position adjustment |             |
|        |                                 | ADJ 2C  | Toner density control reference value setting   | 25-2 (25-6) |
| ADJ 6  | Scan image focus adjustment     |         | 48-1  |             |
| ADJ 11 | Gray balance/density adjustment | ADJ 11A | Scanner calibration (CCD calibration)           | 63-3        |

### Note for the gray balance/density check and adjustments

When setting the adjustment pattern on the document table in the automatic gray balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible.

### (2) Relationship between the servicing job contents and the gray balance/density check and adjustment

Note that the jobs before and after execution of the gray balance/density check and adjustment depend on the machine status and the servicing conditions.

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

There are following four, major cases.

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

### (3) Copy gray balance and density check

NOTE: Before checking the copy gray balance and density, be sure to execute the following jobs.

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

\* Execute the half-tone image correction forcibly. (SIM 44-26)

#### Method 1

Make a copy of the gray test chart (6LS06275000), and check that they are proper.

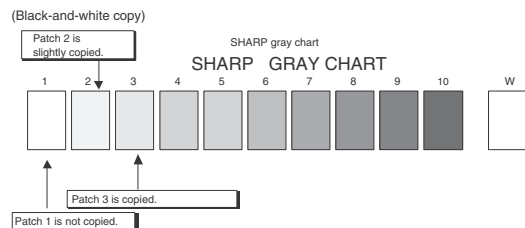
#### Note for checking the density

To check the density, use the gray test chart (6LS06275000) and the servicing color test chart (6LS06276000). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

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

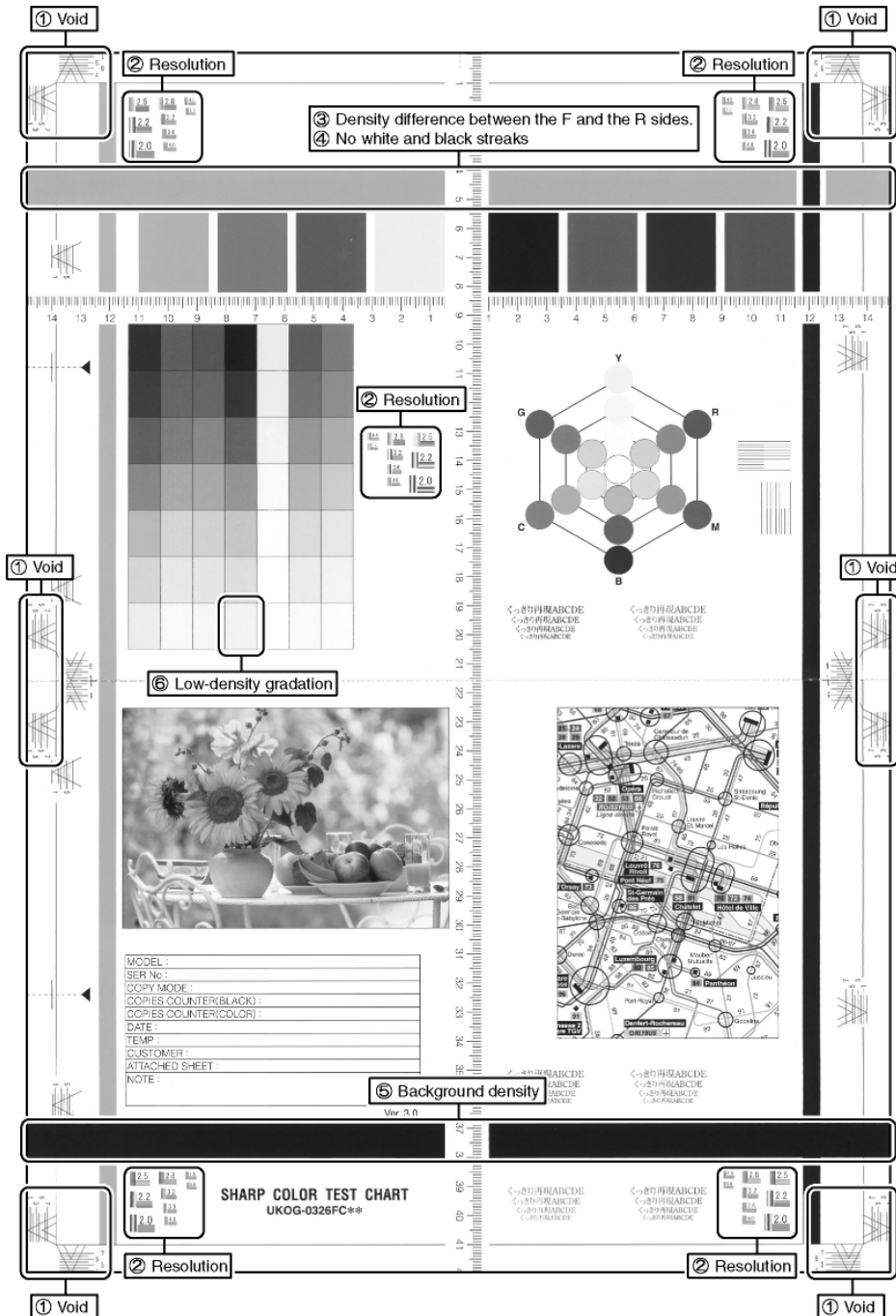
#### Check with the gray test chart (6LS06275000)

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



**Monochrome copy check items (Check to confirm the following:)**

| Display/Item |  | Adjustment items    |  |   |
|--------------|--|---------------------|--|---|
| 1            | There are 12 void areas.   | Main machine<br>S/M | ADJ3-A to C  | Sim50-28  |
| 2            | The resolution of 5.0 (5 points) can be seen.                                    | Main machine<br>S/M | Check the dirt of the OC glass<br>Clean the OC glass<br>Clean the mirror of the scanner<br>ADJ11-D12 | Sim46-54<br>Copy gamma, gray balance adjustment for each dither (Automatic adjustment)                  |
| 3            | The color difference in gray balance between the F and th sides is not so great. | Main machine<br>S/M |  | Sim61-11  |
|              |  |                     | ADJ11-B  | Sim46-74<br>Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment) |
| 4            | There are no white and black streaks.  |                     | Clean the mirror of the LSU.<br>Clean the Main Charger<br>Clean the mirror of the scanner            |   |
| 5            | The background density is not so light.  | Main machine<br>S/M | ADJ11-B  | Sim46-74<br>Copy/Printer gray balance and density adjustment (Automatic adjustment) (Basic adjustment)  |
| 6            | The black low-density gradation is copied slightly.                              | Main machine<br>S/M | ADJ11-B  | Sim46-74<br>Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment) |



#### (4) Printer gray balance/density check

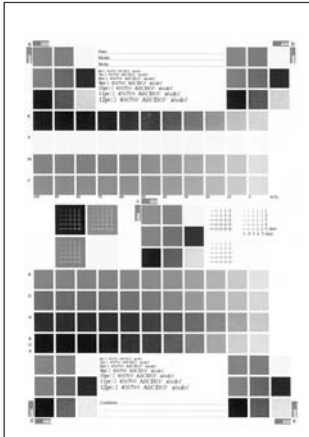
NOTE: Before checking the copy gray balance and the density, be sure to execute the following procedures in advance.

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

##### Method 1

Execute SIM 64-5 to print the print test pattern.

Set each set value to the default and press [EXECUTE] key. The print test pattern is printed.



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

## 11-A Scanner calibration (CCD calibration)

This adjustment must be performed in the following cases:

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

### (1) Note before adjustment

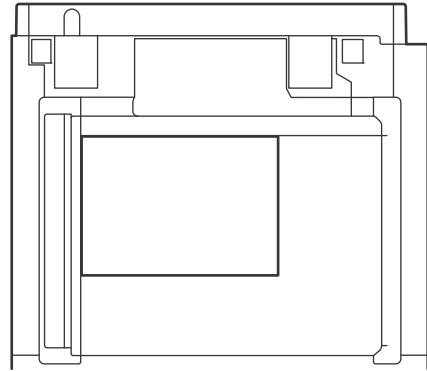
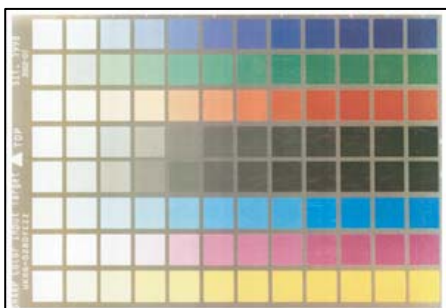
- \* Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.  
(If there is some dust and dirt, wipe and clean with alcohol.)
- \* Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (6LS06277000) are free from dirt and scratches.

If they are dirty, clean them.

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

### (2) Adjustment procedures

- 1) Set the SIT chart (6LS06277000) to the reference position on the left rear frame side of the document table.  
Set the chart so that the lighter density side of the patch is on the left side.



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

NOTE: Check to insure that the SIT chart (6LS06277000) is in close contact with the document table.

- 2) Enter the SIM 63-3 mode and press [EXECUTE] key.  
The automatic operation is started. During the adjustment, [EXECUTE] is highlighted. After completion of the adjustment, [EXECUTE] returns to the normal display.

NOTE: Since the SIT chart (6LS06277000) is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag (such as a dark file) and store in a dark place of low temperature and low humidity.

### SET 1 Gray balance adjustment target setup

#### a. General

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

There are following three kinds of the target.

- \* Factory gray balance (gamma) target
- \* Service gray balance (gamma) target
- \* User gray balance (gamma) target

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

This setting is required in the following cases.

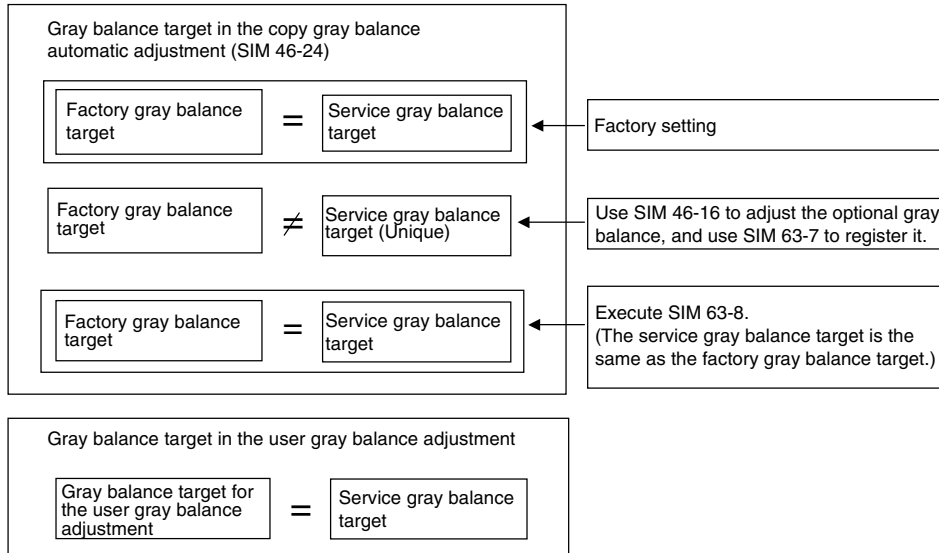
- \* When the gray balance and density adjustments are executed manually (SIM46-16) (SIM67-25)
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* The scanner control PWB has been replaced.
- \* The EEPROM on the scanner control PWB has been replaced.
- \* When the user requests for customizing the gray balance.
- \* When the service gray balance target gamma is judged as improper.

**SET 1A Copy gray balance adjustment target setup**

**Each gray balance target for the copy gray balance adjustment**

| Type |                                     | Descriptions   |
|------|-------------------------------------|--|
| A    | Factory gray balance (gamma) target | The factory target is fixed.   |
| B    | Service gray balance (gamma) target | This target is used when the user requests to customize the gray balance to user's desired level. In advance, the user's unique gray balance must be registered as the service gray balance target. The above registration (setting) is made by the serviceman with SIM 46-16 to adjust the gray balance and with SIM 63-7 to register it. This gray balance target is used when the user executes the gray balance adjustment. When, therefore, the service gray balance target is changed, the gray balance target of the user's gray balance adjustment is also changed. The default setting (factory setting) of the gray balance is same as the factory gray balance target. If the user does not request for customizing the gray balance, be sure to use SIM 63-8 to set the gray balance to the factory gray balance target. |
| C    | User gray balance (gamma) target    | Same gray balance as the service gray balance (gamma) target. When the service gray balance target is changed, this gray balance target is also changed accordingly.   |

**Relationship between the factory target and the service target and the gray balance target for the user gray balance adjustment in the copy gray balance adjustment (Automatic adjustment) (SIM 46-74/46-24)**



**Factory target in the copy gray balance adjustment (SIM 46-74/46-24)**

**Service gray balance target in the copy gray balance adjustment ((Automatic adjustment) SIM 46-74/46-24).**

For the service gray balance target, an optional gray balance can be adjusted with SIM 46-16 and registered with SIM 63-7.

**Gray balance target in the user gray balance adjustment**

This gray balance is same as the service gray balance target in the copy gray balance adjustment (Automatic adjustment) (SIM 46-74/46-24). When, therefore, the service gray balance target is changed, this target is also changed accordingly.

**Meaning of the service gray balance target gamma data and the purpose of registration**

This procedure must be executed only when the gray balance is customized with SIM 46-16.

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

After completion of the customized gray balance adjustment (Manual) with SIM 46-16 according to the user's request, use SIM 63-7 to register the service gray balance target data by using adjustment pattern that was printed in this mode.

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-16.

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

It is recommended to keep the printed adjustment pattern created with SIM 46-16. This adjustment pattern can be used to register the same gray balance target to another machine.

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

The service gray balance target data is registered immediately after the gray balance adjustment (Manual) with SIM 46-16.

If a considerable time has passed after completion of the gray balance adjustment (Manual) with SIM 46-16, the gray balance of the adjustment pattern at the time of adjustment differs from the gray balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The accuracy of the service gray balance target data can be judged as follows.

When result of the gray balance adjustment (Auto) with selecting the service gray balance target in SIM 46-74/46-24 is unsatisfactory or abnormal.

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

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

The gray balance adjustment pattern used in registration was made and printed by the gray balance adjustment (Manual) with SIM 46-16. This procedure may have been executed erroneously

**a. Setting procedure**

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

- 1) Use SIM 46-16 (Copy gray balance adjustment (manual adjustment) mode) to print two sheets of the gray patch image (adjustment pattern).

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-16.

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

- 2) Enter the SIM 63-7 mode.
- 3) Press [SETUP] key.
- 4) Set the gray patch image (adjustment pattern) correctly adjusted and printed in the copy gray balance adjustment (Manual adjustment) (SIM 46-16) (ADJ 11C (2)) on the document table.

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

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

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

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

- 5) Press [EXECUTE] key.  
The gray patch image (adjustment pattern) is read.
- 6) Press [REPEAT] key, set the second gray patch image (adjustment pattern), and execute the procedure 5) again.  
Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.  
In case of an abnormality, repair the problem and try again.
- 7) Press [OK] key.  
The gray balance (gamma) of the gray patch image (adjustment pattern) used in the procedure 5) is set as the service target.

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

NOTE: This procedure must not be executed when the copy gray balance was adjusted with SIM 46-16 to a unique gray balance requested by the user and it was registered as the service gray balance target with SIM 63-7.

- 1) Enter the SIM 63-8 mode.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

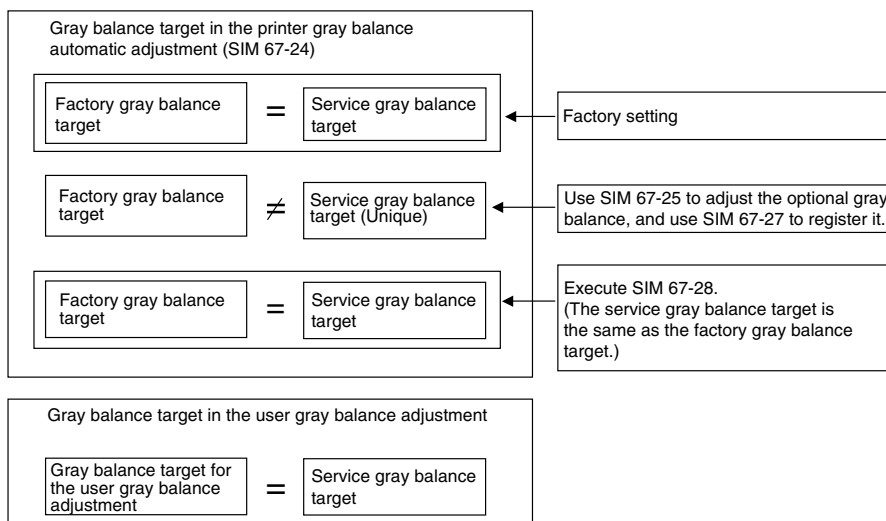
The service gray balance target and the gray balance target for the user gray balance adjustment are set to the same gray balance as the factory gray balance target.

**SET 1B Printer gray balance adjustment target setup**

**Gray balance target for the printer gray balance adjustment**

| Type |                                     | Descriptions   |
|------|-------------------------------------|--|
| A    | Factory gray balance (gamma) target | The factory target is fixed.   |
| B    | Service gray balance (gamma) target | This target is used when the user requests to customize the gray balance to user's desired level. In advance, the user's unique gray balance must be registered as the service gray balance target. The above registration (setting) is made by the serviceman with SIM 67-25 to adjust the gray balance and with SIM 67-27 to register it.<br>This gray balance target is used when the user executes the gray balance adjustment. When, therefore, the service gray balance target is changed, the gray balance target of the user's gray balance adjustment is also changed. The default setting (factory setting) of the gray balance is same as the factory gray balance target.<br>If the user does not request for customizing the gray balance, be sure to use SIM 67-28 to set the gray balance to the factory gray balance target. |
| C    | User gray balance (gamma) target    | Same gray balance as the service gray balance (gamma) target. When the service gray balance target is changed, this gray balance target is also changed accordingly.   |

**Relationship between the factory target and the service target and the gray balance target for the user gray balance adjustment in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/76-24)**



**Factory target in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/67-24)**

**Service gray balance target in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/67-24).**

For the service gray balance target, an optional gray balance can be adjusted with SIM 67-25 and registered with SIM 67-27.

**Gray balance target in the user gray balance adjustment**

This gray balance is same as the service gray balance target in the printer gray balance adjustment (Automatic adjustment) (SIM 46-74/67-24). When, therefore, the service gray balance target is changed, this target is also changed accordingly.

**Meaning of the service gray balance target gamma data and the purpose of registration**

This procedure must be executed only when the gray balance is customized with SIM 67-25.

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

After completion of the customized gray balance adjustment (Manual) with SIM 67-25 according to the user's request, use SIM 67-27 to register the service gray balance target data by use of the printed adjustment pattern.

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 67-25.

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

It is recommended to keep the printed adjustment pattern created with SIM 67-25. This adjustment pattern can be used to register the same gray balance target to another machine.

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

The service gray balance target data is basically registered immediately after the gray balance adjustment (Manual) with SIM 67-25.

If a considerable time has passed after completion of the gray balance adjustment (Manual) with SIM 67-25, the gray balance of the adjustment pattern at the time of adjustment differs from the gray balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The correctness of the service gray balance target data can be judged as follows.

When result of the color balance adjustment (Auto) with selecting the service gray balance target in SIM 67-24 is unsatisfactory or abnormal.

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

This may be caused when an improper or abnormal gray balance adjustment pattern was used to register the service gray balance target data for the gray balance adjustment with SIM 67-27.

The gray balance adjustment pattern used in registration was made and printed by the gray balance adjustment (Manual) with SIM 67-25. This procedure may have been executed erroneously.

**a. Setting procedure**

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

- 1) Use SIM 67-25 (Printer gray balance adjustment (manual adjustment) mode) to print two sheets of the gray patch image (adjustment pattern).

NOTE: In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 67-25.

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

- 2) Enter the SIM 67-27 mode.
- 3) Press [SETUP] key.
- 4) Set the gray patch image (adjustment pattern) correctly adjusted and printed in the printer gray balance adjustment (Manual adjustment) (SIM 67-25) (ADJ 11E (2)) on the document table.

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

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

This procedure must not be executed when the copy gray balance (manual) was adjusted with SIM 67-25 to a unique gray balance requested by the user and it was registered as the service gray balance target with SIM 67-27.

- 5) Press [EXECUTE] key.  
The gray patch image (adjustment pattern) is read.
- 6) Press [REPEAT] key, set the second gray patch image (adjustment pattern), and execute the procedure 5) again.  
Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.  
In case of an abnormality, repair the problem and try again.
- 7) Press [OK] key.

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

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

NOTE: This procedure must not be executed when the copy gray balance was adjusted with SIM 67-25 to a unique gray balance requested by the user and it was registered as the service gray balance target with SIM 67-27.

- 1) Enter the SIM 67-28 mode.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

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



---

**11-B Copy/Printer gray balance and density adjustment (Automatic adjustment)  
(Basic adjustment)**

This adjustment must be performed in the following cases:

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

**a. General**

SIM46-74 is used to perform the automatic copy gray balance and density adjustment (SIM46-24) and the automatic printer gray balance and density adjustment (SIM67-24) continuously.

Since it is desirable to perform the copy gray balance adjustment (automatic adjustment) before the automatic printer gray balance and density adjustment, it is advisable to perform the adjustment in this mode.

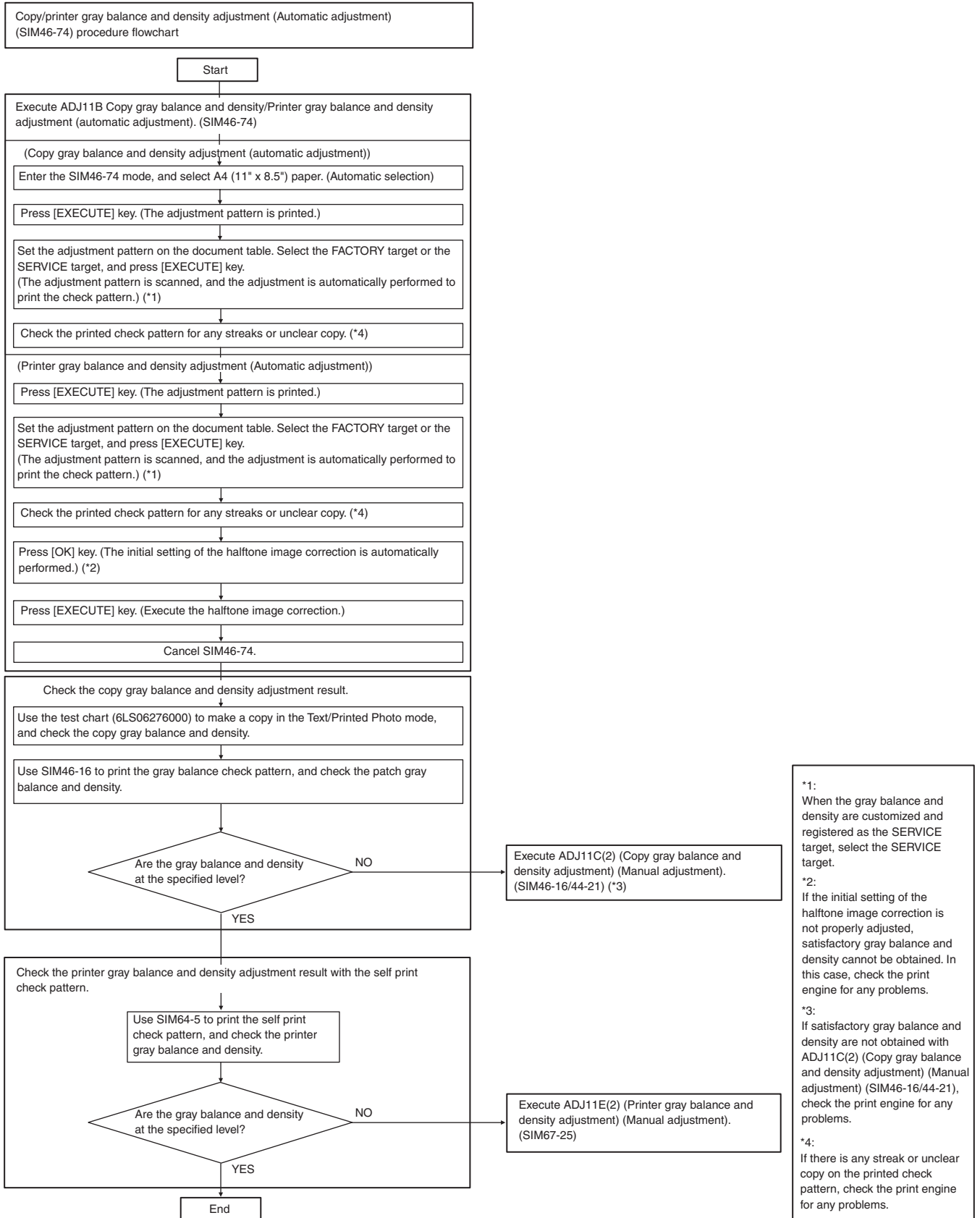
This mode is also advisable to effectively perform both of the automatic copy gray balance and density adjustment (SIM46-24) and the automatic printer gray balance and density adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer gray balance and the density adjustment individually.

The gray balance adjustment (automatic adjustment) is used to adjust the density automatically.

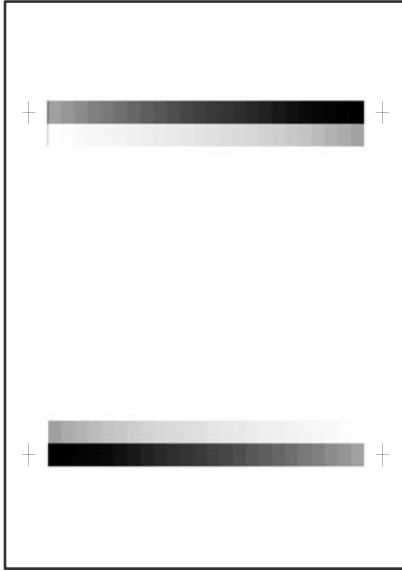
When this adjustment is executed, the gray balance adjustments of all the copy/printer modes are revised.

## b. Adjustment procedures

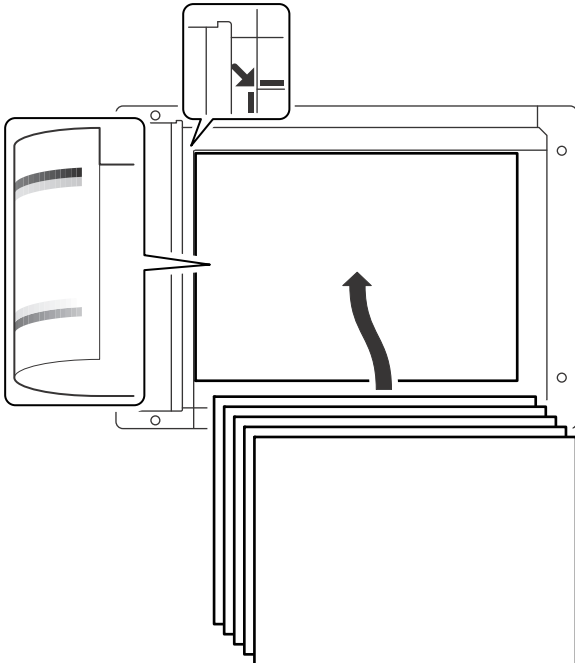
(Auto gray balance adjustment by the serviceman)



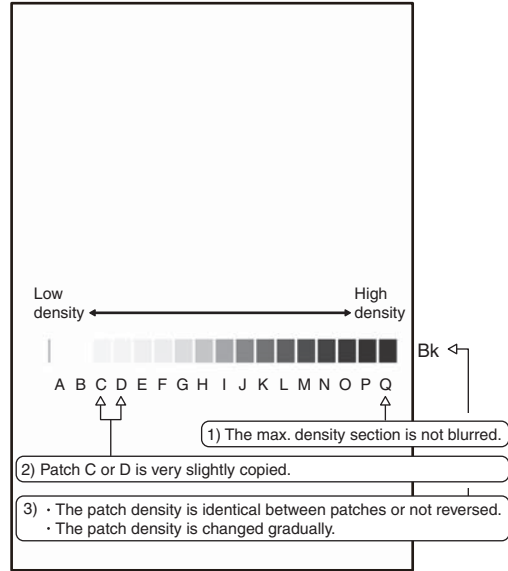
- 1) Enter the SIM46-74 mode.
- 2) Press [EXECUTE] key.  
The high density process control is performed, and the copy gray patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



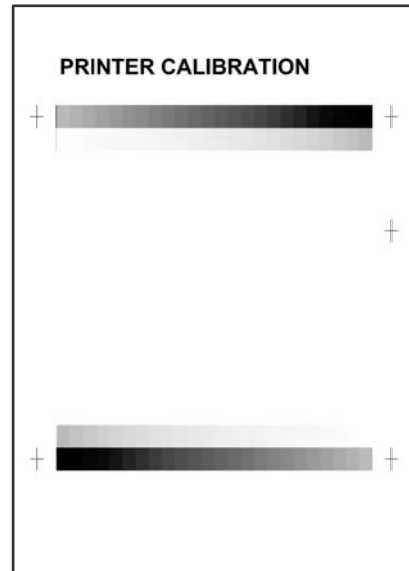
- 3) Set the gray patch image (adjustment pattern) paper printed in procedure 2) on the document table.  
Set the gray patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the gray patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed gray patch image (adjustment pattern).



- 4) Select [FACTORY] target, and press [EXECUTE] key.  
The copy gray balance adjustment is automatically executed and prints the gray balance check patch image. If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.

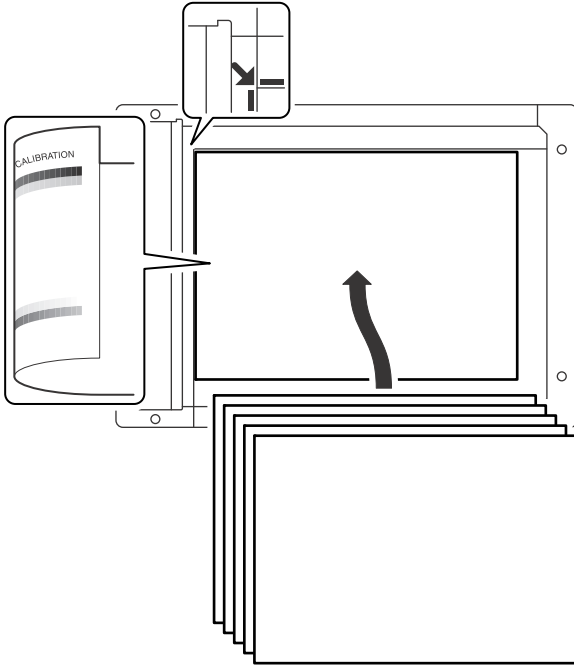


- 5) Press [EXECUTE] key.  
The printer gray patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



- 6) Set the gray patch image (adjustment pattern) printed in the procedure 5) on the document table.

Set the gray patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the gray patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed gray patch image (adjustment pattern).

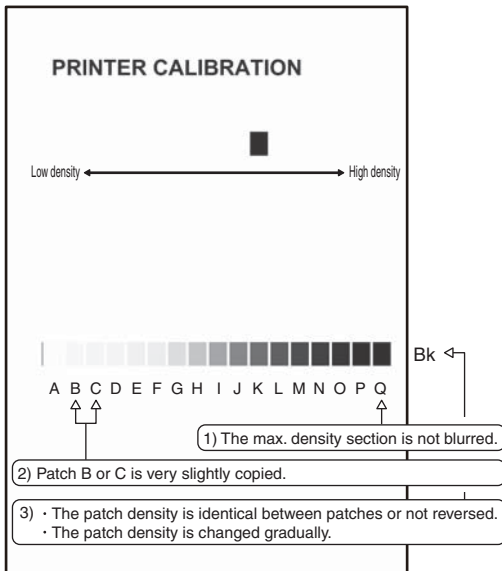


- 7) Select [FACTORY] target, and press [EXECUTE] key.

When the gray balance is customized with the manual gray balance adjustment (SIM 67-25) according to the user's request and the gray balance is registered as the service target with SIM 67-27, if the gray balance is adjusted to that gray balance, select the [SERVICE] target.

The printer gray balance adjustment (step 1) is automatically performed and the gray balance check patch image is printed out.

If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.



- 8) The initial setting menu of the halftone image correction is displayed. Press [OK] key.  
The initial setting of the halftone image correction is performed.
- 9) Wait until [EXECUTE] key is displayed. When it is displayed, press it.  
The halftone image correction is performed.
- 10) When "COMPLETED THIS PROCEDURE" is displayed, the adjustment operation is completed.  
Cancel SIM46-74.

NOTE: The adjustment result becomes valid only when the both adjustments in the copy mode and in the printer mode are completed.

For example, if the copy gray balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is invalid.

- 11) Check the copy gray balance and density.  
(Refer to the item of the copy gray balance and density check.)  
When the gray balance and the density are unsatisfactory after the automatic adjustment by selecting the factory target in procedure 4), execute the manual gray balance adjustment (ADJ11C (2)).  
Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11C (2)).

- 12) Check the printer gray balance and density.  
(Refer to the item of the printer gray balance and density check.)  
If a satisfactory result on the gray balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 11E (2)).  
Also when the service target is selected in procedure 7) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11E (2)).

If the gray balance or density is not in the satisfactory level even after execution of the automatic and manual adjustments, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

### 11-C Copy quality adjustment (Basic adjustment)

This adjustment must be performed in the following cases:

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

### 11-C (1) Copy gray balance and density adjustment (Automatic adjustment)

#### a. General

The gray balance adjustment (automatic adjustment) is used to adjust the copy density automatically.

When this adjustment is executed, the gray balance adjustments of all the copy modes are revised.

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

- 1) Auto gray balance adjustment by the serviceman (SIM 46-24 is used.)
- 2) Auto gray balance adjustment by the user (The user program mode is used.) (The gray balance target is the service target.)  
The auto gray balance adjustment by the user is provided to reduce the number of service calls.

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

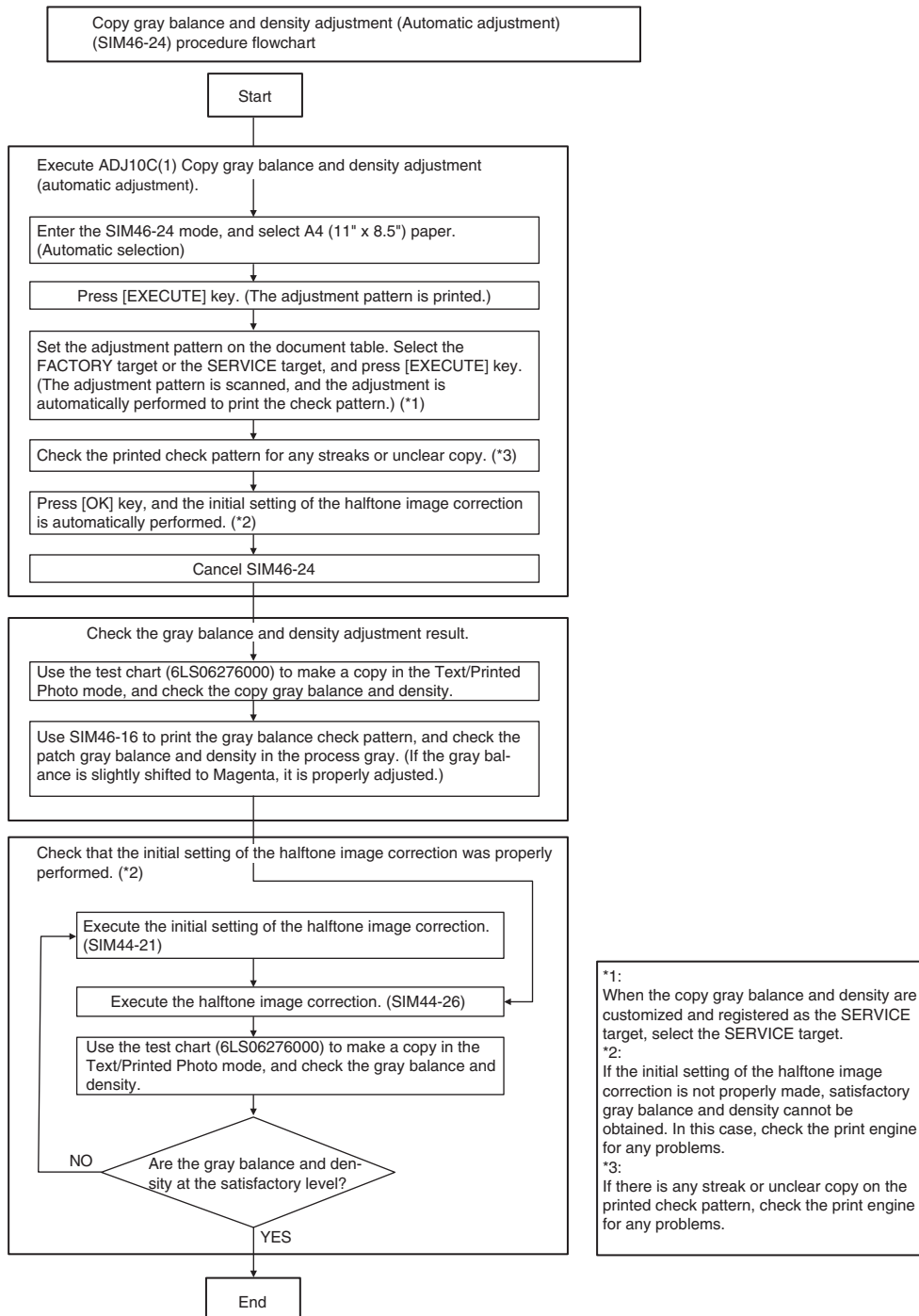
When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

If the machine condition is dramatically changed, a fatal problem occurs, or the normal gray targets cannot be obtained, service must recalibrate the machine to specification.

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

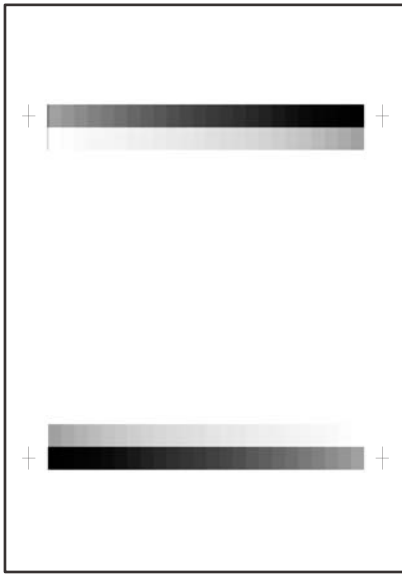
### b. Adjustment procedure

(Auto gray balance adjustment by the serviceman)



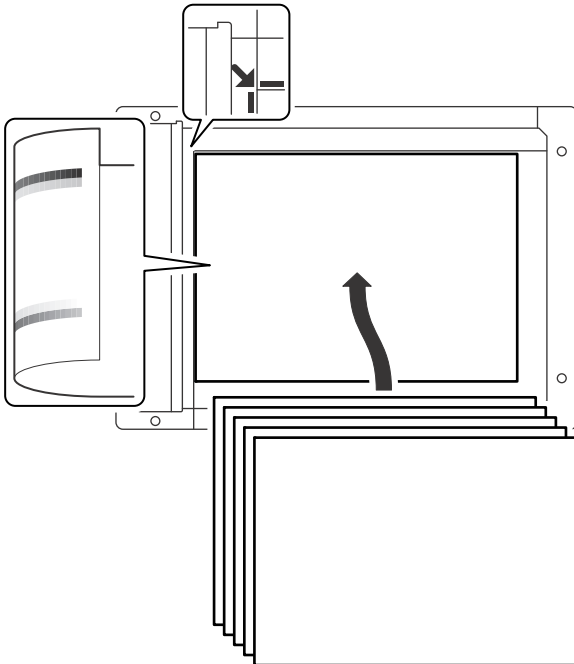
- 1) Enter the SIM 46-24 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

The patch image (adjustment pattern) is printed out.

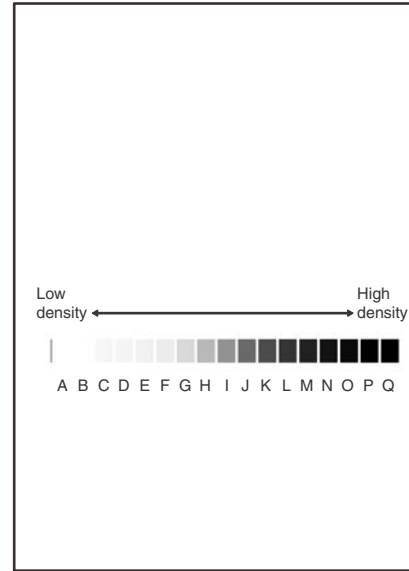


- 3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.

Place the printed patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern) paper.



- 4) Select [FACTORY] target, and press [EXECUTE] key.  
The copy gray balance adjustment is automatically executed to print the gray balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.



- 5) Press [OK] key on the operation panel.  
According to data of this adjustment, the initial setting of the halftone image correction is performed.

**NOTE:**

After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON." is displayed. This operation takes several minutes.

After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.

Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.

- 6) Check the gray balance and density.  
(Refer to the item of the copy gray balance and density check.)
- 7) Use SIM44-26 to execute the halftone image correction.  
(Forcible execution)  
Enter the SIM44-26 mode and press [EXECUTE] key.  
[EXECUTE] key is highlighted and the operation is started.  
It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.  
After completion of the operation, the simulation is canceled.
- 8) Use the servicing color test chart (6LS06276000) in the Text/Photo mode (Manual) to check the copy gray balance and density. (Refer to the item of the copy gray balance and density check.)  
If the copy gray balance and density are not satisfactory, perform the following procedures.
- 9) Execute the initial setting of the halftone image correction. (SIM 44-21)
- 10) Execute the halftone image correction. (Forcible execution) (SIM44-26)
- 11) Use the servicing color test chart (6LS06276000) in the Text/Printed Photo mode (Manual) to check the copy gray balance/density. (Refer to the item of the copy gray balance and density check.)

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

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

When the gray balance and the density are unsatisfactory after the automatic adjustment by selecting the factory target in procedure 4), execute the manual adjustment (SIM46-16)(ADJ11C (2)).

Also when the service target is selected in procedure 7) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11C(2)).

If the gray balance or density is not in the satisfactory level even after execution of the automatic and manual adjustments, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

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**11-C (2)****Copy gray balance and density adjustment  
(Manual adjustment)****a. General**

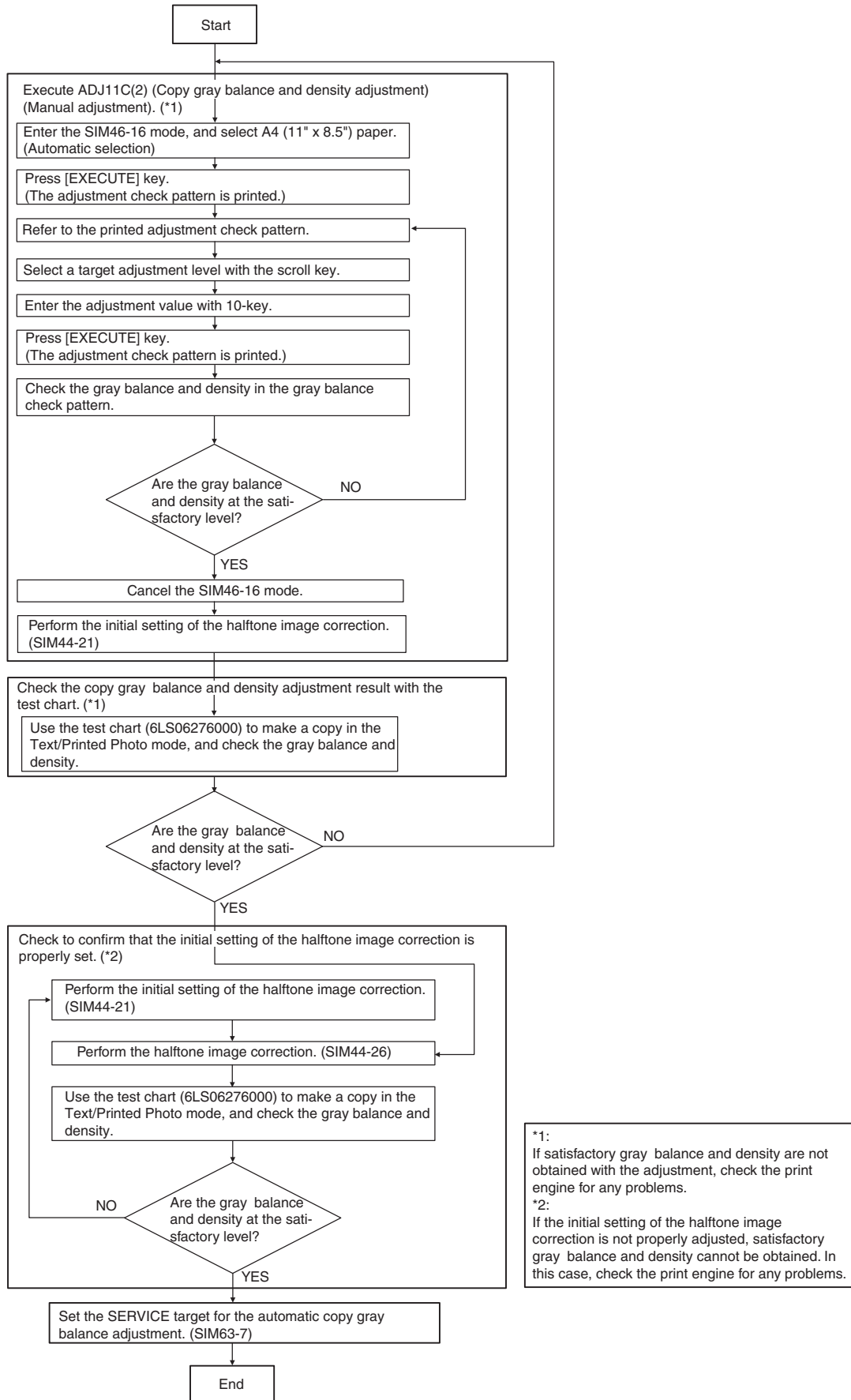
The gray balance adjustment (Manual adjustment) is used to adjust the copy density. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing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

This manual adjustment is executed only for the gray patch which could not adjusted properly in the automatic adjustment.

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

**b. Adjustment procedure**

Copy gray balance and density adjustment (Manual adjustment) procedure flowchart (SIM46-16)

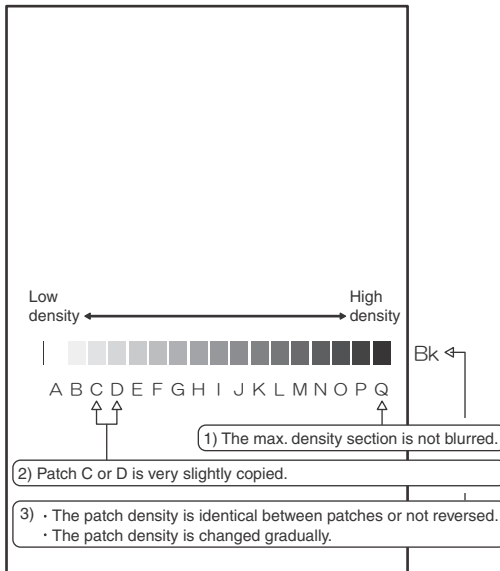


\*1:  
If satisfactory gray balance and density are not obtained with the adjustment, check the print engine for any problems.

\*2:  
If the initial setting of the half-tone image correction is not properly adjusted, satisfactory gray balance and density cannot be obtained. In this case, check the print engine for any problems.



- 1) Enter the SIM46-16 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)  
The gray balance adjustment pattern is printed.
- 3) Check that the following specification is satisfied or the gray balance is satisfactory.  
If not, execute the following procedures.



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

Patch B may not be copied.

Patch A must not be copied.

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

- 4) Enter the adjustment value with 10-key and press [OK] key.  
The adjustment value is set in the range of (1 - 999). When SIM 46-24 is used to adjust the automatic gray balance and density, all the set values of this simulation are set to 500.  
To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.  
Repeat procedures of 2) - 4) until the condition of 3) is satisfied.  
When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A - Q (MAX) to a same level collectively.
- 5) Make a copy of the servicing color test chart (6LS06276000) and a user's document according to necessity in the normal copy mode, the text/Printed Photo mode (Manual) to check the adjustment result.  
(Refer to the item of the copy gray balance/density check.)
- 6) Execute SIM 44-21. (Execute the initial setting of the halftone image correction.)  
It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.  
After completion of the operation, the simulation is canceled.  
NOTE:  
This procedure is to save the copy gray balance adjustment data as the reference data for the halftone correction.  
Immediately after execution of ADJ 11C (2) (Gray balance adjustment, Manual) with SIM 46-16, be sure to execute this procedure.  
When ADJ 11C (1) (Gray balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.

- 7) Use SIM 44-26 to execute the halftone image correction. (Forcible execution)  
Enter the SIM 44-26 mode and press [EXECUTE] key.  
[EXECUTE] key is highlighted and the operation is started.  
It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.  
After completion of the operation, the simulation is canceled.

- 8) Make a copy of the servicing color test chart (6LS06276000) and a user's document according to necessity in the Text/Printed Photo mode (Manual) and check the adjustment result again. (Refer to the item of the copy gray balance/density check.)

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

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

NOTE:

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

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

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

## 11-D Copy / Image send image quality adjustment (Individual adjustment)

### a. General

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 11B and ADJ 11C or there is a request from the user. Normally there is no need to execute this adjustment.

In this adjustment, the adjustment result may be applied to the image send mode and the copy mode.

This must be well understood for execution of the adjustment.

|       |  | Copy MODE       |        | IMAGE SEND(SCAN) MODE |        |                 |        | Printer |
|-------|--|-----------------|--------|-----------------------|--------|-----------------|--------|---------|
|       |  | Monochrome mode |        | Color mode            |        | Monochrome mode |        |         |
|       |  | Auto            | Manual | Auto                  | Manual | Auto            | Manual |         |
| 46-02 | Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)                                  | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-04 | Color image send mode image density adjustment (for each mode) (No need to adjust normally)  | -               | -      | ○                     | ○      | -               | -      | -       |
| 46-05 | Monochrome image send mode image density adjustment (for each mode) (No need to adjust normally)   | -               | -      | -                     | -      | ○               | ○      | -       |
| 46-08 | Image send mode RGB gray balance adjustment (separately for the low-density area and the high-density area) (No need to adjust normally)   | -               | -      | ○                     | ○      | -               | -      | -       |
| 46-09 | DSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally)  | ○               | ○      | ○                     | ○      | ○               | ○      | -       |
| 46-10 | Copy gray balance, gamma adjustment (for each copy mode) (No need to adjust normally)  | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-16 | Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)   | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-19 | Automatic monochrome (Copy/Scan/FAX) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)  | ○               | -      | -                     | -      | ○               | -      | -       |
| 46-23 | Copy high density image density reproduction setting (Normally unnecessary to the setting change)  | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-24 | Copy gray balance and density adjustment (Automatic adjustment)  | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-27 | Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally)  | -               | -      | -                     | -      | -               | -      | -       |
| 46-32 | Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section) | ○               | -      | -                     | -      | ○               | -      | -       |
| 46-37 | Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally)  | ○               | ○      | -                     | -      | ○               | ○      | ○       |
| 46-39 | FAX send image sharpness adjustment  | -               | -      | -                     | -      | -               | -      | -       |
| 46-40 | FAX send image density adjustment (Collective adjustment of all the modes)   | -               | -      | -                     | -      | -               | -      | -       |
| 46-41 | FAX send image density adjustment (Normal text mode)   | -               | -      | -                     | -      | -               | -      | -       |
| 46-42 | FAX send image density adjustment (Fine text mode)   | -               | -      | -                     | -      | -               | -      | -       |
| 46-43 | FAX send image density adjustment (Super fine mode)  | -               | -      | -                     | -      | -               | -      | -       |
| 46-44 | FAX send image density adjustment (Ultra fine mode)  | -               | -      | -                     | -      | -               | -      | -       |
| 46-45 | FAX send image density adjustment (600dpi mode)  | -               | -      | -                     | -      | -               | -      | -       |
| 46-46 | FAX send image density adjustment (RGB_RIP)  | -               | -      | -                     | -      | -               | -      | -       |
| 46-47 | Copy image, image send image, FAX send image (JPEG) compression ratio setting (Normally unnecessary to the setting change)   | ○               | ○      | ○                     | ○      | ○               | ○      | ○       |
| 46-48 | Copy output resolution setting   | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-51 | Gamma manual adjustment for the copy mode heavy paper and the image process mode (dither) (No need to adjust normally)   | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-52 | Gamma default setting for the copy mode heavy paper and the image process mode (dither)  | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-54 | Copy gamma, gray balance adjustment for each dither (Automatic adjustment) (No need to adjust normally)  | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-55 | Dropout color setting  | -               | -      | -                     | -      | -               | ○      | -       |
| 46-60 | Color (Scan) mode sharpness adjustment (No need to adjust normally)  | -               | -      | ○                     | -      | -               | -      | ○       |
| 46-61 | Area separation recognition level adjustment (No need to adjust normally)  | ○               | ○      | ○                     | ○      | ○               | ○      | -       |
| 46-62 | ACS, area separation, background image process, automatic exposure mode operation conditions setting (Normally unnecessary to the setting change)  | ○               | ○      | ○                     | ○      | ○               | ○      | -       |
| 46-63 | Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)  | ○               | ○      | ○                     | ○      | ○               | ○      | -       |
| 46-66 | Watermark adjustment   | ○               | ○      | -                     | -      | -               | -      | -       |
| 46-74 | Printer/Copy gray balance and density adjustment (Automatic adjustment) (Basic adjustment)   | ○               | ○      | -                     | -      | -               | -      | ○       |
| 46-90 | High-compression PDF image process operation setting (Normally unnecessary to the setting change)  | -               | -      | ○                     | ○      | -               | -      | -       |
| 46-91 | Black text emphasis fine adjustment  | -               | -      | ○                     | ○      | -               | -      | -       |

**11-D (1)**

**Monochrome copy density adjustment  
(for each monochrome copy mode)  
(separately for the low-density area and the  
high-density area)  
(No need to adjust normally)**

The density is adjusted in each copy mode individually.

This adjustment must be performed in the following cases:

- \* When there is necessity to change the copy density of the low density and high density part at each copy density individually.
  - \* When there is necessity to change the density gradient of the copy by each the copy mode individually.
  - \* When there is necessity to change all copy density by each the copy mode individually.
  - \* When there is request from the user.
- 1) Enter the SIM 46-2 mode.
  - 2) Select the copy mode to be adjusted with the scroll key.

| Display/Item | Content                           | Setting range                      | Default        |
|--------------|-----------------------------------|------------------------------------|----------------|
| A            | AUTO1                             | Auto 1                             | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| B            | AUTO2                             | Auto 2                             | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| C            | TEXT                              | Text                               | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| D            | TEXT/PRINTED PHOTO                | Text/Printed Photo                 | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| E            | TEXT/PHOTO                        | Text/Photograph                    | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| F            | PRINTED PHOTO                     | Printed Photo                      | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| G            | PHOTOGRAPH                        | Photograph                         | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| H            | MAP                               | Map                                | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| I            | TEXT (COPY TO COPY)               | Text (Copy document)               | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| J            | TEXT/PRINTED PHOTO (COPY TO COPY) | Text/Printed Photo (Copy document) | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| K            | PRINTED PHOTO (COPY TO COPY)      | Printed Photo (Copy document)      | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |
| L            | LIGHT                             | Light document                     | LOW 1 - 99 50  |
|              |                                   |                                    | HIGH 1 - 99 50 |

- 3) Enter the adjustment value with 10-key and press [OK] key.  
When adjusting the copy density on the low density part, select "LOW" mode and change the adjustment value. When adjusting the copy density on the high density part, select "HIGH" mode and change the adjustment value.  
When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.
- 4) Make a copy and check the adjustment result.  
Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.  
Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

**11-D (2)**

**Copy gray balance, gamma adjustment  
(No need to adjust normally)**

This adjustment is used to execute the gray balance adjustment for each density level.

This adjustment must be performed in the following cases:

- \* When there is necessity to change the gray balance and gamma by each the copy mode individually.
  - \* When there is request from the user.
- 1) Enter the SIM 46-10 mode.
  - 2) Select the copy mode to be adjusted with the mode key.
  - 3) Select the density level (point) to be adjusted with the scroll key.

| Item/Display | Density level (Point) | Adjustment value range | Default     |
|--------------|-----------------------|------------------------|-------------|
| A            | POINT1                | Point 1                | 1 - 999 500 |
| B            | POINT2                | Point 2                | 1 - 999 500 |
| C            | POINT3                | Point 3                | 1 - 999 500 |
| D            | POINT4                | Point 4                | 1 - 999 500 |
| E            | POINT5                | Point 5                | 1 - 999 500 |
| F            | POINT6                | Point 6                | 1 - 999 500 |
| G            | POINT7                | Point 7                | 1 - 999 500 |
| H            | POINT8                | Point 8                | 1 - 999 500 |
| I            | POINT9                | Point 9                | 1 - 999 500 |
| J            | POINT10               | Point 10               | 1 - 999 500 |
| K            | POINT11               | Point 11               | 1 - 999 500 |
| L            | POINT12               | Point 12               | 1 - 999 500 |
| M            | POINT13               | Point 13               | 1 - 999 500 |
| N            | POINT14               | Point 14               | 1 - 999 500 |
| O            | POINT15               | Point 15               | 1 - 999 500 |
| P            | POINT16               | Point 16               | 1 - 999 500 |
| Q            | POINT17               | Point 17               | 1 - 999 500 |

- 4) Enter the adjustment value with 10-key and press [OK] key.  
When the adjustment value is increased, the density is increased. When the adjustment value is decreased, the density is decreased.  
When the arrow key is pressed, the densities are collectively adjusted.  
That is, all the density levels (points) from the low density point to the high density point can be adjusted collectively.  
When [EXECUTE] key is pressed, the adjustment pattern is printed out.  
This adjustment pattern can be used to check the gray balance and the density for each density level (point).
- 5) Make a copy and check the adjustment result.  
Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.  
Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

### 11-D (3) Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)

This adjustment is used to execute the density adjustment for each density level in each monochrome copy mode.

This adjustment must be performed in the following cases:

- \* When it is required to change the gamma in each copy mode.
- \* When there is request from the user.

- 1) Enter the SIM 46-16 mode.
- 2) Select the density level (point) to be adjusted with the scroll key.

| Item/Display | Density level (Point) | Adjustment value range | Default |     |
|--------------|-----------------------|------------------------|---------|-----|
| A            | POINT1                | Point 1                | 1 - 999 | 500 |
| B            | POINT2                | Point 2                | 1 - 999 | 500 |
| C            | POINT3                | Point 3                | 1 - 999 | 500 |
| D            | POINT4                | Point 4                | 1 - 999 | 500 |
| E            | POINT5                | Point 5                | 1 - 999 | 500 |
| F            | POINT6                | Point 6                | 1 - 999 | 500 |
| G            | POINT7                | Point 7                | 1 - 999 | 500 |
| H            | POINT8                | Point 8                | 1 - 999 | 500 |
| I            | POINT9                | Point 9                | 1 - 999 | 500 |
| J            | POINT10               | Point 10               | 1 - 999 | 500 |
| K            | POINT11               | Point 11               | 1 - 999 | 500 |
| L            | POINT12               | Point 12               | 1 - 999 | 500 |
| M            | POINT13               | Point 13               | 1 - 999 | 500 |
| N            | POINT14               | Point 14               | 1 - 999 | 500 |
| O            | POINT15               | Point 15               | 1 - 999 | 500 |
| P            | POINT16               | Point 16               | 1 - 999 | 500 |
| Q            | POINT17               | Point 17               | 1 - 999 | 500 |

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

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

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

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

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

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

This adjustment pattern can be used to check the gray balance and the density for each density level (point).
- 4) Make a copy and check the adjustment result.
 

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

Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

### 11-D (4) Automatic monochrome (Copy/Scan) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)

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

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

This setting is required in the following cases.

- \* When a proper density copy is not obtained in the monochrome automatic copy mode.
- \* When a document with images near its lead edge is copied.
- \* When a document with colored background is copied.

- 1) Enter the SIM 46-19 mode.
- 2) Set REALTIME, STOP or PRE-SCAN to adjustment item AE STOP COPY. For contents of each setting item, refer to below. Change the setting value of "AE WIDTH" item to "FULL" or "PART", in some cases.

| Display/Item | Content                              | Set value              | Default |
|--------------|--------------------------------------|------------------------|---------|
| AE_MODE      | Auto exposure mode                   | MODE1, MODE2           | MODE1   |
| AE_STOP_COPY | Auto B/W exposure Stop (for copy)    | REALTIME/ STOP/PRESCAN | STOP    |
| AE_STOP_FAX  | Auto B/W exposure Stop (for FAX)     | ON/OFF                 | ON      |
| AE_STOP_SCAN | Auto B/W exposure Stop (for scanner) | REALTIME/ STOP/PRESCAN | STOP    |
| AE_FILTER    | Auto exposure filter setting         | SOFT                   | NORMAL  |
|              |                                      | NORMAL                 |         |
|              |                                      | SHARP                  |         |
| AE_WIDTH     | AE exposure width                    | FULL                   | FULL    |
|              |                                      | PART                   |         |

NOTE:

MODE1: Normal gamma

MODE2: High gamma (Improves the image contrast)

STOP:

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

REALTIME:

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

PRESCAN:

Once the densities on the document surface are scanned, the output image density is determined according to the average of the scanned densities. (The output image density is even for all the surface.)

AE WIDTH FULL:

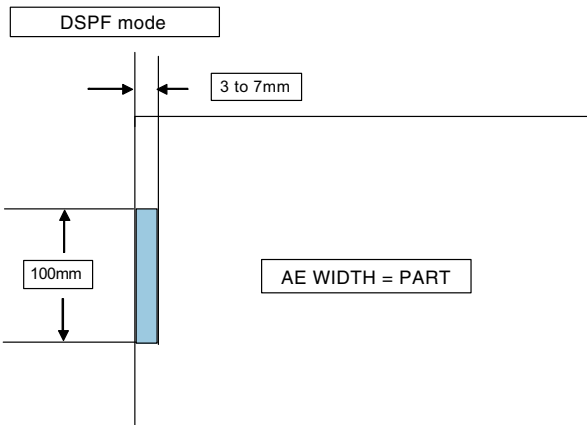
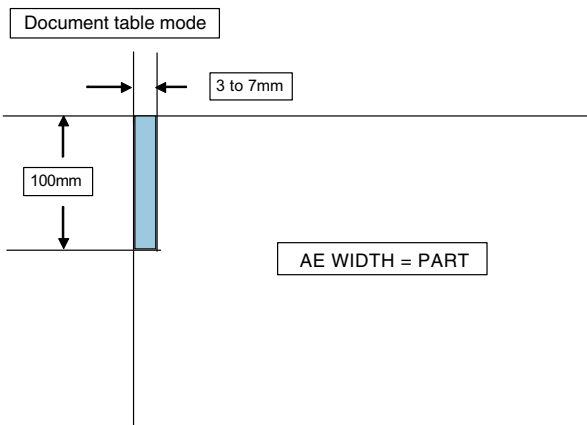
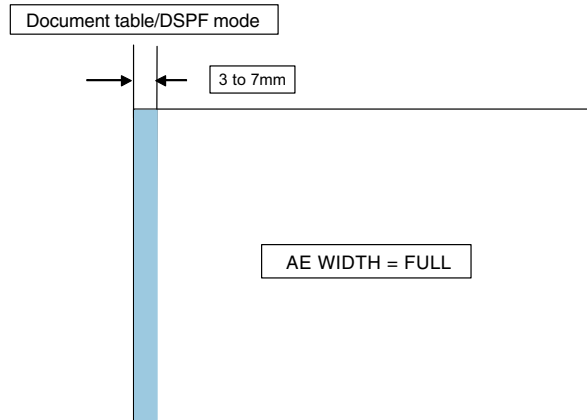
Document density reading area in monochrome auto mode is 3 - 7 mm (leading edge of document) x Document width. No relationship to PRESCAN MODE

AE WIDTH PART:

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

**Operation in monochrome auto copy mode:**

When the density of the document of the read area is light, output image density is increased by control. When the density of the document of the read area is dark, output image density is decreased by control.



Document density detection area

**11-D (5)**

**Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan) mode (No need to adjust normally) (Background density adjustment in the scanning section)**

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

This adjustment is required in the following cases.

- \* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
  - \* When there is request from the user.
- 1) Enter the SIM 46-32 mode.
  - 2) Select the adjustment mode with the scroll key.
  - 3) Enter the adjustment value with 10-key and press [OK] key.

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

| Item/Display         | Content                               | Setting range | Default value |
|----------------------|---------------------------------------|---------------|---------------|
| A COPY: OC           | Copy mode (for OC)                    | 1 - 250       | 196           |
| B COPY: DSPF (SIDE1) | Copy mode (for DSPF front surface)    | 1 - 250       | 196           |
| C COPY: DSPF (SIDE2) | Copy mode (for DSPF back surface)     | 1 - 250       | 196           |
| D SCAN: OC           | Scanner mode (for OC)                 | 1 - 250       | 196           |
| E SCAN: DSPF (SIDE1) | Scanner mode (for DSPF front surface) | 1 - 250       | 196           |
| F SCAN: DSPF (SIDE2) | Scanner mode (for DSPF back surface)  | 1 - 250       | 196           |

**11-D (6)**

**Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)**

This adjustment is used to adjust the image density in the low density area in the copy/scanner mode.

This adjustment is required in the following cases.

- \* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
  - \* When there is request from the user.
- 1) Enter the SIM 46-63 mode.
  - 2) Select the copy mode to be adjusted with the scroll key.

| Display/Item                    | Content                      | Set value | Default |
|---------------------------------|------------------------------|-----------|---------|
| A COLOR PUSH:TEXT/PRINTED PHOTO | Text print (color PUSH)      | 1 - 9     | 3       |
| B COLOR PUSH:TEXT               | Text (color PUSH)            | 1 - 9     | 3       |
| C COLOR PUSH:PRINTED PHOTO      | Printed photo (color PUSH)   | 1 - 9     | 5       |
| D COLOR PUSH:PHOTOGRAPH         | Photograph (color PUSH)      | 1 - 9     | 5       |
| E COLOR PUSH:TEXT/PHOTO         | Text/Photograph (color PUSH) | 1 - 9     | 3       |
| F COLOR PUSH: MAP               | Map (color PUSH)             | 1 - 9     | 5       |

- 3) Enter the adjustment value with 10-key and press [OK] key.  
When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

**11-D (7)**  
**Monochrome (Copy/Scan) mode color document reproduction adjustment (No need to adjust normally)**

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

This adjustment is required in the following cases.

\* When there is desire to change reproducibility of yellow/red image in case of making a color copy of the color document in monochrome copy mode.

\* When there is request from the user.

- 1) Enter the SIM 46-37 mode.
- 2) Select the mode to be adjusted with the scroll key.

| Item/Display | Content     | Setting range                 | Default value   |
|--------------|-------------|-------------------------------|-----------------|
| A            | R-Ratio     | Gray making setting (R)       | 0 - 1000<br>63  |
| B            | G-Ratio     | Gray making setting (G)       | 0 - 1000<br>847 |
| C            | R-Ratio RIP | Print gray making setting (R) | 0 - 1000<br>299 |
| D            | G-Ratio RIP | Print gray making setting (G) | 0 - 1000<br>587 |

|             |  |
|-------------|--|
| B-Ratio     | Gray making setting (B) (1000-R-Ratio - G-Ratio)               |
| B-Ratio RIP | Print gray making setting (B) (1000-R-Ratio RIP - G-Ratio RIP) |

- 3) Enter the adjustment value with 10-key.  
When the adjustment value of adjustment item A is increased, copy density of red image is decreased. When the adjustment value is decreased, copy density of red image is increased.  
When the adjustment value of adjustment item B is increased, copy density of yellow image is decreased. When the adjustment value is decreased, copy density of yellow image is increased.
- 4) Press [OK] key.
- 5) Make a copy in monochrome text/printed photo copy mode (manual), check the copy.  
If a satisfactory result is not obtained, return to the SIM 46-37 mode and change the adjustment value.  
Repeat the above procedures until a satisfactory result is obtained.

**11-D (8)**  
**Monochrome copy/color scan mode sharpness adjustment (No need to adjust normally)**

Use for sharpness adjustment of the high density image in monochrome copy/color scan mode.

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

This adjustment is required in the following cases.

\* When changing the sharpness of copy image in copy mode. (obtain crispy image) (decreases moire)

\* When there is desire to improving smoothness in the image shade part (for decrease of asperity)

\* To make the black background and the dark area darker.

\* To reproduce the gradation change in the dark area.

\* When there is request from the user.

- 1) Enter the SIM 46-60 mode.
- 2) Select the mode to be adjusted with the scroll key.

| Item/Display | Content                    | Setting range | Default value  |        |       |   |            |
|--------------|----------------------------|---------------|--|--------|-------|---|------------|
| A            | CPY PUSH AUTO FILTER LEVEL | SOFT          | Sharpness: The sharpness is specified when the document mode is judged as A5 or A6 by the auto mode of PUSH. | SOFT   | 1 - 3 | 1 | 2 (CENTER) |
|              |                            | CENTER        |  | CENTER |       | 2 |            |
|              |                            | HIGH          |  | HIGH   |       | 3 |            |
| B            | B/W COPY                   | OFF           | Filter mixture, Register select pattern, Monochrome copy   | OFF    | 0 - 1 | 0 | 1(ON)      |
|              |                            | ON            |  | ON     |       | 1 |            |
| C            | COLOR PUSH: RGB            | OFF           | Filter mixture, Register select pattern, Color push  | OFF    | 0 - 1 | 0 | 1(ON)      |
|              |                            | ON            |  | ON     |       | 1 |            |
| D            | B/W PUSH                   | OFF           | Filter mixture, Register select pattern, Monochrome push   | OFF    | 0 - 1 | 0 | 1(ON)      |
|              |                            | ON            |  | ON     |       | 1 |            |
| E            | B/W PRINT                  | OFF           | Filter mixture, Register select pattern, Monochrome print  | OFF    | 0 - 1 | 0 | 0(OFF)     |
|              |                            | ON            |  | ON     |       | 1 |            |

- 3) Input numeric value corresponding to sharpness level (filter process mode).  
\* Adjustment item A:  
When selecting AUTO, filter is selected according to dot pattern state automatically and adjusts sharpness.  
Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.  
\* Adjustment item B:  
Select HIGH to obtain clear images. Select SOFT to reduce moire.  
\* Adjustment item C - J:  
When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases)
- 4) Press [OK] key.
- 5) Make a copy and check the copy image.  
If a satisfactory result is not obtained, return to the SIM 46-60 mode and change the adjustment value.  
Repeat the above procedures until a satisfactory result is obtained.

**11-D (9)****Copy high density image density reproduction setting (Normally unnecessary to the setting change)**

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

This setting is normally not required. When, however, there are case of following, change the setting.

- \* When a tone gap occurs on part of high density.
- \* When there is a necessity to increase the density of the part of high density.
- \* When there is request from the user.

**a. Adjustment procedure**

- 1) Enter the SIM 46-23 mode.
- 2) Select the item A, B with the scroll key.

| Item | Display                      | Content  | Setting range | Default value |
|------|------------------------------|--|---------------|---------------|
| A    | K<br>(0:ENABLE<br>1:DISABLE) | 0 K engine highest density correction mode: Enable     | 0 - 1         | 1             |
|      |                              | 1 K engine highest density correction mode: Disable    |               |               |
| B    | BLACK MAX TARGET             | Scanner target value for BLACK max. density correction | 0 - 999       | 500           |

\* If a tone gap occurs on part of high density, set 0 to item A and B  
The density of high density part decreases. However, the tone gap is better.

\* In case of more increase of the density on high density part, set 1 to item A and B.

The tone gap may occur in high density part.

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

If these values are changed, be sure to execute the copy gray balance density adjustment. (Auto adjustment)

**11-D (10)****DSPF mode (Copy/Scan) density adjustment (No need to adjust normally)**

This setting is normally not required, however, in the following cases, make changes to the setting:

- \* When copy in DSPF mode differs from copy in document table mode.
- \* When copy density in DSPF mode is low or too high.
- \* When the DSPF unit is replaced.
- \* When the DSPF unit is disassembled.
- \* The CCD unit has been replaced.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

**a. Adjustment procedure**

- 1) Enter the SIM 46-9 mode.
- 2) Select the mode to be adjusted with the scroll key.

When adjusting density on low density part, select "A (COPY SIDEA:LOW)". When adjusting density on high density part, select "D (COPY SIDEA:HIGH)".

| Item | Button | Display          | Content   | Setting range | Default value |
|------|--------|------------------|---|---------------|---------------|
| A    | OC     | COPY SIDEA: LOW  | DSPF copy mode exposure adjustment (Low density side)     | 1 - 99        | 47            |
| B    |        | SCAN SIDEA: LOW  | DSPF scanner mode exposure adjustment (Low density side)  | 1 - 99        | 47            |
| C    |        | FAX SIDEA: LOW   | DSPF FAX mode exposure adjustment (Low density side)      | 1 - 99        | 47            |
| D    |        | COPY SIDEA: HIGH | DSPF copy mode exposure adjustment (High density side)    | 1 - 99        | 52            |
| E    |        | SCAN SIDEA: HIGH | DSPF scanner mode exposure adjustment (High density side) | 1 - 99        | 52            |
| F    |        | FAX SIDEA: HIGH  | DSPF FAX mode exposure adjustment (High density)          | 1 - 99        | 52            |
| A    | DSPF   | COPY SIDEB: LOW  | DSPF copy mode exposure adjustment (Low density side)     | 1 - 99        | 47            |
| B    |        | SCAN SIDEB: LOW  | DSPF scanner mode exposure adjustment (Low density side)  | 1 - 99        | 47            |
| C    |        | FAX SIDEB: LOW   | DSPF FAX mode exposure adjustment (Low density side)      | 1 - 99        | 47            |
| D    |        | COPY SIDEB: HIGH | DSPF copy mode exposure adjustment (High density side)    | 1 - 99        | 50            |
| E    |        | SCAN SIDEB: HIGH | DSPF scanner mode exposure adjustment (High density side) | 1 - 99        | 50            |
| F    |        | FAX SIDEB: HIGH  | DSPF FAX mode exposure adjustment (High density)          | 1 - 99        | 50            |
| G    |        | BALANCE SIDEB: R | DSPF gray balance R                                       | 1 - 99        | 50            |
| H    |        | BALANCE SIDEB: G | DSPF gray balance G                                       | 1 - 99        | 50            |
| I    |        | BALANCE SIDEB: B | DSPF gray balance B                                       | 1 - 99        | 50            |

- 3) Enter the adjustment value with 10-key.

In case of increase of image density, input large numeric value. Or in case of diluting the image density, input small numeric value.

- 4) Press [OK] key.
- 5) Make a copy in the DSPF mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-9 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

**11-D (11)****Automatic gray balance adjustment by the user (Copy gray balance automatic adjustment ENABLE setting and adjustment)****a. General**

In the user program mode, the user can execute the auto gray calibration (auto adjustment of the copy gray balance and density).

This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

**NOTE:** This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy gray balance and density and the user's operational ability are judged adequate enough to execute the adjustment.

When set to enable, operation procedures must be fully explained to the user.

**b. Setting procedure**

1) Enter the SIM 26-53 mode.

2) Select ENABLE or DISABLE with 10-key.

When disabling, set to "0" (NO). When enabling, set to "1" (Yes).

3) Press [OK] key.

When set to DISABLE, the menu of the user auto gray calibration (automatic adjustment of copy gray balance and density) is not displayed in the user program mode.

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

**NOTE:** This adjustment is based on the service target gray balance set with SIM 63-7 and SIM 63-8. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.

2) Enter the copy setting mode.

3) Press the auto gray calibration key.

4) Press [EXECUTE] key.

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

5) Set the gray patch image (adjustment pattern) printed in procedure 4) on the document table.

Set the patch image so that the thin line is on the left side as shown in the figure.

At that time, place 5 sheets of white paper on the above gray patch image (adjustment pattern).

6) Press [EXECUTE] key, and the copy gray balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

The message, "Will you go on to the printer gray balance adjustment?" is displayed.

To execute the printer gray balance adjustment successively, perform the procedures same as the above.

**11-D (12)****Copy gamma, gray balance adjustment for each dither (Automatic adjustment)****a. General**

This simulation is used to improve the image quality in a certain mode. (Refer to the list in procedure 6.)

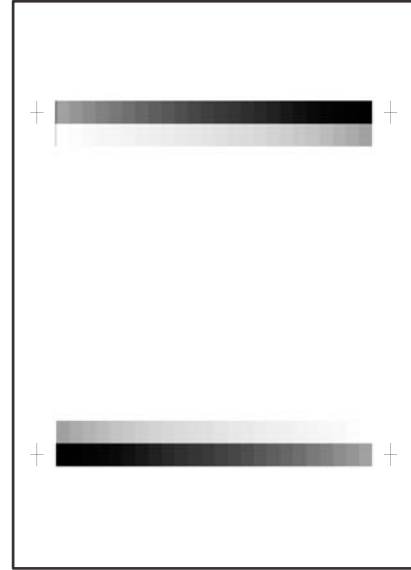
**b. Adjustment procedures**

1) Enter the SIM46-54 mode.

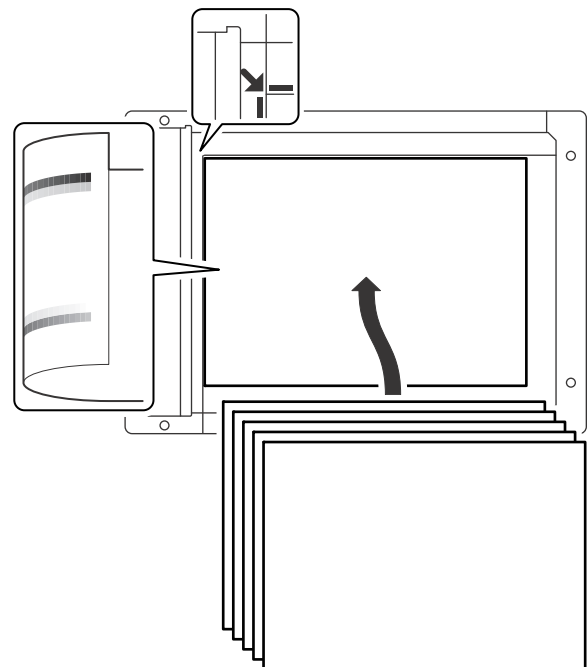
2) Press [EXECUTE] key.

A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.

The gray patch image (adjustment pattern) is printed.



3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



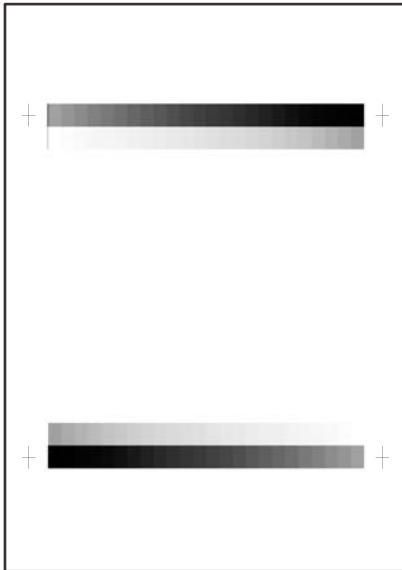


- 4) Press [EXECUTE] key.  
The gray balance and the density are automatically adjusted.  
The adjustment pattern is printed out. Check it for any abnormality.
- 5) Press [OK] key.  
The list of the adjustment items (for each dither) is displayed.
- 6) Select an adjustment item (for each dither).

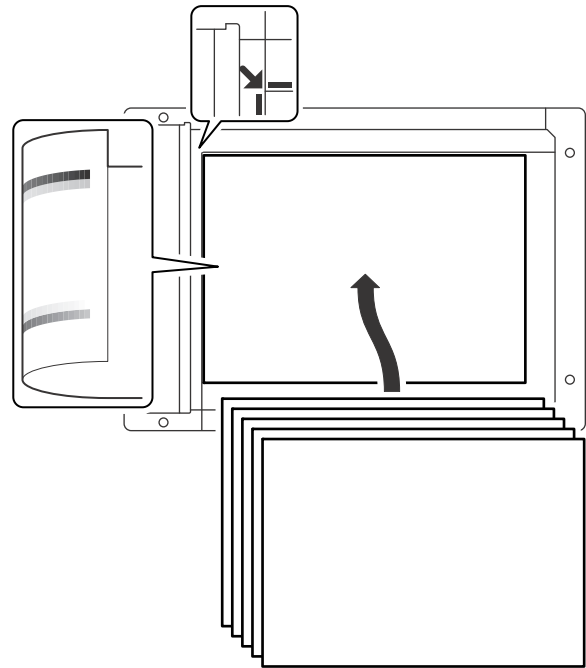
| Select item (Mode/Image) | Content   |
|--------------------------|---|
| Heavy Paper *1           | Adjustment item to improve the gray balance in the heavy paper mode   |
| B/W Ed                   | Adjustment item to improve the gray balance in the text mode, Text/Photograph mode, Light density document mode and the map mode. |
| B/W 1200                 | Adjustment item to improve the density and gradation in the monochrome printed photo mode and the photography mode.               |
| WOVEN1                   | Adjustment item when adjusting the watermark density in the watermark mode 1  |
| WOVEN2                   | Adjustment item when adjusting the watermark density in the watermark mode 2  |
| WOVEN3                   | Adjustment item when adjusting the watermark density in the watermark mode 3  |
| WOVEN4                   | Adjustment item when adjusting the watermark density in the watermark mode 4  |

\*1: When performing adjustments in the heavy paper mode, load paper in the tray 3, 4.

- 7) Press [EXECUTE] key.  
A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.  
The patch image (adjustment pattern) is printed out.



- 8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



- 9) Press [EXECUTE] key.  
The gray balance and the density are automatically adjusted, and the machine goes to the state of procedure 6).  
To complete the adjustment and enable the adjustment result, press [OK] key.
- 10) Make a copy, and check the copy image quality.  
(Refer to the item of the printer gray balance and density check.)

NOTE: Use SIM46-52 to reset the adjustment values to the default values.

**11-D (13)****Dropout color adjustment  
(Normally not required)****a. General**

This adjustment is used to adjust the range of reproduction of color document images as monochrome images in the image send mode (monochrome manual text mode).

In other words, it is used to adjust the level of chroma of color images which are reproduced as monochrome images.

This adjustment must be performed in the following cases:

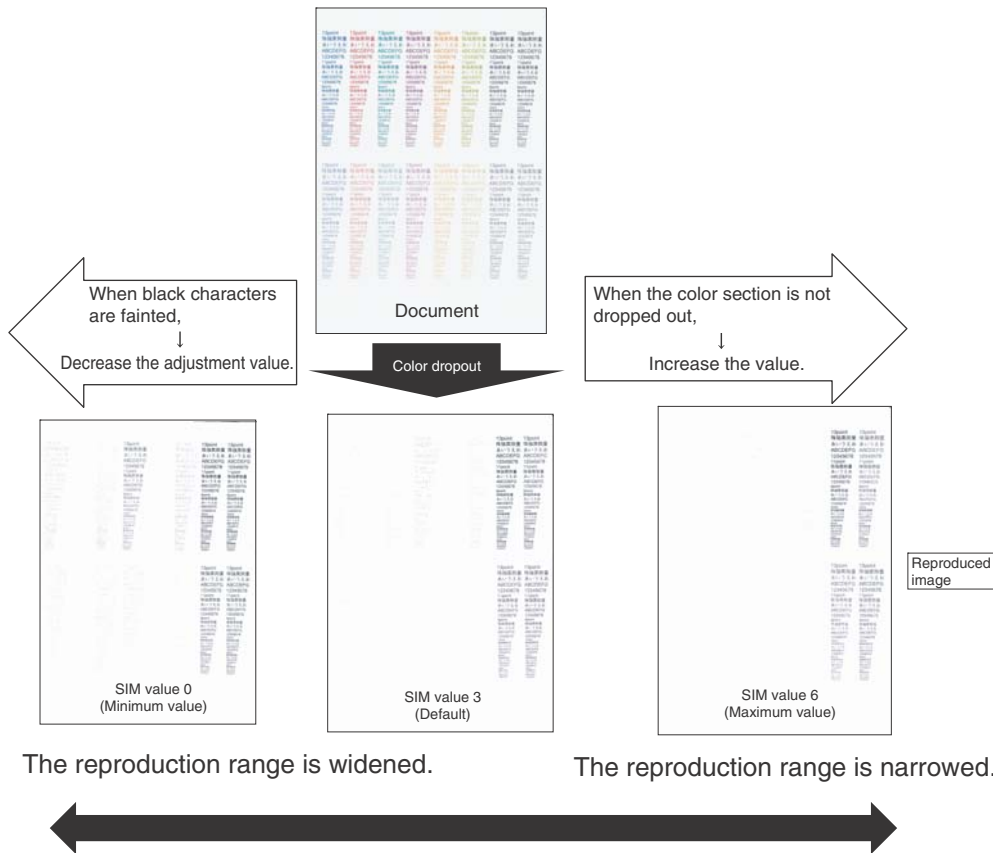
\* When there is request from the user.

**b. Adjustment procedures**

- 1) Enter the SIM 46-55 mode.
- 2) Enter the adjustment value with 10-key and press [OK] key.  
When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

| Item/Display | Content                        | Setting range | Default value |
|--------------|--------------------------------|---------------|---------------|
| A   CHROMA   | Dropout color range adjustment | 0 - 6         | 3             |

- 3) Scan the document in the image send mode (monochrome manual text mode) and check the adjustment result.

**Effect and adverse effect when decreasing the value****[Effect]**

When black characters are faded by color shift, etc, the black area is outputted clearly.

**[Adverse effect]**

Dropout of color sections becomes difficult.

**Effect and adverse effect when increasing the value****[Effect]**

Colors (of low chroma) which are difficult to be dropped out can be dropped out.

**[Adverse effect]**

Black characters are faded or cracked.

**11-D (14)****Watermark adjustment  
(Normally not required)****a. General**

This adjustment is used to adjust the reproduction capability of the watermark in the copy/printer mode.

This adjustment is used for watermark documents (primary output). The result of this adjustment affects the result of watermark print (secondary output).

In the printer mode, the watermark density can be adjusted by the printer driver. That adjustment is based on the result of this adjustment.

This adjustment must be performed in the following cases:

- \* When there is request from the user. (When a satisfactory result is not obtained from the adjustment in the system setting mode.)
- \* When there is request from the user. (When a satisfactory result is not obtained from the adjustment with the printer driver.)

**b. Adjustment procedures**

- 1) Enter the SIM 46-66 mode.
- 2) Select the PATTERN mode, then select an adjustment item in the following list according to the situation.

NOTE: Normally there is no need to adjust the PATTERN mode (items E and F), the COPY MODE, and the POSITION mode.

| Category  | Item         | Display  | Content   | Setting range | Default value |   |
|-----------|--------------|--|---|---------------|---------------|---|
| PATTERN   | A            | WOVEN DEN BK LOW   | Watermark density level (Black LOW)                                   | 0 - 255       | 15            |   |
|           | B            | WOVEN DEN BK MIDDLE  | Watermark density level (Black MIDDLE)                                | 0 - 255       | 19            |   |
|           | C            | WOVEN DEN BK HIGH  | Watermark density level (Black HIGH)                                  | 0 - 255       | 23            |   |
|           | D            | CONTRAST   | Contrast adjustment   | 0 - 255       | 2             |   |
|           | E            | HT TYPE (POSI)   | For halftone index watermark type positive                            | 42 - 43       | 42            |   |
|           | F            | HT TYPE (NEGA)   | For halftone index watermark type negative                            | 42 - 43       | 42            |   |
| COPY MODE | A            | TEXT/PRINTED PHOTO   | Text/Printed Photo mode select Enable/Disable                         | OFF           | 0 - 1         | 1 |
|           |              |  |   | ON            |               |   |
|           | B            | TEXT   | Text mode select Enable/Disable                                       | OFF           | 0 - 1         | 1 |
|           |              |  |   | ON            |               |   |
|           | C            | PRINTED PHOTO  | Printed Photo mode select Enable/Disable                              | OFF           | 0 - 1         | 1 |
|           |              |  |   | ON            |               |   |
|           | D            | PHOTOGRAPH   | Photograph mode select Enable/Disable                                 | OFF           | 0 - 1         | 1 |
|           |              |  |   | ON            |               |   |
|           | E            | TEXT/PHOTO   | Text/Photograph mode select Enable/Disable                            | OFF           | 0 - 1         | 1 |
|           |              |  |   | ON            |               |   |
| F         | MAP          | Map mode select Enable/Disable   | OFF   | 0 - 1         | 1             |   |
|           |              |  | ON  |               |               |   |
| G         | LIGHT        | Light density document mode select Enable/Disable  | OFF   | 0 - 1         | 1             |   |
|           |              |  | ON  |               |               |   |
| H         | AUTO         | Automatic mode select Enable/Disable   | OFF   | 0 - 1         | 1             |   |
|           |              |  | ON  |               |               |   |
| I         | DEFAULT MODE | Default exposure mode<br>Used to specify the exposure mode set when the watermark is ON. | TEXT/PRINTED PHOTO  | 0 - 5         | 0             |   |
|           |              |  | TEXT  |               |               |   |
|           |              |  | PRINTED PHOTO   |               |               |   |
|           |              |  | PHOTOGRAPH  |               |               |   |
|           |              |  | TEXT/PHOTO  |               |               |   |
| POSITION  | A            | LINE SPACE 1   | Line space in the watermark print box (24P - 36P) (*1)                | 0 - 200       | 20            |   |
|           | B            | LINE SPACE 2   | Line space in the watermark print box (37P - 48P) (*1)                | 0 - 200       | 20            |   |
|           | C            | LINE SPACE 3   | Line space in the watermark print box (49P - 64P) (*1)                | 0 - 200       | 20            |   |
|           | D            | LINE SPACE 4   | Line space in the watermark print box (65P - 80P) (*1)                | 0 - 200       | 20            |   |
|           | E            | BLANK H/B 1  | Upper margin/Lower margin in the watermark print box (24P - 36P) (*2) | 0 - 200       | 10            |   |
|           | F            | BLANK H/B 2  | Upper margin/Lower margin in the watermark print box (37P - 48P) (*2) | 0 - 200       | 10            |   |
|           | G            | BLANK H/B 3  | Upper margin/Lower margin in the watermark print box (49P - 64P) (*2) | 0 - 200       | 10            |   |
|           | H            | BLANK H/B 4  | Upper margin/Lower margin in the watermark print box (65P - 80P) (*2) | 0 - 200       | 10            |   |
|           | I            | BLANK L/R 1  | Left margin/Right margin in the watermark print box (24P - 36P) (*3)  | 0 - 200       | 60            |   |
|           | J            | BLANK L/R 2  | Left margin/Right margin in the watermark print box (37P - 48P) (*3)  | 0 - 200       | 90            |   |
|           | K            | BLANK L/R 3  | Left margin/Right margin in the watermark print box (49P - 64P) (*3)  | 0 - 200       | 120           |   |
|           | L            | BLANK L/R 4  | Left margin/Right margin in the watermark print box (65P - 80P) (*3)  | 0 - 200       | 150           |   |

\*1: When the adjustment value is varied by  $\pm 1$ , the line space is varied by 0.1mm.

\*2: When the adjustment value is varied by  $\pm 1$ , the upper and the lower margins are varied by 0.1mm.

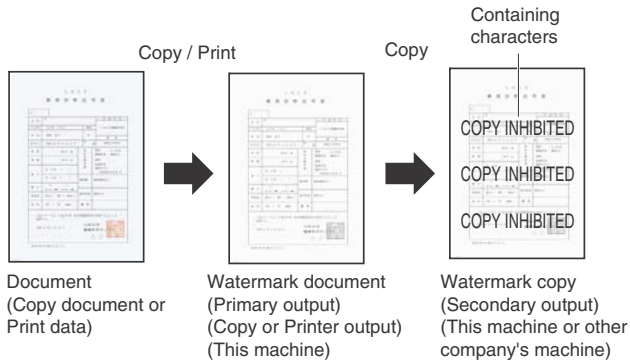
\*3: When the adjustment value is varied by  $\pm 1$ , the left and the right margins are varied by 0.1mm.

### Changing adjustment values of adjustment items A - C and trade off

| Kinds of watermarks (Mode selected in the watermark copy mode) | Density value | Adjustment values of adjustment items A - C | Effect  |
|--|---------------|---|---|
| Characters appearing.  | Decrease.     | The adjustment value is decreased.          | The watermark images become easy to disappear.<br>The containing characters become lighter.           |
|  | Increase.     | The adjustment value is increased.          | The containing characters become darker.<br>The watermark images become difficult to disappear.       |
| Background appearing.  | Decrease.     | The adjustment value is decreased.          | The containing characters become easy to disappear.<br>The watermark images become easy to disappear. |
|  | Increase.     | The adjustment value is increased.          | The watermark images become darker.<br>The containing characters become difficult to disappear.       |

- 3) Enter the adjustment value with 10-key and press [OK] key.
- 4) Make a copy, and check the adjustment result.

#### Descriptions on the watermark



|                         |  |
|-------------------------|--|
| Containing characters   | Characters embedded in a watermark, such as "COPY INHIBITED," are called containing characters.  |
| Kinds of watermarks     | There are two kinds: "Character appearing" and "Background appearing."<br>When a watermark of "Character appearing" is copied, the background disappears and the containing characters appear.<br>When a watermark of "Background appearing" is copied, the watermark of the character area disappears and the containing characters become outline characters.  |
| Principle of watermarks | A watermark is composed of two dots: fine dots and rough dots.<br>Since fine dots disappear when copied, they are called disappearing patterns.<br>Since rough dots remain when copied, they are called remaining patterns.<br>In a watermark of "Character appearing," the background is a disappearing pattern and the containing characters are remaining patterns.<br>In a watermark of "Background appearing," the background is a remaining pattern and the containing characters are disappearing patterns. |

|                              |  |
|------------------------------|--|
| NOTE:<br>Note for watermarks | <p>Watermarks have the following characteristics:</p> <ul style="list-style-type: none"> <li>• A watermark is presumed to be synthesized with text documents. If it is used with photos or images, the containing characters may be seen in the watermark document (primary output) or the containing characters may not appear properly in the watermark copy (secondary output).</li> <li>• When a watermark is synthesized with newspapers or other dark-background documents, the containing characters may not appear in the watermark copy (secondary output).</li> <li>• Containing characters may not appear in the watermark copy (secondary output) depending on the kind of the copier which makes the watermark copy (secondary output) and the copy mode.</li> <li>• Containing characters may not appear clearly in the watermark copy (secondary output) depending on the copy mode in which the watermark document (primary output) is made.</li> <li>• When the print engine status changes, the containing characters may not be concealed properly in the watermark document (primary output). In this case, follow the procedures below to conceal the containing characters. <ul style="list-style-type: none"> <li>* Use SIM46-24 to execute the gray balance adjustment.</li> <li>* Use SIM46-54 to execute the gray balance adjustment for each dither.</li> <li>* Adjust the watermark print contrast in the system setting.</li> </ul> </li> <li>• The preview screen of the watermark only indicates the setting of the watermark color, and does not indicate an actual copy image.</li> <li>• When the document control (printer mode) is used together, it is advisable to use "Characters appearing" setting. If "Background appearing" setting is used together, the detection accuracy of document control may be reduced.</li> <li>• In the printer mode watermark, setting of 1200dpi and a watermark cannot be used together.</li> </ul> |
|------------------------------|--|

#### Watermark adjustment in the system setting

System setting → Security setting → Watermark print → Contrast tab

| Watermark kind mode selection | Density                      | Adjustment                                      |
|-------------------------------|------------------------------|---|
| Character appearing           | To increase the text density | Decrease the contrast value. (Default: 5)       |
|                               | To decrease the text density | Increase the contrast value. (Default value: 5) |
| Background appearing          | To increase the text density | Increase the contrast value. (Default value: 5) |
|                               | To decrease the text density | Decrease the contrast value. (Default: 5)       |

NOTE:

#### Note for adjusting the watermark with SIM46-54

When the gray balance automatic adjustment is executed with SIM46-74 or SIM46-24 but the containing characters are reproduced, use SIM46-54 to execute the gray balance automatic adjustment for each dither.

However, note the following items.

- \* When either of item E or F of the PATTERN mode is 42, the adjustment must be executed for the both modes of WOVEN1 and WOVEN2 of SIM46-54.
- \* When either of item E or F of the PATTERN mode is 43, the adjustment must be executed for the both modes of WOVEN3 and WOVEN4 of SIM46-54.
- \* WOVEN1 and WOVEN2 must be adjusted in a pair as well as WOVEN3 and WOVEN4.  
If it is ignored, the containing characters remain reproduced.

---

**11-E Printer image quality adjustment  
(Basic adjustment)****Requisite condition before execution of the printer gray balance/density adjustment**

Before execution of the printer gray balance/density adjustment, the copy gray balance/density adjustment must have been completed properly.

**This adjustment is required in the following cases.**

- \* Basically same as when the copy gray balance/density adjustment is required.
- \* After the copy gray balance/density adjustment.

---

**11-E (1)  
Printer gray balance adjustment  
(Automatic adjustment)****a. General**

The gray balance adjustment (auto adjustment) is used to adjust the print density of automatically with SIM 67-24 or the user program.

When this adjustment is executed, the gray balance adjustments of all the print modes are revised.

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

- 1) Auto gray balance adjustment by the serviceman (SIM 67-24 is used.)
- 2) Auto gray balance adjustment by the user (The user program mode is used.) (The gray balance target is the service target.)

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

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

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

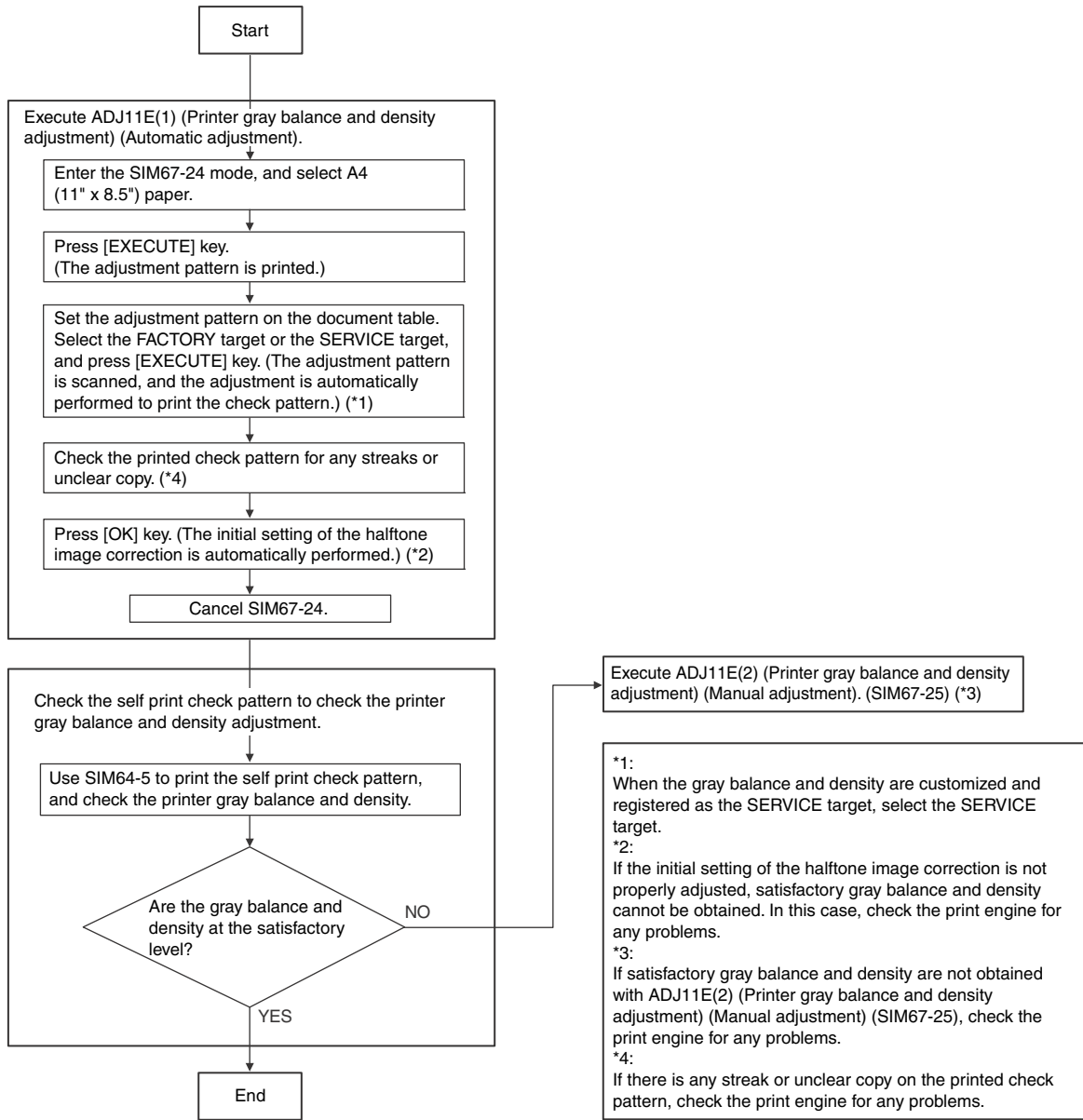
On the other hand, the auto gray balance adjustment by the serviceman functions to recover the normal gray balance though the machine condition is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal gray balance.

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

**b. Adjustment procedure**

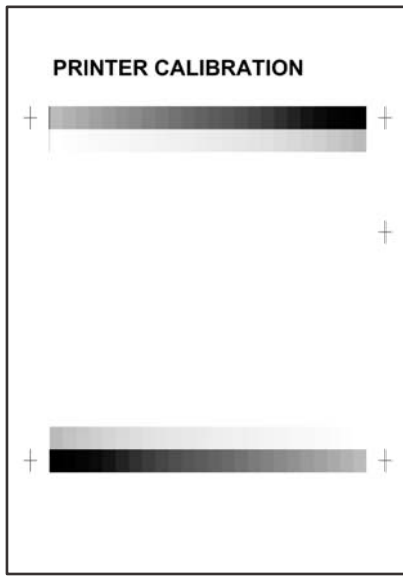
(Auto gray balance adjustment by the serviceman)

Printer gray balance and density adjustment (Automatic adjustment) procedure flowchart (SIM67-24)



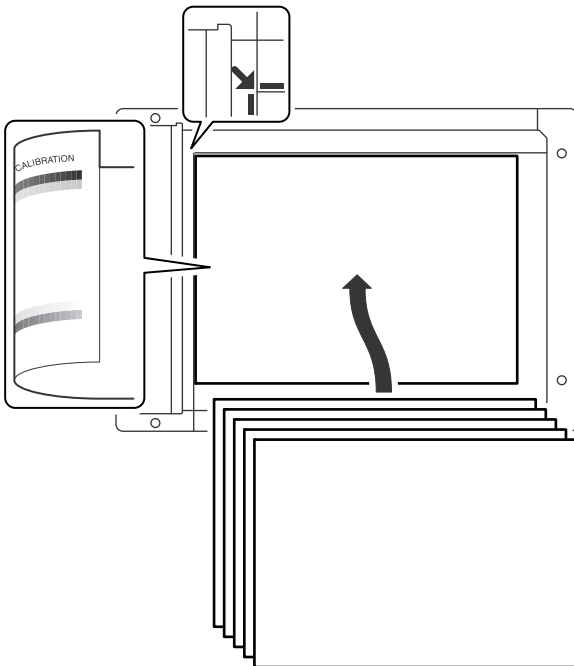
- 1) Enter the SIM 67-24 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

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



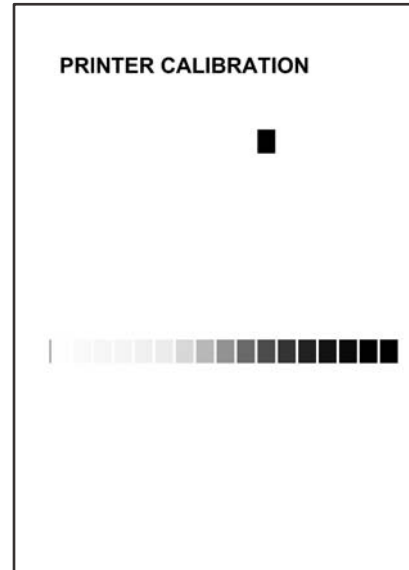
- 3) Set the gray patch image (adjustment pattern) paper printed in procedure 2) on the document table.

Place the printed gray patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed gray patch image (adjustment pattern) paper.



- 4) Select [FACTORY] key, and press [EXECUTE] key.  
When the gray balance is customized with the manual gray balance adjustment (SIM 67-25) according to the user's request and the gray balance is registered as the service target with SIM 67-27, if the gray balance is adjusted to that gray balance, select the service target.

The copy gray balance adjustment is automatically executed and prints the gray balance check patch image. Wait until the operation panel shown in the procedure 5) is displayed.



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

**NOTE:**

After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE" is displayed. This operation takes several minutes.

After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.

Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.

After completion of the operation, the simulation is canceled.

- 6) Check the gray balance and density.  
(Refer to the item of the printer gray balance and density check.)

If a satisfactory result on the gray balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 11E (2)).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11E (2)).

If the gray balance or density is not in the satisfactory level even after execution of the automatic and manual adjustments, there may be another cause.

Troubleshoot the cause, repair or perform necessary works, and repeat the adjustment from the beginning.

## 11-E (2)

### Printer gray balance adjustment (Manual adjustment)

#### a. General

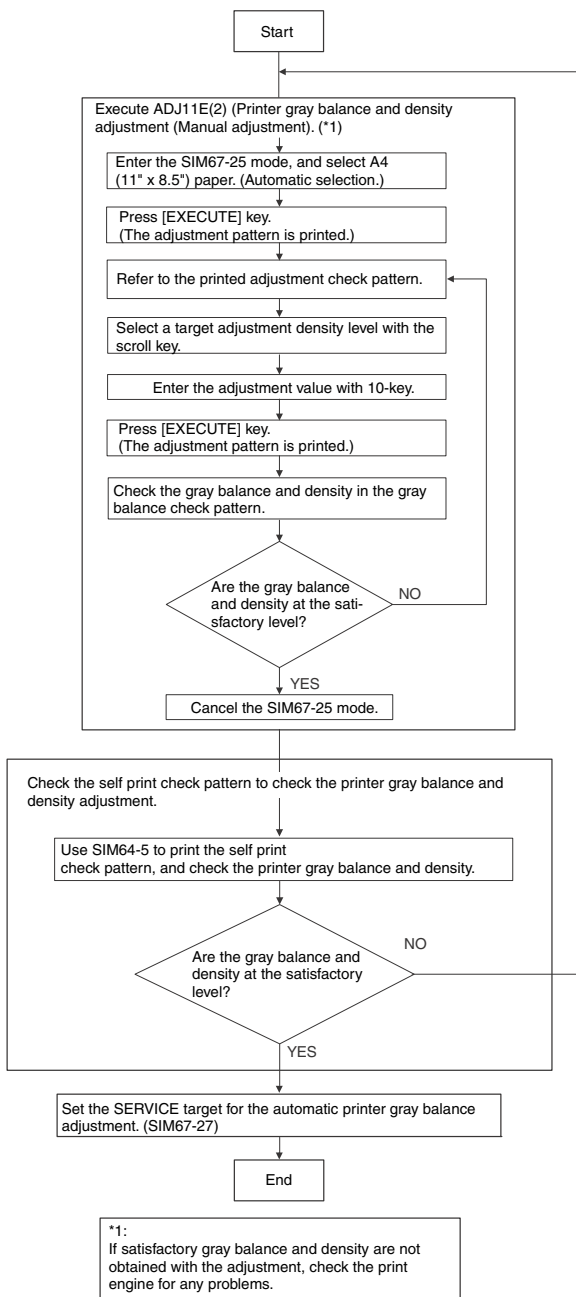
The gray balance adjustment (Manual adjustment) is used to adjust the printer density. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for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

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

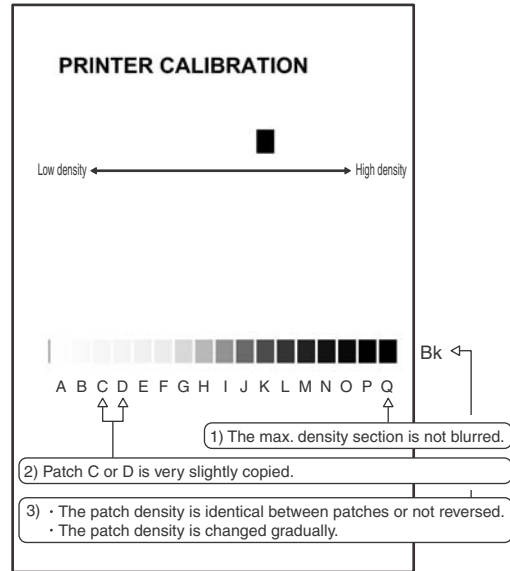
If the gray balance is improper, execute the automatic gray balance adjustment in advance, and execute this adjustment for better efficiency.

#### b. Adjustment procedure

Printer gray balance and density adjustment (Manual adjustment) procedure flowchart (SIM67-25)



- 1) Enter the SIM 67-25 mode.
- 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)  
The gray balance adjustment pattern is printed.
- 3) Check that the following specification is satisfied or the gray balance is satisfactory.  
If not, execute the following procedures.



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

Patch B may not be copied.

Patch A must not be copied.

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

- 4) Enter the adjustment value with 10-key and press [OK] key.  
The adjustment value is set in the range of (1 - 999). When SIM 67-24 is used to adjust the automatic gray balance and density, all the set values of this simulation are set to 500.  
To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.  
Repeat procedures of 2) - 4) until the condition of 3) is satisfied.

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

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

- 5) Check the gray balance and density.  
(Refer to the item of the printer gray balance and density check.)

#### NOTE:

If the gray balance is customized, use SIM 67-27 to register the gray balance as the service target.

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

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



## 11-F Printer image quality adjustment (Individual adjustment)

### a. General

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 11E (1) and ADJ 11E (2) or there is a request from the user. Normally there is no need to execute this adjustment.

This must be well understood for execution of the adjustment.

## 11-F (1) Printer density adjustment (Low density section density adjustment) (No need to adjust normally)

This adjustment is used to adjust the image density in the low density area in the printer mode.

Adjust to reproduction setting of the low density image.

This adjustment is required in the following cases.

\* When it is required not to reproduce images in the low density section, or to reproduce low-density images.

\* When there is request from the user.

- 1) Enter the SIM 67-36 mode.
- 2) Enter the adjustment value and press the [OK] key.  
In case of increase of the image density on low density part, increase the adjustment value. For diluting the image density on low density part, decrease the adjustment value.

## 11-F (2) Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)

When a tone gap is generated in the high density section in the printer mode, the setting is changed to lower the density in the high density section.

This setting is normally not required, however, in the following cases, a change of setting must be made.

\* When a tone gap occurs on part of high density.

\* To lower the density in the high density section.

### a. Adjustment procedure

- 1) Enter the SIM 67-34 mode.
- 2) Select the item A, B with the scroll key.

| Display/Item | Content                      | Setting range   | Default  |
|--------------|------------------------------|---|--|
| A            | K<br>(0:ENABLE<br>1:DISABLE) | 0   | K engine maximum density correction mode Enable  |
|              |                              | 1   | K engine maximum density correction mode Disable |
| B            | BLACK MAX TARGET             | Scanner target value for BLACK maximum density correction | 0 - 999<br>500                                   |

\* If a tone gap occurs on part of high density, set 0 to item A and B  
The density of high density part decreases. However, the tone gap is better.

\* In case of more increase of the density on high density part, set 1 to item A and B.

The tone gap may occur in high density part.

NOTE: If the setting values of item C, D, E and F are changed, density of the high density part is changed.

When these values are changed, be sure to perform the printer gray balance and density adjustment. (Automatic adjustment)

## 11-F (3) Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)

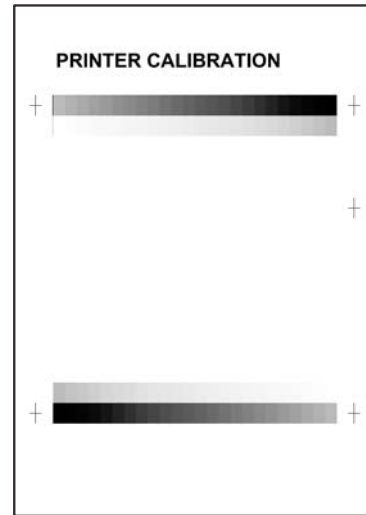
### a. General

This adjustment is used to adjust the gray balance and the density in the monochrome mode, the heavy paper mode, and the gloss paper mode.

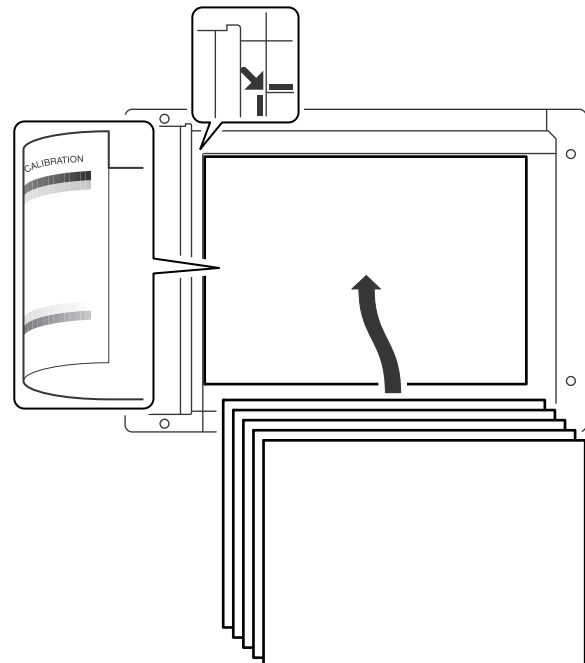
This simulation is used to improve image quality in these modes and images.

### b. Adjustment procedures

- 1) Enter the SIM67-54 mode.
- 2) Press [EXECUTE] key.  
A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.  
The patch image (adjustment pattern) is printed out.



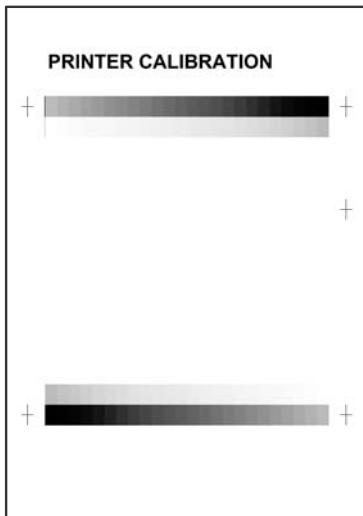
- 3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



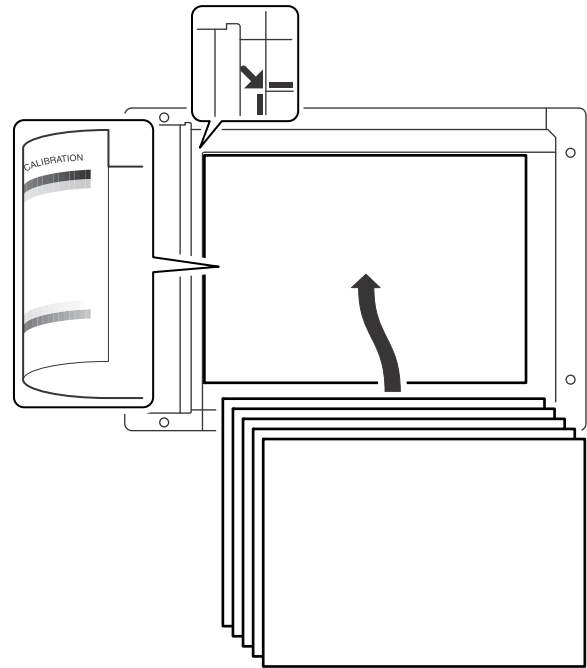
- 4) Press [EXECUTE] key.  
The gray balance adjustment is automatically performed.  
The adjustment pattern is printed out. Check it for any abnormality.
- 5) Press [OK] key.  
The list of the adjustment items (for each dither) is displayed.
- 6) Select an adjustment item (for each dither).

|               |   |
|---------------|---|
| HEAVY PAPER   | Adjustment for heavy paper and that for gloss paper       |
| 4BIT_HIGH     | For adjustments for each screen of 600/4bit HIGH screen   |
| 4BIT_SHIGH    | For adjustments for each screen of 600/4bit SHIGH screen  |
| 1200DPI_LOW   | For adjustments for each screen of 1200/1bit LOW screen   |
| 1200DPI_HIGH  | For adjustments for each screen of 1200/1bit HIGH screen  |
| 1200DPI_SHIGH | For adjustments for each screen of 1200/1bit SHIGH screen |

- 7) Press [EXECUTE] key.  
A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.  
The patch image (adjustment pattern) is printed out.



- 8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



- 9) Press [EXECUTE] key.  
The gray balance adjustment is automatically performed, and the machine goes to the state of procedure 6).
- 10) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.  
To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.  
After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.
- 11) Make a print, and check the print image quality.  
(Refer to the item of the printer gray balance and density check.)

NOTE: Use SIM67-52 to reset the adjustment values to the default values.

## 11-F (4) Automatic gray balance adjustment by the user (Printer gray balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change)

### a. General

In the user program mode, the user can execute the auto gray calibration (auto adjustment of the printer gray balance and density).

This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

NOTE: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the printer gray balance and density and the user's operational ability are judged enough to execute the adjustment.

When set to enable, operation procedures must be fully explained to the user.

## b. Setting procedure

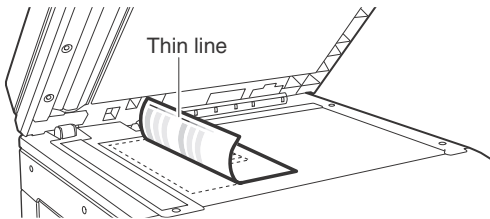
- 1) Enter the SIM 26-53 mode.
- 2) Select ENABLE or DISABLE with 10-key.  
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
- 3) Press [OK] key.

When set to DISABLE, the menu of the user auto gray calibration (automatic adjustment of printer gray balance and density) is not displayed in the user program mode.

### (Auto gray calibration by the user (Auto gray balance adjustment))

NOTE: This adjustment is based on the service target gray balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

- 1) Enter the system setting mode.
- 2) Enter the printer setting mode.
- 3) Press the auto gray calibration key.
- 4) Press [EXECUTE] key.  
The patch image (adjustment pattern) is printed out.
- 5) Set the patch image (adjustment pattern) printed in procedure 4) on the document table.  
Set the patch image so that the thin line is on the left side as shown in the figure.  
At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).



- 6) Press [EXECUTE] key, and the printer gray balance adjustment is executed automatically.  
The message, "Will you go on to the copy gray balance adjustment?" is displayed.  
To execute the copy gray balance adjustment successively, perform the procedures same as the above.

## ADJ 12 Image send mode image quality adjustment

### 12-A Color image send mode, image density and gradation adjustment (by each mode)

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

- \* When the user requests to perform the adjustment.
  - \* When there is a defective copy in a scan image.
  - \* When the scan image density is too light.
- 1) Enter the Sim. 46-4 mode.
  - 2) Select a mode to be adjusted with the scroll button.

| Item/Mode | Display | Document mode      | Setting range      | Default value |    |
|-----------|---------|--------------------|--------------------|---------------|----|
| A         | LOW     | AUTO               | Auto               | 1 - 99        | 50 |
| B         |         | TEXT               | Text               | 1 - 99        | 50 |
| C         |         | TEXT/PRINTEDPHOTO  | Text/Printed Photo | 1 - 99        | 50 |
| D         |         | TEXT/PHOTO         | Text/ Photograph   | 1 - 99        | 50 |
| E         |         | PRINTED PHOTO      | Printed photo      | 1 - 99        | 50 |
| F         |         | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
| G         |         | MAP                | Map                | 1 - 99        | 50 |
| H         |         | RIP                | -                  | 1 - 99        | 50 |
| A         | HIGH    | AUTO               | Auto               | 1 - 99        | 50 |
| B         |         | TEXT               | Text               | 1 - 99        | 50 |
| C         |         | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
| D         |         | TEXT/PHOTO         | Text/ Photograph   | 1 - 99        | 50 |
| E         |         | PRINTED PHOTO      | Printed photo      | 1 - 99        | 50 |
| F         |         | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
| G         |         | MAP                | Map                | 1 - 99        | 50 |
| H         |         | RIP                | -                  | 1 - 99        | 50 |

- 3) Enter the adjustment value with 10-key, and press [OK] button.  
When the adjustment value is increased, the image density is increased. When the adjustment value is decreased, the image density is decreased.
- 4) Scan the color document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.  
Check can be made also in the copy mode by the following procedure. The scanned image, however, is in monochrome.  
4) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.  
Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.  
Repeat the procedures 3 and 4 until a satisfactory result is obtained.

### 12-B Monochrome image send mode, image density and gradation adjustment (by each mode)

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

- \* When the user requests to perform the adjustment.
- \* When there is a defective copy in a scan image.
- \* When the scan image density is too light.

- 1) Enter the Sim. 46-5 mode.
- 2) Select a mode to be adjusted with the scroll button.

| Item/Mode | Display | Document mode      | Setting range      | Default value |    |
|-----------|---------|--------------------|--------------------|---------------|----|
| A         | LOW     | AUTOTEXT           | Auto/Text          | 1 - 99        | 50 |
| B         |         | TEXT               | Text               | 1 - 99        | 50 |
| C         |         | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
| D         |         | TEXT/PHOTO         | Text/ Photograph   | 1 - 99        | 50 |
| E         |         | PRINTED PHOTO      | Printed photo      | 1 - 99        | 50 |
| F         |         | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
| G         |         | MAP                | Map                | 1 - 99        | 50 |
| H         |         | RIP                | -                  | 1 - 99        | 50 |

| Item/Mode | Display | Document mode      | Setting range      | Default value |    |
|-----------|---------|--------------------|--------------------|---------------|----|
| A         | HIGH    | AUTOTEXT           | Auto/Text          | 1 - 99        | 50 |
| B         |         | TEXT               | Text               | 1 - 99        | 50 |
| C         |         | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
| D         |         | TEXT/PHOTO         | Text/ Photograph   | 1 - 99        | 50 |
| E         |         | PRINTED PHOTO      | Printed photo      | 1 - 99        | 50 |
| F         |         | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
| G         |         | MAP                | Map                | 1 - 99        | 50 |
| H         |         | RIP                | -                  | 1 - 99        | 50 |

- 3) Enter the adjustment value with 10-key, and press [OK] button.  
When the adjustment value is increased, the image density is increased. When the adjustment value is decreased, the image density is decreased.
- 4) Scan a monochrome document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.  
Check can be made also in the copy mode by the following procedure.
- 4) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.  
Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.  
Repeat the procedures 3 and 4 until a satisfactory result is obtained.

## 12-C Image send mode, image gray balance adjustment

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

- \* When the user requests to perform the adjustment.
  - \* When the scan image gray balance is defective.
- 1) Enter the Sim. 46-8 mode.
  - 2) Select a color to be adjusted with [R], [G], [B] buttons.
  - 3) Select a mode (low density section or high density section) to be adjusted with the scroll button.

| Display/Item | Content            | Setting range                                      | Default |    |
|--------------|--------------------|--|---------|----|
| A            | LOW DENSITY POINT  | Low density section gray balance adjustment value  | 1 - 99  | 50 |
| B            | HIGH DENSITY POINT | High density section gray balance adjustment value | 1 - 99  | 50 |

- 4) Enter the adjustment value with 10-key, and press [OK] key.  
To increase the density of the target color, increase the adjustment value. To decrease the density of the target color, decrease the adjustment value.
- 5) Scan a color document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.  
Check can be made also in the copy mode by the following procedure. The scanned image, however, is in monochrome.
- 5) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.  
Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.  
Repeat the procedures 3 and 4 until a satisfactory result is obtained.

## ADJ 14 Setting of the auto exposure mode operating conditions in copy, scan

This adjustment is required in the following cases:

- \* When the U2 trouble occurs.
  - \* When the MFP PWB is replaced.
  - \* When the EEPROM on the MFP PWB is replaced.
  - \* When the SCANNER CONTROL PWB is replaced.
  - \* When the EEPROM on the SCANNER CONTROL PWB is replaced.
- 1) Enter the Sim. 46-19 mode.
  - 2) Select the auto mode exposure operating condition of each mode with the mode button.

| Item/Display | Content   | Set value               | Default | NOTE  |
|--------------|---|-------------------------|---------|---|
| AE_MODE      | Auto exposure mode gamma select (for copy)                                    | MODE1,<br>MODE2         | MODE1   | MODE1: High gamma<br>MODE2: Nomal gamma   |
| AE_STOP_COPY | Auto exposure mode document density detecting condition setting (for copy)    | ON/OFF                  | ON      | ON : The document lead edge section density is detected and exposure is adjusted.<br>OFF : Real time exposure adjustment  |
| AE_STOP_SCAN | Auto exposure mode document density detecting condition setting (for scanner) | ON/OFF                  | ON      | ON : The document lead edge section density is detected and exposure is adjusted.<br>OFF : Real time exposure adjustment  |
| AE_FILTER    | Auto exposure mode sharpness setting (for copy)                               | SOFT<br>NORMAL<br>SHARP | NORMAL  |   |
| AE_WIDTH     | Auto exposure mode document density detecting width setting                   | FULL/PART               | FULL    | FULL : Document density detection in A4 (11 X 8.5) width<br>PART : Document density detection in 10mm width on the rear frame side (Document table mode) / Document density detection in 10mm width on the center section (SPDF mode) |

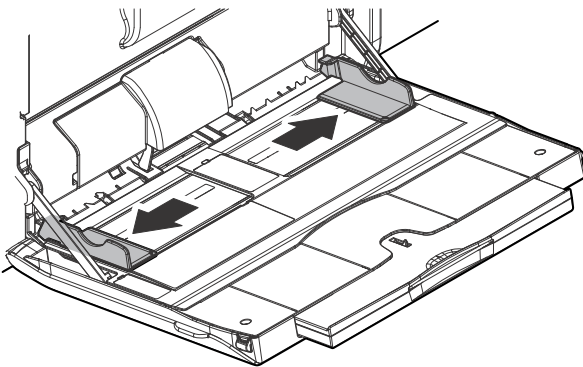
## ADJ 15 Paper size detection adjustment

### 15-A Manual paper feed tray paper width sensor adjustment

This adjustment is required in the following cases:

- \* When the manual paper feed tray section is disassembled.
- \* When the manual paper feed tray section is replaced.
- \* When the U2 trouble occurs.
- \* When the PCB PWB is replaced.

- 1) Enter the Sim. 40-2 mode.
- 2) Open the manual paper feed guide to the maximum width, and press [EXECUTE] key.



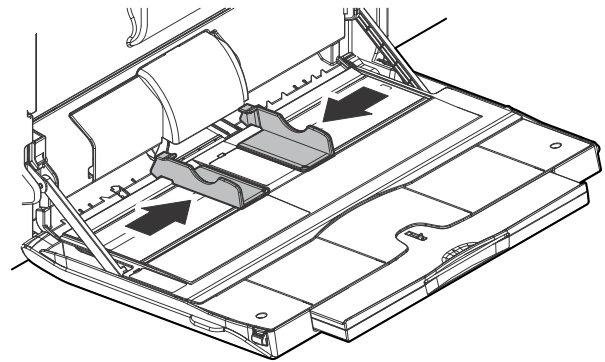
[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

#### Adjustment steps and display contents

| Display/Item      | Content                                  |
|-------------------|--|
| MAX POSITION      | Maximum width detection level adjustment |
| P1 (A4) POSITION  | A4 width detection level adjustment      |
| P2 (A4R) POSITION | A4R width detection level adjustment     |
| MIN POSITION      | Minimum width detection level adjustment |

- 3) Set the manual paper feed guide to the A4 width, and press [EXECUTE] key.  
[EXECUTE] key is highlighted. When the A4 size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

- 4) Set the manual paper feed guide to the A4R width, and press [EXECUTE] key.  
[EXECUTE] key is highlighted. When the A4R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display
- 5) Set the manual paper feed guide to the minimum width, and press [EXECUTE] key.  
[EXECUTE] key is highlighted. When the minimum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

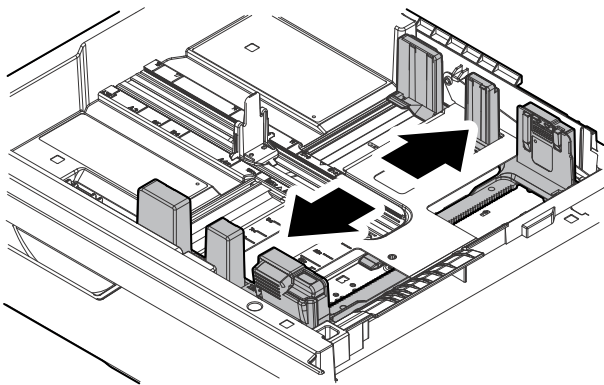


After completion of the adjustment, "COMPLETE" is displayed.

## 15-B Paper feed tray 4 paper width sensor adjustment

This adjustment is required in the following cases:

- \* When the paper feed tray 4 section is disassembled.
  - \* When the paper feed tray 4 section is replaced.
  - \* When the U2 trouble occurs.
  - \* When the PCU PWB is replaced.
- 1) Enter the Sim. 40-12 mode.
  - 2) Set the paper feed guide to the maximum width, and press [EXECUTE] key.



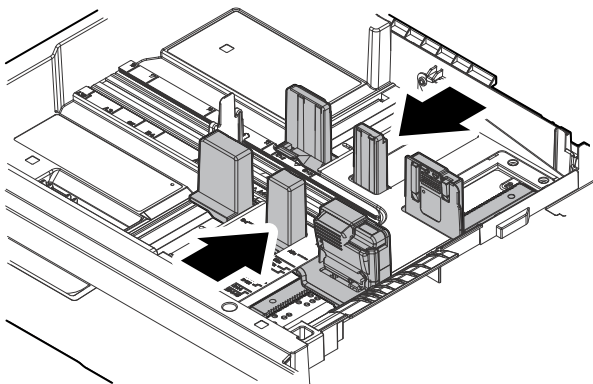
[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

### Adjustment steps and display contents

| Display/Item | Content                                  |
|--------------|--|
| MAX POSITION | Maximum width detection level adjustment |
| MIN POSITION | Minimum width detection level adjustment |

- 3) Set the paper feed guide to the minimum width, and press [EXECUTE] key.

[EXECUTE] key is highlighted. When the minimum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

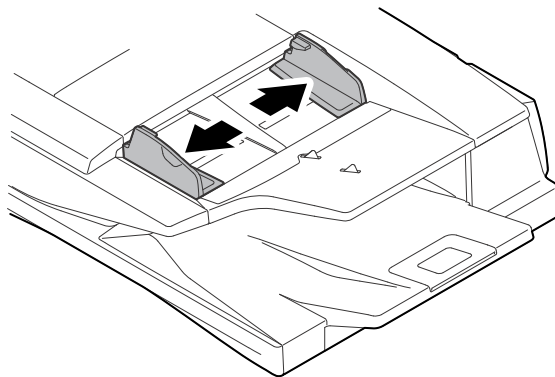


After completion of the adjustment, "COMPLETE" is displayed.

## 15-C DSPF paper feed tray document width sensor adjustment

This adjustment is required in the following cases:

- \* When the DSPF paper feed tray section is disassembled.
  - \* When the DSPF paper feed tray section is replaced.
  - \* When the U2 trouble occurs.
  - \* When the scanner PWB is replaced.
  - \* When the EEPROM on the scanner PWB is replaced.
- 1) Enter the Sim. 53-6 mode.
  - 2) Set the DSPF document guide to the maximum width, and press [EXECUTE] key.



[EXECUTE] key is highlighted. When the maximum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

### Adjustment steps and display contents

| Display/Item | Content                                  |
|--------------|--|
| TRAYVOLMAX   | Maximum width detection level adjustment |
| TRAYVOLA4R   | A4R width detection level adjustment     |
| TRAYVOLA5R   | A5R width detection level adjustment     |
| TRAYVOLMIN   | Minimum width detection level adjustment |

- 3) Set the DSPF paper feed guide to the A4R width, and press [EXECUTE] key.

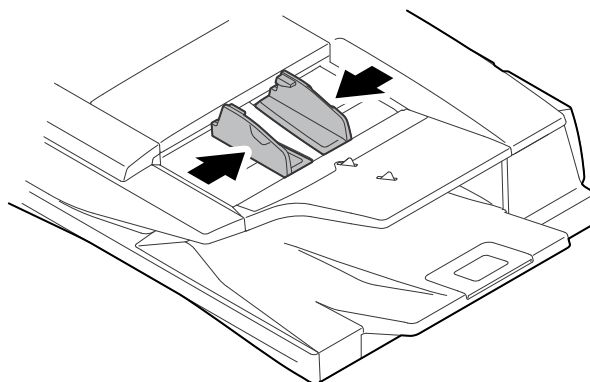
[EXECUTE] key is highlighted. When the A4R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

- 4) Set the DSPF paper feed guide to the A5R width, and press [EXECUTE] key.

[EXECUTE] key is highlighted. When the A5R size width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.

- 5) Set the DSPF paper feed guide to the minimum width, and press [EXECUTE] key.

[EXECUTE] key is highlighted. When the minimum width detection level adjustment value is saved, [EXECUTE] key returns to the normal display.



After completion of the adjustment, "COMPLETE" is displayed.

## ADJ 16 Document size detection adjustment (Document table mode)

This adjustment is required in the following cases:

- \* When the document size sensor section is disassembled.
- \* When the document size sensor section is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

- 1) Enter the Sim. 41-2 mode.
- 2) Set A3 (11 X 17) paper on the document table, and press [EXECUTE] button.

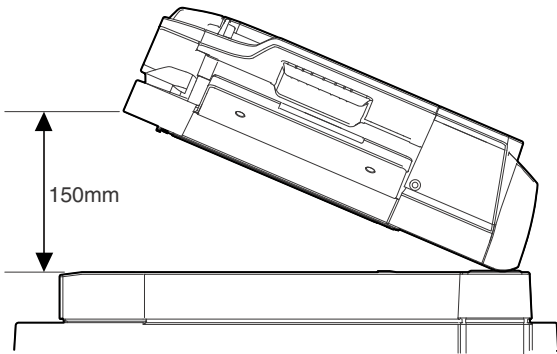
At that time, do not close the DSPF unit.

- 3) Remove the paper set in the procedure 2) from the document table.

- 4) The DSPF unit to the position shown below, and press [EXECUTE] button under that state.

**Note:**

At that time, the OC mat must be installed to the DSPF unit.



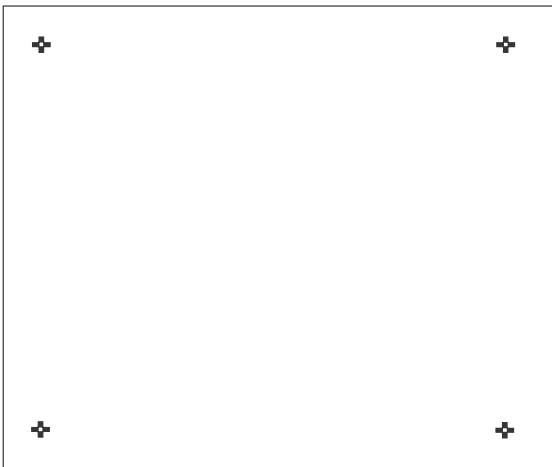
After completion of the adjustment, "COMPLETE" is displayed.

## ADJ 17 Touch panel coordinate adjustment

This adjustment is required in the following cases:

- \* When the operation panel is replaced.
- \* When the U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

- 1) Enter the Sim. 65-1 mode.



- 2) Touch the four cross marks on the corners precisely. Do not use a finger.

When the cross marks are touched precisely, they are reversely displayed. When the touch panel adjustment is completed by touching all the four marks, the display returns to the sub code entry menu.

**Note:**

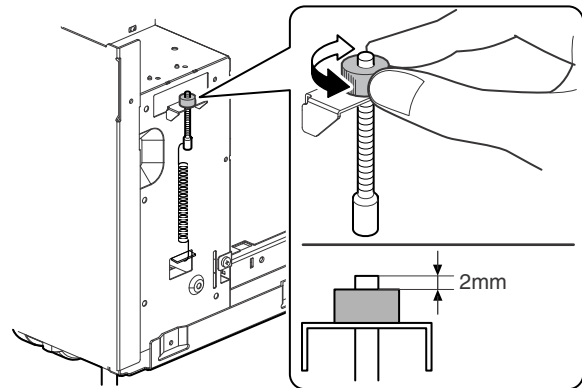
When touching the cross marks, never use a sharp tip (such as a needle and a pin).

## ADJ 18 Waste toner detection level adjustment

This adjustment is required in the following cases:

- \* The waste toner detection section has been disassembled.
- \* One or more parts of the waste toner detection section have been replaced.

Turn the waste toner detection adjustment knob so that height from upper surface of the adjustment knob to head edge of the tension bar is 2.0 mm.

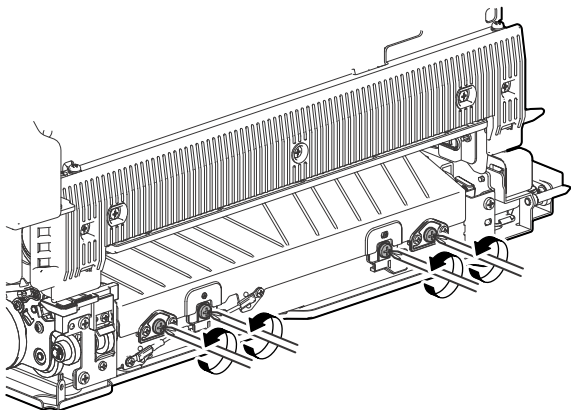


## ADJ 19 Fusing paper guide position adjustment (Manual adjustment of fusing paper guide position)

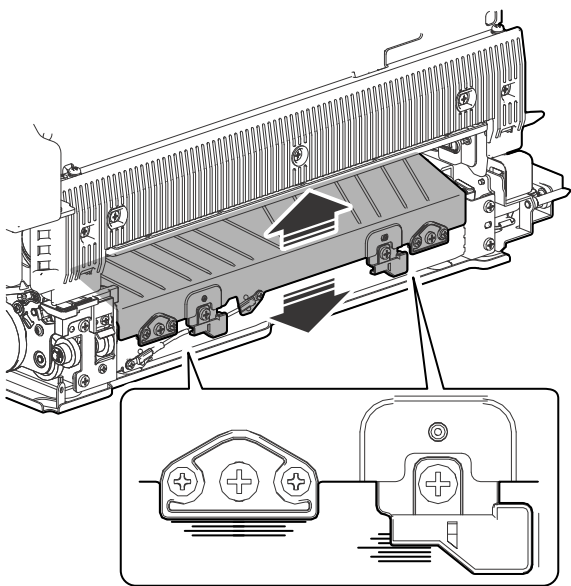
This adjustment is required in the following cases:

- \* When a paper jam occurs in the fusing section.
- \* When the lead edge of paper is folded in the fusing section.
- \* When skew is generated in the fusing section.
- \* When blur or improper focusing is generated on the lead edge section or the rear edge section of an image on paper.
- \* When wrinkle is generated on paper.

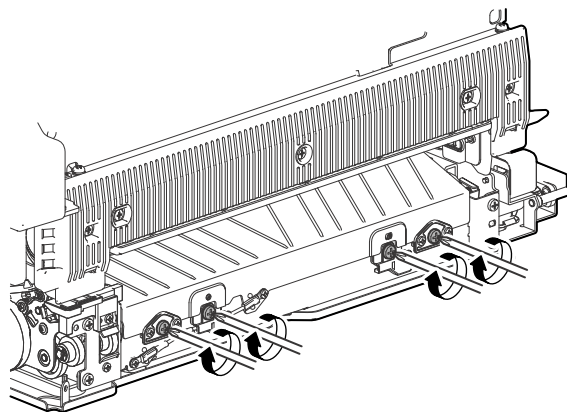
- 1) Remove the fusing unit.
- 2) Loosen the screw.



- 3) Slide the fusing paper guide up or down to adjust the position.
  - \* Check and mark the scale position before the adjustment (with a pencil, etc.), and slide to the left and the right evenly.



- 4) Tighten the screw, and fix the fusing paper guide.



- 5) Install the fusing unit to the main unit, and check the adjustment result in the copy mode.
  - \* There is no jam.
  - \* The paper lead edge is not folded.
  - \* There is no skew.
  - \* There is no blur of improper focusing on the lead edge and the rear edge of an image on paper.
  - \* There is no wrinkle on paper.

## ADJ 20 Decurler roller adjustment

This adjustment must be performed in the following cases:

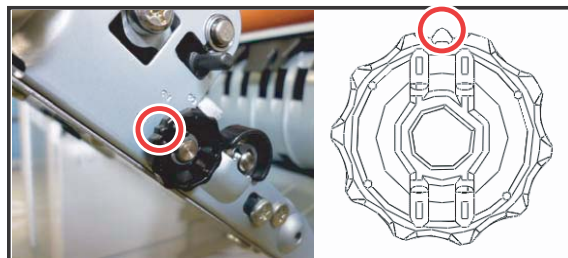
- \* If there occurred a paper jam (POIND\_N) with winding around the Drum when duplex copying.

The ADU section is provided with the decurler (curl correction) function. The curl correction amount can be adjusted by rotating the dial.

The adjustment can be made in 9 steps (Default value : 4). The normally value is 4. The greater the value is from 4, the greater the correction is.

NOTE: Perform a fine adjustment depending on the paper kind and the use environment.

The direction of being pointed by the dial which is surrounded with a O is the curl correction amount.





## ADJ 21 DSPF CCD calibration

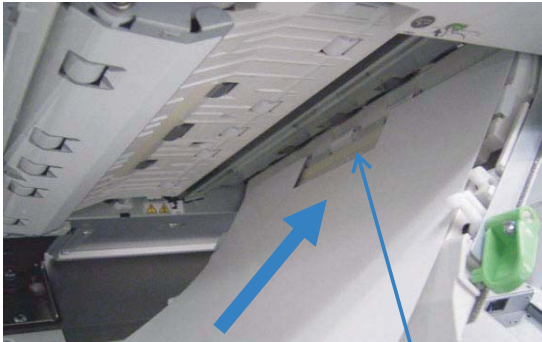
### 21-A DSPF shading adjustment

This adjustment is required in the following cases:

- \* When the DSPF CCD unit is replaced.
- \* When a U2 trouble occurs.
- \* When the DSPF control PWB is replaced.

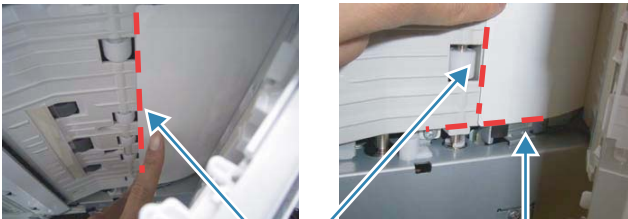
#### (1) Note before adjustment

- 1) Check to insure that there is no dirt or dust on the DSPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)
- 2) Open the DSPF document scan section, and insert the white reference jig (6LS06278000). Then, close the DSPF document scan section, and close the DSPF.



Insert from the notch of the white reference jig, and set.

#### White reference jig set reference



Insert so that the rear edge of the white reference jig is in parallel with the transport roller (as shown with the dotted line in the figure).

Insert so that the rear edge of the white reference jig is fit with the upper transport PG edge.

- 3) Enter the SIM 63-2 mode.
- 4) Select "DSPF SHADING".
- 5) Press [EXECUTE] key. (The shading adjustment process is started.)
  - \* During shading adjustment, "SHADING EXECUTING..." is displayed.
  - \* When [EXECUTE] key is pressed during shading adjustment, the operation is interrupted.
  - \* When shading adjustment is completed normally, [EXECUTE] key returns to the normal display and "COMPLETE" is displayed.

#### <Descriptions of keys>

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

#### <Result display>

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

### 21-B CCD gamma adjustment (CCD calibration) (DSPF mode)

This adjustment is required in the following cases:

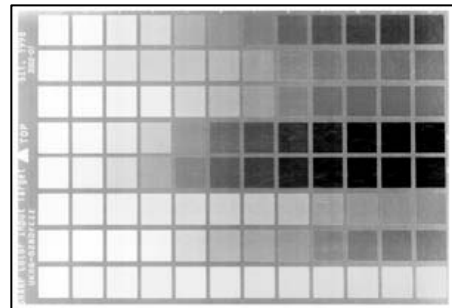
- \* When the DSPF CCD unit is replaced.
- \* When a U2 trouble occurs.
- \* When the DSPF control PWB is replaced.

#### (1) Note before adjustment

- 1) Check to insure that there is no dirt or dust on the DSPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)
- 2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (6LS06277000) are free from dirt and scratches. If they are dirty, clean them.  
If they are scratched or streaked, replace with new one.

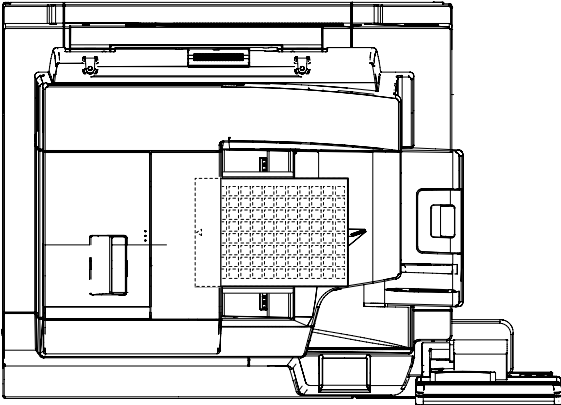
#### NOTE:

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



## (2) Adjustment procedures

- 1) Set the SIT chart (6LS06277000) face-down in the DSPF paper feed tray.



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

- 2) Enter the SIM 63-3 mode.
- 3) When a color key is selected, the adjustment value of the selected color is displayed.
  - \* When [B] (Blue), [G] (Green), or [R] (Red) key is selected, the selected key is highlighted and the adjustment value of the selected color is displayed.
  - \* Only one color key can be selected, and the selected key is highlighted. In the initial state, [B] is selected.
  - \* If there is a page over [ $\uparrow$ ], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.  
If there is a page under [ $\downarrow$ ], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.
- 4) When [DSPF] key is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.
- 5) Press [EXECUTE] key and it is highlighted and the color auto adjustment is executed.
  - \* When [EXECUTE] key is pressed during the automatic adjustment, the automatic adjustment is interrupted.
- 6) After normal completion, the result of calculation is displayed in the initial screen.
  - \* When an error occurs in execution, the following screen is displayed.
  - \* When an error occurs in the automatic adjustment, all the error patch numbers are displayed.  
When [RESULT] key is pressed, the display returns to the initial screen. (The previous value is displayed)
  - \* When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] key is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)

## [6] SIMULATION

### 1. General and purpose

The simulation mode has the following functions, to display the machine operating status, identify the trouble position and causes in an earlier stage, and to efficiently setup and adjust the machine for improved serviceability.

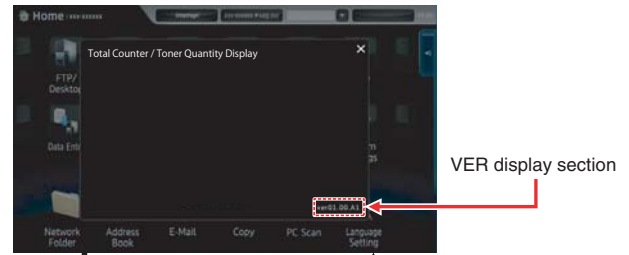
- 1) Various adjustments
- 2) Setting of the specifications and functions
- 3) Canceling troubles
- 4) Operation check
- 5) Counters check, setting, clear
- 6) Machine operating conditions (operation hysteresis), data check, clear.
- 7) Various (adjustments, setting, operation, counters, etc.) data transport.

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

### 2. Starting the simulation

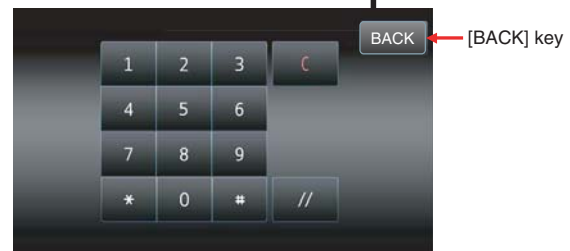
#### Entering the simulation mode

- 1) Double-click the [HOME] key. (Total use quantity/Toner remaining quantity display mode screen)



Touch the VER display section. Touch the [BACK] key.

#### (10-key mode input mode screen)



- 2) Touch the VER display section. (10-key mode input mode screen)
- 3) Touch the (#) key → Asterisk (\*) key → Clear key → Asterisk (\*) key → Ready for input of main code of simulation.
- 4) Enter a main SIM code with the 10-key pad then touch the [START] key or select a main code from the SIM key list on the touch panel.
- 5) Enter a sub code with the 10-key pad, then touch the [START] key or select a sub code from the code list on the touch panel.
- 6) Select an item with the scroll key and the item key.
- 7) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.

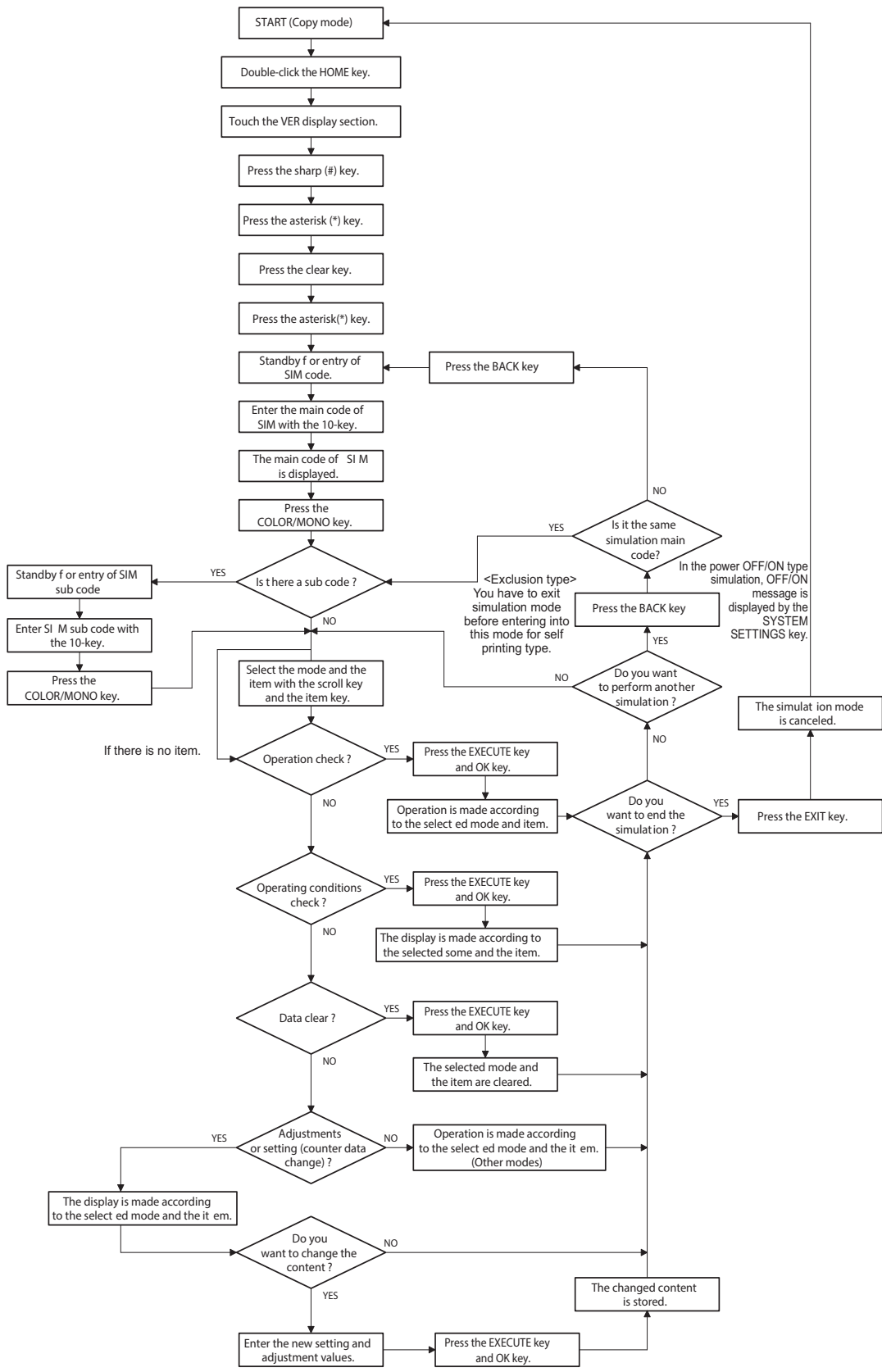
To cancel the current simulation mode and change the main code and the sub code, press [BACK] key.

#### Canceling the simulation mode to return to the normal mode

- 1) Press [EXIT] key.

NOTE: Do not turn OFF the power when the machine is in the simulation mode.

If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.



### 3. List of simulation codes

| Main | Sub | Function (Purpose)   | Section                     | Purpose                         |
|------|-----|--|-----------------------------|---------------------------------|
| 1    | 1   | Used to check the operation of the scanner (reading) unit and the control circuit.   | Scanner (reading)           | Operation test/check            |
|      | 2   | Used to check the sensors in the scanner (reading) section and the related circuits.   | Scanner (reading)           | Operation test/check            |
|      | 5   | Used to check the operation of the scanner (reading) unit and the control circuit.   | Scanner (reading)           | Operation test/check            |
| 2    | 1   | Used to check the operations of the auto document feed unit and the control circuits.  | DSPF                        | Operation test/check            |
|      | 2   | Used to check the operations of the sensors and detectors in the auto document feed unit and the control circuits.                       | DSPF                        | Operation test/check            |
|      | 3   | Used to check the operations of the loads in the auto document feed unit and the control circuit.  | DSPF                        | Operation test/check            |
|      | 6   | Used to check the operation of the scanner fan motor.  | Scanner (reading)           | Operation test/check            |
| 3    | 2   | Used to check the operations of the sensors and the detectors in the finisher and the control circuits.                                  | Finisher                    | Operation test/check            |
|      | 3   | Used to check the operations of the motors and the solenoids in the finisher and the control circuits.                                   | Finisher                    | Operation test/check            |
|      | 10  | Used to adjust the jogger position, the lead edge stopper position, the staple jogging count number, and the paper folding count number. | Finisher                    | Finisher adjustment             |
|      | 30  | Used to check the operations of the sensors and the detectors in the inserter and the related circuits.                                  | Inserter                    | Operation test/check            |
|      | 31  | Used to check the operations of the loads in the inserter and the control circuits.  | Inserter                    | Operation test/check            |
|      | 40  | Used to check the operations of the sensors and the detectors in the paper folding unit and the related circuits.                        | Paper folding unit          | Operation test/check            |
|      | 41  | Used to check the operations of the motors and the solenoids in the paper folding unit and the control circuits.                         | Paper folding unit          | Operation test/check            |
|      | 42  | Paper folding unit adjustment  | Paper folding unit          | Adjustment                      |
|      | 50  | Decurler sensor check  | Decurler                    | Operation check                 |
|      | 51  | Decurler individual load check   | Decurler unit               | Operation check                 |
|      | 60  | Stacker sensor check   | Stacker                     | Operation test/check            |
|      | 61  | Stacker individual load check  | Stacker                     | Operation test/check            |
|      | 62  | Stacker adjustment   | Stacker                     | Adjustment                      |
| 4    | 2   | Used to check the operations of the sensors and the detectors in the large capacity tray (LCC) and the control circuits.                 | Large capacity tray (LCC)   | Operation test/check            |
|      | 3   | Used to check the operations of the loads in the desk/large capacity tray (LCC) and the control circuits.                                | Desk/Large capacity tray    | Operation test/check            |
|      | 5   | Used to check the operations of the transport clutch (LTRC) in the LCC and the monitor.  | Large capacity tray (LCC)   | Operation test/check            |
|      | 10  | LCT warm air heater temperature setting  | LCT                         | Setting                         |
|      | 11  | LCT fan Duty setting   | LCT                         | Setting                         |
|      | 14  | LCT temperature and humidity sensor monitor display  | LCT                         | Check                           |
| 5    | 1   | Used to check the operations of the display lamp and the LCD on the operation panel and the control circuit.                             | Operation panel             | Operation test/check            |
|      | 2   | Used to check the operation of the heater lamp and the control circuit.  | Fusing                      | Operation test/check            |
|      | 3   | Used to check the operations of the copy lamp and the control circuit.   | Scanner (reading)           | Operation test/check            |
|      | 4   | Used to check the operations of the discharge lamp and the control circuit.  | Process                     | Operation test/check            |
| 6    | 1   | Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits.               | Paper transport, paper exit | Operation test/check            |
|      | 2   | Used to check the operations of each fan motor and the control circuit.  |                             | Operation test/check            |
|      | 3   | Used to check the operations of the primary transfer separation.   | Process (transfer)          | Operation test/check            |
|      | 4   | Used to check the operation of the MC cleaner.   | Process (charging)          | Operation test/check            |
|      | 90  | Used to reset the machine to the factory setting. (The scanner is set to the lock enable position)                                       | Scanner                     | Setting                         |
| 7    | 1   | Used to set the conditions of aging operation.   |                             | Setting                         |
|      | 6   | Used to set the intermittent aging cycle.  |                             | Setting                         |
|      | 8   | Used to display the warm-up time.  |                             | Operation display               |
|      | 12  | Used to set the document scan quantity. (For development and inspection)   |                             | Operation test, check           |
| 8    | 1   | Used to check and adjust the developing voltage in each print mode and the control circuit.  | Process (Development)       | Operation test/check/adjustment |
|      | 2   | Used to check and adjust the operations of the main charger grid voltage in each print mode and the control circuit.                     | Process                     | Operation test/check/adjustment |
|      | 6   | Used to check and adjust the operation of the transfer plus bias current and the control circuit.  | Process (transfer)          | Operation test/check/adjustment |
| 9    | 2   | Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.         | Duplex                      | Operation test/check            |
|      | 3   | Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.                          | Duplex                      | Operation test/check            |
| 10   | 1   | Used to check the operation of the toner motor and the control circuit.  | Process (Development)       | Operation test/check            |
|      | 2   | Used to check the operation of the toner hopper empty sensor.  | Process (Development)       | Operation test/check            |
|      | 3   | Used to check the operation of the toner cartridge motor rotation sensor.  | Process (Development)       | Operation test/check            |
| 13   | -   | Used to cancel the self diag U1 trouble.   |                             | Cancel (trouble, etc.)          |
| 14   | -   | Used to cancel the self diag H3/H4/H5 troubles.  | Fusing                      | Cancel (trouble, etc.)          |
| 15   | -   | Used to cancel the self diag U6-09 (large capacity paper feed tray) trouble.   | LCC                         | Cancel (trouble, etc.)          |

| Main | Sub  | Function (Purpose)  | Section  | Purpose  |   |
|------|--|---|--|--|---|
| 16   | -  | Used to cancel the self diag U2 trouble.  | MFPcnt PWB/PCU<br>PWB/SCU PWB  | Cancel (trouble, etc.)                                     |   |
| 17   | -  | Used to cancel the self diag PF trouble.  |  | Cancel (trouble, etc.)                                     |   |
| 21   | 1  | Used to set the maintenance cycle.  |  | Setting  |   |
| 22   | 1  | Used to check the print count value of each section and each operation mode.<br>(Used to check the maintenance timing.)   |  | Adjustment, setting,<br>operation data output<br>and check |   |
|      | 2  | Used to check the total number of misfeed and trouble. (If the total number of JAM is considerably great, it is judged that repair is required.)  |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 3  | Used to check the misfeed position and the number of misfeed. * This data can be used to estimate the trouble position.   |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 4  | Used to check the trouble (self diag) history.  |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 5  | Used to check the ROM version of each unit (section).   |  | Other  |   |
|      | 6  | Used to output the list of various setting and adjustment data (simulation, counter).   |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 8  | Used to check the counter value of the finisher, DSPF, and the scan (reading).  |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 9  | Used to check the use quantity (print quantity) of each paper feed section.   | Paper feed, ADU,<br>LCC  | Adjustment/Setting/<br>Operation data check                |   |
|      | 10   | Used to check the system configuration (option, internal hardware).   |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 12   | Used to check the DSPF misfeed position and the number of each misfeed.<br>(If the number of misfeed is considerably great, it is judged that repair is required.)  | DSPF   | Adjustment/Setting/<br>Operation data check                |   |
|      | 13   | Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).   |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 14   | Used to display the use status of the toner cartridge.  | Process  | Adjustment/Setting/<br>Operation data check                |   |
|      | 18   | Used to display the user data delete history.   |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 19   | Used to check the various scanner counters related to the network scanner.  |  | Adjustment/Setting/<br>Operation data check                |   |
|      | 40   |   | Used to display the error code list and the contents.  |  | Error contents<br>display                   |
|      |  | 42  | Used to check the JAM/trouble data   |  | Adjustment/Setting/<br>Operation data check |
| 43   |  | JAM data details display  |  | Adjustment/Setting/<br>Operation data check                |   |
| 90   |  | Used to output the various setting data.  |  | Adjustment/Setting/<br>Operation data check                |   |
| 23   |  | 2   | Used to print the paper jam, misfeed, and the trouble history. (If the number of misfeed or the troubles is considerably great, it is judged that repair is required.) |  | Adjustment/Setting/<br>Operation data check |
|      | 80   | Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section. | Paper feed, Paper<br>transport   | Operation test/check                                       |   |
| 24   | 1  | Used to clear the jam counter and the trouble counter. (After completion of maintenance, the counters are cleared.)   |  | Data clear   |   |
|      | 2  | Used to clear the counter value (print quantity) in each paper feed section.  |  | Data clear   |   |
|      | 3  | Used to clear the counter value of the finisher, DSPF, and the scan (reading).  |  | Data clear   |   |
|      | 4  | Used to clear the drum counter value of the maintenance counter, the transfer, and the fusing web cleaning feed counter. (After completion of maintenance, the counters are cleared.)   |  | Data clear   |   |
|      | 5  | Used to clear the developer counter value.<br>(After replacement of developer, the counter is cleared.)   |  | Data clear   |   |
|      | 6  | Used to clear the copy counter value.   |  | Data clear   |   |
|      | 9  | Used to clear the printer mode print counter and the self print mode print counter.   |  | Data clear   |   |
|      | 12   | Used to clear the document filing counter.  |  | Data clear   |   |
| 25   | 1  | Used to check the operation of the developing section.  | Process<br>(developing section)  | Operation test/check                                       |   |
|      | 2  | Used to initialize the toner density when replacing developer. (Automatic adjustment)   | Process<br>(Developing section)  | Setting  |   |
|      | 4  | Used to display the operation data of the toner supply quantity. (Not used in the market.)  | Process  | Adjustment/Setting/<br>Operation data check                |   |
| 26   | 2  | Used to set the paper size of the tandem tray/large capacity paper feed tray (LCC). (When the paper size is changed, this simulation must be used to change the paper size on the software.)  | Paper feed   | Setting  |   |
|      | 3  | Used to set the auditor specification mode. Sim.26-3 is described in the service manual for the convenience sake, but the coin vendors of the machines destined for overseas are not guaranteed.  | Auditor  | Setting  |   |
|      | 5  | Used to set the count mode of the total counter and the maintenance counter. (A3/11 x 17 size)  |  | Setting  |   |
|      | 6  | Used to set the specifications of each destination (paper, fixed magnification ratio, etc.)   |  | Setting  |   |
|      | 7  | Used to set the machine ID.   |  | Setting  |   |
|      | 10   | Used to set the trial mode of the network scanner.  |  | Setting  |   |
| 18   | Used to set YES/NO of the toner save mode operation. |   | Setting  |  |   |

| Main | Sub   | Function (Purpose)  | Section  | Purpose   |
|------|---|---|--|---|
| 26   | 30  | Used to set the CE mark support (Europe safety standards) operation mode. (Supporting slow start of the fusing heater lamp when driving it)   |  | Setting   |
|      | 32  | Used to set the specifications of the fusing cleaning operation.  | Fusing   | Setting   |
|      | 35  | Used to set the display type of troubles in Sim. 22-4. When two or more same troubles occur continuously, the trouble history is displayed as one trouble or as two or more troubles occurring continuously.  |  | Setting   |
|      | 38  | Used to set whether printing is terminated or not when the developer life is reached or when the fuser web end.   |  | Setting   |
|      | 41  | Used to set YES/NO of the magnification ratio auto select function (AMS) in the center binding mode.  |  | Setting   |
|      | 49  | Used to set the postcard copy speed mode.   |  | Setting   |
|      | 50  | Used to set Enable/Disable of black/white reverse function.   |  | Setting   |
|      | 52  | Used to set whether non-print paper (insertion, cover sheet) is counted or not.   |  | Setting   |
|      | 53  | User auto calibration (auto balance adjustment) Inhibit/Allow setting.  |  | Setting   |
|      | 65  | Used to set the finisher alarm mode.  |  | Setting   |
|      | 69  | Used to set the operating conditions for toner near end.  |  | Setting   |
|      | 73  | Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment   |  | Setting   |
|      | 78  | Used to set the password of the remote operation panel.   |  | Setting   |
| 79   | Used to set YES/NO of the pop-up display of user data delete result.      |   | Setting  |   |
| 30   | 1   | Used to check the operation of the sensors and the detectors in other than the paper feed section and the control circuits.   |  | Operation test/check                                    |
|      | 2   | Used to check the operation of the sensors and the detectors in the paper feed section and the control circuits.  |  | Operation test/check                                    |
|      | 10  | Used to check the operations of the Main unit double feed sensor.   |  | Must not be used unless a special change is required.   |
| 40   | 2   | Used to adjust the detection level of the manual paper feed tray paper width detector.  | Paper feed   | Adjustment/Setting                                      |
|      | 7   | Used to adjust the manual paper feed tray size width detection level.   | Paper feed   | Adjustment/Setting                                      |
|      | 12  | Used to adjust the tray 4 width detection level.  | Paper feed   | Adjustment/Setting                                      |
| 41   | 1   | Used to check the operation of the document size sensor and the control circuit.  |  | Operation test/check                                    |
|      | 2   | Used to adjust the document size sensor detection level.  |  | Adjustment  |
|      | 3   | Used to check the operation of the document size sensor and the control circuit.  |  | Operation test/check                                    |
| 43   | 1   | Used to set the fusing temperature in each mode.  |  | Setting   |
|      | 2   | Used to set the fusing operation and preheating.  |  | Setting   |
|      | 20  | Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.   |  | Adjustment/Setup  |
|      | 21  | Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.   |  | Adjustment/Setup  |
|      | 24  | Used to set the correction of the temperature adjustment value of SIM 43-1.   |  | Adjustment/Setup  |
|      | 31  | Used to check the operation of the fusing web cleaning motor and the control circuit.   |  | Operation test/check                                    |
|      | 32  | Used to set the forcible operation of the fusing web cleaning when job end.   |  | Adjustment/Setting                                      |
| 44   | 1   | Used to set each correction function of the image forming (process) section.  | Process (OPC drum, developing, transfer, cleaning) | Setting   |
|      | 2   | Used to adjust the process control sensor gain.   | Process  | Adjustment/Setting                                      |
|      | 3   | A change in the OPC drum surface potential VO due to the OPC drum environment and membrane decrease (life) is detected with the surface potential sensor to correct the grid potential Vg so that the cleaning field is maintained at a constant level. | Process  | Operation test/check                                    |
|      | 4   | Used to set the operating conditions of the high density process control.   |  | (Must not be used unless a special change is required.) |
|      | 5   | Used to set the dark potential adjustment conditions.   |  | Adjustment/Setting                                      |
|      | 6   | Used to perform forcible execution of the high density process correction.  |  | Adjustment  |
|      | 9   | Used to display the process data.   | Process (OPC drum, developing, transfer, cleaning) | (This simulation is normally not used in the market.)   |
|      | 12  | Used to display the result of the high density process control.   | Process (OPC drum, development)                    | (This simulation is normally not used in the market.)   |
|      | 14  | Used to check the output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor.  | Process (OPC drum, development)                    | Adjustment/Setting/ Operation data check                |
|      | 15  | Used to set the OPC drum idle rotation.   | Process  | Setting   |
|      | 21  | Used to set the halftone process control target.  | Process  | Adjustment/Setup  |
|      | 22  | Used to display the toner patch density level in the halftone process control operation.  | Process  | Operation data display                                  |
|      | 24  | Used to display the correction target and the correction level in the halftone process control operation.   | Process  | Operation data display                                  |
|      | 25  | Used to set the calculating conditions of the correction value for the halftone process control.  | Process  | Setting   |
|      | 26  | Used to execute the halftone process control compulsory.  | Process  | Adjustment/Setup  |
| 27   | Used to clear the correction data of the halftone process control.        | Process   | Data clear   |   |
| 28   | Used to set the process control execution timing.                         |   | Adjustment/Setting                                 |   |
| 29   | Used to set the operating conditions of the process control during a job. | Process   | Setting  |   |

| Main | Sub   | Function (Purpose)   | Section         | Purpose                              |
|------|---|--|-----------------|--------------------------------------|
| 44   | 33  | Used to set the conditions of the half-tone potential adjustment.  |                 | Adjustment/Setting                   |
|      | 35  | Used to display the half-tone potential adjustment result.   |                 |                                      |
|      | 37  | Used to set the development bias correction level in the continuous printing operation.  |                 | Adjustment/Setup                     |
|      | 62  | Used to set the process control execution conditions.  | Process         | Setup/Adjustment                     |
| 46   | 2   | Used to adjust the copy density in the copy mode.  |                 | Adjustment (Monochrome copy mode)    |
|      | 4   | Used to adjust the density in the image send mode.   |                 | Adjustment (Color scanner mode)      |
|      | 5   | Used to adjust the density in the image send mode.   |                 | Adjustment (Monochrome scanner mode) |
|      | 8   | Used to adjust the scanner color balance RGB.  |                 | Adjustment (Color scanner mode)      |
|      | 9   | Used to adjust the copy density adjustment in the copy mode.   |                 | Adjust (DSPF mode)                   |
|      | 10  | Used to perform the engine gray balance manual adjustment.   |                 | Adjustment                           |
|      | 16  | Used to perform the engine balance manual adjustment. (Monochrome, all modes)  |                 | Adjustment                           |
|      | 19  | Used to set the monochrome auto exposure mode.   |                 | Setting                              |
|      | 23  | Used to set the half-tone max. density correction.   |                 | Adjustment/Setting                   |
|      | 24  | Used to adjust the engine half-tone auto density adjustment.   |                 | Adjustment                           |
|      | 32  | Adjustment of basic color density for AE mode.   |                 | Adjustment/Setting                   |
|      | 37  | Used to adjust B/W image forming.  |                 | Adjustment/Setting                   |
|      | 39  | Used to adjust the image send sharpness.   |                 | Adjustment/Setting                   |
|      | 47  | Used to set the JPEG compression rate in copying and scanning.   |                 | Adjustment/Setting                   |
|      | 48  | Copy output resolution setting   |                 | Adjustment/Setting                   |
|      | 51  | Used to adjust the gamma for the copy mode heavy paper mode and the image process mode.  |                 | Adjustment/Setup                     |
|      | 52  | Used to set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.)  |                 | Adjustment/Setup                     |
|      | 54  | Used to perform the engine halftone automatic density adjustment (dither).   |                 | Adjustment                           |
|      | 55  | Used to adjust the drop out color in the image send mode (monochrome manual text mode).  |                 | Adjustment/Setup                     |
|      | 60  | Used to adjust the sharpness in the color auto mode.   |                 | Adjustment/Setup                     |
|      | 61  | Used to adjust the area separation recognition level.  |                 | Adjustment/Setup                     |
|      | 62  | Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.  |                 | Adjustment/Setup                     |
|      | 63  | Used to adjust the density in the copy low density section.  |                 | Adjustment/Setup                     |
|      | 66  | Used to adjust the reproduction capability of watermarks in the copy/printer mode.   |                 | Adjustment/Setup                     |
|      | 74  | Copy gray balance adjustment (Auto adjustment)/Printer gray balance adjustment (Auto adjustment)   |                 | Adjustment                           |
|      | 90  | Used to set the process operation of high-compression PDF images.  |                 | Adjustment                           |
|      | 91  | Used to adjust the reproduction capability of black text.  |                 | Adjustment                           |
| 48   | 1   | Used to adjust the copy magnification ratio (main/sub scanning direction).   |                 | Adjustment                           |
|      | 5   | Used to adjust the copy magnification ratio (sub scanning direction). This adjustment is performed when Sim. 48-1 is used to adjust the sub scanning direction magnification ratio and a copy is made in a different copy magnification ratio and a satisfactory result is not obtained. | Scanner section | Adjustment                           |
|      | 6   | Used to adjust the rotation speed of each motor.   |                 | Adjustment                           |
| 49   | 1   | Firmware update  |                 |                                      |
|      | 3   | Used to update the instruction manual stored in the HDD.   |                 |                                      |
|      | 5   | Used to perform the watermark update.  |                 |                                      |
| 50   | 1   | Used to adjust copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim. 50-5 and Sim. 50-2 (Simple method). (Document table mode))   |                 | Adjustment                           |
|      | 2   | Used to adjust the copy image position on the paper and the void area (image loss) in the copy mode. (This simulation, similar to Sim. 50-1, provides more simplified adjustment.)   |                 | Adjustment                           |
|      | 5   | Used to adjust the printer print lead edge.  |                 | Adjustment                           |
|      | 6   | DSPF document lead edge adjustment. Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim. 50-7 (Simple method).) (DSPF mode)   | DSPF            | Adjustment                           |
|      | 7   | DSPF document lead edge adjustment (Simple method) Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode (Sim. 50-6 simple method)   | DSPF            | Adjustment                           |
|      | 10  | Used to adjust the print image off-center position. (The adjustment is made for each paper feed section.)  |                 | Adjustment                           |
|      | 12  | Used to adjust the scan image off-center position. (The adjustment is made for each scan mode.)  |                 | Adjustment                           |
|      | 20  | Image registration adjustment (Main scanning direction)  |                 | Adjustment                           |
|      | 27  | Used to adjust the image loss of a scan image in the Scanner mode.   |                 | Adjustment                           |
| 28   | Used to perform the OC adjustment, the BK main scan magnification ratio correction, the DSPF adjustment, and the print position adjustment. |  | Adjustment      |                                      |
| 51   | 1   | Used to adjust the ON/OFF timing of the secondary transport voltage.   |                 | Adjustment/Setting                   |
|      | 2   | Used to adjust the contact pressure of paper against the resist roller (main unit paper feed, duplex paper feed, DSPF paper feed) in each section. (This adjustment is required when there is a great variation in the print image position for the paper or when paper jam occurred.)   |                 | Adjustment/Setting                   |



| Main | Sub | Function (Purpose)  | Section   | Purpose   |   |
|------|-----|---|---|---|---|
| 53   | 6   | Used to adjust the DSPF width detection level.  |   | Adjustment  |   |
|      | 7   | Used to set the DSPF width adjustment value. (Sim. 53-6 manual input)   |   | Adjustment/Setting                                      |   |
|      | 8   | Used to adjust the DSPF document scan start position.   |   | Adjustment  |   |
|      | 9   | DSPF dirt detection setting   |   | Adjustment  |   |
|      | 10  | DSPF dirt detection execution.  |   | Adjustment/Setup  |   |
|      | 12  | Used to check the operations of the DSPF double feed sensor.  |   | Adjustment  |   |
| 55   | 1   | Used to set the specifications of the engine control operation.   |   | (Must not be used unless a special change is required.) |   |
|      | 2   | Used to set the specifications of the controller operation.   |   | (Must not be used unless a special change is required.) |   |
|      | 3   | Used to set the specifications of the controller operation.   |   | (Must not be used unless a special change is required.) |   |
|      | 10  | Used to enter the special stamp text input.   |   | Special stamp text setting                              |   |
| 56   | 1   | Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)   |   | Backup  |   |
|      | 2   | Used to backup the data in the EEPROM. SD Card, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)                                      |   | Data backup   |   |
|      | 3   | Used to back up the document filing data.   |   | Backup  |   |
|      | 4   | Used to back up the job log data.   |   | Backup  |   |
|      | 5   | Used to import the SIM22-6 data to a USB memory in the TEXT format.   |   | Adjustment/Setting/Operation data check                 |   |
| 60   | 1   | Used to check the operations (read/write) of the MFP control (SDRAM).   |   | Operation test/check                                    |   |
| 61   | 1   | Used to check the polygon motor rotation and the BD signal detection.   |   | Adjustment/Setting                                      |   |
|      | 3   | Used to set the laser power.  |   | Adjustment/Setting                                      |   |
|      | 4   | Used to print the print image skew adjustment pattern. (LSU unit)   |   | Adjustment  |   |
|      | 11  | Used to correct the laser power automatically.  |   | Adjustment  |   |
|      | 12  | Laser power manual correction   | LSU   | Adjustment  |   |
|      | 13  | Used to clear the laser power correction value.   |   | Adjustment  |   |
| 62   | 1   | Used to format the hard disk. (Except for the operation manual area.)   |   |   |   |
|      | 2   | Used to check the read/write operation of the hard disk. (Partial section)  |   | Operation test/check                                    |   |
|      | 3   | Used to check the read/write operation of the hard disk. (All area)   |   | Operation test/check                                    |   |
|      | 6   | Used to perform the self diag of the hard disk.   |   | Operation test/check                                    |   |
|      | 7   | Used to print the self diag error log of the hard disk.   |   | Operation test/check                                    |   |
|      | 8   | Used to format the hard disk. (Except for the system area and the operation manual area.)   |   |   |   |
|      | 10  | Used to delete the job log data.  |   | Data clear  |   |
|      | 11  | Used to delete the document filing data.  |   | Data clear  |   |
|      | 12  | Used to set YES/NO of auto format in hard disk trouble.   |   | Setting   |   |
|      | 13  | Used to format the hard disk.(Operation manual area only).  |   |   |   |
|      | 62  | 14  | Used to delete the document filing management data.                             | HDD   | Data clear                              |
|      |     | 20  | Used to check the operation of the mirroring hard disk.                         | Mirroring hard disk                                     | Operation test/check                    |
|      | 63  | 1   | Used to check the result of the shading correction.                             |   | Adjustment/Setting/Operation data check |
| 2    |     | Used to execute shading forcibly.   | Scanner   | Adjustment/Setting                                      |   |
| 3    |     | Used to perform the gamma correction and density conversion for RGB data inputted from the CCD. The gamma correction 1 of the SCAN ASIC and the set value of color correction are calculated and set from the specified image data. | Scanner   | Adjustment/Setting                                      |   |
| 4    |     | The average value of the patch scan values for the RGB image data inputted from the CCD are calculated and displayed.   | Scanner   | Adjustment/Setting                                      |   |
| 5    |     | Used to reset the color balance of the scanner to the default.  |   | Adjustment/Setting                                      |   |
| 6    |     | Used to set the auto adjustment pattern of the engine and gray balance.   |   | Adjustment/Setting                                      |   |
| 7    |     | Used to set the auto density of the engine auto adjustment scanner target value. (Service)  |   | Adjustment/Setting                                      |   |
| 8    |     | Used to reset the engine auto adjustment scanner target value to the default value.   |   | Adjustment/Setting                                      |   |
| 64   | 2   | Self print (B/W mode)   |   | Operation test /check                                   |   |
|      | 3   | Self print (B/W mode: high speed process)   |   | Operation test/check                                    |   |
|      | 4   | Used to make the self print of the printer.   |   | Operation test/check                                    |   |
|      | 5   | Printer self print (PCL)  |   | Operation test/check                                    |   |
|      | 6   | Printer self print (PS)   |   | Operation test/check                                    |   |
|      | 7   | Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-16 is printed.)  |   | Operation test/check                                    |   |
|      | 65  | 1   | Used to adjust the detection position of the touch panel (LCD display section). | Operation panel section                                 | Adjustment                              |
| 2    |     | Used to check the result of the touch panel (LCD display section) detection position adjustment.  | Operation panel section   | Operation check/Test                                    |   |
| 5    |     | Used to check the key input of the operation panel.   | Operation panel section   | Operation check/Test                                    |   |

| Main | Sub | Function (Purpose)  | Section | Purpose            |
|------|-----|---|---------|--------------------|
| 67   | 17  | Printer reset   | Printer | Reset              |
|      | 24  | Used to set for auto color calibration.   |         | Adjustment/Setting |
|      | 25  | Used to set the printer engine color balance manual correction.                             |         | Adjustment/Setting |
|      | 27  | Used to register the scanner target value of the printer engine auto density adjustment.    |         | Adjustment/Setting |
|      | 28  | Used to reset the printer engine auto adjustment scanner target value to the default value. |         | Adjustment/Setting |
|      | 31  | Used to clear the printer calibration value.  |         | Data clear         |
|      | 32  | Printer screen gamma table setting (300/600DPI).  |         | Adjustment/Setting |
|      | 33  | Used to perform the gamma correction of printer screens.                                    |         | Adjustment/Setting |
|      | 34  | Used to set Enable/Disable of the printer half-tone max. density correction.                |         | Adjustment/Setting |

## 4. Details of simulation

1

|                           |  |
|---------------------------|--|
| 1-1                       |  |
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operation of the scanner (reading) unit and the control circuit. |
| <b>Section</b>            | Scanner (reading)  |

### Operation/Procedure

- 1) Select the operation mode with the touch panel key.
- 2) Press [EXECUTE] key.  
The scanner scans at the speed corresponding to the operation mode.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item    | Button  | Content           | Default value    |
|---------|---------|-------------------|------------------|
| OC SCAN | 300DPI  | 300DPI (600mm/S)  | 300DPI (600mm/S) |
|         | 400DPI  | 400DPI (450mm/S)  |                  |
|         | 600DPI  | 600DPI (300mm/S)  |                  |
|         | 1200DPI | 1200DPI (150mm/S) |                  |

\* ( ): Scan speed

|                           |  |
|---------------------------|--|
| 1-2                       |  |
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the sensors in the scanner (reading) section and the related circuits. |
| <b>Section</b>            | Scanner (reading)  |

### Operation/Procedure

The operation conditions of the sensors are displayed.

- \* MHPS is highlighted when the scanner unit is in home position.
- \* When [BACK] key is pressed, the screen returns to the SUB code entry menu.

|                           |  |
|---------------------------|--|
| 1-5                       |  |
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operation of the scanner (reading) unit and the control circuit. |
| <b>Section</b>            | Scanner (reading)  |

### Operation/Procedure

- 1) Select the operation mode with the touch panel key.
- 2) Press [EXECUTE] key.  
The scanner scans at the speed corresponding to the operation mode.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item    | Button  | Content           | Default value    |
|---------|---------|-------------------|------------------|
| OC SCAN | 300DPI  | 300DPI (600mm/S)  | 300DPI (600mm/S) |
|         | 400DPI  | 400DPI (450mm/S)  |                  |
|         | 600DPI  | 600DPI (300mm/S)  |                  |
|         | 1200DPI | 1200DPI (150mm/S) |                  |

\* ( ): Scan speed

2

|                           |   |
|---------------------------|---|
| 2-1                       |   |
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the auto document feed unit and the control circuits. |
| <b>Section</b>            | DSPF  |

### Operation/Procedure

- 1) Select the operation mode with the touch panel key.
- 2) Press [EXECUTE] key.  
The DSPF repeats feed, transport, and paper exit operations in the mode corresponding to the operation mode.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item                         | Button | Content          | Default value    |
|------------------------------|--------|------------------|------------------|
| DSPF SCAN (SINGLE [Simplex]) | 300DPI | 300DPI (600mm/S) | 300DPI (600mm/S) |
|                              | 400DPI | 400DPI (450mm/S) |                  |
|                              | 600DPI | 600DPI (300mm/S) |                  |
| DSPF SCAN (DOUBLE [Duplex])  | 300DPI | 300DPI (496mm/S) | 300DPI (496mm/S) |
|                              | 400DPI | 400DPI (372mm/S) |                  |
|                              | 600DPI | 600DPI (248mm/S) |                  |

\* ( ): Scan speed

\* The operation is continued at the document tray detection size (fixed) when starting the operation. When there is no document, the operation is continued at the A4 size (fixed).

|                           |  |
|---------------------------|--|
| 2-2                       |  |
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the sensors and detectors in the auto document feed unit and the control circuits. |
| <b>Section</b>            | DSPF   |

### Operation/Procedure

The operation conditions of the sensors and the detectors are displayed.

The sensor and the detector which are turned ON are highlighted. When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Sensor name (display) | Content                                    |
|-----------------------|--|
| SSET                  | DSPF installation detection                |
| S OCD                 | DSPF open/close detection                  |
| SCOV                  | DSPF upper door open/close detection       |
| SLCOV                 | DSPF lower door open/close detection       |
| SPED                  | DSPF document set/empty detection          |
| SPPD1                 | DSPF document pass detection 1             |
| SPPD2                 | DSPF document pass detection 2             |
| SPPD3                 | DSPF document pass detection 3             |
| SPPD4                 | DSPF document pass detection 4             |
| SPPD5                 | DSPF document pass detection 5             |
| SPPD6                 | DSPF document pass detection 6             |
| SPPD7                 | DSPF document pass detection 7             |
| SPOD                  | DSPF paper exit detection                  |
| SPRDMD1               | DSPF random document feed size detection 1 |
| SPRDMD2               | DSPF random document feed size detection 2 |
| STUD                  | DSPF document tray upper limit detection   |
| STLD                  | DSPF document tray lower limit detection   |
| SRDPUD                | DSPF random document pickup detection      |
| SPLS1                 | DSPF document length detection 1           |
| SPLS3                 | DSPF document length detection 3           |
| STMPU                 | DSPF stamp unit installation detection     |
| SPRDMU                | DSPF random unit installation detection    |

| Sensor name (display) | Content  |
|-----------------------|--|
| SWD_LEN               | DSPF guide plate position (Unit; 0.1mm)        |
| SWD_AD                | DSPF document detection volume output AD value |

2-3

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the loads in the auto document feed unit and the control circuit. |
| <b>Section</b>            | DSPF  |

**Operation/Procedure**

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display | Content                   |
|---------|---------------------------|
| SPUM    | DSPF paper feed motor     |
| SRRM    | DSPF resist motor         |
| SPFM    | DSPF transport motor      |
| SPSM    | DSPF PS motor             |
| SRFM    | DSPF scan transport motor |
| SPOM    | DSPF paper exit motor     |
| SLUM    | DSPF lift-up motor        |
| SPFFAN1 | DSPF motor cooling fan 1  |
| STMPS   | DSPF stamp solenoid (*)   |

Note (\*): This operation is valid only when the stamp solenoid (option) is installed.

2-6

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check                                  |
| <b>Function (Purpose)</b> | Used to check the operation of the scanner fan motor. |
| <b>Section</b>            | Scanner (reading)                                     |

**Operation/Procedure**

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

<Description of load operation>

| Display | Content         |
|---------|-----------------|
| CCDFM   | CCD cooling fan |

3

3-2

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the sensors and the detectors in the finisher and the control circuits. |
| <b>Section</b>            | Finisher  |

**Operation/Procedure**

The operation conditions of the sensors and the detectors are displayed.

The sensor and the detector which are turned ON are highlighted.

When [BACK] key is pressed, the screen returns to the SUB code entry menu.

<Finisher (50-sheet stapling)>

| NO. | Display Item | Content                                      |
|-----|--------------|--|
| 1   | FINENT       | Inlet port sensor                            |
| 2   | PSTRYEXT     | Staple paper exit sensor                     |
| 3   | STSS         | Edge binding stapler staple presence sensor  |
| 4   | STES         | Edge binding stapler staple lead edge sensor |
| 5   | SFTROLHP     | Shift HP sensor                              |
| 6   | UPTRYEXT     | Paper exit sensor                            |
| 7   | EXGPLTHP     | Paper exit guide plate HP sensor             |
| 8   | UTRPHNST     | Paper surface detection: Staple              |
| 9   | UTRPHSTP     | Paper surface detection: Shift               |
| 10  | PRFTRYEX     | Proof tray paper exit sensor                 |
| 11  | PRFTRYFL     | Proof tray full sensor                       |
| 12  | UPTRYLMT     | Rear edge detection: Shift                   |
| 13  | STKROLHP     | Oscillation return roller HP sensor          |
| 14  | STPTRPAP     | Staple tray paper empty sensor               |
| 15  | JOGHPS       | Jogger HP sensor                             |
| 16  | BLTHPS       | Eject pawl HP sensor                         |
| 17  | CONSTPHP     | Stapler shift HP sensor                      |
| 18  | STPROTHP     | Stapler diagonal HP sensor                   |
| 19  | STRS         | Edge binding stapler (1 rotation) sensor     |
| 20  | UPTRFLNS     | Full sensor: without center binding          |

<Finisher (100-sheet stapling)>

| NO. | Display Item | Content                             |
|-----|--------------|-------------------------------------|
| 1   | FNS103       | Staple tray paper detection         |
| 2   | FNS122       | Tray 1 area 1 sensor                |
| 3   | FNS123       | Tray 1 area 2 sensor                |
| 4   | FNS124       | Tray 1 area 3 sensor                |
| 5   | FNS146       | Discharge paper surface sensor      |
| 6   | FNS149       | YO paper surface sensor             |
| 7   | FNS118       | Process tray paper surface sensor   |
| 8   | FNS143       | Lower tray paper surface sensor     |
| 9   | FNS114       | YOHP sensor                         |
| 10  | FNS112       | Take-up swing HP sensor             |
| 11  | FNS135       | Paper holding lever HP sensor       |
| 12  | FNS111       | Roller nip HP sensor                |
| 13  | FNS142       | Buffer flapper HP sensor            |
| 14  | FNS102       | Discharged paper detection          |
| 15  | FNS101       | Inlet port paper detection          |
| 16  | FNS131       | Staple drive HP detection           |
| 17  | FNS128       | Staple area sensor                  |
| 18  | FNSW110      | Tray 1 interference switch          |
| 19  | FNS134       | Staple cart sensor                  |
| 20  | FNS132       | Staple lead edge position detection |
| 21  | FNS133       | Staple empty detection              |
| 22  | FNS104       | Tray 1 paper detection              |
| 23  | FNS105       | Tray 2 paper detection              |
| 24  | FNS130       | Tray 3 paper detection              |
| 25  | FNPCH_CON    | Punch unit connection detection     |
| 26  | FNSW2        | PUSHSW2 detection                   |
| 27  | FNSW1        | PUSHSW1 detection                   |
| 28  | FNS107       | Staple shift HP detection           |

| NO. | Display Item     | Content   |
|-----|------------------|---|
| 29  | FNS108           | Alignment plate front HP sensor                     |
| 30  | FNS109           | Alignment plate rear HP sensor                      |
| 31  | FNS106           | Shutter open detection                              |
| 32  | FNS110           | Oscillation guide open detection                    |
| 33  | FNSW3-1          | DIPSW1 detection                                    |
| 34  | FNSW3-2          | DIPSW2 detection                                    |
| 35  | FNSW3-3          | DIPSW3 detection                                    |
| 36  | FNSW3-4          | DIPSW4 detection                                    |
| 37  | FNS129           | Finisher front cover sensor                         |
| 38  | FNSW103          | Stapler safety switch                               |
| 39  | FNSW101          | Finisher front cover switch                         |
| 40  | FNS148           | Shutter close detection                             |
| 41  | FNSW102          | Oscillation guide switch                            |
| 42  | FNS125           | Tray 2 area 1 sensor                                |
| 43  | FNS126           | Tray 2 area 2 sensor                                |
| 44  | FNS127           | Tray 2 area 3 sensor                                |
| 45  | FNS113           | Rear edge falling HP sensor                         |
| 46  | FNS138           | YO rear HP sensor                                   |
| 47  | FNS139           | YO front HP sensor                                  |
| 48  | FNS136           | Guide sub rear HP sensor                            |
| 49  | FNS137           | Guide sub front HP sensor                           |
| 50  | FN24V-DET        | 24V-DETECT  |
| 51  | FN24V1-DET       | 24V1-DETECT   |
| 52  | FNAC-RELAY-ON    | Relay on signal                                     |
| 53  | FNS115           | Gripper HP sensor                                   |
| 54  | FNS140           | Gripper front/rear sensor                           |
| 55  | FNS116           | Gripper base front sensor                           |
| 56  | FNS117           | Gripper base rear sensor                            |
| 57  | FNM19-LD         | Load tray upper motor arm                           |
| 58  | FNM20-LD         | Load tray lower motor arm                           |
| 59  | FNFAN2-ALM       | Power supply fan alarm                              |
| 60  | FNFAN1-ALM       | PWB cooling fan alarm                               |
| 61  | FNFAN5-ALM       | Upper tray fan alarm                                |
| 62  | FNFAN4-ALM       | Lower tray fan alarm                                |
| 63  | FNS200           | Cut staple sensor                                   |
| 64  | FNSDL_CON        | Saddle connection detection                         |
| 65  | FNFLD_CON        | Folding unit connection detection                   |
| 66  | FNGBC_CON        | GBC punch connection detection                      |
| 67  | FNFLD-ETR-ST-ACK | Folding unit EntryStartAck signal                   |
| 68  | FNFLD-EJCT-ST    | Folding unit EjectStart signal                      |
| 69  | PIS150           | Transfer unit bus sensor                            |
| 70  | PISW200          | Transfer unit front cover switch                    |
| 71  | PIUNITMOT_ALM    | Transfer unit transport motor lock detection signal |
| 72  | PIPASSUNIT-CON   | Transfer unit connection detection                  |

<Saddle stitch finisher (50-sheet stapling)>

| NO. | Display Item | Content   |
|-----|--------------|---|
| 1   | FSDSTRR      | Center binding stapler (1 rotation) sensor: rear      |
| 2   | FSDSTER      | Center binding stapler staple lead edge sensor: rear  |
| 3   | FSDSTSR      | Center binding stapler staple presence sensor: rear   |
| 4   | FSDSTRF      | Center binding stapler (1 rotation) sensor: front     |
| 5   | FSDSTEF      | Center binding stapler staple lead edge sensor: front |
| 6   | FSDSTSF      | Center binding stapler staple presence sensor: front  |
| 7   | CLPROLHP     | Drive roller HP sensor                                |
| 8   | UPTRFLSD     | Full sensor: with center binding                      |
| 9   | STKPRST      | Lead edge sensor                                      |
| 10  | FLDUNEXT     | Folding pass sensor                                   |
| 11  | FLDCMHP      | Folding cam HP sensor                                 |
| 12  | FLDPLTHP     | Folding plate HP sensor                               |
| 13  | FLDBTMHP     | Rear edge fence HP sensor                             |
| 14  | STJCTGHP     | Bundle branch open/close HP sensor                    |
| 15  | FLDUNENT     | Reach sensor  |
| 16  | SDLFLLF      | Saddle section full sensor: front                     |
| 17  | SDLFLLR      | Saddle section full sensor: rear                      |

<Saddle stitch finisher (100-sheet stapling)>

| NO. | Display Item | Content                                |
|-----|--------------|--|
| 1   | FSS213       | Pushing clock sensor                   |
| 2   | FSS214       | Folding clock sensor                   |
| 3   | FSS228       | Saddle tray paper sensor               |
| 4   | FSS219       | Rear edge holding shift HP             |
| 5   | FSS221       | Rear edge holding HP                   |
| 6   | FSS206       | Alignment plate HP                     |
| 7   | FSS205       | Lead edge stopper HP                   |
| 8   | FSS222       | Pulling separation HP                  |
| 9   | FSS229       | Folding HP sensor                      |
| 10  | FSS223       | Staple HP sensor                       |
| 11  | FSS208       | Pushing HP                             |
| 12  | FSS203       | Vertical path sensor                   |
| 13  | FSS226       | Bundle paper exit path sensor 1        |
| 14  | FST-CON      | Trimmer connection detection           |
| 15  | FSS225       | Staple 2 sensor                        |
| 16  | FSS224       | Staple 1 sensor                        |
| 17  | FSS207       | Roller guide HP sensor                 |
| 18  | FSS227       | Bundle paper exit bus sensor 2         |
| 19  | FSS218       | Rear edge sorting HP                   |
| 20  | FSS201       | Inlet port path sensor                 |
| 21  | FS24V-DET    | Interlock power supply (24V) detection |

<Punch module (Finisher (50-sheet stapling))>

| NO. | Display Item | Content                           |
|-----|--------------|-----------------------------------|
| 1   | PNCHHPFL     | Punch dust full sensor            |
| 2   | PNCHMVHP     | Punch shift HP sensor             |
| 3   | PNCHENC      | Punch RPS                         |
| 4   | PNCHHP       | Punch drive HP                    |
| 5   | PAPPOSHP     | Horizontal registration HP sensor |
| 6   | PAPPOS       | Horizontal registration sensor    |

<Punch module (Finisher (100-sheet stapling))>

| NO. | Display Item | Content                                    |
|-----|--------------|--|
| 1   | FCS105       | Punch motor clock detection                |
| 2   | FCPCB2       | Punch dust sensor                          |
| 3   | FCS104       | Punch HP detection                         |
| 4   | FCS101       | Punch horizontal registration HP detection |
| 5   | FCPCB31      | Punch horizontal registration A3 sensor    |
| 6   | FCPCB32      | Punch horizontal registration LD sensor    |
| 7   | FCPCB33      | Punch horizontal registration B4 sensor    |
| 8   | FCPCB34      | Punch horizontal registration A4R sensor   |
| 9   | FCPCB35      | Punch horizontal registration B5R sensor   |
| 10  | FCS102       | Punch hole motor position sensor           |
| 11  | FCS103       | Punch hole motor 2-hole/3-hole sensor      |
| 12  | FCSW1-1      | Punch DIPSW1                               |
| 13  | FCSW1-2      | Punch DIPSW2                               |

<Paper folding unit>

| NO. | Display Item  | Content   |
|-----|---------------|---|
| 1   | FLENTRY       | Paper reception start request                                 |
| 2   | FLEXIT_ACK    | Paper exit start response                                     |
| 3   | FLS30         | Speed reduction timing sensor                                 |
| 4   | FLS31         | Separation timing sensor                                      |
| 5   | FLS32         | Folding position accurate sensor                              |
| 6   | FLS33         | Upper stopper section paper sensor                            |
| 7   | FLS25         | Lead edge hold guide HP sensor                                |
| 8   | FLS24         | Internal 3-fold stopper HP sensor                             |
| 9   | FLS23         | Upper stopper section HP sensor                               |
| 10  | FLS22         | Paper exit 1 paper sensor                                     |
| 11  | FLS28         | Internal 3-fold tray (intermediate tray) home position sensor |
| 12  | FLS26         | Internal 3-fold tray (paper exit tray) full sensor            |
| 13  | FLS27         | Internal 3-fold tray (intermediate tray) paper sensor         |
| 14  | FLS29         | Folding unit pull-out sensor                                  |
| 15  | FLORIHAN_LOCK | Brushless motor lock detection signal                         |
| 16  | FLFSW1        | Front cover sensor  |
| 17  | FLS20         | Inlet port sensor   |

| NO. | Display Item | Content                                |
|-----|--------------|--|
| 18  | FLS21        | Paper exit 2 sensor                    |
| 19  | FLSW3-1      | DipSW1                                 |
| 20  | FLSW3-2      | DipSW2                                 |
| 21  | FLSW3-3      | DipSW3                                 |
| 22  | FLSW3-4      | DipSW4                                 |
| 23  | FLSW3-5      | DipSW5                                 |
| 24  | FLSW3-6      | DipSW6                                 |
| 25  | FLSW3-7      | DipSW7                                 |
| 26  | FLSW3-8      | DipSW8                                 |
| 27  | FLSW1        | PushSW1                                |
| 28  | FLSW2        | PushSW2                                |
| 29  | FLFAN3_LOCK  | Power supply fan lock detection signal |

<Trimmer unit>

| NO. | Display Item | Content                                    |
|-----|--------------|--|
| 1   | FTS108       | Cutter motor clock sensor                  |
| 2   | FTS105       | Trimmer registration motor HP sensor       |
| 3   | FTS106       | Trimmer press motor HP sensor              |
| 4   | FTS104       | Trimmer rear estrangement motor HP sensor  |
| 5   | FTS102       | Trimmer front estrangement motor HP sensor |
| 6   | FTS103       | Trimmer paper delivery sensor              |
| 7   | FTS101       | Trimmer inlet sensor                       |
| 8   | FTS111       | Trimmer waste paper full sensor            |
| 9   | FTS109       | Trimmer waste paper box detection sensor   |
| 10  | FTSW1-1      | DIPSW1 detection                           |
| 11  | FTSW1-2      | DIPSW2 detection                           |
| 12  | FTSW1-3      | DIPSW3 detection                           |
| 13  | FTSW1-4      | DIPSW4 detection                           |
| 14  | FTSW2        | PUSHSW detection                           |

3-3

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the motors and the solenoids in the finisher and the control circuits. |
| <b>Section</b>            | Finisher   |

#### Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

Finisher (50-sheet stapling)

| NO. | Display  | Content                                 |
|-----|----------|---|
| 1   | PORLDR_M | Tapping roller drive motor              |
| 2   | SFT_M    | Shift motor                             |
| 3   | ENT_M    | Inlet port motor                        |
| 4   | UPTRS_M  | Upper transport motor                   |
| 5   | LOTRS_M  | Lower transport motor                   |
| 6   | TEGPRS_S | Rear edge holding SOL                   |
| 7   | POS_S    | Tapping SOL                             |
| 8   | BLT_M    | Eject motor                             |
| 9   | UPJCTG_S | Proof branch pawl SOL                   |
| 10  | LOJCTG_S | Staple branch pawl SOL                  |
| 11  | EXGPLT_M | Paper exit guide plate open/close motor |
| 12  | EXIT_M   | Paper exit motor                        |
| 13  | STRLVI_M | Return roller oscillation motor         |
| 14  | TRYLFT_M | Tray up/down motor                      |
| 15  | STPROT_M | Stapler diagonal motor                  |
| 16  | JOG_M    | Jogger motor                            |
| 17  | STPMV_M  | Stapler shift motor                     |
| 18  | STPMOV_M | Stapler                                 |

<Finisher (100-sheet stapling)>

| NO. | Display  | Content                                |
|-----|----------|--|
| 1   | FNM101   | Inlet port transport motor             |
| 2   | FNM104   | Paper delivery transport motor         |
| 3   | FNM108   | Front alignment motor                  |
| 4   | FNM107   | Stapler shift motor                    |
| 5   | FNM105   | Load tray upper motor                  |
| 6   | FNM115   | Staple motor                           |
| 7   | FNM110   | Oscillation guide motor                |
| 8   | FNM102   | Buffer transport motor                 |
| 9   | FNM106   | Load tray lower motor                  |
| 10  | FNM119   | Roller nip motor                       |
| 11  | FNM114   | YO motor                               |
| 12  | FNM120   | Guide sub motor                        |
| 13  | FNM113   | Rear edge falling motor                |
| 14  | FNM117   | Gripper belt motor                     |
| 15  | FNM116   | Gripper arm motor                      |
| 16  | FNM121   | Take-up transport motor                |
| 17  | FNM112   | Take-up swing motor                    |
| 18  | FNM118   | Paper holding lever motor              |
| 19  | FNM109   | Rear alignment motor                   |
| 20  | FNCL102  | Shutter clutch                         |
| 21  | FNM122   | Paper delivery lower transport motor   |
| 22  | FNSL101  | Oscillation safety switch solenoid     |
| 23  | FNFAN102 | PWB cooling fan                        |
| 24  | FNFAN103 | Upper tray cooling fan                 |
| 25  | FNFAN104 | Lower tray cooling fan                 |
| 26  | PIM301   | Transfer unit transport motor lock (*) |

\*: Operates only when the transport unit is installed.

<Saddle stitch finisher (50-sheet stapling)>

| NO. | Display  | Content                        |
|-----|----------|--------------------------------|
| 1   | SDLPRS_S | Center binding holding SOL     |
| 2   | BDJCTG_M | Bundle branch open/close motor |
| 3   | TALFNC_M | Rear edge fence motor          |
| 4   | SDLSTF_M | Center binding stapler: front  |
| 5   | SDLSTR_M | Center binding stapler: rear   |
| 6   | FLDPLT_M | Folding plate drive motor      |
| 7   | FLDROL_M | Folding roller motor           |
| 8   | DRRLVI_M | Drive roller oscillation motor |

<Saddle stitch finisher (100-sheet stapling)>

| NO. | Display | Content                                   |
|-----|---------|---|
| 1   | FSM200  | Inlet port transport motor                |
| 2   | FSM201  | Transport motor                           |
| 3   | FSM212  | Alignment roller (lead edge roller) motor |
| 4   | FSSL206 | Inlet port path select solenoid           |
| 5   | FSSL205 | Lead edge stopper solenoid                |
| 6   | FSSL203 | Lead edge separation solenoid 1           |
| 7   | FSSL204 | Lead edge separation solenoid 2           |
| 8   | FSM202  | Alignment motor                           |
| 9   | FSM203  | Lead edge stopper motor                   |
| 10  | FSM204  | Roller guide motor                        |
| 11  | FSM210  | Rear edge holding motor                   |
| 12  | FSM211  | Rear edge shift motor                     |
| 13  | FSM213  | Flapping motor                            |
| 14  | FSM214  | Pull-in roller (separation) motor         |
| 15  | FSM209  | Staple motor                              |
| 16  | FSM206  | Folding motor                             |
| 17  | FSM205  | Push motor                                |

<Punch module (Finisher (50-sheet stapling))>

| NO. | Display  | Content  |
|-----|----------|--|
| 1   | STSMOV_M | Horizontal registration detection sensor shift motor |
| 2   | PNCHMV_M | Punch shift motor                                    |
| 3   | PNCH_M   | Punch drive motor                                    |

Punch module (Finisher (100-sheet stapling))

| NO. | Display | Content                             |
|-----|---------|-------------------------------------|
| 1   | FCM102  | Punch hole motor                    |
| 2   | FCM101  | Punch horizontal registration motor |

<Paper folding unit>

| NO. | Display | Content  |
|-----|---------|--|
| 1   | FLSOL2  | Folding/Straight branch solenoid               |
| 2   | FLSOL3  | Separation solenoid                            |
| 3   | FLSOL5  | Internal 3-fold stopper solenoid               |
| 4   | FLM11   | Folding transport motor                        |
| 5   | FLM15   | Folding position adjustment motor              |
| 6   | FLM13   | Exit port motor 2                              |
| 7   | FLM14   | Exit port motor 1                              |
| 8   | FLM5    | Inlet port motor                               |
| 9   | FLSOL4  | Internal 3-fold tray branch solenoid           |
| 10  | FLM8    | Upper stopper motor                            |
| 11  | FLM9    | Internal 3-fold stopper adjustment motor       |
| 12  | FLM10   | Lead edge holding guide motor                  |
| 13  | FLM7    | Internal 3-fold tray (intermediate tray) motor |
| 14  | FLCL3   | Folding position adjustment clutch (normal)    |
| 15  | FLCL4   | Folding position adjustment clutch (reverse)   |

<Trimmer unit>

| NO. | Display | Content                         |
|-----|---------|---------------------------------|
| 1   | FTM101  | Trimmer transport motor         |
| 2   | FTM103  | Inlet port separation motor     |
| 3   | FTM104  | Paper delivery separation motor |
| 4   | FTM102  | Registration motor              |
| 5   | FTM106  | Cutter motor                    |
| 6   | FTSL101 | Registration solenoid           |
| 7   | FTM105  | Press motor                     |
| 8   | FTSL102 | Paddle solenoid                 |

3-10

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Finisher adjustment  |
| <b>Function (Purpose)</b> | Used to adjust the jogger position, the lead edge stopper position, the staple jogging count number, and the paper folding count number. |
| <b>Section</b>            | Finisher   |

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.  
Press [OK] key. (The set value is saved.)
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

<Finisher (50-sheet stapling)>

| Item | Display       | Item  | Setting range | Default value |
|------|---------------|---|---------------|---------------|
| A    | STAPLE REAR   | Stapling position adjustment (Other) (Rear) | 65 - 110      | 100           |
| B    | STAPLE FRONT  | Stapling position adjustment (Front)        | 90 - 135      | 100           |
| C    | JOGGER(OTHER) | Jogger position adjustment (Other)          | 85 - 115      | 100           |
| D    | JOGGER(A3)    | Jogger position adjustment (A3)             | 85 - 115      | 100           |
| E    | JOGGER(B4)    | Jogger position adjustment (B4)             | 85 - 115      | 100           |
| F    | JOGGER(A4R)   | Jogger position adjustment (A4R)            | 85 - 115      | 100           |
| G    | JOGGER(A4)    | Jogger position adjustment (A4)             | 85 - 115      | 100           |
| H    | JOGGER(B5R)   | Jogger position adjustment (B5R)            | 85 - 115      | 100           |

| Item | Display         | Item   | Setting range | Default value |
|------|-----------------|--|---------------|---------------|
| I    | JOGGER(B5)      | Jogger position adjustment (B5)                        | 85 - 115      | 100           |
| J    | JOGGER(11x17)   | Jogger position adjustment (11 x 17)                   | 85 - 115      | 100           |
| K    | JOGGER(8.5x14)  | Jogger position adjustment (8.5 x 14)                  | 85 - 115      | 100           |
| L    | JOGGER(8.5x11R) | Jogger position adjustment (8.5 x 11R)                 | 85 - 115      | 100           |
| M    | JOGGER(8.5x11)  | Jogger position adjustment (8.5 x 11)                  | 85 - 115      | 100           |
| N    | JOGGER(12x18)   | Jogger position adjustment (12 x 18)                   | 85 - 115      | 100           |
| O    | PUNCH X         | Punch position adjustment (X: Sub scanning direction)  | 70 - 130      | 100           |
| P    | PUNCH Y         | Punch position adjustment (Y: Main scanning direction) | 80 - 120      | 100           |

<Saddle stitch finisher (50-sheet stapling)>

| Item | Display                 | Item   | Setting range | Default value |
|------|-------------------------|--|---------------|---------------|
| A    | STAPLE REAR             | Stapling position adjustment (Other) (Rear)            | 65 - 110      | 100           |
| B    | STAPLE FRONT            | Stapling position adjustment (Front)                   | 90 - 135      | 100           |
| C    | JOGGER(OTHER)           | Jogger position adjustment (Other)                     | 85 - 115      | 100           |
| D    | JOGGER(A3)              | Jogger position adjustment (A3)                        | 85 - 115      | 100           |
| E    | JOGGER(B4)              | Jogger position adjustment (B4)                        | 85 - 115      | 100           |
| F    | JOGGER(A4R)             | Jogger position adjustment (A4R)                       | 85 - 115      | 100           |
| G    | JOGGER(A4)              | Jogger position adjustment (A4)                        | 85 - 115      | 100           |
| H    | JOGGER(B5R)             | Jogger position adjustment (B5R)                       | 85 - 115      | 100           |
| I    | JOGGER(B5)              | Jogger position adjustment (B5)                        | 85 - 115      | 100           |
| J    | JOGGER(11x17)           | Jogger position adjustment (11 x 17)                   | 85 - 115      | 100           |
| K    | JOGGER(8.5x14)          | Jogger position adjustment (8.5 x 14)                  | 85 - 115      | 100           |
| L    | JOGGER(8.5x11R)         | Jogger position adjustment (8.5 x 11R)                 | 85 - 115      | 100           |
| M    | JOGGER(8.5x11)          | Jogger position adjustment (8.5 x 11)                  | 85 - 115      | 100           |
| N    | JOGGER(12x18)           | Jogger position adjustment (12 x 18)                   | 85 - 115      | 100           |
| O    | PUNCH X                 | Punch position adjustment (X: Sub scanning direction)  | 70 - 130      | 100           |
| P    | PUNCH Y                 | Punch position adjustment (Y: Main scanning direction) | 80 - 120      | 100           |
| Q    | SADDLE POSITION (OTHER) | Center binding position adjustment (Other)             | 70 - 130      | 100           |
| R    | SADDLE POSITION(A3)     | Center binding position adjustment (A3)                | 70 - 130      | 100           |
| S    | SADDLE POSITION(B4)     | Center binding position adjustment (B4)                | 70 - 130      | 100           |
| T    | SADDLE POSITION(A4R)    | Center binding position adjustment (A4R)               | 70 - 130      | 100           |
| U    | SADDLE POSITION(B5R)    | Center binding position adjustment (B5R)               | 70 - 130      | 100           |
| V    | SADDLE POSITION(11x17)  | Center binding position adjustment (11 x 17)           | 70 - 130      | 100           |
| W    | SADDLE POSITION(8.5x14) | Center binding position adjustment (8.5 x 14)          | 70 - 130      | 100           |

| Item | Display                    | Item   | Setting range | Default value |
|------|----------------------------|--|---------------|---------------|
| X    | SADDLE POSITION (8.5x11R)  | Center binding position adjustment (8.5 x 11R) | 70 - 130      | 100           |
| Y    | SADDLE POSITION(12x18)     | Center binding position adjustment (12 x 18)   | 70 - 130      | 100           |
| Z    | FOLDING POSITION (OTHER)   | Center folding position adjustment (Other)     | 70 - 130      | 100           |
| AA   | FOLDING POSITION(A3)       | Center folding position adjustment (A3)        | 70 - 130      | 100           |
| AB   | FOLDING POSITION(B4)       | Center folding position adjustment (B4)        | 70 - 130      | 100           |
| AC   | FOLDING POSITION(A4R)      | Center folding position adjustment (A4R)       | 70 - 130      | 100           |
| AD   | FOLDING POSITION(B5R)      | Center folding position adjustment (B5R)       | 70 - 130      | 100           |
| AE   | FOLDING POSITION(11x17)    | Center folding position adjustment (11 x 17)   | 70 - 130      | 100           |
| AF   | FOLDING POSITION(8.5x14)   | Center folding position adjustment (8.5 x 14)  | 70 - 130      | 100           |
| AG   | FOLDING POSITION (8.5x11R) | Center folding position adjustment (8.5 x 11R) | 70 - 130      | 100           |
| AH   | FOLDING POSITION(12x18)    | Center folding position adjustment (12 x 18)   | 70 - 130      | 100           |
| AI   | BEND ADJ COUNT             | Bending number adjustment                      | 1 - 30        | 2             |

<Finisher (100-sheet stapling)>

| Item | Display                | Item  | Setting range | Default value |
|------|------------------------|---|---------------|---------------|
| A    | BUFFER SHIFT1          | Buffer paper shift amount adjustment 1                      | 50 - 150      | 100           |
| B    | BUFFER SHIFT2          | Buffer paper shift amount adjustment 2                      | 50 - 150      | 100           |
| C    | ALIGNMENT              | Alignment width adjustment                                  | 50 - 150      | 100           |
| D    | STAPLE FRONT(S-WIDTH)  | Stapling position adjustment (Front 1 position/Small width) | 70 - 130      | 100           |
| E    | STAPLE FRONT (W-WIDTH) | Stapling position adjustment (Front 1 position/Wide width)  | 70 - 130      | 100           |
| F    | STAPLE REAR (S-WIDTH)  | Stapling position adjustment (Rear 1 position/Small width)  | 70 - 130      | 100           |
| G    | STAPLE REAR (W-WIDTH)  | Stapling position adjustment (Rear 1 position/Wide width)   | 70 - 130      | 100           |
| H    | STAPLE CENTER          | Stapling position adjustment (Center 2 positions)           | 85 - 115      | 100           |
| I    | PUNCH Y (*1)           | Punch hole position adjustment (Y: Main scanning direction) | 85 - 115      | 100           |
| J    | PUNCH X (*1)           | Punch hole position adjustment (X: Sub scanning direction)  | 50 - 150      | 100           |
| K    | PUNCH SKEW (*1)        | Punch mode skew adjustment                                  | 80 - 120      | 100           |
| L    | PUNCH SKEW SHIN (*1)   | Punch mode skew adjustment (Thin paper)                     | 80 - 120      | 100           |

\*1: Not saved when the punch is not installed.

<Saddle stitch finisher (100-sheet stapling)>

| Item | Display       | Item                                   | Setting range | Default value |
|------|---------------|--|---------------|---------------|
| A    | BUFFER SHIFT1 | Buffer paper shift amount adjustment 1 | 50 - 150      | 100           |
| B    | BUFFER SHIFT2 | Buffer paper shift amount adjustment 2 | 50 - 150      | 100           |
| C    | ALIGNMENT     | Alignment width adjustment             | 50 - 150      | 100           |

| Item | Display                | Item  | Setting range | Default value |
|------|------------------------|---|---------------|---------------|
| D    | STAPLE FRONT(S-WIDTH)  | Stapling position adjustment (Front 1 position/Small width)       | 70 - 130      | 100           |
| E    | STAPLE FRONT (W-WIDTH) | Stapling position adjustment (Front 1 position/Wide width)        | 70 - 130      | 100           |
| F    | STAPLE REAR (S-WIDTH)  | Stapling position adjustment (Rear 1 position/Small width)        | 70 - 130      | 100           |
| G    | STAPLE REAR (W-WIDTH)  | Stapling position adjustment (Rear 1 position/Wide width)         | 70 - 130      | 100           |
| H    | STAPLE CENTER          | Stapling position adjustment (Center 2 positions)                 | 85 - 115      | 100           |
| I    | PUNCH Y (*1)           | Punch hole position adjustment (Y: Main scanning direction)       | 85 - 115      | 100           |
| J    | PUNCH X (*1)           | Punch hole position adjustment (X: Sub scanning direction)        | 50 - 150      | 100           |
| K    | PUNCH SKEW (*1)        | Punch mode skew adjustment  | 80 - 120      | 100           |
| L    | PUNCH SKEW SHIN (*1)   | Punch mode skew adjustment (Thin paper)                           | 80 - 120      | 100           |
| M    | SDL FOLD               | Saddle folding position adjustment                                | 80 - 120      | 100           |
| N    | SDL STPL               | Saddle stitch position adjustment                                 | 80 - 120      | 100           |
| O    | SDL DIVIDE             | Saddle separation position adjustment                             | 85 - 115      | 100           |
| P    | SDL WIDTH              | Saddle alignment width adjustment                                 | 80 - 120      | 100           |
| Q    | STPL/FOLD 1            | Stapling/Folding position adjustment value (13 x 19)              | 42 - 58       | 50            |
| R    | UNBOUND FOLD 1         | Not-stapled folding position adjustment value (A4R/LTRR)          | 42 - 58       | 50            |
| S    | UNBOUND FOLD 2         | Not-stapled folding position adjustment value (B4/LGL)            | 42 - 58       | 50            |
| T    | UNBOUND FOLD 3         | Not-stapled folding position adjustment value (A3/LDR)            | 42 - 58       | 50            |
| U    | UNBOUND FOLD 4         | Not-stapled folding position adjustment value (SRA3/12x18)        | 42 - 58       | 50            |
| V    | UNBOUND FOLD 5         | Not-stapled folding position adjustment value (13x19)             | 42 - 58       | 50            |
| W    | UNBOUND FOLD 6         | Not-stapled folding position adjustment value (User-defined size) | 42 - 58       | 50            |
| X    | TRIMMER REG S (*1)     | Trimmer registration position adjustment (Small size)             | 50 - 150      | 100           |
| Y    | TRIMMER REG L (*1)     | Trimmer registration position adjustment (Large size)             | 50 - 150      | 100           |
| Z    | TRIMMER CUT S (*1)     | Trimmer cut position adjustment (Small size)                      | 50 - 150      | 100           |
| AA   | TRIMMER CUT L (*1)     | Trimmer cut position adjustment (Large size)                      | 50 - 150      | 100           |

\*: Setting can be made only when the trimmer unit is installed.

\*1: Not saved when the punch is not installed.



3-30

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the sensors and the detectors in the inserter and the related circuits. |
| <b>Section</b>            | Inserter  |

**Operation/Procedure**

- 1) The operation conditions of the sensors and the detectors are displayed.
- 2) The sensor and the detector which are turned ON are highlighted.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display  | Sensor name                     |
|----------|---------------------------------|
| INSENT   | Inlet port sensor               |
| INSOUT   | Paper exit sensor               |
| VTRS2    | No. 2 vertical transport sensor |
| VTRS1    | No. 1 vertical transport sensor |
| PLOUT2   | No. 2 pull-out sensor           |
| PLOUT1   | No. 1 pull-out sensor           |
| INSFEED2 | No. 2 paper feed sensor         |
| INSFEED1 | No. 1 paper feed sensor         |
| NEREND1  | No. 1 near end detection        |
| LWRLMT2  | No. 2 lower limit detection     |
| LWRLMT1  | No. 1 lower limit detection     |
| UPRLMT2  | No. 2 upper limit detection     |
| UPRLMT1  | No. 1 upper limit detection     |
| INSHP2   | No. 2 pickup arm HP detection   |
| INSHP1   | No. 1 pickup arm HP detection   |
| INSEXT   | Outlet port sensor              |
| INSSZ13  | No. 1 paper size sensor 3       |
| INSSZ12  | No. 1 paper size sensor 2       |
| INSSZ11  | No. 1 paper size sensor 1       |
| PPRLNG2  | No. 2 length sensor             |
| PPRLNG1  | No. 1 length sensor             |
| PPREND2  | No. 2 paper end detection       |
| PPREND1  | No. 1 paper end detection       |
| NEREND2  | No. 2 near end detection        |
| FECVROP1 | No. 1 cover open detection      |
| INSSZ25  | No. 2 paper size sensor 5       |
| INSSZ24  | No. 2 paper size sensor 4       |
| INSSZ23  | No. 2 paper size sensor 3       |
| INSSZ22  | No. 2 paper size sensor 2       |
| INSSZ21  | No. 2 paper size sensor 1       |
| INSSZ15  | No. 1 paper size sensor 5       |
| INSSZ14  | No. 1 paper size sensor 4       |
| INSFDRSW | Front door SW                   |
| VTRCVRSW | Vertical transport cover SW     |
| FECVROP2 | No. 2 cover open detection      |

3-31

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the loads in the inserter and the control circuits. |
| <b>Section</b>            | Inserter  |

**Operation/Procedure**

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Display Item | Content                      |
|-----|--------------|------------------------------|
| 1   | PIKUP1_M     | No. 1 pickup M (1 operation) |

| NO. | Display Item | Content                             |
|-----|--------------|-------------------------------------|
| 2   | PIKUP2_M     | No. 2 pickup M (1 operation)        |
| 3   | FEED1_M      | No. 1 paper feed M (continuous)     |
| 4   | FEED2_M      | No. 2 paper feed M (continuous)     |
| 5   | PLOUT1_M     | No. 1 pull-out M (continuous)       |
| 6   | PLOUT2_M     | No. 2 pull-out M (continuous)       |
| 7   | TRSV_M       | Vertical transport M (continuous)   |
| 8   | TRSH_M       | Horizontal transport M (continuous) |
| 9   | TRYLFT1M     | No. 1 lift motor (lift operation)   |
| 10  | TRYLFT2M     | No. 2 lift motor (lift operation)   |

3-40

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the sensors and the detectors in the paper folding unit and the related circuits. |
| <b>Section</b>            | Paper folding unit  |

**Operation/Procedure**

- 1) The operation conditions of the sensors and the detectors are displayed.
- 2) The sensor and the detector which are turned ON are highlighted.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Sensor name (Display) | Content   |
|-----------------------|---|
| FLENTY                | Paper transfer start request                          |
| FLEXIT_ACK            | Paper exit start response                             |
| FLS30                 | Speed reduction timing sensor                         |
| FLS31                 | Separation timing sensor                              |
| FLS32                 | Folding position accurate sensor                      |
| FLS33                 | Upper stopper section paper sensor                    |
| FLS25                 | Lead edge hold guide HP sensor                        |
| FLS24                 | Internal 3-fold stopper HP sensor                     |
| FLS23                 | Upper stopper section HP sensor                       |
| FLS22                 | Paper exit 1 paper sensor                             |
| FLS28                 | Internal 3-fold tray (Intermediate tray) HP sensor    |
| FLS26                 | Internal 3-fold tray (Paper exit tray) full sensor    |
| FLS27                 | Internal 3-fold tray (Intermediate tray) paper sensor |
| FLS29                 | Folding unit pull-out sensor                          |
| FLORIHAN_LOCK         | Brushless motor lock detection signal                 |
| FLFSW1                | Front cover sensor                                    |
| FLS20                 | Inlet port sensor                                     |
| FLS21                 | Paper exit 2 sensor                                   |
| FLSW3-1               | DipSW1  |
| FLSW3-2               | DipSW2  |
| FLSW3-3               | DipSW3  |
| FLSW3-4               | DipSW4  |
| FLSW3-5               | DipSW5  |
| FLSW3-6               | DipSW6  |
| FLSW3-7               | DipSW7  |
| FLSW3-8               | DipSW8  |
| FLSW1                 | PushSW1   |
| FLSW2                 | PushSW2   |
| FLFAN3_LOCK           | Power supply fan lock detection signal                |

3-41

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the motors and the solenoids in the paper folding unit and the control circuits. |
| <b>Section</b>            | Paper folding unit   |

**Operation/Procedure**

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Display Item | Content  |
|-----|--------------|--|
| 1   | FLSOL2       | Folding/Straight branch solenoid               |
| 2   | FLSOL3       | Separation solenoid                            |
| 3   | FLSOL5       | Internal 3-fold stopper solenoid               |
| 4   | FLM11        | Folding transport motor                        |
| 5   | FLM15        | Folding position adjustment motor              |
| 6   | FLM13        | Outlet port motor 2                            |
| 7   | FLM14        | Outlet port motor 1                            |
| 8   | FLM5         | Inlet port motor                               |
| 9   | FLSOL4       | Internal 3-fold tray branch solenoid           |
| 10  | FLM8         | Upper stopper motor                            |
| 11  | FLM9         | Internal 3-fold stopper adjustment motor       |
| 12  | FLM10        | Lead edge hold guide motor                     |
| 13  | FLM7         | Internal 3-fold tray (Intermediate tray) motor |
| 14  | FLCL3        | Folding position adjustment clutch (Normal)    |
| 15  | FLCL4        | Folding position adjustment clutch (Reverse)   |

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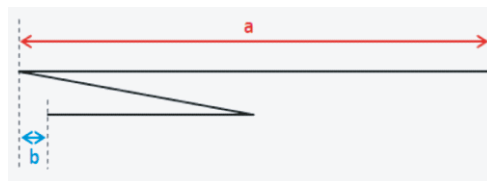
|                           |                               |
|---------------------------|-------------------------------|
| <b>Purpose</b>            | Adjustment                    |
| <b>Function (Purpose)</b> | Paper folding unit adjustment |
| <b>Section</b>            | Paper folding unit            |

**Operation/Procedure**

- 1) Select an adjustment item with the touch panel scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

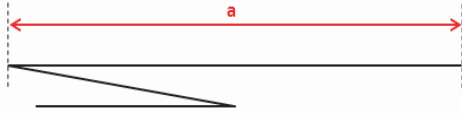
| Item | Display        | Content   | Setting range | Default value |
|------|----------------|---|---------------|---------------|
| A    | FOLD S1 A3     | A3 Z-fold first folding position adjustment           | 50 - 150      | 100           |
| B    | FOLD S2 A3     | A3 Z-fold second folding position adjustment          | 50 - 150      | 100           |
| C    | FOLD S1 B4     | B4 Z-fold first folding position adjustment           | 50 - 150      | 100           |
| D    | FOLD S2 B4     | B4 Z-fold second folding position adjustment          | 50 - 150      | 100           |
| E    | FOLD S1 A4R    | A4R Z-fold first folding position adjustment          | 50 - 150      | 100           |
| F    | FOLD S2 A4R    | A4R Z-fold second folding position adjustment         | 50 - 150      | 100           |
| G    | FOLD S1 LDR    | LDR Z-fold first folding position adjustment          | 50 - 150      | 100           |
| H    | FOLD S2 LDR    | LDR Z-fold second folding position adjustment         | 50 - 150      | 100           |
| I    | FOLD S1 LGL    | LGL Z-fold first folding position adjustment          | 50 - 150      | 100           |
| J    | FOLD S2 LGL    | LGL Z-fold second folding position adjustment         | 50 - 150      | 100           |
| K    | FOLD S1 LTRR   | LTRR Z-fold first folding position adjustment         | 50 - 150      | 100           |
| L    | FOLD S2 LTRR   | LTRR Z-fold second folding position adjustment        | 50 - 150      | 100           |
| M    | FOLD IN T1 A4R | A4R internal 3-fold first folding position adjustment | 50 - 150      | 100           |

| Item | Display          | Content   | Setting range | Default value |
|------|------------------|---|---------------|---------------|
| N    | FOLD IN T2 A4R   | A4R internal 3-fold second folding position adjustment      | 50 - 150      | 100           |
| O    | FOLD IN T1 LTRR  | LTRR internal 3-fold first folding position adjustment      | 50 - 150      | 100           |
| P    | FOLD IN T2 LTRR  | LTRR internal 3-fold second folding position adjustment     | 50 - 150      | 100           |
| Q    | FOLD OUT T1 A4R  | A4R external 3-fold first folding position adjustment       | 50 - 150      | 100           |
| R    | FOLD OUT T2 A4R  | A4R external 3-fold second folding position adjustment      | 50 - 150      | 100           |
| S    | FOLD OUT T1 LTRR | LTRR external 3-fold first folding position adjustment      | 50 - 150      | 100           |
| T    | FOLD OUT T2 LTRR | LTRR external 3-fold second folding position adjustment     | 50 - 150      | 100           |
| U    | FOLD Q1 A4R      | A4R 4-fold first folding position adjustment                | 50 - 150      | 100           |
| V    | FOLD Q2 A4R      | A4R 4-fold second folding position adjustment               | 50 - 150      | 100           |
| W    | FOLD Q1 LTRR     | LTRR 4-fold first folding position adjustment               | 50 - 150      | 100           |
| X    | FOLD Q2 LTRR     | LTRR 4-fold second folding position adjustment              | 50 - 150      | 100           |
| Y    | FOLD Q1 LGL      | LGL 4-fold first folding position adjustment                | 50 - 150      | 100           |
| Z    | FOLD Q2 LGL      | LGL 4-fold second folding position adjustment               | 50 - 150      | 100           |
| AA   | FOLD H1 A4R      | A4R 2-fold first folding position adjustment                | 50 - 150      | 100           |
| AB   | FOLD H1 LTRR     | LTRR 2-fold first position adjustment                       | 50 - 150      | 100           |
| AC   | FOLD IN S FINE   | Z-fold X position fine adjustment designation data          | 46 - 53       | 50            |
| AD   | FOLD IN T FINE   | Internal 3-fold X position fine adjustment designation data | 36 - 60       | 48            |
| AE   | FOLD OUT T FINE  | External 3-fold X position fine adjustment designation data | 36 - 60       | 48            |
| AF   | FOLD Q1 FINE     | 4-fold X position fine adjustment designation data          | 46 - 60       | 48            |
| AG   | FOLD Q2 FINE     | 4-fold Y position fine adjustment designation data          | 50 - 60       | 52            |
| AH   | FOLD H FINE      | 2-fold X position fine adjustment designation data          | 46 - 54       | 50            |

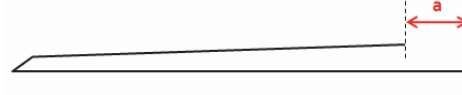


| Item | Content  | Variation value |
|------|--|-----------------|
| A    | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.1mm           |
| B    | When the adjustment value is increased, the length of b is increased.<br>When the adjustment value is decreased, the length of b is decreased. | 0.1mm           |
| C    | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.1mm           |
| D    | When the adjustment value is increased, the length of b is increased.<br>When the adjustment value is decreased, the length of b is decreased. | 0.1mm           |
| E    | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.1mm           |

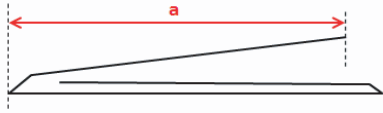




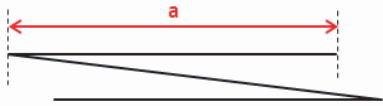
| Item | Content  | Variation value |
|------|--|-----------------|
| AC   | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.5mm           |



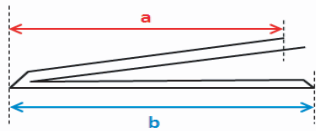
| Item | Content  | Variation value |
|------|--|-----------------|
| AH   | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.5mm           |



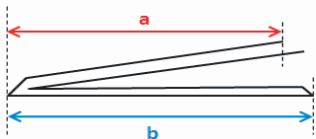
| Item | Content  | Variation value |
|------|--|-----------------|
| AD   | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.5mm           |



| Item | Content  | Variation value |
|------|--|-----------------|
| AE   | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.5mm           |



| Item | Content  | Variation value |
|------|--|-----------------|
| AF   | When the adjustment value is increased, the length of a is increased.<br>When the adjustment value is decreased, the length of a is decreased. | 0.5mm           |



| Item | Content  | Variation value |
|------|--|-----------------|
| AG   | When the adjustment value is increased, the length of b is increased.<br>When the adjustment value is decreased, the length of b is decreased. | 0.5mm           |

3-50

|                           |                       |
|---------------------------|-----------------------|
| <b>Purpose</b>            | Operation check       |
| <b>Function (Purpose)</b> | Decurler sensor check |
| <b>Section</b>            | Decurler              |

**Operation/Procedure**

- 1) When each sensor is turned ON, the sensor name displayed on the screen is highlighted.
- 2) Use the touch panel scroll key to shift between pages.

| NO. | Display         | Content   |
|-----|-----------------|---|
| 1   | DCS100          | Decurler unit transport path sensor                       |
| 2   | DCTRS_MOT_FAULT | Decurler transport motor driver IC error detection signal |
| 3   | DCSW100         | Decurler unit front cover switch                          |
| 4   | DCMOT_FAN_LOCK  | Decurler unit fan 3 alarm signal                          |
| 5   | DCTOP_FAN_LOCK  | Decurler unit fan 1 alarm signal                          |
| 6   | DCBTM_FAN_LOCK  | Decurler unit fan 2 alarm signal                          |
| 7   | DCSW1-1         | DIPSW1 detection  |
| 8   | DCSW1-2         | DIPSW2 detection  |
| 9   | DCSW1-3         | DIPSW3 detection  |
| 10  | DCSW1-4         | DIPSW4 detection  |
| 11  | DCSW2           | PUSHSW detection  |
| 12  | PDPDP1          | Finisher paper relay paper transport detector 1           |
| 13  | PDPDP2          | Finisher paper relay paper transport detector 2           |
| 14  | PDOS            | Finisher paper relay cover open/close sensor              |
| 15  | FFANLK          | Finisher fan motor lock detection                         |

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|                           |                                |
|---------------------------|--------------------------------|
| <b>Purpose</b>            | Operation check                |
| <b>Function (Purpose)</b> | Decurler individual load check |
| <b>Section</b>            | Decurler unit                  |

**Operation/Procedure**

- 1) Press the name of the signal to which a load is applied with the touch panel key.
- 2) Press [EXECUTE] key to start the load operation.
- 3) Press [EXECUTE] key again to stop the operation.

| NO. | Display  | Content                                    |
|-----|----------|--|
| 1   | DCM100   | Decurler transport motor                   |
| 2   | DCFAN100 | Decurler unit fan 1                        |
| 3   | DCFAN101 | Decurler unit fan 2                        |
| 4   | DCFAN103 | Decurler unit fan 3                        |
| 5   | PDPTM    | Finisher paper relay paper transport motor |
| 6   | PDPGS    | Finisher paper relay paper gate solenoid   |
| 7   | PDCF     | Finisher paper relay cooling fan           |
| 8   | PBM102   | Relay unit transport motor 2               |

3-60

|                           |                      |
|---------------------------|----------------------|
| <b>Purpose</b>            | Operation test/check |
| <b>Function (Purpose)</b> | Stacker sensor check |
| <b>Section</b>            | Stacker              |

**Operation/Procedure**

- When each sensor is turned ON, the sensor name displayed on the screen is highlighted.
- Use the touch panel scroll key to shift between pages.

&lt;Stacker 1&gt;

| NO. | Display item | Content  |
|-----|--------------|--|
| 1   | S1SN01       | Inlet port sensor                              |
| 2   | S1SN02       | External tray paper exit sensor                |
| 3   | S1SN03       | Stack tray paper exit sensor                   |
| 4   | S1SN04       | Interface transport section inlet port sensor  |
| 5   | S1SN05       | Interface transport section outlet port sensor |
| 6   | S1SN11       | Offset home sensor                             |
| 7   | S1SN12       | Front side jogger home sensor                  |
| 8   | S1SN13       | Rear side jogger home sensor                   |
| 9   | S1SN30       | Lead edge jogger home sensor                   |
| 10  | S1SN14       | Stack tray home sensor                         |
| 11  | S1SN15-1     | Lateral beam sensor (Lower stage)              |
| 12  | S1SN15-2     | Lateral beam sensor (Upper stage)              |
| 13  | S1SN16-1     | Longitudinal beam sensor (Rear)                |
| 14  | S1SN16-2     | Longitudinal beam sensor (Front)               |
| 15  | S1SN17       | Stack tray 75% load position sensor            |
| 16  | S1SN18       | Stack tray 50% load position sensor            |
| 17  | S1SN19       | Stack tray 25% load position sensor            |
| 18  | S1SN21       | Stack position sensor                          |
| 19  | S1SN23       | Tray (cart) set sensor                         |
| 20  | S1SN24       | Stack tray paper empty sensor                  |
| 21  | S1SN25       | Stack tray 100% load position sensor           |
| 22  | S1SN26       | Stack tray extendable position sensor          |
| 23  | S1SN28       | Tray DC motor encoder sensor                   |
| 24  | S1SN06       | External tray full sensor                      |
| 25  | S1SW01       | Stack tray cover switch                        |
| 26  | S1SW02       | Upper door open/close detection switch         |
| 27  | S1SW03       | Tray lift interlock switch                     |
| 28  | S1SW04       | Tray limit switch                              |

&lt;Stacker 2&gt;

| NO. | Display item | Content  |
|-----|--------------|--|
| 1   | S2SN01       | Inlet port sensor                              |
| 2   | S2SN02       | External tray paper exit sensor                |
| 3   | S2SN03       | Stack tray paper exit sensor                   |
| 4   | S2SN04       | Interface transport section inlet port sensor  |
| 5   | S2SN05       | Interface transport section outlet port sensor |
| 6   | S2SN11       | Offset home sensor                             |
| 7   | S2SN12       | Front side jogger home sensor                  |
| 8   | S2SN13       | Rear side jogger home sensor                   |
| 9   | S2SN30       | Lead edge jogger home sensor                   |
| 10  | S2SN14       | Stack tray home sensor                         |
| 11  | S2SN15-1     | Lateral beam sensor (Lower stage)              |
| 12  | S2SN15-2     | Lateral beam sensor (Upper stage)              |
| 13  | S2SN16-1     | Longitudinal beam sensor (Rear)                |
| 14  | S2SN16-2     | Longitudinal beam sensor (Front)               |
| 15  | S2SN17       | Stack tray 75% load position sensor            |
| 16  | S2SN18       | Stack tray 50% load position sensor            |
| 17  | S2SN19       | Stack tray 25% load position sensor            |
| 18  | S2SN21       | Stack position sensor                          |
| 19  | S2SN23       | Tray (cart) set sensor                         |
| 20  | S2SN24       | Stack tray paper empty sensor                  |
| 21  | S2SN25       | Stack tray 100% load position sensor           |
| 22  | S2SN26       | Stack tray extendable position sensor          |
| 23  | S2SN28       | Tray DC motor encoder sensor                   |
| 24  | S2SN06       | External tray full sensor                      |
| 25  | S2SW01       | Stack tray cover switch                        |
| 26  | S2SW02       | Upper door open/close detection switch         |
| 27  | S2SW03       | Tray lift interlock switch                     |
| 28  | S2SW04       | Tray limit switch                              |

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|                           |                               |
|---------------------------|-------------------------------|
| <b>Purpose</b>            | Operation test/check          |
| <b>Function (Purpose)</b> | Stacker individual load check |
| <b>Section</b>            | Stacker                       |

**Operation/Procedure**

- Press the name of the signal to which a load is applied with the touch panel key.
- Press [EXECUTE] key to start the load operation.
- Press [EXECUTE] key again to stop the operation.

&lt;Stacker 1&gt;

| NO. | Display | Content                        |
|-----|---------|--------------------------------|
| 1   | S1P_LED | Operation panel LED            |
| 2   | S1PM01  | Transport motor                |
| 3   | S1PM02  | Stack tray paper exit motor    |
| 4   | S1PM03  | External tray paper exit motor |
| 5   | S1SL01  | Gate solenoid 1                |
| 6   | S1SL02  | Gate solenoid 2                |
| 7   | S1PM11  | Offset motor                   |
| 8   | S1PM12  | Front side jogger motor        |
| 9   | S1PM13  | Rear side jogger motor         |
| 10  | S1PM22  | Lead edge jogger motor         |
| 11  | S1M21   | Stack tray lift motor          |
| 12  | S1FAN1  | Fan motor                      |

&lt;Stacker 2&gt;

| NO. | Display | Content                        |
|-----|---------|--------------------------------|
| 1   | S2P_LED | Operation panel LED            |
| 2   | S2PM01  | Transport motor                |
| 3   | S2PM02  | Stack tray paper exit motor    |
| 4   | S2PM03  | External tray paper exit motor |
| 5   | S2SL01  | Gate solenoid 1                |
| 6   | S2SL02  | Gate solenoid 2                |
| 7   | S2PM11  | Offset motor                   |
| 8   | S2PM12  | Front side jogger motor        |
| 9   | S2PM13  | Rear side jogger motor         |
| 10  | S2PM22  | Lead edge jogger motor         |
| 11  | S2M21   | Stack tray lift motor          |
| 12  | S2FAN1  | Fan motor                      |

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|                           |                    |
|---------------------------|--------------------|
| <b>Purpose</b>            | Adjustment         |
| <b>Function (Purpose)</b> | Stacker adjustment |
| <b>Section</b>            | Stacker            |

**Operation/Procedure**

- Select an adjustment item with the touch panel scroll key.
- Enter the set value with 10-key.
- Press [OK] key.

| Item | Display                       | Item   | Setting range | Default value |
|------|-------------------------------|--|---------------|---------------|
| A    | STACKER1<br>SIDE<br>POSITION1 | Stacker first series side jogger position adjustment (All sizes)                                       | 92 - 108      | 100           |
| B    | STACKER1<br>SIDE<br>POSITION2 | Stacker first series side jogger position adjustment (Width 210mm or above, and length 400mm or above) | 92 - 108      | 100           |
| C    | STACKER1<br>SIDE<br>POSITION3 | Stacker first series side jogger position adjustment (Width > Length, Width = Length)                  | 92 - 108      | 100           |
| D    | STACKER1<br>SIDE<br>POSITION4 | Stacker first series side jogger position adjustment (Width < Length for other than Large size)        | 92 - 108      | 100           |

| Item | Display                   | Item   | Setting range | Default value |
|------|---------------------------|--|---------------|---------------|
| E    | STACKER1 TOP POSITION1    | Stacker first series lead edge jogger position adjustment (All sizes)  | 92 - 108      | 100           |
| F    | STACKER1 TOP POSITION2    | Stacker first series lead edge jogger position adjustment (Width 210mm or above, and length 400mm or above)  | 92 - 108      | 100           |
| G    | STACKER1 TOP POSITION3    | Stacker first series lead edge jogger position adjustment (Width > Length, Width = Length)                   | 92 - 108      | 100           |
| H    | STACKER1 TOP POSITION4    | Stacker first series lead edge jogger position adjustment (Width < Length for other than Large size)         | 92 - 108      | 100           |
| I    | STACKER2 SIDE POSITION1 * | Stacker second series side jogger position adjustment (All sizes)  | 92 - 108      | 100           |
| J    | STACKER2 SIDE POSITION2 * | Stacker second series side jogger position adjustment (Width 210mm or above, and length 400mm or above)      | 92 - 108      | 100           |
| K    | STACKER2 SIDE POSITION3 * | Stacker second series side jogger position adjustment (Width > Length, Width = Length)                       | 92 - 108      | 100           |
| L    | STACKER2 SIDE POSITION4 * | Stacker second series side jogger position adjustment (Width < Length for other than Large size)             | 92 - 108      | 100           |
| M    | STACKER2 TOP POSITION1 *  | Stacker second series lead edge jogger position adjustment (All sizes)                                       | 92 - 108      | 100           |
| N    | STACKER2 TOP POSITION2 *  | Stacker second series lead edge jogger position adjustment (Width 210mm or above, and length 400mm or above) | 92 - 108      | 100           |
| O    | STACKER2 TOP POSITION3 *  | Stacker second series lead edge jogger position adjustment (Width > Length, Width =Length)                   | 92 - 108      | 100           |
| P    | STACKER2 TOP POSITION4 *  | Stacker second series lead edge jogger position adjustment (Width < Length for other than Large size)        | 92 - 108      | 100           |

\* Displayed only when the stacker 2 is installed.

## 4

4-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the sensors and the detectors in the large capacity tray (LCC) and the control circuits. |
| <b>Section</b>            | Large capacity tray (LCC)  |

### Operation/Procedure

- 1) The operation conditions of the sensors and the detectors are displayed.
- 2) The sensor and the detector which are turned ON are highlighted.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

<A4 LCC sensor>

| Display | Sensor name                    |
|---------|--------------------------------|
| LPFD    | LCC transport detection        |
| LUD     | LCC tray upper limit detection |
| LDD     | LCC tray lower limit detection |

| Display | Sensor name                        |
|---------|------------------------------------|
| LPED    | LCC tray paper empty detection     |
| LCLD    | LCC tray open/close detection      |
| LDSW    | LCC upper open/close detection SW  |
| LRE     | LCC lift motor encoder detection   |
| L24VM   | LCC 24V power monitor              |
| LLSW    | LCC upper limit SW                 |
| LCCD    | LCC main unit connection detection |

<A3 LCC sensor>

| Display | Sensor name                          |
|---------|--------------------------------------|
| LPFD    | LCC transport detection              |
| LUD     | LCC tray upper limit detection       |
| LDD     | LCC tray lower limit detection       |
| LPED    | LCC tray paper empty detection       |
| LCLD    | LCC tray open/close detection        |
| LDSW    | LCC upper open/close detection SW    |
| LRE     | LCC lift motor encoder detection     |
| L24VM   | LCC 24V power monitor                |
| LLSW    | LCC upper limit SW                   |
| LPUSW   | LCC paper upper surface detection SW |
| LRRSW   | LCC reverse winding detection SW     |
| LTLSW   | LCC tray lift SW                     |
| LTLD    | LCC tray lock sensor                 |
| LIPSW   | LCC illegal paper detection SW       |
| LTOD    | LCC main unit connection detection   |

<LCT manual feed unit sensor>

| Display  | Sensor name                          |
|----------|--------------------------------------|
| L1MPFS   | Manual paper feed sensor             |
| L1MTS    | Manual feed transport sensor         |
| L1DFB01  | Manual feed paper entry sensor       |
| L1MPES   | Manual feed paper sensor             |
| L1MSLIDE | Manual feed slide detector           |
| L1MULS   | Upper limit sensor                   |
| L1MLLS   | Lower limit sensor                   |
| L1MPVS1  | Remaining quantity sensor 1          |
| L1MPVS2  | Remaining quantity sensor 2          |
| L1MLSW   | Lift switch                          |
| L1MLS    | Manual feed tray paper length sensor |
| L1MSIZ1  | Size sensor 1                        |
| L1MSIZ2  | Size sensor 2                        |
| L1MSIZ3  | Size sensor 3                        |
| L1MSIZ4  | Size sensor 4                        |
| L1MSIZ5  | Size sensor 5                        |

<LCT 1 series unit sensor>

| Display | Sensor name                                      |
|---------|--|
| L1DFTRC | TRC signal (1 series)                            |
| L1DO001 | 2 series installation detection                  |
| L1DO002 | Interface unit installation detection            |
| L1DO003 | Horizontal transport unit installation detection |
| L1DO004 | Manual feed unit installation detection          |
| L1DD001 | Machine ↔ LCT1 connection sensor                 |
| L1DD002 | LCT1 front door open/close sensor                |
| L1DD003 | Transport open/close sensor 1 (1 series)         |
| L1DD004 | Transport open/close sensor 2 (1 series)         |
| L1DD005 | Vertical transport open/close sensor (1 series)  |
| L1DD006 | Horizontal unit insertion sensor                 |
| L1DF001 | Vertical transport sensor 1 (1 series)           |
| L1DF002 | Vertical transport sensor 2 (1 series)           |
| L1DF003 | Vertical transport sensor 3 (1 series)           |
| L1DF004 | Vertical transport sensor 4 (1 series)           |
| L1DF005 | LCT paper exit sensor (1 series)                 |
| L1DF006 | Horizontal transport sensor 1                    |
| L1DF007 | Horizontal transport sensor 2                    |
| L1DF008 | Horizontal transport sensor 3                    |
| L1DF009 | Horizontal transport sensor 4                    |
| L1DF010 | Horizontal transport sensor 5                    |

<LCT 2 series unit sensor>

| Display | Sensor name                                     |
|---------|---|
| L2DFTRC | TRC signal (2 series)                           |
| L2DO005 | Front LCT installation detection                |
| L2DD001 | Machine ↔ LCT2 connection sensor                |
| L2DD002 | LCT2 front door open/close sensor               |
| L2DD003 | Transport open/close sensor 1 (2 series)        |
| L2DD004 | Transport open/close sensor 2 (2 series)        |
| L2DD005 | Vertical transport open/close sensor (2 series) |
| L2DF001 | Vertical transport sensor 1 (2 series)          |
| L2DF002 | Vertical transport sensor 2 (2 series)          |
| L2DF003 | Vertical transport sensor 3 (2 series)          |
| L2DF004 | Vertical transport sensor 4 (2 series)          |
| L2DF005 | LCT paper exit sensor (2 series)                |

<LCT cassette tray 1 sensor>

| Display | Sensor name                         |
|---------|-------------------------------------|
| L1DF101 | Paper exit sensor 1cs               |
| L1DT101 | Cassette insertion detection SW 1cs |
| L1DT102 | Upper limit SW 1cs                  |
| L1DT103 | Paper empty sensor 1cs              |
| L1DT104 | Lift motor encoder 1cs              |
| L1DT105 | Tray lock sensor 1cs                |
| L1DT106 | Upper limit sensor 1cs              |
| L1DT107 | Lower limit sensor 1cs              |
| L1DT108 | Reverse winding detection SW 1cs    |
| L1DT109 | Tray descending SW 1cs              |
| L1DT110 | Paper upper surface sensor 1cs      |
| L1DT111 | Paper length sensor 1cs             |
| L1DT112 | Size sensor 1 1cs                   |
| L1DT113 | Size sensor 2 1cs                   |
| L1DT114 | Size sensor 3 1cs                   |
| L1DT115 | Size sensor 4 1cs                   |

<LCT cassette tray 2 sensor>

| Display | Sensor name                         |
|---------|-------------------------------------|
| L1DF201 | Paper exit sensor 2cs               |
| L1DT201 | Cassette insertion detection SW 2cs |
| L1DT202 | Upper limit SW 2cs                  |
| L1DT203 | Paper empty sensor 2cs              |
| L1DT204 | Lift motor encoder 2cs              |
| L1DT205 | Tray lock sensor 2cs                |
| L1DT206 | Upper limit sensor 2cs              |
| L1DT207 | Lower limit sensor 2cs              |
| L1DT208 | Reverse winding detection SW 2cs    |
| L1DT209 | Tray descending SW 2cs              |
| L1DT210 | Paper upper surface sensor 2cs      |
| L1DT211 | Paper length sensor 2cs             |
| L1DT212 | Size sensor 1 2cs                   |
| L1DT213 | Size sensor 2 2cs                   |
| L1DT214 | Size sensor 3 2cs                   |
| L1DT215 | Size sensor 4 2cs                   |

<LCT cassette tray 3 sensor>

| Display | Sensor name                         |
|---------|-------------------------------------|
| L2DF101 | Paper exit sensor 3cs               |
| L2DT101 | Cassette insertion detection SW 3cs |
| L2DT102 | Upper limit SW 3cs                  |
| L2DT103 | Paper empty sensor 3cs              |
| L2DT104 | Lift motor encoder 3cs              |
| L2DT105 | Tray lock sensor 3cs                |
| L2DT106 | Upper limit sensor 3cs              |
| L2DT107 | Lower limit sensor 3cs              |
| L2DT108 | Reverse winding detection SW 3cs    |
| L2DT109 | Tray descending SW 3cs              |
| L2DT110 | Paper upper surface sensor 3cs      |
| L2DT111 | Paper length sensor 3cs             |
| L2DT112 | Size sensor 1 3cs                   |
| L2DT113 | Size sensor 2 3cs                   |
| L2DT114 | Size sensor 3 3cs                   |
| L2DT115 | Size sensor 4 3cs                   |

<LCT cassette tray 4 sensor>

| Display | Sensor name                         |
|---------|-------------------------------------|
| L2DF201 | Paper exit sensor 4cs               |
| L2DT201 | Cassette insertion detection SW 4cs |
| L2DT202 | Upper limit SW 4cs                  |
| L2DT203 | Paper empty sensor 4cs              |
| L2DT204 | Lift motor encoder 4cs              |
| L2DT205 | Tray lock sensor 4cs                |
| L2DT206 | Upper limit sensor 4cs              |
| L2DT207 | Lower limit sensor 4cs              |
| L2DT208 | Reverse winding detection SW 4cs    |
| L2DT209 | Tray descending SW 4cs              |
| L2DT210 | Paper upper surface sensor 4cs      |
| L2DT211 | Paper length sensor 4cs             |
| L2DT212 | Size sensor 1 4cs                   |
| L2DT213 | Size sensor 2 4cs                   |
| L2DT214 | Size sensor 3 4cs                   |
| L2DT215 | Size sensor 4 4cs                   |

4-3

**Purpose** Operation test/check

**Function (Purpose)** Used to check the operations of the loads in the desk/large capacity tray (LCC) and the control circuits.

**Section** Desk/Large capacity tray

**Operation/Procedure**

- 1) Select a target load of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

<A4 LCC load item>

| Display | Content                 |
|---------|-------------------------|
| LPFM    | LCC transport motor     |
| LLM     | LCC lift motor          |
| LPFC    | LCC paper feed clutch   |
| LPFS    | LCC paper feed solenoid |
| LTRC    | LCC transport clutch    |

<A3 LCC load item>

| Display | Content                      |
|---------|------------------------------|
| LPFM    | LCC transport motor          |
| LLM     | LCC lift motor               |
| LPFC    | LCC paper feed clutch        |
| LPFS    | LCC paper feed solenoid      |
| LTRC    | LCC transport clutch         |
| LTLED   | LCC tray LED lamp            |
| LTLS    | LCC tray lock solenoid       |
| LFAN    | LCC separation auxiliary fan |

<Paper feed option: Manual feed unit load item>

| Display | Content                     |
|---------|-----------------------------|
| L1MPUM  | Manual paper feed motor     |
| L1MREVM | Manual feed transport motor |
| L1MPFM  | Manual feed interface motor |
| L1MPRM  | Manual feed lift motor      |
| L1MPUS  | Manual feed pickup solenoid |
| L1MLED  | Manual feed lift LED        |

<LCT unit 1 series load item>

| Display | Content                                |
|---------|--|
| L1MT001 | Transport motor 1 (1 series)           |
| L1PW001 | Heat-retention heater relay (1 series) |
| L1CL001 | Horizontal transport clutch            |

<LCT unit 2 series load item>

| Display | Content                                |
|---------|--|
| L2MT001 | Transport motor 1 (2 series)           |
| L2PW001 | Heat-retention heater relay (2 series) |

<LCT cassette tray 1 load item>

| Display  | Content                               |
|----------|---------------------------------------|
| L1MT101  | Lift motor 1cs                        |
| L1MT102  | Inlet fan motor 1cs                   |
| L1MT103  | Outlet fan motor 1cs                  |
| L1MT104  | Assist fan motor 1cs                  |
| L1SL101  | Suction valve solenoid 1cs            |
| L1SL102  | Lock solenoid 1cs                     |
| L1CL101  | Paper feed clutch 1cs                 |
| L1CL102  | Transport clutch 1cs                  |
| L1HT101  | Hot air heater 1cs                    |
| L1LD101  | Lift LED 1cs                          |
| L1CHK101 | Wind pressure measuring operation 1cs |

<LCT cassette tray 2 load item>

| Display  | Content                               |
|----------|---------------------------------------|
| L1MT201  | Lift motor 2cs                        |
| L1MT202  | Inlet fan motor 2cs                   |
| L1MT203  | Outlet fan motor 2cs                  |
| L1MT204  | Assist fan motor 2cs                  |
| L1SL201  | Suction valve solenoid 2cs            |
| L1SL202  | Lock solenoid 2cs                     |
| L1CL201  | Paper feed clutch 2cs                 |
| L1CL202  | Transport clutch 2cs                  |
| L1HT201  | Hot air heater 2cs                    |
| L1LD201  | Lift LED 2cs                          |
| L1CHK201 | Wind pressure measuring operation 2cs |

<LCT cassette tray 3 load item>

| Display  | Content                               |
|----------|---------------------------------------|
| L2MT101  | Lift motor 3cs                        |
| L2MT102  | Inlet fan motor 3cs                   |
| L2MT103  | Outlet fan motor 3cs                  |
| L2MT104  | Assist fan motor 3cs                  |
| L2SL101  | Suction valve solenoid 3cs            |
| L2SL102  | Lock solenoid 3cs                     |
| L2CL101  | Paper feed clutch 3cs                 |
| L2CL102  | Transport clutch 3cs                  |
| L2HT101  | Hot air heater 3cs                    |
| L2LD101  | Lift LED 3cs                          |
| L2CHK101 | Wind pressure measuring operation 3cs |

<LCT cassette tray 4 load item>

| Display  | Content                               |
|----------|---------------------------------------|
| L2MT201  | Lift motor 4cs                        |
| L2MT202  | Inlet fan motor 4cs                   |
| L2MT203  | Outlet fan motor 4cs                  |
| L2MT204  | Assist fan motor 4cs                  |
| L2SL201  | Suction valve solenoid 4cs            |
| L2SL202  | Lock solenoid 4cs                     |
| L2CL201  | Paper feed clutch 4cs                 |
| L2CL202  | Transport clutch 4cs                  |
| L2HT201  | Hot air heater 4cs                    |
| L2LD201  | Lift LED 4cs                          |
| L2CHK201 | Wind pressure measuring operation 4cs |

4-5

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the transport clutch (LTRC) in the LCC and the monitor. |

|                |                           |
|----------------|---------------------------|
| <b>Section</b> | Large capacity tray (LCC) |
|----------------|---------------------------|

**Operation/Procedure**

- \* Press [LTRC] key to check the synchronization signal.  
When normal: ON (highlighted)    When abnormal: OFF
- \* Press [LTRC] key with the display highlighted to check the synchronization signal.  
When normal: OFF    When abnormal: ON (highlighted)  
When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Button | Content                   |
|--------|---------------------------|
| LTRC   | A4/A3LCC transport clutch |

4-10

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting                                 |
| <b>Function (Purpose)</b> | LCT warm air heater temperature setting |
| <b>Section</b>            | LCT                                     |

**Operation/Procedure**

- 1) Select a target item to be adjusted with scroll keys.
- 2) Enter the setting value with 10-key.
- 3) Press [OK] key to save the setting value into the EEPROM and the RAM.

| Item/Display |                                     | Content  | Setting range           | Default value |
|--------------|-------------------------------------|--|-------------------------|---------------|
| A            | WARM AIR TEMP. (PLAIN)              | Warm air heater temperature setting: Normal paper                        | 20 - 80                 | 45            |
| B            | WARM AIR TEMP. (HEAVY1,2)           | Warm air heater temperature setting: Heavy paper 1, 2                    | 20 - 80                 | 45            |
| C            | WARM AIR TEMP. (HEAVY3,4)           | Warm air heater temperature setting: Heavy paper 3, 4                    | 20 - 80                 | 45            |
| D            | WARM AIR TEMP. (THIN)               | Warm air heater temperature setting: Thin paper                          | 20 - 80                 | 45            |
| E            | WARM AIR TEMP. (GROSSY)             | Warm air heater temperature setting: Glossy paper                        | 20 - 80                 | 45            |
| F            | WARM AIR TEMP. (OTHER)              | Warm air heater temperature setting: Other                               | 20 - 80                 | 45            |
| G            | WARM AIR CONTROL DISABLE (PLAIN)    | Warm air heater temperature setting control disable:<br>Normal paper     | 0: Enable<br>1: Disable | 0 - 1<br>1    |
| H            | WARM AIR CONTROL DISABLE (HEAVY1,2) | Warm air heater temperature setting control disable:<br>Heavy paper 1, 2 | 0: Enable<br>1: Disable | 0 - 1<br>0    |
| I            | WARM AIR CONTROL DISABLE (HEAVY3,4) | Warm air heater temperature setting control disable:<br>Heavy paper 3, 4 | 0: Enable<br>1: Disable | 0 - 1<br>0    |
| J            | WARM AIR CONTROL DISABLE (THIN)     | Warm air heater temperature setting control disable:<br>Thin paper       | 0: Enable<br>1: Disable | 0 - 1<br>1    |
| K            | WARM AIR CONTROL DISABLE (GROSSY)   | Warm air heater temperature setting control disable:<br>Glossy paper     | 0: Enable<br>1: Disable | 0 - 1<br>0    |
| L            | WARM AIR CONTROL DISABLE (OTHER)    | Warm air heater temperature setting control disable:<br>Other            | 0: Enable<br>1: Disable | 0 - 1<br>1    |



|                           |                      |
|---------------------------|----------------------|
| <b>Purpose</b>            | Setting              |
| <b>Function (Purpose)</b> | LCT fan Duty setting |
| <b>Section</b>            | LCT                  |

**Operation/Procedure**

- 1) Select a target item to be adjusted with scroll keys.
- 2) Enter the setting value with 10-key.
- 3) Press [OK] key to save the setting value into the EEPROM and the RAM.

When the set value is 50, the fan duty is 50%.

NOTE: When the fan duty is set to 0 - 14%, the fan does not rotate.

|    | Item/Display                   | Content  | Setting range | Default value |
|----|--------------------------------|--|---------------|---------------|
| A  | VACUUM FAN DUTY (PLAIN - L)    | Suction fan Duty: Normal paper Large size          | 30 - 100      | 60            |
| B  | VACUUM FAN DUTY (PLAIN - M)    | Suction fan Duty: Normal paper Middle size         | 30 - 100      | 60            |
| C  | VACUUM FAN DUTY (PLAIN - S)    | Suction fan Duty: Normal paper Small size          | 30 - 100      | 60            |
| D  | VACUUM FAN DUTY (HEAVY1,2 - L) | Suction fan Duty: Heavy paper 1, 2 Large size      | 30 - 100      | 90            |
| E  | VACUUM FAN DUTY (HEAVY1,2 - M) | Suction fan Duty: Heavy paper 1, 2 Middle size     | 30 - 100      | 90            |
| F  | VACUUM FAN DUTY (HEAVY1,2 - S) | Suction fan Duty: Heavy paper 1, 2 Small size      | 30 - 100      | 90            |
| G  | VACUUM FAN DUTY (HEAVY3,4 - L) | Suction fan Duty: Heavy paper 3, 4 Large size      | 30 - 100      | 90            |
| H  | VACUUM FAN DUTY (HEAVY3,4 - M) | Suction fan Duty: Heavy paper 3, 4 Middle size     | 30 - 100      | 90            |
| I  | VACUUM FAN DUTY (HEAVY3,4 - S) | Suction fan Duty: Heavy paper 3, 4 Small size      | 30 - 100      | 90            |
| J  | VACUUM FAN DUTY (THIN - L)     | Suction fan Duty: Thin paper Large size            | 30 - 100      | 60            |
| K  | VACUUM FAN DUTY (THIN - M)     | Suction fan Duty: Thin paper Middle size           | 30 - 100      | 60            |
| L  | VACUUM FAN DUTY (THIN - S)     | Suction fan Duty: Thin paper Small size            | 30 - 100      | 60            |
| M  | VACUUM FAN DUTY (GLOSSY - L)   | Suction fan Duty: Glossy paper Large size          | 30 - 100      | 60            |
| N  | VACUUM FAN DUTY (GLOSSY - M)   | Suction fan Duty: Glossy paper Middle size         | 30 - 100      | 60            |
| O  | VACUUM FAN DUTY (GLOSSY - S)   | Suction fan Duty: Glossy paper Small size          | 30 - 100      | 60            |
| P  | VACUUM FAN DUTY (OTHER - L)    | Suction fan Duty: Other Large size                 | 30 - 100      | 60            |
| Q  | VACUUM FAN DUTY (OTHER - M)    | Suction fan Duty: Other Middle size                | 30 - 100      | 60            |
| R  | VACUUM FAN DUTY (OTHER - S)    | Suction fan Duty: Other Small size                 | 30 - 100      | 60            |
| S  | BLOWER FAN DUTY (PLAIN - L)    | Separation fan Duty: Normal paper Large size       | 30 - 100      | 60            |
| T  | BLOWER FAN DUTY (PLAIN - M)    | Separation fan Duty: Normal paper Middle size      | 30 - 100      | 60            |
| U  | BLOWER FAN DUTY (PLAIN - S)    | Separation fan Duty: Normal paper Small size       | 30 - 100      | 60            |
| V  | BLOWER FAN DUTY (HEAVY1,2 - L) | Separation fan Duty: Heavy paper 1, 2 Large size   | 30 - 100      | 90            |
| W  | BLOWER FAN DUTY (HEAVY1,2 - M) | Separation fan Duty: Heavy paper 1, 2 Middle size  | 30 - 100      | 90            |
| X  | BLOWER FAN DUTY (HEAVY1,2 - S) | Separation fan Duty: Heavy paper 1, 2 Small size   | 30 - 100      | 90            |
| Y  | BLOWER FAN DUTY (HEAVY3,4 - L) | Separation fan Duty: Heavy paper 3, 4 Large size   | 30 - 100      | 90            |
| Z  | BLOWER FAN DUTY (HEAVY3,4 - M) | Separation fan Duty: Heavy paper 3, 4 Middle size  | 30 - 100      | 90            |
| AA | BLOWER FAN DUTY (HEAVY3,4 - S) | Separation fan Duty: Heavy paper 3, 4 Small size   | 30 - 100      | 90            |
| AB | BLOWER FAN DUTY (THIN - L)     | Separation fan Duty: Thin paper Large size         | 30 - 100      | 60            |
| AC | BLOWER FAN DUTY (THIN - M)     | Separation fan Duty: Thin paper Middle size        | 30 - 100      | 60            |
| AD | BLOWER FAN DUTY (THIN - S)     | Separation fan Duty: Thin paper Small size         | 30 - 100      | 60            |
| AE | BLOWER FAN DUTY (GLOSSY - L)   | Separation fan Duty: Glossy paper Large size       | 30 - 100      | 60            |
| AF | BLOWER FAN DUTY (GLOSSY - M)   | Separation fan Duty: Glossy paper Middle size      | 30 - 100      | 60            |
| AG | BLOWER FAN DUTY (GLOSSY - S)   | Separation fan Duty: Glossy paper Small size       | 30 - 100      | 60            |
| AH | BLOWER FAN DUTY (OTHER - L)    | Separation fan Duty: Other Large size              | 30 - 100      | 60            |
| AI | BLOWER FAN DUTY (OTHER - M)    | Separation fan Duty: Other Middle size             | 30 - 100      | 60            |
| AJ | BLOWER FAN DUTY (OTHER - S)    | Separation fan Duty: Other Small size              | 30 - 100      | 60            |
| AK | ASSIST FAN DUTY (PLAIN - L)    | Side assist fan Duty: Normal paper Large size      | 0 - 100       | 10            |
| AL | ASSIST FAN DUTY (PLAIN - M)    | Side assist fan Duty: Normal paper Middle size     | 0 - 100       | 10            |
| AM | ASSIST FAN DUTY (PLAIN - S)    | Side assist fan Duty: Normal paper Small size      | 0 - 100       | 10            |
| AN | ASSIST FAN DUTY (HEAVY1,2 - L) | Side assist fan Duty: Heavy paper 1, 2 Large size  | 0 - 100       | 10            |
| AO | ASSIST FAN DUTY (HEAVY1,2 - M) | Side assist fan Duty: Heavy paper 1, 2 Middle size | 0 - 100       | 10            |
| AP | ASSIST FAN DUTY (HEAVY1,2 - S) | Side assist fan Duty: Heavy paper 1, 2 Small size  | 0 - 100       | 10            |
| AQ | ASSIST FAN DUTY (HEAVY3,4 - L) | Side assist fan Duty: Heavy paper 3, 4 Large size  | 0 - 100       | 30            |
| AR | ASSIST FAN DUTY (HEAVY3,4 - M) | Side assist fan Duty: Heavy paper 3, 4 Middle size | 0 - 100       | 10            |
| AS | ASSIST FAN DUTY (HEAVY3,4 - S) | Side assist fan Duty: Heavy paper 3, 4 Small size  | 0 - 100       | 10            |
| AT | ASSIST FAN DUTY (THIN - L)     | Side assist fan Duty: Thin paper Large size        | 0 - 100       | 10            |
| AU | ASSIST FAN DUTY (THIN - M)     | Side assist fan Duty: Thin paper Middle size       | 0 - 100       | 10            |
| AV | ASSIST FAN DUTY (THIN - S)     | Side assist fan Duty: Thin paper Small size        | 0 - 100       | 10            |
| AW | ASSIST FAN DUTY (GLOSSY - L)   | Side assist fan Duty: Glossy paper Large size      | 0 - 100       | 10            |
| AX | ASSIST FAN DUTY (GLOSSY - M)   | Side assist fan Duty: Glossy paper Middle size     | 0 - 100       | 10            |
| AY | ASSIST FAN DUTY (GLOSSY - S)   | Side assist fan Duty: Glossy paper Small size      | 0 - 100       | 10            |
| AZ | ASSIST FAN DUTY (OTHER - L)    | Side assist fan Duty: Other Large size             | 0 - 100       | 10            |
| BA | ASSIST FAN DUTY (OTHER - M)    | Side assist fan Duty: Other Middle size            | 0 - 100       | 10            |
| BB | ASSIST FAN DUTY (OTHER - S)    | Side assist fan Duty: Other Small size             | 0 - 100       | 10            |

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Check   |
| <b>Function (Purpose)</b> | LCT temperature and humidity sensor monitor display |
| <b>Section</b>            | LCT   |

**Operation/Procedure**

When the machine enters the simulation mode, the current data are displayed.

Since the value varies depending on the use conditions and the operating conditions, use the value as a reference only.

\* Data are revised every 5 sec.

| Display item          | Description   | Display range          |
|-----------------------|---|------------------------|
| LCT1 TEMP.            | LCT 1 series temperature sensor: Temperature                | Temperature: 0 - 255°C |
|                       | LCT1 series temperature sensor: AD value                    | AD value: 0 - 65535    |
| LCT1 RH               | LCT1 series humidity sensor: Humidity                       | Humidity: 0 - 100%     |
|                       | LCT1 series humidity sensor: AD value                       | AD value: 0 - 65535    |
| LCT2 TEMP. *1         | LCT2 series temperature sensor: Temperature                 | Temperature: 0 - 255°C |
|                       | LCT2 series temperature sensor: AD value                    | AD value: 0 - 65535    |
| LCT2 RH *1            | LCT2 series humidity sensor: Humidity                       | Humidity: 0 - 100%     |
|                       | LCT2 series humidity sensor: AD value                       | AD value: 0 - 65535    |
| CS1 HEATER TEMP.      | CS1 CS heater temperature sensor: Temperature               | Temperature: 0 - 255°C |
|                       | CS1 CS heater temperature sensor: AD value                  | AD value: 0 - 65535    |
| CS1 WARM AIR TEMP.    | CS1 CS warm air outlet port temperature sensor: Temperature | Temperature: 0 - 255°C |
|                       | CS1 CS warm air outlet port temperature sensor: AD value    | AD value: 0 - 65535    |
| CS1 TEMP.             | CS1 CS temperature sensor: Temperature                      | Temperature: 0 - 255°C |
|                       | CS1 CS temperature sensor: AD value                         | AD value: 0 - 65535    |
| CS1 RH                | CS1 CS humidity sensor: Humidity                            | Humidity: 0 - 100%     |
|                       | CS1 CS humidity sensor: AD value                            | AD value: 0 - 65535    |
| CS2 HEATER TEMP.      | CS2 CS heater temperature sensor: Temperature               | Temperature: 0 - 255°C |
|                       | CS2 CS heater temperature sensor: AD value                  | AD value: 0 - 65535    |
| CS2 WARM AIR TEMP.    | CS2 CS warm air outlet port temperature sensor: Temperature | Temperature: 0 - 255°C |
|                       | CS2 CS warm air outlet port temperature sensor: AD value    | AD value: 0 - 65535    |
| CS2 TEMP.             | CS2 CS temperature sensor: Temperature                      | Temperature: 0 - 255°C |
|                       | CS2 CS temperature sensor: AD value                         | AD value: 0 - 65535    |
| CS2 RH                | CS2 CS humidity sensor: Humidity                            | Humidity: 0 - 100%     |
|                       | CS2 CS humidity sensor: AD value                            | AD value: 0 - 65535    |
| CS3 HEATER TEMP. *1   | CS3 CS heater temperature sensor: Temperature               | Temperature: 0 - 255°C |
|                       | CS3 CS heater temperature sensor: AD value                  | AD value: 0 - 65535    |
| CS3 WARM AIR TEMP. *1 | CS3 CS warm air outlet port temperature sensor: Temperature | Temperature: 0 - 255°C |
|                       | CS3 CS warm air outlet port temperature sensor: AD value    | AD value: 0 - 65535    |

| Display item          | Description   | Display range          |
|-----------------------|---|------------------------|
| CS3 TEMP. *1          | CS3 CS temperature sensor: Temperature                      | Temperature: 0 - 255°C |
|                       | CS3 CS temperature sensor: AD value                         | AD value: 0 - 65535    |
| CS3 RH *1             | CS3 CS humidity sensor: Humidity                            | Humidity: 0 - 100%     |
|                       | CS3 CS humidity sensor: AD value                            | AD value: 0 - 65535    |
| CS4 HEATER TEMP. *1   | CS4 CS heater temperature sensor: Temperature               | Temperature: 0 - 255°C |
|                       | CS4 CS heater temperature sensor: AD value                  | AD value: 0 - 65535    |
| CS4 WARM AIR TEMP. *1 | CS4 CS warm air outlet port temperature sensor: Temperature | Temperature: 0 - 255°C |
|                       | CS4 CS warm air outlet port temperature sensor: AD value    | AD value: 0 - 65535    |
| CS4 TEMP. *1          | CS4 CS temperature sensor: Temperature                      | Temperature: 0 - 255°C |
|                       | CS4 CS temperature sensor: AD value                         | AD value: 0 - 65535    |
| CS4 RH *1             | CS4 CS humidity sensor: Humidity                            | Humidity: 0 - 100%     |
|                       | CS4 CS humidity sensor: AD value                            | AD value: 0 - 65535    |

\* The AD value is displayed by converting the above display range into hexadecimal number.

\*1: When the LCT2 is not installed, this is not displayed and the list is not printed.

**5**

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the display lamp and the LCD on the operation panel and the control circuit. |
| <b>Section</b>            | Operation panel  |

**Operation/Procedure**

When this simulation is executed, all the LED's are lighted for 12 sec and then turned off.

- 1) With the upper half normally highlighted and the lower half normally displayed, the contrast is changed every 2sec from the current level → Max. → Min.. → the current level in this sequence.
- 2) Then, the upper half is normally displayed and the lower half is highlighted, and the contrast level is changed every 2sec from the current level → Max. → Min. → the current level in this sequence.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

5-2

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of the heater lamp and the control circuit. |
| <b>Section</b>            | Fusing  |

**Operation/Procedure**

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected heater lamp performs ON/OFF operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display | Content                  |
|---------|--------------------------|
| HL_UM   | Heater lamp (Upper main) |
| HL_US   | Heater lamp (Upper sub)  |
| HL_EX   | Heater lamp (Outside)    |

5-3

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the copy lamp and the control circuit. |
| <b>Section</b>            | Scanner (reading)  |

**Operation/Procedure**

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected copy lamp is lighted for 10 sec.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display        | Content        |
|----------------|----------------|
| OC COPY LAMP   | OC copy lamp   |
| DSPF COPY LAMP | DSPF copy lamp |

5-4

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the discharge lamp and the control circuit. |
| <b>Section</b>            | Process   |

**Operation/Procedure**

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected discharge lamp is lighted for 30 sec.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item name | Description of item content |
|-----------|-----------------------------|
| DL1       | Discharge lamp              |
| PTDL      | Pre-transfer discharge lamp |

6

6-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits. |
| <b>Section</b>            | Paper transport, paper exit  |

**Operation/Procedure**

- 1) Select a target item of the operation check with [↑] [↓] keys.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

&lt;Simultaneous load selection table&gt;

|   | machine [Motor system] | machine [Clutch/Solenoid system (machine)] | machine [Clutch/solenoid system (manual feed)] |
|---|------------------------|--|--|
| machine [Motor system]                          | ?                      | ○  | ○  |
| machine [Clutch/Solenoid system (machine)]      | ○                      | ?  | ?  |
| machine [Clutch/solenoid system (manual feed )] | ○                      | ?  | ?  |

\* However, only one load can be selected in each system.

| Item/Display name | Content               |   |
|-------------------|-----------------------|---|
| Motor             | MM                    | Main motor  |
|                   | FUM                   | Fusing motor  |
|                   | MM2                   | Multi-stage motor   |
|                   | TRM                   | PS front motor (TRM)                                      |
|                   | VPM                   | PS front motor (VPM)                                      |
|                   | PSM                   | PS motor  |
|                   | FURM_H                | Fusing rear roller drive motor (High speed)               |
|                   | FURM_L                | Fusing rear roller drive motor (Low speed)                |
|                   | POM_H                 | Paper exit drive motor (High speed)                       |
|                   | POM_L                 | Paper exit drive motor (Low speed)                        |
|                   | SBRM_FH               | Reverse roller drive motor (Normal) (High speed)          |
|                   | SBRM_FL               | Reverse roller drive motor (Normal) (Low speed)           |
|                   | SBRM_RH               | Reverse roller drive motor (Reverse) (High speed)         |
|                   | SBRM_RL               | Reverse roller drive motor (Reverse) (Low speed)          |
|                   | C1LUM                 | Cassette 1 lift motor (T1LUM)                             |
|                   | C2LUM                 | Cassette 2 lift motor (T2LUM)                             |
|                   | C3LUM                 | Cassette 3 lift motor                                     |
| C4LUM             | Cassette 4 lift motor |   |
| DCLM              | Decurler motor        |   |
| Clutch            | T1PFC                 | Tandem 1 paper transport clutch                           |
|                   | T2PFC                 | Tandem 2 paper transport clutch                           |
|                   | C3PFC                 | Cassette 3 paper transport clutch                         |
|                   | C4PFC                 | Cassette 4 paper transport clutch                         |
|                   | T1PTC                 | Horizontal transport clutch                               |
|                   | VPTC1                 | Vertical transport clutch control output 1 (Lower)        |
|                   | VPTC2                 | Vertical transport clutch control output 2 (Intermediate) |
|                   | VPTC3                 | Vertical transport clutch control output 3 (Upper)        |
|                   | LCCPTC                | LCC transport clutch                                      |
|                   | MPFTC                 | Manual feed transport clutch                              |

| Item/Display name |        | Content                               |
|-------------------|--------|---------------------------------------|
| Solenoid          | POCS   | FU/FD select gate solenoid            |
|                   | ADUCS  | Duplex/FD select gate solenoid        |
|                   | T1PUS  | Tandem 1 pickup solenoid              |
|                   | T2PUS  | Tandem 2 pickup solenoid              |
|                   | C3PUS  | Tandem 3 pickup solenoid              |
|                   | C4PUS  | Tandem 4 pickup solenoid              |
|                   | PSPS   | Separation solenoid control output    |
|                   | FRS    | Fusing lower pawl separation solenoid |
|                   | MPFPUS | Manual feed pickup solenoid           |
|                   | MPFGS  | Manual feed gate solenoid             |

\* For the items "Normal ↔ Reverse" of which are displayed as separate items, if two or more of them are selected simultaneously, "Normal" rotation is performed.

If the load is rotating, it will not accept reverse rotation unless it comes to a stop.

| 6-2                       |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of each fan motor and the control circuit. |
| <b>Section</b>            |   |

#### Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display              | Content   |
|----------------------|---|
| CFM_ADU1             | Reverse transport cooling fan/Reverse cooling fan               |
| CFM_ADU2/<br>CFM_PA1 | ADU section paper cooling fan 1, 2/Paper cooling fan            |
| CFM_CL/CFM_PO1       | Process cooling fan 1, 2, 3, 4/Polygon cooling fan              |
| CFM_DC               | Power cooling fan 1, 2, 3                                       |
| CFM_DV1/FM_DV1       | Developing cooling fan/Toner suction fan                        |
| CFM-PS/CFM-Tr        | PS cooling fan (120/105cpm machines only) / Process cooling fan |
| VFM_EX               | Main unit exhaust heat fan                                      |
| VFM_EX12             | Ozone exhaust fan 1 / Ozone exhaust fan 2                       |
| CFM_PC               | Process section peripheral cooling fan                          |
| MFPFAN               | Controller fan motor / HDD fan motor                            |
| SPSFAN               | Sub power cooling fan motor                                     |

| 6-3                       |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the primary transfer separation. |
| <b>Section</b>            | Process (transfer)   |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) When the transfer separation load operation is completed, [EXECUTE] key returns to the normal state.  
\* When [EXECUTE] key is pressed during the load operation, the separation operation is continued until it is completed. After completion of the operation, the load operation is terminated and [EXECUTE] key returns to the normal state.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| 6-4                       |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check                           |
| <b>Function (Purpose)</b> | Used to check the operation of the MC cleaner. |
| <b>Section</b>            | Process (charging)                             |

#### Operation/Procedure

- 1) Select a target of the operation check with the touch panel.
- 2) Press [EXECUTE] key.
- 3) When the cleaner operation is completed normally, [OK] is displayed.  
\* The counter value is displayed when cleaning reaches R to F.
- 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| 6-90                      |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to reset the machine to the factory setting. (The scanner is set to the lock enable position) |
| <b>Section</b>            | Scanner  |

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
The scanner is shifted to the lock enable position and stopped.

## 7

| 7-1                       |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the conditions of aging operation. |
| <b>Section</b>            |  |

#### Operation/Procedure

- 1) Select a target of setting with the touch panel.
- 2) Press [EXECUTE] key.  
The machine is rebooted in the aging mode.  
Afterwards, the operation mode is continued until the power is turned off or resetting is made.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

|                  |  |
|------------------|--|
| AGING            | Aging operation setting                  |
| INTERVAL         | Intermittent setting                     |
| MISFEED DISABLE  | JAM detection YES/NO setting             |
| FUSING DISABLE   | Fusing operation YES/NO setting          |
| WARMUP DISABLE   | Warm-up omission setting                 |
| DV CHECK DISABLE | Developing unit detection YES/NO setting |
| SHADING DISABLE  | Shading omission setting                 |
| CCD GAIN FREE    | CCD gain adjustment free setting         |

**7-6**

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting                                   |
| <b>Function (Purpose)</b> | Used to set the intermittent aging cycle. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Enter the intermittent aging cycle (unit: sec) with 10-key.
- 2) Press [OK] key.  
The time set in step 1 is set.  
\* The setting range of the interval time is 1 - 900 (sec).
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

**7-8**

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Purpose</b>            | Operation display                 |
| <b>Function (Purpose)</b> | Used to display the warm-up time. |
| <b>Section</b>            |                                   |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Counting of the warm-up time is started.  
\* Interruption during the execution with [EXECUTE] key is invalid.

**7-12**

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test, check  |
| <b>Function (Purpose)</b> | Used to set the document scan quantity. (For development and inspection) |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key, and the currently set data are saved to the EPROM and the RAM.
- 3) When [BACK] key is pressed, the screen returns to the sub code entry menu.

| Item | Display   | Content                                    | Setting range | Default value |
|------|-----------|--|---------------|---------------|
| A    | ORIGINALS | Document scan quantity setting (for aging) | 0 - 255       | 0             |

8-1

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check/adjustment   |
| <b>Function (Purpose)</b> | Used to check and adjust the developing voltage in each print mode and the control circuit. |
| <b>Section</b>            | Process (Development)   |

**Operation/Procedure**

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
  - \* When  $\Delta$  or  $\nabla$  key is pressed, the set value of each item is increased or decreased by 1.
 Collective change can be made.
- 3) Press [EXECUTE] key.  
The currently set voltage is outputted and the set value is saved.
- 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item | Display    | Content                          | Setting range | Default value |                    |
|------|------------|----------------------------------|---------------|---------------|--------------------|
|      |            |                                  |               | 90cpm machine | 105/120cpm machine |
| A    | DVB_K      | K developing bias set value      | 0 - 750       | 496           | 496                |
| B    | DVB_K PLUS | K developing bias plus set value | 0 - 250       | 164           | 164                |

8-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check/adjustment  |
| <b>Function (Purpose)</b> | Used to check and adjust the operations of the main charger grid voltage in each print mode and the control circuit. |
| <b>Section</b>            | Process  |

**Operation/Procedure**

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
  - \* When  $\Delta$  or  $\nabla$  key is pressed, the set value of each item is increased or decreased by 1.
 Collective change can be made.
- 3) Press [EXECUTE] key.  
The currently set voltage is outputted and the set value is saved.
- 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item | Display | Content  | Setting range | Default       |                    |
|------|---------|--|---------------|---------------|--------------------|
|      |         |  |               | 90cpm machine | 105/120cpm machine |
| A    | GB_K    | Main charger grid voltage adjustment value (Copy mode) | 200-1000      | 575           | 605                |

8-6

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check/adjustment   |
| <b>Function (Purpose)</b> | Used to check and adjust the operation of the transfer plus bias current and the control circuit. |
| <b>Section</b>            | Process (transfer)  |

**Operation/Procedure**

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.  
The currently set voltage is outputted for 30 sec, and the set value is saved.  
When [EXECUTE] key is pressed, the output is terminated.
- 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item | Display      | Content   | Setting range | Default value |                    |
|------|--------------|---|---------------|---------------|--------------------|
|      |              |   |               | 90cpm machine | 105/120cpm machine |
| A    | TC PLAIN SPX | Transfer current (THV+): Standard paper front surface | 0 - 255       | 142           | 174                |
| B    | TC PLAIN DPX | Transfer current (THV+): Standard paper back surface  | 0 - 255       | 112           | 127                |

| Item | Display             | Content  | Setting range | Default value |                    |
|------|---------------------|--|---------------|---------------|--------------------|
|      |                     |  |               | 90cpm machine | 105/120cpm machine |
| C    | TC HEAVY SPX        | Transfer current (THV+): Heavy paper front surface | 0 - 255       | 142           | 174                |
| D    | TC HEAVY DPX        | Transfer current (THV+): Heavy paper back surface  | 0 - 255       | 128           | 142                |
| E    | TC OHP              | Transfer current (THV+): OHP                       | 0 - 255       | 96            | 127                |
| F    | TC FRONT EDGE BIAS  | Transfer current (THV+): Paper lead edge           | 0 - 255       | 32            | 32                 |
| G    | TC ADSORPTION BIAS  | Transfer current (THV+): Absorption process        | 0 - 255       | 96            | 127                |
| H    | TC INTERVAL BIAS    | Transfer current (THV+): Between paper             | 0 - 255       | 48            | 48                 |
| I    | TC CLEANING AC SPX  | Transfer cleaning AC (THVAC)                       | 0 - 255       | 191           | 191                |
| J    | TC CLEANING DC -    | Transfer cleaning DC bias - (THV-)                 | 0 - 255       | 135           | 201                |
| K    | TC CLEANING BRUSH + | Transfer CL brush print + (THVCL (+))              | 0 - 128       | 109           | 109                |
| L    | TC CLEANING BRUSH - | Transfer CL brush cleaning - (THVCL (-))           | 128 - 255     | 169           | 169                |
| M    | PTDL SPX            | PTDL front surface                                 | 0 - 255       | 15            | 20                 |
| N    | PTDL DPX            | PTDL back surface                                  | 0 - 255       | 15            | 20                 |

## 9

9-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit. |
| <b>Section</b>            | Duplex   |

### Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

| Display item name | Sensor name                                 |
|-------------------|---|
| APPD1             | ADU paper pass detection 1                  |
| APPD2             | ADU paper pass detection 2                  |
| APPD3             | ADU paper pass detection 3                  |
| APFD1             | Paper vertical transport (ADU paper feed)   |
| APFD2             | Paper vertical transport 2 (ADU paper feed) |

9-3

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit. |
| <b>Section</b>            | Duplex  |

### Operation/Procedure

- 1) Select the item to be checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation.  
When [EXECUTE] key is pressed, the operation is terminated.

| Display | Content            |
|---------|--------------------|
| ADUM2   | ADU motor 2        |
| ADUM1   | ADU motor 1        |
| ASRM    | ADU reverse motor  |
| ASBC    | ADU reverse clutch |

## 10

10-1

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of the toner motor and the control circuit. |
| <b>Section</b>            | Process (Development)   |

### Operation/Procedure

- 1) Select a target of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation during 10 sec.  
When [EXECUTE] key is pressed, the operation is terminated.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item | Display | Content  |
|------|---------|--|
| 1    | TM1     | Toner motor 1<br>(TM1 operates only when the developing unit is installed.) *1 |
| 2    | TM2     | Toner motor 2  |
| 3    | BOTM    | Bottle drive motor   |

\*1: When the DV disable setting in Sim.07-01 is "NO", TM1 does not operate.

10-2

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of the toner hopper empty sensor. |
| <b>Section</b>            | Process (Development)   |

### Operation/Procedure

- 1) When [EXECUTE] key is pressed, the toner motor is driven for 10 sec.  
\* When the toner hopper empty sensor (TFSD) is turned ON, the sensor name is highlighted.
- 2) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Display Item | Content                                |
|-----|--------------|--|
| 1   | TFSD         | Hopper toner remaining quantity sensor |

10-3

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of the toner cartridge motor rotation sensor. |
| <b>Section</b>            | Process (Development)   |

**Operation/Procedure**

- 1) Press [EXECUTE] key, and the following operations are executed.

The toner cartridge motor is driven for 10 sec, and the toner cartridge motor rotating sensor status is displayed.

\* When the sensor is turned ON, the sensor name corresponding to the sensor is displayed.

- 2) When [BACK] key is pressed, the screen returns to the sub code input menu.

| NO. | Display Item | Content                               |
|-----|--------------|---------------------------------------|
| 1   | BOTD         | Toner cartridge motor rotation sensor |

13

13--

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Cancel (trouble, etc.)                   |
| <b>Function (Purpose)</b> | Used to cancel the self diag U1 trouble. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Target trouble code | Description      |
|-----|---------------------|------------------|
| 1   | U1-02               | RTC read trouble |

14

14--

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Cancel (trouble, etc.)                          |
| <b>Function (Purpose)</b> | Used to cancel the self diag H3/H4/H5 troubles. |
| <b>Section</b>            | Fusing  |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Target trouble code | Description  |
|-----|---------------------|--|
| 1   | H3-00               | Fusing high temperature trouble (HL1)                  |
| 2   | H3-01               | Fusing high temperature trouble (HL2)                  |
| 3   | H3-02               | Fusing high temperature trouble (HL3)                  |
| 4   | H4-00               | Fusing low temperature trouble (HL1)                   |
| 5   | H4-01               | Fusing low temperature trouble (HL2)                   |
| 6   | H4-02               | Fusing low temperature trouble (HL3)                   |
| 7   | H5-01               | Fusing paper exit not-reached JAM continuous detection |

15

15--

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Cancel (trouble, etc.)   |
| <b>Function (Purpose)</b> | Used to cancel the self diag U6-09 (large capacity paper feed tray) trouble. |
| <b>Section</b>            | LCC  |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Target trouble code | Description                                 |
|-----|---------------------|---|
| 1   | U6-09               | Tray 1, Tray 2, Side LCC lift motor trouble |

16

16--

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Cancel (trouble, etc.)                   |
| <b>Function (Purpose)</b> | Used to cancel the self diag U2 trouble. |
| <b>Section</b>            | MFPcnt PWB/PCU PWB/SCU PWB               |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

17

17--

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Cancel (trouble, etc.)                   |
| <b>Function (Purpose)</b> | Used to cancel the self diag PF trouble. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to cancel the trouble.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Target trouble code | Description                       |
|-----|---------------------|-----------------------------------|
| 1   | PF-00               | RIC copy inhibit signal reception |



## 21

21-1

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Purpose</b>            | Setting                            |
| <b>Function (Purpose)</b> | Used to set the maintenance cycle. |
| <b>Section</b>            |                                    |

### Operation/Procedure

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item | Display                     | Content                     | Setting range                                | Default value |
|------|-----------------------------|-----------------------------|--|---------------|
| A    | MAINTENANCE COUNTER (TOTAL) | Maintenance counter (total) | 0: DEFAULT<br>1 - 300:1K - 300K<br>999: FREE | 0 (500K)      |

## 22

22-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment, setting, operation data output and check   |
| <b>Function (Purpose)</b> | Used to check the print count value of each section and each operation mode. (Used to check the maintenance timing.) |
| <b>Section</b>            |  |

### Section

### Operation/Procedure

- 1) Press [START] key to make printing.
- 2) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Target counter        | Display        | Description                                   | Default value | Display range/ No. of digits |
|-----------------------|----------------|---|---------------|------------------------------|
| Total output quantity | TOTAL OUT (BW) | Total output quantity of black and white      | 0             | Max. 8                       |
| Total use quantity    | TOTAL(BW)      | Total use quantity of black and white         | 0             | Max. 8                       |
|                       | TOTAL(COL)     | Total use quantity of color                   | 0             | Max. 8                       |
| Copy                  | COPY(BW)       | Black and white copy counter                  | 0             | Max. 8                       |
| Print                 | PRINT(BW)      | Black and white print counter                 | 0             | Max. 8                       |
| Document filing       | DOC FIL(BW)    | Black and white document filing print counter | 0             | Max. 8                       |
| Other                 | OTHER(BW)      | Black and white other counter                 | 0             | Max. 8                       |

22-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to check the total number of misfeed and trouble. (If the total number of JAM is considerably great, it is judged that repair is required.) |
| <b>Section</b>            |  |

### Section

### Operation/Procedure

- 1) The paper jam and the trouble counter values are displayed.
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| NO. | Display     | Content             | Default value |
|-----|-------------|---------------------|---------------|
| 1   | MACHINE JAM | Machine JAM counter | 0             |
| 2   | SPF JAM     | SPF JAM counter     | 0             |
| 3   | TROUBLE     | Trouble counter     | 0             |

22-3

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to check the misfeed position and the number of misfeed.<br>* This data can be used to estimate the trouble position. |
| <b>Section</b>            |  |

### Section

### Operation/Procedure

- 1) Paper JAM and misfeed data are displayed by max. 50 items from the latest one. (The older one is sequentially deleted.)
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

22-4

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check        |
| <b>Function (Purpose)</b> | Used to check the trouble (self diag) history. |
| <b>Section</b>            |  |

### Section

### Operation/Procedure

- 1) The trouble history is displayed by max. 30 items from the latest one. (The older one is sequentially deleted.)
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

22-5

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Other   |
| <b>Function (Purpose)</b> | Used to check the ROM version of each unit (section). |

**Section****Operation/Procedure**

- 1) The ROM version of each section or of the installed unit is displayed.
- 2) If there is any problem in any software program, use this simulation to check the ROM version and replace it with a new one.
- 3) Press [START] key to make printing.
- 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display item | Description of item content    |
|--------------|--------------------------------|
| S/N          | Serial No.                     |
| ICUM(MAIN)   | ICUM (MAIN)                    |
| ICUM(SUB)    | ICUM (SUB)                     |
| ICUM(BIOS)   | ICUM (BIOS)                    |
| ICU1(MAIN)   | ICU1 (Main section)            |
| ICU1(BOOT)   | ICU1 (Boot section)            |
| ICU1(SUB)    | ICU1 Sub section (ARM9)        |
| ICU2         | ICU2                           |
| LANGUAGE     | Language support data version  |
| UICONTENTS   | Content data for display       |
| PCU          | PCU                            |
| SCU          | SCU                            |
| SPF          | SPF                            |
| LCC1         | Side LCC or LCT 1 series       |
| LCC2         | Side LCT 2 series              |
| FINISHER     | Finisher                       |
| SADDLE       | Saddle unit (Main section)     |
| TRIMMER      | Trimmer unit                   |
| INSERTER     | Inserter                       |
| FOLDING UNIT | Folding unit                   |
| DECURLER     | Relay unit (Decurler)          |
| STACKER1     | Stacker 1 series               |
| STACKER2     | Stacker 2 series               |
| NIC          | NIC                            |
| POWER-CON    | Power controller               |
| E-MANUAL     | Operation manual (HDD storage) |
| WATER MARK   | Watermark (HDD storage)        |
| ESCP         | ESCP font ROM                  |
| ACRE(MAIN)   | ACRE (Main section)            |
| ACRE(DATA)   | ACRE (Data section)            |

22-6

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check   |
| <b>Function (Purpose)</b> | Used to output the list of various setting and adjustment data (simulation, counter). |

**Section****Operation/Procedure**

\* When installing or servicing, this simulation is executed to print the list of various adjustment and setting data for use in the next servicing. (Memory trouble, PWB replacement, etc.)

- 1) Select a print mode with 10-key. 1. List print
- 2) When [EXECUTE] key is pressed, the list selected in step 1 is printed.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Item         | Button display | Content                              |
|--------------|----------------|--------------------------------------|
| DATA PATTERN | NO.1           | List print                           |
|              | NO.3           | List print (Process control-related) |
| 2SIDED PRINT | 1-SIDED        | Simplex surface print (Default)      |
|              | 2-SIDED        | Duplex surface print                 |

22-8

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to check the counter value of the finisher, DSPF, and the scan (reading). |

**Section****Operation/Procedure**

- 1) The counter values of the finisher, DSPF, and the scanner are displayed.
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display          | Content   | Number of digits of display or type | Default value |
|------------------|---|-------------------------------------|---------------|
| SPF              | Document feed quantity  | 8 digits                            | 0             |
| SCAN             | Scan counter  | 8 digits                            | 0             |
| STAPLER          | Staple counter  | 8 digits                            | 0             |
| PUNCHER          | Puncher counter   | 8 digits                            | 0             |
| STAMP            | Stamp counter   | 8 digits                            | 0             |
| SADDLE STAPLER   | Saddle staple counter   | 8 digits                            | 0             |
| SADDLE V FOLD    | Saddle finisher V fold counter                                    | 8 digits                            | 0             |
| COVER            | Cover open/close counter  | 8 digits                            | 0             |
| HP_ON            | Number of HP detection  | 8 digits                            | 0             |
| TRIMMER          | Trimmer counter   | 8 digits                            | 0             |
| FOLDING          | Paper folding counter   | 8 digits                            | 0             |
| INSERTER         | Inserter counter (Tray 1)   | 8 digits                            | 0             |
| INSERTER2        | Inserter counter (Tray 2)   | 8 digits                            | 0             |
| INSERTER OFFLINE | Inserter offline counter  | 8 digits                            | 0             |
| DECURLER         | Decurler counter  | 8 digits                            | 0             |
| STACKER          | Stacker counter   | 8 digits                            | 0             |
| STACKER2         | Stacker2 counter  | 8 digits                            | 0             |
| OC LAMP TIME     | Displays the total lighting time of the lamp in the OC section.   | *****                               | 0             |
| DSPF LAMP TIME * | Displays the total lighting time of the lamp in the DSPF section. | *****                               | 0             |

The lamp lighting time is displayed in \*\* hours \*\* minutes.

The lamp lighting time is accumulated in all the modes.

\*: Displayed only when DSPF is installed.

22-9

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check                                     |
| <b>Function (Purpose)</b> | Used to check the use quantity (print quantity) of each paper feed section. |
| <b>Section</b>            | Paper feed, ADU, LCC  |

**Operation/Procedure**

- 1) The counter values related to paper feed are displayed.
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display item | Content  | Number of digits of display | Default value |
|--------------|--|-----------------------------|---------------|
| TRAY1        | Tray 1 paper feed counter  | 8 digits                    | 0             |
| TRAY2        | Tray 2 paper feed counter  | 8 digits                    | 0             |
| TRAY3        | Tray 3 paper feed counter  | 8 digits                    | 0             |
| TRAY4        | Tray 4 paper feed counter  | 8 digits                    | 0             |
| ADU          | ADU paper feed counter   | 8 digits                    | 0             |
| MFT          | Manual paper feed counter (*1)                                   | 8 digits                    | 0             |
| LCC          | Side LCC paper feed counter (A4 LCC or A3 LCC) (*1)              | 8 digits                    | 0             |
| LCT1         | Upper stage LCT paper feed counter (*1)                          | 8 digits                    | 0             |
| LCT2         | Lower stage LCT paper feed counter (*1)                          | 8 digits                    | 0             |
| LCT3         | Upper LCT paper feed counter (connected in two) (*1)             | 8 digits                    | 0             |
| LCT4         | Lower LCT paper feed counter (connected in two) (*1)             | 8 digits                    | 0             |
| LCT_MFT      | LCT manual paper feed counter (*1)                               | 8 digits                    | 0             |
| TRAY1_TTL    | Accumulated tray 1 paper feed counter                            | 8 digits                    | 0             |
| TRAY2_TTL    | Accumulated tray 2 paper feed counter                            | 8 digits                    | 0             |
| TRAY3_TTL    | Accumulated tray 3 paper feed counter                            | 8 digits                    | 0             |
| TRAY4_TTL    | Accumulated tray 4 paper feed counter                            | 8 digits                    | 0             |
| ADU_TTL      | Accumulated ADU paper feed counter                               | 8 digits                    | 0             |
| MFT_TTL      | Accumulated manual paper feed counter (*1)                       | 8 digits                    | 0             |
| LCC_TTL      | Accumulated side LCC paper feed counter (A4 LCC or A3 LCC) (*1)  | 8 digits                    | 0             |
| LCT1_TTL     | Accumulated upper stage LCT paper feed counter (*1)              | 8 digits                    | 0             |
| LCT2_TTL     | Accumulated lower stage LCT paper feed counter (*1)              | 8 digits                    | 0             |
| LCT3_TTL     | Accumulated upper LCT paper feed counter (connected in two) (*1) | 8 digits                    | 0             |
| LCT4_TTL     | Accumulated lower LCT paper feed counter (connected in two) (*1) | 8 digits                    | 0             |
| LCT_MFT_TTL  | Accumulated LCT manual paper feed counter (*1)                   | 8 digits                    | 0             |

(\*1) Displayed only when option is installed.

22-10

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check                             |
| <b>Function (Purpose)</b> | Used to check the system configuration (option, internal hardware). |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) The system configuration is displayed.  
(The installed devices and options are displayed in their model names.)
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

22-12

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check   |
| <b>Function (Purpose)</b> | Used to check the DSPF misfeed position and the number of each misfeed. (If the number of misfeed is considerably great, it is judged that repair is required.) |
| <b>Section</b>            | DSPF  |

**Operation/Procedure**

- 1) Paper JAM and misfeed data are displayed by max. 50 items from the latest one. (The older one is sequentially deleted.)
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

22-13

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check   |
| <b>Function (Purpose)</b> | Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge). |

|                |
|----------------|
| <b>Section</b> |
|----------------|

**Operation/Procedure**

- 1) The rotating time of the process section and the print quantity are displayed.
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display item         | Content                                | Counter       | RPM           | Number of use days | Life meter (±1% unit) | Number of remaining days |
|----------------------|--|---------------|---------------|--------------------|-----------------------|--------------------------|
| MAINTENANCE ALL      | Maintenance counter (Total)            | Max. 8        | Not displayed | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| FUSING ROLLER        | Fusing heat roller                     | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| PRESSURE ROLLER      | Pressure roller                        | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| SEPARATE PAWL        | Separation pawl                        | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| FUSING WEB UNIT      | Fusing upper web unit                  | Max. 8        | Not displayed | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| FUSING WEB SEND      | Fusing upper web cleaning send counter | Max. 8        | Not displayed | Not displayed      | Not displayed         | Not displayed            |
| TRANSFER BLADE       | Transfer blade                         | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| TC BELT              | Transfer belt                          | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| PS PAPER             | PS paper dust removing                 | Max. 8        | Not displayed | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| OZONE/EXHAUST FILTER | Ozone filter/Exhaust filter            | Max. 8        | Not displayed | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| DEVE CTRG(K)         | Developer cartridge K                  | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| DRUM CTRG(K)         | Drum unit K                            | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| MC CLEAN(K)          | MC cleaner (K)                         | Not displayed | Max. 8        | Not displayed      | Not displayed         | Not displayed            |
| MAIN CHARGER(K)      | Main charger K                         | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| DRUM BLADE(K)        | Drum blade K                           | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | 0 - 365 *                |
| TONER CTRG(K)        | Toner cartridge K                      | Max. 8        | Max. 8        | 0 - 999            | 0 - 100(%)            | Not displayed            |

\* For outside the range, "-----" is displayed.

22-14

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check                |
| <b>Function (Purpose)</b> | Used to display the use status of the toner cartridge. |

|                |         |
|----------------|---------|
| <b>Section</b> | Process |
|----------------|---------|

**Operation/Procedure**

The status of the toner cartridge is displayed.

| Display item | Content                         | Accumulated No. of installed cartridges (Unit) | Accumulated No. of near end (Unit) | Accumulated No. of end (Unit) | Remaining quantity (Unit: %)         |
|--------------|---------------------------------|--|------------------------------------|-------------------------------|--------------------------------------|
|              |                                 | INSTALL  | NN END                             | END                           | RESIDUAL                             |
| TONER (K)    | Toner cartridge use counter (K) | 0 - 255  | 0 - 255                            | 0 - 255                       | 0-25%<br>25-50%<br>50-75%<br>75-100% |

22-18

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check       |
| <b>Function (Purpose)</b> | Used to display the user data delete history. |

|                |
|----------------|
| <b>Section</b> |
|----------------|

**Operation/Procedure**

The date and time of the user data delete are displayed.

| Display item |                          | Content   |
|--------------|--------------------------|---|
| Item name    | Date                     |   |
| START        | Year/month/day/hour/min. | Delete history (Date and time of operation start) |
| END          | Year/month/day/hour/min. | Delete history (Date and time of operation end)   |

22-19

|                |   |
|----------------|---|
| <b>Purpose</b> | Adjustment/Setting/Operation data check |
|----------------|---|

|                           |  |
|---------------------------|--|
| <b>Function (Purpose)</b> | Used to check the various scanner counters related to the network scanner. |
|---------------------------|--|

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

**Operation/Procedure**

- 1) The counter values related to the network scanner are displayed.
- 2) Press [START] key to make printing.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display         |                 | Content   | No. of digits | Default value |
|-----------------|-----------------|---|---------------|---------------|
| Network scanner | NET SCN ORG_B/W | Network scanner document scan quantity counter (B/W) (B/W scan job)     | 8             | 0             |
|                 | NET SCN ORG_CL  | Network scanner document scan quantity counter (COLOR) (Color scan job) | 8             | 0             |
| E-Mail          | MAIL COUNTER    | Number of of E-MAIL send  | 8             | 0             |
| FTP             | FTP COUNTER     | Number of FTP send  | 8             | 0             |
| Other           | SMB SEND        | Number of SMB send  | 8             | 0             |
|                 | USB CNT         | Number of times of USB storage  | 8             | 0             |
|                 | TRIAL MODE_B&C  | Trial mode counter (B/W & COLOR scan job)                               | 8             | 0             |
|                 | SCAN TO HDD_B/W | Scan to HDD record quantity (B/W)                                       | 8             | 0             |
|                 | SCAN TO HDD_CL  | Scan to HDD record quantity (Color)                                     | 8             | 0             |

22-40

|                |                        |
|----------------|------------------------|
| <b>Purpose</b> | Error contents display |
|----------------|------------------------|

|                           |   |
|---------------------------|---|
| <b>Function (Purpose)</b> | Used to display the error code list and the contents. |
|---------------------------|---|

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

**Operation/Procedure**

- 1) Select the main error code.
- The sub error code and the contents are displayed.

22-42

|                |   |
|----------------|---|
| <b>Purpose</b> | Adjustment/Setting/Operation data check |
|----------------|---|

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Function (Purpose)</b> | Used to check the JAM/trouble data |
|---------------------------|------------------------------------|

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

**Operation/Procedure**

- 1) Select the item to be checked with the touch panel key.
- 2) Printable with [COLOR] and [MONO] keys.

| Display data | Counter         |                                | Content                      |   |  | Max. number of histories | Remarks   |
|--------------|-----------------|--------------------------------|------------------------------|---|--|--------------------------|---|
|              | Display         | Content                        | JAM CODE/TROUBLE CODE        | DATE/TIME                               | TOTAL COUNT(BW)                          |                          |   |
| PAPER JAM    | PAPER JAM COUNT | Number of machine JAM troubles | Generated JAM code (Machine) | Generated date/time (YY/MM/DD HH:MM:SS) | Total output quantity of black and white | 50                       | The head is the latest, and the bottom is the oldest. The max. number of histories is 50.   |
| SPF JAM      | SPF JAM COUNT   | Number of SPF JAM troubles     | Generated JAM code (SPF)     |   |  |                          | When 50 is exceeded, the oldest one is not displayed sequentially.  |
| TROUBLE      | TROUBLE COUNT   | Number of troubles             | Generated trouble code       |   |  | 30                       | The head is the latest, and the bottom is the oldest. The max. number of histories is 30.<br>When 30 is exceeded, the oldest one is not displayed sequentially. |

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check |
| <b>Function (Purpose)</b> | JAM data details display                |
| <b>Section</b>            |   |

**Operation/Procedure**

- Select the item to be checked with the touch panel key.  
When [COUNTER] key is pressed, the JAM counter, the paper feed counter, and the paper feed retry counter are displayed.  
When [HISTORY1] key is pressed, the JAM history is displayed.  
When [HISTORY2] key is pressed, the temperature and humidity data are displayed.

- Printable with [COLOR] and [MONO] keys.

**Display data and contents (COUNTER)**

| Item                     | Content  |
|--------------------------|--|
| PAPER JAM COUNT          | Number of machine JAM troubles                             |
| PAPER FEED COUNTER       | Paper feed counter (Similar with SIM22-09 display content) |
| PAPER FEED RETRY COUNTER | Paper feed retry counter                                   |

**Display data and contents (HISTORY1)**

| Item      | Content          | Description                  |
|-----------|------------------|------------------------------|
| NO        | No               | History number               |
| JAM CODE  | JAM Code         | Jam code main                |
| DATE/TIME | Date/Time        | Occurrence date              |
| TOTAL_BW  | Total Count (BW) | Total counter (B/W)          |
| P_S (*1)  | Paper Size       | Paper size                   |
| P_T (*1)  | Paper Type       | Paper type                   |
| JOB (*1)  | Job Mode         | Job mode                     |
| JN        | Job No           | First after JOB start or not |
| OF        | Offset           | Paper exit: Offset           |
| EP        | Exit Position    | Paper exit: Exit position    |
| PC        | Punch            | Paper exit: Punch            |
| SP        | Staple           | Paper exit: Staple           |

\*1: Refer to the detail display content of HISTORY1.

**Display data and contents (HISTORY2)**

| Item      | Content  |
|-----------|--|
| NO.       | History number   |
| DATE/TIME | Occurrence date  |
| TH_M      | External air temperature sensor temperature/AD value             |
| HUD_M     | External air humidity sensor humidity/AD value                   |
| TH1_LSU   | LSU thermistor 1 temperature/AD value                            |
| TH2_LSU   | LSU thermistor 2 temperature/AD value                            |
| TH_UM     | Fusing upper main thermistor (differential) temperature/AD value |
| TH_UM_CS  | Fusing upper main thermistor (compensation) temperature/AD value |
| TUMD      | Fusing upper main thermistor (detection) AD value                |
| TH_US1    | Fusing upper sub thermistor (differential) temperature/AD value  |
| TH_US1_CS | Fusing upper sub thermistor (compensation) temperature/AD value  |
| TU1D      | Fusing upper sub thermistor (detection) AD value                 |
| TH_LM1    | Fusing lower main thermistor (differential) temperature/AD value |
| TH_LM1_CS | Fusing lower main thermistor (compensation) temperature/AD value |
| TL1D      | Fusing lower main thermistor (detection) AD value                |
| TH_US2    | Fusing upper sub thermistor 2 temperature/AD value               |
| TH_LM2    | Fusing lower main thermistor 2 temperature/AD value              |

**Detail display content of HISTORY1**

| Display |                           | Content                  |
|---------|---------------------------|--------------------------|
| NON     | Inch series<br>fixed form | No paper size            |
| WLG     |                           | Double Legal             |
| WLR     |                           | Double Legal-R           |
| LD      |                           | Ledger                   |
| LDR     |                           | Ledger-R (Double Letter) |
| LG      |                           | Legal                    |
| LGR     |                           | Legal-R                  |
| FC      |                           | Foolscap                 |
| FCR     |                           | Foolscap-R               |
| LT      |                           | Letter                   |
| LTR     |                           | Letter-R                 |
| IV      |                           | Invoice (Mini)           |
| IVR     |                           | Invoice-R (Mini)         |
| EC      |                           | Executive                |
| ECR     |                           | Executive-R              |
| A3W     |                           | A3W (12x18 in)           |
| AWR     |                           | A3W (12x18 in)-R         |
| 12      |                           | 22x17                    |
| 13      |                           | 22x17R                   |
| 14      |                           | 22x34                    |
| 15      |                           | 22x34R                   |
| 16      |                           | 34x44                    |
| 17      |                           | 34x44R                   |
| 18      |                           | 44x68                    |
| 19      |                           | 44x68R                   |
| 01A     |                           | 9x12                     |
| 01B     |                           | 9x12R                    |
| 01C     |                           | 13x19                    |
| 01D     | 13x19R                    |                          |
| MLG     | Mexican-Legal             |                          |
| MLR     | Mexican-Legal-R           |                          |
| ALG     | Asian-Legal               |                          |
| ALR     | Asian -Legal-R            |                          |
| EXT     | Other                     | Extra (Special)          |
| A1      | AB series<br>fixed form   | A1                       |
| A1R     |                           | A1R                      |
| A2      |                           | A2                       |
| A2R     |                           | A2R                      |
| A3      |                           | A3                       |
| A3R     |                           | A3R                      |
| A4      |                           | A4                       |
| A4R     |                           | A4R                      |
| A5      |                           | A5                       |
| A5R     |                           | A5R                      |
| A6      |                           | A6                       |
| A6R     |                           | A6R                      |
| B3      |                           | B3                       |
| B3R     |                           | B3R                      |
| B4      |                           | B4                       |
| B4R     |                           | B4R                      |
| B5      |                           | B5                       |
| B5R     |                           | B5R                      |
| B6      |                           | B6                       |
| B6R     |                           | B6R                      |
| 54      |                           | A0x2                     |
| 55      |                           | A0x2 R                   |
| A0      |                           | A0                       |
| A0R     |                           | A0R                      |
| B0      | B0                        |                          |
| B0R     | B0R                       |                          |
| B1      | B1                        |                          |
| B1R     | B1R                       |                          |
| B2R     | B2                        |                          |

| Display | Content                          |                                   |                |
|---------|----------------------------------|-----------------------------------|----------------|
| B2R     | AB series<br>fixed form          | B2R                               |                |
| K8      |                                  | K8                                |                |
| K8R     |                                  | K8R                               |                |
| K16     |                                  | K16                               |                |
| 16R     |                                  | K16R                              |                |
| K32     |                                  | K32                               |                |
| 32R     |                                  | K32R                              |                |
| 66      |                                  | SRA3                              |                |
| 67      |                                  | SRA3R                             |                |
| 68      |                                  | SRA4                              |                |
| 69      |                                  | SRA4R                             |                |
| 06A     |                                  | 318 x 469 mm                      |                |
| 06B     |                                  | 469 x 318 mm                      |                |
| 06C     |                                  | 234 x 318 mm                      |                |
| 06D     |                                  | 318 x 234 mm                      |                |
| 06E     |                                  | 312 x 440 mm                      |                |
| 06F     |                                  | 440 x 312 mm                      |                |
| 70      |                                  | 220 x 312 mm                      |                |
| 71      |                                  | 312 x 220 mm                      |                |
| 82      |                                  | Domestic<br>special<br>(Envelope) | DBL Postcard   |
| 83      |                                  |                                   | DBL Postcard-R |
| 84      | Postcard                         |                                   |                |
| 85      | Postcard-R                       |                                   |                |
| 87      | 119 x 277 mm                     |                                   |                |
| 89      | 120 x 235 mm                     |                                   |                |
| 08B     | 90 x 205 mm                      |                                   |                |
| 08D     | 90 x 185 mm                      |                                   |                |
| 08F     | 240 x 332 mm                     |                                   |                |
| 91      | 216 x 277 mm                     |                                   |                |
| 93      | 197 x 267 mm                     |                                   |                |
| 95      | 190 x 240 mm                     |                                   |                |
| 97      | 162 x 229 mm                     |                                   |                |
| 99      | 142 x 205 mm                     |                                   |                |
| 09B     | 119 x 197 mm                     |                                   |                |
| 09D     | 120 x 176 mm                     |                                   |                |
| 09F     | 114 x 162 mm                     |                                   |                |
| 0A1     | 98 x 148 mm                      |                                   |                |
| 0A3     | 105 x 235 mm                     |                                   |                |
| 0A5     | 95 x 217 mm                      |                                   |                |
| 0A7     | 98 x 190 mm                      |                                   |                |
| 0A9     | 92 x 165 mm                      |                                   |                |
| 0AA     | AB series E-version              |                                   |                |
| 0AB     | AB series L-version              |                                   |                |
| 0AC     | AB series panorama size          |                                   |                |
| 0AD     | AB series name card size         |                                   |                |
| 0AE     | AB series identification photo   |                                   |                |
| 0AF     | AB series name card small        |                                   |                |
| 0B0     | Other                            | A3 width                          |                |
| 0B1     |                                  | B4 width                          |                |
| 0B2     |                                  | A4 width                          |                |
| 0B3     |                                  | A3 width (Long size)              |                |
| 0B4     |                                  | B4 width (Long size)              |                |
| 0B5     |                                  | A4 width (Long size)              |                |
| 0BC     |                                  | Custom (Large size)               |                |
| 0BD     |                                  | Custom (Small size)               |                |
| 0BF     | Custom                           |                                   |                |
| 0C2     | Oversea<br>special<br>(Envelope) | Monarch                           |                |
| 0C3     |                                  | Monarch-R                         |                |
| 0C4     |                                  | DL                                |                |
| 0C5     |                                  | DL-R                              |                |
| 0C6     |                                  | C4                                |                |
| 0C7     |                                  | C4-R                              |                |
| 0C8     |                                  | C5                                |                |
| 0C9     |                                  | C5-R                              |                |
| 0CA     |                                  | C6                                |                |
| 0CB     |                                  | C6-R                              |                |
| 0CC     |                                  | C65                               |                |
| 0CD     |                                  | C65-R                             |                |
| 0CE     |                                  | ISOB5                             |                |
| 0CF     |                                  | ISOB5-R                           |                |
| 0D0     |                                  | Size6-1/2                         |                |

| Display | Content                          |   |
|---------|----------------------------------|---|
| 0D1     | Oversea<br>special<br>(Envelope) | Size6-1/2-R   |
| 0D2     |                                  | Size9   |
| 0D3     |                                  | Size9-R   |
| 0D8     |                                  | Com-10  |
| 0D9     |                                  | Com-10-R  |
| 0DA     |                                  | Inch series E-version   |
| 0DB     |                                  | Inch series L-version   |
| 0DC     |                                  | Inch series panorama size                                     |
| 0DD     |                                  | Inch series name card large                                   |
| 0DE     |                                  | Inch series identification photo                              |
| 0DF     | Inch series name card small      |   |
| 0EC     | Other                            | Extra (Special large size)                                    |
| 0ED     |                                  | Extra (Special small size)                                    |
| 0EF     |                                  | Extra (Special/Not fixed)                                     |
| 0F0     |                                  | Long size   |
| 0FF     |                                  | JAM (Used for canceling temporary charging in a coin vendor.) |

#### Display content detail: Paper type (P\_T)

| Display | Content                  |  |
|---------|--------------------------|--|
| UST     | User type                |  |
| LHP     | Letter head paper        |  |
| PNP     | Perforated sheet         |  |
| RCL     | Recycled paper           |  |
| COL     | Color paper              |  |
| PLN     | Standard paper           |  |
| PRP     | Pre printed              |  |
| OHP     | OHP Transparency         |  |
| HV      | Heavy paper              |  |
| LBL     | Label sheet              |  |
| ENV     | Envelope                 |  |
| HG      | Postcard                 |  |
| TAB     | Tab sheet                |  |
| THN     | Thin paper               |  |
| US1     | User type 1              |  |
| US2     | User type 2              |  |
| US3     | User type 3              |  |
| US4     | User type 4              |  |
| US5     | User type 5              |  |
| US6     | User type 6              |  |
| US7     | User type 7              |  |
| HV2     | Heavy paper 2            |  |
| PL2     | Plain paper 2 (not used) |  |
| HV3     | Heavy paper 3            |  |
| HV4     | Heavy paper 4            |  |
| GLS     | Glossy paper             |  |

#### Display content detail: Job mode (JOB)

| Display | Content                        |  |
|---------|--------------------------------|--|
| SHD     | Shading.                       |  |
| PCL     | Process control                |  |
| SIM     | Test mode (Sim)                |  |
| ICP     | Interruption copy              |  |
| CP      | Copy                           |  |
| FXS     | FAX send scan                  |  |
| AXS     | AXIS                           |  |
| FXP     | FAX reception print            |  |
| PR      | Printer                        |  |
| FXC     | FAX communication report print |  |
| 00A     | Zaurus print                   |  |
| SLF     | Self/Test print                |  |
| 00C     | Document counter               |  |
| RMT     | Remote maintenance             |  |
| 00F     | Tandem (Cordless handset)      |  |
| CFP     | Confidential print             |  |
| NET     | Network scanner                |  |
| PRF     | Proof print                    |  |

22-90

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to output the various setting data. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Select a target screen with [↑] [↓] keys.
- 2) Select a target list for printing.
- 3) When [EXECUTE] key is pressed, the self print is made.
- 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| All setting list                    | ALL CUSTOM SETTING LIST           |
| Printer test page                   | PCL SYMBOL SET LIST               |
|                                     | PCL INTERNAL FONT LIST            |
|                                     | PCL EXTENDED FONT LIST            |
|                                     | PS FONT LIST                      |
|                                     | PS KANJI FONT LIST                |
|                                     | PS EXTENDED FONT LIST             |
| Address registration list (*)       | NIC PAGE                          |
|                                     | INDIVIDUAL LIST                   |
|                                     | GROUP LIST                        |
|                                     | PROGRAM LIST                      |
|                                     | MEMORY BOX LIST                   |
| Document filing list                | ALL SENDING ADDRESS LIST          |
|                                     | DOCUMENT FILING FOLDER LIST       |
| System setting list                 | ADMIN. SETTINGS LIST (COPY)       |
|                                     | ADMIN. SETTINGS LIST (PRINT)      |
|                                     | ADMIN. SETTINGS LIST (IMAGE SEND) |
|                                     | ADMIN. SETTINGS LIST (DOC FILING) |
|                                     | ADMIN. SETTINGS LIST (SECURITY)   |
|                                     | ADMIN. SETTINGS LIST (COMMON)     |
|                                     | ALL ADMINISTRATOR SETTINGS LIST   |
| Receive rejection number list       | ANTI JUNK FAX NUMBER LIST         |
| Receive YES/NO address/domain table | ANTI JUNK MAIL/DOMAIN NAME LIST   |
| List of transfer table to E-mail    | INBOUND ROUTING LIST              |
| List of transfer to administrator   | DOCUMENT ADMIN LIST               |
| Web setting list                    | WEB SETTING LIST                  |
| Meta data set list                  | METADATA SET LIST                 |

23

23-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to print the paper jam, misfeed, and the trouble history. (If the number of misfeed or the troubles is considerably great, it is judged that repair is required.) |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) When [EXECUTE] key is pressed, print is made.
- 2) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

23-80

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section. |
| <b>Section</b>            | Paper feed, Paper transport   |

**Operation/Procedure**

When [EXECUTE] key is pressed, the timing list of paper feed and paper transport is outputted.

Used to print the operations timing list of the sensors and detectors in the paper feed and transport section.

The timing list of paper feed and paper transport operations of the latest job (copy or print) on the final paper is printed.

Since the paper feed and paper transport routes differ depending on the used paper feed tray and the print operation mode, the sensor and the detectors and the operation timing also differ.

|               |   |
|---------------|---|
| SECTION       | Operation content (Trigger name - Detection operation or load operation name) |
| STANDARD      | Reference value (ms)  |
| CURRENT (*1)  | Operation timing (ms) of the latest job on the final paper                    |
| PREVIOUS (*1) | Operation timing (ms) of the second latest job on the final paper             |
| MAXIMUM (*1)  | Max. operation timing (ms) of all the jobs                                    |
| MINIMUM (*1)  | Min. operation timing (ms) of all the jobs                                    |

\*1: The value without unit on the left side of each item on the list has no relation to the operation timing. It is not used in the market.

24

24-1

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Data clear  |
| <b>Function (Purpose)</b> | Used to clear the jam counter and the trouble counter. (After completion of maintenance, the counters are cleared.) |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

|         |                     |
|---------|---------------------|
| MACHINE | Machine JAM counter |
| SPF     | SPF JAM counter     |
| TROUBLE | Trouble counter     |

24-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Data clear   |
| <b>Function (Purpose)</b> | Used to clear the counter value (print quantity) in each paper feed section. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.



- 4) The target counter is cleared.
- 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display | Content   |
|---------|---|
| TRAY1   | Tray 1 paper feed counter                                       |
| TRAY2   | Tray 2 paper feed counter                                       |
| TRAY3   | Tray 3 paper feed counter                                       |
| TRAY4   | Tray 4 paper feed counter                                       |
| ADU     | ADU paper feed counter  |
| MFT     | Manual paper feed counter (*1)                                  |
| LCC     | Side LCC paper feed counter (A4 LCC or A3 LCC) (*1)             |
| LCT1    | Upper stage LCT paper feed counter (*1)                         |
| LCT2    | Lower stage LCT paper feed counter (*1)                         |
| LCT3    | Upper stage LCT paper feed counter (When connected in two) (*1) |
| LCT4    | Lower stage LCT paper feed counter (When connected in two) (*1) |
| LCT_MFT | LCT manual paper feed counter (*1)                              |

(\*1) Displayed only when option is installed.

|                           |  |
|---------------------------|--|
| <b>24-3</b>               |  |
| <b>Purpose</b>            | Data clear   |
| <b>Function (Purpose)</b> | Used to clear the counter value of the finisher, DSPF, and the scan (reading). |

**Section**  
**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display           | Content                               |
|-------------------|---------------------------------------|
| SPF               | Document feed quantity                |
| SCAN              | Number of times of scan               |
| STAPLER           | Staple counter                        |
| PUNCHER           | Puncher counter                       |
| STAMP             | Number of stamps                      |
| SADDLE STAPLER    | Saddle staple counter                 |
| SADDLE V FOLD     | Saddle finisher V fold counter        |
| COVER             | Cover open/close counter              |
| HP_ON             | Number of HP detection                |
| TRIMMER           | Trimmer counter                       |
| FOLDING           | Paper folding counter                 |
| INSERTER          | Insertor counter (Tray 1)             |
| INSERTER2         | Insertor counter (Tray 2)             |
| INSERTER OFFLINE  | Insertor offline counter              |
| DECURLER          | Decurler counter                      |
| STACKER           | Stacker counter                       |
| STACKER2          | Stacker2 counter                      |
| OC LAMP TIME      | OC section lamp total lighting time   |
| DSPF LAMP TIME(*) | DSPF section lamp total lighting time |

(\*) Displayed only when DSPF is installed.

|                           |   |
|---------------------------|---|
| <b>24-4</b>               |   |
| <b>Purpose</b>            | Data clear  |
| <b>Function (Purpose)</b> | Used to clear the drum counter value of the maintenance counter, the transfer, and the fusing web cleaning feed counter. (After completion of maintenance, the counters are cleared.) |

**Section**  
**Operation/Procedure**

- 1) Select a target of clear with the touch panel key.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.
- 4) The target counter is cleared.
- 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display      | Content               |   |  |   |
|--------------|-----------------------|---|--|---|
| Maintenance  | MAINTENANCE ALL       | Maintenance counter (Total) (Counter)<br>Maintenance counter (Total) (Number of use days)                             |  |   |
|              | Fusing                | FUSING ROLLER   | Fusing heat roller (Counter)<br>Fusing heat roller (Number of use days)<br>Fusing heat roller (Accumulated traveling distance) |   |
| PRESS ROLLER |                       | Pressure roller (Counter)<br>Pressure roller (Number of use days)<br>Pressure roller (Accumulated traveling distance) |  |   |
|              |                       | Separation  | SEPARATE PAWL  | Separation pawl (Counter)<br>Separation pawl (Number of use days)<br>Separation pawl (Accumulated traveling distance)             |
|              |                       |   | FUSING WEB   | Fusing upper web unit (Counter)<br>Fusing upper web unit (Number of use days)<br>Fusing upper web cleaning send counter (Counter) |
| Transfer     | TRANS BLADE           |   |  | Transfer blade (Counter)<br>Transfer blade (Number of use days)<br>Transfer blade (Accumulated traveling distance)                |
|              | TC BELT               |   |  | Transfer belt (Counter)<br>Transfer belt (Number of use days)<br>Transfer belt (Accumulated traveling distance)                   |
|              |                       | Drum  | DRUM CTRG K  | Drum unit K (Counter)<br>Drum unit K (Number of use days)<br>Drum unit K (Accumulated number of rotations)                        |
|              |                       |   | Main charger   | MAIN CHARGER K  |
| MC CLEAN K   | MC cleaner K (RPM)    |   |  |   |
| Drum blade   | DRUM BLADE K          | Drum blade K (Counter)<br>Drum blade K (Number of use days)<br>Drum blade K (Accumulated number of rotations)         |  |   |
|              |                       | Other   | PS PAPER   | PS paper dust removing (Counter)<br>PS paper dust removing (Number of use days)   |
|              | OZONE/ EXHAUST FILTER | Ozone filter/Exhaust filter (Counter)<br>Ozone filter/Exhaust filter (Number of use days)                             |  |   |

\* The winding counter for the fusing web cleaning is cleared by being synchronized with the fusing web cleaning feed counter.

\* When MAIN CHARGER is cleared, MC CLEAN K is also cleared.

|                           |  |
|---------------------------|--|
| <b>24-5</b>               |  |
| <b>Purpose</b>            | Data clear   |
| <b>Function (Purpose)</b> | Used to clear the developer counter value. (After replacement of developer, the counter is cleared.) |

**Section**

- Operation/Procedure**
- 1) Select a target of clear with the touch panel key.
  - 2) Press [EXECUTE] key.
  - 3) Press [YES] key.
  - 4) The target counter is cleared.
  - 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Content  |
|--|
| Developer cartridge print counter (K)                      |
| Developer cartridge accumulated traveling distance (cm)(K) |
| Developer number of use days (day)(K)                      |

|                           |                                       |
|---------------------------|---------------------------------------|
| <b>24-6</b>               |                                       |
| <b>Purpose</b>            | Data clear                            |
| <b>Function (Purpose)</b> | Used to clear the copy counter value. |
| <b>Section</b>            |                                       |

- Operation/Procedure**
- 1) Select a target of clear with the touch panel key.
  - 2) Press [EXECUTE] key.
  - 3) Press [YES] key.
  - 4) The target counter is cleared.
  - 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

| Display | Content            |
|---------|--------------------|
| COPY BW | Copy counter (B/W) |

|                           |   |
|---------------------------|---|
| <b>24-9</b>               |   |
| <b>Purpose</b>            | Data clear  |
| <b>Function (Purpose)</b> | Used to clear the printer mode print counter and the self print mode print counter. |
| <b>Section</b>            |   |

- Operation/Procedure**
- 1) Press [EXECUTE] key.
  - 2) Press [YES] key.
  - 3) The target counter is cleared.
  - 4) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

|          |                       |
|----------|-----------------------|
| PRINT BW | Printer counter (B/W) |
| OTHER BW | Other counter (B/W)   |

|                           |  |
|---------------------------|--|
| <b>24-12</b>              |  |
| <b>Purpose</b>            | Data clear                                 |
| <b>Function (Purpose)</b> | Used to clear the document filing counter. |
| <b>Section</b>            |  |

- Operation/Procedure**
- 1) Select the item to be cleared with the touch panel key.
  - 2) Press [EXECUTE] key.
  - 3) Press [YES] key.  
The target counter is cleared.

| Display      | Content                                       |
|--------------|---|
| DOC FIL (BW) | Black and white document filing print counter |

|                           |  |
|---------------------------|--|
| <b>24-15</b>              |  |
| <b>Purpose</b>            | Data clear                                       |
| <b>Function (Purpose)</b> | Clearing counters related to the network scanner |
| <b>Section</b>            |  |

- Operation/Procedure**
- 1) Select a target of clear with the touch panel key.
  - 2) Press [EXECUTE] key.
  - 3) Press [YES] key.
  - 4) The target counter is cleared.
  - 5) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

|                 | Display            | Content   | No. of digits | Default value |
|-----------------|--------------------|---|---------------|---------------|
| Network scanner | NET SCN<br>ORG_B/W | Network scanner document scan quantity counter (B/W) (B/W scan job)     | 8             | 0             |
|                 | NET SCN<br>ORG_CL  | Network scanner document scan quantity counter (COLOR) (Color scan job) | 8             | 0             |
| E-Mail          | MAIL<br>COUNTER    | Number of of E-MAIL send  | 8             | 0             |
| FTP             | FTP COUNTER        | Number of FTP send  | 8             | 0             |
| Other           | SMB SEND           | Number of SMB send  | 8             | 0             |
|                 | USB CNT            | Number of times of USB storage  | 8             | 0             |
|                 | TRIAL<br>MODE_B&C  | Trial mode counter (B/W & COLOR scan job)                               | 8             | 0             |
|                 | SCAN TO<br>HDD_B/W | Scan to HDD record quantity (B/W)                                       | 8             | 0             |
|                 | SCAN TO<br>HDD_CL  | Scan to HDD record quantity (Color)                                     | 8             | 0             |

## 25

|                           |  |
|---------------------------|--|
| <b>25-1</b>               |  |
| <b>Purpose</b>            | Operation test/check                                   |
| <b>Function (Purpose)</b> | Used to check the operation of the developing section. |
| <b>Section</b>            |  |

- Operation/Procedure**
- 1) Press [EXECUTE] key.
  - 2) The developing motor and the OPC drum motor are rotated for 3 min, and the toner density sensor output level is displayed.

| NO. | Sensor name (display) | Sensor name (Display)                        |
|-----|-----------------------|--|
| 1   | TCS_K                 | Toner sensor output value (K)                |
| 2   | TSG_K                 | Toner sensor control voltage input value (K) |
| 3   | DESS_VO               | Surface potential sensor output value        |

25-2

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to initialize the toner density when replacing developer. (Automatic adjustment) |
| <b>Section</b>            | Process (Developing section)  |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) After stopping the developing motor, the toner density sampling values is set as the reference toner density control level.

Note:1 When the above operation is interrupted in the middle, the reference toner density control level is not set.

Note:2 If the reference toner density control level is not set normally, the error code, EE-EL, EE-EU or EE-EC, is displayed.

**Result display item name**

| Display item name | Descriptions of items                          | Display range | Default value |
|-------------------|--|---------------|---------------|
| HUMIDITY AREA     | Humidity area registered value                 | 0 - 15        | 8             |
| DEVE REFERENCE    | Execution transition target registration value | 0 - 255       | 120           |
| CONTROL VOLTAGE   | Execution control voltage registered value     | 0 - 255       | 128           |

**Result display item name**

| Sensor name (Display) | Sensor name      |
|-----------------------|------------------|
| HUMIDITY AREA         | Humidity area    |
| DEVE REFERENCE        | TCS sensor value |
| CONTROL VOLTAGE       | Control voltage  |

**List of error displays**

| Error display | Error name     | Details of error display  | Remarks  |
|---------------|----------------|---|--|
| EE-EL         | EL abnormality | After completion of stirring: control voltage level exceeds 197   | In case of an error, the humidity area, the execution transition target, and the execution control voltage are not registered. |
| EE-EU         | EU abnormality | After completion of stirring: control voltage level is less than 49   |  |
| EE-EC         | EC abnormality | When the toner density output value is outside the range of the toner density reference value (120) $\pm 5(\text{dec})$ . |  |

25-4

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to display the operation data of the toner supply quantity. (Not used in the market.) |
| <b>Section</b>            | Process  |

**Operation/Procedure**

The operation data of the toner supply quantity are displayed.

| Display       | Content   | Display range |
|---------------|---|---------------|
| DV CTRG       | Developer cartridge print counter                           | 0 to 99999999 |
| DV RANGE      | Developer cartridge accumulated traveling distance (cm)     | 0 to 99999999 |
| HUMIDITY AREA | Current humidity area                                       | 0 to 255      |
| ALL VREF      | All correction values for the toner density reference value | 0 to 255      |

| Display       | Content   | Display range |
|---------------|---|---------------|
| DELTA_VREF    | Transition target correction amount                 | -127 to +127  |
| ALL V0        | All correction values for the control voltage value | 0 to 255      |
| HUM V0        | Humidity correction amount                          | -127 to +127  |
| LIFE V0       | Life correction amount                              | -127 to +127  |
| PROCON V0     | Process control feedback correction amount          | -127 to +127  |
| AREA V0       | Area correction amount                              | -127 to +127  |
| PRINT RATE V0 | Print ratio correction amount                       | -127 to +127  |
| ENV V0        | Environment multiple correction amount              | -127 to +127  |
| PROFIT R V0   | Difference conversion correction                    | -127 to +127  |
| JDV           | Optimum effective developing potential              | 0 to 999      |
| JDVB          | Effective development potential                     | 0 to 999      |

26

26-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the paper size of the tandem tray/large capacity paper feed tray (LCC). (When the paper size is changed, this simulation must be used to change the paper size on the software.) |
| <b>Section</b>            | Paper feed   |

**Operation/Procedure**

Select a paper size to be changed with the touch panel.

| Item      | Setting value | Content         |
|-----------|---------------|-----------------|
| TRAY1     | 0             | 8.5 $\times$ 11 |
|           | 1             | A4              |
|           | 2             | B5              |
| A4 LCC    | 0             | 8.5 $\times$ 11 |
|           | 1             | A4              |
|           | 2             | B5              |
| G/LBS SET | 0             | GRAM            |
|           | 1             | LBS             |

26-3

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the auditor specification mode. Sim.26-3 is described in the service manual for the convenience sake, but the coin vendors of the machines destined for overseas are not guaranteed. |
| <b>Section</b>            | Auditor  |

**Operation/Procedure**

Select a target of setting with the touch panel.

| Item                                | Button display | Content   | Default value |
|-------------------------------------|----------------|---|---------------|
| BUILT-IN AUDITOR (Built-in auditor) | P10            | Built-in auditor mode (standard mode) operation | P10           |

| Item                               | Button display | Content  | Default value |
|------------------------------------|----------------|--|---------------|
| OUTSIDE AUDITOR (External auditor) | NONE           | Normal operation   | NONE          |
|                                    | P_VENDOR1      | The machine enters the vendor mode for the conventional coin vendors. Only the copy mode is controlled. The multi job cuing is disabled.                       |               |
|                                    | P_VENDOR2      | The machine enters the vendor mode where a signal for DocuLyser connected to the PCU side is transferred by the parallel I/F. The multi job cuing is disabled. |               |
|                                    | P_VENDOR3      | The machine enters the vendor mode where a signal for InterCard connected to the PCU side is transferred by the parallel I/F                                   |               |
|                                    | P_OTHER        | The machine enters the mode for an external auditor connected to the SCU side.   |               |
|                                    | S_VENDOR       | Serial vendor  |               |
| DOC ADJ                            | ON             | Document filing function available   | OFF           |
|                                    | OFF            | Document filing function not available   |               |
| PF ADJ                             | ON             | Continuous feeding is performed.   | OFF           |
|                                    | OFF            | Continuous feeding is not performed.   |               |
| VENDOR MODE (*)                    | MODE1          | Vendor mode 1  | MODE3         |
|                                    | MODE2          | Vendor mode 2  |               |
|                                    | MODE3          | Vendor mode 3  |               |
| COUNTUP TIMING                     | FUSER_IN       | When the paper lead edge passes the sensor after fusing, counting is made.   | EXIT_OUT      |
|                                    | FUSER_OUT      | When the paper rear edge passes the sensor after fusing, counting is made.   |               |
|                                    | EXIT_OUT       | When the paper rear edge passes the paper-exit sensor of the tray (machine, right) after-process unit after fusing, counting is made.                          |               |

|       | Completion of the specified quantity (with money left) | Insufficient fee during a copy job |                 | Completion of the specified quantity (with money left) |
|-------|--|------------------------------------|-----------------|--|
|       |  | With no money left                 | with money left |  |
|       | Condition 1  | Condition 2                        | Condition 3     | Condition 4  |
| MODE1 | Operation 1  | Operation 2                        | Operation 2     | Operation 1  |
| MODE2 | Operation 1  | Operation 1                        | Operation 2     | Operation 1  |
| MODE3 | Operation 1  | Operation 3                        | Operation 2     | Operation 3  |

Operation 1: Standby during auto clear setting time.  
Default: 60 sec. Can be varied by the system setting.

Operation 2: Auto clear is not performed.

Operation 3: Shifts to the initial screen.

|                           |  |
|---------------------------|--|
| <b>26-5</b>               |  |
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the count mode of the total counter and the maintenance counter. (A3/11 x 17 size) |

**Section**

**Operation/Procedure**

- 1) Enter the set value with 10-key.  
1=1 count-up, 2=2 count-up
- 2) Press [OK] key.

| Item | Display      | Content                   | Set ting range | De- fault value |
|------|--------------|---------------------------|----------------|-----------------|
| A    | TOTAL (B/W)  | Total counter (B/W)       | 1 - 2          | 2               |
| B    | MAINTE (B/W) | Maintenance counter (B/W) | 1 - 2          | 2               |
| C    | DEV (B/W)    | Developer counter (B/W)   | 1 - 2          | 2               |

|                           |   |
|---------------------------|---|
| <b>26-6</b>               |   |
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set the specifications of each destination (paper, fixed magnification ratio, etc.) |

**Section**

**Operation/Procedure**

|                           |                             |
|---------------------------|-----------------------------|
| <b>26-7</b>               |                             |
| <b>Purpose</b>            | Setting                     |
| <b>Function (Purpose)</b> | Used to set the machine ID. |

**Section**

**Operation/Procedure**

- 1) Enter the machine ID with the 10-key.  
Max. 30 digits of numerals and alphabetical characters can be inputted.  
To select a desired character, press the 10-key repeatedly.  
Refer to the following list and enter characters.  
Touch the "CONFIRM" section every time a character is inputted.  
To modify an inputted character, delete it with "CLEAR" key and enter the correct character.

2) Press [SET] key to set the contents entered in procedure 1).  
NOTE:

The machine ID can be set also by the Web Page service mode function.

Conventionally, the machine ID has been set by the Web Page function. In this mode, this function is made available in the simulation mode.

| 10-key | Number of times of key input |   |   |   |   |   |   |   |   |    |
|--------|------------------------------|---|---|---|---|---|---|---|---|----|
|        | 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1      | 1                            | - | - | - | - | - | - | - | - | -  |
| 2      | A                            | B | C | a | b | c | 2 | - | - | -  |
| 3      | D                            | E | F | d | e | f | 3 | - | - | -  |
| 4      | G                            | H | I | g | h | i | 4 | - | - | -  |
| 5      | J                            | K | L | j | k | l | 5 | - | - | -  |
| 6      | M                            | N | O | m | n | o | 6 | - | - | -  |
| 7      | P                            | Q | R | S | p | q | r | s | 7 | -  |
| 8      | T                            | U | V | t | u | v | 8 | - | - | -  |
| 9      | W                            | X | Y | Z | w | x | y | z | 9 | -  |
| 0      | 0                            | - | - | - | - | - | - | - | - | -  |

|                           |  |
|---------------------------|--|
| <b>26-10</b>              |  |
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the trial mode of the network scanner. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.  
The set value of step 1 is saved.

|                           |   |
|---------------------------|---|
| <b>26-18</b>              |   |
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set YES/NO of the toner save mode operation. (For Japan and UK versions.) |
| <b>Section</b>            |   |

**Operation/Procedure**

|                           |   |
|---------------------------|---|
| <b>26-30</b>              |   |
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set the CE mark support (Europe safety standards) operation mode. |
| <b>Section</b>            |   |

**Operation/Procedure**

|                           |  |
|---------------------------|--|
| <b>26-32</b>              |  |
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the specifications of the fusing cleaning operation. |
| <b>Section</b>            | Fusing   |

**Operation/Procedure**

- 1) Enter the set value with 10-key.  
Enable/Disable of the user fusing cleaning function is set.
- 2) Press [OK] key.

| Item/Display | Content            | Setting range | Default value |            |
|--------------|--------------------|---------------|---------------|------------|
| A            | CLEANING PRINT SET | 0             | YES           | 0<br>(YES) |
|              |                    | 1             | NO            |            |

|                           |   |
|---------------------------|---|
| <b>26-35</b>              |   |
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set the display type of troubles in Sim.22-4. When two or more same troubles occur continuously, the trouble history is displayed as one trouble or as two or more troubles occurring continuously. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.  
The set value of step 1 is saved.

| Display               | Content   | Default value |
|-----------------------|---|---------------|
| (0 : ONCE<br>1 : ANY) | 0 : Only once. If the trouble is the same as the previous one, it is not saved. | 0             |
|                       | 1 : Any time. Though the trouble is the same as the previous one, it is saved.  |               |

|                           |   |
|---------------------------|---|
| <b>26-38</b>              |   |
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set whether printing is terminated or not when the developer life is reached or when the fuser web end. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.  
The set value of step 1 is saved.

| Item/Display | Content                                     | Setting range | Default value |   |
|--------------|---|---------------|---------------|---|
| A            | MAINTENANCE LIFE OVER (0: CONTINUE 1: STOP) | 0             | 0 - 1         | 0 |
|              |   | 1             |               |   |
| B            | FUSER WEB END (0: CONTINUE 1: STOP)         | 0             | 0 - 1         | 1 |
|              |   | 1             |               |   |

|                           |  |
|---------------------------|--|
| <b>26-41</b>              |  |
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set YES/NO of the magnification ratio auto select function (AMS) in the center binding mode. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Enter the set value with 10-key.  
0: AMS cancel 1: AMS setting
- 2) Press [OK] key.  
The set value of step 1 is saved.

|                           |   |
|---------------------------|---|
| <b>26-49</b>              |   |
| <b>Purpose</b>            | Setting                                   |
| <b>Function (Purpose)</b> | Used to set the postcard copy speed mode. |
| <b>Section</b>            |   |

**Operation/Procedure**

Select a copy speed mode with the touch panel. (Default: LOW)

| Item      | Setting value | Content                  | Default value |
|-----------|---------------|--------------------------|---------------|
| POST CARD | LOW           | Postcard copy speed LOW  | LOW           |
|           | HIGH          | Postcard copy speed HIGH |               |

26-50

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set Enable/Disable of black/white reverse function. |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item/Display |                         | Content |   | Setting range |   | Default value |
|--------------|-------------------------|---------|---|---------------|---|---------------|
| A            | BW REVERSE              | YES     | B/W reverse allowed   | 0 - 1         | 1 | 1             |
|              |                         | NO      | B/W reverse inhibited   |               | 0 |               |
| B            | FINISHER FUNCTION       | YES     | Finisher special paper discharge quantity limit setting (Limit enable)  | 0 - 1         | 0 | 0(YES)        |
|              |                         | NO      | Finisher special paper discharge quantity limit setting (Limit disable) |               | 1 |               |
| C            | FEED TRAY COLOR         | YES     | Tray coloring ON during paper feed                                      | 0 - 1         | 0 | 0(YES)        |
|              |                         | NO      | Tray coloring OFF during paper feed                                     |               | 1 |               |
| D            | LONG SIZE PRINT         | YES     | Long size print enable  | 0 - 1         | 1 | 0(NO)         |
|              |                         | NO      | Long size print disable   |               | 0 |               |
| E            | WIRELESS SET            | YES     | Wireless LAN enable setting   | 0 - 1         | 1 | 0(NO)         |
|              |                         | NO      | Wireless LAN disable setting  |               | 0 |               |
| F            | MACHINE ADJ             | YES     | The machine adjustment button is displayed.                             | 0 - 1         | 1 | 0(NO)         |
|              |                         | NO      | The machine adjustment button is not displayed.                         |               | 0 |               |
| G            | MACHINE ADJ HIDDEN ITEM | YES     | The machine adjustment blind item is displayed.                         | 0 - 1         | 1 | 0(NO)         |
|              |                         | NO      | The machine adjustment blind item is not displayed.                     |               | 0 |               |
| H            | STATUS LIGHT SETTING    | YES     | The status display light setting is displayed.                          | 0 - 1         | 1 | 0(NO)         |
|              |                         | NO      | The status display light setting is not displayed.                      |               | 0 |               |

26-52

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set whether non-print paper (insertion, cover sheet) is counted or not. |

**Section****Operation/Procedure**

- 1) Enter the set value with 10-key.  
0: Counted up. 1: Not counted.
- 2) Press [OK] key.  
The set value of step 1 is saved.

26-53

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | User auto calibration (auto balance adjustment) Inhibit/Allow setting. |

**Section****Operation/Procedure**

- 1) Enter the set value with 10-key.

| Item/Display |                      | Content      |         | Setting range | Default value |
|--------------|----------------------|--------------|---------|---------------|---------------|
| A            | COPY (1:YES 0:NO)    | Copy mode    | Allow   | 1             | 1             |
|              |                      |              | Inhibit | 0             |               |
| B            | PRINTER (1:YES 0:NO) | Printer mode | Allow   | 1             | 1             |
|              |                      |              | Inhibit | 0             |               |

- 2) Press [OK] key.  
The set value in step 1) is saved.

26-65

|                           |                                      |
|---------------------------|--------------------------------------|
| <b>Purpose</b>            | Setting                              |
| <b>Function (Purpose)</b> | Used to set the finisher alarm mode. |

**Section****Operation/Procedure**

Use the touch key to set.

| Item         | Setting value | Content                                 | Setting range | Default value |
|--------------|---------------|---|---------------|---------------|
| LIMIT COPIES | ON            | Number of sheets of stapling: Limited   | ON or OFF     | ON            |
|              | OFF           | Number of sets of stapling: Not Limited |               |               |

26-69

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the operating conditions for toner near end. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

| Item/Display |   | Content |   | Setting range | Default value |
|--------------|---|---------|---|---------------|---------------|
| A            | TONER PREPARATION (0:YES 1:NO)                    | 0       | The toner preparation message is displayed.                             | 0 - 1         | 0             |
|              |   | 1       | The toner preparation message is not displayed.                         |               |               |
| B            | REMAINING TONER LEVEL                             | 5 %     | Toner preparation at remaining toner level of 5%                        | 0 - 9         | 4             |
|              |   | 10 %    | Toner preparation at remaining toner level of 10%                       |               |               |
|              |   | 15 %    | Toner preparation at remaining toner level of 15%                       |               |               |
|              |   | 20 %    | Toner preparation at remaining toner level of 20%                       | 0 - 9         | 4             |
|              |   | 25 %    | Toner preparation at remaining toner level of 25%                       |               |               |
|              |   | 30 %    | Toner preparation at remaining toner level of 30%                       |               |               |
|              |   | 35 %    | Toner preparation at remaining toner level of 35%                       |               |               |
|              |   | 40 %    | Toner preparation at remaining toner level of 40%                       |               |               |
|              |   | 45 %    | Toner preparation at remaining toner level of 45%                       |               |               |
| 50 %         | Toner preparation at remaining toner level of 50% |         |   |               |               |
| C            | TONER NEAR END(0:YES 1:NO)                        | 0       | The toner near end message is displayed.                                | 0 - 1         | 0             |
|              |   | 1       | The toner near end message is not displayed.                            |               |               |
| D            | TONER END   | 1       | Operation 1   | 1 - 3         | 3             |
|              |   | 2       | Operation 2   |               |               |
|              |   | 3       | Operation 3   |               |               |
| E            | TONER END JUDGMENT                                | 1       | Remaining toner counter (accumulated rotation time of the toner hopper) | 1 - 2         | 1             |
|              |   | 2       | Toner end judgment by TCS (Exhaust use in the intermediate hopper)      |               |               |
| F            | TONER E-MAIL ALERT                                | 1       | E-mail alert Toner Low status send timing ear near toner end            | 0 - 1         | 0             |
|              |   | 2       | E-mail alert Toner Low status send timing near toner end                |               |               |

26-73

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

When the adjustment value is increased, the image loss (shade delete quantity) is increased.

| Item/Display |                         | Content  |        | Setting range | Default value                   |
|--------------|-------------------------|--|--------|---------------|---------------------------------|
| A            | DELETING SHADOW ADJ (M) | Rear frame side image loss quantity (shade delete quantity) adjustment | 0 - 50 | 0             | (Adjustment amount: 0.1mm/step) |
|              |                         | Lead edge image loss quantity (shade delete quantity) adjustment       | 0 - 50 | 0             | (Adjustment amount: 0.1mm/step) |

26-78

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set the password of the remote operation panel. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Enter a password with 10-key. (5 - 8 digits)  
The entered password is displayed on the column of "NEW".  
In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
- 2) Press [SET] key.

26-79

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set YES/NO of the pop-up display of user data delete result. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Enter the set value with 10-key.  
The value for the display operation specification after completion of user data delete is set.
- 2) Press [OK] key.

| Item/Display |          | Content                                    |     | Setting range |        | Default value |
|--------------|----------|--|-----|---------------|--------|---------------|
| A            | DISP SET | User data delete result pop-up display ON  | YES | 1             | 0 (NO) |               |
|              |          | User data delete result pop-up display OFF | NO  | 0             |        |               |

30-1

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of the sensors and the detectors in other than the paper feed section and the control circuits. |

**Section**  
**Operation/Procedure**

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

The sensors and the detectors which are turned ON are highlighted.

| No. | Display  | Sensor name                                       |
|-----|----------|---|
| 1   | PPD1     | Paper vertical transport sensor                   |
| 2   | PPD2     | Paper transport sensor 2                          |
| 3   | PPD3     | Paper transport sensor 3                          |
| 4   | PPD4     | Paper transport sensor 4                          |
| 5   | FDSBD    | FD reverse sensor                                 |
| 6   | DSBD1    | Reverse vertical transport sensor 1               |
| 7   | DSBD2    | Reverse vertical transport sensor 2               |
| 8   | DSBD3    | Reverse vertical transport sensor 3               |
| 9   | POD      | Paper exit detection                              |
| 10  | POFD     | Paper exit full detection                         |
| 11  | POIND    | Paper exit section paper entry sensor             |
| 12  | LFPD1    | LCC paper feed detection 1                        |
| 13  | DSW-F    | Front door detection                              |
| 14  | DSW_CS   | Vertical transport door open/close detection      |
| 15  | BOTSW    | Toner tray switch                                 |
| 16  | MCHPS1   | MC cleaner position sensor 1                      |
| 17  | PTD      | Paper lead edge detection                         |
| 18  | WEB_SPD  | Web near end detection                            |
| 19  | TNF      | Waste toner full detection                        |
| 20  | TFSD     | Hopper toner remaining quantity detection         |
| 21  | TNBOX    | Toner collection container installation detection |
| 22  | WEB_END1 | Web end detection                                 |

30-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operation of the sensors and the detectors in the paper feed section and the control circuits. |

**Section**  
**Operation/Procedure**

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

The sensors and the detectors which are turned ON are highlighted.

| Sensor name (Display) | Content   |
|-----------------------|---|
| TANSET                | Tandem tray insertion detection                 |
| VPPD                  | Paper vertical transport (multi-stage cassette) |
| T1PFD                 | Cassette 1 paper feed detection                 |
| T1LUD                 | Cassette 1 upper limit detection                |
| T1PED                 | Cassette 1 paper empty detection                |
| T1SPD                 | Cassette 1 paper remaining quantity detection   |
| T2PFD                 | Cassette 2 paper feed detection                 |
| T1PPD1                | Cassette 1 transport detection                  |
| T1PPD2                | Cassette 1 transport detection                  |
| T2LUD                 | Cassette 2 upper limit detection                |
| T2PED                 | Cassette 2 paper empty detection                |
| T2SPD                 | Cassette 2 paper remaining quantity detection   |
| C3PFD                 | Cassette 3 paper feed detection                 |
| C3LUD                 | Cassette 3 upper limit detection                |
| C3PED                 | Cassette 3 paper empty detection                |

| Sensor name (Display) | Content   |
|-----------------------|---|
| C3SPD                 | Cassette 3 paper remaining quantity detection     |
| C3SS1                 | Cassette 3 paper rear edge detection 1            |
| C3SS2                 | Cassette 3 paper rear edge detection 2            |
| C3SS3                 | Cassette 3 paper rear edge detection 3            |
| C3SS4                 | Cassette 3 paper rear edge detection 4            |
| C4PFD                 | Cassette 4 paper transport detection              |
| C4LUD                 | Cassette 4 upper limit detection                  |
| C4PED                 | Cassette 4 paper empty detection                  |
| C4SPD                 | Cassette 4 paper remaining quantity detection     |
| C4SS1                 | Cassette 4 paper rear edge detection 1            |
| C4SS2                 | Cassette 4 paper rear edge detection 2            |
| C4SS3                 | Cassette 4 paper rear edge detection 3            |
| C4SS4                 | Cassette 4 paper rear edge detection 4            |
| MPFD                  | Manual feed paper entry detection                 |
| MPLD1                 | Manual feed paper length detection                |
| MTOP1                 | Manual feed tray retraction detection             |
| MTOP2                 | Manual feed tray extension detection              |
| MPED                  | Manual feed paper empty detection                 |
| PTD                   | PS section paper lead edge shift detection sensor |

30-10

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Must not be used unless a special change is required.             |
| <b>Function (Purpose)</b> | Used to check the operations of the Main unit double feed sensor. |

**Section**  
**Operation/Procedure**

<check the operations>

Press [DPA EXE] key.

After completion of the detection operation, the sensor status is displayed.

<Item, setting range, and default values>

| Display | Content               | Range   | Default value |
|---------|-----------------------|---------|---------------|
| GAIN    | Gain adjustment value | 1 - 100 | 50            |

<On sensor names>

| Sensor name (Display) | Content                      | Range                                 | Default value |
|-----------------------|------------------------------|---------------------------------------|---------------|
| DPAOUT                | Paper thickness analog value | 0 - 1023                              | 800           |
| STATUS                | Paper detection state        | NO PAPER<br>ONE PAPER<br>DOUBLE PAPER | ONE PAPER     |

<Gain reset>

Gain initial value: 50

\* Do not use this setting unless specially required.

40-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting   |
| <b>Function (Purpose)</b> | Used to adjust the detection level of the manual paper feed tray paper width detector. |

**Section**  
**Operation/Procedure**

- 1) Set the manual paper feed guide to the max. width (MAX).
- 2) Press [EXECUTE] key. The max. width (MAX) detection level is recognized.
- 3) Set the manual paper feed guide to the P1 width (A4).
- 4) Press [EXECUTE] key.



The P1 width (A4) detection level is recognized.

- 5) Set the manual paper feed guide to the P2 width (A4R).
- 6) Press [EXECUTE] key.

The P2 width (A4R) detection level is recognized.

- 7) Set the manual paper feed guide to the min. width (MIN).
- 8) Press [EXECUTE] key.

The min. width (MIN) detection level is recognized.

If the above operations are not completed normally, an error display is made. If completed normally, "COMPLETE" is displayed.

| Display Item      | Content                             |
|-------------------|-------------------------------------|
| MAX POSITION      | Manual feed max. width              |
| P1 (A4) POSITION  | Manual feed P1 position width (A4)  |
| P2 (A4R) POSITION | Manual feed P2 position width (A4R) |
| MIN POSITION      | Manual feed min. width              |

40-7

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to adjust the manual paper feed tray size width detection level. |
| <b>Section</b>            | Paper feed  |

**Operation/Procedure**

- 1) Select a target item of the adjustment with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value of step 2 is saved.

| Item | Item              | Item Content                        | Setting range | Default value |
|------|-------------------|-------------------------------------|---------------|---------------|
| A    | MAX POSITION      | Manual feed max. width              | 0 - 255       | 241           |
| B    | P1 (A4) POSITION  | Manual feed P1 position width (A4)  | 0 - 255       | 231           |
| C    | P2 (A4R) POSITION | Manual feed P2 position width (A4R) | 0 - 255       | 140           |
| D    | MIN POSITION      | Manual feed min. width              | 0 - 255       | 19            |

40-12

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting                               |
| <b>Function (Purpose)</b> | Used to adjust the tray 4 width detection level. |
| <b>Section</b>            | Paper feed                                       |

**Operation/Procedure**

- 1) Set the tray 4 paper feed guide to the max. width (MAX).
- 2) Press [EXECUTE] key.
- 3) Set to the tray 4 paper feed guide to the min. width (MIN).
- 4) Press [EXECUTE] key.

The max. width (MAX) detection level is recognized.

The min. width (MIN) detection level is recognized.

If the above operations are not completed normally, an error display is made. If completed normally, "COMPLETE" is displayed.

| Display Item | Description       |
|--------------|-------------------|
| MAX POSITION | Tray 4 max. width |
| MIN POSITION | Tray 4 min. width |

# 41

41-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operation of the document size sensor and the control circuit. |

**Section**

**Operation/Procedure**

The operation conditions of the sensors and the detectors are displayed.

The sensor and the detector which are turned ON are highlighted.

| Display   | Sensor name (Display)    |
|-----------|--------------------------|
| OCSW      | Original cover SW        |
| PD1 - PD9 | Document detection 1 - 9 |

41-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to adjust the document size sensor detection level. |

**Section**

**Operation/Procedure**

- 1) Open the original cover. Set an A3 paper (11" x 17") on the original table. Press [EXECUTE] key.
- 2) Remove the paper from the original table. Keep the original cover open in 20° - 24° and press [EXECUTE] key.

When the sensor level setting is completed, the result is displayed.

| Display | Content                         | Setting range | Default value |
|---------|---------------------------------|---------------|---------------|
| PD1 - 9 | Document detection sensor 1 - 9 | 0 - 255       | 255           |

41-3

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the operation of the document size sensor and the control circuit. |

**Section**

**Operation/Procedure**

The detection output levels (A/D values) of OCSW and the document detection sensors (PD1 - PD9) are displayed in real time.

In [ ] on the side of the sensor name, the threshold value/secured value adjusted in 41-2 is displayed.

| Display | Content                         | Setting range           |
|---------|---------------------------------|-------------------------|
| OCSW    | Original cover SW               | 0 - 1<br>(Close at "1") |
| PD1 - 9 | Document detection sensor 1 - 9 | 0 - 255                 |

43-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the fusing temperature in each mode. |

**Section****Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

| Display                    | Content  | Setting range *<br>(Button display) | Default value |
|----------------------------|--|-------------------------------------|---------------|
| PLAIN<br>PAP&WUP&RDY<br>GR | Used to change the fusing temperature setting of plain paper, WUP, and Ready series. | -10                                 | 0             |
|                            |  | -5                                  |               |
|                            |  | 0                                   |               |
|                            |  | 5                                   |               |
|                            |  | 10                                  |               |
| HEAVY PAPER GR             | Used to change the fusing temperature setting of heavy paper series.                 | -10                                 | 0             |
|                            |  | -5                                  |               |
|                            |  | 0                                   |               |
|                            |  | 5                                   |               |
|                            |  | 10                                  |               |
| THIN PAPER GR              | Used to change the fusing temperature setting of thin paper series.                  | -10                                 | 0             |
|                            |  | -5                                  |               |
|                            |  | 0                                   |               |
|                            |  | 5                                   |               |
|                            |  | 10                                  |               |
| RECYCLED PAPER GR          | Used to change the fusing temperature setting of recycled paper series.              | -10                                 | 0             |
|                            |  | -5                                  |               |
|                            |  | 0                                   |               |
|                            |  | 5                                   |               |
|                            |  | 10                                  |               |
| GLOSS PAPER GR             | Used to change the fusing temperature setting of gloss paper series.                 | -10                                 | 0             |
|                            |  | -5                                  |               |
|                            |  | 0                                   |               |
|                            |  | 5                                   |               |
|                            |  | 10                                  |               |

\*: The values indicate the temperature. (5 = 5°C)

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set the fusing operation and pre-heating. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2) is saved.

<Setting range and default values of fusing temperature>

| Item | Display              | Content  | Setting range | Default value |
|------|----------------------|--|---------------|---------------|
| A    | WARMUP FUMON HL_US T | Fusing motor previous rotation start TH_US set value                                   | 30 - 200      | *             |
| B    | WARMUP FUMOFF        | Fusing motor previous rotation complete time   | 0 - 255       | *             |
| C    | WARMUP END TIME      | Warm-up complete time  | 1 - 255       | *             |
| D    | HI_WU_FM_ON_TMP      | FM preliminary rotation start TH_UM when warm-up at alpha °C or above                  | 30 - 200      | *             |
| E    | HI_WU_END_TIME       | Warm-up completion time when Warm-Up at alpha °C or above                              | 0 - 255       | *             |
| F    | LO_WARMUP_TIME       | Setting value applying time in warm-up of 120°C or below (Timer from Ready completion) | 0 - 255       | *             |
| G    | HI_WARMUP_TIME       | Setting value applying time in warm-up of 120°C or above (Timer from Ready completion) | 0 - 255       | *             |
| H    | HI_WARMUP_BORDER     | Threshold value alpha to apply the setting value in warm-up of alpha °C or above       | 1 - 119       | *             |
| I    | ROT_TIME_AFTER_JOB   | After-rotation time after completion of a job  | 0 - 255       | *             |
| J    | HL_UM E-STAR         | TH_UM set value when preheating  | 30 - 200      | *             |
| K    | HL_US E-STAR         | TH_US set value when preheating  | 30 - 200      | *             |
| L    | HL_UM PRE-JOB        | TH_UM set value when recovery from warm-up   | 30 - 200      | *             |

\* Refer to List of Default value.

<Descriptions of abbreviations in the above list>

|       |   |       |   |
|-------|---|-------|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper)  | HL_US | Heater lamp sub (Heat roller for front surface of paper)  |

<List of Default values>

| Item | Default value (90cpm machine) | Default value (105cpm machine) | Default value (120cpm machine) |
|------|-------------------------------|--------------------------------|--------------------------------|
| A    | 140                           | 150                            | 150                            |
| B    | 30                            | 30                             | 30                             |
| C    | 205                           | 205                            | 205                            |
| D    | 140                           | 150                            | 150                            |
| E    | 205                           | 205                            | 205                            |
| F    | 0                             | 0                              | 0                              |
| G    | 0                             | 0                              | 0                              |
| H    | 70                            | 70                             | 70                             |
| I    | 10                            | 10                             | 10                             |
| J    | 170                           | 180                            | 180                            |
| K    | 170                           | 180                            | 180                            |
| L    | 180                           | 200                            | 200                            |

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode. |

|                |
|----------------|
| <b>Section</b> |
|----------------|

**Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

|                  |     |     |    |    |    |    |    |
|------------------|-----|-----|----|----|----|----|----|
| Correction value | -49 | -25 | -5 | 0  | 5  | 25 | 49 |
| Input value      | 1   | 25  | 45 | 50 | 55 | 75 | 99 |

<List of setting parameters>

| Item/Display |                         | Content   | Setting range | Default value |
|--------------|-------------------------|---|---------------|---------------|
| A            | WARMUP FUMON HL_US T LL | Correction value for fusing motor pre-rotation start TH_US set value under LL environment   | 1 - 99        | *             |
| B            | WARMUP FUMOFF LL        | Fusing motor prior rotation completion time under LL environment  | 1 - 99        | *             |
| C            | WARMUP END TIME LL      | Correction value for warm-up complete time under LL environment   | 1 - 99        | *             |
| D            | HL_WU_FM_ON_TMP_LL      | Correction value for FM prior rotation start TH_UM in warm-up at alpha alpha °C or above under LL environment                       | 1 - 99        | *             |
| E            | HL_WU_END_TIME_LL       | Correction value for warm-up completion time in warm-up at alpha alpha °C or above under LL environment                             | 1 - 99        | *             |
| F            | LO_WARMUP_TIME_LL       | Correction value of the setting value applying time in warm-up of 120°C or below under LL environment (Timer from Ready completion) | 1 - 99        | *             |
| G            | HI_WARMUP_TIME_LL       | Correction value of the setting value applying time in warm-up of 120°C or above under LL environment (Timer from Ready completion) | 1 - 99        | *             |
| H            | HI_WARMUP_BORDER_LL     | Correction value of the threshold value alpha to apply the setting value in warm-up of alpha °C or above under LL environment       | 1 - 99        | *             |
| I            | ROT_TIME_AFTER_JOB LL   | Correction value for the after rotation time when completing a job under LL environment   | 1 - 99        | *             |
| J            | HL_UM E-STAR LL         | Correction value for preheating TH_UM set value under LL environment  | 1 - 99        | *             |
| K            | HL_E E-STAR LL          | Correction value for preheating TH_US set value under LL environment  | 1 - 99        | *             |
| L            | HL_UM PRE-JOB LL        | Correction value for the set value of TH_UM when restoring from preheating under LL environment                                     | 1 - 99        | *             |

\* Refer to List of Default value.

- \* WARMUP END TIME LL: 1 Count = 1s Change  
Correction value for the other items: 1 count for 1°C change

<List of Default values>

<Descriptions of abbreviations in the above list>

|       |   |       |   |
|-------|---|-------|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper)  | HL_US | Heater lamp sub (Heat roller for front surface of paper)  |

| Item | Default value |                |                |
|------|---------------|----------------|----------------|
|      | 90cpm machine | 105cpm machine | 120cpm machine |
| A    | 40            | 40             | 40             |
| B    | 50            | 50             | 50             |
| C    | 80            | 80             | 80             |
| D    | 40            | 40             | 40             |
| E    | 50            | 50             | 50             |
| F    | 50            | 50             | 50             |
| G    | 50            | 50             | 50             |
| H    | 50            | 50             | 50             |
| I    | 50            | 50             | 50             |
| J    | 55            | 55             | 55             |
| K    | 55            | 55             | 55             |
| L    | 55            | 55             | 55             |

43-21

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode. |

**Section****Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

|                  |     |     |    |    |    |    |    |
|------------------|-----|-----|----|----|----|----|----|
| Correction value | -49 | -25 | -5 | 0  | 5  | 25 | 49 |
| Input value      | 1   | 25  | 45 | 50 | 55 | 75 | 99 |

<List of setting parameters>

| Item/Display |                         | Content   | Setting range | Default value |
|--------------|-------------------------|---|---------------|---------------|
| A            | WARMUP FUMON HL_US T HH | Fusing motor previous rotation start TH_UM set value  | 1 - 99        | *             |
| B            | WARMUP FUMOFF HH        | Fusing motor previous rotation complete time  | 1 - 99        | *             |
| C            | WARMUP END TIME HH      | Warm-up complete time   | 1 - 99        | *             |
| D            | HL_WU_FM_ON_TMP HH      | FM preliminary rotation start TH_UM when warm-up at alpha °C or above   | 1 - 99        | *             |
| E            | HL_WU_END_TIME HH       | Warm-up completion time when warm-up at alpha °C or above   | 1 - 99        | *             |
| F            | LO_WARMUP_TIME_HH       | Correction value of the setting value applying time in warm-up of 120°C or below under HH environment (Timer from Ready completion) | 1 - 99        | *             |
| G            | HL_WARMUP_TIME HH       | Correction value of the setting value applying time in warm-up of 120°C or above under HH environment (Timer from Ready completion) | 1 - 99        | *             |
| H            | HL_WARMUP_BORDER_HH     | Correction value of the threshold value alpha to apply the setting value in warm-up of alpha °C or above under HH environment       | 1 - 99        | *             |
| I            | ROT_TIME_AFTER_JOB HH   | After-rotation time after completion of a job   | 1 - 99        | *             |
| J            | HL_UM E-STAR HH         | TH_UM set value when preheating   | 1 - 99        | *             |
| K            | HL_E E-STAR HH          | TH_US set value when preheating   | 1 - 99        | *             |
| L            | HL_UM PRE-JOB HH        | TH_UM set value when recovery from warm-up  | 1 - 99        | *             |

\* Refer to List of Default value.

\* WARMUP END TIME HH: 1 Count = 1s Change  
Correction value for the other items: 1 count for 1°C change

<Descriptions of abbreviations in the above list>

|       |   |       |   |
|-------|---|-------|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper)  | HL_US | Heater lamp sub (Heat roller for front surface of paper)  |

<List of Default values>

| Item | Default value |                |                |
|------|---------------|----------------|----------------|
|      | 90cpm machine | 105cpm machine | 120cpm machine |
| A    | 50            | 50             | 50             |
| B    | 50            | 50             | 50             |
| C    | 50            | 50             | 50             |
| D    | 50            | 50             | 50             |
| E    | 50            | 50             | 50             |
| F    | 50            | 50             | 50             |
| G    | 50            | 50             | 50             |
| H    | 50            | 50             | 50             |
| I    | 50            | 50             | 50             |
| J    | 50            | 50             | 50             |
| K    | 50            | 50             | 50             |
| L    | 50            | 50             | 50             |

43-24

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to set the correction of the temperature adjustment value of SIM 43-1. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value in step 2 is saved.

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

|                  |     |     |    |    |    |     |     |
|------------------|-----|-----|----|----|----|-----|-----|
| Correction value | -49 | -25 | -5 | 0  | +5 | +25 | +49 |
| Input value      | 1   | 25  | 45 | 50 | 55 | 75  | 99  |

<Setting range of each set value and default>

| Item/Display      | Content  | Setting range | Default value |
|-------------------|--|---------------|---------------|
| A COOL_DOWN_HEAVY | Cool down time (Heavy paper)                                       | 1 - 60        | *             |
| B COOL_DOWN_OHP   | Cool down time (OHP)   | 1 - 60        | *             |
| C FUS_MOTOR       | Fusing web motor operating interval                                | 3 - 20        | *             |
| D POWER_SET       | Power voltage setting<br>1: 100V<br>2: 110 - 120V<br>3: 220 - 240V | 1 - 3         | *             |

\* Refer to List of Default value.

\* On the adjustment values

Each cool-down time: 1 count for 1 sec change

<Descriptions of abbreviations in the above list>

|       |   |       |   |
|-------|---|-------|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper)  | HL_US | Heater lamp sub (Heat roller for front surface of paper)  |

<List of Default values>

| Item | Default value (90cpm machine) | Default value (105 cpm machine) | Default value (120 cpm machine) |
|------|-------------------------------|---------------------------------|---------------------------------|
| A    | 15                            | 15                              | 15                              |
| B    | 30                            | 30                              | 30                              |
| C    | 7                             | 7                               | 7                               |
| D    | 3                             | 3                               | 3                               |

43-31

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operation of the fusing web cleaning motor and the control circuit. |
| <b>Section</b>            |   |

**Operation/Procedure**

Press [EXECUTE] key.

The fusing web cleaning motor is operated.

| Fusing web unit installation detection state | Operation                       | Remark |
|--|---------------------------------|--------|
| Fusing web unit not installed                | No operation                    |        |
| Fusing web unit installed                    | Operates predefined pulse times |        |

43-32

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to set the forcible operation of the fusing web cleaning when job end. |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value of step 2 is saved.

| Item | Display                   | Item      | Setting range  | Default value        |
|------|---------------------------|-----------|--|----------------------|
| A    | JOB END COMP ACT CHECK    | YES<br>NO | Fusing web motor forcible operation condition when job end<br>Enable<br>Disable        | 0 - 1<br>0<br>1<br>1 |
| B    | JOB END COMP ACT INTERVAL |           | Interval of the print quantity of compulsory action of the fusing web motor at job end | 1 - 255<br>110       |
| C    | JOB END COMP ACT CNT      |           | Number of forcible operations of the fusing web motor when job end                     | 1 - 10<br>5          |

**44**

44-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set each correction function of the image forming (process) section. |
| <b>Section</b>            | Process (OPC drum, developing, transfer, cleaning)                           |

**Operation/Procedure**

- 1) An target item of setting is selected with the touch panel.  
The selected item is highlighted.
- 2) Press [OK] key. (The set value is saved.)

| Item     | Content  | Setting range                                  | Default value | Remarks   |
|----------|--|--|---------------|---|
| DRK      | Enable/Disable setting of the dark potential adjustment during normal operation      | Black text on white background (Inhibit: 0=NO) | Allow         |   |
| HV       | Enable/Disable setting of the high density process control in normal operation       | White text on black background (Allow: 1=YES)  | Allow         |   |
| HTLD     | Enable/Disable setting of the half-tone potential correction during normal operation |  | Allow         |   |
| HT       | Enable/Disable setting of the medium density process control in normal operation     |  | Allow         |   |
| TC       | Enable/Disable setting of the transfer output correction                             |  | Allow         | A variation of the transfer efficiency is corrected with temperature and humidity (absolute moisture). Enable/Disable setting. Correction of the output voltage of the high transfer voltage. |
| MD VG    | Enable/Disable setting of the membrane decrease grid voltage correction              |  | Allow         |   |
| MD EV    | Enable/Disable setting of the membrane decrease environment grid voltage correction  |  | Allow         |   |
| MD LD    | Enable/Disable setting of the membrane decrease laser power voltage correction       |  | Allow         |   |
| MD EV LD | Enable/Disable setting of the environment laser power voltage correction             |  | Allow         |   |
| MULTI V0 | Enable/Disable setting of the multi grid voltage correction between paper sheets     |  | Allow         |   |
| TN_HUM   | Enable/Disable setting of the toner density humidity correction                      |  | Allow         |   |
| TN_AREA  | Enable/Disable setting of the toner density area correction                          |  | Allow         |   |
| TN_LIFE  | Enable/Disable setting of the toner density life correction                          |  | Allow         |   |
| TN_COV   | Enable/Disable setting of the toner density print ratio correction                   |  | Allow         |   |

| Item         | Content  | Setting range   | Default value | Remarks  |
|--------------|--|---|---------------|--|
| TN_FB        | Enable/Disable setting of the toner density process control feedback correction        | Black text on white background (Inhibit: 0=NO)<br>White text on black background (Allow: 1=YES) | Allow         | When set to Disable, toner supply is not made by the process control feedback.     |
| TN_ENV       | Toner density environment multi correction   |   | Allow         |  |
| TN_DRIP      | Enable/Disable setting of toner drip supply  |   | Allow         |  |
| TN_SPEND     | Enable/Disable setting of toner supply by the process control result                   |   | Inhibit       |  |
| TN_INT       | Enable/Disable setting of toner intermittent supply                                    |   | Allow         | When set to Disable, toner supply is not made by the developer traveling distance. |
| TN_ABS       | Enable/Disable setting of toner unconditional supply                                   |   | Allow         |  |
| TN_P_RET     | Enable/Disable setting of the toner difference return correction                       |   | Inhibit       |  |
| PRT_HT       | Enable/Disable setting of the printer correction feedback of half tone process control |   | Allow         |  |
| PTDL         | Enable/Disable setting of the PTDL correction  |   | Inhibit       | Enable: Correction ON  |
| TN_VREF      | Enable/Disable setting of the Vref correction  |   | Allow         |  |
| TN_DISCHARGE | Enable/Disable setting of the background discharge                                     | Allow   |               |  |

|                           |   |
|---------------------------|---|
| <b>44-2</b>               |   |
| <b>Purpose</b>            | Adjustment/Setting                              |
| <b>Function (Purpose)</b> | Used to adjust the process control sensor gain. |
| <b>Section</b>            | Process   |

#### Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is performed automatically.

After completion of the adjustment, the result is displayed.

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

<Setting range and default values of fusing temperature>

| Content | Item/Display name | Content   | Setting range | Default value |
|---------|-------------------|---|---------------|---------------|
| PROCON  | A PCS_K LED ADJ   | Black sensor light emitting quantity adjustment value   | 1 - 255       | 21            |
|         | B PCS_K DARK      | Black dark voltage                                      | 0 - 255       | 0             |
|         | C PCS_K GRND      | Drum surface when the adjustment of item A is completed | 0 - 255       | 0             |
|         | D PCS_K DRM MAX   | Drum surface input max. value                           | 0 - 255       | 0             |
|         | E PCS_K DRM MIN   | Drum surface input min. value                           | 0 - 255       | 0             |
|         | F PCS_K DRM DIF   | Drum surface input difference (Item D - Item E)         | 0 - 255       | 0             |

<Error list>

| Error name                          | Error content  |
|-------------------------------------|--|
| Black sensor adjustment abnormality | PCS_K LED ADJ error<br>The target is not reached by 3 times of retries.                                |
| Surface scanning abnormality        | PCS_K GRND error<br>Effective difference of the upper and the lower values of the drum element surface |

|                           |   |
|---------------------------|---|
| <b>44-3</b>               |   |
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | A change in the OPC drum surface potential VO due to the OPC drum environment and membrane decrease (life) is detected with the surface potential sensor to correct the grid potential Vg so that the cleaning field is maintained at a constant level. |
| <b>Section</b>            | Process   |

#### Operation/Procedure

- 1) Select a target item of the operation check with the touch panel key.
- 2) Press [EXECUTE] key.  
The OPC drum is rotated to detect a trouble in the surface potential sensor.
- 3) When [BACK] key is pressed, the screen returns to the SUB code entry menu.

<Details of display and content description>

| Item/Display name | Content  | Setting range | Memory | Default value |
|-------------------|--|---------------|--------|---------------|
| A TARGET VO       | Target VO  | 0 - 1000      | NO     | 650           |
| B VO RESULT       | Final dark potential adjustment result                           | 0 - 1000      | YES    | 650           |
| C GRID BIAS       | Grid bias adjustment value                                       | 0 - 1000      | NO     | 650           |
| D VG_DRK1         | Initial dark potential process control correction amount         | -256 - 256    | YES    | 0             |
| E VG_DRK2         | Life dark potential process control correction amount            | -256 - 256    | YES    | 0             |
| F VG_MULTI        | Multi VO correction amount                                       | -256 - 256    | YES    | 0             |
| G VG_LIFE         | Grid voltage correction amount by the OPC drum membrane decrease | 0 - 255       | NO     | 0             |
| H VG_ENV          | Grid voltage correction amount by the OPC drum environment       | -255 - 255    | NO     | 0             |



| Item/Display name | Content   | Setting range | Memory | Default value |
|-------------------|---|---------------|--------|---------------|
| I LIFE COUNTER    | Membrane decrease correction counter in the dark potential adjustment | 0 - 30        | NO     | 0             |
| J ENV AREA        | Environment correction area in the dark potential adjustment          | 0 - 14        | NO     | 0             |

<Result display list>

|              |                      |
|--------------|----------------------|
| COMPLETE     | No error             |
| ERROR        | Error                |
| INTERRUPTION | Forcible termination |

<Error list>

| Display         | Error name                           | Error content  |
|-----------------|--------------------------------------|--|
| S.P TROUBLE     | Surface potential sensor abnormality | Surface potential sensor scan abnormality                |
| DARK WIDE ERROR | Dark potential adjustment variation  | The OPC drum surface potential variation is great.       |
| VG LIMIT ERROR  | Gird voltage output limit error      | "Vg" reaches the upper or lower limit in the adjustment. |

44-4

**Purpose** (Must not be used unless a special change is required.)

**Function (Purpose)** Used to set the operating conditions of the high density process control.

**Section**

**Operation/Procedure**

| Item/Display           | Content  | Setting range | Default value |
|------------------------|--|---------------|---------------|
| A PCS_K TARGET         | Black sensor target set value  | 1 - 255       | 210           |
| B LED_K OUTPUT         | Black sensor light emitting quantity set value                                     | 1 - 255       | 21            |
| C PCS ADJSTMENT LIMIT  | Sensor adjustment target limit value   | 1 - 255       | 10            |
| D DRM GROUND DIF       | Effective difference of the upper and the lower values of the drum element surface | 1 - 255       | 1             |
| E BIAS_BK STANDARD DIF | Bias (for black) reference calculation difference                                  | 0 - 255       | 0             |
| F BIAS PATCH INTERVAL  | Patch bias output interval   | 1 - 255       | 30            |
| G K_PAT TARGET ID      | Patch density standard value (black)   | 1 - 255       | 50            |
| H HV BK_GROUND LIMIT   | Surface light reception effective area value at the patch position                 | 1 - 255       | 60            |
| I JDVB                 | Optimum effective developing potential   | 10 - 60       | 30            |

44-5

**Purpose** Adjustment/Setting

**Function (Purpose)** Used to set the dark potential adjustment conditions.

**Section**

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.  
Press [OK] key. (The set value is saved.)

| Item/Display         | Content   | Setting range | Default value |
|----------------------|---|---------------|---------------|
| A CLEANING FIELD GAP | The difference between the target surface potential VO and the developing bias is set.          | 0 - 250       | 150           |
| B DV BIAS OUTPUT     | The actual output of the developing bias voltage in the AE mode                                 | 0 - 750       | 500           |
| C MULTI VO THRESHOLD | Multi VO correction revision threshold value  | 0 - 100       | 20            |
| D MULTI VO DATA      | Number of detection times of exceeding the threshold value of VO potential between paper sheets | 0 - 100       | 10            |
| E MULTI VO LIMIT     | Multi VO correction limit   | 0 - 255       | 50            |
| F MULTI RESET TIME   | Multi VO correction reset leaving time (min)  | 0 - 255       | 30            |

44-6

**Purpose** Adjustment

**Function (Purpose)** Used to perform forcible execution of the high density process correction.

**Section**

**Operation/Procedure**

Press [EXECUTE] key.

When the operation is normally completed, the result is saved.

If the operation is terminated abnormally, "ERROR" is displayed.

| Result display | Content description  |
|----------------|----------------------|
| COMPLETE       | No error             |
| ERROR          | Error                |
| INTERRUPTION   | Forcible termination |

<Detailed error display and content description>

| Details of error display | Content description   |
|--------------------------|---|
| DRK_WIDE_ERR             | The dark potential process control variation is great.  |
| VG_LIMIT_ERR             | Gird voltage output limit error   |
| S.P TROUBLE              | Surface potential sensor abnormality  |
| BK_SEN_ADJ_ERR           | Black sensor adjustment abnormality   |
| K_HV_ERR                 | High density process control abnormality<br>Process control patch density not detected<br>Process control patch potential not detected        |
| K_LDP_ERR                | Half tone potential process control abnormality<br>Process control patch density not detected<br>Process control patch potential not detected |
| TIMEOUT_ERR              | Time-out  |

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | (This simulation is normally not used in the market.) |
| <b>Function (Purpose)</b> | Used to display the process data.                     |
| <b>Section</b>            | Process (OPC drum, developing, transfer, cleaning)    |

**Operation/Procedure**

When the simulation is executed, the process data are displayed.

| Mode        | Page |                              | Item display<br>(*: Correction value) | Descriptions of items          | Display range   | Default value   |                    |   |
|-------------|------|------------------------------|---------------------------------------|--------------------------------|---|---|--------------------|---|
| CPY/<br>PRN | 1/1  | P (PROCON)                   | LEFT                                  | BLACK : GB ***/**<br>DV ***/** | High density process control<br>GB/DV data (K)                        | GB:150 - 1000<br>DV:0 - 600                           | GB: 630<br>DV: 495 |   |
|             |      | N(M)<br>(NORMAL<br>(MIDDLE)) |                                       | BLACK : GB ***/**<br>DV ***/** | High density normal (display for middle<br>speed)<br>GB/DV data (K)   | GB:150 - 1000<br>DV:0 - 600                           | GB: 630<br>DV: 495 |   |
|             |      | S.P                          |                                       | VO                             | OPC drum surface potential VO data                                    | 0 - 850   | 0                  |   |
|             |      |                              |                                       | VH                             | OPC drum surface potential VH data                                    | 0 - 600   | 0                  |   |
|             |      |                              |                                       | VL                             | OPC drum surface potential VL data                                    | 0 - 600   | 0                  |   |
| OTHER       | 1/3  | TN/TC                        | LEFT                                  | TN HUD AREA                    | Toner control display humidity area                                   | 1 - 14  | 9                  |   |
|             |      |                              |                                       | TN HUD DATA                    | Toner control display humidity AD value                               | 0 - 1023  | 0                  |   |
|             |      |                              |                                       | TC TMP AREA                    | Transfer display temperature area                                     | 1 - 9   | 4                  |   |
|             |      |                              |                                       | TC TMP DATA                    | Transfer display temperature AD value                                 | 0 - 1023  | 0                  |   |
|             |      |                              | RIGHT                                 | TC HUD AREA                    | Transfer display humidity area  | 1 - 9   | 4                  |   |
|             |      |                              |                                       | TC HUD DATA                    | Transfer display humidity AD value                                    | 0 - 1023  | 0                  |   |
|             |      |                              |                                       | MD HUD AREA                    | Membrane decrease display humidity area                               | 1 - 14  | 9                  |   |
|             |      |                              |                                       | MD HUD DATA                    | Membrane decrease display humidity AD<br>value                        | 0 - 1023  | 0                  |   |
|             |      |                              | DRUM                                  | LEFT                           | MD K STEP   | Drum membrane decrease correction STEP<br>display (K) | 0 - 4              | 0 |
|             |      |                              |                                       | RIGHT                          | MD K DRUM COUNTER   | Membrane decrease drum traveling<br>distance area (K) | 0 - 30             | 0 |
|             |      |                              | DRK                                   |                                | MD K REVISE(DRK1)   | Initial dark potential process control<br>correction  | -256 - 256         | 0 |
|             |      |                              |                                       |                                | MD K REVISE(DRK2)   | Life dark potential process control<br>correction     | -256 - 256         | 0 |
|             |      |                              |                                       | MD K REVISE(MULTI)             | Multi VO correction   | -256 - 256  | 0                  |   |
|             |      | LIFE                         | LEFT                                  | MD K REVISE(LIFE) : M ***      | LIFE grid voltage correction display (K)                              | 0 - 255   | 0                  |   |
|             |      | 2/3                          | EV                                    | MD K REVISE(EV) : M ***        | Environment grid voltage correction display<br>(K)                    | -255 - 255  | 0                  |   |
|             |      |                              | ALL                                   | MD K REVISE(ALL) : M ***       | Grid voltage correction ALL display (K)                               | -255 - 255  | 0                  |   |
|             |      |                              | LD LIFE                               | MD K REVISE(LD LIFE) : M ***   | Drum membrane decrease laser power<br>voltage correction (K)          | 0 - 255   | 0                  |   |
|             |      |                              | LD EV                                 | MD K REVISE(LD EV) : M ***     | Drum environment laser power voltage<br>correction                    | -255 - 255  | 0                  |   |
|             |      |                              | LD HLD                                | MD K REVISE(LD HLD) : M ***    | Half tone potential process control laser<br>power voltage correction | -255 - 255  | 0                  |   |
|             |      |                              | LD ALL                                | MD K REVISE(LD ALL) : M ***    | Laser power voltage correction ALL display                            | -255 - 255  | 0                  |   |

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | (This simulation is normally not used in the market.)           |
| <b>Function (Purpose)</b> | Used to display the result of the high density process control. |
| <b>Section</b>            | Process (OPC drum, development)                                 |

**Operation/Procedure**

Select a page with [↑] [↓] keys.

<Details of display and content description>

| Item                        | Display item | Descriptions of items                             |   | Display range  | Default value |
|-----------------------------|--------------|---|---|----------------|---------------|
| TARGET (1 page)             | ADK_SL(K)    | Development characteristics gradient coefficient  |   | -9.99 - 9.99   | 0             |
|                             | ADK_INT(K)   | Development characteristics intercept coefficient |   | -999.9 - 999.9 | 0             |
|                             | TARGET (K)   | Sensor target set value                           |   | 0.00 - 255.00  | 0             |
|                             | PCS_K_DARK   | BK sensor dark potential                          |   | 0 - 255        | 0             |
| PATCHID 1-5 (1 - 2 page)    | n-1          | Patch/Surface                                     | Patch data (n)th time patch 1 density (n = 1 to 5)    | 0 - 255        | 0             |
|                             | n-2          |   | Patch data (n)th time patch 2 density (n = 1 to 5)    | 0 - 255        | 0             |
|                             | n-3          |   | Patch data (n)th time patch 3 density (n = 1 to 5)    | 0 - 255        | 0             |
|                             | n-4          |   | Patch data (n)th time patch 4 density (n = 1 to 5)    | 0 - 255        | 0             |
|                             | n-5          |   | Patch data (n)th time patch 5 density (n = 1 to 5)    | 0 - 255        | 0             |
| PATCHID 6-10 (1 - 2 page)   | n-1          | Patch/Surface                                     | Patch data (n)th time patch 1 density (n = 6 to 10)   | 0 - 255        | 0             |
|                             | n-2          |   | Patch data (n)th time patch 2 density (n = 6 to 10)   | 0 - 255        | 0             |
|                             | n-3          |   | Patch data (n)th time patch 3 density (n = 6 to 10)   | 0 - 255        | 0             |
|                             | n-4          |   | Patch data (n)th time patch 4 density (n = 6 to 10)   | 0 - 255        | 0             |
|                             | n-5          |   | Patch data (n)th time patch 5 density (n = 6 to 10)   | 0 - 255        | 0             |
| PATCH S.P 1-5 (1 - 2 page)  | n-1          | Patch potential/<br>Surface potential             | Patch data (n)th time patch potential 1 (n = 1 to 5)  | 0 - 255        | 0             |
|                             | n-2          |   | Patch data (n)th time patch potential 2 (n = 1 to 5)  | 0 - 255        | 0             |
|                             | n-3          |   | Patch data (n)th time patch potential 3 (n = 1 to 5)  | 0 - 255        | 0             |
|                             | n-4          |   | Patch data (n)th time patch potential 4 (n = 1 to 5)  | 0 - 255        | 0             |
|                             | n-5          |   | Patch data (n)th time patch potential 5 (n = 1 to 5)  | 0 - 255        | 0             |
| PATCH S.P 6-10 (1 - 2 page) | n-1          | Patch potential/<br>Surface potential             | Patch data (n)th time patch potential 1 (n = 6 to 10) | 0 - 255        | 0             |
|                             | n-2          |   | Patch data (n)th time patch potential 2 (n = 6 to 10) | 0 - 255        | 0             |
|                             | n-3          |   | Patch data (n)th time patch potential 3 (n = 6 to 10) | 0 - 255        | 0             |
|                             | n-4          |   | Patch data (n)th time patch potential 4 (n = 6 to 10) | 0 - 255        | 0             |
|                             | n-5          |   | Patch data (n)th time patch potential 5 (n = 6 to 10) | 0 - 255        | 0             |

44-14

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check  |
| <b>Function (Purpose)</b> | Used to check the output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor. |
| <b>Section</b>            | Process (OPC drum, development)  |

**Operation/Procedure**

The output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor are displayed.

| Display Item | Description                        | Display range | De-<br>fault | Remark  |
|--------------|------------------------------------|---------------|--------------|---|
| TH_CL        | Process temperature sensor         | 0 - 255       | -            | AD value  |
|              |                                    | 0 - 255       | -            | Temperature (°C)  |
| HUS-CL       | Process humidity sensor            | 0 - 255       | -            | AD value  |
|              |                                    | 0 - 100.0     | -            | Humidity (%)<br>* The value multiplied by 10 is sent from the PCU.    |
| TH-RA        | Room temperature sensor            | 0 - 255       | -            | AD value  |
|              |                                    | 0 - 255       | -            | Temperature (°C)  |
| HUS-RA       | Room humidity sensor               | 0 - 255       | -            | AD value  |
|              |                                    | 0 - 100.0     | -            | Humidity (%)<br>* The value multiplied by 10 is sent from the PCU.    |
| RTH1         | Fusing thermistor 1 (Differential) | 0 - 1023      | -            | AD value  |
|              |                                    | 0 - 255       | -            | Temperature (°C)  |
| RTH1_AD1     | Fusing thermistor 1 (Compensation) | 0 - 1023      | -            | AD value  |
|              |                                    | 0 - 100.0     | -            | Temperature (%)<br>* The value multiplied by 10 is sent from the PCU. |
| RTH1_AD2     | Fusing thermistor 1 (Detection)    | 0 - 1023      | -            | AD value<br>* AD value only   |
| RTH2         | Fusing thermistor 2                | 0 - 1023      | -            | AD value  |
|              |                                    | 0 - 255       | -            | Temperature (°C)  |

44-15

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting                                 |
| <b>Function (Purpose)</b> | Used to set the OPC drum idle rotation. |
| <b>Section</b>            | Process                                 |

**Operation/Procedure**

- 1) Select an item to be set with the scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The initial value must be set unless any special change is required.

| Item/Display | Content   | Setting range | Default value |
|--------------|---|---------------|---------------|
| A TIME       | Idle rotation interval (time interval between the previous OPC drum idle rotation and the next one) setting (h)                             | 0 - 255       | 6             |
| B AREA1      | Environmental area difference judgment threshold value setting (difference between the previous OPC drum idle rotation and the current one) | 0 - 5         | 2             |
| C AREA2      | Environmental area conditions (AND condition of the previous OPC drum idle rotation and the current one)                                    | 1 - 15        | 1             |
| D CYCLE      | Previous rotation time setting (sec) in the process control when recovered from power ON, preheating/sleep mode.                            | 0 - 255       | 0             |

44-21

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setup                                 |
| <b>Function (Purpose)</b> | Used to set the halftone process control target. |
| <b>Section</b>            | Process  |

**Operation/Procedure**

Press [EXECUTE] key.

The halftone process control target is set and the operation data are displayed.

| Display                       | Content                             |
|-------------------------------|-------------------------------------|
| COMPLETE                      | Normal completion                   |
| ERROR BLACK SENSOR ADJUSTMENT | Black sensor adjustment abnormality |
| [K]                           | Halftone process control [K] error  |
| OTHER                         | Other errors                        |

44-22

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation data display   |
| <b>Function (Purpose)</b> | Used to display the toner patch density level in the halftone process control operation. |

|                |         |
|----------------|---------|
| <b>Section</b> | Process |
|----------------|---------|

**Operation/Procedure**

- 1) Select the display mode with [1ST STEP], [2ND STEP] key.  
The toner patch density level made in the halftone process control operation is displayed.

| Display item | Content                         |
|--------------|---------------------------------|
| ID_n         | Patch data display (n = 1 - 14) |
| BASE1        | Belt substrate data (START)     |
| BASE3        | Belt substrate data (LAST)      |

44-24

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation data display  |
| <b>Function (Purpose)</b> | Used to display the correction target and the correction level in the halftone process control operation. |

|                |         |
|----------------|---------|
| <b>Section</b> | Process |
|----------------|---------|

**Operation/Procedure**

- 1) Select the display category with [NEXT] key.

| Category         | Display item    | Content   |
|------------------|-----------------|---|
| Coefficient      | [EX-LOW]        | Coefficient value of the approximation formula of the min. density                                      |
|                  | [LOW]           | Coefficient value of the approximation formula of a low density   |
|                  | [CONNECT]       | Coefficient value of the approximation formula when a low density is connected with a half-tone density |
|                  | [MID]           | Coefficient value of the approximation formula of a half-tone density                                   |
|                  | [HIGH]          | Coefficient value of the approximation formula of a high density  |
| Coefficient      | [CONNECT POINT] | Density section connection output ratio   |
| Reference value  | [SENSOR_TARGET] | Halftone process control reference value  |
| Correction value | [S_VALUE]       | Halftone process control correction amount  |

| Category                  | Display item                | Content   |
|---------------------------|-----------------------------|---|
| For the printer           | [PRINTER_S_VALUE]           | Printer halftone process control correction amount      |
|                           | [PRINTER_BASE_DITHER_VALUE] | Printer halftone process control reference dither value |
|                           | [PRINTER_AUTO_HT_VALUE]     | Printer auto density adjustment correction value        |
| Previous correction value | [BEFORE S_VALUE]            | Previous halftone process control correction amount     |

44-25

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the calculating conditions of the correction value for the halftone process control. |
| <b>Section</b>            | Process  |

**Operation/Procedure**

- 1) Select a target adjustment density level with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: Set the items to the default values unless a change is specially required.

| Item/Display             | Setting range | Content  | Default value |
|--------------------------|---------------|--|---------------|
| A LOW FIELD LOWER LIMIT  | 0 - 255       | Lower limit value of the low density approximation formula data          | 98            |
| B LOW FIELD UPPER LIMIT  | 0 - 255       | Upper limit value of the low density approximation formula data          | 60            |
| C MID FIELD LOWER LIMIT  | 0 - 255       | Lower limit value of the intermediate density approximation formula data | 90            |
| D MID FIELD UPPER LIMIT  | 0 - 255       | Upper limit value of the intermediate density approximation formula data | 4             |
| E HIGHLIGHT POINT        | 1 - 8         | Reference point of the highlight correction amount                       | 7             |
| F HIGHTLIGHT VALUE LIMIT | 0 - 128       | Highlight correction amount limit value                                  | 20            |
| G MAX VALUE LIMIT        | 0 - 128       | Maximum density value correction limit value                             | 20            |

44-26

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setup   |
| <b>Function (Purpose)</b> | Used to execute the halftone process control compulsory. |
| <b>Section</b>            | Process  |

**Operation/Procedure**

Press [EXECUTE] key.

The halftone process control is performed and the operation data are displayed.

| Display                       | Content                             |
|-------------------------------|-------------------------------------|
| COMPLETE                      | Normal completion                   |
| ERROR BLACK SENSOR ADJUSTMENT | Black sensor adjustment abnormality |
| [K]                           | Halftone process control [K] error  |
| OTHER                         | Other errors                        |

44-27

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Data clear   |
| <b>Function (Purpose)</b> | Used to clear the correction data of the halftone process control. |
| <b>Section</b>            | Process  |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The correction data of the halftone process control are cleared.

44-28

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting                                |
| <b>Function (Purpose)</b> | Used to set the process control execution timing. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item | Category                               | Display                                     |     | Content  |   | Setting range                                       |         | Default value |   |
|------|--|---|-----|--|---|---|---------|---------------|---|
| A    | Process control Enable/Disable setting | INITIAL                                     | YES | When warming up after clearing the OPC drum and the developer unit counters  | Enable  | 0 - 1   | 0       | 0             |   |
|      |  |   | NO  |  | Disable   |   | 1       |               |   |
| B    |  | SW ON                                       |     |  | When supplying the power (when clearing shut-off.)  | Process control Disable                             | 1 - 3   | 1             | 2 |
|      |  |   |     |  |   | BK process control Enable                           |         | 2             |   |
|      |  |   |     |  |   | Pixel count judgment                                |         | 3             |   |
| C    |  | TIME  |     |  | After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)   | Process control Disable                             | 1 - 3   | 1             | 2 |
|      |  |   |     |  |   | BK process control Enable                           |         | 2             |   |
|      |  |   |     |  |   | Pixel count judgment                                |         | 3             |   |
| D    |  | HUM_LIMIT                                   |     |  | HUM judgment is made when turning ON the power and after passing TIME.  | Process control Disable                             | 1 - 2   | 1             | 2 |
|      |  |   |     |  |   | BK process control Enable                           |         | 2             |   |
| E    |  | HUM   |     |  | The temperature and humidity inside the machine are monitored only in a job. When a change in the temperature and humidity compared from the previous process control execution is greater than the specified level (when item 10 is greater than the set value). | Process control Disable                             | 1 - 2   | 1             | 2 |
|      |  |   |     |  |   | BK process control Enable                           |         | 2             |   |
| F    |  | REV1  | YES | When a certain level of the accumulated traveling distance of BK position OPC drum unit is reached after the power is supplied.                        | Enable  | 0 - 1   | 0       | 0             |   |
|      |  |   | NO  |  | Disable   |   | 1       |               |   |
| G    |  | REV2_BK                                     | YES | When a certain level of the accumulated traveling distance of BK position OPC drum unit is reached after execution of the previous density correction. | Enable  | 0 - 1   | 0       | 0             |   |
|      |  |   | NO  |  | Disable   |   | 1       |               |   |
| H    |  | REFRESH MODE                                | YES | YES/NO setting of the display of the manual process control key by key operations  | Key operation display YES   | 0 - 1   | 0       | 1             |   |
|      |  |   | NO  |  | Key operation display NO  |   | 1       |               |   |
| I    |  | Process control execution condition setting | DAY | After job after passing a certain days from execution of the previous process control. When next warming up if there is no job.                        |   | 0: Disable of the specified days judgment           | 0 - 999 | 0             | 1 |
|      |  |   |     |  |   | 1 - 999: 1 - 999 days passing                       |         | 999           |   |
| J    |  | HI-COV                                      |     |  | The average print ratio is monitored in a certain interval, and the high print process control execution is judged.   | Process control interval setting for every 10 pages | 0 - 2   | 0             | 0 |
|      |  |   |     |  |   | High print judgment disable                         |         | 1             |   |
|      |  |   |     |  |   | Judgment at the 30th paper (continuous).            |         | 2             |   |
| K    |  | LO-COV                                      |     |  | Low print document continuous printing process control execution judgment   | Enable  | 0 - 1   | 0             | 1 |
|      |  |   |     |  |   | Disable   |         | 1             |   |
| L    |  | TonerCA-END                                 |     |  | When the toner cartridge remaining quantity reached 25% or below, the process control interval is changed.  | Enable  | 0 - 1   | 0             | 1 |
|      |  |   |     |  |   | Disable   |         | 1             |   |
| M    |  | JOB STOP                                    |     |  | Enable/Disable setting of Job interruption process control execution  | Enable  | 0 - 1   | 0             | 0 |
|      |  |   |     |  |   | Disable   |         | 1             |   |
| N    |  | AVERAGE-PAGE                                |     |  | Average print ratio paper number setting  | 1: 10 pages - 10: 100 pages                         | 1 - 10  | 1             | 5 |
|      | Corresponds to 1 step/10 pages.        |   |     |  |   | 10  |         |               |   |
| O    | LIMIT PAGE                             |   |     | Setting of the job connection number of sheets/ limitation of the number of sheets   | 1: 10 pages - 10: 100 pages   | 1 - 10  | 1       | 10            |   |
|      |  |   |     |  | Corresponds to 1 step/10 pages.   |   | 10      |               |   |
| P    | PIX_RATIO_BK                           |   |     | Magnification ratio setting (%) of the BK toner count specified value<br>When 100 is entered, it corresponds to 1kp at 5% print.                       | 1 - 999   |   | 10      |               |   |
| Q    | INTERVAL TIME                          |   |     | Setting of the leaving time when turning ON the power (including the sleep recovery time) (h: hour)  | 1 - 255<br>(1 - 255, 1 - 255h passing)  |   | 2       |               |   |
| R    | HUM HOUR                               |   |     | Interval setting of the temperature and humidity monitoring time of "HUM" (unit: 10 minutes)   | 1 - 24  |   | 2       |               |   |
| S    | HUM_DIF                                |   |     | Area difference specified value when compared with the execution of the previous process control of "HUM" and "HUM_LIMIT"                              | 1 - 9   |   | 2       |               |   |
| T    | BK_RATIO                               |   |     | [REV2_BK] BK position OPC drum traveling distance value magnification ratio setting (%)  | 1 - 999   |   | 70      |               |   |
| U    | HT_DIF                                 |   |     | Used to judge the execution of HT process control.<br>Bias variation difference value  | 1 - 255   |   | 40      |               |   |
| V    | REV1_RATIO                             |   |     | [REV1_BK] BK position OPC drum traveling distance value magnification ratio setting (%)  | 1 - 255   |   | 20      |               |   |
| W    | LDP_DIF                                |   |     | LDP variation difference value used for HT process control execution judgment  | 1 - 255   |   | 10      |               |   |
| X    | MC cleaner control                     | MC_CLEAN_TIME                               |     | MC automatic cleaning execution interval   | 0: Not executed<br>1 - 200: Executed<br>(Unit: K)   | 0 - 200   |         | 10            |   |

44-29

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setting   |
| <b>Function (Purpose)</b> | Used to set the operating conditions of the process control during a job. |
| <b>Section</b>            | Process   |

**Operation/Procedure**

- 1) Select a target item of setting with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

| Item/Display       | Content   | Setting range | Default value  |
|--------------------|---|---------------|--|
| A COPY             | During copy job   | 0 - 2         | 0: No execution<br>1: HV only<br>2: HV → HT  |
| B PRINTER          | During print job  |               |  |
| C FAX              | During FAX print job  |               |  |
| D SELF PRINT       | During self print   |               |  |
| E CPY TO PRT TABLE | Halftone process control copier - printer conversion table select | 0 - 1         | 0: CALCULATED (Gray balance calculation value (Revised every time when SIM46-74 is executed.))<br>1: DEFAULT (Default (Fixed value)) |

44-37

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to set the development bias correction level in the continuous printing operation. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a set target color with the touch panel.
- 2) Select a target item with scroll keys.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

NOTE: When the print density is varied in the continuous printing operation, this simulation is used.

| Button | Item | Display             | Content  | Setting range | Default value |
|--------|------|---------------------|--|---------------|---------------|
| K      | A    | DV_ADJ_BK_H_DATA_1  | Developing bias correction data 1 in black-white printing (high speed)   | 0 - 5         | 0             |
|        | B    | DV_ADJ_BK_H_DATA_2  | Developing bias correction data 2 in black-white printing (high speed)   | 0 - 5         | 0             |
|        | C    | DV_ADJ_BK_H_DATA_3  | Developing bias correction data 3 in black-white printing (high speed)   | 0 - 5         | 0             |
|        | D    | DV_ADJ_START_BK_H_1 | Developing bias correction start position data 1 (K) in black-white printing (less than 10[s]) (high speed)                    | 1 - 12        | 4             |
|        | E    | DV_ADJ_START_BK_H_2 | Developing bias correction start position data 2 (K) in black-white printing (more than 10 [s] less than 60 [s]) (high speed)  | 1 - 12        | 3             |
|        | F    | DV_ADJ_START_BK_H_3 | Developing bias correction start position data 3 (K) in black-white printing (more than 60 [s] less than 240 [s]) (high speed) | 1 - 12        | 1             |
|        | G    | DV_ADJ_START_BK_H_4 | Developing bias correction start position data 4 (K) in black-white printing (more than 240 [s]) (high speed)                  | 1 - 12        | 1             |

44-62

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Setup/Adjustment                                      |
| <b>Function (Purpose)</b> | Used to set the process control execution conditions. |
| <b>Section</b>            | Process   |

**Operation/Procedure**

This simulation allows collective change in the set contents of SIM44-4 and SIM44-28.

44-33

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to set the conditions of the half-tone potential adjustment. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. The set value is saved.

| Item | Display            | Item Content               | Setting range | Default value |
|------|--------------------|----------------------------|---------------|---------------|
| A    | VH TARGET          | Target set value           | 1 - 100       | 70            |
| B    | LDP PATCH INTERVAL | Laser power variable width | 1 - 32        | 5             |

44-35

|                            |  |
|----------------------------|--|
| <b>Purpose</b>             |  |
| <b>Function (Purpose)</b>  | Used to display the half-tone potential adjustment result. |
| <b>Section</b>             |  |
| <b>Operation/Procedure</b> |  |

46-2

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment (Copy mode)                            |
| <b>Function (Purpose)</b> | Used to adjust the copy density in the copy mode. |

**Section****Operation/Procedure**

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

To adjust the copy density in the low density area, select the "LOW" mode and change the adjustment value. To adjust the copy density in the high density area, select the "HIGH" mode and change the adjustment value.

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

| Item/Display | Content                           | Setting range                      | Default value |    |
|--------------|-----------------------------------|------------------------------------|---------------|----|
| A            | AUTO1                             | Auto 1                             | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| B            | AUTO2                             | Auto 2                             | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| C            | TEXT                              | Text                               | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| D            | TEXT/PRINTED PHOTO                | Text/Printed Photo                 | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| E            | TEXT/PHOTO                        | Text/Photograph                    | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| F            | PRINTED PHOTO                     | Printed Photo                      | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| G            | PHOTOGRAPH                        | Photograph                         | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| H            | MAP                               | Map                                | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| I            | TEXT (COPY TO COPY)               | Text (Copy document)               | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| J            | TEXT/PRINTED PHOTO (COPY TO COPY) | Text/Printed Photo (Copy document) | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| K            | PRINTED PHOTO (COPY TO COPY)      | Printed Photo (Copy document)      | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |
| L            | LIGHT                             | Light document                     | LOW 1 - 99    | 50 |
|              |                                   |                                    | HIGH 1 - 99   | 50 |

46-4

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment (Color scanner mode)                    |
| <b>Function (Purpose)</b> | Used to adjust the density in the image send mode. |

**Section****Operation/Procedure**

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

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

| Mode | Item/Display | Content            | Setting range      | Default value |    |
|------|--------------|--------------------|--------------------|---------------|----|
| LOW  | A            | AUTO               | Auto               | 1 - 99        | 50 |
|      | B            | TEXT               | Text               | 1 - 99        | 50 |
|      | C            | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
|      | D            | TEXT/PHOTO         | Text/Photograph    | 1 - 99        | 50 |
|      | E            | PRINTED PHOTO      | Printed Photo      | 1 - 99        | 50 |
|      | F            | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
|      | G            | MAP                | Map                | 1 - 99        | 50 |
|      | H            | RIP                | –                  | 1 - 99        | 50 |
| HIGH | A            | AUTO               | Auto               | 1 - 99        | 50 |
|      | B            | TEXT               | Text               | 1 - 99        | 50 |
|      | C            | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
|      | D            | TEXT/PHOTO         | Text/Photograph    | 1 - 99        | 50 |
|      | E            | PRINTED PHOTO      | Printed Photo      | 1 - 99        | 50 |
|      | F            | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
|      | G            | MAP                | Map                | 1 - 99        | 50 |
|      | H            | RIP                | –                  | 1 - 99        | 50 |

46-5

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment (Monochrome scanner mode)               |
| <b>Function (Purpose)</b> | Used to adjust the density in the image send mode. |

**Section****Operation/Procedure**

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When the  $\triangle$   $\nabla$  key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
- 3) Press [OK] key. (The set value is saved.)

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

| Mode | Item/Display | Content            | Setting range      | Default value |    |
|------|--------------|--------------------|--------------------|---------------|----|
| LOW  | A            | AUTO TEXT          | Auto/Text          | 1 - 99        | 50 |
|      | B            | TEXT               | Text               | 1 - 99        | 50 |
|      | C            | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
|      | D            | TEXT/PHOTO         | Text/Photograph    | 1 - 99        | 50 |
|      | E            | PRINTED PHOTO      | Printed Photo      | 1 - 99        | 50 |
|      | F            | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
|      | G            | MAP                | Map                | 1 - 99        | 50 |
|      | H            | RIP                | –                  | 1 - 99        | 50 |
| HIGH | A            | AUTO TEXT          | Auto/Text          | 1 - 99        | 50 |
|      | B            | TEXT               | Text               | 1 - 99        | 50 |
|      | C            | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        | 50 |
|      | D            | TEXT/PHOTO         | Text/Photograph    | 1 - 99        | 50 |
|      | E            | PRINTED PHOTO      | Printed Photo      | 1 - 99        | 50 |
|      | F            | PHOTOGRAPH         | Photograph         | 1 - 99        | 50 |
|      | G            | MAP                | Map                | 1 - 99        | 50 |
|      | H            | RIP                | –                  | 1 - 99        | 50 |



46-8

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment (Color scanner mode)               |
| <b>Function (Purpose)</b> | Used to adjust the scanner color balance RGB. |

**Section****Operation/Procedure**

- 1) Select a target color of the adjustment with [R], [G], and [B] keys on the touch panel.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)  
When [START] key is pressed, copying is performed.

| Item | Display            | Item Content                                    | Setting range | Default value |
|------|--------------------|---|---------------|---------------|
| A    | LOW DENSITY POINT  | Set value of the low density correction amount  | 1 - 99        | 50            |
| B    | HIGH DENSITY POINT | Set value of the high density correction amount | 1 - 99        | 50            |

46-9

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjust (DSPF mode)   |
| <b>Function (Purpose)</b> | Used to adjust the copy density adjustment in the copy mode. |

**Section****Operation/Procedure**

- 1) Select a target item of the adjustment with [OC] [DSPF] keys on the touch panel.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.  
\* When △ or ▽ key is pressed, the set value of each item is increased or decreased by 1.  
Collective change can be made.
- 4) Press [OK] key. (The set value is saved.)  
When [START] key is pressed, copying is performed.

| Item | Button | Display          | Content   | Setting range | Default value |
|------|--------|------------------|---|---------------|---------------|
| A    | OC     | COPY SIDEA: LOW  | DSPF coy mode exposure adjustment (low density side)      | 1 - 99        | 47            |
| B    |        | SCAN SIDEA: LOW  | DSPF scanner mode exposure adjustment (low density side)  | 1 - 99        | 47            |
| C    |        | FAX SIDEA: LOW   | DSPF FAX mode exposure adjustment (low density side)      | 1 - 99        | 47            |
| D    |        | COPY SIDEA: HIGH | DSPF copy mode exposure adjustment (high density side)    | 1 - 99        | 52            |
| E    |        | SCAN SIDEA: HIGH | DSPF scanner mode exposure adjustment (high density side) | 1 - 99        | 52            |
| F    |        | FAX SIDEA: HIGH  | DSPF FAX mode exposure adjustment (high density side)     | 1 - 99        | 52            |
| A    | DSPF   | COPY SIDEB: LOW  | DSPF coy mode exposure adjustment (low density side)      | 1 - 99        | 47            |
| B    |        | SCAN SIDEB: LOW  | DSPF scanner mode exposure adjustment (low density side)  | 1 - 99        | 47            |

| Item | Button | Display          | Content   | Setting range | Default value |
|------|--------|------------------|---|---------------|---------------|
| C    | DSPF   | FAX SIDEB: LOW   | DSPF FAX mode exposure adjustment (low density side)      | 1 - 99        | 47            |
| D    |        | COPY SIDEB: HIGH | DSPF copy mode exposure adjustment (high density side)    | 1 - 99        | 50            |
| E    |        | SCAN SIDEB: HIGH | DSPF scanner mode exposure adjustment (high density side) | 1 - 99        | 50            |
| F    |        | FAX SIDEB: HIGH  | DSPF FAX mode exposure adjustment (high density side)     | 1 - 99        | 50            |
| G    |        | BALANCE SIDEB: R | DSPF color balance R                                      | 1 - 99        | 50            |
| H    |        | BALANCE SIDEB: G | DSPF color balance G                                      | 1 - 99        | 50            |
| I    |        | BALANCE SIDEB: B | DSPF color balance B                                      | 1 - 99        | 50            |

46-10

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to perform the engine gray balance manual adjustment. |

**Section****Operation/Procedure**

- 1) Select a target mode of the adjustment with the touch panel key.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.  
\* When △ or ▽ key is pressed, the set value of each item is increased or decreased by 1.  
Collective change can be made.
- 4) Press [OK] key. (The set value is saved.)

&lt;Setting items&gt;

| Item           | Content                 |
|----------------|-------------------------|
| AUTO           | Auto (AE) 1/Auto (AE) 2 |
| TEXT           | Text                    |
| TEXT/PRT PHOTO | Text/Printed Photo      |
| TEXT/PHOTO     | Text/Photograph         |
| PRINTED PHOTO  | Printed photo           |
| PHOTO          | Photograph              |
| MAP            | Map                     |
| LIGHT          | Light document          |

&lt;Setting range of each set value and default&gt;

| Item | Display | Item     | Setting range | Default value |
|------|---------|----------|---------------|---------------|
| A    | POINT1  | Point 1  | 1 - 999       | 500           |
| B    | POINT2  | Point 2  | 1 - 999       | 500           |
| C    | POINT3  | Point 3  | 1 - 999       | 500           |
| D    | POINT4  | Point 4  | 1 - 999       | 500           |
| E    | POINT5  | Point 5  | 1 - 999       | 500           |
| F    | POINT6  | Point 6  | 1 - 999       | 500           |
| G    | POINT7  | Point 7  | 1 - 999       | 500           |
| H    | POINT8  | Point 8  | 1 - 999       | 500           |
| I    | POINT9  | Point 9  | 1 - 999       | 500           |
| J    | POINT10 | Point 10 | 1 - 999       | 500           |
| K    | POINT11 | Point 11 | 1 - 999       | 500           |
| L    | POINT12 | Point 12 | 1 - 999       | 500           |
| M    | POINT13 | Point 13 | 1 - 999       | 500           |
| N    | POINT14 | Point 14 | 1 - 999       | 500           |
| O    | POINT15 | Point 15 | 1 - 999       | 500           |
| P    | POINT16 | Point 16 | 1 - 999       | 500           |
| Q    | POINT17 | Point 17 | 1 - 999       | 500           |

46-16

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to perform the engine balance manual adjustment. (Monochrome, all modes) |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
  - \* When  $\Delta$  or  $\nabla$  key is pressed, the set value of each item is increased or decreased by 1.
  - Collective change can be made.
- 3) Press [OK] key. (The set value is saved.)

| Item | Display | Item     | Setting range | Default value |
|------|---------|----------|---------------|---------------|
| A    | POINT1  | Point 1  | 1 - 999       | 500           |
| B    | POINT2  | Point 2  | 1 - 999       | 500           |
| C    | POINT3  | Point 3  | 1 - 999       | 500           |
| D    | POINT4  | Point 4  | 1 - 999       | 500           |
| E    | POINT5  | Point 5  | 1 - 999       | 500           |
| F    | POINT6  | Point 6  | 1 - 999       | 500           |
| G    | POINT7  | Point 7  | 1 - 999       | 500           |
| H    | POINT8  | Point 8  | 1 - 999       | 500           |
| I    | POINT9  | Point 9  | 1 - 999       | 500           |
| J    | POINT10 | Point 10 | 1 - 999       | 500           |
| K    | POINT11 | Point 11 | 1 - 999       | 500           |
| L    | POINT12 | Point 12 | 1 - 999       | 500           |
| M    | POINT13 | Point 13 | 1 - 999       | 500           |
| N    | POINT14 | Point 14 | 1 - 999       | 500           |
| O    | POINT15 | Point 15 | 1 - 999       | 500           |
| P    | POINT16 | Point 16 | 1 - 999       | 500           |
| Q    | POINT17 | Point 17 | 1 - 999       | 500           |

46-19

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Setting  |
| <b>Function (Purpose)</b> | Used to set the monochrome auto exposure mode. |

**Section****Operation/Procedure**

- Select a target item of setting with the touch panel.  
The selected item is highlighted, and the setting is saved.

| Item         | Content                              | Setting value                 | Default value |
|--------------|--------------------------------------|-------------------------------|---------------|
| AE_MODE      | Auto exposure mode                   | MODE1,<br>MODE2               | MODE1         |
| AE_STOP_COPY | Auto B/W exposure Stop (for copy)    | REALTIME/<br>STOP/<br>PRESCAN | STOP          |
| AE_STOP_FAX  | Auto B/W exposure Stop (for FAX)     | ON/OFF                        | ON            |
| AE_STOP_SCAN | Auto B/W exposure Stop (for scanner) | REALTIME/<br>STOP/<br>PRESCAN | STOP          |
| AE_FILTER    | Auto exposure filter setting         | SOFT                          | NORMAL        |
|              |                                      | NORMAL                        |               |
|              |                                      | SHARP                         |               |
| AE_WIDTH     | AE exposure width                    | FULL                          | FULL          |
|              |                                      | PART                          |               |

**Descriptions of each item**

|              |  |
|--------------|--|
| AE_MODE      | Copy auto mode $\gamma$ setting can be selected from MODE1 and MODE2.<br>MODE1 : Provides good reproduction in the lower density, and suitable for copy of printed photos. For duplex copy on thin paper, images on the back surface may appear on the front surface.<br>MODE2 : Images on the back surface of thin paper in duplex copy hardly appear on the front surface. However, the density in the lower density section is lower than that in MODE1.  |
| AE_STOP_COPY | The auto exposure system of the copy auto mode can be selected from Lead edge stop ON and Lead edge stop OFF (Real time system).<br>AE_STOP_COPY ON : The $\gamma$ correction table of the whole images is automatically set according to the scan data of several mm at the document lead edge.<br>AE_STOP_COPY OFF : The $\gamma$ correction table is automatically set for every one line of the document. When $\gamma$ changes in the document, and the half-tone density changes accordingly. However, it is effective for prevention of appearing back images on the front. |
| AE_STOP_SCAN | Scan to xx auto mode auto exposure system select (The system is similar with the item of AE_STOP_COPY.)  |
| AE_FILTER    | The copy auto mode filter setting can be selected from SOFT, NORMAL, and SHARP.<br>SOFT : Used to delete moire in copy. However, images are softly focused.<br>NORMAL : Default<br>SHARP : Used to make clear and sharp photos and thin lines in the copy. However, moire may be easily produced.  |
| AE_WIDTH     | The main scanning direction width of the background judgment scan data used in the auto exposure in the copy, FAX, Scan auto mode can be selected from FULL and PART.<br>FULL : Full scan data of the main scanning direction width of the detected document size are used.<br>PART : Scan data of about 100mm width in the main scanning direction from the document reference position are used. When an uncertain size document such as a newspaper clipping is copied, images on the back may not easily appear on the front.  |

46-23

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting                                 |
| <b>Function (Purpose)</b> | Used to set the half-tone max. density correction. |

**Section****Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key. (The set value is saved.)

| Item | Display                      | Content  | Setting range | Default value |
|------|------------------------------|--|---------------|---------------|
| A    | K<br>(0:ENABLE<br>1:DISABLE) | 0 K engine highest density correction mode: Enable     | 0 - 1         | 1             |
|      |                              | 1 K engine highest density correction mode: Disable    |               |               |
| B    | BLACKMAX TARGET              | Scanner target value for BLACK max. density correction | 0 - 999       | 500           |

46-24

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to adjust the engine half-tone auto density adjustment. |

**Section****Operation/Procedure**

- 1) Press [EXECUTE] key.  
The half-tone auto density adjustment is performed and the self print is made.
- 2) Place the printed self print patch on the glass table, and select the process mode with [FACTORY] and [SERVICE] keys on the touch panel.
- 3) Press [EXECUTE] key.  
The patches are read, and the self print of 17 patches is made.  
The correction value is saved, and the reference value registration is performed.

46-32

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting                             |
| <b>Function (Purpose)</b> | Adjustment of basic color density for AE mode. |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press the [OK] key. (The set value is saved.)

| Item | Display            | Item Content                   | Setting range | Default value |
|------|--------------------|--------------------------------|---------------|---------------|
| A    | COPY: OC           | Copy mode (OC)                 | 1 - 250       | 196           |
| B    | COPY: DSPF (SIDE1) | Copy mode (DSPF front surface) | 1 - 250       | 196           |
| C    | COPY: DSPF (SIDE2) | Copy mode (DSPF back surface)  | 1 - 250       | 196           |
| D    | SCAN: OC           | Scan mode (OC)                 | 1 - 250       | 196           |
| E    | SCAN: DSPF (SIDE1) | Scan mode (DSPF front surface) | 1 - 250       | 196           |
| F    | SCAN: DSPF (SIDE2) | Scan mode (DSPF back surface)  | 1 - 250       | 196           |
| G    | FAX: OC            | FAX mode (OC)                  | 1 - 250       | 196           |
| H    | FAX: DSPF (SIDE1)  | FAX mode (DSPF front surface)  | 1 - 250       | 196           |
| I    | FAX: DSPF (SIDE2)  | FAX mode (DSPF back surface)   | 1 - 250       | 196           |

46-37

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Purpose</b>            | Adjustment/Setting                |
| <b>Function (Purpose)</b> | Used to adjust B/W image forming. |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [YES] key. (The set value is saved.)

&lt;Setting range of each set value and default&gt;

| Item/Display  | Content                       | Setting range | Default value |
|---------------|-------------------------------|---------------|---------------|
| A R-Ratio     | Gray making setting (R)       | 0 - 1000      | 63            |
| B G-Ratio     | Gray making setting (G)       | 0 - 1000      | 847           |
| C R-Ratio RIP | Print gray making setting (R) | 0 - 1000      | 299           |
| D G-Ratio RIP | Print gray making setting (G) | 0 - 1000      | 587           |

|             |  |
|-------------|--|
| B-Ratio     | Gray making setting (B) (1000-R-Ratio - G-Ratio)               |
| B-Ratio RIP | Print gray making setting (B) (1000-R-Ratio RIP - G-Ratio RIP) |

46-39

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting                       |
| <b>Function (Purpose)</b> | Used to adjust the image send sharpness. |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item | Display             | Item Content                 | Setting range | Default value |
|------|---------------------|------------------------------|---------------|---------------|
| A    | 200 x 100 [DPI] OFF | 200 ?100 [DPI] half-tone OFF | 0 - 2         | 1             |
| B    | 200 x 200 [DPI] OFF | 200 ?200 [DPI] half-tone OFF | 0 - 2         | 1             |
| C    | 200 x 200 [DPI] ON  | 200 ?200 [DPI] half-tone ON  | 0 - 2         | 1             |
| D    | 200 x 400 [DPI] OFF | 200 ?400 [DPI] half-tone OFF | 0 - 2         | 1             |
| E    | 200 x 400 [DPI] ON  | 200 ?400 [DPI] half-tone ON  | 0 - 2         | 1             |
| F    | 400 x 400 [DPI] OFF | 400 ?400 [DPI] half-tone OFF | 0 - 2         | 1             |
| G    | 400 x 400 [DPI] ON  | 400 ?400 [DPI] half-tone ON  | 0 - 2         | 1             |
| H    | 600 x 600 [DPI] OFF | 600 ?600 [DPI] half-tone OFF | 0 - 2         | 1             |
| I    | 600 x 600 [DPI] ON  | 600 ?600 [DPI] half-tone ON  | 0 - 2         | 1             |

46-47

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting   |
| <b>Function (Purpose)</b> | Used to set the JPEG compression rate in copying and scanning. |

**Section**

**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value is saved.

| Item | Display    | Content | Setting range  | Default value |             |
|------|------------|---------|--|---------------|-------------|
| A    | FILLING(C) | LOW     | Low compression (Color)  | 0             | 0 (LOW)     |
|      |            | MIDDLE  | Medium compression (Color)   | 1             |             |
|      |            | HIGH    | High compression (Color)   | 2             |             |
| B    | FILLING(G) | LOW     | Low compression (Gray)   | 0             | 0 (LOW)     |
|      |            | MIDDLE  | Medium compression (Gray)  | 1             |             |
|      |            | HIGH    | High compression (Gray)  | 2             |             |
| C    | PRINT(C)   | LOW     | Low compression (Color)  | 0             | 0 (LOW)     |
|      |            | MIDDLE  | Medium compression (Color)   | 1             |             |
|      |            | HIGH    | High compression (Color)   | 2             |             |
| D    | PRINT(G)   | LOW     | Low compression (Gray)   | 0             | 0 (LOW)     |
|      |            | MIDDLE  | Medium compression (Gray)  | 1             |             |
|      |            | HIGH    | High compression (Gray)  | 2             |             |
| E    | SCAN(C)    | MIDDLE1 | Medium compression mode 1 Q table for compression (for brightness and color difference)<br>Medium compression mode 1 Q table for decompression (for brightness and color difference) | 0             | 1 (MIDDLE2) |
|      |            | MIDDLE2 | Medium compression mode 2 Q table for compression (for brightness and color difference)<br>Medium compression mode 2 Q table for decompression (for brightness and color difference) | 1             |             |
|      |            | MIDDLE3 | Medium compression mode 3 Q table for compression<br>Medium compression mode 3 Q table for decompression   | 2             |             |
| F    | SCAN(G)    | MIDDLE1 | Medium compression mode 1 Q table for compression<br>Medium compression mode 1 Q table for decompression   | 0             | 1 (MIDDLE2) |
|      |            | MIDDLE2 | Medium compression mode 2 Q table for compression<br>Medium compression mode 2 Q table for decompression   | 1             |             |
|      |            | MIDDLE3 | Medium compression mode 3 Q table for compression<br>Medium compression mode 3 Q table for decompression   | 2             |             |

46-48

|                           |                                |
|---------------------------|--------------------------------|
| <b>Purpose</b>            | Adjustment/Setting             |
| <b>Function (Purpose)</b> | Copy output resolution setting |

**Section**

**Operation/Procedure**

- 1) Use the touch panel to press the set value key to be changed.
  - 2) The set value is saved to the EEPROM and the RAM.
- <Setting range of each set value and default>

| Item           | Button display | Content       | Default value |
|----------------|----------------|---------------|---------------|
| TEXT/PRT PHOTO | 600DPI ED      | Text/Printed  | 600DPI ED     |
|                | 600DPI DT      | Photo         |               |
|                | 1200DPI DT     |               |               |
| TEXT/PHOTO     | 600DPI DT      | Text/         | 600DPI DT     |
|                | 1200DPI DT     | Photograph    |               |
| PRINTED PHOTO  | 600DPI DT      | Printed photo | 1200DPI DT    |
|                | 1200DPI DT     |               |               |
| PHOTO          | 600DPI DT      | Photograph    | 1200DPI DT    |
|                | 1200DPI DT     |               |               |

\* ED: Error diffusion, DT: Dither

46-51

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to adjust the gamma for the copy mode heavy paper mode and the image process mode. |

**Section**

**Operation/Procedure**

- 1) Select a target adjustment mode with the touch panel key [PAPER/DITHER].
- 2) Select a target adjustment density level with scroll key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [EXECUTE] key, or [OK] key.  
When [EXECUTE] key is pressed, the self print image is outputted.

When the image density is insufficient or a background copy is made in heavy paper copy, change this adjustment value to adjust the image density.

<Setting items>

| Item  | Item content                | Color |
|-------|-----------------------------|-------|
| HEAVY | Copier heavy paper gamma    | K     |
| DITH1 | Monochrome error diffusion  | K     |
| DITH2 | Monochrome dither (1200dpi) | K     |

<Setting range of each set value and default>

| Item/Display | Item    | Setting range | Default value |     |
|--------------|---------|---------------|---------------|-----|
| A            | POINT1  | Point 1       | 1 - 999       | 500 |
| B            | POINT2  | Point 2       | 1 - 999       | 500 |
| C            | POINT3  | Point 3       | 1 - 999       | 500 |
| D            | POINT4  | Point 4       | 1 - 999       | 500 |
| E            | POINT5  | Point 5       | 1 - 999       | 500 |
| F            | POINT6  | Point 6       | 1 - 999       | 500 |
| G            | POINT7  | Point 7       | 1 - 999       | 500 |
| H            | POINT8  | Point 8       | 1 - 999       | 500 |
| I            | POINT9  | Point 9       | 1 - 999       | 500 |
| J            | POINT10 | Point 10      | 1 - 999       | 500 |
| K            | POINT11 | Point 11      | 1 - 999       | 500 |
| L            | POINT12 | Point 12      | 1 - 999       | 500 |
| M            | POINT13 | Point 13      | 1 - 999       | 500 |
| N            | POINT14 | Point 14      | 1 - 999       | 500 |
| O            | POINT15 | Point 15      | 1 - 999       | 500 |
| P            | POINT16 | Point 16      | 1 - 999       | 500 |
| Q            | POINT17 | Point 17      | 1 - 999       | 500 |

46-52

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.) |

**Section**

**Operation/Procedure**

- 1) Select an item to be set to the default with the touch panel key.  
To reset the adjustment values of all the items, select [ALL].
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

| Display | Content                             |
|---------|-------------------------------------|
| Dither  | HEAVYPAPER Copier/Heavy paper gamma |
|         | B/W ED Monochrome error diffusion   |
|         | B/W 1200 Monochrome dither 1200dpi  |
|         | WOVEN1 Watermark 1                  |
|         | WOVEN2 Watermark 2                  |
|         | WOVEN3 Watermark 3                  |
|         | WOVEN4 Watermark 4                  |

46-54

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to perform the engine halftone automatic density adjustment (dither). |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.  
The high density process control is started to make 48 patch self print. (A4 (11" x 8.5") or A3 (11" x 17") paper in the paper feed tray is used.)
- 2) Place the 48 patch self print on the document table, and press [EXECUTE] key.  
Scanning the 48 patch self print is started.  
After scanning the 48 patch self print, the 17 patch self print is automatically printed.
- 3) Press [OK] key.  
After completion of the correction amount registration, the screen shifts to the dither selection menu.
- 4) Select an item (dither) to be adjusted.
- 5) Press [EXECUTE] key.  
The 48 patch self print is printed.

- 6) Place the 48 patch self print on the document table, and press [EXECUTE] key.  
Scanning the 48 patch self print is started.  
After scanning the patch, the screen automatically shifts to the dither selection menu.
- 7) After completion of the adjustment of all the density adjustment items (dither), press [OK] key.

46-55

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to adjust the drop out color in the image send mode (monochrome manual text mode). |

**Section**

**Operation/Procedure**

In the image send mode (monochrome manual text mode), the range where color images are reproduced as monochrome images is adjusted.

- 1) Enter the adjustment value with 10-key and press [OK] key.  
When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

| Item/Display | Content | Setting range                  | Default value |   |
|--------------|---------|--------------------------------|---------------|---|
| A            | CHROMA  | Dropout color range adjustment | 0 - 6         | 3 |

- 2) Scan the document in the image send mode (monochrome manual text mode), and check the adjustment result.

46-60

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setup                                     |
| <b>Function (Purpose)</b> | Used to adjust the sharpness in the color auto mode. |

**Section**

**Operation/Procedure**

- 1) Select a target item with scroll keys on the touch panel.
- 2) Input numeric value corresponding to sharpness level (filter process mode).
- 3) Press [OK] key.

This is used to adjust the sharpness in the color auto mode and the smoothness (roughness) in the dark area.

| Item | Display                          | Content | Setting range  |        | Default value |   |           |   |
|------|----------------------------------|---------|--|--------|---------------|---|-----------|---|
|      |                                  |         |  |        |               |   |           |   |
| A    | CPY PUSH<br>AUTO FILTER<br>LEVEL | SOFT    | Sharpness: The sharpness is specified when the document mode is judged as A5 or A6 by the auto mode of PUSH. | SOFT   | 1-3           | 1 | 2(CENTER) |   |
|      |                                  | CENTER  |  | CENTER |               |   |           | 2 |
|      |                                  | HIGH    |  | HIGH   |               |   |           | 3 |
| B    | B/W COPY                         | OFF     | Filter mixture, Register select pattern, Monochrome copy   | OFF    | 0-1           | 0 | 1(ON)     |   |
|      |                                  | ON      |  | ON     |               |   |           | 1 |
| C    | COLOR<br>PUSH:RGB                | OFF     | Filter mixture, Register select pattern, Color push  | OFF    | 0-1           | 0 | 1(ON)     |   |
|      |                                  | ON      |  | ON     |               |   |           | 1 |
| D    | B/W PUSH                         | OFF     | Filter mixture, Register select pattern, Monochrome push   | OFF    | 0-1           | 0 | 1(ON)     |   |
|      |                                  | ON      |  | ON     |               |   |           | 1 |
| E    | B/W PRINT                        | OFF     | Filter mixture, Register select pattern, Monochrome print  | OFF    | 0-1           | 0 | 0(OFF)    |   |
|      |                                  | ON      |  | ON     |               |   |           | 1 |

46-61

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup                                      |
| <b>Function (Purpose)</b> | Used to adjust the area separation recognition level. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select an adjustment mode.
- 2) Select a target adjustment item with scroll key on the touch panel.
- 3) Enter the adjustment value using the 10-key.
- 4) Press [OK] key.

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is set to a value greatly different from the default value, image quality trouble may occur for some documents.

| Item/Display |           | Content                                 |
|--------------|-----------|---|
| COLOR        | AUTO      | [Color/Gray] Auto                       |
|              | TPP       | [Color/Gray] Manual (Text print)        |
|              | COPY(TPP) | [Color/Gray] Copy document (Text print) |
| MONO         | AUTO      | [Monochrome] Auto                       |
|              | TPP       | [Monochrome] Manual (Text print)        |
|              | COPY(TPP) | [Monochrome] Copy document (Text print) |

| Item/Display |   | Content  | Setting range | Default value |
|--------------|---|--|---------------|---------------|
| A            | SEGMENT: SWITCH [TXT ON SCR]            | Detection ON/OFF: Text on dot                              | 0 - 1         | 0             |
| B            | SEGMENT: SWITCH [LINE SCR]              | Detection ON/OFF: line screen                              | 0 - 1         | 0             |
| C            | SEGMENT: SWITCH [SMALL SCR]             | Detection ON/OFF: Dot in a small area                      | 0 - 1         | 0             |
| D            | SEGMENT: SWITCH [HIGH LPI]              | Detection ON/OFF: High line number judgment select         | 0 - 1         | 0             |
| E            | SEGMENT: SWITCH [TXT ON SCR IMAGE SEND] | Detection ON/OFF: Text on image send dots                  | 0 - 1         | 0             |
| F            | SEGMENT: ADJUST [BK TXT 1]              | Detection level adjustment: Black text 1                   | 1 - 99        | 50            |
| G            | SEGMENT: ADJUST [CL TXT 1]              | Detection level adjustment: Color text 1                   | 1 - 99        | 50            |
| H            | SEGMENT: ADJUST [BK TXT 2, CL TXT 2]    | Detection level adjustment: Black text 2, Color text 2     | 1 - 49        | 25            |
| I            | SEGMENT: ADJUST [TXT ON SCR 1]          | Detection level adjustment: Text 1 on dots                 | 1 - 99        | 50            |
| J            | SEGMENT: ADJUST [TXT ON SCR 2]          | Detection level adjustment: Text 2 on dots                 | 1 - 99        | 50            |
| K            | SEGMENT: ADJUST [TXT ON SCR AREA]       | Detection level adjustment: Detection area of text on dots | 1 - 15        | 8             |
| L            | SEGMENT: ADJUST [HIGH LPI]              | Detection level adjustment: High line number judgment      | 1 - 49        | 25            |
| M            | SEGMENT: ADJUST [BK]                    | Detection level adjustment: No chrome judgment             | 1 - 99        | 50            |
| N            | SEGMENT: ADJUST [CL]                    | Detection level adjustment: Chrome judgment                | 1 - 99        | 50            |
| O            | SEGMENT: ADJUST [TXT ON BG]             | Detection level adjustment: Text on background             | 1 - 99        | 50            |
| P            | SEGMENT: ADJUST [SCR 1 HIGH]            | Detection level adjustment: High density dots              | 1 - 49        | 25            |

| Item/Display |                                 | Content   | Setting range | Default value |
|--------------|---------------------------------|---|---------------|---------------|
| Q            | SEGMENT: ADJUST [SCR 1 MIDDLE]  | Detection level adjustment: Medium density dots | 1 - 49        | 25            |
| R            | SEGMENT: ADJUST [SCR 1 LOW]     | Detection level adjustment: Low density dots    | 1 - 49        | 25            |
| S            | SEGMENT: ADJUST [SCR 2]         | Detection level adjustment: Dot 2               | 1 - 15        | 8             |
| T            | SEGMENT: ADJUST [SCR 3]         | Detection level adjustment: Dot 3               | 1 - 15        | 8             |
| U            | SEGMENT: ADJUST [LINE HALFTONE] | Detection level adjustment: line screen         | 1 - 49        | 25            |

46-62

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode. |

**Section****Operation/Procedure**

- 1) Select a target adjustment item with scroll key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is set to a value greatly different from the default value, image quality trouble may occur for some documents.

| Item/Display |                 | Content   | Setting range | Default value |
|--------------|-----------------|---|---------------|---------------|
| A            | SW_ACS          | ACS judgment reference area select                                      | 0 - 1         | 1             |
| B            | TEXT_IMAGE      | Text/Image judgment priority level adjustment                           | 0 - 6         | 3             |
| C            | TEXT_BLANK      | Text/Blank judgment priority level adjustment                           | 0 - 6         | 4             |
| D            | HT_LV           | Dot area judgment threshold value adjustment                            | 0 - 6         | 1             |
| E            | AE_AREA_LV      | Color AE judgment target area adjustment                                | 0 - 6         | 3             |
| F            | AE_LV_CC        | AE background detection division result adjustment: For color copy      | 0 - 8         | 4             |
| G            | AE_LV_MC        | AE background detection division result adjustment: For monochrome copy | 0 - 8         | 4             |
| H            | AE_LV_CS        | AE background detection division result adjustment: For color scan      | 0 - 8         | 4             |
| I            | AE_LV_MS        | AE background detection division result adjustment: For monochrome scan | 0 - 8         | 4             |
| J            | AE_JUDGE_LV_L_U | Color AE background density threshold value adjustment (lower limit)    | 0 - 4         | 0             |
| K            | AE_JUDGE_LV_L_O | Color AE background density threshold value adjustment (upper limit)    | 0 - 10        | 0             |
| L            | AE_JUDGE_LV_C   | Color AE background detection level adjustment (chroma)                 | 0 - 10        | 5             |

| Item/Display |                      |   | Content                                  | Setting range |       | Default value |
|--------------|----------------------|---|--|---------------|-------|---------------|
| M            | AE<br>_ONOFF<br>_CC  | ON  | AE mode ON/                              | ON            | 0 - 1 | 0             |
|              |                      | OFF   | OFF switch :<br>For color copy           | OFF           |       |               |
| N            | AE<br>_ONOFF<br>_MC  | ON  | AE mode ON/                              | ON            | 0 - 1 | 0             |
|              |                      | OFF   | OFF switch :<br>For mono-<br>chrome copy | OFF           |       |               |
| O            | AE<br>_ONOFF<br>_CS  | ON  | AE mode ON/                              | ON            | 0 - 1 | 0             |
|              |                      | OFF   | OFF switch :<br>For color scan           | OFF           |       |               |
| P            | AE<br>_ONOFF<br>_MS  | ON  | AE mode ON/                              | ON            | 0 - 1 | 0             |
|              |                      | OFF   | OFF switch :<br>For mono-<br>chrome copy | OFF           |       |               |
| Q            | BLANK_JUDGE_<br>LV_L | Blank judgment level<br>adjustment (value)  |  | 0 - 10        | 0     |               |
| R            | BLANK_JUDGE_<br>LV_C | Blank judgment level<br>adjustment (chroma) |  | 0 - 10        | 0     |               |
| S            | MODE0_UNDER          | Mode 0 developing<br>paper mode select      |  | 0 - 6         | 0     |               |
| T            | MODE1_UNDER          | Mode 1 developing<br>paper mode select      |  | 0 - 6         | 0     |               |
| U            | MODE5_UNDER          | Mode 5 developing<br>paper mode select      |  | 0 - 6         | 0     |               |
| V            | MODE6_UNDER          | Mode 6 developing<br>paper mode select      |  | 0 - 6         | 0     |               |
| W            | SW_CHANGE_<br>MODE0  | Mode 0: Mode judgment<br>select             |  | 0 - 6         | 0     |               |
| X            | SW_CHANGE_<br>MODE1  | Mode 1: Mode judgment<br>select             |  | 0 - 6         | 1     |               |
| Y            | SW_CHANGE_<br>MODE2  | Mode 2: Mode judgment<br>select             |  | 0 - 6         | 2     |               |
| Z            | SW_CHANGE_<br>MODE3  | Mode 3: Mode judgment<br>select             |  | 0 - 6         | 3     |               |
| AA           | SW_CHANGE_<br>MODE4  | Mode 4: Mode judgment<br>select             |  | 0 - 6         | 4     |               |
| AB           | SW_CHANGE_<br>MODE5  | Mode 5: Mode judgment<br>select             |  | 0 - 6         | 5     |               |
| AC           | SW_CHANGE_<br>MODE6  | Mode 6: Mode judgment<br>select             |  | 0 - 6         | 6     |               |

46-63

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setup  |
| <b>Function (Purpose)</b> | Used to adjust the density in the copy low density section. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target adjustment item with scroll key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [OK] key.

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

| Item/Display | Content                            | Setting range                   | Default value |
|--------------|------------------------------------|---------------------------------|---------------|
| A            | COLOR PUSH :<br>TEXT/PRINTED PHOTO | Text print<br>(color PUSH)      | 1 - 9<br>3    |
| B            | COLOR PUSH : TEXT                  | Text (color PUSH)               | 1 - 9<br>3    |
| C            | COLOR PUSH :<br>PRINTED PHOTO      | Printed photo<br>(color PUSH)   | 1 - 9<br>5    |
| D            | COLOR PUSH :<br>PHOTOGRAPH         | Photograph<br>(color PUSH)      | 1 - 9<br>5    |
| E            | COLOR PUSH :<br>TEXT/PHOTO         | Text/Photograph<br>(color PUSH) | 1 - 9<br>3    |
| F            | COLOR PUSH : MAP                   | Map (color PUSH)                | 1 - 9<br>5    |

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setup   |
| <b>Function (Purpose)</b> | Used to adjust the reproduction capability of watermarks in the copy/printer mode. |
| <b>Section</b>            |  |

**Operation/Procedure**

This is to adjust the reproduction capability of watermarks in the copy/printer mode.

- 1) Select the adjustment mode.
- 2) Select an adjustment item according to the necessity.
- 3) Enter the adjustment value with 10-key and press [OK] key.
- 4) Make a copy, and check the adjustment result.

| Category       | Item         | Display   | Content                                    | Setting range | Default value | NOTE  |   |
|----------------|--------------|---|--|---------------|---------------|---|---|
| PATTERN        | A            | WOVEN DEN BK LOW  | Watermark density level (Black LOW)        | 0 - 255       | 15            | The adjustment value is changed to increase or decrease the density of the watermark of background documents (primary output).<br>To increase the watermark density, increase the adjustment value.<br>To decrease the watermark density, decrease the adjustment value.<br>NOTE: When the adjustment value is increased, the watermark area which is originally not reproduced becomes difficult to disappear.<br>When the adjustment value is decreased, the watermark area which is originally reproduced becomes easy to disappear. |   |
|                | B            | WOVEN DEN BK MIDDLE   | Watermark density level (Black MIDDLE)     | 0 - 255       | 19            |   |   |
|                | C            | WOVEN DEN BK HIGH   | Watermark density level (Black HIGH)       | 0 - 255       | 23            |   |   |
|                | D            | CONTRAST  | Contrast adjustment                        | 0 - 255       | 2             | This is used to adjust the variation in the watermark density when the adjustment value of the watermark print/contrast adjustment in the system setting is changed by 1.<br>When this value is increased, the variation is also increased. When the value is decreased, the variation is also decreased. When the adjustment value is 0, the result of the contrast adjustment is not reflected.<br>* The adjustment value must be set to 1 or greater.  |   |
|                | E            | HT TYPE (POSI)  | For halftone index watermark type positive | 42 - 43       | 42            | To reproduce the containing characters of watermark copy (secondary output) more clearly, set to 43.<br>In that case, however, the containing characters of the watermark document (primary output) can be easily reproduced.   |   |
|                | F            | HT TYPE (NEGA)  | For halftone index watermark type negative | 42 - 43       | 42            |   |   |
| COPY MODE      | A            | TEXT/PRINTED PHOTO  | Text/Printed Photo mode select             | OFF           | 0 - 1         | 1   | Normally set to the default.<br>ON 1 No need to change in the market. |
|                |              |   | Enable/Disable                             | ON            |               |   |   |
|                | B            | TEXT  | Text mode select                           | OFF           | 0 - 1         | 1   |   |
|                |              |   | Enable/Disable                             | ON            |               |   |   |
|                | C            | PRINTED PHOTO   | Printed Photo mode select                  | OFF           | 0 - 1         | 1   |   |
|                |              |   | Enable/Disable                             | ON            |               |   |   |
|                | D            | PHOTOGRAPH  | Photograph mode select                     | OFF           | 0 - 1         | 1   |   |
|                |              |   | Enable/Disable                             | ON            |               |   |   |
|                | E            | TEXT/PHOTO  | Text/Photograph mode select                | OFF           | 0 - 1         | 1   |   |
| Enable/Disable |              |   | ON   |               |               |   |   |
| F              | MAP          | Map mode select   | OFF  | 0 - 1         | 1             |   |   |
|                |              | Enable/Disable  | ON   |               |               |   |   |
| G              | LIGHT        | Light density document mode select                              | OFF  | 0 - 1         | 1             |   |   |
|                |              | Enable/Disable  | ON   |               |               |   |   |
| H              | AUTO         | Automatic mode select   | OFF  | 0 - 1         | 1             |   |   |
|                |              | Enable/Disable  | ON   |               |               |   |   |
| I              | DEFAULT MODE | Default exposure mode   | TEXT/PRINTED PHOTO                         | 0 - 5         | 0             |   |   |
|                |              | Used to specify the exposure mode set when the watermark is ON. | TEXT                                       |               |               |   |   |
|                |              |   | PRINTED PHOTO                              |               |               |   |   |
|                |              |   | PHOTOGRAPH                                 |               |               |   |   |
|                |              |   | TEXT/PHOTO                                 |               |               |   |   |
|                |              |   | MAP  |               |               |   |   |



| Category | Item | Display      | Content  | Setting range | Default value | NOTE  |
|----------|------|--------------|--|---------------|---------------|---|
| POSITION | A    | LINE SPACE 1 | Line space in the watermark print box (24P - 36P)                | 0 - 200       | 20            | Normally set to the default.<br>ON 1 No need to change in the market. |
|          | B    | LINE SPACE 2 | Line space in the watermark print box (37P - 48P)                | 0 - 200       | 20            |   |
|          | C    | LINE SPACE 3 | Line space in the watermark print box (49P - 64P)                | 0 - 200       | 20            |   |
|          | D    | LINE SPACE 4 | Line space in the watermark print box (65P - 80P)                | 0 - 200       | 20            |   |
|          | E    | BLANK H/B 1  | Upper margin/Lower margin in the watermark print box (24P - 36P) | 0 - 200       | 10            |   |
|          | F    | BLANK H/B 2  | Upper margin/Lower margin in the watermark print box (37P - 48P) | 0 - 200       | 10            |   |
|          | G    | BLANK H/B 3  | Upper margin/Lower margin in the watermark print box (49P - 64P) | 0 - 200       | 10            |   |
|          | H    | BLANK H/B 4  | Upper margin/Lower margin in the watermark print box (65P - 80P) | 0 - 200       | 10            |   |
|          | I    | BLANK L/R 1  | Left margin/Right margin in the watermark print box (24P - 36P)  | 0 - 200       | 60            |   |
|          | J    | BLANK L/R 2  | Left margin/Right margin in the watermark print box (37P - 48P)  | 0 - 200       | 90            |   |
|          | K    | BLANK L/R 3  | Left margin/Right margin in the watermark print box (49P - 64P)  | 0 - 200       | 120           |   |
|          | L    | BLANK L/R 4  | Left margin/Right margin in the watermark print box (65P - 80P)  | 0 - 200       | 150           |   |

|                           |  |
|---------------------------|--|
| <b>46-74</b>              |  |
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Copy gray balance adjustment (Auto adjustment)/Printer gray balance adjustment (Auto adjustment) |

**Section**

**Operation/Procedure**

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy gray balance adjustment (Automatic adjustment) and the printer gray balance adjustment (Automatic adjustment), use this simulation for efficient adjustment operations.

- 1) Press [EXECUTE] key, and the high density process control is performed. Then, the copy gray balance adjustment pattern is printed.
- 2) Place the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
- 3) Press [EXECUTE] key, and the copy gray balance adjustment is performed and the adjustment result pattern is printed.
- 4) Press [EXECUTE] key, and the printer gray balance adjustment pattern is printed.
- 5) Place the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
- 6) Press [EXECUTE] key, and the printer gray balance adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
- 7) Press [OK] key, and the halftone correction target is registered.
- 8) When [EXECUTE] key is displayed, press it.

When "COMPLETED THIS PROCEDURE" is displayed, the adjustment is completed.

NOTE: The adjustment result becomes effective only when the adjustment procedure for both copy and print mode have completed successfully. For example, when the copy gray balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.

|                           |   |
|---------------------------|---|
| <b>46-90</b>              |   |
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to set the process operation of high-compression PDF images. |

**Section**

**Operation/Procedure**

- 1) Select a target adjustment mode.
- 2) Select an adjustment target item with the scroll key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. The set value is saved.

| Mode     | Item/Display | Content              | Setting range                   | Default value |     |
|----------|--------------|----------------------|---------------------------------|---------------|-----|
| TEXT     | A            | GLYPH SENSITIVITY    | Text handling selection         | 0 - 2         | 0   |
|          | B            | BG SW FOR FINDLINES  | Line handling selection         | 0 - 1         | 0   |
|          | C            | HOR FINDLINES SW     | Line detection SW (H)           | 0 - 2         | 0   |
|          | D            | VERT FINDLINES SW    | Line detection SW (V)           | 0 - 2         | 0   |
|          | E            | FGCOLOR INDEXING SEL | Text color number adjustment SW | 0 - 3         | 0   |
|          | F            | FGCOLOR INDEXING ADJ | Text color adjustment           | 0 - 4         | 2   |
| COLOR    | A            | LUMINANCE ADJUSTMENT | Luminance adjustment            | 0 - 4         | 2   |
|          | B            | CHROMA INTENT        | Chroma selection                | 0 - 2         | 1   |
|          | C            | NEUTRAL ADJUSTMENT   | Neutral adjustment              | 0 - 2         | 0   |
|          | D            | R-RATIO ADJUSTMENT   | Gray scale adjustment (R)       | 0 - 1000      | 299 |
|          | E            | G-RATIO ADJUSTMENT   | Gray scale adjustment (G)       | 0 - 1000      | 587 |
| BG LAYER | A            | BG LAYER INTENT 1    | Speed priority setting          | 0 - 2         | 1   |
|          | B            | BG LAYER INTENT 2    | Image quality priority setting  | 0 - 2         | 1   |

46-91

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to adjust the reproduction capability of black text. |

**Section****Operation/Procedure**

- 1) Select an item to be set with the scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The adjustment value is set.

| Item | Display                               | Content  | Description   | Setting range   | Default value |   |
|------|---------------------------------------|--|---|---|---------------|---|
| A    | SEGMENT PARAM                         | COMMON   | Area separation setting select  | 0: Other than image send mode black text emphasis (simple, high compression)<br>1: Image send mode black text emphasis (simple, high compression) | 0 - 1         | 0 |
|      |                                       | SPECIAL  |   |   |               |   |
| B    | BG: JPEG QUALITY LV [COL: COMPACT]    | JPEG recompression level adjustment [Color: High compression mode] | The JPEG compression ratio of the background layer is selected.<br>0: Low<br>1: Middle<br>2: High | 0 - 2   | 1             |   |
| C    | BG: JPEG QUALITY LV [COL: ULTRA FINE] | JPEG recompression level adjustment [Color: Ultra fine mode]       |   | 0 - 2   | 1             |   |
| D    | BG: JPEG QUALITY LV [GRY: COMPACT]    | JPEG recompression level adjustment [Gray: High compression mode]  |   | 0 - 2   | 1             |   |
| E    | BG: JPEG QUALITY LV [GRY: ULTRA FINE] | JPEG recompression level adjustment [Gray: Ultra fine mode]        |   | 0 - 2   | 1             |   |
| F    | FG: TARGET AREA                       | TYPE0  | Front ground extraction area select   | 0: type0<br>1: type1<br>2: type2  | 0 - 2         | 0 |
|      |                                       | TYPE1  |   |   |               |   |
|      |                                       | TYPE2  |   |   |               |   |
| G    | FG: TEXT DENSITY [COL]                | Front ground black text density adjustment [Color]                 | The black text density in the front ground layer is changed.<br>0: Dark - 5: Default - 10: Light  | 0 - 10  | 5             |   |
| H    | FG: TEXT DENSITY [GRY]                | Front ground black text density adjustment [Gray]                  |   | 0 - 10  | 5             |   |
| I    | ULTRA FINE MODE                       | OFF  | High compression/Ultra Fine mode select   | 0: High compression mode<br>1: Ultra fine mode  | 0 - 1         | 0 |
|      |                                       | ON   |   |   |               |   |

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is changed greatly from the initial value, an image quality trouble may occur.

**48**

48-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to adjust the copy magnification ratio (main/sub scanning direction). |

**Section****Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value is saved.

| Item/Display  | Content   | Setting range | Default value |
|---------------|---|---------------|---------------|
| A CCD (MAIN)  | SCAN main scanning magnification adjustment (CCD)               | 1 - 99        | 50            |
| B CCD (SUB)   | SCAN sub scan magnification adjustment (CCD)                    | 1 - 99        | 50            |
| C SPF (MAIN)  | DSPF document surface magnification adjustment (main scan)      | 1 - 99        | 50            |
| D SPF (SUB)   | DSPF document magnification adjustment (sub scan)               | 1 - 99        | 50            |
| E SPFB (MAIN) | DSPF document back surface magnification adjustment (main scan) | 1 - 99        | 50            |

48-5

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to adjust the copy magnification ratio (sub scanning direction).<br>This adjustment is performed when Sim. 48-1 is used to adjust the sub scanning direction magnification ratio and a copy is made in a different copy magnification ratio and a satisfactory result is not obtained. |

**Section**

Scanner section

**Operation/Procedure**

- 1) Select a target item of setting with [↑] [↓] keys on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value is saved.

| Item/Display | Content                                     | Setting range | Default value |
|--------------|---|---------------|---------------|
| A MR(HI)     | Scanner motor (High speed)                  | 1 - 99        | 50            |
| B MR(MID)    | Scanner motor (Reference speed)             | 1 - 99        | 50            |
| C MR(LO)     | Scanner motor (Low speed)                   | 1 - 99        | 50            |
| D SPF(HI)    | Document feed (SPF) motor (High speed)      | 1 - 99        | 50            |
| E SPF(MID)   | Document feed (SPF) motor (Reference speed) | 1 - 99        | 50            |
| F SPF(LO)    | Document feed (SPF) motor (Low speed)       | 1 - 99        | 50            |

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment                                       |
| <b>Function (Purpose)</b> | Used to adjust the rotation speed of each motor. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Select an adjustment target mode with [COLOR] [MONO] [HEAVY] keys on the touch panel.
- 2) Select a target adjustment item with scroll key on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

The set value is saved.

When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

| Item/Display | Content       | Mode select                         | Setting range  | Default value |        |    |
|--------------|---------------|-------------------------------------|----------------|---------------|--------|----|
| A            | RRM           | Registration motor correction value | Standard paper | NORMAL        | 1 - 99 | 45 |
| B            | DM            | Drum motor correction value         | Standard paper | NORMAL        | 1 - 99 | 47 |
| C            | DVM           | Developing motor correction value   | Standard paper | NORMAL        | 1 - 99 | 47 |
| D            | FSM           | Fusing motor correction value       | Standard paper | NORMAL        | 1 - 99 | 47 |
| E            | TRM           | Transport motor correction value    | Standard paper | NORMAL        | 1 - 99 | 47 |
| F            | POM           | Paper exit motor correction value   | Standard paper | NORMAL        | 1 - 99 | 47 |
| G            | DCLM          | Decurler motor correction value     | Standard paper | NORMAL        | 1 - 99 | 47 |
| H            | FURM          | Fusing rear motor correction value  | Standard paper | NORMAL        | 1 - 99 | 47 |
| I            | FUSER SETTING | Fusing speed select timing          |                | HEAVY         | 1 - 99 | 47 |

|                           |                 |
|---------------------------|-----------------|
| <b>Purpose</b>            |                 |
| <b>Function (Purpose)</b> | Firmware update |
| <b>Section</b>            |                 |

**Operation/Procedure**

- 1) Install the firmware to the USB memory.
- 2) Insert the USB memory into the machine.
- 3) Select a target firmware of update with the touch panel.
- 4) Select a target of firmware update.
- 5) Press [EXECUTE] key.
- 6) Press [YES] key.

The selected firmware update is performed.

When the operation is completed normally, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

| Display item    | Descriptions of items                             | VER (No. of digits) | Error display |
|-----------------|---|---------------------|---------------|
| ICUM(MAIN)      | ICUM Main   | 8 digits            | ICUMM         |
| ICUM(SUB)       | ICUM Sub  | 8 digits            | ICUMS         |
| ICUM(OS)        | ICUM OS   | 8 digits            | ICUMO         |
| ICUM(CN)        | ICUM CN   | 8 digits            | ICUMC         |
| ICUM(BOOT)      | ICUM BOOT   | 8 digits            | ICUMT         |
| ICUM(BIOS)      | ICUM BIOS   | 8 digits            | ICUMB         |
| ICU1(MAIN)      | ICU1 Main section former half                     | 8 digits            | ICU1M         |
| ICU1(BOOTM)     | ICU1 Boot section main                            | 8 digits            | ICU1B         |
| ICU1(SUB)       | ICU1 Sub section (ARM9)                           | 8 digits            | ICU1S         |
| ICU2            | ICU2 program                                      | 8 digits            | ICU2          |
| LANGUAGE        | Language support data program (General term)      | 8 digits            | LANG          |
| GRAPHIC         | Graphic data for L-LCD                            | 8 digits            | GRAPH         |
| SLIST           | SLIST data for L-LCD                              | 8 digits            | SLIST         |
| UICONTENTS      | Content data for display                          | 8 digits            | UICON         |
| EOSA            | embedded OSA                                      | 8 digits            | EOSA          |
| PCU(BOOT)       | PCU Boot section                                  | 8 digits            | PCUB          |
| PCU(MAIN)       | PCU Main section                                  | 8 digits            | PCUM          |
| A4LCC(BOOT)     | Side LCC (A4) Boot section                        | 8 digits            | LCC4B         |
| A4LCC(MAIN)     | Side LCC (A4) Main section                        | 8 digits            | LCC4M         |
| A3LCC(BOOT)     | Side LCC (A3) Boot section                        | 8 digits            | LCC3B         |
| A3LCC(MAIN)     | Side LCC (A3) Main section                        | 8 digits            | LCC3M         |
| LCT1(BOOT)      | A3 LCT 1 series, Boot section                     | 8 digits            | LCT1B         |
| LCT1(MAIN)      | A3 LCT 1 series, Main section                     | 8 digits            | LCT1M         |
| LCT2(BOOT)      | A3 LCT 2 series, Boot section                     | 8 digits            | LCT2B         |
| LCT2(MAIN)      | A3 LCT 2 series, Main section                     | 8 digits            | LCT2M         |
| INSERTER(BOOT)  | Inserter Boot section                             | 8 digits            | INSB          |
| INSERTER(MAIN)  | Inserter Main section                             | 8 digits            | INSM          |
| 4KFIN100(BOOT)  | 4K finisher (100-sheet stapling) Boot section     | 8 digits            | 100FB         |
| 4KFIN100(MAIN)  | 4K finisher (100-sheet stapling) Main section     | 8 digits            | 100FM         |
| SFIN(BOOT)      | Finisher (50-sheet stapling) Boot section         | 8 digits            | SFINB         |
| SFIN(MAIN)      | Finisher (50-sheet stapling) Main section         | 8 digits            | SFINM         |
| SADDLE100(BOOT) | Saddle unit (100-sheet stapling) Boot section ROM | 8 digits            | S100B         |

| Display item    | Descriptions of items                              | VER (No. of digits) | Error display |
|-----------------|--|---------------------|---------------|
| SADDLE100(MAIN) | Saddle unit (100-sheet stapling) Main section ROM  | 8 digits            | S100M         |
| TRIMMER(BOOT)   | Trimmer unit (100-sheet stapling) Boot section ROM | 8 digits            | TRIMB         |
| TRIMMER(MAIN)   | Trimmer unit (100-sheet stapling) Main section ROM | 8 digits            | TRIMM         |
| FOLDER(BOOT)    | Folding unit (100-sheet stapling) Boot section ROM | 8 digits            | FOLDB         |
| FOLDER(MAIN)    | Folding unit (100-sheet stapling) Main section ROM | 8 digits            | FOLDM         |
| DECURLER(BOOT)  | Decurler Boot section ROM                          | 8 digits            | DECB          |
| DECURLER(MAIN)  | Decurler Main section ROM                          | 8 digits            | DECM          |
| STACKER1(BOOT)  | Stacker 1 series Boot section ROM                  | 8 digits            | STC1B         |
| STACKER1(MAIN)  | Stacker 1 series Main section ROM                  | 8 digits            | STC1M         |
| STACKER2(BOOT)  | Stacker 2 series Boot section ROM                  | 8 digits            | STC2B         |
| STACKER2(MAIN)  | Stacker 2 series Main section ROM                  | 8 digits            | STC2M         |
| SCU(BOOT)       | SCU Boot section                                   | 8 digits            | SCUB          |
| SCU(MAIN)       | SCU Main section                                   | 8 digits            | SCUM          |
| DSPF(BOOT)      | DSPF Boot section                                  | 8 digits            | DSPFB         |
| DSPF(MAIN)      | DSPF Main section                                  | 8 digits            | DSPFM         |
| ANIMATION       | Animation data                                     | 8 digits            | ANIME         |
| ACRE(BOOT)      | ACRE Boot section                                  | 8 digits            | ACREB         |
| ACRE(MAIN)      | ACRE Main section                                  | 8 digits            | ACREM         |
| ACRE_DATA       | ACRE table   | 8 digits            | ACRED         |

49-3

**Purpose**

**Function (Purpose)** Used to update the instruction manual stored in the HDD.

**Section**

**Operation/Procedure**

- 1) Store the instruction manual data into the USB memory.
- 2) Insert the USB memory into the machine.
- 3) Select the target instruction manual data of instruction manual update with the touch panel.
- 4) Press [EXECUTE] key.
- 5) Press [YES] key.

Update of the selected instruction manual data is executed.

When the operation is completed normally, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

49-5

**Purpose**

**Function (Purpose)** Used to perform the watermark update.

**Section**

**Operation/Procedure**

- 1) Insert the USB memory into the main unit.
  - 2) Select the button of the folder to perform the watermark update.
  - 3) The current version and the update version are displayed.
  - 4) Press [EXECUTE] key.
  - 5) Press [YES] key.
- The selected watermark is updated.

50

50-1

**Purpose**

Adjustment

**Function (Purpose)**

Used to adjust copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim.50-5 and Sim.50-2 (Simple method). (Document table mode))

**Section**

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

|   | Item/Display item               | Descriptions   | Setting range  | Default value |
|---|---------------------------------|----------------|--|---------------|
| A | Lead edge adjustment value      | RRCA           | Document lead edge reference position (OC)             | 0 - 99<br>50  |
| B | Image loss amount setting value | LEAD           | Lead edge image loss amount setting                    | 0 - 99<br>30  |
|   |                                 | SIDE           | Side image loss amount setting                         | 0 - 99<br>20  |
| D | Void amount setting             | DENA           | Print lead edge adjustment                             | 1 - 99<br>30  |
|   |                                 | DENB           | Sub scanning direction print range adjustment          | 1 - 99<br>30  |
| F |                                 | FRONT/ REAR    | Front/Rear void amount adjustment                      | 1 - 99<br>20  |
| G | Off-center adjustment           | OFFSET_ OC     | OC document off-center adjustment                      | 1 - 99<br>50  |
| H | Magnification ratio correction  | SCAN_ SPEED_OC | Scan sub scanning magnification ratio adjustment (CCD) | 1 - 99<br>50  |

| Item/Display item |  | Descriptions | Setting range                            | Default value |    |
|-------------------|--|--------------|--|---------------|----|
| I                 | Sub scanning direction print area correction value | DENB-MFT     | Manual feed correction value             | 1 - 99        | 50 |
| J                 |  | DENB-CS1     | Tray 1 correction value                  | 1 - 99        | 50 |
| K                 |  | DENB-CS2     | Tray 2 correction value                  | 1 - 99        | 50 |
| L                 |  | DENB-CS3     | Tray 3 correction value                  | 1 - 99        | 50 |
| M                 |  | DENB-CS4     | Tray 4 correction value                  | 1 - 99        | 50 |
| N                 |  | DENB-LC      | LCC/LCT/LCT manual feed correction value | 1 - 99        | 50 |
| O                 |  | DENB-ADU     | ADU correction value                     | 1 - 99        | 55 |
| P                 |  | DENB-HV      | Heavy paper correction value             | 1 - 99        | 50 |

| Item/Display item |                                 | Descriptions | Setting range  | Default value |    |
|-------------------|---------------------------------|--------------|--|---------------|----|
| A                 | Actual measurement value        | L1           | Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment) | 0 - 999       | -  |
|                   |                                 | L2           | Distance from the paper lead edge to the image lead edge (0.1mm increment)             | 0 - 999       | 0  |
| C                 | Image loss amount setting value | LEAD         | Lead edge image loss amount setting  | 0 - 99        | 30 |
|                   |                                 | SIDE         | Side image loss amount setting   | 0 - 99        | 20 |
| E                 | Void amount setting             | DENA         | Print lead edge adjustment   | 1 - 99        | 30 |
|                   |                                 | DENB         | Sub scanning direction print range adjustment  | 1 - 99        | 30 |
|                   |                                 | FRONT/ REAR  | Front/Rear void amount adjustment  | 1 - 99        | 20 |

**50-2**

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the copy image position on the paper and the void area (image loss) in the copy mode. (This simulation, similar to Sim.50-1, provides more simplified adjustment.)

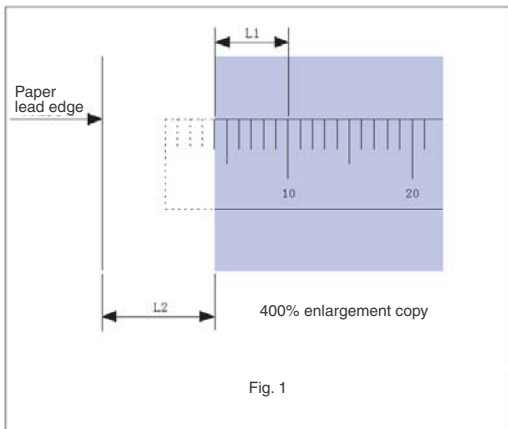
**Section**

**Operation/Procedure**

\* In advance, the magnification ratio adjustment in the sub scanning direction must be executed. (Sim. 48-1)

- 1) Set Item A (L1) and B (L2) to 0.
- 2) Place a ruler on the left edge of the document table, and make a B/W copy at 400%.
- 3) Measure the copied image (see the figure below). Measure the distances L1 and L2 in the unit of 0.1mm. Multiple the measured values by 10. Enter the obtained values to L1 and L2.

Be sure to enter L1 and L2 together in a combination.  
L1: Distance from the copy image lead edge to the scale of 10mm.  
L2: Distance from the paper lead edge to the copy image lead edge.



- 4) Press [EXECUTE] key. (The set value is saved.)
- 5) Make a copy at 100%, and adjust the rear edge void.

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment                                  |
| <b>Function (Purpose)</b> | Used to adjust the printer print lead edge. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. .

The set value is saved and the adjustment print is made

- 4) Measure the void area quantities on the right and left frames on the printed adjustment pattern, and check to confirm that they are as shown below.

DEN-C =  $3.0 \pm 2.0$ mm      DEN-B =  $3.0 \pm 2.0$ mm

If the values are within the range shown on the left, there is no need to adjust. IF not, go to step 5.

- 5) Change the adjustment item A (DEN-C) and B (DEN-B).  
When the item A (DEN-C) is decreased by 1, the print start position in the sub scanning direction is shifted to the paper lead edge by 0.1mm.  
When the item B (DEN-B) adjustment value is decreased by 1, the paper transport direction print area is extended to the rear edge by 0.1mm.
- 6) Repeat steps 1 to 5 until the conditions of step 4 are satisfied.

| Item   | Display item/Details of display    |        | Descriptions of items                         |                                   | Setting range |   | Default value | Remarks  |
|--------|------------------------------------|--------|---|-----------------------------------|---------------|---|---------------|--|
| A      | DEN-C                              |        | Printer print lead edge adjustment            |                                   | 1 - 99        |   | 30            | Adjustment value for fitting the print lead edge for the printer<br>When the adjustment value of this item is decreased by 1, the printer print start position in the paper transport direction is shifted to the lead edge by 0.1mm.  |
| B      | DEN-B                              |        | Sub scanning direction print range adjustment |                                   | 1 - 99        |   | 30            | Void amount generated at the paper rear edge.<br>When the adjustment value of item B (DEN-B) is decreased by 1, the print area adjustment value in the sub scanning direction for the paper transport direction is decreased by 0.1mm. |
| C      | FRONT/REAR                         |        | Front/Rear void amount adjustment             |                                   | 1 - 99        |   | 20            | Adjustment of the void amount generated on the left and right edges of paper. When the value is increased, the void amount is increased.   |
| D      | DENB-MFT                           |        | Manual feed correction value                  |                                   | 1 - 99        |   | 50            |  |
| E      | DENB-CS1                           |        | Tray 1 correction value                       |                                   | 1 - 99        |   | 50            |  |
| F      | DENB-CS2                           |        | Tray 2 correction value                       |                                   | 1 - 99        |   | 50            |  |
| G      | DENB-CS3                           |        | Tray 3 correction value                       |                                   | 1 - 99        |   | 50            |  |
| H      | DENB-CS4                           |        | Tray 4 correction value                       |                                   | 1 - 99        |   | 50            |  |
| I      | DENB-LC                            |        | LCC/LCT/LCT manual feed correction value      |                                   | 1 - 99        |   | 50            |  |
| J      | DENB-ADU                           |        | ADU correction value                          |                                   | 1 - 99        |   | 55            |  |
| K      | DENB-HV                            |        | Heavy paper correction value                  |                                   | 1 - 99        |   | 50            |  |
| L      | MULTI COUNT                        |        | Number of print                               |                                   | 1 - 999       |   | 1             |  |
| M      | PAPER                              | MFT    | Tray selection                                | Manual feed                       | 1 - 9         | 1 | 2 (CS1)       |  |
|        |                                    | CS1    |   | Tray 1                            |               | 2 |               |  |
|        |                                    | CS2    |   | Tray 2                            |               | 3 |               |  |
|        |                                    | CS3    |   | Tray 3                            |               | 4 |               |  |
|        |                                    | CS4    |   | Tray 4                            |               | 5 |               |  |
|        |                                    | LCC    |   | LCC *1                            |               | 6 |               |  |
|        |                                    | LCT1_1 |   | LCT first series, first stage *2  |               | 6 |               |  |
|        |                                    | LCT1_2 |   | LCT first series, second stage *2 |               | 7 |               |  |
|        |                                    | LCT2_1 |   | LCT second series, first stage *3 |               | 8 |               |  |
| LCT2_2 | LCT second series, second stage *3 | 9      |   |                                   |               |   |               |  |
| N      | DUPLEX                             | YES    | Duplex print selection                        | Select                            | 0 - 1         | 0 | 1(NO)         |  |
|        |                                    | NO     |   | Not select                        |               | 1 |               |  |

\* Items M, N are "Item name : Details display."

Example: PAPER:CS1

\*1: Displayed only when A4/A3 LCC is connected.

\*2: Displayed only when 2-stage LCT is installed.

\*3: Displayed only when two units of 2-stage LCT are connected.

50-6

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | DSPF document lead edge adjustment. Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode. (The similar adjustment can be performed with Sim. 50-7 (Simple method).) (DSPF mode) |
| <b>Section</b>            | DSPF   |

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item | Display item                    | Descriptions  | Setting range | Default value |
|------|---------------------------------|---|---------------|---------------|
| A    | SIDE1                           | Front surface document scan position adjustment (CCD)                   | 1 - 99        | 50            |
| B    | SIDE2                           | Back surface document scan position adjustment (CCD)                    | 1 - 99        | 50            |
| C    | Image loss amount setting SIDE1 | LEAD_EDGE (SIDE1)<br>Front surface lead edge image loss amount setting  | 0 - 99        | 20            |
| D    | SIDE1                           | FRONT_REAR (SIDE1)<br>Front surface side image loss amount setting      | 0 - 99        | 20            |
| E    |                                 | TRAIL_EDGE (SIDE1)<br>Front surface rear edge image loss amount setting | 0 - 99        | e0            |
| F    | Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2)<br>Back surface lead edge image loss amount setting   | 0 - 99        | e0            |
| G    | SIDE2                           | FRONT_REAR (SIDE2)<br>Back surface side image loss amount setting       | 0 - 99        | 20            |
| H    |                                 | TRAIL_EDGE (SIDE2)<br>Back surface rear edge image loss amount setting  | 0 - 99        | 20            |
| I    | OFFSET_SPF1                     | DSPF front surface image off-center adjustment                          | 1 - 99        | 50            |
| J    | OFFSET_SPF2                     | DSPF back surface image off-center adjustment                           | 1 - 99        | 50            |
| K    | SCAN_SPEED_SPF1                 | DSPF document front surface magnification ratio adjustment (Sub scan)   | 1 - 99        | 50            |

A, B: When the adjustment value is increased, the scan timing is delayed.

C - H: When the adjustment value is increased, the image loss is increased.

A - H: 1step=0.1m

The SPF rear edge image loss is provided against for shade.

50-7

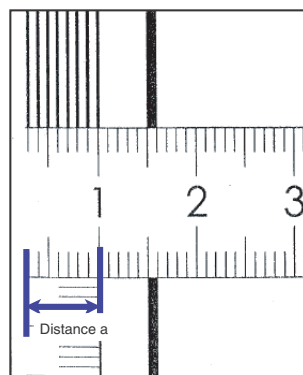
|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | DSPF document lead edge adjustment (Simple method)<br>Used to adjust the copy image position on print paper and the void area (image loss) in the copy mode (Sim. 50-6 simple method) |
| <b>Section</b>            | DSPF  |

**Operation/Procedure**

\* In advance, the magnification ratio in the sub scanning direction must be adjusted. (Sim. 48-1)

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Set Item A (L4) and B (L5) to 0.
- 3) Set the magnification ratio to 200%, and press [START] key to make a print.
- 4) Measure the printed image, and enter the measure value of distance a (DSPF) to L4 and L5 in the unit of 0.1mm.  
L4 : Distance a (DSPF front surface: 200%) (Unit: 0.1mm)  
L5 : Distance a (DSPF back surface: 200%) (Unit: 0.1mm)
- 5) Press [EXECUTE] key. (The set value is saved.)

&lt;DSPF Front surface&gt;



&lt;DSPF Back surface&gt;



| Item | Display Item       | Description  | Setting range | Default value |
|------|--------------------|--|---------------|---------------|
| A    | L4                 | Distance from the front surface image lead edge to the scale of 10mm (SPF, 200%, 0.1mm unit) | 0 - 999       | -             |
| B    | L5                 | Distance from the back surface image lead edge to the scale of 10mm (SPF, 200%, 0.1mm unit)  | 0 - 999       | -             |
| C    | LEAD_EDGE (SIDE1)  | Image loss quantity setting SIDE1  | 0 - 99        | 20            |
| D    | FRONT_REAR (SIDE1) |  | 0 - 99        | 20            |
| E    | TRAIL_EDGE (SIDE1) |  | 0 - 99        | 30            |
| F    | LEAD_EDGE (SIDE2)  | Image loss quantity setting SIDE2  | 0 - 99        | 30            |
| G    | FRONT_REAR (SIDE2) |  | 0 - 99        | 20            |
| H    | TRAIL_EDGE (SIDE2) |  | 0 - 99        | 20            |

C - H: When the adjustment value is increased, the image loss is increased.

A - H: 1step=0.1m

\* Items C - H are interlocked with items C - H of SIM50-06.

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to adjust the print image off-center position. (The adjustment is made for each paper feed section.) |

**Section****Operation/Procedure**

- 1) Select an adjustment item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

| Item | Display item/Details of display |          | Item content   | Setting range                                     |             | Default value |   |
|------|---------------------------------|----------|--|---|-------------|---------------|---|
| A    | BK-MAG                          |          | Main scan print magnification ratio BK   | 60 - 140  |             | 100           |   |
| B    | MAIN-MFT                        |          | Print off center adjustment value (Manual feed)  | 1 - 99  |             | 50            |   |
| C    | MAIN-CS1                        |          | Print off center adjustment value (Tray 1)   | 1 - 99  |             | 50            |   |
| D    | MAIN-CS2                        |          | Print off center adjustment value (Tray 2)   | 1 - 99  |             | 50            |   |
| E    | MAIN-CS3                        |          | Print off center adjustment value (Tray 3)   | 1 - 99  |             | 50            |   |
| F    | MAIN-CS4                        |          | Print off center adjustment value (Tray 4)   | 1 - 99  |             | 50            |   |
| G    | MAIN-LCC                        |          | Print off center adjustment value (LCC)  | 1 - 99  |             | 50            |   |
| H    | MAIN-LCT1                       |          | Print off center adjustment value (LCT 1 series, first stage)                          | 1 - 99  |             | 50            |   |
| I    | MAIN-LCT2                       |          | Print off center adjustment value (LCT 1 series, second stage)                         | 1 - 99  |             | 50            |   |
| J    | MAIN-LCT3                       |          | Print off center adjustment value (LCT 2 series, first stage)                          | 1 - 99  |             | 50            |   |
| K    | MAIN-LCT4                       |          | Print off center adjustment value (LCT 2 series, second stage)                         | 1 - 99  |             | 50            |   |
| L    | MAIN-LCT-MFT                    |          | Print off center adjustment value (LCT_manual feed)                                    | 1 - 99  |             | 50            |   |
| M    | MAIN-ADU                        |          | Print off center adjustment value (ADU)  | 1 - 99  |             | 50            |   |
| N    | SUB -CS12                       |          | Registration motor ON timing adjustment  | Standard tray                                     |             | 50            |   |
| O    | SUB -CS34                       |          |  | LCC /LCT/LCT manual feed                          |             | 50            |   |
| P    | SUB -LC                         |          |  | Manual feed (Main machine)                        |             | 50            |   |
| Q    | SUB -MFT                        |          |  | ADU   |             | 50            |   |
| R    | SUB -ADU                        |          |  | Main unit tray adjustment value (Heavy paper A)   |             | 40            |   |
| S    | SUB-CS-HV-A                     |          |  | Main unit tray adjustment value (OHP)             |             | 40            |   |
| T    | SUB-HV-OHP                      |          |  | LCC/LCT adjustment value (Heavy paper A)          |             | 40            |   |
| U    | SUB-LC-HV-A                     |          |  | LCC/LCT adjustment value (Heavy paper B)          |             | 35            |   |
| V    | SUB-LC-HV-B                     |          |  | Manual feed tray adjustment value (Heavy paper A) |             | 40            |   |
| W    | SUB-MFT-HV-A                    |          |  | Manual feed tray adjustment value (Heavy paper B) |             | 35            |   |
| X    | SUB-MFT-HV-B                    |          |  | ADU adjustment value (Heavy paper A)              |             | 40            |   |
| Y    | SUB-ADU-HV-A                    |          |  |   |             |               |   |
| Z    | MULTI COUNT                     |          |  | Number of print                                   | 1 - 999     |               | 1   |
| AA   | PAPER                           | MFT      |  | Tray selection                                    | Manual feed | 1 - 9         | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9 |
|      |                                 | CS1      |  | Tray 1  |             |               |   |
|      |                                 | CS2      |  | Tray 2  |             |               |   |
|      |                                 | CS3      |  | Tray 3  |             |               |   |
|      |                                 | CS4      |  | Tray 4  |             |               |   |
|      |                                 | LCC      |  | LCC *1  |             |               |   |
|      |                                 | LCT1_1   |  | LCT 1 series, first stage *2                      |             |               |   |
|      |                                 | LCT1_2   |  | LCT 1 series, second stage *2                     |             |               |   |
|      |                                 | LCT2_1   |  | LCT 2 series, first stage *3                      |             |               |   |
|      |                                 | LCT2_2   |  | LCT 2 series, second stage *3                     |             |               |   |
| AB   | DUPLEX                          | YES      | Duplex print selection   | Select  | 0 - 1       | 0<br>1        |   |
|      |                                 | NO       |  | Not select  |             |               |   |
| AC   | MAIN-STD                        |          | Print position correction_Reference correction amount (Off-center direction)           | 1 - 99  |             | 50            |   |
| AD   | SUB-STD                         |          | Print position correction_Reference correction amount (Transport direction)            | 1 - 99  |             | 50            |   |
| AE   | SFT                             |          | Print position correction_Back surface shift correction amount (Transport direction)   | 0 - 3   |             | 2             |   |
| AF   | SWT1                            | OFF      | Print position correction_Correction control ON/OFF switch (Off-center direction)      | OFF   | 0 - 1       | 0<br>1        |   |
|      |                                 | ON       |  | ON  |             |               |   |
| AG   | SWT2                            | OFF      | Print position correction_Correction control ON/OFF switch (Transport direction)       | OFF   | 0 - 1       | 0<br>1        |   |
|      |                                 | ON       |  | ON  |             |               |   |
| AH   | SWT3                            | OFF      | Print position correction_Correction control mode select switch                        | OFF   | 0 - 1       | 0<br>1        |   |
|      |                                 | ON       |  | ON  |             |               |   |
| AI   | SWT4                            | OFF      | Print position correction_Correction control mode select switch (Off-center direction) | OFF   | 0 - 1       | 0<br>1        |   |
|      |                                 | ON       |  | ON  |             |               |   |
| AJ   | SWT5                            | STANDARD | Print position correction_POS adjustment mode select switch                            | STANDARD  | 0 - 1       | 0<br>1        |   |
|      |                                 | POS      |  | POS   |             |               |   |

\*1 Displayed only when A4/A3 LCC is connected.

\*2 Displayed only when 2-stage LCT is installed.

\*3 Displayed only when two units of 2-stage LCT are connected.



50-12

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to adjust the scan image off-center position. (The adjustment is made for each scan mode.) |

**Section****Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item | Item display | Setting range                                    | Setting value | Default value |
|------|--------------|--|---------------|---------------|
| A    | OC           | OC document off-center adjustment                | 1 - 99        | 50            |
| B    | SPF (SIDE1)  | SPF front surface document off-center adjustment | 1 - 99        | 50            |
| C    | SPF (SIDE2)  | SPF back surface off-center adjustment           | 1 - 99        | 50            |

50-27

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to adjust the image loss of a scan image in the Scanner mode. |

**Section****Operation/Procedure**

- 1) Select a target mode of the adjustment with [SCANNER] keys on the touch panel.
- 2) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

| Category     | Item | Display Item                          | Description            | Setting range                                       | Default value |         |
|--------------|------|---------------------------------------|------------------------|---|---------------|---------|
| Scanner mode | A    | Image loss quantity setting OC        | LEAD_EDGE (OC)         | OC lead edge image loss quantity setting            | 0 - 100       | 0 (0mm) |
|              | B    |                                       | FRONT_REAR (OC)        | OC side image loss quantity setting                 | 0 - 100       | 0 (0mm) |
|              | C    |                                       | TRAIL_EDGE (OC)        | OC rear edge image loss quantity setting            | 0 - 100       | 0 (0mm) |
|              | D    | Image loss quantity setting SPF SIDE1 | LEAD_EDGE (SPF_SIDE1)  | Front surface lead edge image loss quantity setting | 0 - 100       | 0 (0mm) |
|              | E    |                                       | FRONT_REAR (SPF_SIDE1) | Front surface side image loss quantity setting      | 0 - 100       | 0 (0mm) |
|              | F    |                                       | TRAIL_EDGE (SPF_SIDE1) | Front surface rear edge image loss quantity         | 0 - 100       | 0 (0mm) |
|              | G    | Image loss quantity setting SPF SIDE2 | LEAD_EDGE (SPF_SIDE2)  | Back surface rear edge image loss quantity          | 0 - 100       | 0 (0mm) |
|              | H    |                                       | FRONT_REAR (SPF_SIDE2) | Back surface side image loss quantity setting       | 0 - 100       | 0 (0mm) |
|              | I    |                                       | TRAIL_EDGE (SPF_SIDE2) | Back surface rear edge image loss quantity setting  | 0 - 100       | 0 (0mm) |

50-28

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to perform the OC adjustment, the BK main scan magnification ratio correction, the DSPF adjustment, and the print position adjustment. |

**Section****Operation/Procedure**

&lt;Adjustment item&gt;

| No. | Menu display item | Content       | General  |
|-----|-------------------|---------------|--|
| 1   | OC ADJ            | OC adjustment | Adjustment of the OC document lead edge, the off-center, and the sub scan magnification ratio. |

| No. | Menu display item | Content                                     | General   |
|-----|-------------------|---|---|
| 2   | BK-MAG ADJ        | BK main scan magnification ratio correction | Adjustment of the BK main scan magnification ratio  |
| 3   | SPF ADJ           | SPF adjustment                              | Adjustment of the DSPF (front/back) document lead edge, the off-center, and the sub scan magnification ratio. |
| 4   | SETUP/PRINT ADJ   | Print position adjustment                   | Print lead edge adjustment, all-cassette print off-center adjustment (individual cassette, ADU)               |
| 5   | RESULT            | Result display                              | Adjustment results are displayed.   |
| 6   | DATA              | Data display                                | Data used in execution of the adjustment is displayed.  |

(1) Adjustment of the OC document lead edge, the off-center, and the sub scan magnification ratio

- 1) Select [OC ADJ] on the touch panel.
- 2) Select a tray for self print of the OC adjustment pattern.
- 3) Press [EXECUTE] key to start self print of the OC adjustment pattern.
- 4) Set the OC adjustment pattern on the OC in the center reference.
- 5) Press [EXECUTE] key to start scanning of the OC adjustment pattern.
- 6) The adjustment result is displayed.
  - \* The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ( ).
  - \* Press [REPRINT] button, and the screen returns to the cassette selection menu and the self print of the OC adjustment pattern can be made again.
  - \* Press [RESCAN] button to start rescanning of the OC adjustment pattern.
  - \* Press [RETRY] button to save the adjustment value.
  - \* Press [DATA] button, and the data used for execution of the adjustment are displayed.
- 7) Press [OK] key, and the adjustment value is displayed.

**(2) BK main scan magnification ratio**

- 1) Select [BK-MAG ADJ] on the touch panel.
- 2) Select the tray for the self print of the BK magnification ratio adjustment pattern.
- 3) Press [EXECUTE] key, and the self print of the BK magnification ratio adjustment pattern is started.
- 4) Set the BK magnification ratio adjustment pattern on the OC.
- 5) Press [EXECUTE] key, and scanning of the BK magnification ratio adjustment pattern is started.
- 6) The adjustment result is displayed.
  - \* The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ( ).
  - \* Press [REPRINT] button, and the screen returns to the cassette selection menu and the self print of the BK magnification ratio adjustment pattern can be made again.
  - \* Press [RESCAN] button, and rescanning of the BK magnification ratio adjustment pattern is started.
  - \* Press [RETRY] button, and the adjustment value is not saved the screen is shifted to the top menu.
  - \* Press [DATA] button, and the data used for execution of this adjustment are displayed.
- 7) Press [OK] key, and the adjustment value is displayed.

**(3) The DSPF (front, back) document lead edge adjustment, the off-center adjustment, and the sub scan magnification ratio adjustment**

- 1) Select [SPF ADJ] on the touch panel.
- 2) Select a target item of the adjustment, and select a tray for self print of the DSPF adjustment pattern.
- 3) Press [EXECUTE] key, and the self print of the DSPF adjustment pattern is started.
- 4) Set the DSPF adjustment pattern on the DSPF in face up.
- 5) Press [EXECUTE] key, and scanning of the DSPF adjustment pattern is started.
- 6) Set the DSPF adjustment pattern on the DSPF in face down.
- 7) Press [EXECUTE] key, and scanning of the DSPF adjustment pattern is started.

- 8) The adjustment result is displayed.
  - \* The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ( ).
  - \* Press [REPRINT] button, and the screen returns to the cassette selection menu and the self print of the DSPF adjustment pattern (front, back) can be made again.
  - \* Press [RESCAN] button, and scanning of the SPF adjustment pattern (front and back) is started again.
  - \* Press [RETRY] button, and the adjustment value is not saved the screen is shifted to the top menu.
  - \* Press [DATA] button, and the data used for execution of this adjustment are displayed.
- 9) Press [OK] key, and the adjustment value is displayed.

**(4) Print lead edge adjustment, all tray print off-center (each paper feed tray, duplex tray) adjustment**

- 1) Select [SETUP/PRINT ADJ] on the touch panel.

| Menu display item | Content   |
|-------------------|---|
| LEAD              | Print lead edge adjustment                              |
| OFFSET            | Print off-center adjustment                             |
| ALL               | Print lead edge adjustment, print off-center adjustment |

- 1) Press the adjustment item key, and press a tray for the self print of the print position adjustment pattern.
- 2) Press [EXECUTE] key, and self print of the print position adjustment pattern is started.
- 3) Set the print position adjustment pattern on the OC.
- 4) Press [EXECUTE] key, and scanning of the print position adjustment pattern is started.
  - \* The measured value of this time is displayed, and the difference between the measured value of this time and that of the previous time is displayed in ( ). (For those which are not adjusted yet, " \* " is displayed.)
  - \* Press [REPRINT] button, and the screen returns to the cassette selection menu and self print of the print position adjustment pattern can be executed.
  - \* Press [RESCAN] button, and scanning of the print position adjustment pattern is started again.
  - \* Press [RETRY] button, and the adjustment value is not saved the screen is shifted to the top menu.
  - \* Press [DATA] button, and the data used for execution of this adjustment are displayed.
- 5) Press [OK] key, and the adjustment value is displayed.

**(5) Adjustment result display**

- 1) Select [RESULT] on the touch panel.
  - \* Press [RESULT] button, and the adjustment result is displayed.

**(6) The data used for the adjustment are displayed.**

When [OC SPF] button is pressed, the data used for the OC adjustment and the SPF adjustment are displayed.

When [BK-MAG] button is pressed, the data used for the BK main scan magnification ratio correction adjustment are displayed.

When [PRINT] button is pressed, the data used for the print position adjustment are displayed.

51-1

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting   |
| <b>Function (Purpose)</b> | Used to adjust the ON/OFF timing of the secondary transport voltage. |

**Section****Operation/Procedure**

- 1) Select an adjustment item with the touch panel scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

When the set value is decreased, the ON/OFF timing of the transfer current (THV+) is advanced. When the value is increased, it is delayed.

(When the adjustment value is changed by 1, the timing is changed by about 1ms.)

| Item/Display item | Descriptions of items                      | Setting range | Default value  |                     |
|-------------------|--|---------------|----------------|---------------------|
|                   |  |               | 90 cpm machine | 105/120 cpm machine |
| A TC ON TIMING    | Transfer current (THV+) ON timing setting  | 1 - 99        | 48             | 45                  |
| B TC OFF TIMING   | Transfer current (THV+) OFF timing setting | 1 - 99        | 50             | 50                  |

51-2

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting   |
| <b>Function (Purpose)</b> | Used to adjust the contact pressure of paper against the resist roller (main unit paper feed, duplex paper feed, DSPF paper feed) in each section. (This adjustment is required when there is a great variation in the print image position for the paper or when paper jam occurred.) |

**Section****Operation/Procedure**

- 1) Select a target mode of the adjustment with [REGI1] [REGI2] [ENGIN] keys.
- 2) Select a target item of the adjustment with [↑] [↓] keys.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

| Item | Button           | Display item      | Descriptions of items (Mode, document, paper feed speed)            | Transport direction | Setting range   | Default value |    |
|------|------------------|-------------------|---|---------------------|---|---------------|----|
| A    | REGI1            | NORMAL_PLAIN_HIGH | DSPF deflection amount adjustment value 1 (Normal/Plain paper/HIGH) |                     | 1 - 99  | 50            |    |
| B    |                  | NORMAL_PLAIN_MID  | DSPF deflection amount adjustment value 1 (Normal/Plain paper/MID)  |                     | 1 - 99  | 50            |    |
| C    |                  | NORMAL_PLAIN_LOW  | DSPF deflection amount adjustment value 1 (Normal/Plain paper/LOW)  |                     | 1 - 99  | 50            |    |
| D    |                  | NORMAL_THIN_HIGH  | DSPF deflection amount adjustment value 1 (Normal/Thin paper/HIGH)  |                     | 1 - 99  | 50            |    |
| E    |                  | NORMAL_THIN_MID   | DSPF deflection amount adjustment value 1 (Normal/Thin paper/MID)   |                     | 1 - 99  | 50            |    |
| F    |                  | NORMAL_THIN_LOW   | DSPF deflection amount adjustment value 1 (Normal/Thin paper/LOW)   |                     | 1 - 99  | 50            |    |
| G    |                  | RANDOM_PLAIN_HIGH | DSPF deflection amount adjustment value 1 (Random/Plain paper/HIGH) |                     | 1 - 99  | 50            |    |
| H    |                  | RANDOM_PLAIN_MID  | DSPF deflection amount adjustment value 1 (Random/Plain paper/MID)  |                     | 1 - 99  | 50            |    |
| I    |                  | RANDOM_PLAIN_LOW  | DSPF deflection amount adjustment value 1 (Random/Plain paper/LOW)  |                     | 1 - 99  | 50            |    |
| J    |                  | RANDOM_THIN_HIGH  | DSPF deflection amount adjustment value 1 (Random/Thin paper/HIGH)  |                     | 1 - 99  | 50            |    |
| K    |                  | RANDOM_THIN_MID   | DSPF deflection amount adjustment value 1 (Random/Thin paper/MID)   |                     | 1 - 99  | 50            |    |
| L    |                  | RANDOM_THIN_LOW   | DSPF deflection amount adjustment value 1 (Random/Thin paper/LOW)   |                     | 1 - 99  | 50            |    |
| A    |                  | REGI2             | NORMAL_PLAIN_HIGH   |                     | DSPF deflection amount adjustment value 2 (Normal/Plain paper/HIGH) | 1 - 99        | 50 |
| B    |                  |                   | NORMAL_PLAIN_MID  |                     | DSPF deflection amount adjustment value 2 (Normal/Plain paper/MID)  | 1 - 99        | 50 |
| C    | NORMAL_PLAIN_LOW |                   | DSPF deflection amount adjustment value 2 (Normal/Plain paper/LOW)  | 1 - 99              | 50  |               |    |
| D    | NORMAL_THIN_HIGH |                   | DSPF deflection amount adjustment value 2 (Normal/Thin paper/HIGH)  | 1 - 99              | 50  |               |    |
| E    | REGI2            | NORMAL_THIN_MID   | DSPF deflection amount adjustment value 2 (Normal/Thin paper/MID)   | 1 - 99              | 50  |               |    |
| F    |                  | NORMAL_THIN_LOW   | DSPF deflection amount adjustment value 2 (Normal/Thin paper/LOW)   | 1 - 99              | 50  |               |    |
| G    |                  | RANDOM_PLAIN_HIGH | DSPF deflection amount adjustment value 2 (Random/Plain paper/HIGH) | 1 - 99              | 50  |               |    |
| H    |                  | RANDOM_PLAIN_MID  | DSPF deflection amount adjustment value 2 (Random/Plain paper/MID)  | 1 - 99              | 50  |               |    |
| I    |                  | RANDOM_PLAIN_LOW  | DSPF deflection amount adjustment value 2 (Random/Plain paper/LOW)  | 1 - 99              | 50  |               |    |
| J    |                  | RANDOM_THIN_HIGH  | DSPF deflection amount adjustment value 2 (Random/Thin paper/HIGH)  | 1 - 99              | 50  |               |    |
| K    |                  | RANDOM_THIN_MID   | DSPF deflection amount adjustment value 2 (Random/Thin paper/MID)   | 1 - 99              | 50  |               |    |
| L    |                  | RANDOM_THIN_LOW   | DSPF deflection amount adjustment value 2 (Random/Thin paper/LOW)   | 1 - 99              | 50  |               |    |

| Item | Button                   | Display item  | Descriptions of items (Mode, document, paper feed speed)                  | Transport direction        | Setting range | Default value |
|------|--------------------------|---|---|----------------------------|---------------|---------------|
| A    | ENGINE                   | TRAY1(S)  | Tray 1 (Upper stage)/deflection adjustment value (Plain paper/Small size) | LT size or less            | 1 - 99        | 36            |
| B    |                          | TRAY2(S)  | Tray 2 (Lower stage)/deflection adjustment value (Plain paper/Small size) | LT size or less            | 1 - 99        | 36            |
| C    |                          | MANUAL PLAIN PAPER(S)   | Manual feed tray/deflection adjustment value (Plain paper/Small size)     | LT size or less            | 1 - 99        | 36            |
| D    |                          | MANUAL PLAIN PAPER(L)   | Manual feed tray/deflection adjustment value (Plain paper/Large size)     | Longer size than the above | 1 - 99        | 36            |
| E    |                          | MANUAL HEAVY APAPER(S)  | Manual feed tray/deflection adjustment value (Heavy paper A/Small size)   | LT size or less            | 1 - 99        | 26            |
| F    |                          | MANUAL HEAVY APAPER(L)  | Manual feed tray/deflection adjustment value (Heavy paper A/Large size)   | Longer size than the above | 1 - 99        | 26            |
| G    |                          | MANUAL HEAVY B PAPER(S)   | Manual feed tray/deflection adjustment value (Heavy paper B/Small size)   | LT size or less            | 1 - 99        | 26            |
| H    |                          | MANUAL HEAVY B PAPER(L)   | Manual feed tray/deflection adjustment value (Heavy paper B/Large size)   | Longer size than the above | 1 - 99        | 26            |
| I    |                          | MANUAL OHP  | Manual feed tray/deflection adjustment value (OHP)                        | –                          | 1 - 99        | 26            |
| J    |                          | ADU PLAIN PAPER(S)  | ADU/deflection adjustment value (Plain paper/Small size)                  | LT size or less            | 1 - 99        | 36            |
| K    |                          | ADU PLAIN PAPER(L)  | ADU/deflection adjustment value (Plain paper/Large size)                  | Longer size than the above | 1 - 99        | 36            |
| L    |                          | ADU HEAVY A PAPER(S)  | ADU/deflection adjustment value (Heavy paper A/Small size)                | LT size or less            | 1 - 99        | 26            |
| M    |                          | ADU HEAVY A PAPER(L)  | ADU/deflection adjustment value (Heavy paper A/Large size)                | Longer size than the above | 1 - 99        | 26            |
| N    |                          | TRAY3/4(S)  | Tray 3, 4/deflection adjustment value (Plain paper/Small size)            | LT size or less            | 1 - 99        | 36            |
| O    |                          | TRAY3/4 HEAVY A PAPER(S)  | Tray 3, 4/deflection adjustment value (Heavy paper A/Small size)          | LT size or less            | 1 - 99        | 26            |
| P    |                          | TRAY3/4(L)  | Tray 3, 4/deflection adjustment value (Plain paper/Large size)            | LT size or above           | 1 - 99        | 36            |
| Q    |                          | TRAY3/4 HEAVY A PAPER(L)  | Tray 3, 4/deflection adjustment value (Heavy paper A/Large size)          | LT size or above           | 1 - 99        | 26            |
| R    |                          | TRAY4 OHP   | Tray 4/deflection adjustment value (OHP)                                  | –                          | 1 - 99        | 26            |
| S    |                          | LCC/LCT(S)  | LCC/LCT, deflection adjustment value (Plain paper/Small size)             | LT size or less            | 1 - 99        | 36            |
| T    |                          | LCC/LCT HEAVY A PAPER(S)  | LCC/LCT, deflection adjustment value (Heavy paper A/Small size)           | LT size or less            | 1 - 99        | 26            |
| U    | LCC/LCT HEAVY B PAPER(S) | LCC/LCT, deflection adjustment value (Heavy paper B/Small size) | LT size or less   | 1 - 99                     | 26            |               |
| V    | LCC/LCT(L)               | LCC/LCT, deflection adjustment value (Plain paper/Large size)   | LT size or above  | 1 - 99                     | 36            |               |
| W    | LCC/LCT HEAVY A PAPER(L) | LCC/LCT, deflection adjustment value (Heavy paper A/Large size) | LT size or above  | 1 - 99                     | 26            |               |
| X    | LCC/LCT HEAVY B PAPER(L) | LCC/LCT, deflection adjustment value (Heavy paper B/Large size) | LT size or above  | 1 - 99                     | 26            |               |
| Y    | LCT MANUAL OHP           | LCT, warp adjustment value (OHP) manual feed adjustment value   | –   | 1 - 99                     | 26            |               |

#### Small size, Large size

Small size: The paper length in the transport direction is shorter than the LT size (216mm).

Large size: The paper length in the transport direction is longer than the LT size (216mm).

#### Adjustment value

When the adjustment value is increased, the warp amount is increased. When the adjustment value is decreased, the warp amount is decreased.

(When the adjustment value is changed by 1, the stop timing is changed by 0.1mm.)

53-6

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment                                     |
| <b>Function (Purpose)</b> | Used to adjust the DSPF width detection level. |

Section

**Operation/Procedure**

- 1) Set the DSPF paper feed guide to the max. width.
- 2) Press [EXECUTE] key.  
The max. width detection level is recognized.
- 3) Set the DSPF paper feed guide to the A4R width.
- 4) Press [EXECUTE] key.  
The A4R width detection level is recognized.
- 5) Set the DSPF paper feed guide to the A5R width.
- 6) Press [EXECUTE] key.  
The A5R width detection level is recognized.
- 7) Open the DSPF paper feed guide to the min. width.
- 8) Press [EXECUTE] key.  
The min. width detection level is recognized.  
If the above operations are not completed normally, "ERROR" is displayed.  
If completed normally, "COMPLETE" is displayed.

| NO. | Display    | Content                               |
|-----|------------|---------------------------------------|
| 1   | TRAYVOLMAX | Tray volume max. value                |
| 2   | TRAYVOLA4R | Tray volume A4R size adjustment value |
| 3   | TRAYVOLA5R | Tray volume A5R size adjustment value |
| 4   | TRAYVOLMIN | Tray size volume min. value           |

53-7

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to set the DSPF width adjustment value. (Sim. 53-6 manual input) |

Section

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item | Display Item | Regulation plate position value | Setting range | Default value |
|------|--------------|---------------------------------|---------------|---------------|
| A    | AD_MAX       | Max. width position             | 0 - 1023      | 66            |
| B    | AD_P1        | Middle position (L)             | 0 - 1023      | 456           |
| C    | AD_P2        | Middle position (S)             | 0 - 1023      | 714           |
| D    | AD_MIN       | Min. width position             | 0 - 1023      | 898           |

53-8

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment  |
| <b>Function (Purpose)</b> | Used to adjust the DSPF document scan start position. |

Section

**Operation/Procedure**

Select a target mode of the adjustment with the touch panel key.

| Menu display item | Content   |
|-------------------|---|
| AUTO              | Shifted to the mirror scan position auto adjustment menu of SPF document.   |
| MANUAL            | Shifted to the mirror scan position manual adjustment menu of SPF document. |

**When [AUTO] is selected:**

- 1) Set a stripe document on the DSPF, and press [EXECUTE] key. During the auto adjustment, "EXECUTING.." is displayed.
- 2) When the auto adjustment is completed, [EXECUTE] key returns to the normal display.

<Auto adjustment item, setting range, and default value>

| Display Item         | Description                           | Setting range           | Default value |
|----------------------|---------------------------------------|-------------------------|---------------|
| MEASUREMENT DISTANCE | Document lead edge measured distance  | 0 - 255<br>(0.1mm unit) | -             |
| RRCA                 | Document lead edge reference position | 0 - 99                  | 50            |

**When [MANUAL] is selected:**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key. (The set value is saved.)

<Manual adjustment item. Setting range, and default value>

| Item | Display Item | Description                  | Setting range | Default value |
|------|--------------|------------------------------|---------------|---------------|
| A    | ADJUST VALUE | SPF scan position adjustment | 1 - 99        | 30            |

53-9

|                           |                             |
|---------------------------|-----------------------------|
| <b>Purpose</b>            | Adjustment                  |
| <b>Function (Purpose)</b> | DSPF dirt detection setting |
| <b>Section</b>            |                             |

**Operation/Procedure**

- 1) Select an item to be set with the scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

| Item/Display item, Details of display |                               |        | Content  | Setting range |       | Default value |               |   |
|---------------------------------------|-------------------------------|--------|--|---------------|-------|---------------|---------------|---|
| A                                     | SIDEA_SCAN_POSITION_SET_START | OFF    | DSPF front surface optimum scan position detection setting (when starting) | OFF           | 0 - 1 | 0             | 1<br>(ON)     |   |
|                                       |                               | ON     |  | ON            |       |               |               | 1 |
| B                                     | SIDEA_SCAN_POSITION_SET_JOB   | OFF    | DSPF front surface optimum scan position detection setting (After a job)   | OFF           | 0 - 1 | 0             | 1<br>(ON)     |   |
|                                       |                               | ON     |  | ON            |       |               |               | 1 |
| C                                     | SIDEA_SCAN_POSITION_LV        | WEAK   | DSPF front surface optimum scan position detection level setting           | Low           | 0 - 2 | 0             | 1<br>(MIDDLE) |   |
|                                       |                               | MIDDLE |  | Medium        |       |               |               | 1 |
|                                       |                               | STRONG |  | High          |       |               |               | 2 |
| D                                     | OC_DIRT_LV                    | WEAK   | OC dirt level setting  | Low           | 0 - 2 | 0             | 1<br>(MIDDLE) |   |
|                                       |                               | MIDDLE |  | Medium        |       |               |               | 1 |
|                                       |                               | STRONG |  | High          |       |               |               | 2 |
| E                                     | SIDEA_DIRT_ALARM_LV           | WEAK   | DSPF front surface dirt alarm level setting                                | Low           | 0 - 2 | 0             | 1<br>(MIDDLE) |   |
|                                       |                               | MIDDLE |  | Medium        |       |               |               | 1 |
|                                       |                               | STRONG |  | High          |       |               |               | 2 |
| F                                     | SIDEB_DIRT_ALARM_LV           | WEAK   | DSPF back surface dirt alarm level setting                                 | Low           | 0 - 2 | 0             | 1<br>(MIDDLE) |   |
|                                       |                               | MIDDLE |  | Medium        |       |               |               | 1 |
|                                       |                               | STRONG |  | High          |       |               |               | 2 |
| G                                     | SIDEA_DIRT_SHADING_SET        | OFF    | DSPF front surface streak delete shading setting                           | OFF           | 0 - 1 | 0             | 1<br>(ON)     |   |
|                                       |                               | ON     |  | ON            |       |               |               | 1 |
| H                                     | SIDEB_DIRT_SHADING_SET        | OFF    | DSPF back surface streak delete shading setting                            | OFF           | 0 - 1 | 0             | 1<br>(ON)     |   |
|                                       |                               | ON     |  | ON            |       |               |               | 1 |
| I                                     | SCAN_POSITION_PRIORITY_SET    | MVIEW  | DSPF front surface MVIEW/SCU priority setting (Optimum scan position)      | MVIEW         | 0 - 1 | 0             | 0<br>(MVIEW)  |   |
|                                       |                               | SCU    |  | SCU           |       |               |               | 1 |
| J                                     | DIRT_ALARM_PRIORITY_SET       | MVIEW  | DSPF common MVIEW/SCU priority setting (Alarm)                             | MVIEW         | 0 - 1 | 0             | 0<br>(MVIEW)  |   |
|                                       |                               | SCU    |  | SCU           |       |               |               | 1 |

53-10

|                           |                                |
|---------------------------|--------------------------------|
| <b>Purpose</b>            | Adjustment/Setup               |
| <b>Function (Purpose)</b> | DSPF dirt detection execution. |
| <b>Section</b>            |                                |

**Operation/Procedure**

- 1) Press [EXECUTE] key.

&lt;Descriptions of items&gt;

| Item      | Content  |
|-----------|--|
| SPF SIDEA | SPF front glass dirt position (Main scan 8 areas 1 - 8)<br>"-": No dirt, "***": Dirt |
| SPF SIDEB | DSPF back glass dirt position (Main scan 8 areas 1 - 8)<br>"-": No dirt, "***": Dirt |
| OC        | OC glass dirt position (Main scan 8 areas 1 - 8)<br>"-": No dirt, "***": Dirt        |

\* For the display content of each item, "1" indicates the front side and "8" the rear side.

&lt;Descriptions on buttons&gt;

| Item | Content  |
|------|--|
| OC   | Forcible execution of OC/SPF SIDE A and the result display are made. |
| DSPF | Forcible execution of SPF SIDE B and the result display are made.    |

53-12

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment   |
| <b>Function (Purpose)</b> | Used to check the operations of the DSPF double feed sensor. |
| <b>Section</b>            |  |

**Operation/Procedure**

&lt;Operation Check&gt;

Press [DPA EXE] key.

After completion of the detection operation, the sensor status is displayed.

| Display | Content                      | (Set range)  |
|---------|------------------------------|--------------|
| DPAOUT  | Paper thickness analog value | 0 - 1023     |
| STATUS  | Paper detection state        | NO PAPER     |
|         |                              | ONE PAPER    |
|         |                              | DOUBLE PAPER |

&lt;Gain reset&gt;

Gain initial value: 50

\* Do not use this setting unless specially required.

# 55

**55-1**

**Purpose** (Must not be used unless a special change is required.)

**Function (Purpose)** Used to set the specifications of the engine control operation.

**Section**

**Operation/Procedure**

**55-2**

**Purpose** (Must not be used unless a special change is required.)

**Function (Purpose)** Used to set the specifications of the controller operation.

**Section**

**Operation/Procedure**

**55-3**

**Purpose** (Must not be used unless a special change is required.)

**Function (Purpose)** Used to set the specifications of the controller operation.

**Section**

**Operation/Procedure**

**55-10**

**Purpose** Special stamp text setting

**Function (Purpose)** Used to enter the special stamp text input.

**Section**

**Operation/Procedure**

- 1) Select a target item of the check with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key. When [C] key is pressed, the entered value is cleared.
- 3) Press [OK] key. (The set value is saved.)

| Item | Display   | Content                 | Setting range                                    | Default value                   |       |   |   |
|------|-----------|-------------------------|--|---------------------------------|-------|---|---|
| A    | 1ST DIGIT | First digit (Left edge) | 1 - 90   | 1                               |       |   |   |
| B    | 2ND DIGIT | Second digit            | 32   |                                 |       |   |   |
| C    | 3RD DIGIT | Third digit             | [Empty:20H]<br>65 - 90                           |                                 |       |   |   |
| D    | 4TH DIGIT | Fourth digit            | [Alphabet:<br>41H ("A") -<br>5AH ("Z")]          |                                 |       |   |   |
| E    | 5TH DIGIT | Fifth digit             | 48 - 57  |                                 |       |   |   |
| F    | 6TH DIGIT | Sixth digit             | [Numeric<br>figure:<br>30H ("0") -<br>39H ("9")] |                                 |       |   |   |
| G    | TYPE      | PATTERN 1               | Print composition method                         | Bordering type                  | 0 - 2 | 0 | 0 |
|      |           | PATTERN 2               |  | OR process type                 |       | 1 |   |
|      |           | PATTERN 3               |  | Type of composition not deleted |       | 2 |   |

<Input value>

|       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Print | Space | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  | K  | L  | M  | N  |
| Input | 32    | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 |

|       |    |    |    |    |    |    |    |    |    |    |    |    |
|-------|----|----|----|----|----|----|----|----|----|----|----|----|
| Print | O  | P  | Q  | R  | S  | T  | U  | V  | W  | X  | Y  | Z  |
| Input | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |

|       |    |    |    |    |    |    |    |    |    |    |
|-------|----|----|----|----|----|----|----|----|----|----|
| Print | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| Input | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 |

# 56

**56-1**

**Purpose** Backup

**Function (Purpose)** Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)

**Section**

**Operation/Procedure**

- 1) Select a target content of data transfer.
- 2) Press [EXECUTE] key and press [YES] key.  
Data transfer of the item selected in procedure 1) is executed.  
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

|              |                             |
|--------------|-----------------------------|
| EEPROM → HDD | Transfer from EEPROM to HDD |
| HDD → EEPROM | Transfer from HDD to EEPROM |

**56-2**

**Purpose** Data backup

**Function (Purpose)** Used to backup the data in the EEPROM. SD Card, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)

**Section**

**Operation/Procedure**

- 1) Insert the USB memory into the main unit.
- 2) Select a target transfer item with the touch panel.  
<IMPORT>  
From USB MEMORY DEVICE To EEPROM, SD Card HDD  
<EXPORT>  
From EEPROM, SD Card, HDD To USB MEMORY
- 3) Press [EXECUTE] key, and press [YES] key.  
Data transfer selected in the procedure 2) is performed  
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

<Data list outside the backup targets>  
(EEPROM/SD Card)

| PWB Type   | Content                            | NOTE                |
|------------|------------------------------------|---------------------|
| Controller | Machine serial No.                 |                     |
|            | Product key information            |                     |
|            | Various counter                    |                     |
|            | Trouble history                    |                     |
| PCU        | Machine serial No.                 |                     |
|            | Various counter                    | Maintenance counter |
|            | Machine adjustment execute history |                     |
|            | Trouble history                    |                     |
| SCU        | Various counter                    | Maintenance counter |
|            | Trouble history                    |                     |

(HDD)

| Classification   | Content  | NOTE                     |
|------------------|--|--------------------------|
| Job end list     | Job end list display data<br>(The image send series include the preserved job list.) |                          |
| Log              | Job log  | Read from WEB is enable. |
| Operation manual | E-manual   |                          |

|                           |   |
|---------------------------|---|
| <b>56-3</b>               |   |
| <b>Purpose</b>            | Backup                                    |
| <b>Function (Purpose)</b> | Used to back up the document filing data. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Insert the USB memory into the machine.
- 2) Select a target item of transfer on the touch panel.  
DOC FIL EXPORT: Data are saved to the USB memory.  
DOC FIL IMPORT: The saved data are restored.
- 3) Press [EXECUTE] key, and press [YES] key.  
The data of the item selected in step 2 are transferred.  
When the above operation is normally completed, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>56-4</b>               |                                   |
| <b>Purpose</b>            | Backup                            |
| <b>Function (Purpose)</b> | Used to back up the job log data. |
| <b>Section</b>            |                                   |

**Operation/Procedure**

- 1) Insert the USB memory into the machine.
- 2) Select a target of the JOG LOG EXPORT with the touch panel.
- 3) Press [EXECUTE] key, and press [YES] key.  
The data of the item selected in step 2 are transferred.  
When the above operation is normally completed, "COMPLETE" is displayed. If the operation is terminated abnormally, "ERROR" is displayed.

|                           |   |
|---------------------------|---|
| <b>56-5</b>               |   |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check                             |
| <b>Function (Purpose)</b> | Used to import the SIM22-6 data to a USB memory in the TEXT format. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Insert the USB memory into the main unit.
- 2) Select a kind of data to be imported.
- 3) Press [EXECUTE] key, and press [YES] key.  
Procedure 2) The selected data are imported.  
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

|                           |   |
|---------------------------|---|
| <b>56-6</b>               |   |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check |
| <b>Function (Purpose)</b> | Used to output the JAM/trouble data.    |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Insert the USB memory into the main unit.

- 2) Select the output target item with the touch panel key.
- 3) Press [EXECUTE] key.
- 4) Press [YES] key.

**60**

|                           |   |
|---------------------------|---|
| <b>60-1</b>               |   |
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the operations (read/write) of the MFP control (SDRAM). |
| <b>Section</b>            |   |

**Operation/Procedure**

Press [EXECUTE] key.

Test is performed.

<Result display>

| Result display | Description                            |
|----------------|--|
| OK             | Success                                |
| NG             | Fail                                   |
| NONE           | Not installed (Including DIMM trouble) |
| INVALID        | Execution disable                      |

<SLOT descriptions>

| SLOT       | Descriptions    |       |
|------------|-----------------|-------|
| ICUM SLOT1 | ICUM standard 1 | SLOT1 |
| ICUM SLOT2 | ICUM standard 2 | SLOT2 |
| ICU1 SLOT1 | ICU1 standard   | DIMM1 |
| ICU1 SLOT2 | ICU1 expansion  | DIMM2 |
| ICU2 SLOT1 | ICU2 standard   | DIMM3 |
| ACRE SLOT  | ACRE            | ACRE  |

\* If the memory target board is not installed, no display is made.

\* When an NG occurs in the ICUM SLOT1 or SLOT2, the both slots must be replaced.

**61**

|                           |   |
|---------------------------|---|
| <b>61-1</b>               |   |
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to check the polygon motor rotation and the BD signal detection. |
| <b>Section</b>            |   |

**Operation/Procedure**

Press [EXECUTE] key.

Test is performed.

| Display           | Content            | Operation                     |
|-------------------|--------------------|-------------------------------|
| LSU TESTRESULT OK | LSU check normal   | Normal completion             |
| LSU TESTRESULT NG | LSU check abnormal | Interruption during operation |

|                           |                              |
|---------------------------|------------------------------|
| <b>61-3</b>               |                              |
| <b>Purpose</b>            | Adjustment/Setting           |
| <b>Function (Purpose)</b> | Used to set the laser power. |
| <b>Section</b>            |                              |

**Operation/Procedure**

- 1) Select a target mode of the adjustment with the touch panel key.
- 2) Select an adjustment item with [↑] [↓] keys on the touch panel.
- 3) Enter the set value with 10-key.



4) Press [OK] key. (The set value is saved.)

| Category  | Item/Display | Content             | Setting range            | Default value |                    |     |
|-----------|--------------|---------------------|--------------------------|---------------|--------------------|-----|
|           |              |                     |                          | 90cpm machine | 105/120cpm machine |     |
| COPY 600  | A            | LASER POWER (K1)    | Laser power setting/K1   | 64 - 255      | 81                 | 112 |
|           | B            | LASER POWER (K2)    | Laser power setting/K2   | 64 - 255      | 81                 | 112 |
|           | C            | LASER POWER (K3)    | Laser power setting/K3   | 64 - 255      | 81                 | 112 |
|           | D            | LASER POWER (K4)    | Laser power setting/K4   | 64 - 255      | 81                 | 112 |
|           | E            | LASER DUTY (K)      | LaserDUTY select/K       | 0 - 255       | 0                  | 0   |
| COPY 1200 | A            | LASER POWER (K1)    | Laser power setting/K1   | 64 - 255      | 81                 | 112 |
|           | B            | LASER POWER (K2)    | Laser power setting/K2   | 64 - 255      | 81                 | 112 |
|           | C            | LASER POWER (K3)    | Laser power setting/K3   | 64 - 255      | 81                 | 112 |
|           | D            | LASER POWER (K4)    | Laser power setting/K4   | 64 - 255      | 81                 | 112 |
|           | E            | LASER DUTY (K)      | LaserDUTY select/K       | 0 - 255       | 0                  | 0   |
| PR600/FAX | A            | LASER POWER (K1)    | Laser power setting/K1   | 64 - 255      | 81                 | 112 |
|           | B            | LASER POWER (K2)    | Laser power setting/K2   | 64 - 255      | 81                 | 112 |
|           | C            | LASER POWER (K3)    | Laser power setting/K3   | 64 - 255      | 81                 | 112 |
| PR600/FAX | D            | LASER POWER (K4)    | Laser power setting/K4   | 64 - 255      | 81                 | 112 |
|           | E            | LASER DUTY (K)      | LaserDUTY select/K       | 0 - 255       | 0                  | 0   |
|           | F            | LASER DUTY (K 1BIT) | LaserDUTY select/ K 1BIT | 0 - 255       | 0                  | 0   |
| PR1200    | A            | LASER POWER (K1)    | Laser power setting/K1   | 64 - 255      | 81                 | 112 |
|           | B            | LASER POWER (K2)    | Laser power setting/K2   | 64 - 255      | 81                 | 112 |
|           | C            | LASER POWER (K3)    | Laser power setting/K3   | 64 - 255      | 81                 | 112 |
|           | D            | LASER POWER (K4)    | Laser power setting/K4   | 64 - 255      | 81                 | 112 |
|           | E            | LASER DUTY (K)      | LaserDUTY select/K       | 0 - 255       | 0                  | 0   |

|   |   |
|---|---|
| <b>61-4</b>   |   |
| <b>Purpose</b>  | Adjustment  |
| <b>Function (Purpose)</b>                                   | Used to print the print image skew adjustment pattern. (LSU unit) |
| <b>Section</b>  |   |
| <b>Operation/Procedure</b>                                  |   |
| 1) Select a target item with scroll key on the touch panel. |   |

- 2) Enter the print conditions setting value with 10-key.
- 3) Press [EXECUTE] key.  
The print image skew adjustment pattern is printed.

| Item/Display |             | Content         | Setting range     | Default value |              |
|--------------|-------------|-----------------|-------------------|---------------|--------------|
| A            | MULTI COUNT | Number of print | 1 - 999           | 1             |              |
| B            | PAPER       | MFT             | Tray selection    | 1 - 5         | 1<br>4 (CS3) |
|              |             | CS1             | Manual paper feed |               |              |
|              |             | CS2             | Tray 1            |               |              |
|              |             | CS3             | Tray 2            |               |              |
|              |             | CS4             | Tray 3            |               |              |
|              |             | Tray 4          |                   | 5             |              |

|                           |  |
|---------------------------|--|
| <b>61-11</b>              |  |
| <b>Purpose</b>            | Adjustment                                     |
| <b>Function (Purpose)</b> | Used to correct the laser power automatically. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Select a target item with touch panel key.

| Items           | Contents             | Outline  |
|-----------------|----------------------|--|
| AUTO CORRECTION | Automatic correction | Adjustment by scanner                                |
| DATA            | Data display screen  | Data display when executing the automatic correction |

- 2) Press [AUTO CORRECTION] key.
- 3) Select the adjustment density pattern.
- 4) Press [EXECUTE] key.
- 5) The adjustment pattern is printed out.
- 6) Place the printed adjustment pattern on the document table (A4R direction), and press [EXECUTE] key.  
The automatic correction of the laser power is performed, and then the adjustment result pattern is outputted.
- 7) To perform the correction again, press [RETRY] key.
- 8) When [DATA] key is pressed on the initial screen, the display is shifted to the automatic adjustment result display screen.

|                           |                               |
|---------------------------|-------------------------------|
| <b>61-12</b>              |                               |
| <b>Purpose</b>            | Adjustment                    |
| <b>Function (Purpose)</b> | Laser power manual correction |
| <b>Section</b>            | LSU                           |

**Operation/Procedure**

Press an item button to be adjusted.

**When [MEASURING INSTRUMENT] is pressed:**

- 1) Select the adjustment density pattern.
- 2) Press [EXECUTE] key.
- 3) The adjustment pattern is printed out.
- 4) Enter the adjustment value by the density meter.
- 5) Press [EXECUTE] key.  
Execute the manual correction of the laser power. Then the adjustment result pattern is outputted and the data are displayed.
- 6) To perform the correction again, press [RETRY] key.

**When [VISUAL INSPECTION] is pressed:**

- 1) Select the adjustment density pattern.
- 2) Press [EXECUTE] key.
- 3) The adjustment pattern is printed out.
- 4) Press [4POINT CORRECTION] or [31POINT CORRECTION].
- 5) Enter an adjustment value.
- 6) Press [EXECUTE] key.

Execute the manual correction of the laser power. Then the adjustment result pattern is outputted and the data are displayed.

7) To perform the correction again, press [RETRY] key.

**When [DATA] is pressed:**

The display is shifted to the manual adjustment result display screen.

| Items                | Contents                   | Outline  |
|----------------------|----------------------------|--|
| MEASURING INSTRUMENT | Density meter correction * | Adjustment with the density meter.                     |
| VISUAL INSPECTION    | Visual check adjustment    | Adjustment by visual check                             |
| DATA                 | Data display screen        | Data display during execution of the manual correction |

\*: Since a special tool is required for measurement, this simulation is executed only in the factory.

**61-13**

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment                                      |
| <b>Function (Purpose)</b> | Used to clear the laser power correction value. |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

| Reference value reset item                                  |
|---|
| Laser power automatic correction amount (K) 32 data (point) |
| Laser power manual correction amount (K) 32 data (point)    |

**62**

**62-1**

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            |  |
| <b>Function (Purpose)</b> | Used to format the hard disk.<br>(Except for the operation manual area.) |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Formatting of the hard disk is performed.

**62-2**

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to check the read/write operation of the hard disk. (Partial section) |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Read/write is executed.

**62-3**

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check  |
| <b>Function (Purpose)</b> | Used to check the read/write operation of the hard disk. (All area) |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Read/write is executed.

**62-6**

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check                            |
| <b>Function (Purpose)</b> | Used to perform the self diag of the hard disk. |

**Section**

**Operation/Procedure**

- 1) Select a target item of the self diag.
- 2) Press [EXECUTE] key.  
The self diag is executed.

| Target data  | Content        |
|--------------|----------------|
| SHORT S.T    | Partial check  |
| EXTENDED S.T | All area check |

**62-7**

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check                                    |
| <b>Function (Purpose)</b> | Used to print the self diag error log of the hard disk. |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.  
The error log print is started.

**62-8**

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            |   |
| <b>Function (Purpose)</b> | Used to format the hard disk. (Except for the system area and the operation manual area.) |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Formatting of the hard disk is performed.

**62-10**

|                           |                                  |
|---------------------------|----------------------------------|
| <b>Purpose</b>            | Data clear                       |
| <b>Function (Purpose)</b> | Used to delete the job log data. |

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The job log data are deleted.

**62-11****Purpose** Data clear**Function (Purpose)** Used to delete the document filing data.**Section****Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The document filing data are deleted.

**62-12****Purpose** Setting**Function (Purpose)** Used to set YES/NO of auto format in hard disk trouble.**Section****Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.  
The set value is saved.

| Item | Display          | Content |                     | Setting range | Default value  |
|------|------------------|---------|---------------------|---------------|----------------|
| A    | (0: YES<br>1:NO) | 0       | Auto format Enable  | 0 - 1         | 1<br>(Disable) |
|      |                  | 1       | Auto format Disable |               |                |

**62-13****Purpose****Function (Purpose)** Used to format the hard disk.  
(Operation manual area only).**Section****Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
Formatting of the hard disk is executed.

**62-14****Purpose** Data clear**Function (Purpose)** Used to delete the document filing management data.**Section** HDD**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The document filing management data are cleared.  
At the same time, the job log data are also cleared.

This simulation is executed in the following trouble cases.

- \* The document filing function does not work normally.
- \* The job log is not recorded normally.

**62-20****Purpose** Operation test/check**Function (Purpose)** Used to check the operation of the mirroring hard disk.**Section** Mirroring hard disk**Operation/Procedure**

Enter the simulation mode, and the operation status of the HDD is displayed.

The status display is renewed in every second.

| Display    | Content description |
|------------|---------------------|
| OK         | Normal operation    |
| NONE       | Not connected       |
| REBUILDING | Data rebuilding     |
| ERROR      | Error occurrence    |
| TROUBLE    | Trouble             |

63-1

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting/Operation data check             |
| <b>Function (Purpose)</b> | Used to check the result of the shading correction. |

**Section**

### Operation/Procedure

Select a target color of display with [R] [G] [B] keys on the touch panel.

| Button                    | Display item   | Descriptions  | Remarks   |  |
|---------------------------|--|---|---|--|
| OC                        | GAIN ODD   | Gain adjustment value (odd number)                  |   |  |
|                           | GAIN EVEN  | Gain adjustment value (Even number)                 |   |  |
|                           | OFFSET ODD   | Offset value (odd number)                           |   |  |
|                           | OFFSET EVEN  | Offset value (even number)                          |   |  |
|                           | SMP AVE ODD  | Reference plate sampling average value (ODD)        |   |  |
|                           | SMP AVE EVEN   | Reference plate sampling average value (EVEN)       |   |  |
|                           | TARGET VALUE   | Target value  |   |  |
|                           | BLACK LEVEL  | Black output level                                  |   |  |
|                           | ERROR CODE   | Error code (0, 1 - 14)                              | 0: No error<br>1: STAGE1. Loop number over<br>2: STAGE2. The target value is less than the specified level.<br>3: STAGE3. The gain set value is negative.<br>4: END is not asserted. (Gain adjustment)<br>5: (reserve)<br>6: STAGE2. Underflow<br>7: Black shading error<br>8: Other error<br>9: END is not asserted. (White shading)<br>10: END is not asserted. (Black shading)<br>11: END is not asserted. (Light quantity correction)<br>12: END is not asserted. (Scan)<br>13: Register check error (When starting/Gain)<br>14: Register check error. (Before light quantity correction) |  |
|                           | DSPF FACE WHITE LEVEL 1ST  | First scan DSPF front surface white reference level |   |  |
| DSPF FACE WHITE LEVEL 2ND | DSPF front surface white reference level of the second or later scanning |   |   |  |

| Button                    | Display item  | Descriptions                                       | Remarks   |  |
|---------------------------|---|--|---|--|
| DSPF                      | ANALOG GAIN ODD   | Analog gain adjustment value (odd number)          |   |  |
|                           | ANALOG GAIN EVEN  | Analog gain adjustment value (Even number)         |   |  |
|                           | DIGITAL GAIN ODD  | Digital gain adjustment value (odd number)         |   |  |
|                           | DIGITAL GAIN EVEN   | Digital gain adjustment value (Even number)        |   |  |
|                           | SMP AVE ODD   | Reference plate sampling average value (ODD)       |   |  |
|                           | SMP AVE EVEN  | Reference plate sampling average value (EVEN)      |   |  |
|                           | TARGET VALUE  | Target value                                       |   |  |
|                           | BLACK LEVEL   | Black output level                                 |   |  |
|                           | ERROR CODE  | Error code (0, 1 - 14)                             | 0: No error<br>1: STAGE1. Loop number over<br>2: STAGE2. The target value is less than the specified level.<br>3: STAGE3. The gain set value is negative.<br>4: END is not asserted. (Gain adjustment)<br>5: (reserve)<br>6: STAGE2. Underflow<br>7: Black shading error<br>8: Other error<br>9: END is not asserted. (White shading)<br>10: END is not asserted. (Black shading)<br>11: END is not asserted. (Light quantity correction)<br>12: END is not asserted. (Scan)<br>13: Register check error (When starting/Gain)<br>14: Register check error. (Before light quantity correction) |  |
|                           | DSPF BACK WHITE LEVEL 1ST   | First scan DSPF back surface white reference level |   |  |
| DSPF BACK WHITE LEVEL 2ND | DSPF back surface white reference level of the second or later scanning |  |   |  |

63-2

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Purpose</b>            | Adjustment/Setting                |
| <b>Function (Purpose)</b> | Used to execute shading forcibly. |
| <b>Section</b>            | Scanner                           |

**Operation/Procedure**

- 1) Select a target mode of the adjustment with the touch panel key.
- 2) Press [EXECUTE] key.

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

| Display    | Content                                 |
|------------|---|
| COMPLETE   | (Normal) Completion                     |
| ERROR      | Abnormal completion (DSPF SHADING)      |
| INCOMPLETE | Incomplete, interruption (DSPF SHADING) |

63-3

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to perform the gamma correction and density conversion for RGB data inputted from the CCD. The gamma correction 1 of the SCAN ASIC and the set value of color correction are calculated and set from the specified image data. |
| <b>Section</b>            | Scanner   |

**Operation/Procedure**

- 1) Select an adjustment result display target color with [R] [G] [B] keys on the touch panel.
- 2) Select a target mode with [OC] [DSPF] keys.
- 3) Press [EXECUTE] key.  
The color auto adjustment is executed.

63-4

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | The average value of the patch scan values for the RGB image data inputted from the CCD are calculated and displayed. |
| <b>Section</b>            | Scanner   |

**Operation/Procedure**

- 1) Select an adjustment result display target color with [R] [G] [B] keys on the touch panel.
- 2) Select a target mode with [OC] [DSPF] keys.
- 3) Press [EXECUTE] key.  
The result is displayed.

63-5

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting   |
| <b>Function (Purpose)</b> | Used to reset the color balance of the scanner to the default. |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Select a target of the default reset with [SIDE A (OC)] [SIDE B (DSPF)] keys on the touch panel.
- 2) Press [EXECUTE] key, and press [OK] key.  
The default value is saved.

| Display       | Content   |
|---------------|---|
| SIDE A (OC)   | Copy gamma correction 1 and color correction coefficient            |
|               | TWAIN gamma correction 1 and color correction coefficient           |
|               | Auto adjustment gamma correction 1 and color correction coefficient |
| SIDE B (DSPF) | Copy gamma correction 1 and color correction coefficient            |
|               | TWAIN gamma correction 1 and color correction coefficient           |

63-6

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to set the auto adjustment pattern of the engine and gray balance. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Place the self-print chart printed with Sim.46-16 on the glass table.
- 2) Press [EXECUTE] key.
- 3) The sampling value of each patch from the high density side is displayed.

63-7

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Adjustment/Setting   |
| <b>Function (Purpose)</b> | Used to set the auto density of the engine auto adjustment scanner target value. (Service) |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Press [SETUP] key on the touch panel.  
Sampling is executed.
- 2) Place the self-print chart printed with Sim.46-16 on the glass table.
- 3) Press [EXECUTE] key.  
Sampling of each patch is executed.
- 4) Press [OK] key.  
The displayed sampling result is saved as the target value.

| Display data | Display Content           |
|--------------|---------------------------|
| B            | Point B target value      |
| C            | Point C target value      |
| D            | Point D target value      |
| E            | Point E target value      |
| F            | Point F target value      |
| G            | Point G target value      |
| H            | Point H target value      |
| I            | Point I target value      |
| J            | Point J target value      |
| K            | Point K target value      |
| L            | Point L target value      |
| M            | Point M target value      |
| N            | Point N target value      |
| O            | Point O target value      |
| BASE         | Background sampling value |

63-8

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Adjustment/Setting  |
| <b>Function (Purpose)</b> | Used to reset the engine auto adjustment scanner target value to the default value. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The engine auto adjustment scanner target value is reset to the default value.

**64**

64-2

|                           |                       |
|---------------------------|-----------------------|
| <b>Purpose</b>            | Operation test /check |
| <b>Function (Purpose)</b> | Self print (B/W mode) |
| <b>Section</b>            |                       |

**Operation/Procedure**

- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.

Printing of the pattern is executed.

| Item   | Display item                                      |                    | Descriptions of items   |                               | Setting range   |   | Default value          |
|--------|---|--------------------|---|-------------------------------|---|---|------------------------|
| A      | PRINT PATTERN (1, 2, 9 - 11, 17 - 19, 21, 22, 29) |                    | Print pattern specification   |                               | 1 - 58 (Printable only 1, 2, 9 - 11, 17 - 19, 21, 22, 29) |   | 1                      |
| B      | DOT1 (DOT1>=2 IF A: 2, 11)                        |                    | Setting of print dot number (M parameter)<br>(Self print pattern: m by n) |                               | 1 - 255 (Pattern 2, 11: 2 - 255 except above: 1 - 255)    |   | 1                      |
| C      | DOT2 (DOT2>=2 IF A: 2, 11)                        |                    | Setting of blank dot number (N parameter)<br>(Self print pattern: m by n) |                               | 0 - 255 (Pattern 2, 11: 2 - 255 except above: 0 - 255)    |   | 254                    |
| D      | DENSITY (FIXED "255" IF A: 9)                     |                    | Used to specify the print gradation.                                      |                               | 1 - 255 (Pattern 9: 255 Fixed except above: 1 - 255)      |   | 255                    |
| E      | MULTI COUNT                                       |                    | Number of print   |                               | 1 - 999   |   | 1                      |
| F      | EXPOSURE<br>(2 - 9 IF A: 17 - 19)                 | THROUGH            | Exposure mode<br>specification  | No process (through)          | 1 - 9 (Pattern 17 - 19: 2 - 9 except above: 1 - 8)        | 1 | 8 (STANDARD<br>DITHER) |
|        |   | CHAR/PIC           |   | Text/Printed Photo            |   | 2 |                        |
|        |   | CHAR/PRPIC         |   | Text/Photograph               |   | 3 |                        |
|        |   | CHAR               |   | Text                          |   | 4 |                        |
|        |   | PRINT PIC          |   | Printed photo                 |   | 5 |                        |
|        |   | PRINT PAPER        |   | Photograph                    |   | 6 |                        |
|        |   | MAP                |   | Map                           |   | 7 |                        |
|        |   | STANDARD<br>DITHER |   | Dither without correction     |   | 8 |                        |
|        |   | AUTO               |   | Auto                          |   | 9 |                        |
| G      | PAPER   | MFT                | Tray selection  | Manual feed                   | 1 - 9   | 1 | 2 (CS1)                |
|        |   | CS1                |   | Tray 1                        |   | 2 |                        |
|        |   | CS2                |   | Tray 2                        |   | 3 |                        |
|        |   | CS3                |   | Tray 3                        |   | 4 |                        |
|        |   | CS4                |   | Tray 4                        |   | 5 |                        |
|        |   | LCC                |   | LCC *1                        |   | 6 |                        |
|        |   | LCT1_1             |   | LCT 1 series, first stage *2  |   | 6 |                        |
|        |   | LCT1_2             |   | LCT 1 series, second stage *2 |   | 7 |                        |
|        |   | LCT2_1             |   | LCT 2 series, first stage *3  |   | 8 |                        |
| LCT2_2 | LCT 2 series, second stage *3                     | 9                  |   |                               |   |   |                        |
| H      | DUPLEX  | YES                | Duplex print<br>selection   | Select                        | 0 - 1   | 0 | 1 (NO)                 |
|        |   | NO                 |   | Not select                    |   | 1 |                        |
| I      | PAPER TYPE  | PLAIN              | Paper type  | Standard paper                | 1 - 6   | 1 | 1 (PLAIN)              |
|        |   | HEAVY              |   | Heavy paper                   |   | 2 |                        |
|        |   | OHP                |   | OHP                           |   | 3 |                        |
|        |   | HEAVY2             |   | Heavy paper 2                 |   | 4 |                        |
|        |   | HEAVY3             |   | Heavy paper 3                 |   | 5 |                        |
|        |   | HEAVY4             |   | Heavy paper 4                 |   | 6 |                        |

\*1: Displayed only when A4/A3 LCC is connected.

\*2: Displayed only when 2-stage LCT is installed.

\*3: Displayed only when two units of 2-stage LCT are connected.

<Item A print pattern>

| No. | Content                                   | Pattern generating section            |
|-----|---|---------------------------------------|
| 1   | Grid pattern                              | LSU-ASIC                              |
| 2   | Dot print                                 |                                       |
| 3   |   |                                       |
| 4   |   |                                       |
| 5   |   |                                       |
| 6   |   |                                       |
| 7   |   |                                       |
| 8   |   |                                       |
| 9   | Each color 10% area (A4/4R) density print | Half-tone<br>(IMG-ASIC after-process) |
| 10  | 8-color belt print                        |                                       |
| 11  | 4-color dot print (sub scan)              |                                       |
| 12  |   |                                       |
| 13  |   |                                       |
| 14  |   |                                       |
| 15  |   |                                       |
| 16  |   |                                       |
| 17  | All background (halftone)                 | LSU-ASIC                              |
| 18  | 256 gradations pattern (Other dither)     |                                       |
| 19  | 256 gradations pattern (Dither for text)  |                                       |
| 20  |   |                                       |
| 21  | 4-point dot print (main scan)             |                                       |

| No. | Content           | Pattern generating section |
|-----|-------------------|----------------------------|
| 22  | Slant line        | LSU-ASIC                   |
| 23  |                   |                            |
| 24  |                   |                            |
| 25  |                   |                            |
| 26  |                   |                            |
| 27  |                   |                            |
| 28  |                   |                            |
| 29  | Dot print 1200dpi |                            |
| 30  |                   |                            |
| 31  |                   |                            |
| 32  |                   |                            |
| 51  |                   |                            |
| 52  |                   |                            |
| 53  |                   |                            |
| 54  |                   |                            |
| 55  |                   |                            |
| 56  |                   |                            |
| 57  |                   |                            |
| 58  |                   |                            |

64-3

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check                      |
| <b>Function (Purpose)</b> | Self print (B/W mode: high speed process) |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target item with [↑] [↓] keys on the touch panel.
  - 2) Enter the set value with 10-key.
  - 3) Press [EXECUTE] key.
- Printing of the pattern is executed.

| Item            | Display item & detail display               |                           | Item description   |                         | Setting range  |   | Default value          |
|-----------------|---|---------------------------|--|-------------------------|--|---|------------------------|
| A               | PRINT PATTERN<br>(1 - 22, 53 - 58, 71 - 78) |                           | Print pattern specification                                  |                         | 1 - 22, 53 - 59, 71 - 78<br>(1 - 22, 53 - 59, 71 - 78 printable) |   | 1                      |
| B               | DOT1 (DOT1>=2 IF A: 2, 11)                  |                           | Print dot number setting<br>(Self print pattern: for m by n) |                         | Pattern 2, 11: 2 - 255<br>Other than above : 1 - 255             |   | 1                      |
| C               | DOT2 (DOT2<=100 IF A:59)                    |                           | Empty dot number setting                                     |                         | Pattern 59 : 0 - 100<br>Other than above : 0 - 255               |   | 254                    |
| D               | DENSITY (FIXED "255" IF A: 9)               |                           | Print gradation specification                                |                         | Pattern 9 : Fixed to 255.<br>Other than above : 1 - 255          |   | 255                    |
| E               | RESOLUTION (DPI)                            |                           | Resolution selection (600DPI, 1200DPI)                       |                         | 0 (600DPI) - 1 (1200DPI)   |   | 1                      |
| F               | MULTI COUNT                                 |                           | Print quantity   |                         | 1 - 999  |   | 1                      |
| G               | EXPOSURE<br>(2 - 8 IF<br>A: 14 - 19)        | THROUGH                   | Exposure mode<br>specification                               | No process<br>(Through) | Pattern 14 - 19 : 2 - 8<br>Other than above : 1 - 8              | 1 | 8<br>(STANDARD DITHER) |
| CHAR/PIC        |   | Text/Printed Photo        |  | 2                       |  |   |                        |
| CHAR/PRPIC      |   | Text/Photograph           |  | 3                       |  |   |                        |
| CHAR            |   | Text                      |  | 4                       |  |   |                        |
| PRINT PIC       |   | Printed Photo             |  | 5                       |  |   |                        |
| PRINT PAPER     |   | Photograph                |  | 6                       |  |   |                        |
| MAP             |   | Map                       |  | 7                       |  |   |                        |
| STANDARD DITHER |   | Correction without dither |  | 8                       |  |   |                        |
| H               | PAPER                                       | MFT                       | Paper feed selection   | Manual feed             | 1 - 8  | 1 | 2 (CS1)                |
| CS1             |   | Cassette 1                |  | 2                       |  |   |                        |
| CS2             |   | Cassette 2                |  | 3                       |  |   |                        |
| CS3             |   | Cassette 3                |  | 4                       |  |   |                        |
| CS4             |   | Cassette 4                |  | 5                       |  |   |                        |
| LCC1            |   | LCC1                      |  | 6                       |  |   |                        |
| LCC2            |   | LCC2                      |  | 7                       |  |   |                        |
| LCC3            |   | LCC3                      |  | 8                       |  |   |                        |
| I               | DUPLEX                                      | YES                       | Duplex print select  | Select                  | 0 - 1  | 0 | 1 (NO)                 |
| NO              |   | Not select                |  | 1                       |  |   |                        |

| Item | Display item & detail display |          | Item description     |             | Setting range |   | Default value |
|------|-------------------------------|----------|----------------------|-------------|---------------|---|---------------|
| J    | PAPER TYPE                    | PLAIN    | Paper type selection | Plain paper | 1 - 4         | 1 | 1 (PLAIN)     |
|      |                               | HEAVY    |                      | Heavy paper |               | 2 |               |
|      |                               | OHP      |                      | OHP         |               | 3 |               |
|      |                               | ENVELOPE |                      | Envelope    |               | 4 |               |

<Item A print pattern>

| Item | Pattern generation section |
|------|----------------------------|
| 1    | LSU-ASIC                   |
| 2    |                            |
| 3    |                            |
| 4    |                            |
| 5    |                            |
| 6    |                            |
| 7    |                            |
| 8    |                            |
| 9    |                            |
| 10   |                            |
| 11   |                            |
| 12   |                            |
| 13   |                            |
| 14   |                            |
| 15   |                            |
| 16   |                            |
| 17   |                            |
| 18   |                            |
| 19   |                            |

| Item | Pattern generation section         |
|------|------------------------------------|
| 20   | LSU-ASIC                           |
| 21   |                                    |
| 22   |                                    |
| 51   | Dot print (IMG-ASIC pre-process)   |
| 52   |                                    |
| 53   |                                    |
| 54   | IMG-ASIC                           |
| 55   |                                    |
| 56   | half-tone (IMG-ASIC after-process) |
| 57   |                                    |
| 58   |                                    |
| 59   | Controller (Memory)                |
| 71   |                                    |
| 72   |                                    |
| 73   |                                    |
| 74   |                                    |
| 75   |                                    |
| 76   |                                    |
| 77   |                                    |
| 78   |                                    |

64-4

|                           |   |
|---------------------------|---|
| <b>Purpose</b>            | Operation test/check                        |
| <b>Function (Purpose)</b> | Used to make the self print of the printer. |
| <b>Section</b>            |   |

**Operation/Procedure**

- 1) Select a target item of print with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) The self print is started.

| Item | Display item/Details of display |             | Descriptions of items                |                        | Setting range |   | Default value   |
|------|---------------------------------|-------------|--------------------------------------|------------------------|---------------|---|-----------------|
| A    | PRINT PATTERN                   |             | Print pattern specification          |                        | 1 - 3         |   | 3               |
| B    | DENSITY                         |             | Used to specify the print gradation. |                        | 1 - 255       |   | 128             |
| C    | MULTI COUNT                     |             | Number of print                      |                        | 1 - 999       |   | 1               |
| D    | PAPER                           | MFT         | Paper feed tray selection            | Manual feed            | 1 - 6         | 1 | 2 (CS1)         |
|      |                                 | CS1         |                                      | Tray 1                 |               | 2 |                 |
|      |                                 | CS2         |                                      | Tray 2                 |               | 3 |                 |
|      |                                 | CS3         |                                      | Tray 3                 |               | 4 |                 |
|      |                                 | CS4         |                                      | Tray 4                 |               | 5 |                 |
|      |                                 | LCC         |                                      | LCC                    |               | 6 |                 |
| E    | HALFTONE                        | LOW         | Halftone                             | Low line number        | 0 - 2         | 0 | 0 (LOW)         |
|      |                                 | HIGH        |                                      | High line number       |               | 1 |                 |
|      |                                 | SHIGH       |                                      | Ultra high line number |               | 2 |                 |
| F    | QUALITY                         | STANDARD    | Image quality setting                | Standard               | 0 - 2         | 0 | 1 (HIGHQUALITY) |
|      |                                 | HIGHQUALITY |                                      | High quality           |               | 1 |                 |
|      |                                 | FINE        |                                      | Ultra fine             |               | 2 |                 |
| G    | DITHER                          | STRAIGHT    | Specification of dither correction   | Straight               | 0 - 1         | 0 | 1 (CALIB)       |
|      |                                 | CALIB       |                                      | Calibration            |               | 1 |                 |



| Item | Display item/Details of display |        | Descriptions of items |                | Setting range |   | Default value |
|------|---------------------------------|--------|-----------------------|----------------|---------------|---|---------------|
| H    | PAPER TYPE                      | PLAIN  | Paper type            | Standard paper | 0 - 5         | 0 | 0             |
|      |                                 | HEAVY  |                       | Heavy paper    |               | 1 |               |
|      |                                 | HEAVY2 |                       | Heavy paper 2  |               | 2 |               |
|      |                                 | HEAVY3 |                       | Heavy paper 3  |               | 3 |               |
|      |                                 | HEAVY4 |                       | Heavy paper 4  |               | 4 |               |
|      |                                 | GLOSSY |                       | Glossy paper   |               | 5 |               |

<Descriptions for print pattern at Item A>

| No. | Content                     |
|-----|-----------------------------|
| 1   | 256 gradation pattern (B/W) |
| 2   | half-tone pattern (B/W)     |
| 3   | Background dot print        |

|                           |                          |
|---------------------------|--------------------------|
| 64-5                      |                          |
| <b>Purpose</b>            | Operation test/check     |
| <b>Function (Purpose)</b> | Printer self print (PCL) |
| <b>Section</b>            |                          |

**Operation/Procedure**

- 1) Select a print target item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) The self print is started.

| Item | Display item/Details of display |                  | Descriptions of items              |                             | Setting range | Default value   |
|------|---------------------------------|------------------|------------------------------------|-----------------------------|---------------|-----------------|
| A    | PRINT PATTERN                   |                  | Print pattern specification        |                             | 1 - 2         | 1               |
| B    | DENSITY                         |                  | Print gradation specification      |                             | 1 - 255       | 255             |
| C    | MULTI COUNT                     |                  | Number of print                    |                             | 1 - 999       | 1               |
| D    | PAPER                           | MFT              | Paper feed tray selection          | Manual feed                 | 1 - 6         | 2 (CS1)         |
|      |                                 | CS1              |                                    | Tray 1                      |               |                 |
|      |                                 | CS2              |                                    | Tray 2                      |               |                 |
|      |                                 | CS3              |                                    | Tray 3                      |               |                 |
|      |                                 | CS4              |                                    | Tray 4                      |               |                 |
|      |                                 | LCC              |                                    | LCC                         |               |                 |
| E    | HALFTONE                        | LOW(IMAGE)       | Halftone                           | Photograph                  | 0 - 3         | 3 (AUTO)        |
|      |                                 | HIGH(TEXT)       |                                    | Text                        |               |                 |
|      |                                 | SHIGH(FINE TEXT) |                                    | Fine text                   |               |                 |
|      |                                 | AUTO             |                                    | Auto (Photograph/Text)      |               |                 |
| F    | QUALITY                         | STANDARD         | Image quality setting              | Standard (600dpi, 1bit)     | 0 - 1         | 1 (HIGHQUALITY) |
|      |                                 | HIGHQUALITY      |                                    | High quality (600dpi, 4bit) |               |                 |
|      |                                 | FINE             |                                    | Ultra fine (1200dpi, 1bit)  |               |                 |
| G    | DITHER                          | STRAIGHT         | Specification of dither correction | 0: Straight                 | 0 - 1         | 1               |
|      |                                 | CALIB            |                                    | 1: Calibration              |               |                 |
| H    | PAPER TYPE                      | PLAIN            | Paper type                         | Standard paper              | 0 - 5         | 0 (PLAIN)       |
|      |                                 | HEAVY            |                                    | Heavy paper                 |               |                 |
|      |                                 | HEAVY2           |                                    | Heavy paper 2               |               |                 |
|      |                                 | HEAVY3           |                                    | Heavy paper 3               |               |                 |
|      |                                 | HEAVY4           |                                    | Heavy paper 4               |               |                 |
|      |                                 | GLOSSY           |                                    | Glossy paper                |               |                 |
| I    | TONER SAVE                      | OFF              | Toner save mode                    | not set.                    | 0 - 1         | 0 (OFF)         |
|      |                                 | ON               |                                    | set.                        |               |                 |

<Descriptions for print pattern at Item A>

| No. | Content                              | Remarks  |
|-----|--------------------------------------|--|
| 1   | PCL process inspection pattern (B/W) | Printing is made at the process speed of the B/W mode. |
| 2   | Service chart (B/W)                  | Printing is made at the process speed of the B/W mode. |

64-6

|                           |                         |
|---------------------------|-------------------------|
| <b>Purpose</b>            | Operation test/check    |
| <b>Function (Purpose)</b> | Printer self print (PS) |
| <b>Section</b>            |                         |

**Operation/Procedure**

- 1) Select a print target item with [↑] [↓] keys.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) The self print is started.

| Item | Display item/Details of display |                  | Descriptions of items              | Setting range           | Default value |                    |                             |
|------|---------------------------------|------------------|------------------------------------|-------------------------|---------------|--------------------|-----------------------------|
| A    | PRINT PATTERN                   |                  | Print pattern specification        | 1 - 1                   | 1             |                    |                             |
| B    | DENSITY                         |                  | Print gradation specification      | 1 - 255                 | 255           |                    |                             |
| C    | MULTI COUNT                     |                  | Number of print                    | 1- 999                  | 1             |                    |                             |
| D    | PAPER                           | MFT              | Paper feed tray selection          | Manual feed             | 1-6           | 2 (CS1)            |                             |
|      |                                 | CS1              |                                    |                         |               |                    | Tray 1                      |
|      |                                 | CS2              |                                    |                         |               |                    | Tray 2                      |
|      |                                 | CS3              |                                    |                         |               |                    | Tray 3                      |
|      |                                 | CS4              |                                    |                         |               |                    | Tray 4                      |
|      |                                 | LCC              |                                    |                         |               |                    | LCC                         |
| E    | HALFTONE                        | LOW(IMAGE)       | Halftone                           | Photograph              | 0 - 3         | 3 (AUTO)           |                             |
|      |                                 | HIGH(TEXT)       |                                    |                         |               |                    | Text                        |
|      |                                 | SHIGH(FINE TEXT) |                                    |                         |               |                    | Fine text                   |
|      |                                 | AUTO             |                                    |                         |               |                    | Auto (Photograph/Text)      |
| F    | QUALITY                         | STANDARD         | Image quality setting              | Standard (600dpi, 1bit) | 0 - 1         | 1<br>(HIGHQUALITY) |                             |
|      |                                 | HIGHQUALITY      |                                    |                         |               |                    | High quality (600dpi, 4bit) |
|      |                                 | FINE             |                                    |                         |               |                    | Ultra fine (1200dpi, 1bit)  |
| G    | DITHER                          | STRAIGHT         | Specification of dither correction | 0: Straight             | 0 - 1         | 1 (CALIB)          |                             |
|      |                                 | CALIB            |                                    |                         |               |                    | 1: Calibration              |
| H    | PAPER TYPE                      | PLAIN            | Paper type                         | Standard paper          | 0 - 5         | 0 (PLAIN)          |                             |
|      |                                 | HEAVY            |                                    |                         |               |                    | Heavy paper                 |
|      |                                 | HEAVY2           |                                    |                         |               |                    | Heavy paper 2               |
|      |                                 | HEAVY3           |                                    |                         |               |                    | Heavy paper 3               |
|      |                                 | HEAVY4           |                                    |                         |               |                    | Heavy paper 4               |
|      |                                 | GLOSSY           |                                    |                         |               |                    | Glossy paper                |
| I    | TONER SAVE                      | OFF              | Toner save mode                    | not set.                | 0 - 1         | 0 (OFF)            |                             |
|      |                                 | ON               |                                    |                         |               |                    | set.                        |

&lt;Descriptions for print pattern at Item A&gt;

| No. | Content                     | Gradation select<br>Dither select | Remarks  |
|-----|-----------------------------|-----------------------------------|--|
| 1   | PS inspection pattern (B/W) | 1: Straight<br>2: Calibration     | Printing is made at the process speed of the B/W mode. |

64-7

|                           |  |
|---------------------------|--|
| <b>Purpose</b>            | Operation test/check   |
| <b>Function (Purpose)</b> | Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-16 is printed.) |
| <b>Section</b>            |  |

**Operation/Procedure**

- 1) Set the print conditions.  
Select an item to be print condition with scroll keys.  
Set the print conditions with 10-key.
- 2) Press [EXECUTE] key.  
The adjustment pattern of SIM46-21 is printed.

| Item/Display |          | Content         |   | Setting range | Default value | Writing |
|--------------|----------|-----------------|---|---------------|---------------|---------|
| A            | COPIES   | Number of print |   | 1 - 999       | 1             | No      |
| B            | PROC ADJ | YES             | 0 | 0 - 1         | 1             | Yes     |
|              |          | NO              | 1 |               |               |         |

## 65

|  |   |
|--|---|
| <b>65-1</b>  |   |
| <b>Purpose</b>   | Adjustment  |
| <b>Function (Purpose)</b>  | Used to adjust the detection position of the touch panel (LCD display section). |
| <b>Section</b>   | Operation panel section   |
| <b>Operation/Procedure</b>   |   |
| Touch the centers of the four cross marks on the screen.                               |   |
| When all the four points are touched and OK, the corrected value of sampling is saved. |   |

|   |  |
|---|--|
| <b>65-2</b>   |  |
| <b>Purpose</b>  | Operation check/Test   |
| <b>Function (Purpose)</b>   | Used to check the result of the touch panel (LCD display section) detection position adjustment. |
| <b>Section</b>  | Operation panel section  |
| <b>Operation/Procedure</b>  |  |
| Touch the touch panel.  |  |
| The coordinates X (horizontal) and Y (vertical) of the current touch position are displayed in real time. |  |

|  |   |
|--|---|
| <b>65-5</b>  |   |
| <b>Purpose</b>                                       | Operation check/Test                                |
| <b>Function (Purpose)</b>                            | Used to check the key input of the operation panel. |
| <b>Section</b>                                       | Operation panel section                             |
| <b>Operation/Procedure</b>                           |   |
| Press the keys displayed on the screen sequentially. |   |

## 67

|  |               |
|--|---------------|
| <b>67-17</b>   |               |
| <b>Purpose</b>   | Reset         |
| <b>Function (Purpose)</b>  | Printer reset |
| <b>Section</b>   | Printer       |
| <b>Operation/Procedure</b>   |               |
| 1) Press [EXECUTE] key.  |               |
| 2) Press [YES] key.<br>The set data related to the printer are initialized. (Including the NIC setting.) |               |
| When the operation is completed, [EXECUTE] key returns to the normal display.                            |               |

|   |   |
|---|---|
| <b>67-24</b>  |   |
| <b>Purpose</b>  | Adjustment/Setting                      |
| <b>Function (Purpose)</b>   | Used to set for auto color calibration. |
| <b>Section</b>  |   |
| <b>Operation/Procedure</b>  |   |
| 1) Press [EXECUTE] key.<br>The high density process control is started, and the self print is outputted.                              |   |
| 2) Place the printed self print patch on the glass table, and select a process mode with [FACTORY] [SERVICE] keys on the touch panel. |   |

- 3) Press [EXECUTE] key. After scanning the patch, the self print of 17 patches is printed.
- 4) Press [OK] key.  
The correction print is saved, and the reference value registration is processed.

|   |   |
|---|---|
| <b>67-25</b>                                    |   |
| <b>Purpose</b>                                  | Adjustment/Setting  |
| <b>Function (Purpose)</b>                       | Used to set the printer engine color balance manual correction. |
| <b>Section</b>                                  |   |
| <b>Operation/Procedure</b>                      |   |
| 1) Select an adjustment item with [↑] [↓] keys. |   |
| 2) Enter the set value with 10-key.             |   |
| 3) Press [OK] key. (The set value is saved.)    |   |

| Item | Display name | Setting range | Default value |
|------|--------------|---------------|---------------|
| A    | POINT1       | 1 - 999       | 500           |
| B    | POINT2       | 1 - 999       | 500           |
| C    | POINT3       | 1 - 999       | 500           |
| D    | POINT4       | 1 - 999       | 500           |
| E    | POINT5       | 1 - 999       | 500           |
| F    | POINT6       | 1 - 999       | 500           |
| G    | POINT7       | 1 - 999       | 500           |
| H    | POINT8       | 1 - 999       | 500           |
| I    | POINT9       | 1 - 999       | 500           |
| J    | POINT10      | 1 - 999       | 500           |
| K    | POINT11      | 1 - 999       | 500           |
| L    | POINT12      | 1 - 999       | 500           |
| M    | POINT13      | 1 - 999       | 500           |
| N    | POINT14      | 1 - 999       | 500           |
| O    | POINT15      | 1 - 999       | 500           |
| P    | POINT16      | 1 - 999       | 500           |
| Q    | POINT17      | 1 - 999       | 500           |

|  |  |
|--|--|
| <b>67-27</b>   |  |
| <b>Purpose</b>   | Adjustment/Setting   |
| <b>Function (Purpose)</b>  | Used to register the scanner target value of the printer engine auto density adjustment. |
| <b>Section</b>   |  |
| <b>Operation/Procedure</b>   |  |
| 1) Press [SETUP] key.  |  |
| 2) Place the self print patch printed with Sim. 67-25 on the glass table, and press [EXECUTE] key. |  |
| 3) Press [OK] key.<br>The target value is saved.   |  |

| Item | Display Content           |
|------|---------------------------|
| B    | Point B target value      |
| C    | Point C target value      |
| D    | Point D target value      |
| E    | Point E target value      |
| F    | Point F target value      |
| G    | Point G target value      |
| H    | Point H target value      |
| I    | Point I target value      |
| J    | Point J target value      |
| K    | Point K target value      |
| L    | Point L target value      |
| M    | Point M target value      |
| N    | Point N target value      |
| O    | Point O target value      |
| BASE | Background sampling value |

**67-28**

**Purpose** Adjustment/Setting

**Function (Purpose)** Used to reset the printer engine auto adjustment scanner target value to the default value.

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The engine auto adjustment scanner target value is reset to the default value.

**67-31**

**Purpose** Data clear

**Function (Purpose)** Used to clear the printer calibration value.

**Section**

**Operation/Procedure**

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The printer calibration value is cleared.

**67-32**

**Purpose** Adjustment/Setting

**Function (Purpose)** Printer screen gamma table setting (300/600DPI).

**Section**

**Operation/Procedure**

- 1) Select a target item with [↑] [↓] keys on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value is saved.

| Item | Display                        | Content                              | Setting range | Default value |
|------|--------------------------------|--------------------------------------|---------------|---------------|
| A    | STANDARD GAMMA TABLE (600DPI)  | Standard gamma table setting 600DPI  | 1 - 3         | 1             |
| B    | STANDARD GAMMA TABLE (1200DPI) | Standard gamma table setting 1200DPI | 1 - 3         | 1             |

**67-33**

**Purpose** Adjustment/Setting

**Function (Purpose)** Used to perform the gamma correction of printer screens (for PCL).

**Section**

**Operation/Procedure**

- 1) Select an adjustment target color with [K] [C] [M] [Y] keys on the touch panel.
- 2) Select a target item with [SCREEN] key.
- 3) Select an adjustment item with [↑] [↓] keys.
- 4) Enter the set value with 10-key.
- 5) Press [OK] key.

The set value is saved.

| Item | Display | Description | Setting range | Default value |
|------|---------|-------------|---------------|---------------|
| A    | POINT1  | Point 1     | 0 - 255       | 128           |
| B    | POINT2  | Point 2     | 0 - 255       | 128           |
| C    | POINT3  | Point 3     | 0 - 255       | 128           |
| D    | POINT4  | Point 4     | 0 - 255       | 128           |

| Item | Display | Description | Setting range | Default value |
|------|---------|-------------|---------------|---------------|
| E    | POINT5  | Point 5     | 0 - 255       | 128           |
| F    | POINT6  | Point 6     | 0 - 255       | 128           |
| G    | POINT7  | Point 7     | 0 - 255       | 128           |
| H    | POINT8  | Point 8     | 0 - 255       | 128           |
| I    | POINT9  | Point 9     | 0 - 255       | 128           |
| J    | POINT10 | Point 10    | 0 - 255       | 128           |
| K    | POINT11 | Point 11    | 0 - 255       | 128           |
| L    | POINT12 | Point 12    | 0 - 255       | 128           |
| M    | POINT13 | Point 13    | 0 - 255       | 128           |
| N    | POINT14 | Point 14    | 0 - 255       | 128           |
| O    | POINT15 | Point 15    | 0 - 255       | 128           |
| P    | POINT16 | Point 16    | 0 - 255       | 128           |
| Q    | POINT17 | Point 17    | 0 - 255       | 128           |

<Items selected by SCREEN>

| Display     | Content                         |
|-------------|---------------------------------|
| HEAVY PAPER | Heavy paper or Glossy paper     |
| SCREEN1     | B/W 600dpi 1bit                 |
| SCREEN2     | B/W 600dpi 4bit LOW (Photo)     |
| SCREEN3     | B/W 600dpi 4bit HIGH (Graphics) |
| SCREEN4     | B/W 600dpi 4bit SHIGH           |
| SCREEN5     | B/W 1200dpi 1bit LOW            |
| SCREEN6     | B/W 1200dpi 1bit HIGH           |
| SCREEN7     | B/W 1200dpi 1bit SHIGH          |

**67-34**

**Purpose** Adjustment/Setting

**Function (Purpose)** Used to set Enable/Disable of the printer half-tone max. density correction.

**Section**

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.

The set value is saved.

| Item | Display                 | Content  | Setting range | Default value |
|------|-------------------------|--|---------------|---------------|
| A    | 0: ENABLE<br>1: DISABLE | 0 Engine max. density correction mode: Enable  | 0 - 1         | 1             |
|      |                         | 1 Engine max. density correction mode: Disable |               |               |

# [7] TROUBLESHOOTING

## 1. Error code and troubleshooting

### A. General

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.

### B. 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.)

### C. Self diag message kinds

The self diag messages are classified as shown in the table below.

|         |         |  |
|---------|---------|--|
| Class 1 | User    | Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)     |
|         | Service | Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)            |
|         | Others  | -  |
| Class 2 | Warning | Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.) |
|         | Trouble | Warning of a machine trouble. The machine is stopped.  |
|         | Others  | -  |

### D. Self diag operation

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

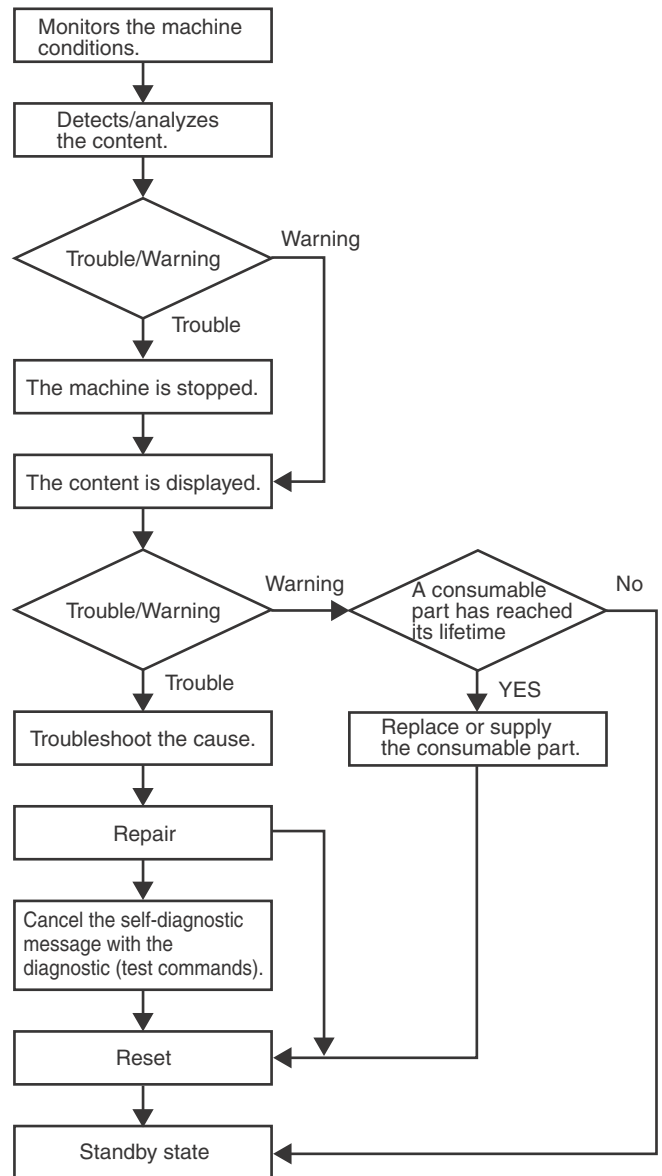
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD and lamp.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



## E. Breakdown sequence

### (1) Error code and operatable mode

| Trouble content                     |   | Judgment block              | Trouble code  | Operatable mode                    |             |             |             |       |            |
|-------------------------------------|---|-----------------------------|---|------------------------------------|-------------|-------------|-------------|-------|------------|
|                                     |   |                             |   | Copy scan (including interruption) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print |
| HDD trouble                         | SD card breakdown                                       | MFP                         | E7 (07)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | HDD breakdown   |                             | E7 (03, A5)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | HDD-ASIC breakdown                                      |                             | E7 (04)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Scanner communication trouble       | SCU communication error                                 |                             | A0 (02)<br>E7 (80)  | ?                                  | ?           | ?           | ?           | ○     | ○          |
| Engine communication trouble        | PCU communication error                                 |                             | A0 (01)<br>E7 (90)  | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Option communication trouble        | ACU communication error                                 |                             | A0 (04, 05)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Printer port system trouble         | Printer port system trouble                             |                             | F9 (91, 92)   | ○                                  | ?           | ?           | ○           | ?     | △          |
| Backup battery voltage fall trouble | Backup battery voltage fall                             |                             | U1 (01)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Operation disable trouble 1         | Controller fan motor trouble                            |                             | L4 (28, 30)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Operation disable trouble 2         | External communication disable (RIC)                    |                             | U7 (50, 51)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | Memory error (included not installed the expansion RAM) |                             | U2 (00, 11, 40, 41, 42)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | Connection trouble (MFP detection)                      |                             | A0 (10, 11, 14, 16, 17, 20)<br>E7 (60, 61, 62, 65, 89)  | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | Serial number discrepancy                               |                             | U2 (30)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | HDD registration data check sum error                   |                             | U2 (50)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Operation disable trouble 3         | Memory check error when booting                         |                             | E7 (95, 96)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
|                                     | Image memory trouble, decode error                      | E7 (01, 49, 91, 92, 93, 94) | ?   | ?                                  | ?           | ?           | ?           | ?     |            |
|                                     | Image memory trouble, decode error (related to ACRE, 1) | E7 (42, 46, 48)             | ?   | △17                                | ?           | ?           | ?           | ○     |            |
| Operation disable trouble 4         | Personal counter not-installed trouble                  | PC (00)                     | ?   | ?                                  | ?           | ?           | ?           | ?     |            |
| Power controller trouble            | Power controller trouble                                | L8 (20)                     | ?   | ?                                  | ?           | ?           | ?           | ?     |            |
| Special function trouble            | Special function error trouble                          | U2 (60)                     | ○   | ○                                  | ○           | ○           | ○           | ○     |            |
| Laser trouble                       | LSU breakdown   | PCU                         | E7 (20, 21, 24, 28, 29, A0)<br>L6 (10)  | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Engine trouble 1                    | Connection trouble (PCU detection)                      |                             | A0 (21)<br>E7 (50, 55, 58)<br>F1 (50)   | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Engine trouble 2                    | PCU troubles (motor, fusing, etc.)                      |                             | C1 (01, 10)<br>C4 (20)<br>F2 (22, 40, 64, 70, 74, 91)<br>H2 (00, 01, 02, 03)<br>H3 (00, 01, 02)<br>H4 (00, 01, 02, 30)<br>H5 (01)<br>H7 (10, 11)<br>L4 (01, 02, 03, 04, 14, 17, 27, 31, 32, 34, 36, 38, 39, 40, 41, 43, 46, 47, 48, 49, 50, 54, 58)<br>L8 (01, 02)<br>U2 (90, 91) | ?                                  | ?           | ?           | ?           | ?     | ?          |

| Trouble content                |   | Judgment block      | Trouble code   | Operatable mode                    |             |             |             |       |            |
|--------------------------------|---|---------------------|--|------------------------------------|-------------|-------------|-------------|-------|------------|
|                                |   |                     |  | Copy scan (including interruption) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print |
| Paper feed tray 0 trouble      | Paper feed tray 0 breakdown                           | PCU                 | U6 (63, 68, 69)  | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 1 trouble      | Paper feed tray 1 breakdown                           |                     | F3 (12)  | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 2 trouble      | Paper feed tray 2 breakdown                           |                     | F3 (22)  | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 3 trouble      | Paper feed tray 3 breakdown                           |                     | F3 (32)  | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 4 trouble      | Paper feed tray 4 breakdown                           |                     | F3 (42)  | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 5 trouble      | Paper feed tray 5 breakdown                           |                     | U6 (09, 20, 21, 23, 24, 29, 51)<br>UE (10, 11, 12, 13, 14, 15, 16, 17, 18, 19)   | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 6 trouble      | Paper feed tray 6 breakdown                           |                     | U6 (33, 34, 39)<br>UE (20, 21, 22, 23, 24, 25, 26, 27, 28, 29)   | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 7 trouble      | Paper feed tray 7 breakdown                           |                     | U6 (43, 44, 49)<br>UE (30, 31, 32, 33, 34, 35, 36, 37, 38, 39)   | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray 8 trouble      | Paper feed tray 8 breakdown                           |                     | U6 (73, 74, 79)<br>UE (40, 41, 42, 43, 44, 45, 46, 47, 48, 49)   | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Paper feed tray other troubles | Paper feed tray other breakdown                       |                     | U6 (22, 53, 54, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90)  | △11                                | ○           | ○           | ○           | △11   | △11<br>*10 |
| Staple trouble                 | Staple breakdown                                      |                     | F1 (01, 08, 09, 10)  | △4                                 | △4          | △4          | △4          | △4    | △4<br>*10  |
| Saddle stitch section trouble  | Saddle stitch section breakdown                       |                     | F1 (31, 44, 45, 46, 47, 48)  | △4                                 | △4          | △4          | △4          | △4    | △4<br>*10  |
| Finisher trouble               | After-process breakdown                               |                     | F0 (03, 08, 10, 11, 14, 15, 18, 19, 20, 23, 25, 28, 29, 30, 31, 32, 33, 34, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 60, 61, 62, 63, 64, 65, 70, 71, 72, 73, 74, 75, 76, 77, 80, 81, 82, 83, 84, 86, 90, 91, 92, 93, 94, 95)<br>F1 (00, 11, 15, 23, 33, 34, 35, 60, 86, 89, 90, 96, 97, 98, 99) | △4                                 | △4          | △4          | △4          | △4    | △4<br>*10  |
| Insertor trouble               | Insertor breakdown (except for communication trouble) |                     | F1 (64, 65, 66, 67)  | △3                                 | ○           | ○           | ○           | △3    | △3<br>*10  |
| Other troubles                 | Other troubles  | EE (EC, EL, EU)     | ○  | ○                                  | ○           | ○           | ○           | ○     |            |
| Double feed detection trouble  | Double feed detection trouble                         | FF (00)             | ○  | ○                                  | ○           | ○           | ○           | ○     |            |
| Process control trouble        | Process control breakdown (PCU detection)             | F2 (33, 39, 58, 78) | ○<br>*12   | ○                                  | ○           | ○           | ○           | ○     |            |



| Trouble content                       |   | Judgment block | Trouble code                   | Operatable mode                    |             |             |             |       |            |
|---------------------------------------|---|----------------|--------------------------------|------------------------------------|-------------|-------------|-------------|-------|------------|
|                                       |   |                |                                | Copy scan (including interruption) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print |
| Operation disable trouble             | Connection trouble (SCU detection)                        | SCU            | A0 (22)<br>E7 (70, 71, 75, 76) | ?                                  | ?           | ?           | ?           | ?     | ?          |
| Color system trouble (SCU detection)  | SCU color system breakdown (SCU detection)                |                | UC (02)                        | △9                                 | △9          | △9          | △9          | ○     | ○          |
| Color system trouble (DSPF detection) | SCU color system breakdown (DSPF detection)               |                | UC (12)                        | △8                                 | △8          | △8          | △8          | ○     | ○          |
| Anti-copy trouble                     | Anti-copy system  |                | UC (20)                        | ?                                  | ?           | ?           | ?           | ○     | ○          |
| Anti-copy trouble (DSPF detection)    | Anti-copy system (DSPF detection)                         |                | UC (30)                        | △7                                 | △7          | △7          | △7          | ○     | ○          |
| Scanner trouble 1                     | EEPROM system   |                | U2 (80, 81)                    | ?                                  | ?           | ?           | ?           | ○     | ○          |
| Scanner trouble 2                     | Scanner section breakdown (mirror motor, lens, copy lamp) |                | L1 (00)<br>L2 (10)<br>L3 (00)  | ?                                  | ?           | ?           | ?           | ○     | ○          |
| CCD trouble                           | CCD breakdown (shading, etc.)                             |                | E7 (10, 11, 14)                | ?                                  | ?           | ?           | ?           | ○     | ○          |
| DSPF/DF trouble                       | DSPF/DF breakdown   |                | U5 (00, 16, 30, 31)            | △6                                 | △6          | △6          | △6          | ○     | ○          |
| SPF back surface trouble              | General troubles in the SPF back surface scanning section |                | E6 (10, 11, 14)                | △7                                 | △7          | △7          | △7          | ○     | ○          |
| Double feed detection trouble         | Double feed detection trouble                             |                | FF (10)                        | ○                                  | ○           | ○           | ○           | ○     | ○          |

#### Error where only history data are saved

| Trouble content |     | Judgment block     | Trouble code | Operatable mode                    |             |             |             |       |            |
|-----------------|-----|--------------------|--------------|------------------------------------|-------------|-------------|-------------|-------|------------|
|                 |     |                    |              | Copy scan (including interruption) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print |
| Error history   | PCU | F2 (45)            | ○            | ○                                  | ○           | ○           | ○           | ○     |            |
|                 | MFP | E7 (02)<br>U2 (05) | ○            | ○                                  | ○           | ○           | ○           | ○     |            |

○: Operation enabled    ? : Operation disabled

△3: When detected during other than a job, the operation is enabled with a tray other than the trouble tray.

△4: When detected during other than a job, the operation is enabled in a section other than the trouble paper exit section. \* However, it is valid only when the escape tray setting has been made.

△6: When detected during other than a job, the operation is enabled in the OC mode.

△7: When detected in other than a job, the operation is enabled in the OC mode/single surface scan mode.

△8: When detected in other than a job, the operation is enabled in other than the duplex color scan mode.

△9: When detected during other than a job, the operation is enabled in the black and white mode.

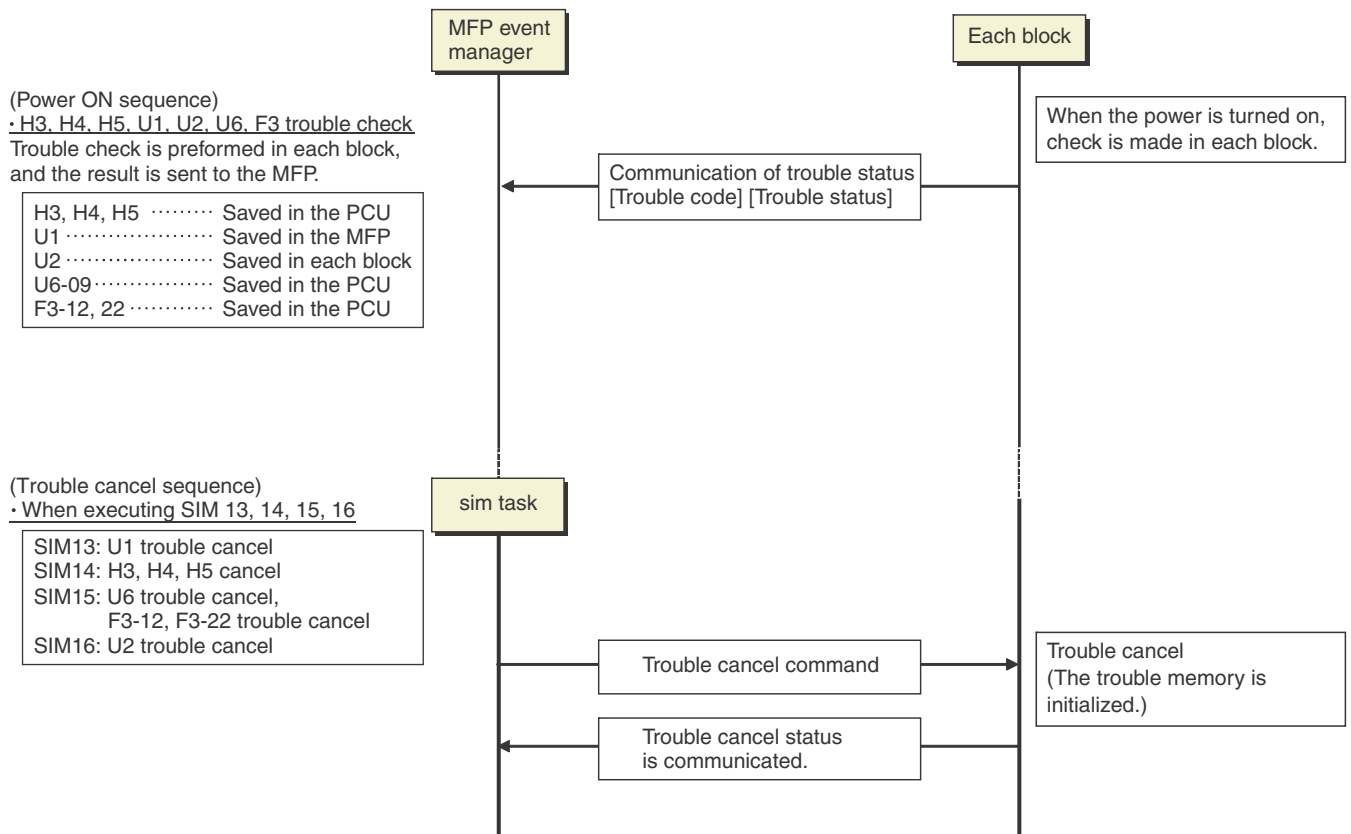
\*10: Since communication is enabled, reception can be transferred. (Noted in the list print category of the system setting screen operation because it is an operation on the system setting screen.)

△11: When detected during other than a job, the operation is enabled in other than the DESK and the LCC.

\*12: Trouble display message is displayed in 2 lines. (Example: Ready to copy. F2 trouble)

△17: Job execution enable only in a format other than high compression PDF.

**(2) Trouble detection sequence and trouble cancel sequence when turning on the power**



**The process has priority when the power is turned ON with the MFP.**

When booting, two or more troubles in the list below may be detected. In this case, the trouble code of higher priority is displayed.

| Process sequence        | Error code | Content  |  |
|-------------------------|------------|--|--|
| First<br>(Low priority) | U2         | 60 Watermark check error                                     |  |
|                         |            | 50 HDD user authentication data check sum error              |  |
|                         |            | 30 MFPC PWB and PCU PWB manufacturing No. data inconsistency |  |
| ↑                       | A0         | 20 Conflict firmware and EEPROM data version (MFP)           |  |
|                         |            | U2   | 11 MFPC PWB EEPROM counter check sum error                         |
| ↓                       | E7         | 00 MFP EEPROM read/write error                               |  |
|                         |            | 48 Scanner expansion PWB (ACRE) ASIC memory error            |  |
|                         |            | 42 Image data trouble (Scanner expansion PWB (ACRE) ASIC)    |  |
|                         |            | 96 MFPC PWB DIMM memory check error (MFPC PWB)               |  |
| Last<br>(High priority) | U1         | 95 Printer PWB DIMM memory check error (PRINTER section)     |  |
|                         |            | 01 Battery trouble   |  |
|                         |            | E7   | 60 Combination error between PWB and firmware (MFPC PWB detection) |
|                         |            | A0   | 04 Scanner expansion PWB (ACU) (ACRE) ROM error                    |

## F. Error code list

| Trouble code |   | Trouble content   | Trouble detection | Mechanism | Option | Electricity | Supply |
|--------------|---|---|-------------------|-----------|--------|-------------|--------|
| Main code    | Sub code  |   |                   |           |        |             |        |
| A0           | 01  | PCU PWB ROM error   | MFP               |           |        | ○           |        |
|              | 02  | SCU PWB ROM error   | MFP               |           |        | ○           |        |
|              | 04  | Scanner expansion PWB (ACU) (ACRE) ROM error                                | MFP               |           |        | ○           |        |
|              | 05  | Scanner expansion PWB (ACU) (ACRE) firmware error                           | MFP               |           |        | ○           |        |
|              | 10  | MFPC PWB ROM error  | MFP               |           |        | ○           |        |
|              | 11  | Firmware version inconsistency (MFP - PCU)                                  | MFP               |           |        | ○           |        |
|              | 14  | Inconsistency between the MFP and the CPU firmware version                  | MFP               |           |        | ○           |        |
|              | 16  | Data error of the energy-saving NIC controller firmware in the SD card      | MFP               |           |        | ○           |        |
|              | 17  | Inconsistency between the UI data and the CPU firmware version              | MFP               |           |        | ○           |        |
|              | 20  | Conflict firmware and EEPROM data version (MFP)                             | MFP               |           |        | ○           |        |
|              | 21  | Conflict firmware and EEPROM data version (PCU)                             | PCU               |           |        | ○           |        |
|              | 22  | Conflict firmware and EEPROM data version (SCU)                             | SCU               |           |        | ○           |        |
| C1           | 01  | Charger cleaner trouble (K)   | PCU               |           |        | ○           |        |
|              | 10  | Main charger trouble (Monochrome)   | PCU               |           |        | ○           |        |
| C4           | 20  | Transfer high voltage output trouble  | PCU               |           |        | ○           |        |
| E6           | 10  | DSPF shading error (Black correction)                                       | SCU               |           |        | ○           |        |
|              | 11  | DSPF shading error (White correction)                                       | SCU               |           |        | ○           |        |
|              | 14  | DSPF CCD-ASIC error   | SCU               |           |        | ○           |        |
| E7           | 01  | MFP image data error  | MFP               |           |        | ○           |        |
|              | 02  | HDD trouble when the mirroring kit is installed                             | MFP               |           | ○      |             |        |
|              | 03  | HDD trouble (When the mirroring kit is not installed)                       | MFP               |           |        | ○           |        |
|              | 03  | HDD trouble (When the mirroring kit is installed)                           | MFP               |           |        | ○           |        |
|              | 04  | HDD-ASIC error  | MFP               |           |        | ○           |        |
|              | 07  | SD card error   | MFP               |           |        | ○           |        |
|              | 10  | Shading error (Black correction)  | SCU               |           |        | ○           |        |
|              | 11  | Shading error (White correction)  | SCU               |           |        | ○           |        |
|              | 14  | CCD-ASIC error  | SCU               |           |        | ○           |        |
|              | 20  | LSU laser detection and deterioration error (K)                             | PCU               |           |        | ○           |        |
|              | 21  | LSU laser deterioration trouble   | PCU               |           |        | ○           |        |
|              | 24  | LSU LD driver trouble   | PCU               |           |        | ○           |        |
|              | 28  | LSU - PCU connection error  | PCU               |           |        | ○           |        |
|              | 29  | LSU ASIC frequency error  | PCU               |           |        | ○           |        |
|              | 35  | Communication trouble with the CIS-ASIC                                     | PCU               |           |        | ○           |        |
|              | 36  | CIS-ASIC black level detection abnormality                                  | PCU               |           |        | ○           |        |
|              | 37  | CIS-ASIC white level detection abnormality                                  | PCU               |           |        | ○           |        |
|              | 42  | Image data trouble (Scanner expansion PWB (ACRE) ASIC)                      | MFP               |           |        | ○           |        |
|              | 46  | Image data decode error (Scanner expansion PWB (ACRE) ASIC)                 | MFP               |           |        | ○           |        |
|              | 48  | Scanner expansion PWB (ACRE) ASIC memory error                              | MFP               |           |        | ○           |        |
|              | 49  | Water Mark data error   | MFP               |           |        | ○           |        |
|              | 50  | Engine connection trouble   | PCU               |           |        | ○           |        |
|              | 55  | PWB information sum error (engine detection)                                | PCU               |           |        | ○           |        |
|              | 58  | PWB information sum error (engine other detection)                          | PCU               |           |        | ○           |        |
|              | 60  | Combination error between PWB and firmware (MFPC PWB detection)             | MFP               |           |        | ○           |        |
|              | 61  | Combination error between the MFPC PWB and the PCU PWB (MFPC PWB detection) | MFP               |           |        | ○           |        |
|              | 62  | Controller connection trouble (scanner)                                     | MFP               |           |        | ○           |        |
|              | 65  | MFP EEPROM sum check error  | MFP               |           |        | ○           |        |
|              | 70  | Scanner connection trouble  | SCU               |           |        | ○           |        |
|              | 71  | DSPF connection trouble   | SCU               |           |        | ○           |        |
|              | 75  | PWB information sum error (scanner detection)                               | SCU               |           |        | ○           |        |
|              | 76  | PWB information sum error (DSPF detection)                                  | DSPF              |           |        | ○           |        |
|              | 80  | MFP - SCU PWB communication error   | MFP               |           |        | ○           |        |
|              | 89  | Communication error between MFPC PWB CPU and energy-saving NIC controller   | MFP               |           |        | ○           |        |
|              | 90  | MFP - PCU PWB communication error   | MFP               |           |        | ○           |        |
|              | 92  | Copy image data error   | MFP               |           |        | ○           |        |
| 93           | Copy, image send, filing, print image data process error      | MFP   |                   |           | ○      |             |        |
| 94           | Image file data process error (when importing file data)      | MFP   |                   |           | ○      |             |        |
| 95           | Printer PWB DIMM memory check error                           | MFP   |                   |           | ○      |             |        |
| 96           | MFPC PWB DIMM memory check error                              | MFP   |                   |           | ○      |             |        |
| A0           | LSU EEPROM/LD driver read/write error (K)                     | PCU   |                   |           | ○      |             |        |
| A5           | Installation error of HDD which was used in the mirroring kit | MFP   |                   | ○         |        |             |        |
| EE           | EC  | Automatic toner density adjustment error                                    | PCU               |           |        | ○           |        |
|              | EL  | Automatic toner density adjustment error (Over toner)                       | PCU               |           |        | ○           |        |
|              | EU  | Automatic toner density adjustment error (Under toner)                      | PCU               |           |        | ○           |        |

| Trouble code |   | Trouble content  | Trouble detection | Mechanism | Option | Electricity | Supply |
|--------------|---|--|-------------------|-----------|--------|-------------|--------|
| Main code    | Sub code  |  |                   |           |        |             |        |
| F0           | 03  | Finisher paper exit roller lift motor section abnormality (FNM110)               | PCU               |           | ○      |             |        |
|              | 08  | Finisher stapler shift motor section abnormality (FNM107)                        | PCU               |           | ○      |             |        |
|              | 10  | Finisher staple motor section abnormality (FNM115)                               | PCU               |           | ○      |             |        |
|              | 11  | Finisher bundle exit motor section abnormality (FNM116)                          | PCU               |           | ○      |             |        |
|              | 14  | Finisher paper rear edge falling motor section abnormality (FNM113)              | PCU               |           | ○      |             |        |
|              | 15  | Finisher tray lift motor section abnormality (FNM106)                            | PCU               |           | ○      |             |        |
|              | 18  | Finisher rear edge hold motor section abnormality (FNM118)                       | PCU               |           | ○      |             |        |
|              | 19  | Finisher paper alignment motor F section abnormality (FNM108)                    | PCU               |           | ○      |             |        |
|              | 20  | Finisher paper alignment motor R section abnormality (FNM109)                    | PCU               |           | ○      |             |        |
|              | 23  | Shutter trouble (FNCL102)  | PCU               |           | ○      |             |        |
|              | 25  | Finisher paper transport roller lift motor section abnormality (FNM119)          | PCU               |           | ○      |             |        |
|              | 28  | Finisher paper alignment roller lift motor section abnormality (FNM112)          | PCU               |           | ○      |             |        |
|              | 29  | Finisher PWB cooling fan abnormality (FNFAN102)                                  | PCU               |           | ○      |             |        |
|              | 30  | Communication trouble between the finisher and the saddle                        | PCU               |           | ○      |             |        |
|              | 31  | Finisher saddle folding motor section abnormality (FNFAN103)                     | PCU               |           | ○      |             |        |
|              | 32  | Finisher relay unit transport motor section abnormality (FNFAN104)               | PCU               |           | ○      |             |        |
|              | 33  | Finisher punch shift motor section abnormality (FNM113)                          | PCU               |           | ○      |             |        |
|              | 34  | Finisher punch motor section abnormality (FNM117)                                | PCU               |           | ○      |             |        |
|              | 37  | Finisher backup RAM trouble  | PCU               |           | ○      |             |        |
|              | 40  | Communication trouble between the finisher saddle and the trimmer.               | PCU               |           | ○      |             |        |
|              | 41  | Finisher saddle lead edge stopper motor section abnormality (FSM203)             | PCU               |           | ○      |             |        |
|              | 42  | Finisher saddle folding roller guide motor section abnormality (FSM204)          | PCU               |           | ○      |             |        |
|              | 43  | Finisher saddle alignment motor section abnormality (FSM212)                     | PCU               |           | ○      |             |        |
|              | 44  | Finisher saddle rear edge hold motor section abnormality (FSM210)                | PCU               |           | ○      |             |        |
|              | 45  | Finisher saddle staple motor section abnormality (FSM209)                        | PCU               |           | ○      |             |        |
|              | 46  | Finisher saddle rear edge shift motor section abnormality (FSM211)               | PCU               |           | ○      |             |        |
|              | 47  | Finisher saddle flap motor section abnormality (FSM213)                          | PCU               |           | ○      |             |        |
|              | 48  | Finisher saddle push motor section abnormality (FSM205)                          | PCU               |           | ○      |             |        |
|              | 49  | Finisher saddle separation motor section abnormality (FSM214)                    | PCU               |           | ○      |             |        |
|              | 51  | Finisher trimmer cutter motor abnormality (FTM106)                               | PCU               |           | ○      |             |        |
|              | 52  | Finisher trimmer registration motor section abnormality (FTM102)                 | PCU               |           | ○      |             |        |
|              | 53  | Finisher trimmer inlet port separation motor abnormality (FTM103)                | PCU               |           | ○      |             |        |
|              | 54  | Finisher trimmer paper exit separation motor section abnormality (FTM104)        | PCU               |           | ○      |             |        |
|              | 55  | Finisher trimmer bundle press motor section abnormality (FTM105)                 | PCU               |           | ○      |             |        |
|              | 56  | Paper remaining trouble in the finisher trimmer                                  | PCU               |           | ○      |             |        |
|              | 60  | Communication trouble between the stacker first series and the downstream units. | PCU               |           | ○      |             |        |
|              | 61  | Stacker first series offset unit abnormality                                     | PCU               |           | ○      |             |        |
|              | 62  | Stacker first series front side jogger abnormality                               | PCU               |           | ○      |             |        |
|              | 63  | Stacker first series rear side jogger abnormality                                | PCU               |           | ○      |             |        |
|              | 64  | Stacker first series lead edge jogger abnormality                                | PCU               |           | ○      |             |        |
|              | 65  | Stacker first series stack tray abnormality                                      | PCU               |           | ○      |             |        |
|              | 70  | Communication trouble between the finisher and the folding unit                  | PCU               |           | ○      |             |        |
|              | 71  | Folding unit lead edge holding guide motor section abnormality (FLM10)           | PCU               |           | ○      |             |        |
|              | 72  | Folding unit backup RAM trouble  | PCU               |           | ○      |             |        |
|              | 73  | Folding unit power fan abnormality   | PCU               |           | ○      |             |        |
| 74           | Folding unit folding tray paper exit motor section abnormality (FLM14)            | PCU  |                   | ○         |        |             |        |
| 75           | Folding unit upper stopper motor section abnormality (FLM8)                       | PCU  |                   | ○         |        |             |        |
| 76           | 3-fold stopper motor section in the folding unit is abnormal (FLM9)               | PCU  |                   | ○         |        |             |        |
| 77           | Folding unit transport motor section abnormality (FLM11)                          | PCU  |                   | ○         |        |             |        |
| 80           | Finisher power cooling fan motor abnormality (FNFAN101)                           | PCU  |                   | ○         |        |             |        |
| 81           | Finisher upper tray fan abnormality (FNFAN103)                                    | PCU  |                   | ○         |        |             |        |
| 82           | Finisher lower tray fan abnormality (FNFAN104)                                    | PCU  |                   | ○         |        |             |        |
| 83           | Finisher paper guide motor section abnormality (FNM120)                           | PCU  |                   | ○         |        |             |        |
| 84           | Finisher grip section abnormality (FNM116)  | PCU  |                   | ○         |        |             |        |
| 86           | Finisher discharged paper hold motor section abnormality (FNM118)                 | PCU  |                   | ○         |        |             |        |
| 90           | Communication trouble between the stacker second series and the downstream units. | PCU  |                   | ○         |        |             |        |
| 91           | Stacker second series offset unit abnormality                                     | PCU  |                   | ○         |        |             |        |
| 92           | Stacker second series front side jogger abnormality                               | PCU  |                   | ○         |        |             |        |
| 93           | Stacker second series rear side jogger abnormality                                | PCU  |                   | ○         |        |             |        |
| 94           | Stacker second series lead edge jogger abnormality                                | PCU  |                   | ○         |        |             |        |
| 95           | Stacker second series stack tray abnormality                                      | PCU  |                   | ○         |        |             |        |

| Trouble code |  | Trouble content   | Trouble detection | Mechanism | Option | Electricity | Supply |
|--------------|--|---|-------------------|-----------|--------|-------------|--------|
| Main code    | Sub code   |   |                   |           |        |             |        |
| F1           | 00   | Finisher - PCU PWB communication error                                | PCU               |           | ○      |             |        |
|              | 01   | Jogger motor trouble  | PCU               |           | ○      |             |        |
|              | 08   | Stapler shift trouble (FSM)   | PCU               |           | ○      |             |        |
|              | 09   | Staple diagonal motor trouble   | PCU               |           | ○      |             |        |
|              | 10   | Staple operation trouble (FFSM)                                       | PCU               |           | ○      |             |        |
|              | 11   | Finisher bundle exit motor trouble                                    | PCU               |           | ○      |             |        |
|              | 13   | Paper exit guide plate open/close motor trouble                       | PCU               |           | ○      |             |        |
|              | 15   | Finisher paper exit tray lift operation trouble (FTLM)                | PCU               |           | ○      |             |        |
|              | 23   | Bundle branch open/close motor trouble                                | PCU               |           | ○      |             |        |
|              | 31   | Folding plate motor trouble   | PCU               |           | ○      |             |        |
|              | 33   | Punch unit shift operation trouble (FPSM)                             | PCU               |           | ○      |             |        |
|              | 34   | Punch operation trouble (FPNM)  | PCU               |           | ○      |             |        |
|              | 35   | Horizontal registration detection motor trouble                       | PCU               |           | ○      |             |        |
|              | 44   | Staple motor 3 trouble  | PCU               |           | ○      |             |        |
|              | 45   | Saddle staple trouble (FSFSTM)  | PCU               |           | ○      |             |        |
|              | 46   | Rear edge fence motor trouble   | PCU               |           | ○      |             |        |
|              | 47   | Drive collar oscillation motor trouble                                | PCU               |           | ○      |             |        |
|              | 48   | Saddle discharge motor trouble  | PCU               |           | ○      |             |        |
|              | 60   | Communication trouble between peripheral devices (Inserter detection) | PCU               |           | ○      |             |        |
|              | 64   | No. 1 pickup motor trouble  | PCU               |           | ○      |             |        |
|              | 65   | No. 2 pickup motor trouble  | PCU               |           | ○      |             |        |
|              | 66   | No. 1 lift motor trouble  | PCU               |           | ○      |             |        |
|              | 67   | No. 2 lift motor trouble  | PCU               |           | ○      |             |        |
|              | 86   | Return collar oscillation motor trouble                               | PCU               |           | ○      |             |        |
|              | 89   | Shift motor trouble   | PCU               |           | ○      |             |        |
|              | 90   | Communication trouble between the decurler and the downstream units.  | PCU               |           | ○      |             |        |
|              | 96   | Decurler transport motor abnormality (DCM100)                         | PCU               |           | ○      |             |        |
|              | 97   | Decurler unit fan 1 (Upper cooling fan) abnormality (DCFAN100)        | PCU               |           | ○      |             |        |
|              | 98   | Decurler unit fan 2 (Lower cooling fan) abnormality (DCFAN103)        | PCU               |           | ○      |             |        |
| 99           | Decurler unit fan 3 (Transport motor cooling fan) abnormality (DCFAN101) | PCU   |                   | ○         |        |             |        |
| F2           | 22   | Discharge lamp trouble (K)  | PCU               |           |        |             | ○      |
|              | 33   | Surface potential sensor trouble                                      |                   |           |        |             | ○      |
|              | 39   | Process temperature sensor trouble                                    | PCU               |           |        |             | ○      |
|              | 40   | Toner density sensor trouble (K)                                      | PCU               |           |        |             | ○      |
|              | 47   | Room temperature thermistor trouble                                   | PCU               |           |        |             | ○      |
|              | 58   | Process humidity sensor trouble                                       | PCU               |           |        |             | ○      |
|              | 59   | Room temperature/humidity thermistor trouble                          | PCU               |           |        |             | ○      |
|              | 64   | Toner supply operation trouble (K)                                    | PCU               |           |        |             | ○      |
|              | 70   | Improper toner cartridge detection (K)                                | PCU               |           |        |             | ○      |
|              | 74   | Toner cartridge CRUM error (K)  | PCU               |           |        |             | ○      |
|              | 78   | Image density sensor adjustment trouble                               | PCU               |           |        |             | ○      |
|              | 91   | High density process control high voltage error (K)                   | PCU               |           |        |             | ○      |
| F3           | 12   | Paper feed tray 1 lift operation trouble                              | PCU               | ○         |        |             |        |
|              | 22   | Paper feed tray 2 lift operation trouble                              | PCU               | ○         |        |             |        |
|              | 32   | Main body cassette 3 lift trouble                                     | PCU               |           |        | ○           |        |
|              | 42   | Main body cassette 4 lift trouble                                     | PCU               |           |        | ○           |        |
| F9           | 91   | Communication error between MFP and the printer section when booting  | MFP               |           |        | ○           |        |
|              | 92   | Printer (section) PWB hardware error                                  | MFP               |           |        | ○           |        |
| FF           | 00   | Double feed detection trouble (PCU)                                   | PCU               |           |        | ○           |        |
|              | 10   | Double feed detection trouble (SCU)                                   | SCU               |           |        | ○           |        |
| H2           | 00   | Thermistor open trouble (TH_UM_AD2)                                   | PCU               | ○         |        |             |        |
|              | 02   | Contact thermistor upper sub detection thermistor open                | PCU               |           |        | ○           |        |
|              | 03   | Non-contact thermistor upper main compensation thermistor open        | PCU               |           |        | ○           |        |
| H3           | 00   | Fusing section high temperature trouble (TH_UM)                       | PCU               | ○         |        |             |        |
|              | 02   | Fusing section high temperature trouble (TH_US)                       | PCU               | ○         |        |             |        |
| H4           | 00   | Fusing section low temperature trouble (TH_UM_AD2)                    | PCU               | ○         |        |             |        |
|              | 02   | Fusing section low temperature trouble (TH_US)                        | PCU               | ○         |        |             |        |
|              | 30   | Upper main thermistor differential input abnormality (TH_UM)          | PCU               |           |        | ○           |        |
| H5           | 01   | 5 times continuous POD1 not-reach jam                                 | PCU               | ○         |        |             |        |
| H7           | 10   | Recovery error from low fuser temp. (TH_UM_AD2)                       | PCU               | ○         |        |             |        |
|              | 12   | Recovery error from low fuser temp. (TH_US)                           | PCU               | ○         |        |             |        |
| L1           | 00   | Scanner feed trouble  | SCU               | ○         |        |             |        |
| L2           | 10   | CCD cooling fan motor trouble   | SCU               |           |        | ○           |        |
| L3           | 00   | Scanner return trouble  | SCU               | ○         |        |             |        |

| Trouble code |  | Trouble content   | Trouble detection | Mechanism | Option | Electricity | Supply |
|--------------|--|---|-------------------|-----------|--------|-------------|--------|
| Main code    | Sub code                               |   |                   |           |        |             |        |
| L4           | 01                                     | Main motor lock trouble                                   | PCU               |           |        | ○           |        |
|              | 02                                     | Main motor 2 lock trouble                                 | PCU               |           |        | ○           |        |
|              | 03                                     | Fusing motor lock trouble                                 | PCU               |           |        | ○           |        |
|              | 04                                     | Toner hopper motor/Developing motor trouble               | PCU               |           |        | ○           |        |
|              | 14                                     | Toner cartridge motor lock trouble                        | PCU               |           |        | ○           |        |
|              | 17                                     | Drum motor lock trouble (K)                               | PCU               |           |        | ○           |        |
|              | 27                                     | Decurler motor lock trouble                               | PCU               |           |        | ○           |        |
|              | 28                                     | Sub power source cooling fan motor                        | MFP               |           |        | ○           |        |
|              | 30                                     | Controller fan motor                                      | MFP               |           |        | ○           |        |
|              | 31                                     | Machine heat-exhaust fan trouble                          | PCU               |           |        | ○           |        |
|              | 32                                     | Power source cooling fan trouble                          | PCU               |           |        | ○           |        |
|              | 34                                     | Polygon cooling fan trouble                               | PCU               |           |        | ○           |        |
|              | 36                                     | Toner suction fan trouble                                 | PCU               |           |        | ○           |        |
|              | 38                                     | Reverse transport cooling fan trouble                     | PCU               |           |        | ○           |        |
|              | 39                                     | Reverse cooling fan trouble                               | PCU               |           |        | ○           |        |
|              | 40                                     | Ozone fan motor 1 trouble                                 | PCU               |           |        | ○           |        |
|              | 41                                     | Ozone fan motor 2 trouble                                 | PCU               |           |        | ○           |        |
|              | 43                                     | Paper cooling fan trouble                                 | PCU               |           |        | ○           |        |
|              | 46                                     | Development cooling fan 1 trouble                         | PCU               |           |        | ○           |        |
|              | 47                                     | Power cooling fan 3 trouble                               | PCU               |           |        | ○           |        |
|              | 48                                     | ADU paper cooling fan 1 trouble                           | PCU               |           |        | ○           |        |
|              | 49                                     | ADU paper cooling fan 2 trouble                           | PCU               |           |        | ○           |        |
|              | 50                                     | Process suction fan 1 trouble                             | PCU               |           |        | ○           |        |
|              | 51                                     | Process cooling fan 2 trouble                             | PCU               |           |        | ○           |        |
|              | 52                                     | Process cooling fan 3 trouble                             | PCU               |           |        | ○           |        |
|              | 53                                     | Process cooling fan 4 trouble                             | PCU               |           |        | ○           |        |
|              | 54                                     | PS cooling fan trouble                                    | PCU               |           |        | ○           |        |
|              | 55                                     | Process cooling fan trouble                               | PCU               |           |        | ○           |        |
| 58           | Process section peripheral fan trouble | PCU   |                   |           | ○      |             |        |
| L6           | 10                                     | Polygon motor trouble                                     | PCU               |           |        | ○           |        |
| L8           | 01                                     | Full wave signal detection error                          | PCU               |           |        | ○           |        |
|              | 02                                     | Full wave signal error                                    | PCU               |           |        | ○           |        |
|              | 20                                     | Communication error of MFPC PWB/SCN mother board          | MFP               |           |        | ○           |        |
| U1           | 01                                     | Battery trouble   | MFP               |           |        | ○           |        |
| U2           | 00                                     | MFP EEPROM read/write error                               | MFP               |           |        | ○           |        |
|              | 05                                     | Erroneous detection of account management data            | MFP               |           |        | ○           |        |
|              | 11                                     | MFPC PWB EEPROM counter check sum error                   | MFP               |           |        | ○           |        |
|              | 30                                     | MFPC PWB and PCU PWB manufacturing No. data inconsistency | MFP               |           |        | ○           |        |
|              | 40                                     | SD card system storage data area error                    | MFP               |           |        | ○           |        |
|              | 41                                     | HDD system storage data area error                        | MFP               |           |        | ○           |        |
|              | 42                                     | Machine adjustment data (system storage data area) error  | MFP               |           |        | ○           |        |
|              | 50                                     | HDD user authentication data check sum error              | MFP               |           |        | ○           |        |
|              | 60                                     | Watermark check error                                     | MFP               |           |        | ○           |        |
|              | 80                                     | SCU PWB EEPROM read/write error                           | SCU               |           |        | ○           |        |
|              | 81                                     | SCU PWB EEPROM check sum error                            | SCU               |           |        | ○           |        |
|              | 90                                     | PCU PWB EEPROM read/write error                           | PCU               |           |        | ○           |        |
|              | 91                                     | PCU PWB EEPROM check sum error                            | PCU               |           |        | ○           |        |
| U5           | 00                                     | Document feed unit communication error                    | SCU               |           |        | ○           |        |
|              | 16                                     | Document feed unit fan trouble                            | SCU               |           |        | ○           |        |
|              | 30                                     | Document feed unit tray lift up trouble                   | SCU               |           |        | ○           |        |
|              | 31                                     | Document feed unit tray lift down trouble                 | SCU               |           |        | ○           |        |

| Trouble code |   | Trouble content   | Trouble detection | Mechanism | Option | Electricity | Supply |
|--------------|---|---|-------------------|-----------|--------|-------------|--------|
| Main code    | Sub code  |   |                   |           |        |             |        |
| U6           | 09  | LCC lift motor trouble  | PCU               |           | ○      |             |        |
|              | 20  | LCC control PWB - PCU PWB communication error                       | PCU               |           | ○      |             |        |
|              | 21  | LCC transport motor trouble   | PCU               |           | ○      |             |        |
|              | 22  | LCC 24V power abnormality   | PCU               |           | ○      |             |        |
|              | 23  | A3 LCC tray descending trouble (Reverse winding detection) (A3 LCC) | PCU               |           | ○      |             |        |
|              | 24  | A3 LCC tray lock detection trouble                                  | PCU               |           | ○      |             |        |
|              | 29  | LCT1 lift trouble   | PCU               |           | ○      |             |        |
|              | 33  | LCT2 reverse winding detection trouble                              | PCU               |           | ○      |             |        |
|              | 34  | LCT2 lock detection trouble   | PCU               |           | ○      |             |        |
|              | 39  | LCT2 lift trouble   | PCU               |           | ○      |             |        |
|              | 43  | LCT3 reverse winding detection trouble                              | PCU               |           | ○      |             |        |
|              | 44  | LCT3 lock detection trouble   | PCU               |           | ○      |             |        |
|              | 49  | LCT3 lift trouble   | PCU               |           | ○      |             |        |
|              | 51  | LCC - Main unit combination trouble                                 | PCU               |           | ○      |             |        |
|              | 53  | Communication trouble between LCT's                                 | PCU               |           | ○      |             |        |
|              | 54  | Option installation combination trouble                             | PCU               |           | ○      |             |        |
|              | 63  | Manual feed tray descending trouble                                 | PCU               |           | ○      |             |        |
|              | 68  | Manual feed tray paper feed position abnormality                    | PCU               |           | ○      |             |        |
|              | 69  | Manual feed tray lift trouble                                       | PCU               |           | ○      |             |        |
|              | 73  | LCT4 reverse winding detection trouble                              | PCU               |           | ○      |             |        |
|              | 74  | LCT4 lock detection trouble   | PCU               |           | ○      |             |        |
|              | 79  | LCT4 lift motor trouble   | PCU               |           | ○      |             |        |
|              | 81  | Power unit cooling fan motor trouble (1 series)                     | PCU               |           | ○      |             |        |
|              | 82  | EEPROM trouble (1 series)   | PCU               |           | ○      |             |        |
|              | 83  | Room temperature thermistor breakdown (1 series)                    | PCU               |           | ○      |             |        |
|              | 84  | Room humidity thermistor breakdown (1 series)                       | PCU               |           | ○      |             |        |
|              | 85  | Transport motor 1 trouble (2 series)                                | PCU               |           | ○      |             |        |
|              | 86  | 24V power trouble (2 series)  | PCU               |           | ○      |             |        |
|              | 87  | Power unit cooling fan motor trouble (2 series)                     | PCU               |           | ○      |             |        |
|              | 88  | EEPROM trouble (2 series)   | PCU               |           | ○      |             |        |
| 89           | Room temperature thermistor breakdown (2 series)      | PCU   |                   | ○         |        |             |        |
| 90           | Room humidity thermistor breakdown (2 series)         | PCU   |                   | ○         |        |             |        |
| U7           | 50  | MFPC PWB - Vendor machine communication error                       | MFP               |           |        | ○           |        |
|              | 51  | Vendor machine error  | MFP               |           |        | ○           |        |
| UC           | 02  | IPD/DOCC-ASIC (CPT function) trouble                                | SCU               |           |        | ○           |        |
|              | 12  | IPD/DOCC-ASIC (CPT function) trouble [DSPF detection]               | SCU               |           |        | ○           |        |
|              | 20  | IPD/DOCC-ASIC (DOCC function) trouble                               | SCU               |           |        | ○           |        |
|              | 30  | IPD/DOCC-ASIC (DOCC function) trouble [DSPF detection]              | SCU               |           |        | ○           |        |
| UE           | 10  | LCT1 suction fan motor trouble                                      | PCU               |           | ○      |             |        |
|              | 11  | LCT1 exhaust fan motor trouble                                      | PCU               |           | ○      |             |        |
|              | 12  | LCT1 warm air heater thermistor open                                | PCU               |           | ○      |             |        |
|              | 13  | LCT1 warm air heater thermistor low temperature trouble             | PCU               |           | ○      |             |        |
|              | 14  | LCT1 warm air heater thermistor high temperature trouble            | PCU               |           | ○      |             |        |
|              | 15  | LCT1 warm air outlet port thermistor open                           | PCU               |           | ○      |             |        |
|              | 16  | LCT1 warm air outlet port thermistor low temperature                | PCU               |           | ○      |             |        |
|              | 17  | LCT1 warm air outlet port thermistor high temperature               | PCU               |           | ○      |             |        |
|              | 20  | LCT2 suction fan motor trouble                                      | PCU               |           | ○      |             |        |
|              | 21  | LCT2 exhaust fan motor trouble                                      | PCU               |           | ○      |             |        |
|              | 22  | LCT2 warm air heater thermistor open                                | PCU               |           | ○      |             |        |
|              | 23  | LCT2 warm air heater thermistor low temperature trouble             | PCU               |           | ○      |             |        |
|              | 24  | LCT2 warm air heater thermistor high temperature trouble            | PCU               |           | ○      |             |        |
|              | 25  | LCT2 warm air outlet port thermistor open                           | PCU               |           | ○      |             |        |
|              | 26  | LCT2 warm air outlet port thermistor low temperature                | PCU               |           | ○      |             |        |
| 27           | LCT2 warm air outlet port thermistor high temperature | PCU   |                   | ○         |        |             |        |

| Trouble code |   | Trouble content  | Trouble detection | Mechanism | Option | Electricity | Supply |
|--------------|---|--|-------------------|-----------|--------|-------------|--------|
| Main code    | Sub code  |  |                   |           |        |             |        |
| UE           | 30  | LCT3 suction fan motor trouble                           | PCU               |           | ○      |             |        |
|              | 31  | LCT3 exhaust fan motor trouble                           | PCU               |           | ○      |             |        |
|              | 32  | LCT3 warm air heater thermistor open                     | PCU               |           | ○      |             |        |
|              | 33  | LCT3 warm air heater thermistor low temperature trouble  | PCU               |           | ○      |             |        |
|              | 34  | LCT3 warm air heater thermistor high temperature trouble | PCU               |           | ○      |             |        |
|              | 35  | LCT3 warm air outlet port thermistor open                | PCU               |           | ○      |             |        |
|              | 36  | LCT3 warm air outlet port thermistor low temperature     | PCU               |           | ○      |             |        |
|              | 37  | LCT3 warm air outlet port thermistor high temperature    | PCU               |           | ○      |             |        |
|              | 40  | LCT4 suction fan motor trouble                           | PCU               |           | ○      |             |        |
|              | 41  | LCT4 exhaust fan motor trouble                           | PCU               |           | ○      |             |        |
|              | 42  | LCT4 warm air heater thermistor open                     | PCU               |           | ○      |             |        |
|              | 43  | LCT4 warm air heater thermistor low temperature trouble  | PCU               |           | ○      |             |        |
|              | 44  | LCT4 warm air heater thermistor high temperature trouble | PCU               |           | ○      |             |        |
|              | 45  | LCT4 warm air outlet port thermistor open                | PCU               |           | ○      |             |        |
|              | 46  | LCT4 warm air outlet port thermistor low temperature     | PCU               |           | ○      |             |        |
| 47           | LCT4 warm air outlet port thermistor high temperature | PCU  |                   | ○         |        |             |        |

## G. Details of error codes and countermeasures

### A0-01 PCU PWB ROM error

| Trouble content |  |
|-----------------|--|
| Section         | MFP  |
| Cause           | The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc.<br>PCU PWB trouble. |
| Check & Remedy  | Use SIM49-1 to perform the firmware version-up procedure again.<br>Replace the PCU PWB.  |

### A0-02 SCU PWB ROM error

| Trouble content |  |
|-----------------|--|
| Section         | MFP  |
| Cause           | The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc.<br>SCU PWB trouble. |
| Check & Remedy  | Use SIM49-1 to perform the firmware version-up procedure again.<br>Replace the SCU PWB.  |

### A0-04 Scanner expansion PWB (ACU) (ACRE) ROM error

| Trouble content |   |
|-----------------|---|
| Section         | MFP   |
| Cause           | Scanner expansion PWB (ACU) (ACRE) ROM data error.<br>An error occurs during firmware upgrading for some reasons. |
| Check & Remedy  | Perform firmware upgrading again.   |

### A0-05 Scanner expansion PWB (ACU) (ACRE) firmware error

| Trouble content |   |
|-----------------|---|
| Section         | MFP   |
| Cause           | Improper firmware<br>A firmware of a different model is installed. A ROM of a different model is installed. |
| Check & Remedy  | Replace the ROM with a proper one.<br>Write the proper firmware. (Upgrade to the proper firmware.)          |

### A0-10 MFPC PWB ROM error

| Trouble content |  |
|-----------------|--|
| Section         | MFP  |
| Cause           | CTL and the image ROM firmware combination error.        |
| Check & Remedy  | Check the firmware combination of CTL and the image ROM. |

### A0-11 Firmware version inconsistency (MFP - PCU)

| Trouble content |   |
|-----------------|---|
| Section         | MFP   |
| Cause           | Firmware combination error between the MFP and the PCU.   |
| Check & Remedy  | Install the firmware in the all-firmware version-up mode. |

### A0-14 Inconsistency between the MFP and the CPU firmware version

| Trouble content |  |
|-----------------|--|
| Section         | MFP  |
| Cause           | Inconsistency between the MFP and the PCL firmware version<br>Combination error between the MFP and the CPU UI firmware version. |
| Check & Remedy  | Install the firmware in the all-firmware version-up mode.  |



### A0-16 Data error of the energy-saving NIC controller firmware in the SD card

|                 |  |
|-----------------|--|
| Trouble content | Data error of the energy-saving NIC controller firmware in the SD card.  |
| Section         | MFP  |
| Cause           | SD card trouble.<br>MFPC PWB trouble.                                    |
| Check & Remedy  | Reinstall the firmware.<br>Replace the SD card.<br>Replace the MFPC PWB. |

### A0-17 Inconsistency between the UI data and the CPU firmware version

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | Combination error between the UI contents data and the CPU UI firmware version. |
| Check & Remedy  | Install the firmware in the all-firmware version-up mode.                       |

### A0-20 Conflict firmware and EEPROM data version (MFP)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | Inconsistency between the MFP firmware version and the EEPROM data version. |
| Check & Remedy  | Check the combination of the firmware.                                      |

### A0-21 Conflict firmware and EEPROM data version (PCU)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Inconsistency between the PCU firmware version and the EEPROM data version. |
| Check & Remedy  | Check the combination of the firmware.                                      |

### A0-22 Conflict firmware and EEPROM data version (SCU)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | SCU   |
| Cause           | Inconsistency between the SCU firmware version and the EEPROM data version. |
| Check & Remedy  | Check the combination of the firmware.                                      |

### C1-01 Charger cleaner trouble (K)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | The main charger unit (K) is not installed properly.<br>There is an abnormality in the main charger unit (K).<br>Connector connection trouble of the drum unit (K) HP sensor, the discharge lamp, or the after-transfer discharge lamp.<br>Harness disconnection of the drum unit (K) HP sensor, the discharge lamp, or the after-transfer discharge lamp.<br>HP sensor dirt.<br>Charger cleaner motor (K) trouble.<br>PCU PWB connector connection trouble/PWB trouble.  |
| Check & Remedy  | Use SIM6-4 to check the operation of the charger cleaner.<br>Check disconnection of the main charger unit./<br>Replace.<br>Check for disconnection of the connector of the drum unit (K) HP sensor, the discharge lamp, and the after-transfer discharge lamp.<br>Check the harness of the drum unit (K) HP sensor, the discharge lamp, and the after-transfer discharge lamp. (Since the earth wire is common to them, check the three positions.)<br>Clean the HP sensor.<br>Check disconnection of the PCU PWB connector./<br>Replace PWB.<br>Replace the charger cleaner motor (K). |

### C1-10 Main charger trouble (Monochrome)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | The main charger unit (K) is not installed properly.<br>There is an abnormality in the main charger unit (K).<br>Disconnection of the high voltage PWB connector.<br>Breakage of the high voltage harness.<br>High voltage PWB trouble.<br>PCU PWB trouble. |
| Check & Remedy  | Check the output of the main charger with SIM8-2.<br>Check disconnection of the main charger./Replace.<br>Check disconnection of the high voltage PWB connector./Replace.<br>Replace the high voltage PWB.<br>Replace the PCU PWB.                          |

### C4-20 Transfer high voltage output trouble

|                 |  |
|-----------------|--|
| Trouble content | When the transfer output is delivered, the output voltage exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Transfer unit abnormality.<br>Transfer unit insertion trouble.<br>TC output harness disconnection, breakage.<br>Transfer unit separation operation trouble.<br>OPC drum abnormality (Does not rotate.)<br>High voltage PWB trouble.<br>PCU PWB trouble.<br>PCU PWB - high voltage PWB harness disconnection, breakage. |
| Check & Remedy  | Replace the transfer unit.<br>Reinsert the transfer unit.<br>Check or replace the TC output harness.<br>Replace the high voltage PWB.<br>Replace the PCU PWB.<br>Check the harness between the PCU PWB and the high voltage PWB, and replace as needed.  |

**E6-10 DSPF shading error (Black correction)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | Installation error of the CCD unit harness.<br>CCD unit trouble.<br>DSPF PWB trouble.                    |
| Check & Remedy  | Check the installing state of the harness to the CCD unit.<br>Check the CCD unit.<br>Check the DSPF PWB. |

**E6-11 DSPF shading error (White correction)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | Installation error of the CCD unit harness.<br>Copy lamp lighting trouble.<br>Dirt on the mirror, the lens, or the reference white plate.<br>CCD unit trouble.<br>DSPF PWB trouble.<br>Shading SIM not executed / Shading ROM abnormality. |
| Check & Remedy  | Check the installing state of the harness the CCD unit.<br>Check the installing state of the harness to the copy lamp unit.<br>Clean the mirror, the lens, or the reference white plate.<br>Check the CCD unit.<br>Check the DSPF PWB.     |

**E6-14 DSPF CCD-ASIC error**

|                 |                     |
|-----------------|---------------------|
| Trouble content |                     |
| Section         | SCU                 |
| Cause           | DSPF PWB trouble.   |
| Check & Remedy  | Check the DSPF PWB. |

**E7-01 MFP image data error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | Image data transfer error in the MFPC PWB.<br>MFPC PWB trouble.                                      |
| Check & Remedy  | Check connection of the connector and the harness of the MFPC PWB.<br>Check or replace the MFPC PWB. |

**E7-02 HDD trouble when the mirroring kit is installed**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | When installing the mirroring kit, the HDD of the machine or the HDD of the mirroring kit breaks down or connection fails.<br>Defective installation of the mirroring kit<br>Breakdown of the HDD of the mirroring kit<br>Defective connection between the HDD and the mirroring kit harness<br>MFPC PWB trouble |
| Check & Remedy  | Use SIM62-20 to check the trouble.<br>Check installation of the mirroring kit (connector and harness), and replace if necessary.<br>Replace the broken HDD.<br>Replace the mirroring kit.<br>Replace the MFPC PWB.   |

**E7-03 HDD trouble (When the mirroring kit is not installed)**

|  |   |
|--|---|
| Trouble content                                      |   |
| Section  | MFP   |
| Cause  | Connector, harness connection trouble in the MFPC PWB and HDD.<br>HDD (error file management area) data abnormality (FAT breakage).<br>MFPC PWB trouble.                                      |
| Check & Remedy                                       | Check connection of the connector and the harness of the MFPC PWB and HDD.<br>Use SIM62-2, 3 to check read/write operations of the HDD.<br>Replace the HDD.<br>Check or replace the MFPC PWB. |
| Cause (When the mirroring kit is not installed)      | RAID PWB trouble.<br>A HDD which has been used for mirroring is installed. Both HDD's go into trouble under the use environment of mirroring.   |
| Check & Remedy (When the mirroring kit is installed) | Check the RAID PWB, and replace if necessary.<br>Replace the HDD.<br>(For details, refer to the HDD and RAID PWB replacement procedures under mirroring environment.)                         |

**E7-03 HDD trouble (When the mirroring kit is installed)**

|  |   |
|--|---|
| Trouble content                                      |   |
| Section  | MFP   |
| Cause  | Connector, harness connection trouble in the MFPC PWB and HDD.<br>HDD (error file management area) data abnormality (FAT breakage).<br>MFPC PWB trouble.                                      |
| Check & Remedy                                       | Check connection of the connector and the harness of the MFPC PWB and HDD.<br>Use SIM62-2, 3 to check read/write operations of the HDD.<br>Replace the HDD.<br>Check or replace the MFPC PWB. |
| Cause (When the mirroring kit is installed)          | RAID PWB trouble.<br>A HDD which has been used for mirroring is installed. Both HDD's go into trouble under the use environment of mirroring.   |
| Check & Remedy (When the mirroring kit is installed) | Check the RAID PWB, and replace if necessary.<br>Replace the HDD.<br>(For details, refer to the HDD and RAID PWB replacement procedures under mirroring environment.)                         |

**E7-04 HDD-ASIC error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | HDD-ASIC trouble. (MFPC PWB trouble.)<br>An error occurs in the HDD-ASIC self test when booting. |
| Check & Remedy  | Check or replace the MFPC PWB.   |

**E7-07 SD card error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | SD card trouble or contact error<br>MFPC PWB trouble.                      |
| Check & Remedy  | Replace the SD card.<br>Check the SD card socket.<br>Replace the MFPC PWB. |

**E7-10 Shading error (Black correction)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | Abnormality in the CCD black scan level when the scanner lamp is turned OFF.<br>Improper installation of the harness to the CCD unit.<br>CCD unit abnormality.<br>SCU PWB abnormality. |
| Check & Remedy  | Check connection of the harness to the CCD unit.<br>Check the CCD unit.<br>Check the SCU PWB.  |

**E7-11 Shading error (White correction)**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | SCU   |
| Cause           | Abnormality in the CCD white reference plate scan level when the scanner lamp is turned ON.<br>Improper installation of the harness to the CCD unit.<br>Dirt on the mirror, lens, and the reference white plate.<br>Scanner lamp lighting trouble.<br>Scanner lamp drive PWB trouble<br>CCD unit abnormality.<br>SCU PWB abnormality.           |
| Check & Remedy  | Check connection of the harness to the CCD unit.<br>Check connection of the harness to the scanner lamp unit.<br>Check or replace the scanner lamp.<br>Check or replace the scanner lamp drive PWB.<br>Clean or replace the mirror, the lens, and the reference white board.<br>Check or replace the CCD unit.<br>Check or replace the SCU PWB. |

**E7-14 CCD-ASIC error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | SCU PWB trouble.                           |
| Check & Remedy  | Check the SCU PWB.<br>Replace the SCU PWB. |

**E7-20 LSU laser detection and deterioration error (K)**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Laser optical axis misalignment<br>Reduced laser power, lighting error, laser diode trouble.<br>LSU harness, connector trouble<br>LSU trouble       |
| Check & Remedy  | Use SIM61-1 to check the operation of the LSU.<br>Check or replace the LSU control PWB.<br>Check connection of the LSU harness.<br>Replace the LSU. |

**E7-21 LSU laser deterioration error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Reduced laser power, lighting error, laser diode trouble.<br>LSU harness, connector trouble<br>LSU trouble  |
| Check & Remedy  | Use SIM61-1 to check the operation of the LSU.<br>Check or replace the LSU control PWB.<br>Check connection of the LSU harness.<br>Replace the LSU. |

**E7-24 LSU LD driver trouble**

|                 |  |
|-----------------|--|
| Trouble content | The LSU LD is lighted, the initialization process of the LD driver is not performed normally.  |
| Section         | PCU  |
| Cause           | Disconnection or improper connection of the harness and the connector between the LD PWB and the LSU control PWB.<br>LD PWB/LSU control PWB trouble.                       |
| Check & Remedy  | Use SIM61-01 to check the operations of the LSU.<br>Check the harness and the connector between the LD PWB and the LSU control PWB.<br>Replace the LD PWB/LSU control PWB. |

**E7-28 LSU - PCU connection error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Communication error between the CPU in the PCU PWB and the LSU control ASIC.<br>Improper connection of the communication connector between the PCU PWB and the LSU control PWB (interface PWB).<br>Harness trouble between the PCU PWB and the LSU control PWB (interface PWB)<br>PCU PWB trouble.<br>LSU control PWB trouble.<br>LSU trouble. |
| Check & Remedy  | Check connection of the connector and the harness between the PCU PWB and the LSU control PWB.<br>Replace the LSU control PWB.<br>Replace the PCU PWB.<br>Replace the LSU.   |

**E7-29 LSU ASIC frequency error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Oscillation abnormality of the external oscillator used in the LSU ASIC.<br>LSU ASIC abnormality on the LSU control PWB. |
| Check & Remedy  | Replace the LSU control PWB.   |

### E7-35 Communication trouble with the CIS-ASIC

|                 |  |
|-----------------|--|
| Trouble content | Communication trouble (clock synchronization) between the CPU and the CIS-ASIC in the PCU PWB  |
| Section         | PCU  |
| Cause           | Connector/harness trouble between the PCU PWB and the PEDCis PWB.<br>PEDCis PWB trouble, PCU PWB trouble.<br>PS unit drawer connector insertion trouble.                       |
| Check & Remedy  | Check the harness between the PCU PWB and the PEDCis PWB.<br>Check the PEDCis PWB, and the PCU PWB.<br>If the trouble is not canceled, replace the PEDCis PWB and the PCU PWB. |

### E7-36 CIS-ASIC black level detection abnormality

|                 |  |
|-----------------|--|
| Trouble content | The black reference plate scan level when the lamp is lighted is abnormal.   |
| Section         | PCU  |
| Cause           | The CIS unit is not installed properly.<br>Harness trouble between the CIS unit and the PEDCis PWB.<br>CIS unit trouble, PEDCis PWB trouble.<br>Dirt on the reference black plate.                                       |
| Check & Remedy  | Check the installing state of the CIS unit<br>Check the harness between the CIS unit and the PEDCis PWB.<br>Clean the reference black plate.<br>If the trouble is not canceled, replace the CIS unit and the PEDCis PWB. |

### E7-37 CIS-ASIC white level detection abnormality

|                 |  |
|-----------------|--|
| Trouble content | The white reference plate scan level when the lamp is lighted is abnormal.   |
| Section         | PCU  |
| Cause           | The CIS unit is not installed properly.<br>Harness trouble between the CIS unit and the PEDCis PWB.<br>CIS unit trouble, PEDCis PWB trouble.<br>Dirt on the reference white plate.                                       |
| Check & Remedy  | Check the installing state of the CIS unit<br>Check the harness between the CIS unit and the PEDCis PWB.<br>Clean the reference white plate.<br>If the trouble is not canceled, replace the CIS unit and the PEDCis PWB. |

### E7-42 Image data trouble (Scanner expansion PWB (ACRE) ASIC)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | An image data error occurs.<br>An image data send error occurs.<br>Scanner expansion PWB (ACRE) connection trouble.<br>Scanner expansion PWB (ACRE) trouble.<br>MFPC PWB trouble. |
| Check & Remedy  | Check connection of the scanner expansion PWB (ACRE).<br>Check the scanner expansion PWB (ACRE), and replace if necessary.<br>Check the MFPC PWB, and replace if necessary.       |

### E7-46 Image data decode error (Scanner expansion PWB (ACRE) ASIC)

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | A decode error occurs while high compression PDF images are made. (garbled data)<br>Scanner expansion PWB (ACRE) connection trouble.<br>Scanner expansion PWB (ACRE) trouble.<br>MFPC PWB trouble. |
| Check & Remedy  | Check connection of the scanner expansion PWB (ACRE).<br>Check the scanner expansion PWB (ACRE), and replace if necessary.<br>Check the MFPC PWB, and replace if necessary.                        |

### E7-48 Scanner expansion PWB (ACRE) ASIC memory error

|                 |  |
|-----------------|--|
| Trouble content | DDR calibration error<br>DIMM insertion trouble, etc.  |
| Section         | MFP  |
| Cause           | Scanner expansion PWB (ACRE) DIMM trouble, memory slot trouble.<br>Scanner expansion PWB (ACRE) DIMM insertion trouble.<br>Scanner expansion PWB (ACRE) connection trouble.<br>Scanner expansion PWB (ACRE) trouble.<br>MFPC PWB trouble.  |
| Check & Remedy  | Check insertion of the scanner expansion PWB (ACRE) DIMM memory.<br>Check the scanner expansion PWB (ACRE) DIMM memory, and replace if necessary.<br>Check connection of the scanner expansion PWB (ACRE).<br>Check the scanner expansion PWB (ACRE), and replace if necessary.<br>Check the MFPC PWB, and replace if necessary. |

### E7-49 Water Mark data error

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | Watermark data trouble.<br>HDD trouble.                       |
| Check & Remedy  | Use SIM49-5 to upload the watermark data.<br>Replace the HDD. |

### E7-50 Engine connection trouble

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | A PWB/firmware/LSU which is not compatible with the machine specifications is detected.<br>PCU PWB trouble<br>LSU trouble |
| Check & Remedy  | Check the kind and the version of the firmware.<br>Check or replace the LSU.<br>Check or replace the PCU PWB.             |

### E7-55 PWB information sum error (engine detection)

|                 |  |
|-----------------|--|
| Trouble content | EEPROM PWB information sum error   |
| Section         | PCU  |
| Cause           | EEPROM device trouble.<br>EEPROM device contact trouble.<br>Device access error due to noises. |
| Check & Remedy  | Replace the PWB.   |

### E7-58 PWB information sum error (engine other detection)

|                 |  |
|-----------------|--|
| Trouble content | LSU PWB information sum error (engine other detection)                   |
| Section         | PCU  |
| Cause           | LSU connection failure<br>PCU PWB trouble.<br>LSU trouble.               |
| Check & Remedy  | Replace the LSU control PWB.<br>Replace the PCU PWB.<br>Replace the LSU. |

### E7-60 Combination error between PWB and firmware (MFPC PWB detection)

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | A PWB/firmware which is not compatible with the machine specifications is detected in the MFPC PWB.<br>MFPC PWB trouble. |
| Check & Remedy  | Check the kind and the version of the firmware.<br>Check or replace the MFPC PWB.  |

### E7-61 Combination error between the MFPC PWB and the PCU PWB (MFPC PWB detection)

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | Combination error between the MFPC PWB and the PCU PWB.<br>MFPC PWB trouble.<br>PCU PWB trouble.             |
| Check & Remedy  | Check the combination between the MFPC PWB and the PCU PWB.<br>Replace the MFPC PWB.<br>Replace the PCU PWB. |

### E7-62 Controller connection trouble (scanner)

|                 |   |
|-----------------|---|
| Trouble content | Controller connection trouble.<br>Compatibility trouble between the controller and the scanner. |
| Section         | MFP   |
| Cause           | Combination error between the controller PWB and the engine.                                    |
| Check & Remedy  | Check the controller PWB.<br>Check combination between the controller PWB and the scanner.      |

### E7-65 MFP EEPROM sum check error

|                 |  |
|-----------------|--|
| Trouble content | EEPROM PWB information sum error   |
| Section         | MFP  |
| Cause           | EEPROM device trouble.<br>EEPROM device contact trouble.<br>Device access error due to noises. |
| Check & Remedy  | Replace the PWB.   |

### E7-70 Scanner connection trouble

|                 |  |
|-----------------|--|
| Trouble content | Unknown PWB identification information is detected on the SCU PWB  |
| Section         | SCU  |
| Cause           | The PWB/firmware which is not supported by the machine specifications is connected.<br>SCU PWB trouble.<br>DSPF PWB trouble. |
| Check & Remedy  | Check the firmware kind and the version.<br>Check the SCU PWB.<br>Check the DSPF PWB.  |

### E7-71 DSPF connection trouble

|                 |   |
|-----------------|---|
| Trouble content | An unknown PWB identification information is detected in the DSPF PWB/ combination abnormality with the SCU PWB |
| Section         | SCU   |
| Cause           | PWB / firmware which does not support the machine specifications is connected.                                  |
| Check & Remedy  | Firmware kind / Version check.  |

### E7-75 PWB information sum error (scanner detection)

|                 |  |
|-----------------|--|
| Trouble content | EEPROM PWB information sum error   |
| Section         | SCU  |
| Cause           | EEPROM device trouble.<br>EEPROM device contact trouble.<br>Device access error due to noises. |
| Check & Remedy  | Replace the SCU PWB.   |

### E7-76 PWB information sum error (DSPF detection)

|                 |  |
|-----------------|--|
| Trouble content | FLASH ROM PWB information sum error  |
| Section         | DSPF   |
| Cause           | FLASH ROM device trouble.<br>FLASH ROM device contact trouble.<br>Device access error due to noises. |
| Check & Remedy  | Replace the DSPF PWB.  |

### E7-80 MFP - SCU PWB communication error

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | SCU PWB - MFPC PWB connection trouble.<br>SCU PWB trouble.<br>MFPC PWB trouble.   |
| Check & Remedy  | Check connection of the SCU PWB and the MFPC PWB.<br>Check the ground.<br>Replace the SCU PWB.<br>Replace the MFPC PWB. |

### E7-89 Communication error between MFPC PWB CPU and energy-saving NIC controller

|                 |  |
|-----------------|--|
| Trouble content | No response can be obtained from the energy-saving NIC controller. |
| Section         | MFP  |
| Cause           | MFPC PWB trouble.  |
| Check & Remedy  | Replace the MFPC PWB.  |

**E7-90 MFP - PCU PWB communication error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | PCU PWB - MFPC PWB connection trouble.<br>PCU PWB trouble.<br>MFPC PWB trouble.   |
| Check & Remedy  | Check connection of the PCU PWB and the MFPC PWB.<br>Check the ground.<br>Replace the PCU PWB.<br>Replace the MFPC PWB. |

**E7-92 Copy image data error**

|                 |  |
|-----------------|--|
| Trouble content | An error of copy image data process occurs.<br>(In Non ERDH)   |
| Section         | MFP  |
| Cause           | Image data process abnormality<br>HDD trouble<br>Image compression data corruption<br>MFPC PWB trouble<br>DIMM memory trouble or contact error                   |
| Check & Remedy  | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>Replace or check installation of the DIMM memory. |

**E7-93 Copy, image send, filing, print image data process error**

|                 |   |
|-----------------|---|
| Trouble content | An image data process error occurs in the following operation mode:<br>Copy (in ERDH)<br>Copy composing system function (Water mark)<br>When in image send<br>When filing documents<br>When displaying the preview<br>When printing with the GDI/PCL printer<br>Copy composing system function (Water mark) |
| Section         | MFP   |
| Cause           | Image data process abnormality<br>HDD trouble<br>Image compression data corruption<br>MFPC PWB trouble<br>DIMM memory trouble or contact error  |
| Check & Remedy  | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>Replace or check installation of the DIMM memory.  |

**E7-94 Image file data process error (when importing file data)**

|                 |  |
|-----------------|--|
| Trouble content | File image process error (backup restore error) when importing filing data   |
| Section         | MFP  |
| Cause           | Image data process abnormality<br>HDD trouble<br>Image compression data corruption<br>MFPC PWB trouble<br>DIMM memory trouble or contact error                   |
| Check & Remedy  | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>Replace or check installation of the DIMM memory. |

**E7-95 Printer PWB DIMM memory check error**

|                 |   |
|-----------------|---|
| Trouble content | SOC DIMM memory access trouble  |
| Section         | MFP   |
| Cause           | Memory data corruption occurs<br>MFPC PWB trouble<br>DIMM memory trouble or contact error   |
| Check & Remedy  | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the MFPC PWB.<br>DIMM memory socket check<br>Replace the DIMM memory. |

**E7-96 MFPC PWB DIMM memory check error**

|                 |   |
|-----------------|---|
| Trouble content | MFPC PWB DIMM memory access trouble   |
| Section         | MFP   |
| Cause           | Memory data corruption occurs<br>MFPC PWB trouble<br>DIMM memory trouble or contact error   |
| Check & Remedy  | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the MFPC PWB.<br>DIMM memory socket check<br>Replace the DIMM memory. |

**E7-A0 LSU EEPROM/LD driver read/write error (K)**

|                 |   |
|-----------------|---|
| Trouble content | Write error in write sequence of the serial EEPROM/LD driver for Black  |
| Section         | PCU   |
| Cause           | EEPROM/LD driver trouble.<br>EEPROM/LD driver access circuit trouble.   |
| Check & Remedy  | Check connection of the connector and the harness of the LD PWB and the PCU PWB.<br>Replace the PCU PWB.<br>If the above remedies cannot delete the trouble, replace the LSU. |

**E7-A5 Installation error of HDD which was used in the mirroring kit**

|                 |  |
|-----------------|--|
| Trouble content | When a HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit, its operation is restricted in order to prevent against malfunction. |
| Section         | MFP  |
| Cause           | A HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit.   |
| Check & Remedy  | Replace the HDD with one which has not been used in the mirroring kit.   |

**EE-EC Automatic toner density adjustment error**

|                 |   |
|-----------------|---|
| Trouble content | The sampling level in the automatic toner density adjustment is outside of 120 ±5.        |
| Section         | PCU   |
| Cause           | Toner density sensor trouble.<br>Developing unit trouble.<br>PCU PWB trouble.             |
| Check & Remedy  | Replace the toner density sensor.<br>Replace the developing unit.<br>Replace the PCU PWB. |

**EE-EL Automatic toner density adjustment error (Over toner)**

|                 |  |
|-----------------|--|
| Trouble content | When in the automatic toner density adjustment, the sample level is less than 67 or the control voltage value exceeds 197. |
| Section         | PCU  |
| Cause           | Toner density sensor trouble.<br>Developing unit trouble.<br>PCU PWB trouble.  |
| Check & Remedy  | Replace the toner density sensor.<br>Replace the developing unit.<br>Replace the PCU PWB.                                  |

**EE-EU Automatic toner density adjustment error (Under toner)**

|                 |  |
|-----------------|--|
| Trouble content | When in the automatic toner density adjustment, the sample level exceeds 154 or the control voltage value is less than 49. |
| Section         | PCU  |
| Cause           | Toner density sensor trouble.<br>Developing unit trouble.<br>PCU PWB trouble.  |
| Check & Remedy  | Replace the toner density sensor.<br>Replace the developing unit.<br>Replace the PCU PWB.                                  |

**F0-03 Finisher paper exit roller lift motor section abnormality (FNM110)**

|                 |  |
|-----------------|--|
| Trouble content | Finisher paper exit roller lifting operation abnormality.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper exit roller lift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-08 Finisher stapler shift motor section abnormality (FNM107)**

|                 |   |
|-----------------|---|
| Trouble content | The shift operation of the finisher stapler is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the stapler shift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-10 Finisher staple motor section abnormality (FNM115)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the finisher staple is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the staple motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the stapler unit |

**F0-11 Finisher bundle exit motor section abnormality (FNM116)**

|                 |   |
|-----------------|---|
| Trouble content | The grip expansion arm drive motor of the finisher for staple bundle exit is abnormal. HP sensor abnormality.   |
| Section         | PCU   |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, HP sensor breakdown, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the gripper arm motor (FNM116).<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F0-14 Finisher paper rear edge falling motor section abnormality (FNM113)**

|                 |   |
|-----------------|---|
| Trouble content | The rear edge falling operation in the staple compiler of the finisher is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the rear edge falling motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-15 Finisher tray lift motor section abnormality (FNM106)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the lift motor for the upper and the lower trays of the finisher is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, area sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the upper tray lift motor and the lower tray lift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, and motor, and the sensor part. |

### F0-18 Finisher rear edge hold motor section abnormality (FNM118)

|                 |  |
|-----------------|--|
| Trouble content | The operation of the paper hold arm in the staple compiler of the finisher is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper hold motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-19 Finisher paper alignment motor F section abnormality (FNM108)

|                 |   |
|-----------------|---|
| Trouble content | The operation of the front alignment plate in the staple compiler of the finisher is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper alignment motor F.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-20 Finisher paper alignment motor R section abnormality (FNM109)

|                 |   |
|-----------------|---|
| Trouble content | The operation of the rear alignment plate in the staple compiler of the finisher.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper alignment motor R.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-23 Shutter trouble (FNCL102)

|                 |  |
|-----------------|--|
| Trouble content | The operation of the shutter open/close in the paper exit section.   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the shutter clutch.<br>Check connection from the control PWB to the clutch and the sensor.<br>Replace the control PWB, the clutch, and the sensor part. |

### F0-25 Finisher paper transport roller lift motor section abnormality (FNM119)

|                 |   |
|-----------------|---|
| Trouble content | The separation operation of the transport roller in the buffer section of the finisher or the path select operation of the flapper is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper transport roller lift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-28 Finisher paper alignment roller lift motor section abnormality (FNM112)

|                 |   |
|-----------------|---|
| Trouble content | The lifting operation of the paper takeup roller arm in the staple compiler of the finisher is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper alignment roller lift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-29 Finisher PWB cooling fan abnormality (FNFAN102)

|                 |  |
|-----------------|--|
| Trouble content | The operation of the PWB cooling fan in the finisher is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the control PWB cooling fan.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the fan motor. |

### F0-30 Communication trouble between the finisher and the saddle

|                 |   |
|-----------------|---|
| Trouble content | Communication trouble between the finisher and the saddle<br>No response for the command send from the saddle unit          |
| Section         | PCU   |
| Cause           | Noise on the communication line, control PWB trouble, disconnection of connector or harness.                                |
| Check & Remedy  | Turn OFF/ON the power. Check the connector between the finisher and the saddle. Replace the control PWB of the saddle unit. |



### F0-31 Finisher saddle folding motor section abnormality (FSM206)

|                 |  |
|-----------------|--|
| Trouble content | Saddle unit folding roller operation abnormality   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle paper folding motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-32 Finisher relay unit transport motor section abnormality (PIM301)

|                 |   |
|-----------------|---|
| Trouble content | The operation of the paper transport in the paper relay unit of the finisher is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the relay paper transport motor.<br>Check connection from the control PWB to the motor.<br>Turn OFF/ON the power. Replace the control PWB and the motor. |

### F0-33 Finisher punch shift motor section abnormality (FCM101)

|                 |   |
|-----------------|---|
| Trouble content | The horizontal registration shift operation of the punch unit in the finisher is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the punch shift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-34 Finisher punch motor section abnormality (FCM102)

|                 |   |
|-----------------|---|
| Trouble content | The punching operation of the punch unit in the finisher is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the punch motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-37 Finisher backup RAM trouble

|                 |  |
|-----------------|--|
| Trouble content | Data cannot be written into the backup RAM. The red values are abnormal. |
| Section         | PCU  |
| Cause           | Finisher control PWB trouble, EEPROM chip breakdown.                     |
| Check & Remedy  | Replace the finisher control PWB.  |

### F0-40 Communication trouble between the finisher saddle and the trimmer

|                 |  |
|-----------------|--|
| Trouble content | Communication trouble between the saddle unit and the trimmer unit.<br>When a command is sent from the saddle unit to the trimmer unit, no response is made by the trimmer unit. |
| Section         | PCU  |
| Cause           | Noise on the communication line, control PWB trouble, disconnection of connector or harness.   |
| Check & Remedy  | Turn OFF/ON the power. Check the connector between the saddle and the trimmer unit. Replace the control PWB of the saddle unit. Replace the control PWB of the trimmer unit.     |

### F0-41 Finisher saddle lead edge stopper motor section abnormality (FSM203)

|                 |  |
|-----------------|--|
| Trouble content | The operation of the finisher saddle unit lead edge stopper motor is abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle lead edge stopper motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-42 Finisher saddle folding roller guide motor section abnormality (FSM204)

|                 |   |
|-----------------|---|
| Trouble content | The operation of the saddle unit folding roller guide is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle folding roller guide motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-43 Finisher saddle alignment motor section abnormality (FSM212)

|                 |  |
|-----------------|--|
| Trouble content | The jogger shift operation in the staple compiler of the saddle unit is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle paper alignment motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-44 Finisher saddle rear edge hold motor section abnormality (FSM210)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the rear edge hold member of the saddle unit is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle rear edge hold motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-45 Finisher saddle staple motor section abnormality (FSM209)**

|                 |   |
|-----------------|---|
| Trouble content | The staple operation of the saddle unit is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle staple motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-46 Finisher saddle rear edge shift motor section abnormality (FSM211)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the rear edge shift motor of the finisher saddle unit is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle rear edge shift motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-47 Finisher saddle flap motor section abnormality (FSM213)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the rear edge flap unit of the saddle unit is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle flap motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-48 Finisher saddle push motor section abnormality (FSM205)**

|                 |   |
|-----------------|---|
| Trouble content | The pushing operation of the saddle unit is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle push motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-49 Finisher saddle separation motor section abnormality (FSM214)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the takeup separation roller of the saddle unit is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle separation motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-51 Finisher trimmer cutter motor abnormality (FTM106)**

|                 |  |
|-----------------|--|
| Trouble content | The cutter operation of the trimmer unit is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the trimmer cutter motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-52 Finisher trimmer registration motor section abnormality (FTM102)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the registration taking unit of the trimmer unit is abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the trimmer registration motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-53 Finisher trimmer inlet port separation motor abnormality (FTM103)**

|                 |   |
|-----------------|---|
| Trouble content | The separation operation of the inlet port roller of the trimmer unit is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the trimmer inlet port separation motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-54 Finisher trimmer paper exit separation motor section abnormality (FTM104)**

|                 |   |
|-----------------|---|
| Trouble content | The separation operation of the paper exit roller of the trimmer unit is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the trimmer paper exit separation motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-55 Finisher trimmer bundle press motor section abnormality (FTM105)**

|                 |  |
|-----------------|--|
| Trouble content | The nip and separation operations of the bundle press roller of the trimmer unit are abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the trimmer bundle press motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-56 Paper remaining trouble in the finisher trimmer**

|                 |  |
|-----------------|--|
| Trouble content | Paper bundle remained in the trimmer is not discharged by the automatic paper exit operation.  |
| Section         | PCU  |
| Cause           | Trimmer inlet port sensor breakdown<br>The paper bundle is bent and cannot be transported.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the trimmer transport motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part.<br>Check the paper bundle can be transported or not. |

**F0-60 Communication trouble between the stacker first series and the downstream units.**

|                 |   |
|-----------------|---|
| Trouble content | Communication trouble with a downstream unit  |
| Section         | PCU   |
| Cause           | Communication trouble with the stacker and the downstream unit of the stacker<br>Stacker unit ID setting failure (Setting failure of the DIP switch on the control PWB), noises on the communication line, control PWB trouble, connector connection failure, harness breakage, disconnection of an AC cable to a downstream unit |
| Check & Remedy  | Turn OFF/ON the power. Check connection between the stacker and the downstream unit of the stacker.<br>Replace the control PWB of the downstream unit of the stacker.   |

**F0-61 Stacker first series offset unit abnormality**

|                 |  |
|-----------------|--|
| Trouble content | Offset motor, offset home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the offset motor which shifts the stack tray paper exit roller<br>Offset home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the offset motor.<br>Use SIM03-60 to check the offset home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the offset motor. Check connection of the connector and harness from the control PWB to the offset home sensor. |

**F0-62 Stacker first series front side jogger abnormality**

|                 |  |
|-----------------|--|
| Trouble content | Front side jogger motor, front side jogger home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the front side jogger motor for driving the alignment plate (front side)<br>Alignment plate (front side) home position front side jogger home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the front side jogger motor.<br>Use SIM03-60 to check the front side jogger home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the front side jogger motor. Check connection of the connector and harness from the control PWB to the front side jogger home sensor. |

### F0-63 Stacker first series rear side jogger abnormality

|                 |  |
|-----------------|--|
| Trouble content | Rear side jogger motor, rear side jogger home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the rear side jogger motor for driving the alignment plate (rear side)<br>Alignment plate (rear side) home position rear side jogger home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the rear side jogger motor.<br>Use SIM03-60 to check the rear side jogger home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the rear side jogger motor. Check connection of the connector and harness from the control PWB to the rear side jogger home sensor. |

### F0-64 Stacker first series lead edge jogger abnormality

|                 |  |
|-----------------|--|
| Trouble content | Lead edge jogger motor, lead edge jogger home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the lead edge jogger motor for driving the alignment plate (lead edge)<br>Alignment plate (lead edge) home position lead edge jogger home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the lead edge jogger motor.<br>Use SIM03-60 to check the lead edge jogger home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the lead edge jogger motor. Check connection of the connector and harness from the control PWB to the lead edge jogger home sensor. |

### F0-65 Stacker first series stack tray abnormality

|                 |  |
|-----------------|--|
| Trouble content | Stack tray lift motor abnormality, tray DC motor encoder sensor abnormality, tray limit switch (upper limit, lower limit) operation trouble, tray position sensor abnormality  |
| Section         | PCU  |
| Cause           | Abnormal operation of the stack tray lift motor<br>Abnormality of the tray DC motor encoder sensor for detecting the motor rotation<br>Tray limit switch (upper limit, lower limit) operation<br>Stack tray home sensor abnormality, stack tray 25% load position sensor abnormality, stack tray 50% load position sensor abnormality, stack tray 75% load position sensor abnormality, stack tray 100% load position sensor abnormality, stack tray extendable position sensor abnormality<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble  |
| Check & Remedy  | Use SIM03-61 to check the operation of the stack tray lift motor.<br>Use SIM03-60 to check the tray DC motor encoder sensor signal.<br>Use SIM03-60 to check the operation of the tray limit switch (upper limit, lower limit).<br>Use SIM03-60 to check each tray position sensor signal and to check that two or more sensors are not simultaneously ON.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the stack tray lift motor. Check connection of the connector and harness from the control PWB to the tray DC motor encoder sensor. Check connection of the connector and harness from the control PWB to the tray limit switch (upper limit, lower limit). Check connection of the connector and harness from the control PWB to each tray position sensor. |

### F0-70 Communication trouble between the finisher and the folding unit

|                 |   |
|-----------------|---|
| Trouble content | Communication trouble between the finisher and the folding unit.<br>No response for a command from the folding unit.            |
| Section         | PCU   |
| Cause           | Noise on the communication line, control PWB trouble, disconnection of connector or harness.                                    |
| Check & Remedy  | Turn OFF/ON the power. Check connection between the finisher and the folding unit. Replace the control PWB of the folding unit. |

### F0-71 Folding unit lead edge holding guide motor section abnormality (FLM10)

|                 |  |
|-----------------|--|
| Trouble content | The operations of the folding unit lead edge holding guide is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the folding unit lead edge holding guide motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-72 Folding unit backup RAM trouble**

|                 |  |
|-----------------|--|
| Trouble content | Data cannot be written into the backup RAM of the folding unit. The red values are abnormal. |
| Section         | PCU  |
| Cause           | Folding unit control PWB trouble, EEPROM chip breakdown.                                     |
| Check & Remedy  | Replace the folding unit control PWB.  |

**F0-73 Folding unit power fan abnormality**

|                 |  |
|-----------------|--|
| Trouble content | Cooling fan abnormality in the power unit section of the folding unit                                      |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.          |
| Check & Remedy  | Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F0-74 Folding unit folding tray paper exit motor section abnormality (FLM14)**

|                 |  |
|-----------------|--|
| Trouble content | The paper exit operation to the folding unit is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the folding unit folding tray paper exit motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-75 Folding unit upper stopper motor section abnormality (FLM8)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the upper stopper of the folding unit is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the folding unit upper stopper motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-76 3-fold stopper motor section in the folding unit is abnormal (FLM9)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the 3-fold stopper in the folding unit is abnormal.  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-41 to check the operation of the 3-fold stopper motor in the folding unit.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

**F0-77 Folding unit transport motor section abnormality (FLM11)**

|                 |  |
|-----------------|--|
| Trouble content | The folding and transport operations of the folding unit are abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-41 to check the operation of the folding unit transport motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor. |

**F0-80 Finisher power cooling fan motor abnormality (FNFAN101)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the cooling fan in the power unit section of the finisher is abnormal.                    |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.          |
| Check & Remedy  | Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F0-81 Finisher upper tray fan abnormality (FNFAN103)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the cooling fan in the upper tray of the finisher is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the upper tray fan.<br>Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F0-82 Finisher lower tray fan abnormality (FNFAN104)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the cooling fan in the lower tray of the finisher is abnormal.  |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the lower tray fan.<br>Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F0-83 Finisher paper guide motor section abnormality (FNM120)**

|                 |   |
|-----------------|---|
| Trouble content | The operation of the paper lead edge guide unit at the paper exit port of the finisher is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper guide motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-84 Finisher grip section abnormality (FNM116)

|                 |   |
|-----------------|---|
| Trouble content | The bundle grip operation when discharging paper bundle from the staple compiler of the finisher is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the gripper motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-86 Finisher discharged paper hold motor section abnormality (FNM118)

|                 |   |
|-----------------|---|
| Trouble content | The operation of the paper hold lever at the paper exit port of the finisher is abnormal.   |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, disconnection of harness or connector, HP sensor breakdown.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the discharged paper hold motor.<br>Check connection from the control PWB to the motor and the sensor.<br>Replace the control PWB, the motor, and the sensor part. |

### F0-90 Communication trouble between the stacker second series and the downstream units.

|                 |   |
|-----------------|---|
| Trouble content | Communication trouble with a downstream unit  |
| Section         | PCU   |
| Cause           | Communication trouble with the stacker and the downstream unit of the stacker<br>Stacker unit ID setting failure (Setting failure of the DIP switch on the control PWB), noises on the communication line, control PWB trouble, connector connection failure, harness breakage, disconnection of an AC cable to a downstream unit |
| Check & Remedy  | Turn OFF/ON the power. Check connection between the stacker and the downstream unit of the stacker.<br>Replace the control PWB of the downstream unit of the stacker.   |

### F0-91 Stacker second series offset unit abnormality

|                 |  |
|-----------------|--|
| Trouble content | Offset motor, offset home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the offset motor which shifts the stack tray paper exit roller<br>Offset home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the offset motor.<br>Use SIM03-60 to check the offset home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the offset motor. Check connection of the connector and harness from the control PWB to the offset home sensor. |

### F0-92 Stacker second series front side jogger abnormality

|                 |  |
|-----------------|--|
| Trouble content | Front side jogger motor, front side jogger home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the front side jogger motor for driving the alignment plate (front side)<br>Alignment plate (front side) home position front side jogger home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the front side jogger motor.<br>Use SIM03-60 to check the front side jogger home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the front side jogger motor. Check connection of the connector and harness from the control PWB to the front side jogger home sensor. |

### F0-93 Stacker second series rear side jogger abnormality

|                 |  |
|-----------------|--|
| Trouble content | Rear side jogger motor, rear side jogger home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the rear side jogger motor for driving the alignment plate (rear side)<br>Alignment plate (rear side) home position rear side jogger home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the rear side jogger motor.<br>Use SIM03-60 to check the rear side jogger home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the rear side jogger motor. Check connection of the connector and harness from the control PWB to the rear side jogger home sensor. |

### F0-94 Stacker second series lead edge jogger abnormality

|                 |  |
|-----------------|--|
| Trouble content | Lead edge jogger motor, lead edge jogger home sensor abnormality   |
| Section         | PCU  |
| Cause           | Abnormal operation of the lead edge jogger motor for driving the alignment plate (lead edge)<br>Alignment plate (lead edge) home position lead edge jogger home sensor detection trouble<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble   |
| Check & Remedy  | Use SIM03-61 to check the operation of the lead edge jogger motor.<br>Use SIM03-60 to check the lead edge jogger home sensor signal.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the lead edge jogger motor. Check connection of the connector and harness from the control PWB to the lead edge jogger home sensor. |

## F0-95 Stacker second series stack tray abnormality

|                 |  |
|-----------------|--|
| Trouble content | Stack tray lift motor abnormality, tray DC motor encoder sensor abnormality, tray limit switch (upper limit, lower limit) operation trouble, tray position sensor abnormality  |
| Section         | PCU  |
| Cause           | Abnormal operation of the stack tray lift motor<br>Abnormality of the tray DC motor encoder sensor for detecting the motor rotation<br>Tray limit switch (upper limit, lower limit) operation<br>Stack tray home sensor abnormality, stack tray 25% load position sensor abnormality, stack tray 50% load position sensor abnormality, stack tray 75% load position sensor abnormality, stack tray 100% load position sensor abnormality, stack tray extendable position sensor abnormality<br>Control PWB trouble, disconnection of connector trouble, motor trouble, sensor trouble  |
| Check & Remedy  | Use SIM03-61 to check the operation of the stack tray lift motor.<br>Use SIM03-60 to check the tray DC motor encoder sensor signal.<br>Use SIM03-60 to check the operation of the tray limit switch (upper limit, lower limit).<br>Use SIM03-60 to check each tray position sensor signal and to check that two or more sensors are not simultaneously ON.<br>Replace the control PWB. Check connection of the connector and harness from the control PWB to the stack tray lift motor. Check connection of the connector and harness from the control PWB to the tray DC motor encoder sensor. Check connection of the connector and harness from the control PWB to the tray limit switch (upper limit, lower limit). Check connection of the connector and harness from the control PWB to each tray position sensor. |

## F1-00 Finisher - PCU PWB communication error

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Connection trouble of the connector and the harness between the finisher and the PCU PWB.<br>Finisher control PWB trouble.<br>PCU PWB trouble. |
| Check & Remedy  | Check the connector and the harness between the finisher and the PCU PWB.<br>Replace the finisher control PWB.<br>Replace the PCU PWB.         |

## F1-01 Jogger motor trouble

|                 |   |
|-----------------|---|
| Trouble content | Jogger shift motor abnormality in the finisher staple compiler  |
| Section         | PCU   |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.   |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the jogger motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

## F1-08 Stapler shift trouble (FSM)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Stapler shift motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.  |
| Check & Remedy  | Use SIM3-3 to check the operation of the stapler shift motor.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the stapler shift motor.<br>Check connection of the connector and the harness.<br>Replace the home position sensor.<br>Replace the finisher control PWB. |

## F1-09 Staple diagonal motor trouble

|                 |   |
|-----------------|---|
| Trouble content | Finisher stapler unit diagonal shift motor abnormality  |
| Section         | PCU   |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble                                |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the stapler diagonal motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

## F1-10 Staple operation trouble (FFSM)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Staple motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the staple motor.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the staple motor.<br>Check connection of the connector and the harness.<br>Replace the home position sensor.<br>Replace the finisher control PWB. |

## F1-11 Finisher bundle exit motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the discharge motor for staple bundle discharge of the finisher   |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble                         |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the discharge motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

## F1-13 Paper exit guide plate open/close motor trouble

|                 |   |
|-----------------|---|
| Trouble content | Abnormality of the paper exit port open / close motor in the shift tray paper exit section of the finisher  |
| Section         | PCU   |
| Cause           | Motor lock, motor harness short / open, control PWB trouble, home position sensor trouble, connection harness/connector connection trouble.   |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the paper exit port open/close motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

### F1-15 Finisher paper exit tray lift operation trouble (FTLM)

|                 |   |
|-----------------|---|
| Trouble content | Lift motor trouble.   |
| Section         | PCU   |
| Cause           | Paper exit tray lift motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the paper exit tray lift motor.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the finisher control PWB.<br>Replace the paper exit tray lift motor.<br>Replace the home position sensor. |

### F1-23 Bundle branch open/close motor trouble

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Motor lock trouble.<br>Control PWB trouble.<br>Home position sensor trouble.<br>Connection harness/connector connection trouble.                   |
| Check & Remedy  | Check the operation of the bundle paper exit motor with SIM3-3.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB. |

### F1-31 Finisher saddle motor trouble (Saddle stitch finisher) (FSFOM)

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Saddle paper folding motor trouble.<br>Saddle paper folding mechanism trouble.<br>Finisher control PWB trouble.<br>Folding plate home position sensor trouble.<br>Saddle paper folding motor rotation sensor trouble.<br>Harness/connector connection trouble.<br>PCU PWB trouble.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle motor.<br>Check the saddle paper folding mechanism.<br>Check the finisher control PWB, and replace if necessary.<br>Check the folding plate home position sensor, and replace if necessary.<br>Check the saddle paper folding motor rotation sensor, and replace if necessary.<br>Check connection of the harness/connector, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

### F1-33 Punch unit shift operation trouble (FPSM)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Punch shift motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the punch shifting.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the punch shift motor.<br>Replace the finisher control PWB.<br>Replace the home position sensor.<br>Check connection of the connectors and the harness. |

### F1-34 Punch operation trouble (FPNM)

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Punch motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble.  |
| Check & Remedy  | Use SIM3-2 to check the operation of the home position sensor.<br>Use SIM3-3 to check the operation of the punch.<br>Replace the punch motor.<br>Replace the finisher control PWB.<br>Replace the home position sensor.<br>Check connection of the connectors and the harness. |

### F1-35 Horizontal registration detection motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the paper sensor shift motor for punch positioning of the punch unit in the finisher  |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short / open, control PWB trouble, home position sensor trouble, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the horizontal resist detection motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

### F1-44 Staple motor 3 trouble

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | Saddle staple motor R trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle staple motor R.<br>Check connection from the control PWB to the motor.<br>Turn OFF/ON the power.<br>Replace the control PWB.<br>Replace the sensor. |



**F1-45 Saddle staple trouble (FSFSTM)**

|                 |   |
|-----------------|---|
| Trouble content | Abnormality of the staple unit drive motor in the saddle section.   |
| Section         | PCU   |
| Cause           | Saddle staple motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble.   |
| Check & Remedy  | Use SIM3-3 to check the operation of the saddle staple motor.<br>Check connection from the control PWB to the motor.<br>Turn OFF/ON the power.<br>Replace the control PWB.<br>Replace the sensor. |

**F1-46 Rear edge fence motor trouble**

|                |  |
|----------------|--|
| Section        | PCU  |
| Cause          | Saddle motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble.   |
| Check & Remedy | Use SIM3-3 to check the operation of the saddle motor.<br>Check connection from the control PWB to the motor.<br>Turn OFF/ON the power.<br>Replace the control PWB.<br>Replace the sensor. |

**F1-47 Drive collar oscillation motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Drive collar oscillation motor abnormality in the finisher staple compiler.  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-3 and Sim. 3-2 to check the operation of the jogger motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-48 Saddle discharge motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Bundle paper transport / discharge drive motor abnormality in the saddle unit  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-2 to check the operation of the saddle discharge motor.<br>Check connection from the control PWB to the motor, and turn OFF / ON the power.<br>Replace the control PWB and the sensor part. |

**F1-50 Main unit - Finisher combination error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | The finisher which is not supported by the main unit model is installed.<br>Finisher control PWB trouble. |
| Check & Remedy  | Install a proper finisher.<br>Replace the finisher control PWB.   |

**F1-60 Communication trouble between peripheral devices (Inserter detection)**

|                 |  |
|-----------------|--|
| Trouble content | Communication abnormality between the units connected to the downstream of the inserter.<br>No response for a command from the inserter. Motor abnormality.                |
| Section         | PCU  |
| Cause           | Noise on the communication line<br>Control PWB trouble.<br>Harness and connector connection trouble.   |
| Check & Remedy  | Turn OFF/ON the power.<br>Check connection of the connector with the downstream units of the inserter.<br>Replace the control PWB of the downstream units of the inserter. |

**F1-64 No. 1 pickup motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the paper feed roller driving motor in the upper side paper feed section of the inserter  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-31 to check the operation of the No. 1 pickup motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-65 No. 2 pickup motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the paper feed roller driving motor in the lower side paper feed section of the inserter  |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-31 to check the operation of the No. 2 pickup motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-66 No. 1 lift motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the tray lift-up driving motor in the upper side paper feed section of the inserter   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-31 to check the operation of the No. 1 lift motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-67 No. 2 lift motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the tray-lift-up driving motor in the lower side paper feed section of the inserter   |
| Section         | PCU  |
| Cause           | Motor lock, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.  |
| Check & Remedy  | Use Sim. 3-31 to check the operation of the No. 2 lift motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-86 Return collar oscillation motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | Abnormality of the return driving motor in the compiler of the finisher.   |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open trouble, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.                              |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the return collar oscillation motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-89 Shift motor trouble**

|                 |   |
|-----------------|---|
| Trouble content | Abnormality of the shift unit driving motor   |
| Section         | PCU   |
| Cause           | Motor lock, motor harness short/open trouble, control PWB trouble, home position sensor breakdown, connection harness / connector connection trouble.         |
| Check & Remedy  | Use Sim. 3-3 to check the operation of the shift motor<br>Check connection from the control PWB to the motor.<br>Replace the control PWB and the sensor part. |

**F1-90 Communication trouble between the decurler and the downstream units.**

|                 |  |
|-----------------|--|
| Trouble content | Communication trouble of the decurler and the units connected to the downstream of the decurler.   |
| Section         | PCU  |
| Cause           | Noise on the communication line, control PWB trouble, disconnection of connector or harness.   |
| Check & Remedy  | Turn OFF/ON the power.<br>Check connection of the connector between main unit and decurler.<br>Check connection of the connector between the decurler unit and the downstream units of the decurler.<br>Replace the decurler control PWB.<br>Replace the control PWB of the downstream units of the decurler |

**F1-96 Decurler transport motor abnormality (DCM100)**

|                 |   |
|-----------------|---|
| Trouble content | The transport operation of the decurler transport motor is abnormal.                            |
| Section         | PCU   |
| Cause           | Motor driver IC overcurrent detection, overheat detection.                                      |
| Check & Remedy  | Use SIM3-51 to check the operation of the decurler transport motor.<br>Replace the control PWB. |

**F1-97 Decurler unit fan 1 (Upper cooling fan) abnormality (DCFAN100)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the fan in the decurler unit is abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-51 to check the operation of the decurler unit fan 1 (Upper cooling fan).<br>Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F1-98 Decurler unit fan 2 (Lower cooling fan) abnormality (DCFAN103)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the fan in the decurler unit is abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-51 to check the operation of the decurler unit fan 2 (Lower cooling fan).<br>Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F1-99 Decurler unit fan 3 (Transport motor cooling fan) abnormality (DCFAN101)**

|                 |  |
|-----------------|--|
| Trouble content | The operation of the fan in the decurler unit is abnormal.   |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, control PWB trouble, disconnection of harness or connector.  |
| Check & Remedy  | Use SIM3-51 to check the operation of the decurler unit fan 3 (Transport motor cooling fan).<br>Check connection from the control PWB to the fan motor.<br>Replace the control PWB. Replace the fan motor. |

**F2-22 Discharge lamp trouble (K)**

|                 |   |
|-----------------|---|
| Trouble content | When the discharge lamp open sensor is kept ON for a certain time from turning ON the discharge lamp, it is detected as a trouble.                                  |
| Section         | PCU   |
| Cause           | Contact trouble between the discharge lamp PWB (K) and the PCU PWB.<br>Discharge lamp PWB (K) trouble.<br>PCU PWB trouble.  |
| Check & Remedy  | Use SIM5-4 to check lighting of the discharge lamp (K) [DL_K].<br>Check the discharge lamp PWB (K).<br>Check the harness and the connector.<br>Replace the PCU PWB. |

**F2-33 Surface potential sensor trouble**

|                 |   |
|-----------------|---|
| Trouble content | Front surface potential sensor open or short, sensor detection trouble  |
| Section         | PCU   |
| Cause           | Sensor dirt, sensor trouble.<br>Surface potential sensor harness connection trouble.<br>PCU PWB trouble. Drum surface state abnormality.<br>Grid high voltage output trouble.<br>Drum charging abnormality due to dirt on the MC grid.<br>The drum life is reached.   |
| Check & Remedy  | Check connection of the harness and the connector of the sensor.<br>Check the PCU PWB. Check for dirt on the MC grid.<br>Clean or replace as needed.<br>Check the drum surface condition. Use Sim. 22-1 to check the drum life meter. If it is 100%, it means that the drum life is reached, and maintenance must be performed.<br>Use Sim. 44-3 to execute DARK V0 and check the operation.<br>Check the grid high voltage output. |

**F2-39 Process temperature sensor trouble**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Process thermistor trouble.<br>Process thermistor harness connection trouble.<br>PCU PWB trouble.                                |
| Check & Remedy  | Replace the process thermistor.<br>Check connection of the process thermistor harness and the connector.<br>Replace the PCU PWB. |

**F2-40 Toner density sensor trouble (K)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Toner density sensor output abnormality.<br>Sensor connector and harness connection trouble.<br>Developing unit trouble.<br>PCU PWB trouble.           |
| Check & Remedy  | Replace the toner density sensor.<br>Check connection of the sensor connector and the harness.<br>Replace the developing unit.<br>Replace the PCU PWB. |

**F2-47 Room temperature thermistor trouble**

|                 |   |
|-----------------|---|
| Trouble content | Room temperature thermistor open or short   |
| Section         | PCU   |
| Cause           | Room temperature thermistor trouble, room temperature thermistor harness connection trouble, PCU PWB trouble. |
| Check & Remedy  | Check connection of the room temperature harness / connector. Check the PCU PWB.                              |

**F2-58 Process humidity sensor trouble**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Temperature/humidity sensor trouble.<br>Process humidity sensor harness and connector connection trouble<br>PCU PWB trouble.                       |
| Check & Remedy  | Replace the temperature/humidity sensor.<br>Check connection of the temperature/humidity sensor harness and the connector.<br>Replace the PCU PWB. |

**F2-59 Room temperature/humidity thermistor trouble**

|                 |   |
|-----------------|---|
| Trouble content | Room temperature humidity sensor open   |
| Section         | PCU   |
| Cause           | Room temperature humidity sensor trouble, room temperature humidity sensor harness connection trouble, PCU PWB trouble. |
| Check & Remedy  | Check connection of the room temperature humidity sensor harness/connector.<br>Check the PCU PWB.                       |

**F2-64 Toner supply operation trouble (K)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Toner motor trouble.<br>Toner density sensor trouble.<br>Connector/harness trouble.<br>PCU PWB trouble.<br>Toner cartridge trouble.<br>Developing unit trouble.<br>Toner hopper section trouble                          |
| Check & Remedy  | Replace the toner motor.<br>Replace the toner density sensor.<br>Connector and harness check.<br>Replace the PCU PWB.<br>Replace the toner cartridge.<br>Replace the developing unit.<br>Check the toner hopper section. |

**F2-70 Improper toner cartridge detection (K)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.)<br>Toner cartridge trouble.<br>PCU PWB trouble. |
| Check & Remedy  | Replace the toner cartridge.<br>Replace the PCU PWB.   |

**F2-74 Toner cartridge CRUM error (K)**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Toner cartridge (CRUM) trouble.<br>PCU PWB trouble.<br>Connector and harness trouble between PCU PWB and toner cartridge                 |
| Check & Remedy  | Replace the toner cartridge.<br>Replace the PCU PWB.<br>Check the connector and the harness between the PCU PWB and the toner cartridge. |

**F2-78 Image density sensor adjustment trouble**

|                 |  |
|-----------------|--|
| Trouble content | Before registration, the transfer belt surface is scanned by the image density sensor to adjust the sensor gain so that the output is maintained at a constant level. When, however, the sensor gain is changed, the output level does not fall within the specified range.  |
| Section         | PCU  |
| Section         | Image density sensor trouble.<br>Connection trouble of the harness between the PCU PWB and the image density sensor.<br>Dirt on the image density sensor, transfer belt cleaning trouble<br>Calibration plate solenoid operation trouble   |
| Section         | Check the sensor and the harness<br>Check the operation of the calibration plate solenoid, and check the transfer belt surface conditions.<br>If the trouble is not removed, perform the following procedures depending on the check results.<br>Replace the registration image sensor. Replace the transfer belt. Replace the calibration plate solenoid.<br>Replace the PCU PWB. |

### F2-91 High density process control high voltage error (K)

|                 |  |
|-----------------|--|
| Trouble content | When executing the high density process control in the toner cartridge-less production process, the developing bias exceeds 500V.  |
| Section         | PCU  |
| Cause           | Image density sensor trouble, harness connection trouble between the PCU PWB and the image density sensor, dirt on the image density sensor, transfer belt cleaning trouble<br>Developing tank abnormality   |
| Check & Remedy  | Use SIM44-02 to execute the gain adjustment of the process control sensor.<br>When "Error" is displayed, it may be considered as breakdown. Check the sensor and the harness.<br>When the adjustment is normally completed, check the drum surface and the belt surface.<br>Replace the developing tank. |

### F3-12 Paper feed tray 1 lift operation trouble

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | LUD1 is not turned ON within the specified time.<br>CLUD1 sensor trouble.<br>Paper feed tray 1 lift unit trouble.<br>PCU PWB trouble.<br>Sensor harness and connector connection trouble |
| Check & Remedy  | Check connection of the harness and the connector of LUD1.<br>Replace the lift unit.<br>Replace the PCU PWB.   |

### F3-22 Paper feed tray 2 lift operation trouble

|                 |  |
|-----------------|--|
| Trouble content | LUD2 does not turn ON within the specified time.   |
| Section         | PCU  |
| Cause           | LUD2 does not turn ON within the specified time.<br>CLUD2 sensor trouble.<br>Paper feed tray 2 lift unit trouble.<br>PCU PWB trouble.<br>Sensor harness and connector connection trouble |
| Check & Remedy  | Check the harness and the connector of LUD2.<br>Replace the lift unit.<br>Replace the PCU PWB.   |

### F3-32 Main body cassette 3 lift trouble

|                 |   |
|-----------------|---|
| Trouble content | C3LUD does not turn ON within the specified time.   |
| Section         | PCU   |
| Cause           | C3LUD sensor trouble.<br>Cassette 3 lift motor trouble.<br>Harness connection trouble between the PCU PWB, the lift unit, and the paper feed unit |
| Check & Remedy  | Check the harness and the connector of C3LUD.<br>Check the lift unit.   |

### F3-42 Main body cassette 4 lift trouble

|                 |   |
|-----------------|---|
| Trouble content | C4LUD does not turn ON within the specified time.   |
| Section         | PCU   |
| Cause           | C4LUD sensor trouble.<br>Cassette 4 lift motor trouble.<br>Harness connection trouble between the PCU PWB, the lift unit, and the paper feed unit |
| Check & Remedy  | Check the harness and the connector of C4LUD.<br>Check the lift unit.   |

### F9-91 Communication error between MFP and the printer section when booting

|                 |   |
|-----------------|---|
| Trouble content | Booting of the printer section cannot be recognized when booting.   |
| Section         | MFP   |
| Cause           | MFPC (section) PWB trouble.<br>Printer (section) PWB trouble.<br>Printer flash ROM trouble.<br>MFPC (section) PWB - printer (section) PWB connection trouble.                             |
| Check & Remedy  | Replace the MFPC (section) PWB.<br>Replace the printer (section) PWB.<br>Replace the printer flash ROM.<br>Check connection between the MFPC (section) PWB and the printer (section) PWB. |

### F9-92 Printer (section) PWB hardware error

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | Printer PWB trouble<br>Font ROM contact trouble or error<br>DIMM memory contact trouble or error   |
| Check & Remedy  | Replace the printer PWB.<br>Check the font ROM socket.<br>Check the DIMM memory socket.<br>Check the font ROM.<br>Replace the DIMM memory. |

### FF-00 Double feed detection trouble (PCU) (105/120 ppm only)

|                 |  |
|-----------------|--|
| Trouble content | Double feed sensor abnormality detection   |
| Section         | PCU  |
| Cause           | Double feed sensor abnormality.<br>Harness / circuit trouble related to the double feed sensor.<br>Insertion failure of the drawer connector of the PS unit. |
| Check & Remedy  | Check the circuit related to the double feed sensor and the harness and the connector.<br>Replace the double feed detection PWB and the sensor.              |

### FF-10 Double feed detection trouble (SCU) (105/120 ppm only)

|                 |   |
|-----------------|---|
| Trouble content | Double feed sensor abnormality detection  |
| Section         | SCU   |
| Cause           | Double feed sensor abnormality.<br>Harness/circuit trouble related to the double feed sensor.   |
| Check & Remedy  | Check the circuit related to the double feed sensor and the harness and the connector.<br>Replace the double feed detection PWB and the sensor. |

## H2-00 Thermistor open trouble (TH\_UM\_AD2)

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>Fusing section connector connection trouble<br>Fusing unit not installed   |
| Check & Remedy  | Use SIM44-14 to check the state of the thermistor.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Check the connector in the fusing section. |

## H2-02 Contact thermistor upper sub detection thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Thermistor trouble<br>Control PWB trouble<br>Fusing section connector connection trouble<br>AC power trouble<br>Fusing unit not installed. |
| Check & Remedy  | Check connection of the harness and the connector from the thermistor to the control PWB.  |

## H2-03 Non-contact thermistor upper main compensation thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Thermistor trouble<br>Control PWB trouble<br>Fusing section connector connection trouble<br>AC power trouble<br>Fusing unit not installed. |
| Check & Remedy  | Check connection of the harness and the connector from the thermistor to the control PWB.  |

## H3-00 Fusing section high temperature trouble (TH\_UM)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | The fusing temperature exceeds the specified level.<br>Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>HL control PWB trouble   |
| Check & Remedy  | Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Replace the HL control PWB. |

## H3-02 Fusing section high temperature trouble (TH\_US)

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | The fusing temperature exceeds the specified level.<br>Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>HL control PWB trouble   |
| Check & Remedy  | Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Replace the HL control PWB. |

## H4-00 Fusing section low temperature trouble (TH\_UM\_AD2)

|                 |  |
|-----------------|--|
| Trouble content | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble.   |
| Check & Remedy  | Use SIM14 to cancel the trouble.<br>Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit. |

## H4-02 Fusing section low temperature trouble (TH\_US)

|                 |  |
|-----------------|--|
| Trouble content | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble.   |
| Check & Remedy  | Use SIM14 to cancel the trouble.<br>Use SIM44-14 to check the state of the thermistor.<br>Use SIM05-02 to check the flashing operation of the heater lamp.<br>Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit. |

#### H4-30 Upper main thermistor differential input abnormality (TH\_UM)

|                 |   |
|-----------------|---|
| Trouble content | The values of TH_UM_AD1 and TH_UM_AD2 do not exceed the specified value within the specified time from turning ON the HL_UM.  |
| Section         | PCU   |
| Cause           | HL_UM does not turn on.<br>Thermistor trouble.<br>Harness trouble.<br>PCU PWB trouble   |
| Check & Remedy  | Use SIM05-02 to check the flashing operation of the heater lamp.<br>When the heater lamp flashes normally, check the thermistor and its harness.<br>Check the thermistor input circuit section of the PCU PWB.<br>When the lamp does not light up, check for disconnection in the heater lamp and breakage of the thermostat.<br>Check the interlock switch.<br>Check the lamp control circuit of the AC PWB and the PCU PWB.<br>Use SIM14 to cancel the trouble. |

#### H5-01 5 times continuous POD1 not-reach jam

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | A fusing jam is not canceled completely. (A jam paper remains.)<br>POD1 sensor trouble<br>Fusing unit installation trouble<br>POD1 sensor connector and harness connection trouble<br>PCU PWB trouble<br>Fusing unit, drive section trouble                               |
| Check & Remedy  | Replace the POD1 sensor.<br>Check installation of the fusing unit.<br>Replace the fusing unit.<br>Check or repair the fusing drive section.<br>Check connection of the POD1 sensor connector and the harness.<br>Replace the PCU PWB.<br>Use SIM14 to cancel the trouble. |

#### H7-10 Recovery error from low fuser temp. (TH\_UM\_AD2)

|                 |  |
|-----------------|--|
| Trouble content | The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble.   |
| Check & Remedy  | Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit.<br>Use SIM5-2 to check the flashing operation of the heater lamp. |

#### H7-12 Recovery error from low fuser temp. (TH\_US)

|                 |  |
|-----------------|--|
| Trouble content | The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble.   |
| Check & Remedy  | Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit.<br>Use SIM5-2 to check the flashing operation of the heater lamp. |

#### L1-00 Scanner feed trouble

|                 |  |
|-----------------|--|
| Trouble content | Scanner feed is not completed within the specified time.   |
| Section         | SCU  |
| Cause           | Scanner unit trouble.<br>SCU PWB trouble.<br>Harness and connector connection trouble.<br>Scanner home position sensor trouble.<br>Scanner motor trouble.  |
| Check & Remedy  | Use SIM1-1 to check the scan operation.<br>Replace the scanner unit.<br>Replace the SCU PWB.<br>Check connection of the connectors and the harness.<br>Replace the scanner home position sensor.<br>Replace the scanner motor. |

#### L2-10 CCD cooling fan motor trouble

|                 |   |
|-----------------|---|
| Trouble content | The lock signal is detected during rotation of the fan /<br>The non-lock state is detected when the motor is not rotated in booting |
| Section         | SCU   |
| Cause           | Fan motor trouble, fan motor related harness and circuit trouble.   |
| Check & Remedy  | Check the fan motor related circuits (SCNcnt PWB) and their harness and connector.  |

#### L3-00 Scanner return trouble

|                 |  |
|-----------------|--|
| Trouble content | Scanner return is not completed within the specified time.   |
| Section         | SCU  |
| Cause           | Scanner unit trouble<br>SCU PWB trouble<br>Harness and connector connection trouble<br>Scanner home position sensor trouble<br>Scanner motor trouble   |
| Check & Remedy  | Use SIM1-1 to check the scan operation.<br>Replace the scanner unit.<br>Replace the SCU PWB.<br>Check connection of the connectors and the harness.<br>Replace the scanner home position sensor.<br>Replace the scanner motor. |

#### L4-01 Main motor lock trouble

|                 |  |
|-----------------|--|
| Trouble content | The motor lock signal is detected during rotation of the main motor (MM/MM2)   |
| Section         | PCU  |
| Cause           | Main motor (MM/MM2) lock trouble.<br>Connection failure or disconnection of the connector and the harness.<br>Control circuit trouble.   |
| Check & Remedy  | Use Sim. 6-1 to check the operation of the main motor (MM/MM2) lock.<br>Check the harness and the connector. (between the PCU PWB and the motor, between the HL PWB and the motor) |

#### L4-02 Main motor 2 lock trouble

|                 |   |
|-----------------|---|
| Trouble content | The lock signal is not detected within 1 sec when the paper feed motor is rotated in warming up or in canceling a paper jam.  |
| Section         | PCU   |
| Cause           | Paper feed motor trouble.<br>Harness connection trouble between the PCU PWB and the paper feed motor.<br>Control circuit trouble.                                   |
| Check & Remedy  | Use SIM6-1 to check the operation of the paper feed motor.<br>Check connection of the connector and the harness between the PCU PWB and the toner paper feed motor. |

#### L4-03 Fusing motor lock trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the fusing motor.  |
| Section         | PCU   |
| Cause           | Fusing motor trouble<br>Fusing motor harness and connector connection trouble<br>PCU PWB trouble  |
| Check & Remedy  | Use SIM6-1 to check the operation of the fusing motor.<br>Replace the Fusing motor.<br>Check connection of the fusing motor harness and the connection.<br>Replace the PCU PWB. |

#### L4-04 Toner hopper/Developing motor trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the toner hopper/developing motor  |
| Section         | PCU   |
| Cause           | Toner hopper/developing motor trouble.<br>Harness connection trouble between the PCU PWB and the toner hopper/developing motor.<br>Control circuit trouble.                       |
| Check & Remedy  | Check the toner hopper/developing motor operation with Sim. 25-1.<br>Check connection of the connector and the harness between the PCU PWB and the toner hopper/developing motor. |

#### L4-14 Toner cartridge motor lock trouble

|                 |  |
|-----------------|--|
| Trouble content | Though the toner cartridge motor is rotated for a certain time, the toner cartridge motor rotation sensor count value does not exceed the threshold value  |
| Section         | PCU  |
| Cause           | Toner cartridge motor trouble.<br>Toner cartridge motor rotation sensor trouble.<br>Harness connection trouble between the PCU PWB and the toner cartridge motor.<br>Harness trouble between the PCU PWB and the toner cartridge motor rotation sensor.<br>Toner cartridge trouble.  |
| Check & Remedy  | Use Sim. 10-1 to check the operation of the toner cartridge motor.<br>Use Sim. 10-3 to check the operation of the toner cartridge motor rotation sensor.<br>Check the harness and the connector between the PCU PWB and the toner cartridge motor.<br>Check the harness and the connector between the PCU PWB and the toner cartridge motor rotation sensor.<br>Replace the toner cartridge. |

#### L4-17 Drum motor lock trouble (K)

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the drum motor (K).  |
| Section         | PCU   |
| Cause           | Drum motor trouble<br>Harness connection trouble between the PCU PWB and the drum motor<br>Control circuit trouble  |
| Check & Remedy  | Use SIM25-01 to check the operation of the drum motor.<br>Check the harness and the connector between the PCU PWB and the developing motor.<br>Replace the PCU PWB. Replace the drum motor. |

#### L4-27 Decurler motor lock trouble

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during rotation of the decurler motor.   |
| Section         | PCU  |
| Cause           | Decurler motor trouble.<br>Harness connection trouble between the PCU PWB and the decurler motor.<br>Control circuit trouble.  |
| Check & Remedy  | Use SIM06-01 to check the operation of the decurler motor.<br>Replace the decurler motor.<br>Check connection of the decurler motor harness and the connector.<br>Replace the PCU PWB. |

#### L4-28 Sub power source cooling fan motor

|                 |  |
|-----------------|--|
| Trouble content | The motor lock signal is detected during rotation of the sub power cooling fan motor.  |
| Section         | MFP  |
| Cause           | Fan motor trouble, Mother PWB trouble, fan motor/Mother PWB harness connection trouble, control circuit trouble  |
| Check & Remedy  | Use SIM06-02 to check the operation of the fan motor.<br>Check the mother PWB, and the harness and the connector between the fan motor and the Mother PWB. |

#### L4-30 Controller fan motor trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the controller fan motor or the HDD fan motor.   |
| Section         | MFP   |
| Cause           | Fan motor trouble, Mother PWB trouble, fan motor/Mother PWB harness connection trouble, control circuit trouble   |
| Check & Remedy  | Use SIM06-02 to check the operation of the fan motor. Check the Mother PWB, and the harness and the connector between the fan motor and the Mother PWB. |

#### L4-31 Machine heat-exhaust fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The lock signal is detected during rotation of the machine heat-exhaust fan.  |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.                                     |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-32 Power source cooling fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the power cooling fans 1 and 2.  |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the ozone exhaust fan or other trouble.                                 |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-34 Polygon cooling fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the polygon cooling fan.   |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.                                     |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-36 Toner suction fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the toner suction fan.   |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.                                     |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-38 Reverse transport cooling fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the reverse transport cooling fan.                                     |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.                                     |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-39 Reverse cooling fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the reverse cooling fan.   |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.                                     |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-40 Ozone fan motor 1 trouble

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during rotation of the ozone fan motor 1.  |
| Section         | PCU  |
| Cause           | Harness/connector trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble.<br>Fan motor trouble.<br>The fan does not rotate because of the other trouble. (No power supply to the fan motor) |
| Check & Remedy  | Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.                             |

#### L4-41 Ozone fan motor 2 trouble

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during rotation of the ozone fan motor 2.  |
| Section         | PCU  |
| Cause           | Harness/connector trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble.<br>Fan motor trouble.<br>The fan does not rotate because of the other trouble. (No power supply to the fan motor) |
| Check & Remedy  | Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.                             |

#### L4-43 Paper cooling fan trouble

|                 |   |
|-----------------|---|
| Trouble content | The motor lock signal is detected during rotation of the paper cooling fan.   |
| Section         | PCU   |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.                                     |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan. Use SIM6-2 to check that the fan is actually rotating. |

#### L4-46 Development cooling fan 1 trouble

|                 |   |
|-----------------|---|
| Trouble content | The lock signal is detected during operation of the developing cooling fan  |
| Section         | PCU   |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble. (Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor. Replace the PCU PWB. Replace the fan motor.                        |



**L4-47 Power cooling fan 3 trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the power cooling fan  |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-48 ADU paper cooling fan 1 trouble**

|                 |   |
|-----------------|---|
| Trouble content | The lock signal is detected during rotation of the ADU transport cooling fan motor F.   |
| Section         | PCU   |
| Cause           | Harness/connector trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble.<br>Fan motor trouble.<br>The fan does not rotate because of the other trouble.<br>(No power supply to the fan motor) |
| Check & Remedy  | Use SIM6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB.<br>Replace the fan motor.                       |

**L4-49 ADU paper cooling fan 2 trouble**

|                 |   |
|-----------------|---|
| Trouble content | The lock signal is detected during rotation of the ADU transport cooling fan motor R.   |
| Section         | PCU   |
| Cause           | Harness/connector trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble.<br>Fan motor trouble.<br>The fan does not rotate because of the other trouble.<br>(No power supply to the fan motor) |
| Check & Remedy  | Use SIM6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB.<br>Replace the fan motor.                       |

**L4-50 Process cooling fan 1 trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the process cooling fan  |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-51 Process cooling fan 2 trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the process cooling fan  |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-52 Process cooling fan 3 trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the process cooling fan  |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-53 Process cooling fan 4 trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the process cooling fan  |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-54 PS cooling fan trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the PS cooling fan   |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-55 Process cooling fan trouble**

|                 |  |
|-----------------|--|
| Trouble content | The lock signal is detected during operation of the process cooling fan  |
| Section         | PCU  |
| Cause           | Harness connection trouble between the PCU PWB and the fan motor.<br>PCU PWB trouble. Fan motor trouble.<br>The fan is not rotating due to other trouble.<br>(Power is not supplied to the fan motor.) |
| Check & Remedy  | Use Sim. 6-2 to check the operation of the fan motor.<br>Check the harness and the connector between the PCU PWB and the fan motor.<br>Replace the PCU PWB. Replace the fan motor.                     |

**L4-58 Process section peripheral fan trouble**

|                 |  |
|-----------------|--|
| Trouble content | The motor lock signal is detected during rotation of the cooling fan around the process section.                               |
| Section         | PCU  |
| Cause           | The fan does not rotate because of disconnection of the fan connector or other trouble.  |
| Check & Remedy  | Check the harness and the connector between the PCU PWB and the fan.<br>Use SIM6-2 to check that the fan is actually rotating. |

**L6-10 Polygon motor trouble**

|                 |  |
|-----------------|--|
| Trouble content | The polygon motor does not reach the specified RPM within the specified time after starting rotation of the polygon motor.   |
| Section         | PCU  |
| Cause           | Polygon motor trouble.<br>LSU control PWB trouble.<br>Connection trouble of the connector and the harness.   |
| Check & Remedy  | Use SIM61-1 to check the operation of the polygon motor.<br>Check connection of the connector and the harness.<br>Replace the LSU.<br>Replace the LSU control PWB. |

**L8-01 Full wave signal detection error**

|                 |   |
|-----------------|---|
| Trouble content | The full wave signal is not detected.   |
| Section         | PCU   |
| Cause           | PCU PWB trouble.<br>Power unit trouble.<br>Connection trouble of the connector and the harness.       |
| Check & Remedy  | Replace the PCU PWB.<br>Replace the power unit.<br>Check connection of the connector and the harness. |

**L8-02 Full wave signal error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | An abnormality in the full wave signal frequency is detected.<br>(The frequency is detected as 65Hz or above, or 45Hz or less.)<br>PCU PWB trouble.<br>Power unit trouble.<br>Connection trouble of the connector and the harness.<br>Power frequency, waveform abnormality. |
| Check & Remedy  | Replace the PCU PWB.<br>Replace the power unit.<br>Check connection of the connector and the harness.<br>Check the power waveform.   |

**L8-20 Communication error of MFPC PWB/SCN mother board**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | SCN mother board PWB - MFPC PWB connection trouble.<br>MFPC PWB trouble.<br>SCN mother board trouble.   |
| Check & Remedy  | Check connection between the SCN mother board PWB and the MFPC PWB.<br>Check the ground of the main unit.<br>Replace the MFPC PWB.<br>Replace the SCN mother board. |

**P1-00 PCI communication error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | Communication error between the MFPC PWB and the PCI.<br>Connection failure of connectors and harness between the MFPC PWB and the PCI.<br>MFPC PWB trouble.<br>PCI control PWB trouble.  |
| Check & Remedy  | Check connection of the harness and connectors between the MFPC PWB and the PCI.<br>Check the MFPC PWB, and replace if necessary.<br>(Refer to the necessary procedures after replacement of the MFPC PWB in the Service Manual, and perform the procedures.)<br>Check the PCI control PWB, and replace if necessary. |

**U1-01 Battery trouble**

|                 |   |
|-----------------|---|
| Trouble content | RTC backup battery voltage fall   |
| Section         | MFP   |
| Cause           | Battery life<br>Battery circuit abnormality   |
| Check & Remedy  | Check to confirm that the battery voltage is about 2.5V or above.<br>Replace the battery. |

**U2-00 MFP EEPROM read/write error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | MFPC PWB EEPROM trouble<br>EEPROM socket contact trouble<br>MFPC PWB trouble<br>Strong external noises.   |
| Check & Remedy  | Replace the MFPC PWB EEPROM.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.)<br>Check the power environment. |

## U2-05 Erroneous detection of account management data

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | Breakage of the authentication DB is detected.  |
| Check & Remedy  | When breakage of the authentication DB is detected, the MFP is rebooted and the DB tables are reconstructed, generating "U2-05". The message, however, is not displayed and only the trouble history is saved. The authentication data are cleared. |

## U2-11 MFPC PWB EEPROM counter check sum error

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | MFPC PWB EEPROM trouble<br>EEPROM socket contact trouble<br>MFPC PWB trouble<br>Strong external noises.  |
| Check & Remedy  | Use SIM16 to cancel the error. (The previous writing data (about the latest 8 sheets) are written into the EEPROM.)<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.) |

## U2-30 MFPC PWB and PCU PWB manufacturing No. data inconsistency

|                 |  |
|-----------------|--|
| Trouble content | Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFPC PWB.   |
| Section         | MFP  |
| Cause           | When replacing the PCU PWB or the MFPC PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB.<br>MFPC PWB trouble<br>PCU PWB trouble   |
| Check & Remedy  | Check that the EEPROM is properly set.<br>Check to confirm that the EEPROM which was mounted on the PWB before replacement is mounted on the new PWB.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.)<br>Replace the PCU PWB. |

## U2-40 SD card system storage data area error

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | A file error occurs in the SD card system storage data partition.<br>SD card trouble<br>MFPC PWB trouble   |
| Check & Remedy  | Turn OFF/ON the power, and the backup data in the HDD are written into the SD card and the machine is automatically booted.<br>Check the MFPC PWB, and replace if necessary.<br>Check the SD card, and replace if necessary. |

## U2-41 HDD system storage data area error

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | A file error occurs in the HDD system saved data area, disabling backup of the saved file of the machine adjustment values in the SD card.<br>HDD trouble<br>MFPC PWB trouble   |
| Check & Remedy  | Check the HDD, and replace if necessary.<br>Check the MFPC PWB, and replace if necessary.<br>When replacing the HDD and the MFPC PWB, refer to the chapter of "Necessary works and procedures of HDD and MFPC PWB replacement." |

## U2-42 Machine adjustment data (system storage data area) error

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | The saved file of the machine adjustment values in the SD card and the HDD cannot be found or is broken. Both of the SD card set data and the HDD system saved data area are broken.<br>HDD trouble<br>MFPC PWB trouble<br>SD card trouble  |
| Check & Remedy  | Check the HDD, and replace if necessary.<br>Check the MFPC PWB, and replace if necessary.<br>Check the SD card, and replace if necessary.<br>When replacing the HDD, the MFPC PWB, and the SD card, refer to the chapter of "Necessary works and procedures of HDD, MFPC PWB, and SD card replacement."<br>Use SIM to adjust the machine again and set the adjustment values. |

## U2-50 HDD user authentication data check sum error

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP   |
| Cause           | HDD trouble<br>MFPC PWB trouble<br>Strong external noises.  |
| Check & Remedy  | Check the data related to the check sum error (address book, image send system registration data (senders record, meta data)) and register again.<br>Use SIM16 to cancel the U2 trouble.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.) |

## U2-60 Watermark check error

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | MFP  |
| Cause           | Watermark data trouble<br>HDD trouble<br>MFPC PWB trouble  |
| Check & Remedy  | Use SIM16 to cancel the U2 trouble.<br>Use SIM49-5 to install the watermark data.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.) |

**U2-80 SCU PWB EEPROM read/write error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | SCU PWB EEPROM trouble<br>SCU PWB trouble<br>SCU PWB EEPROM socket connection trouble  |
| Check & Remedy  | Replace the SCU PWB EEPROM.<br>Replace the SCU PWB.<br>Check connection of the SCU PWB EEPROM socket.<br>Check the SIM adjustment value of the following items, and adjust again if they are improper.<br>* Scanner-related adjustments<br>* Touch panel-related adjustments<br>Use SIM16 to cancel the trouble. |

**U2-81 SCU PWB EEPROM check sum error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | SCU PWB EEPROM trouble.<br>Installation of non-initialized EEPROM.<br>SCU PWB trouble.<br>EEPROM socket contact trouble.   |
| Check & Remedy  | Replace the SCU PWB EEPROM.<br>Replace the SCU PWB.<br>Check contact of the EEPROM socket.<br>Use SIM16 to cancel the trouble. (The check sum error detection data are calculated again to reset the proper check sum data.) |

**U2-90 PCU PWB EEPROM read/write error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | PCU   |
| Cause           | PCU PWB EEPROM trouble<br>PCU PWB trouble<br>EEPROM socket contact trouble  |
| Check & Remedy  | Replace the PCU PWB EEPROM.<br>Check the SIM adjustment values of the engine, and adjust again if they are improper.<br>Replace the PCU PWB.<br>Check contact of the EEPROM socket.<br>Use SIM16 to cancel the trouble. |

**U2-91 PCU PWB EEPROM check sum error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | PCU PWB EEPROM trouble<br>PCU PWB trouble<br>EEPROM socket contact trouble   |
| Check & Remedy  | Replace the PCU PWB EEPROM.<br>Replace the PCU PWB.<br>Check contact of the EEPROM socket.<br>Use SIM16 to cancel the trouble. (The check sum error detection data are calculated again to reset the proper check sum data.) |

**U5-00 Document feed unit communication error**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | SCU   |
| Cause           | Connector, harness connection trouble.<br>SCU PWB trouble.<br>DSPF PWB trouble.   |
| Check & Remedy  | Turn OFF/ON the power.<br>Check connection of the connector and the harness.<br>Replace the SCU PWB.<br>Replace the DSPF PWB. |

**U5-16 Document feed unit fan trouble**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | SCU  |
| Cause           | When the fan is operated, the fan operation signal is not detected within the specified time.<br>Fan motor trouble.<br>Connector, harness connection trouble.<br>DSPF PWB trouble. |
| Check & Remedy  | Use SIM2-3 to check that the fan is rotating.<br>Replace the fan motor.<br>Check connection of the connector and the harness.<br>Replace the DSPF PWB.                             |

**U5-30 Document feed unit tray lift up trouble**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | SCU   |
| Cause           | STUD does not turn ON 5 times continuously within the specified time.<br>STUD/STLD sensor trouble.<br>Connection trouble of the connector and the harness.<br>DSPF PWB trouble. |
| Check & Remedy  | Replace the STUD/STLD sensor.<br>Check connection of the connector and the harness.<br>Replace the DSPF PWB.  |

**U5-31 Document feed unit tray lift down trouble**

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | SCU   |
| Cause           | STLD does not turn OFF within the specified time.<br>STUD/STLD sensor trouble.<br>Connection trouble of the connector and the harness.<br>DSPF PWB trouble. |
| Check & Remedy  | Replace the STUD/STLD sensor.<br>Check connection of the connector and the harness.<br>Replace the DSPF PWB.  |

**U6-09 LCC lift motor trouble**

|                 |   |
|-----------------|---|
| Trouble content | No variation in the motor rotation sensor signal (encoder sign) is detected within the specified time after booting or stopping the LCC lift motor.   |
| Section         | PCU   |
| Cause           | LCC lift motor rotation sensor trouble<br>LCC control PWB trouble<br>LCC lift mechanism trouble<br>LCC lift motor trouble   |
| Check & Remedy  | Use SIM4-2 and 4-3 to check the operation of the LCC sensor and the lift motor.<br>Check the LCC lift motor rotation sensor, and replace if necessary.<br>Check the LCC control PWB, and replace if necessary.<br>Check the LCC lift mechanism, and repair if necessary.<br>Check the LCC lift motor, and replace if necessary.<br>Use SIM15 to cancel the trouble. |

**U6-20 LCC control PWB - PCU PWB communication error**

|                 |  |
|-----------------|--|
| Trouble content |  |
| Section         | PCU  |
| Cause           | Communication error between the LCC control PWB and the PCU PWB.<br>Connection trouble of the harness and the connector between the machine and the LCC and those of the LCC control PWB.<br>LCC control PWB trouble<br>PCU PWB trouble<br>Malfunction due to noises.                        |
| Check & Remedy  | Check to confirm the LCC model.<br>Check the connection of the harness and the connector between the machine and the LCC and those of the LCC control PWB, and replace if necessary.<br>Check the LCC control PWB, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

**U6-21 LCC transport motor trouble**

|                 |   |
|-----------------|---|
| Trouble content | Transport motor abnormality   |
| Section         | PCU   |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>LCC control PWB trouble / A3 2-stage LCT control PWB trouble   |
| Check & Remedy  | Use SIM04-03 to check the operation of the transport motor.<br>Replace the motor<br>Replace the LCC / A3 2-stage LCT control PWB. |

**U6-22 LCC 24V power abnormality**

|                 |   |
|-----------------|---|
| Trouble content | The DV 24V power is not supplied to the LCC / A3 2-stage LCT.   |
| Section         | PCU   |
| Cause           | Connection trouble or disconnection of the connector and the harness.<br>LCC control PWB trouble / A3 2-stage LCT control PWB trouble<br>Power unit trouble   |
| Check & Remedy  | Check the connector and the harness of the power line.<br>Check the 24V voltage with the power unit, the LCC control PWB, and the A3 2-stage LCT control PWB. |

**U6-23 A3 LCC tray descending trouble (Reverse winding detection) (A3 LCC)**

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the wire of the LCC tray is reversely wound. (A3 LCC / A3 2-stage LCT)<br>The lower limit position (full state) is not detected within the specified time (A4: 10sec, A3: 8sec) from the start of descending the LCT1 tray. (A3 3-stage LCT / A4 3-stage LCT)  |
| Section         | PCU  |
| Cause           | Reverse winding detection SW ON<br>The wire is reversely wound.<br>Reverse winding detection SW trouble<br>Connection trouble of the connector and the harness<br>LCC control PWB trouble. (A3 LCC)<br>A3 2-stage LCT control PWB trouble (A3 2-stage LCT)<br>Remaining quantity sensor abnormality, LCT1 tray lift motor lock, connector and harness connection trouble, PWB trouble<br>(A3 3-stage LCT / A4 3-stage LCT) |
| Check & Remedy  | Check the wire.<br>Replace the reverse winding SW and the LCC control PWB. / Replace the A3 2-stage LCT control PWB.<br>Check connection of the connector and the harness. (A3 LCC / A3 2-stage LCT)<br>Use SIM04-02 and SIM04-03 to check the operations of the remaining quantity sensor and the LCT1 lift motor. Check the wiring.<br>(A3 3-stage LCT / A4 3-stage LCT)   |

**U6-24 A3 LCC tray lock detection trouble**

|                 |   |
|-----------------|---|
| Trouble content | The LCC / A3 2-stage LCT tray lock mechanism malfunctions.  |
| Section         | PCU   |
| Cause           | Tray lock mechanism breakdown<br>Connection trouble of the connector and the harness<br>Tray lock sensor trouble<br>LCC control PWB trouble / A3 2-stage LCT control PWB trouble                |
| Check & Remedy  | Check the tray lock mechanism.<br>Check connection of the connector and the harness.<br>Replace the tray lock sensor.<br>Replace the LCC control PWB. / Replace the A3 2-stage LCT control PWB. |

**U6-29 LCT1 lift trouble**

|                 |  |
|-----------------|--|
| Trouble content | The upper limit is not detected within the specified time (A4 LCC: 10sec, A3 LCC: 8sec) when lifting up. (A3 3-stage LCT / A4 3-stage LCT)<br>The upper limit is not detected within the specified time when lifting. The limit SW ON is detected when lifting. The encoder signal does not vary when lifting. (A3 2-stage LCT)  |
| Section         | PCU  |
| Cause           | Upper limit sensor abnormality, tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT)<br>Sensor trouble, upper limit SW trouble, A3 2-stage LCT control PWB trouble, broken gear, lift motor trouble (A3 2-stage LCT)  |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor and the lift operation. Check the wiring.<br>Fix the trouble, and use SIM15 to cancel the trouble. (A3 3-stage LCT / A4 3-stage LCT)<br>Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor.<br>Fix the trouble, and use SIM15 to cancel the trouble. (A3 2-stage LCT) |

### U6-33 LCT2 reverse winding detection trouble

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the wire of the tray is reversely wound.   |
| Section         |  |
| Cause           | Reverse winding detection SW ON<br>The wire is reversely wound.<br>Reverse winding detection SW trouble<br>Connection trouble of the connector and the harness<br>A3 2-stage LCT control PWB trouble |
| Check & Remedy  | Check the wire.<br>Replace the reverse winding SW.<br>Check connection of the connector and the harness.<br>Replace the A3 2-stage LCT control PWB.  |

### U6-34 LCT2 lock detection trouble

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the tray lock mechanism malfunctions.  |
| Section         |  |
| Cause           | Tray lock mechanism breakdown<br>Connection trouble of the connector and the harness<br>Tray lock sensor trouble<br>A3 2-stage LCT control PWB trouble           |
| Check & Remedy  | Check the tray lock mechanism.<br>Check connection of the connector and the harness.<br>Replace the tray lock sensor.<br>Replace the A3 2-stage LCT control PWB. |

### U6-39 LCT2 lift trouble

|                 |  |
|-----------------|--|
| Trouble content | The upper limit is not detected within the specified time (A4 LCC: 10sec, A3 LCC: 8sec) when lifting. (A3 3-stage LCT / A4 3-stage LCT)<br>The upper limit is not detected within the specified time when lifting. The limit SW ON is detected when lifting. The encoder signal does not vary when lifting. (A3 2-stage LCT)   |
| Section         | PCU  |
| Cause           | Upper limit sensor abnormality, tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT)<br>Sensor trouble, upper limit SW trouble, LCT control PWB trouble, broken gear, lift motor trouble (A3 2-stage LCT)   |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor and the lift operation. Check the wiring.<br>Fix the trouble, and use SIM15 to cancel the trouble. (A3 3-stage LCT / A4 3-stage LCT)<br>Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor.<br>Fix the trouble, and use SIM15 to cancel the trouble. (A3 2-stage LCT) |

### U6-43 LCT3 reverse winding detection trouble

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the wire of the tray is reversely wound.   |
| Section         | PCU  |
| Cause           | Reverse winding detection SW ON<br>The wire is reversely wound.<br>Reverse winding detection SW trouble<br>Connection trouble of the connector and the harness<br>A3 2-stage LCT control PWB trouble |
| Check & Remedy  | Check the wire.<br>Replace the reverse winding SW.<br>Check connection of the connector and the harness.<br>Replace the A3 2-stage LCT control PWB.  |

### U6-44 LCT3 lock detection trouble

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the tray lock mechanism malfunctions.  |
| Section         | PCU  |
| Cause           | Tray lock mechanism breakdown<br>Connection trouble of the connector and the harness<br>Tray lock sensor trouble<br>A3 2-stage LCT control PWB trouble           |
| Check & Remedy  | Check the tray lock mechanism.<br>Check connection of the connector and the harness.<br>Replace the tray lock sensor.<br>Replace the A3 2-stage LCT control PWB. |

### U6-49 LCT3 lift trouble

|                 |  |
|-----------------|--|
| Trouble content | The upper limit is not detected within the specified time (A4 LCC: 10sec, A3 LCC: 8sec) when lifting. (A3 3-stage LCT / A4 3-stage LCT)<br>The upper limit is not detected within the specified time when lifting. The limit SW ON is detected when lifting. The encoder signal does not vary when lifting. (A3 2-stage LCT)   |
| Section         | PCU  |
| Cause           | Upper limit sensor abnormality, tray lift motor lock, connector and harness connection trouble, PWB trouble (A3 3-stage LCT / A4 3-stage LCT)<br>Sensor trouble, upper limit SW trouble, A3 2-stage LCT control PWB trouble, broken gear, lift motor trouble (A3 2-stage LCT)  |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor and the lift operation. Check the wiring.<br>Fix the trouble, and use SIM15 to cancel the trouble. (A3 3-stage LCT / A4 3-stage LCT)<br>Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor.<br>Fix the trouble, and use SIM15 to cancel the trouble. (A3 2-stage LCT) |

### U6-51 LCC - Main unit combination trouble

|                 |   |
|-----------------|---|
| Trouble content | An LCC of a different model which is not supported by the machine is installed. (Improper combination of the machine and the LCC model code.) |
| Section         | PCU   |
| Cause           | LCC control PWB trouble<br>PCU PWB trouble  |
| Check & Remedy  | Check to confirm the LCC model.<br>Check the LCC control PWB, and replace if necessary.<br>Check the PCU PWB, and replace if necessary.       |

### U6-53 Communication trouble between LCT's

|                 |  |
|-----------------|--|
| Trouble content | Communication error between the A3 2-stage LCT (1 series) and the A3 2-stage LCT (2 series)<br>Communication test error when turning ON the power or after canceling the exclusive simulation.       |
| Section         | PCU  |
| Cause           | Connection trouble or disconnection of the connector and the harness<br>A3 2-stage LCT (1 series) control PWB trouble, A3 2-stage LCT (2 series) control PWB trouble<br>Malfunction caused by noises |
| Check & Remedy  | Cancel the trouble by turning OFF/ON the power.<br>Check the connector and the harness of the communication line.<br>Replace the A3 2-stage LCT control PWB.   |

## U6-54 Option installation combination trouble

|                 |   |
|-----------------|---|
| Trouble content | Relay unit installation detection signal abnormality, front LCT installation detection signal abnormality, 2-series installation detection signal abnormality           |
| Section         | PCU   |
| Cause           | Combination error<br>Connection trouble of the connector and the harness<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check the combination of options.<br>Check connection of the harness and the connector from control PWB to each option unit.<br>Replace the A3 2-stage LCT control PWB. |

## U6-63 Manual feed tray descending trouble

|                 |   |
|-----------------|---|
| Trouble content | The lower limit position is not detected within the specified time (10sec) from the start of descending the manual feed tray.   |
| Section         | PCU   |
| Cause           | Lower limit sensor trouble.<br>Manual feed tray lift motor lock.<br>Connection trouble of the connector and the harness.<br>PWB trouble.  |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operations of the lower limit position sensor and the manual feed tray lift motor.<br>Wiring check.<br>Fix the trouble, and use SIM15 to cancel the trouble. |

## U6-68 Manual feed tray paper feed position abnormality

|                 |   |
|-----------------|---|
| Trouble content | The upper limit sensor turns OFF before turning ON the pickup SOL. (Normally the upper limit sensor turns OFF after turning OFF the pickup SOL when starting lifting up.) |
| Section         | PCU   |
| Cause           | Sensor trouble.<br>Connection trouble of the connector and the harness.<br>PWB trouble.<br>The pickup roller remains in the lower position. (Mechanism trouble)           |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operations of the upper limit sensor and lift operations.<br>Wiring check.   |

## U6-69 Manual feed tray lift trouble

|                 |  |
|-----------------|--|
| Trouble content | The upper limit is not detected within the specified time (10sec) when lifting up.   |
| Section         | PCU  |
| Cause           | Upper limit sensor trouble.<br>Tray lift motor lock.<br>Connection trouble of the connector and the harness.<br>PWB trouble.   |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operations of the upper limit sensor and lift operations.<br>Wiring check.<br>Fix the trouble, and use SIM15 to cancel the trouble. |

## U6-73 LCT4 reverse winding detection trouble

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the wire of the tray is reversely wound.   |
| Section         | PCU  |
| Cause           | Reverse winding detection SW ON<br>The wire is reversely wound.<br>Reverse winding detection SW trouble<br>Connection trouble of the connector and the harness<br>A3 2-stage LCT control PWB trouble |
| Check & Remedy  | Check the wire.<br>Replace the reverse winding SW.<br>Check connection of the connector and the harness.<br>Replace the A3 2-stage LCT control PWB.  |

## U6-74 LCT4 lock detection trouble

|                 |  |
|-----------------|--|
| Trouble content | It is detected that the tray lock mechanism malfunctions.  |
| Section         | PCU  |
| Cause           | Tray lock mechanism breakdown<br>Connection trouble of the connector and the harness<br>Tray lock sensor trouble<br>A3 2-stage LCT control PWB trouble           |
| Check & Remedy  | Check the tray lock mechanism.<br>Check connection of the connector and the harness.<br>Replace the tray lock sensor.<br>Replace the A3 2-stage LCT control PWB. |

## U6-79 LCT4 lift motor trouble

|                 |  |
|-----------------|--|
| Trouble content | The upper limit is not detected within the specified time when lifting.<br>The upper limit SW ON is detected when lifting.<br>The encoder signal does not vary when lifting.                     |
| Section         | PCU  |
| Cause           | Sensor trouble, upper limit SW trouble, A3 2-stage LCT control PWB trouble, broken gear, lift motor trouble  |
| Check & Remedy  | Use SIM04-02 and SIM04-03 to check the operation of the upper limit sensor, the upper limit SW, the encoder sensor, and the lift motor.<br>Fix the trouble, and use SIM15 to cancel the trouble. |

## U6-81 Power unit cooling fan motor trouble (1 series)

|                 |  |
|-----------------|--|
| Trouble content | A3 2-stage LCT power unit section cooling fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, A3 2-stage LCT control PWB trouble, harness and connector connection trouble               |
| Check & Remedy  | Check connection from the A3 2-stage LCT control PWB to the motor.<br>Replace the A3 2-stage LCT control PWB. Replace the motor. |

## U6-82 EEPROM trouble (1 series)

|                 |  |
|-----------------|--|
| Trouble content | The EEPROM contents are garbled.                                   |
| Section         | PCU  |
| Cause           | A3 2-stage LCT control PWB trouble<br>Malfunction caused by noises |
| Check & Remedy  | Replace the A3 2-stage LCT controller PWB.                         |

### U6-83 Room temperature thermistor breakdown (1 series)

|                 |  |
|-----------------|--|
| Trouble content | Room temperature thermistor open or short  |
| Section         | PCU  |
| Cause           | Room temperature thermistor harness connection trouble<br>Room temperature thermistor trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check connection of the harness and the connector of the room temperature thermistor.<br>Replace the temperature and humidity sensor.<br>Check the A3 2-stage LCT control PWB. |

### U6-84 Room humidity thermistor breakdown (1 series)

|                 |  |
|-----------------|--|
| Trouble content | Humidity thermistor open or short  |
| Section         | PCU  |
| Cause           | Humidity thermistor harness connection trouble<br>Humidity thermistor trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check connection of the harness and the connector of the humidity thermistor.<br>Replace the temperature and humidity sensor.<br>Check the A3 2-stage LCT control PWB. |

### U6-85 Transport motor 1 trouble (2 series)

|                 |  |
|-----------------|--|
| Trouble content | Transport motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>A3 2-stage LCT control PWB trouble                        |
| Check & Remedy  | Use SIM04-03 to check the operation of the transport motor.<br>Replace the motor.<br>Replace the A3 2-stage LCT control PWB. |

### U6-86 24V power trouble (2 series)

|                 |   |
|-----------------|---|
| Trouble content | The DC24V power is not supplied to the A3 2-stage LCT.  |
| Section         | PCU   |
| Cause           | Connection trouble or disconnection of the connector and the harness.<br>A3 2-stage LCT control PWB trouble<br>Power unit trouble       |
| Check & Remedy  | Check the connector and the harness of the power line.<br>Check the 24V voltage with the power unit and the A3 2-stage LCT control PWB. |

### U6-87 Power unit cooling fan motor trouble (2 series)

|                 |  |
|-----------------|--|
| Trouble content | A3 2-stage LCT power unit section cooling fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock, motor harness short/open, A3 2-stage LCT control PWB trouble, harness and connector connection trouble               |
| Check & Remedy  | Check connection from the A3 2-stage LCT control PWB to the motor.<br>Replace the A3 2-stage LCT control PWB. Replace the motor. |

### U6-88 EEPROM trouble (2 series)

|                 |  |
|-----------------|--|
| Trouble content | The EEPROM contents are garbled.                                   |
| Section         | PCU  |
| Cause           | A3 2-stage LCT control PWB trouble<br>Malfunction caused by noises |
| Check & Remedy  | Replace the A3 2-stage LCT control PWB.                            |

### U6-89 Room temperature thermistor breakdown (2 series)

|                 |  |
|-----------------|--|
| Trouble content | Room temperature thermistor open or short  |
| Section         | PCU  |
| Cause           | Room temperature thermistor harness connection trouble<br>Room temperature thermistor trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check connection of the harness and the connector of the room temperature thermistor.<br>Replace the temperature and humidity sensor.<br>Check the A3 2-stage LCT control PWB. |

### U6-90 Room humidity thermistor breakdown (2 series)

|                 |  |
|-----------------|--|
| Trouble content | Humidity thermistor open or short  |
| Section         | PCU  |
| Cause           | Humidity thermistor harness connection trouble<br>Humidity thermistor trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check connection of the harness and the connector of the humidity thermistor.<br>Replace the temperature and humidity sensor.<br>Check the A3 2-stage LCT control PWB. |

### U7-50 MFPC PWB - Vendor machine communication error

|                 |  |
|-----------------|--|
| Trouble content | Communication error between the MFP and the serial vendor.   |
| Section         | MFP  |
| Cause           | Improper setting of the vendor machine specifications (SIM26-3).<br>Vendor machine trouble.<br>MFPC PWB trouble.<br>Connector, harness connection trouble.<br>Strong external noises.                  |
| Check & Remedy  | Cancel the error by turning OFF/ON the power.<br>Check the connector and the harness in the communication line.<br>Change the specifications of the vendor machine (SIM26-3).<br>Replace the MFPC PWB. |

### U7-51 Vendor machine error

|                 |   |
|-----------------|---|
| Trouble content |   |
| Section         | MFP (Notification of a trouble from the serial vendor)  |
| Cause           | Serial vendor machine trouble.<br>Connector, harness connection trouble.  |
| Check & Remedy  | Err.XX is displayed on the operation panel of the vendor. (XX is the detail code.)<br>Repair the vendor machine referring to the detail code.<br>Check the connector and the harness in the communication line. |



## UC-02 IPD/DOCC-ASIC (CPT function) trouble

|                 |   |
|-----------------|---|
| Trouble content | IPD/DOCC-ASIC (CPT function) abnormality  |
| Section         | SCU                                       |
| Cause           | SCU PWB trouble. (IPD/DOCC-ASIC trouble.) |
| Check & Remedy  | Replace the SCU PWB.                      |

## UC-12 IPD/DOCC-ASIC (CPT function) trouble [DSPF detection]

|                 |   |
|-----------------|---|
| Trouble content | IPD/DOCC-ASIC (CPT function) abnormality  |
| Section         | SCU                                       |
| Cause           | DSPF PWB trouble (IPD/DOCC-ASIC trouble). |
| Check & Remedy  | Replace the DSPF PWB.                     |

## UC-20 IPD/DOCC-ASIC (DOCC function) trouble

|                 |   |
|-----------------|---|
| Trouble content | IPD/DOCC-ASIC (DOCC function) abnormality |
| Section         | SCU                                       |
| Cause           | SCU PWB trouble. (IPD/DOCC-ASIC trouble.) |
| Check & Remedy  | Replace the SCU PWB.                      |

## UC-30 IPD/DOCC-ASIC (DOCC function) trouble [DSPF detection]

|                 |   |
|-----------------|---|
| Trouble content | IPD/DOCC-ASIC (DOCC function) abnormality |
| Section         | SCU                                       |
| Cause           | DSPF PWB trouble (IPD/DOCC-ASIC trouble). |
| Check & Remedy  | Replace the DSPF PWB.                     |

## UE-10 LCT1 suction fan motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Suction fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble              |
| Check & Remedy  | Use SIM04-03 to check the operation of the suction fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT control PWB. |

## UE-11 LCT1 exhaust fan motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Exhaust fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble              |
| Check & Remedy  | Use SIM04-03 to check the operation of the exhaust fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT control PWB. |

## UE-12 LCT1 warm air heater thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble |
| Check & Remedy  | Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.                           |

## UE-13 LCT1 warm air heater thermistor low temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

## UE-14 LCT1 warm air heater thermistor high temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The warm air heater temperature exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

## UE-15 LCT1 warm air outlet port thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>A3 2-stage LCT control PWB trouble<br>Connector connection trouble                |
| Check & Remedy  | Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB. |

### UE-16 LCT1 warm air outlet port thermistor low temperature

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

### UE-17 LCT1 warm air outlet port thermistor high temperature

|                 |  |
|-----------------|--|
| Trouble content | The temperature at the warm air outlet port exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

### UE-20 LCT2 suction fan motor trouble

|                 |   |
|-----------------|---|
| Trouble content | Suction fan motor abnormality   |
| Section         | PCU   |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble                 |
| Check & Remedy  | Use SIM04-03 to check the operation of the suction fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT controller PWB. |

### UE-21 LCT2 exhaust fan motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Exhaust fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble              |
| Check & Remedy  | Use SIM04-03 to check the operation of the exhaust fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT control PWB. |

### UE-22 LCT2 warm air heater thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble |
| Check & Remedy  | Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.                           |

### UE-23 LCT2 warm air heater thermistor low temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

### UE-24 LCT2 warm air heater thermistor high temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The warm air heater temperature exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

### UE-25 LCT2 warm air outlet port thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>A3 2-stage LCT control PWB trouble<br>Connector connection trouble                |
| Check & Remedy  | Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB. |

### UE-26 LCT2 warm air outlet port thermistor low temperature

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

### UE-27 LCT2 warm air outlet port thermistor high temperature

|                 |  |
|-----------------|--|
| Trouble content | The temperature at the warm air outlet port exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

### UE-30 LCT3 suction fan motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Suction fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble              |
| Check & Remedy  | Use SIM04-03 to check the operation of the suction fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT control PWB. |

### UE-31 LCT3 exhaust fan motor trouble

|                 |  |
|-----------------|--|
| Trouble content | Exhaust fan motor abnormality  |
| Section         | PCU  |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble              |
| Check & Remedy  | Use SIM04-03 to check the operation of the exhaust fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT control PWB. |

### UE-32 LCT3 warm air heater thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble |
| Check & Remedy  | Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.                           |

### UE-33 LCT3 warm air heater thermistor low temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

### UE-34 LCT3 warm air heater thermistor high temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The warm air heater temperature exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

### UE-35 LCT3 warm air outlet port thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>A3 2-stage LCT control PWB trouble<br>Connector connection trouble                |
| Check & Remedy  | Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB. |

### UE-36 LCT3 warm air outlet port thermistor low temperature

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

### UE-37 LCT3 warm air outlet port thermistor high temperature

|                 |  |
|-----------------|--|
| Trouble content | The temperature at the warm air outlet port exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

### UE-40 LCT4 suction fan motor trouble

|                 |   |
|-----------------|---|
| Trouble content | Suction fan motor abnormality   |
| Section         | PCU   |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble                 |
| Check & Remedy  | Use SIM04-03 to check the operation of the suction fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT controller PWB. |

### UE-41 LCT4 exhaust fan motor trouble

|                 |   |
|-----------------|---|
| Trouble content | Exhaust fan motor abnormality   |
| Section         | PCU   |
| Cause           | Motor lock<br>Motor RPM abnormality<br>Overcurrent to the motor<br>Harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble                 |
| Check & Remedy  | Use SIM04-03 to check the operation of the exhaust fan motor.<br>Check connection of the harness and the connector.<br>Replace the A3 2-stage LCT controller PWB. |

### UE-42 LCT4 warm air heater thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble |
| Check & Remedy  | Check the harness and the connector from the warm air heater (thermistor) to the A3 2-stage LCT control PWB.                           |

### UE-43 LCT4 warm air heater thermistor low temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

### UE-44 LCT4 warm air heater thermistor high temperature trouble

|                 |  |
|-----------------|--|
| Trouble content | The warm air heater temperature exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Warm air heater (thermistor) trouble<br>A3 2-stage LCT control PWB trouble<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble   |
| Check & Remedy  | Check the warm air heater (thermistor) and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

### UE-45 LCT4 warm air outlet port thermistor open

|                 |  |
|-----------------|--|
| Trouble content | The thermistor is open.  |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>A3 2-stage LCT control PWB trouble<br>Connector connection trouble                |
| Check & Remedy  | Check connection of the harness and the connector from the thermistor to the A3 2-stage LCT control PWB. |

**UE-46 LCT4 warm air outlet port thermistor low temperature**

|                 |  |
|-----------------|--|
| Trouble content | The temperature does not reach the specified level within the specified time after turning ON the power relay.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater trouble<br>Warm air heater harness and connector connection trouble<br>A3 2-stage LCT control PWB trouble<br>Thermostat trouble.<br>AC power trouble<br>Insertion detection switch 2 trouble<br>Heater relay PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check for disconnection of the warm air heater and the thermostat.<br>Check the insertion detection switch 2.<br>Check the heater relay PWB.<br>Check the heater control circuit of the AC PWB and that of the A3 2-stage LCT control PWB. |

**UE-47 LCT4 warm air outlet port thermistor high temperature**

|                 |  |
|-----------------|--|
| Trouble content | The temperature at the warm air outlet port exceeds the specified level.   |
| Section         | PCU  |
| Cause           | Thermistor trouble.<br>Warm air heater harness and connector connection trouble<br>Heater relay PWB trouble<br>A3 2-stage LCT control PWB trouble  |
| Check & Remedy  | Check the thermistor and its harness.<br>Check the thermistor input circuit section of the A3 2-stage LCT control PWB.<br>Check the heater relay PWB.<br>Check the heater control circuit of the A3 2-stage LCT control PWB. |

## [8] MAINTENANCE

### 1. Necessary execution items in maintenance and servicing

#### A. Execution items before maintenance and servicing

To perform the procedures safely, refer to "NOTE FOR SERVICING" on the first page of this service manual.

| Item  | Simulation |    |
|---|------------|----|
|   |            |    |
| Check the developer counter value.  | 22         | 13 |
| Check the OPC drum counter value.   | 22         | 1  |
| 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, and 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. Necessary execution items in maintenance and servicing

The necessary execution items in maintenance are shown below. (The items necessary to be executed are marked with "\*" in the table below.)

The following items must be executed regardless of maintenance or not. (\*).

( ) : When repairing and inspecting (without replacement of maintenance parts), installing, cleaning each section, etc.

| No. | JOB No. | Work item  | Simulation | When repairing (replacing consumable parts) / maintenance |                             |                          |                                     |   |                      | When repairing (without replacement of consumable parts) / inspecting |
|-----|---------|--|------------|---|-----------------------------|--------------------------|-------------------------------------|---|----------------------|---|
|     |         |  |            | Installation  | When replacing the OPC drum | When replacing developer | When replacing the fuser web roller | After cleaning the scanner (read) section | Periodic maintenance |   |
| 1   | —       | Toner concentration reference control level setting                | 25-2       | *   |                             | *                        |                                     |   |                      |   |
| 2   | —       | The photoconductor counter is cleared.                             | 24-4       |   | *                           |                          |                                     |   |                      |   |
| 3   | —       | Perform the dark potential adjustment. (Select INIDARK VO)         | 44-3       |   | *                           |                          |                                     |   |                      |   |
| 4   | —       | Clear the fuser web cleaning send counter. (Select FUSER WEB SEND) | 24-4       |   |                             |                          | *                                   |   |                      |   |
| 5   | ADJ11A  | Auto copy density, gradation adjustment                            | 46-24      | *   | *                           | *                        |                                     | *   | *                    |   |
| 6   | ADJ12A  | Auto printer density, gradation adjustment                         | 67-24      | *   | *                           | *                        |                                     |   | *                    |   |

\* 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.

\* When replacing the TSC sensor and the developing unit (New/Old), set new developer and execute the procedures for developer replacement.

#### 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. (Select MAINTENANCE ALL)   | 24         | 4 |
| Clear the cleaning operation counter of the MC cleaner. (Select MC CLEANER)                                      | 24         | 4 |
| The list of setting values and adjustment values is printed.   | 22         | 6 |

## 2. Life end definition

### A. Definition of the drum life end

When the drum counter exceeds the specified level, it is judged as life end. In an actual use, however, wear is not solely determined by the copy quantity but other operating conditions. Therefore, the number of rotations of the drum is used as an indication of the product quality (wear level).

The number of rotations for the drum life end is 1000K. The drum life is affected by the number of sheets of one print job.

This is because the actual life is determined by rotations of the drum. The less the number of sheets of one print job is, the more the number of rotations for page is. Therefore, the number of sheets of drum life varies depending on the number of sheets of one print job.

As a reference of the drum life, "Life meter" can be checked with Sim. 22-13 from the accumulated number of rotations of the drum.

"Life meter" indicates the reached life (%) with the entire life as 100%.

(Example) If the used number of rotations is 550K :

$$550 \text{ (K rotations)} / 1000 \text{ (K rotations)} \times 100 = 55 \text{ (\%)}$$

|      | Drum counter | Number of rotations of drum |
|------|--------------|-----------------------------|
| Life | 1000K sheets | 1000K rotations             |

### B. Definition of the developer life end

When the developer counter exceeds the specified level, it is judged as life end. In an actual use, however, wear is not solely determined by the copy quantity but other operating conditions. Therefore, the number of rotations of the developer is used as an indication of the product quality (wear level).

The number of rotations for the developer life end is 1000K. The developer life is affected by the number of sheets of one print job.

This is because the actual life is determined by rotations of the developer unit. The less the number of sheets of one print job is, the more the number of rotations for page is. Therefore, the number of sheets of developer life varies depending on the number of sheets of one print job.

As a reference of the developer life, "Life meter" can be checked with Sim. 22-13 from the accumulated number of rotations of the developer unit.

"Life meter" indicates the reached life (%) of developer with the entire life as 100%.

|      | Developer counter | Number of rotations of developer |
|------|-------------------|----------------------------------|
| Life | 1000K sheets      | 1000K rotations                  |

## 3. Other related items

### A. Maintenance timing display

The message of maintenance execution timing is displayed when each counter reaches the set value. The relationship between the messages and the counters is shown below.

#### (Maintenance timing) (Frameless)

| Kinds of counter                                    | Code | Content   | Print job Enable/Disable | Remarks  |
|---|------|---|--------------------------|--|
| Maintenance counter                                 | TA   | The maintenance counters (total) reaches 90% of the set value of Sim. 21-1, or they reaches the set value of Sim. 21-1 but Sim. 26-38 is set to Print Enable. | Enable                   | After completion of the maintenance, execute Sim. 24-4 (MEINTENANCE ALL clear).  |
| Upper heat roller (Upper heat roller print counter) | FK1  | The upper heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Enable.   | Enable                   | After execution of the maintenance, execute Sim. 24-4 to clear the upper heat roller print counter, the accumulated number of rotations counter, and the use day counter.    |
| Lower heat roller (Lower heat roller print counter) | FK2  | The lower heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Enable.   | Enable                   | After execution of the maintenance, execute Sim. 24-4 to clear the lower heat roller print counter, the accumulated number of rotations counter, and the use day counter.    |
| Fusing upper web (Fusing upper web print counter)   | FK3  | When the near end detection sensor (WEBSPD) and the end detection sensor (WEBEND1) are OFF.   | Enable                   | After completion of the maintenance, execute Sim. 24-4 (FUSER WEB SEND clear).   |
| Transfer belt counter                               | TK   | The transfer belt system counter reaches 1000K, and Sim. 26-38 is set to Print Enable.  | Enable                   | After execution of the maintenance, execute Sim. 24-4 to clear the transfer belt print counter, the accumulated number of rotations counter, and the use day counter.        |
| Drum cartridge counter                              | DK   | The drum cartridge print counter reaches 1,000,000 sheets, or the accumulated number of rotations of the drum reaches 1000K.                                  | Enable                   | After completion of the maintenance, execute Sim. 24-4 (Drum counters (number of the drum print counter, accumulated number of rotations of the drum) clear).                |
| Developer cartridge system counter                  | VK   | The developer print counter reaches 1,000,000 sheets, or the accumulated number of rotations of the developer reaches 1000K.                                  | Enable                   | After completion of the maintenance, execute Sim. 24-5 (Developer counters (number of the developer print counter, accumulated number of rotations of the developer) clear). |

#### [Maintenance timing] (Framed)

| Kinds of counter                                    | Code | Content  | Print job Enable/Disable | Remarks   |
|---|------|--|--------------------------|---|
| Maintenance counter                                 | TA   | The maintenance counters (total) reaches the set value of Sim. 21-1, and Sim. 26-38 is set to Print Disable. | Disable                  | After completion of the maintenance, execute Sim. 24-4 (MEINTENANCE ALL clear).   |
| Upper heat roller (Upper heat roller print counter) | FK1  | The upper heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Disable.                   | Disable                  | After execution of the maintenance, execute Sim. 24-4 to clear the upper heat roller print counter, the accumulated number of rotations counter, and the use day counter. |

| Kinds of counter                                    | Code | Content  | Print job Enable/Disable | Remarks   |
|---|------|--|--------------------------|---|
| Lower heat roller (Lower heat roller print counter) | FK2  | The lower heat roller print counter reaches 1000K, and Sim. 26-38 is set to Print Disable. | Disable                  | After execution of the maintenance, execute Sim. 24-4 to clear the lower heat roller print counter, the accumulated number of rotations counter, and the use day counter.   |
| Fusing upper web (Fusing upper web print counter)   | FK3  | When the end detection sensor (WEBEND1) is turned ON.                                      | Disable                  | After completion of the maintenance, execute Sim. 24-4 (FUSER WEB SEND clear).<br>When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.) |
| Transfer belt system counter                        | TK   | The transfer belt print counter reaches 1000K, and Sim. 26-38 is set to Print Disable.     | Disable                  | After execution of the maintenance, execute Sim. 24-4 to clear the transfer belt print counter, the accumulated number of rotations counter, and the use day counter.   |
| Toner collection container                          | -    | Waste toner full   | Disable                  | After replacing the toner collection container with an empty one, close the front door to cancel the full detection.  |

#### 4. Maintenance system table

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

| Unit name              | No. | Part name                             | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark  |
|------------------------|-----|---------------------------------------|--------------|-------|--------|--------|--------|--------|--------|---|
| Photoconductor Section | 1   | OPC drum                              | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |   |
|                        | 2   | Cleaning blade                        | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 3   | Sub blade                             | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 4   | Side seal F, R                        | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 5   | Drum separation pawl                  | ×            | ▲□    | ▲□     | ▲□     | ▲□     | ▲□     | ▲□     | When replacing, shift the separation pawl mounting position.  |
|                        | 6   | Discharge lamp                        | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
|                        | 7   | Procon sensor                         | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
|                        | 8   | Surface potential sensor              | ×            | ○     | ○      | ○      | ○      | ○      | ○      | Hold the sensor so that no foreign material enters the port of the sensor. Wipe it with waste cloth. Use alcohol if it is dirtied with oil. |
|                        | 9   | Cleaning brush roller                 | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |   |
|                        | 10  | Charger wire                          | ○            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 11  | Screen grid                           | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 12  | Charger cleaner                       |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 13  | Charger cushion                       |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 14  | Duct sheet                            |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 15  | Blade side seal F, R                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      |   |
|                        | 16  | Cleaning brush bearing                |              |       |        |        |        |        | ×      |   |
|                        | 17  | Cleaning brush drive bearing          |              |       |        |        |        |        | ×      |   |
|                        | 18  | Separation pawl oscillation bearing   |              |       |        |        |        |        | ×      |   |
|                        | 19  | Auxiliary cleaning brush bearing      |              |       |        |        |        |        | ×      |   |
|                        | 20  | Bearing                               |              |       |        |        |        |        | ×      |   |
|                        | 21  | Separation pawl oscillation arm       |              |       |        |        |        |        | ×      |   |
|                        | 22  | Separation pawl oscillation shaft     |              |       |        |        |        |        | ×      |   |
|                        | 23  | Ball bearings                         |              |       |        |        |        |        | ×      |   |
|                        | 24  | Gears                                 |              |       |        |        |        |        | ×      |   |
|                        | 25  | Cleaner base guide                    |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 26  | Sub blade seal F, R                   |              | ×     | ×      | ×      | ×      | ×      | ×      |   |
|                        | 27  | Main charger case                     |              | ○     | ○      | ○      | ○      | ○      | ○      |   |
|                        | 28  | Before-transfer discharge lamp        |              | ○     | ○      | ○      | ○      | ○      | ○      | Use dry cloth only. Never use alcohol.  |
| Waste toner section    | 1   | Toner collection container (with cap) | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
|                        | 2   | Gears                                 |              |       |        |        |        |        | ×      |   |
|                        | 3   | Bearing (Waste toner resin bearing)   |              |       |        |        |        |        | ×      |   |



| Unit name               | No. | Part name                           | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark   |
|-------------------------|-----|-------------------------------------|--------------|-------|--------|--------|--------|--------|--------|--|
| Transfer section        | 1   | Transfer belt                       | ○            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Use dry cloth only. Never use alcohol.   |
|                         | 2   | Transfer roller                     |              | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
|                         | 3   | Transfer cleaning brush             |              | ×     | ○      | ×      | ○      | ×      | ▲      |  |
|                         | 4   | Transfer CL blade                   | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
|                         | 5   | Transfer sub blade                  | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
|                         | 6   | Transfer side seal F, R             | ×            | ×     | ×      | ×      | ×      | ×      | ×      |  |
|                         | 7   | Transfer drive roller               |              |       |        |        |        |        | ×      |  |
|                         | 8   | Bearing (Waste toner resin bearing) |              |       |        |        |        |        | ×      |  |
|                         | 9   | Ball bearings                       |              |       |        |        |        |        | ×      |  |
|                         | 10  | Gears                               |              |       |        |        |        |        | ×      |  |
|                         | 11  | Ball bearing for transfer roller    |              | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
|                         | 12  | Discharge plate                     | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 13  | Discharge plate holder              | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
| Developing section      | 1   | Developer                           | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Supply when installing   |
|                         | 2   | Doctor cover UN/DV seal             | ○            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Use dry cloth only. Never use alcohol.   |
|                         | 3   | DV side plate F, R                  | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Clean around the DV side seal F and R.   |
|                         | 4   | DV duct cover                       | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Clean the lower section of the MG roller.  |
|                         | 5   | DV side seal F, R                   | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Use dry cloth only. Never use alcohol.   |
|                         | 6   | DV BOX filter                       | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
|                         | 7   | Filter unit                         | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
| Toner supply section    | 1   | Toner cartridge                     |              |       |        |        |        |        |        | Attach when installing. When it is emptied, replacement is made by the user.                   |
|                         | 2   | Toner hopper                        | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Clean the shutter area.  |
| Fusing section          | 1   | Upper heat roller                   | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Apply grease to the bearing section when replacing. (6LS06268000)                              |
|                         | 2   | Upper heat roller ball bearing      | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Must be free from abnormal noises when rotating.<br>Apply grease when replacing. (6LS06268000) |
|                         | 3   | Upper heat roller insulation bush   |              | ×     | ▲      | ×      | ▲      | ×      | ▲      | Apply grease when replacing. (6LS06268000)   |
|                         | 4   | Upper heat roller gear              | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Check / Apply grease when replacing. (6LS06268000)   |
|                         | 5   | Upper heat roller separation pawl   | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Clean and remove foreign material.   |
|                         | 6   | Non-contact thermistor              | ×            | ×     | ×      | ×      | ×      | ×      | ×      |  |
|                         | 7   | Sub thermistor                      | ×            | ×     | ×      | ×      | ×      | ×      | ▲      | Clean and remove foreign material.   |
|                         | 8   | Upper heater lamp                   | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
|                         | 9   | Lower heat roller                   | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Apply grease to the bearing section when replacing. (6LS06268000)                              |
|                         | 10  | Lower heat roller ball bearing      | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Must be free from abnormal noises when rotating.<br>Apply grease when replacing. (6LS06268000) |
|                         | 11  | Lower heat roller separation pawl   | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Clean and remove foreign material.   |
|                         | 12  | Paper guides                        | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 13  | Upper heat roller drive gear        | ×            | ×     | ×      | ×      | ×      | ×      | ▲      | Check / Apply grease when replacing. (6LS06268000)   |
|                         | 14  | Web roller                          | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
|                         | 15  | Web backup roller                   | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
|                         | 16  | Web backup roller bearing           | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
|                         | 17  | Web motor                           | ×            | ×     | ×      | ×      | ▲      | ×      | ×      |  |
|                         | 18  | Other ball bearing                  |              |       |        |        |        |        | ×      | Must be free from abnormal noises when rotating.   |
|                         | 19  | Front upper paper guide             | ○            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
|                         | 20  | Web guide shaft                     | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
|                         | 21  | Web guide bearing                   | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
| Filter section          | 1   | Ozone filter                        |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Or 6 months  |
|                         | 2   | Exhaust filter                      |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Or 6 months  |
| Tray 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   | Optical reflection type sensor      | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 6   | Transport rollers                   | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |  |

| Unit name               | No. | Part name                       | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark                                       |
|-------------------------|-----|---------------------------------|--------------|-------|--------|--------|--------|--------|--------|--|
| Paper transport section | 1   | Resist roller (Idle)            | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |  |
|                         | 2   | Transport rollers               | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |  |
|                         | 3   | Transport paper guides          | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 4   | Optical reflection type sensor  | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 5   | Paper dust cleaner              | ○            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
|                         | 6   | Double feed detection unit      | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Ultrasonic sensor top surface (Air cleaning) |
|                         | 7   | PS section PWB protection sheet |              |       |        |        |        |        | ○      |  |
|                         | 8   | PS gears                        | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
|                         | 9   | CIS                             | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 10  | Bearings                        |              |       |        |        |        |        | ×      |  |
| ADU paper exit section  | 1   | Solenoids                       | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
|                         | 2   | Gears                           | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
|                         | 3   | Gates                           | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
|                         | 4   | Transport rollers               | 5            | ○     | ○      | ○      | ○      | ○      | ▲      |  |
|                         | 5   | Bearings                        |              |       |        |        |        |        | ×      |  |
|                         | 6   | Optical reflection type sensors | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
|                         | 7   | Discharge brush                 | ×            | ×     | ×      | ×      | ×      | ×      | ×      |  |
|                         | 8   | Decurler roller                 | ▲            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Check when calling or every 500K.            |
|                         | 9   | Torque limiter                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1)                                     |
| Drive section           | 1   | Gears (Grease)                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (6LS06283000)                                |
|                         | 2   | Gears (Grease)                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (6LS06270000)                                |
|                         | 3   | Belts                           |              | ×     | ×      | ×      | ×      | ×      | ×      |  |
|                         | 4   | Gears                           |              |       |        |        |        |        | ×      |  |
|                         | 5   | Torque limiter                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1)                                     |
|                         | 6   | Clutches                        | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 2)                                     |
| Image related sections  | 1   |                                 | ×            | ×     | ×      | ×      | ×      | ×      |        |  |

**(Document scanning section)**

| Unit name       | No.                           | Part name     | When calling               | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark       |  |
|-----------------|-------------------------------|---------------|----------------------------|-------|--------|--------|--------|--------|--------|--------------|--|
| Scanner section | 1                             | Lens          |                            | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 | 2                             | CCD           |                            | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 | 3                             | Mirror        |                            | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 | 4                             | Table glass   | ○                          | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 | 5                             | SPF glass     | ○                          | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 | 6                             | Reflector     |                            | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 | 7                             | Scanner lamp  |                            | ○     | ○      | ○      | ○      | ○      | ○      | Air cleaning |  |
|                 | 8                             | Rail (Grease) |                            | ☆     | ☆      | ☆      | ☆      | ☆      | ☆      |              |  |
|                 | 9                             | Drive belt    |                            | ×     | ×      | ×      | ×      | ×      | ×      |              |  |
|                 | 10                            | Drive wire    |                            | ×     | ×      | ×      | ×      | ×      | ×      |              |  |
|                 | 11                            | Sensor        |                            | ×     | ×      | ×      | ×      | ×      | ×      |              |  |
| DSPF section    | Paper feed, Transport section | 1             | Paper feed roller          | ○     | ○      | ○      | ○      | ○      | ○      | (Note 1)     |  |
|                 |                               | 2             | Paper pickup roller        | ○     | ○      | ○      | ○      | ○      | ○      | (Note 1)     |  |
|                 |                               | 3             | Separation roller          | ○     | ○      | ○      | ○      | ○      | ○      | (Note 1)     |  |
|                 |                               | 4             | No. 1 resist roller        | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 |                               | 5             | Torque limiter             |       | ×      | ×      | ×      | ×      | ×      | (Note 1)     |  |
|                 |                               | 6             | Double feed detection unit |       |        |        |        |        |        | ○            | Ultrasonic sensor top surface (Air cleaning) (105/120cpm machine only) |
|                 |                               | 7             | Transport roller 1         | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 |                               | 8             | Transport roller 2         | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 |                               | 9             | Second resist roller       | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 |                               | 10            | Platen roller              | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 |                               | 11            | Transport roller 3         | ○     | ○      | ○      | ○      | ○      | ○      |              |  |
|                 |                               | 12            | Transport roller 4         | ○     | ○      | ○      | ○      | ○      | ○      |              |  |

| Unit name    |                    | No.                             | Part name  | When calling | 500 K | 1000K | 1500 K | 2000 K | 2500 K | 3000 K   | Remark        |
|--------------|--------------------|---------------------------------|--|--------------|-------|-------|--------|--------|--------|----------|---------------|
| DSPF section | Scanning section   | 13                              | Lens   | X            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 14                              | CCD  | X            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 15                              | Mirror   | X            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 16                              | Reflector  | X            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 17                              | Scanner lamp                                     | X            | ○     | ○     | ○      | ○      | ○      | ○        | Air cleaning  |
|              |                    | 18                              | Back surface scanning section glass Upper, Lower | ○            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              | Paper exit section | 19                              | Transport roller 5                               | ○            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 20                              | Paper exit roller                                | ○            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              | Drive section      | 21                              | Gears (Grease)                                   | X            | X     | X     | X      | X      | X      | X        | (6LS06270000) |
|              |                    | 22                              | Belts  |              | X     | X     | X      | X      | X      | X        |               |
|              | Others             | 23                              | Document mat                                     | ○            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 24                              | Scanning section paper guide (White Mylar)       | ○            | ○     | ○     | ○      | ○      | ○      | ○        |               |
|              |                    | 25                              | Discharge brush                                  | X            | X     | X     | X      | X      | X      | X        |               |
| 26           |                    | Optical reflection type sensors | ○  | ○            | ○     | ○     | ○      | ○      | ○      | (Note 3) |               |
| 27           |                    | Optical reflection type sensors | ○  | ○            | ○     | ○     | ○      | ○      | ○      |          |               |
| 28           |                    | Paper guides                    | X  | ○            | ○     | ○     | ○      | ○      | ○      |          |               |

(Note 1) Replacement reference: Use the paper feed, DSPF counters values for replacement reference.

- Paper pickup roller, paper feed roller, separation roller: 200K or 1 year
- Torque limiter: 800K

**\* Paper feed section roller life**

Each roller life is 200K. When, therefore, a certain unit is used intensively, the life will be expired before the maintenance cycle.

Since, however, sheets of different sizes are used with different paper feed trays actually, it is quite rare that the roller replacement is required before the maintenance cycle.

If a certain size of paper is intensively used, explain the user to use different paper feed trays for that size as far as possible.

When servicing, always check the use frequency of each paper feed tray, and replace the roller according to necessity.

When cleaning the roller, it is recommendable to use wet cloth.

The wear level is greater in the sequence of the separation roller, the paper feed roller, and the paper pickup roller.

(Note 2) The conditions of the clutches differ depending on the paper pass conditions from the paper tray. Refer to the table below for replacement of the clutches.

| UN                | Tandem drive    |                 |                 | Multi-stage drive B |       | Transport drive |                 | Tandem drive   |                | Multi-stage drive B |
|-------------------|-----------------|-----------------|-----------------|---------------------|-------|-----------------|-----------------|----------------|----------------|---------------------|
|                   | C1PFC           | C1PTC           | C2PFC           | C3PFC               | C4PFC | MPTFC           | LCCPTC          | VPTC3          | VPTC2          | VPTC1               |
|                   | 6LS<br>05339000 | 6LS<br>05338000 | 6LS<br>05339000 | 6LS05340000         |       | 6LS<br>05339000 | 6LS<br>05338000 | 6LS05338000    |                | 6LS<br>05341000     |
| No. 1 tray        | 3000K           | 3000K           |                 |                     |       |                 |                 |                |                |                     |
| No. 2 tray        |                 |                 | 3000K           |                     |       |                 |                 |                |                |                     |
| No. 3 tray        |                 |                 |                 | 3000K               |       |                 |                 |                |                |                     |
| No. 4 tray        |                 |                 |                 |                     | 3000K |                 |                 |                |                |                     |
| Manual paper feed |                 |                 |                 |                     |       | 3000K           |                 |                |                |                     |
| LCC paper feed    |                 |                 |                 |                     |       |                 | 3000K           |                |                |                     |
|                   |                 |                 |                 |                     |       |                 |                 | Total<br>3000K | Total<br>3000K | Total<br>1500K      |

(Note 3) Optical reflection sensor cleaning

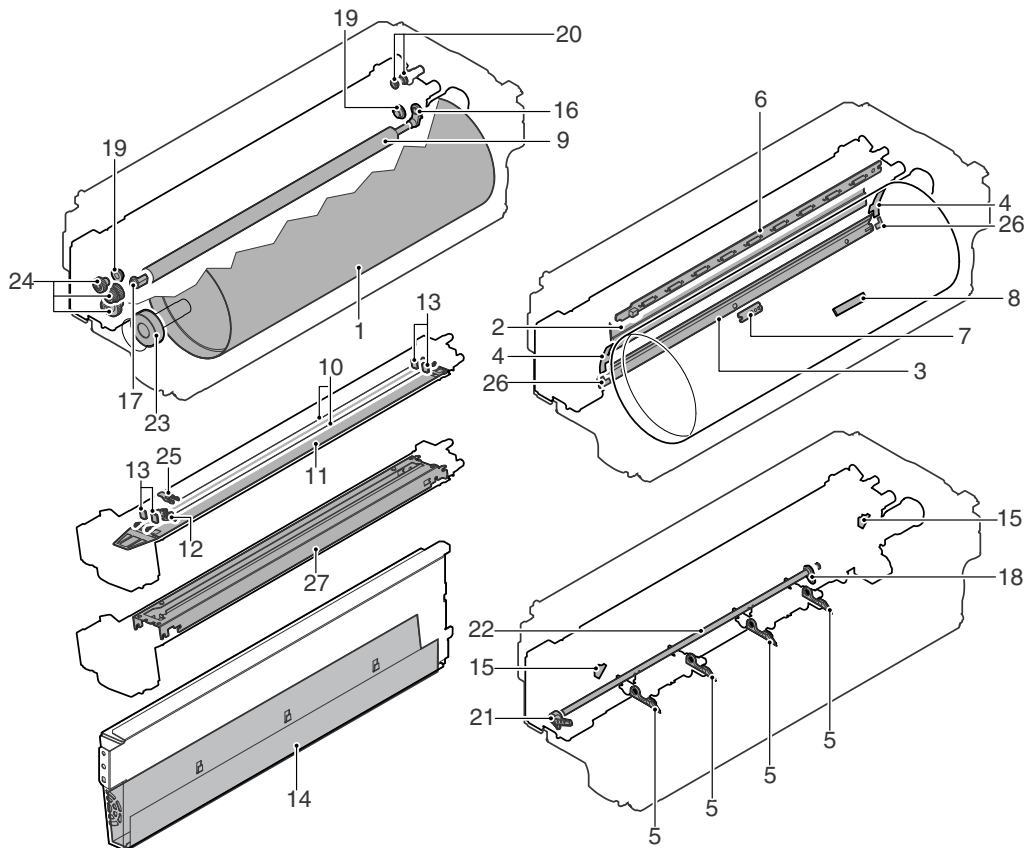
- \* Optical reflection sensor which allows cleaning when opening/closing the jam cancel door: 200K

## 5. Photoconductor section

### A. Maintenance table

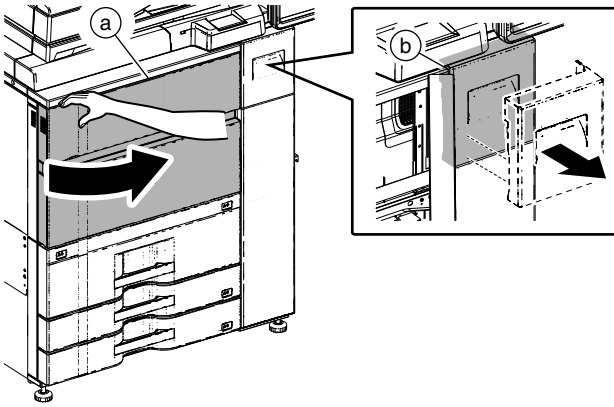
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name                           | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark  |
|-----|-------------------------------------|--------------|-------|--------|--------|--------|--------|--------|---|
| 1   | OPC drum                            | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |   |
| 2   | Cleaning blade                      | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 3   | Sub blade                           | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 4   | Side seal F, R                      | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 5   | Drum separation pawl                | ×            | ▲□    | ▲□     | ▲□     | ▲□     | ▲□     | ▲□     | When replacing, shift the separation pawl mounting position.  |
| 6   | Discharge lamp                      | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 7   | Procon sensor                       | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 8   | Surface potential sensor            | ×            | ○     | ○      | ○      | ○      | ○      | ○      | Hold the sensor so that no foreign material enters the port of the sensor. Wipe it with waste cloth. Use alcohol if it is dirtied with oil. |
| 9   | Cleaning brush roller               | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |   |
| 10  | Charger wire                        | ○            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 11  | Screen grid                         | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 12  | Charger cleaner                     |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 13  | Charger cushion                     |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 14  | Duct sheet                          |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 15  | Blade side seal F, R                | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |   |
| 16  | Cleaning brush bearing              |              |       |        |        |        |        | ×      |   |
| 17  | Cleaning brush drive bearing        |              |       |        |        |        |        | ×      |   |
| 18  | Separation pawl oscillation bearing |              |       |        |        |        |        | ×      |   |
| 19  | Auxiliary cleaning brush bearing    |              |       |        |        |        |        | ×      |   |
| 20  | Bearing                             |              |       |        |        |        |        | ×      |   |
| 21  | Separation pawl oscillation arm     |              |       |        |        |        |        | ×      |   |
| 22  | Separation pawl oscillation shaft   |              |       |        |        |        |        | ×      |   |
| 23  | Ball bearings                       |              |       |        |        |        |        | ×      |   |
| 24  | Gears                               |              |       |        |        |        |        | ×      |   |
| 25  | Cleaner base guide                  |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 26  | Sub blade seal F, R                 |              | ×     | ×      | ×      | ×      | ×      | ×      |   |
| 27  | Main charger case                   |              | ○     | ○      | ○      | ○      | ○      | ▲      |   |
| 28  | Before-transfer discharge lamp      |              | ○     | ○      | ○      | ○      | ○      | ○      | Use dry cloth only. Never use alcohol.  |

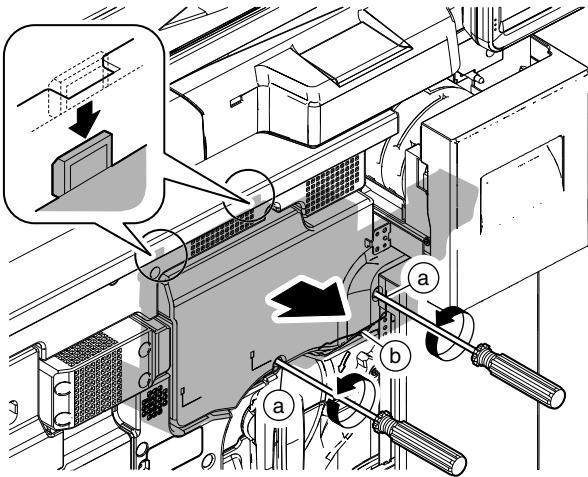


## B. Details

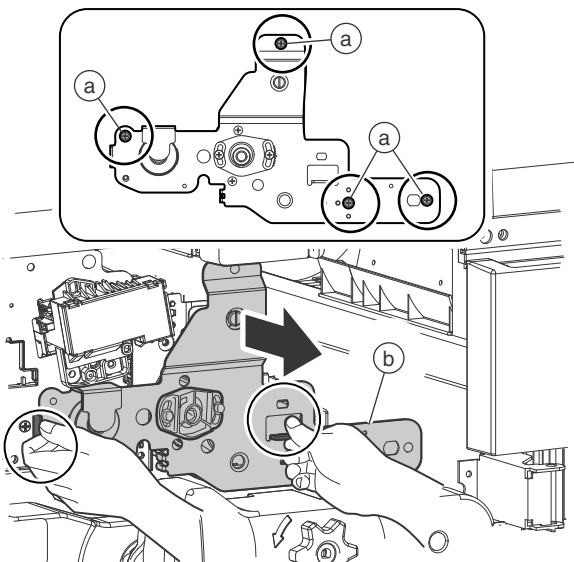
- 1) Open the front cover (a), and pull out the toner tray (b) a little.



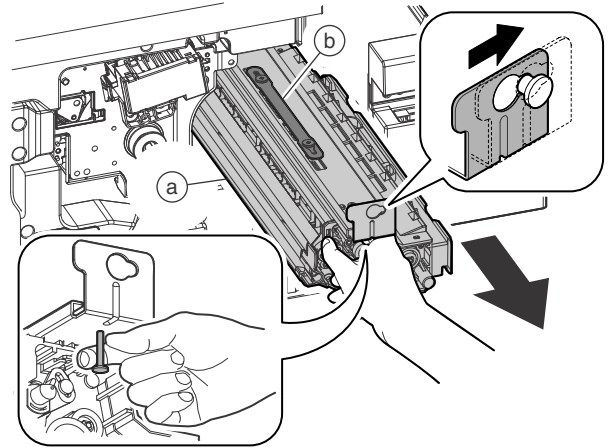
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

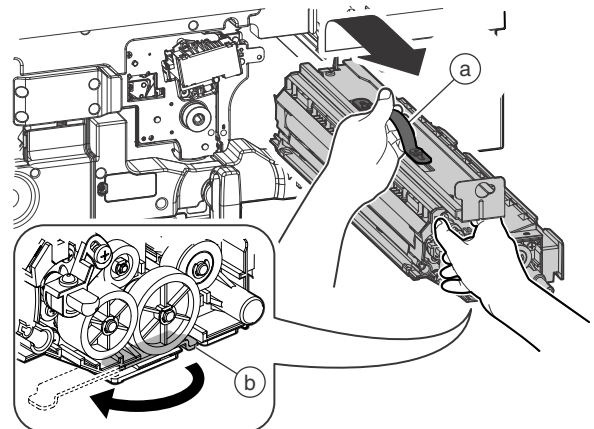


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

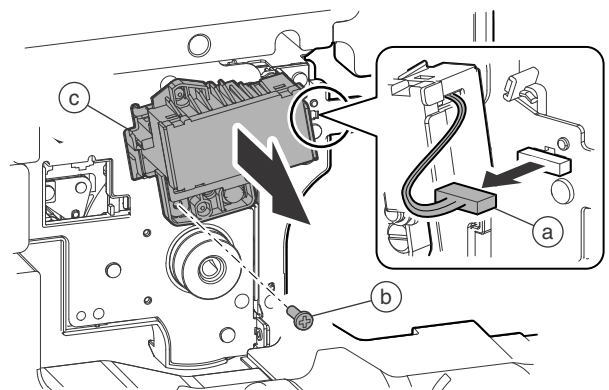


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

\* When placing the developing unit, use the stand (b) and place the unit on it.

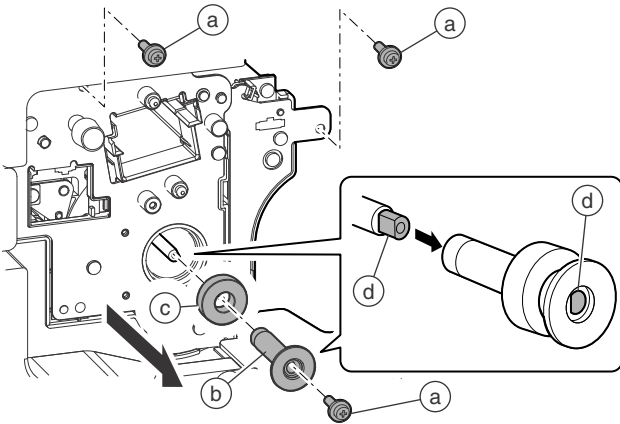


- 6) Disconnect the connector (a) and the blue screw (b), and pull out the Main charger unit (c).



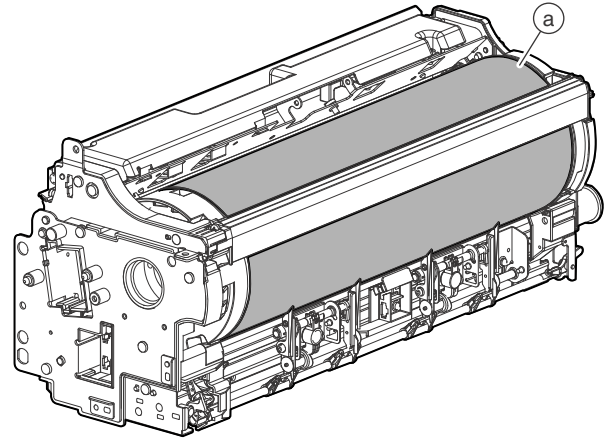
7) Remove the blue screw (a), and remove the bearing (b) and bearing (c).

\* When installing the bearing, fit the D-cut direction and engage it properly.

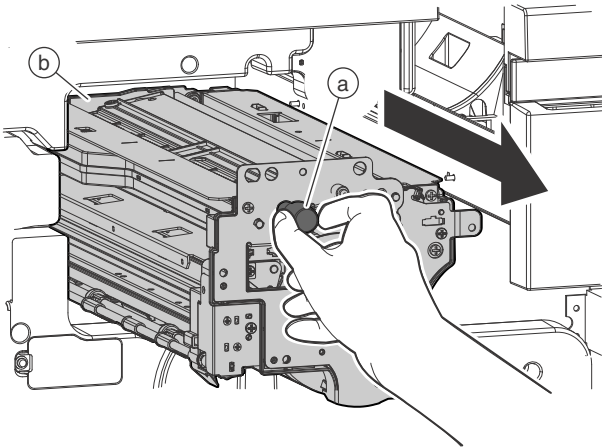


10) Check the OPC drum (a) at every 500K.

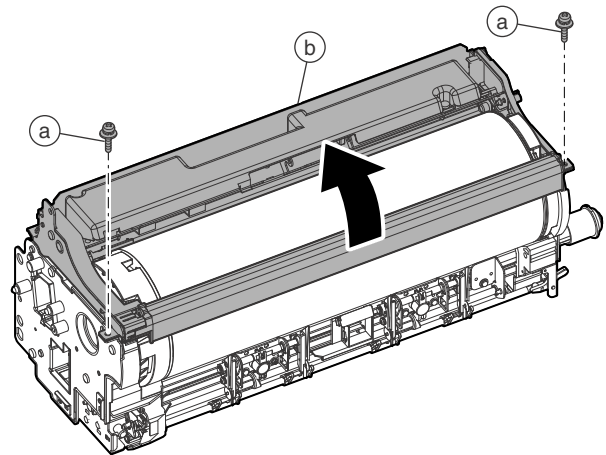
\* Place the cleaner unit on the lower side.



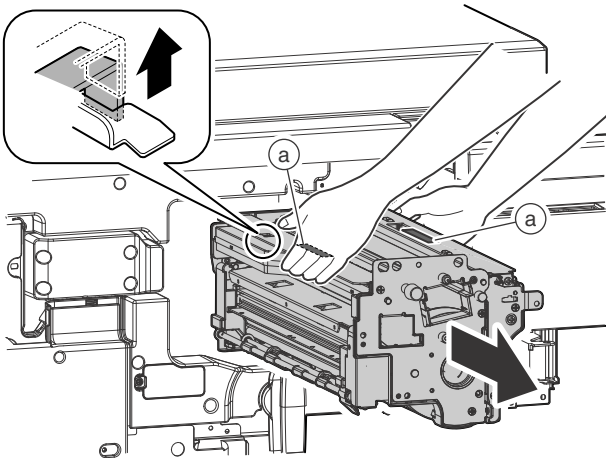
8) Hold the handle (a), and pull out the process unit (b) until it stops.



11) Remove the blue screw (a), and open the frame (b).

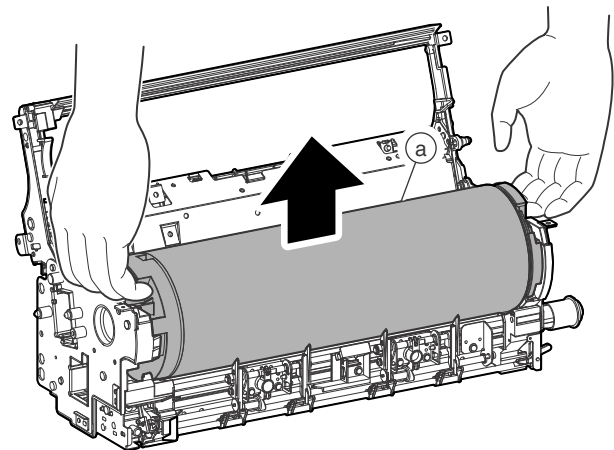


9) Hold the green label section (a) of the process unit frame, and lift it up and remove it completely.

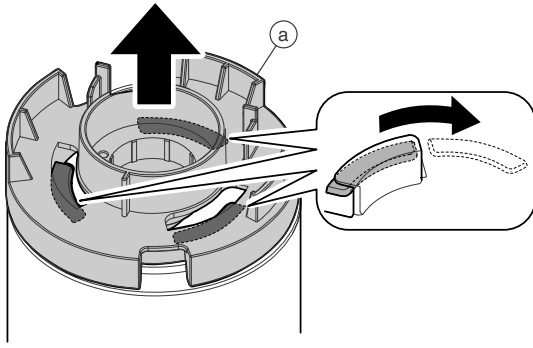


12) Remove the OPC drum unit (a).

\* Use a great care not to damage the OPC drum.



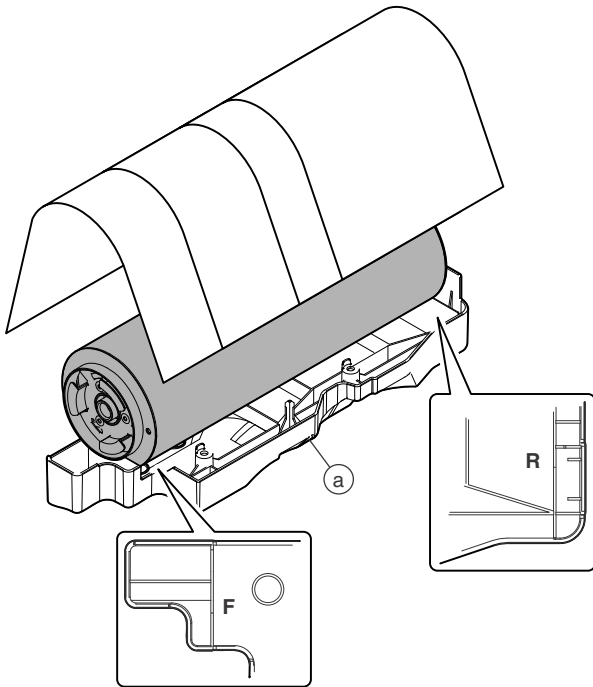
13) Rotate the bearing (a) and remove it.



\* While performing the procedure, turn back the cover (a) that have been removed in step 2), and put the OPC drum unit on the cover.

When putting the OPC drum unit on the cover, in advance remove the bearing, place it according to "F" and "R" marked on the cover (a).

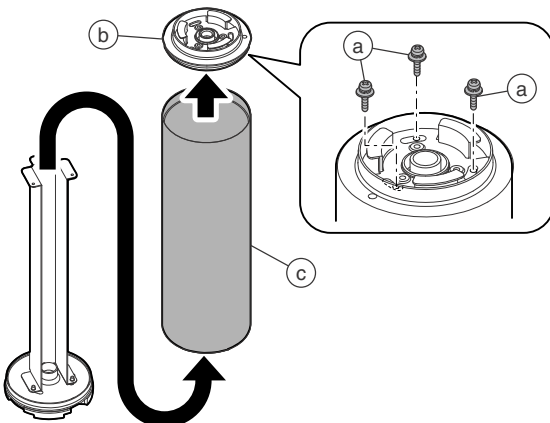
Cover the OPC drum unit with paper to prevent exposure.



14) Remove the blue screw (a), and remove the flange (b).

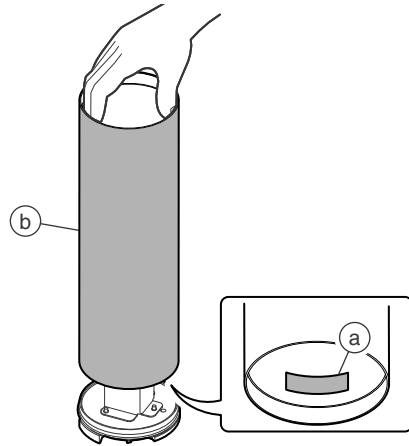
Replace the OPC drum (c) at every 1000K.

\* If the drum flange cannot be removed easily, refer to "3. Drum flange removal" in [12] OTHERS.



\* When installing the OPC drum, check to confirm that the label (a) inside the OPC drum comes on the rear side.

\* When handling the OPC drum, be careful not to touch the photoconductor surface (b). Put your hand inside the OPC drum to install it.



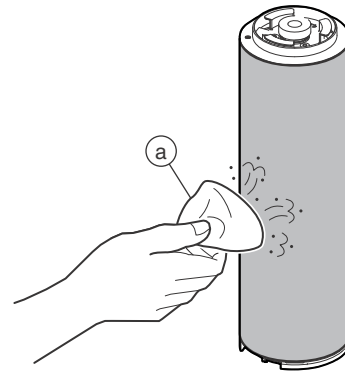
\* After replacement, apply yellow toner (CKOG-0345DS51) (a) to the whole surface of the OPC drum

\* After installing the OPC drum to the unit, rotate it one revolution in the normal direction.

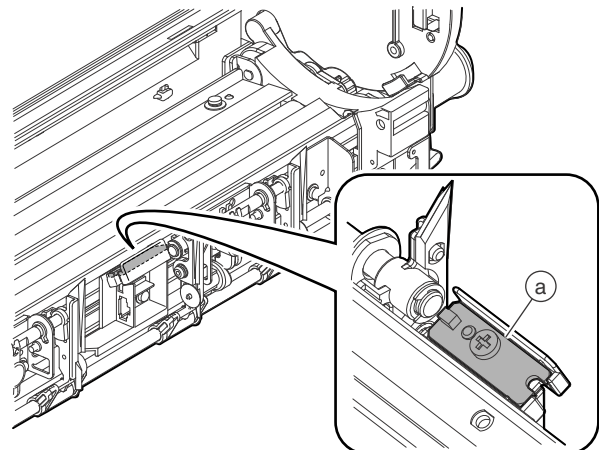
\* Never apply powder other than yellow toner.

\* Do not remove SETTING POWDER from the surface of the OPC drum for replacement. Apply yellow toner over SETTING POWDER.

\* Use special care to apply yellow toner to the neighborhood (30mm) of the both ends of the OPC drum at the end of the cleaning blade.

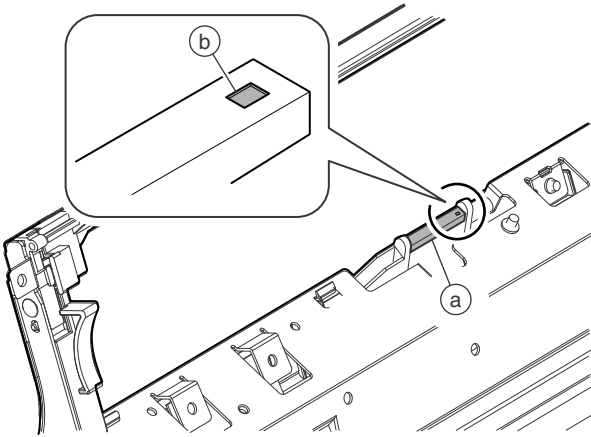


15) Clean the procon sensor (a) every 500K.



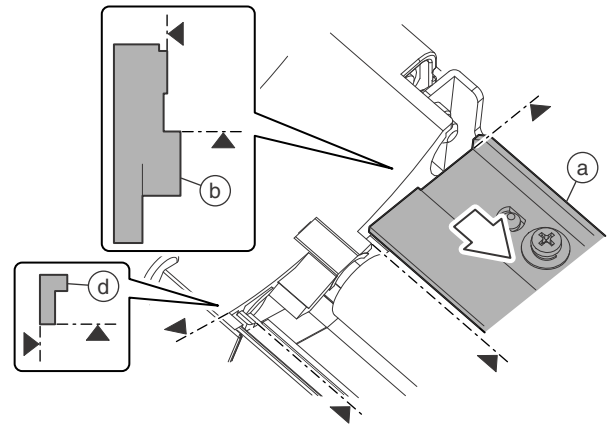
16) Clean the front surface potential sensor (a) at every 500K.

- \* When cleaning, be careful not to drop a foreign material into the small window (b) of the surface potential sensor.



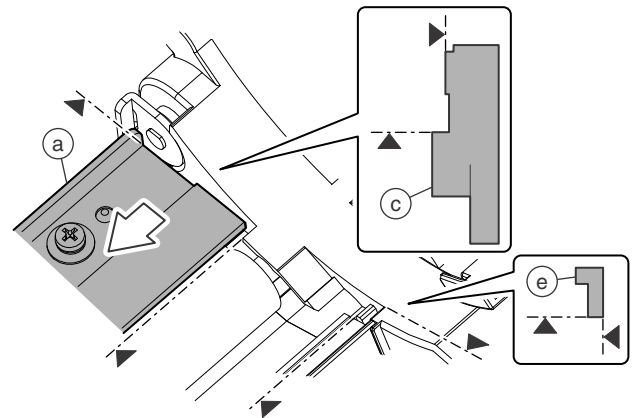
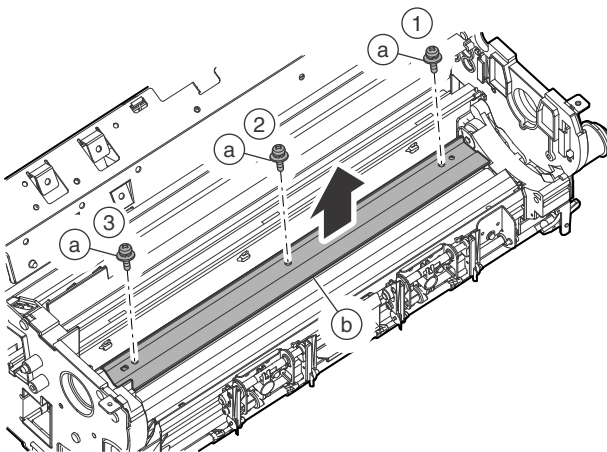
- \* Slide the cleaning blade (a) in the arrow direction, and attach the side seal F (b), the side seal R (c), the sub blade seal F (d), and the sub blade seal R (e) according to the references.

- \* When attaching the seal, check to confirm that the side seal is not covered with the cleaning blade.



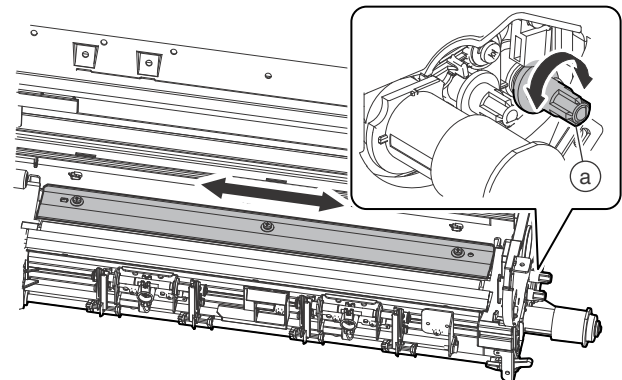
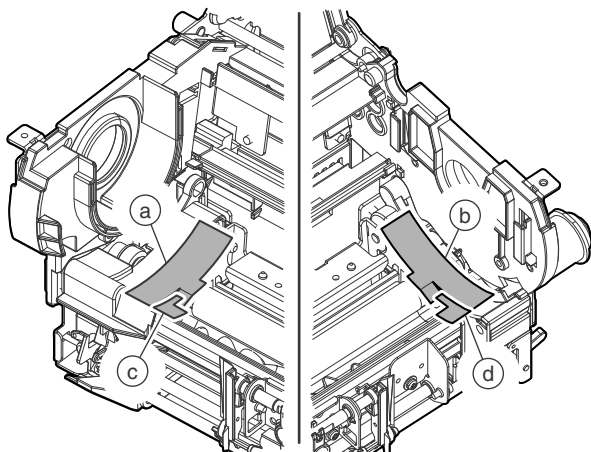
17) Remove the blue screw (a), and replace the cleaning blade (b).

- \* Do not touch the urethane edge of the cleaning blade.
- \* Tighten the blue screw (a) in the sequence of (1), (2), and (3).



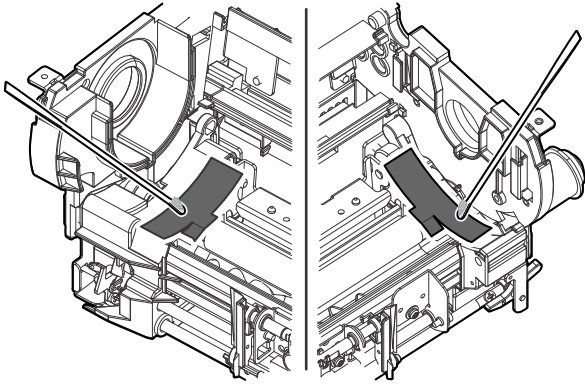
- \* The cleaning blade can be shifted to the front side or the rear side by turning the knob (a) on the front side clockwise or counterclockwise.

18) Replace the side seal F (a) and the side seal R (b). Check the sub blade seal F (c) and the sub blade seal R (d).



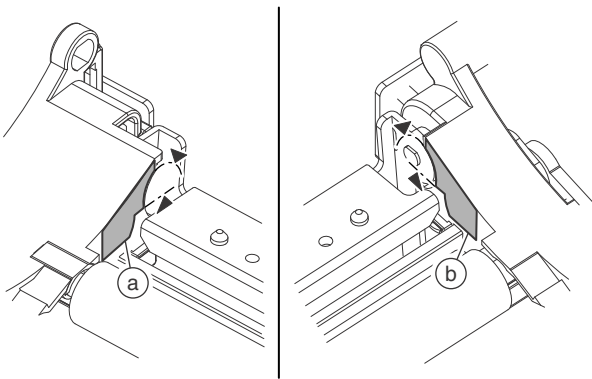


\* After attachment, apply side seal powder (6LS06272000) to the whole surfaces of the side seal F and side seal R evenly by using Patel (6LS06273000) .



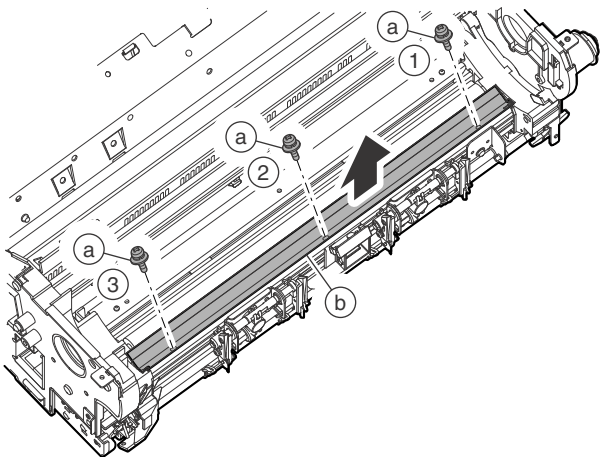
19) Check the blade side seal F (a) and the blade side seal R (b) at every 500K, and replace them at every 300K.

\* When attaching them, attach according to the reference.

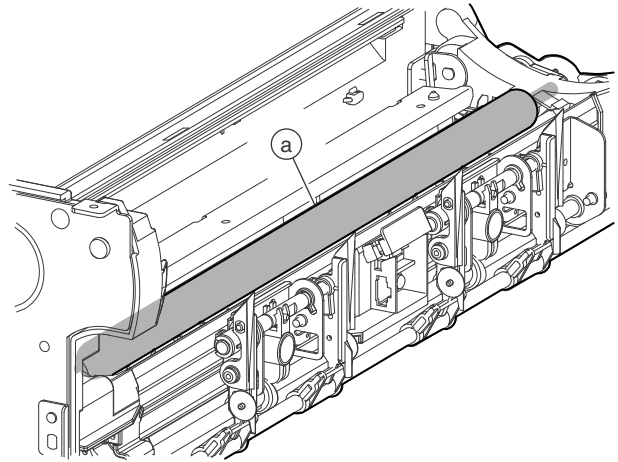


20) Remove the blue screw (a), and replace the sub blade (b).

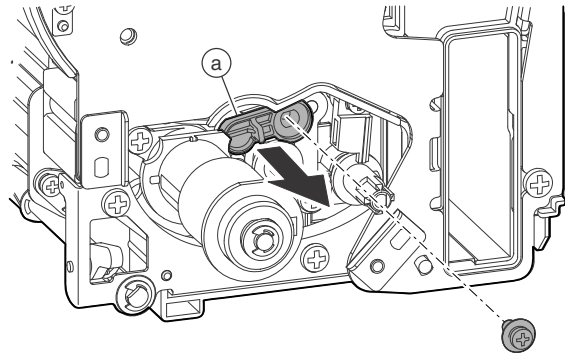
\* Tighten the blue screw (a) in the sequence of (1), (2), and (3).



21) Clean the cleaning brush roller (a) at every 500K.

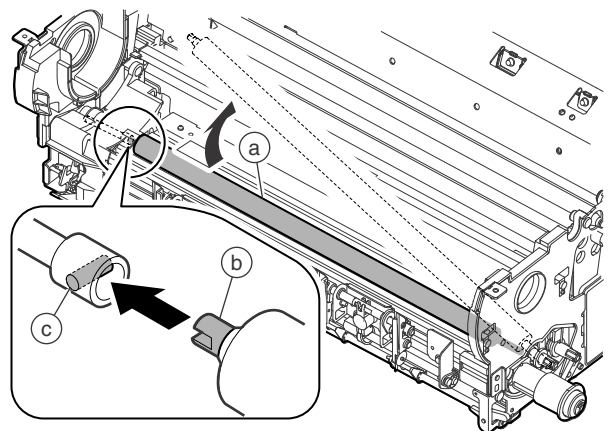


22) Remove the screw (a). Remove the brush bearing (b), and check at every 3000K.

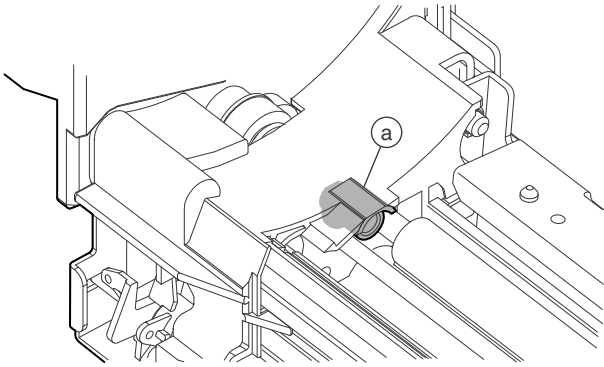


23) Replace the cleaning brush roller (a).

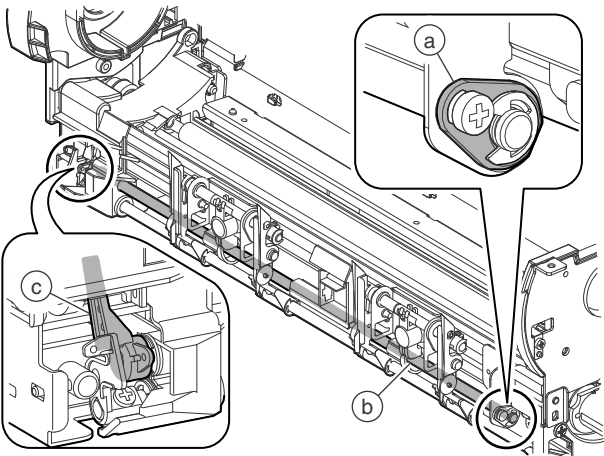
\* When attaching, the cleaning brush roller, engage the slit (b) at the lead edge with the pin (c) in the shaft.



24) Check the brush drive bearing (a) at every 3000K.

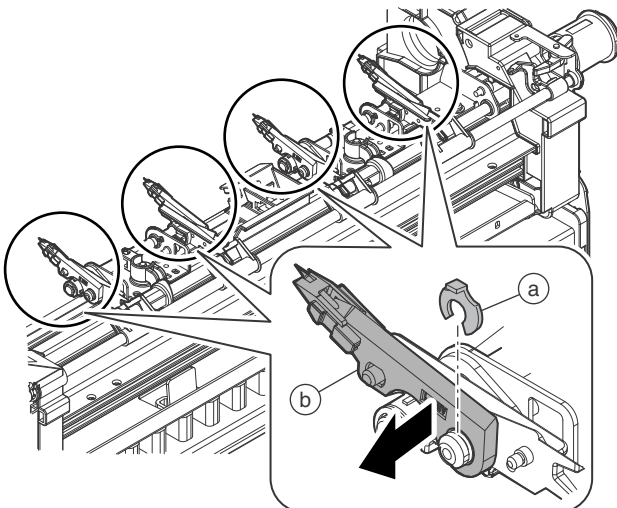


25) Check the separation pawl oscillation bearing (a), the separation pawl oscillation shaft and the separation pawl oscillation arm (c) at every 3000K.

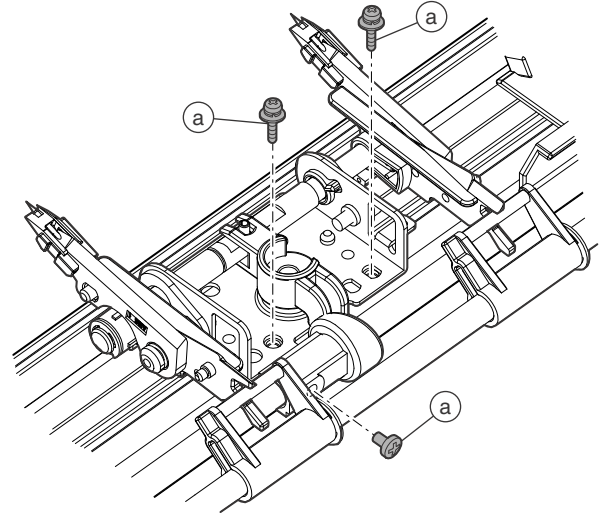


26) Remove the E-ring (a), and replace the drum separation pawl (b).

\* Be careful not to touch the lead edge of the drum separation pawl and the paper pass section.

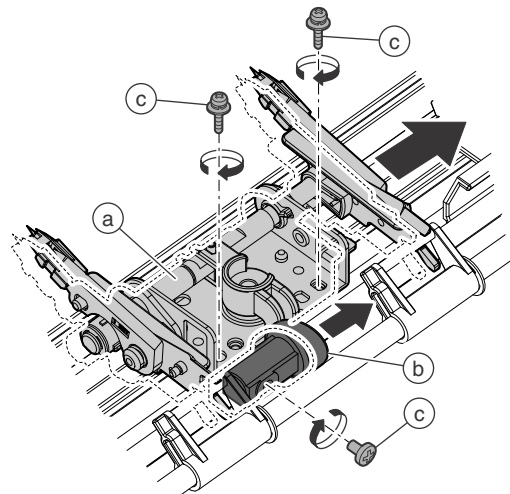


27) Remove the blue screw (a).

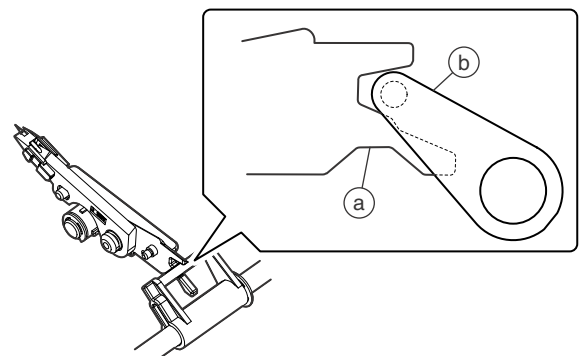


28) After replacing the drum separation pawl, shift the drum separation pawl unit (a) position. At the same time, shift the cam (b) position and fix it with the blue screw (c).

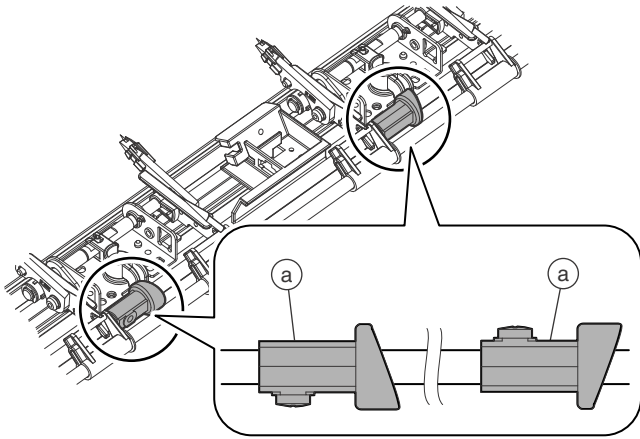
\* When shifting the position of the drum separation pawl unit, shift and adjust both the front unit and the rear unit.



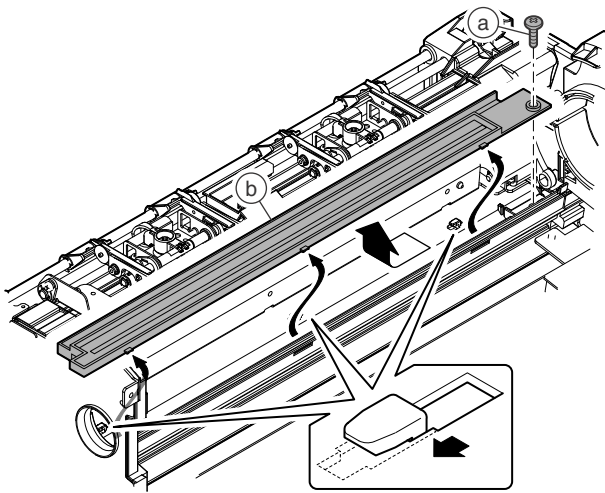
\* Be careful to engage all of V-groove section (4 position) of the separation pawl holder with the separation pawl separation arm.



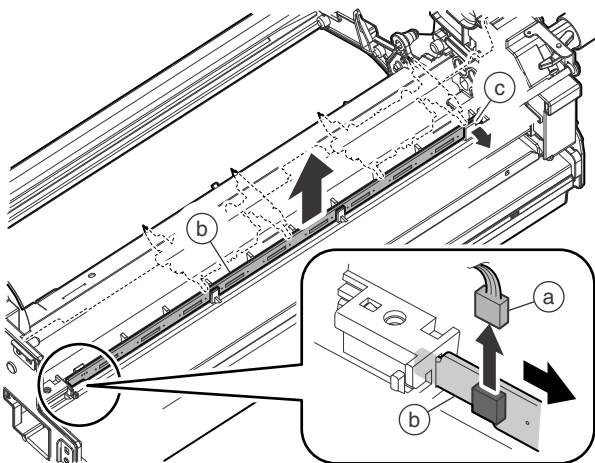
\* When shifting the position, fix the cam (a) in the reversed direction.



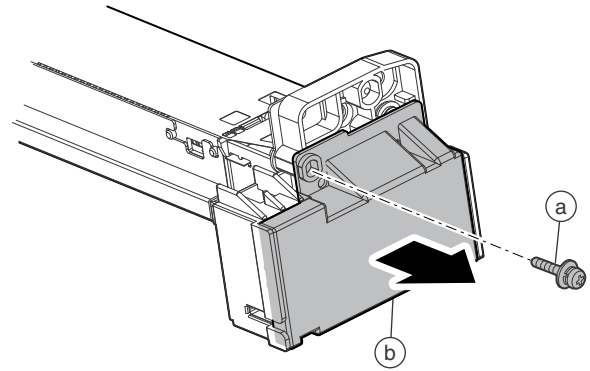
29) Remove the blue screw (a), and slide the cover (b) to remove.



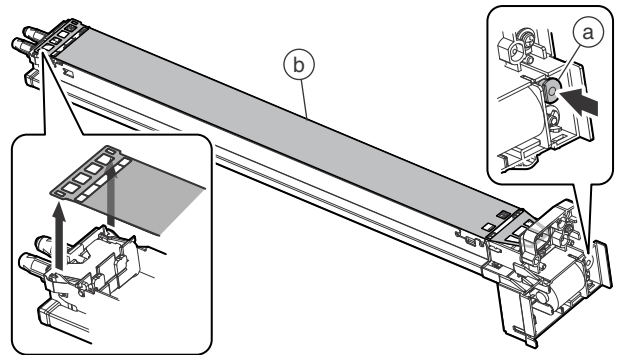
30) Disconnect the connector (a), extend the pawl (c), and remove the discharge lamp.  
Clean the discharge lamp (b) at every 500K.  
\* Be careful not to break the pawl. (c).



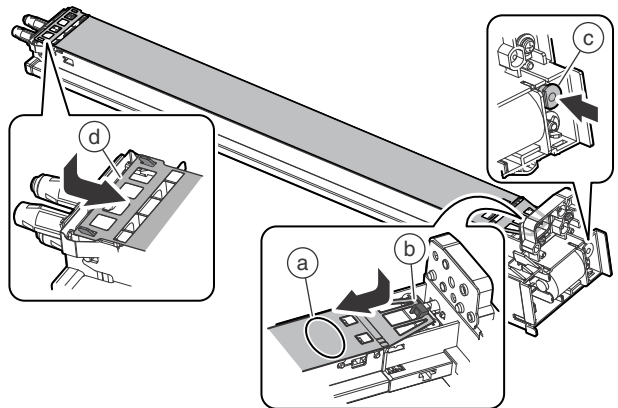
31) Remove the blue screw (a), and remove the cover (b).



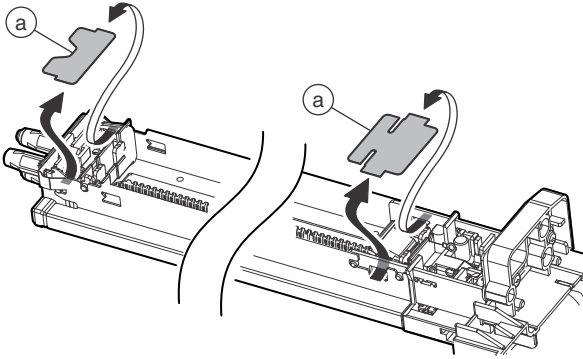
32) While pushing the push button (a), remove the screen grid (b) from the rear side and replace it.



\* Be careful not to touch the mesh section of the screen grid.  
\* When installing the screen grid, face the marking (a) toward the front, and hang the front side (b) first, then hang the rear side (d) while pushing the push button (c).

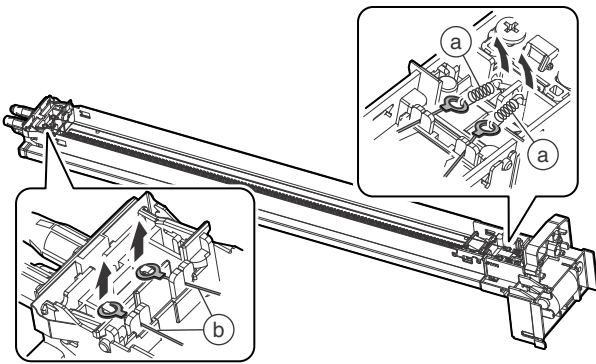


33) Remove the sheet (a).

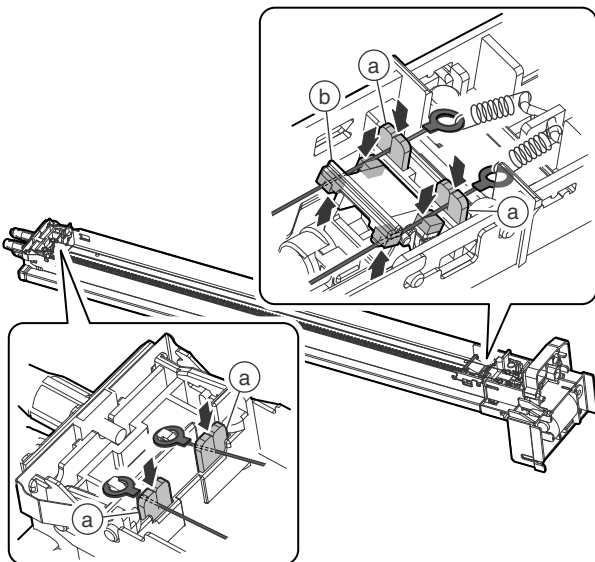


34) Remove the spring (a) in the front side, and remove the rear side (b) of the charger wire, and replace it.

- \* When replacing the charger wire, wear polyethylene glove which is packed together with the 500K maintenance kit.
- \* When handling the charger wire, be careful not to twist, fold, or break, and do not touch the wire section.



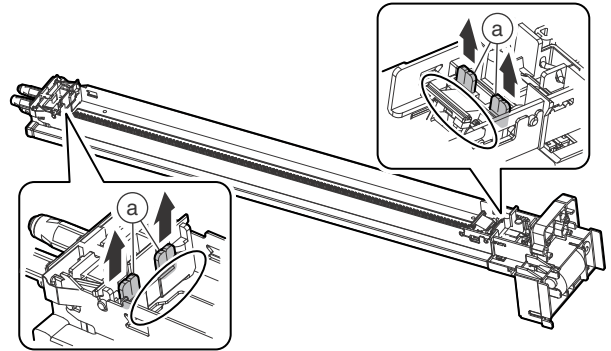
\* When installing the charger wire, insert the charger wire into the slit of the charger cushion (a) and the slit of the charger cleaner (b).



35) Clean the main charger case at every 500K.

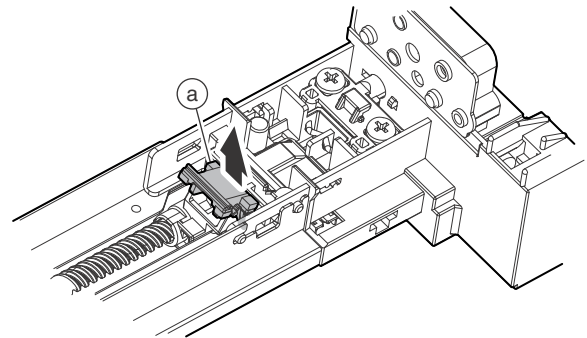
Clean the MC holder F/R and the MC case shown in a rounded sign part so that there is no dirt by toner etc.

36) Replace the charger cushion (a).



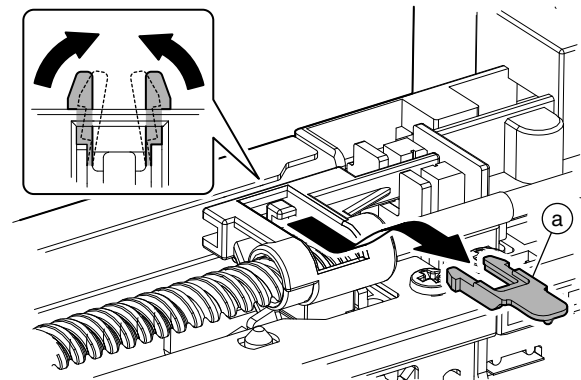
37) Replace the charger cleaner (a).

- \* When attaching, be careful of the direction.
- \* After attaching, check to confirm that it moves smoothly



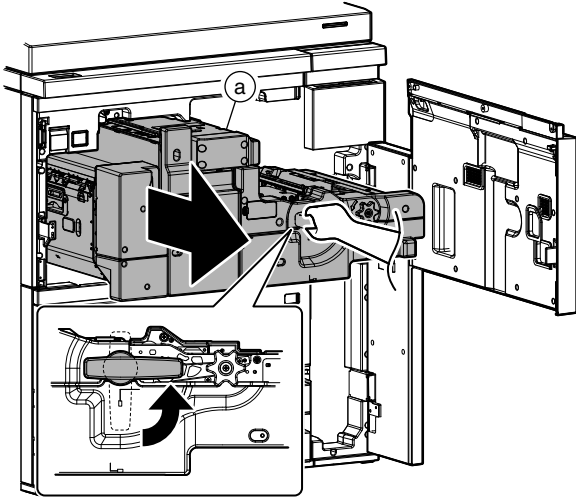
38) Replace the cleaner base guide (a).

\* When attaching, be careful of the direction. Be sure to engage the pawl securely.

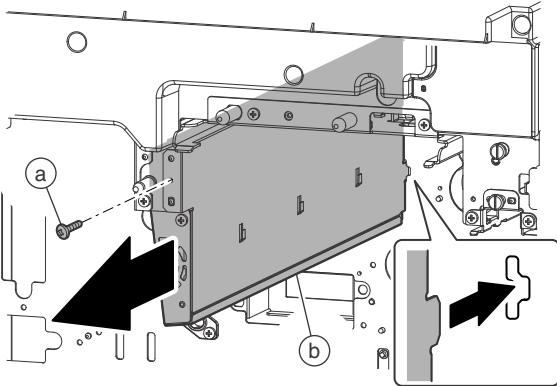


39) Replace the main charger case at every 3000K.

40) Pull out the intermediate frame (a).



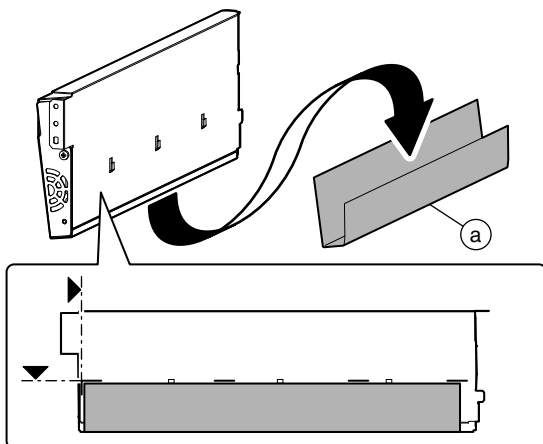
41) Remove the screw (a), and remove the duct (b).



42) Replace the duct sheet (a).

\* When pasting, fit the reference line.

\* When attaching, remove oily dirt from the attachment surface. Be careful not to include air bubbles. If any air bubbles are included, push and remove them out of the ends of the sheet so that air bubble of  $\phi 5$  or greater is not remained.

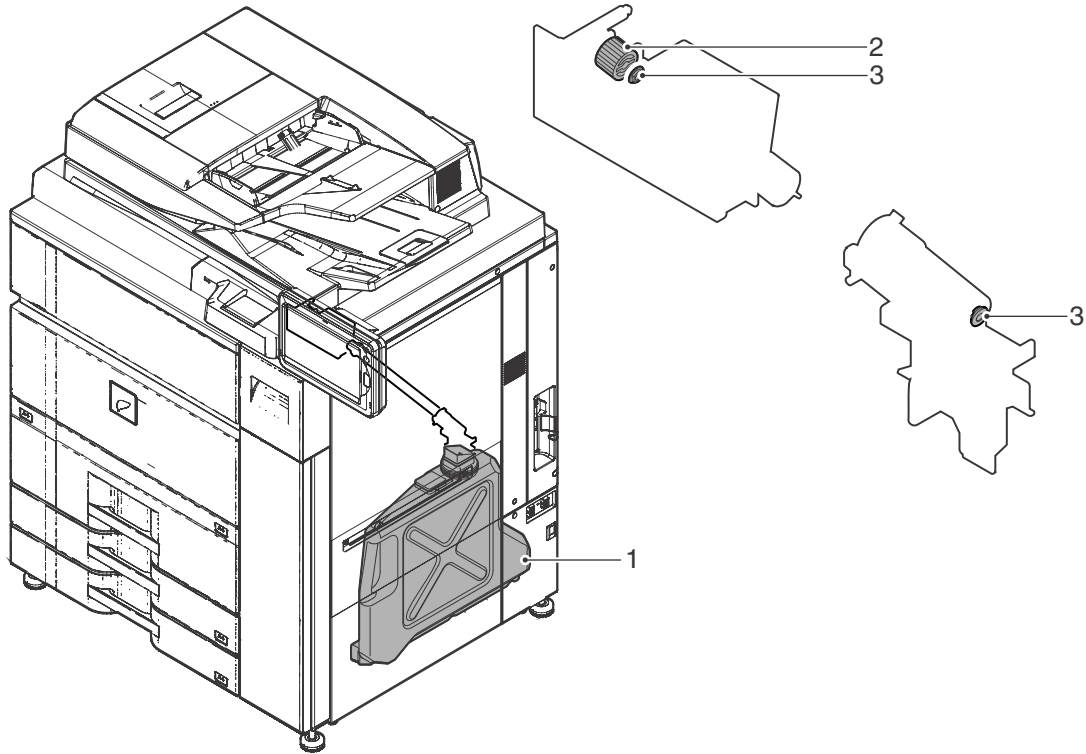


## 6. Waste toner section

### A. Maintenance table

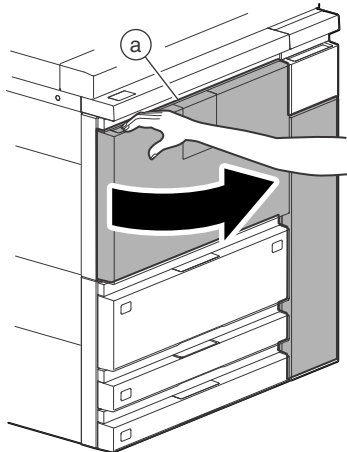
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name                             | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark |
|-----|---------------------------------------|--------------|-------|--------|--------|--------|--------|--------|--------|
| 1   | Toner collection container (with cap) | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |        |
| 2   | Gears                                 |              |       |        |        |        |        | ×      |        |
| 3   | Bearing (Waste toner resin bearing)   |              |       |        |        |        |        | ×      |        |



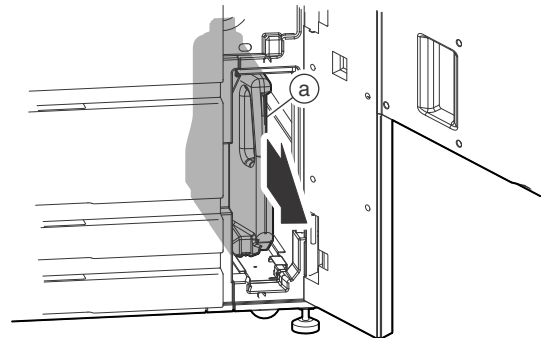
### B. Details

1) Open the front cover (a).



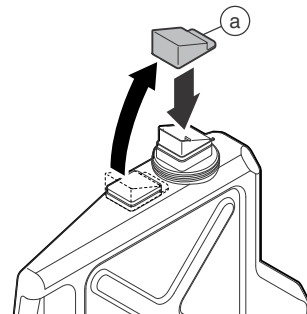
2) Replace the toner collection container (a).

\* Be sure to insert a new toner collection container securely to the bottom.



3) Attach the cap (a).

\* Check to confirm that it is securely attached.

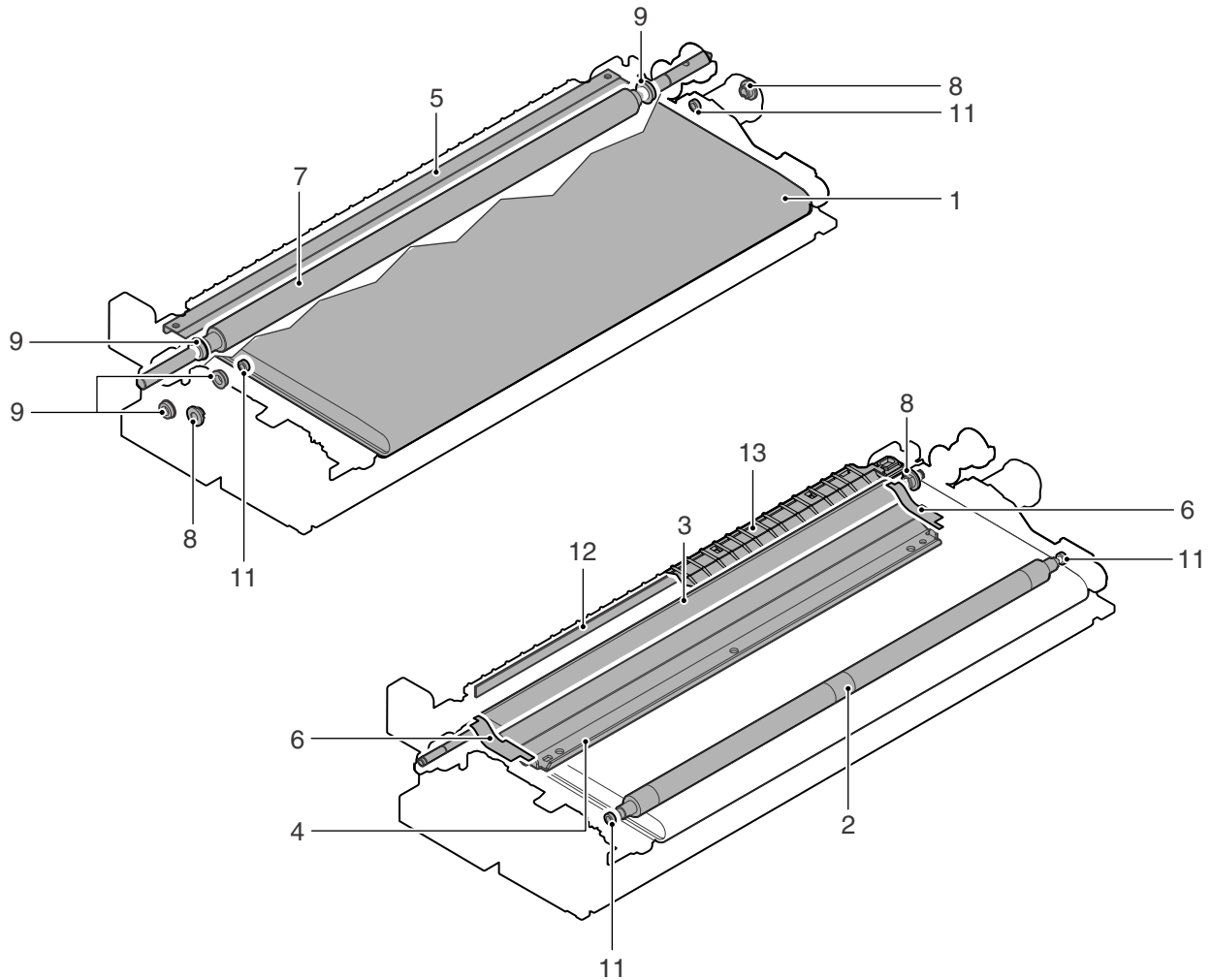


## 7. Transfer section

### A. Maintenance table

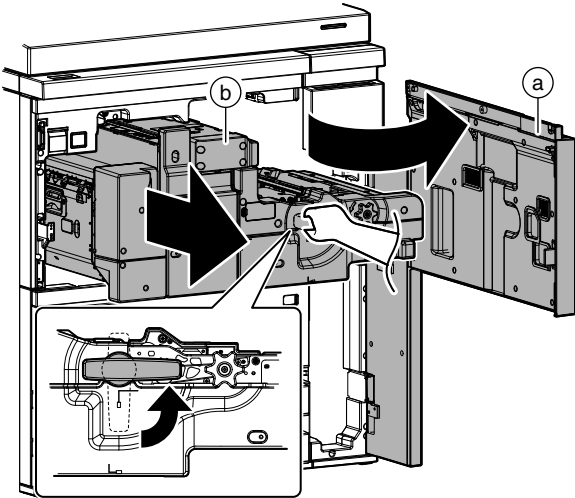
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name                           | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark                                 |
|-----|-------------------------------------|--------------|-------|--------|--------|--------|--------|--------|--|
| 1   | Transfer belt                       | ○            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Use dry cloth only. Never use alcohol. |
| 2   | Transfer roller                     |              | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
| 3   | Transfer cleaning brush             |              | ×     | ○      | ×      | ○      | ×      | ▲      |  |
| 4   | Transfer cleaning blade             | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
| 5   | Transfer sub blade                  | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
| 6   | Transfer side seal F, R             | ×            | ×     | ×      | ×      | ×      | ×      | ×      |  |
| 7   | Transfer drive roller               |              |       |        |        |        |        | ×      |  |
| 8   | Bearing (Waste toner resin bearing) |              |       |        |        |        |        | ×      |  |
| 9   | Ball bearings                       |              |       |        |        |        |        | ×      |  |
| 10  | Gears                               |              |       |        |        |        |        | ×      |  |
| 11  | Ball bearing for transfer roller    |              | ×     | ▲      | ×      | ▲      | ×      | ▲      |  |
| 12  | Discharge plate                     | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
| 13  | Discharge plate holder              | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |

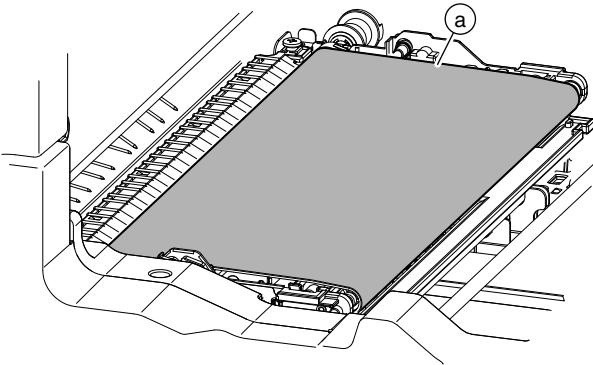


## B. Details

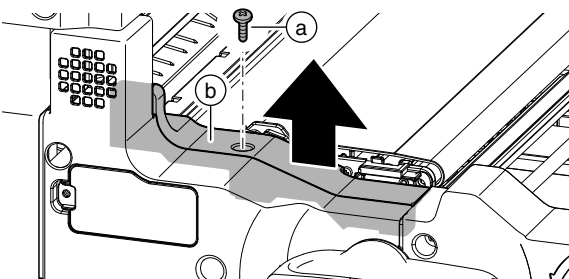
- 1) Open the front cover (a), and pull out the intermediate frame (b).



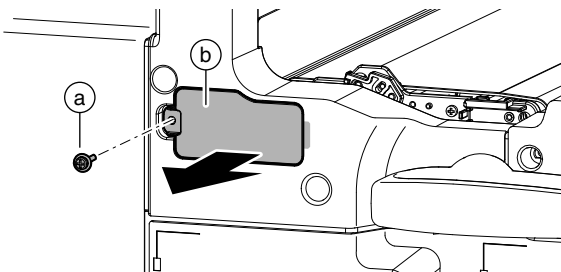
- 2) Check the transfer belt (a) at every 500K.



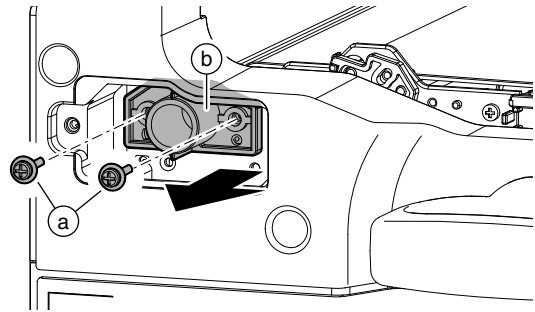
- 3) Remove the screw (a), and remove the cover (b).



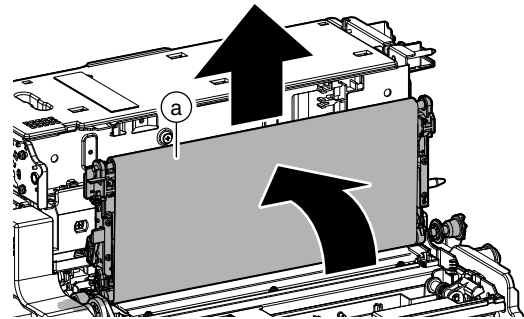
- 4) Remove the screw (a), and remove the cover (b).



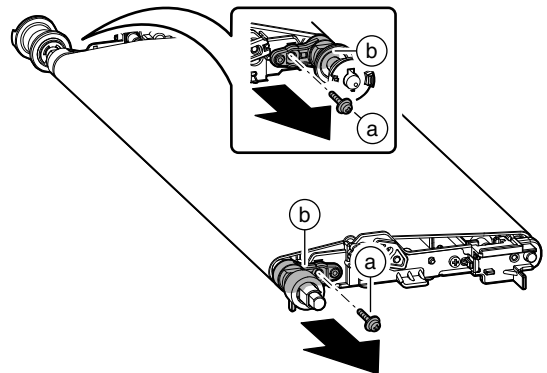
- 5) Remove the screw (a), and remove the holder (b).



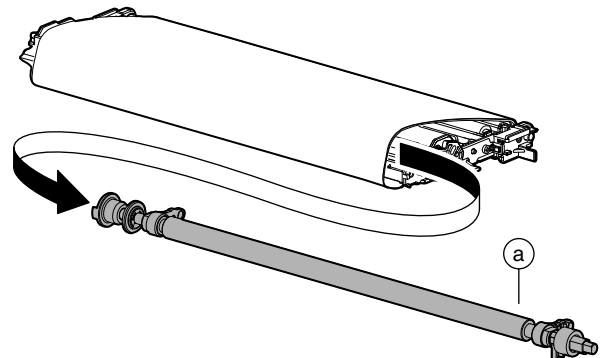
- 6) Remove the transfer belt unit (a).



- 7) Remove the screw (a), and remove the bearing (b).



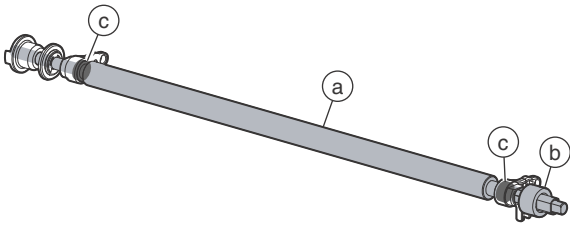
- 8) Remove the transfer drive roller unit (a).





- 9) Check the transfer drive roller (a), the gear (b) and the ball bearings (c) at every 3000K.

\* In maintenance, clean the section (a) with alcohol.

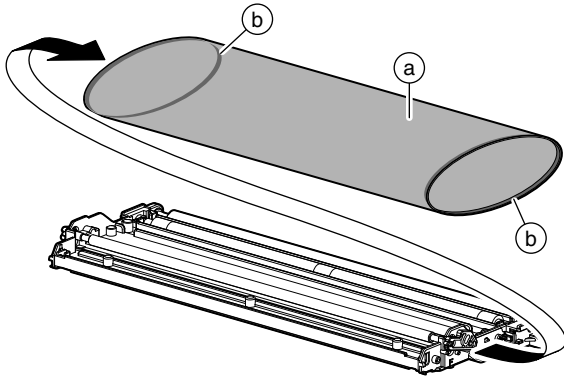


- 10) Replace the transfer belt (a) at every 1000K.

\* After replacement of the transfer belt, apply stearic acid (6LS06274000) to all the circumference of the belt. After assembling the unit, rotate it one revolution in the normal direction.

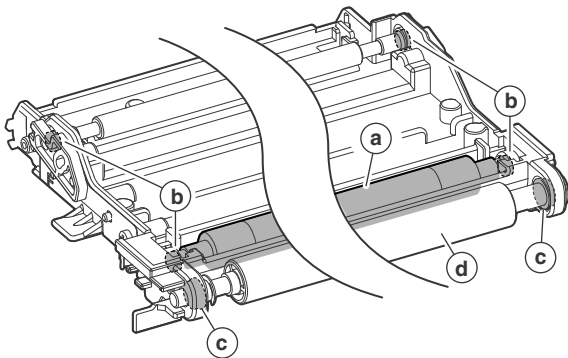
\* Use care so that the beats (b) on the both edges of the back of the transfer belt are not on the drive roller and the follower roller.

\* Never apply powder other than stearic acid.

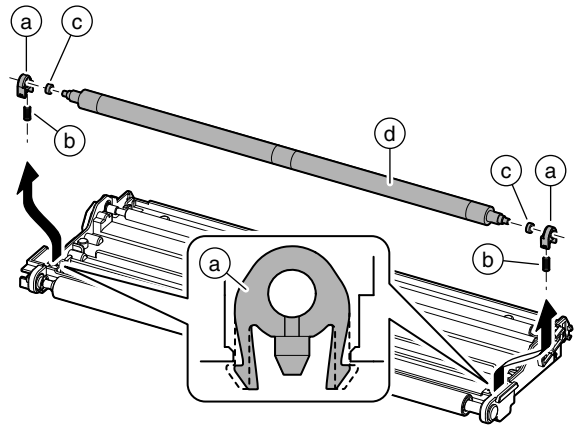


- 11) Check the transfer roller (a) and the ball bearing (b) for the transfer roller at every 500K, and check each ball bearing (c) at every 3000K.

\* In maintenance, clean the section (d) with alcohol.

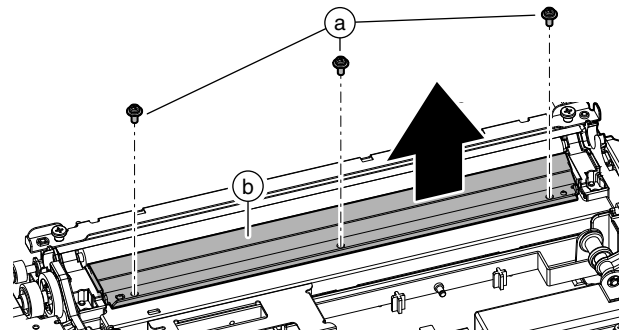


- 12) Remove the bearing (a) and the spring (b), and replace the ball bearing (c) for the transfer roller and the transfer roller (d) at every 1000K.

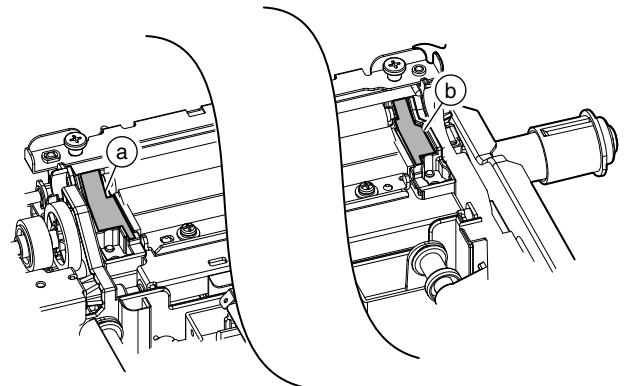


- 13) Check the screw (a), and replace the transfer cleaning blade (b) at every 500K, and replace it at every 1000K.

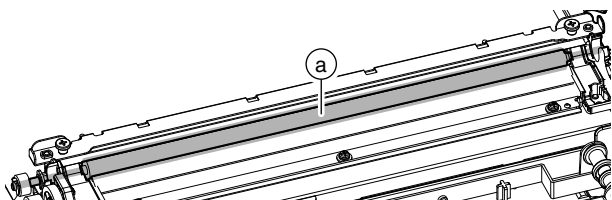
\* Be careful not to touch the urethane edge of the transfer cleaning blade.



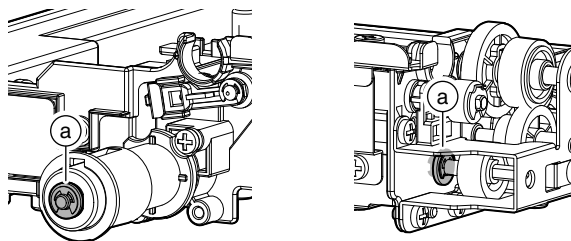
- 14) Check the side seal F (a) and the side seal R (b) at every 500K.



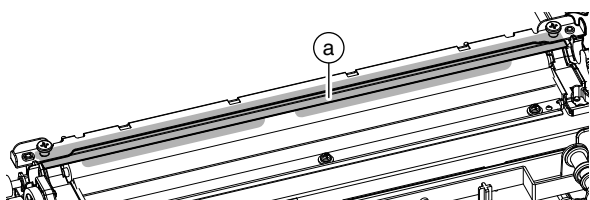
15) Check the transfer cleaning brush (a) at every 500K, and cleaning them at every 300K.



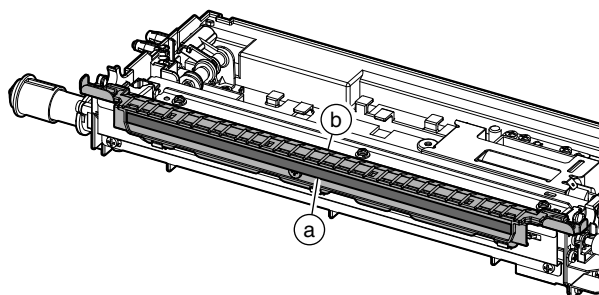
19) Check the bearing (a) at every 3000K.



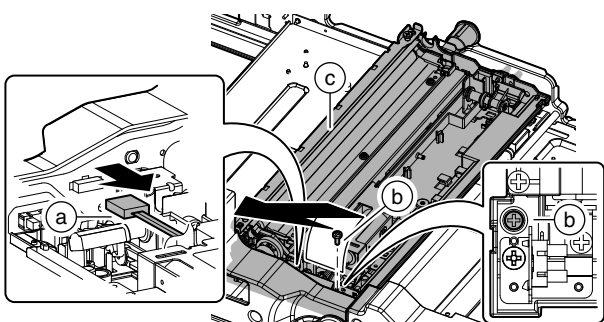
16) Check the transfer sub blade (a) at every 500K.



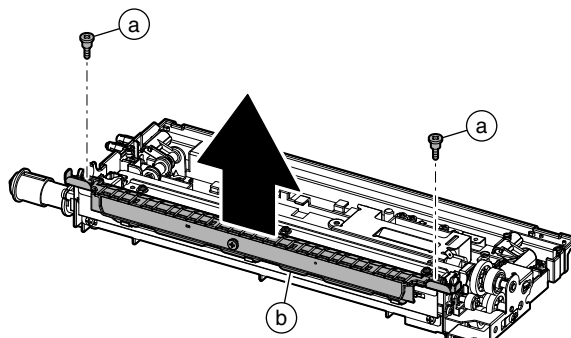
20) Clean the discharge plate (a), and the discharge plate holder (b) at every 500K.



17) Disconnect the connector (a), and remove the screw (b). Remove the transfer frame (c).



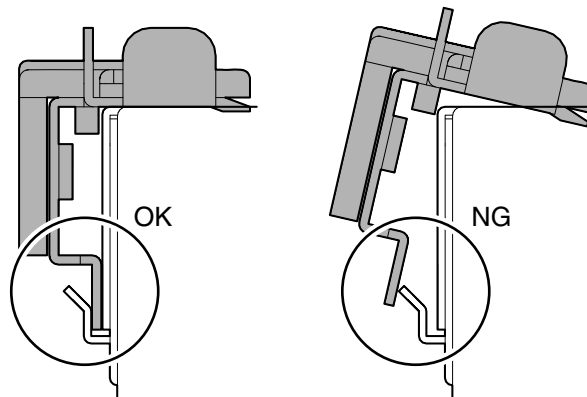
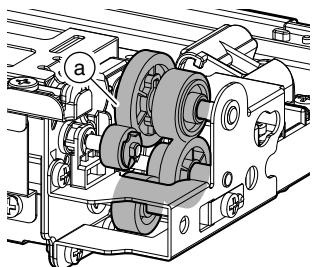
21) Remove the screw (a) and remove the holder unit (b).



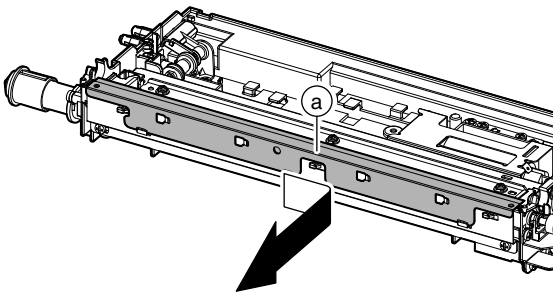
<<Note for installation>>

When installing the discharge plate holder, check to confirm that it is securely installed.

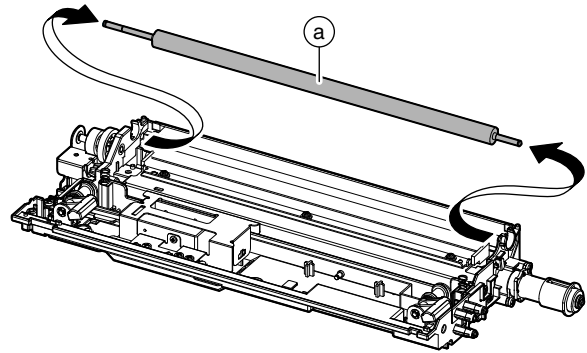
18) Check each gear (a) at every 3000K.



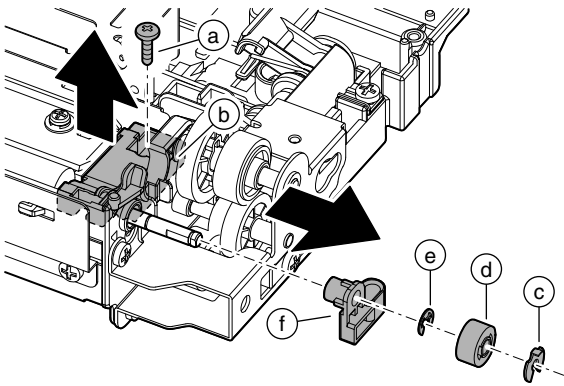
22) Slide remove the transfer sub blade (a), and replace it.



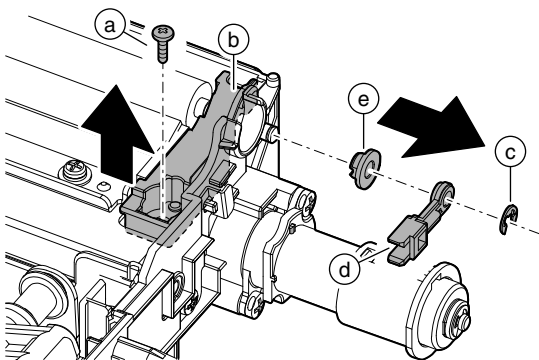
25) Replace the transfer cleaning brush (a).



23) Remove the screw (a), and remove the mounting plate (b). Remove the stopper (c), the gear (d), the E-ring (e), and the bearing (f).



24) Remove the screw (a), and remove the mounting plate (b). Remove the E-ring (c), the bearing (d), and the bearing (e).

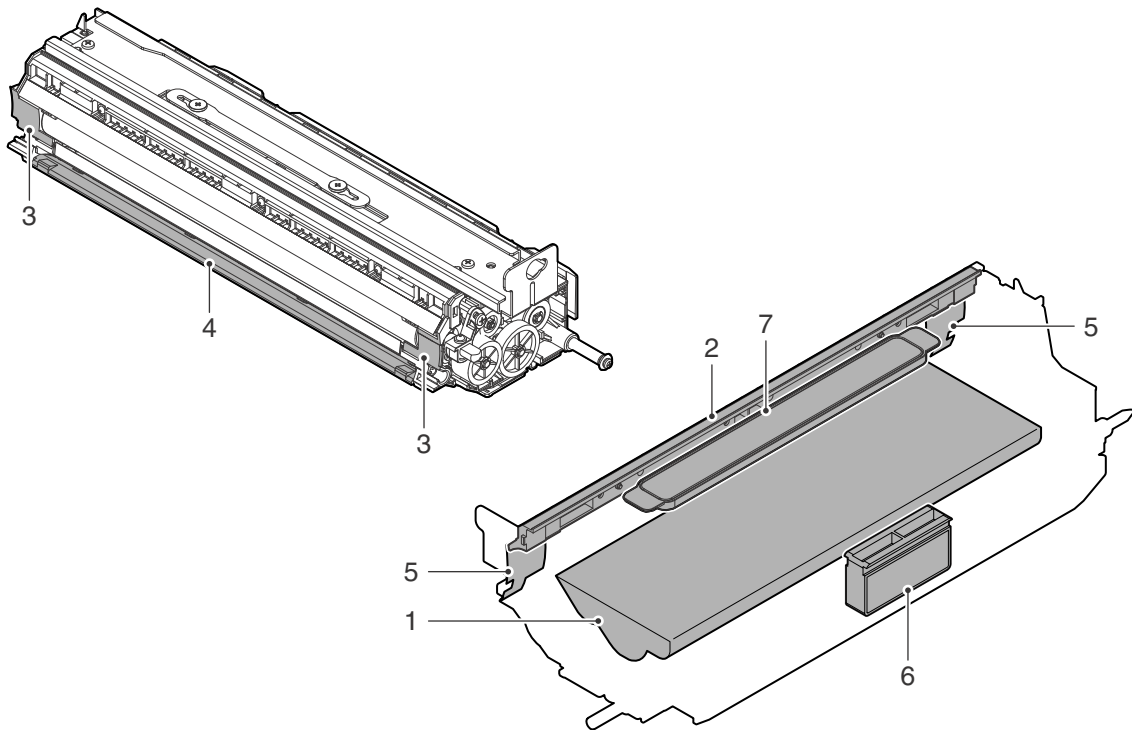


## 8. Developing section

### A. Maintenance table

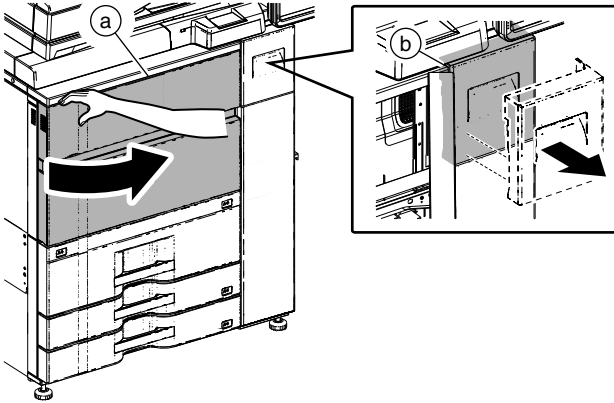
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name               | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark                                    |
|-----|-------------------------|--------------|-------|--------|--------|--------|--------|--------|---|
| 1   | Developer               | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Supply when installing                    |
| 2   | Doctor cover UN/DV seal | ○            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Use dry cloth only. Never use alcohol.    |
| 3   | DV side plate F, R      | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Clean around the DV side seal F and R.    |
| 4   | DV duct cover           | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Clean the lower section of the MG roller. |
| 5   | DV side seal F, R       | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Use dry cloth only. Never use alcohol.    |
| 6   | DV BOX filter           | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |   |
| 7   | Filter unit             | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      |   |

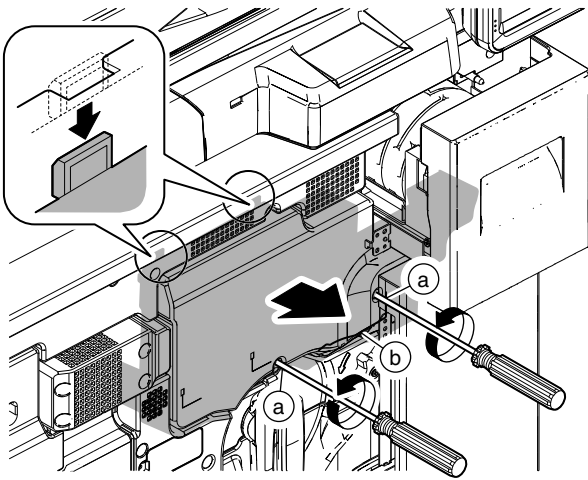


## B. Details

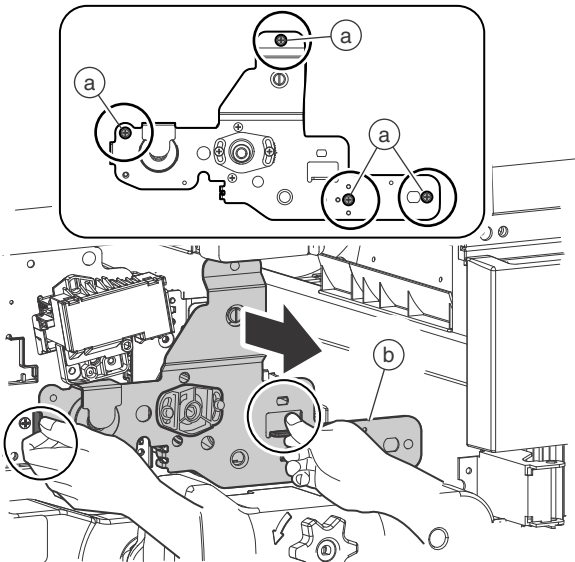
- 1) Open the front cover (a), and pull out the toner tray (b) a little.



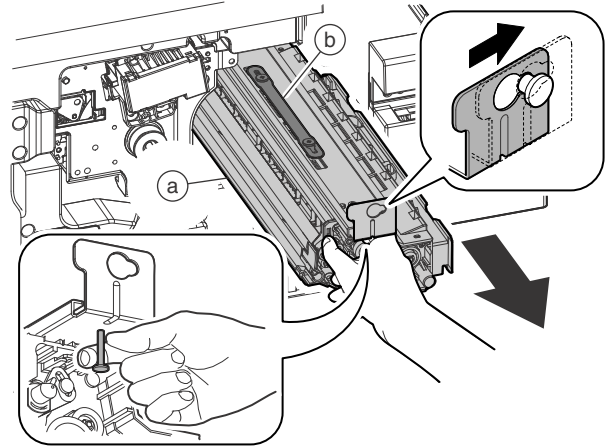
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

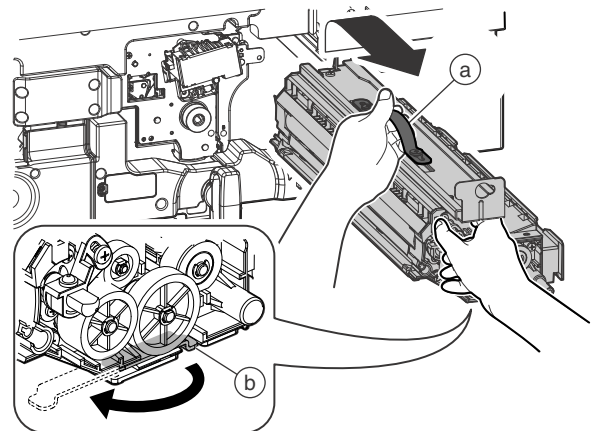


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

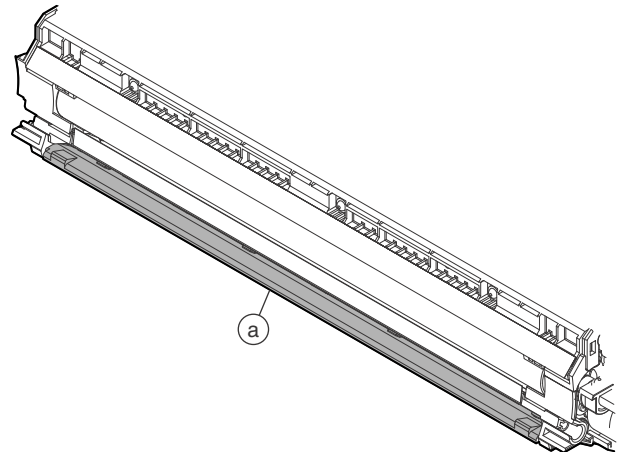


- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

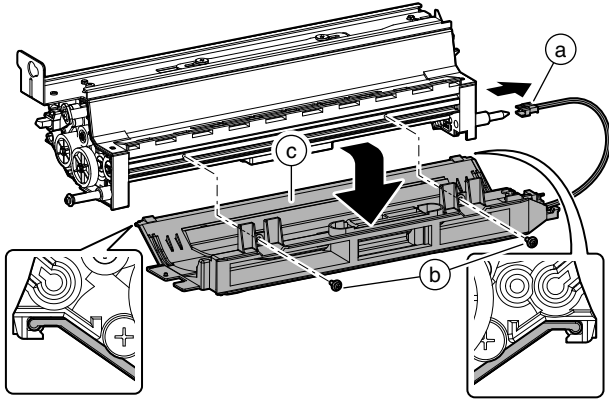
\* When placing the developing unit, use the stand (b) and place the unit on it.



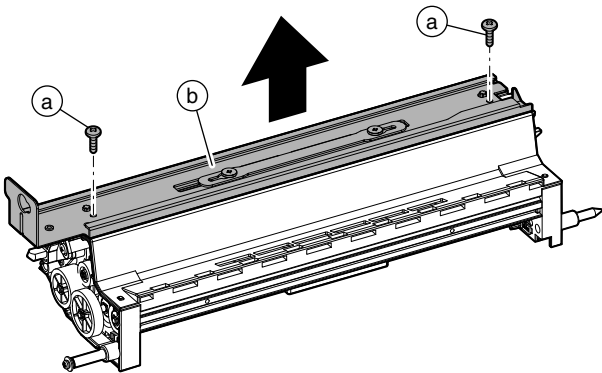
- 6) Clean the lower section (a) of the MG roller of the DV duct cover at every 500K.



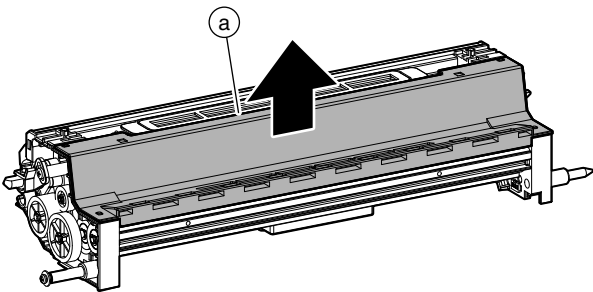
- 7) Disconnect the connector (a), and remove the screw (b).  
Remove the DV duct cover (c).  
\* Use extra care not to foul the connector terminal section.



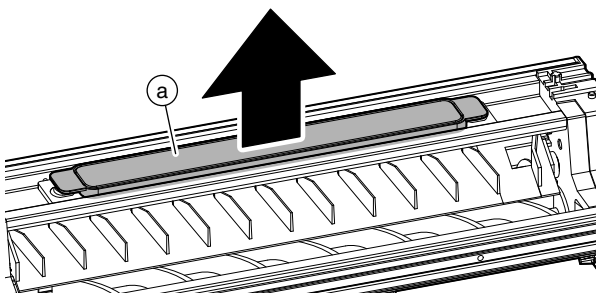
- 8) Remove the screw (a), and remove the guide (b).



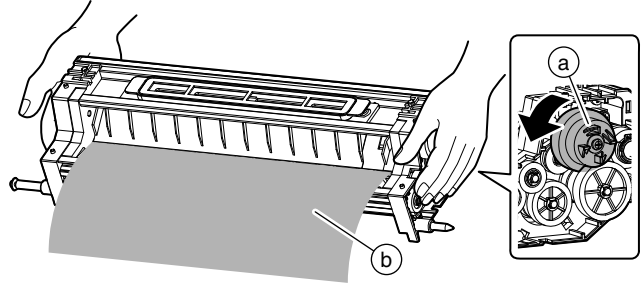
- 9) Remove the cover (a).



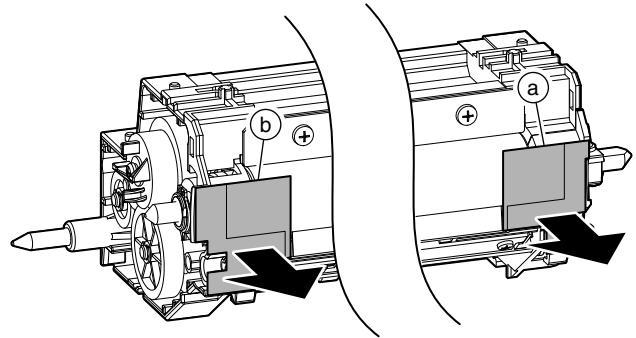
- 10) Remove the DV filter unit (a).



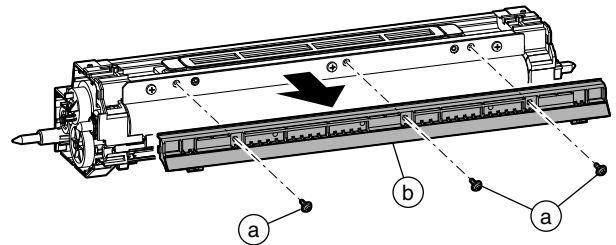
- 11) While rotating the coupling (a), discharge old developer (b).  
\* Rotate the MG roller clockwise and counterclockwise to remove developer from the MG roller.



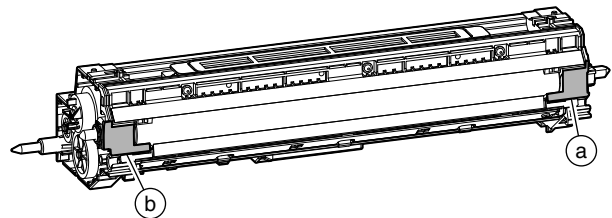
- 12) Remove the DV side seal F (a) and the DV side seal R (b).



- 13) Remove the screw (a), and remove the doctor cover unit (b).  
Clean the doctor section with dry cloth. Do not use alcohol.  
\* Rotate the MG roller and check to confirm that there is no foreign material in the doctor gap section.



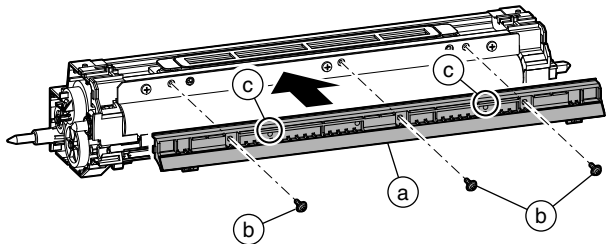
- 14) Clean the DV side seal attaching section of the DV side plate F (a) and the DV side plate R (b) with dry cloth. Do not use alcohol.



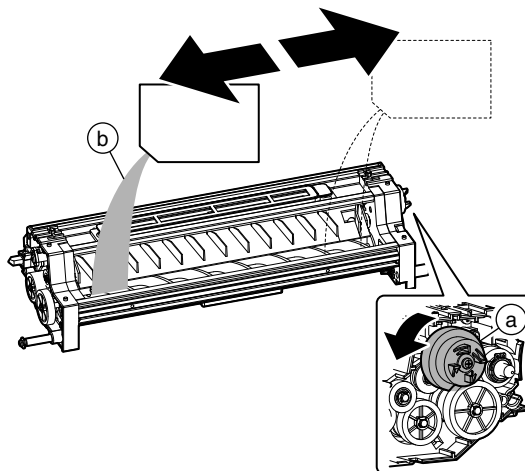
15) Replace the doctor cover unit (a) with new one, and install and fix with the screw (b).

\* When installing, check to confirm that the positioning boss (c) is securely engaged.

\* After installing, check to confirm that the cover is not deformed.

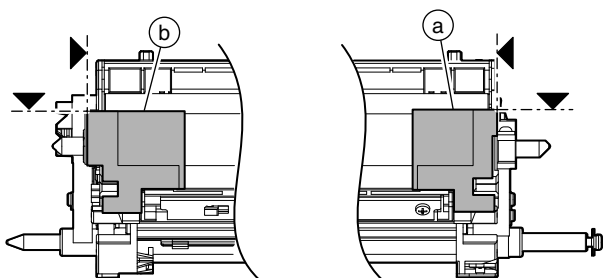


19) While rotating the coupling (a), supply new developer (b).

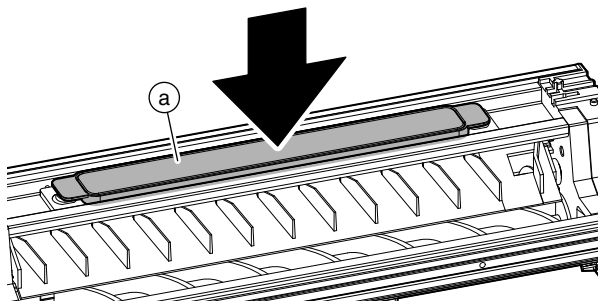


16) Replace the DV side seal F (a) and the DV side seal R (b) with new ones and attach them according to the reference.

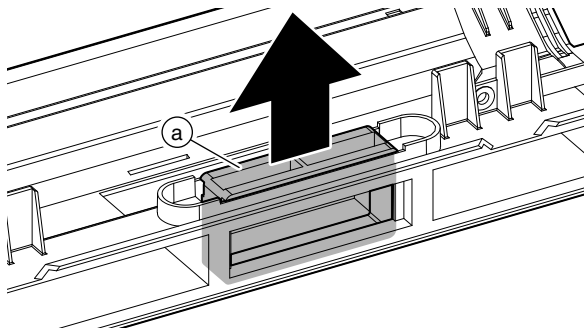
\* When attaching, be careful not to deform the seals.



17) Attach the DV filter unit (a).



18) Replace the DV BOX filter (a).

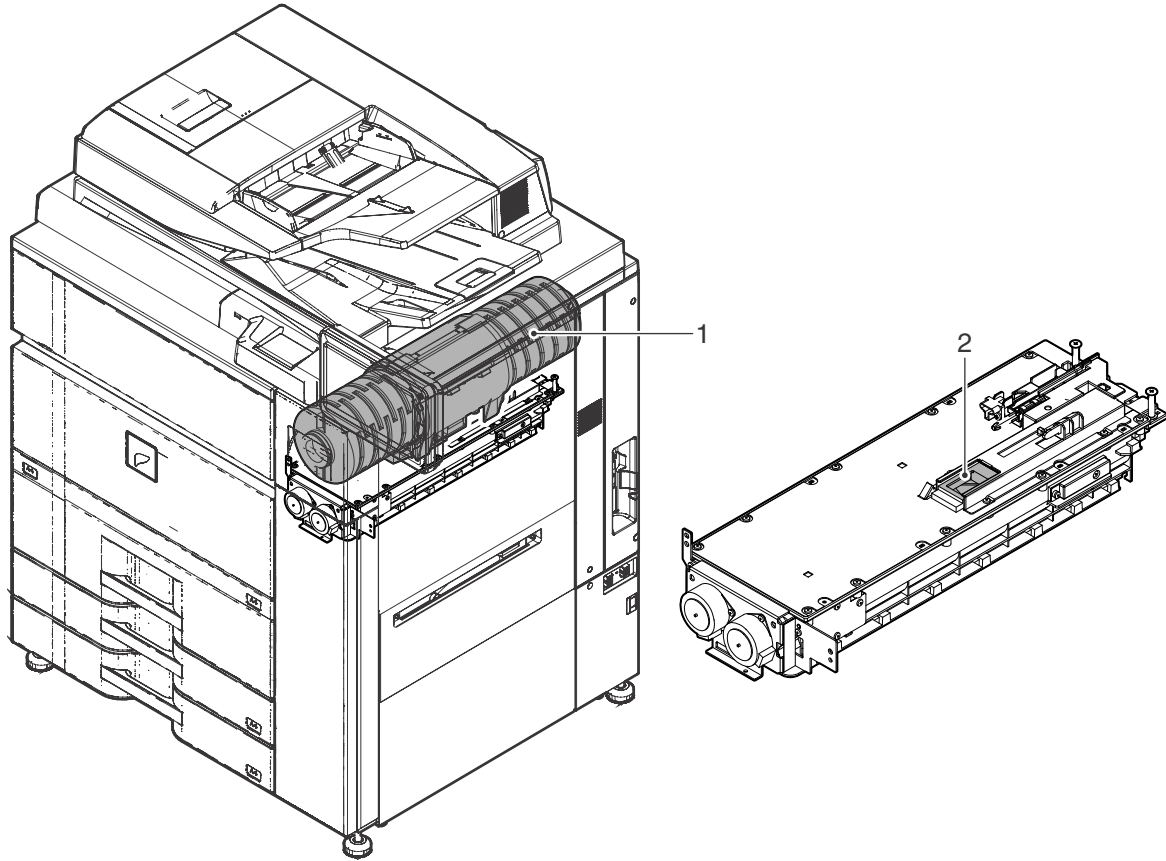


## 9. Toner supply section

### A. Maintenance table

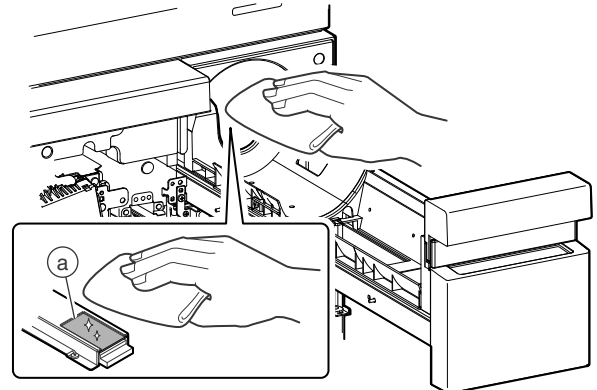
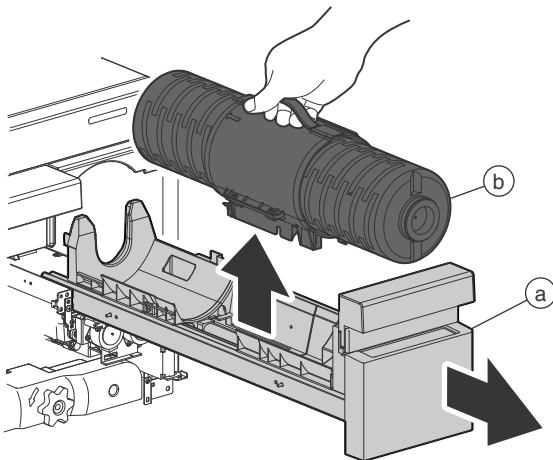
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name       | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark   |
|-----|-----------------|--------------|-------|--------|--------|--------|--------|--------|--|
| 1   | Toner cartridge |              |       |        |        |        |        |        | Attach when installing. When it is emptied, replacement is made by the user. |
| 2   | Toner hopper    | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Clean the shutter area.  |



### B. Details

- 1) Pull out the toner tray (a), and remove the toner cartridge (b).  
\* Replacement of the toner cartridge is performed by the user when toner is exhausted.
- 2) Put your hand into the toner tray and clean the shutter section (a) of the toner hopper unit at every 500K.



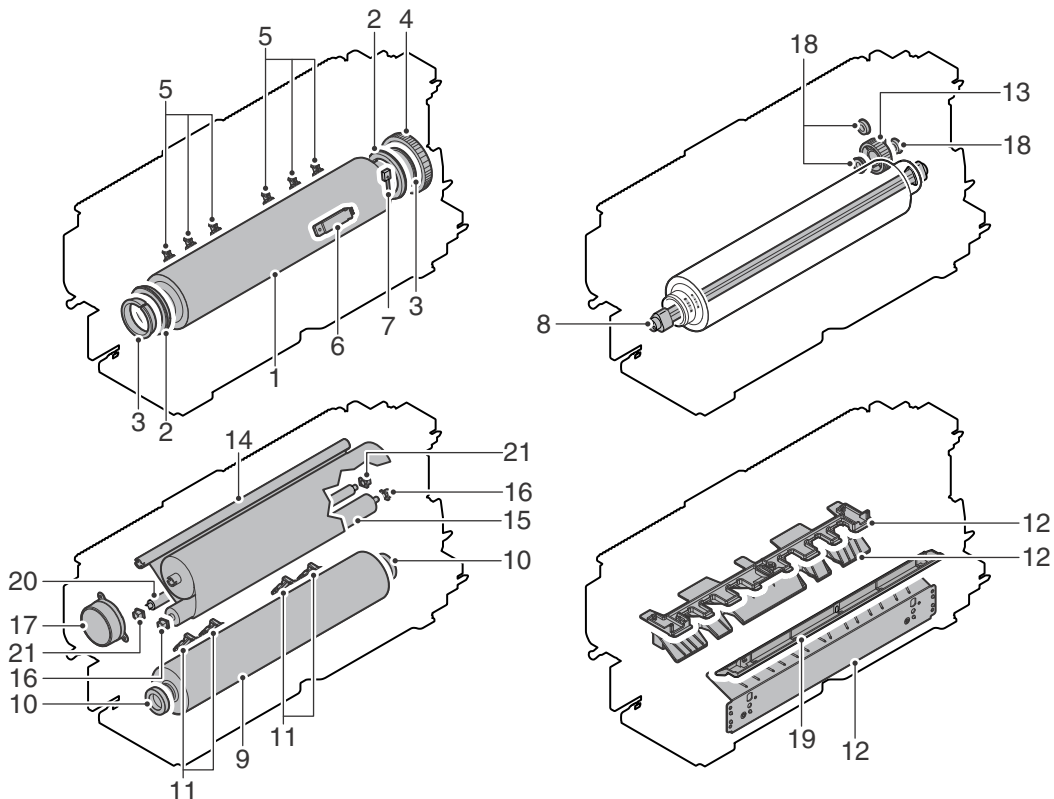


# 10. Fusing section

## A. Maintenance table

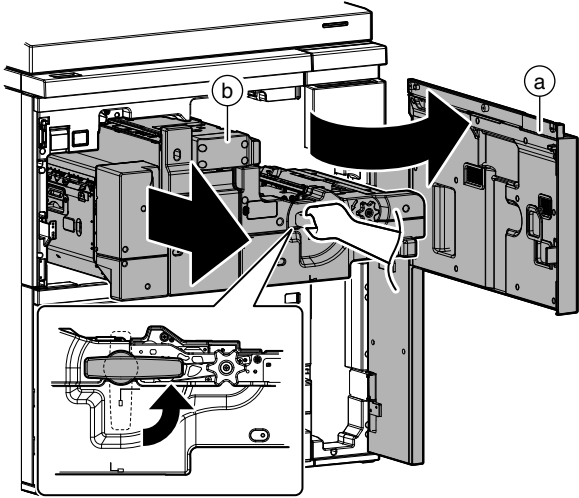
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name                         | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark  |
|-----|-----------------------------------|--------------|-------|--------|--------|--------|--------|--------|---|
| 1   | Upper heat roller                 | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Apply grease to the bearing section when replacing. (6LS06268000)                           |
| 2   | Upper heat roller ball bearing    | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Must be free from abnormal noises when rotating. Apply grease when replacing. (6LS06268000) |
| 3   | Upper heat roller insulation bush |              | ×     | ▲      | ×      | ▲      | ×      | ▲      | Apply grease when replacing. (6LS06268000)  |
| 4   | Upper heat roller gear            | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Check/Apply grease when replacing. (6LS06268000)  |
| 5   | Upper heat roller separation pawl | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Clean and remove foreign material.  |
| 6   | Non-contact thermistor            | ×            | ×     | ×      | ×      | ×      | ×      | ×      |   |
| 7   | Sub thermistor                    | ×            | ×     | ×      | ×      | ×      | ×      | ▲      | Clean and remove foreign material.  |
| 8   | Upper heater lamp                 | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |   |
| 9   | Lower heat roller                 | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Apply grease to the bearing section when replacing. (6LS06268000)                           |
| 10  | Lower heat roller ball bearing    | ×            | ×     | ▲      | ×      | ▲      | ×      | ▲      | Must be free from abnormal noises when rotating. Apply grease when replacing. (6LS06268000) |
| 11  | Lower heat roller separation pawl | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Clean and remove foreign material.  |
| 12  | Paper guides                      | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 13  | Upper heat roller drive gear      | ×            | ×     | ×      | ×      | ×      | ×      | ▲      | Check/Apply grease when replacing. (6LS06268000)  |
| 14  | Web roller                        | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 15  | Web backup roller                 | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 16  | Web backup roller bearing         | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 17  | Web motor                         | ×            | ×     | ×      | ×      | ▲      | ×      | ×      |   |
| 18  | Other ball bearing                |              |       |        |        |        |        | ×      | Must be free from abnormal noises when rotating.  |
| 19  | Front upper paper guide           | ○            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 20  | Web guide shaft                   | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |
| 21  | Web guide bearing                 | ×            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |   |

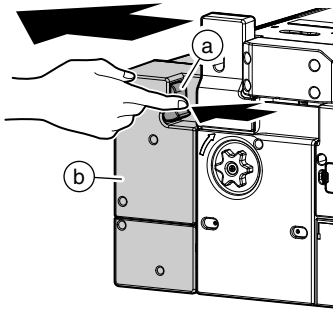


## B. Details

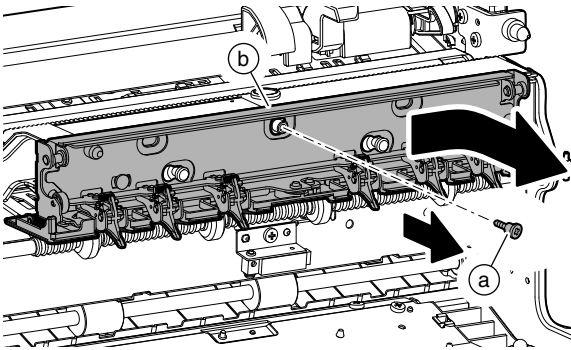
- 1) Open the front cover (a), and pull out the intermediate frame (b).



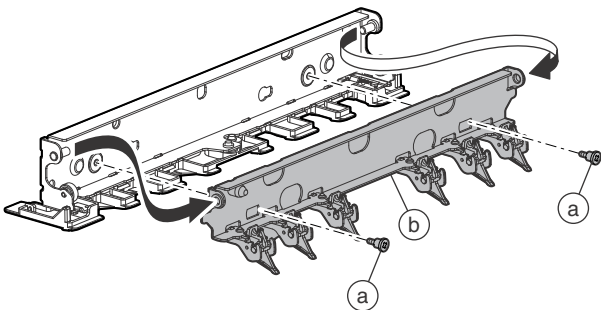
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



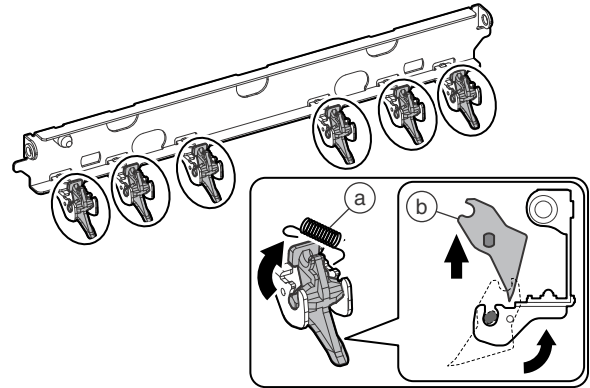
- 3) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).



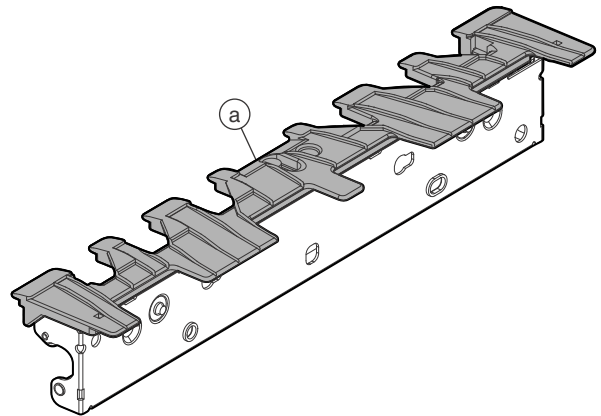
- 4) Remove the screw (a), and remove the upper heat roller separation pawl unit 2 (b).



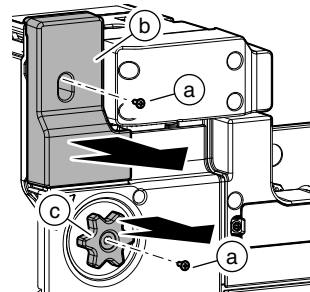
- 5) Remove the spring (a), and replace the upper heat roller separation pawl (b).



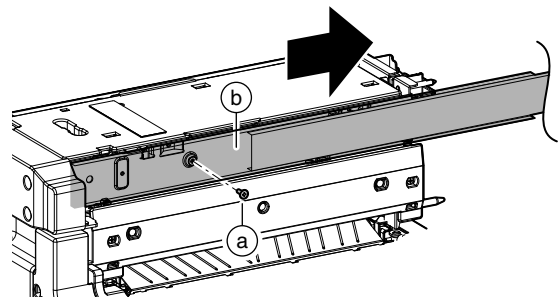
- 6) Clean the paper guide (a) at every 500K.



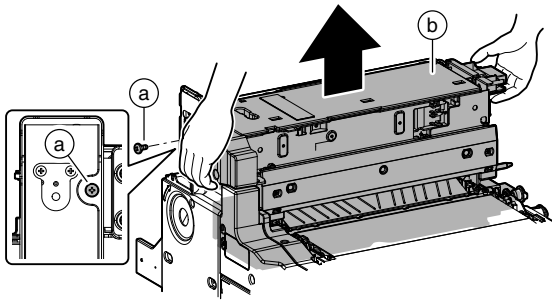
- 7) Remove the screw (a), and remove the cover (b) and the knob (c).



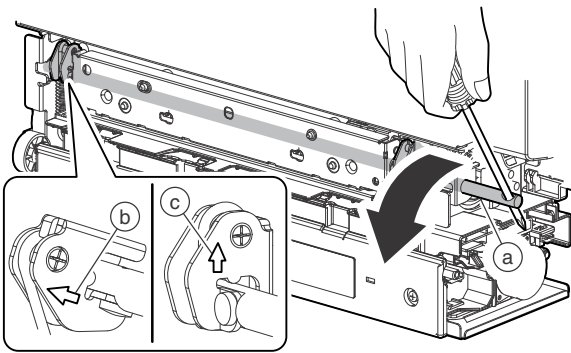
- 8) Remove the screw (a), and remove the rail (b).



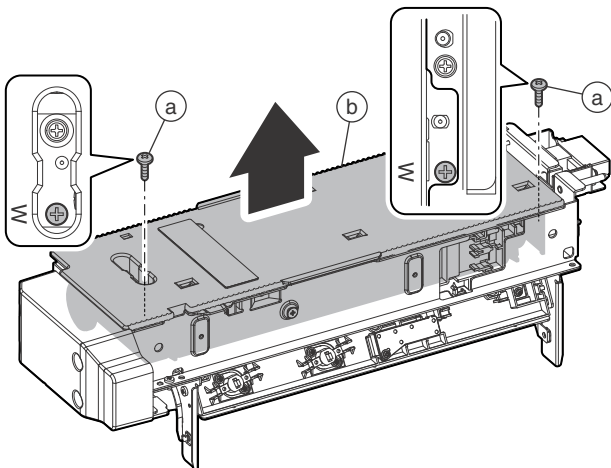
- 9) Remove the screw (a), and remove the fusing unit (b).  
 \* Be careful to handling of the fusing unit heated to a high temperature. When removing it, hold the resin sections on both sides of the fusing unit.



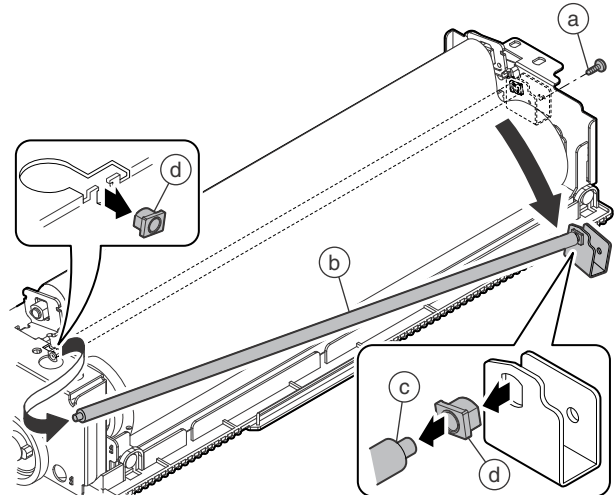
- 10) Insert a screwdriver into the pressure release shaft (a) to release the pressure.  
 \* When the pressure is released, the arrow on the pressure release shaft faces diagonally (b). When the pressure is applied, the arrow faces upward (c).



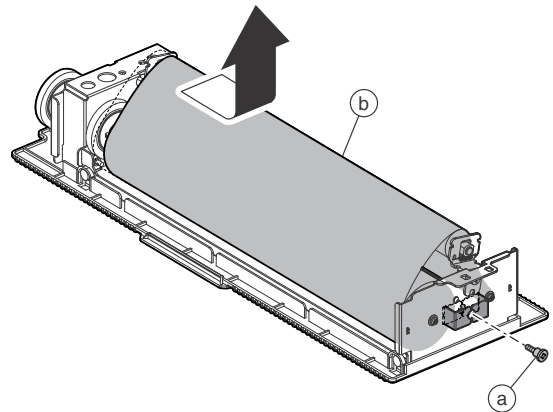
- 11) Remove the screw (a) on the side of "W" mark from the fusing upper unit, and remove the web unit (b).



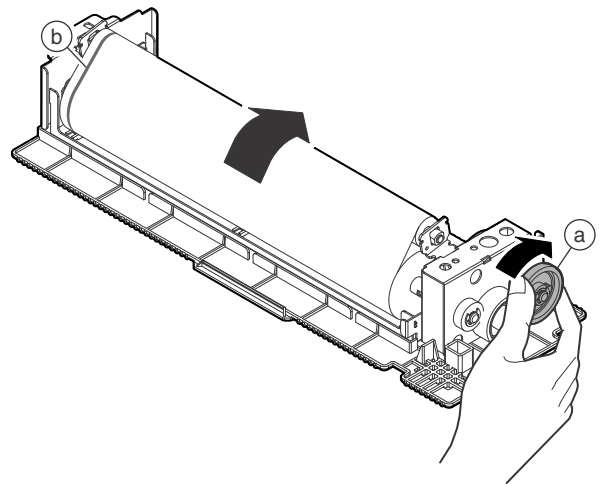
- 12) Remove the screw (a), and remove the web guide shaft unit (b). Replace the web guide shaft (c) and the web guide bearing (d).



- 13) Remove the screw (a), and slide and remove the WEB roller (b), and replace the WEB roller.



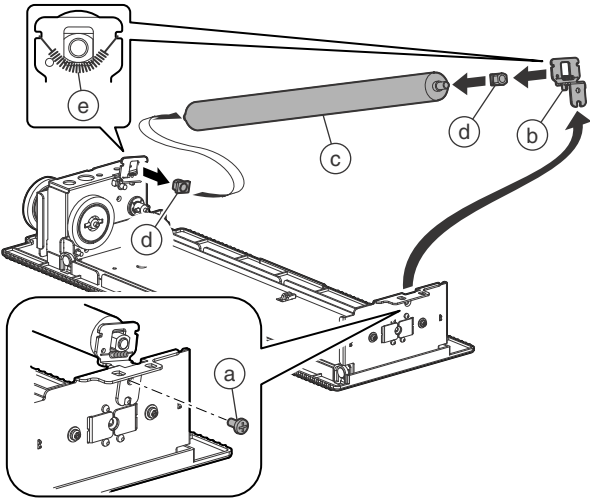
- \* After replacement, rotate the gear (a) and manually wind the web roller until the red line (b) of the web roller is covered.



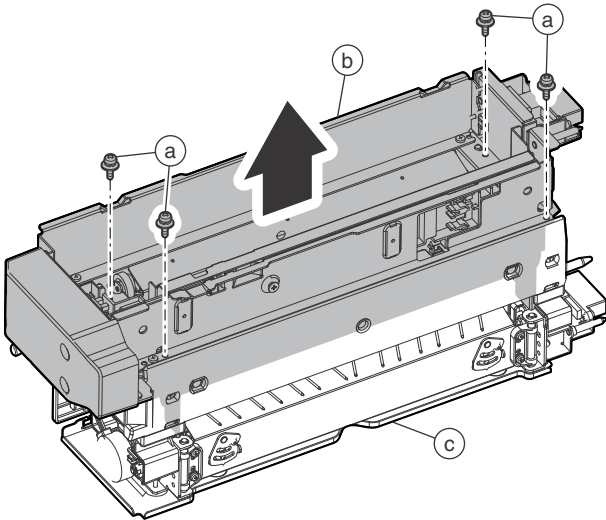
- \* After completion of maintenance, execute SIM. 24-4 (Fusing web cleaning feed counter clear).

- \* When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.)

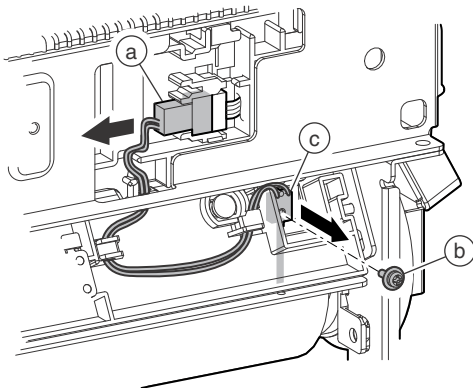
- 14) Remove the screw (a), and remove the metal fixture (b).  
 Replace the WEB backup roller (c) and the WEB backup roller bearing (d).  
 \* When installing, be careful to the hang the spring (e) properly.



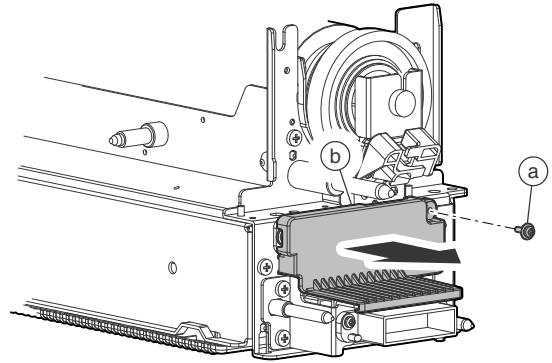
- 15) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).



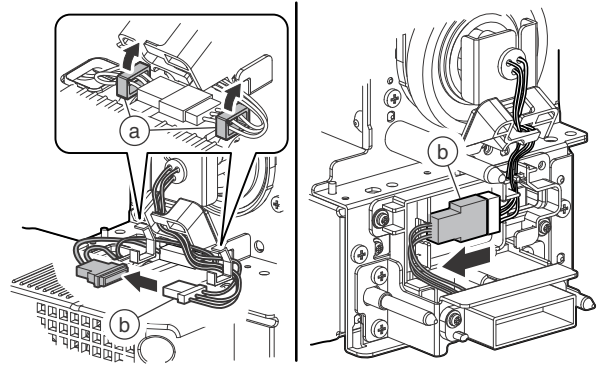
- 16) Disconnect the connector (a), and remove the screw (b), and remove the sub thermistor (c). Check or the sub thermistor (c) at every 500K, or replace it at every 3000K.  
 \* When handling the thermistor, be careful not to deform it.



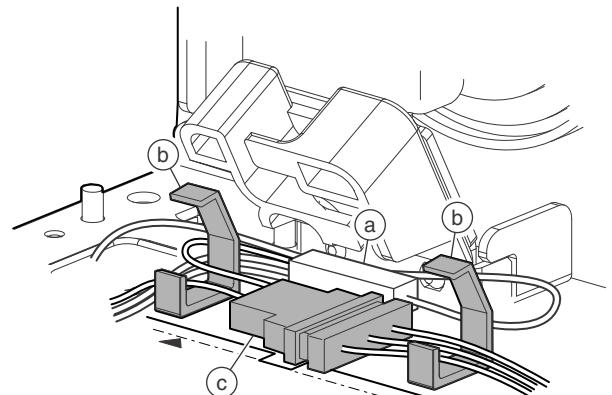
- 17) Turn the fusing upper unit upside down. Remove the screw (a), and remove the cover (b).



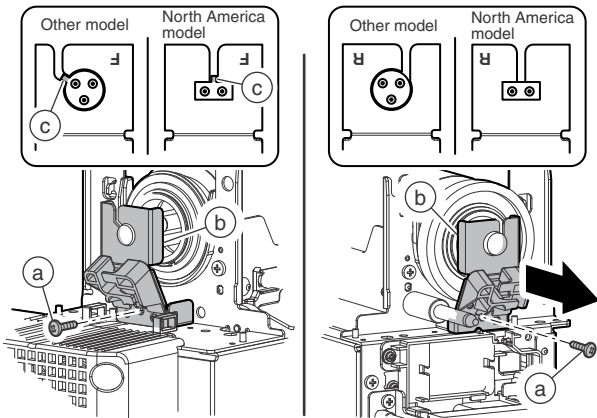
- 18) Open the clamp (a). Disconnect the connector (b) of the upper heater lamp.



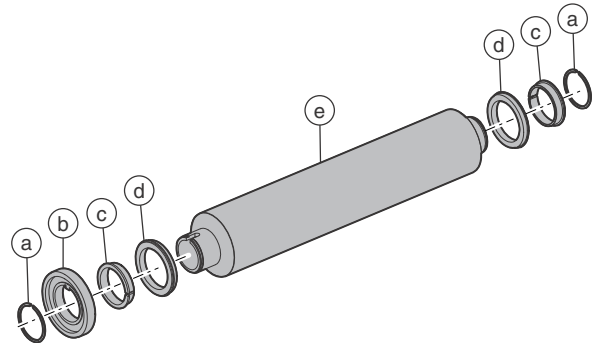
- \* When assembling, store the white clamp (a) at the bottom of the clamp (b), and store the black connector (c) to the clamp (b).
- \* Check to confirm that the black connector (c) does not extend from the reference line.
- \* When storing each connector, be careful not to pinch it.



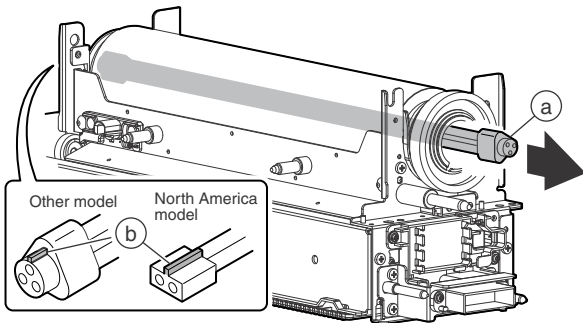
- 19) Remove the screw (a), and remove the lamp holder (b).  
 \* When installing, engage the positioning (c) of the upper heater lamp with the notch of the lamp holder.



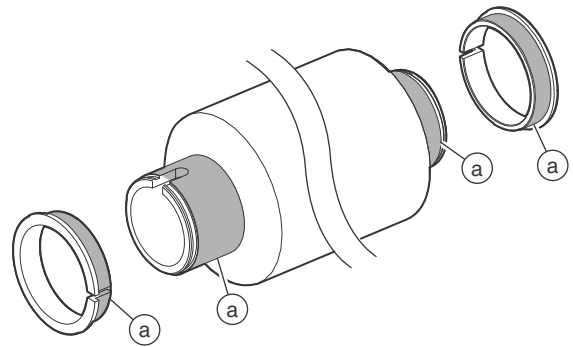
- 22) Remove the C-ring (a), and remove the upper heat roller gear (b), the upper heat roller insulation bush (c), and the upper heat roller ball bearing (d) from the upper heat roller (e).  
 Check the upper heat roller gear (b), the upper heat roller insulation bush (c), the upper heat roller ball bearing (d), and the upper heat roller (e) at every 500K, or replace them at every 1000K.



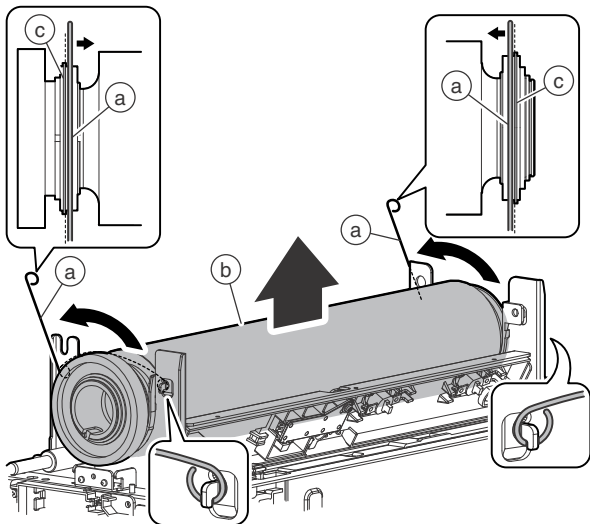
- 20) Remove the upper heater lamp (a), and check it at every 500K, or replace it at every 3000K.  
 \* Insert the positioning (b) into the upper heater lamp so that the positioning (b) is on the front side.



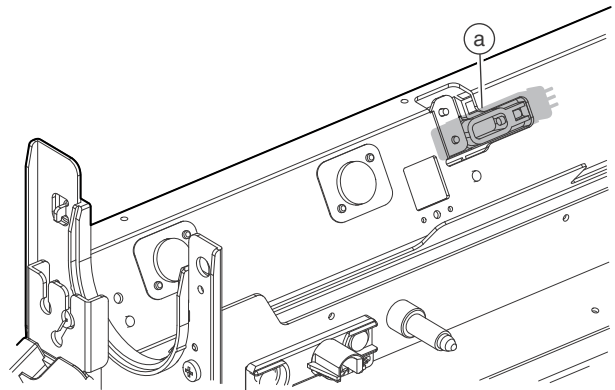
- \* When replacing, apply grease (6LS06268000) to the upper heat roller insulation bush and the upper heat roller section (a).



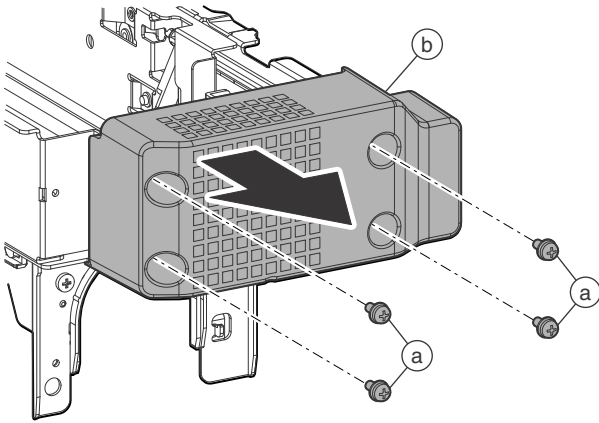
- 21) Remove the fixing fin (a), and remove the upper heat roller unit (b).  
 \* When installing, assemble the fixing fin (a) inside the bearing flange (c).



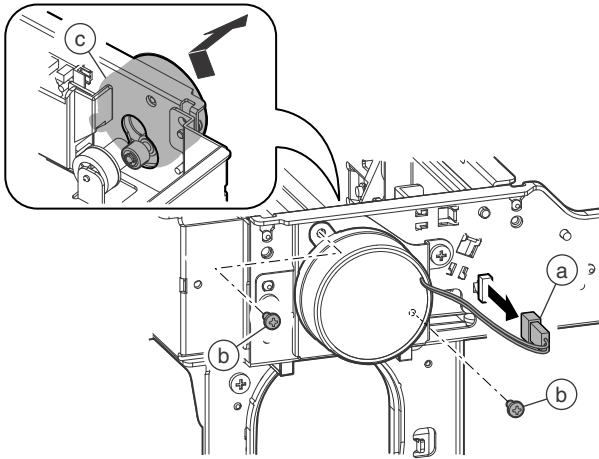
- 23) Check the non-contact thermistor (a) at every 500K.



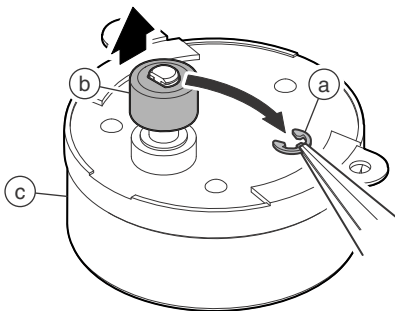
24) Remove the screw (a), and remove the cover (b).



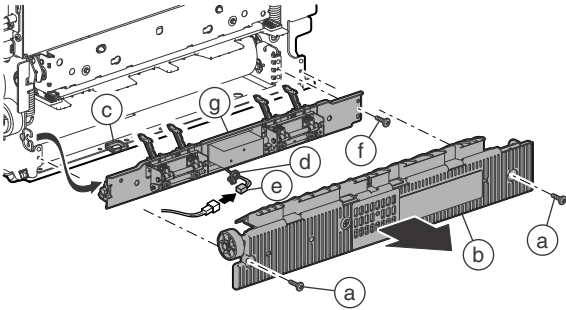
25) Disconnect the connector (a), and remove the screw (b). Remove the WEB motor unit (c).



26) Remove the E-ring (a) and the gear (b), and check the web motor (c) at every 500K or replace it at every 2000K.

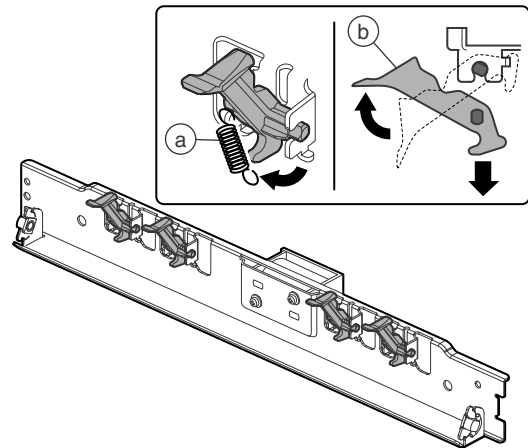


27) Remove the screw (a), and remove the cover (b). Remove the harness from the edge saddle (c). Remove the snap band (d) and disconnect the connector (e). Remove the screw (f), and remove the lower heat roller separation pawl unit (g).

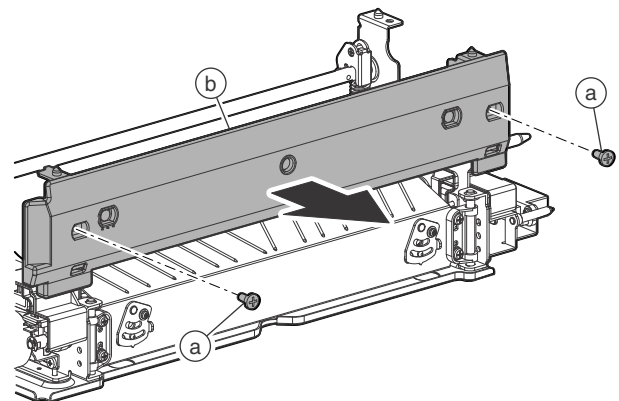


\* When disconnecting the connector (e), do not pull the harness but hold the connector section and pull it out.

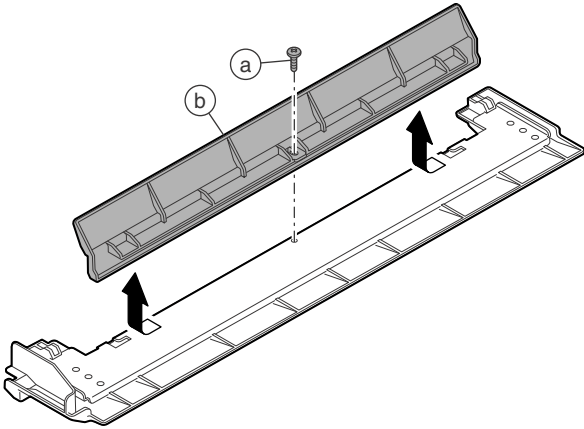
28) Remove the spring (a), and replace the lower heat roller separation pawl (b).



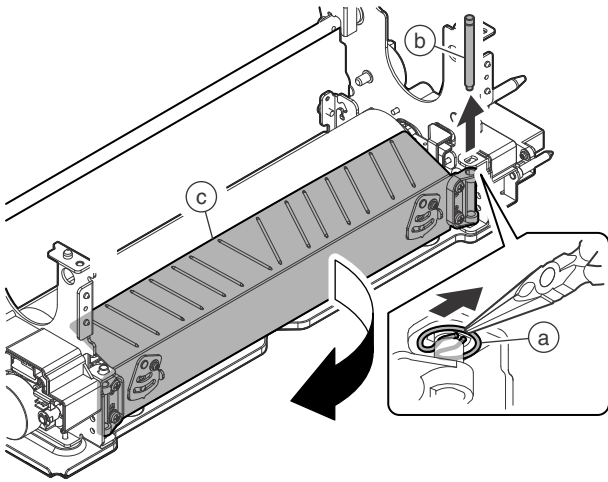
29) Remove the screw (a), and remove the cover (b).



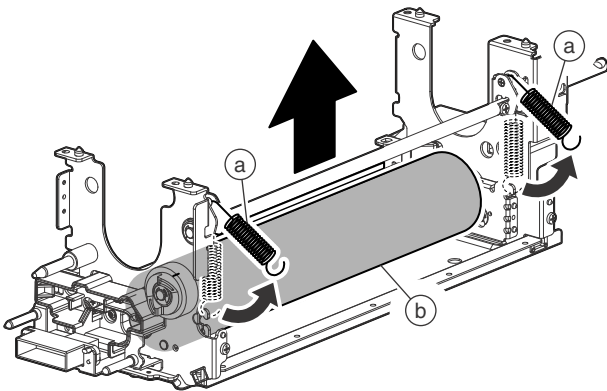
30) Remove the screw (a). Slide the front upper paper guide (b), and remove and replace it.



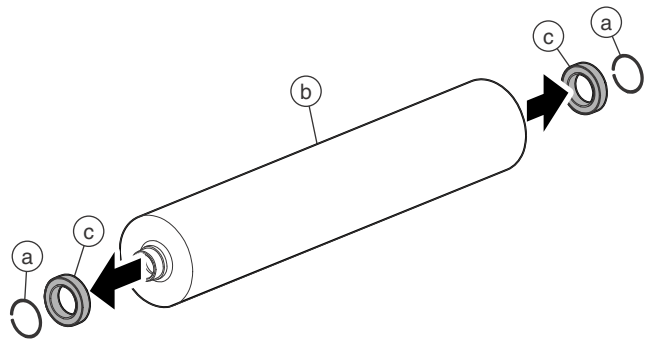
31) Remove the clip (a), and pull out the shaft (b). Open the paper guide (c), and clean it at every 500K.



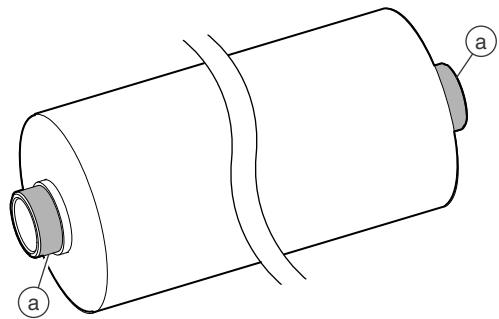
32) Remove the spring (a), and remove the lower heat roller unit (b).



33) Remove the C-ring (a). Check the lower heat roller (b) and the lower heat roller ball bearing (c) at every 500K or replace them at every 1000K.

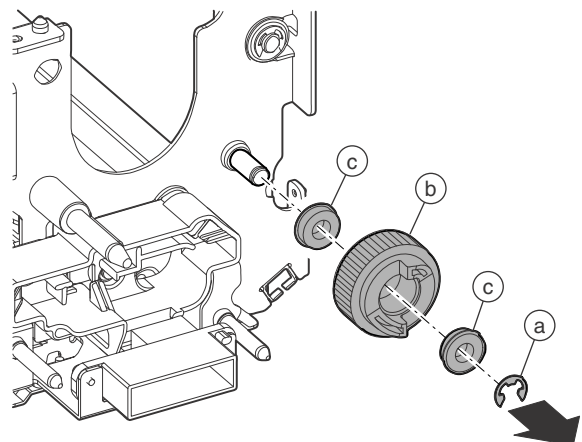


\* When replacing, apply grease (6LS06268000) to each section (a) of the lower heat roller.



34) Remove the E-ring (a), and remove the upper heat roller drive gear (b) and the ball bearing (c).

Check the upper heat roller drive gear (b) at every 500K, or replace it at every 3000K. Check the ball bearing (c) at every 3000K.

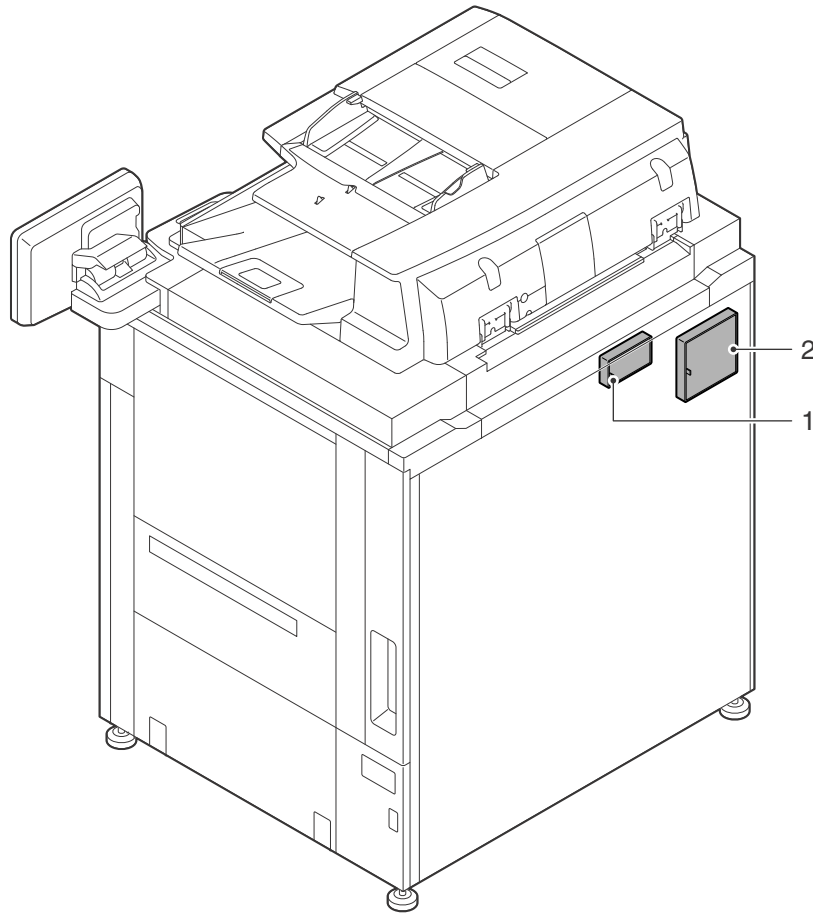


# 11. Filter section

## A. Maintenance table

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

| No. | Part name      | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark      |
|-----|----------------|--------------|-------|--------|--------|--------|--------|--------|-------------|
| 1   | Ozone filter   |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Or 6 months |
| 2   | Exhaust filter |              | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Or 6 months |

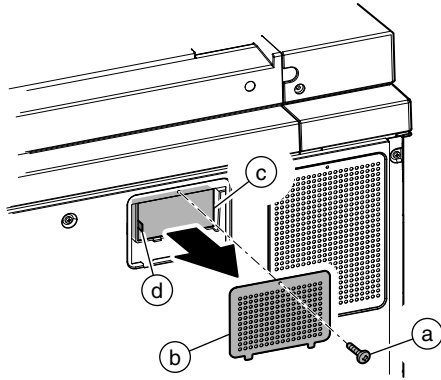




## B. Details

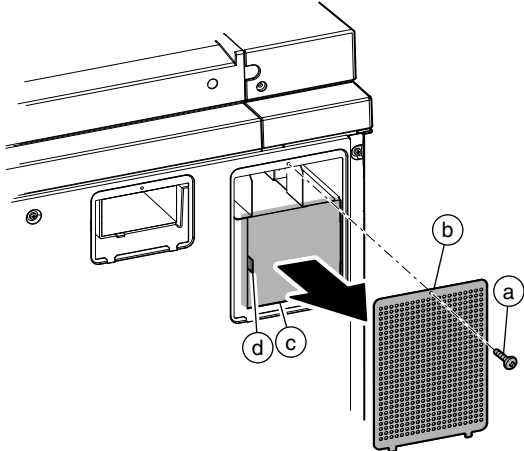
- 1) Remove the screw (a) on the back side of the machine, and remove the cover (b). Replace the ozone filter (c).

\* Attach so that the filter knob (d) comes on the left side as shown below.



- 2) Remove the screw (a), and remove the cover (b). Replace the exhaust filter (c).

\* Attach so that the filter knob (d) comes on the left side as shown below.



## 12. Tray paper feed section

### A. Maintenance table

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

| No. | Part name                      | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark   |
|-----|--------------------------------|--------------|-------|--------|--------|--------|--------|--------|----------|
| 1   | Paper pickup roller            | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1) |
| 2   | Paper feed roller              | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1) |
| 3   | Separation roller              | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1) |
| 4   | Torque limiter                 | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1) |
| 5   | Optical reflection type sensor | ○            | ○     | ○      | ○      | ○      | ○      | ○      |          |
| 6   | Transport rollers              | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |          |

(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

\* Paper pickup roller, paper feed roller, separation roller: 200K or 1 year

\* Torque limiter: 800K

#### \* Paper feed section roller life

Each roller life is 200K. When, therefore, a certain unit is used intensively, the life will be expired before the maintenance cycle.

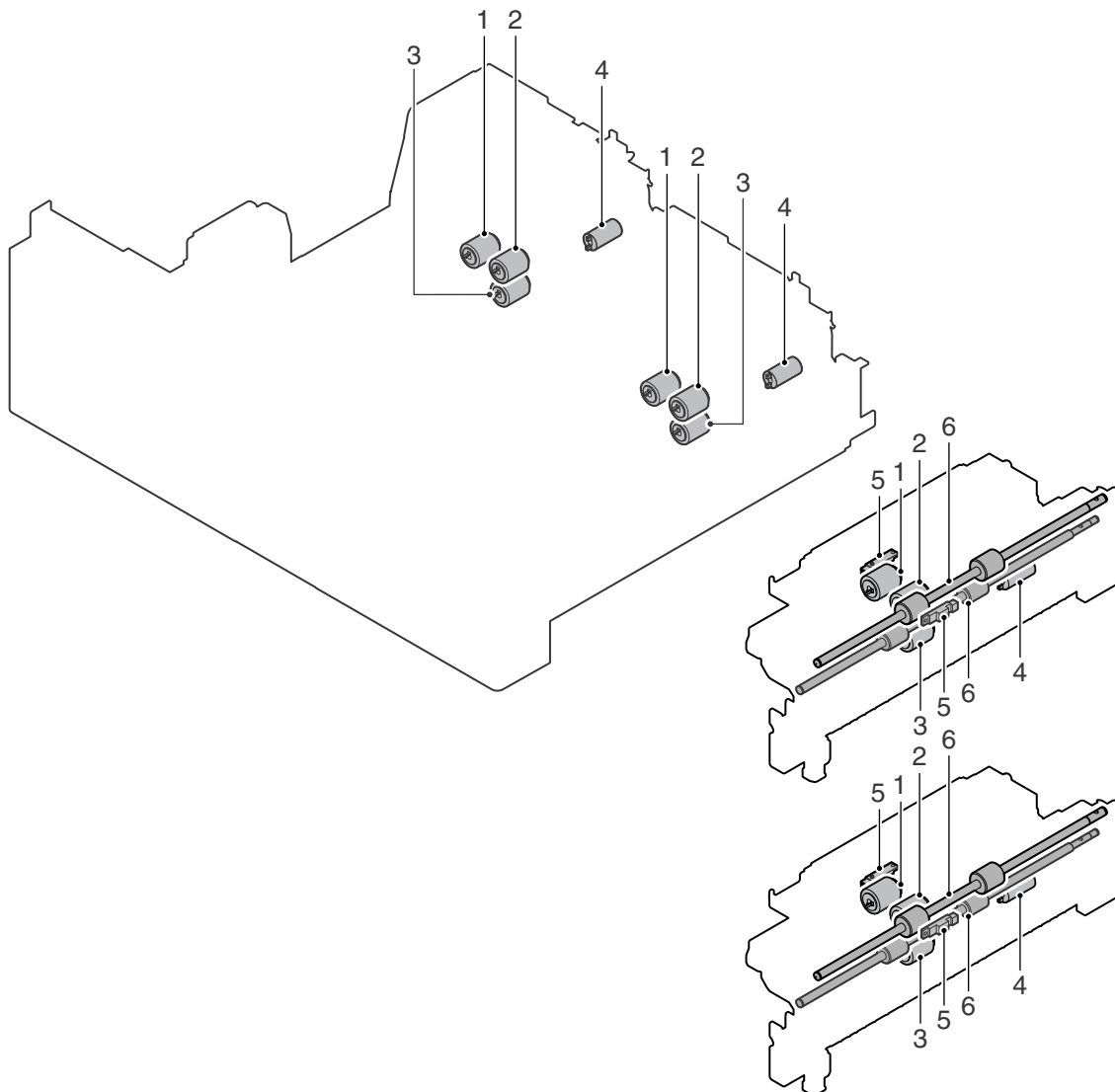
Since, however, sheets of different sizes are used with different paper feed trays actually, it is quite rare that the roller replacement is required before the maintenance cycle.

If a certain size of paper is intensively used, explain the user to use different paper feed trays for that size as far as possible.

When servicing, always check the use frequency of each paper feed tray, and replace the roller according to necessity.

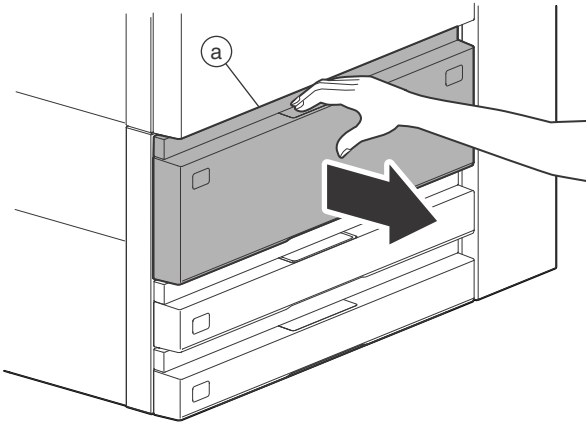
When cleaning the roller, it is recommendable to use wet cloth.

The wear level is greater in the sequence of the separation roller, the paper feed roller, and the paper pickup roller.

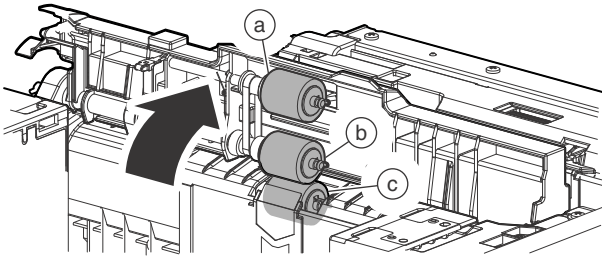


## B. Details

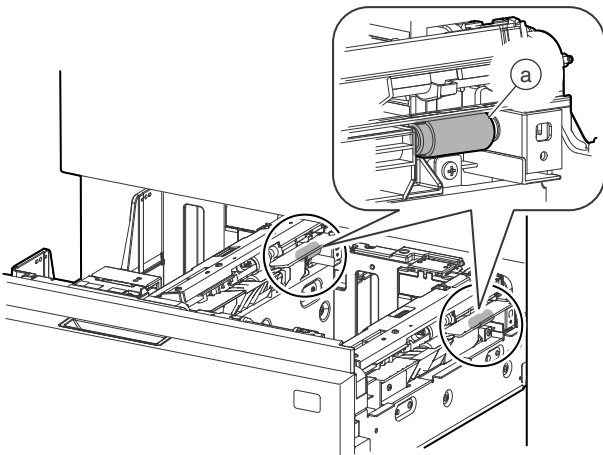
- 1) Pull out the tray 1/2 (a).



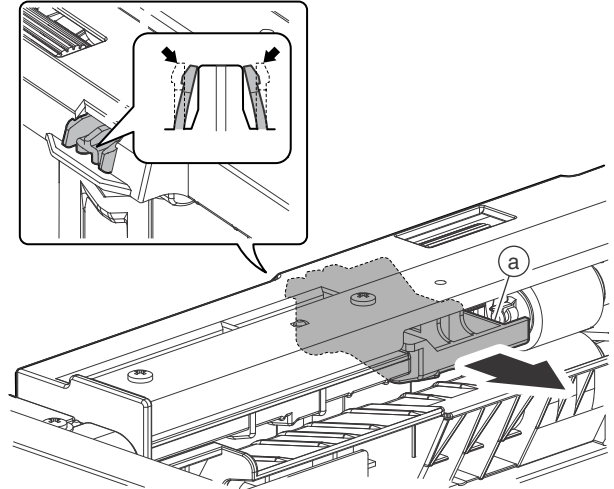
- 2) Check the paper pickup roller (a), the paper feed roller (b), and the separation roller (c) at every calling.



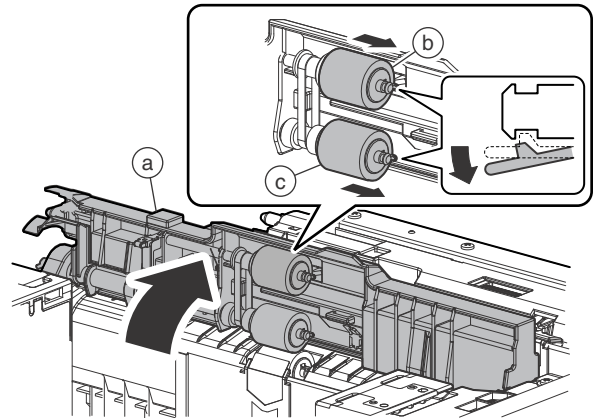
- 3) Check the torque limiter (a) at every 500K.



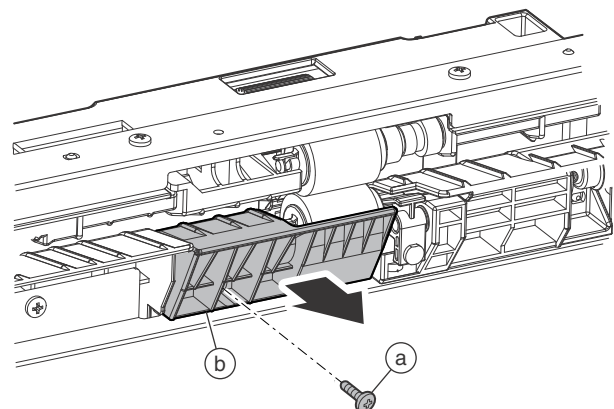
- 4) Remove the paper guide (a).



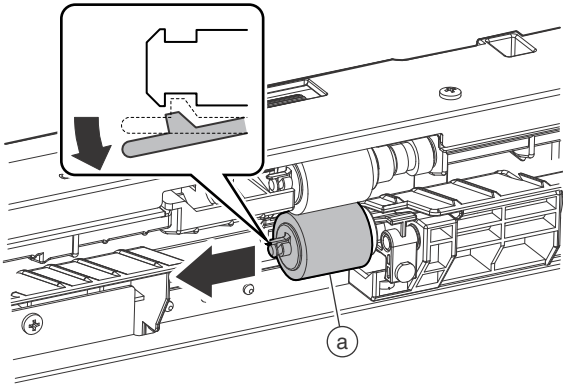
- 5) Open the paper feed unit (a), and replace the paper pickup roller (b) and the paper feed roller (c) (when each paper feed counter value reaches 200K or 1 year from the beginning of use).



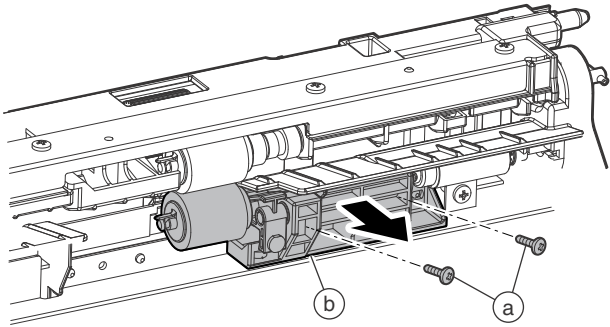
- 6) Remove the screw (a), and remove the paper guide (b).



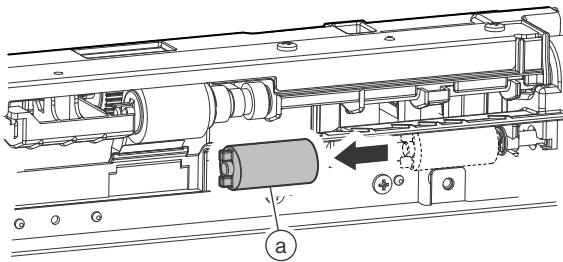
- 7) Replace the separation roller (a) (when each paper feed counter value reaches 200K or 1 year from the beginning of use).



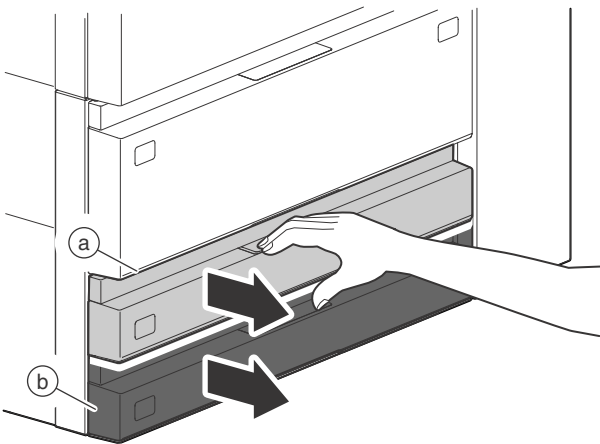
8) Remove the screw (a), and remove the separation roller unit (b).



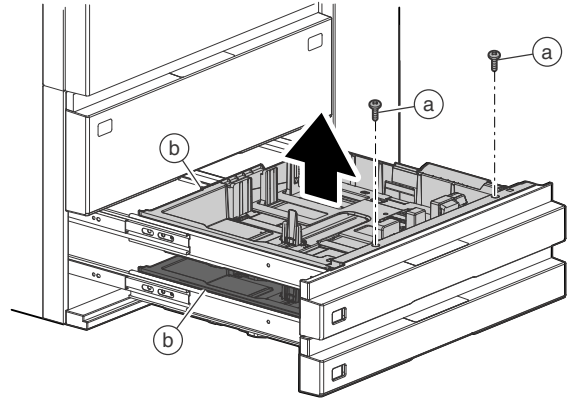
9) Replace the torque limiter (a) (when each paper feed counter value reaches 800K from the beginning of use).



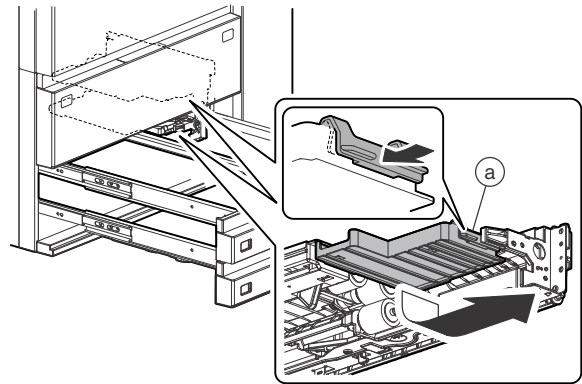
10) Pull out the tray 3 (a) and the tray 4 (b).



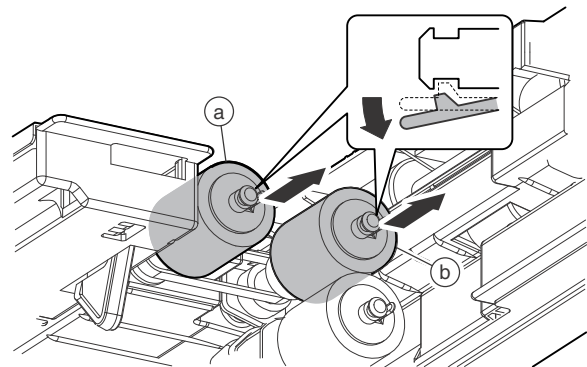
11) Remove the screw (a), and remove the trays 3 and 4 (b).



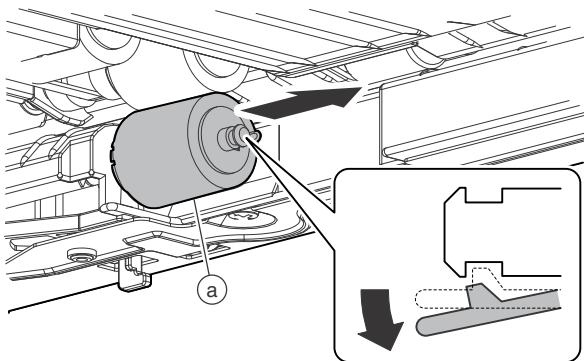
12) Remove the paper guide (a) of the tray 3 and 4 paper feed unit.



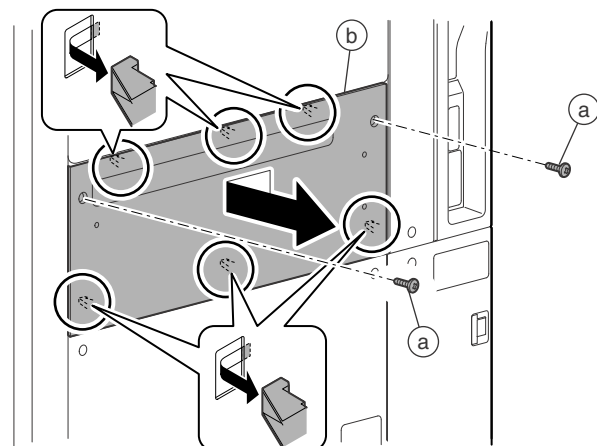
13) Check the paper pickup roller (a) and the paper feed roller (b) at every calling, or replace them (when each paper feed counter value reaches 200K from beginning of the use or 1 year).



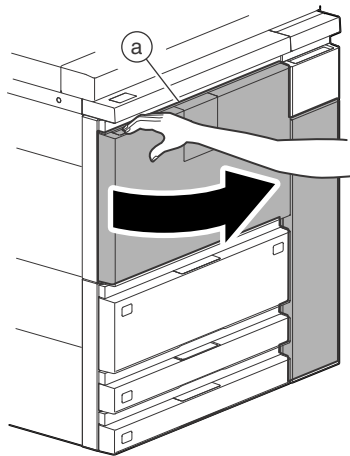
14) Remove the separation roller (a). Check at every calling, or replace (when each paper feed counter value reaches 200K from beginning of the use or 1 year.)



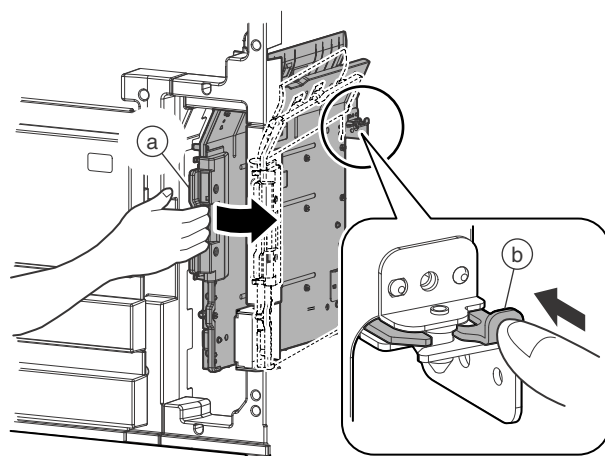
17) Remove the screw (a), and remove the cabinet (b).  
 \* The following procedures can be performed without removing the cabinet. However, it is advisable to remove the cabinet for easier work.



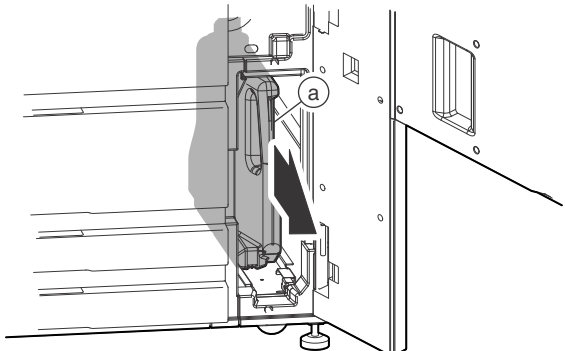
15) Open the front cover (a).



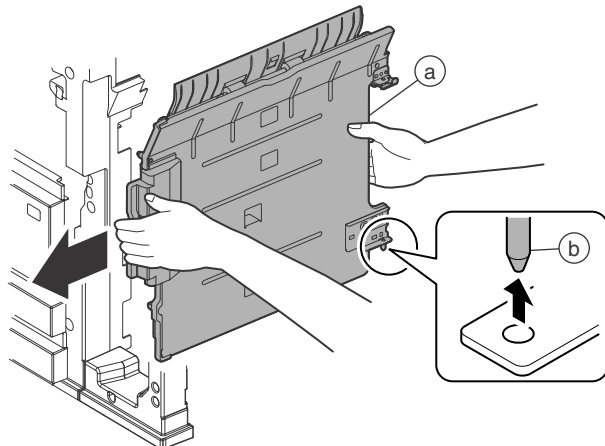
18) Open the vertical transport door unit (a). Push the lever (b), and release the lock of the vertical transport door unit (a).



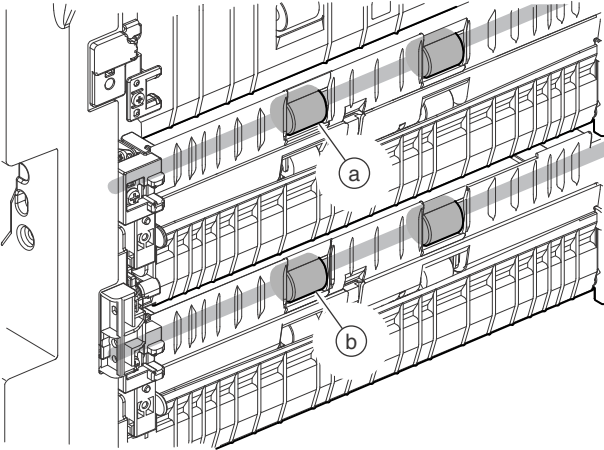
16) Remove the toner collection container (a).



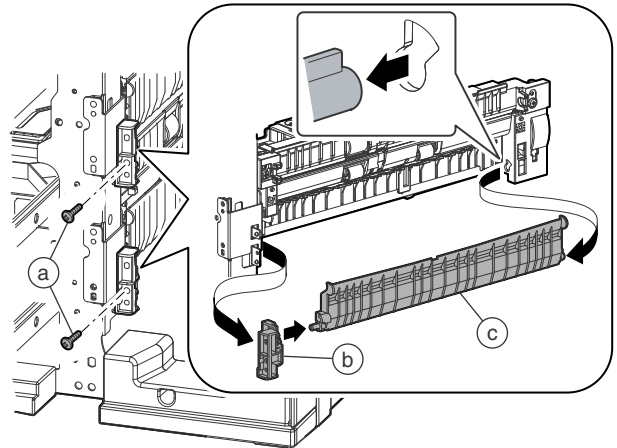
19) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



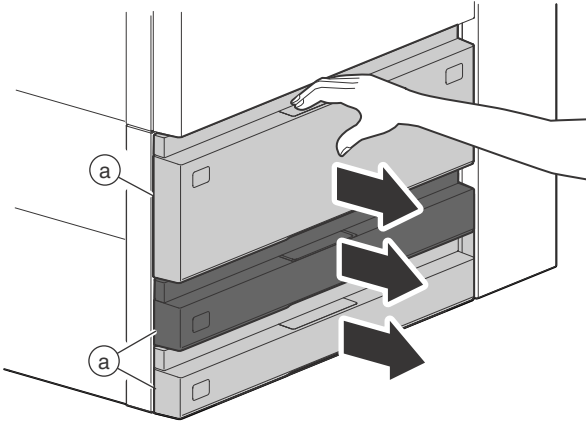
20) Clean the transport roller 4 (a) and the transport roller 2 (b) at every 500K.



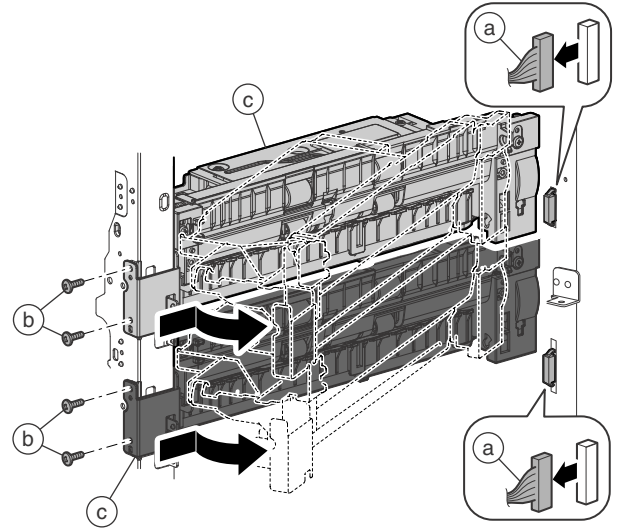
23) Remove the screw (a), and remove the fulcrum block (b) and the paper guide (c).



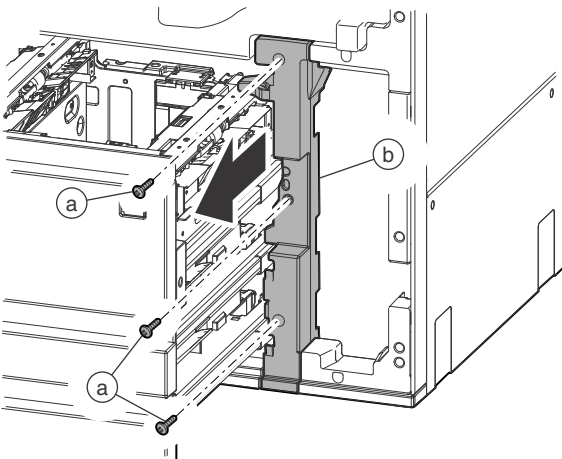
21) Pull out all tray (a).



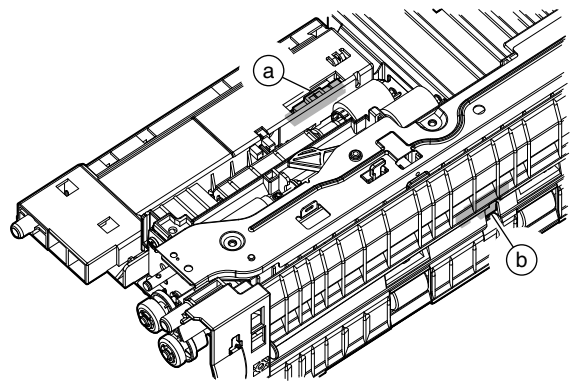
24) Disconnect the connector (a). Remove the screw (b), and remove the tray 3 and 4 paper feed unit (c).



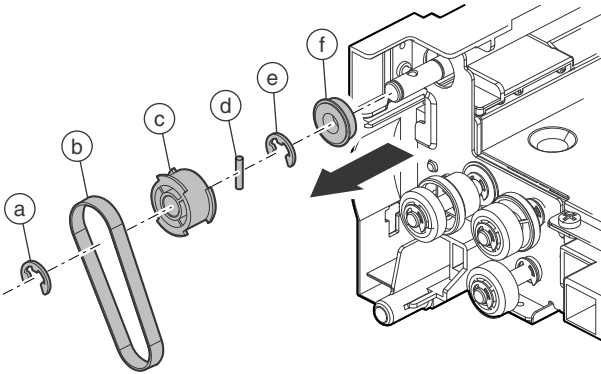
22) Remove the screw (a), and remove the cover (b).



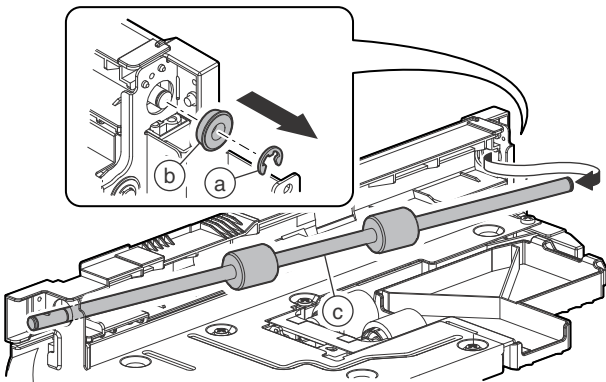
25) Clean the cassette 3 and 4 paper presence detection (a) and the cassette 3 and 4 paper entry detection (b) at every 500K.



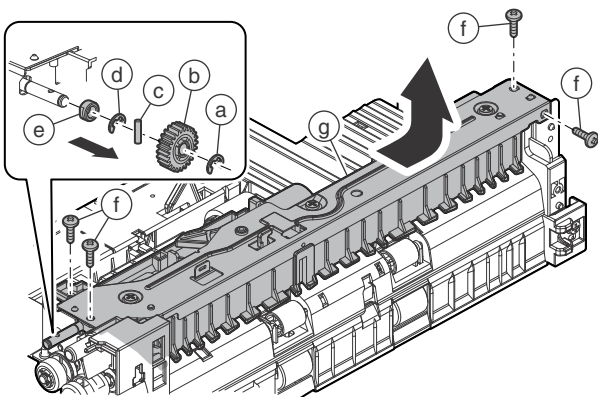
26) Remove the E-ring (a), and remove the belt (b), the pulley (c), and the parallel pin (d). Remove the E-ring (e) and the bearing (f).



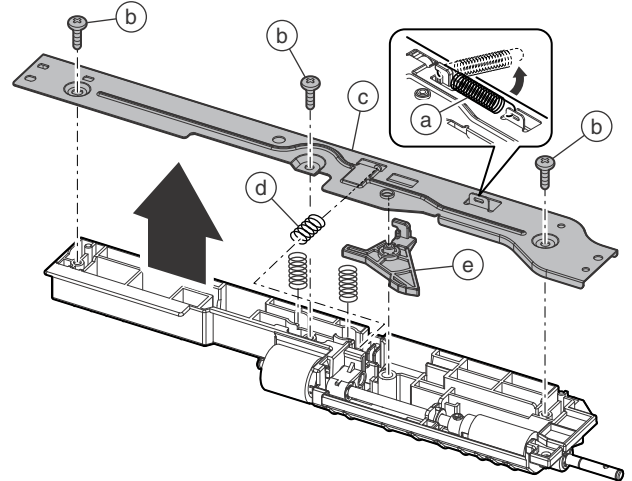
27) Remove the E-ring (a), the bearing (b), and replace the transport roller 2 and 4 (c).



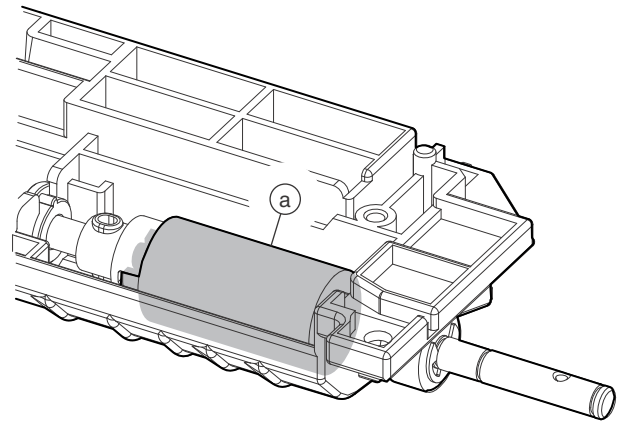
28) Remove the E-ring (a), the gear (b), the parallel pin (c), the E-ring (d), and the bearing (e). Remove the screw (f), and remove the paper guide unit (g).



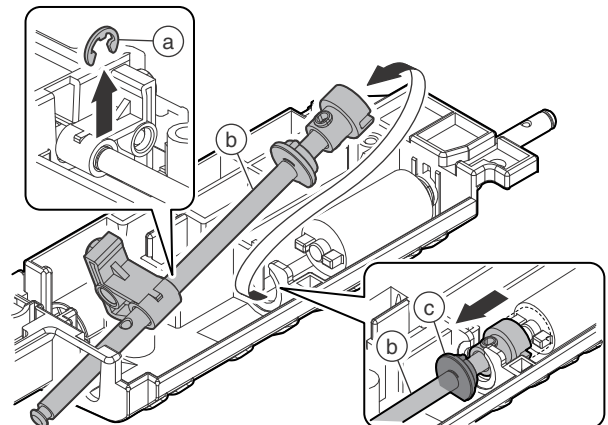
29) Remove the spring (a). Remove the screw (b) and the stay (c). Remove the spring (d) and the separation pressure release plate (e).



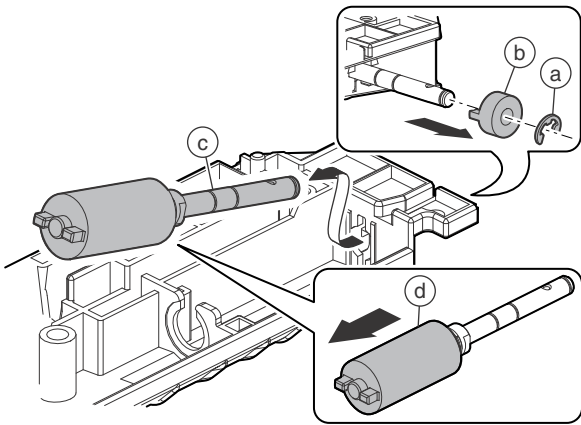
30) Check the torque limiter (a) at every 500K.



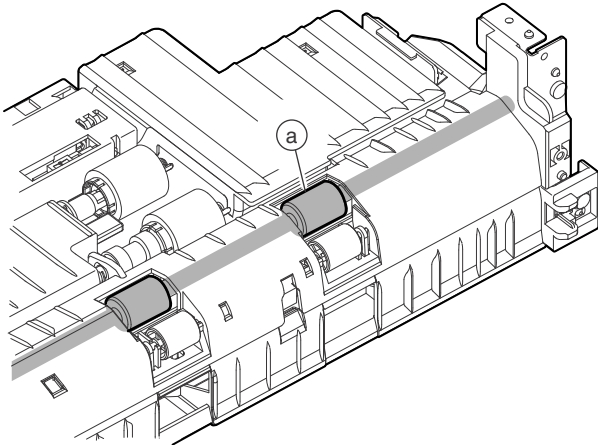
31) Remove the E-ring (a). Slide the shaft (b) and remove the bearing (c). Remove the shaft (b).



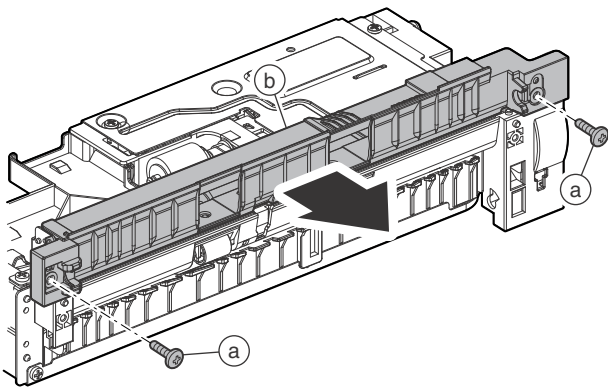
32) Remove the E-ring (a), and remove the coupling (b). Remove the shaft (c), and replace the torque limiter (d) (when each paper feed counter value reaches 800K from the beginning of use).



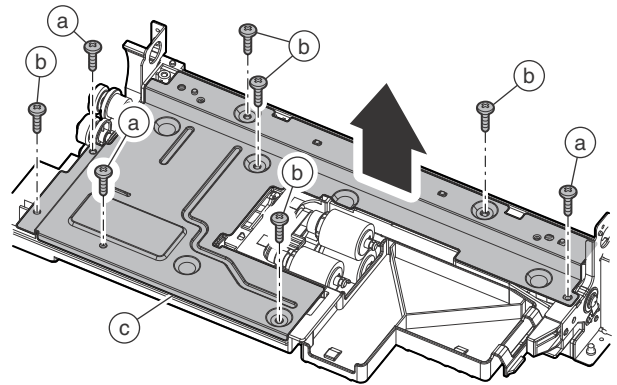
33) Clean the transport roller 1 and 3 (a) at every 500K.



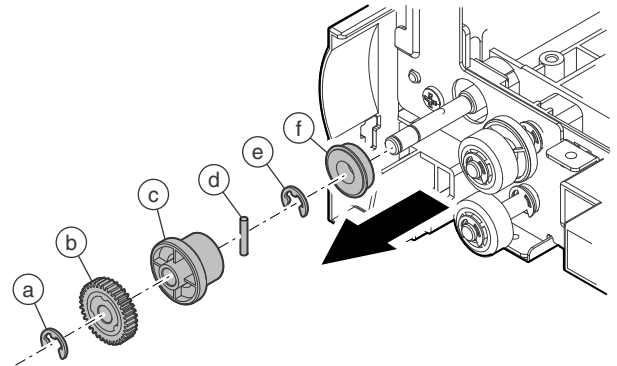
34) Remove the screw (a), and remove the paper guide (b).



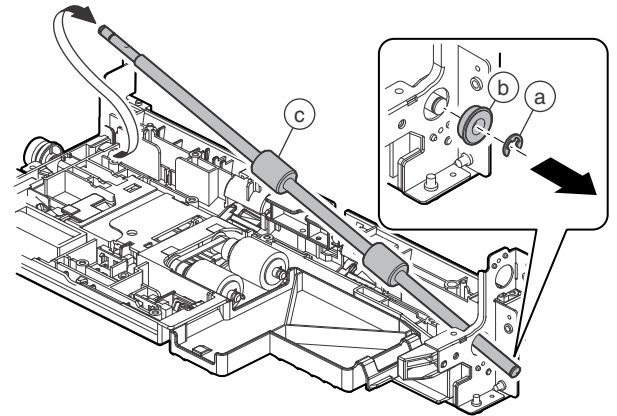
35) Remove the screw (a), the screw (b), and the cover (c).



36) Remove the E-ring (a), and remove the gear (b), the pulley (c), and the parallel pin (d). Remove the E-ring (e), and remove the bearing (f).



37) Remove the E-ring (a), the bearing (b), and replace the transport roller 1 and 3 (c).



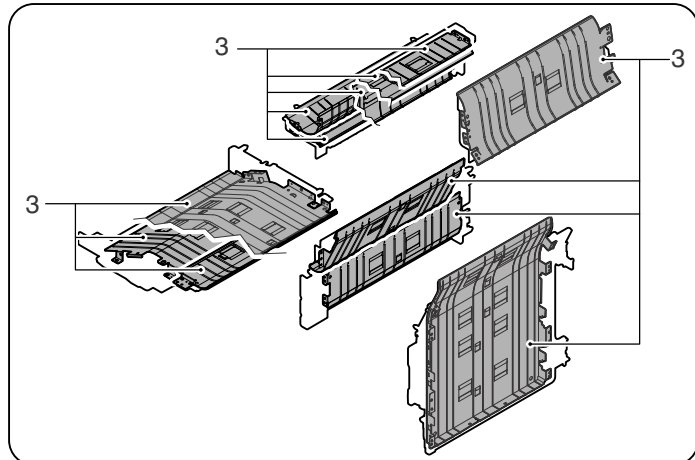
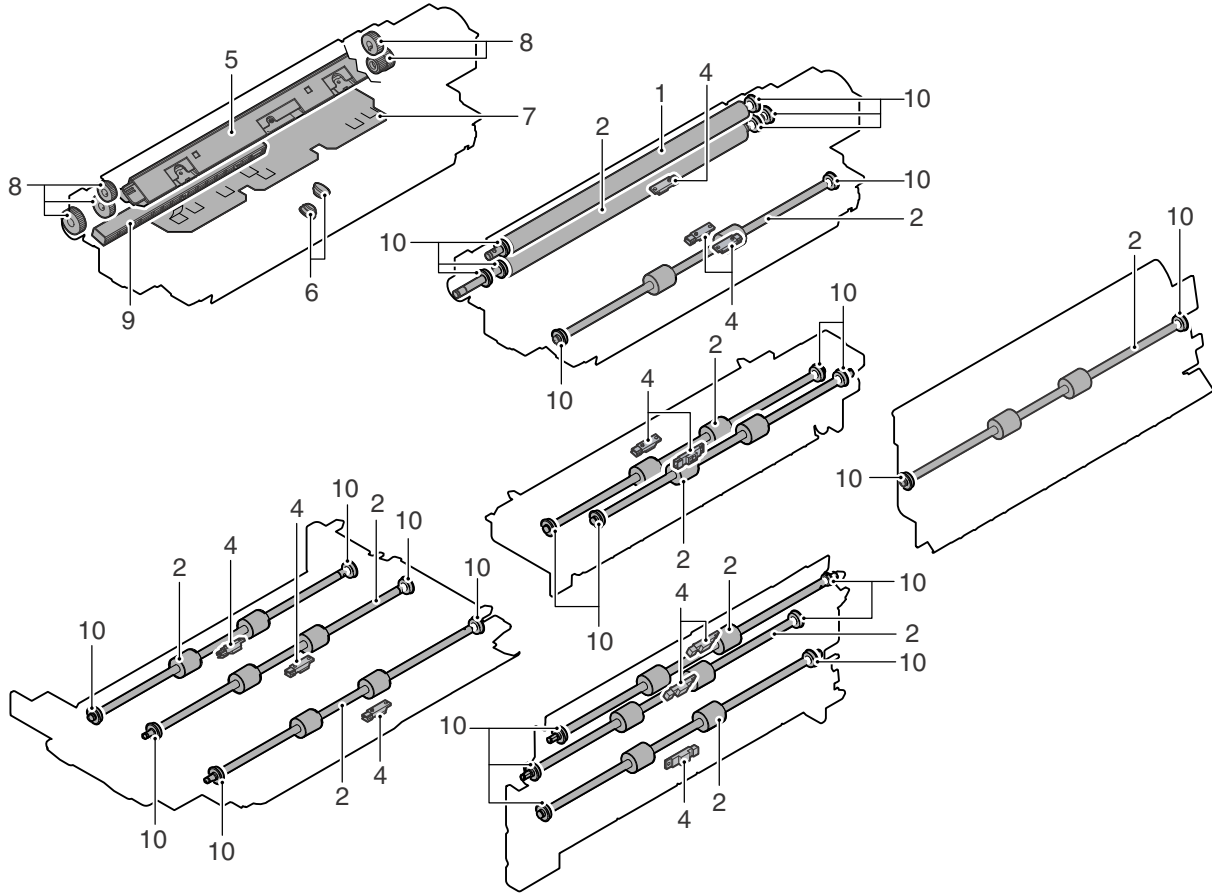


# 13. Paper transport section

## A. Maintenance table

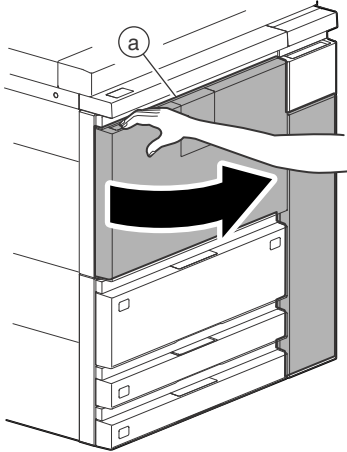
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name                       | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark                                       |
|-----|---------------------------------|--------------|-------|--------|--------|--------|--------|--------|--|
| 1   | Resist roller (Idle)            | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |  |
| 2   | Transport rollers               | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |  |
| 3   | Transport paper guides          | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
| 4   | Optical reflection type sensor  | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
| 5   | Paper dust cleaner              | ○            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      |  |
| 6   | Double feed detection unit      | ○            | ○     | ○      | ○      | ○      | ○      | ○      | Ultrasonic sensor top surface (Air cleaning) |
| 7   | PS section PWB protection sheet |              |       |        |        |        |        | ○      |  |
| 8   | PS gears                        | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |  |
| 9   | CIS                             | ○            | ○     | ○      | ○      | ○      | ○      | ○      |  |
| 10  | Bearings                        |              |       |        |        |        |        | ×      |  |

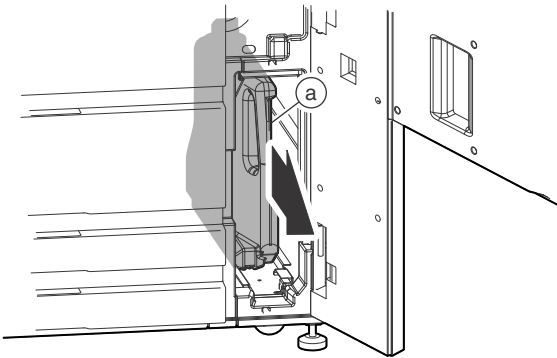


## B. Details

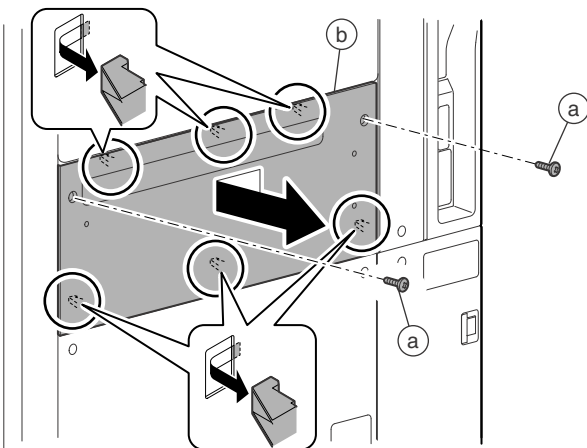
- 1) Open the front cover (a).



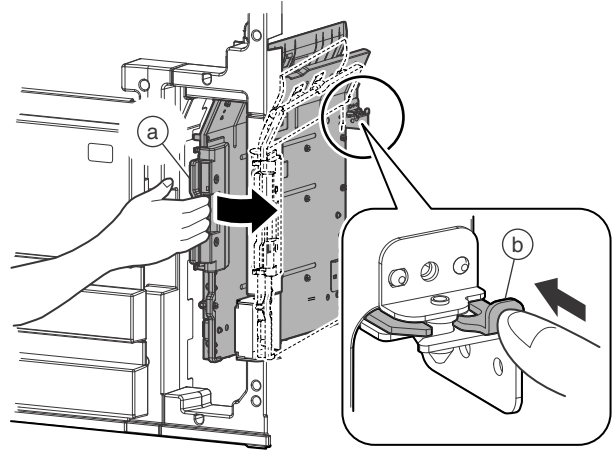
- 2) Remove the toner collection container (a).



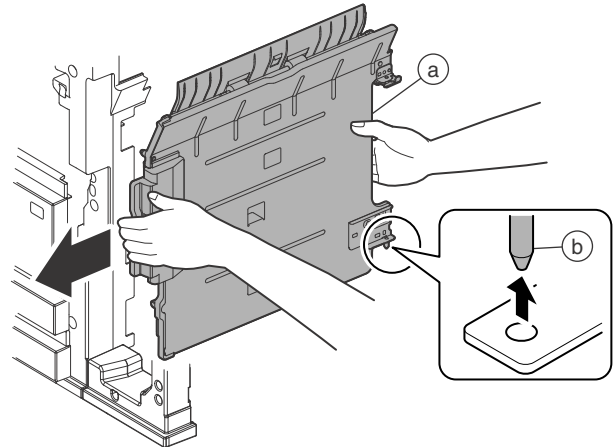
- 3) Remove the screw (a), and remove the cabinet (b).  
\* The following procedures can be performed without removing the cabinet. However, it is advisable to remove the cabinet for easier work.



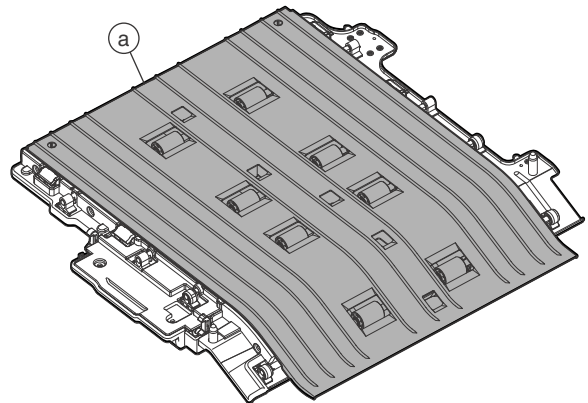
- 4) Open the vertical transport door unit (a). Push the lever (b), and release the lock of the vertical transport door unit (a).



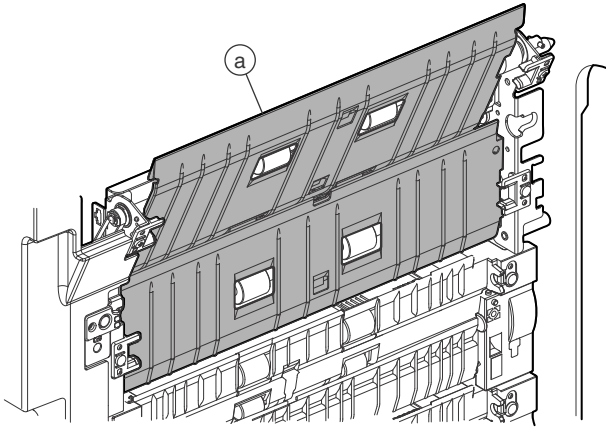
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



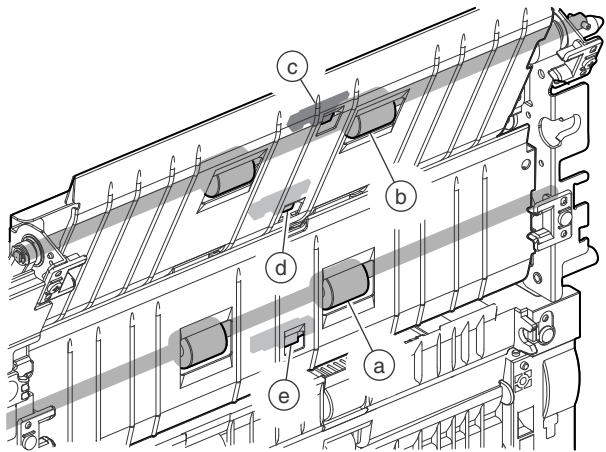
- 6) Clean the paper guide (a) of the vertical transport door unit at every 500K.



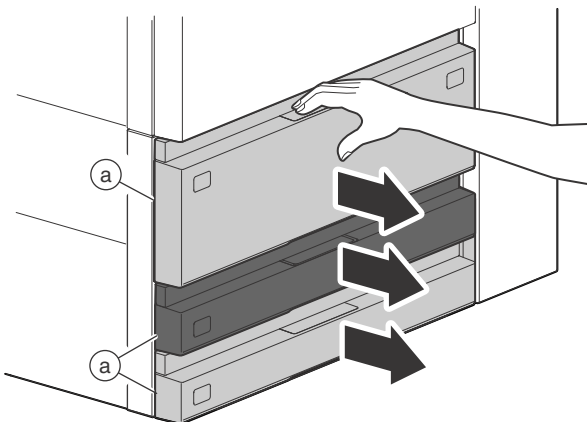
- 7) Clean the paper guide (a) of the vertical transport unit at every 500K.



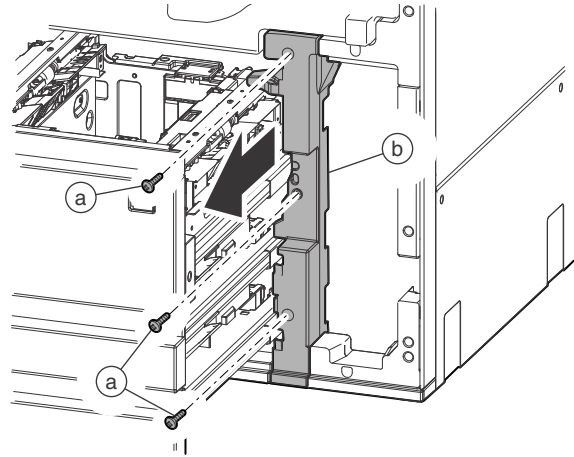
- 8) Clean the transport roller 5 (a), the transport roller 7 (b), the transport detection (c), the cassette 2 paper entry detection (d), and the vertical transport detection (e) at every 500K.



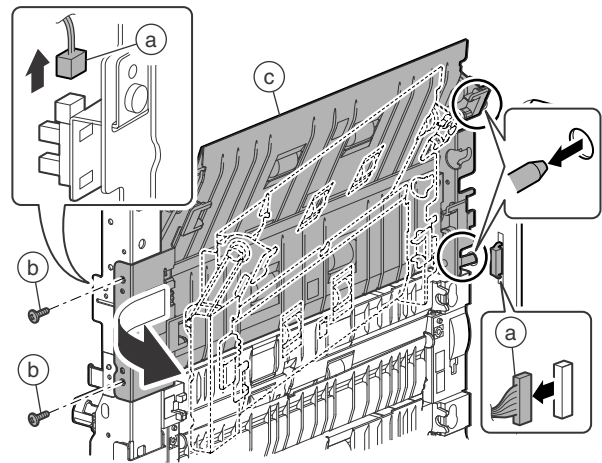
- 9) Pull out all tray (a).



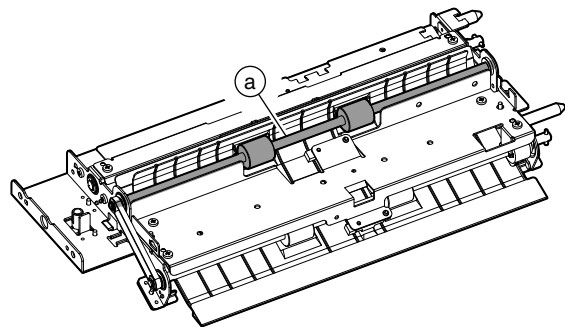
- 10) Remove the screw (a), and remove the cover (b).



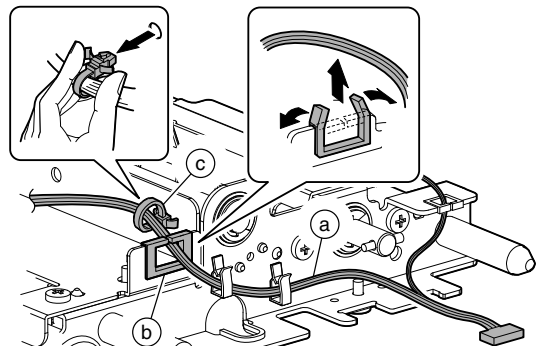
- 11) Disconnect the connector (a) and remove the screw (b). Remove the vertical transport unit (c).



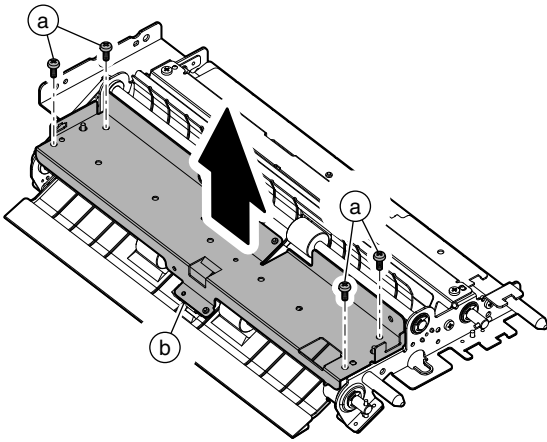
- 12) Clean the transport roller 6 (a) at every 500K.



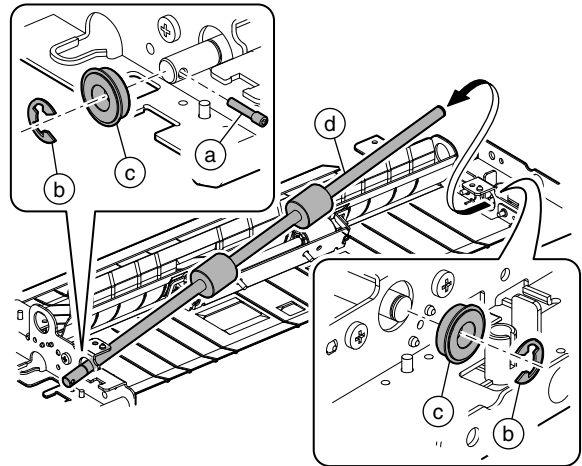
- 13) Remove the harness (a) from the harness holder (b). Remove the snap band (c).



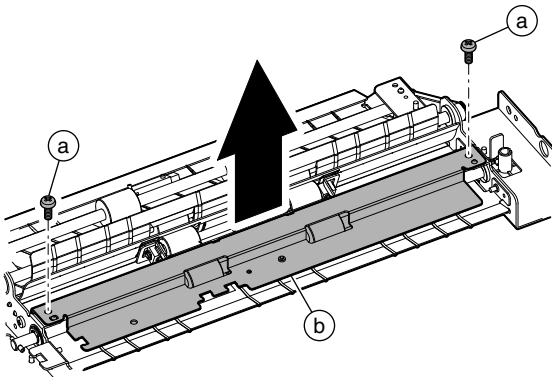
14) Remove the screw (a), and remove the frame (b).



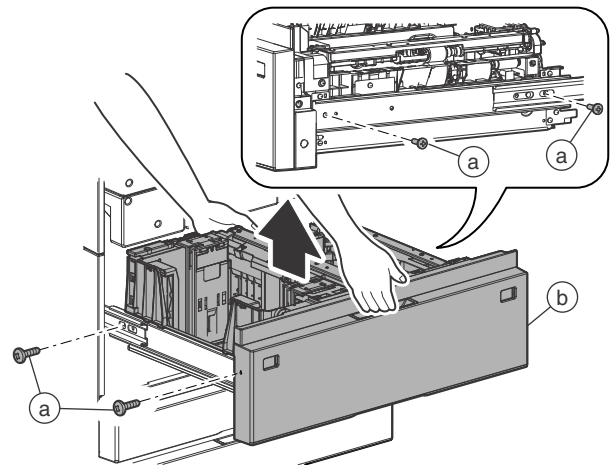
17) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 5 (d).



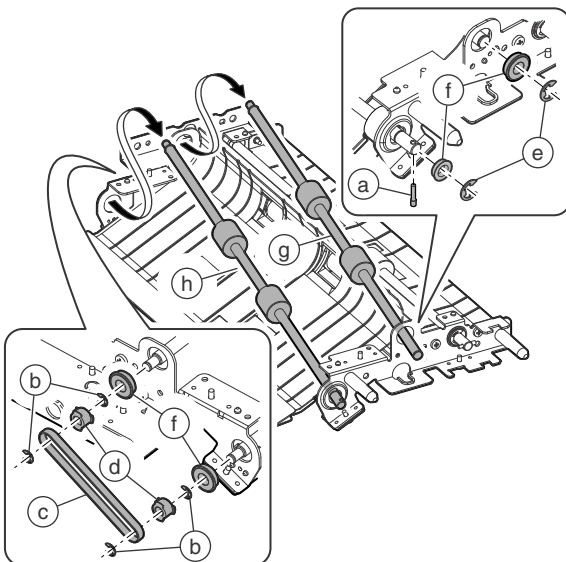
15) Remove the screw (a), and remove the frame (b).



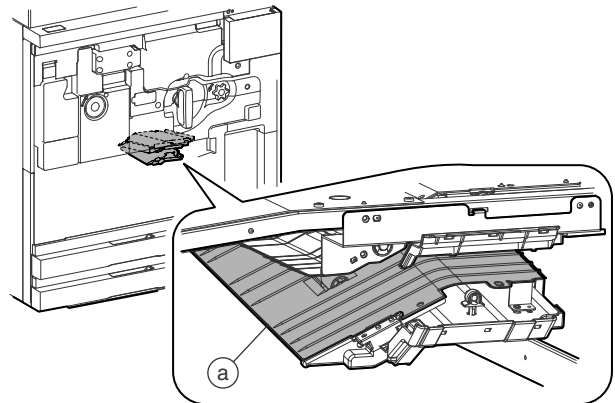
18) Remove the screw (a), and remove the tray 1/2 (b).



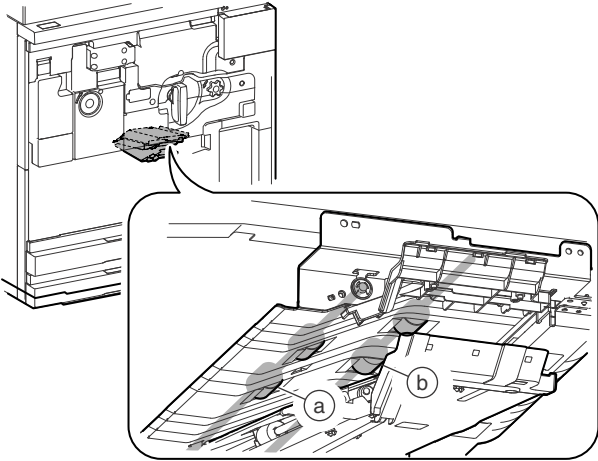
16) Remove the set screw (a), the E-ring (b), the belt (c), and the pulley (d). Remove the E-ring (e) and the bearing (f). Replace the transport roller 6 (g) and the transport roller 7 (h).



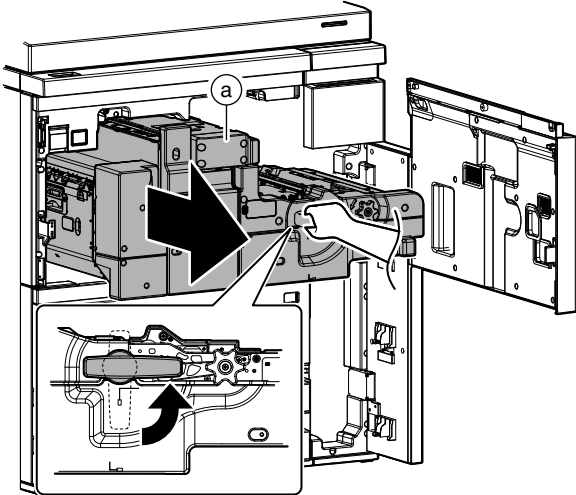
19) Clean the paper guide (a) of the interface pass unit at every 500K.



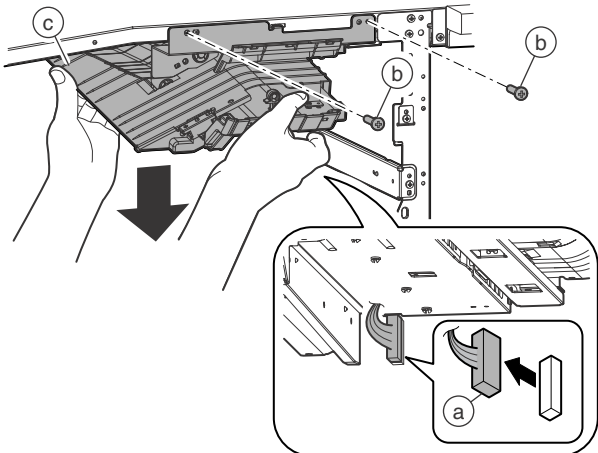
20) Clean the transport roller 8 (a) and the transport roller 9 (b) at every 500K.



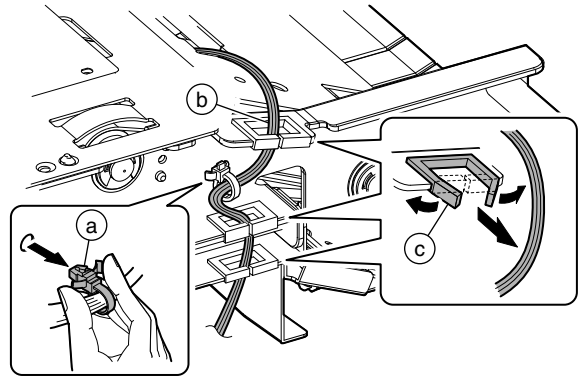
21) Pull out the intermediate frame (a).



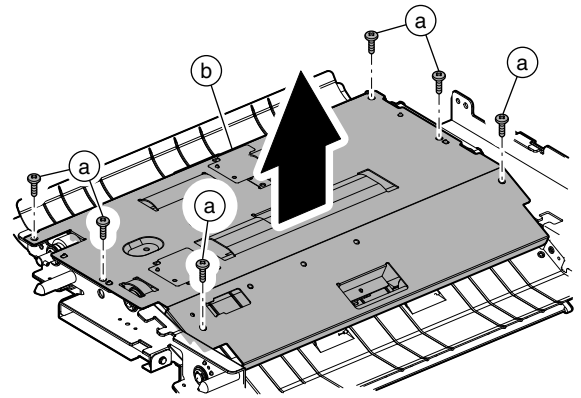
22) Disconnect the connector (a), and remove the screw (b). Remove the interface pass unit (c).



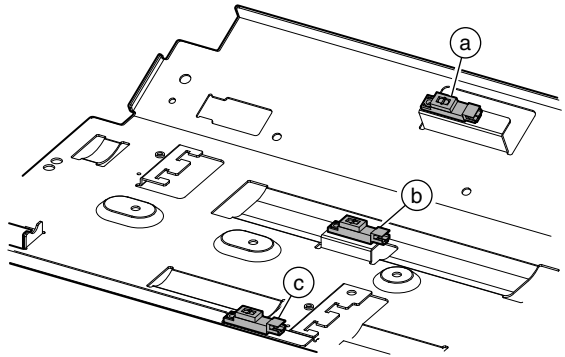
23) Remove the snap band (a), and remove the harness (b) from the harness holder (c).



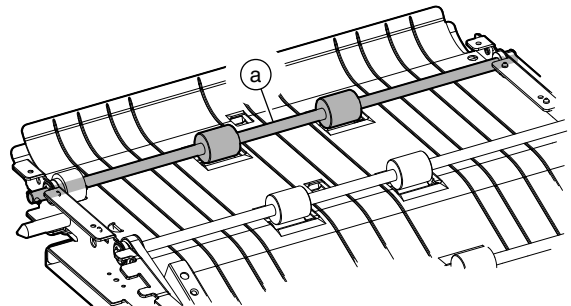
24) Remove the screw (a), and remove the frame (b).



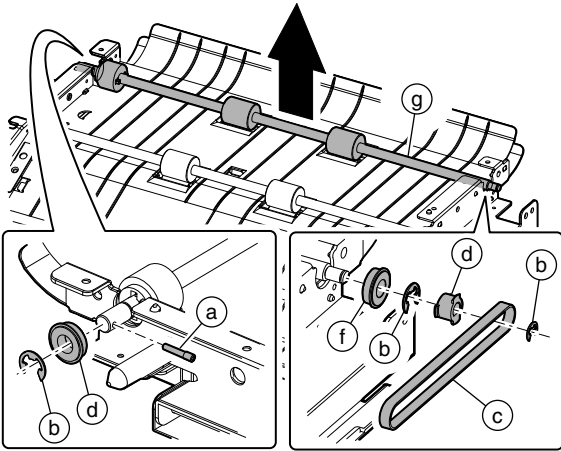
25) Clean the cassette 1 paper entry detection (a), the cassette 1 transport detection 1 (b), and the cassette 1 transport detection 2 (c) at every 500K.



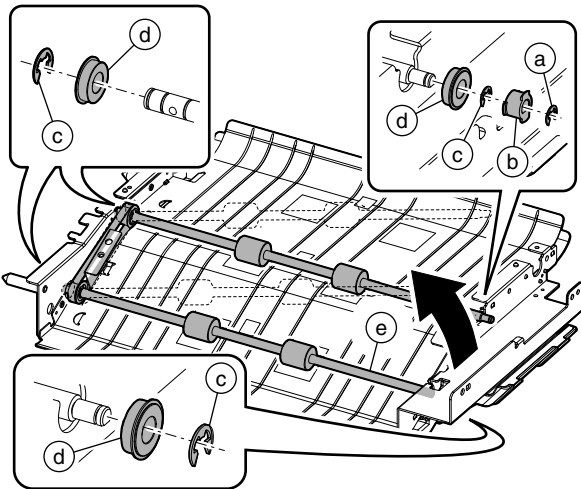
26) Clean the transport roller 10 (a) at every 500K.



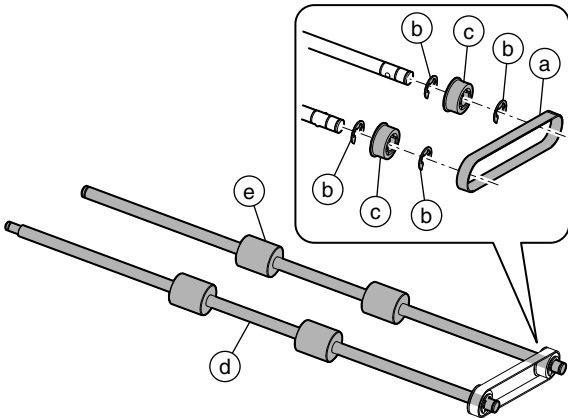
27) Remove the set screw (a), the E-ring (b), the belt (c), and the pulley (d). Remove the E-ring (e) and the bearing (f). Replace the transport roller 10 (g).



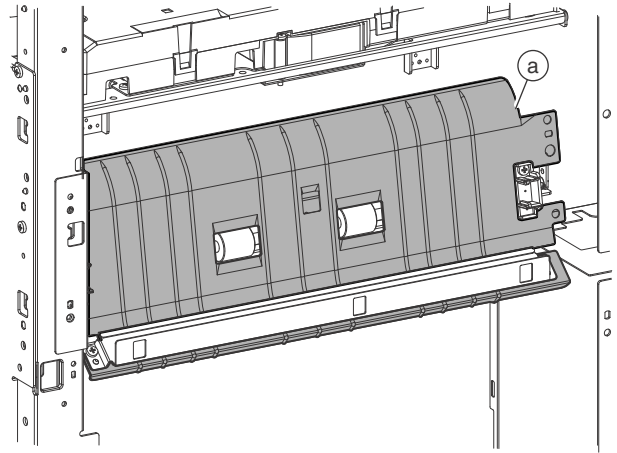
28) Remove the E-ring (a) and the pulley (b). Remove the E-ring (c) and the bearing (d). Remove the transport roller 8 and 9 unit (e).



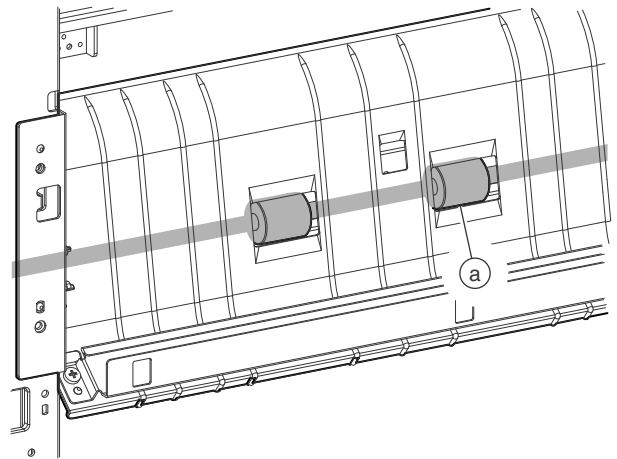
29) Remove the belt (a), the E-ring (b), and the pulley (c). Replace the transport roller 8 (d) and the transport roller 9 (e).



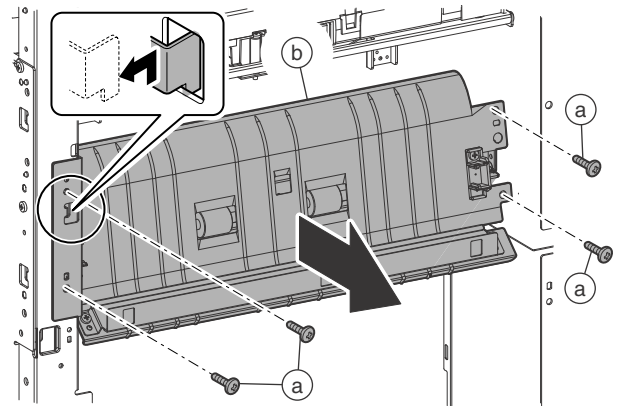
30) Clean the paper guide (a) of the LCC interface transport unit at every 500K.



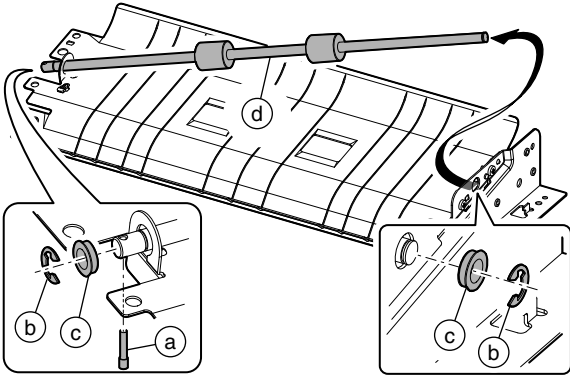
31) Clean the transport roller 12 (a) at every 500K.



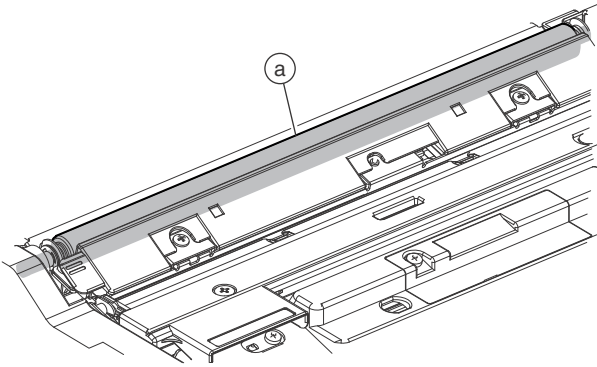
32) Remove the screw (a), and remove the LCC interface transport unit (b).



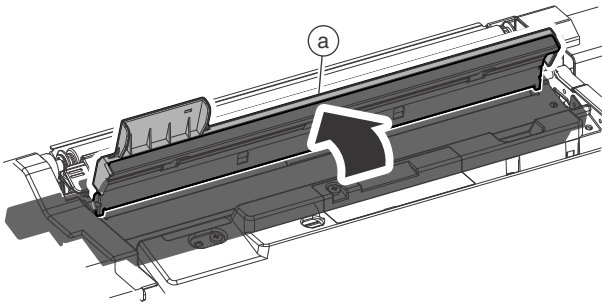
- 33) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 12 (d).



- 34) Clean the resist roller (idle) (a) at every 500K.

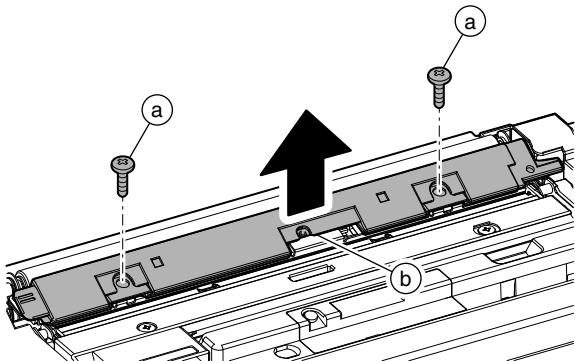


- 35) Open the paper guide (a) of the resist roller unit, and clean it at every 500K.

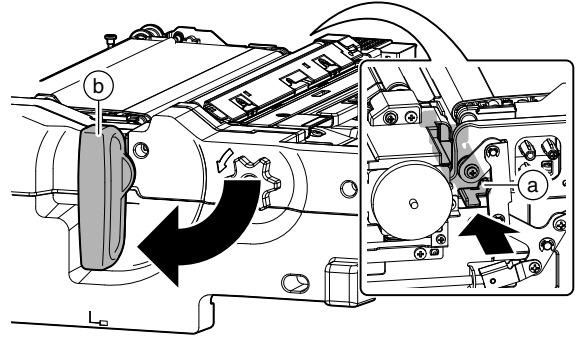


- 36) Clean the blue screw (a), and replace the paper dust cleaner (b).

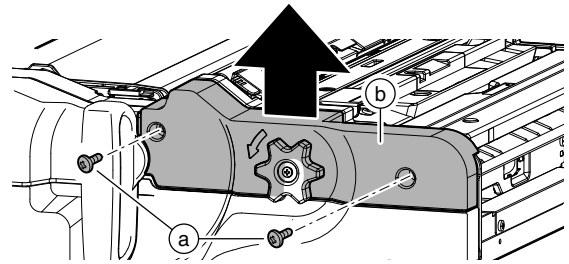
\* When the paper dust cleaner is removed for another purpose than replacement, it must be cleaned.



- 37) Push the lever (a) on the intermediate frame rear side to release the lock, and rotate the handle (b) to put it straight.

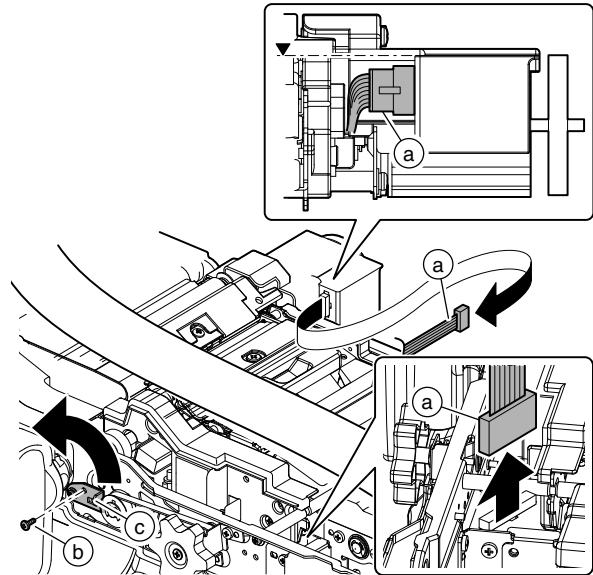


- 38) Remove the screw (a), and remove the cover (b).

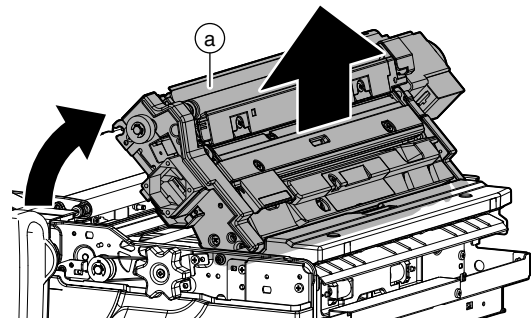


- 39) Disconnect the connector (a). Remove the screw (b), and rotate the plate (c) to put it straight.

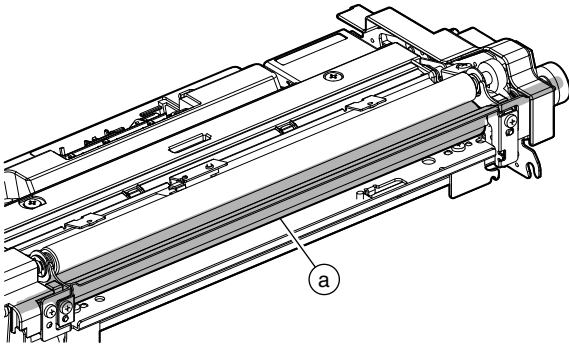
\* When connecting, arrange so that the connector (a) does not extend over the PS roller unit.



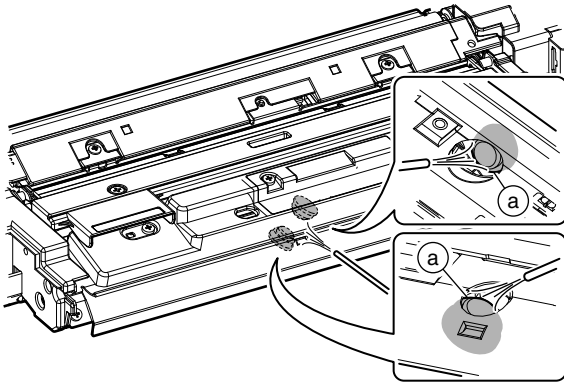
- 40) Remove the resist roller unit (a).



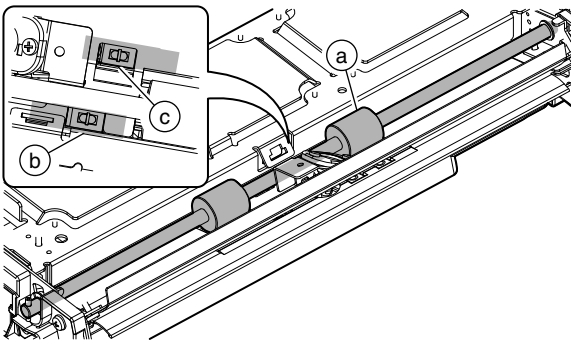
41) Clean the resist roller (drive) (a) at every 500K.



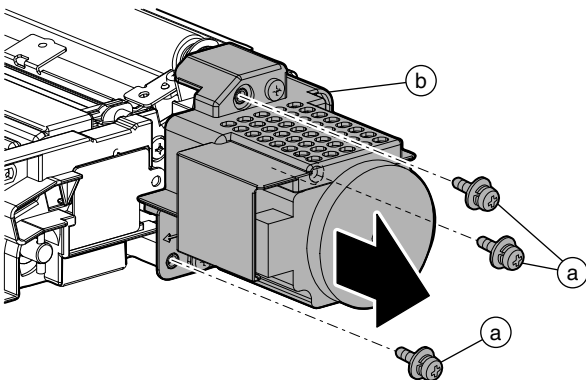
42) Blow air to the top of the double feed detection sensor (a) to clean at every 3000K.



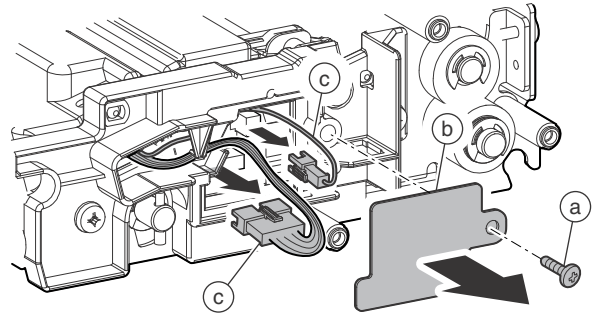
43) Clean the transport roller 14 (a), the transport detection 2 (b), and the transport detection 3 (c) at every 500K.



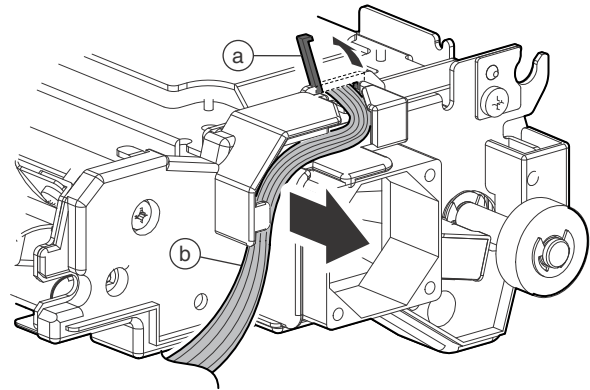
44) Remove the screw (a), and remove the PS motor unit (b).



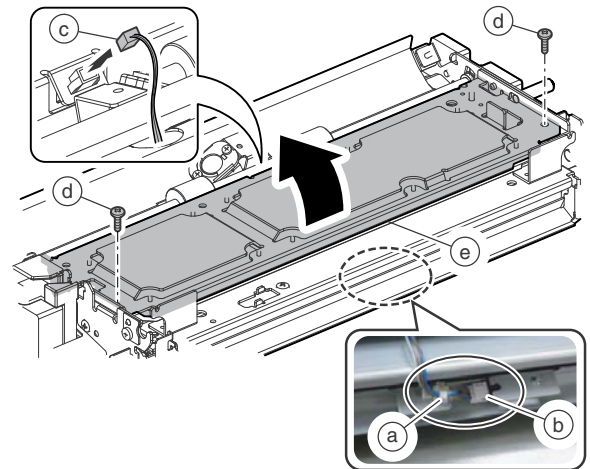
45) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



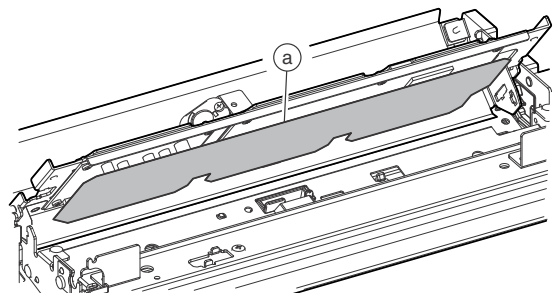
46) Open the harness holder (a), and remove the harness (b)



47) Remove the reuse band (a), and disconnect the connector (b). Disconnect the connector (c), and remove the screw (d). Open the frame (e).

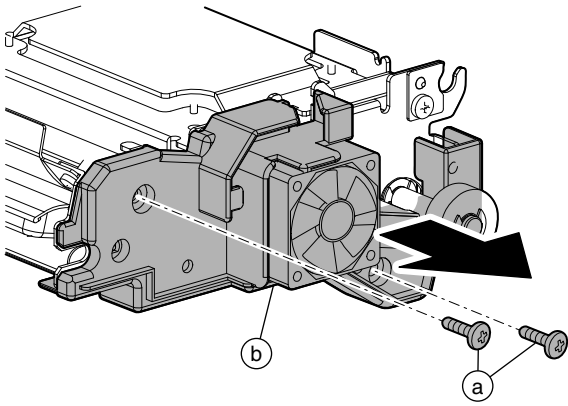


48) Clean the PS section PWB protection sheet (a) at every 3000K.

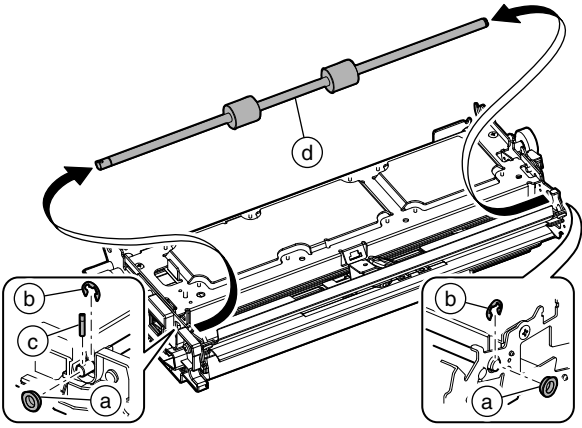




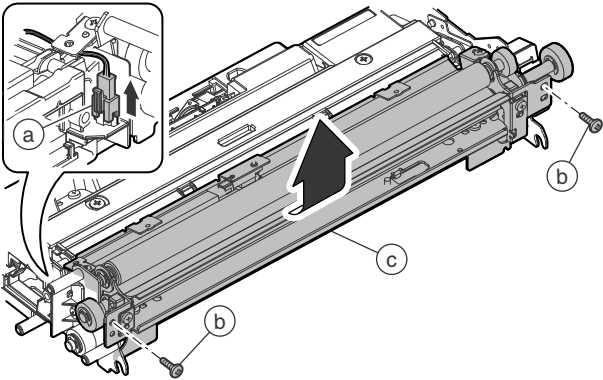
49) Remove the screw (a), and remove the cover (b).



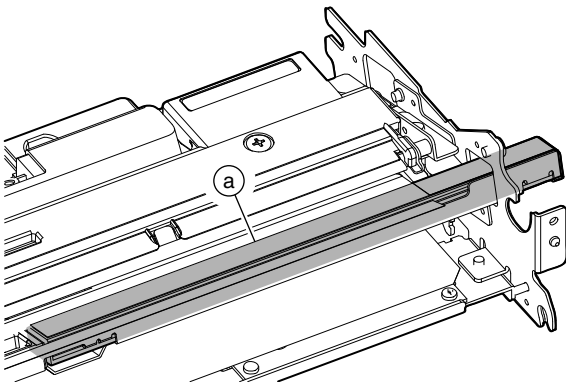
50) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 14 (d).



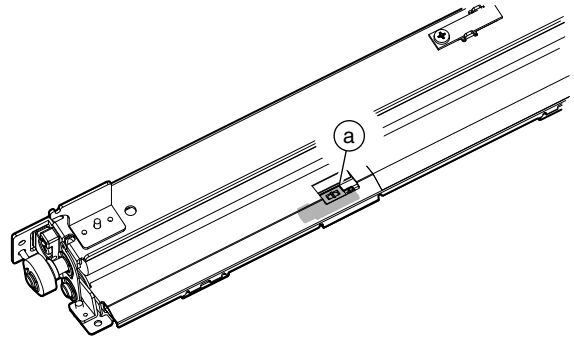
51) Disconnect the connector (a), and remove the screw (b). Remove the roller unit (c).



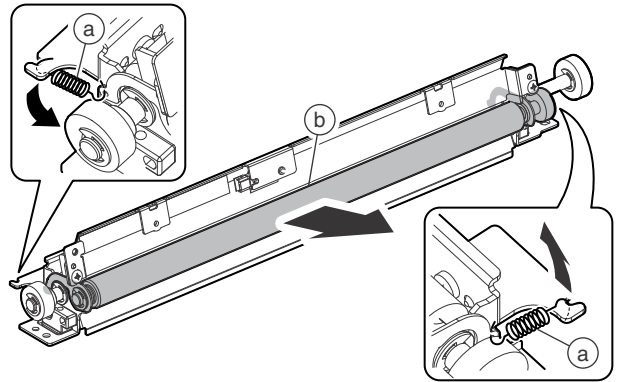
52) Clean the CIS (a) at every 3000K.



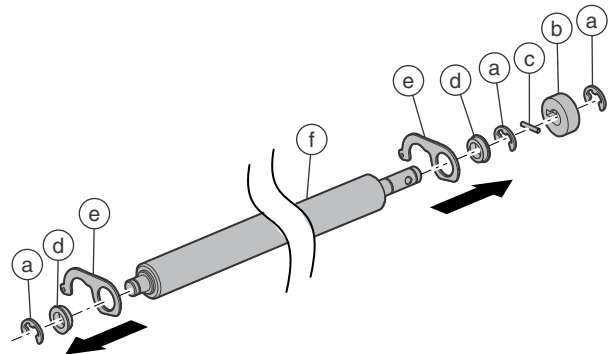
53) Clean the transport detection 4 (a) at every 500K.



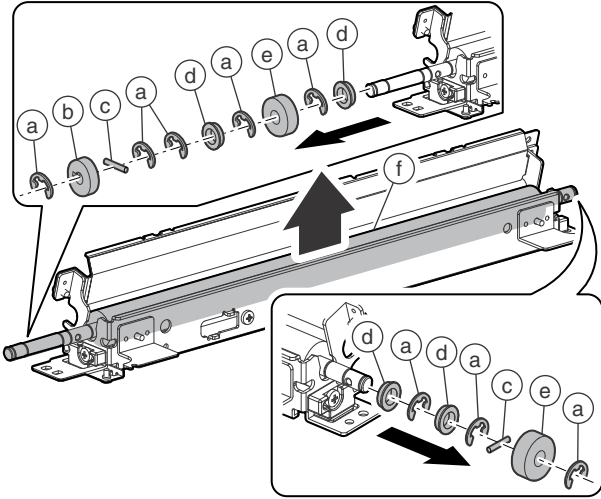
54) Remove the spring (a), and remove the resist roller (idle) unit (b).



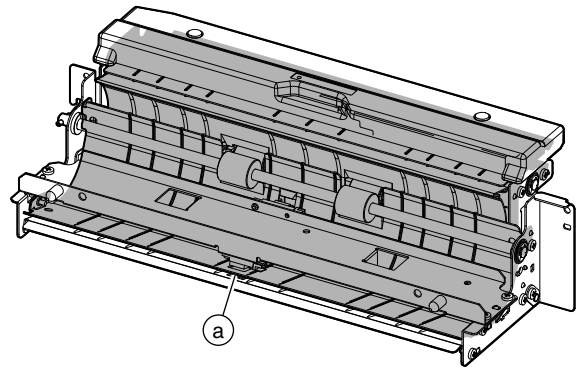
55) Remove the E-ring (a), the PS gear (b), the parallel pin (c), the bearing (d), and the plate (e). Replace the PS gear (b), and the resist roller (idle) (f).



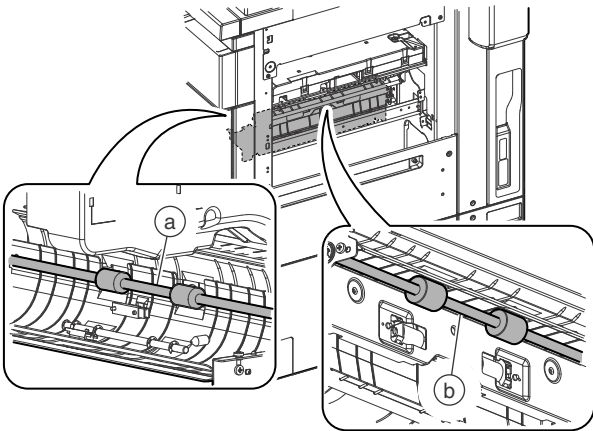
56) Remove the E-ring (a), the gear (b), the parallel pin (c), the bearing (d), and the PS gear (e). Replace the PS gear (e), and the resist roller (drive) (f).



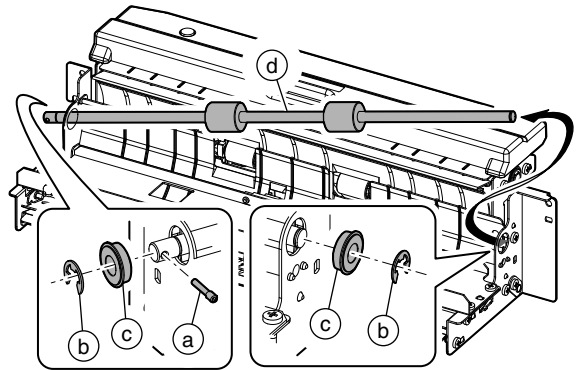
59) Clean the paper guide (a) of the upper transport unit at every 500K.



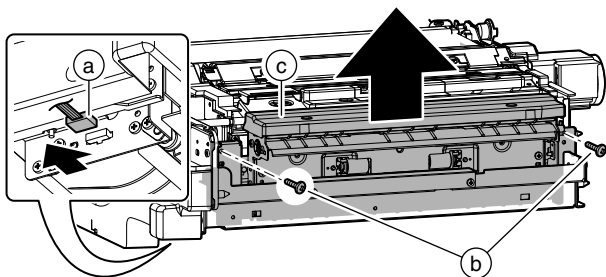
57) Clean the transport roller 11 (a) and the transport roller 13 (b) at every 500K.



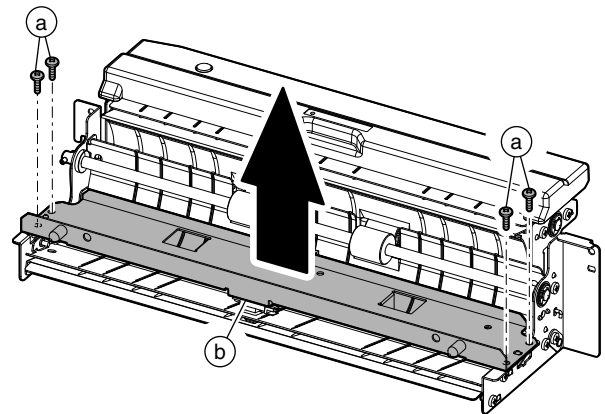
60) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 11 (d).



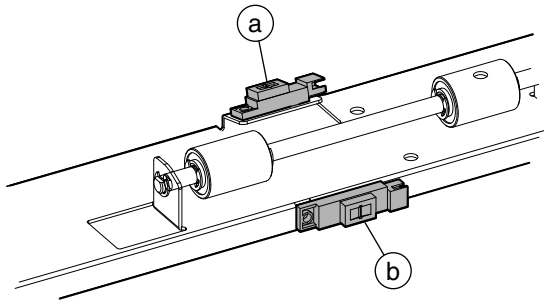
58) Disconnect the connector (a), and remove the screw (b). Remove the upper transport unit (c).



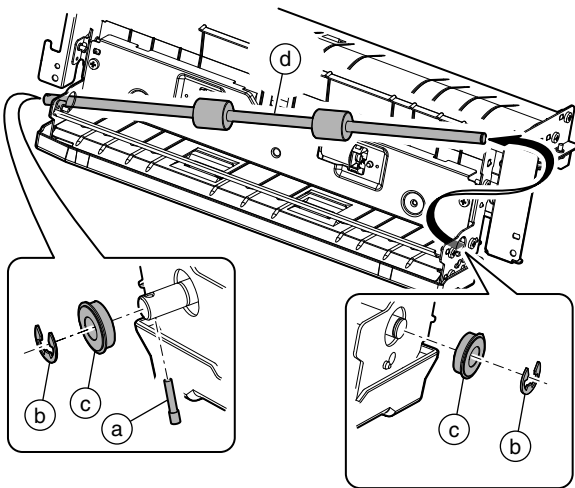
61) Remove the screw (a), and remove the frame (b).



62) Clean the ADU paper entry detection 1 (a) and the ADU paper entry detection 2 (b) at every 500K.



63) Remove the set screw (a), the E-ring (b), and the bearing (c). Replace the transport roller 13 (d).



# 14. ADU paper exit section

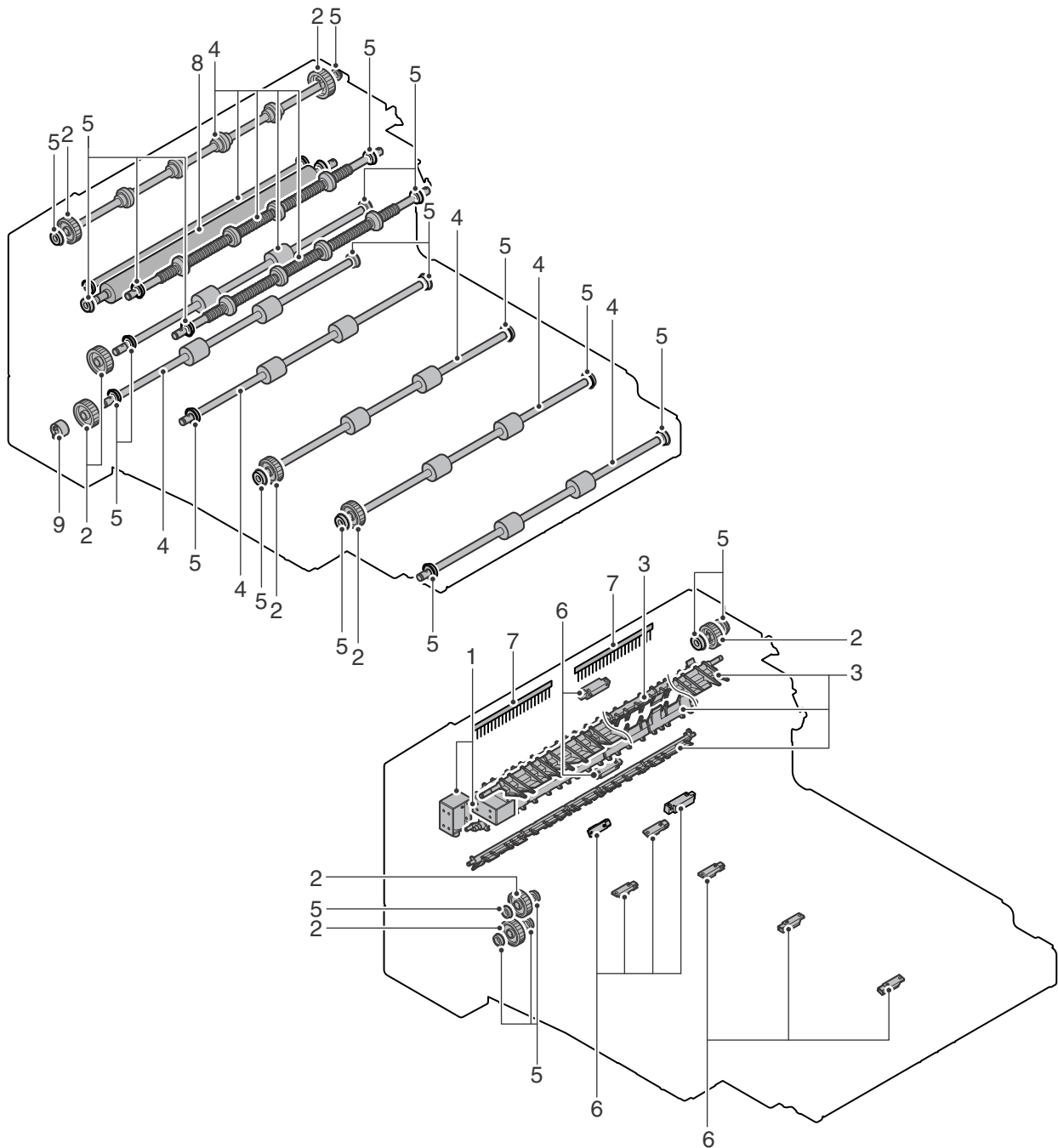
## A. Maintenance table

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

| No. | Part name                       | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark                            |
|-----|---------------------------------|--------------|-------|--------|--------|--------|--------|--------|-----------------------------------|
| 1   | Solenoids                       | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |                                   |
| 2   | Gears                           | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |                                   |
| 3   | Gates                           | ×            | ×     | ×      | ×      | ×      | ×      | ▲      |                                   |
| 4   | Transport rollers               | ×            | ○     | ○      | ○      | ○      | ○      | ▲      |                                   |
| 5   | Bearings                        |              |       |        |        |        |        | ×      |                                   |
| 6   | Optical reflection type sensors | ○            | ○     | ○      | ○      | ○      | ○      | ○      |                                   |
| 7   | Discharge brush                 | ×            | ×     | ×      | ×      | ×      | ×      | ×      |                                   |
| 8   | Decurler roller                 | ▲            | ▲     | ▲      | ▲      | ▲      | ▲      | ▲      | Check when calling or every 500K. |
| 9   | Torque limiter                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1)                          |

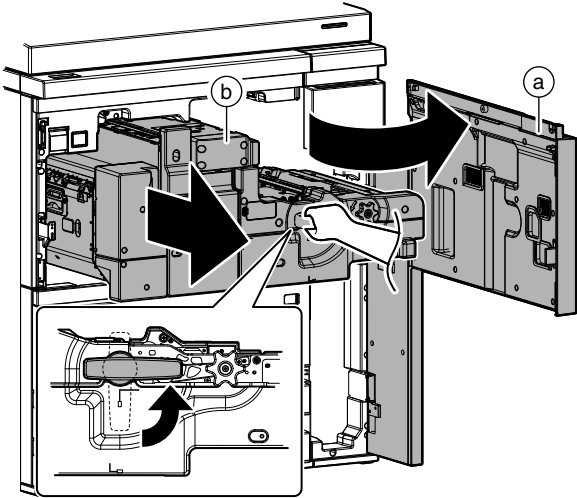
(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

\* Torque limiter: 800K

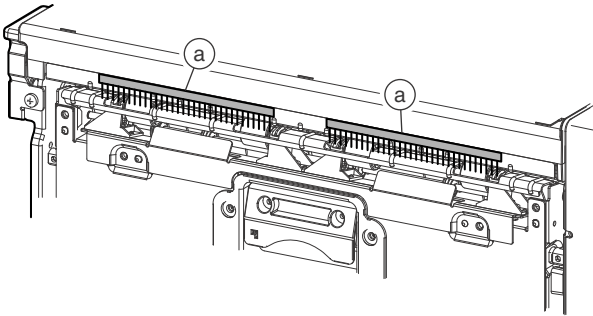


## B. Details

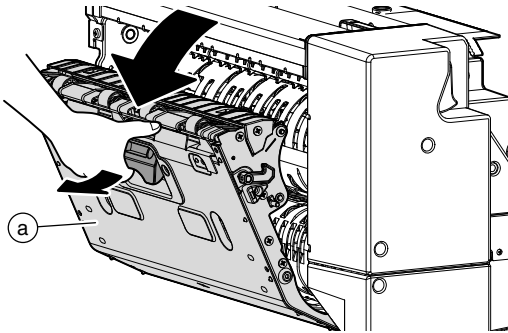
- 1) Open the front cover (a), and pull out the intermediate frame (b).



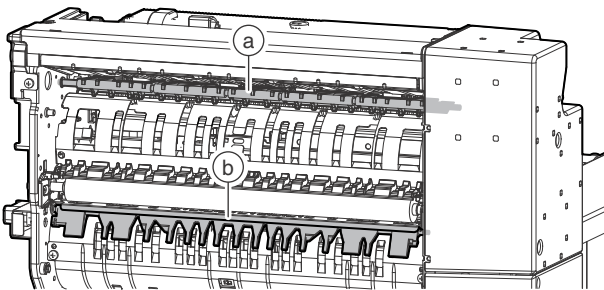
- 2) Check the discharge brush (a) at every 500K.



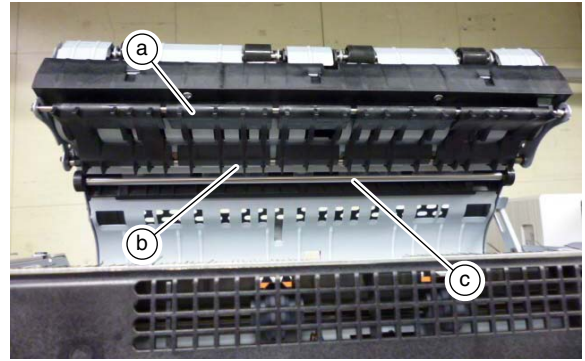
- 3) Open the left door (a).



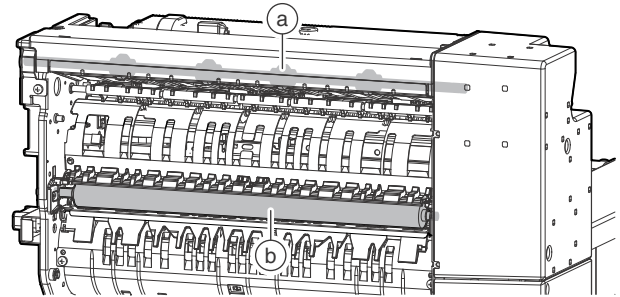
- 4) Check the face-up/face-down select gate solenoid (a), and the solenoid (b) at every 500K.



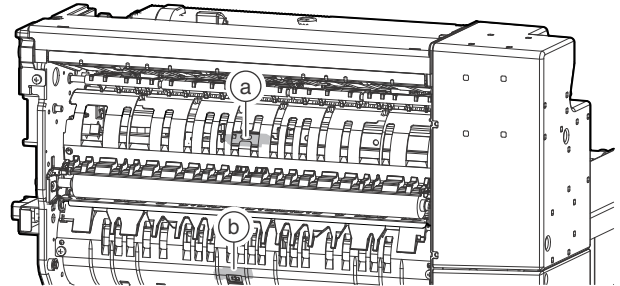
- 5) Check the paper exit/reverse select gate (a) and the reverse ADU gate (b) and the decurler follower roller (c) at every 500K.



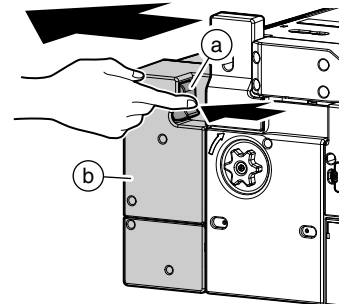
- 6) Clean the paper exit roller (a) and the decurler roller (b) at every 500K.



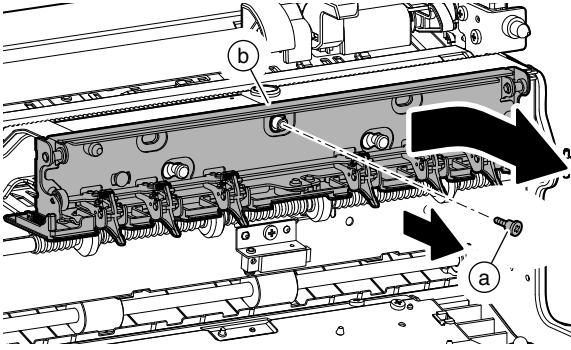
- 7) Clean the duplex reverse detection 1 (a) and the duplex reverse detection 2 (b) at every 500K.



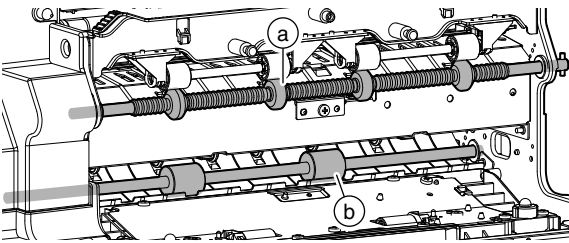
- 8) While pushing the lever (a), slide the ADU paper exit unit (b).



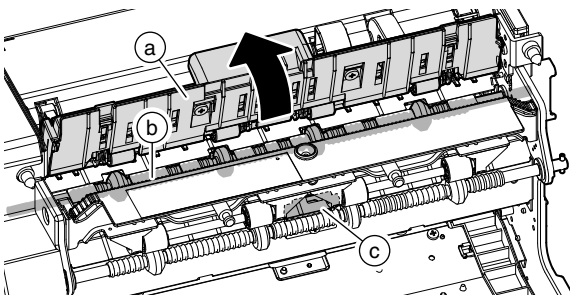
- 9) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).



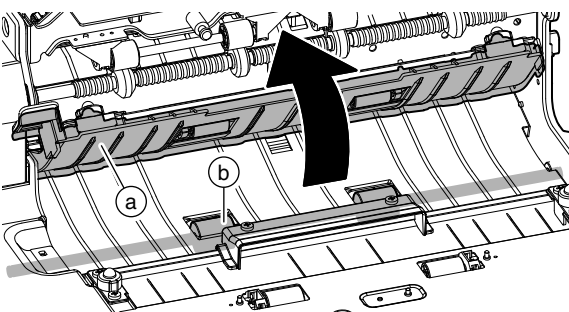
- 10) Clean the transport roller 15 (a) and the reverse roller 2 (b) at every 500K.



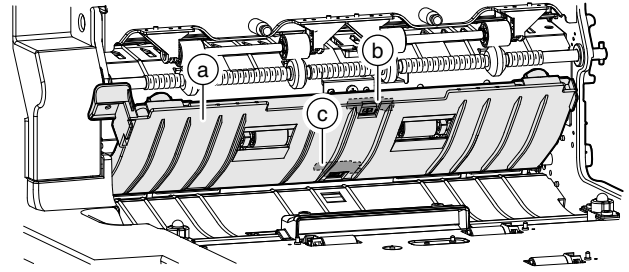
- 11) Open the paper guide (a), and clean the transport roller 16 (b) at every 500K. Clean the paper exit entry detection (c) at every 500K.



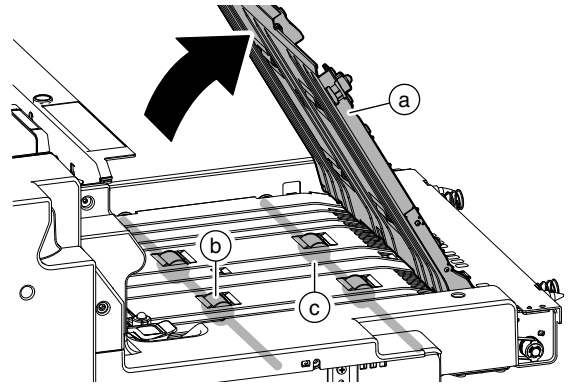
- 12) Open the paper guide (a), and clean the transport roller 18 (b) at every 500K.



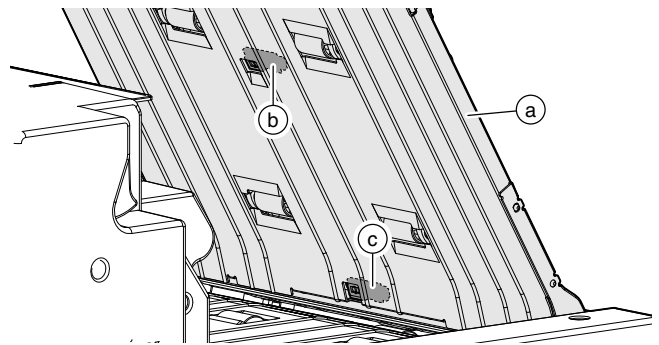
- 13) Open the paper guide (a), and clean the face-down reverse detection (b) and the ADU transport detection 1 (c) at every 500K.



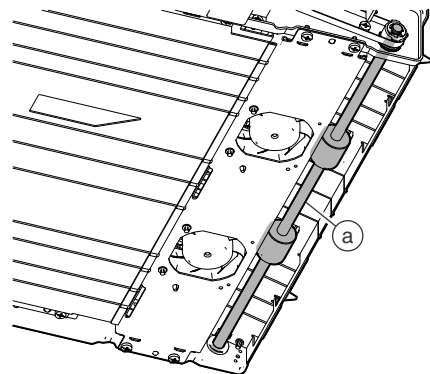
- 14) Open the paper guide (a), and clean the transport roller 19 (b) and the transport roller 20 (c) at every 500K.



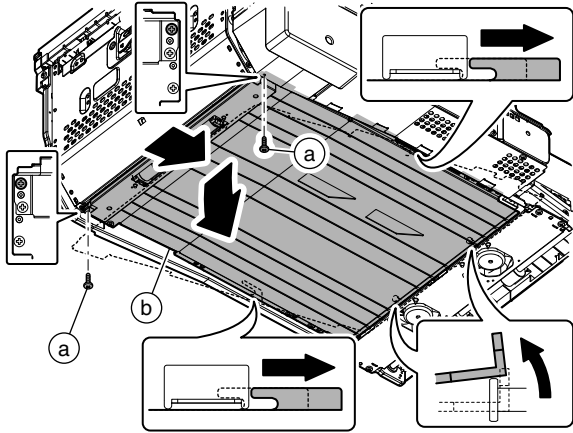
- 15) Open the paper guide (a), and clean the ADU transport detection 2 (b) and the ADU transport detection 3 (c) at every 500K.



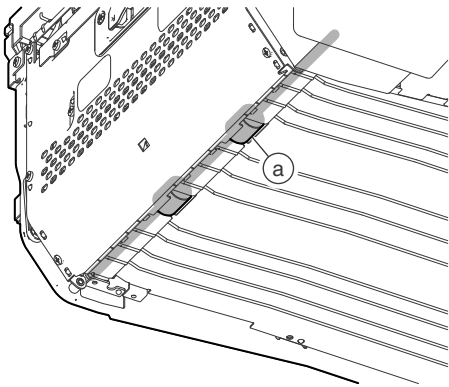
- 16) Clean the transport roller 21 (a) from the bottom side of the ADU paper exit unit at every 500K.



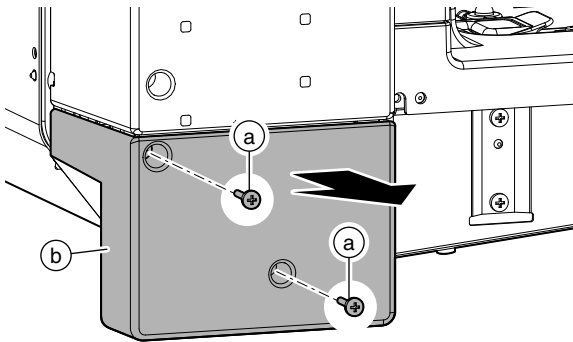
17) Remove the screw (a) from the bottom side, push into the paper guide (b) once, then remove it.



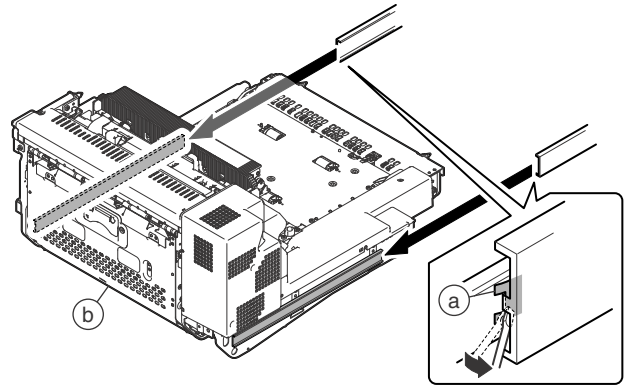
18) Clean the reverse roller 1 (a) at every 500K.



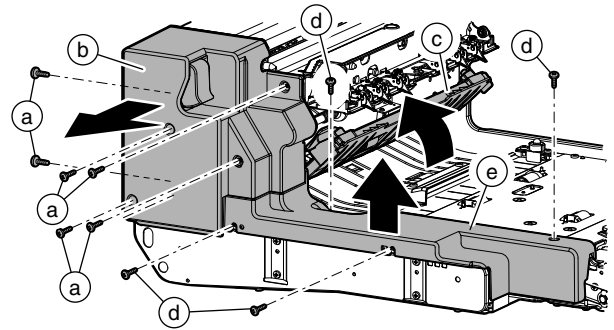
19) Remove the screw (a), and remove the cover (b).



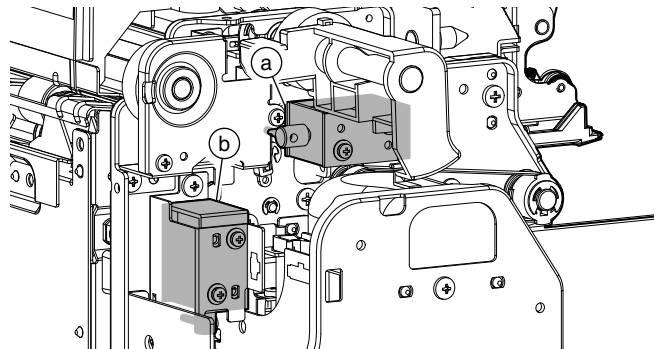
20) Release the lock (a) of the rail at two positions. Pull out the ADU paper exit unit (b) further to remove.



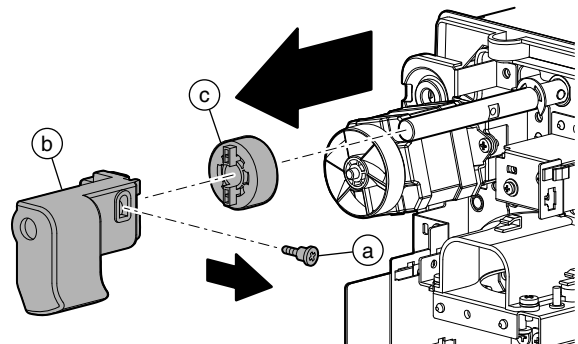
21) Remove the screw (a), and remove the cover (b). Open the paper guide (c), and remove the screw (d) and the cover (e).



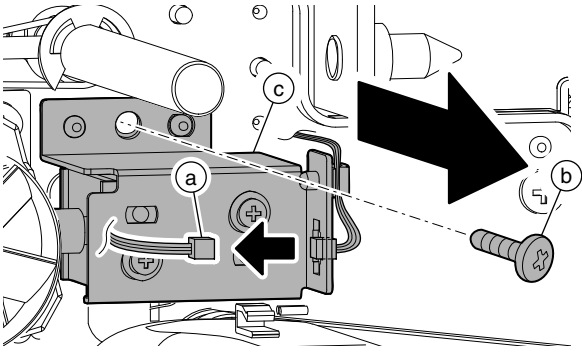
22) Check the face-up/face-down select gate solenoid (a), and the duplex select gate solenoid (b) at every 500K.



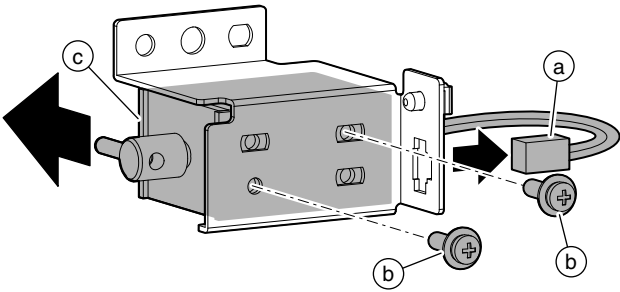
23) Remove the screw (a), and remove the lever (b) and the one-way clutch (c).



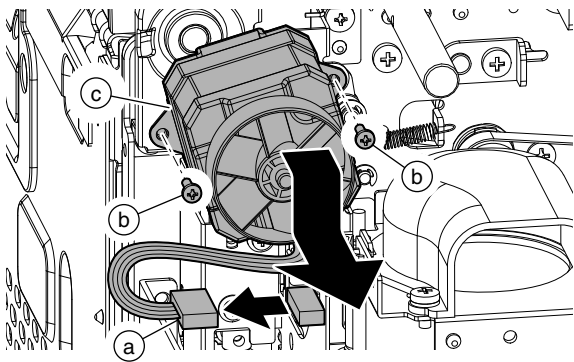
- 24) Disconnect the connector (a), and remove the screw (b).  
Remove the face-up/face-down select gate solenoid unit (c).



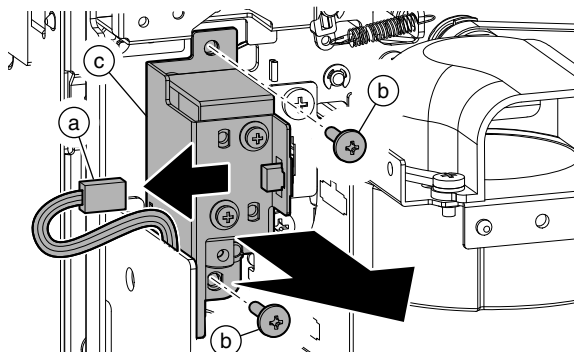
- 25) Disconnect the connector (a), and remove the screw (b).  
Replace the face-up/face-down select gate solenoid (c).



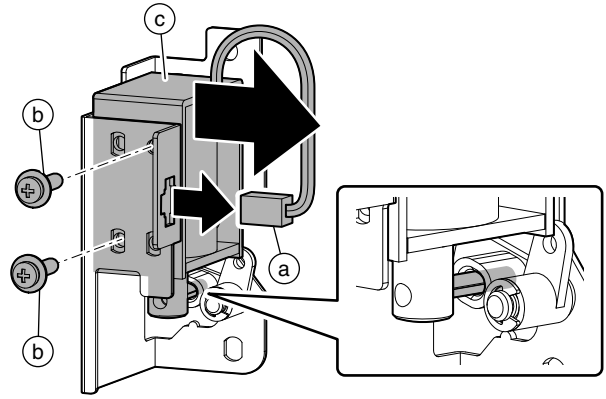
- 26) Disconnect the connector (a), and remove the screw (b).  
Remove the paper exit motor (c).



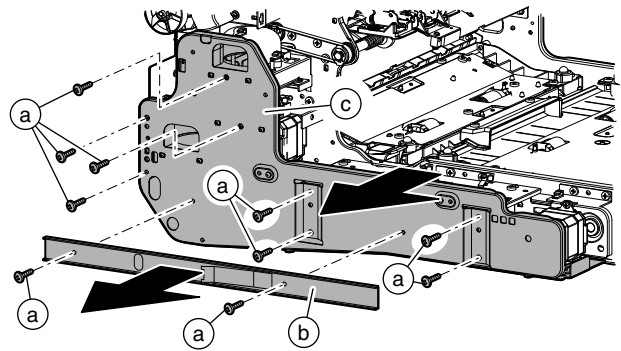
- 27) Disconnect the connector (a), and remove the screw (b).  
Remove the duplex select gate solenoid unit (c).



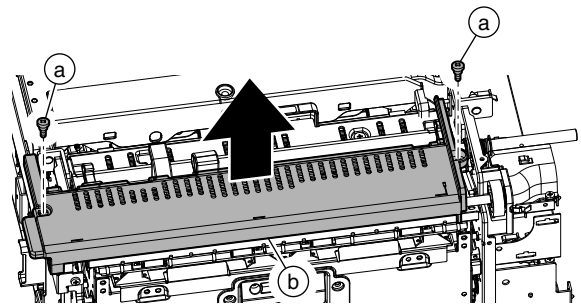
- 28) Disconnect the connector (a), and remove the screw (b).  
Replace the Duplex select gate solenoid (c).



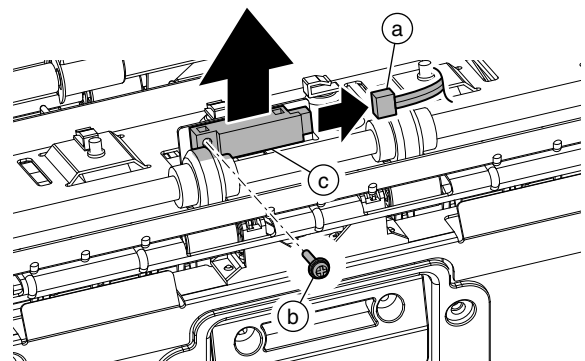
- 29) Remove the screw (a), and remove the rail (b) and the frame (c).



- 30) Remove the screw (a), and remove the cover (b).

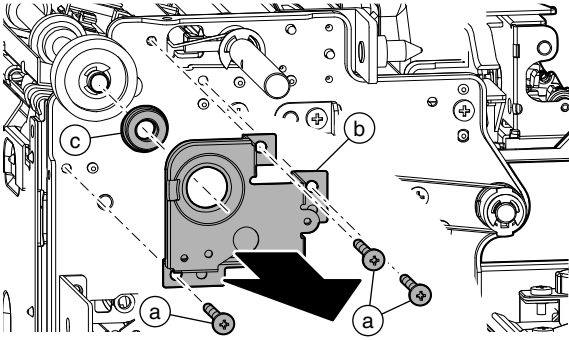


- 31) Disconnect the connector (a), and remove the screw (b).  
Remove the paper exit detection (c). Clean it at every 500K.

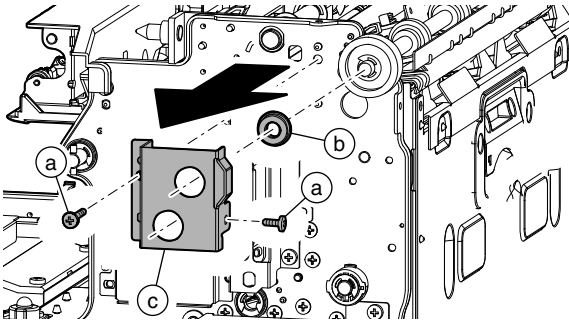




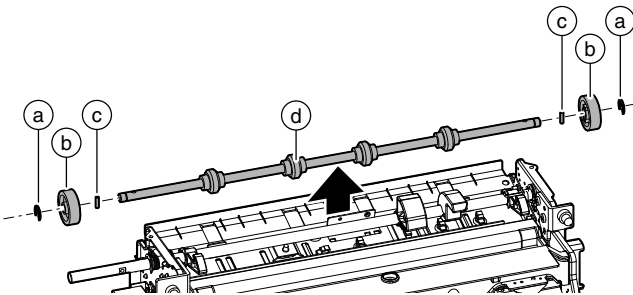
32) Remove the screw (a), and remove the mounting plate (b) and the bearing (c).



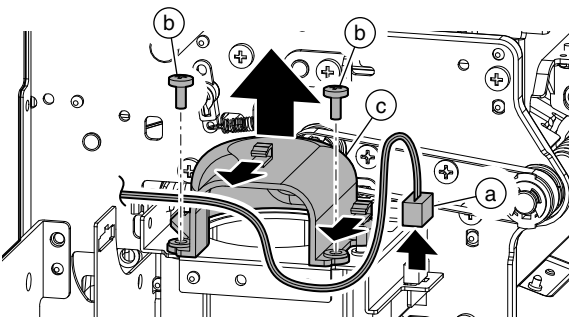
33) Remove the screw (a), the bearing (b), and the plate (c).



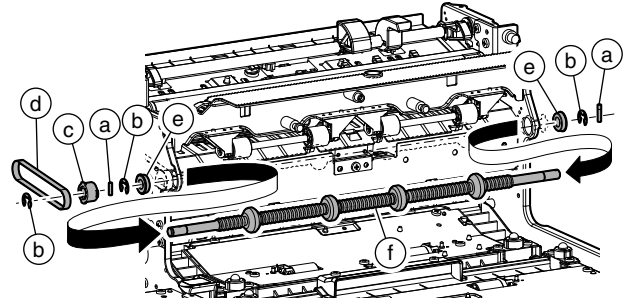
34) Remove the E-ring (a), the gear (b), and the parallel pin (c). Replace the paper exit roller (d).



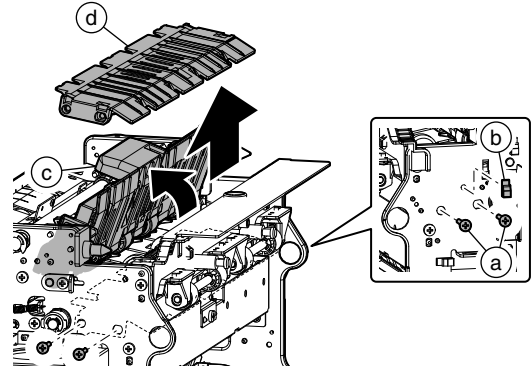
35) Disconnect the connector (a), and remove the screw (b). Remove the duct (c).



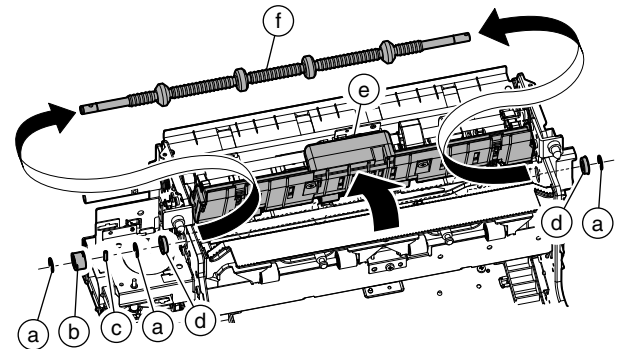
36) Remove the parallel pin (a), the E-ring (b), the pulley (c), the belt (d), and the bearing (e). Replace the transport roller 15 (f).



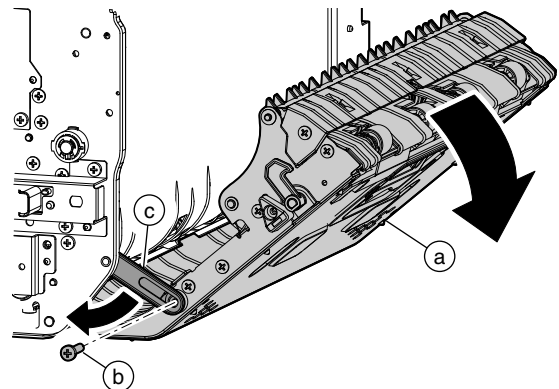
37) Remove the screw (a) and the snap band (b). Open the paper guide (c), and remove the paper guide (d).



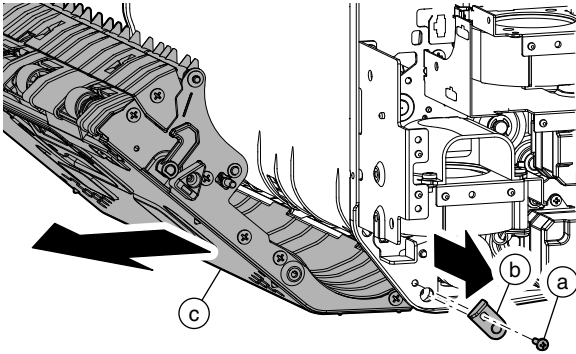
38) Remove the E-ring (a), the pulley (b), the parallel pin (c), and the bearing (d). Open the paper guide (e) and replace the transport roller 16 (f).



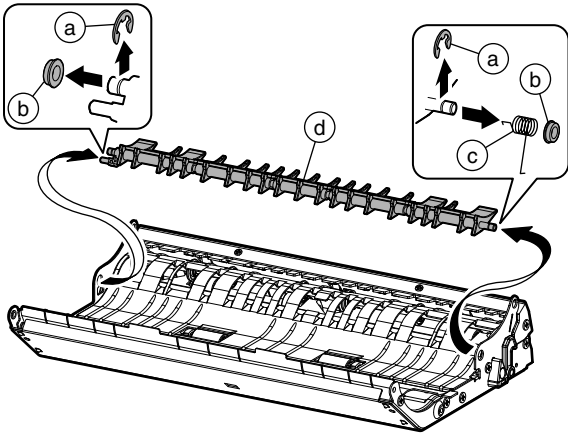
39) Open the left door (a). Remove the screw (b), and remove the stopper (c).



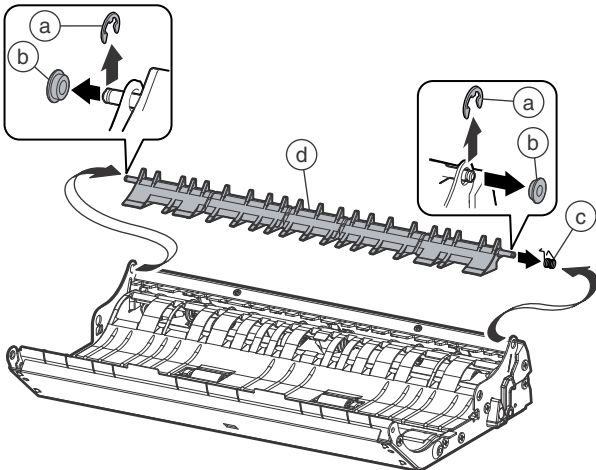
40) Remove the screw (a) and the fulcrum plate (b). Remove the left door (c).



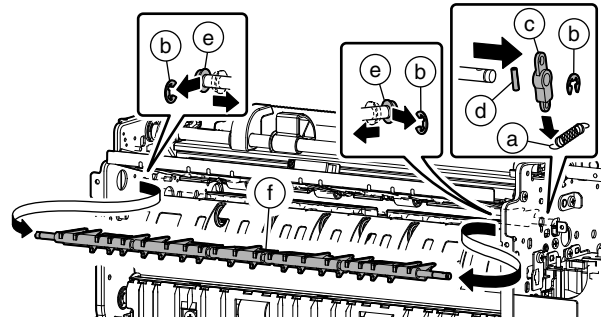
41) Remove the E-ring (a), the bearing (b), and the spring (c). Replace the reverse ADU select gate (d).



42) Remove the E-ring (a), the bearing (b), and the spring (c). Replace the paper exit/reverse select gate (d).

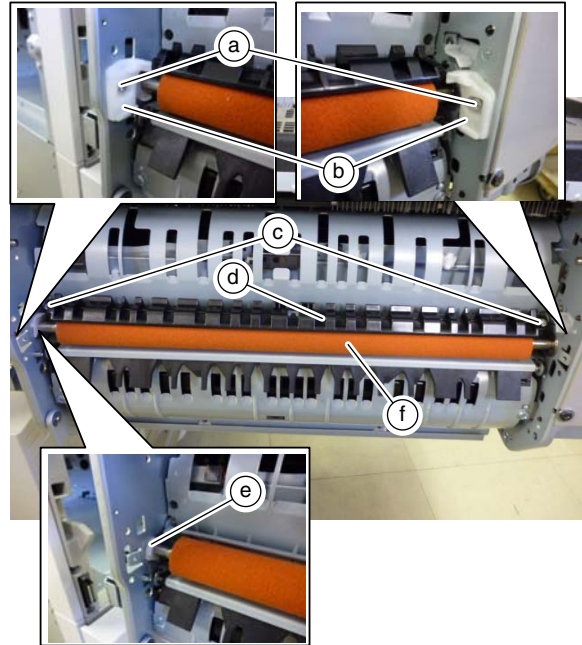


43) Remove the spring (a), the E-ring (b), the lever (c), the parallel pin (d), and the bearing (e). Replace the face-up/face-down select gate (f).

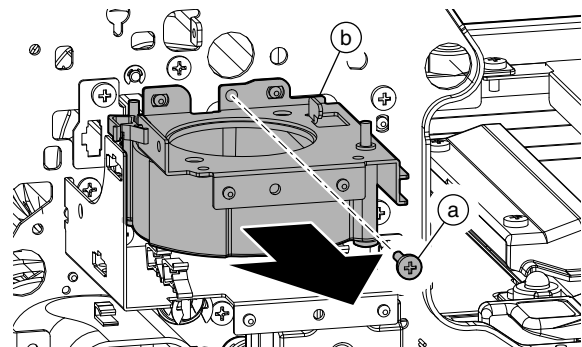


44) Remove the screw (a), and remove the alignment holder (b). Remove the screw (c), and remove the paper entry upper paper guide (d).

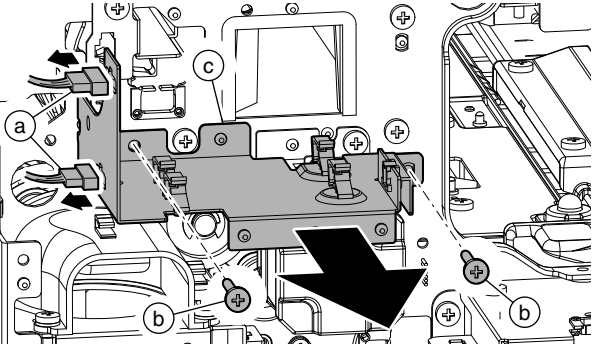
Remove the resin E-ring. Slide the decurler roller (f) to the rear side once, and remove the bearing. Slide the roller to the front side to remove.



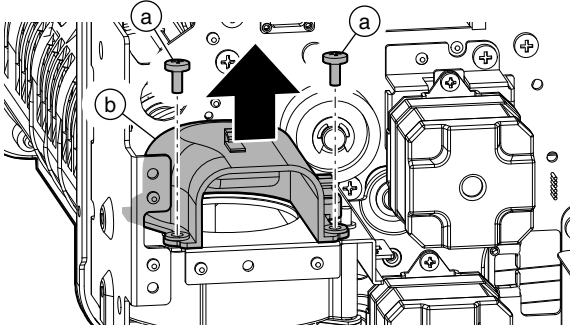
45) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



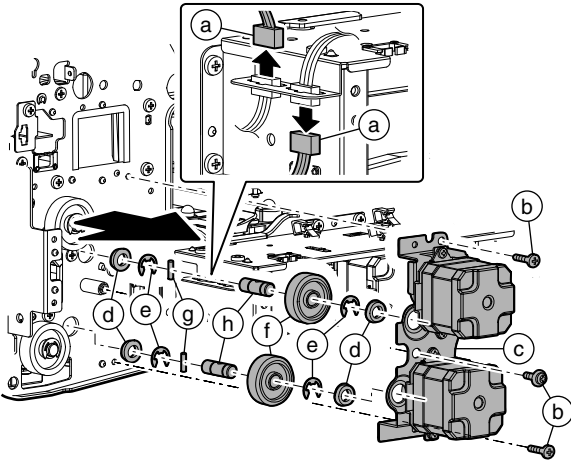
46) Disconnect the connector (a), and remove the screw (b), and the plate (c).



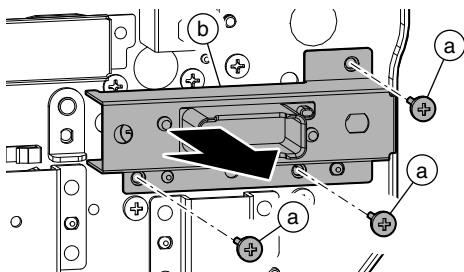
47) Remove the screw (a), and remove the duct (b).



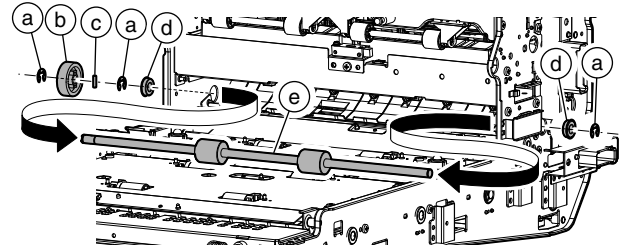
48) Disconnect the connector (a), and remove the screw (b). Remove the motor unit (c). Remove the bearing (d), the E-ring (e), the gear (f), the parallel pin (g), and the shaft (h).



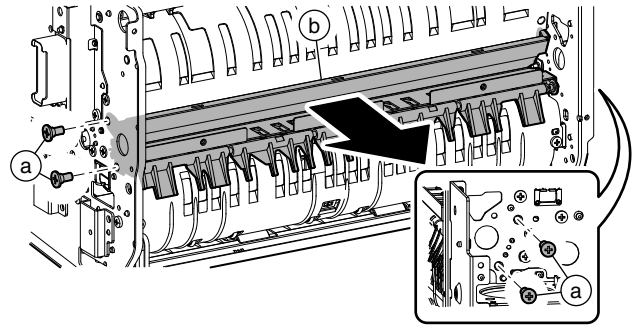
49) Remove the screw (a) on the rear side, and remove the drawer unit (b).



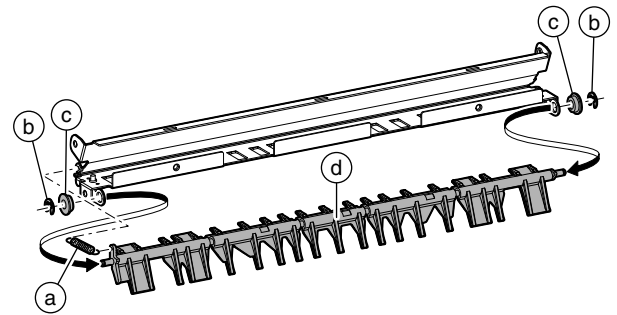
50) Remove the E-ring (a), the gear (b), the parallel pin (c), and the bearing (d). Replace the reverse roller 2 (e).



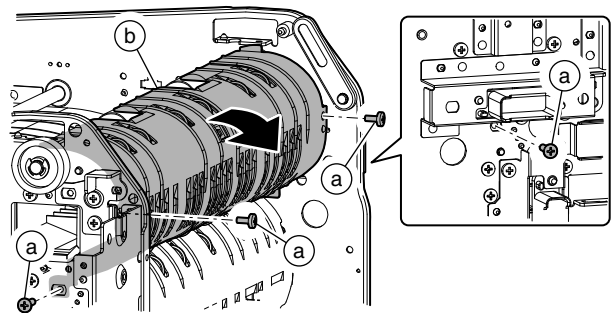
51) Remove the screw (a), and remove the paper guide (b).



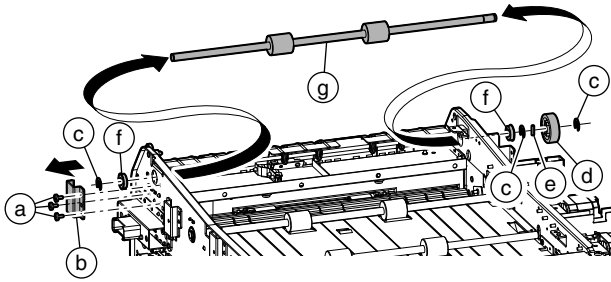
52) Remove the spring (a), the E-ring (b), and the bearing (c). Replace the ADU reverse select gate (d).



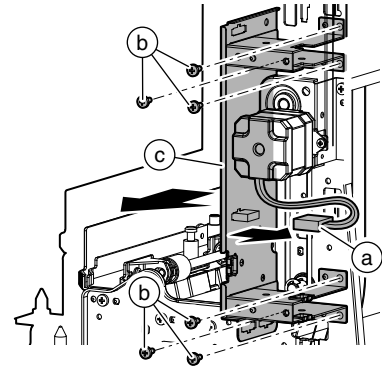
53) Remove the screw (a), and slide the paper guide (b).



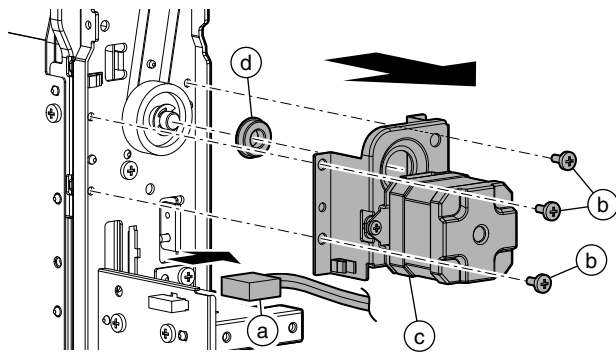
54) Remove the screw (a), and remove the plate (b). Remove the E-ring (c), the gear (d), the parallel pin (e), and the bearing (f). Replace the reverse roller 1 (g).



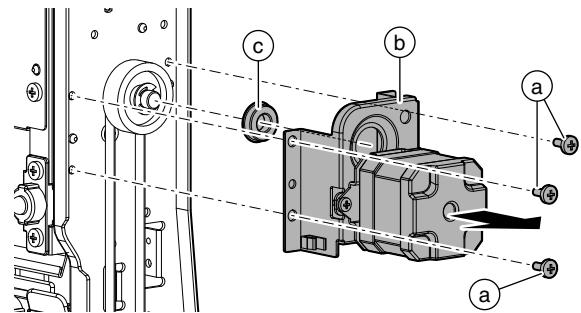
58) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).



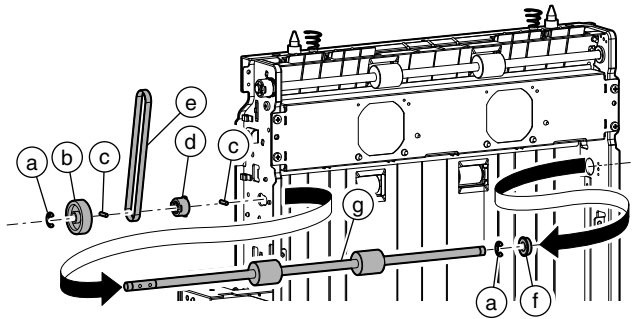
55) Disconnect the connector (a), and remove the screw (b). Remove the ADU transport motor 2 unit (c) and the bearing (d).



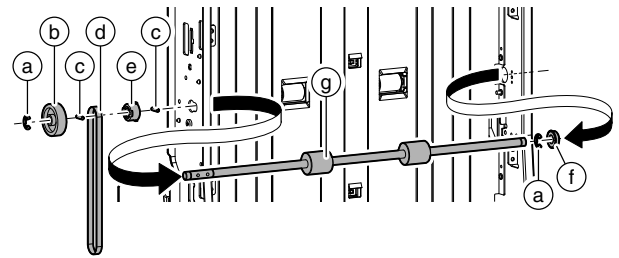
59) Remove the screw (a), and remove the ADU transport motor 1 unit (b) and the bearing (c).



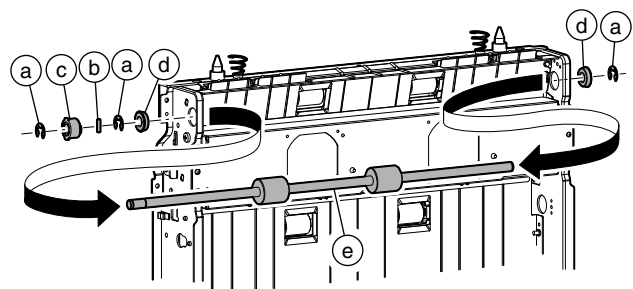
56) Remove the E-ring (a), the gear (b), the parallel pin (c), the pulley (d), the belt (e), and the bearing (f). Replace the transport roller 20 (g).



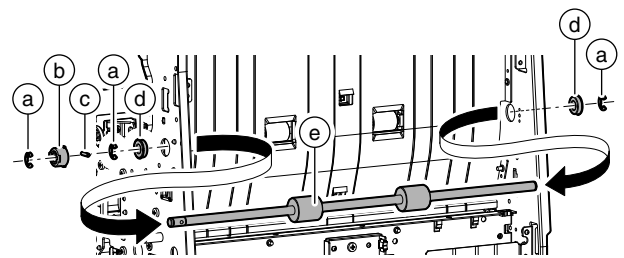
60) Remove the E-ring (a), the gear (b), the parallel pin (c), the pulley (d), the belt (e), and the bearing (f). Replace the transport roller 19 (g).



57) Remove the E-ring (a), the parallel pin (b), the pulley (c), and the bearing (d). Replace the transport roller 21 (e).



61) Remove the E-ring (a), the parallel pin (b), the pulley (c), and the bearing (d). Replace the transport roller 18 (e).



# 15. Drive section

## A. Maintenance table

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

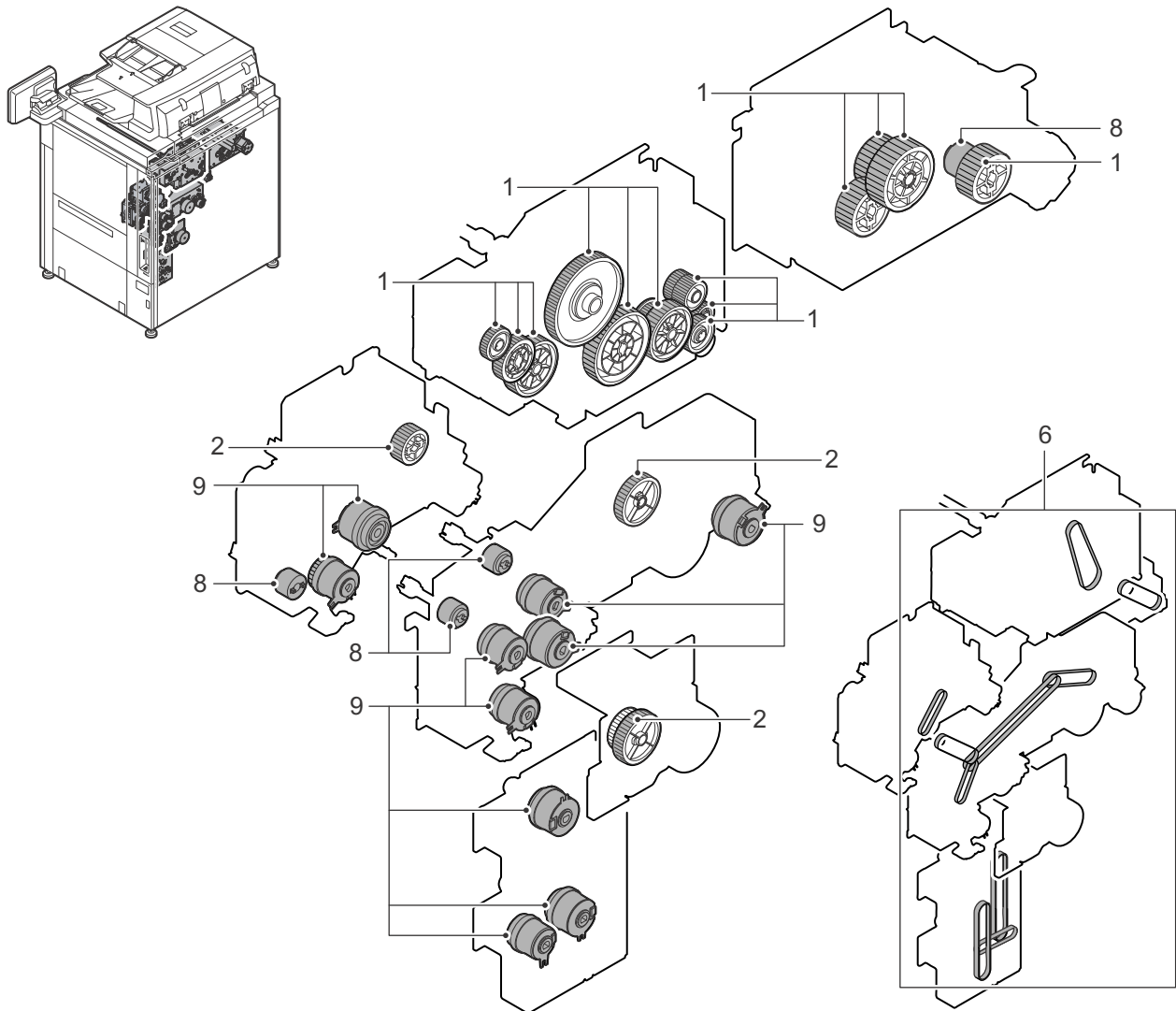
| No. | Part name      | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark        |
|-----|----------------|--------------|-------|--------|--------|--------|--------|--------|---------------|
| 1   | Gears (Grease) | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (6LS06283000) |
| 2   | Gears (Grease) | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (6LS06270000) |
| 3   | Belts          |              | ×     | ×      | ×      | ×      | ×      | ×      |               |
| 4   | Gears          |              |       |        |        |        |        | ×      |               |
| 5   | Torque limiter | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1)      |
| 6   | Clutches       | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (Note 2)      |

(Note 1) Replacement reference: Use the paper feed counters values for replacement reference.

\* Torque limiter: 800K

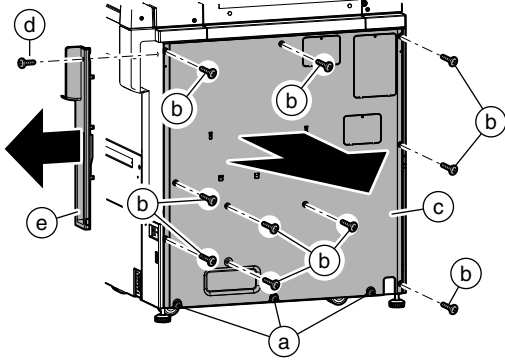
(Note 2) The conditions of the clutches differ depending on the paper pass conditions from the paper tray. Refer to the table below for replacement of the clutches.

| UN                | Tandem drive |                 |                 | Multi-stage drive B |             | Transport drive |                 | Tandem drive    |                | Multi-stage drive B |                 |
|-------------------|--------------|-----------------|-----------------|---------------------|-------------|-----------------|-----------------|-----------------|----------------|---------------------|-----------------|
|                   | Signal name  | C1PFC           | C1PTC           | C2PFC               | C3PFC       | C4PFC           | MPTFC           | LCCPTC          | VPTC3          | VPTC2               | VPTC1           |
|                   | P/N          | 6LS<br>05339000 | 6LS<br>05338000 | 6LS<br>05339000     | 6LS05340000 |                 | 6LS<br>05339000 | 6LS<br>05338000 | 6LS05338000    |                     | 6LS<br>05341000 |
| No. 1 tray        |              | 3000K           | 3000K           |                     |             |                 |                 |                 |                |                     |                 |
| No. 2 tray        |              |                 |                 | 3000K               |             |                 |                 |                 | Total<br>3000K | Total<br>3000K      | Total<br>1500K  |
| No. 3 tray        |              |                 |                 |                     | 3000K       |                 |                 |                 |                |                     |                 |
| No. 4 tray        |              |                 |                 |                     |             | 3000K           |                 |                 |                |                     |                 |
| Manual paper feed |              |                 |                 |                     |             |                 | 3000K           |                 |                |                     |                 |
| LCC paper feed    |              |                 |                 |                     |             |                 |                 | 3000K           |                |                     |                 |

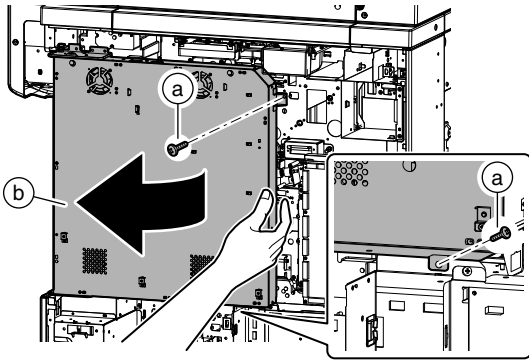


## B. Details

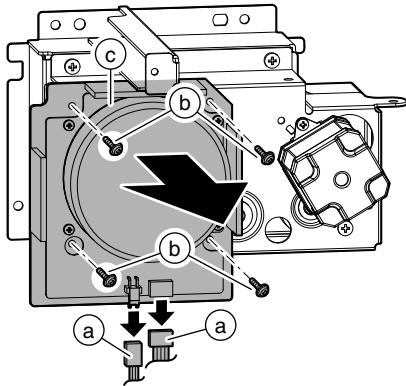
- 1) Loosen the screw (a). Remove the screw (b), and remove the rear cabinet (c). Remove the screw (d) and the cover (e).



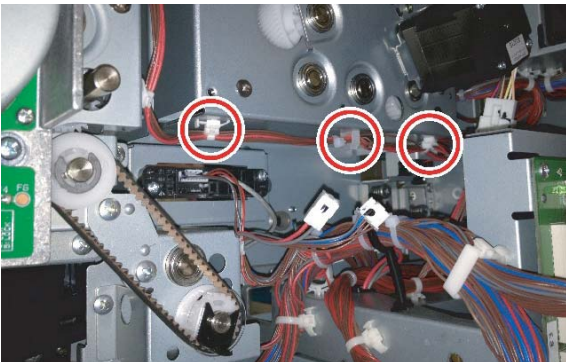
- 2) Remove the screw (a), and open the control box (b).



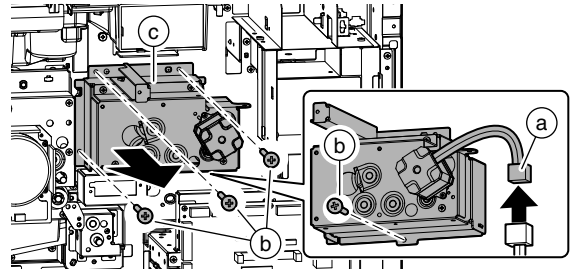
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing motor (c).



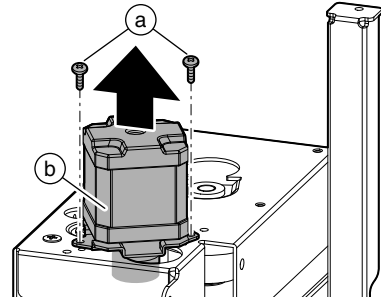
- 4) Remove the snap band, and remove the clamp to set it free.



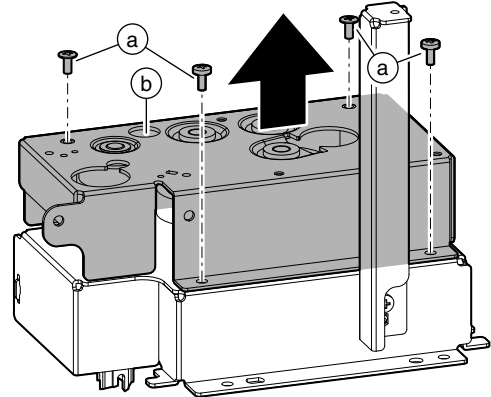
- 5) Disconnect the connector (a), and remove the screw (b). Remove the fusing drive unit (c).



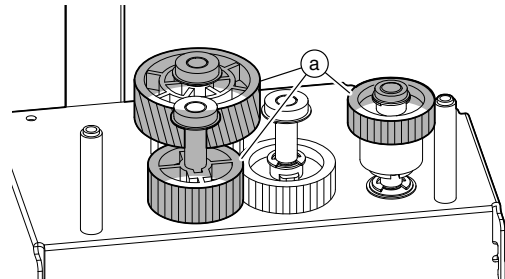
- 6) Remove the screw (a), and remove the fusing rear motor (b).



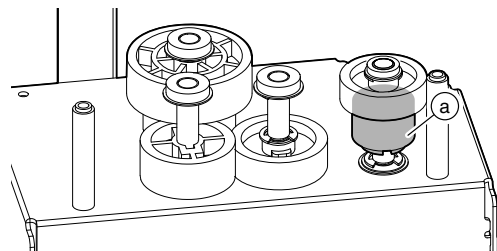
- 7) Remove the screw (a), and remove the plate (b).



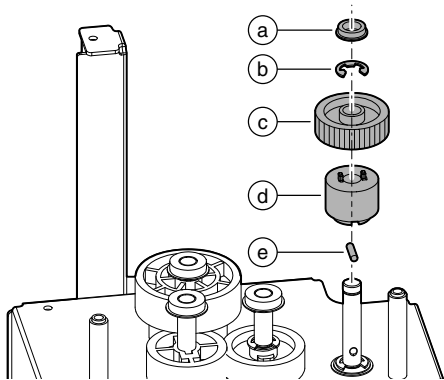
- 8) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



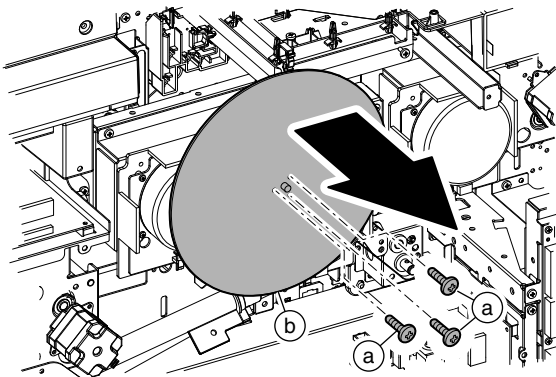
- 9) Check the torque limiter (a) at every 500K.



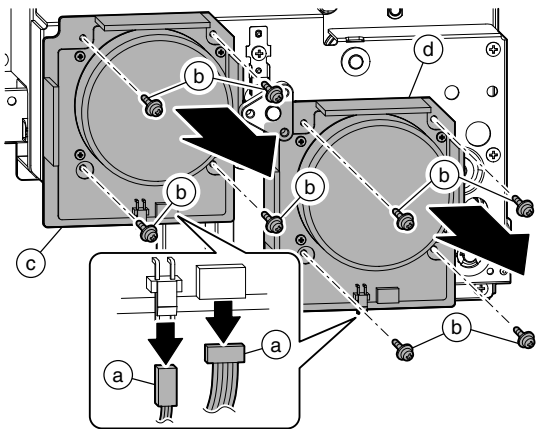
10) Remove the bearing (a) and the E-ring (b), and remove the gear (c), the torque limiter (d) and the parallel pin (e).



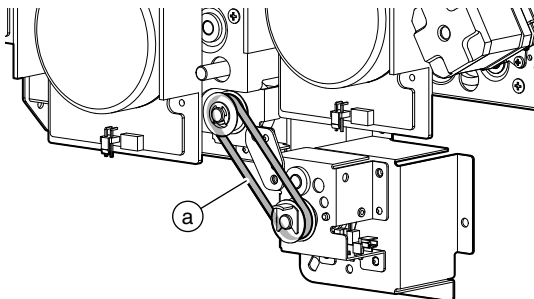
11) Remove the screw (a), and remove the flywheel (b).



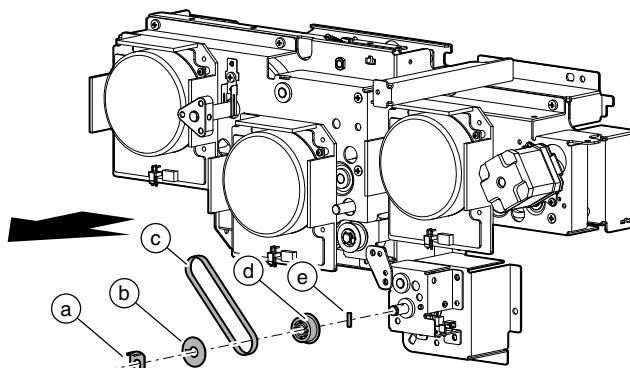
12) Disconnect the connector (a), and remove the screw (b). Remove the developing motor (c) and the drum motor (d).



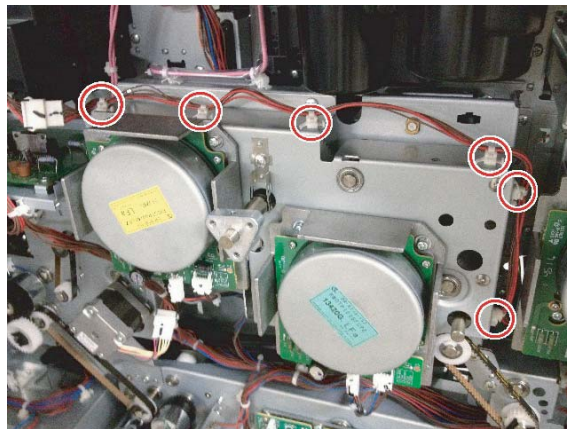
13) Check the belt (a) at every 500K.



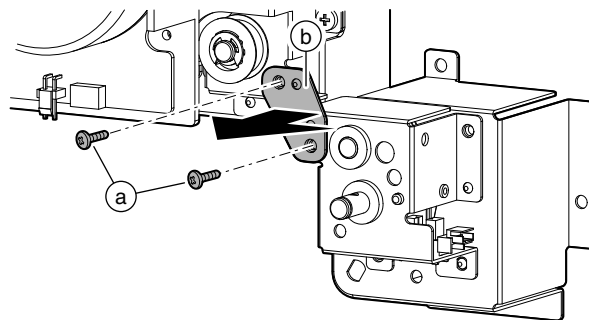
14) Remove the resin E-ring (a), and remove the sheet (b), the belt (c), the pulley (d), and the parallel pin (e).



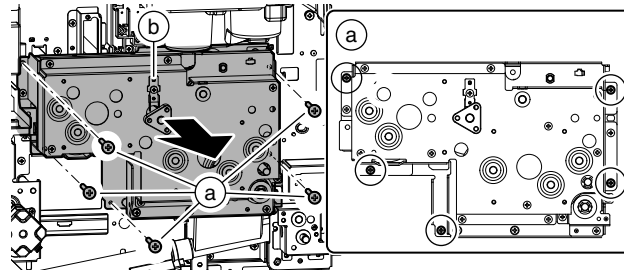
15) Remove the snap band, and set the harness free.



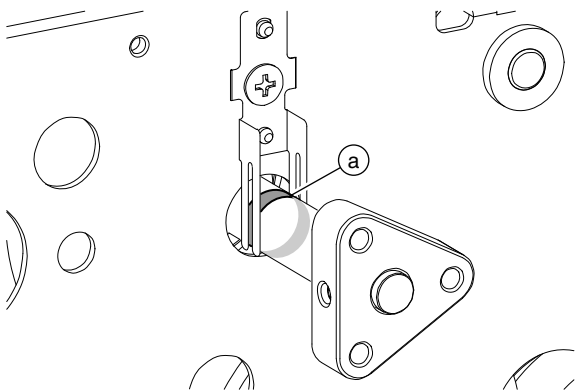
16) Remove the screw (a), and remove the plate (b).



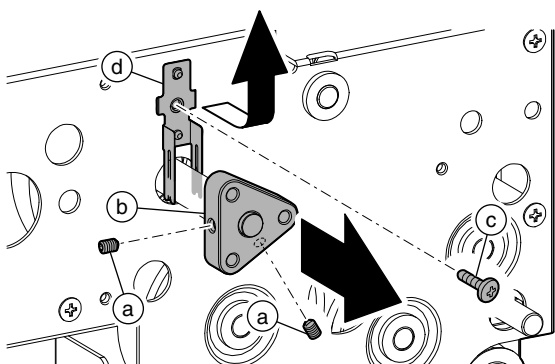
17) Remove the screw (a), and remove the drum drive unit (b).



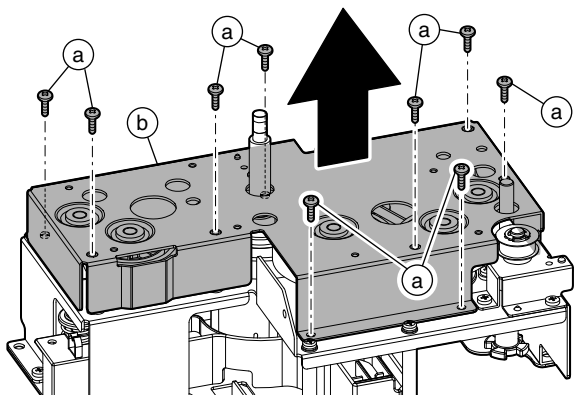
18) Check the conduction grease applying section (a) at every 500K. In necessary, apply conduction grease.



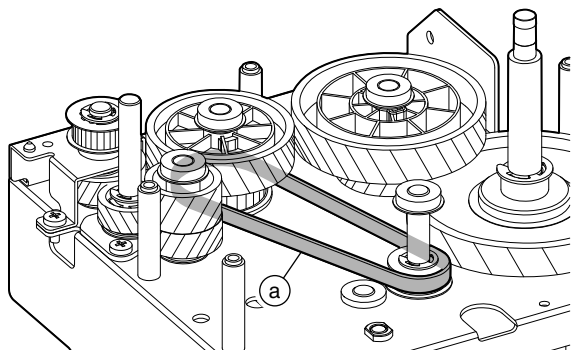
19) Remove the set screw (a) and the wheel receiver (b). Remove the screw (c) and the earth plate (d).



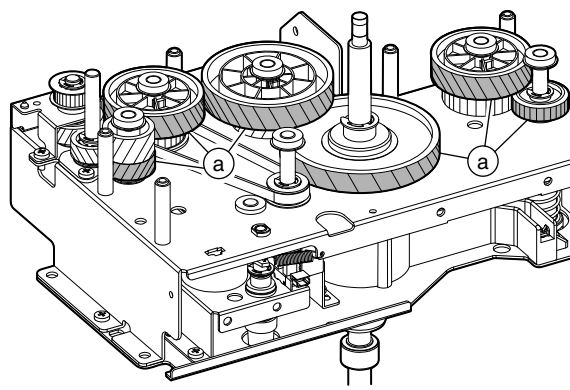
20) Remove the screw (a), and remove the plate (b).



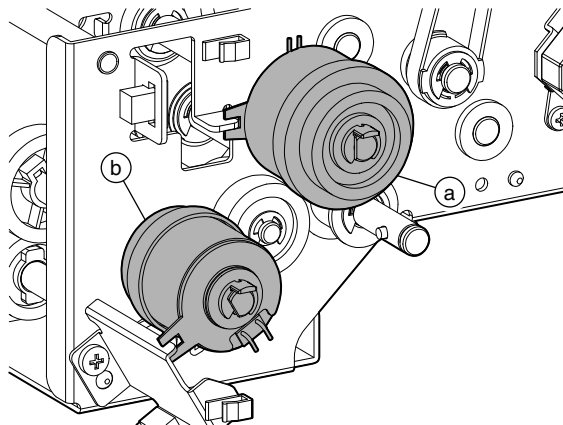
21) Check the belt (a) at every 500K.



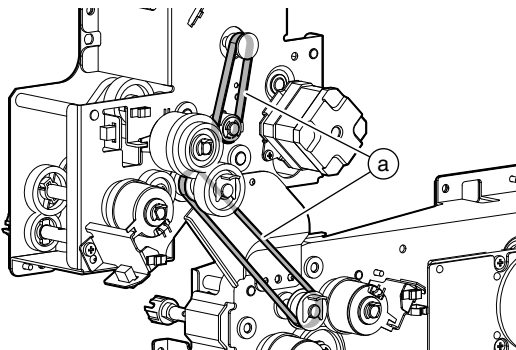
22) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



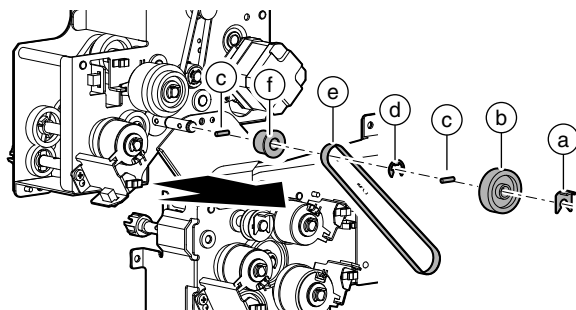
23) Check the manual feed clutch (a) and the LCC transport clutch (b) of the transport drive unit at every 500K.



24) Check the belt (a) at every 500K.

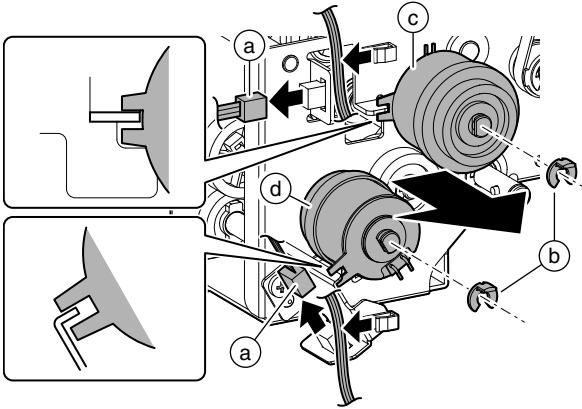


25) Remove the resin E-ring (a), remove the gear (b) and the parallel pin (c). Remove the e-ring (d), the belt (e), and the pulley (f).

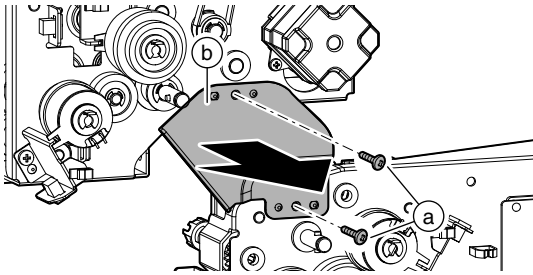




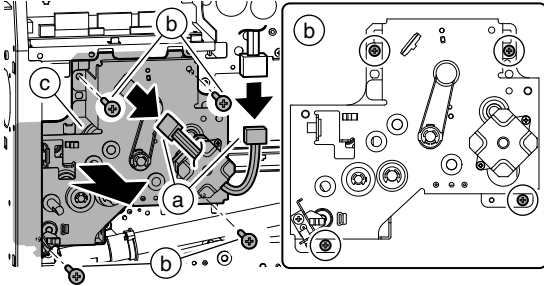
26) Disconnect the connector (a), and remove the resin E-ring (b), and replace the manual feed transport clutch (c) and the LCC transport clutch (d).



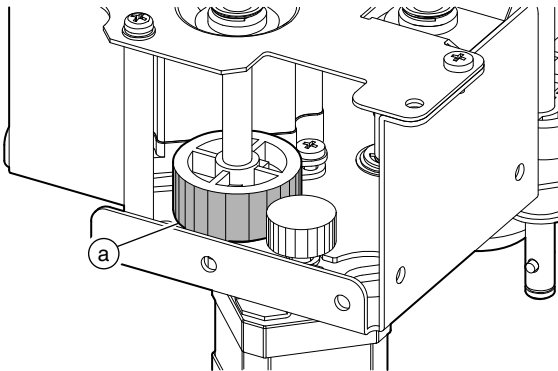
27) Remove the screw (a), and remove the plate (b).



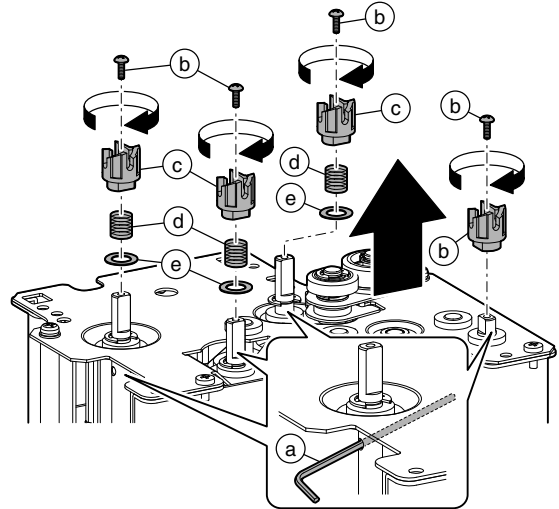
28) Disconnect the connector (a), and remove the screw (b). Remove the transport drive unit (c).



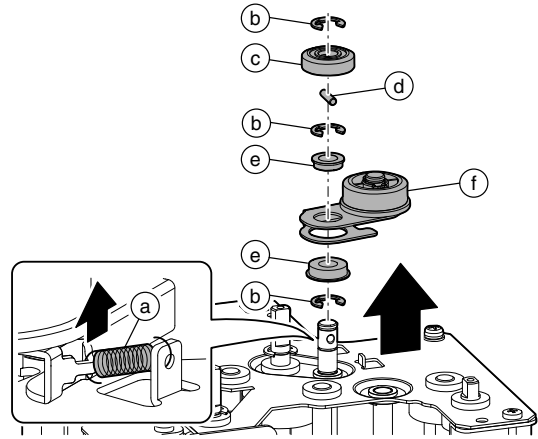
29) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



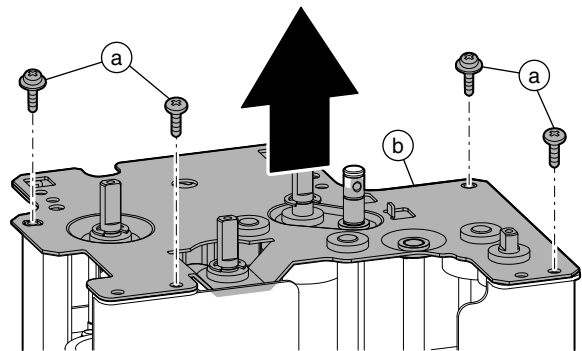
30) Insert the stopper (a) into the shaft, and rotate the screw (b) **clockwise** to remove it. Remove the coupling (c), the spring (d), and the washer (e).



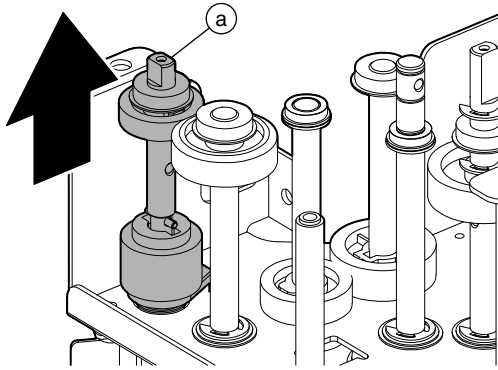
31) Remove the spring (a), the E-ring (b), the gear (c), the parallel pin (d), the bearing (e), and the plate (f).



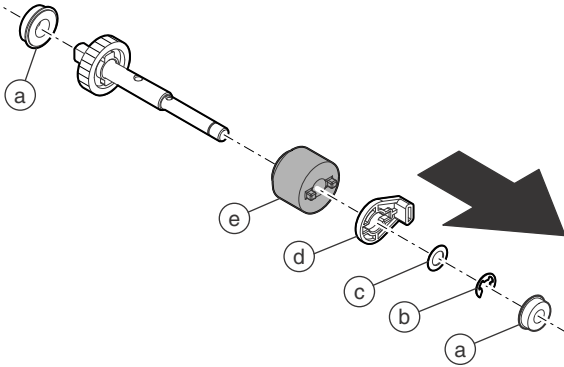
32) Remove the screw (a), and remove the plate (b).



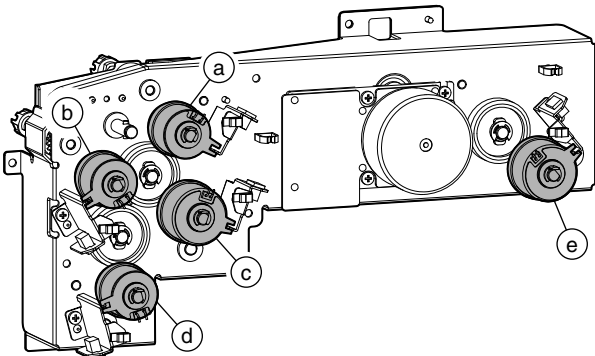
33) Remove the torque limiter unit (a).



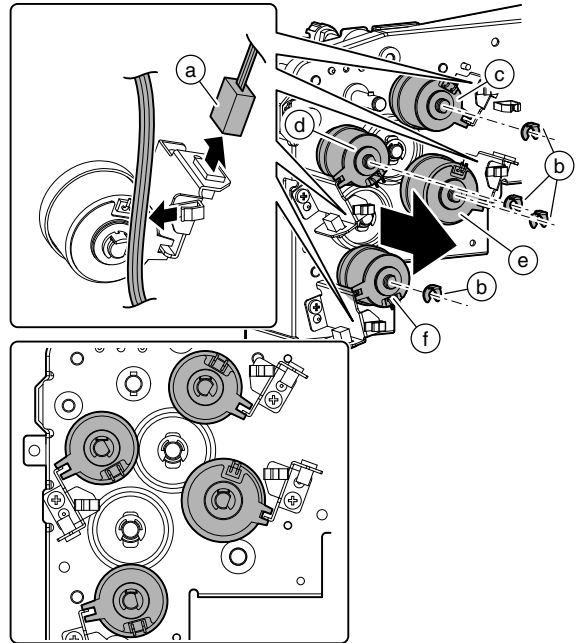
34) Remove the bearing (a) and the E-ring (b). Remove the washer (c), the resin part (d), the torque limiter (e). Replace the torque limiter (e).



35) Check the horizontal transport clutch (a) of the tandem drive, the vertical transport clutch (Upper) (b), the cassette 2 paper transport clutch (c), the vertical transport clutch (Middle) (d), and the cassette 1 paper transport clutch (e) at every 500K.

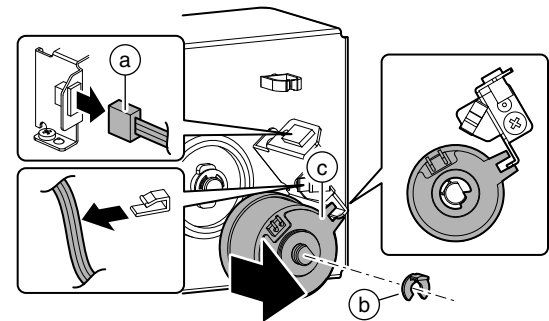


36) Disconnect the connector (a), and remove the resin ring (b), and replace the horizontal transport clutch (c), the vertical transport clutch (Upper) (d), the cassette 2 paper transport clutch (e), the Vertical transport clutch (Intermediate) (f).



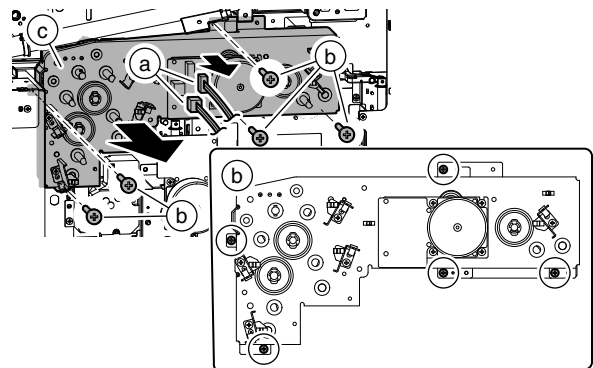
\* Set the clutch so that the bent section of the plate is engaged with the notch of the clutch.

37) Disconnect the connector (a), and remove the resin ring (b), and replace the cassette 1 paper transport clutch (c).

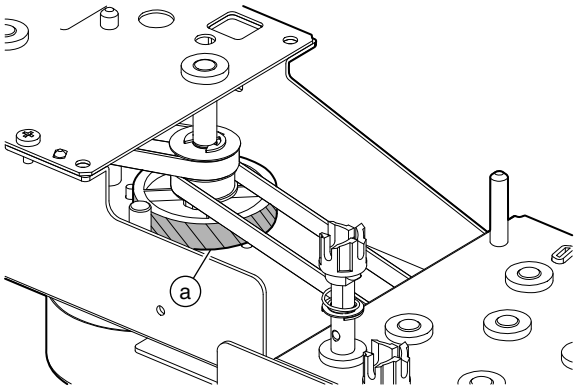


\* Set the clutch so that the bent section of the plate is engaged with the notch of the clutch.

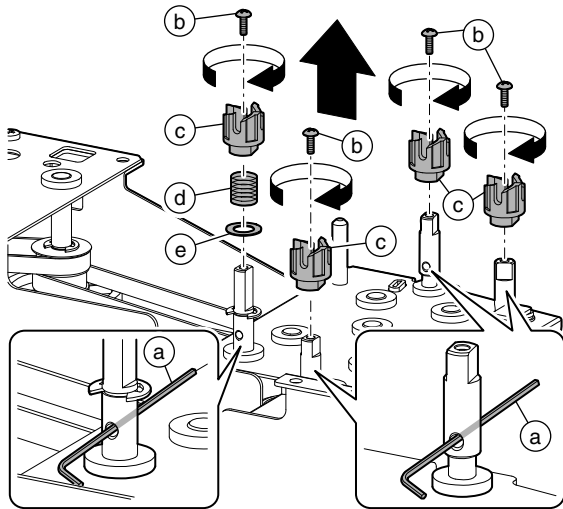
38) Disconnect the connector (a), and remove the screw (b). Remove the tandem drive unit (c).



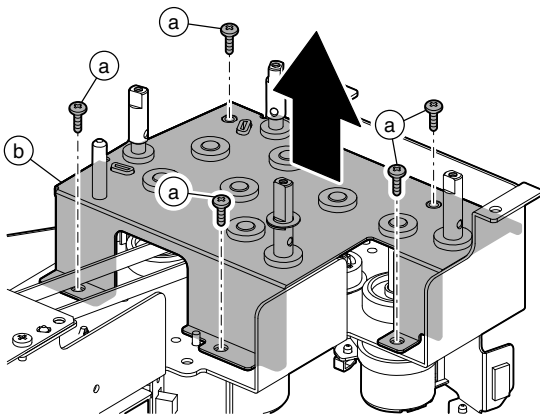
39) Check the grease applying section (a) at every 500K. If necessary, apply grease (HANARL) to the section.



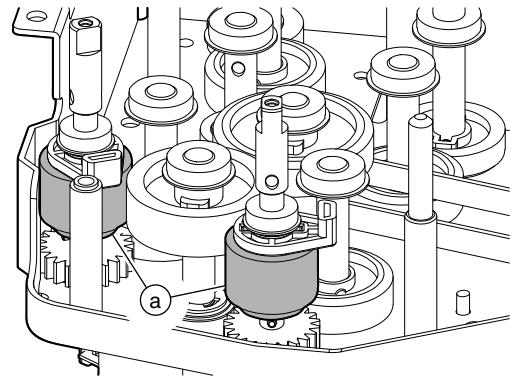
40) Insert the stopper (a) into the shaft, rotate the screw (b) **clockwise** to remove it, and remove the coupling (c), the spring (d), and the washer (e).



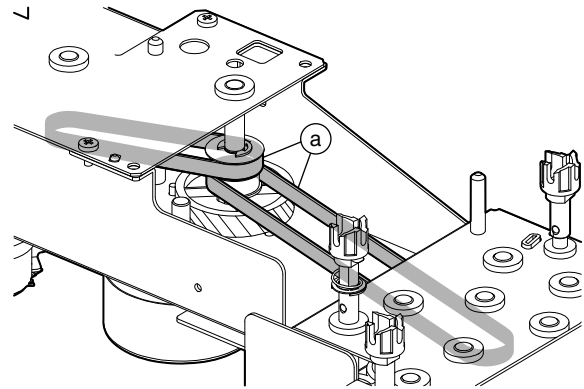
41) Remove the screw (a), and remove the plate (b).



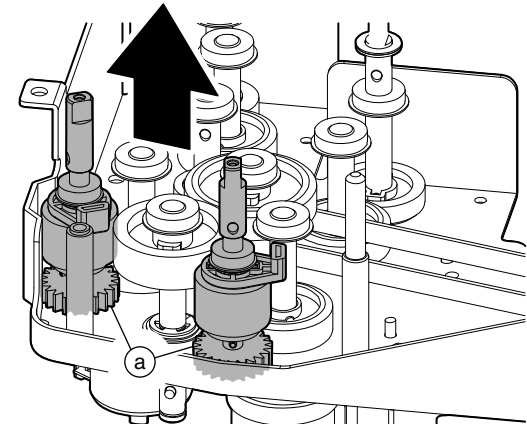
42) Check the torque limiter (a) at every 500K.



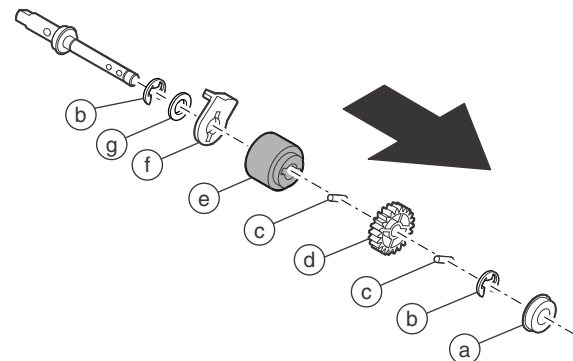
43) Check the belt (a) at every 500K.



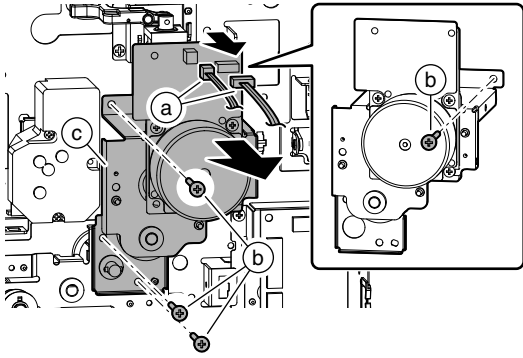
44) Remove the torque limiter unit (a).



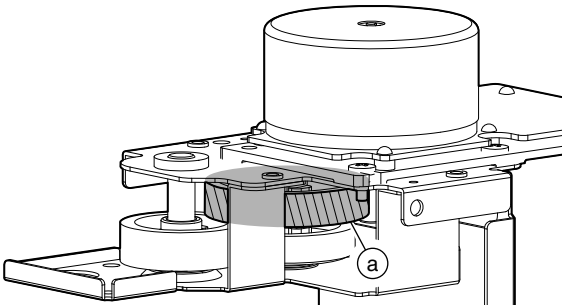
45) Remove the bearing (a), the E-ring (b), the parallel pin (c), and the gear (d). Remove the torque limiter (e), the resin part (f), and the washer (g). Replace the torque limiter (e).



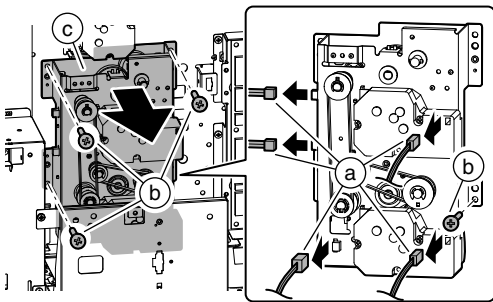
- 46) Disconnect the connector (a), and remove the screw (b).  
Remove the multi-stage drive unit (c).



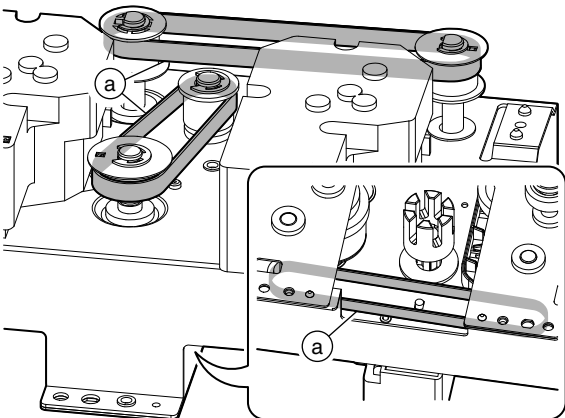
- 47) Check the grease applying section (a) at every 500K. If necessary, apply grease to the section.



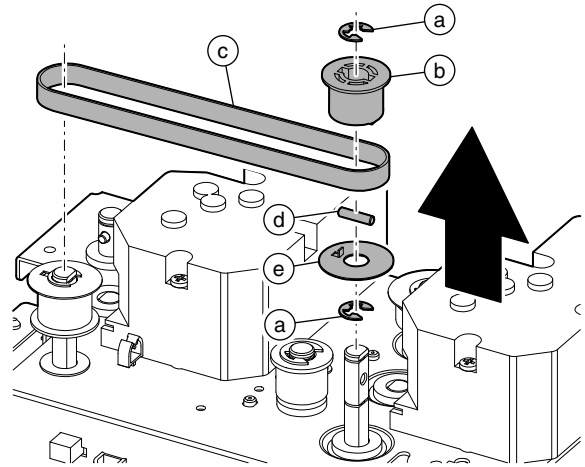
- 48) Disconnect the connector (a), and remove the screw (b).  
Remove the multi-stage drive B unit (c).



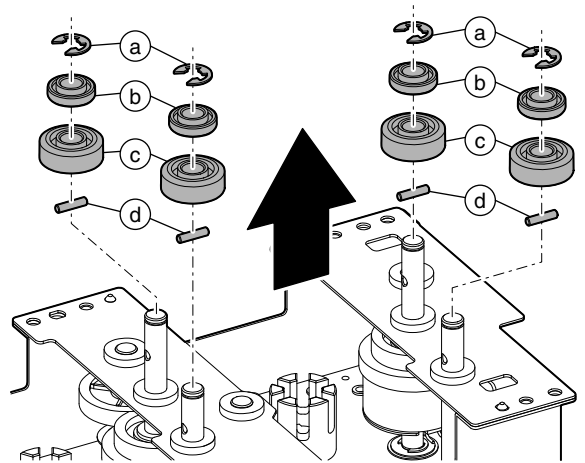
- 49) Check the belt (a) at every 500K.



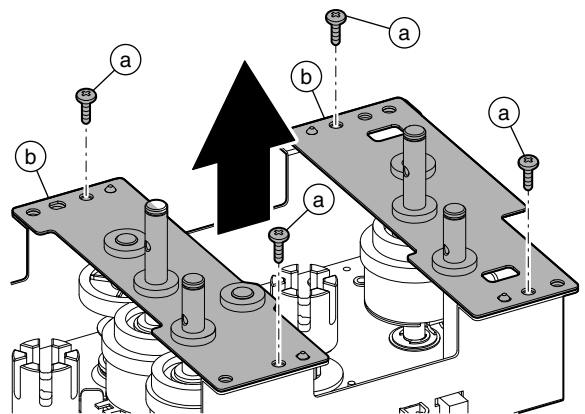
- 50) Remove the E-ring (a), the pulley (b), the belt (c), the parallel pin (d), and the seat (e).



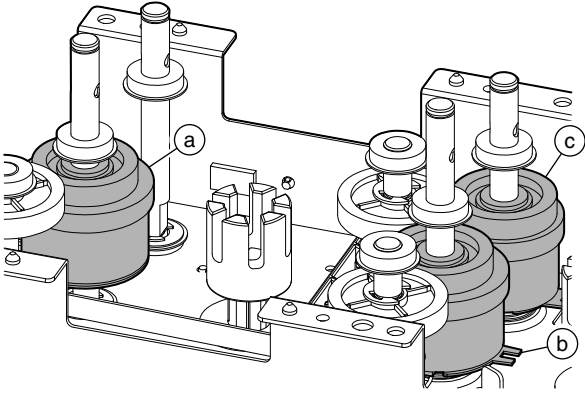
- 51) Remove the E-ring (a), the roller (b), the gear (c), and the parallel pin (d).



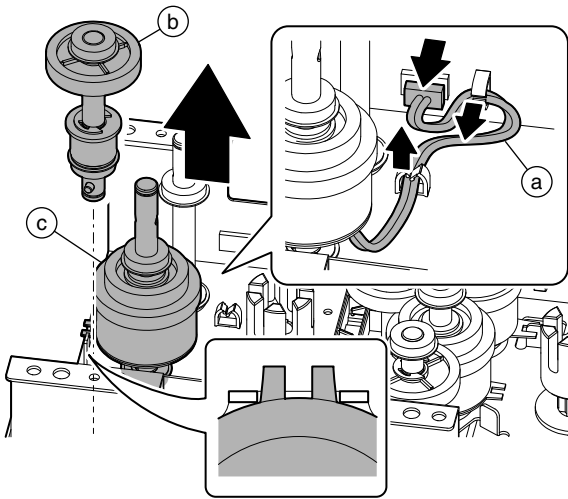
- 52) Remove the screw (a), and remove the plate (b).



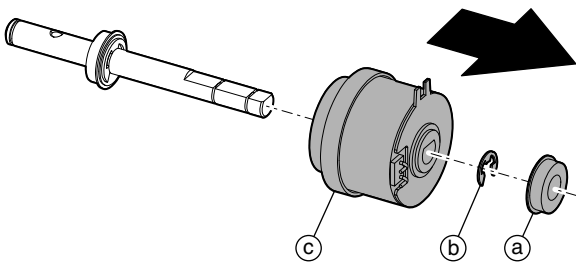
53) Check the cassette 3 paper transport clutch (a), the cassette 4 paper transport clutch (b), and the Vertical transport clutch (Lower) (c) at every 500K.



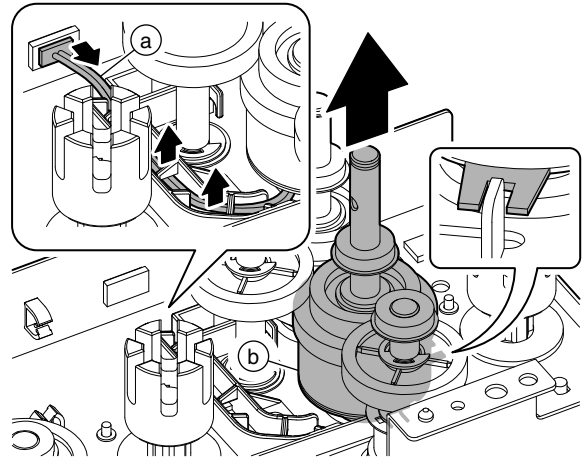
54) Disconnect the connector (a). Remove the gear unit (b), and remove the cassette 3 paper transport clutch unit (c).



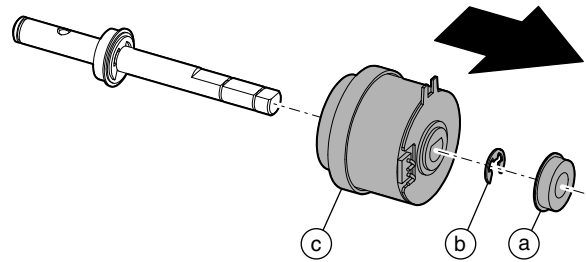
55) Remove the bearing (a), the E-ring (b). Replace the cassette 3 paper transport clutch (c).



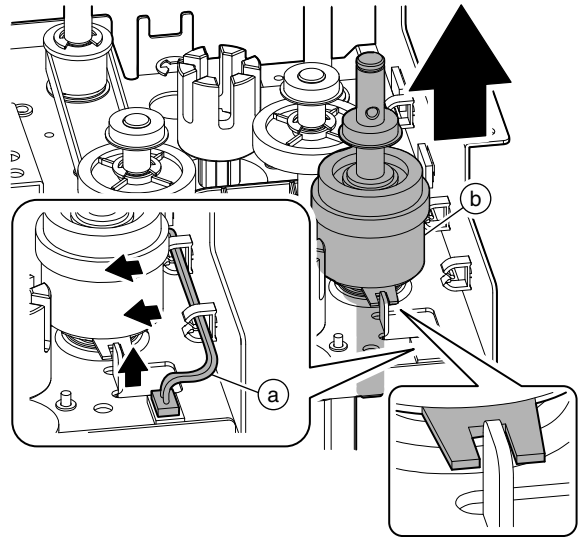
56) Disconnect the connector (a), and remove the cassette 4 paper transport clutch unit (b).



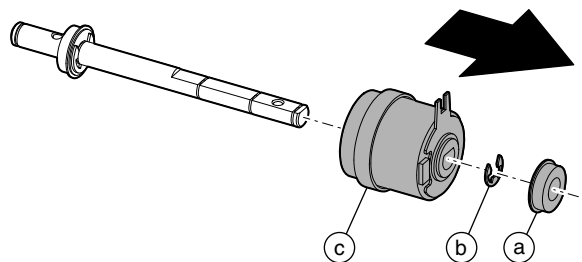
57) Remove the bearing (a), the E-ring (b), and replace the cassette 4 paper transport clutch (c).



58) Disconnect the connector (a), and remove the Vertical transport clutch (Lower) unit (b).



59) Remove the bearing (a), the E-ring (b), and replace the Vertical transport clutch (Lower) (c).

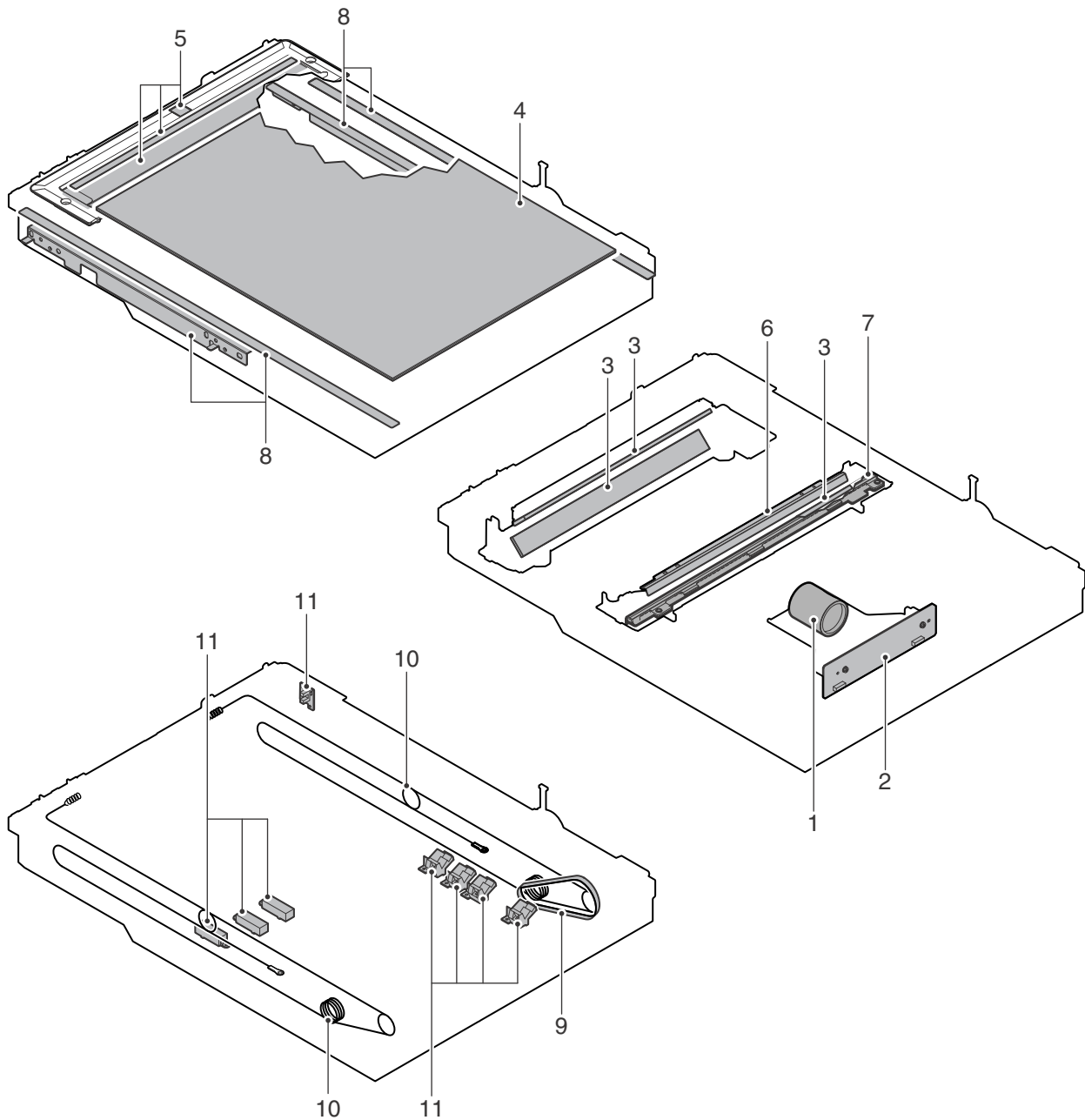


## 16. Scanner section

### A. Maintenance table

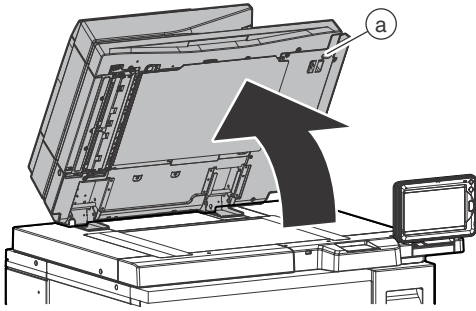
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position

| No. | Part name     | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark       |
|-----|---------------|--------------|-------|--------|--------|--------|--------|--------|--------------|
| 1   | Lens          |              | ○     | ○      | ○      | ○      | ○      | ○      |              |
| 2   | CCD           |              | ○     | ○      | ○      | ○      | ○      | ○      |              |
| 3   | Mirror        |              | ○     | ○      | ○      | ○      | ○      | ○      |              |
| 4   | Table glass   | ○            | ○     | ○      | ○      | ○      | ○      | ○      |              |
| 5   | SPF glass     | ○            | ○     | ○      | ○      | ○      | ○      | ○      |              |
| 6   | Reflector     |              | ○     | ○      | ○      | ○      | ○      | ○      |              |
| 7   | Scanner lamp  |              | ○     | ○      | ○      | ○      | ○      | ○      | Air cleaning |
| 8   | Rail (Grease) |              | ☆     | ☆      | ☆      | ☆      | ☆      | ☆      |              |
| 9   | Drive belt    |              | ×     | ×      | ×      | ×      | ×      | ×      |              |
| 10  | Drive wire    |              | ×     | ×      | ×      | ×      | ×      | ×      |              |
| 11  | Sensor        |              | ×     | ×      | ×      | ×      | ×      | ×      |              |

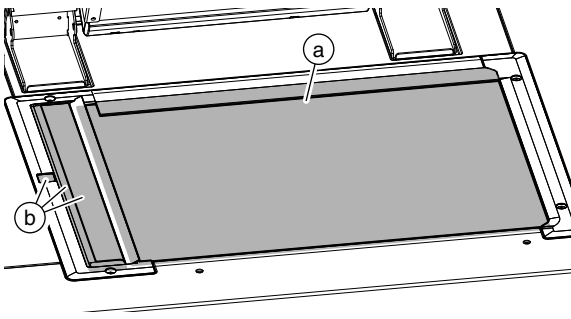


## B. Details

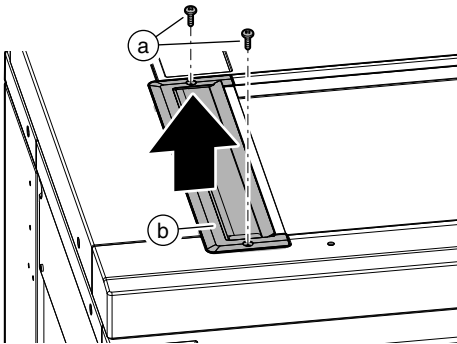
- 1) Open the DSPF unit (a).



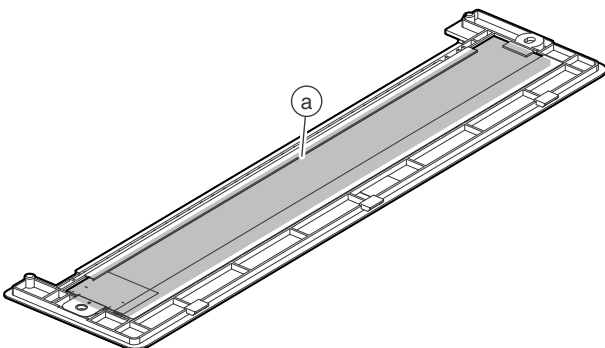
- 2) Clean the table glass (a) and the SPF glass (b) at every 500K.  
(Cleaning must be performed when calling, too.)



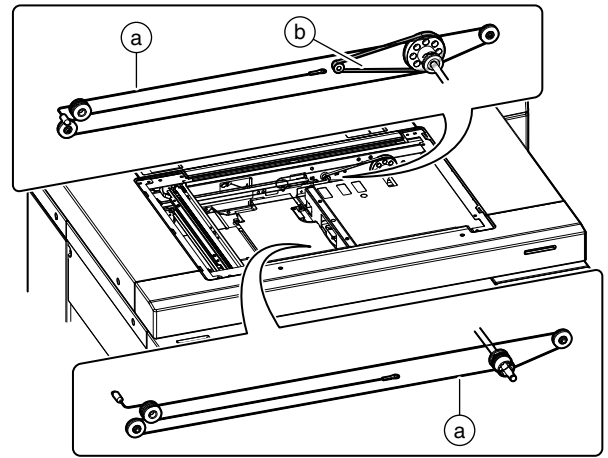
- 3) Remove the screw (a), and remove the SPF glass (b).



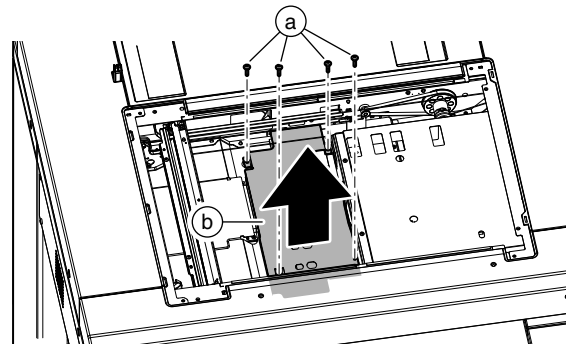
- 4) Clean the back surface of the SPF glass (a).



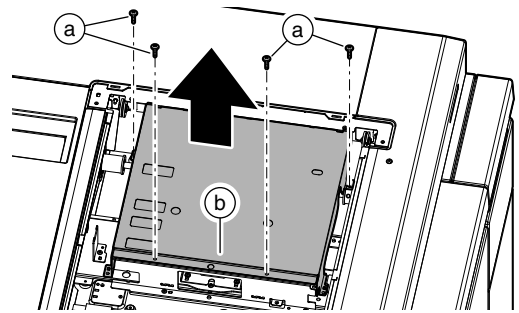
- 5) Check the drive wire (a) and the drive belt (b) at every 500K.



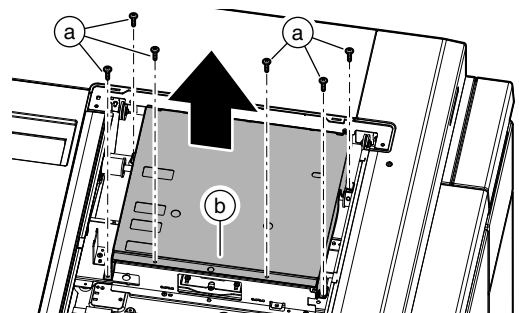
- 6) Remove the screw (a), and remove the plate (b).



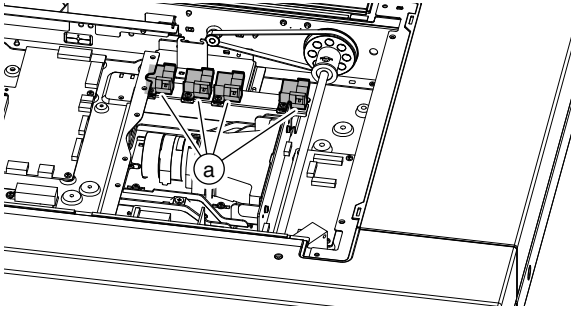
- 7) Check the main scanning document size sensor (a) at every 500K.



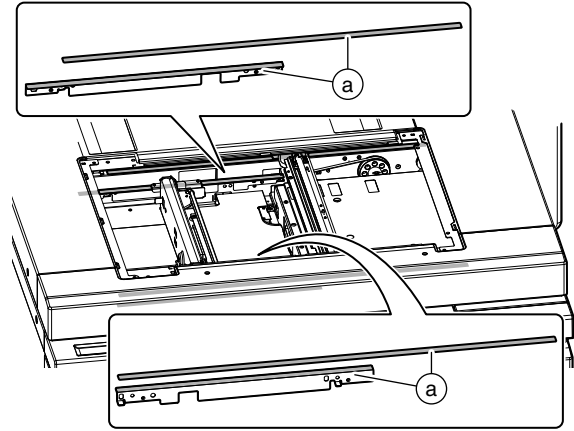
- 8) Remove the screw (a), and remove the dark box (b).



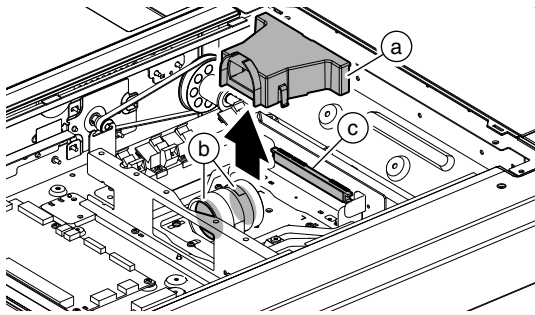
9) Check the sub scanning document size sensor (a) at every 500K.



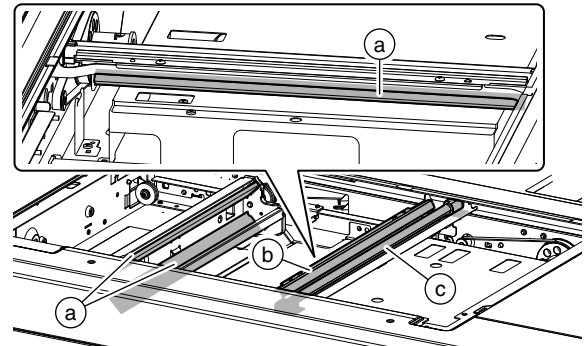
13) Apply grease to each rail (a) at every 500K.



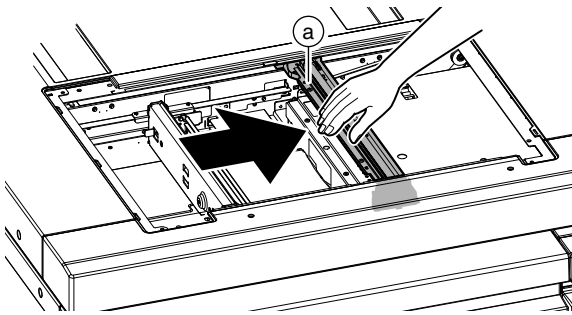
10) Remove the cover (a). Clean the lens (b), and the CCD (c) at every 500K.



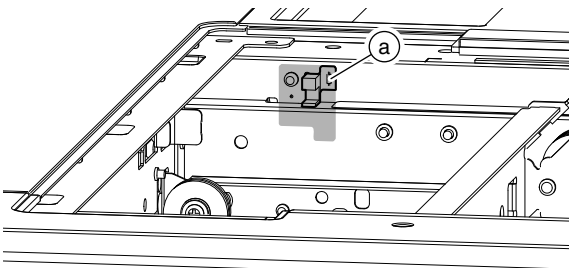
14) Clean the mirror (a), the reflector (b), and the scanner lamp (c) at every 500K.



11) Shift the lamp unit (a).



12) Check the scanner home position sensor (a) at every 500K.





# 17. DSPF section

## A. Maintenance table

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

| No. | Part name                     |  | When calling | 500 K | 1000 K | 1500 K | 2000 K | 2500 K | 3000 K | Remark  |
|-----|-------------------------------|--|--------------|-------|--------|--------|--------|--------|--------|---|
| 1   | Paper feed, transport section | Paper feed roller                                | ○            | ○     | ○      | ○      | ○      | ○      | ○      | (Note 1)  |
| 2   |                               | Paper pickup roller                              | ○            | ○     | ○      | ○      | ○      | ○      | ○      | (Note 1)  |
| 3   |                               | Separation roller                                | ○            | ○     | ○      | ○      | ○      | ○      | ○      | (Note 1)  |
| 4   |                               | No. 1 resist roller                              | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 5   |                               | Torque limiter                                   |              | ×     | ×      | ×      | ×      | ×      | ×      | (Note 1)  |
| 6   |                               | Double feed detection unit                       |              |       |        |        |        |        | ○      | Ultrasonic sensor top surface (Air cleaning)<br>(105/120cpm machine only) |
| 7   |                               | Transport roller 1                               | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 8   |                               | Transport roller 2                               | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 9   |                               | Second resist roller                             | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 10  |                               | Platen roller                                    | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 11  |                               | Transport roller 3                               | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 12  |                               | Transport roller 4                               | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 13  | Scanning section              | Lens   | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 14  |                               | CCD  | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 15  |                               | Mirror   | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 16  |                               | Reflector  | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 17  |                               | Scanner lamp                                     | ×            | ○     | ○      | ○      | ○      | ○      | ○      | Air cleaning  |
| 18  |                               | Back surface scanning section glass Upper, Lower | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 19  | Paper exit section            | Transport roller 5                               | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 20  |                               | Paper exit roller                                | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 21  | Drive section                 | Gears (Grease)                                   | ×            | ×     | ×      | ×      | ×      | ×      | ×      | (6LS06270000)   |
| 22  |                               | Belts  |              | ×     | ×      | ×      | ×      | ×      | ×      |   |
| 23  | Others                        | Document mat                                     | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 24  |                               | Scanning section paper guide (White Mylar)       | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 25  |                               | Discharge brush                                  | ×            | ×     | ×      | ×      | ×      | ×      | ×      |   |
| 26  |                               | Optical reflection type sensors                  | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 27  |                               | Optical reflection type sensors                  | ○            | ○     | ○      | ○      | ○      | ○      | ○      |   |
| 28  |                               | Paper guides                                     | ×            | ○     | ○      | ○      | ○      | ○      | ○      |   |

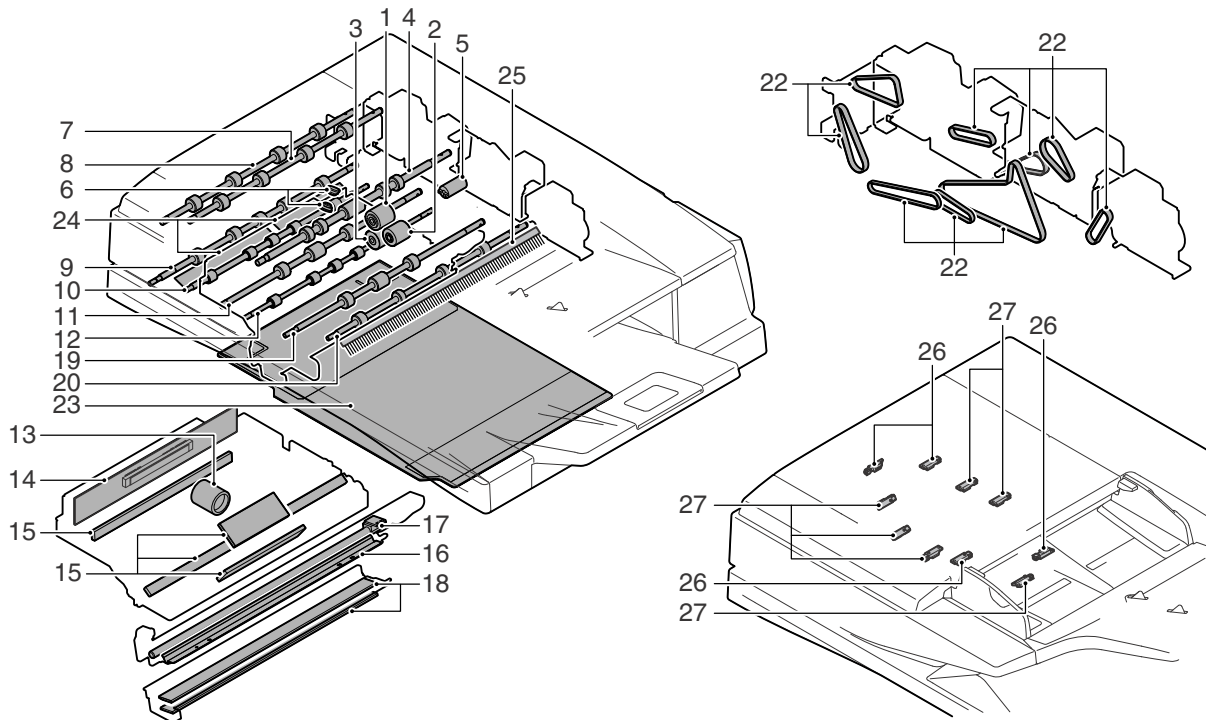
(Note 1) Replacement reference: Use the DSPF counter values for replacement reference.

\* Pickup roller, paper feed roller, separation roller: 200K or 1 year

\* Torque limiter: 800K

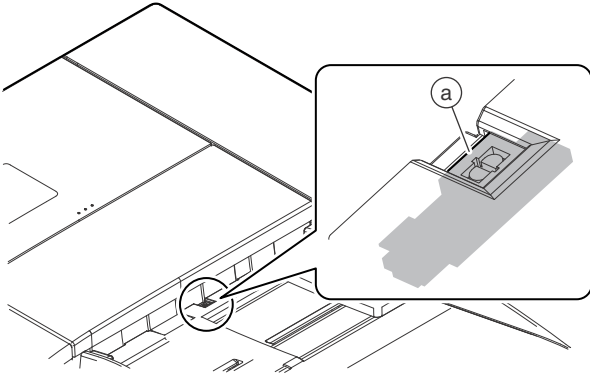
(Note2) Optical reflection sensor cleaning

\* Optical reflection sensor which allows cleaning when opening/closing the jam cancel door: 200K

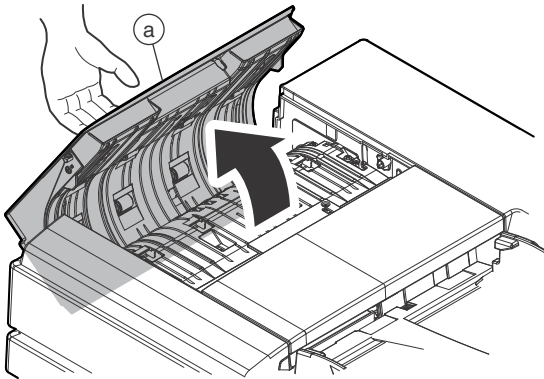


## B. Details

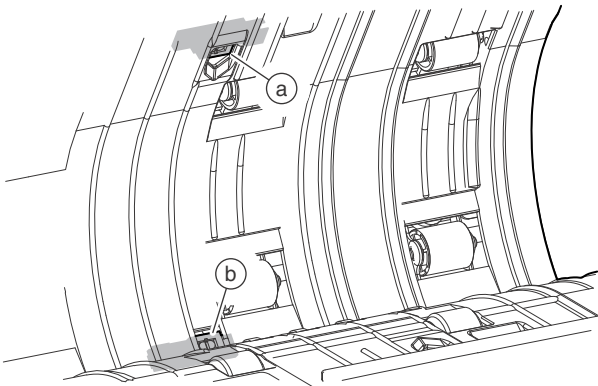
- 1) Clean the DSPF document empty sensor (a) of the document tray at every 200K.



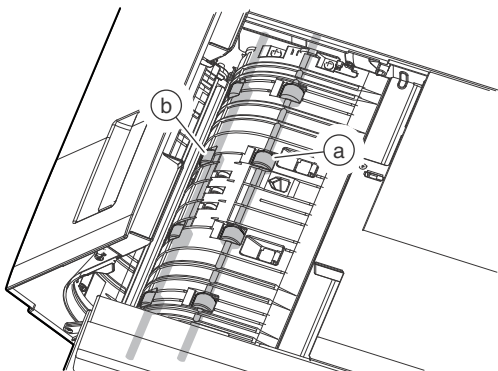
- 2) Open the upper door (a).



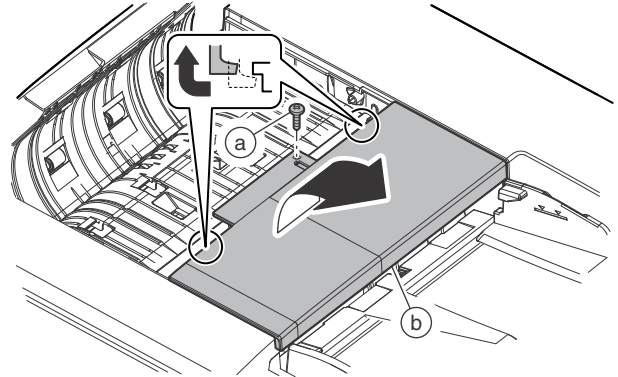
- 3) Clean the DSPF paper pass sensor 3 (a) and the DSPF paper pass sensor 4 (b) at every 200K.



- 4) Clean the transport roller 1 (a) and the transport roller 2 (b) at every 500K.

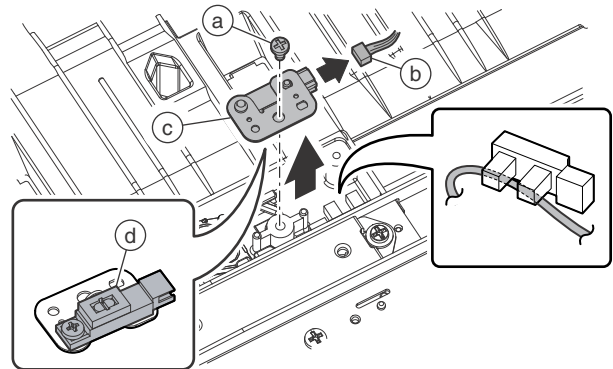


- 5) Remove the screw (a), and remove the cover (b).

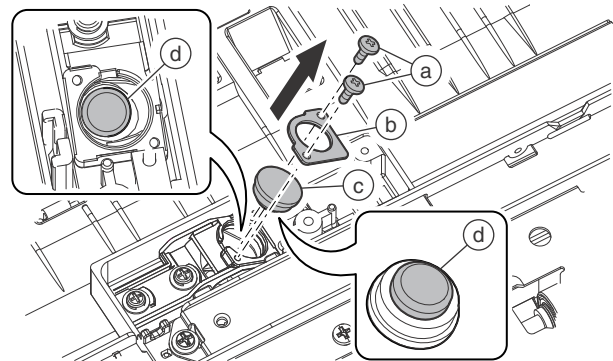


- 6) Remove the screw (a), and disconnect the connector. Remove the mounting plate (c). Clean the DSPF pass sensor 2 (d) at every 500K.

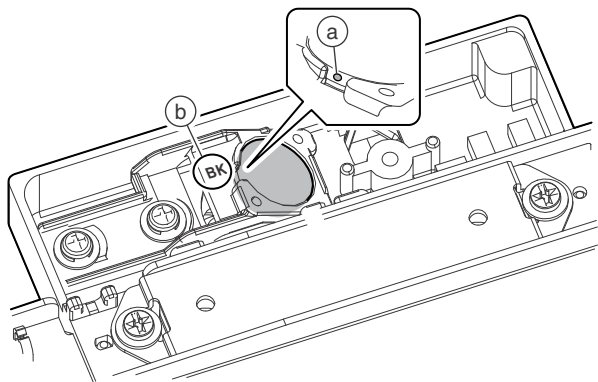
\* When connecting, arrange the harness of the connector (b) under the sensor.



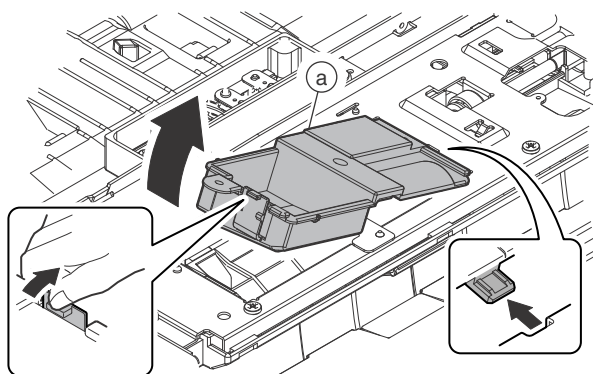
- 7) Remove the screw (a) and the plate (b). Remove the double feed sensor (c). Clean the double feed sensor by blowing air onto the top (d) of the double feed sensor at every 3000K.



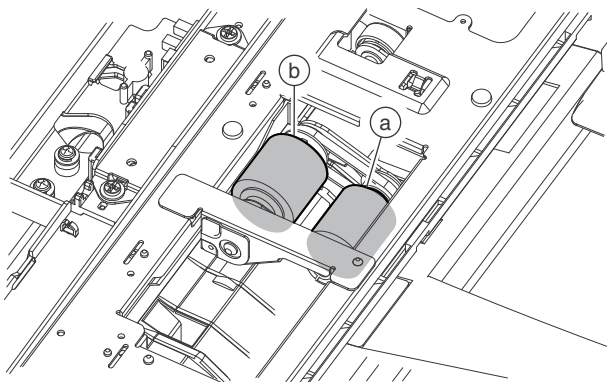
\* When installing the double feed sensor, install so that the white dot (a) on the side of the sensor comes on the side of the mark (b) and that the white dot can be seen from the slit.



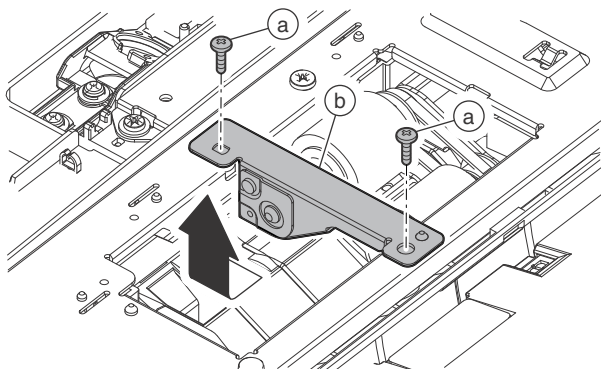
8) Remove the cover (a).



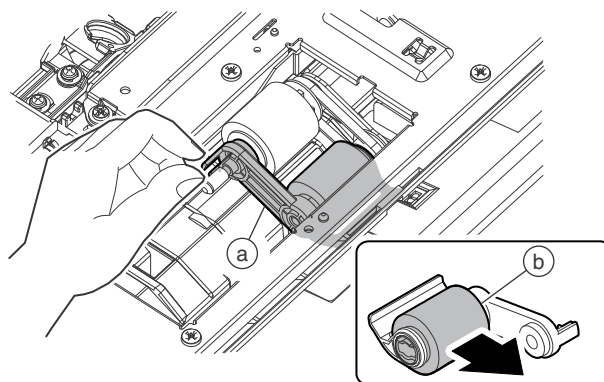
9) Check the paper pickup roller (a) and the paper feed roller (b) at every calling.



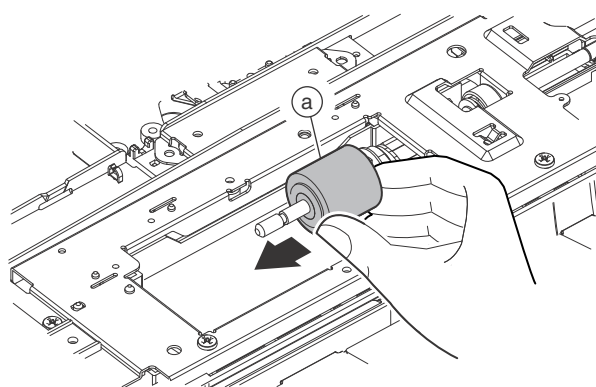
10) Remove the screw (a), and remove the stay (b).



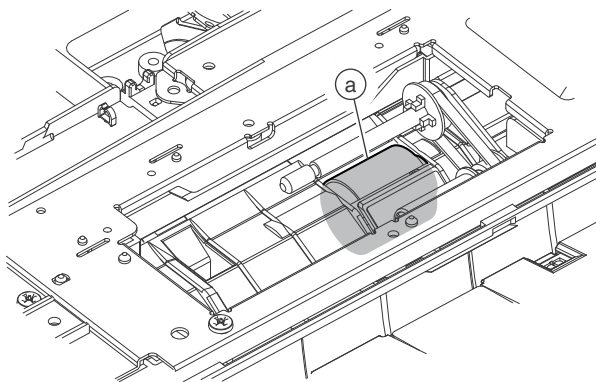
11) Remove the holder (a). Replace the paper pickup roller (b) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



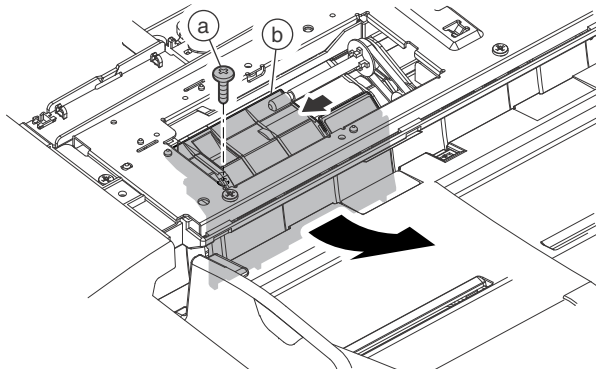
12) Replace the paper feed roller (a) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



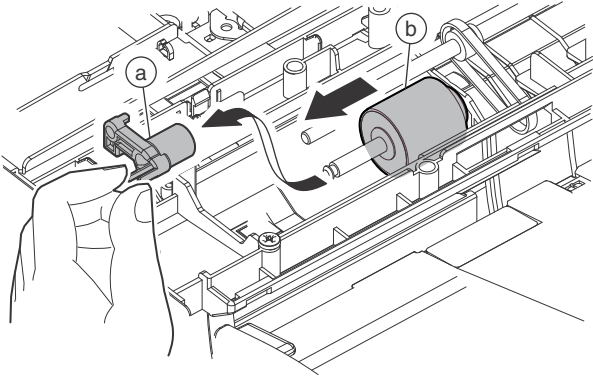
13) Check the separation roller (a) at every calling.



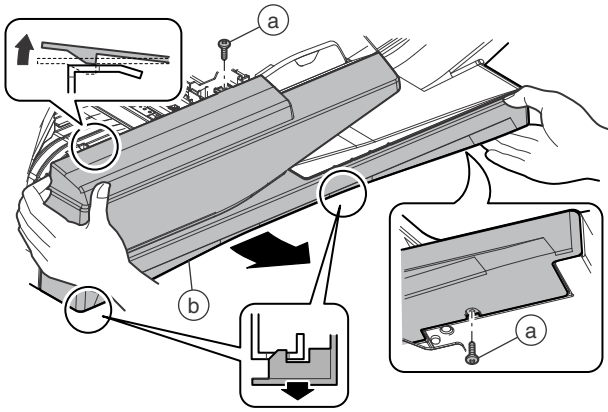
14) Remove the screw (a), and remove the cover (b).



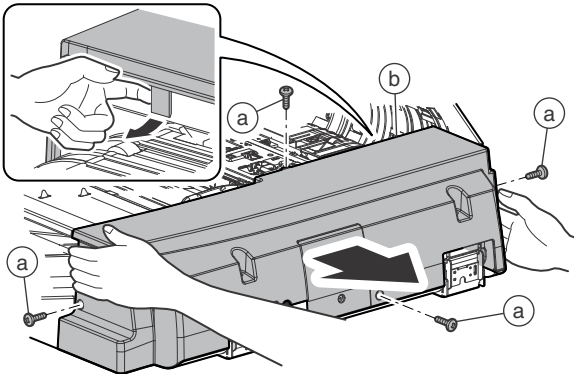
15) Remove the holder (a), and replace the separation roller (b) (when DSPF counter value reaches 200K or 1 year from the beginning of use).



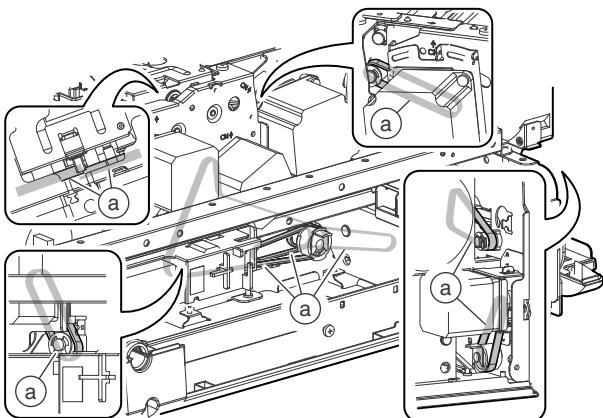
16) Remove the screw (a), and remove the front cabinet (b).



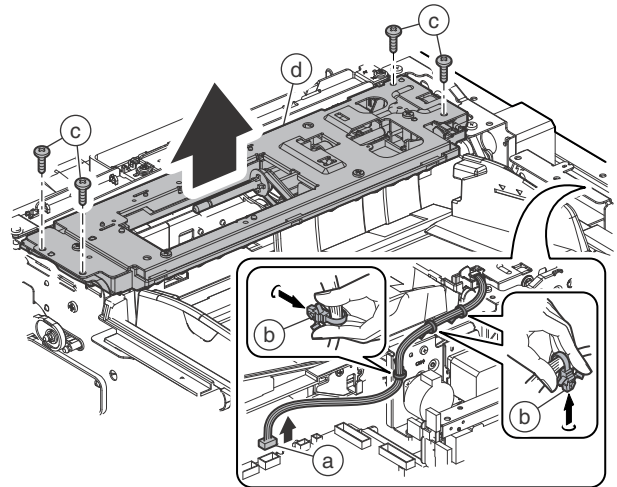
17) Remove the screw (a), and remove the rear cabinet (b).



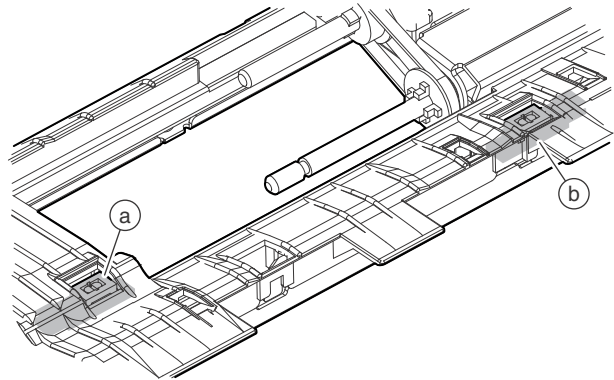
18) Check each belt (a) at every 500K.



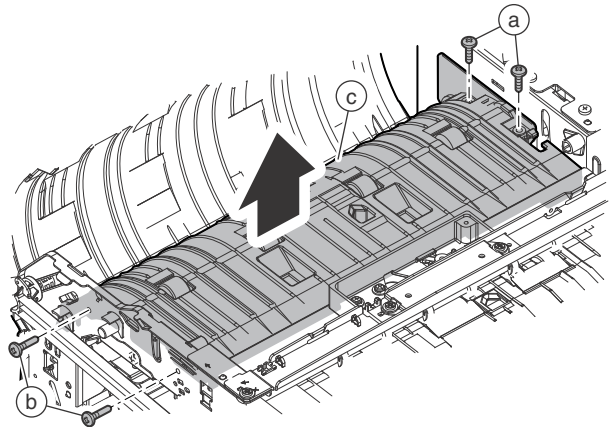
19) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the paper feed unit (d).



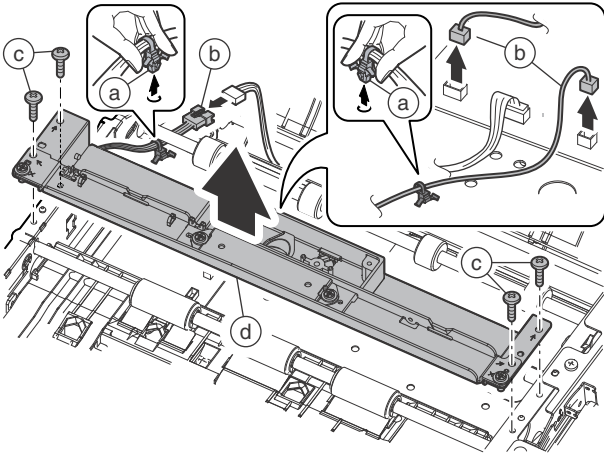
20) Turn back the paper feed unit, and clean the DSPF random sensor (a) and the DSPF paper pass sensor 1 (b) at every 500K. Clean the paper guide at every 500K.



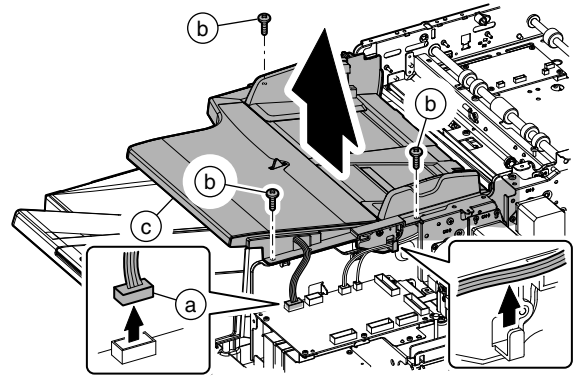
21) Remove the screw (a) and the step screw (b), and remove the paper guide (c). Clean the paper guide (c) at every 500K.



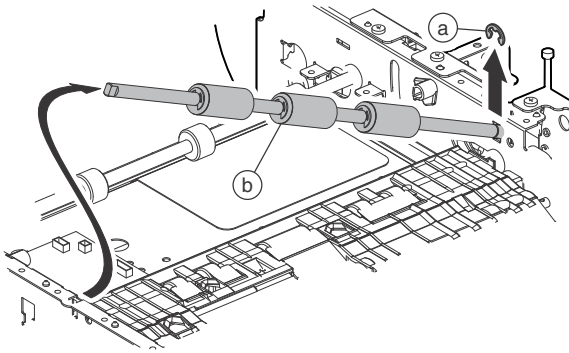
22) Remove the snap band (a), and disconnect the connector (b). Remove the screw (c), and remove the double feed detection unit (d).



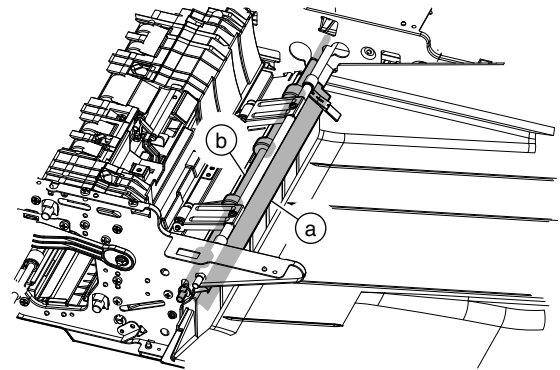
25) Disconnect the connector (a). Remove the screw (b), and remove the document tray unit (c). Clean the transport section of the document tray unit (c) at every 500K.



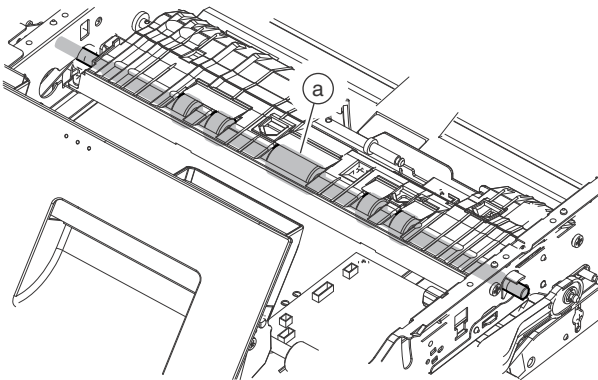
23) Remove the E-ring (a), and remove the No. 1 resist roller (Idle) (b).



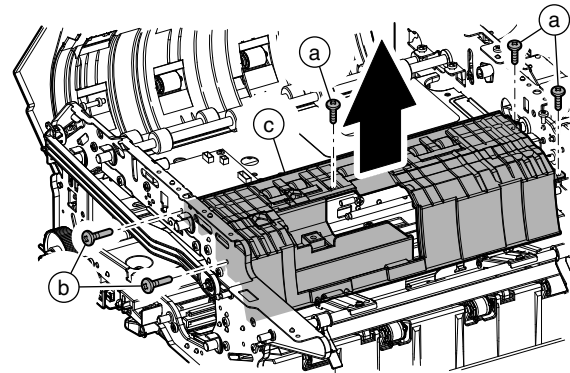
26) Check the discharge brush (a) at every 500K. Clean the paper exit roller (b) at every 500K.



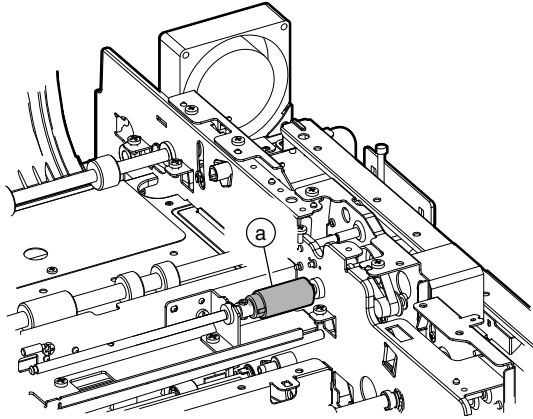
24) Clean the No. 1 resist roller (a) at every 500K.



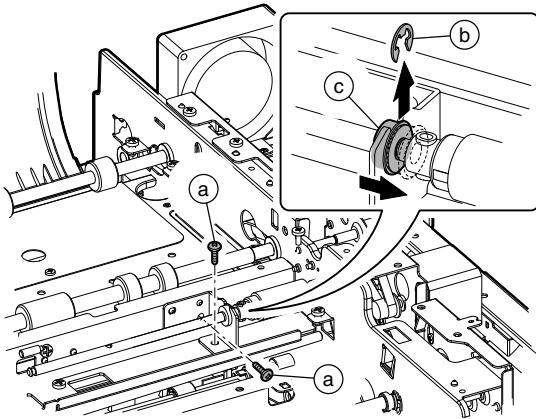
27) Remove the screw (a) and the step screw (b), and remove the paper guide (c). Clean the paper guide (c) at every 500K.



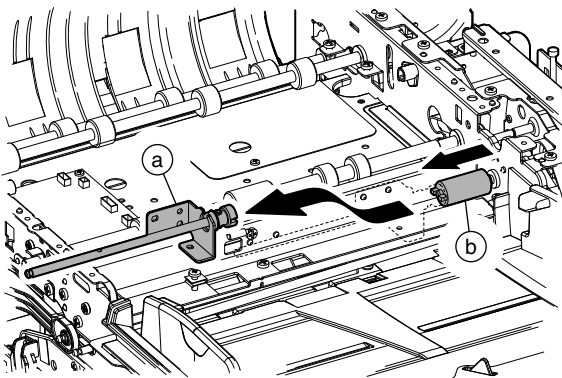
28) Check the torque limiter (a) at every 500K.



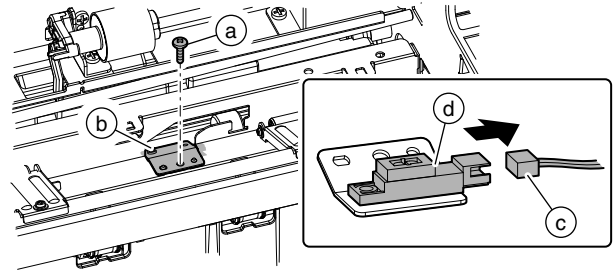
29) Remove the screw (a). Remove the E-ring (b), and slide the bearing (c).



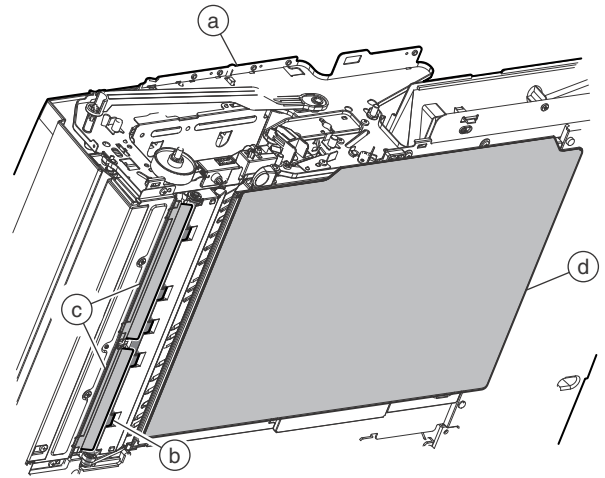
30) Remove the shaft (a), and replace the torque limiter (b) (when DSPF counter value reaches 800K from the beginning of use).



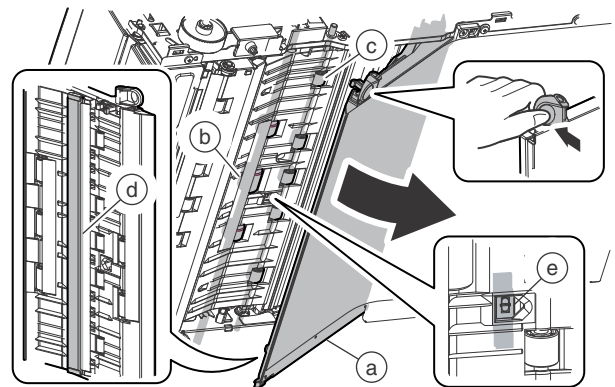
31) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c). Clean the DSPF paper exit sensor (d) at every 500K.



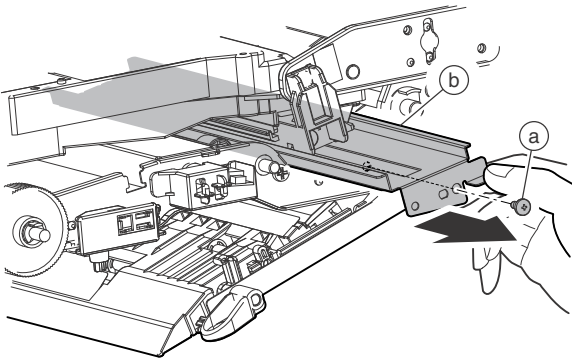
32) Open the DSPF unit (a), and clean the platen roller (b), the scanning section paper guide (c), and the document mat (d) at every 500K.



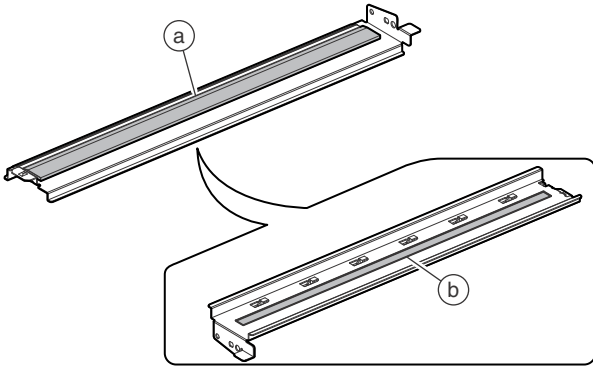
33) Open the lower door (a), and clean the transport roller 3 (b), the transport roller 4 (c), and the back surface scanning glass lower (d) at every 500K, and check the DSPF paper pass sensor 7 (e) at every 200K. Clean the paper guides at every 500K.



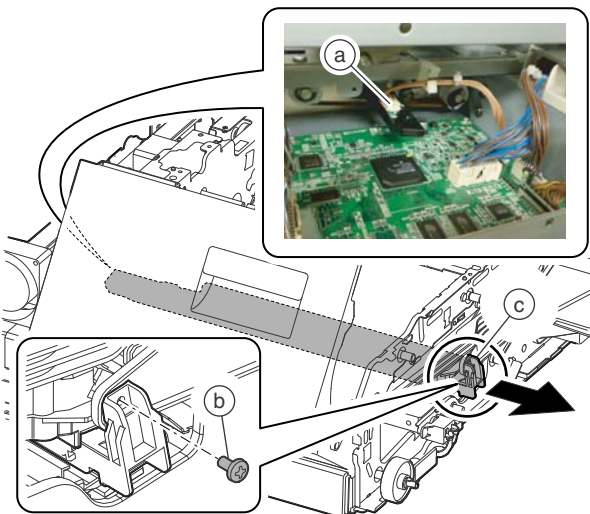
34) Remove the screw (a). Remove the back surface scanning section glass upper unit (b).



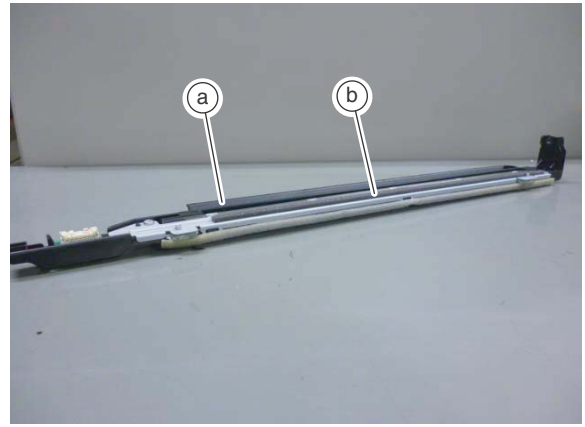
35) Clean the front surface (a) and the back surface (b) of the back surface scanning glass upper at every 500K.



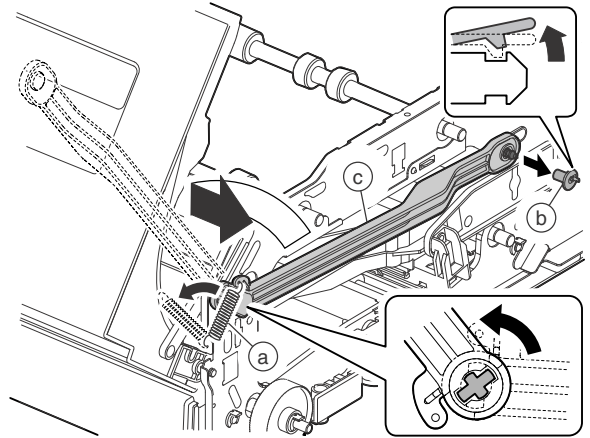
36) Disconnect the connector (a). Remove the screw (b), and remove the LED unit (c).



37) Clean the reflector (a) and the scanner lamp (b) at every 500K.

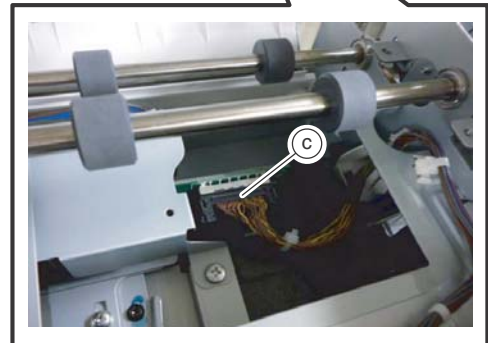
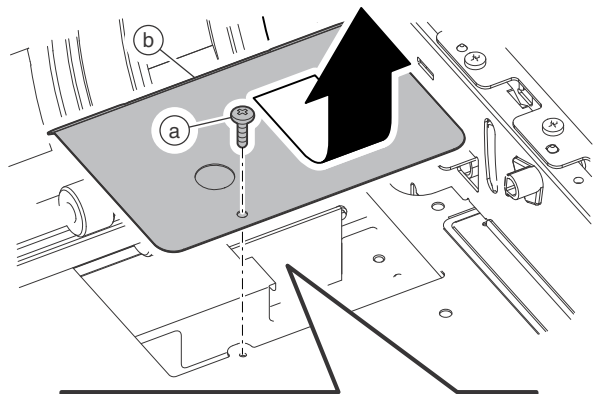


38) Remove the spring (a). Remove the holder (b) and the arm (c).

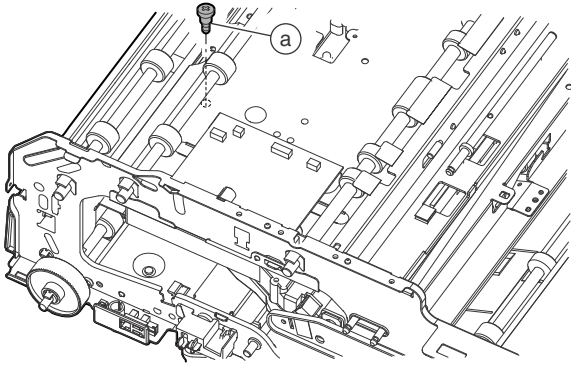


39) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).

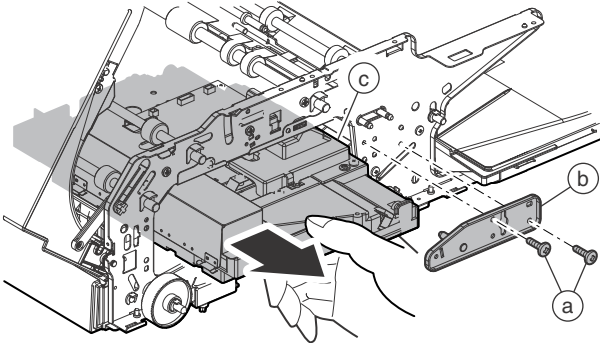
\* When disconnecting the connector (c), release the lock and carefully disconnect the connector. Be careful not to use an excessive force when disconnecting the connector.



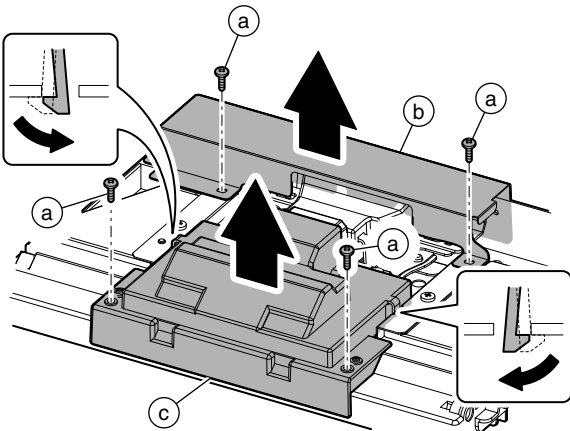
40) Remove the step screw (a).



41) Remove the screw (a), and remove the fulcrum plate (b). Remove the scanner unit (c).

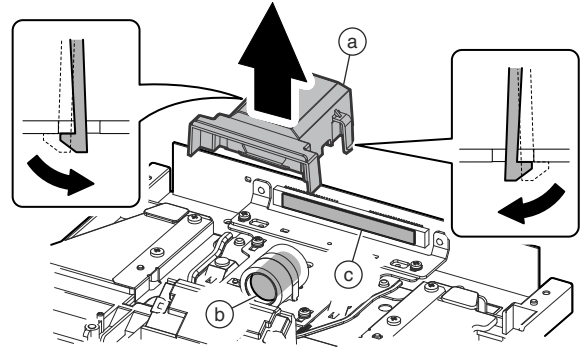


42) Clean the whole surface the scanner unit at every 500K. Remove the screw (a), and remove the dark box (b) and the cover (c).

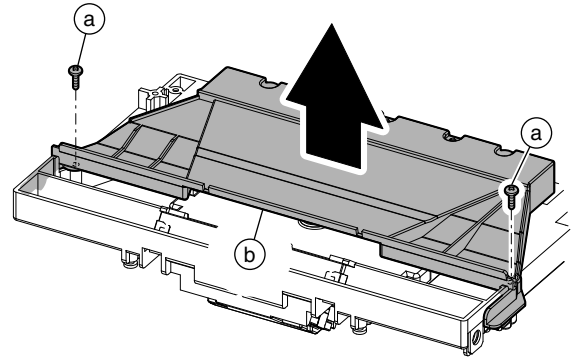


43) Remove the cover (a). Clean the lens (b) and the CCD (c) at every 500K.

\* After completion of cleaning, visually check for any dust.

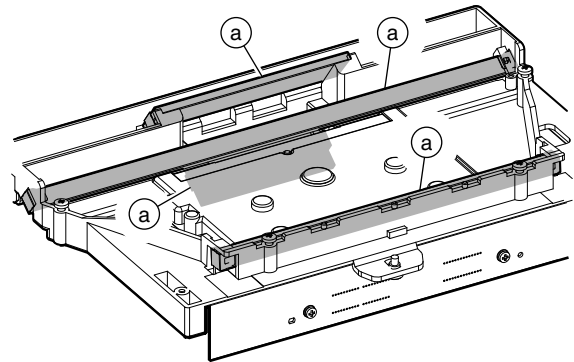


44) Remove the screw (a), and remove the cover (b).

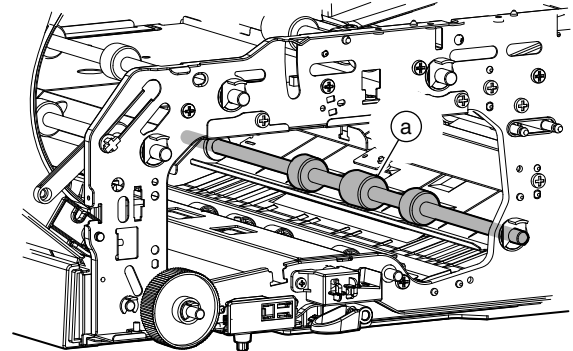


45) Clean the mirror (a) at every 500K.

\* After completion of cleaning, visually check for any dust.

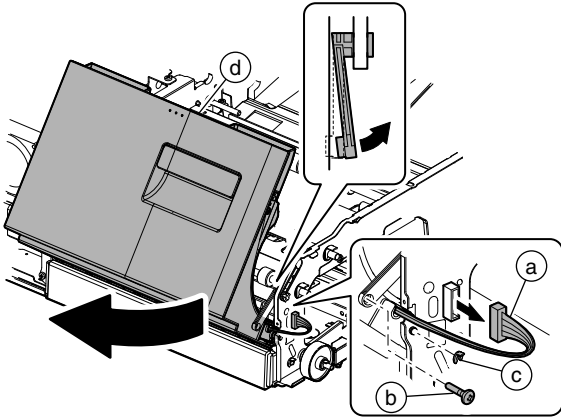


46) Clean the transport roller 5 (a) at every 500K.

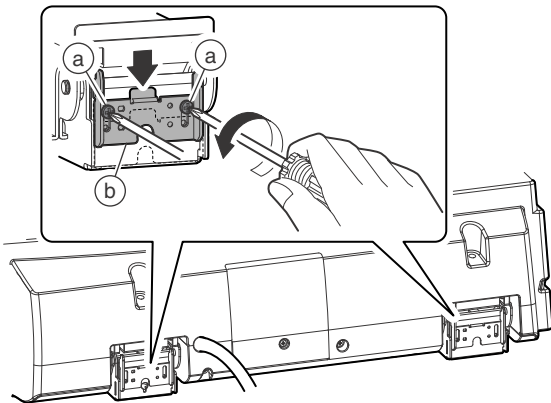




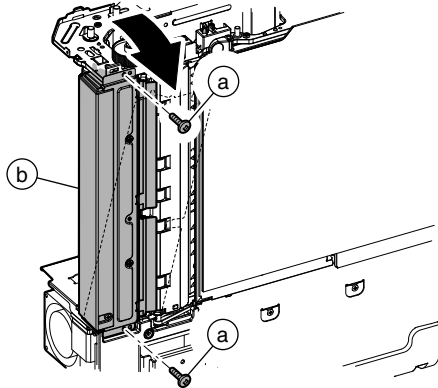
47) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d). Clean the paper guide of the upper door (d) at every 500K.



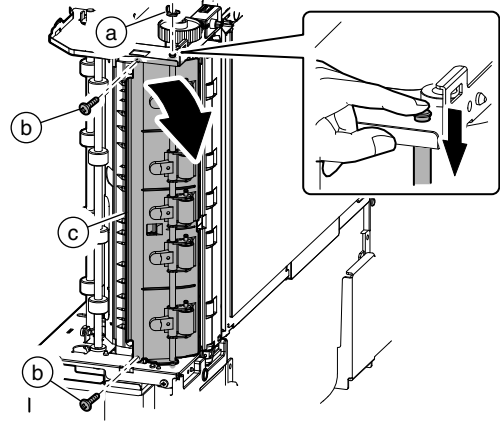
48) Loosen the screw (a), and move down the fixing plate (b).



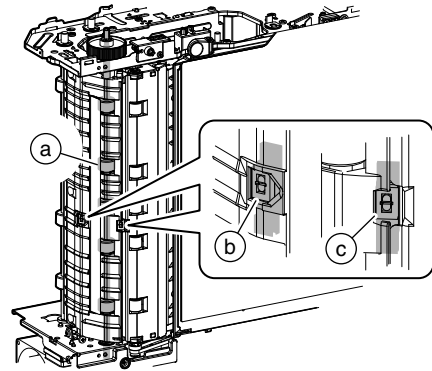
49) Remove the screw (a), and remove the stay (b). Clean the paper guide of the stay (b) at every 500K.



50) Remove the E-ring (a). Remove the screw (b), and remove the roller unit (c). Clean the paper guide of the roller unit (c) at every 500K.



51) Clean the No. 2 resist roller (a), the DSPF paper pass sensor 5 (b) at every 500K, and the DSPF paper pass sensor 6 (c) at every 200K. Clean the paper guides at every 500K.



# [9] ROM VERSION-UP

## 1. General

### A. Cases where version-up is required

ROM version-up is required in the following cases:

- 1) When there is a necessity to upgrade the performance.
- 2) When installing a new spare ROM to the machine for repair.
- 3) When installing a new spare PWB unit with ROM installed to it.
- 4) When there is a problem in the programs in ROM and it must be repaired.

- Firmware types

| Display Item   | Description of item content                   |
|----------------|---|
| ICUM(MAIN)     | ICUM Main                                     |
| ICUM(SUB)      | ICUM Sub                                      |
| ICUM(OS)       | ICUM OS                                       |
| ICUM(CN)       | ICUM CN                                       |
| ICUM(BOOT)     | ICUM BOOT                                     |
| ICUM(BIOS)     | ICUM BIOS                                     |
| ICU1(MAIN)     | ICU1 Main section former half                 |
| ICU1(BOOTM)    | ICU1 Boot section main                        |
| ICU1(SUB)      | ICU1 Sub section (ARM9)                       |
| ICU2           | ICU2 program                                  |
| LANGUAGE       | Language support data program (General term)  |
| GRAPHIC        | Graphic data for L-LCD                        |
| SLIST          | SLIST data for L-LCD                          |
| UICONTENTS     | Content data for display                      |
| EOSA           | embedded OSA                                  |
| PCU(BOOT)      | PCU Boot section                              |
| PCU(MAIN)      | PCU Main section                              |
| A4LCC(BOOT)    | Side LCC (A4) Boot section                    |
| A4LCC(MAIN)    | Side LCC (A4) Main section                    |
| A3LCC(BOOT)    | Side LCC (A3) Boot section                    |
| A3LCC(MAIN)    | Side LCC (A3) Main section                    |
| LCT1(BOOT)     | A3 LCT 1 series, Boot section                 |
| LCT1(MAIN)     | A3 LCT 1 series, Main section                 |
| LCT2(BOOT)     | A3 LCT 2 series, Boot section                 |
| LCT2(MAIN)     | A3 LCT 2 series, Main section                 |
| INSERTER(BOOT) | Inserter Boot section                         |
| INSERTER(MAIN) | Inserter Main section                         |
| 4KFIN100(BOOT) | 4K finisher (100-sheet stapling) Boot section |
| 4KFIN100(MAIN) | 4K finisher (100-sheet stapling) Main section |
| SFIN(BOOT)     | Finisher (50-sheet stapling) Boot section     |
| SFIN(MAIN)     | Finisher (50-sheet stapling) Main section     |

## B. Notes for version-up

### (1) Relationship between each ROM and version-up

Before execution of ROM version-up, check combinations with ROMs installed in the other PWBs including options.

Some combinations of versions may cause malfunctions of the machine.

### C. Update procedures and kinds of firmware

There are following methods of downloading of the firmware.

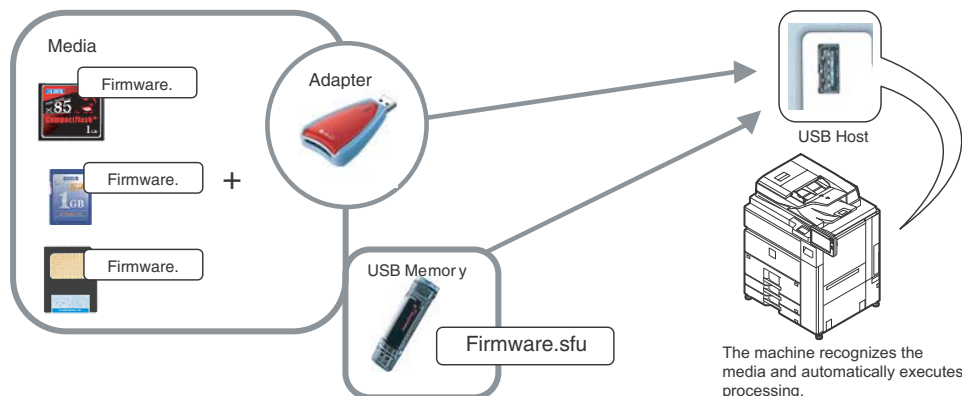
- 1) Firmware download using media
- 2) Firmware download using FTP
- 3) Firmware download using Web page

| Display Item    | Description of item content                        |
|-----------------|--|
| SADDLE100(BOOT) | Saddle unit (100-sheet stapling) Boot section ROM  |
| SADDLE100(MAIN) | Saddle unit (100-sheet stapling) Main section ROM  |
| TRIMMER(BOOT)   | Trimmer unit (100-sheet stapling) Boot section ROM |
| TRIMMER(MAIN)   | Trimmer unit (100-sheet stapling) Main section ROM |
| FOLDER(BOOT)    | Folding unit (100-sheet stapling) Boot section ROM |
| FOLDER(MAIN)    | Folding unit (100-sheet stapling) Main section ROM |
| DECURLER(BOOT)  | Decurler Boot section ROM                          |
| DECURLER(MAIN)  | Decurler Main section ROM                          |
| STACKER1(BOOT)  | Stacker 1 series Boot section ROM                  |
| STACKER1(MAIN)  | Stacker 1 series Main section ROM                  |
| STACKER2(BOOT)  | Stacker 2 series Boot section ROM                  |
| STACKER2(MAIN)  | Stacker 2 series Main section ROM                  |
| SCU(BOOT)       | SCU Boot section                                   |
| SCU(MAIN)       | SCU Main section                                   |
| DSPF(BOOT)      | DSPF Boot section                                  |
| DSPF(MAIN)      | DSPF Main section                                  |
| ANIMATION       | Animation data                                     |
| ACRE(BOOT)      | ACRE Boot section                                  |
| ACRE(MAIN)      | ACRE Main section                                  |
| ACRE_DATA       | ACRE table   |

## 2. Update procedure

### A. Update method using SIM 49-1

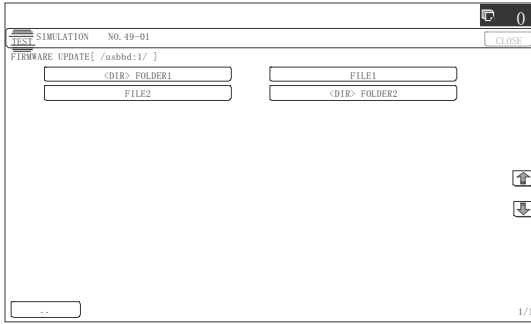
For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.



- Store the firmware data (xxx .sfu) to the media or USB memory beforehand.
- The media used for the update must have an enough capacity for storing the firmware data.
- The USB memory equipped with the security (secure) function cannot be used.

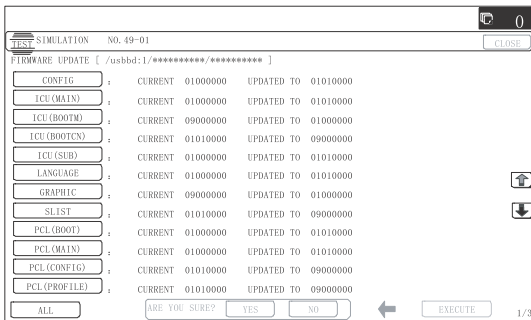
Execution of the firmware by SIM49-01

- 1) Insert the media or USB memory which stores the firmware into the main unit. (Be sure to use the USB I/F on the operation panel.)
- 2) Enter the SIM49-01.  
Press the key of the file to be updated. The screen transfers to the update screen.

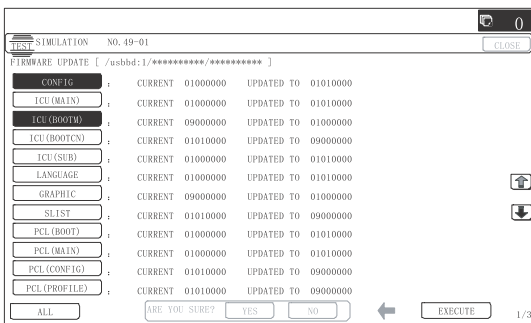


- \* The number of key changes according to the number of the sfu file in the media or USB memory inserted.
- \* If the media or USB memory was not inserted when entry to the SIM49-01 screen, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE [OK]" is displayed on the screen. Insert the media or USB memory and push the [OK] key to open the file. If the media have not been inserted and [OK] key is pushed, the next screen does not appear and the screen waits the entry. Conversely, if the media or USB memory is pulled out on the file list screen, the error is detected by the [FILE] key pressing, and the first screen appears.

- 3) Current version number and the version number to be updated will be shown for each firmware respectively.

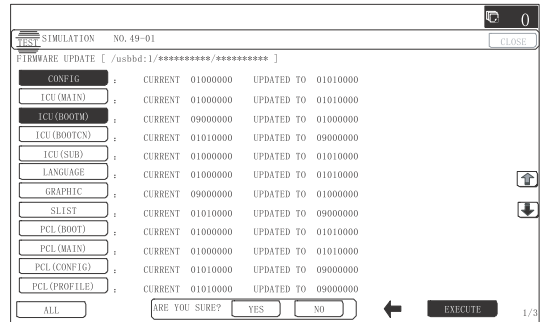


- 4) Press [ALL] key.  
All the firmware programs are selected.

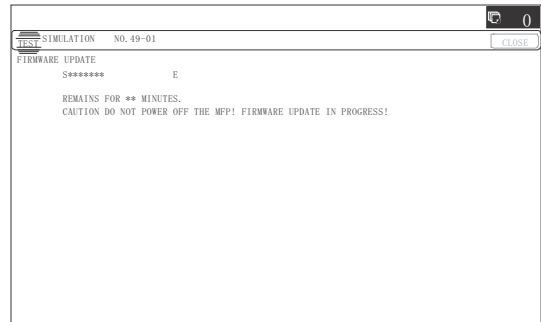


- \* Normally select all the firmwares and execute updating.
- \* In this case, firmwares which do not exist on the machine side are ignored.  
To update a certain firmware only, select the firmware with the firmware display key.
- \* If firmware's key is not selected, [EXECUTE] key is gray out and cannot be pressed.

- 5) Press [EXECUTE] key. "ARE YOU SURE? [YES] [NO]" becomes clear. Press [YES] key to start the update of selected firmware.



The progress is displayed on right side of "FIRMWARE UPDATE" title by 20 steps.



At this time, only the progress gauge is displayed on the screen, and the version and the firmware selection key are not displayed.

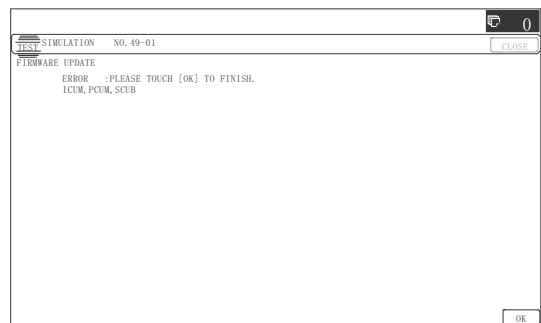
- 6) If the update is normal completion, following screen is displayed.



Press [OK] key. (The machine is rebooted.)

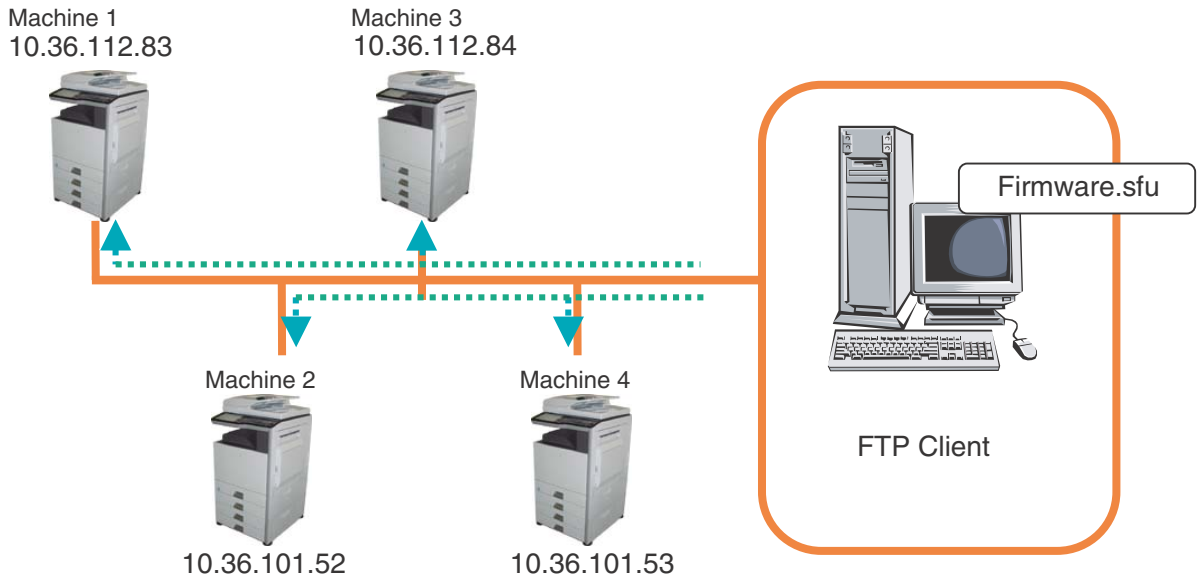
Go to SIM22-05 and confirm the firmware has upgraded successfully.

- 7) If the update is not normal completion, following screen is displayed.



## B. Firmware update using FTP

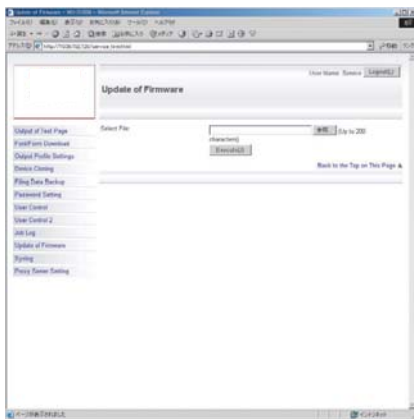
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



## C. Firmware update using the Web page

An Web browser (service technician's Web page) is used to update the firmware.

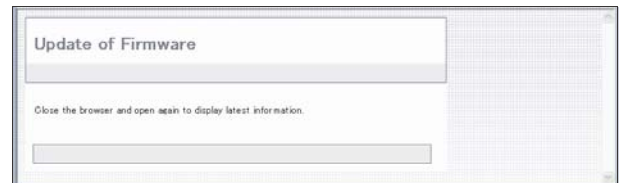
- 1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
- 2) Click the "Update of Firmware" key in the Web page. Click the [Browse] key and select the firmware for the update.



- 3) After selecting the file, click the [Submit] key to send the firmware to the machine. Update processing begins. While processing takes place, "Firmware Update, now processing..." appears.



- 4) When the firmware update is finished, "Firmware Update completed. Please reboot the MFP." appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.



"Close the browser and open again to display latest information." will be displayed.

- 5) Check the firmware version of machine again.

## D. Firmware update using the CN update function (There are three methods.)

### (1) Outline

The update method using the DIP SW of the MFP PWB is called the CN update.

#### a. Function

There are the following three functions in the CN update mode.

##### - Firmware update function

This function is used to update the firmware by transferring data from the PC which is connected to the MFP PWB, the SCU PWB, the PCU PWB, and various options by means of a USB memory or USB cable.

This is basically the same as SIM49-01, but differs in the following points:

When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.

If, however, an abnormality occurs in the boot program, the SD card and CompactFlash must be replaced with a new one having the normal boot program.

If the boot animation is not displayed, there is an abnormality in the boot program.

If the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program.

##### - Firmware version check function

(The method to check the firmware version by using SIM22-5 is easier than this method. Therefore, it is not described in this manual.)

#### b. Purpose

This function is used in the following cases:

- When an error occurs during firmware update operation other than the CN update.
- When the power is shut down or an error occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.

If an error occurs in the boot program, this method cannot be used. In such a case, the SD card and CompactFlash must be replaced with a new one having the normal boot program.

#### c. DIP-SW used in the CN update mode

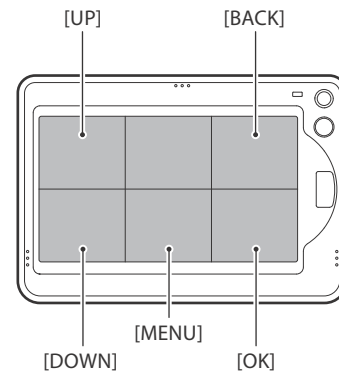
To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

When terminating the CN update mode, reset UPDATE DIP-SW to OFF (normal mode).



#### d. Keys used in the CN update mode

The following five keys are used for operations in the CN update mode. Be careful that the functions of the keys differ those in the normal mode.



| Key name   | Functions in the CN update mode  |
|------------|--|
| [OK] key   | Executes the selected function or item.                                    |
| [MENU] key | Selects a menu.  |
| [BACK] key | Selects a menu.<br>(Serves as a cancel key in the execution check screen.) |
| [UP] key   | Selects an item.   |
| [DOWN] key | Selects an item.   |

### (2) Operating procedures

#### a. Firmware update function

This function is used to revise the firmware by using the USB memory for the MFP PWB, the SCU PWB, the PCU PWB, and each option.

It is basically same as SIM 49-01, but differs in the following points.

- The update target ROM is automatically selected.
- When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update.

If, however, an abnormality occurs in the boot program, this method cannot be used. On that case, the SD card and CompactFlash must be replaced with a new one having the normal boot program.

When the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program (SD card or CompactFlash).

##### a-1. Necessary items

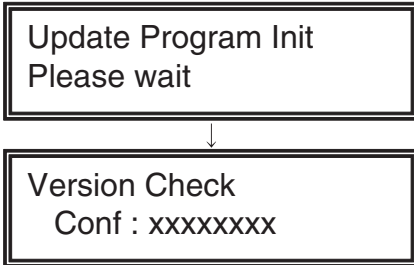
- 1) Insert the SD card and CompactFlash to the MFP PWB of the machine.
- 2) USB memory with the firmware file (SFU) saved in it.

NOTE: Save the firmware file in the main directory or in a one-level lower directory.

**a-2. Procedures**

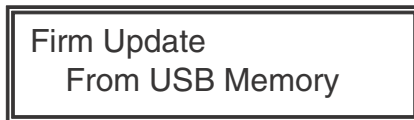
- 1) Turn OFF the power, and remove the cabinet and the MFP PWB cover.
- 2) Turn ON the DIP SW of the MFP PWB UP DATE.
- 3) Install the USB memory into the USB port.
- 4) Turn ON the power.
- 5) Check to confirm that the machine starts booting. (It takes more than ten seconds to display the menu.)

**Display when booting is completed**



- 6) Select the firmware update mode.  
Select the update mode with [MENU] key and [BACK] key.

**Display of the firmware update mode**



- 7) Press [OK] key.  
The firmware file saved in the USB memory is retrieved, and the file selection menu is displayed.

**Display of file selection**



- 8) Select the firmware file (SFU).  
Select the target firmware file (SFU) with [UP] key and [DOWN] key.  
When [OK] key is pressed with a directory name (the head: "> D") displayed, the menu goes to the one-stage lower directory.  
When [BACK] key is pressed in the lower-stage directory, the menu returns to the original upper directory.

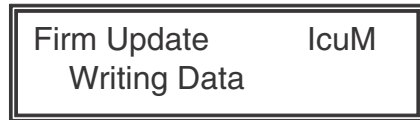
- 9) Press [OK] key.  
The selected firmware file (SFU) is read. It takes about one minute.

**Display of file reading**



- 10) After completion of reading, the firmware update process is continued.

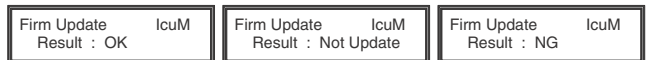
**Display of the firmware update process**



- \* The abbreviated name of the firmware which is under update process is indicated on the right upper corner of the display.
- \* During the update process, the display may flash instantaneously. It is a normal operation.

- 11) Check the update result.  
Use [UP] key and [DOWN] key to display the results of all the firmware programs.

**Display of the firmware update result**



- OK: Update is completed successfully.
- NG: Update is failed.
- Not Update: Update is not executed.

- 12) Turn OFF the power.
- 13) Turn OFF the DIP SW of the MFP PWB UP DATE. (Set the DIP-SW to the normal mode.)
- 14) Turn ON the power, and check to confirm that the machine boots up normally.  
Check to confirm that the boot animation is displayed.  
Check to confirm that "Copying is enabled" is displayed on the copier basic menu.
- 15) Check to confirm the version of each firmware with SIM22-5.
- 16) Attach the MFP PWB cover and the cabinet.

# [10] SERVICE WEB PAGE

## 1. General

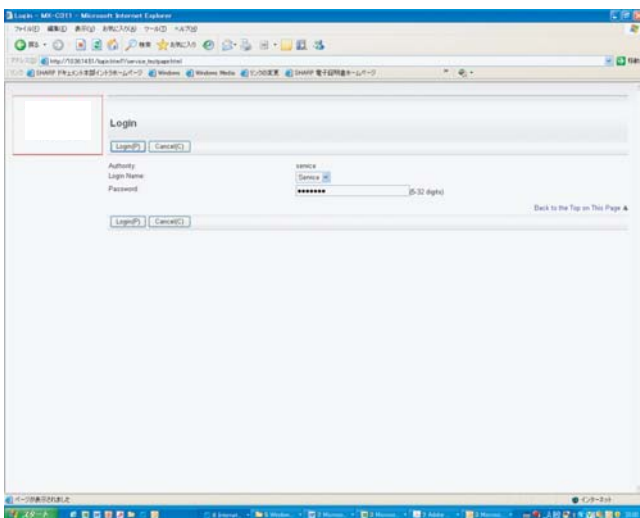
The following functions are available on the Hidden Web Page exclusively used for the serviceman.

| Menu/Item           |                         | Function and content  |
|---------------------|-------------------------|---|
| Output of Test Page |                         | Used to print out the test page (system setting contents).  |
| Font/Form Download  |                         | Used to download Font/Form.<br>Font/Form of PCL and PostScript, macro, and other resources are downloaded to the HDD and controlled.<br>(PS, PCL5 only)   |
| Device Cloning      |                         | Used to import/export the system setting information in XML format. By importing the export file to the other device, the setting values and setting contents of the device can be copied to another device. This function is useful to set the same setting to two or more machines efficiently. |
| Filing Data Backup  |                         | Used to import/export the document filing data in the unit of folder.   |
| User Control        |                         | Used to shift to the user mode. After log in, the screen is shifted to the setting screen of user management.   |
| User Control 2      |                         | Used to set the Pages Limit Group and the Favorite Operation Group by authority of the serviceman.<br>(Select among preset items.)  |
| Job Log             | Save Job Log            | Used to save the Job Log.   |
|                     | View Job Log            | Used to display the Job Log.  |
| Update of Firmware  |                         | Used to update the firmware version.  |
| Syslog              | Administration Settings | Used to set the Log Type. (Set to the default.)   |
|                     | Storage/Send Settings   | Keep all the items selected.  |
|                     | Save/ Delete Syslog     | Used to save or delete the log data.  |
|                     | View Syslog             | Used to display the log data.   |

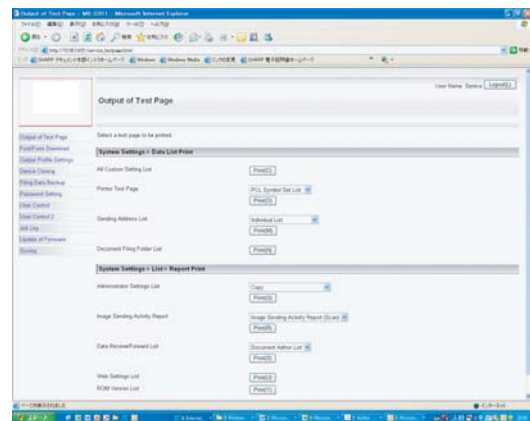
## 2. Details and operation procedures

### A. Procedures to enter the Hidden Web page exclusively used for the serviceman

- 1) Boot a browser program.
- 2) Enter the specified URL ([http://xxx.xxx.xxx.xxx/service\\_login.html](http://xxx.xxx.xxx.xxx/service_login.html)) and enter the servicing page menu.  
Default password: "service"

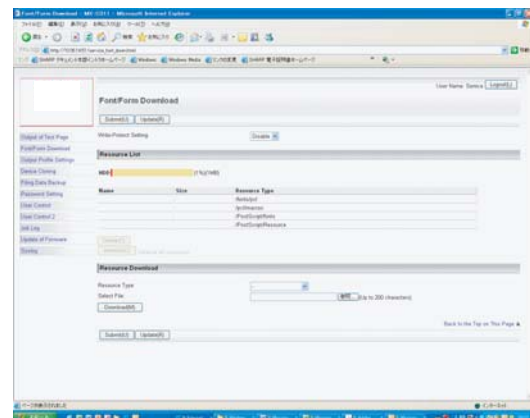


### B. Output of Test Page



- 1) Click "Print" button of an item or report to be printed.  
When there is a list of items for selection, select one of the items in the pull-down menu list, and click "Print" button.  
The list is printed out.

### C. Font/Form Download



## (1) Download of Font, Form, and Macro

- 1) Select "Resource Type" from the pull-down menu list.  
(Example: PCL/PostScript Font/Form or Macro)
- 2) Click "Refer" button to select a target file.
- 3) Click "Download" button.
- 4) Click "Submit" (registration) button.  
The file is downloaded to the HDD.  
The list of the downloaded files and the use percentage of the HDD are displayed.

## (2) Delete of downloaded font (Procedures to delete a file separately)

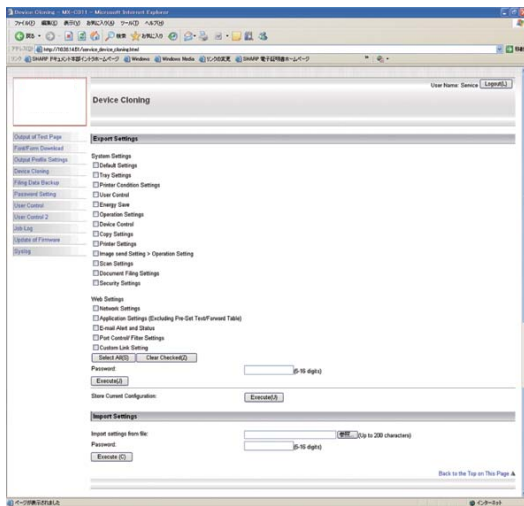
- 1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
- 2) Check that the confirmation message is displayed, and press Yes key.
- 3) Click "Submit" (registration) button.  
The file in the HDD is deleted.

## (3) Procedures to delete all the files at a time

- 1) Click "Initialize" button.
- 2) Check that the confirmation message is displayed, and press OK key.
- 3) Click "Submit" (registration) button.

NOTE: By the Write-Protect Setting function, the downloaded files can be set to write protect.

## D. Device Cloning



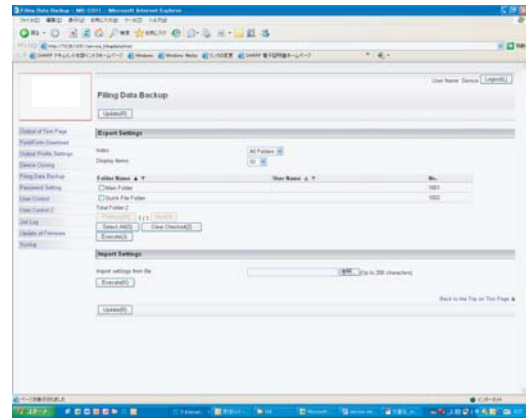
### (1) Export

- 1) Select an item to be backed up.
- 2) Click "Execute" button.  
Specify the save position of the file, and save the file.  
(File name: \*\*\*\*\*.bin)  
When the password is set, the set password must be entered when importing.

### (2) Import

- 1) Import from a file: Click "Refer" button to select the back-up file. (File name: \*\*\*\*\*.bin)
- 2) Click "Execute" button to execute import.  
If the password is set when exporting, the password must be entered.
- 3) Reboot the machine.

## E. Filing Data Backup



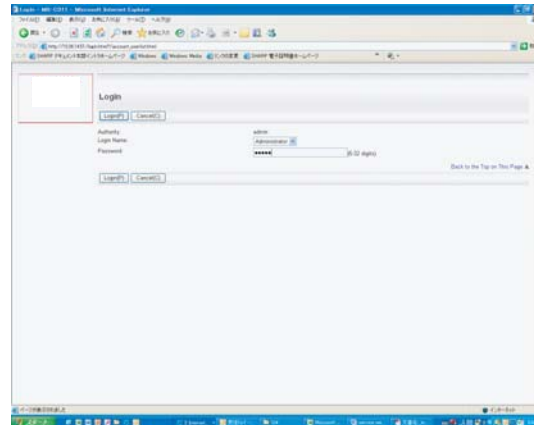
### (1) Export

- 1) Select the folder to be backed up.  
The list display conditions can be specified by changing the index and the number of display items on the pull-down menu.
- 2) Click "Execute" button.  
Specify the save position of the file, and save the file. (File name: \*\*\*\*\*.bin)
- 3) Click "Update" button.

### (2) Import

- 1) Click "Refer" button to select a target file. (File name: \*\*\*\*\*.bin)
- 2) Click "Execute" button.  
The target file is imported.
- 3) Click "Update" button.

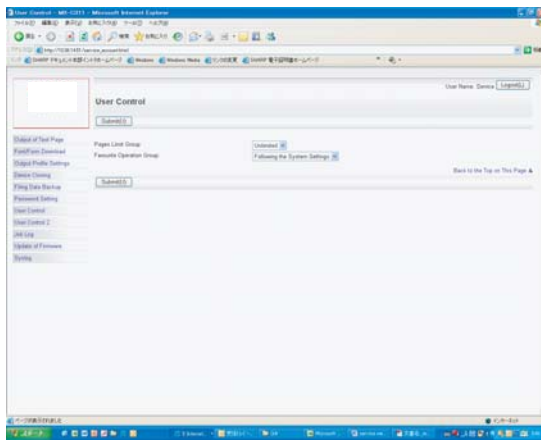
## F. User Control 1



- 1) Enter the password to log in.  
Default Password: admin  
The screen is shifted to the setting menu of user management.



## G. User Control 2



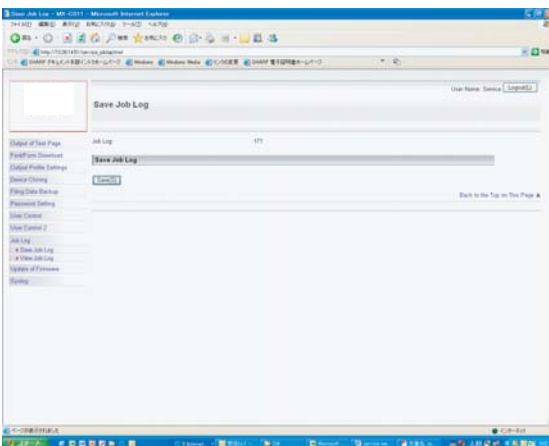
- 1) Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

### (Example of use)

The use sets the conditions for servicing work by using the Pages Limit Group and the Favorite Operation Group functions in advance, and the serviceman selects the set conditions in this mode for servicing work.

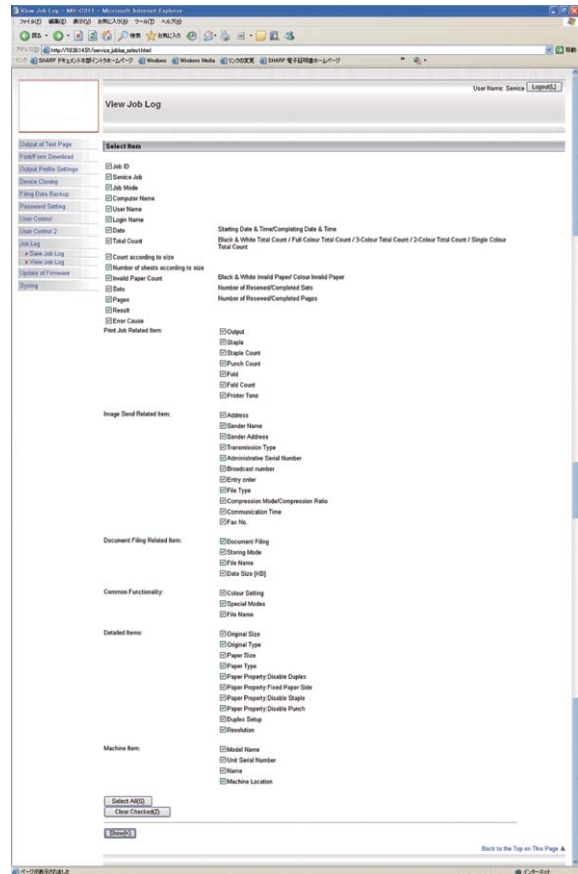
## H. Job Log

### (1) Save Job Log



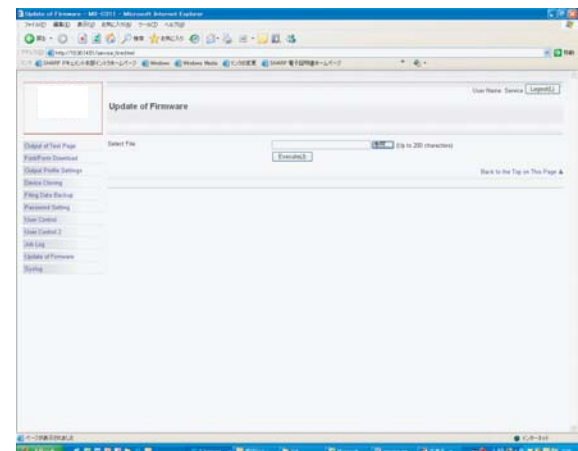
- 1) Click "Save" button, and specify the save position of the Job Log to save it.

## (2) View Job Log



- 1) Select a Jog Log item to be displayed. (In the default setting, all the items are selected. Remove check marks of the items which are not to be displayed.)
- 2) Click "Show" (display) button.  
The Jog Log is displayed.

## I. Update of Firmware



- 1) Click "Refer" button to select a firmware file.
- 2) After selecting a firmware file, click "Execute" button.  
The firmware data are sent to the machine, and update of the firmware is processed.

During the process, the message of "Firmware Update, now processing..." is displayed.

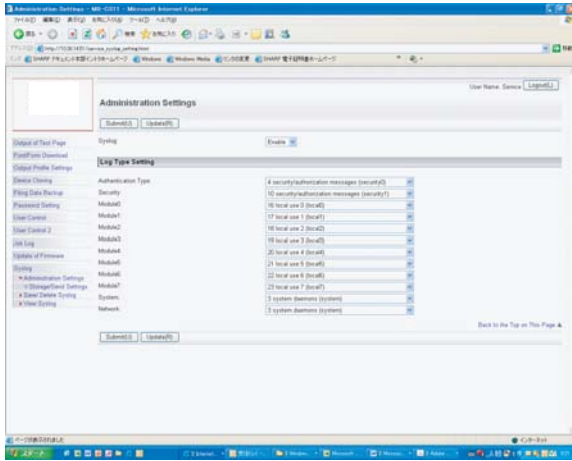
## J. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to troubleshoot when a trouble occurs.

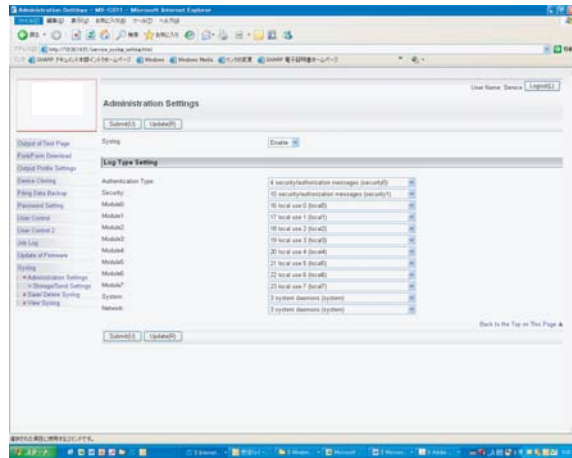
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

|        |                         |  |
|--------|-------------------------|--|
| Syslog | Administration Settings | Log Type Setting (Set to the default.) |
|        | Storage/Send Settings   | Set all the items selected.            |
|        | Save/ Delete Syslog     | Log data save, delete                  |
|        | View Syslog             | Log data display                       |



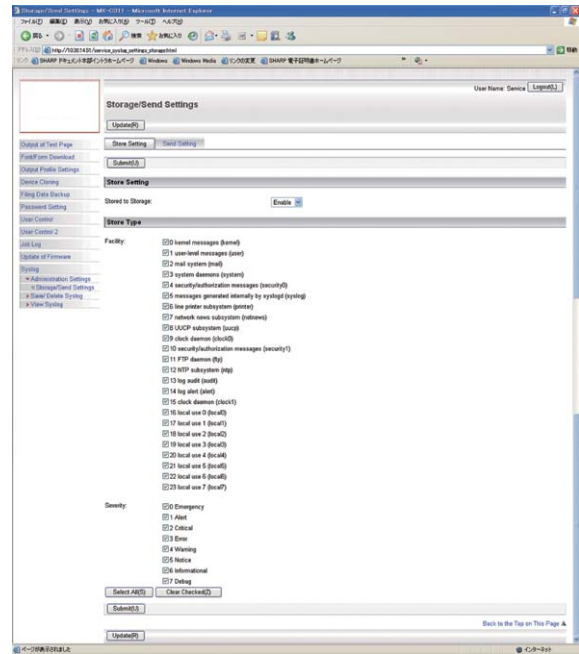
### (1) Administration Settings/ Log Type Setting

Set to the default.

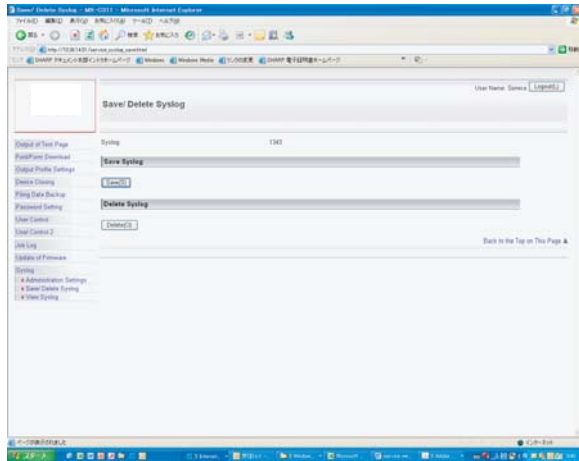


### (2) Storage/Send Settings

Keep all the items selected.



### (3) Save/ Delete Syslog

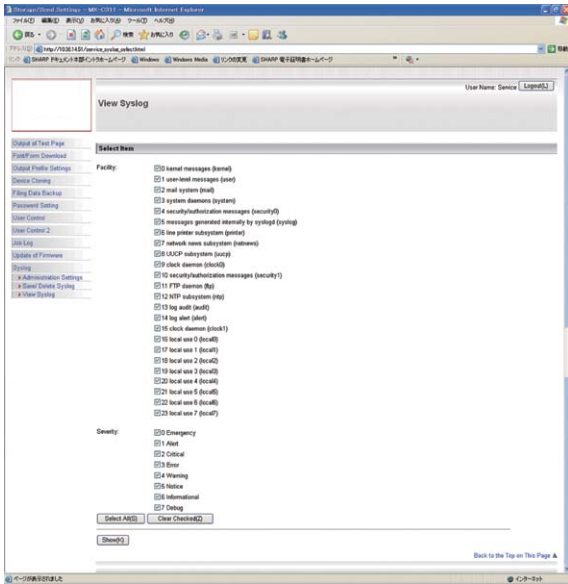


When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

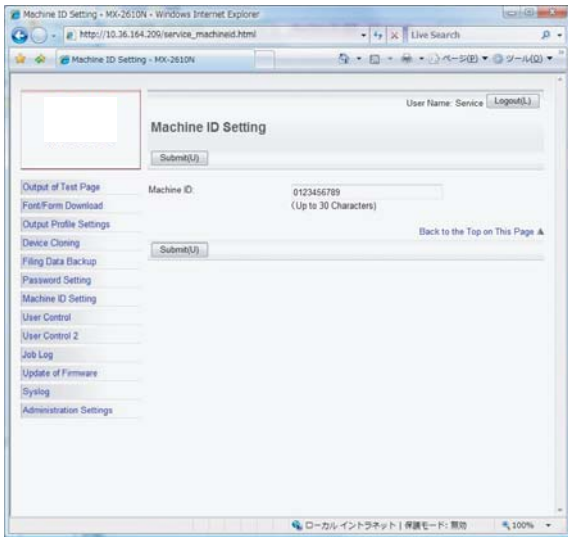
Check to confirm that the confirmation message is displayed, and press OK key.

#### (4) View Syslog



- 1) Select a Syslog item to be displayed.
- 2) Click "Show" button.  
The Syslog is displayed.

#### K. Machine ID Setting



- 1) Enter the machine ID.  
Max. 30 digits of numeral figures and characters can be entered.
- 2) Press the registration button.

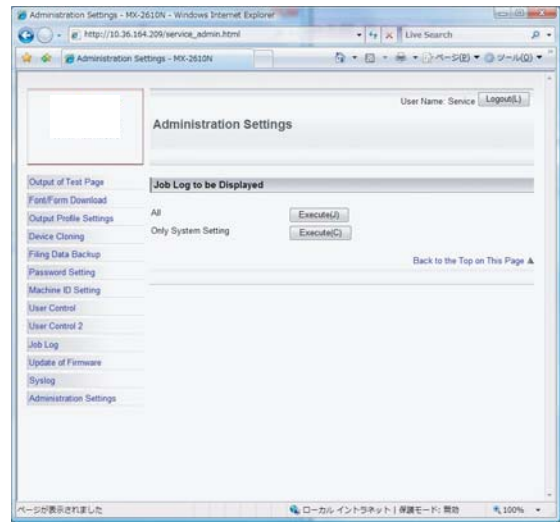
NOTE: The machine ID can be set with SIM26-7 as well as this function.

#### L. Administration Settings (Menu display setting)

This setting is to select whether to display all the menus of Web Page on the machine display or to display only the restricted system setting menu of the default.

Setting must be executed according to the user request.

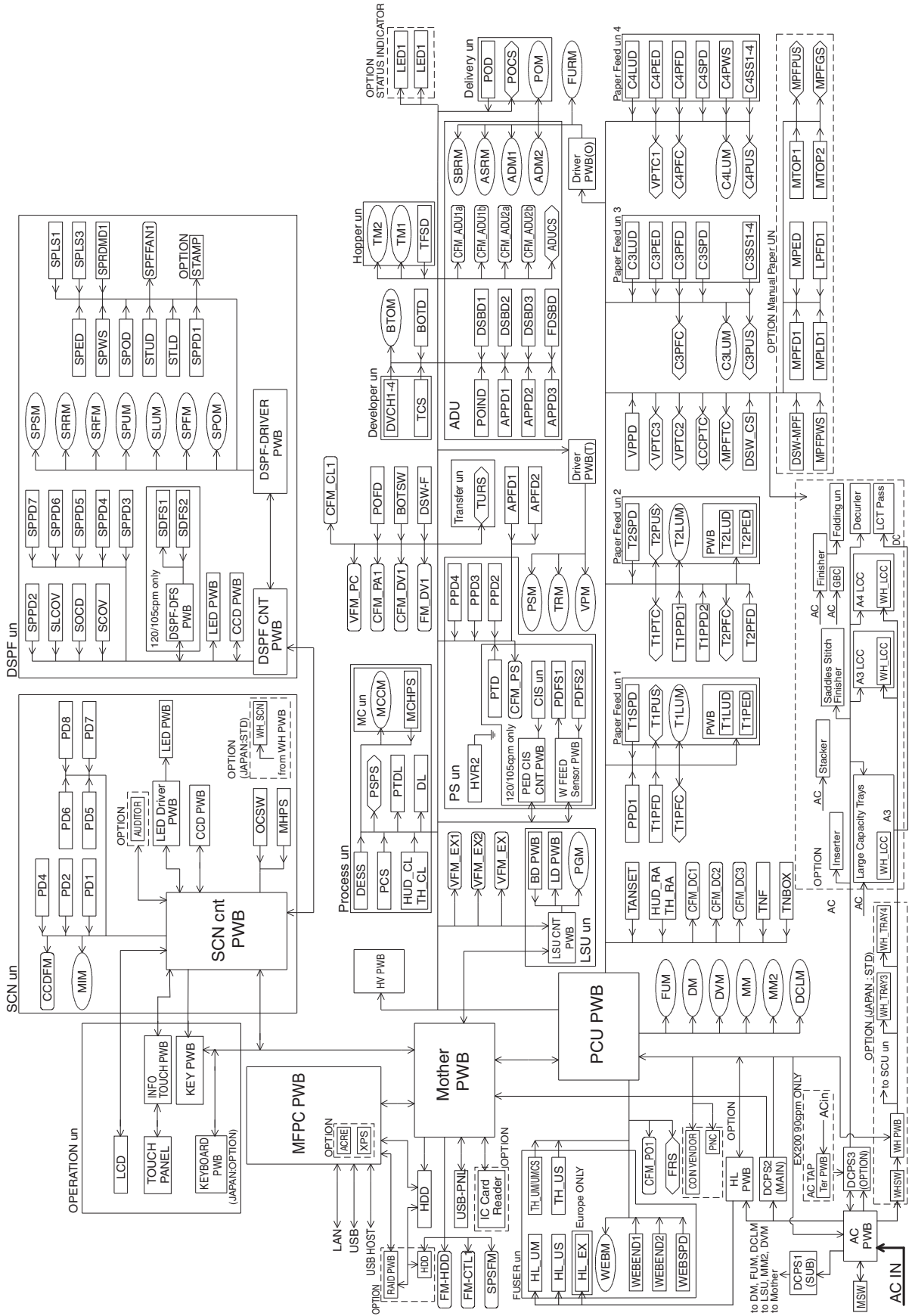
- 1) Press the setting execution button corresponding to the display mode.



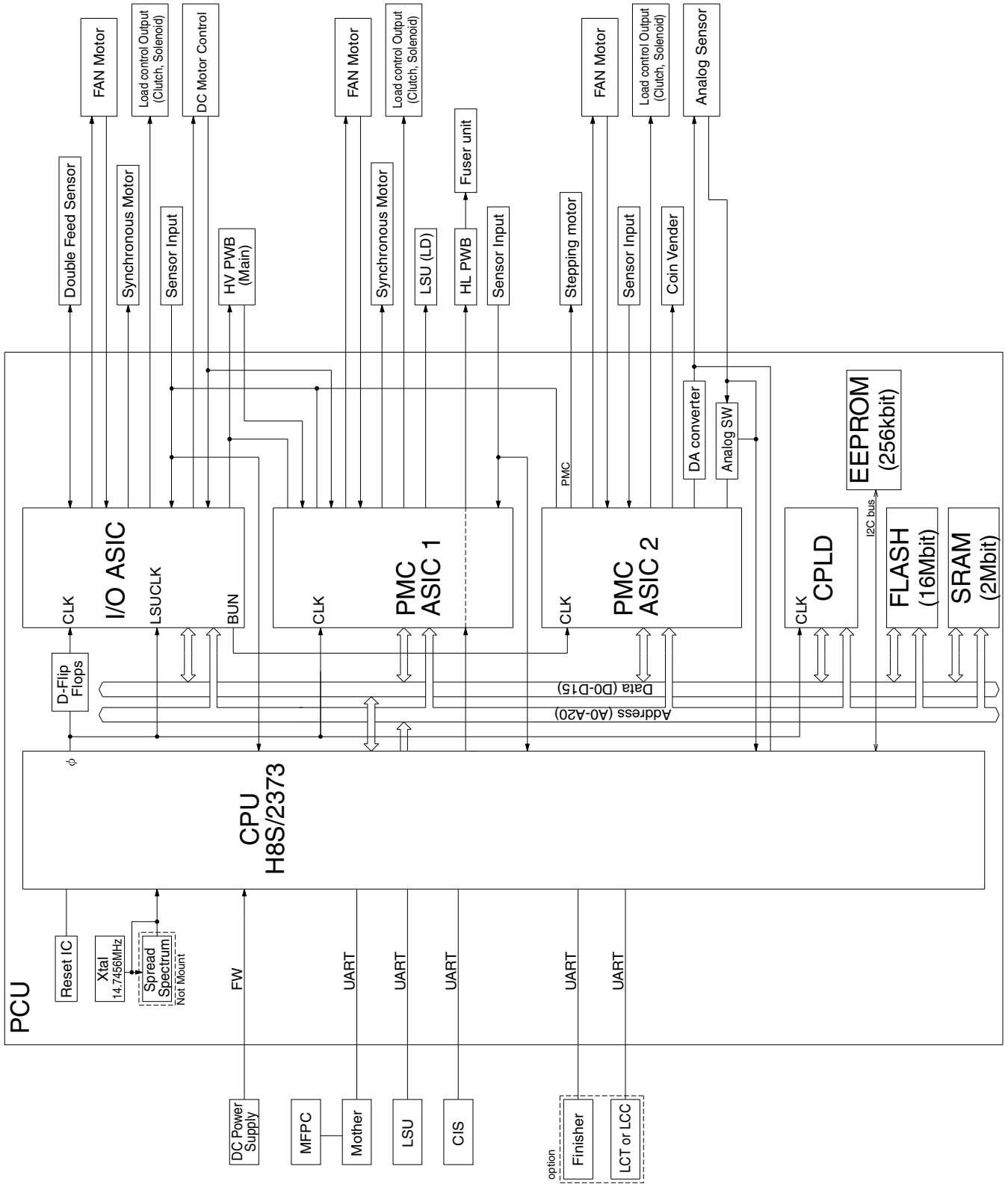
# [11] ELECTRICAL SECTION

## 1. Block diagram

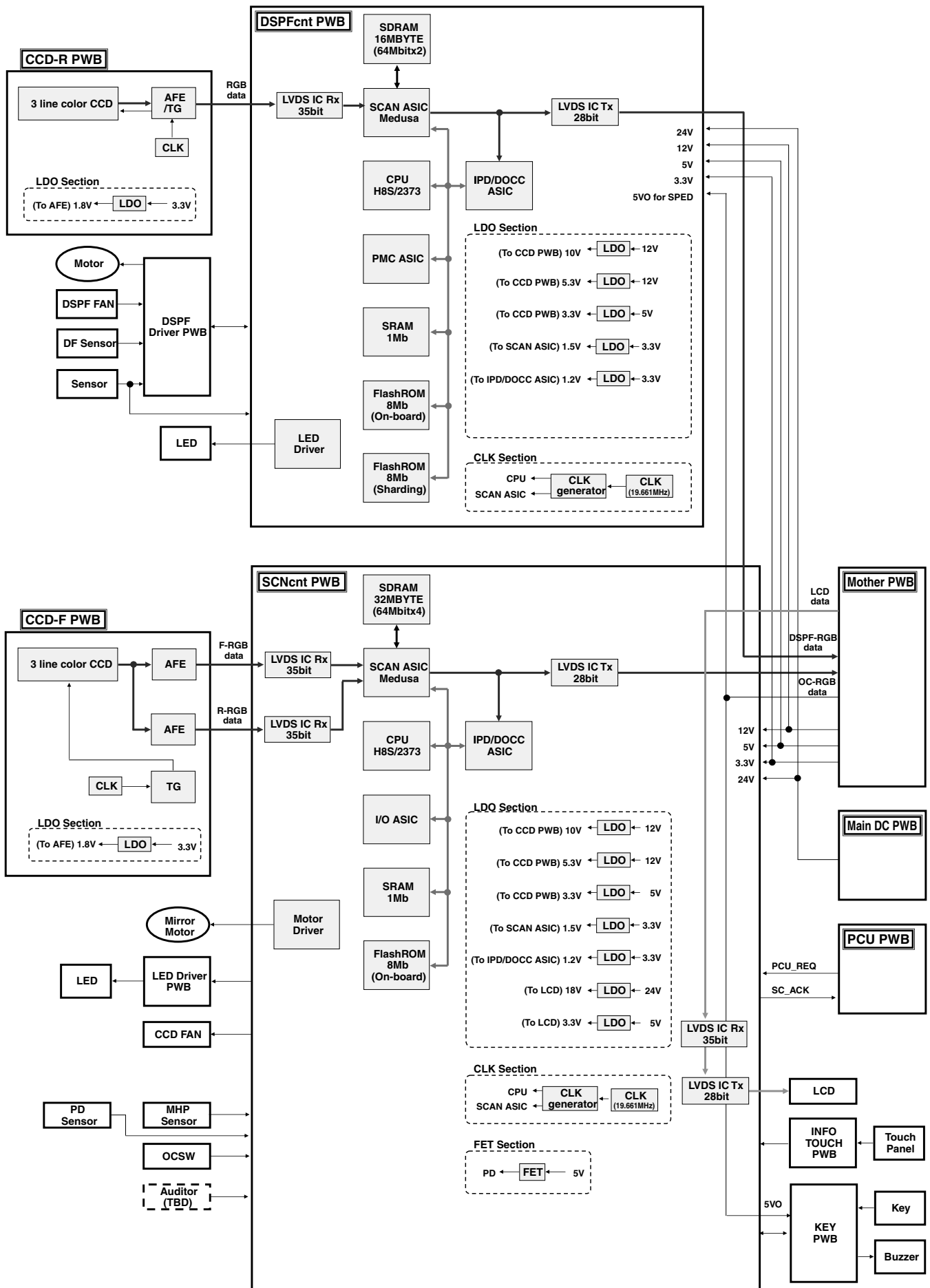
### A. System block diagram



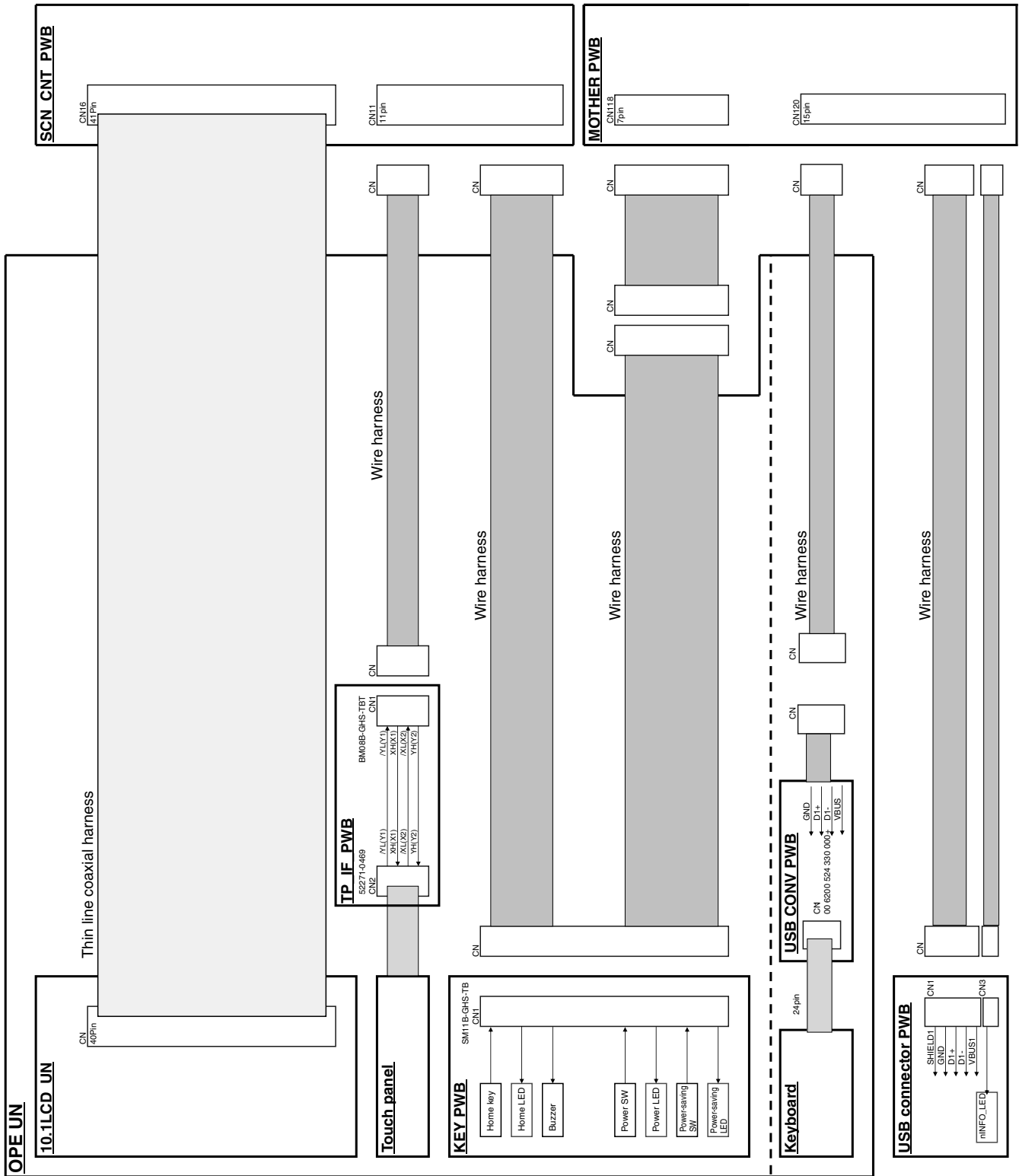
## B. PCU PWB



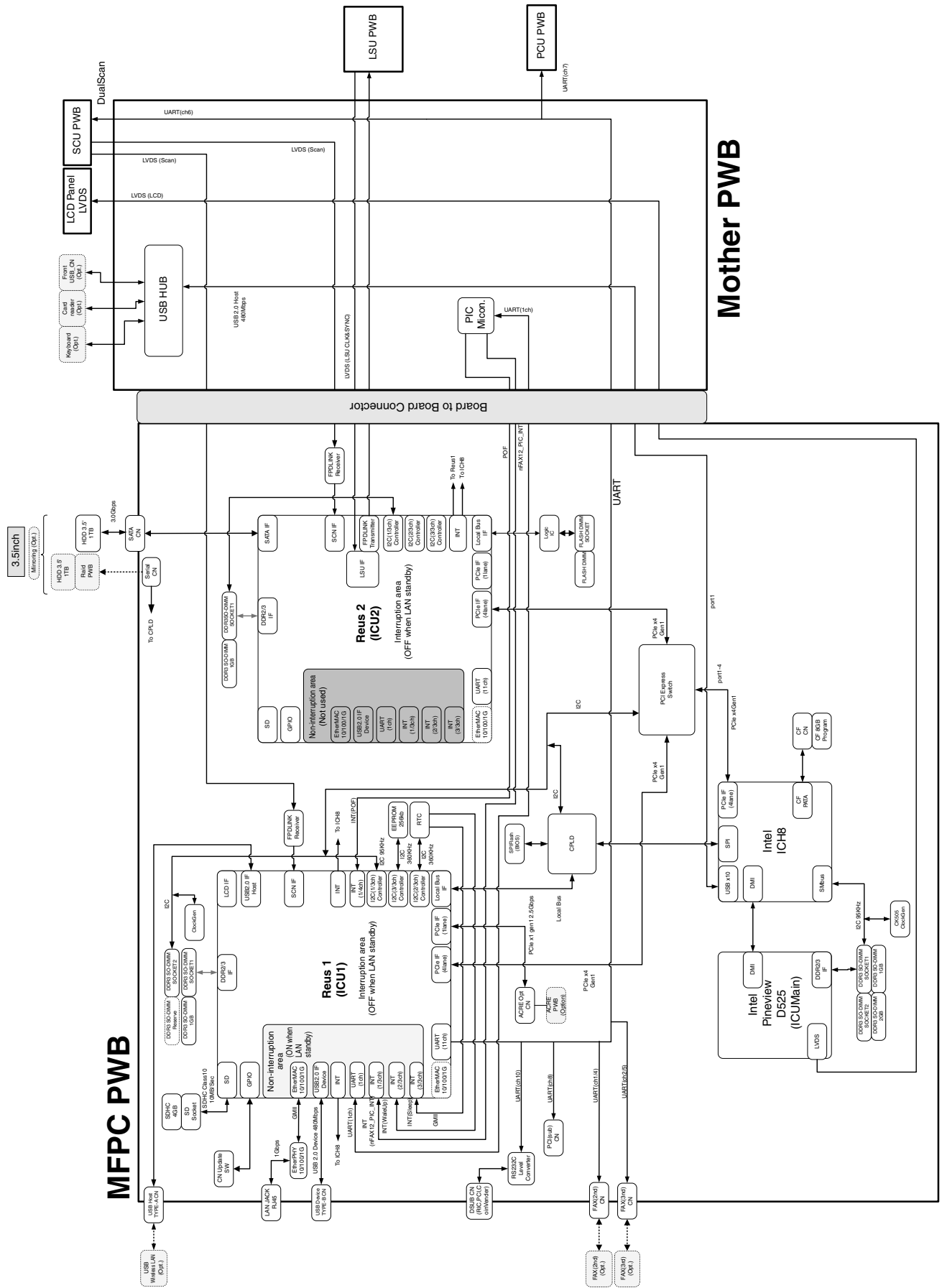
### C. Scanner control PWB



## D. Operation unit

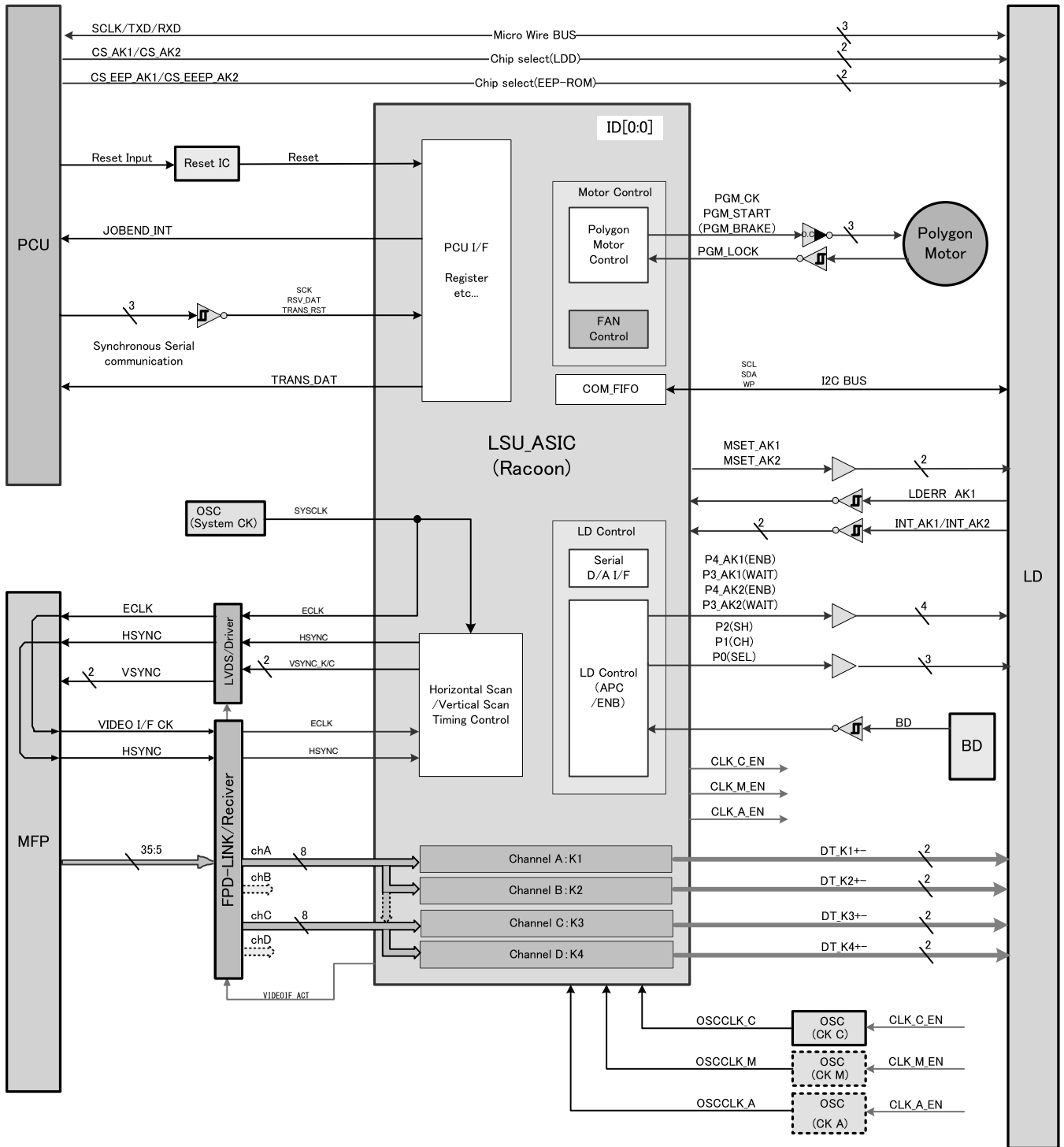


# E. MFP control PWB





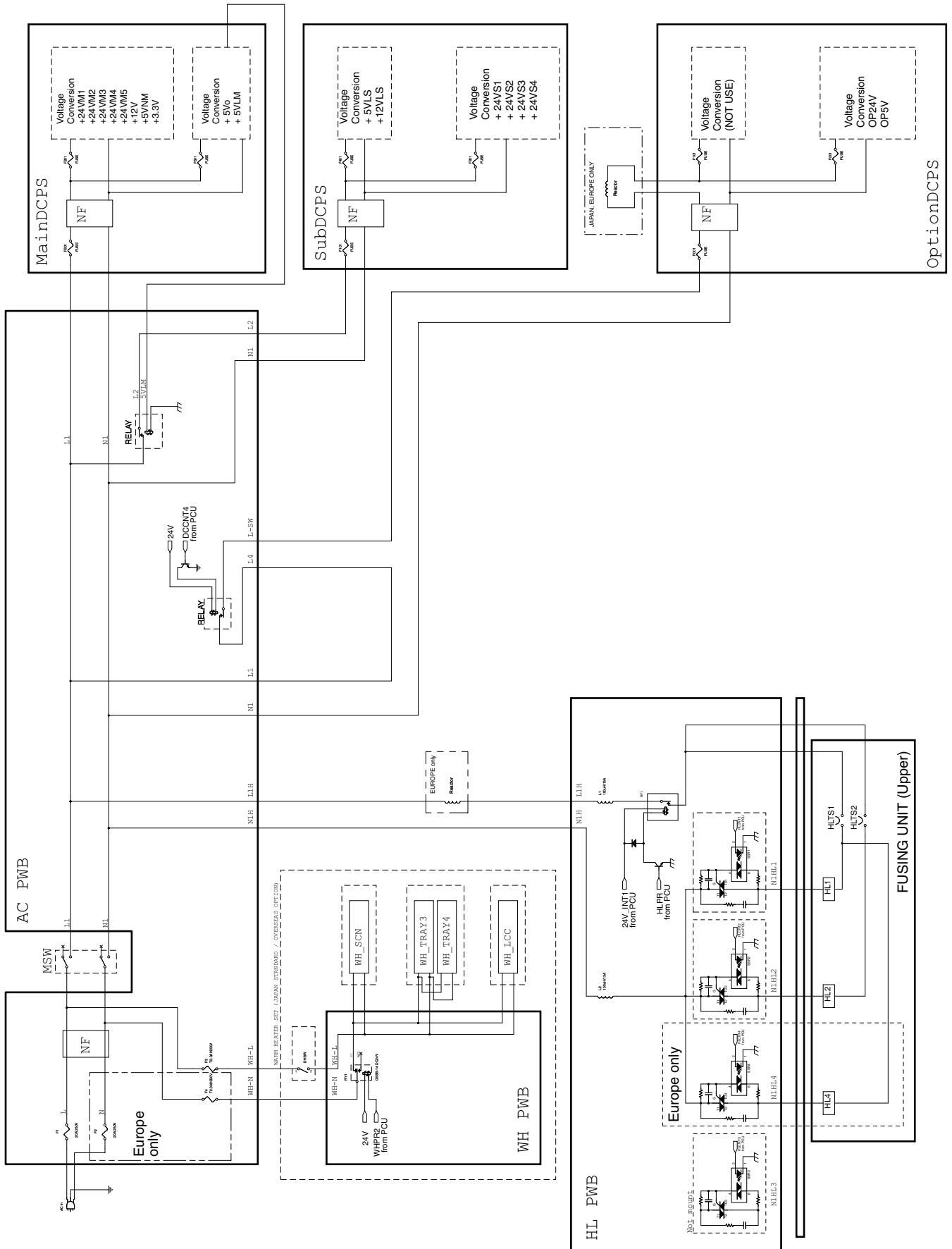
# F. LSU CNT PWB



## 2. Power line diagram

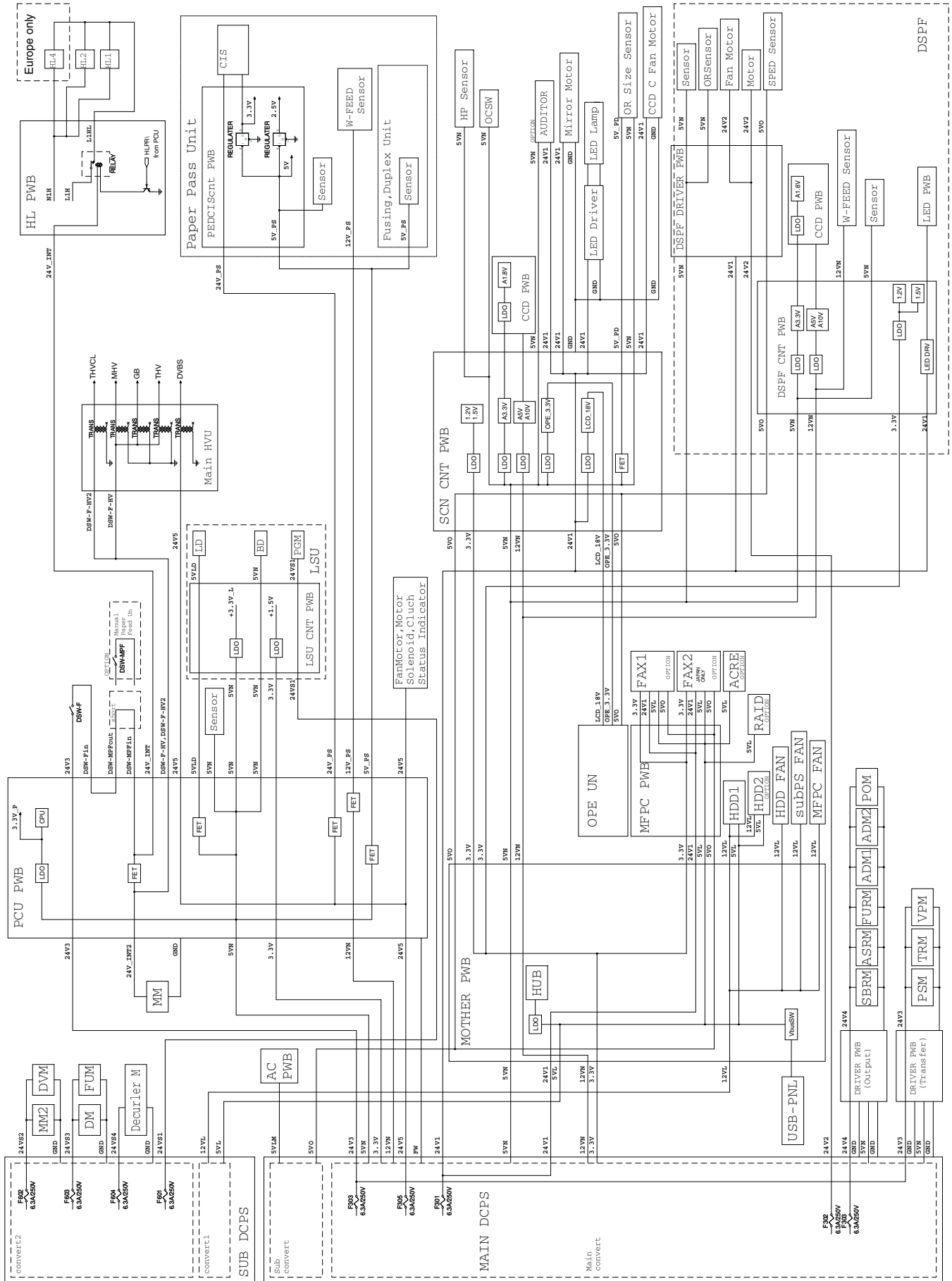
### A. AC power line diagram

#### (1) AC power line diagram

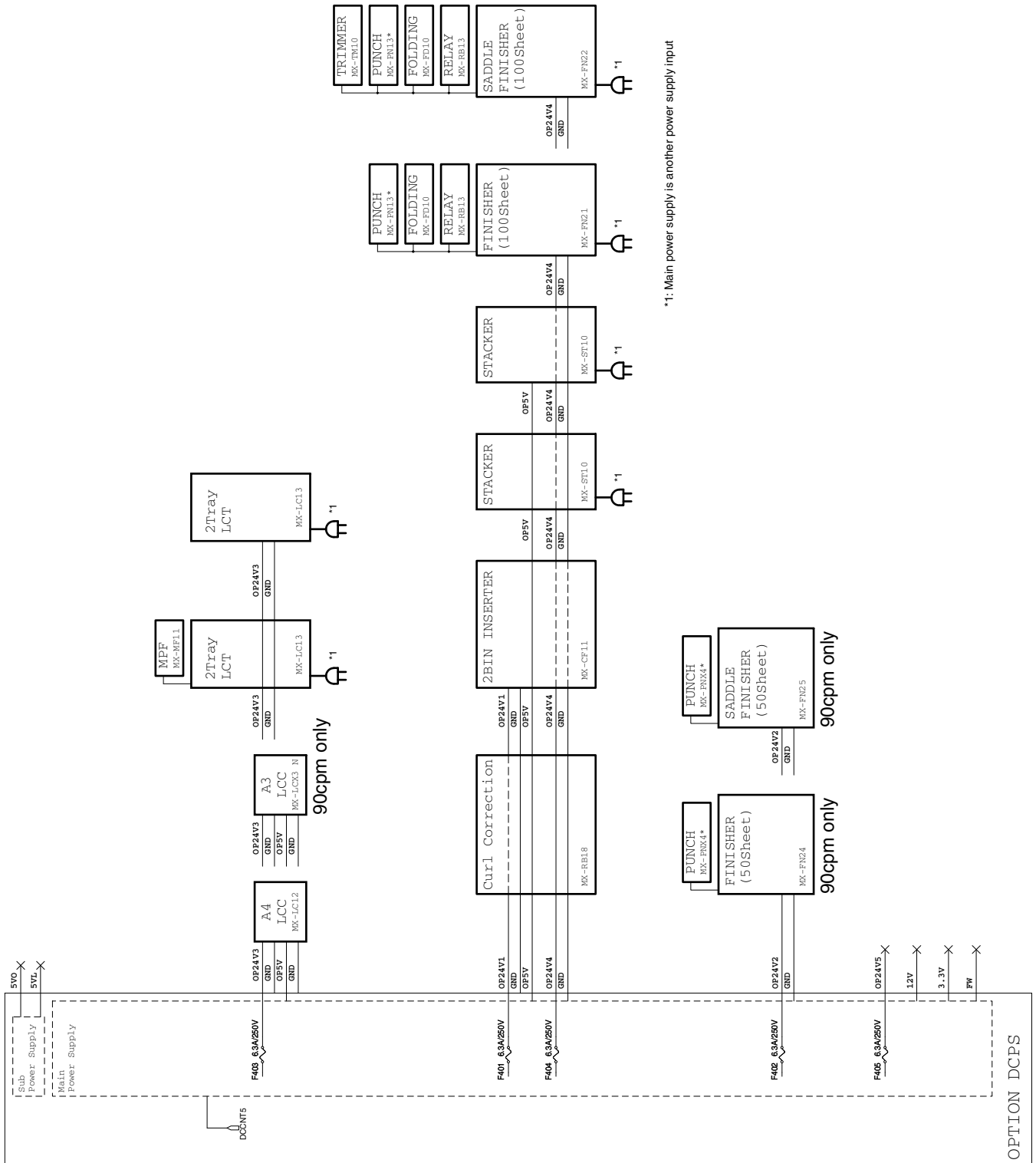


## B. DC power line diagram

### (1) DC power line diagram (MAIN/SUB DCPS)



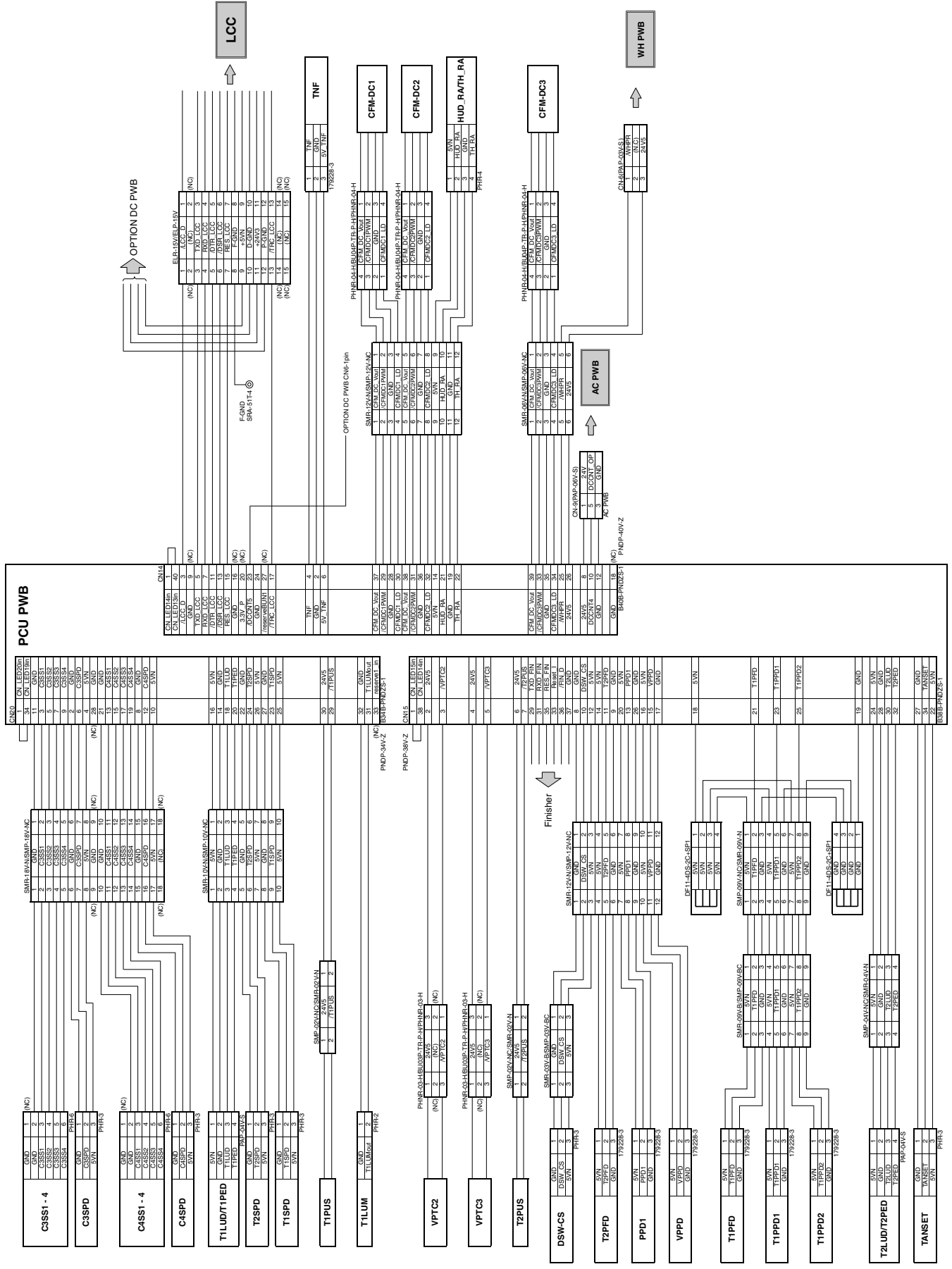
**(2) DC power line diagram (OPTION DCPS)**



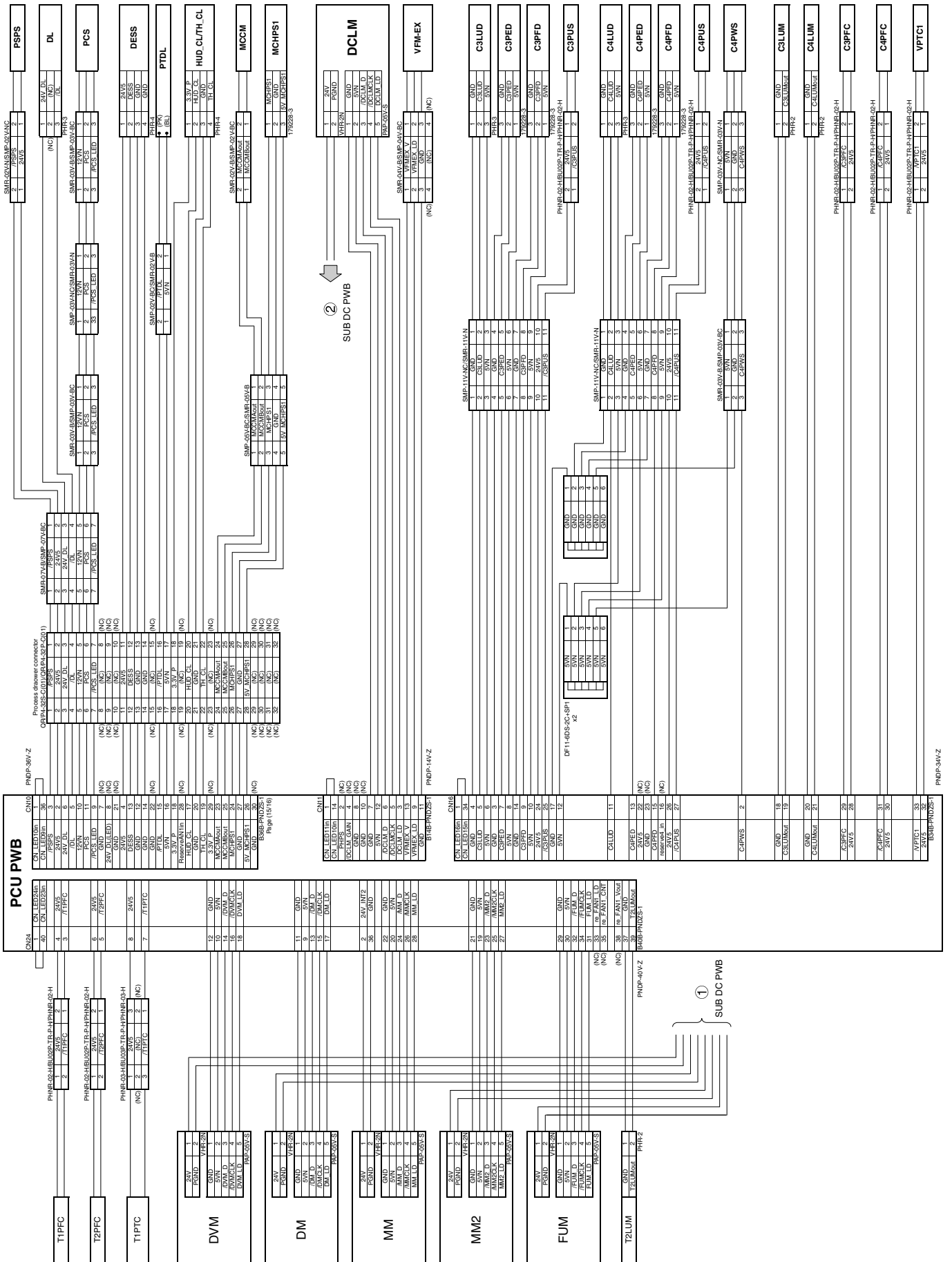
\*1: Main power supply is another power supply input

### 3. Actual wiring chart

#### A. Tandem/Multi-purpose/Interface path/Vertical transport/Finisher/LCC/DC fan



# B. Process/MC/CS3/CS4/Drive motor





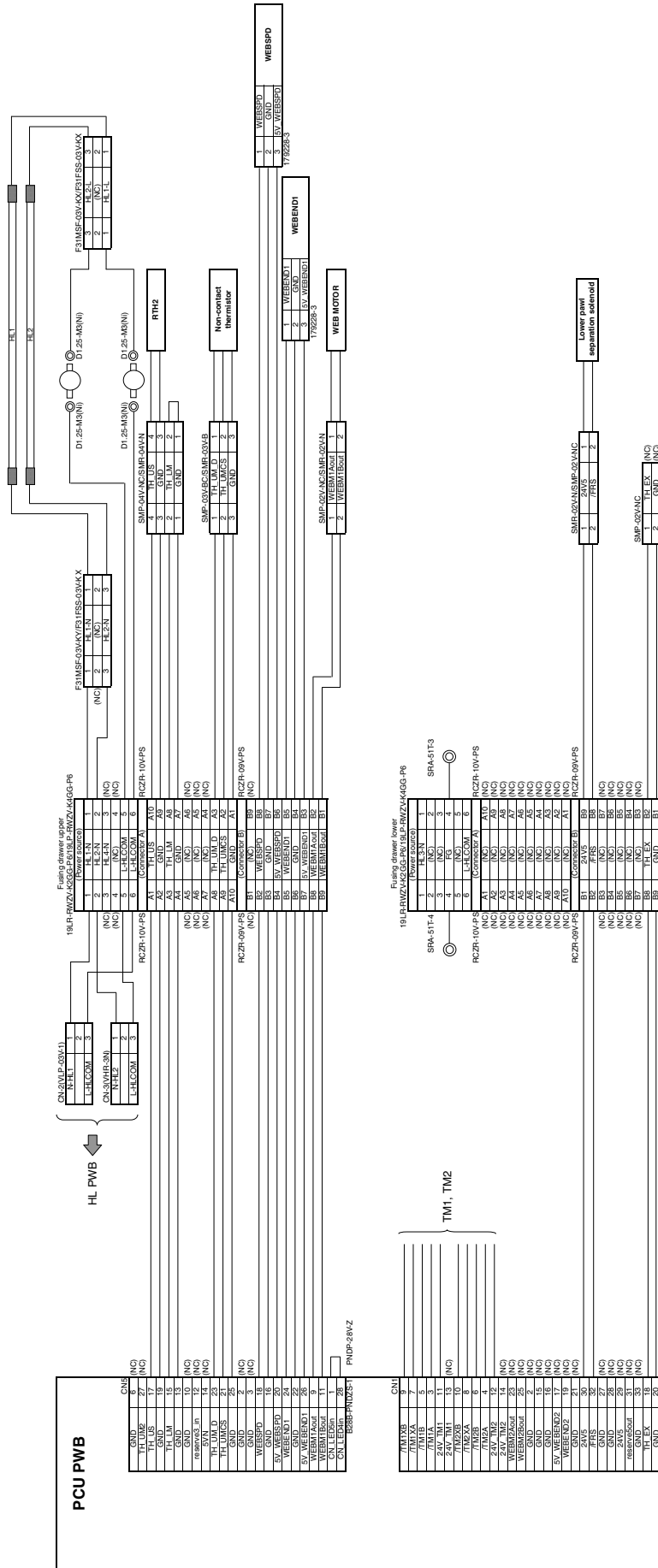




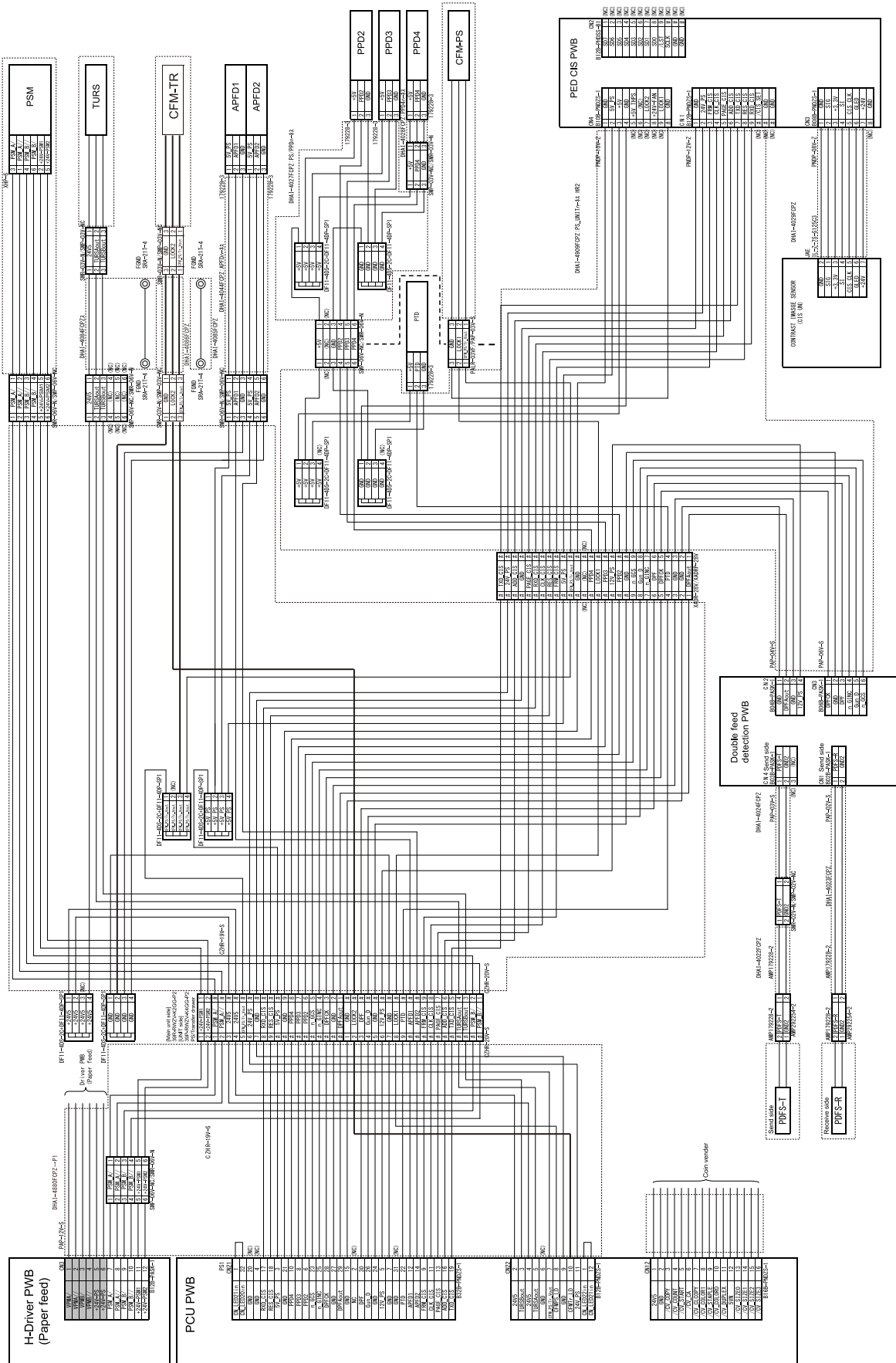




# G. Fusing

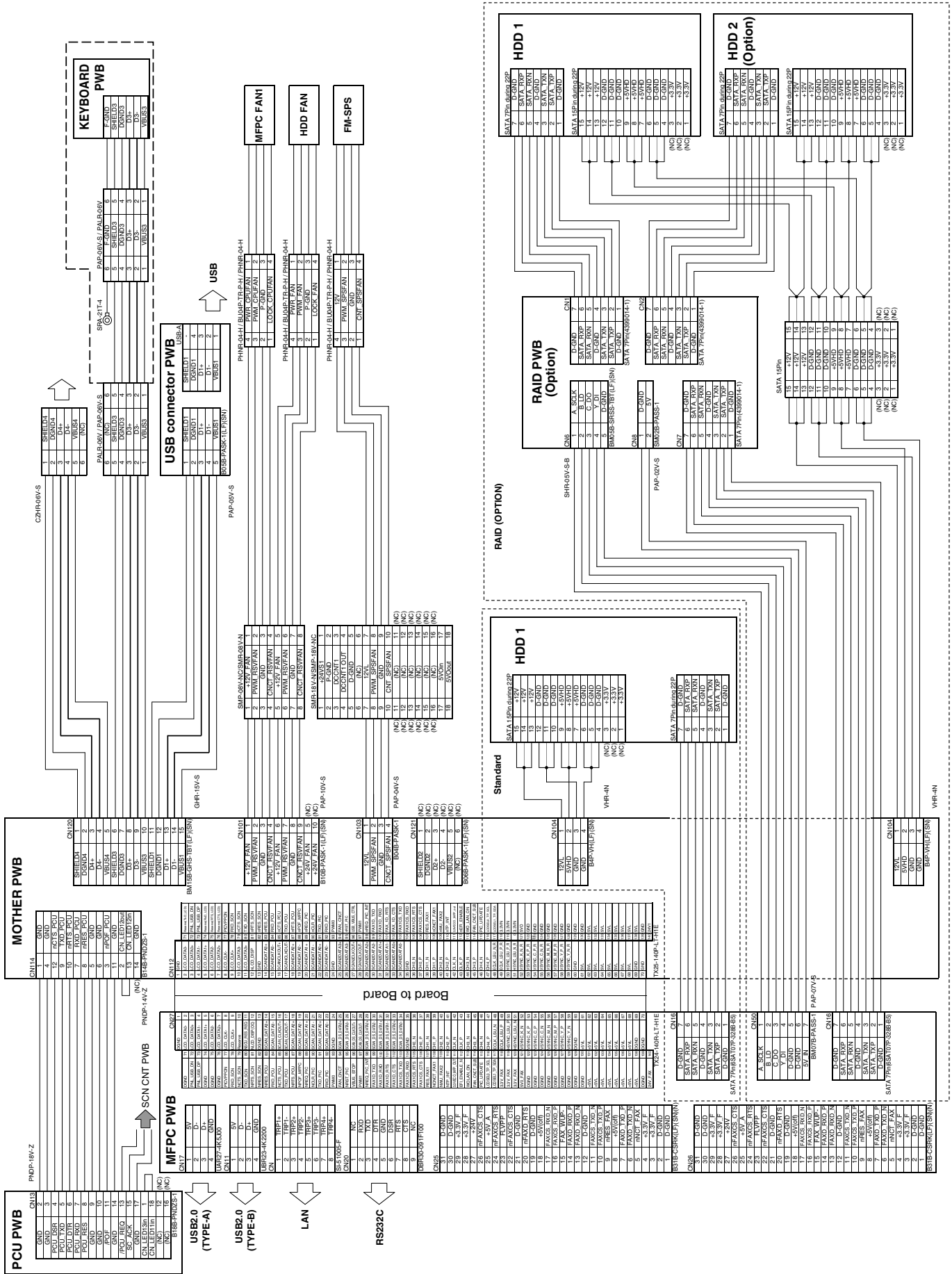


# H. PS/Transfer (90cpm machine)

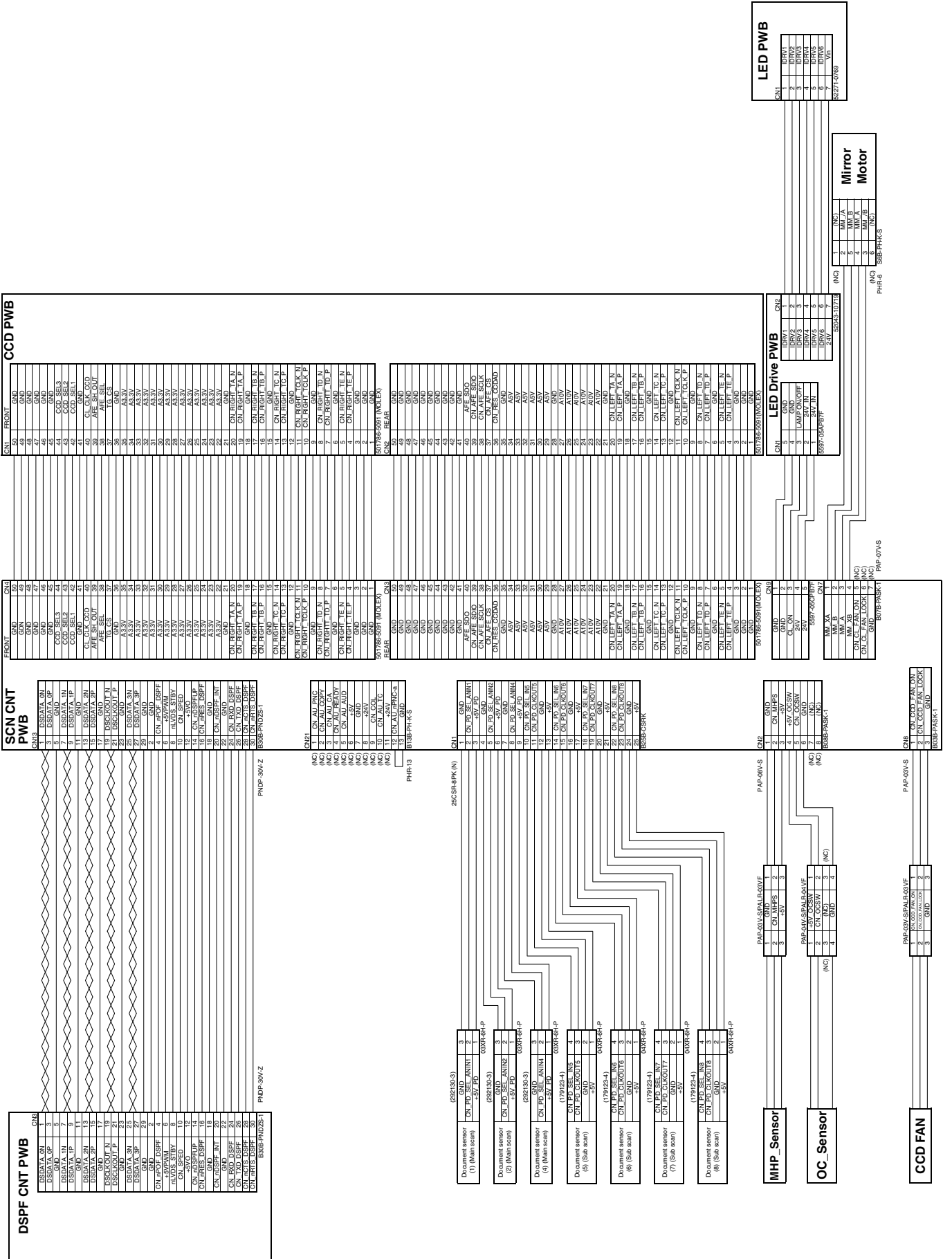




# J. USB/HDD/Keyboard



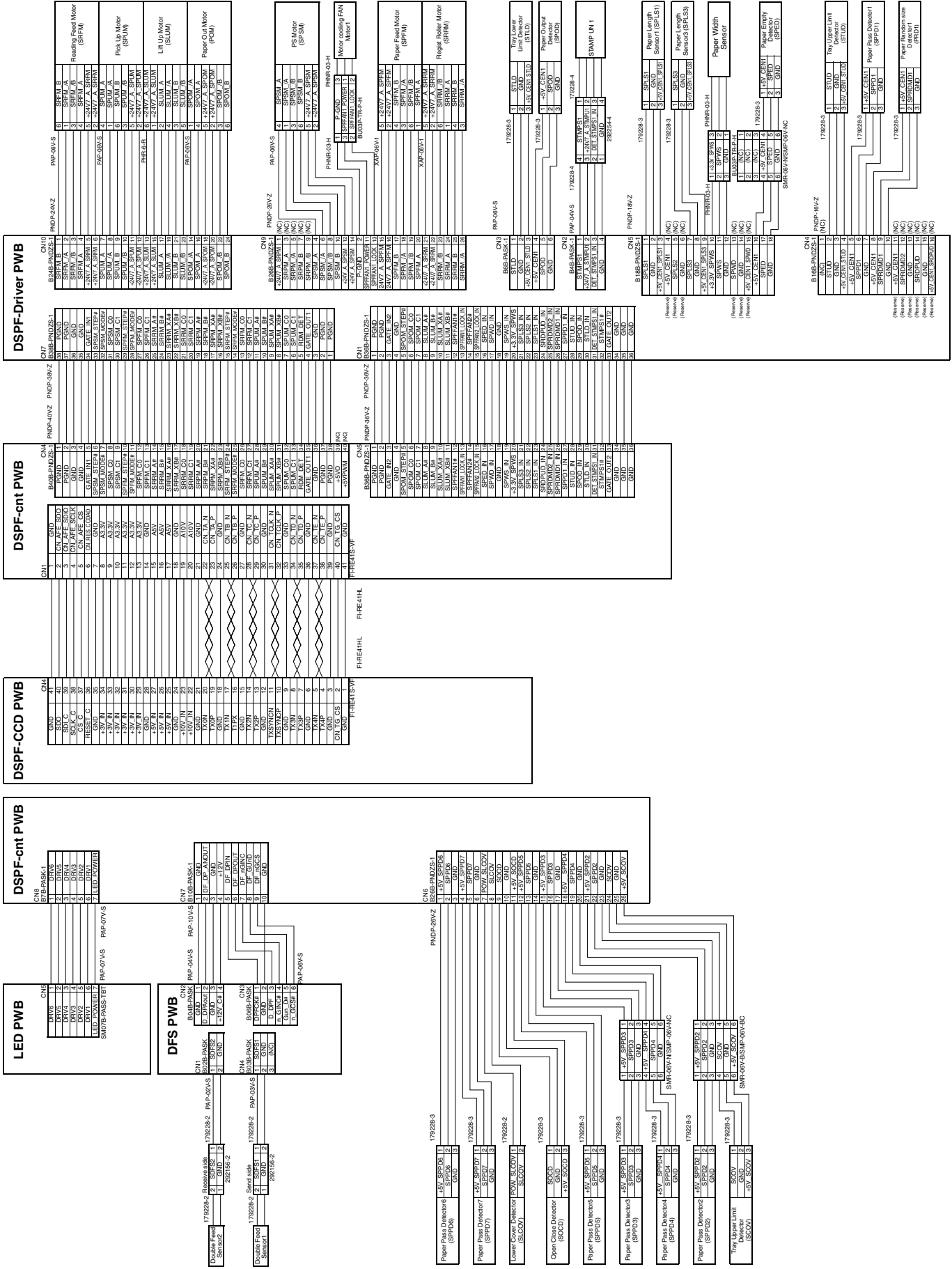
K. Scanner



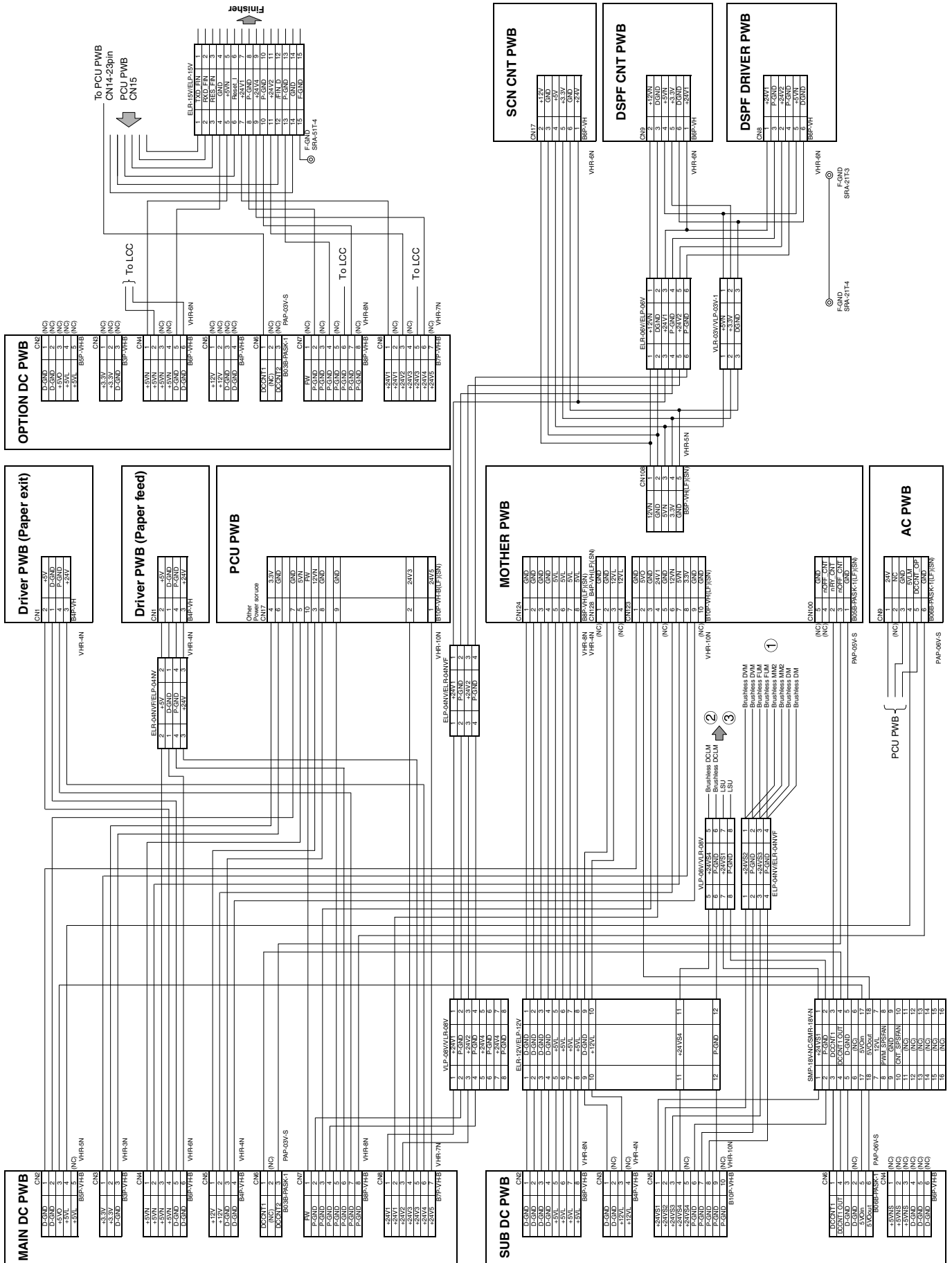




M. DSPF



# N. DC power supply







| JAM code    | JAM content  |
|-------------|--|
| PPD2_S2     | PPD2 remaining JAM<br>(tandem tray 2 paper feed paper)   |
| PPD2_S3     | PPD2 remaining JAM (cassette 3 paper feed paper)   |
| PPD2_S4     | PPD2 remaining JAM (cassette 4 paper feed paper)   |
| PPD2_SL     | PPD2 remaining JAM<br>(side A4/A3LCC paper feed paper)   |
| PPD2_SL1    | PPD2 remaining JAM<br>(large capacity paper feed tray 1 paper feed paper)  |
| PPD2_SL2    | PPD2 remaining JAM<br>(large capacity paper feed tray 2 paper feed paper)  |
| PPD2_SL3    | PPD2 remaining JAM<br>(large capacity paper feed tray 3 paper feed paper)  |
| PPD2_SL4    | PPD2 remaining JAM<br>(large capacity paper feed tray 4 paper feed paper)  |
| PPD2_SL5    | PPD2 remaining JAM<br>(large capacity paper feed tray 5 paper feed paper)  |
| PPD2_SL6    | PPD2 remaining JAM<br>(large capacity paper feed tray 6 paper feed paper)  |
| PPD2_SLM    | PPD2 remaining JAM (large capacity paper feed<br>tray manual paper feed paper)   |
| PPD2_SA     | PPD2 remaining JAM (ADU refeed paper)  |
| PPD2_NM_D   | PPD2 not-reached JAM<br>(manual paper feed tray paper)<br>(Delay of paper just before the jam from PS)*2                               |
| PPD2_N1_D   | PPD2 not-reached JAM<br>(tandem tray 1 paper feed paper)<br>(Delay of paper just before the jam from PS) *2                            |
| PPD2_N2_D   | PPD2 not-reached JAM<br>(tandem tray 2 paper feed paper)<br>(Delay of paper just before the jam from PS) *2                            |
| PPD2_N3_D   | PPD2 not-reached JAM<br>(cassette 3 paper feed paper)<br>(Delay of paper just before the jam from PS) *2                               |
| PPD2_N4_D   | PPD2 not-reached JAM<br>(cassette 4 paper feed paper)<br>(Delay of paper just before the jam from PS) *2                               |
| PPD2_NL_D   | PPD2 not-reached JAM<br>(side A4/A3LCC paper feed paper)<br>(Delay of paper just before the jam from PS) *2                            |
| PPD2_NL11_D | PPD2 not-reached JAM<br>(large capacity paper feed tray 1 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_NL12_D | PPD2 not-reached JAM<br>(large capacity paper feed tray 2 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_NL13_D | PPD2 not-reached JAM<br>(large capacity paper feed tray 3 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_NL21_D | PPD2 not-reached JAM<br>(large capacity paper feed tray 4 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_NL22_D | PPD2 not-reached JAM<br>(large capacity paper feed tray 5 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_NL23_D | PPD2 not-reached JAM<br>(large capacity paper feed tray 6 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_NLM_D  | PPD2 not-reached JAM<br>(large capacity paper feed tray manual paper feed<br>paper)<br>(Delay of paper just before the jam from PS) *2 |
| PPD2_NA_D   | PPD2 not-reached JAM (ADU refeed paper)<br>(Delay of paper just before the jam from PS) *2   |
| PPD2_SM_D   | PPD2 remaining JAM<br>(manual paper feed tray paper)<br>(Delay of paper just before the jam from PS) *2                                |
| PPD2_S1_D   | PPD2 remaining JAM<br>(tandem tray 1 paper feed paper)<br>(Delay of paper just before the jam from PS)*2                               |
| PPD2_S2_D   | PPD2 remaining JAM<br>(tandem tray 2 paper feed paper)<br>(Delay of paper just before the jam from PS)*2                               |
| PPD2_S3_D   | PPD2 remaining JAM<br>(cassette 3 paper feed paper)<br>(Delay of paper just before the jam from PS) *2                                 |

| JAM code    | JAM content  |
|-------------|--|
| PPD2_S4_D   | PPD2 remaining JAM<br>(cassette 4 paper feed paper)<br>(Delay of paper just before the jam from PS) *2                               |
| PPD2_SL_D   | PPD2 remaining JAM<br>(side A4/A3LCC paper feed paper)<br>(Delay of paper just before the jam from PS) *2                            |
| PPD2_SL11_D | PPD2 remaining JAM<br>(large capacity paper feed tray 1 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_SL12_D | PPD2 remaining JAM<br>(large capacity paper feed tray 2 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_SL13_D | PPD2 remaining JAM<br>(large capacity paper feed tray 3 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_SL21_D | PPD2 remaining JAM<br>(large capacity paper feed tray 4 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_SL22_D | PPD2 remaining JAM<br>(large capacity paper feed tray 5 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_SL23_D | PPD2 remaining JAM<br>(large capacity paper feed tray 6 paper feed paper)<br>(Delay of paper just before the jam from PS) *2         |
| PPD2_SLM_D  | PPD2 remaining JAM<br>(large capacity paper feed tray manual paper feed<br>paper)<br>(Delay of paper just before the jam from PS) *2 |
| PPD2_SA_D   | PPD2 remaining JAM (ADU refeed paper)<br>(Delay of paper just before the jam from PS) *2   |
| PPD3_NM     | PPD3 not-reached JAM<br>(manual paper feed tray paper)   |
| PPD3_N1     | PPD3 not-reached JAM<br>(tandem tray 1 paper feed paper)   |
| PPD3_N2     | PPD3 not-reached JAM<br>(tandem tray 2 paper feed paper)   |
| PPD3_N3     | PPD3 not-reached JAM<br>(cassette 3 paper feed paper)  |
| PPD3_N4     | PPD3 not-reached JAM<br>(cassette 4 paper feed paper)  |
| PPD3_NL     | PPD3 not-reached JAM<br>(side A4/A3LCC paper feed paper)   |
| PPD3_NL1    | PPD3 not-reached JAM<br>(large capacity paper feed tray 1 paper feed paper)  |
| PPD3_NL2    | PPD3 not-reached JAM<br>(large capacity paper feed tray 2 paper feed paper)  |
| PPD3_NL3    | PPD3 not-reached JAM<br>(large capacity paper feed tray 3 paper feed paper)  |
| PPD3_NL4    | PPD3 not-reached JAM<br>(large capacity paper feed tray 4 paper feed paper)  |
| PPD3_NL5    | PPD3 not-reached JAM<br>(large capacity paper feed tray 5 paper feed paper)  |
| PPD3_NL6    | PPD3 not-reached JAM<br>(large capacity paper feed tray 6 paper feed paper)  |
| PPD3_NLM    | PPD3 not-reached JAM<br>(large capacity paper feed tray manual paper feed<br>paper)  |
| PPD3_NA     | PPD3 not-reached JAM (ADU refeed paper)  |
| PPD3_SM     | PPD3 remaining JAM<br>(manual paper feed tray paper)   |
| PPD3_S1     | PPD3 remaining JAM<br>(tandem tray 1 paper feed paper)   |
| PPD3_S2     | PPD3 remaining JAM<br>(tandem tray 2 paper feed paper)   |
| PPD3_S3     | PPD3 remaining JAM (cassette 3 paper feed paper)   |
| PPD3_S4     | PPD3 remaining JAM (cassette 4 paper feed paper)   |
| PPD3_SL     | PPD3 remaining JAM<br>(side A4/A3LCC paper feed paper)   |
| PPD3_SL1    | PPD3 remaining JAM<br>(large capacity paper feed tray 1 paper feed paper)  |
| PPD3_SL2    | PPD3 remaining JAM<br>(large capacity paper feed tray 2 paper feed paper)  |
| PPD3_SL3    | PPD3 remaining JAM<br>(large capacity paper feed tray 3 paper feed paper)  |

| JAM code | JAM content  |
|----------|--|
| PPD3_SL4 | PPD3 remaining JAM<br>(large capacity paper feed tray 4 paper feed paper)        |
| PPD3_SL5 | PPD3 remaining JAM<br>(large capacity paper feed tray 5 paper feed paper)        |
| PPD3_SL6 | PPD3 remaining JAM<br>(large capacity paper feed tray 6 paper feed paper)        |
| PPD3_SLM | PPD3 remaining JAM<br>(large capacity paper feed tray manual paper feed paper)   |
| PPD3_SA  | PPD3 remaining JAM (ADU refeed paper)  |
| PPD4_NM  | PPD4 not-reached JAM<br>(manual paper feed tray paper)                           |
| PPD4_N1  | PPD4 not-reached JAM<br>(tandem tray 1 paper feed paper)                         |
| PPD4_N2  | PPD4 not-reached JAM<br>(tandem tray 2 paper feed paper)                         |
| PPD4_N3  | PPD4 not-reached JAM<br>(cassette 3 paper feed paper)                            |
| PPD4_N4  | PPD4 not-reached JAM<br>(cassette 4 paper feed paper)                            |
| PPD4_NL  | PPD4 not-reached JAM<br>(side A4/A3LCC paper feed paper)                         |
| PPD4_NL1 | PPD4 not-reached JAM<br>(large capacity paper feed tray 1 paper feed paper)      |
| PPD4_NL2 | PPD4 not-reached JAM<br>(large capacity paper feed tray 2 paper feed paper)      |
| PPD4_NL3 | PPD4 not-reached JAM<br>(large capacity paper feed tray 3 paper feed paper)      |
| PPD4_NL4 | PPD4 not-reached JAM<br>(large capacity paper feed tray 4 paper feed paper)      |
| PPD4_NL5 | PPD4 not-reached JAM<br>(large capacity paper feed tray 5 paper feed paper)      |
| PPD4_NL6 | PPD4 not-reached JAM<br>(large capacity paper feed tray 6 paper feed paper)      |
| PPD4_NLM | PPD4 not-reached JAM<br>(large capacity paper feed tray manual paper feed paper) |
| PPD4_NA  | PPD4 not-reached JAM (ADU refeed paper)  |
| PPD4_SM  | PPD4 remaining JAM<br>(manual paper feed tray paper)                             |
| PPD4_S1  | PPD4 remaining JAM<br>(tandem tray 1 paper feed paper)                           |
| PPD4_S2  | PPD4 remaining JAM<br>(tandem tray 2 paper feed paper)                           |
| PPD4_S3  | PPD4 remaining JAM (cassette 3 paper feed paper)                                 |
| PPD4_S4  | PPD4 remaining JAM (cassette 4 paper feed paper)                                 |
| PPD4_SL  | PPD4 remaining JAM<br>(side A4/A3LCC paper feed paper)                           |
| PPD4_SL1 | PPD4 remaining JAM<br>(large capacity paper feed tray 1 paper feed paper)        |
| PPD4_SL2 | PPD4 remaining JAM<br>(large capacity paper feed tray 2 paper feed paper)        |
| PPD4_SL3 | PPD4 remaining JAM<br>(large capacity paper feed tray 3 paper feed paper)        |
| PPD4_SL4 | PPD4 remaining JAM<br>(large capacity paper feed tray 4 paper feed paper)        |
| PPD4_SL5 | PPD4 remaining JAM<br>(large capacity paper feed tray 5 paper feed paper)        |
| PPD4_SL6 | PPD4 remaining JAM<br>(large capacity paper feed tray 6 paper feed paper)        |
| PPD4_SLM | PPD4 remaining JAM<br>(large capacity paper feed tray manual paper feed paper)   |
| PPD4_SA  | PPD4 remaining JAM (ADU refeed paper)  |
| POIND_N  | POIND not-reached JAM  |
| POIND_SU | POIND remaining JAM ()   |
| POIND_SD | POIND remaining JAM (Face-down paper exit)                                       |
| POIND_SA | POIND remaining JAM (ADU transport)  |
| POD_NU   | POD not-reached JAM (Face-up paper exit)   |
| POD_ND   | POD not-reached JAM (Face-down paper exit)                                       |
| POD_SU   | POD remaining JAM (Face-up paper exit)   |
| POD_SD   | POD remaining JAM (Face-down paper exit)   |
| DSBD1_ND | DSBD1 not-reached JAM (Face-down paper exit)                                     |
| DSBD1_SD | DSBD1 remaining JAM (Face-down paper exit)                                       |

| JAM code     | JAM content   |
|--------------|---|
| DSBD1_NA     | DSBD1 not-reached JAM (ADU transport)   |
| DSBD1_SA     | DSBD1 remaining JAM (ADU transport)   |
| DSBD2_N      | DSBD2 not-reached JAM   |
| DSBD2_S      | DSBD2 remaining JAM   |
| FDSBD_ND     | FDSBD not-reached JAM (Face-down paper exit)  |
| FDSBD_SD     | FDSBD remaining JAM (Face-down paper exit)  |
| FDSBD_NA     | FDSBD not-reached JAM (ADU transport)   |
| FDSBD_SA     | FDSBD remaining JAM (ADU transport)   |
| APPD1_ND     | APPD1 not-reached JAM (Face-down paper exit)  |
| APPD1_SD     | APPD1 remaining JAM (Face-down paper exit)  |
| APPD1_NA     | APPD1 not-reached JAM (ADU transport)   |
| APPD1_SA     | APPD1 remaining JAM (ADU transport)   |
| APPD2_ND     | APPD2 not-reached JAM (Face-down paper exit)  |
| APPD2_SD     | APPD2 remaining JAM (Face-down paper exit)  |
| APPD2_NA     | APPD2 not-reached JAM (ADU transport)   |
| APPD2_SA     | APPD2 remaining JAM (ADU transport)   |
| APPD3_N      | APPD3 not-reached JAM   |
| APPD3_S      | APPD3 remaining JAM   |
| APFD1_N      | APFD1 not-reached JAM   |
| APFD1_S      | APFD1 remaining JAM   |
| APFD2_N1     | APFD2 not-reached JAM (tray 1 paper feed paper)                                     |
| APFD2_N2     | APFD2 not-reached JAM (tray 2 paper feed paper)                                     |
| APFD2_N3     | APFD2 not-reached JAM (tray 3 paper feed paper)                                     |
| APFD2_N4     | APFD2 not-reached JAM (tray 4 paper feed paper)                                     |
| APFD2_NA     | APFD2 not-reached JAM (ADU refeed paper)  |
| APFD2_S1     | APFD2 remaining JAM (tray 1 paper feed paper)                                       |
| APFD2_S2     | APFD2 remaining JAM (tray 2 paper feed paper)                                       |
| APFD2_S3     | APFD2 remaining JAM (tray 3 paper feed paper)                                       |
| APFD2_S4     | APFD2 remaining JAM (tray 4 paper feed paper)                                       |
| APFD2_SA     | APFD2 remaining JAM (ADU refeed paper)  |
| DPF_SM       | Compulsory stop by double-feed detection<br>(Manual feed paper)                     |
| DPF_S1       | Compulsory stop by double-feed detection<br>(Tray 1 feed paper)                     |
| DPF_S2       | Compulsory stop by double-feed detection<br>(Tray 2 feed paper)                     |
| DPF_S3       | Compulsory stop by double-feed detection<br>(Tray 3 feed paper)                     |
| DPF_S4       | Compulsory stop by double-feed detection<br>(Tray 4 feed paper)                     |
| DPF_SL       | Compulsory stop by double-feed detection<br>(Side LCC feed paper)                   |
| DPF_SL1      | Compulsory stop by double-feed detection<br>(Large capacity feed Tray 1 feed paper) |
| DPF_SL2      | Compulsory stop by double-feed detection<br>(Large capacity feed Tray 2 feed paper) |
| DPF_SL3      | Compulsory stop by double-feed detection<br>(Large capacity feed Tray 3 feed paper) |
| DPF_SL4      | Compulsory stop by double-feed detection<br>(Large capacity feed Tray 4 feed paper) |
| DPF_SL5      | Compulsory stop by double-feed detection<br>(Large capacity feed Tray 5 feed paper) |
| DPF_SL6      | Compulsory stop by double-feed detection<br>(Large capacity feed Tray 6 feed paper) |
| DPF_SLM      | Compulsory stop by double-feed detection<br>(Large capacity feed Manual feed paper) |
| DPF_SA       | Compulsory stop by double-feed detection<br>(ADU re-feed paper)                     |
| DRUM         | Drum lock detection   |
| FUSER        | Fusing winding detection  |
| PRI_JAM      | Image ready complete standby time-out   |
| LCC_ERR      | LCC communication abnormality detection   |
| FIN_ERR      | Finisher communication abnormality detection  |
| MTR_ILG      | Motor driver trouble JAM  |
| SIZE_ILG     | Size illegal JAM  |
| STOP_JAM     | Emergency stop request JAM (Controller request)                                     |
| NO_MATCH     | Parameter inconsistency   |
| NO_JAM_CAUSE | No JAM. Also used when a JAM is canceled.   |

**(2) MX-RB18**

| JAM code | JAM content   |
|----------|---|
| DCS100_N | Decurler unit transport pass sensor not-reached JAM |
| DCS100_S | Decurler unit transport pass sensor remaining JAM   |
| DCTIME   | Early reaching JAM                                  |
| DCPAOF   | Paper attribute data reception overflow             |

**(3) MX-RB13**

| JAM code | JAM content                                |
|----------|--|
| PIS150_N | Transport unit pass sensor not-reached JAM |
| PIS150_S | Transport unit pass sensor remaining JAM   |

**(4) MX-FN21/22**

| JAM code | JAM content  |
|----------|--|
| FNS101_N | Inlet port not-reached JAM (FN pass)               |
| FNS101_S | Inlet port remaining JAM (FN pass)                 |
| FNS102_N | Paper exit not-reached JAM                         |
| FNS102_S | Paper exit remaining JAM                           |
| FNM110   | Paper exit roller lift motor JAM                   |
| FNM117   | Gripper motor JAM                                  |
| FNM115   | Staple JAM   |
| FNM114   | Discharged paper HOLD motor JAM                    |
| FNM113   | Paper rear edge fall motor JAM                     |
| FNM116   | Gripper arm motor JAM                              |
| FNM112   | Paper alignment roller lift motor JAM              |
| FNM118   | Paper rear edge hold motor JAM                     |
| FCM102   | Punch JAM  |
| FNPAOF   | Paper attribute data reception overflow            |
| FNTIME   | Early reaching JAM                                 |
| FSS201_N | Saddle inlet port pass sensor delay JAM            |
| FSS201_S | Saddle inlet port pass sensor remaining JAM        |
| FSS203_N | Saddle vertical pass sensor delay JAM              |
| FSS226_N | Saddle transport paper pass sensor 1 delay JAM     |
| FSS226_S | Saddle transport paper pass sensor 1 remaining JAM |
| FSS227_N | Saddle paper exit pass sensor 2 delay JAM          |
| FSS227_S | Saddle paper exit pass sensor 2 remaining JAM      |
| FSSTPLJ  | Saddle staple JAM                                  |
| FSM202   | Saddle section saddle alignment motor JAM          |
| FSM203   | Saddle section lead edge stopper motor JAM         |
| FSM204   | Saddle section folding roller guide motor JAM      |
| FSM210   | Saddle section rear edge hold motor JAM            |
| FSM211   | Saddle section rear edge shift motor JAM           |
| FSM213   | Saddle section SADDLE flapping motor JAM           |
| FSM214   | Saddle section SEPARATION motor JAM                |
| FSM206   | Saddle section folding motor JAM                   |
| FSM205   | Saddle section PUSH motor JAM                      |

**(5) MX-TM10**

| JAM code | JAM content                                     |
|----------|---|
| FTS103_N | Trimmer paper exit sensor delay JAM             |
| FTS103_S | Trimmer paper exit sensor remaining JAM         |
| FTS101_N | Trimmer inlet port sensor relay JAM             |
| FTS101_S | Trimmer inlet port sensor remaining JAM         |
| FTM103   | Trimmer section inlet port separation motor JAM |
| FTM104   | Trimmer section paper exit separation motor JAM |
| FTM102   | Trimmer section registration motor JAM          |
| FTM106   | Trimmer section CUTTER motor JAM                |
| FTM105   | Trimmer section bundle press motor JAM          |

**(6) MX-FD10**

| JAM code | JAM content  |
|----------|--|
| FLS30_N  | Speed reduction timing sensor delay JAM                |
| FLS30_S  | Speed reduction timing sensor remaining JAM            |
| FLS31_N  | Separation timing sensor delay JAM                     |
| FLS31_S  | Separation timing sensor remaining JAM                 |
| FLS32_N  | Folding position adjustment sensor delay JAM           |
| FLS32_S  | Folding position adjustment sensor remaining JAM       |
| FLS33_N  | Upper stopper section paper detection sensor delay JAM |

| JAM code  | JAM content  |
|-----------|--|
| FLS33_S   | Upper stopper section paper detection sensor remaining JAM |
| FLS22_N   | Outlet port 1 sensor delay JAM                             |
| FLS22_S   | Outlet port 1 sensor remaining JAM                         |
| FLS27_N   | Folding tray empty sensor delay JAM                        |
| FLS27_S   | Folding tray empty sensor remaining JAM                    |
| FLS20_N   | Inlet port sensor delay JAM                                |
| FLS20_S   | Inlet port sensor remaining JAM                            |
| FLS21_N   | Outlet port 2 sensor delay JAM                             |
| FLS21_S   | Outlet port 2 sensor remaining JAM                         |
| FLM8      | Folding section upper stopper motor JAM                    |
| FLM9      | Folding SECTION 3-fold stopper motor JAM                   |
| FLM10     | Folding section lead edge hold guide motor JAM             |
| FLM7      | Folding section folding tray paper exit motor JAM          |
| FLENT_ERR | EntryStart time out JAM                                    |
| FLEJT_ERR | EjectStartAck time out JAM                                 |

**(7) MX-CF11**

| JAM code  | JAM content                                     |
|-----------|---|
| INSFED1_N | No. 1 paper feed sensor not-reached JAM         |
| INSFED1_S | No. 1 paper feed sensor remaining JAM           |
| INSFED2_N | No. 2 paper feed sensor not-reached JAM         |
| INSFED2_S | No. 2 paper feed sensor remaining JAM           |
| INSPL1_N  | No. 1 pull-out sensor not-reached JAM           |
| INSPL1_S  | No. 1 pull-out sensor remaining JAM             |
| INSPL2_N  | No. 2 pull-out sensor not-reached JAM           |
| INSPL2_S  | No. 2 pull-out sensor remaining JAM             |
| INSVTR1_N | No. 1 vertical transport sensor not-reached JAM |
| INSVTR1_S | No. 1 vertical transport sensor remaining JAM   |
| INSVTR2_N | No. 2 vertical transport sensor not-reached JAM |
| INSVTR2_S | No. 2 vertical transport sensor remaining JAM   |
| INSOUT_N  | Paper exit sensor not reached JAM               |
| INSOUT_S  | Paper exit sensor remaining JAM                 |
| INSENT_N  | Inlet port sensor not-reached JAM               |
| INSENT_S  | Inlet port sensor remaining JAM                 |
| INSEXT_N  | Outlet port sensor not-reached JAM              |
| INSEXT_S  | Outlet port sensor remaining JAM                |
| INSLUP1J  | No. 1 lift motor JAM                            |
| INSLUP2J  | No. 2 lift motor JAM                            |
| INSPICM1J | No. 1 pickup motor JAM                          |
| INSPICM2J | No. 2 pickup motor JAM                          |

**(8) MX-FN24/25**

| JAM code  | JAM content                                     |
|-----------|---|
| FENT_N    | Inlet port section transport Not-reached        |
| FENT_S    | Inlet port section transport Remaining          |
| FPRFEX_N  | Proof paper exit section transport Not-reached  |
| FPRFEX_S  | Proof paper exit section transport Remaining    |
| FSFTEX_N  | Shift paper exit section transport Not-reached  |
| FSFTEX_S  | Shift paper exit section transport Remaining    |
| FSTPEX_N  | Staple paper exit section transport Not-reached |
| FSTPEX_S  | Staple paper exit section transport Remaining   |
| FFPS_N    | Center folding section not-reached JAM          |
| FSHS_N    | Center folding paper exit not-reached JAM       |
| FSHS_S    | Center folding paper exit remaining JAM         |
| FBLTJAM   | Discharge JAM                                   |
| FSFTMJ    | Shift motor JAM                                 |
| EXGPLTMJ  | Paper exit open / close guide plate motor JAM   |
| FLFTMJ    | Tray motor JAM                                  |
| FSTRVLMJ  | Return roller oscillation motor JAM             |
| FJOGMJ    | Jogger motor JAM                                |
| FBLTMJ    | Discharge motor JAM                             |
| FSTMVMJ   | Staple shift motor JAM                          |
| FSTROTMJ  | Staple diagonal motor JAM                       |
| FSTMOVVMJ | Staple motor JAM 1 (edge binding) JAM           |
| FSDSTFMJ  | Staple motor JAM 2 (center binding front) JAM   |
| FSDSTRMJ  | Staple motor JAM 3 (center binding rear) JAM    |
| FBJCTGMJ  | Bundle branch open / close motor JAM            |
| FDRRLVMJ  | Drive roller oscillation motor JAM              |
| FTFNCMJ   | Rear edge fence motor JAM                       |
| FFLPLTMJ  | Folding plate motor JAM                         |

| JAM code | JAM content                           |
|----------|---------------------------------------|
| FPNCHMJ  | Punch motor JAM                       |
| FPCHMVMJ | Punch shift motor JAM                 |
| FSTSMVMJ | Horizontal resist detection motor JAM |

### (9) MX-ST10

| JAM code | JAM content                                     |
|----------|---|
| S1SN01_N | Inlet port sensor not-reached JAM               |
| S1SN02_N | External tray paper exit sensor not-reached JAM |
| S1SN02_S | External tray paper exit sensor remaining JAM   |
| S1SN03_N | Stack tray paper exit sensor not-reached JAM    |
| S1SN03_S | Stack tray paper exit sensor remaining JAM      |
| S1SN04_N | Interface transport section JAM                 |
| S1SN05_N | Interface outlet port sensor not-reached JAM    |
| S1SN05_S | Interface outlet port sensor remaining JAM      |
| S1PM11   | Offset unit abnormality                         |
| S1PM12   | Front side jogger                               |
| S1PM13   | Rear side jogger                                |
| S1PM22   | Lead edge jogger abnormality                    |
| S1M21    | Stack tray abnormality                          |
| S1TSISW  | Tray safety interlock SW operation              |
| S2SN01_N | Inlet port sensor not-reached JAM               |
| S2SN02_N | External tray paper exit sensor not-reached JAM |
| S2SN02_S | External tray paper exit sensor remaining JAM   |
| S2SN03_N | Stack tray paper exit sensor not-reached JAM    |
| S2SN03_S | Stack tray paper exit sensor remaining JAM      |
| S2SN04_N | Interface transport section JAM                 |
| S2SN05_N | Interface outlet port sensor not-reached JAM    |
| S2SN05_S | Interface outlet port sensor remaining JAM      |
| S2PM11   | Offset unit abnormality                         |
| S2PM12   | Front side jogger                               |
| S2PM13   | Rear side jogger                                |
| S2PM22   | Lead edge jogger abnormality                    |
| S2M21    | Stack tray abnormality                          |
| S2TSISW  | Tray safety interlock SW operation              |

### (10) MX-MF11

| JAM code    | JAM content  |
|-------------|--|
| L1MPFS_NLM  | Manual paper feed sensor not-reached JAM (Multi-stage LCT manual paper feed)       |
| L1MPFS_SLM  | Manual paper feed sensor remaining JAM (Multi-stage LCT manual paper feed)         |
| L1MTS_NLM   | Manual paper transport sensor not-reached JAM (Multi-stage LCT manual paper feed)  |
| L1MTS_SLM   | Manual paper transport sensor remaining JAM (Multi-stage LCT manual paper feed)    |
| L1DFB01_NLM | Manual feed paper entry sensor not-reached JAM (Multi-stage LCT manual paper feed) |
| L1DFB01_SLM | Manual feed paper entry sensor remaining JAM (Multi-stage LCT manual paper feed)   |
| MFT2_L      | Multi-stage LCT manual feed tray paper feed JAM (60K for the paper feed counter)*1 |

### (11) MX-LC13

| JAM code    | JAM content  |
|-------------|--|
| L1DF101_NL1 | Paper exit sensor 1cs not-reached JAM (Multi-stage LCT tray 1 paper feed)                  |
| L1DF101_SL1 | Paper exit sensor 1cs remaining JAM (Multi-stage LCT tray 1 paper feed)                    |
| L1DF201_NL2 | Paper exit sensor 2cs not-reached JAM (Multi-stage LCT tray 2 paper feed)                  |
| L1DF201_SL2 | Paper exit sensor 2cs remaining JAM (Multi-stage LCT tray 2 paper feed)                    |
| L1DF001_NL1 | Vertical transport sensor 1 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed) |
| L1DF001_SL1 | Vertical transport sensor 1 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)   |
| L1DF001_NLM | Vertical transport sensor 1 (1-series) not-reached JAM (Multi-stage LCT manual paper feed) |
| L1DF001_SLM | Vertical transport sensor 1 (1-series) remaining JAM (Multi-stage LCT manual paper feed)   |
| L1DF002_NL1 | Vertical transport sensor 2 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed) |

| JAM code    | JAM content  |
|-------------|--|
| L1DF002_SL1 | Vertical transport sensor 2 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)   |
| L1DF002_NLM | Vertical transport sensor 2 (1-series) not-reached JAM (Multi-stage LCT manual paper feed) |
| L1DF002_SLM | Vertical transport sensor 2 (1-series) remaining JAM (Multi-stage LCT manual paper feed)   |
| L1DF003_NL1 | Vertical transport sensor 3 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed) |
| L1DF003_SL1 | Vertical transport sensor 3 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)   |
| L1DF003_NLM | Vertical transport sensor 3 (1-series) not-reached JAM (Multi-stage LCT manual paper feed) |
| L1DF003_SLM | Vertical transport sensor 3 (1-series) remaining JAM (Multi-stage LCT manual paper feed)   |
| L1DF004_NL1 | Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed) |
| L1DF004_SL1 | Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)   |
| L1DF004_NL2 | Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 2 paper feed) |
| L1DF004_SL2 | Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 2 paper feed)   |
| L1DF004_NL3 | Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 3 paper feed) |
| L1DF004_SL3 | Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 3 paper feed)   |
| L1DF004_NL4 | Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT tray 4 paper feed) |
| L1DF004_SL4 | Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT tray 4 paper feed)   |
| L1DF004_NLM | Vertical transport sensor 4 (1-series) not-reached JAM (Multi-stage LCT manual paper feed) |
| L1DF004_SLM | Vertical transport sensor 4 (1-series) remaining JAM (Multi-stage LCT manual paper feed)   |
| L1DF005_NL1 | LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 1 paper feed)       |
| L1DF005_SL1 | LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 1 paper feed)         |
| L1DF005_NL2 | LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 2 paper feed)       |
| L1DF005_SL2 | LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 2 paper feed)         |
| L1DF005_NL3 | LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)       |
| L1DF005_SL3 | LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 3 paper feed)         |
| L1DF005_NL4 | LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT tray 4 paper feed)       |
| L1DF005_SL4 | LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT tray 4 paper feed)         |
| L1DF005_NLM | LCT paper exit sensor (1-series) not-reached JAM (Multi-stage LCT manual paper feed)       |
| L1DF005_SLM | LCT paper exit sensor (1-series) remaining JAM (Multi-stage LCT manual paper feed)         |
| L1DF006_NL3 | Horizontal transport sensor 1 not-reached JAM (Multi-stage LCT tray 3 paper feed)          |
| L1DF006_SL3 | Horizontal transport sensor 1 remaining JAM (Multi-stage LCT tray 3 paper feed)            |
| L1DF006_NL4 | Horizontal transport sensor 1 not-reached JAM (Multi-stage LCT tray 4 paper feed)          |
| L1DF006_SL4 | Horizontal transport sensor 1 remaining JAM (Multi-stage LCT tray 4 paper feed)            |
| L1DF007_NL3 | Horizontal transport sensor 2 not-reached JAM (Multi-stage LCT tray 3 paper feed)          |
| L1DF007_SL3 | Horizontal transport sensor 2 remaining JAM (Multi-stage LCT tray 3 paper feed)            |
| L1DF007_NL4 | Horizontal transport sensor 2 not-reached JAM (Multi-stage LCT tray 4 paper feed)          |
| L1DF007_SL4 | Horizontal transport sensor 2 remaining JAM (Multi-stage LCT tray 4 paper feed)            |
| L1DF008_NL3 | Horizontal transport sensor 3 not-reached JAM (Multi-stage LCT tray 3 paper feed)          |
| L1DF008_SL3 | Horizontal transport sensor 3 remaining JAM (Multi-stage LCT tray 3 paper feed)            |



| JAM code    | JAM content  |
|-------------|--|
| L1DF008_NL4 | Horizontal transport sensor 3 not-reached JAM (Multi-stage LCT tray 4 paper feed)          |
| L1DF008_SL4 | Horizontal transport sensor 3 remaining JAM (Multi-stage LCT tray 4 paper feed)            |
| L1DF009_NL3 | Horizontal transport sensor 4 not-reached JAM (Multi-stage LCT tray 3 paper feed)          |
| L1DF009_SL3 | Horizontal transport sensor 4 remaining JAM (Multi-stage LCT tray 3 paper feed)            |
| L1DF009_NL4 | Horizontal transport sensor 4 not-reached JAM (Multi-stage LCT tray 4 paper feed)          |
| L1DF009_SL4 | Horizontal transport sensor 4 remaining JAM (Multi-stage LCT tray 4 paper feed)            |
| L1DF010_NL3 | Horizontal transport sensor 5 not-reached JAM (Multi-stage LCT tray 3 paper feed)          |
| L1DF010_SL3 | Horizontal transport sensor 5 remaining JAM (Multi-stage LCT tray 3 paper feed)            |
| L1DF010_NL4 | Horizontal transport sensor 5 not-reached JAM (Multi-stage LCT tray 4 paper feed)          |
| L1DF010_SL4 | Horizontal transport sensor 5 remaining JAM (Multi-stage LCT tray 4 paper feed)            |
| L2DF101_NL3 | Paper exit sensor 3cs not-reached JAM (Multi-stage LCT tray 3 paper feed)                  |
| L2DF101_SL3 | Paper exit sensor 3cs remaining JAM (Multi-stage LCT tray 3 paper feed)                    |
| L2DF201_NL4 | Paper exit sensor 4cs not-reached JAM (Multi-stage LCT tray 4 paper feed)                  |
| L2DF201_SL4 | Paper exit sensor 4cs remaining JAM (Multi-stage LCT tray 4 paper feed)                    |
| L2DF001_NL3 | Vertical transport sensor 1 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed) |
| L2DF001_SL3 | Vertical transport sensor 1 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)   |
| L2DF002_NL3 | Vertical transport sensor 2 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed) |
| L2DF002_SL3 | Vertical transport sensor 2 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)   |
| L2DF003_NL3 | Vertical transport sensor 3 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed) |
| L2DF003_SL3 | Vertical transport sensor 3 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)   |
| L2DF004_NL3 | Vertical transport sensor 4 (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed) |
| L2DF004_SL3 | Vertical transport sensor 4 (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)   |
| L2DF004_NL4 | Vertical transport sensor 4 (2-series) not-reached JAM (Multi-stage LCT tray 4 paper feed) |
| L2DF004_SL4 | Vertical transport sensor 4 (2-series) remaining JAM (Multi-stage LCT tray 4 paper feed)   |
| L2DF005_NL3 | LCT paper exit sensor (2-series) not-reached JAM (Multi-stage LCT tray 3 paper feed)       |
| L2DF005_SL3 | LCT paper exit sensor (2-series) remaining JAM (Multi-stage LCT tray 3 paper feed)         |
| L2DF005_NL4 | LCT paper exit sensor (2-series) not-reached JAM (Multi-stage LCT tray 4 paper feed)       |
| L2DF005_SL4 | LCT paper exit sensor (2-series) remaining JAM (Multi-stage LCT tray 4 paper feed)         |

**(12) MX-LCX3N/LC12**

| JAM code | JAM content   |
|----------|---|
| LCC      | A4/A3LCC paper feed JAM (LPFD1 not-reached JAM)     |
| LPFD_SL  | LPFD remaining JAM (side A4/A3LCC paper feed paper) |

**B. SCU JAM case (Some parts are overlapped with the PCU code table.)**

| JAM code     | JAM content                                     |
|--------------|---|
| NO_JAM_CAUSE | No JAM. Also used when a JAM is canceled.       |
| STOP_JAM     | Emergency stop request JAM (Controller request) |
| 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                             |
| SPPD5_N      | SPPD5 not-reached JAM                           |
| SPPD5_S      | SPPD5 remaining JAM                             |
| SPOD_N       | SPOD not-reached JAM                            |
| SPOD_S       | SPOD remaining JAM                              |
| SPSD_SCN     | Exposure start notification timer end           |
| SPPD6_N      | SPPD6 not-reached JAM                           |
| SPPD6_S      | SPPD6 remaining JAM                             |
| SPPD7_N      | SPPD7 not-reached JAM                           |
| SPPD7_S      | SPPD7 remaining JAM                             |
| P_SHORT      | Short size JAM                                  |
| SDFS_S       | Double feed detection JAM/Accompanied feed JAM  |
| ICU_REQ      | ICU factor stop JAM                             |

## 2. Service parts harness

### A. Extension cable for unit connection

When the following unit is pulled out. Use the following extension cable for unit connection.

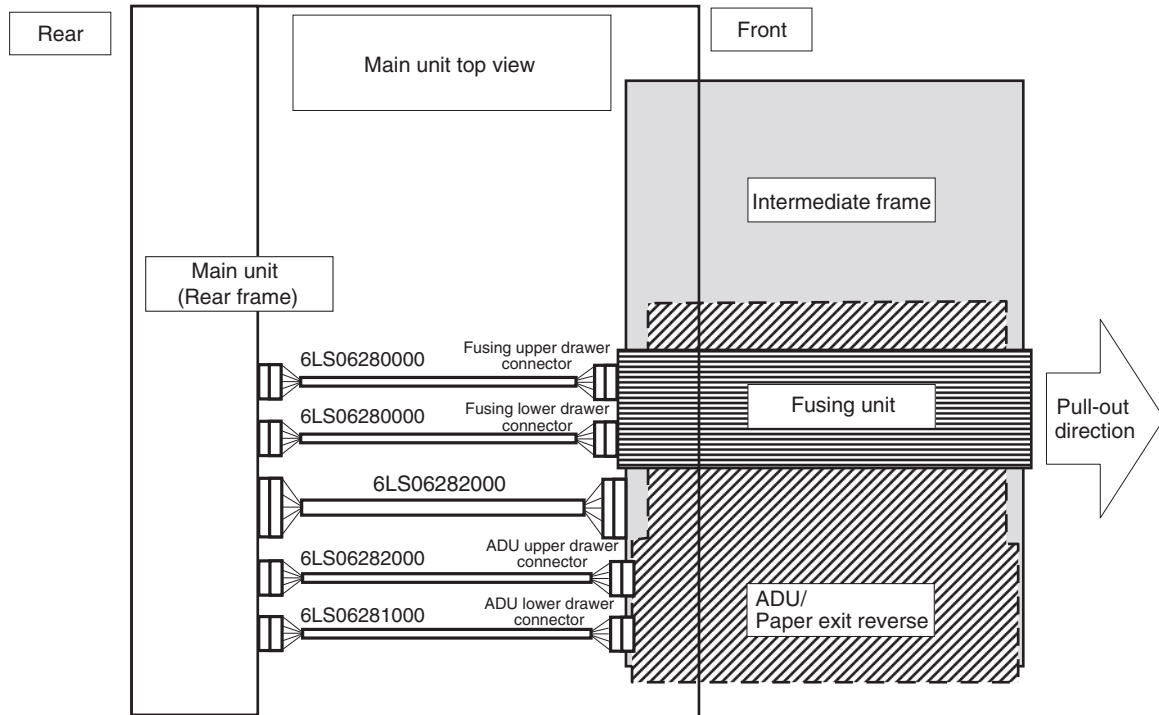
**(Note)**

Never close the draws with the connection cable connected. as damage will occur.

\* Parts code: 6LS06280000 (Drawer 19 pin connection harness)

\* Parts code: 6LS06281000 (Drawer 33 pin connection harness)

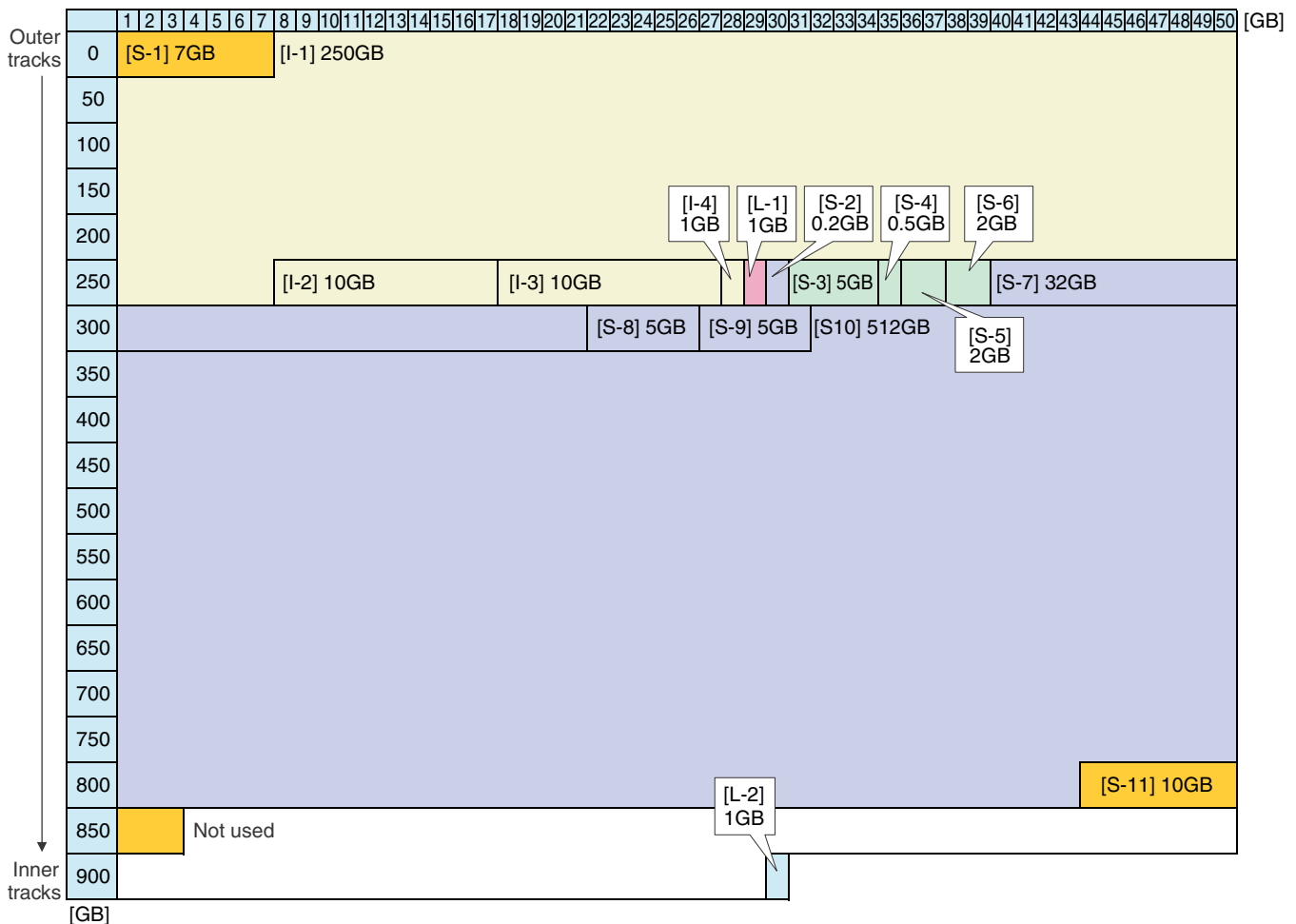
\* Parts code: 6LS06282000 (Drawer 39 pin connection harness)



### 3. HDD/SD card/CF card memory map

#### A. HDD partition

HDD size = 1TB (Actual size 930GB)



#### B. HDD data contents

| No. | File system   | Stored data   | NOTE   |
|-----|---------------|---|--|
| S-1 | Universal     | e-manual<br>Watermark   |  |
| I-1 | Image data    | Image data (ERDH/Document filing)   | Upper limit: 5000 documents,<br>35000 images |
| I-2 | Image data    | Image data (Temporary storage)  | Upper limit: 1000 documents,<br>10000 images |
| I-3 | Image data    | Image data (User watermark/stamp)   | Upper limit: 1000 documents,<br>10000 images |
| I-4 | Image data    |   |  |
| L-1 | Not available | Image send system registration data (sender's information, meta data, etc.)   |  |
| S-2 | Universal     | System setting value data (Backup)  |  |
| S-3 | Universal     | Download font<br>User macro<br>Database system file<br>System log<br>FEP learning data<br>SPN print data<br>SPN collection data<br>For saving difference update   |  |
| S-4 | Universal     | Document filing (Database)<br>Job log (Database)<br>Job completion list   |  |
| S-5 | Universal     | Address book (Database)<br>Account management information (Database)<br>Individual setting information for direct WEB browsing<br>Cookie file for OSA application |  |
| S-6 | Universal     | Database file (save area for collective erasing)  |  |

| No.  | File system   | Stored data  | NOTE |
|------|---------------|--|------|
| S-7  | Universal     | PDL data (temporary area for print spool)  |      |
| S-8  | Universal     | Application work area (User file used in USB direct print)   |      |
| S-9  | Universal     | eOSA application file  |      |
| S-10 | Universal     | User file saved in the SMB server  |      |
| S-11 | Universal     | User data of set values, etc. which must not be erased when installing the DSK.<br>(Address book, account information) |      |
| L-2  | Not available | RAID system information  |      |

### C. SD card partition

SD card size = 4GB (Actual size 3.6GB)

|   | 0             | 100 | 200 | 300 | 400 | 500            | 600 | 700 | 800 | 900 | [MB] |
|---|---------------|-----|-----|-----|-----|----------------|-----|-----|-----|-----|------|
| 0 | [L-201] 500MB |     |     |     |     | [I-201] 1024MB |     |     |     |     |      |
| 1 |               |     |     |     |     | Not used       |     |     |     |     |      |
| 2 |               |     |     |     |     |                |     |     |     |     |      |
| 3 |               |     |     |     |     |                |     |     |     |     |      |

[GB]

### D. SD card data contents

| No.   | File system   | Stored data                 | NOTE |
|-------|---------------|-----------------------------|------|
| L-201 | Not available | ICU firmware (Reus section) |      |
| I-201 | Image data    | (Backup)                    |      |

### E. CF card data partition

CF card size = 4GB (Actual size 3.7GB)

|   | 0             | 100 | 200 | 300 | 400 | 500           | 600 | 700 | 800 | 900           | [MB] |
|---|---------------|-----|-----|-----|-----|---------------|-----|-----|-----|---------------|------|
| 0 | [L-101] 2.4GB |     |     |     |     |               |     |     |     |               |      |
| 1 |               |     |     |     |     |               |     |     |     |               |      |
| 2 |               |     |     |     |     | [S-101] 512MB |     |     |     | [S-102] 200MB |      |
| 3 | [L-102] 600MB |     |     |     |     |               |     |     |     |               |      |

[GB]

### F. CF card data contents

| No.   | File system   | Stored data   | NOTE |
|-------|---------------|---|------|
| L-101 | Universal     | ICU firmware (Including the OS section)   |      |
| S-101 | Universal     | font<br>spd<br>UI content file<br>lang (message data)<br>eOSA Delegator<br>Option FontROM |      |
| S-102 | Universal     | System setting value data   |      |
| L-102 | Not available | Operating system work area  |      |

## **4. Necessary steps when replacing the PWB, HDD, SD Card and the CF card**

### **A. MFP substrate replacement procedure (work flow)**

CAUTION: Registered user information will not be recovered if the MFP PWB is affected by U2-05 trouble. (\*1)

- 1) Attach the flash ROM, the memory, the EEPROM, the SD card etc. of the MFP PWB on the service parts MFP PWB and install it to the main unit.

CAUTION: Ground your body with grounding band during the work.

- 2) When U2 trouble occurs, use SIM16 to cancel it.
- 3) Set as follows after restarting the main unit.

### **B. Procedures necessary for HDD replacement**

#### **Note for HDD replacement**

- Data of the following list are saved in the HDD of the complex machine. If the HDD operates normally and data backup is possible before replacement, perform data backup and then replace the HDD.
- If the HDD does not operate normally, data cannot be backed up.
- The HDD replacement procedures with a broken HDD differs from that with a normal HDD.

#### **Contents of this chapter**

- HDD storage data and backup
- Replacement procedures when HDD storage data can be backed up
- Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD
- Reinstall and update procedures of Operation Manual data saved in HDD
- Reinstall and update procedures of watermark data.

## (1) HDD storage data and backup

Some HDD storage data can be backed up, and some other data cannot. Some HDD storage data can be reinstalled, and some other storage data cannot.

If the HDD operates normally before replacement and data can be backed up, back up the data before replacement of the HDD referring to the HDD storage data list. Then reinstall the data after replacement of the HDD.

### a. HDD storage data list

| No. | Data kind   | Before installation<br>(When shipping<br>from the factory) | After installation<br>(After use by<br>users)                | Enable/<br>Disable of<br>data<br>backup | Backup means                                    | Enable/<br>Disable of<br>data reinstall | Data reinstall<br>procedures   | Reinstall<br>operator |
|-----|---|--|--|---|---|---|--|-----------------------|
| 1   | e-Manual  | Available  | Available  | Disable                                 | *1  | Enable                                  | Sim49-3  | Service               |
| 2   | Address book  | Not available  | Available  | Enable                                  | Sim56-2 /<br>Device cloning /<br>Storage backup | Enable                                  | Sim56-2 /<br>Device cloning /<br>Storage backup                                  | Service               |
| 3   | Image send series<br>registration data (Sender's<br>information, meta data, etc.)                           | Not available  | Available  | Enable                                  | Sim56-2 /<br>Device cloning /<br>Storage backup | Enable                                  | Sim56-2 /<br>Device cloning /<br>Storage backup                                  | Service               |
| 4   | User authentication<br>Account management   | Not available  | Available  | Enable                                  | Sim56-2   | Enable                                  | Sim56-2  | Service               |
| 5   | Japanese FEP dictionary<br>(Learning)   | Not available  | Available  | Disable                                 | Not available                                   | Disable                                 |  | —                     |
| 6   | Chinese FEP dictionary<br>(Learning)  | Not available  | Available  | Disable                                 | Not available                                   | Disable                                 |  | —                     |
| 7   | JOB LOG   | Not available  | Available  | Enable                                  | Perform with<br>WEB PAGE.                       | Disable                                 |  | —                     |
| 8   | JOB completion list   | Not available  | Available  | Disable                                 | Not available                                   | Disable                                 |  | —                     |
| 9   | New N/A (FSS) information   | Not available  | Available  | Disable                                 | Not available                                   | Disable                                 |  | —                     |
| 10  | User font (Added)   | Not available  | Available  | Disable                                 | Not available                                   | Enable                                  | Perform with<br>WEB PAGE.  | Service<br>or User    |
| 11  | User macro  | Not available  | Available  | Disable                                 | Not available                                   | Enable                                  | Perform with<br>WEB PAGE.  |                       |
| 12  | Document filing   | Not available  | Available  | Enable                                  | Perform with<br>WEB PAGE.                       | Enable                                  | Perform with<br>WEB PAGE.  |                       |
| 13  | Some of system setting<br>data  | Not available  | Available  | Enable                                  | Sim56-2 /<br>Device cloning /<br>Storage backup | Enable                                  | Sim56-2 /<br>Device cloning /<br>Storage backup                                  | Service               |
| 14  | Watermark   | Available  | Available  | Disable                                 | *2  | Enable                                  | Sim49-5  | Service               |
| 15  | Mirroring information (When<br>the mirroring kit is installed,<br>the mirroring information is<br>written.) | Not available  | Available<br>(After installation<br>of the mirroring<br>kit) | Disable                                 | Not available                                   | Enable                                  | The mirroring<br>information is<br>erased by<br>forcible build or<br>RIB BUSTER. | Service               |
| 16  | Individual setting<br>information for direct WEB<br>browsing  | Not available  | Available  | Disable                                 |   | Disable                                 |  | Service               |
| 17  | Cookie file for OSA<br>application  | Not available  | Available  | Disable                                 |   | Disable                                 |  | Service               |
| 18  | eOSA application file   | Not available  | Installation of<br>application                               | Disable                                 |   | Enable                                  | Reinstallation of<br>application   | Service               |
| 19  | User file saved in the SMB<br>server (NAS)  | Not available  | Available  | Disable                                 |   | Disable                                 |  | Service               |

\*1: The e-Manual cannot be backed up, but can be reinstalled by using Sim49-3 and USB memory.

\*2: Watermark data cannot be backed up, but can be reinstalled by using Sim49-5 and USB memory.

**(2) Replacement procedures when HDD data can be backed up**

**a. Work contents and procedures**

| Procedures | When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.  | When a used HDD (used in the same model) is used *                                 |
|------------|--|--|
| Step 1     | Back up the HDD storage data before replacement. (Servicing)<br>Use SIM56-2 or the device cloning, or the storage backup function to backup the data. (Back up the data to the USB memory.)<br>(Backup enable data: HDD storage data list No. 2, 3, 4 (Address book, Image send series registration data, User authentication data)) |  |
| Step 2     | Back up the HDD storage data before replacement. (User or servicing)<br>Back up the data to PC with Web page.<br>(Backup enable data: HDD storage data list No. 7, 10, 14 (Document filing data, JOB LOG data))  |  |
| Step 3     | Replace the HDD.   |  |
| Step 4     | Boot the complex machine.<br><input type="checkbox"/> Formatting is automatically performed.   | Boot the complex machine.  |
| Step 5     |  | The trouble code, U2-05, is displayed. <input type="checkbox"/> Cancel with SIM16. |
| Step 6     | Since a blank HDD is automatically formatted, there is no need to perform formatting procedure with SIM.   | Use SIM62-1 to format the HDD.   |
| Step 7     | Use SIM49-3 to install the manual data to the HDD.   |  |
| Step 8     | The trouble code, U2-60, is displayed. <input type="checkbox"/> Use SIM49-5 to install the watermark data to the HDD. <input type="checkbox"/> After booting the machine, use SIM16 to cancel the "U2-60" trouble.   |  |
| Step 9     | Import the data backed up in Step 1.<br>Use SIM56-2, or the device cloning, or the storage backup to import.<br>(Import enable data: HDD storage data list No. 2, 3, 4 (Address book, Image send series registration data, User authentication data))  |  |
| Step 10    | Import the data backed up with the Web page function in Step 2.<br>Import enable data: Document filing data, User font, Use macro<br>(The JOB LOG data can be backed up but cannot be imported.)   |  |

**(3) Replacement procedures when the HDD storage data cannot be backed up due to breakdown**

**a. Display when HDD breakdown**

When a trouble occurs in the HDD, the error code display of E7-03 is popped up.

In this case, the main power must be turned OFF and the HDD must be replaced.

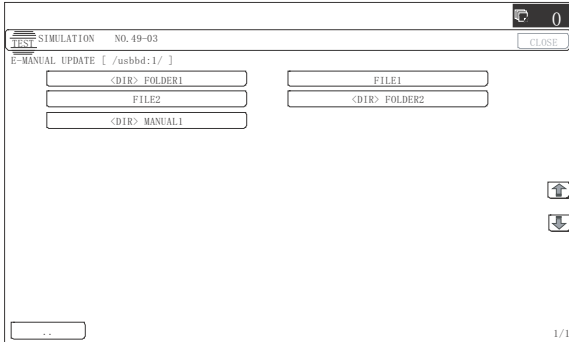
**b. Work contents and procedures**

| Procedures | When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.  | When a used HDD (used in the same model) is used *                                 |
|------------|--|--|
| Step 1     | Install a HDD to the machine, and boot the complex machine.<br><input type="checkbox"/> Formatting is automatically performed.   | Install a HDD to the machine, and boot the complex machine.                        |
| Step 2     |  | The trouble code, U2-05, is displayed. <input type="checkbox"/> Cancel with SIM16. |
| Step 3     | Since a blank HDD is automatically formatted, there is no need to perform formatting procedure with SIM.   | Use Sim62-1 to format the HDD.   |
| Step 4     | Use SIM49-3 to install the manual data to the HDD.   |  |
| Step 5     | The trouble code, U2-60, is displayed. <input type="checkbox"/> Use SIM49-5 to install the watermark data to the HDD. <input type="checkbox"/> After booting the machine, use SIM16 to cancel the "U2-60" trouble. |  |

With the above procedures, the HDD is reset to the state of factory shipping.

**(4) Reinstall and update procedures of the HDD storage Operation Manual data**

- 1) Obtain the Operation Manual data.  
Download the Operation Manual data from the utility menu on Tech-To-Go web site.  
Copy the downloaded files to the USB device without changing the file hierarchy.
- 2) Enter the SIM49-3 mode.



- 3) Insert the USB memory into the machine.
- 4) Select the folder of the Operation Manual data. (The screen shifts to the Operation Manual data install menu.)  
The current version and the update version are displayed.
- 5) Press [EXECUTE] button.  
[EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.
- 6) When [YES] button is pressed, the selected Operation Manual is installed.  
When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.

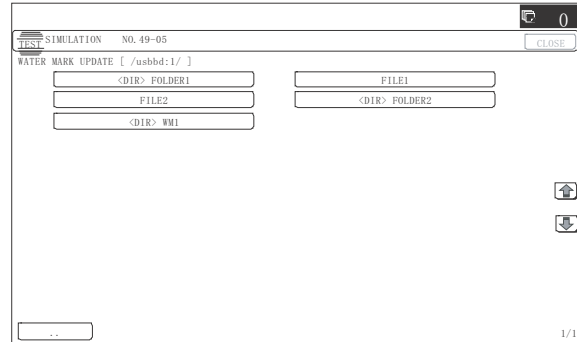
**(5) Watermark data reinstall and update procedures**

- 1) Obtain the watermark data.  
Download the watermark data from the utility menu on Tech-To-Go.  
Copy the downloaded files to the USB device without changing the file hierarchy.

NOTE: When data are uploaded from the USB memory to the HDD, if there are some data in the HDD, the files in the memory are compared with the files in the HDD and only the files which satisfy the following conditions are written into the HDD.

- The file size is different.
- The time stamp is different.
- The file exists only in the USB memory.

- 2) Enter the SIM49-5 mode.



- 3) Insert the USB memory into the machine.
- 4) Select the folder of the watermark data. (The screen shifts to the watermark data install menu.)  
The current version and the update version are displayed.
- 5) Press [EXECUTE] button.  
[EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.
- 6) When [YES] button is pressed, the selected watermark data are installed.  
When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.



## C. Procedures necessary for SD card replacement

### (1) SD card data and backup

Some SD card storage data can be backed up, and some other cannot. Some SD card storage data can be reinstalled, and some other cannot. If the SD card operates normally before replacement and data can be backed up, back up the data before replacement of the SD card referring to the storage data list. Then reinstall the data after replacement of the SD card.

The SD card includes the following data.

#### SD card backup

| Partition number | Stored data                 |   | Enable/Disable of data backup | Backup means | Enable/Disable of data reinstall | Data reinstall procedures |
|------------------|-----------------------------|---|-------------------------------|--------------|----------------------------------|---------------------------|
| L-201            | ICU firmware (Reus section) | ICU firmware (Including the OS section) | Disable                       |              | Enable                           | SIM49-1                   |
| I-201            |                             |   |                               |              |                                  |                           |

- 1) Replace the SD card with a new one.
- 2) Upgrade the firmware to the latest version.
- 3) Use SIM66-10 to clear the image send memory. (Ensure consistency between the HDD data and the image-related memory.)

CAUTION: When replacing the SD card, be sure to use only the specified SD card supplied as a service part.

**The firmware required for booting must be included in the SD card used in this machine. The commercially available SD cards have no such data.**

NOTE: When E7-07 error occurs, there may be some trouble in the SD card.

## D. Procedures necessary for CF card replacement

### (1) CF card data and backup

Some CF card storage data can be backed up, and some other cannot. Some CF card storage data can be reinstalled, and some other cannot. If the CF card operates normally before replacement and data can be backed up, back up the data before replacement of the CF card referring to the storage data list. Then reinstall the data after replacement of the CF card.

The CF card includes the following data.

#### CF card backup

| Partition number | Stored data             |  | Enable/Disable of data backup | Backup means | Enable/Disable of data reinstall | Data reinstall procedures |
|------------------|-------------------------|--|-------------------------------|--------------|----------------------------------|---------------------------|
| L-101            | ICU firmware            | ICU firmware (Including the OS section)  | Disable                       |              | Enable                           | SIM49-1                   |
| S-101            | ICU firmware fixed data | font<br>spdl<br>UI content file<br>lang (message data)<br>eOSA Delegator<br>Option FontROM | Disable                       |              | Enable                           | SIM49-1                   |
| S-102            | System data             | Setting value data file (System setting/SIM setting data (Image quality adjustment))       | Enable                        | SIM56-02     | Enable                           | SIM56-02                  |

- 1) Use SIM56-02 to backup the CF card data to the USB memory.
- 2) When the operation panel home screen has been customized, backup the CF card data by using the device cloning function.
- 3) Replace the CF card with a new one.
- 4) Upgrade the firmware to the latest version.
- 5) Use SIM56-02 to restore the data backed up in procedure 1).
- 6) Restore the data backed up in procedure 2) by using the device cloning function.

CAUTION: When replacing the CF card, be sure to use only the specified CF card supplied as a service part.

**The firmware required for booting must be included in the CF card used in this machine. The commercially available CF cards have no such data.**

NOTE: When E7-A6 error occurs, there may be some trouble in the CF card.

## 5. Necessary works and notes for replacement of the mirroring kit HDD

### NOTE:

#### Terminology and contents

Mirroring information: When the mirroring kit is installed and the power is turned ON, the mirroring information is written into the L-2 partition of the both HDD's.

Rebuilding: Copying operation of the whole contents of one HDD to the other HDD.

Forcible rebuilding: Erasing the mirroring information in the HDD and rewriting new information.

When the mirroring kit is installed, the two HDD's are named HDD1 and HDD2.

HDD1: Standard HDD for the machine

HDD2: Mirroring kit HDD




The status of each HDD can be checked with SIM62-20.

#### Outline / Description Items

|   |   |
|---|---|
| Kinds of errors and remedies  | A. Causes and remedies when the icon of HDD trouble is displayed                          |
|   | B. Causes and remedies when the E7-03 error display is popped up                          |
| Specified remedies for each error<br>(Details of remedies and procedures) | C. Replacement procedures of the HDD of the mirroring kit or that of the machine          |
|   | D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine |
|   | E. Note for reuse of HDD  |

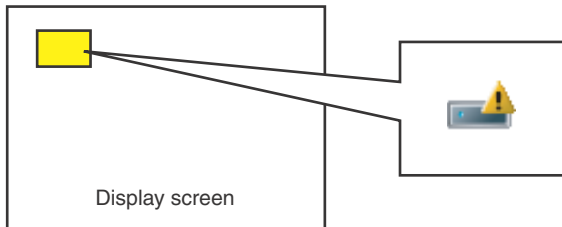
#### Mirroring kit status and status icons

When the mirroring kit is installed, one of the following icons is displayed on the operation panel.

| Icon  | Mirroring kit status      |
|---|---------------------------|
|  | Mirroring kit installed   |
|  | Mirroring kit/HDD trouble |
|  | Mirroring kit/Rebuilding  |

#### A. Causes and remedies when the icon of HDD trouble is displayed

(When the icon shown below is displayed)



- 1) When one HDD goes into trouble, the UI icon which indicates HDD trouble of the mirroring kit is displayed.
- 2) Use SIM62-20 to check the HDD status, and refer to the table below to confirm the relation between the HDD status and the remedy.

#### SIM62-20 status and causes of troubles (When the icon of HDD trouble is displayed)

|      |            | HDD2 |      |            |       |         |
|------|------------|------|------|------------|-------|---------|
|      |            | OK   | NONE | REBUILDING | ERROR | TROUBLE |
| HDD1 | OK         | -    | A    | -          | A     | A       |
|      | NONE       | A    | -    | -          | -     | -       |
|      | REBUILDING | -    | -    | -          | -     | -       |
|      | ERROR      | A    | -    | -          | -     | -       |
|      | TROUBLE    | A    | -    | -          | -     | -       |

- 3) Refer to the table below and check to confirm the remedy.

#### Table: Causes of troubles and remedies when the icon of HDD trouble is displayed

| Case | State   | Cause  | Remedy   |
|------|---|--|--|
| A    | One HDD status is OK.<br>The other HDD status is other than OK. | <ul style="list-style-type: none"> <li>• The HDD which indicates the status other than OK is in trouble.</li> <li>• Connection failure of the connectors and harness of the mirroring kit</li> </ul> | <ul style="list-style-type: none"> <li>• Replace the HDD. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine")</li> <li>• Replace the mirroring kit. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine")</li> </ul> |

- 4) Refer to the details of the remedy and perform the necessary procedures.

## B. Causes and remedies when the E7-03 error display is popped up

- 1) Use SIM62-20 to check the HDD status, and refer to the table below to confirm the relation between the HDD status and the remedy. Refer to the table of "Causes of troubles and remedies when the E7-03 error occurs" and perform the necessary procedures. Backup the data from the HDD without trouble first.

### SIM62-20 status and causes of troubles

|      |            | HDD2   |        |            |       |         |
|------|------------|--------|--------|------------|-------|---------|
|      |            | OK     | NONE   | REBUILDING | ERROR | TROUBLE |
| HDD1 | OK         | B      | B or C | B          | B     | B       |
|      | NONE       | B or C | C      | C          | C     | C       |
|      | REBUILDING | B      | C      | F          | F     | F       |
|      | ERROR      | B      | C      | F          | F     | F       |
|      | TROUBLE    | B      | C      | F          | F     | D or E  |

- 2) Refer to the table below, and check to confirm the remedy.

### Causes of troubles and remedies when the E7-03 error occurs

| Case | State   | Cause   | Remedy   |
|------|---|---|--|
| B    | When at least one HDD is OK.                                | <ul style="list-style-type: none"> <li>Communication trouble through the SATA harness of HDD.</li> <li>Trouble of HDD which indicates the status other than OK.</li> <li>Broken data in HDD</li> <li>The mirroring kit side HDD is normal. The machine side HDD is in trouble or rebuild operation is not completed.</li> <li>RAID PWB trouble</li> </ul> | <ul style="list-style-type: none"> <li>Replace the cable. Remove and connect.</li> <li>Replace the HDD which indicates other than OK. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")</li> <li>Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")</li> </ul>   |
| C    | When at least one HDD is NONE.                              | <ul style="list-style-type: none"> <li>Communication trouble through the SATA harness of HDD.</li> <li>Connection failure between the RAID PWB and the HDD.</li> <li>HDD trouble</li> <li>HDD SATA harness and connector trouble</li> <li>Both the mirroring kit side HDD and the machine side HDD are in trouble.</li> <li>RAID PWB trouble</li> </ul>   | <ul style="list-style-type: none"> <li>Replace the cable. Remove and connect.</li> <li>Check connection between the mirroring kit and the HDD.</li> <li>Replace the HDD which indicates NONE. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")</li> <li>Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")</li> <li>Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")</li> </ul> |
| D    | When in TROUBLE-TROUBLE.                                    | <ul style="list-style-type: none"> <li>RAID PWB trouble</li> <li>(Both or one) HDD trouble</li> <li>Raid PWB is in trouble. The mirroring side HDD is normal. The machine side HDD is other than OK.</li> </ul>   | <ul style="list-style-type: none"> <li>Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")</li> <li>Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")</li> </ul>   |
| E    | When in TROUBLE-TROUBLE. (Occurring when replacing the HDD) | <ul style="list-style-type: none"> <li>The mirroring kit is composed of HDD's which have different mirroring information each other. (A HDD which has been used in the mirroring kit of another machine is used.)</li> </ul>  | <ul style="list-style-type: none"> <li>Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")</li> </ul>   |

- 3) Refer to the details of the remedy and perform the necessary procedures.

### Causes and remedies when cases B, C, D, and E are not applicable

| Case | State                           | Cause  | Remedy   |
|------|---------------------------------|--|--|
| F    | Other than cases B, C, D, and E | <ul style="list-style-type: none"> <li>RAID PWB trouble</li> <li>Both HDD's trouble</li> </ul> | <ul style="list-style-type: none"> <li>Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")</li> <li>Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")</li> </ul> |

### C. Replacement procedures of the HDD of the mirroring kit or that of the machine (Details of the remedies and the procedures)

- When replacing the mirroring kit, follow the replacement procedures of the HDD of the mirroring kit only.

#### (1) Work contents and procedures

##### Data backup

NOTE: When E7-03 error code is popped up, procedures of Step 1 and Step 2 are not required.

|        |   |
|--------|---|
| Step 1 | Back up the data in the HDD before replacement. (By servicing)<br>Use SIM56-2, the device cloning, or the storage backup function to save the data. (Back up the data to the PC or a USB memory.)<br>(Data which can be backed up: Address book data, image send registration data, user authentication data) |
| Step 2 | Back up the data in the HDD before replacement. (By the user or by servicing)<br>Back up the data to the PC by Web page.<br>(Data which can be backed up: Document filing data, JOB log data)   |
| Step 3 | When there is some received data of FAX and Internet FAX, use SIM66-62 to back up the image data from the HDD (BACKUP DATA) to a USB memory. (The backed up image data are in the PDF file type and cannot be returned to the machine.) Give the backed up data to the user.                                  |



##### HDD replacement procedures

| Procedure | Procedure   |
|-----------|---|
| Condition | When a new HDD (blank)(*1) (service part) is used.  |
| Step 4    | If HDD1 is in trouble, replace the HDD of the machine. If HDD2 is in trouble, replace the HDD of the mirroring kit. (*2)  |
| Step 5    | Boot the machine.<br><input type="checkbox"/> Rebuilding is automatically executed.<br><input type="checkbox"/> Check to confirm that E7-03 error (HDD trouble) does not occur, and that the UI icon which indicates rebuilding of the mirroring kit is displayed. Use SIM 62-20 to confirm that the status of the replaced HDD is displayed as REBUILDING. |
| Step 6    | It takes about three hour to complete rebuilding.   |
| Step 7    | Check to confirm that the UI icon which indicated installation of the mirroring unit is displayed. Use SIM62-20 to confirm that the HDD status is displayed as HDD1/HDD2=OK/OK.   |

### D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine (Details of the remedies and the procedures)

#### (1) Work contents and procedures

##### HDD replacement procedures

| Procedure | Procedure  |
|-----------|--|
| Condition | When two new HDD's (blank)(*1) (service part) are used for the both.   |
| Step 2    | Replace the both HDD's (as well as the RAID PWB if necessary). (*2)  |
| Step 3    | Set DIPSW2 of the mirroring kit to ON, and turn on the main power of the machine.<br><input type="checkbox"/> Forcible rebuilding is executed.<br><input type="checkbox"/> Check to confirm that the E7-03 error (HDD trouble) does not occur and that the UI icon which indicates installation of the mirroring kit is displayed. Use SIM62-20 to confirm that the HDD status is displayed as HDD1/HDD2=OK/OK.<br> |
| Step 4    | Turn OFF the main power of the machine, and set DIPSW2 to OFF. Then, turn ON the main power of the machine again.<br>   |
| Step 5    | Use SIM49-3 to install the e-Operation Manual data to the HDD.   |
| Step 6    | The trouble code "U2-60" is displayed.<br><input type="checkbox"/> Use SIM49-5 to install the watermark data to the HDD.<br><input type="checkbox"/> Use SIM16 to cancel the U2-60 error.  |

#### E. Note for reuse of HDD

When replacing the HDD for the mirroring kit, be sure to use a new HDD.

If a HDD which has been used in a mirroring kit is used for replacing the HDD, the operations and the data cannot be assured.

If a HDD which has been used in a mirroring kit is installed, the original data may be erased.

If, however, the mirroring information of the HDD is erased by RIB Buster as described later, it can be used. (\*1) In addition, if the both HDD's are replaced with HDD's which have been used, SIM62-1 must be executed to format HDD's in addition to erasing the mirroring information.

When removing the HDD after installing the mirroring kit, be sure to remove the both HDD's together.

If only one HDD is removed then it is reinstalled, the data of both HDD's may not be identical, causing an error.

When removing the HDD and performing some work, first disconnect the HDD SATA connector of the MFP PWB and perform the work.

With the above procedure, the both HDD's are brought into the status disconnected from the machine.

Put mark on the mirroring kit HDD and the machine HDD to indicate that they have been used. (\*2)

\*1: Refer to "5-C. Deleting the HDD mirroring information."

\*2: Refer to "5-B. How to check the usage history of a HDD in a mirroring kit."

## 6. Note for installing and repairing the mirroring kit

When installing or repairing the mirroring kit, fully understand the following descriptions to avoid erroneous handling and procedures. When a HDD which has once been used for the mirroring kit is reused without proper preparation, it may cause an error and destruction of user data, or other troubles.

The following three cases must be strictly avoided.

- \* When newly installing a mirroring kit, do not use one which has been once used.
- \* When replacing the HDD because of a HDD trouble, do not replace it with a HDD which has been once used in a mirroring kit.
- \* When replacing the HDD because of a HDD trouble in the machine, do not replace it with a HDD which has been once used in a mirroring kit.

NOTE: When a HDD is once used in a mirroring kit, the mirroring information is written into the HDD. This causes a trouble by erroneous using.

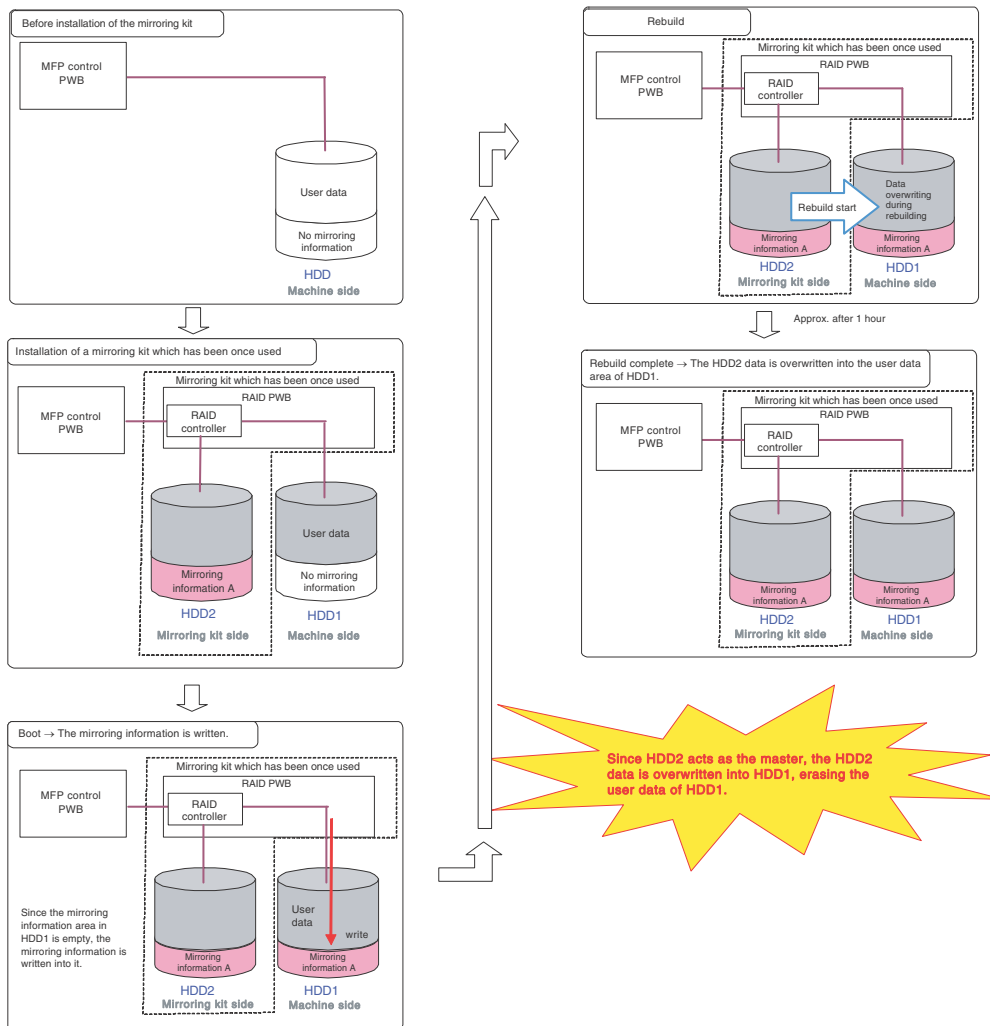
The details of inhibited items, results of erroneous procedures, and precautions for avoiding those errors are described below.

### A. Details of inhibited items

#### (1) When newly installing a mirroring kit, do not use one which has been once used.

##### Trouble contents

If HDD2 which has been once used is used for new installation of a mirroring kit, the data in HDD2 will be written into HDD1. This causes erasure of the original user data, freeze of the machine, or other troubles. The "HDD which has been once used" includes a HDD which was just installed and conducted only.



##### Countermeasures

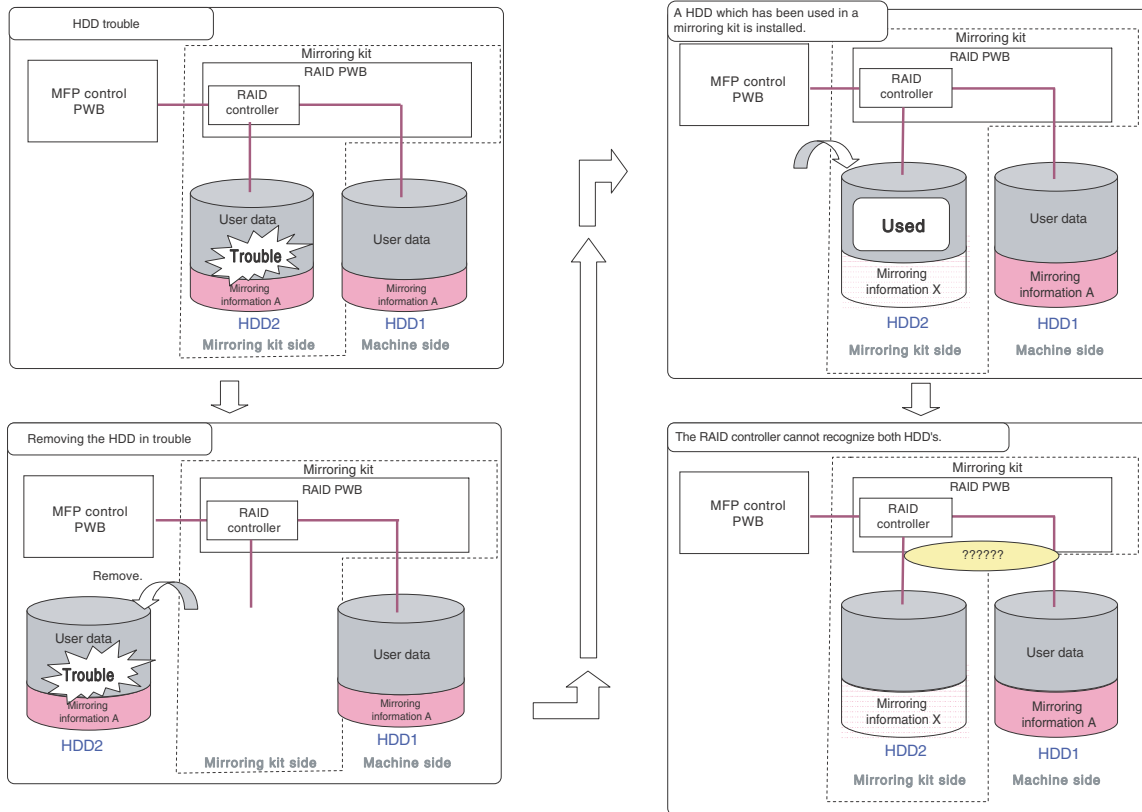
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

**(2) When replacing the HDD in case of a trouble in the HDD, do not use a HDD which has been used in another mirroring kit of another machine.**

**Trouble contents**

If a HDD which has been used in another mirroring kit, the RAID controller cannot recognize the HDD, causing E7-03 error, and the necessary data may be destructed in some cases.



Since the mirroring information of both HDD's does not synchronize each other, the RAID controller cannot recognize both HDD's.  
 →E7-03 error occurs.  
 The user data may be erased and the machine may freeze in some cases.

**Countermeasures**

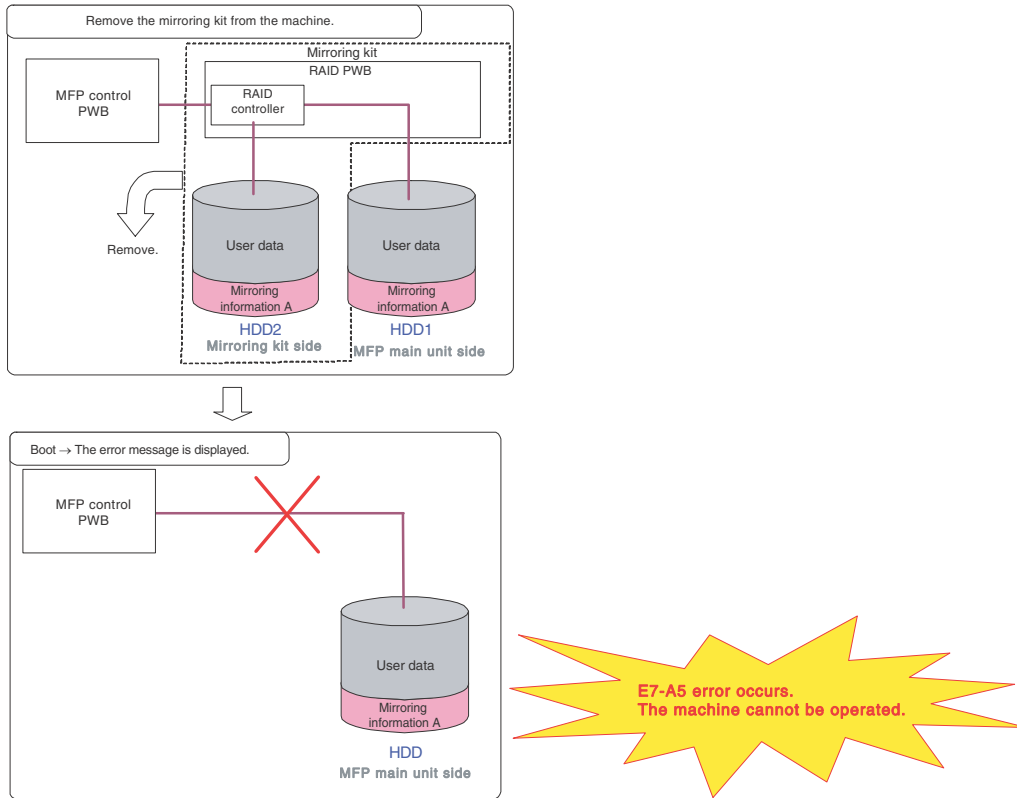
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

(3) When the HDD is replaced because of a HDD trouble, do not use a HDD which has been used in a mirroring kit of another machine.

**Trouble contents**

E7-A5 error occurs. If a HDD which has been used in a mirroring kit is used as the machine HDD, the machine does not operate normally. In this case, the trouble of erasing the original data is avoided.



**Countermeasures**

Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

When a HDD is used without any other HDD, the mirroring information must be erased before executing SIM62-1 to format.

This procedure allows the HDD being treated as a new HDD.

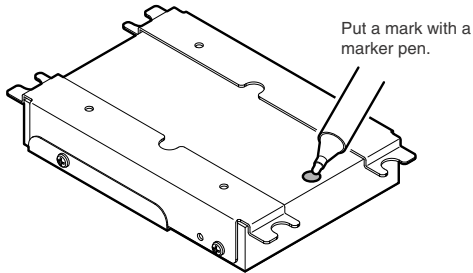
When removing the HDD after installation of the mirroring kit, remove both HDD's simultaneously. If only one HDD is removed and then installed again, the data of both HDD's may not match, causing a trouble.

[Simultaneous removal of both HDD's] Disconnect the HDD SATA connector of the MFP PWB, and both HDD's are brought into disconnected state from the machine.

## B. How to check the usage history of a HDD in a mirroring kit

As stated before, when installing a mirroring kit or replacing a HDD, be sure to check the usage history of a HDD or a mirroring kit which is to be used.

For convenience of checking the usage history, put a mark on the mirroring kit HDD and the machine HDD when installing them to indicate that they have been used.



## C. Deleting the HDD mirroring information

When stopping the use of the mirroring kit, the mirroring information in the machine HDD must be deleted.

### (1) Necessary tools

- \* RIB Buster software

The software is composed of the following two files. (They can be downloaded from the Tech-To-Go web site.)

- \* RIB Buster{YYYYMMDD}.exe
- \* Setup.ini



- \* USB cable
- \* SATA connection cable
- \* SATA connector
- \* AC adaptor
- \* Windows PC

(Support OS: Windows XP, Windows VISTA, Windows 7 (32/64bit))

### (2) Procedures

- 1) Connect the USB cable, the SATA connection cable, the SATA connector, and the AC adaptor to the HDD from which the mirroring information is deleted.



CAUTION: When disconnecting any cable, be sure to disconnect the USB cable from the PC in advance.

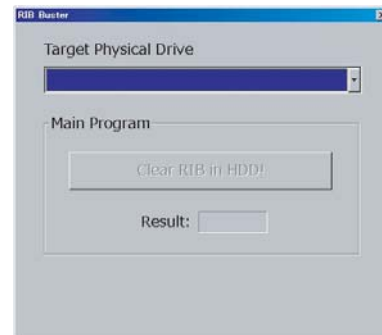
If this precaution is ignored, the HDD may be damaged.

- 2) Copy the RIB Buster software files (RIB Buster {YYYYM-MDD}.exe and Setup.ini) to a same directory of the PC.
  - \* RIB Buster{YYYYMMDD}.exe
  - \* Setup.ini
- 3) Connect the HDD assembled in procedure 1) to the PC by use of the USB cable.



- 4) Double-click RIB Buster {YYYYMMDD}.exe to boot the RIB Buster software.

If the user account control is ON in VISTA or Windows 7 setting, the user account control menu is displayed. Click [Allow] on this menu.





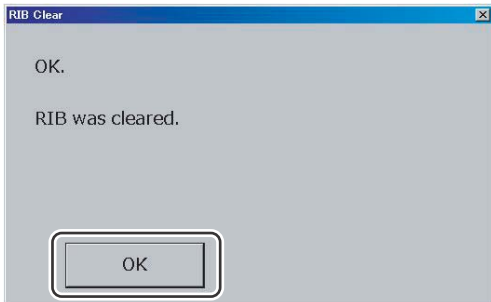
- 5) Select the target HDD to delete the mirroring information.



- 6) Click [Clear RIB in HDD] button.



- 7) Click [OK] button. (The mirroring information is deleted.)



- 8) After completion of deleting the mirroring information, "OK" is displayed.

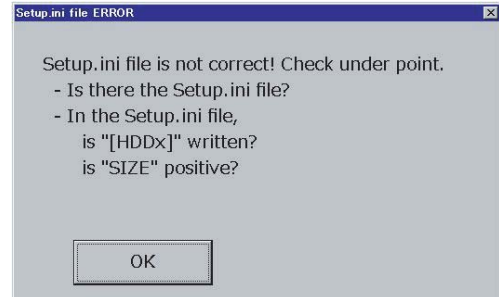


### (3) Kinds of errors, causes and remedies

#### Phenomenon 1

An error indicating an abnormality in the Setup.ini file when booting the RIB Buster software.

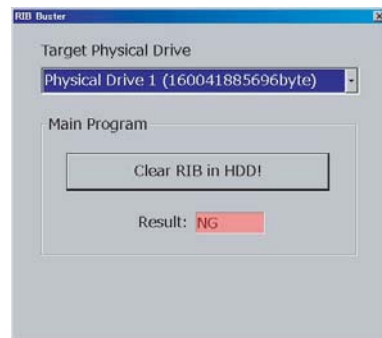
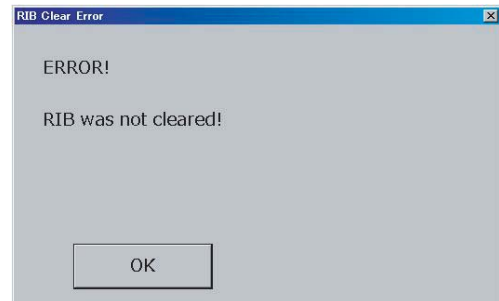
|                 |   |
|-----------------|---|
| Cause           | Setup.ini file does not exist, or there is any abnormality in the file.   |
| Countermeasures | Check to confirm that there is Setup.ini file in the proper directory and that there is no abnormality in the descriptions. |



#### Phenomenon 2

The mirroring information has not been deleted normally.

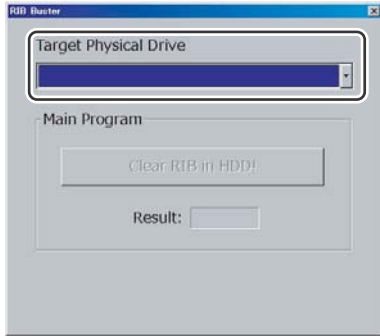
|                 |   |
|-----------------|---|
| Cause           | Temporary communication trouble, cable or other device trouble, HDD trouble   |
| Countermeasures | 1. Click [Clear RIB in HDD] button again.<br>2. If the trouble is not solved by procedure 1. , disconnect and connect the cable, change the devices, and reboot the RIB Buster. Then execute procedure 1. . |



**Phenomenon 3**

Though the target HDD is connected, it is not displayed.

|                 |   |
|-----------------|---|
| Cause           | The target HDD is not registered in the Setup.ini file.<br>Cable or other device trouble, HDD trouble   |
| Countermeasures | 1. Reboot RIB Buster, and click the frame section.<br>2. If the trouble is not solved by procedure 1. , replace the Setup. ini file and the RIB Buster {YYYYMMDD} with the latest version, and execute procedure 1. .<br>3. If the trouble is not solved by procedure 2. , disconnect and connect the cable, change the devices, and reboot the RIB Buster. Then execute procedure 1. . |



## 7. Tool list

### ■Service tool for Main unit

| No. | Parts code  | Parts name            | Purpose of use  |
|-----|-------------|-----------------------|---|
| 1   | 6LS06268000 | Grease                | Apply grease to the bearing section when replacing upper heat roller and lower heat roller.<br>upper heat roller ball bearing<br>upper heat roller insulation<br>upper heat roller drive gear |
| 2   | 6LS06283000 | Grease                | Drive section   |
| 3   | 6LS06270000 | Grease                | Drive section   |
| 4   | 6LS06271000 | Powder                | Drum  |
| 5   | 6LS06272000 | Powder                | Side seal replacement   |
| 6   | 6LS06273000 | Patel                 | Side seal replacement   |
| 7   | 6LS06274000 | Powder                | Transfer belt   |
| 8   | 6LS06275000 | Gray test chart       | gray balance and density check  |
| 9   | 6LS06276000 | Color test chart      | gray balance and density check  |
| 10  | 6LS06277000 | SIT chart             | CCD calibration   |
| 11  | 6LS06278000 | white reference chart | DSPF shading adjustment   |
| 12  | 6LS06279000 | Skid slope            | Installation  |
| 13  | 6LS06280000 | Extension cable       | Connection check  |
| 14  | 6LS06281000 | Extension cable       | Connection check  |
| 15  | 6LS06282000 | Extension cable       | Connection check  |

### ■Service tool for Option

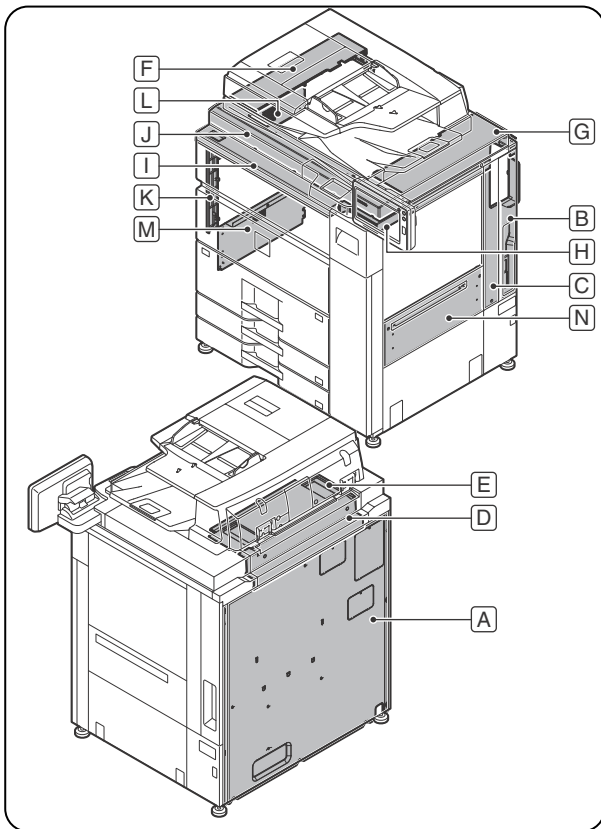
| No. | Parts code  | Parts name         | Purpose of use                        |
|-----|-------------|--------------------|---------------------------------------|
| 1   | 6LS06283000 | Grease             | Apply grease to paper feed drive gear |
|     |             |                    | MX-CF11                               |
|     |             |                    | Apply grease to gear                  |
|     |             |                    | MX-FN24/25                            |
|     |             |                    | Apply grease to drive shaft           |
|     |             |                    | MX-LCX3N                              |
|     |             |                    | Apply grease to gear                  |
|     |             |                    | MX-MF11                               |
| 2   | 6LS06284000 | Air pressure meter | Air pressure adjustment               |
| 3   | 6LS06285000 | Tube               | Air pressure adjustment               |
| 4   | 6LS06286000 | Grease             | Apply grease to drive shaft           |
| 5   | 6LS06287000 | Oil                | Apply oil to sintered bearing         |
|     |             |                    | MX-LC13                               |
|     |             |                    | MX-LC13                               |
|     |             |                    | MX-LCX3N                              |
|     |             |                    | MX-FN24/25                            |

# [A] EXTERNAL OUTFIT

## 1. Disassembly and assembly

### A. Cabinet

| Parts |   | Page    |
|-------|---|---------|
| A     | Rear cabinet                                    | A-1/(1) |
| B     | Right cabinet rear upper                        | A-1/(2) |
| C     | Right cabinet rear center                       | A-1/(2) |
| D     | Upper cabinet rear cover                        | A-1/(3) |
| E     | Upper cabinet rear                              | A-1/(3) |
| F     | Upper cabinet left                              | A-2/(4) |
| G     | Upper cabinet right                             |         |
| H     | Upper cabinet front cover right                 |         |
| I     | Upper cabinet front cover left                  |         |
| J     | Upper cabinet front / Upper cabinet front right |         |
| K     | Left cabinet front upper                        | A-3/(5) |
| L     | Left upper cabinet                              | A-3/(6) |
| M     | Left center cabinet                             | A-3/(7) |
| N     | Right cabinet center                            | A-4/(8) |

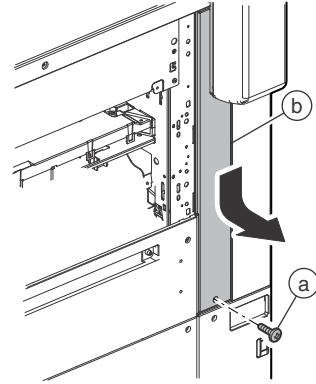


### (1) Rear cabinet / Right cabinet rear upper

1) Remove the rear cabinet.

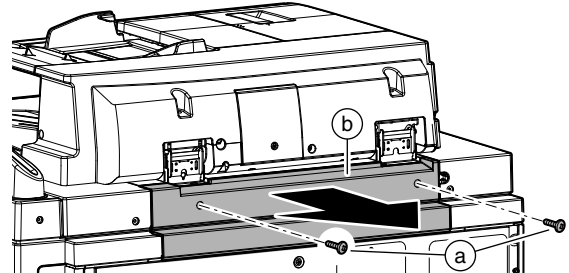
### (2) Right cabinet rear center

1) Remove the screw (a), and remove the right cabinet rear center (b).



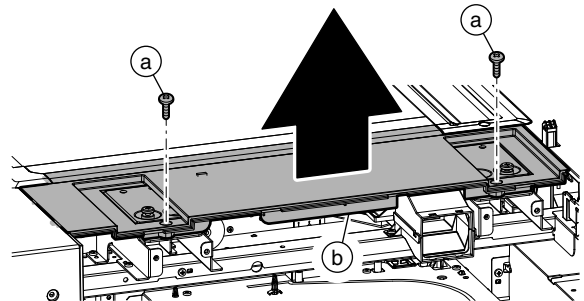
### (3) Upper cabinet rear cover / Upper cabinet rear

1) Remove the screw (a), and remove the upper cabinet rear cover (b).



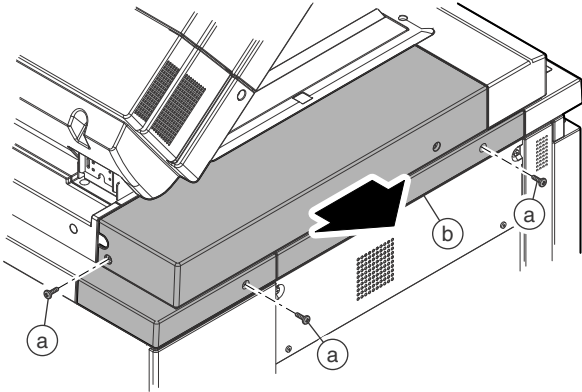
2) Remove the DSPF unit.

3) Remove the screw (a), and remove the upper cabinet rear (b).

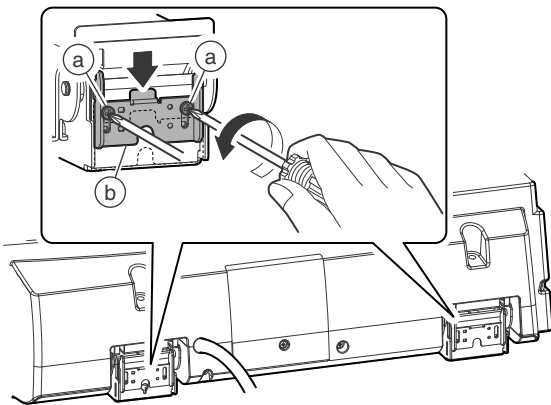


**(4) Upper cabinet left / Upper cabinet right / Upper cabinet front cover left / Upper cabinet front cover right / Upper cabinet front / Upper cabinet front right**

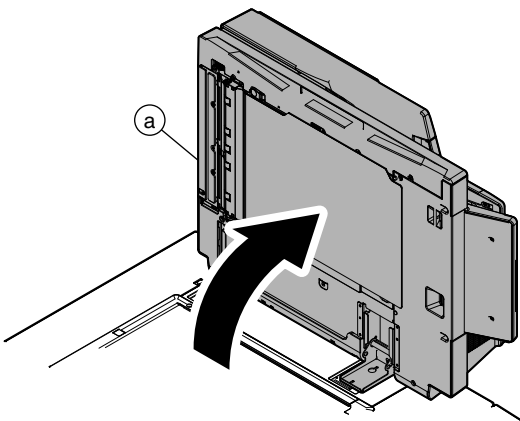
1) Remove the screw (a), and remove the upper cabinet left (b).



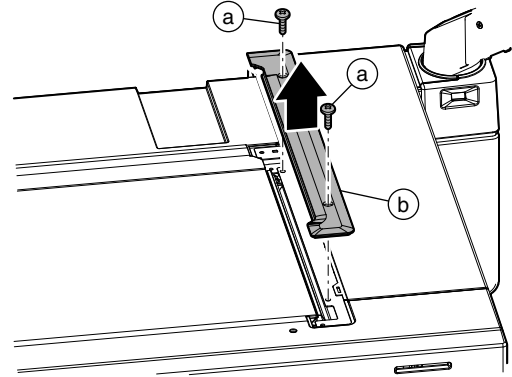
2) Loosen the screw (a), and lower the fixing plate (b).



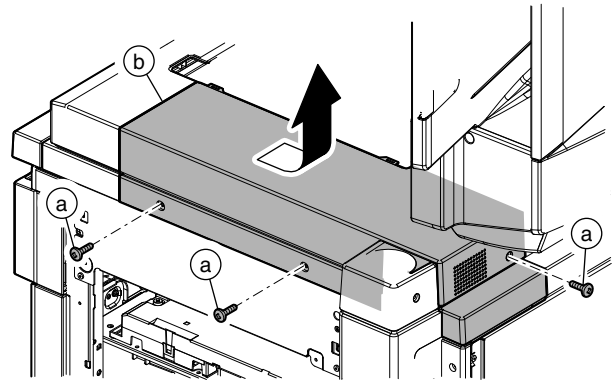
3) Open the DSPF unit (a) perpendicularly.



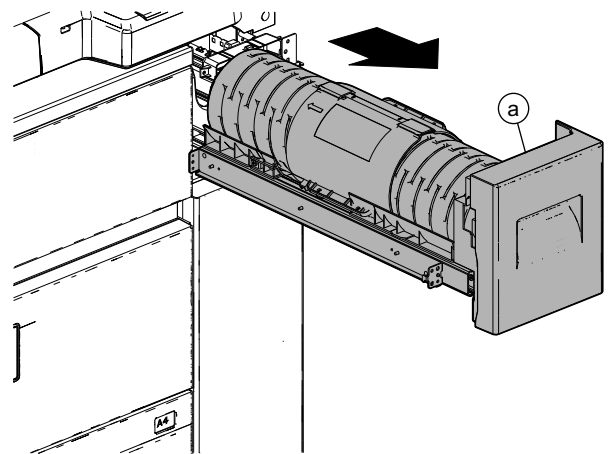
4) Remove the screw (a), and remove the table glass holder (b).



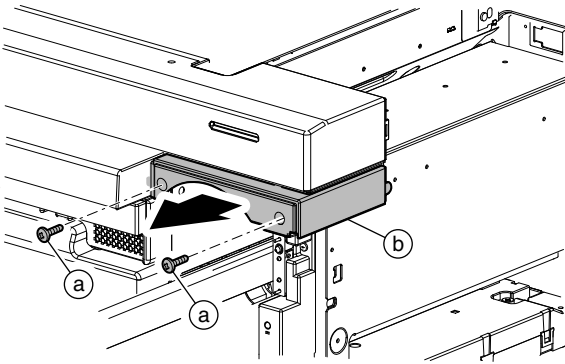
5) Remove the screw (a), and remove the upper cabinet right (b).



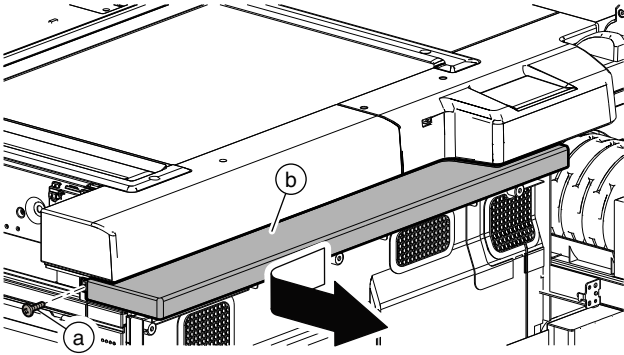
6) Pull out the toner tray (a).



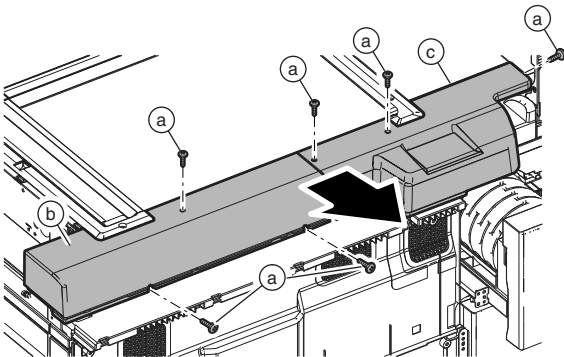
- Remove the screw (a), and remove the upper cabinet front cover right (b).



- Remove the screw (a), and slide the upper cabinet front cover left (b) to remove.

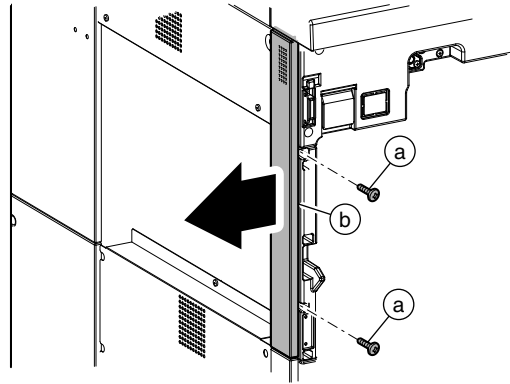


- Remove the screw (a), and remove the upper cabinet front (b) and the upper cabinet front right (c).



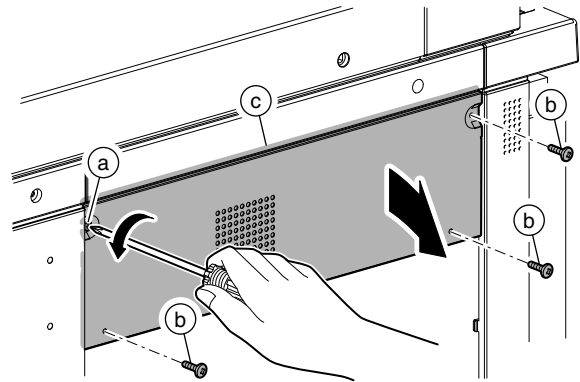
## (5) Left cabinet front upper

- Remove the screw (a), and remove the left cabinet front upper (b).



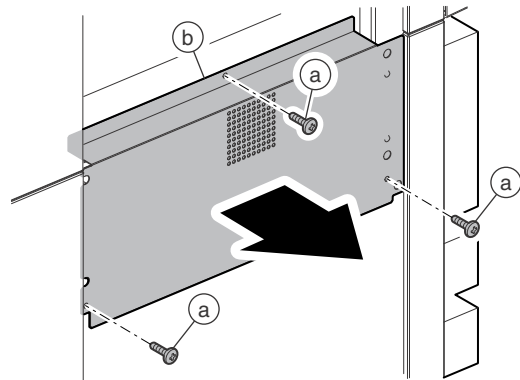
## (6) Left upper cabinet

- Loosen the screw (a), and remove the screw (b). Remove the left upper cabinet (c).



## (7) Left center cabinet

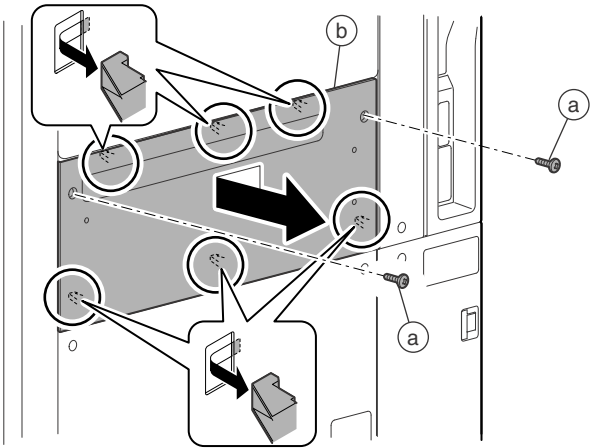
- Remove the screw (a), and remove the left center cabinet (b).



## (8) Right cabinet center

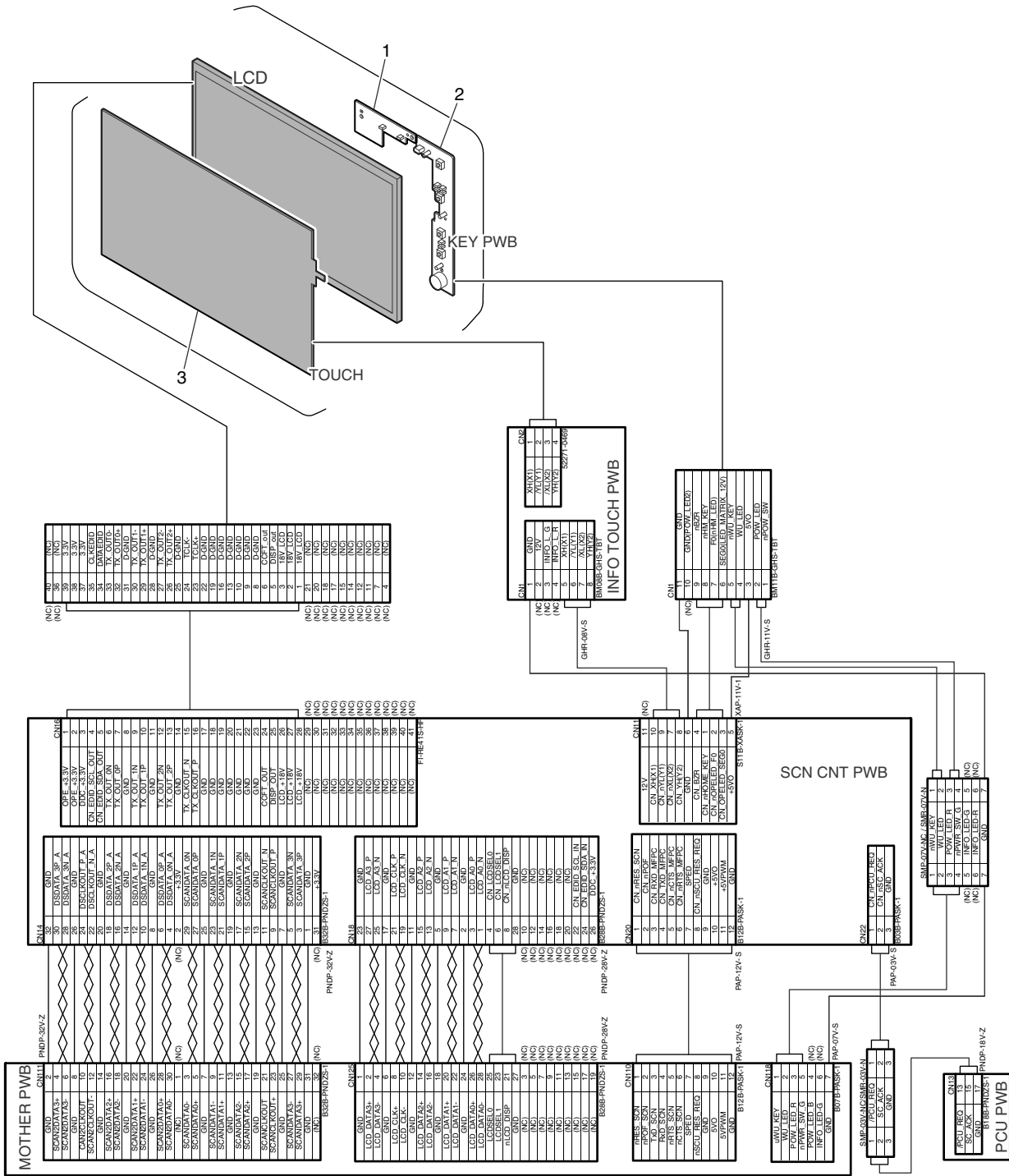
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- 1) Remove the screw (a), and remove the right cabinet center (b).



# [B] OPERATION PANEL

## 1. Electrical and mechanism relation diagram



| Code       | Name                     | Function / Operation                                     |
|------------|--------------------------|--|
| LCD        | LCD unit                 | Displays various menu information.                       |
| TOUCH      | Touch panel              | Used to make various adjustments and setting operations. |
| INFO_LED_R | Status display LED red   | Displays the error status of the machine.                |
| INFO_LED_G | Status display LED green | Displays the machine status.                             |

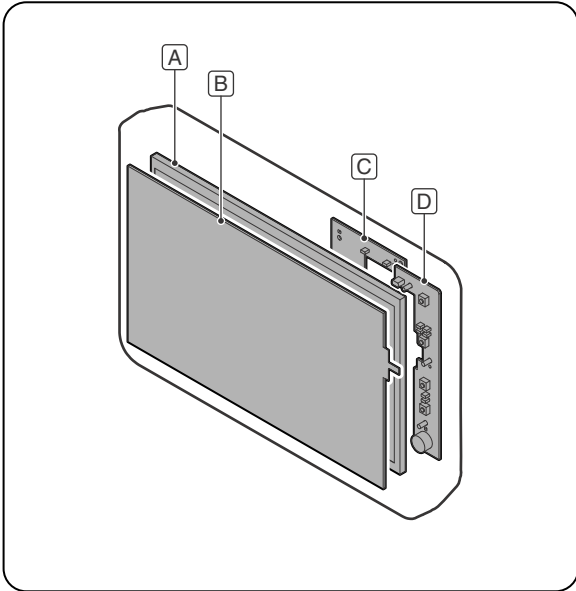
| No. | Name           | Function / Operation               |
|-----|----------------|------------------------------------|
| 1   | INFO TOUCH PWB | Displays the machine status.       |
| 2   | KEY PWB        | Operation panel key control.       |
| 3   | LCD            | Displays various menu information. |



## 2. Disassembly and assembly

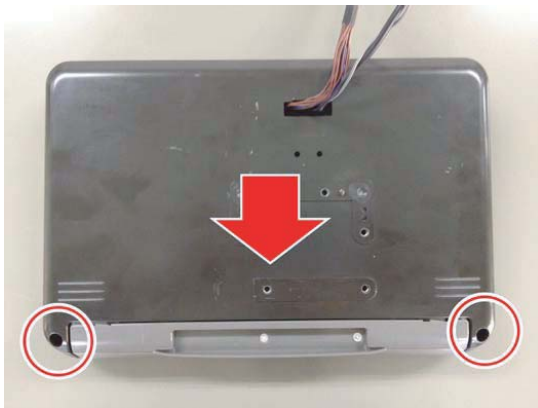
### A. Operation panel unit

| Unit                 | Parts |                |
|----------------------|-------|----------------|
| Operation panel unit | A     | LCD            |
|                      | B     | Touch panel    |
|                      | C     | POWER LAMP PWB |
|                      | D     | KEY PWB        |

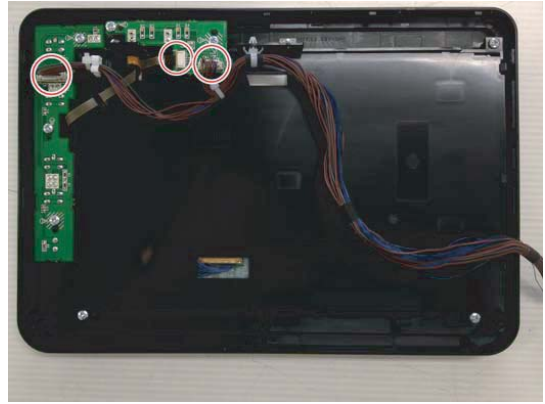


#### (1) Operation panel unit

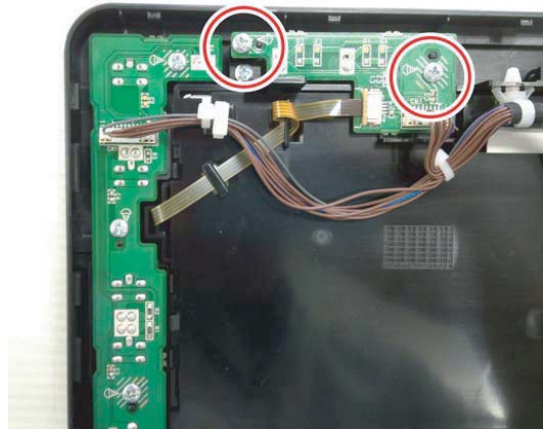
- 1) Remove the panel unit.
- 2) Remove the rear cover.



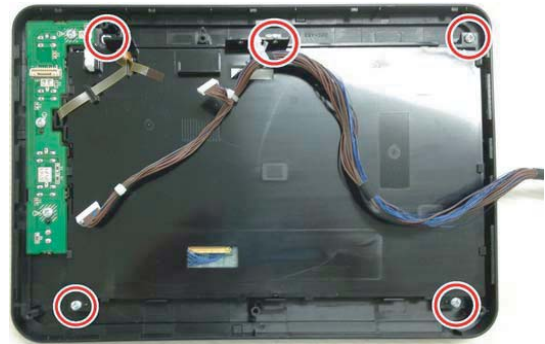
- 3) Disconnect the connector, and remove the snap band.



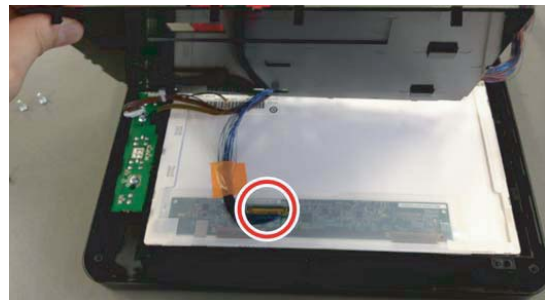
- 4) Remove the PWB.



- 5) Remove the screw, and remove the touch panel cover.



- 6) Disconnect the connector.

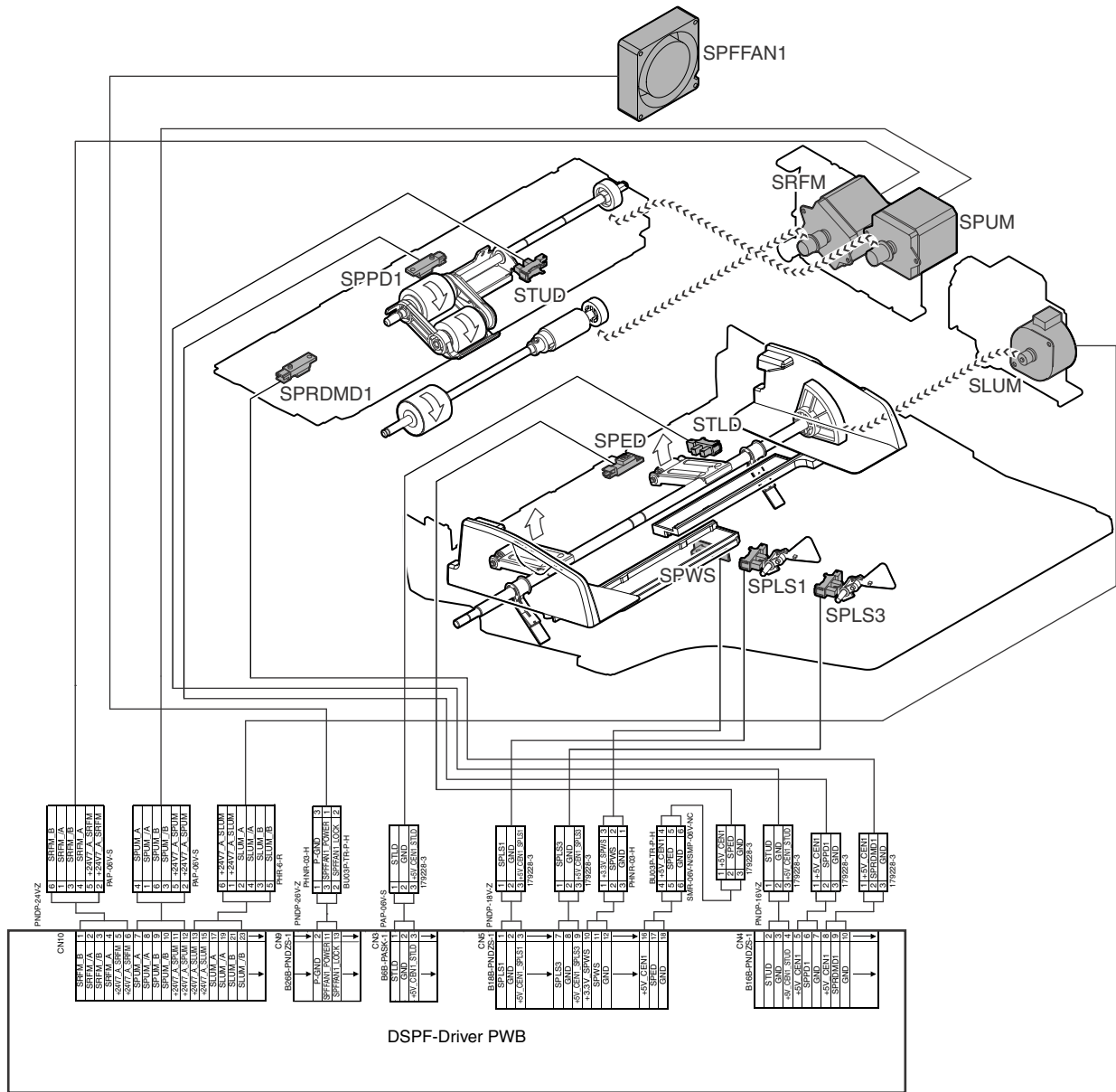


- 7) Remove the touch panel.

# [C] DSPF SECTION

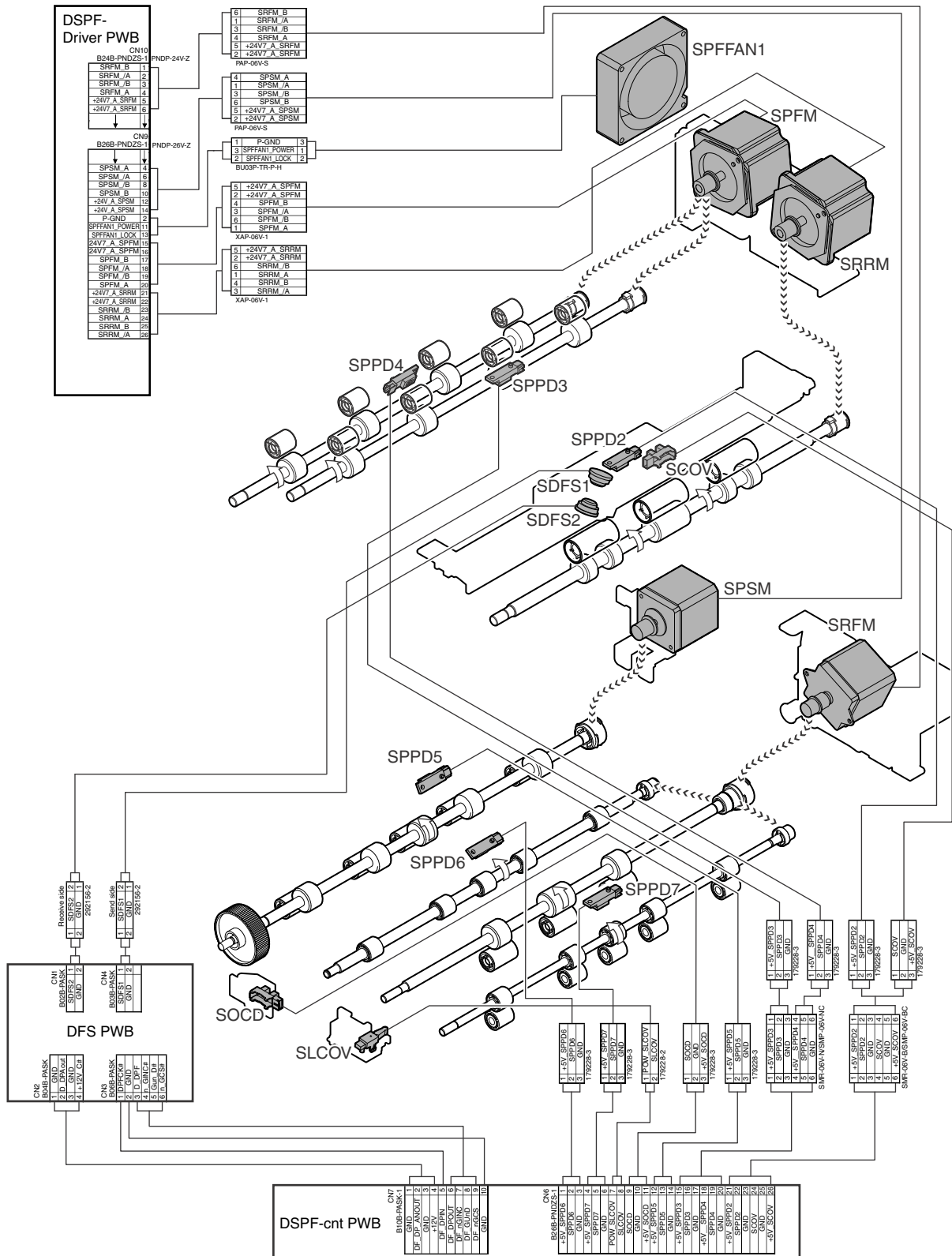
## 1. Electrical and mechanism relation diagram

### A. Paper feed section



| Signal name | Name  | Type              | Function/Operation                                       |
|-------------|---|-------------------|--|
| SLUM        | DSPF lift-up motor                          | PM stepping motor | Lifts up and move down the document tray.                |
| SPED        | DSPF document empty sensor                  | Reflection type   | Detects document empty on the document tray.             |
| SPLS1       | DSPF document length detection short sensor | Transmission type | Detects the length of the document on the document tray. |
| SPLS3       | DSPF document length detection1 long sensor | Transmission type | Detects the length of the document on the document tray. |
| SPPD1       | DSPF document pass sensor 1                 | Reflection type   | Detects document pass.                                   |
| SPRDMD1     | DSPF document random sensor                 | Reflection type   | Detects the paper size in random paper feed.             |
| SPUM        | DSPF paper feed motor                       | Stepping motor    | Drives the paper feed roller.                            |
| SPWS        | DSPF document width sensor                  | Volume resistor   | Detects the width of the document.                       |
| SRFM        | DSPF scan transport motor                   | Stepping motor    | Drives the scan transport roller.                        |
| STLD        | DSPF document tray lower limit sensor       | Transmission type | Detects the lower limit of the DSPF document tray.       |
| STUD        | DSPF document tray upper limit sensor       | Transmission type | Detects the upper limit of the DSPF document tray.       |

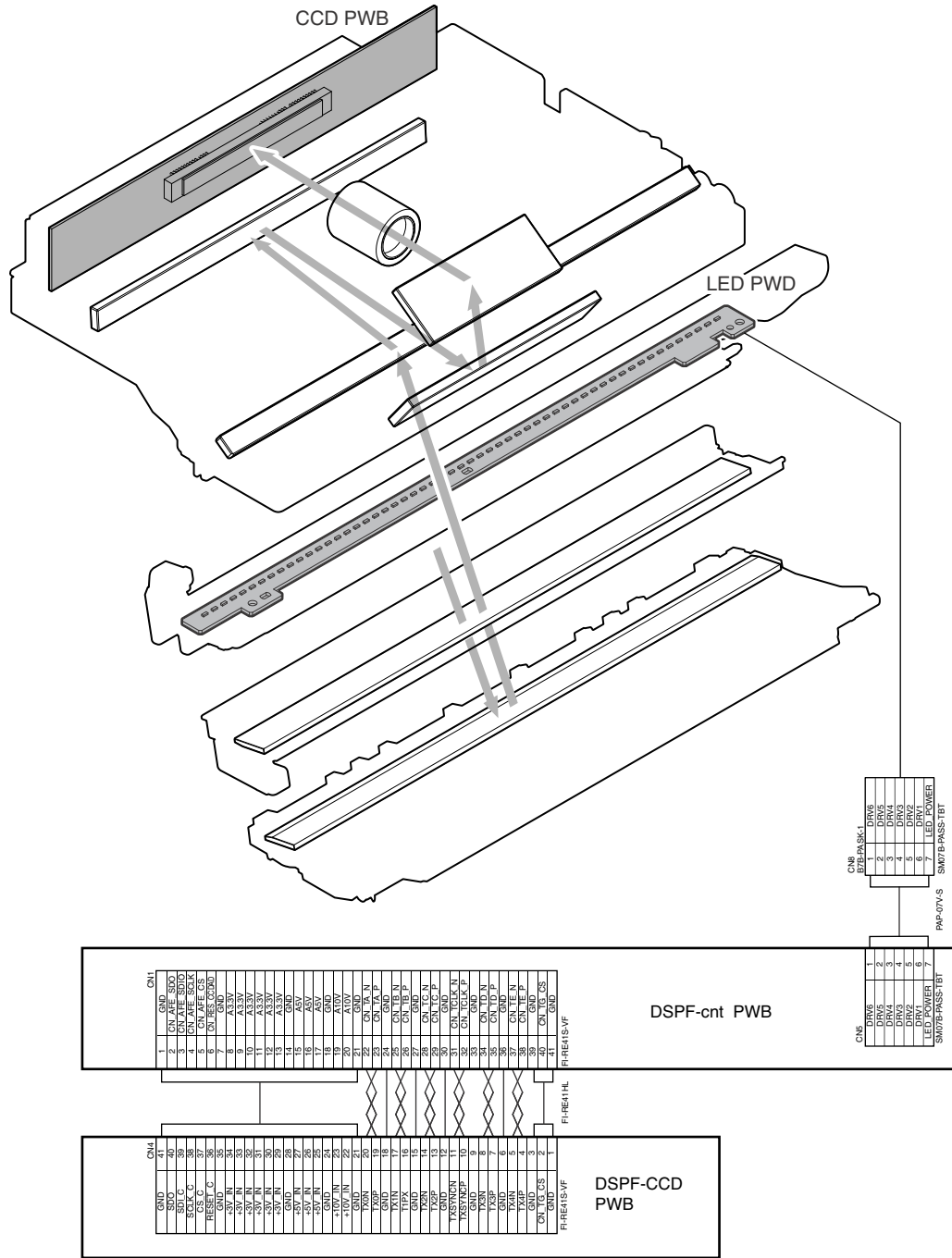
## B. Transport section



| Signal name | Name                                   | Type              | Function/Operation                    |
|-------------|--|-------------------|---------------------------------------|
| SCOV        | DSPF upper door open/close sensor      | Transmission type | Detects open/close of the upper door. |
| SDFS1       | DSPF double feed sensor (transmitting) | Supersonic sensor | Detects double feed.                  |
| SDFS2       | DSPF double feed sensor (receiving)    | Supersonic sensor | Detects double feed.                  |
| SLCOV       | DSPF lower door open/close sensor      | Transmission type | Detects open/close of the lower door. |
| SOCD        | DSPF open/close sensor                 | Transmission type | Detects open/close of the DSPF unit.  |
| SPFM        | DSPF transport motor                   | Stepping motor    | Drives the transport roller.          |
| SPPD2       | DSPF document pass sensor 2            | Reflection type   | Detects document pass.                |
| SPPD3       | DSPF document pass sensor 3            | Reflection type   | Detects document pass.                |

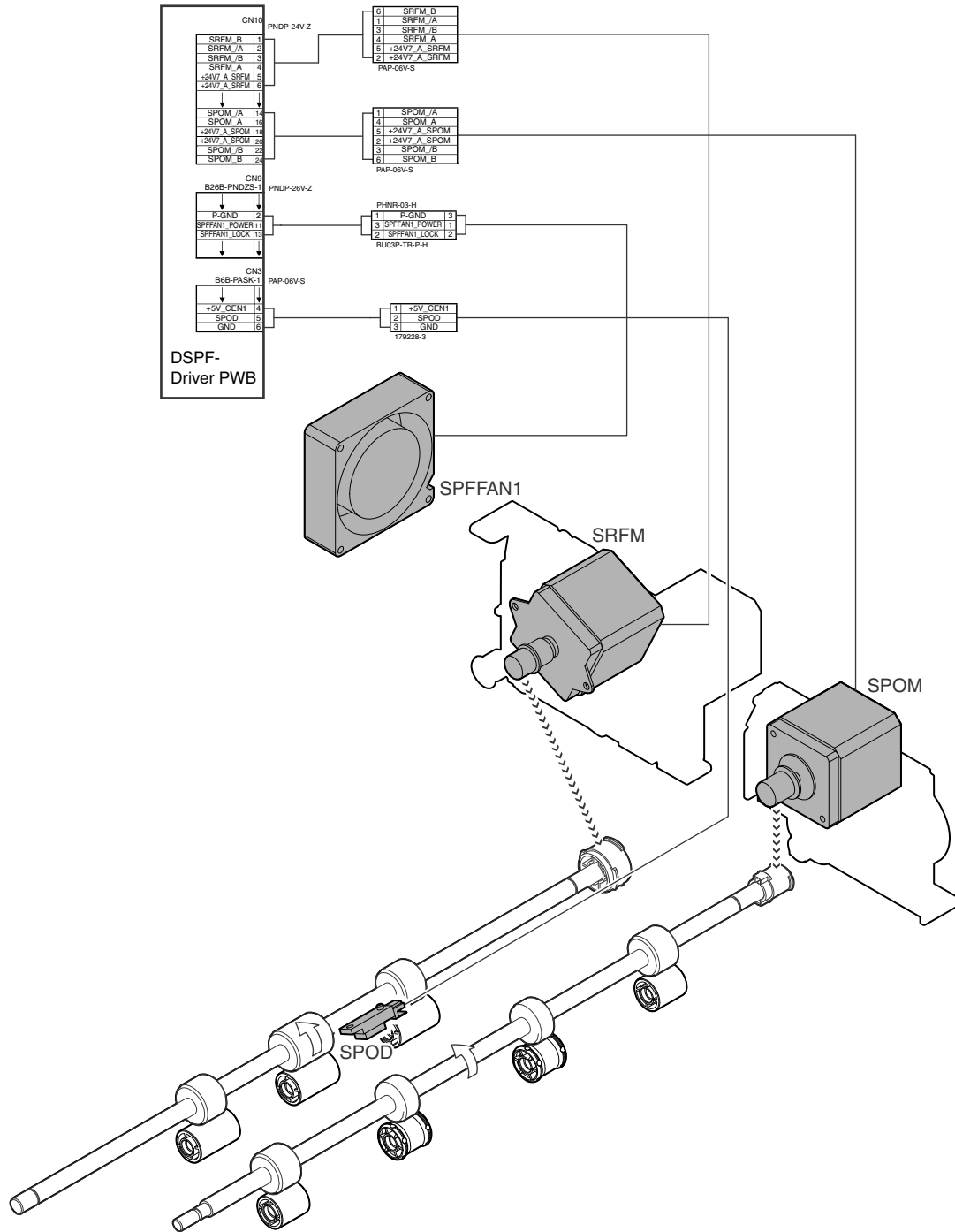
| Signal name | Name                        | Type            | Function/Operation           |
|-------------|-----------------------------|-----------------|------------------------------|
| SPPD4       | DSPF document pass sensor 4 | Reflection type | Detects document pass.       |
| SPPD5       | DSPF document pass sensor 5 | Reflection type | Detects document pass.       |
| SPPD6       | DSPF document pass sensor 6 | Reflection type | Detects document pass.       |
| SPPD7       | DSPF document pass sensor 7 | Reflection type | Detects document pass.       |
| SPSM        | DSPF PS motor               | Stepping motor  | Drives the PS roller.        |
| SPFM        | DSPF transport motor        | Stepping motor  | Drives the transport roller. |
| SRRM        | DSPF resist motor           | Stepping motor  | Drive the resist roller.     |

**C. Scanner section**



| Signal name    | Name           | Type     | Function/Operation  |
|----------------|----------------|----------|---|
| DSPF COPY LUMP | DSPF copy lamp | LED lamp | Radiates lights onto a document for the CCD to scan the document image. |

## D. Paper exit section

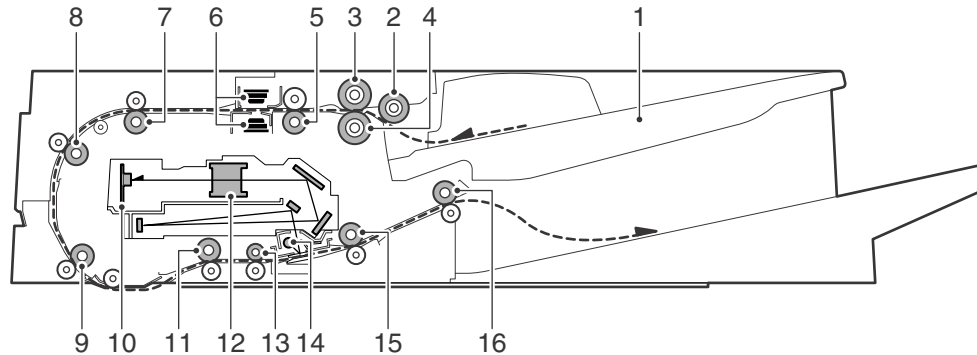


| Signal name | Name                      | Type            | Function/Operation                |
|-------------|---------------------------|-----------------|-----------------------------------|
| SPFFAN1     | DSPF motor cooling fan    | Fan motor       | Cools the DSPF motor.             |
| SPOD        | DSPF paper exit sensor    | Reflection type | Detects document pass.            |
| SPOM        | DSPF paper exit motor     | Stepping motor  | Drives the paper exit roller.     |
| SRFM        | DSPF scan transport motor | Stepping motor  | Drives the scan transport roller. |

## 2. Operational descriptions

Document sheets are automatically fed and transported for continuous scanning.

The front and the back surfaces of duplex sheet documents can be scanned at the same time.



| No. | Name                        | Function/Operation  |
|-----|-----------------------------|---|
| 1   | Document tray               | Max.250 sheets (80g/m <sup>2</sup> , 21lbs Bond) Max. height 32.5mm.      |
| 2   | Document pickup roller      | Picks up a document and transport it to the paper feed roller.            |
| 3   | Paper feed roller           | Performs paper feed operation of a document.                              |
| 4   | Separation roller           | Separates a document, preventing double feed.                             |
| 5   | No. 1 resist roller (Drive) | Performs resist of document transport.                                    |
| 6   | DSPF double feed sensor     | Detects double feed.  |
| 7   | Transport roller 1 (Drive)  | Transports paper from No. 1 resist roller to No.2 resist roller.          |
| 8   | Transport roller 2 (Drive)  | Transports paper from the transport roller 1 to No.2 resist roller.       |
| 9   | No. 2 resist roller (Drive) | Synchronizes the document lead edge and the scan start position.          |
| 10  | CCD PWB                     | DSPF (back) scanning CCD.   |
| 11  | Transport roller 3 (Drive)  | Transports paper from the platen roller to the transport roller 4.        |
| 12  | Lens                        | Reduces the document images (optical) and radiates them onto the CCD PWB. |
| 13  | Transport roller 4 (Drive)  | Transport paper from the transport roller 3 to the transport roller 5.    |
| 14  | DSPF copy lamp              | Radiates lights onto a document for the CCD to scan the document image.   |
| 15  | Transport roller 5 (Drive)  | Transport paper from the transport roller 4 to the paper exit roller.     |
| 16  | Paper exit roller (Drive)   | Discharges paper.   |

### A. 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 (SPED) 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.

### B. Document feed, transport, scan, paper exit, and operating speed

The document fed by the pick 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 sent to the document exit tray by the exit rollers.

### C. The original scan

The CCD is located inside the DSPF this items scan the document images.

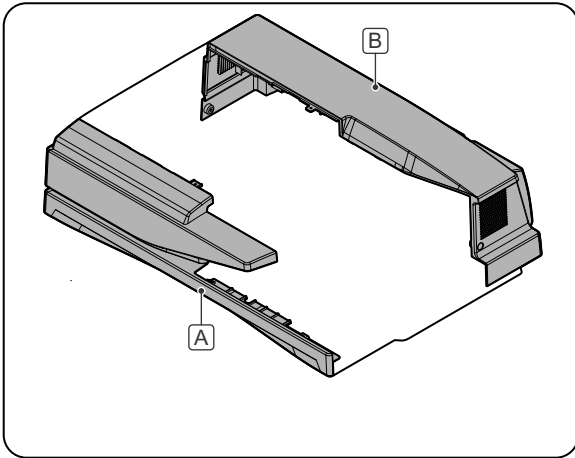
When scanning document images in the DSPF mode, the front surface of the document is scanned by the CCD of the machine, and the back surface by the CCD in the DSPF.

When scanning the front surface of the document by the CCD of the machine, the scanner unit of the machine moves to the specified position and scans images of the document which is being transported by the document transport mechanism.

### 3. Disassembly and assembly

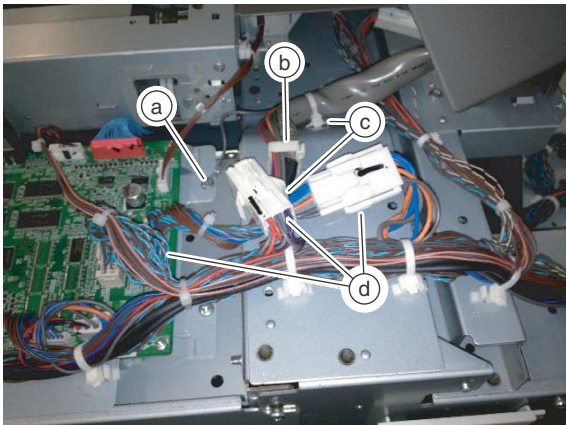
#### A. Exterior section

| Unit      | Parts | Page          |       |
|-----------|-------|---------------|-------|
| DSPF unit | A     | Front cabinet | C-7/a |
|           | B     | Rear cabinet  |       |

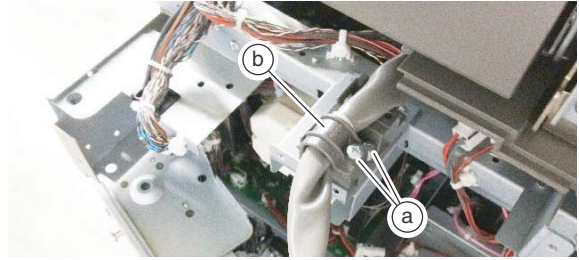


#### (1) DSPF unit

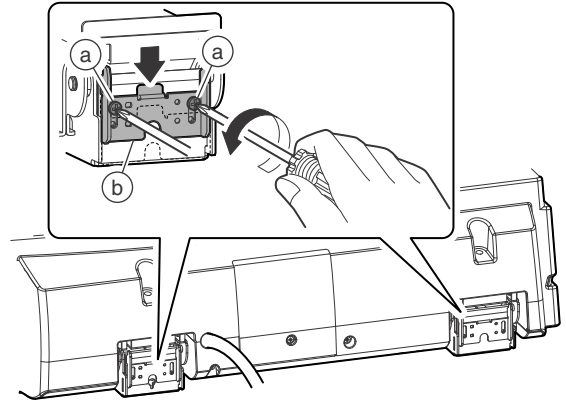
- 1) Remove the upper cabinet left of the machine.
- 2) Remove the earth wire (a), the edge saddle (b), the snap band (c), the connector (d).



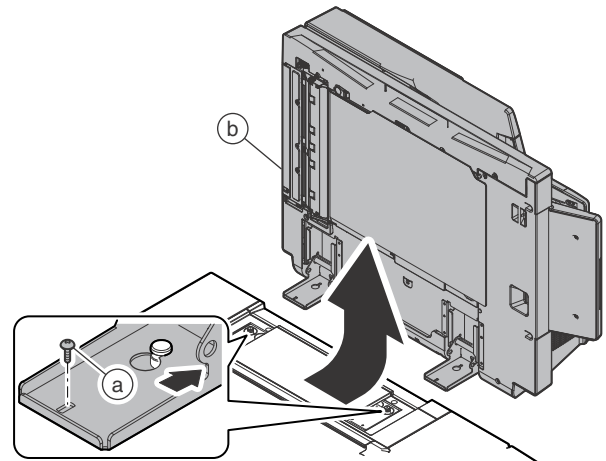
- 3) Remove the screw (a), and remove the cover (b).



- 4) Loosen the screw (a), and lower the fixing plate (b).

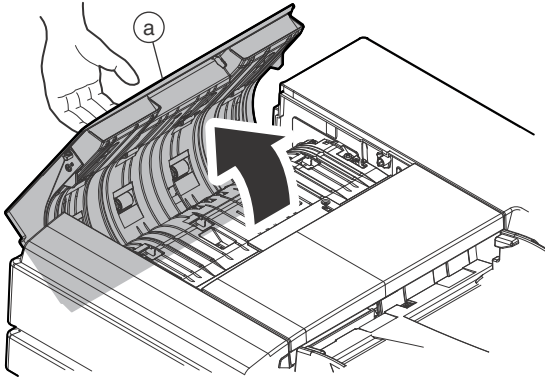


- 5) Remove the screw (a) and slide the DSPF unit (b) to the rear side to remove.

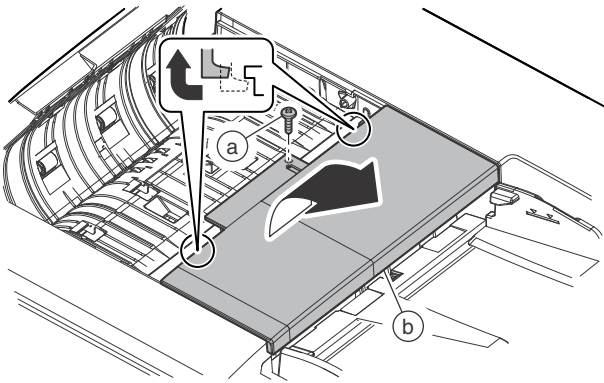


**a. Front cabinet / Rear cabinet.**

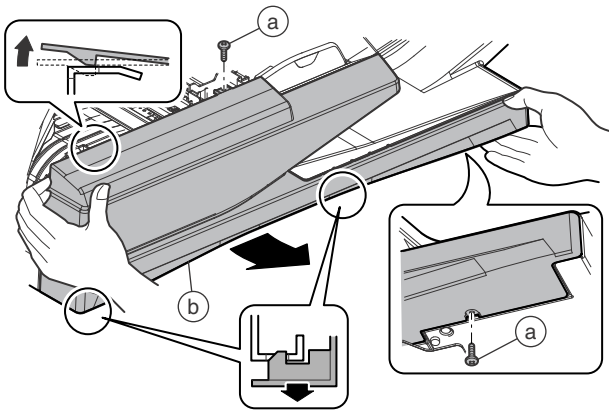
1) Open the upper door (a).



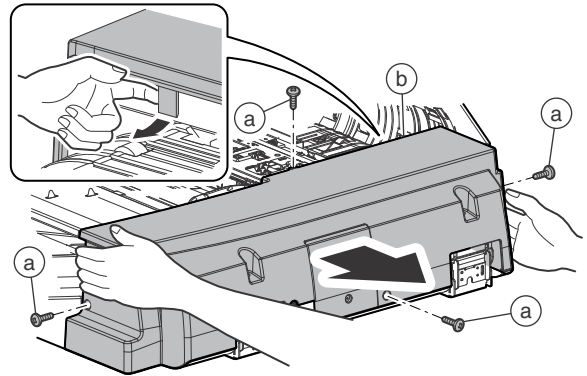
2) Remove the screw (a), and remove the cover (b).



3) Remove the screw (a), and remove the front cabinet (b).  
 \* Disengage one pawl at the top and two pawls at the bottom, and turn the cabinet from the bottom to the top to remove.

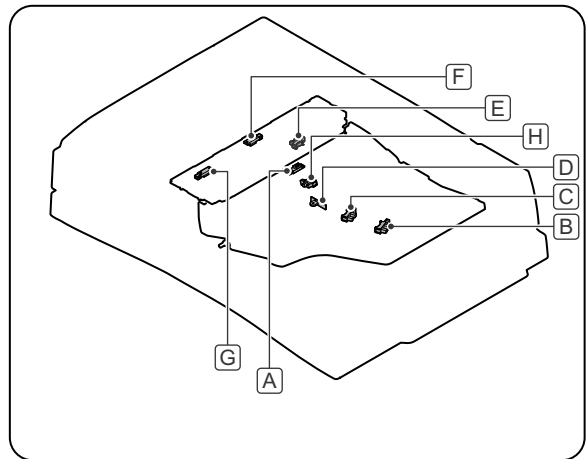


4) Remove the screw (a), and remove the rear cabinet (b).



**B. Paper feed section**

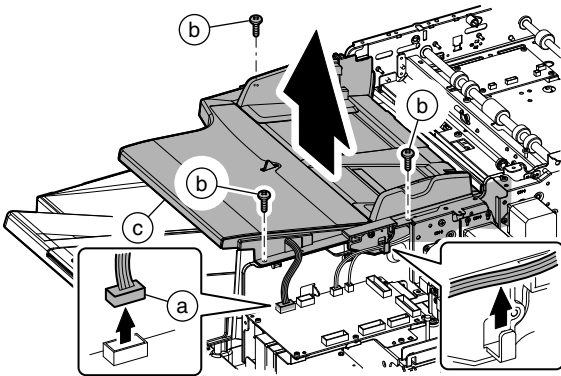
| Unit               | Parts                                   | Page    |
|--------------------|---|---------|
| Document tray unit | A DSPF document empty sensor            | C-8/a   |
|                    | B DSPF document length long sensor      | C-8/b   |
|                    | C DSPF document length short sensor     |         |
|                    | D DSPF document width sensor            |         |
| Paper feed unit    | E DSPF document tray upper limit sensor | C-9/a   |
|                    | F DSPF document pass sensor 1           |         |
|                    | G DSPF random sensor                    |         |
| Others             | H DSPF document tray lower limit sensor | C-9/(3) |



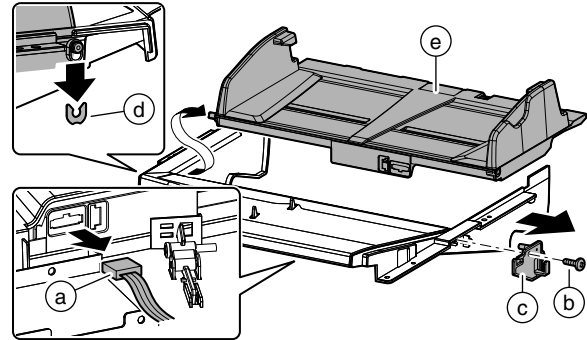


## (1) Document tray unit

- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the document tray unit (c).

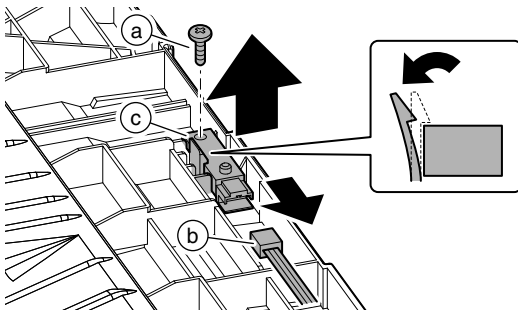


- 4) Disconnect the connector (a). Remove the screw (b) and the shaft (c). Remove the E-ring (d) and the rotation tray (e).

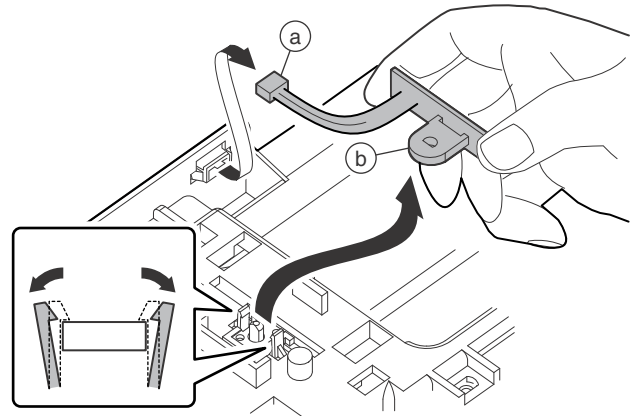


### a. DSPF document empty sensor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the screw (a) and the connector (b), and remove the DSPF document empty sensor (c).

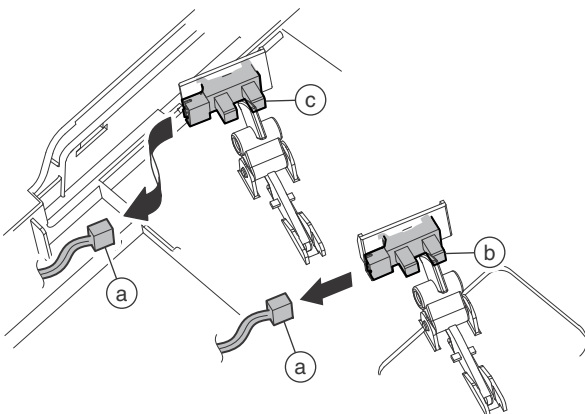


- 5) Disconnect the connector (a), and remove the DSPF document width sensor (b).



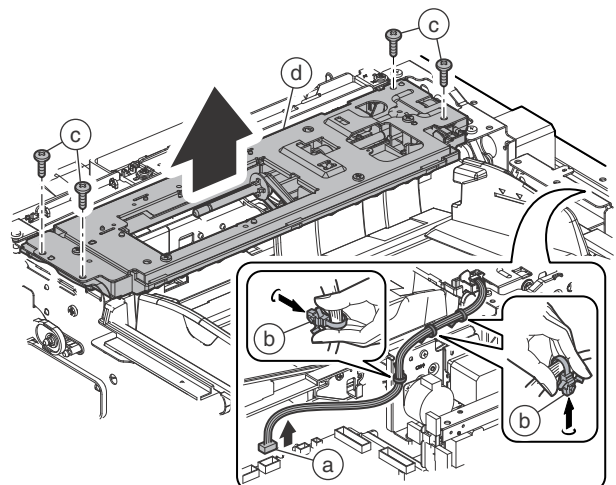
### b. DSPF document length long sensor / DSPF document length short sensor / DSPF document width sensor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Disconnect the connector (a), and remove the DSPF document length long sensor (b) and the DSPF document length short sensor (c).



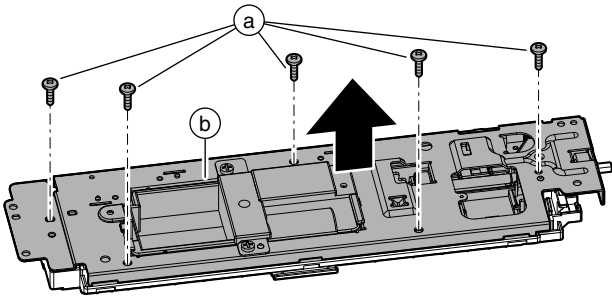
## (2) Paper feed unit

- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the paper feed unit (d).

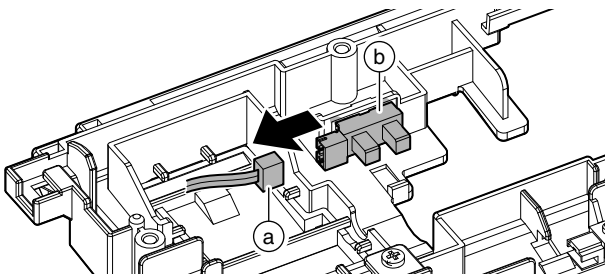


**a. DSPF document tray upper limit sensor / DSPF document pass sensor 1 / DSPF random sensor**

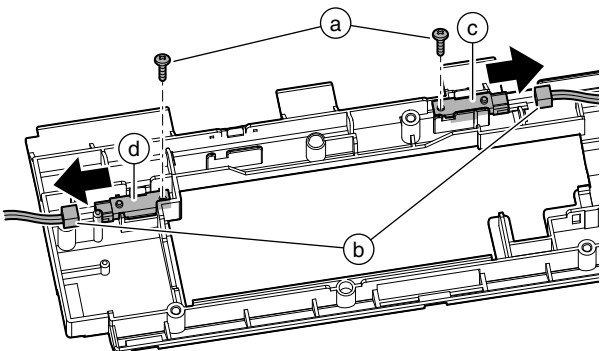
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the paper feed unit.
- 3) Remove the screw (a), and remove the cover (b).



- 4) Disconnect the connector (a), and remove the DSPF document tray upper limit sensor (b).

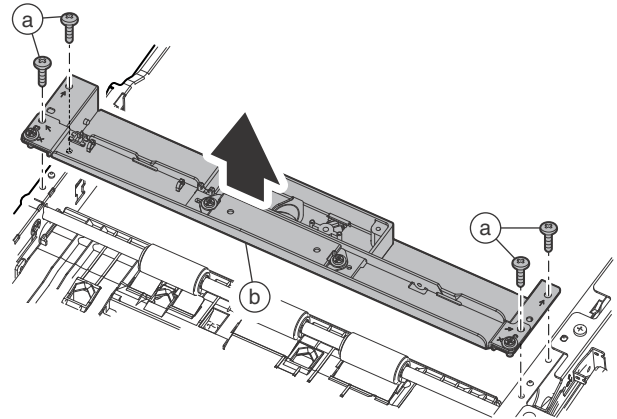


- 5) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 1 (c) and the DSPF random sensor (d).

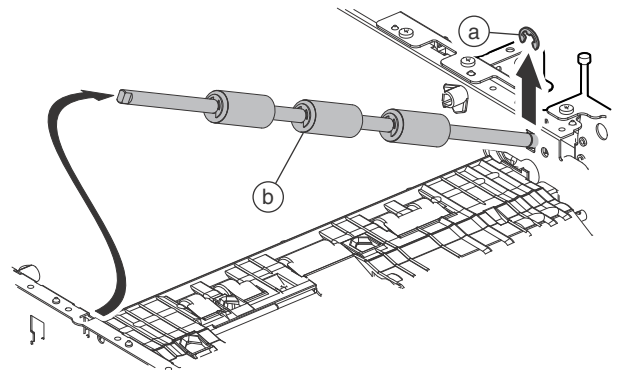


**(3) DSPF document tray lower limit sensor**

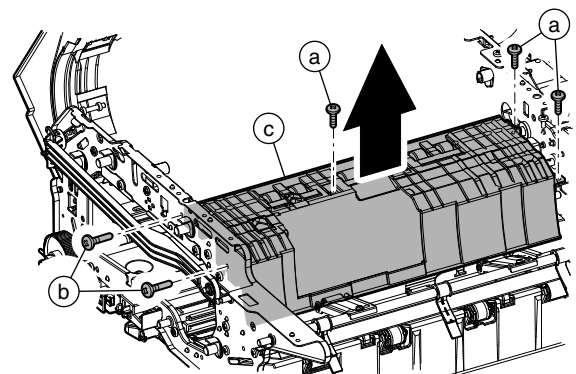
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the paper feed unit.
- 4) Remove the screw (a), and remove the double feed detection unit (b).  
\* Since the harness is kept connected, be careful not to break it.



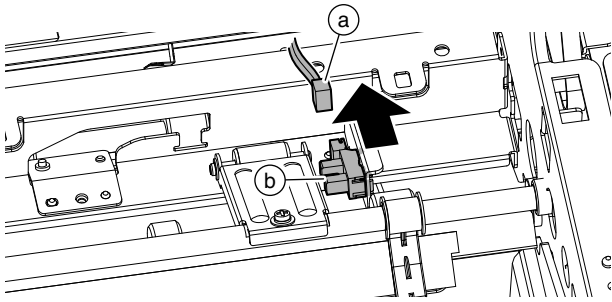
- 5) Remove the E-ring (a), and remove the No.1 resist roller (idle) (b).



- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

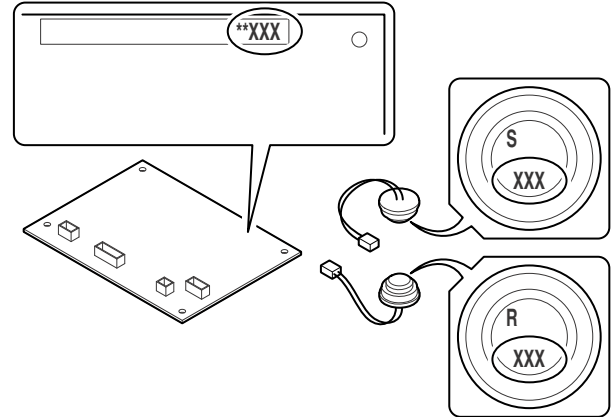


- 7) Disconnect the connector (a), and remove the DSPF document tray lower limit sensor (b).



- (1) **DSPF document pass sensor 2 / DSPF upper door open/close sensor / DSPF double feed sensor (transmitting) / DSPF double feed sensor (receiving) / Double feed detection PWB**

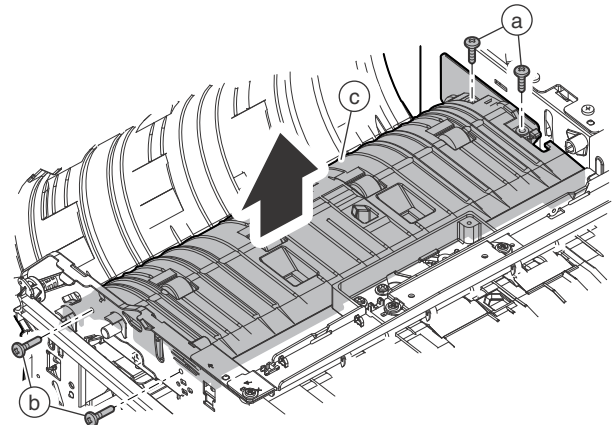
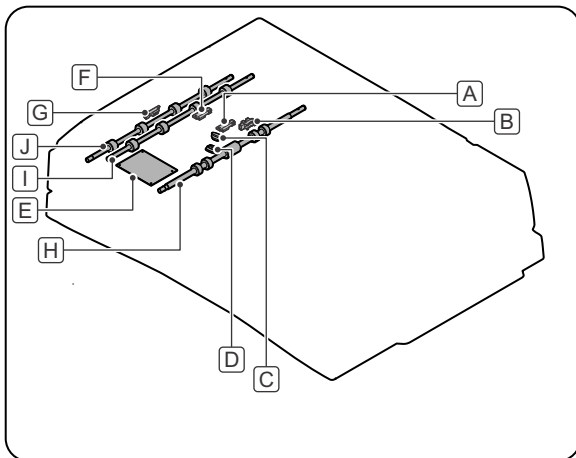
\* Since the DSPF double feed sensor (transmitting), the DSPF double feed sensor (receiving), and the double feed detection PWB comprise one set, do not replace each one of them separately. Always replace them in one set. Each part is marked with its serial number. Before replacement, check to confirm that the serial number of each part corresponds.



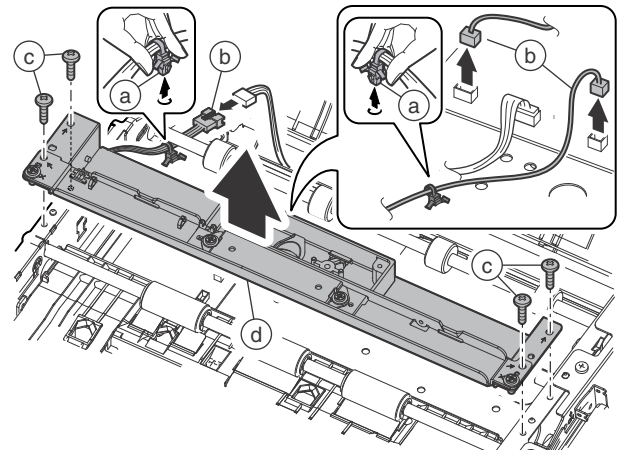
### C. Upper transport section

| Parts |  | Page     |
|-------|--|----------|
| A     | DSPF document pass sensor 2            | C-10/(1) |
| B     | DSPF upper door open/close sensor      |          |
| C     | DSPF double feed sensor (transmitting) |          |
| D     | DSPF double feed sensor (receiving)    |          |
| E     | Double feed detection PWB              |          |
| F     | DSPF document pass sensor 3            | C-12/(2) |
| G     | DSPF document pass sensor 4            |          |
| H     | No. 1 resist roller                    | C-13/(3) |
| I     | Transport roller 1                     |          |
| J     | Transport roller 2                     | C-13/(4) |

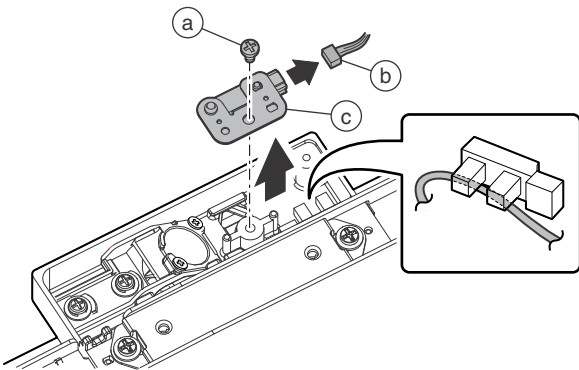
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



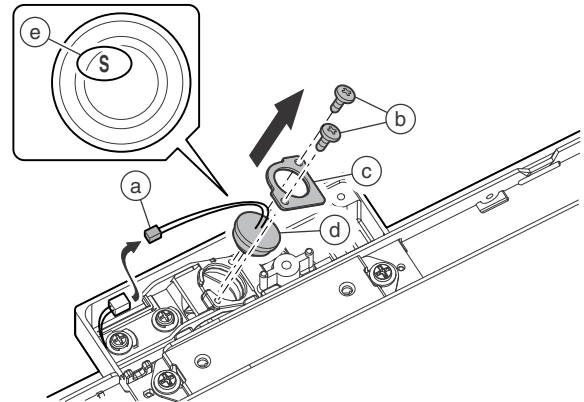
- 3) Remove the snap band (a), and disconnect the connector (b). Remove the screw (c), and remove the double feed detection unit (d).



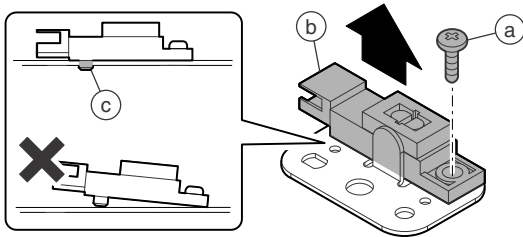
- 4) Remove the screw (a), and disconnect the connector (b). Remove the mounting plate (c).
- \* When connecting, arrange the harness of the connector (b) under the sensor.



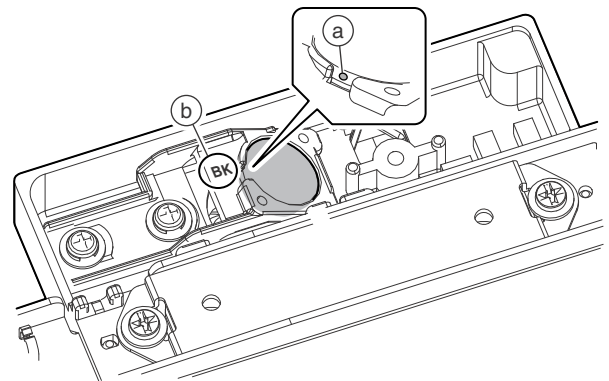
- 7) Disconnect the connector (a). Remove the screw (b) and the plate (c). Remove the DSPF double feed sensor (transmitting) (d).
- \* When installing the double feed sensor (transmitting), check to confirm that "S" mark (e) is engraved on the top of the sensor.



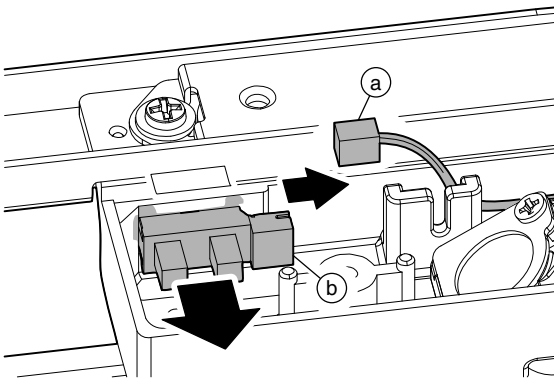
- 5) Remove the screw (a), and remove the DSPF document pass sensor 2 (b).
- \* When installing the sensor, check to confirm that the sensor boss (c) is securely engaged and fix it with the screw.



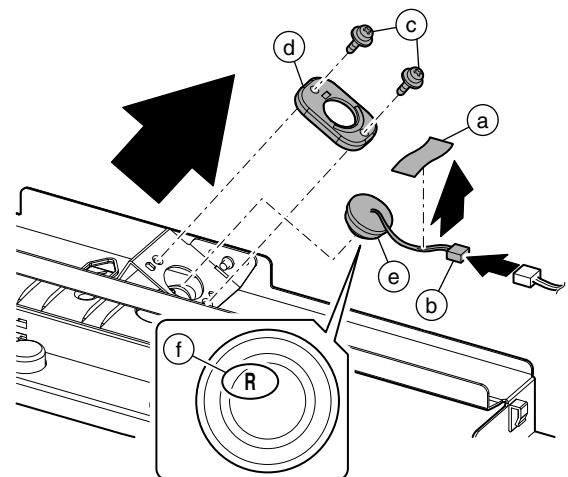
- \* Install so that the white dot (a) on the side of the sensor faces toward the marking (b) and so that the white dot (a) can be seen from the slit.



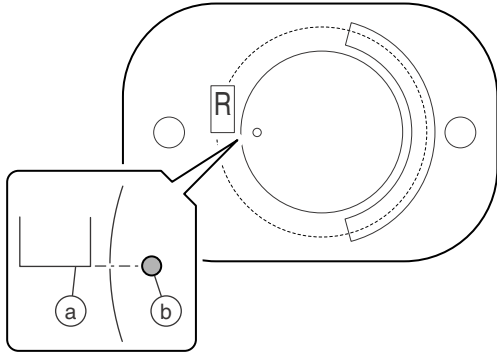
- 6) Disconnect the connector (a), and remove the DSPF upper door open/close sensor (b).



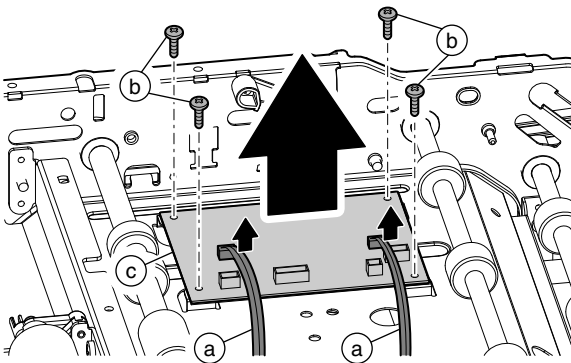
- 8) Remove the tape (a), and disconnect the connector (b). Remove the screw (c) and the holder (d). Remove the DSPF double feed sensor (receiving) (e).
- \* When installing the double feed sensor (receiving), check to confirm that "R" mark (f) is engraved on the top of the sensor.



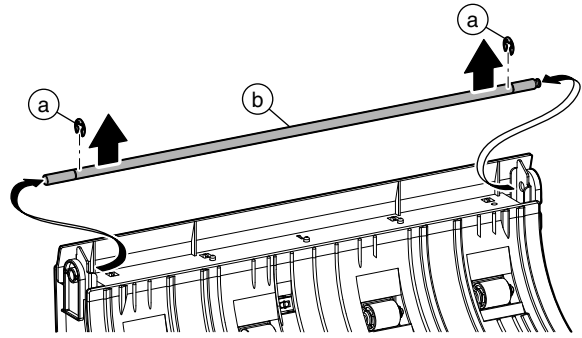
\* When installing the double feed sensor (receiving), arrange it so that the bottom line (a) of the square encircling the "R" mark on the holder is on the same side of the white dot (b) on the back of the sensor. (Within  $\pm 10$  degrees)



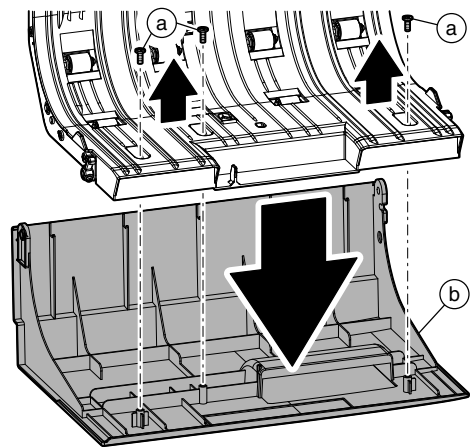
9) Disconnect the connector (a), and remove the screw (b), and remove the double feed detection PWB (c).



3) Remove the E-ring (a), and remove the shaft (b).

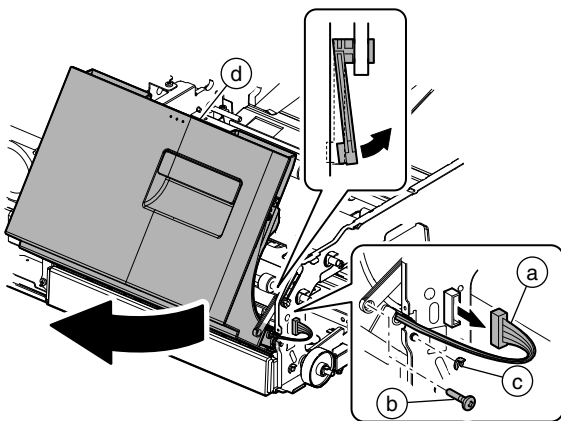


4) Remove the screw (a), and remove the cover (b).



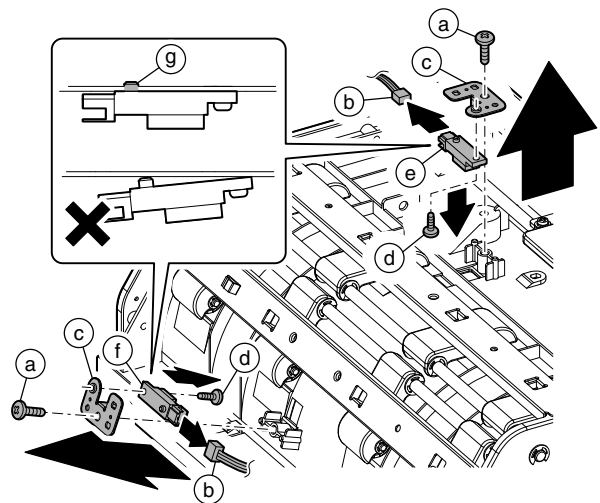
## (2) DSPF document pass sensor 3 / DSPF document pass sensor 4

- 1) Remove the front cabinet and the rear cabinet.
- 2) Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d).



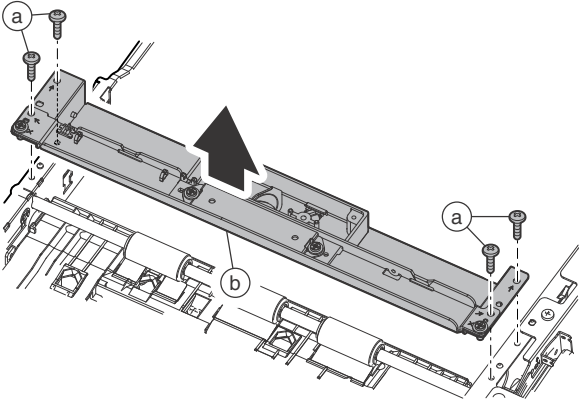
5) Remove the screw (a), and disconnect the connector (b), and remove the mounting plate (c). Remove the screw (d), and remove the DSPF document pass sensor 3 (e) and the DSPF document pass sensor 4 (f).

\* When installing the sensor, check to confirm that the sensor boss (g) is securely engaged and fix it with the screw.

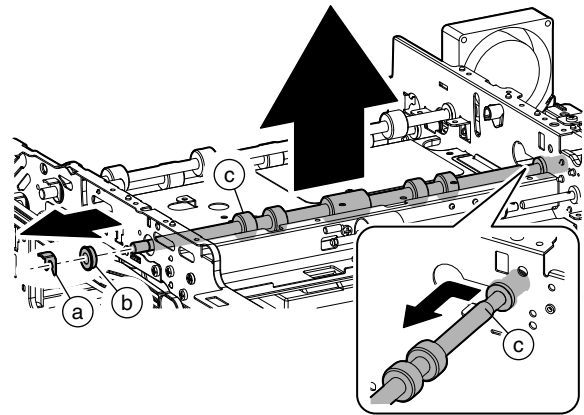


### (3) No. 1 resist roller

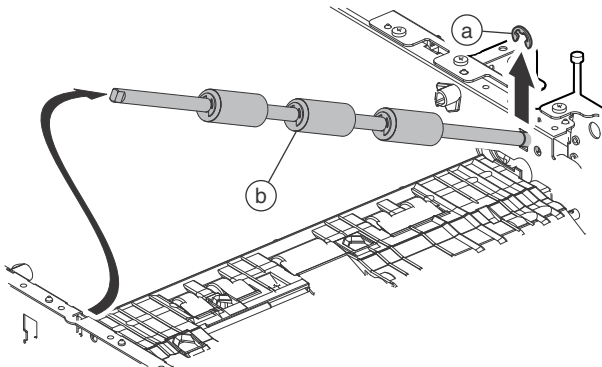
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the paper feed unit.
- 3) Remove the upper transport drive unit.
- 4) Remove the screw (a), and remove the double feed detection unit (b).  
\* Since the harness is kept connected, be careful not to disconnect it.



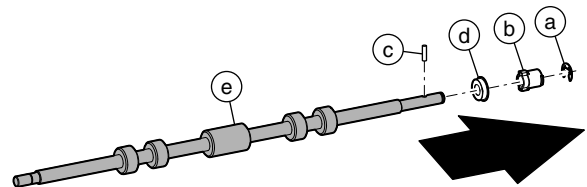
- 7) Remove the E-ring (a) and the bearing (b). Remove the No.1 resist roller unit (c).



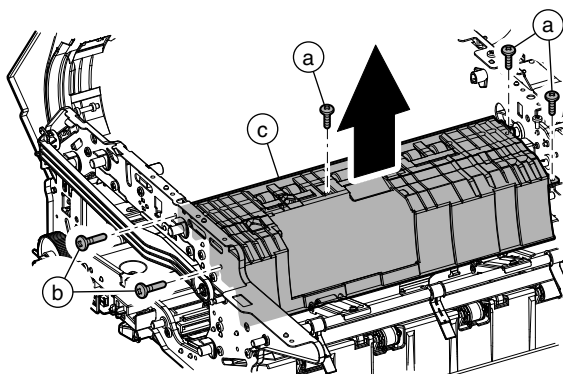
- 5) Remove the E-ring (a), and remove the No. 1 resist roller (idle) (b).



- 8) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the No. 1 resist roller (e).

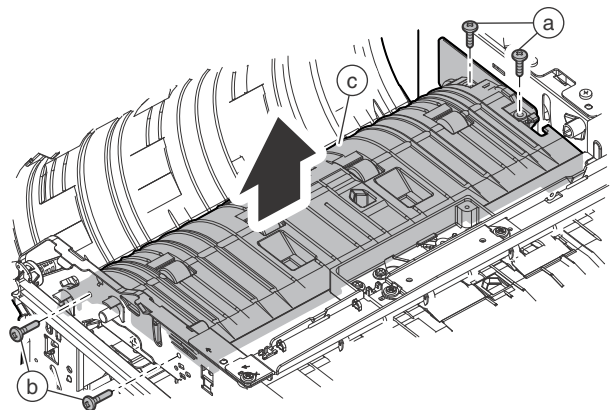


- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



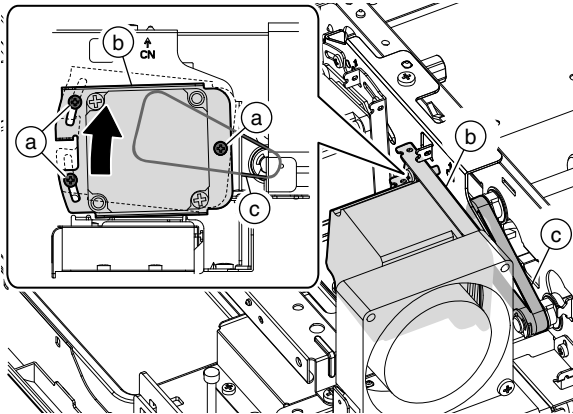
### (4) Transport roller 1 / Transport roller 2

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

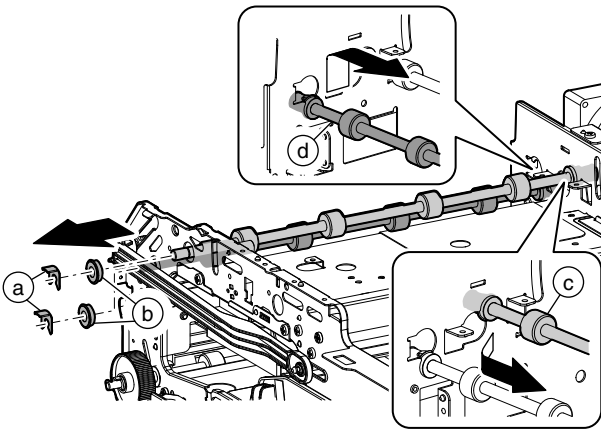


- Loosen the screw (a). Slide the DSPF transport motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

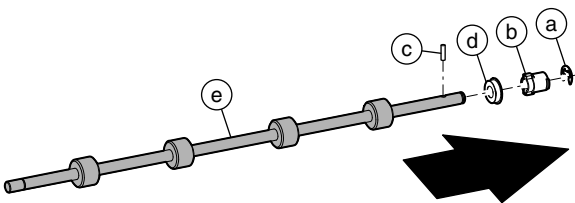
\* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- Remove the E-ring (a) and the bearing (b). Remove the transport roller 1 unit (c) and the transport roller 2 unit (d).

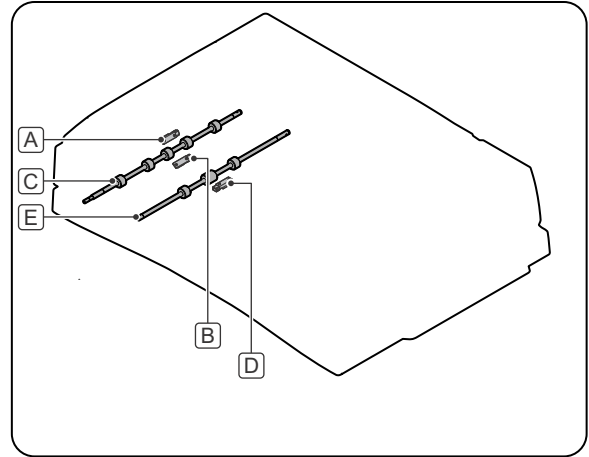


- Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the transport roller 1 / transport roller 2 (e).



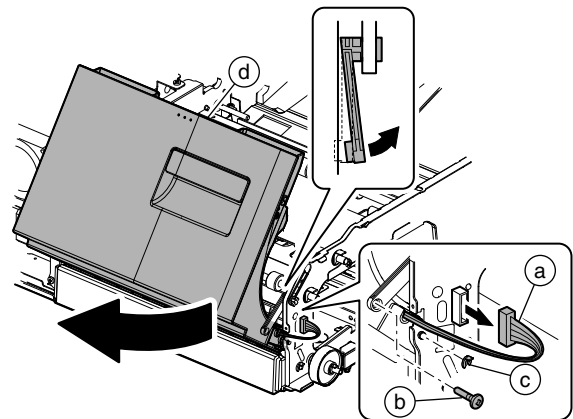
## D. Lower transport section

| Parts |                             | Page        |
|-------|-----------------------------|-------------|
| A     | DSPF document pass sensor 5 | C - 14/ (1) |
| B     | DSPF document pass sensor 6 |             |
| C     | No. 2 resist roller         | C - 16/ (2) |
| D     | DSPF document pass sensor 7 |             |
| E     | Transport roller 3          |             |

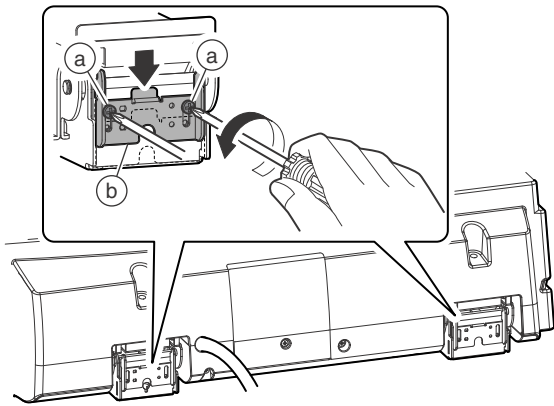


### (1) DSPF document pass sensor 5 / DSPF document pass sensor 6 / No. 2 resist roller

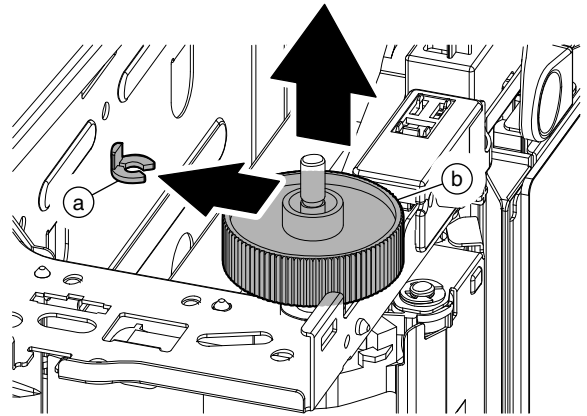
- Remove the front cabinet and the rear cabinet.
- Disconnect the connector (a), the step screw (b), and the E-ring (c). Remove the upper door (d).



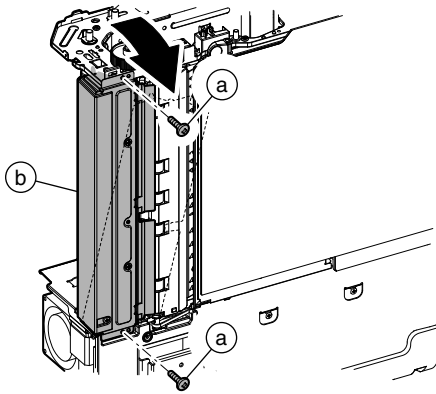
3) Loosen the screw (a), and lower the fixing plate (b).



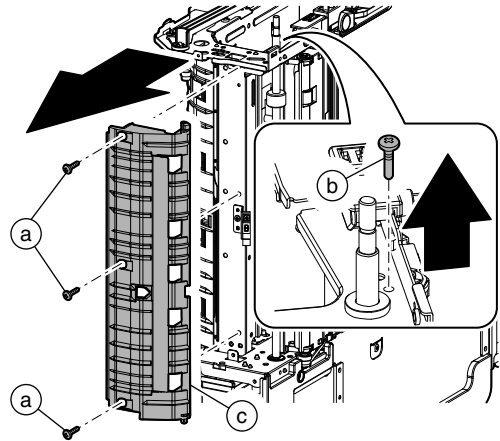
6) Remove the E-ring (a), and remove the knob (b).



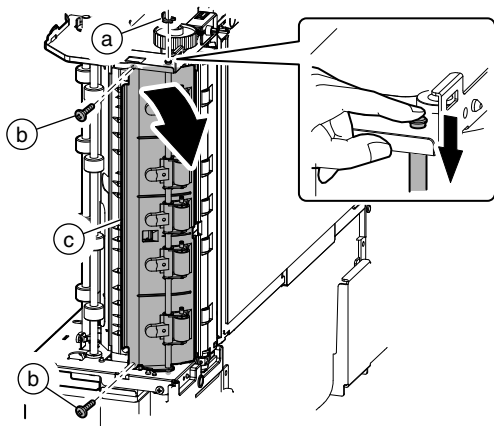
4) Remove the screw (a), and remove the stay (b).



7) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

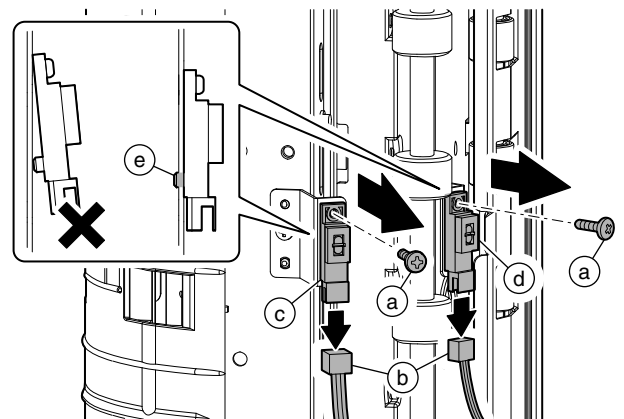


5) Remove the E-ring (a). Remove the screw (b), and remove the roller unit (c).



8) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 5 (c) and the DSPF document pass sensor 6 (d).

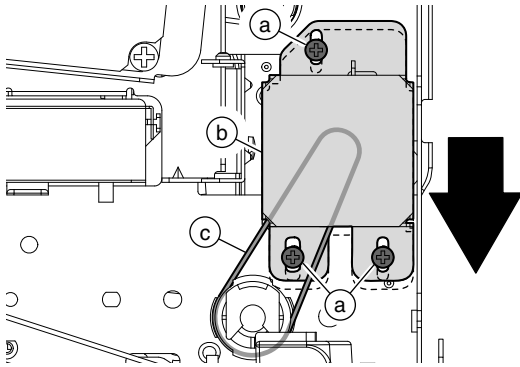
\* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



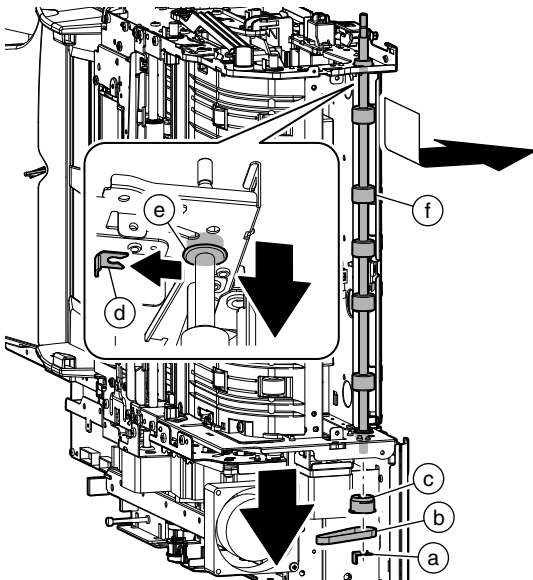


- 9) Loosen the screw (a). Slide the PS drive unit (b) to reduce the tension of the belt (c). Tighten the screw (a).

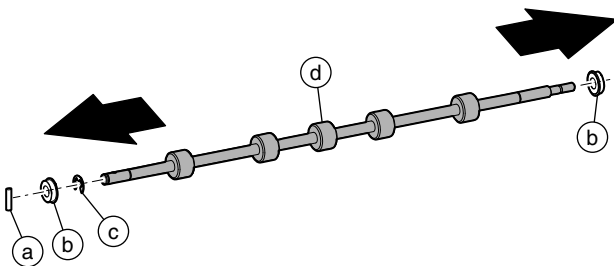
\* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- 10) Remove the E-ring (a), the belt (b), and the pulley (c). Remove the E-ring (d), and slide the bearing (e) and remove the No. 2 resist roller unit (f).

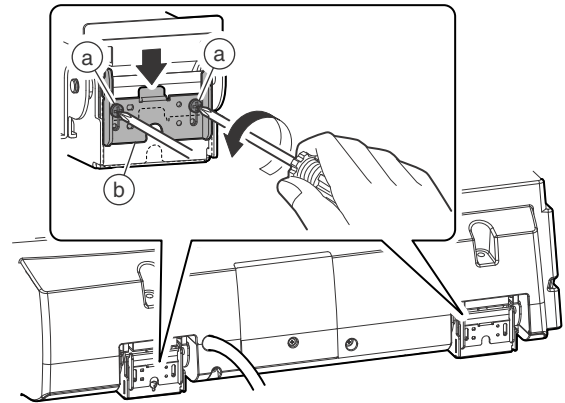


- 11) Remove the pin (a), bearing (b) and the E-ring (c) from the No. 2 resist roller (d).

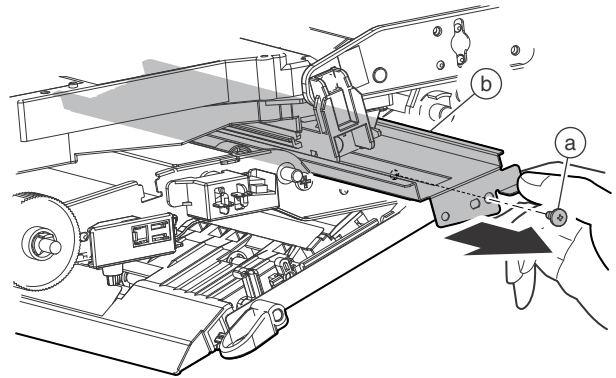


## (2) DSPF document pass sensor 7 / Transport roller 3

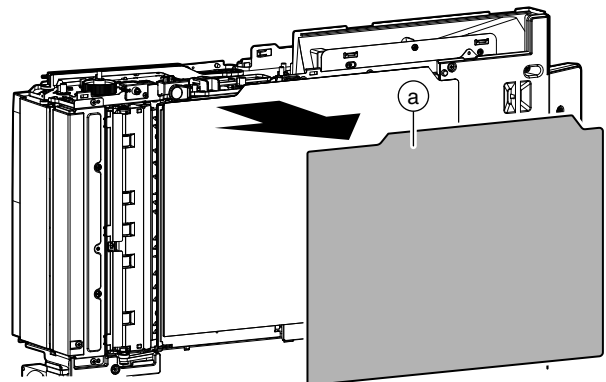
- 1) Remove the front cabinet and the rear cabinet.
- 2) Loosen the screw (a), and lower the fixing plate (b).



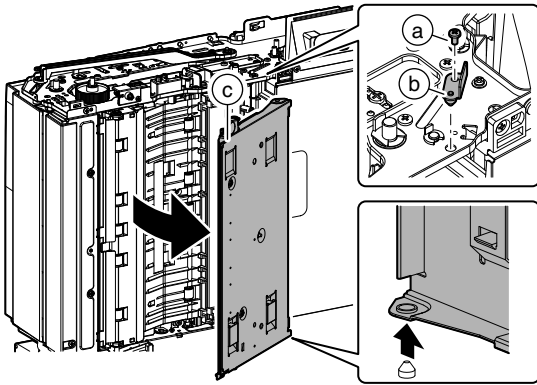
- 3) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



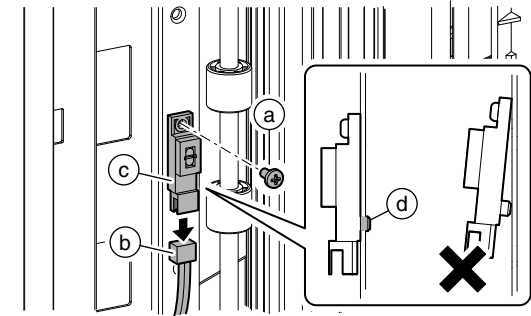
- 4) Remove the document mat (a).



- 5) Remove the screw (a), and remove the fulcrum plate (b). Remove the lower door (c).

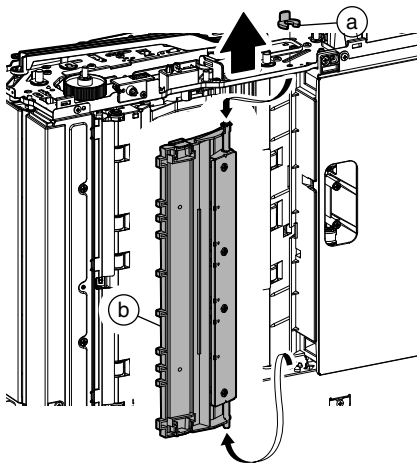


- 8) Remove the screw (a), and disconnect the connector (b), and remove the DSPF document pass sensor 7 (c).

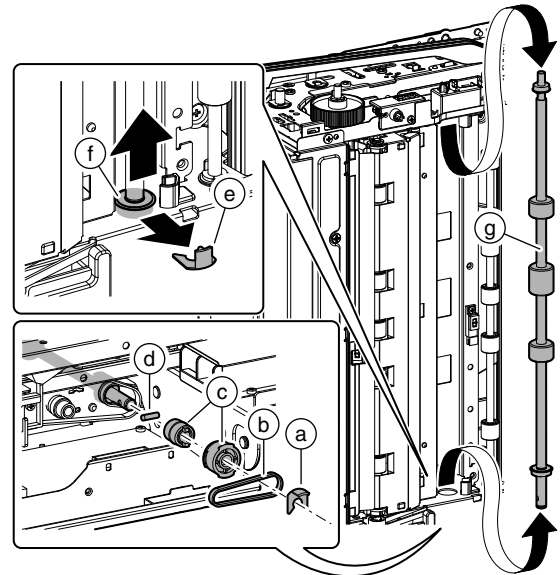


\* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.

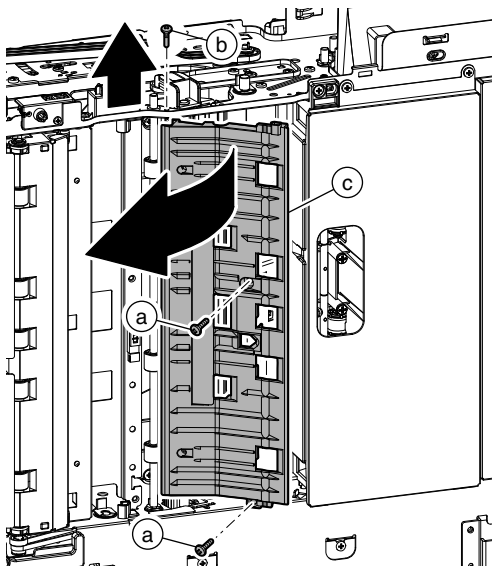
- 6) Remove the E-ring (a), and remove the paper guide (b).



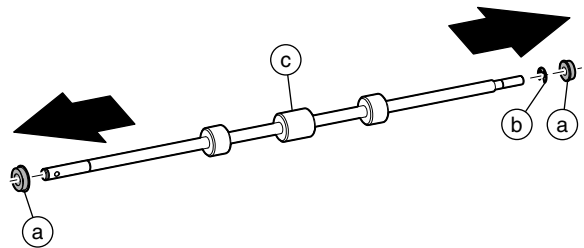
- 9) Remove the E-ring (a), the belt (b), the pulley (c), and the pin (d). Remove the E-ring (e), and slide the bearing (f) and remove the transport roller 3 unit (g).



- 7) Remove the screw (a) and the step screw (b), and remove the paper guide (c).

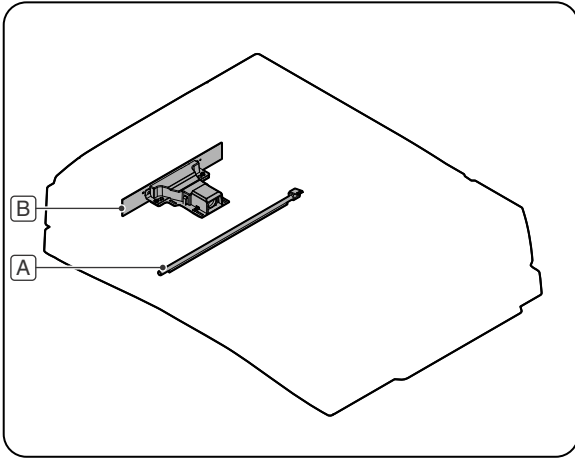


- 10) Remove the bearing (a) and the E-ring (b) from the transport roller 3 (c).



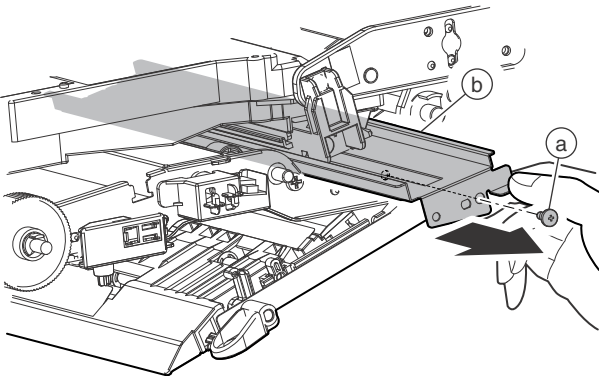
## E. Scanner section

| Parts |              | Page         |
|-------|--------------|--------------|
| A     | Scanner lamp | C - 18 / (1) |
| B     | CCD unit     |              |

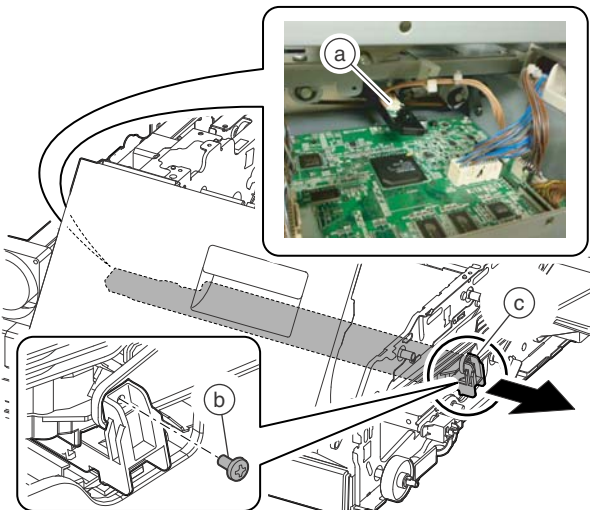


### (1) Scanner lamp / CCD unit

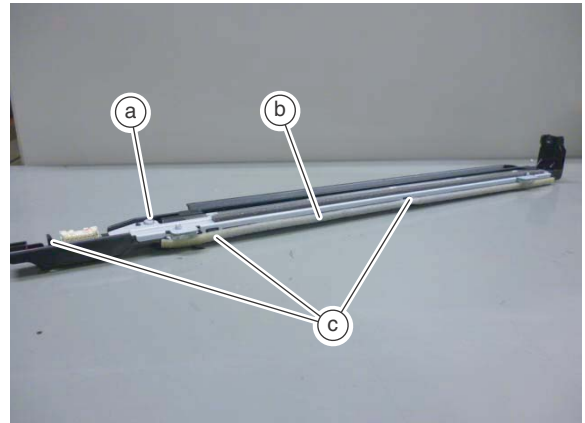
- 1) Remove the paper feed section cabinet and the front cabinet and the rear cabinet.
- 2) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



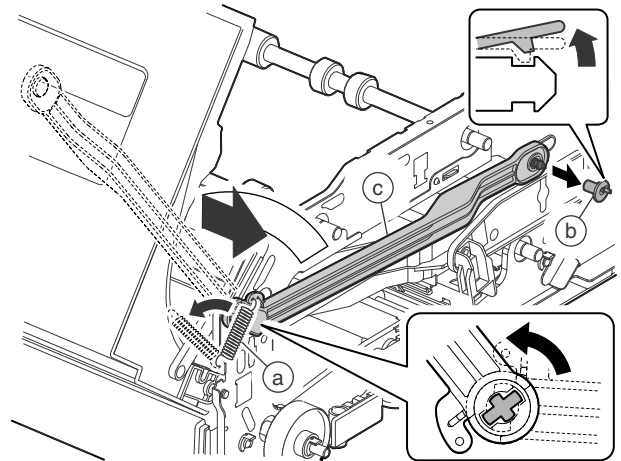
- 3) Disconnect the R side connector (a). Remove the screw (b), and remove the lamp unit (c).



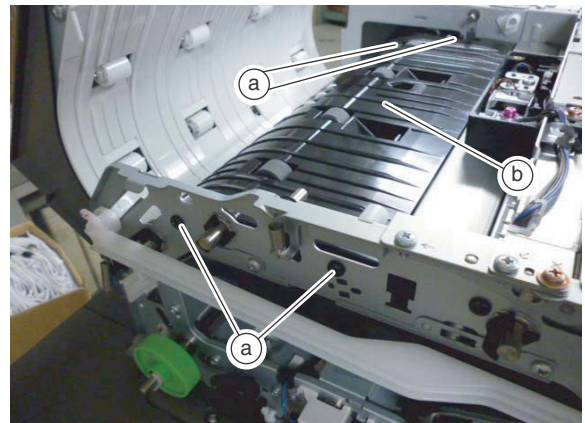
- 4) Remove the screw (a), and remove the sponge (b) and the hook (c) and the LED unit.



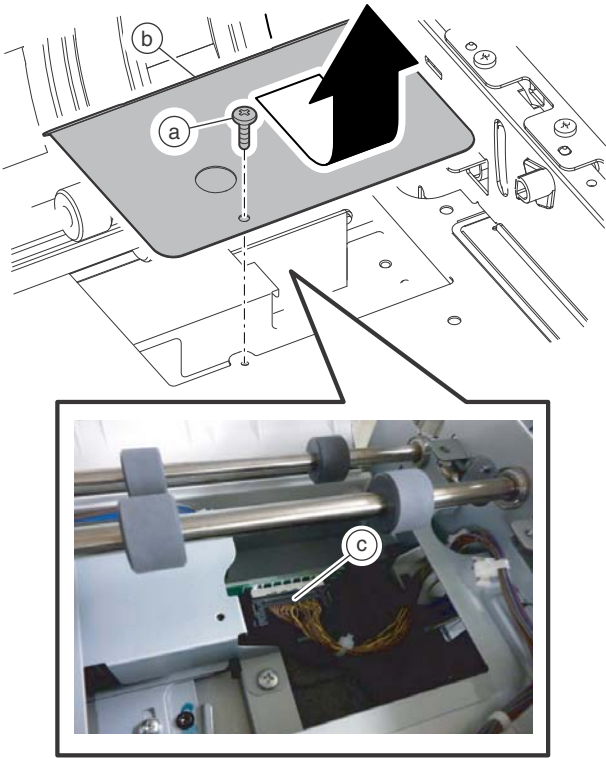
- 5) Remove the spring (a). Remove the holder (b), and remove the arm (c).



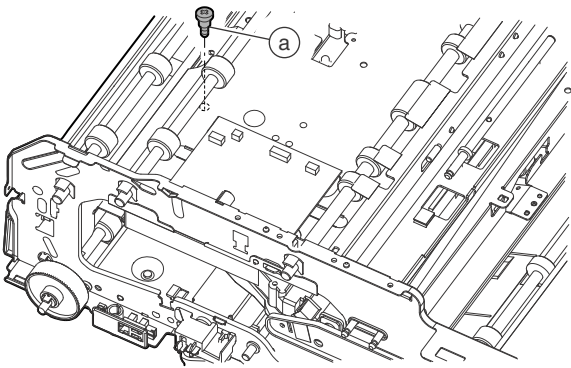
- 6) Remove the screw (a), and remove the paper guide (b).



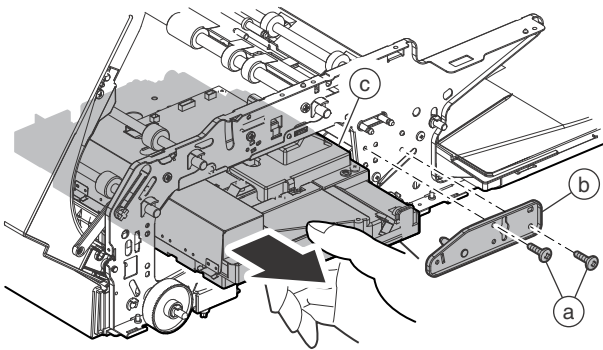
7) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



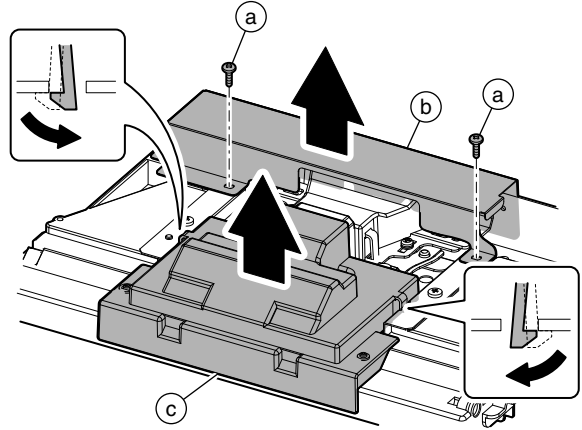
8) Remove the step screw (a).



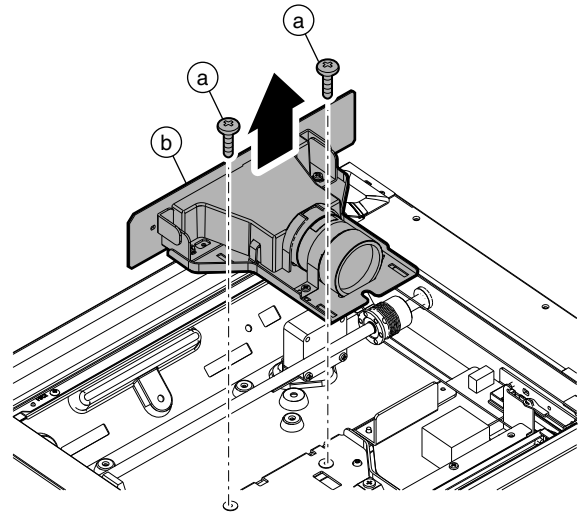
9) Remove the screw (a), and remove the fulcrum plate (b). Remove the scanner unit (c).



10) Remove the screw (a). Remove the dark box (b) and the cover (c).

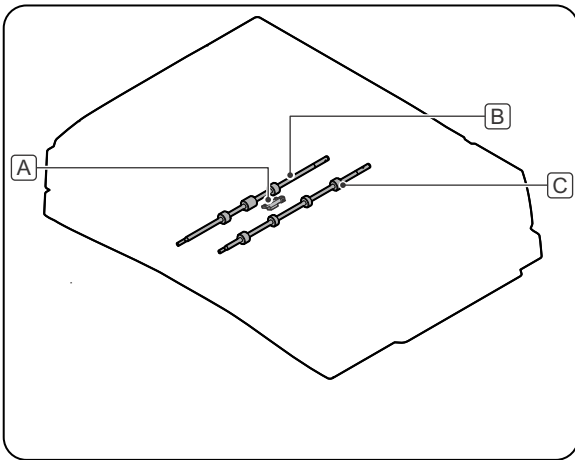


11) Remove the screw (a), and remove the CCD unit (b).



## F. Paper exit section

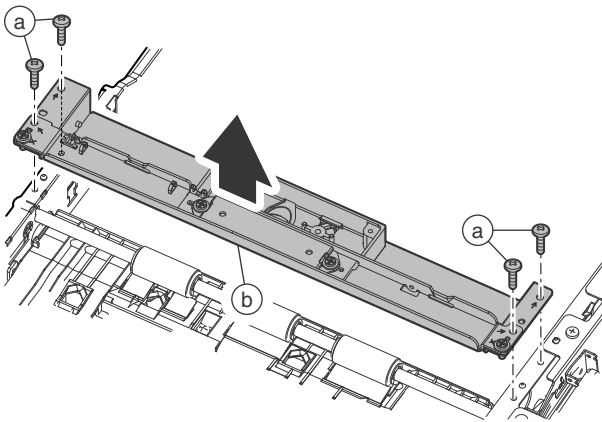
| Parts |                                  | Page     |
|-------|----------------------------------|----------|
| A     | DSPF paper exit detection sensor | C-20/(1) |
| B     | Transport roller 5               | C-21/(2) |
| C     | Paper exit roller                |          |



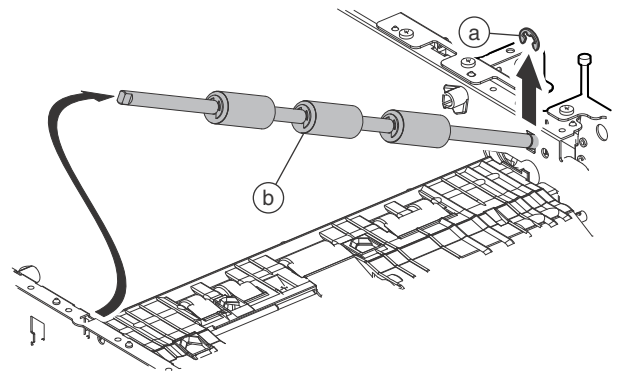
### (1) DSPF paper exit detection sensor

- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Remove the paper feed unit.
- 4) Remove the screw (a), and remove the double feed detection unit (b).

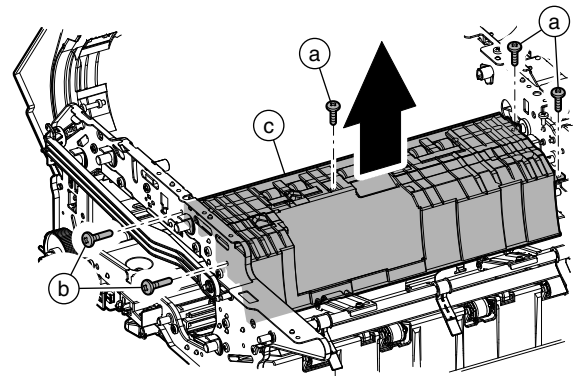
\* The harness is connected, be careful not to disconnect it.



- 5) Remove the E-ring (a), and remove the No. 1 resist roller (idle) (b).

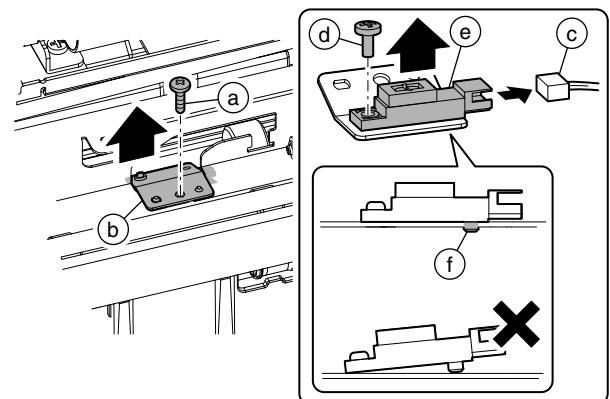


- 6) Remove the screw (a) and the step screw (b), and remove the paper guide (c).



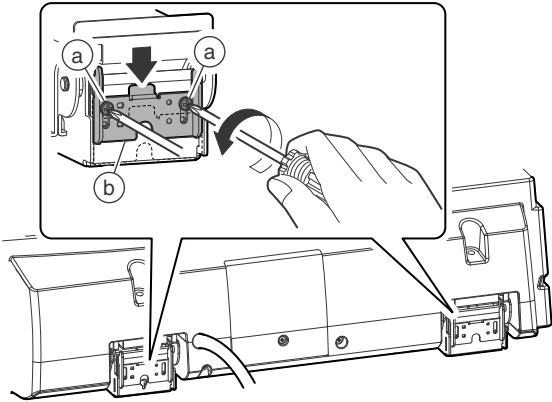
- 7) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector, and remove the screw (d). Remove the DSPF paper exit sensor (e).

\* When installing the sensor, check to confirm that the sensor boss (f) is securely engaged and fix it with the screw.

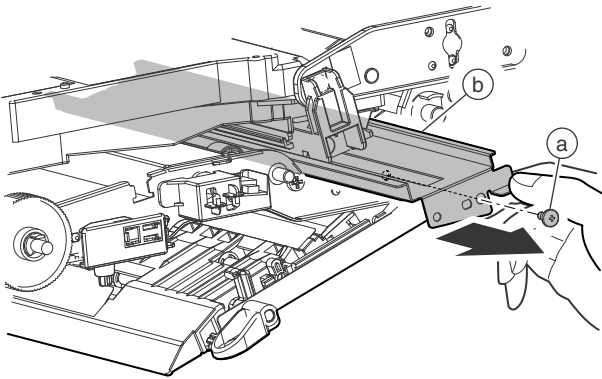


**(2) Transport roller 5 / Paper exit roller**

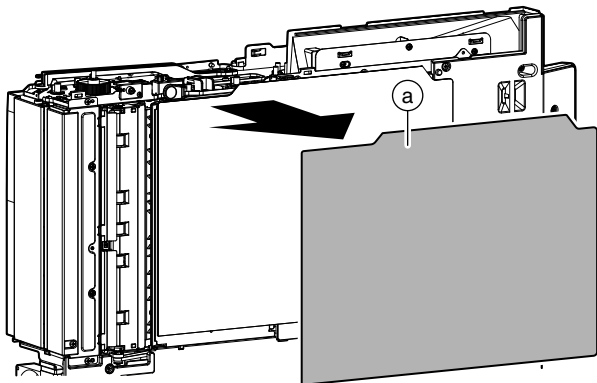
- 1) Remove the front cabinet and the rear cabinet.
- 2) Remove the document tray unit.
- 3) Loosen the screw (a), and lower the fixing plate (b).



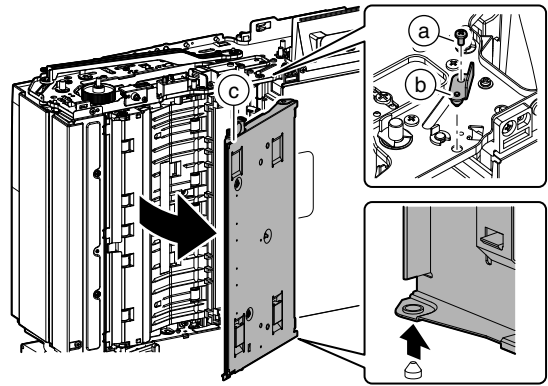
- 4) Remove the screw (a), and remove the back surface scanning section glass upper unit (b).



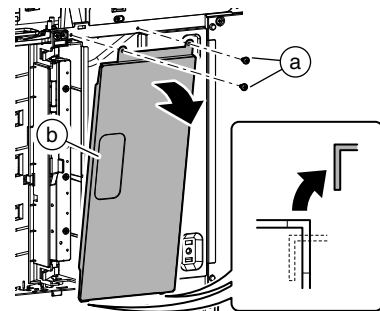
- 5) Remove the document mat (a).



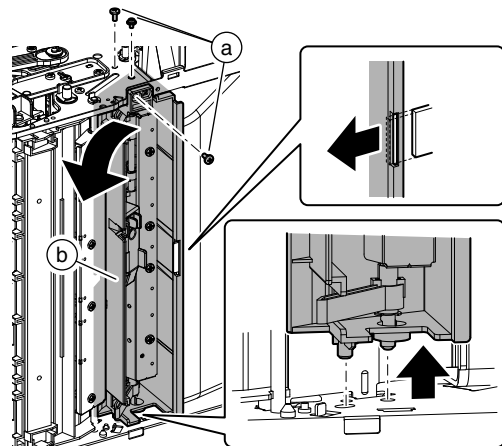
- 6) Remove the screw (a), and remove the fulcrum plate (b). Remove the lower door (c).



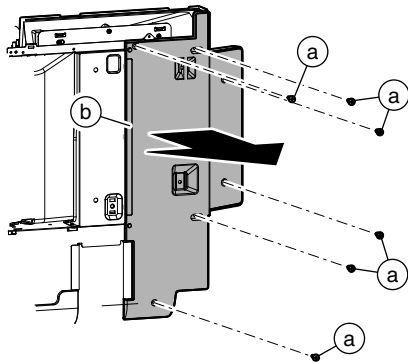
- 7) Remove the screw (a), and remove the cover (b).



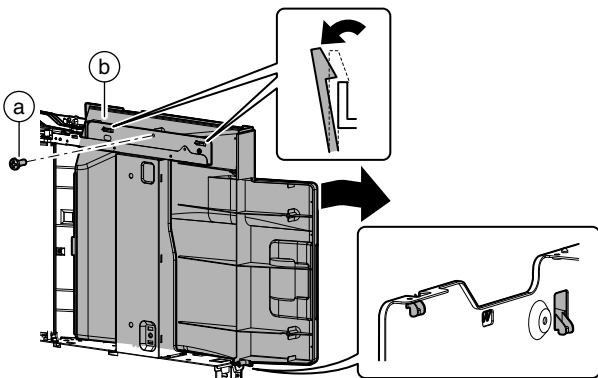
- 8) Remove the screw (a), and remove the follower roller unit (b).



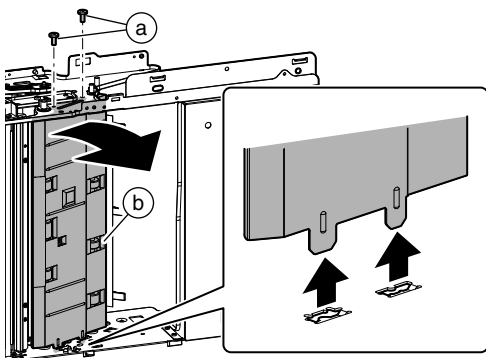
9) Remove the screw (a), and remove the cabinet (b).



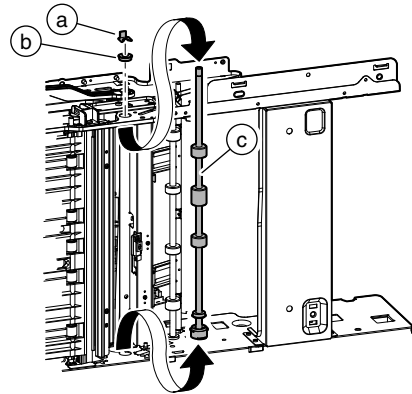
10) Remove the screw (a), and the paper exit tray (b).



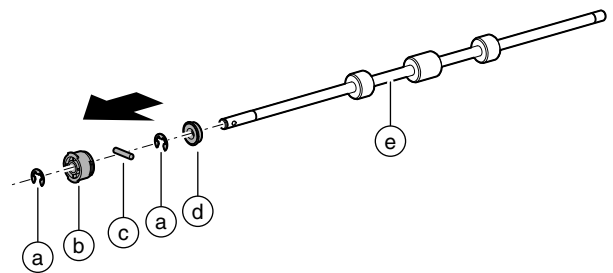
11) Remove the screw (a), and remove the paper guide (b).



12) Remove the E-ring (a), and remove the bearing (b). Remove the transport roller 5 unit (c).

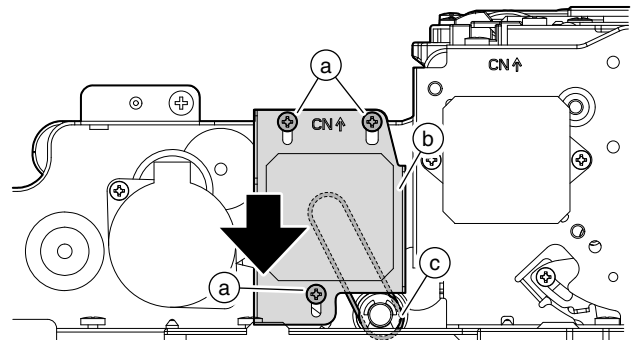


13) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the transport roller 5 (e).

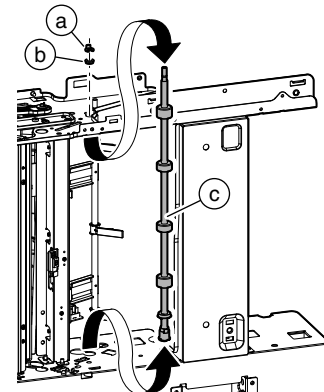


14) Loosen the screw (a). Slide the DSPF paper exit motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

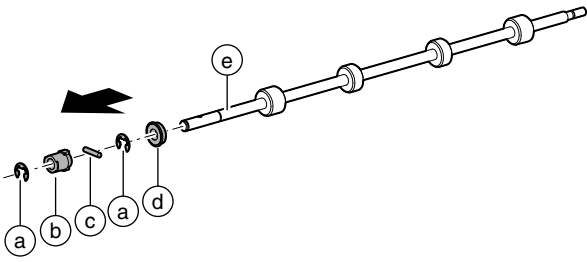
\* When assembling, set the spring in the compressed state by the same procedure to apply a tension to the belt.



15) Remove the E-ring (a), and remove the bearing (b). Remove the paper exit roller unit (c).

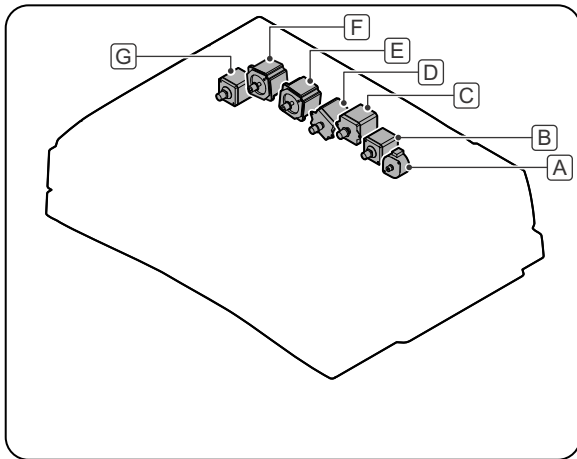


- 16) Remove the E-ring (a), the pulley (b), the pin (c), and the bearing (d) from the paper exit roller (e).



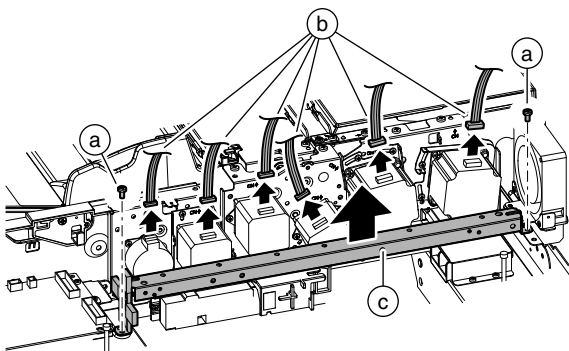
### G. Drive section

| Parts |                           | Page     |
|-------|---------------------------|----------|
| A     | DSPF lift-up motor        | C-23/(1) |
| B     | DSPF paper exit motor     |          |
| C     | DSPF document feed motor  | C-24/(2) |
| D     | DSPF scan transport motor |          |
| E     | DSPF resist motor         | C-25/(3) |
| F     | DSPF transport motor      |          |
| G     | DSPF PS motor             | C-26/(4) |

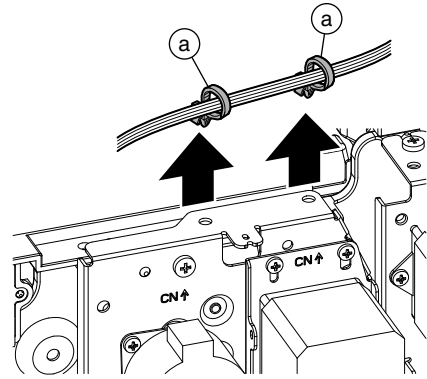


#### (1) DSPF lift-up motor / DSPF paper exit motor

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the stay (c).

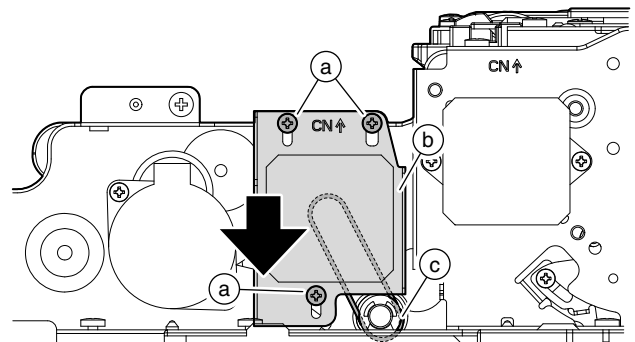


- 3) Remove the snap band (a).

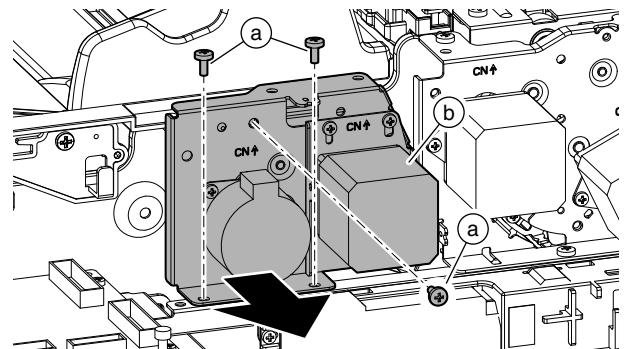


- 4) Loosen the screw (a). Slide the DSPF paper exit motor (b) to reduce the tension of the belt (c). Tighten the screw (a).

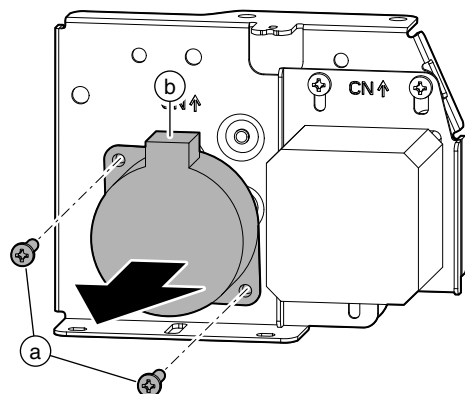
\* Before installing the lift-up paper exit drive unit, perform this procedure. After installing the paper feed scan transport drive unit, set the spring in the compressed state by the same procedure to apply a tension to the belt.



- 5) Remove the screw (a), and remove the lift-up paper exit drive unit (b).

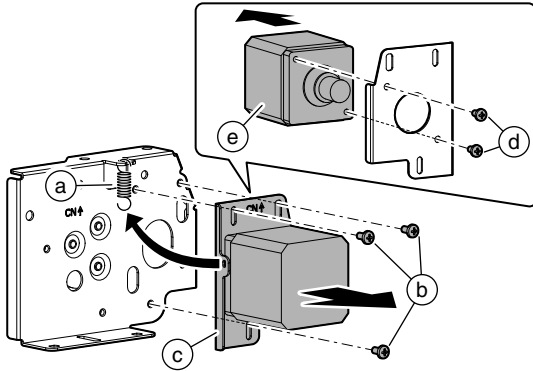


- 6) Remove the screw (a), and remove the DSPF lift-up motor (b).



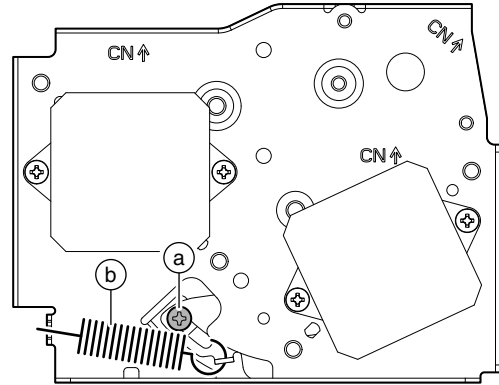


- Remove the spring (a) and the screw (b). Remove the DSPF paper exit motor unit (c). Remove the screw (d), and remove the DSPF paper exit motor (e).



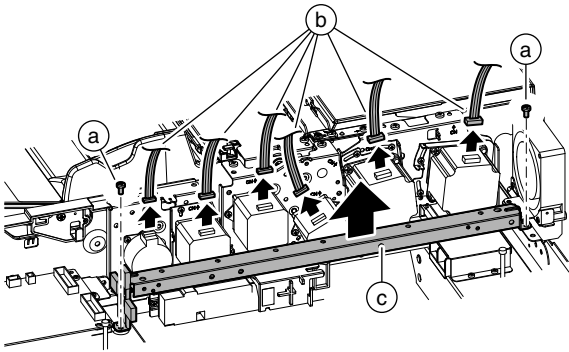
- Loosen the screw (a), and stretch the spring (b). Tighten the screw (a).

\* Before installing the paper feed scan transport drive unit, perform this procedure. After installing the paper feed scan transport drive unit, perform the same procedure to compress the spring, applying a tension to the belt.

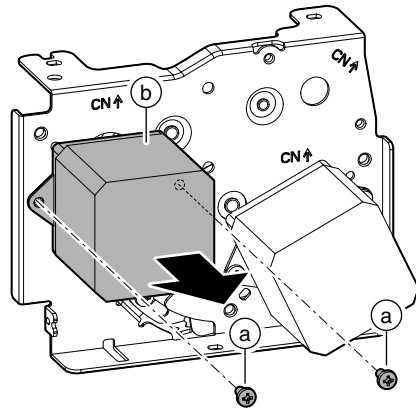


## (2) DSPF document feed motor / DSPF scan transport motor

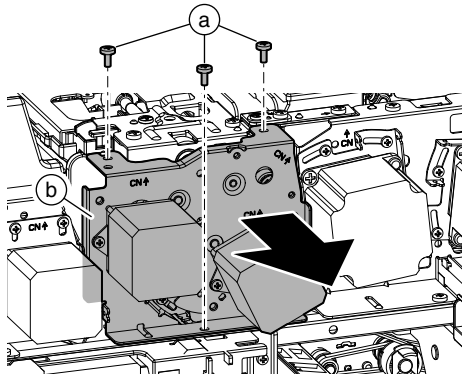
- Remove the rear cabinet.
- Disconnect the connector (a), and remove the screw (b). Remove the stay (c).



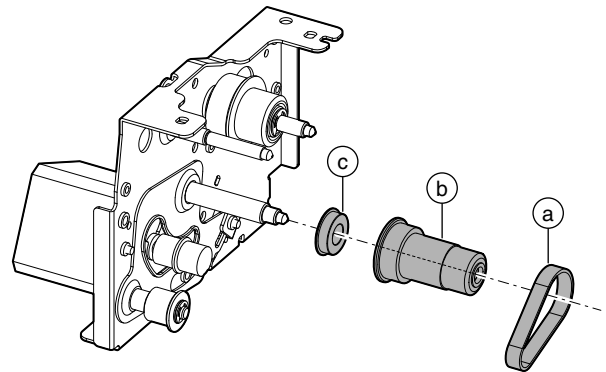
- Remove the screw (a), and remove the DSPF document feed motor (b).



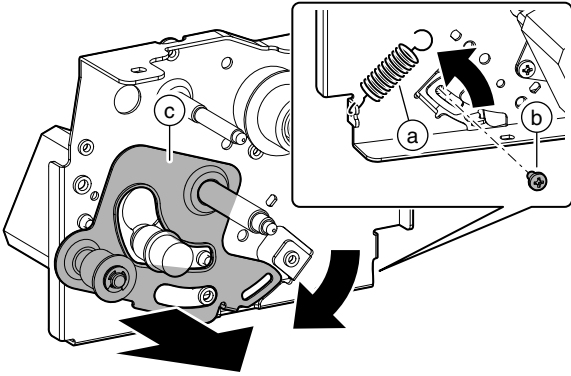
- Remove the screw (a), and remove the paper feed scan transport drive unit (b).



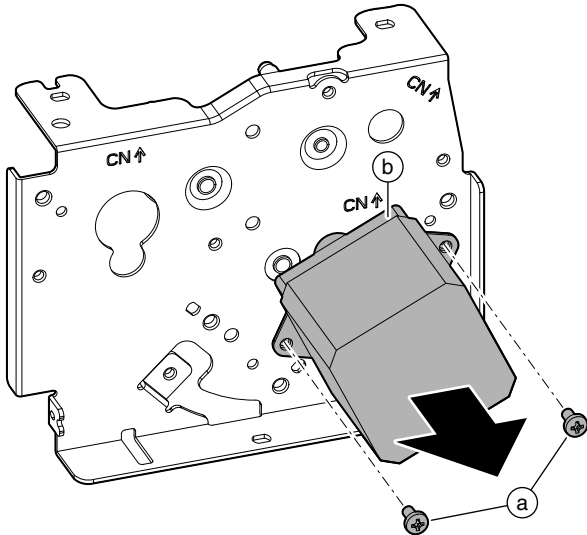
- Remove the belt (a), the pulley (b), and the bearing (c).



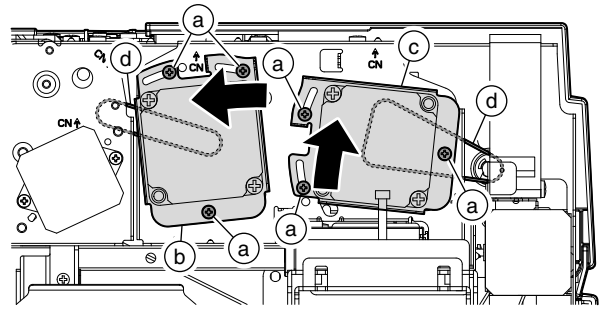
- Remove the spring (a) and the screw (b), and remove the plate (c).



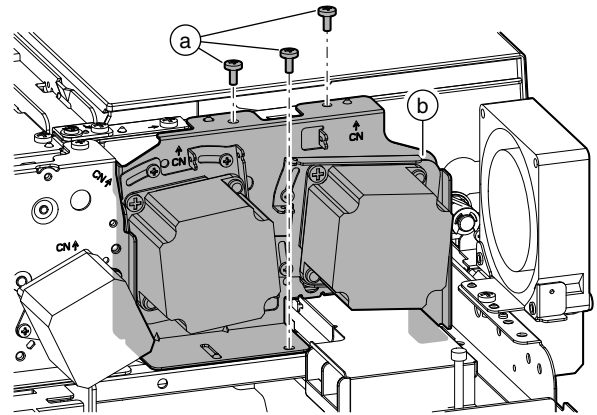
- Remove the screw (a), and remove the DSPF scan transport motor (b).



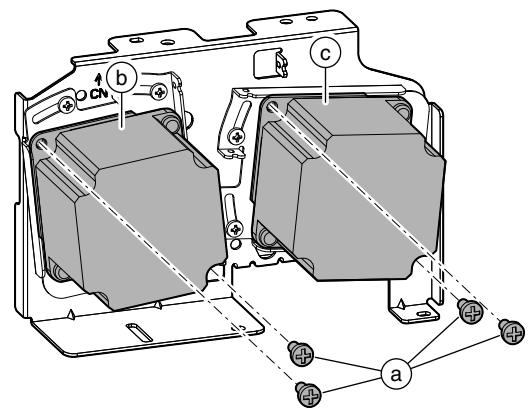
- Loosen the screw (a). Slide the DSPF resist motor (b) and the DSPF transport motor (c) to reduce the tension of the belt (d). Tighten the screw (a).



- Remove the screw (a), and remove the resist transport drive unit (b).

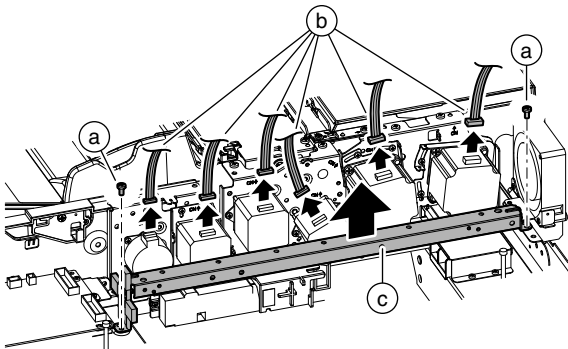


- Remove the screw (a), and remove the DSPF resist motor (b) and the DSPF transport motor (c).



### (3) DSPF resist motor / DSPF transport motor

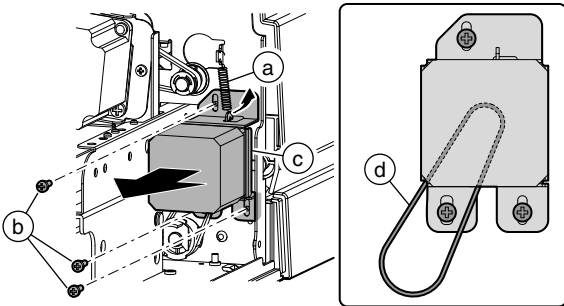
- Remove the rear cabinet.
- Disconnect the connector (a) and the screw (b), and remove the stay (c).



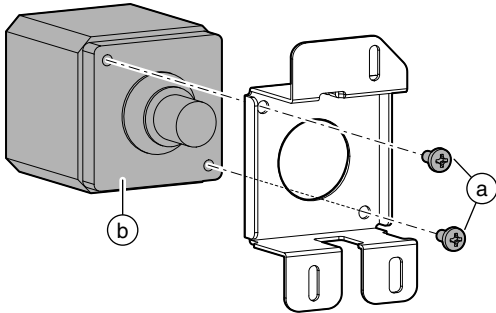
#### (4) DSPF PS motor

- 1) Remove the rear cabinet.
- 2) Remove the spring (a). Remove the screw (b), and remove the PS drive unit (c).

\* When installing, temporarily tighten the screw (b) in loosened state and install the spring (a). Then apply a tension to the belt (c) and tighten the screw (b) securely.

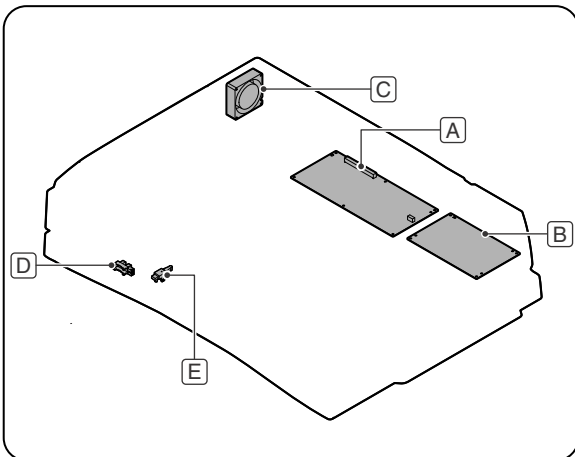


- 3) Remove the screw (a), and remove the DSPF PS motor (b).



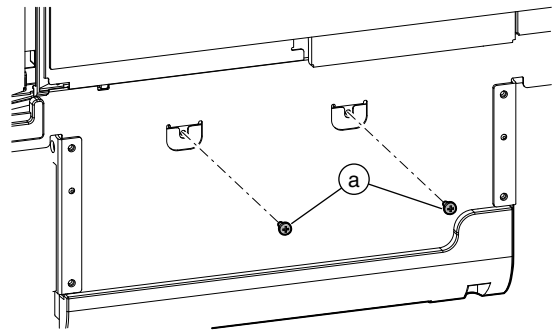
#### H. Others

| Parts |                                   | Page     |
|-------|-----------------------------------|----------|
| A     | DSPF cnt PWB                      | C-26/(1) |
| B     | DSPF driver PWB                   |          |
| C     | DSPF motor cooling fan 1          |          |
| D     | DSPF open/close sensor            | C-27/(2) |
| E     | DSPF lower door open/close sensor |          |

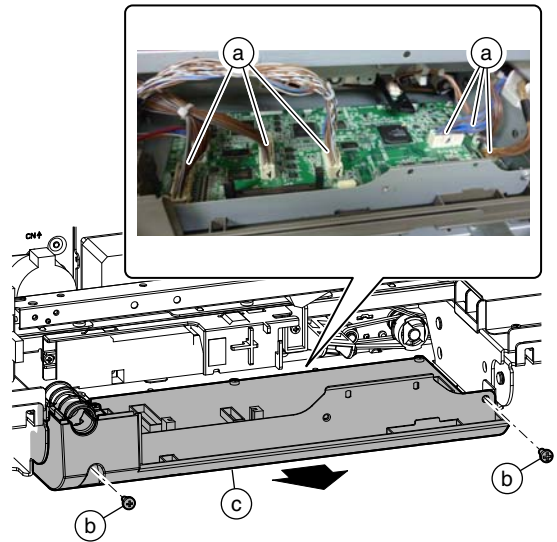


#### (1) DSPF cnt PWB / DSPF driver PWB / DSPF motor cooling fan 1

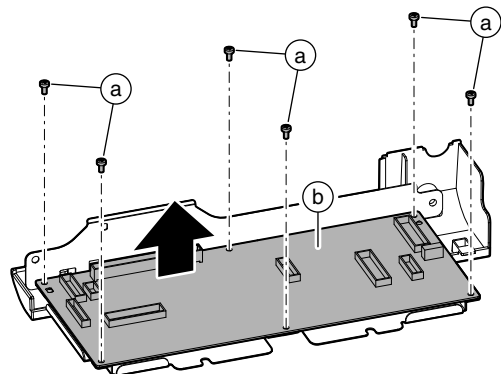
- 1) Remove the rear cabinet.
- 2) Remove the screw (a) at the bottom of the DSPF unit.



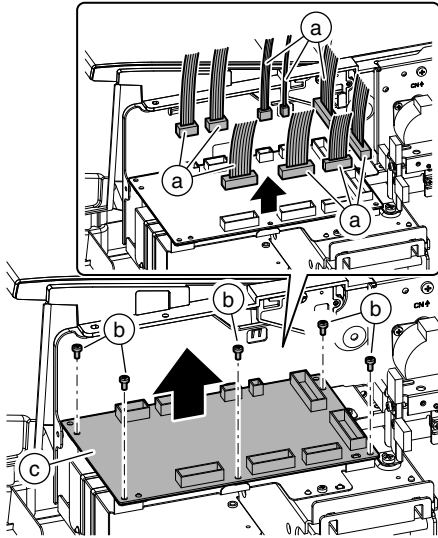
- 3) Disconnect the connector (a), and remove the screw (b). Pull out the DSPF cnt PWB unit (c).



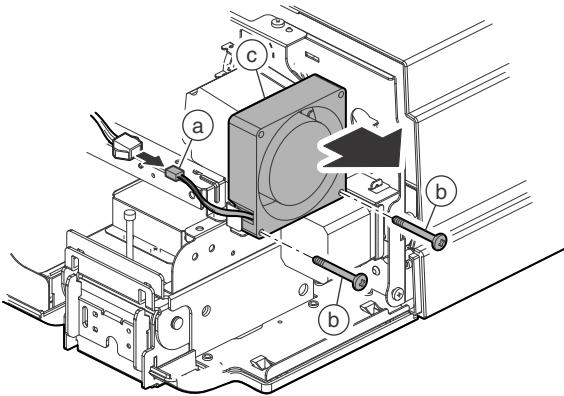
- 4) Remove the screw (a), and remove the DSPF cnt PWB (b).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the DSPF driver PWB (c).

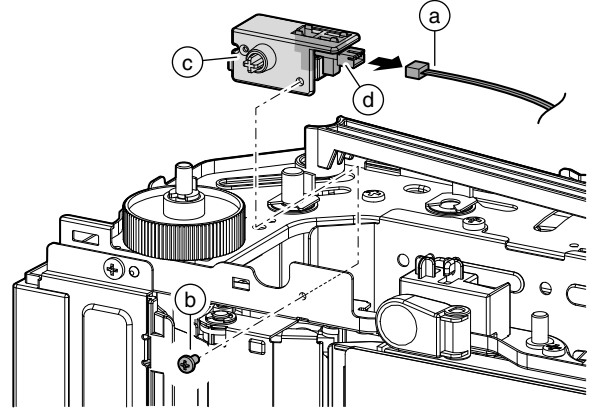


- 6) Disconnect the connector (a), and remove the screw (b). Remove the DSPF motor cooling fan 1 (c).

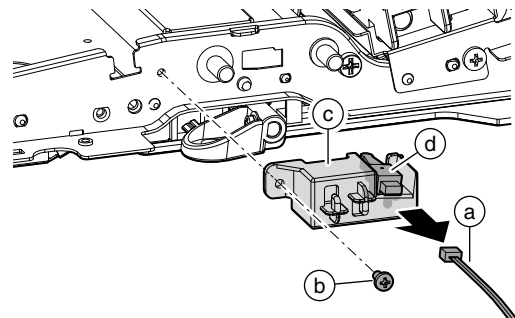


## (2) DSPF open/close sensor / DSPF lower door open/close sensor

- 1) Remove the front cabinet.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the holder (c). Remove the DSPF open/close sensor (d).

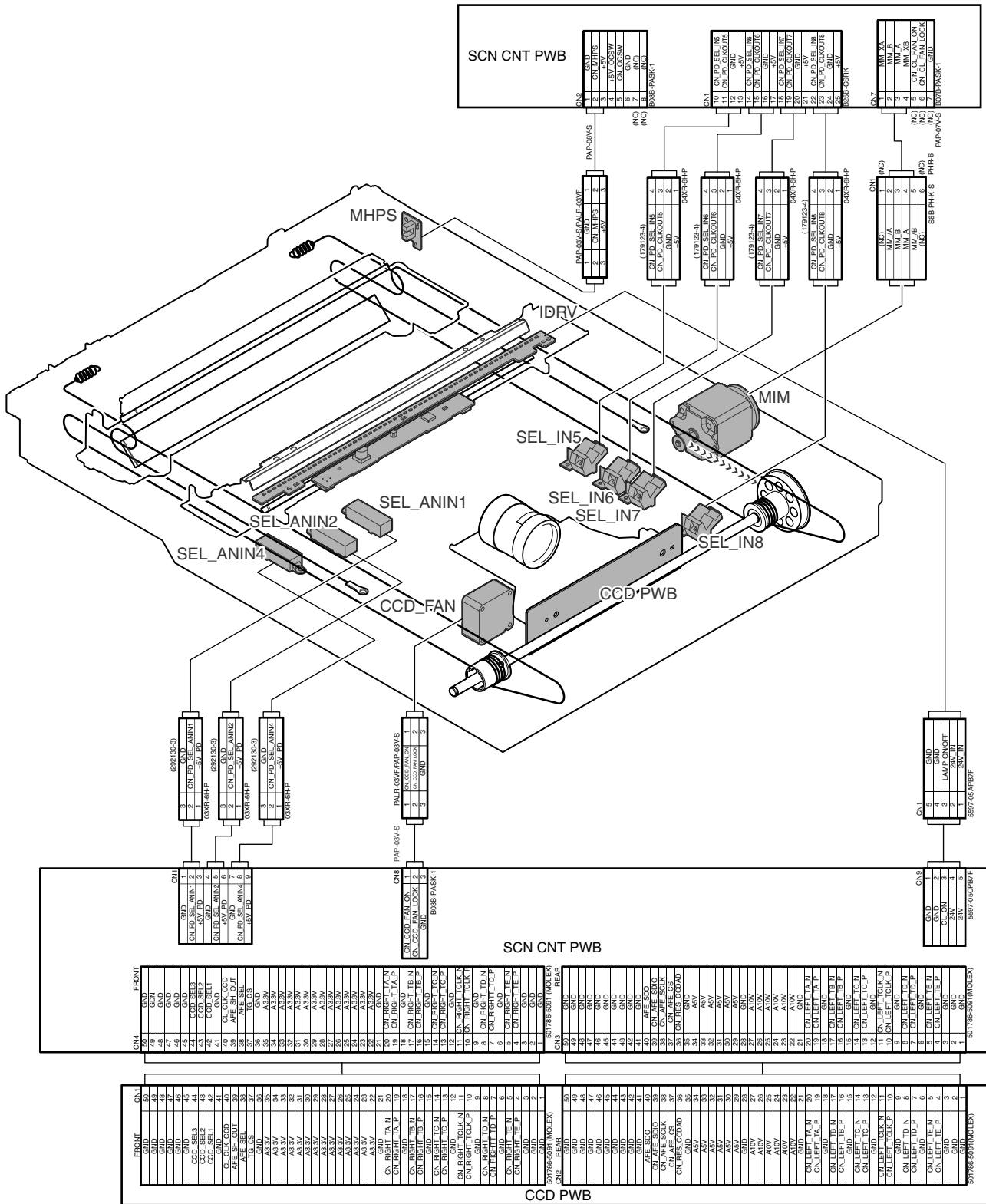


- 3) Disconnect the connector (a), and remove the screw (b). Remove the holder (c). Remove the DSPF lower door open/close sensor (d).



# [D] SCANNER SECTION

## 1. Electrical and mechanism relation diagram



| Signal name | Name                               | Type              | Function / Operation                     |
|-------------|------------------------------------|-------------------|--|
| MIM         | Scanner (reading) motor            | Stepping motor    | Drives the copy lamp unit.               |
| MHPS        | Scanner home position sensor       | Photo interrupter | Scanner home position detection.         |
| CLI         | Scanner lamp                       | LED lamp          | Radiates lights onto the document.       |
| SEL_ANIN 1  | Main scanning document size sensor | Reflectin type    | Detects the main scanning document size. |
| SEL_ANIN 2  | Main scanning document size sensor | Reflectin type    | Detects the main scanning document size. |
| SEL_ANIN 4  | Main scanning document size sensor | Reflectin type    | Detects the main scanning document size. |

| Signal name | Name                              | Type           | Function/Operation                      |
|-------------|-----------------------------------|----------------|---|
| SEL_IN 5    | Sub scanning document size sensor | Reflectin type | Detects the sub scanning document size. |
| SEL_IN 6    | Sub scanning document size sensor | Reflectin type | Detects the sub scanning document size. |
| SEL_IN 7    | Sub scanning document size sensor | Reflectin type | Detects the sub scanning document size. |
| SEL_IN 8    | Sub scanning document size sensor | Reflectin type | Detects the sub scanning document size. |
| CCDFM       | CCD cooling fan                   | Fan motor      | Cools the CCD.                          |

| No. | Name       | Function/Operation  |
|-----|------------|---|
| 1   | CCD PWB    | The Document image is scanned and is converted into a analog signal by the CCD. |
| 2   | SCNCNT PWB | Controls the scanner.   |

## 2. Operational descriptions

This machine employs the reduction optical type line CCD for scan resolution in the main scanning direction. Scan resolution is 600 DPI in the main scan direction and 300 DPI in the sub scan direction. Total of 7300 pixels.

Scanning is performed by moving mirror unit 1 and 2 in a sequential manner to scan the document.

Light reflected from the document to each mirror projects the image onto the CCD after its been reduced by the lens.

In the CCD, the optical energy is converted into electrical energy (analog) (Photo electric conversion), and is converted into digital signals (A/D conversion).

Image processes such as white balance and shading corrections are performed on the SCNCnt PWB. The signal is then sent to the MFP control PWB.

In the MFP control PWB, image process is performed according to the setting condition of the operation panel selected by the end user EX reduction, enlargement etc. etc..

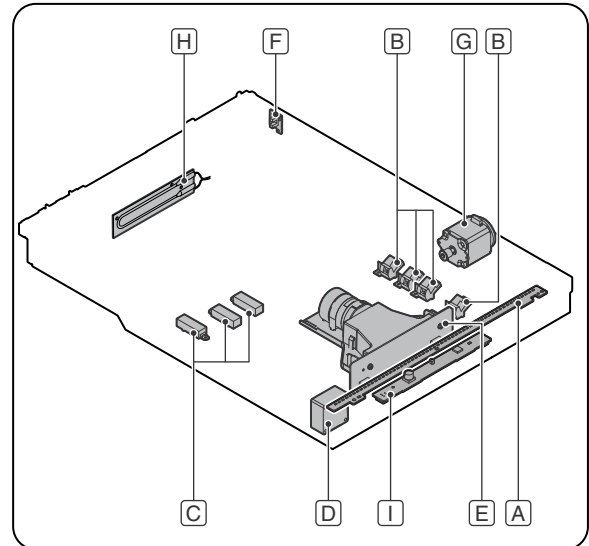
The image data is converted into video signal and sent to the PCU then to the LSU (Laser Scan Unit).

In the LSU, the VIDEO signal is converted into laser beams, which are radiated onto the drum.

## 3. Disassembly and assembly

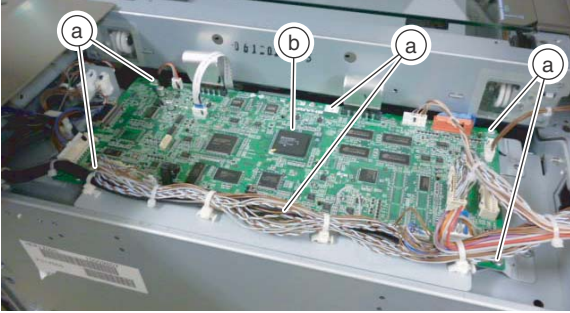
### A. Scanner unit

| Unit         | Parts                                | Page    |
|--------------|--------------------------------------|---------|
| Scanner unit | A LED PWB                            | D - 3/a |
|              | B Sub scanning document size sensor  | D - 5/c |
|              | C Main scanning document size sensor |         |
|              | D CCD cooling fan                    | D - 6/d |
|              | E CCD unit                           |         |
|              | F Scanner home position sensor       | D - 6/e |
|              | G Scanner motor                      | D - 6/f |
|              | H Scanner dehumidifying heater       | D - 7/g |
|              | I DRV PWB                            | D - 4/b |

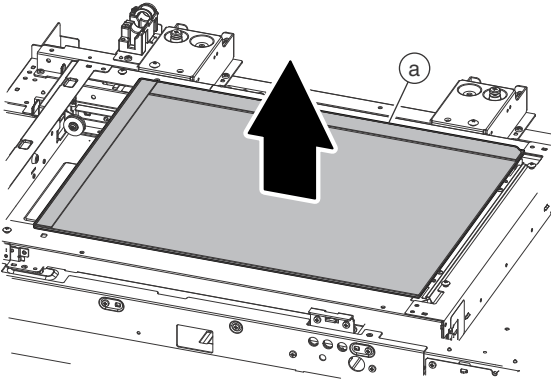


## (1) Scanner unit

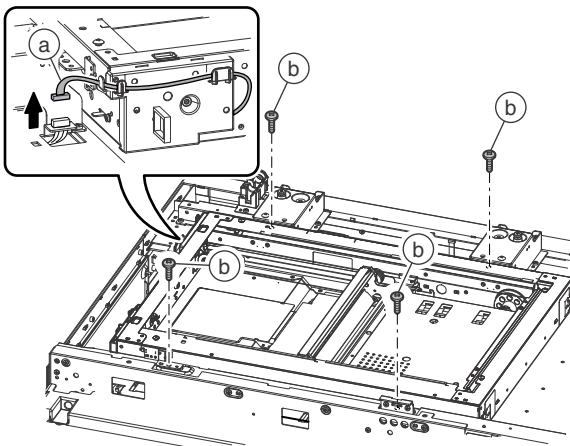
- 1) Remove the DSPF unit.
- 2) Remove the upper cabinet rear cover and the upper cabinet rear.
- 3) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, the upper cabinet front cover left and the upper cabinet front.
- 4) Disconnect the all connectors. Remove the screw (a), and pull out the SCNCNT PWB (b).



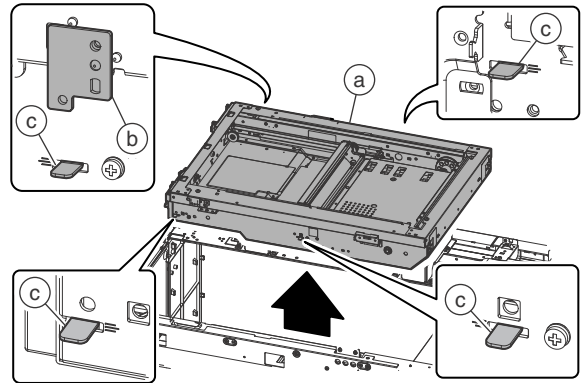
- 5) Remove the table glass (a).



- 6) Disconnect the connector (a), and remove the screw (b).

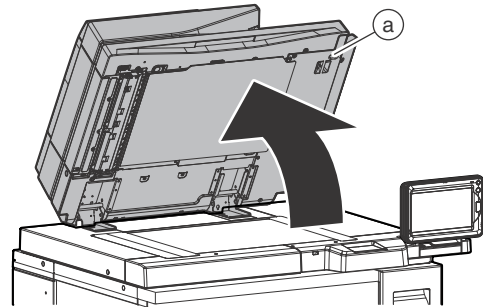


- 7) Remove the scanner unit (a).  
\* When installing, be careful not to bring the scanner home position sensor (b) and the rail collar (c) of the scanner unit into contact with the machine.

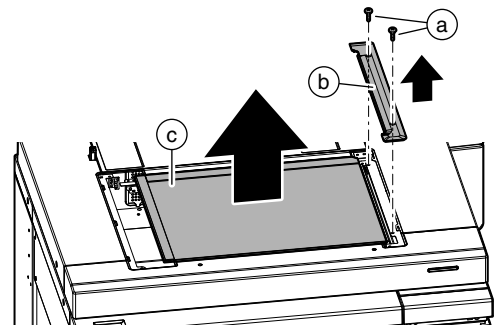


### a. LED PWB

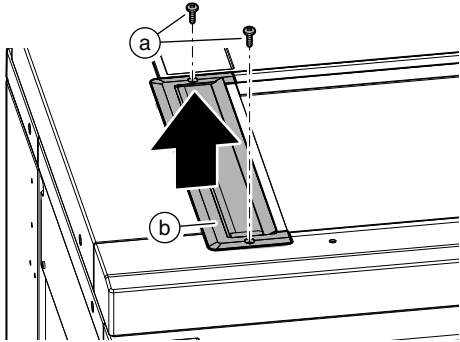
- 1) Open the DSPF unit (a).



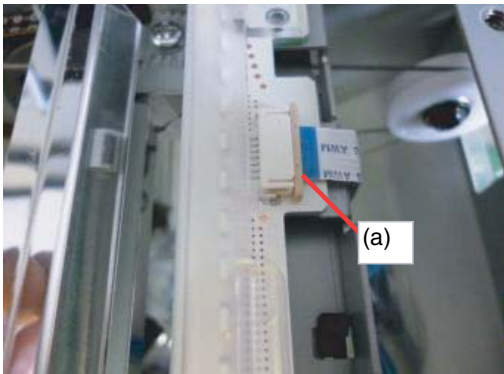
- 2) Remove the screw (a). Remove the table glass holder (b) and the table glass (c).



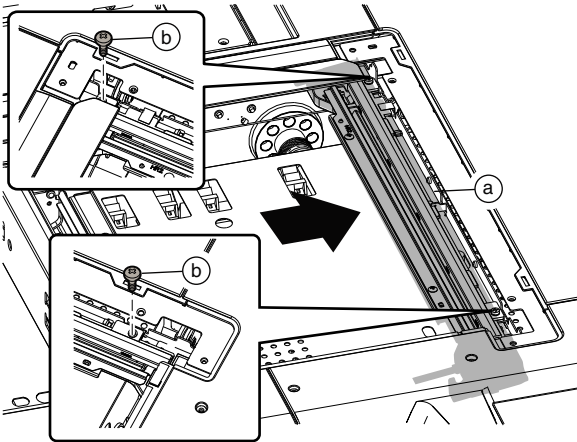
3) Remove the screw (a), and remove the SPF glass (b).



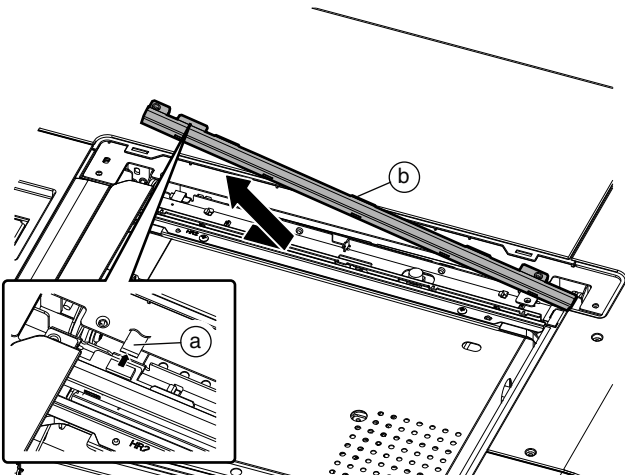
4) Disconnect the connector (a).



5) Shift the lamp unit (a) to the right, and remove the screw (b).

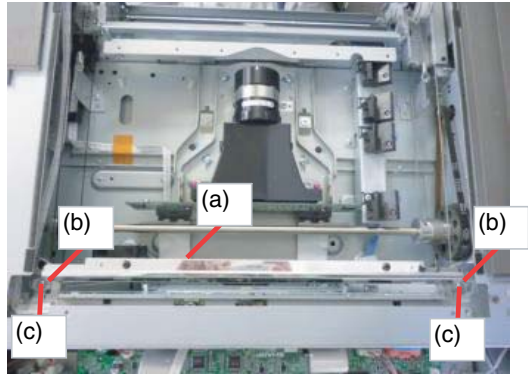


6) Remove the light guide plate (a) and the scanner lamp (b).

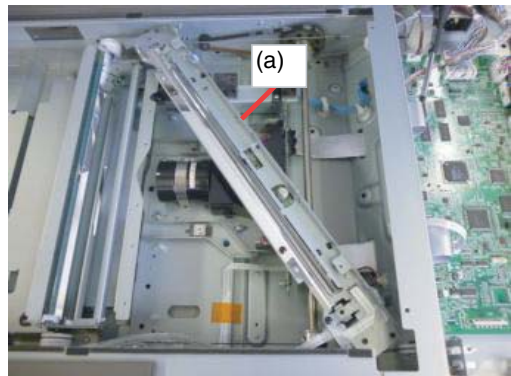


**b. DRV PWB**

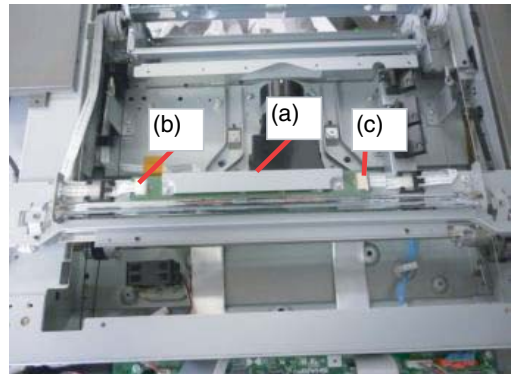
1) Remove the fixing screw (c) which is fixing the plate (b) which is holding the lamp unit (a) and the wire.



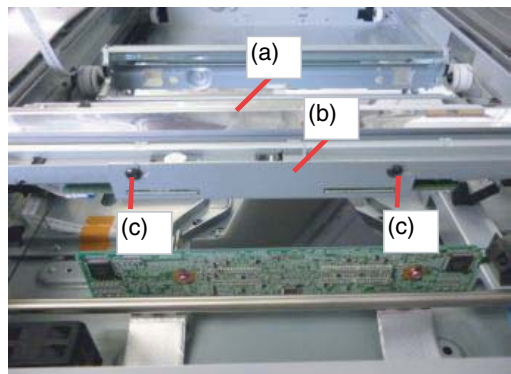
2) Remove the lamp unit (a).



3) Disconnect the connector (b) and (c) of the lamp unit (a).

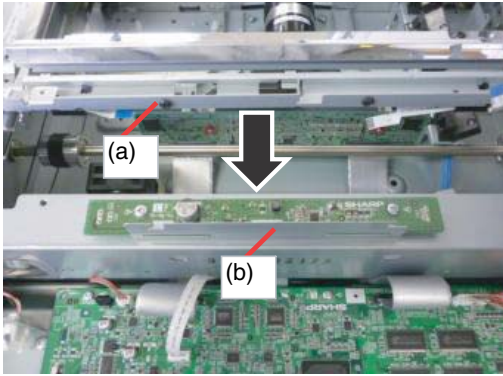


4) Loosen the screw (c) of the plate (b) which is fixing the lamp unit (a) and the DRV PWB.

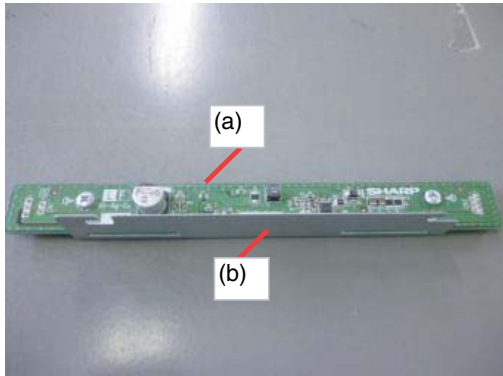




- 5) Remove the plate (b) which is fixing the DRV PWB from the lamp unit (a).

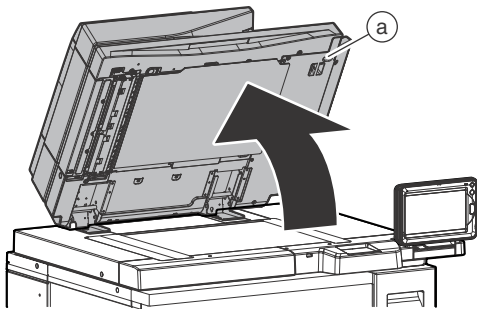


- 6) Remove the DRV PWB (a) from the plate (b).

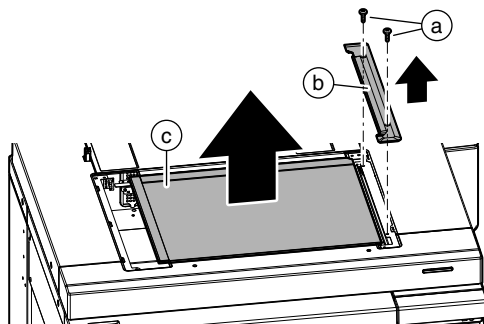


**c. Sub scanning document size sensor / Main scanning document size sensor**

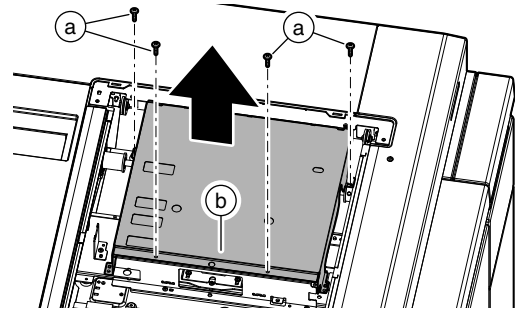
- 1) Open the DSPF unit (a).



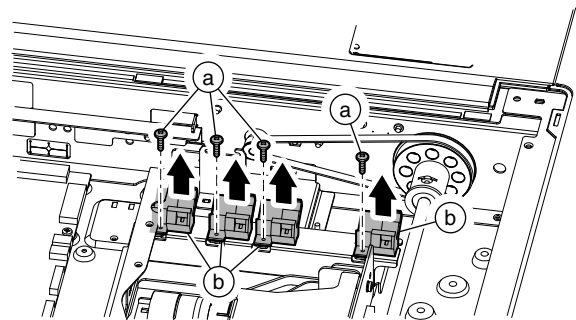
- 2) Remove the screw (a). Remove the table glass holder (b) and the table glass (c).



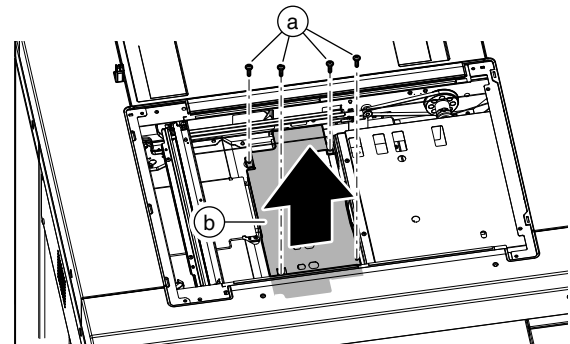
- 3) Remove the screw (a), and remove the dark box cover (b).



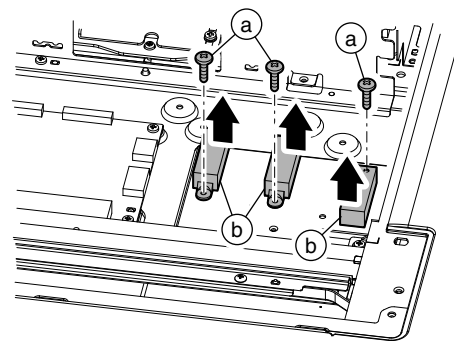
- 4) Remove the screw (a), and remove the sub scanning document size sensor (b).



- 5) Remove the screw (a), and remove the plate (b).

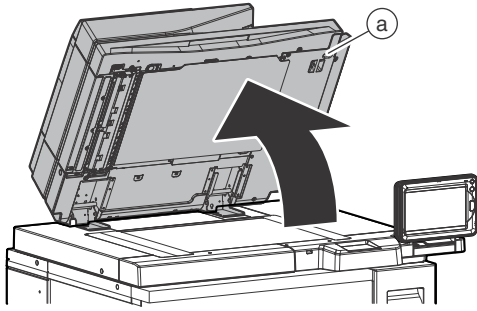


- 6) Remove the screw (a), and remove the main scanning document size sensor (b).

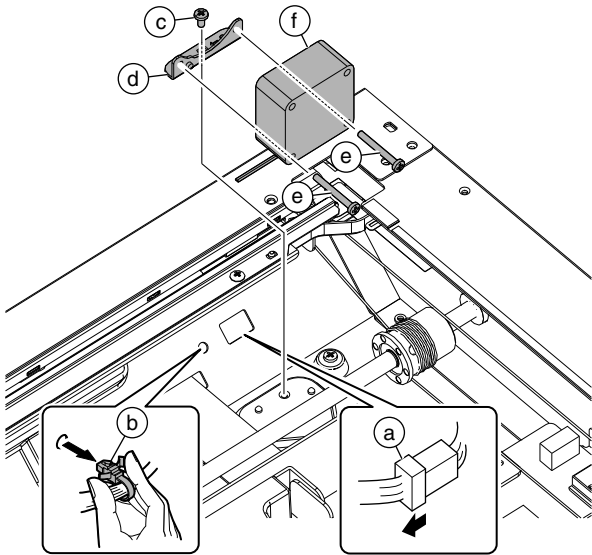


#### d. CCD cooling fan / CCD unit

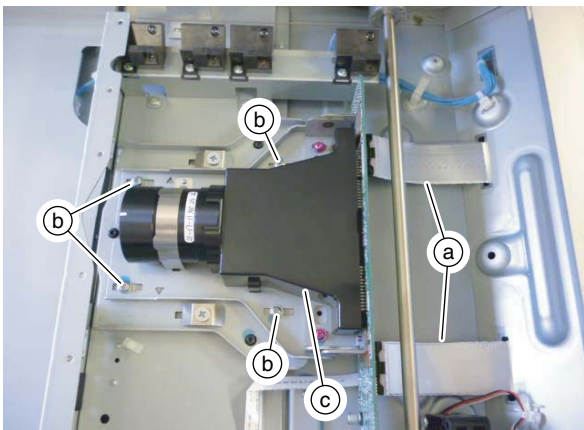
- 1) Open the DSPF unit (a).



- 2) Remove the table glass holder and the table glass.
- 3) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the plate (d). Remove the screw (e), and remove the CCD cooling fan (f).

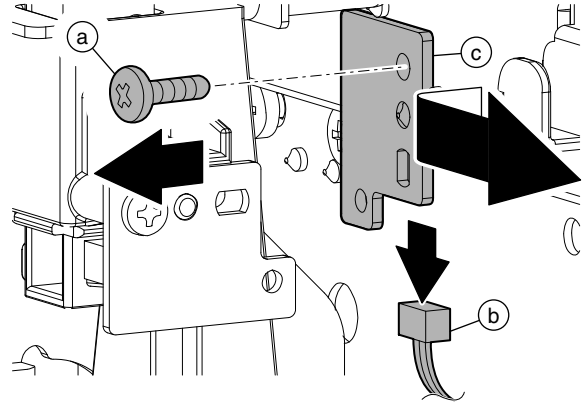


- 4) Remove the flat cable (a), and the screw (b). Remove the CCD unit (c).



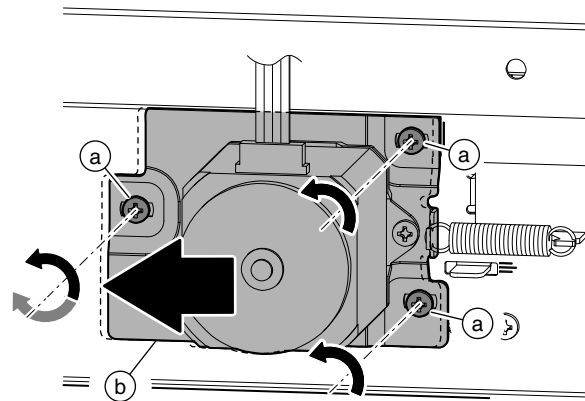
#### e. Scanner home position sensor

- 1) Remove the upper cabinet rear cover.
- 2) Remove the upper cabinet left.
- 3) Remove the screw (a), and disconnect the connector (b). Remove the scanner home position sensor (c).

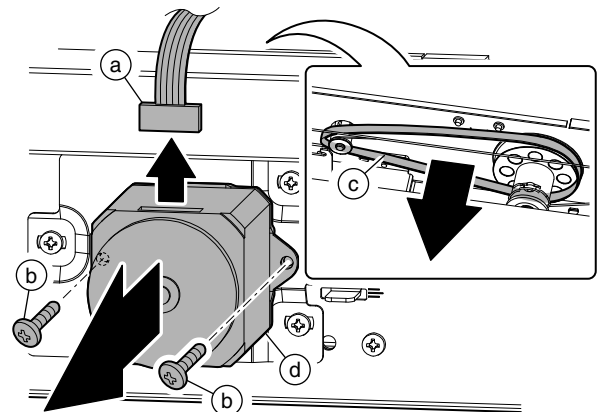


#### f. Scanner motor

- 1) Remove the upper cabinet rear cover and the upper cabinet rear.
- 2) Remove the table glass holder and the table glass.
- 3) Remove the SPF glass unit.
- 4) Loosen the screw (a). Slide the scanner motor unit (b), and tighten one screw to fix it.

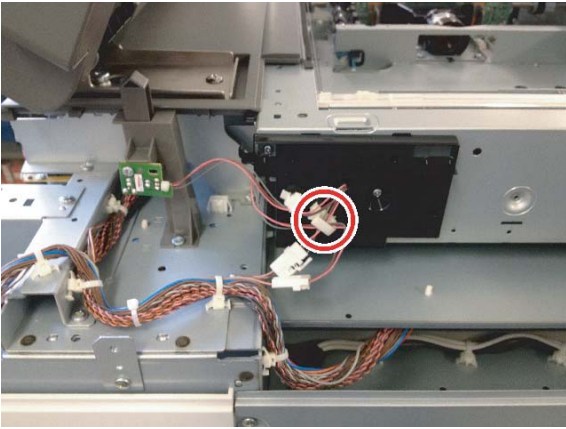


- 5) Disconnect the connector (a), and remove the screw (b). Remove the belt (c) and scanner motor (d).

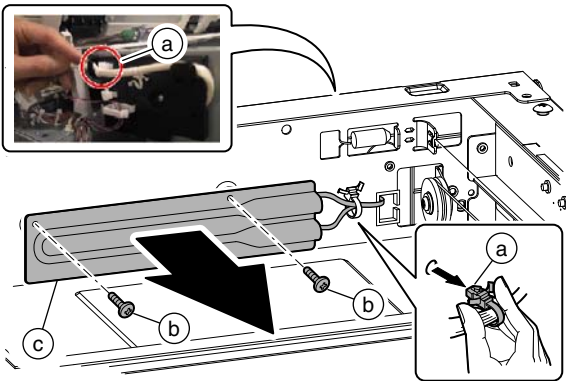


**g. Scanner dehumidifying heater**

- 1) Remove the upper cabinet left.
- 2) Remove the table glass holder and the table glass.
- 3) Remove the SPF glass unit.
- 4) Remove the screw, and remove the cover.



- 5) Remove the snap band (a). Remove the screw (b), and remove the scanner dehumidifying heater (c).



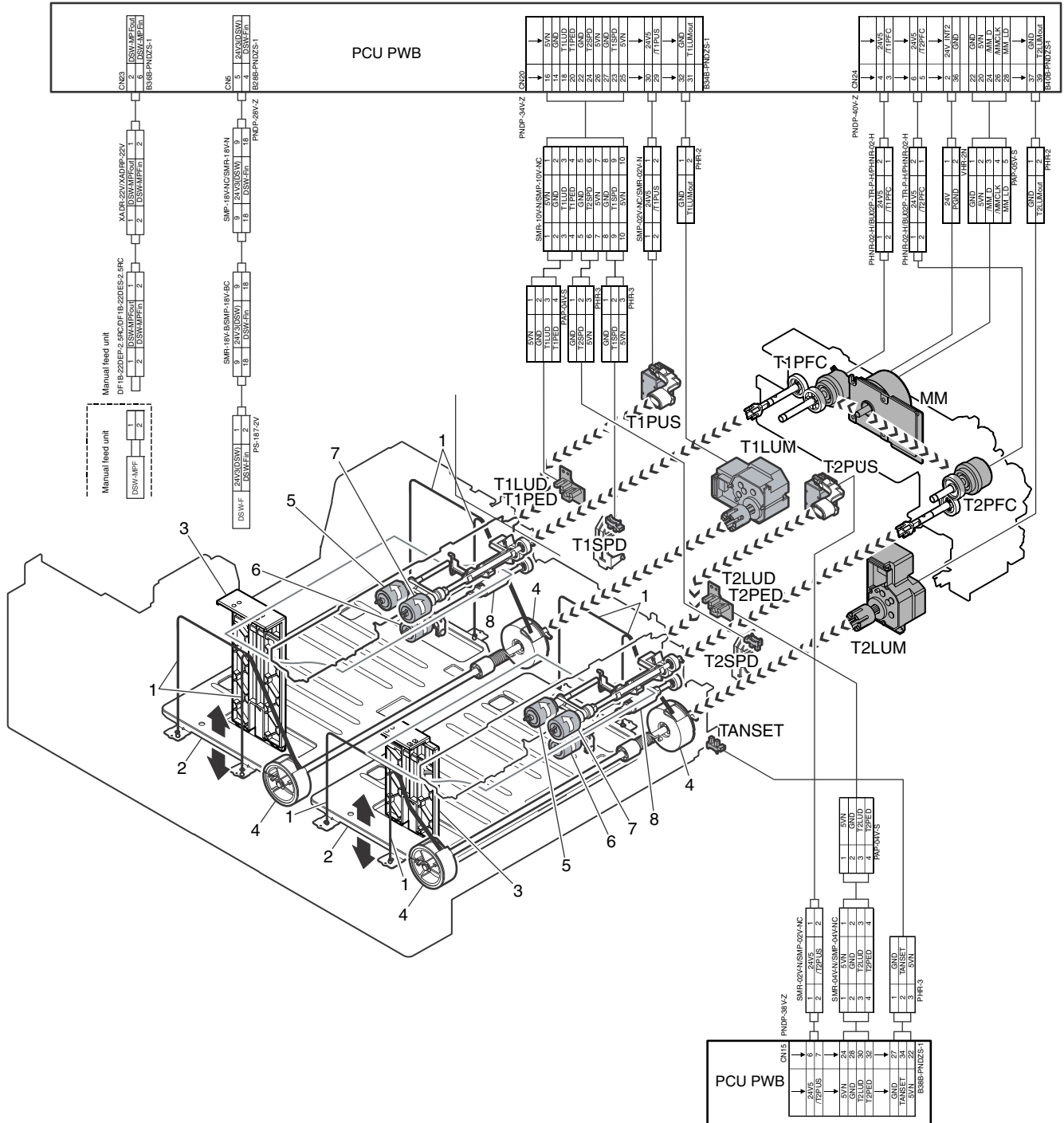
# [E] TRAY PAPER FEED SECTION

Paper capacity for each tray is as follow.

- Paper feed tray (Left): 1200 sheets
- Paper feed tray 2 (Right): 800 sheets
- Paper feed tray 3, 4: 500 sheets

## 1. Electrical and mechanism relation diagram

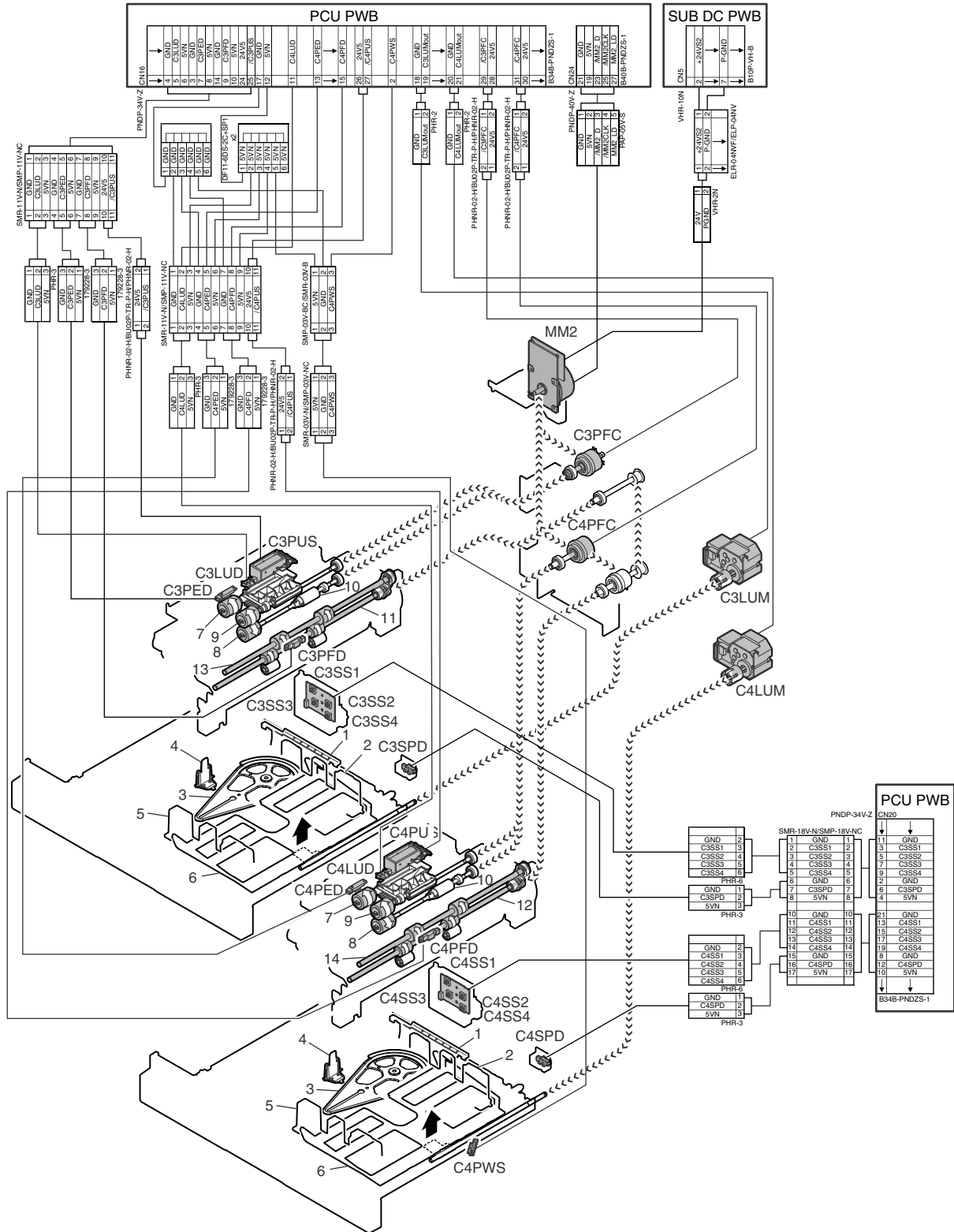
### A. Paper feed tray 1 and 2 section



| Signal name | Name  | Type                   | Function / Operation  |
|-------------|---|------------------------|---|
| T1SPD       | Paper remaining quantity detector (Paper feed tray 1) | Transmission type      | Paper remaining quantity detection. (Paper feed tray 1)   |
| T1PED       | Paper empty detector (Paper feed tray 1)              | Photo interrupter      | Paper empty detection.  |
| T1PFD       | Paper entry detector (Paper feed tray 1)              | Reflection type        | Detects paper pass.   |
| T1LUM       | Paper feed tray lift-up motor (Paper feed tray 1)     | DC brush motor         | Drives the lift plate of the paper feed tray. (This is the same as the T1LUM in the circuit diagram.) |
| T1LUD       | Paper upper limit detection (Paper feed tray 1)       | Photo interrupter      | Detects lift up of the paper feed tray 1.   |
| T1PUS       | Paper pickup solenoid (Paper feed tray 1)             | Electromagnetic clutch | Push down the paper pickup roller onto paper.   |
| T1PFC       | Paper feed clutch (Paper feed tray 1)                 | Electromagnetic clutch | Paper feed tray 1 section roller ON/OFF control.  |
| T2SPD       | Paper remaining quantity detector (Paper feed tray 2) | Transmission type      | Paper remaining quantity detection. (Paper feed tray 2)   |
| T2PED       | Paper empty detector (Paper feed tray 2)              | Photo interrupter      | Paper empty detection.  |
| T2PFD       | Paper entry detector (Paper feed tray 2)              | Reflection type        | Detects paper pass.   |
| T2LUM       | Paper feed tray lift-up motor (Paper feed tray 2)     | DC brush motor         | Drives the lift plate of the paper feed tray. (This is the same as the T2LUM in the circuit diagram.) |
| T2LUD       | Paper upper limit detection (Paper feed tray 1)       | Photo interrupter      | Drives the lift plate of the paper feed tray.   |
| T2PUS       | Paper pickup solenoid (Paper feed tray 2)             | Electromagnetic clutch | Push down the paper pickup roller onto paper.   |
| T2PFC       | Paper feed clutch (Paper feed tray 2)                 | Electromagnetic clutch | Paper feed tray 1 section roller ON/OFF control.  |
| TANSET      | Paper feed tray 1/2 (Tandem tray) detection signal    | Transmission type      | Paper feed tray 1/2 (Tandem tray) insertion detection.  |
| MM1         | Paper feed motor 1                                    | DC brushless motor     | Drives paper feed section 1 and 2.  |

| No. | Name  | Function / Operation  |
|-----|---|---|
| 1   | Lift wire                                       | Transmits drive power of the paper feed tray lift motor to the paper feed tray.                                       |
| 2   | Paper feed table                                | Paper load on this table.   |
| 3   | Paper feed tray unit 1, 2 regulation plates L/R | Regulates the paper width to restrict skew to minimize.   |
| 4   | Pulley  | Transmits drive power of the paper feed tray lift motor 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 and 4 section



| Signal name | Name                                    | Type                     | Function / Operation  |
|-------------|---|--------------------------|---|
| C3LUD       | Cassette 3 upper limit detection        | Transmission type        | Detects lift up of the cassette 3.  |
| C3LUM       | Paper lift up motor (Tray 3)            | DC brush motor           | Drives the paper tray lift.   |
| C3PED       | Cassette 3 paper presence detection     | Reflection type          | Detects the cassette 3 paper presence.  |
| C3PFC       | Cassette 3 paper transport clutch       | Electromagnetic clutch   | Controls ON/OFF of the paper feed roller in the tray 3 paper feed section.                |
| C3PFD       | Cassette 3 paper presence detection     | Reflection type          | Detects the cassette 3 paper presence.  |
| C3PUS       | Cassette 3 paper pickup solenoid        | Electromagnetic solenoid | Paper pickup solenoid (Tray 3)  |
| C3SPD       | Cassette 3 remaining quantity detection | Transmission type        | Detects the cassette 3 remaining quantity.  |
| C3SS1       | Cassette 3 size detection 1             | Tact switch              | Detects insertion of the cassette 3 by detecting one of cassette 3 size detection 1 to 4. |
| C3SS2       | Cassette 3 size detection 2             | Tact switch              |   |
| C3SS3       | Cassette 3 size detection 3             | Tact switch              |   |
| C3SS4       | Cassette 3 size detection 4             | Tact switch              |   |
| C4LUD       | Cassette 4 upper limit detection        | Transmission type        | Detects lift up of the cassette 4.  |
| C4LUM       | Paper lift up motor (Tray 4)            | DC brush motor           | Drives the paper tray lift.   |
| C4PED       | Cassette 4 paper presence detection     | Reflection type          | Detects the cassette 4 paper presence.  |
| C4PFC       | Cassette 4 paper transport clutch       | Electromagnetic clutch   | Controls ON/OFF of the paper feed roller in the tray 4 paper feed section.                |
| C4PFD       | Cassette 4 paper entry detection        | Reflection type          | Detects the cassette 4 paper pass.  |
| C4PUS       | Cassette 3 paper pickup solenoid        | Electromagnetic solenoid | Paper pickup solenoid (Tray 3)  |
| C4PWS       | Cassette 4 width detection              | Volume resistor          | Detects the cassette 4 width.   |
| C4SPD       | Cassette 4 remaining quantity detection | Transmission type        | Detects the cassette 4 remaining quantity.  |
| C4SS1       | Cassette 4 size detection 1             | Tact switch              | Detects insertion of the cassette 4 by detecting one of cassette 4 size detection 1 to 4. |
| C4SS2       | Cassette 4 size detection 2             | Tact switch              |   |
| C4SS3       | Cassette 4 size detection 3             | Tact switch              |   |
| C4SS4       | Cassette 4 size detection 4             | Tact switch              |   |
| MM2         | Paper feed motor 2                      | DC brushless motor       | Drives the paper feed section 2.  |

| 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  | Torque limiter                      | Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.  |
| 11  | Transport roller 3 (Drive)          | Transports paper from the paper feed tray 3 to the transport roller 4.   |
| 12  | Transport roller 1 (Drive)          | Transports paper from the paper feed tray 4 to the transport roller 2.   |
| 13  | Transport roller 4 (Drive)          | Transport paper from the transport roller 2 and the transport roller 3 to the transport roller 5.  |
| 14  | Transport roller 2 (Drive)          | Transports paper from the transport roller 1 to the transport roller 2.  |

## 2. Operational descriptions

### 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 operations to lift the tray.
- 3) The paper upper limit sensor turns on to stop the tray at the specified position.

### C. Each paper feed tray paper size detection method

Paper feed tray (Paper feed tray 3), multi purpose 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  $\pm 6$  mm).

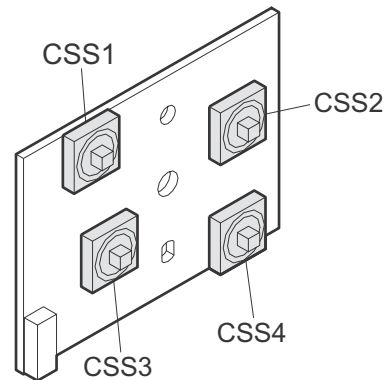
| Width size detection pattern | Paper size      | Standard value [mm] | Range [mm]     |
|------------------------------|-----------------|---------------------|----------------|
| A                            | A3/A4           | 297.0               | 303.0 to 291.0 |
| B                            | 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 |

### B. Paper feed operation

- 1) When copy/print operation is started, the motors (MM1, MM2) and the clutch (C1PFC) are turned on to turn on the colenoid (C1PUS) 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.

#### 2) Paper size detection

The paper size detection is made by the combination of the cassette paper size detector 1 to 4.



Relationship between paper size and detection by the paper size detector.

| 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) Combination of size detection.

| 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. Remaining paper detection

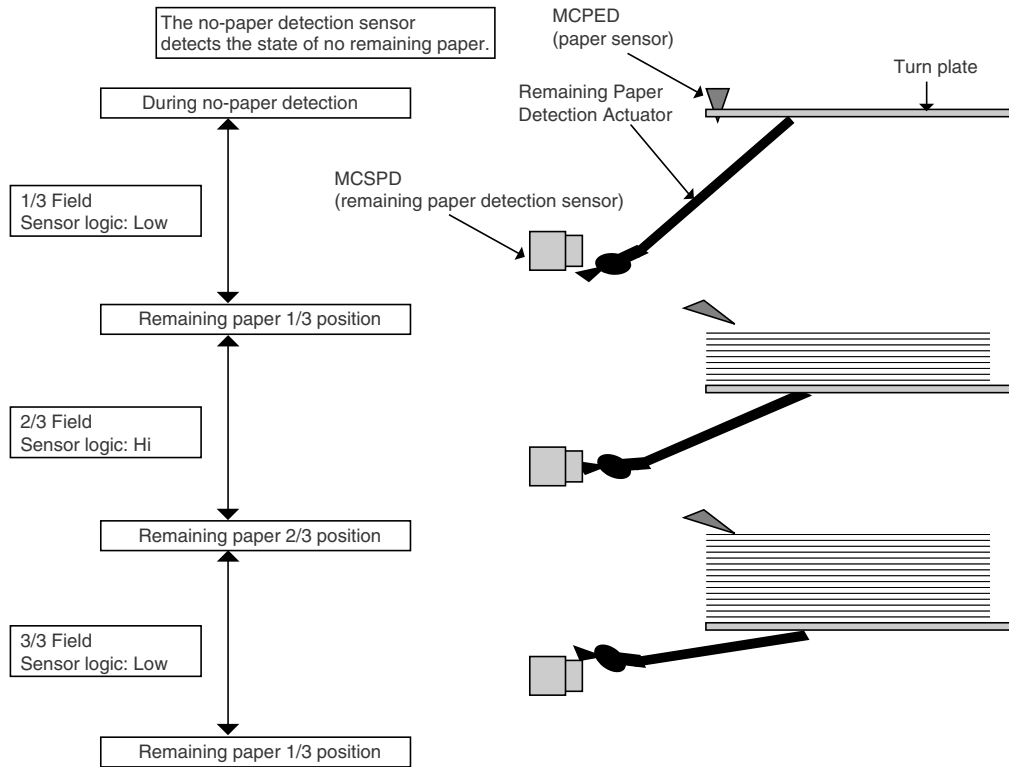
### (1) Remaining paper detection

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.

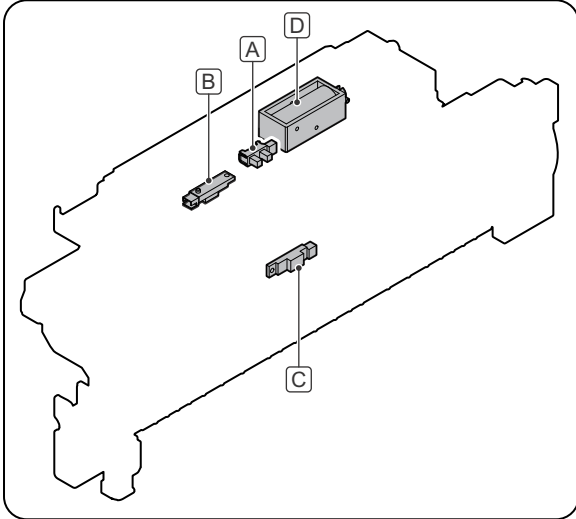
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



### 3. Disassembly and assembly

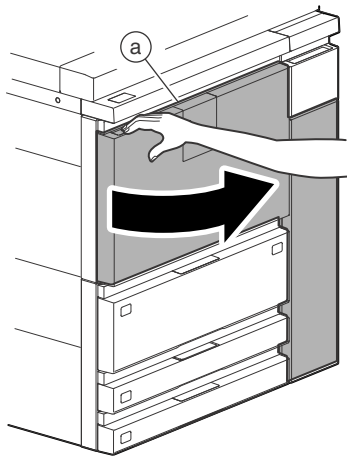
#### A. Tray 3, 4 paper feed unit

| Unit                      | Parts | Page                                |         |
|---------------------------|-------|-------------------------------------|---------|
| Tray 3, 4 paper feed unit | A     | Cassette 3, 4 upper limit detection | E - 8/a |
|                           | B     | Cassette 3, 4 paper empty detection |         |
|                           | C     | Cassette 3, 4 paper entry detection |         |
|                           | D     | Cassette 3, 4 paper pickup solenoid |         |

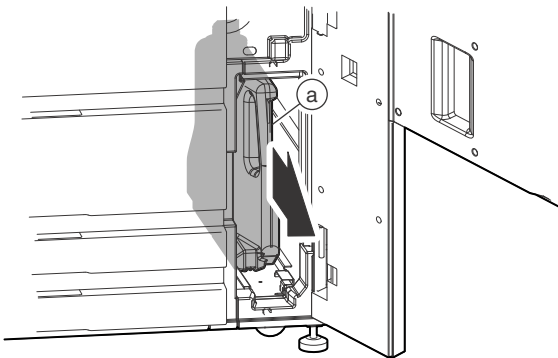


#### (1) Tray 3, 4 paper feed unit

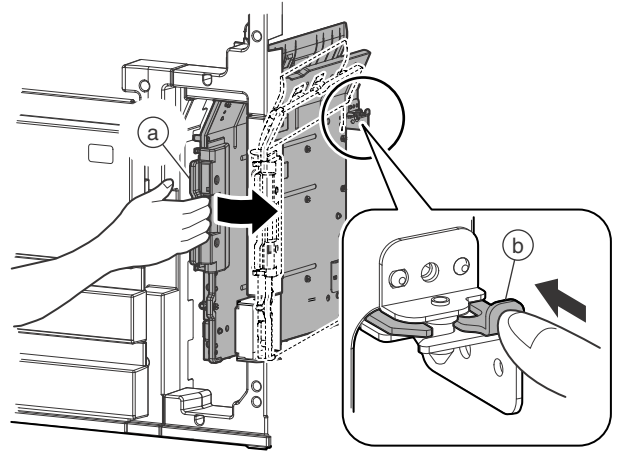
- 1) Open the front cover (a).



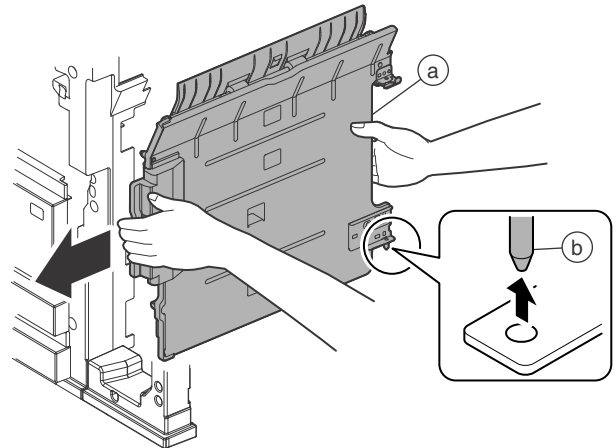
- 2) Remove the toner collection container (a).



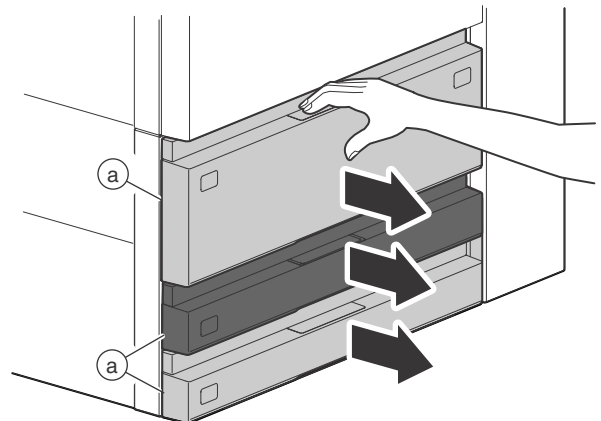
- 3) Remove the right cabinet center.
  - \* The following procedure can be performed without removing the right cabinet center. However, the procedure is easier when the right lower cabinet is removed.
- 4) Open the vertical transport door unit (a). Push the lever (b) to release the lock of the vertical transport door unit (a).



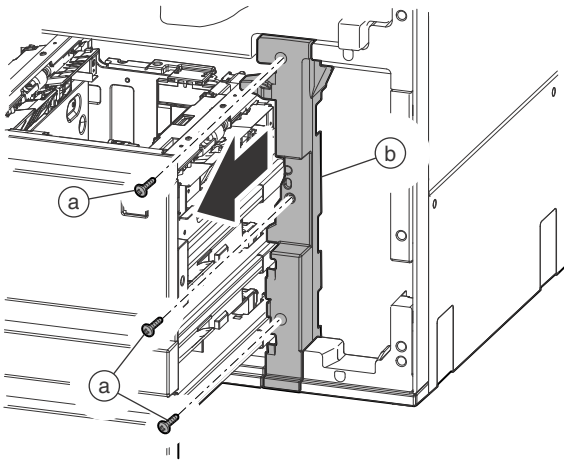
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



- 6) Pull out all paper feed tray (a).

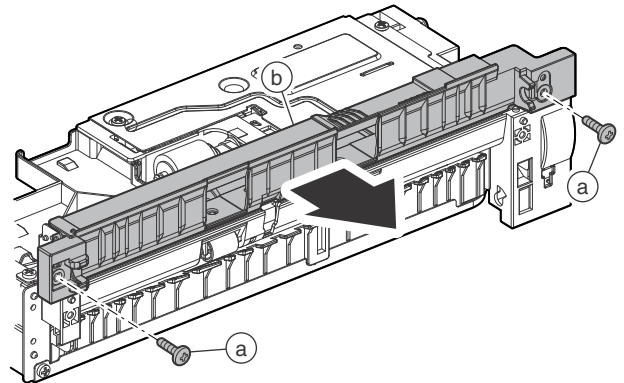


7) Remove the screw (a), and remove the cover (b).

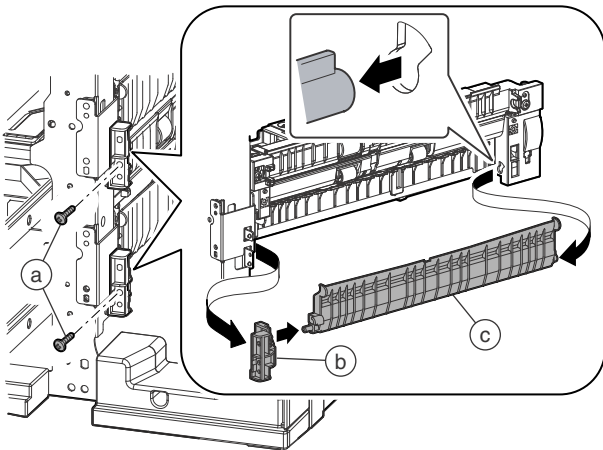


a. Cassette 3, 4 upper limit detection / Cassette 3, 4 paper empty detection / Cassette 3, 4 paper entry detection / Cassette 3, 4 paper pickup solenoid

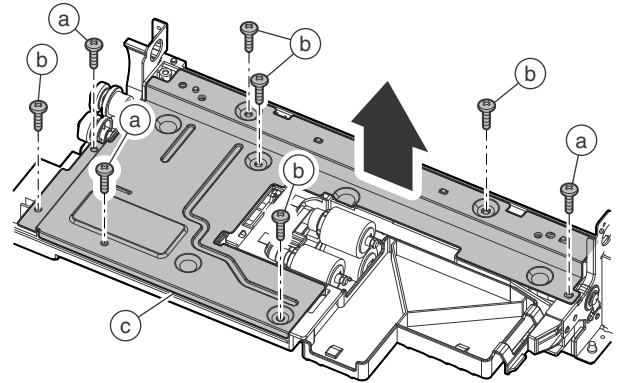
- 1) Remove the tray 3, 4 paper feed unit.
- 2) Remove the screw (a), and remove the paper guide (b).



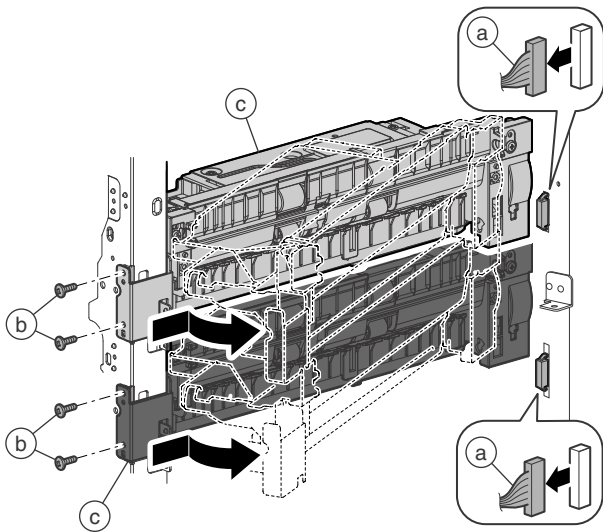
8) Remove the screw (a), and remove the fulcrum block (b) and the paper guide (c).



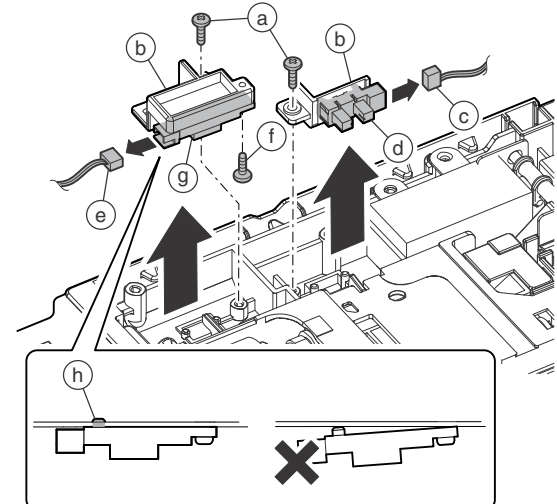
3) Remove the screw (a) and the screw (b). Remove the cover (c).



9) Disconnect the connector (a). Remove the screw (b), and remove the tray 3, 4 paper feed unit (c).



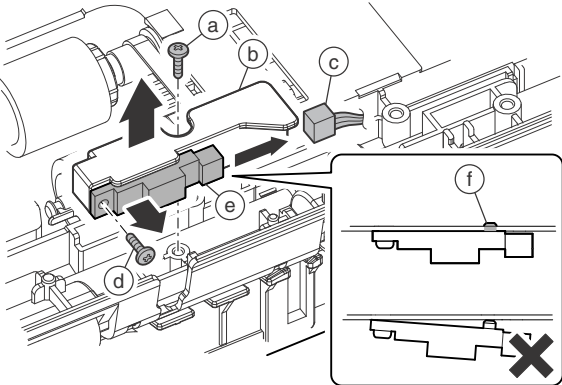
4) Remove the screw (a), and remove the holder (b). Disconnect the connector (c), and remove the cassette 3, 4 upper limit detection (d). Disconnect the connector (e), and remove the screw (f). Remove the cassette 3, 4 paper empty detection (g).



\* When installing the sensor, check that the boss (h) of the sensor is securely engaged, and then fix it with the screw.

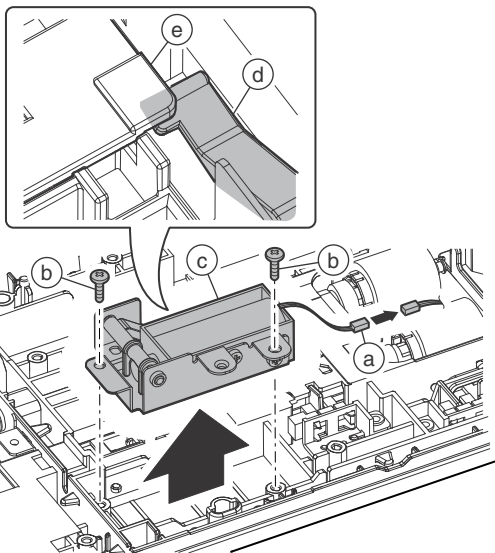
- 5) Remove the screw (a), and remove the holder (b). Disconnect the connector (c), and remove the screw (d). Remove the cassette 3, 4 paper entry detection (e).

\* When installing the sensor, check that the boss (f) of the sensor is securely engaged, and then fix it with the screw.



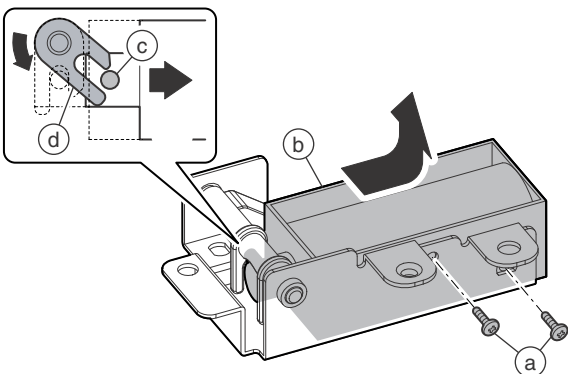
- 6) Disconnect the connector (a), and remove the screw (b). Remove the cassette 3, 4 paper pickup solenoid unit (c).

\* When installing, arrange so that the arm (d) comes under the holder (e).



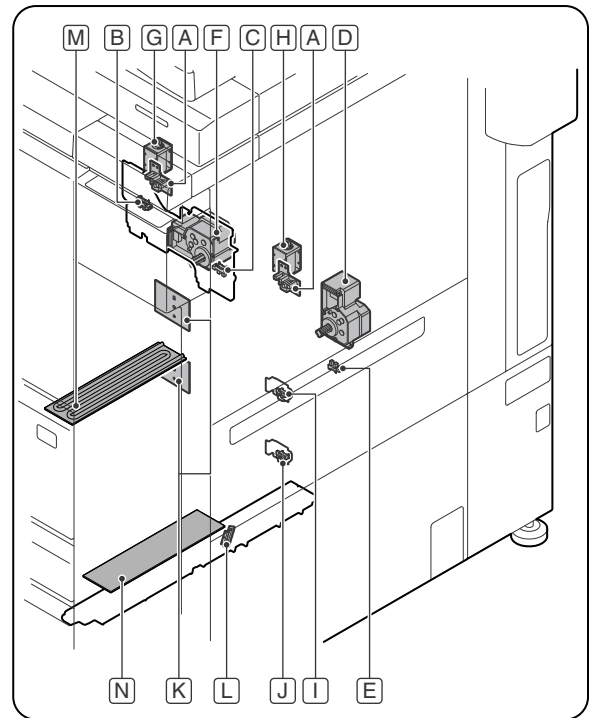
- 7) Remove the screw (a), and remove the tray 3, 4 paper pickup solenoid (b).

\* When installing, check that the pin (c) of the solenoid is securely engaged in the arm (d).



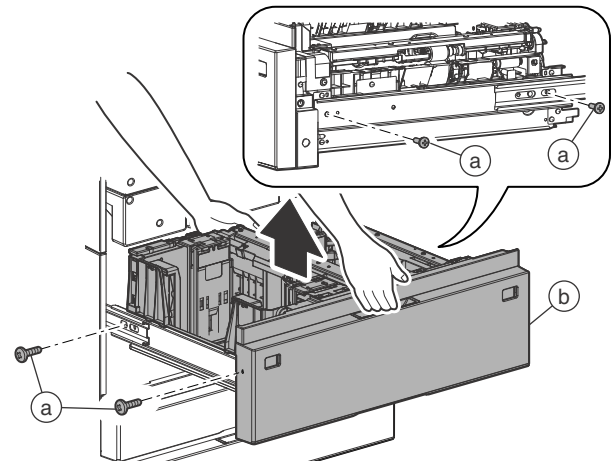
## B. Others

| Parts |   | Page       |
|-------|---|------------|
| A     | Tandem sensor PWB                           | E - 9/(1)  |
| B     | Cassette 1 remaining quantity detection     |            |
| C     | Cassette 2 remaining quantity detection     |            |
| D     | Paper lift motor (Tray 2)                   | E - 10/(2) |
| E     | Tandem presence detection                   |            |
| F     | Paper lift motor (Tray 1)                   | E - 11/(3) |
| G     | Cassette 1 paper pickup solenoid            |            |
| H     | Cassette 2 paper pickup solenoid            | E - 12/(4) |
| I     | Cassette 3 remaining quantity detection     |            |
| J     | Cassette 4 remaining quantity detection     | E - 13/(5) |
| K     | Size detection PWB                          |            |
| L     | Cassette 4 width detection                  | E - 13/(6) |
| M     | Dehumidifying heater (Paper feed tray 1, 2) |            |
| N     | Dehumidifying heater (Paper feed tray 3, 4) | E - 14/(7) |

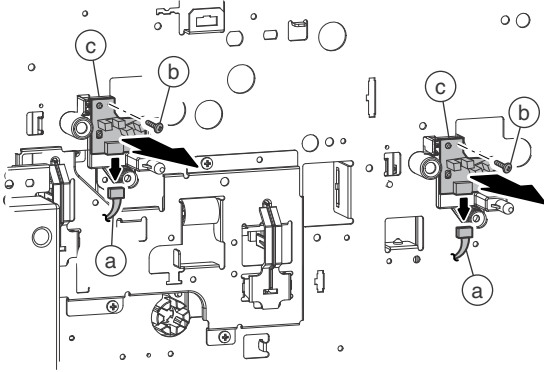


- (1) Tandem sensor PWB / Cassette 1 remaining quantity detection / Cassette 2 remaining quantity detection

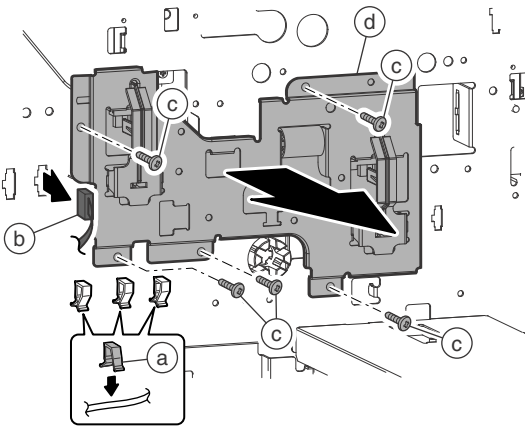
- 1) Remove the screw (a), and remove the tray 1, 2 (b).



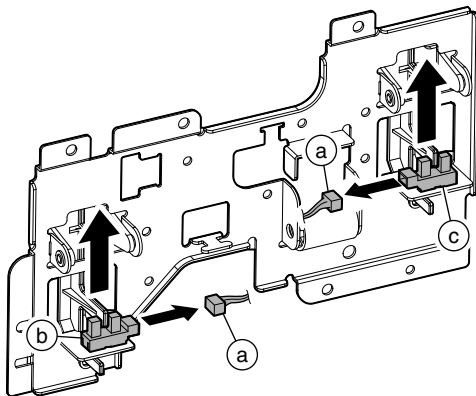
- 2) Disconnect the connector (a), and remove the screw (b). Remove the tandem sensor PWB (c).



- 3) Open the wire saddle (a), and disconnect the connector (b). Remove the screw (c), and remove the lock arm unit (d).

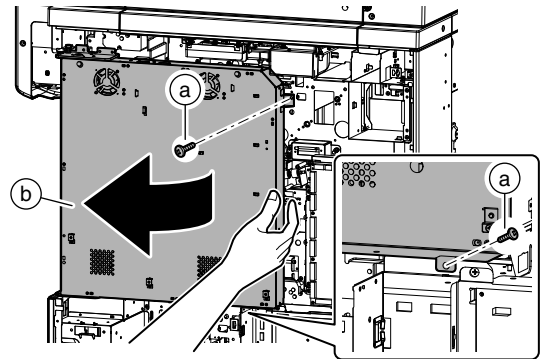


- 4) Disconnect the connector (a), and remove the cassette 1 remaining quantity detection (b) and the cassette 2 remaining quantity detection (c).

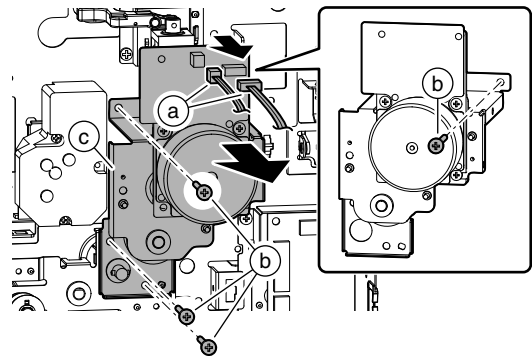


## (2) Paper lift motor (Tray 2) / Tandem presence detection

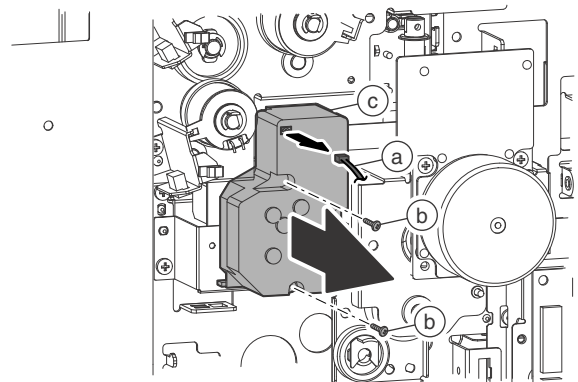
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



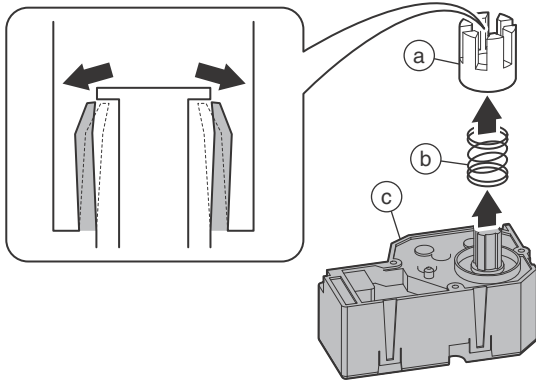
- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).



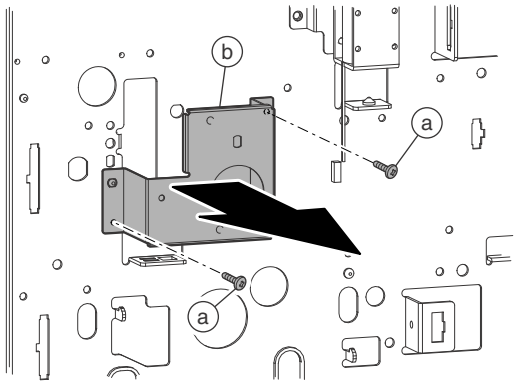
- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (tray 2) (c).



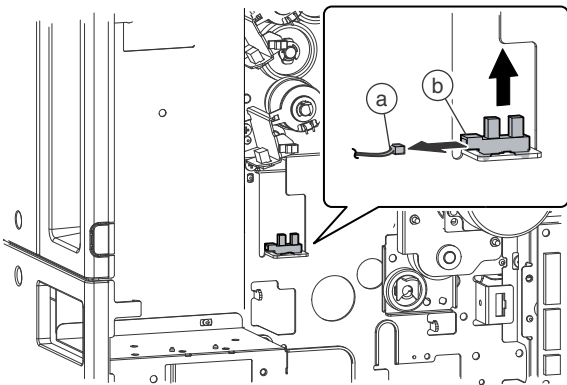
- 5) Remove the coupling (a) and the spring (b) from the paper lift motor (c).



- 6) Remove the screw (a), and remove the mounting plate (b).

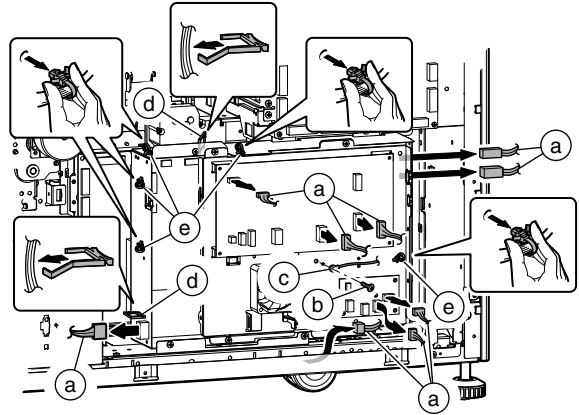


- 7) Disconnect the connector (a), and remove the tandem presence detection (b).

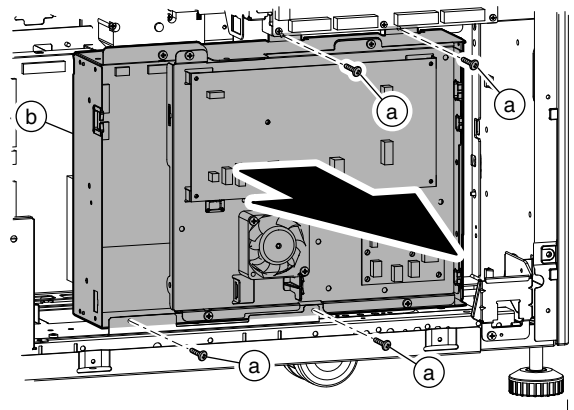


### (3) Paper lift motor (Tray 1)

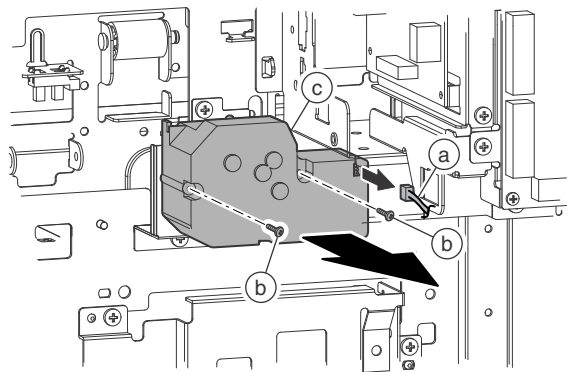
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Disconnect the connector (a), and remove the screw (b), and the earth wire (c). Open the edge saddle (d), and remove the snap band (e).



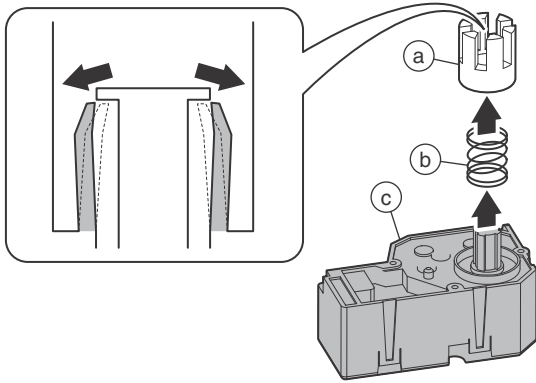
- 3) Remove the screw (a), and remove the AC-OP power unit (b).



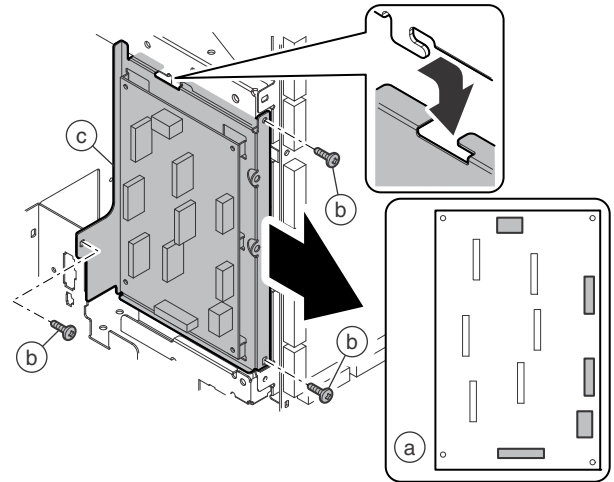
- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (tray 1) (c).



- 5) Remove the coupling (a) and the spring (b) from the paper lift motor (c).

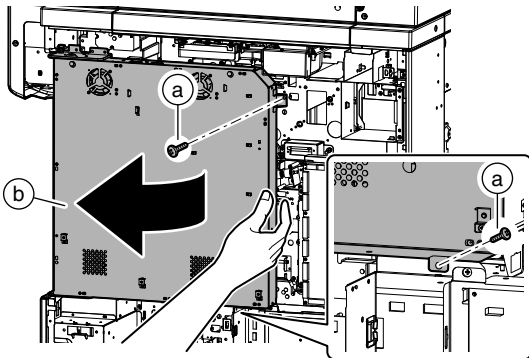


- 4) Disconnect the connector (a). Remove the screw (b), and remove the driver PWB (paper exit) unit (c).

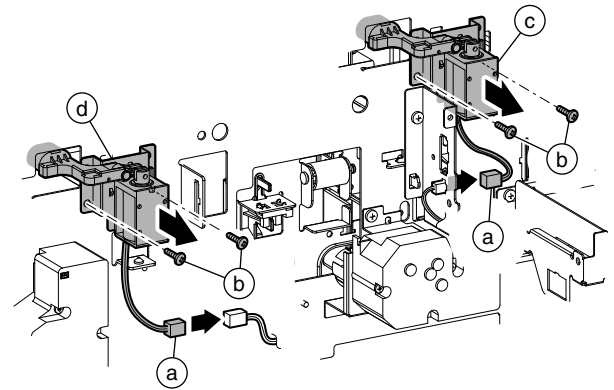


**(4) Cassette 1 paper pickup solenoid / Cassette 2 paper pickup solenoid**

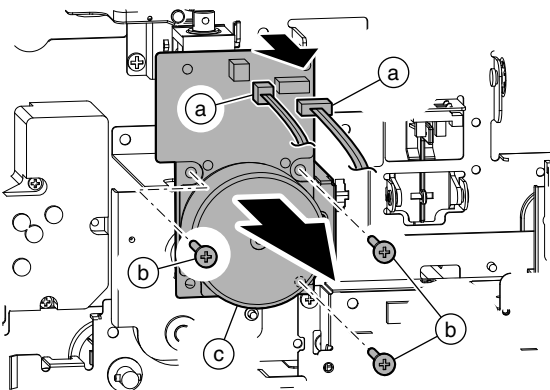
- 1) Remove the rear cabinet and the right cabinet rear upper.  
2) Remove the screw (a), and open the control box (b).



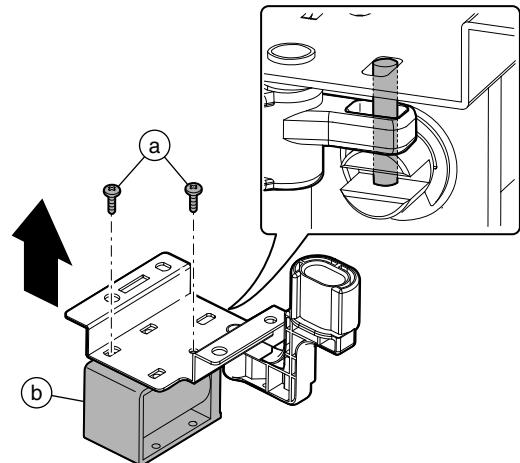
- 5) Disconnect the connector (a), and remove the screw (b). Remove the cassette 1 paper pickup solenoid unit (c) and the cassette 2 paper pickup solenoid unit (d).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 1 (c).

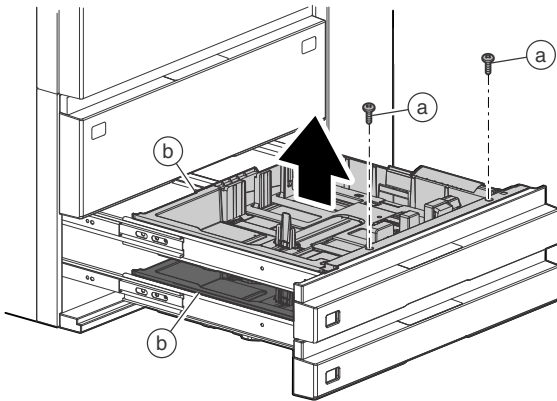


- 6) Remove the screw (a), and remove the cassette 1 and 2 paper pickup solenoid (b).

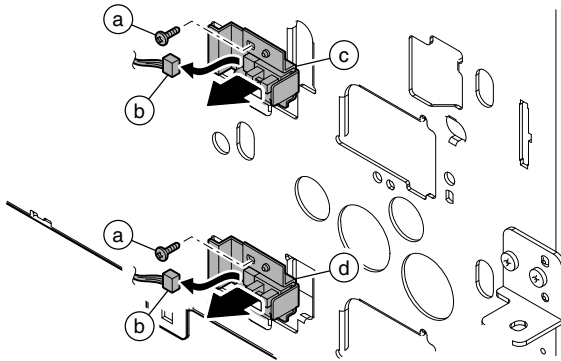


**(5) Cassette 3 remaining quantity detection / Cassette 4 remaining quantity detection / Size detection PWB**

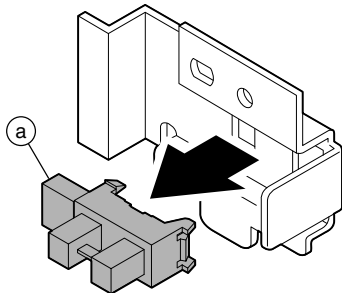
- 1) Remove the screw (a), and remove the trays 3 and 4 (b).



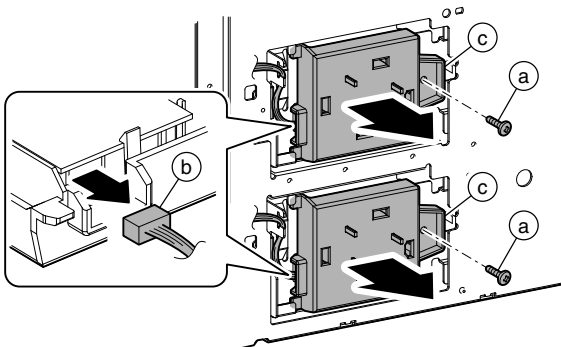
- 2) Remove the screw (a), and disconnect the connector (b). Remove the cassette 3 remaining quantity detection unit (c) and the cassette 4 remaining quantity detection unit (d).



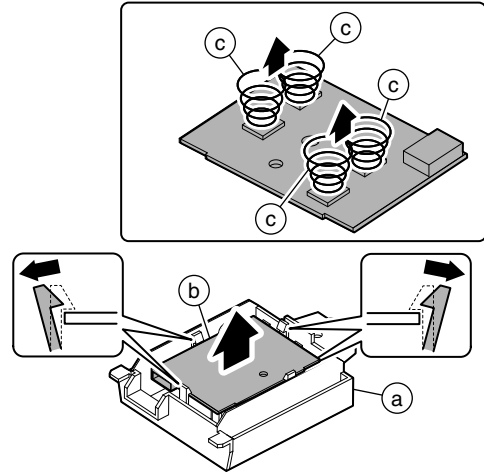
- 3) Remove the cassette 3 and 4 remaining quantity detection (a).



- 4) Remove the screw (a), and disconnect the connector (b). Remove the size detection PWB unit (c).

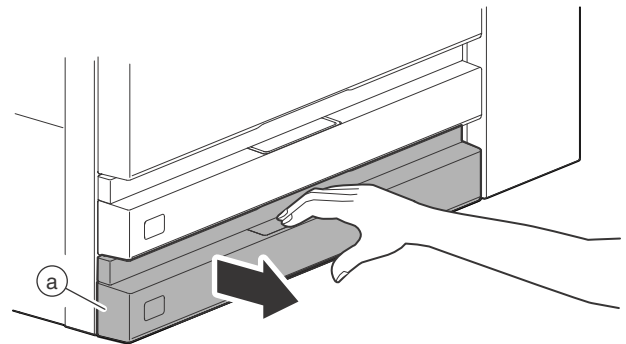


- 5) Remove the size detection PWB (b) from the holder (a). Remove the spring (c).

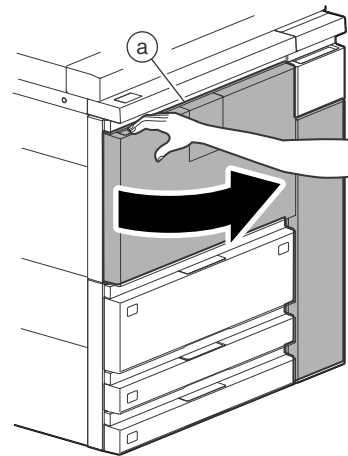


**(6) Cassette 4 width detection**

- 1) Remove the right cabinet center.  
2) Pull out the tray 4 (a).

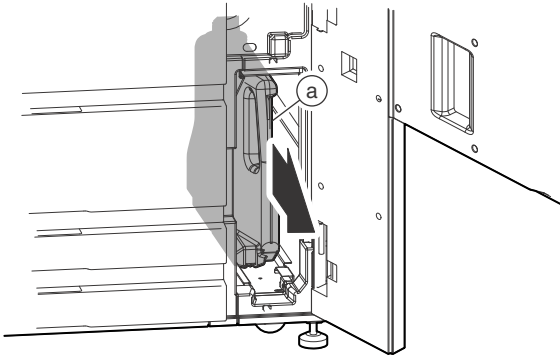


- 3) Open the front cover (a).

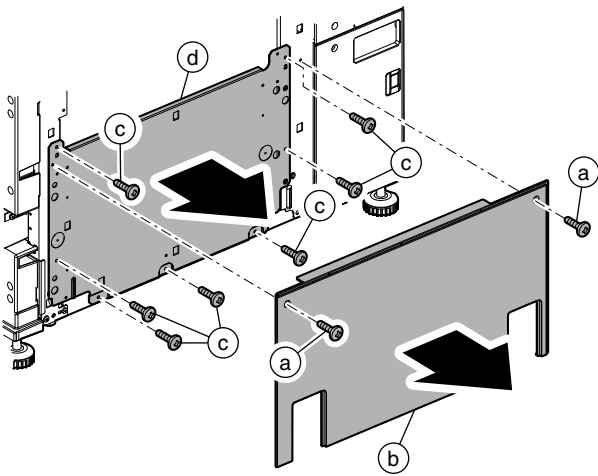




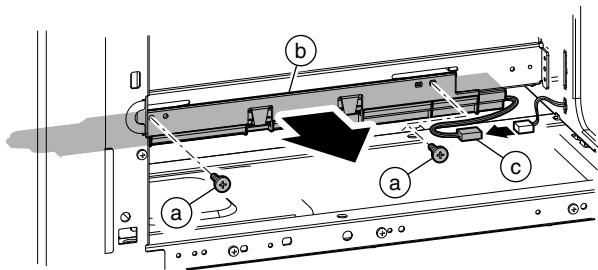
4) Remove the toner collection container (a).



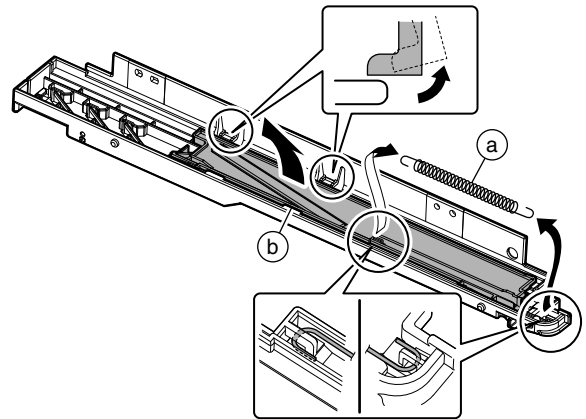
5) Remove the screw (a), and remove the cabinet (b). Remove the screw (c), and remove the plate (d).



6) Remove the screw (a), and remove the holder (b). Disconnect the connector (c).

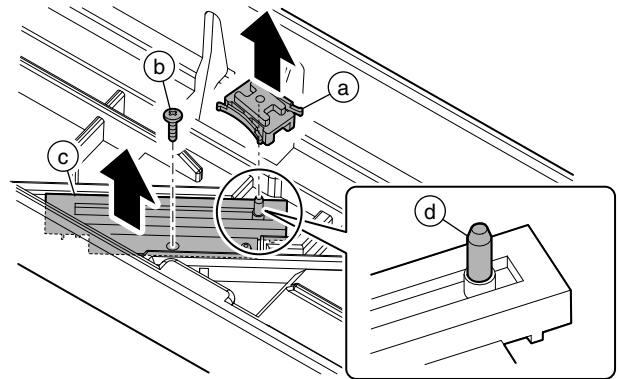


7) Remove the spring (a). Remove the mounting plate (b).



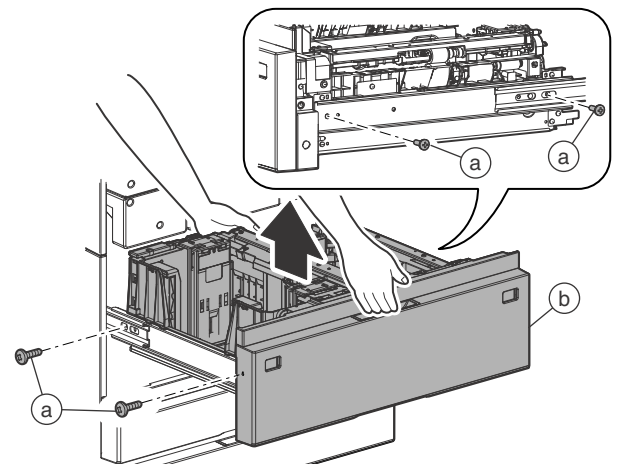
8) Remove the arm (a). Remove the screw (b), and remove the cassette 4 width detection (c).

\* When installing, insert the projection (d) of the cassette 4 width detection into the arm.

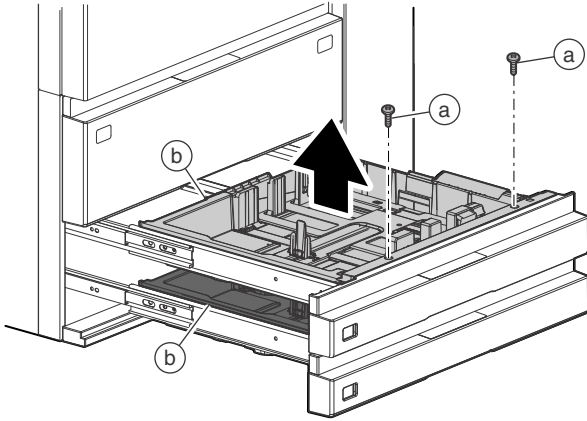


**(7) Dehumidifying heater (Paper feed tray 1, 2) / Dehumidifying heater (Paper feed tray 3, 4)**

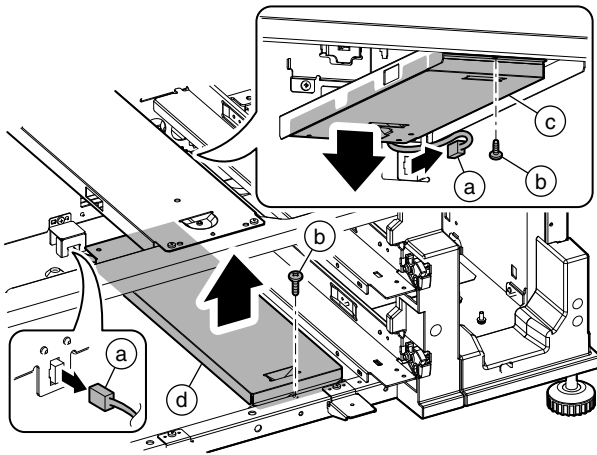
1) Remove the screw (a), and remove the tray 1, 2 (b).



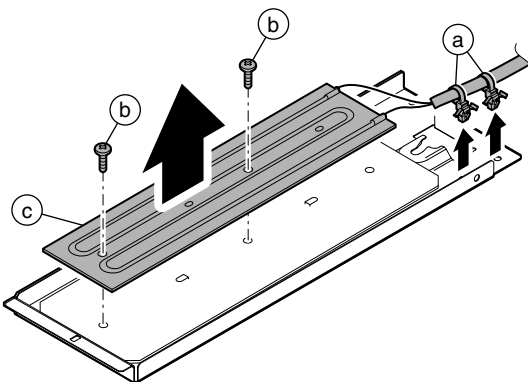
- 2) Remove the screw (a), and remove the trays 3 and 4 (b).



- 3) Disconnect the connector (a). Remove the screw (b), and remove the dehumidifying heater (Paper feed tray 1, 2) unit (c), and the dehumidifying heater (Paper feed tray 3, 4) unit (d).



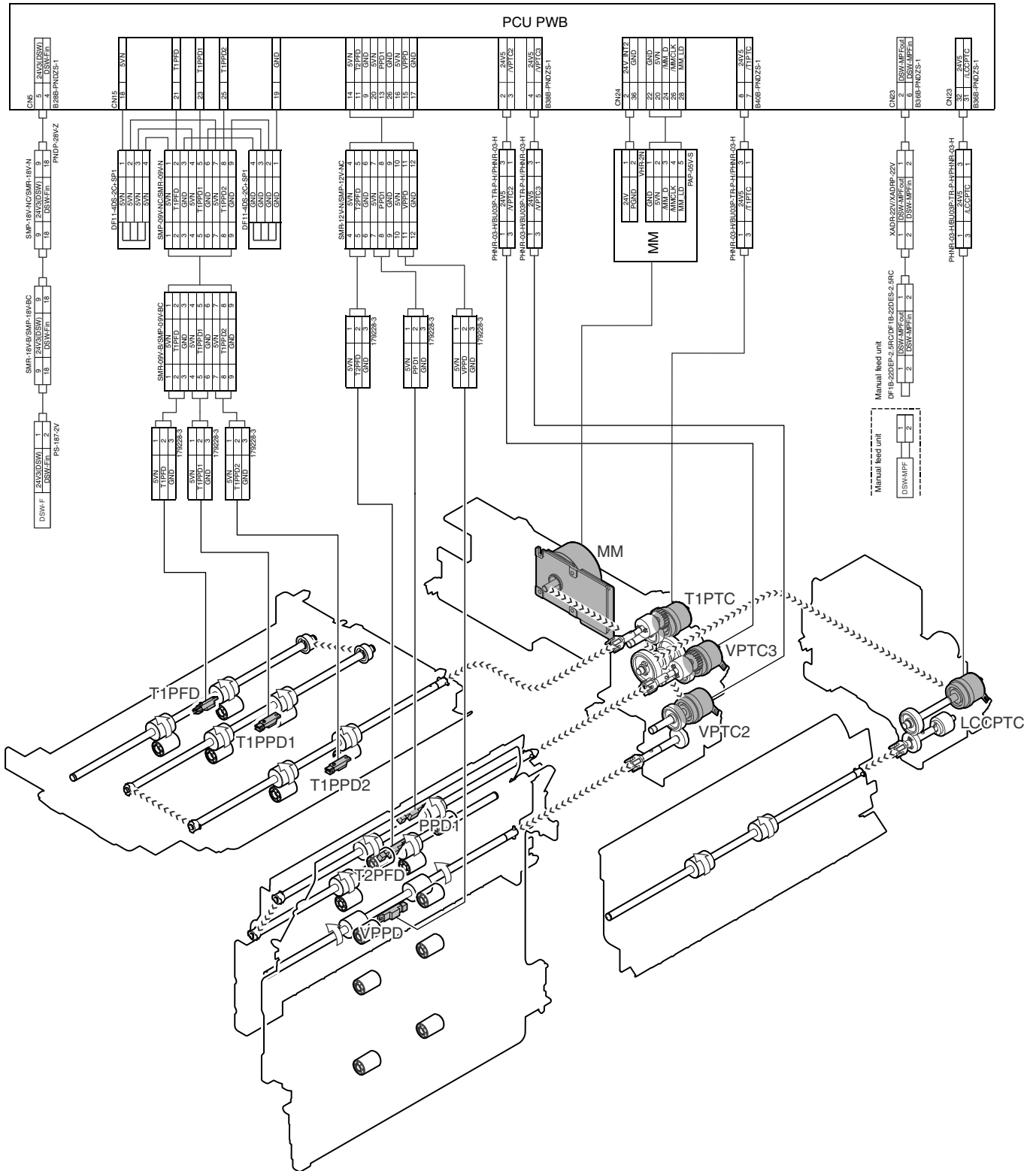
- 4) Remove the snap band (a). Remove the screw (b), and remove the dehumidifying heater (c).



# [F] PAPER TRANSPORT SECTION

## 1. Electrical and mechanism relation diagram

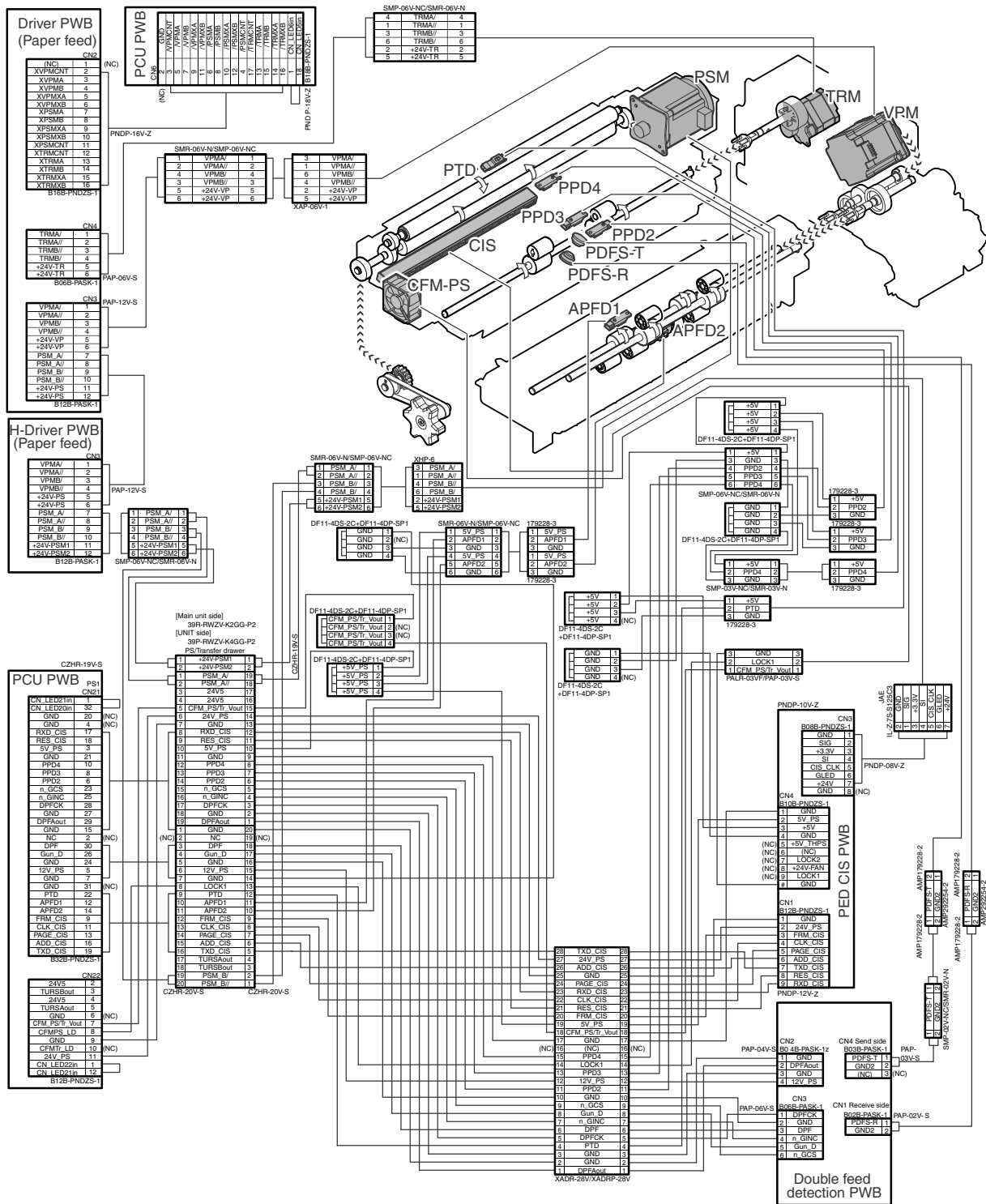
### A. Paper pass / Vertical transport / LCC interface transport section



| Signal name | Name                             | Type                   | Function / Operation                     |
|-------------|----------------------------------|------------------------|--|
| T1PFD       | Cassette 1 paper entry detection | Reflection type        | Detects the cassette 1 paper pass.       |
| T1PPD1      | Cassette 1 transport detection 1 | Reflection type        | Detects the cassette 1 paper transport.  |
| T1PPD2      | Cassette 1 transport detection 2 | Reflection type        | Detects the cassette 1 paper transport.  |
| T1PTC       | Horizontal transport clutch      | Electromagnetic clutch | Controls ON/OFF of the transport roller. |
| T2PFD       | Cassette 2 paper entry detection | Reflection type        | Detects the cassette 2 paper pass.       |



(2) 105/120cpm machine



| Signal name | Name  | Type                | Function/Operation  |
|-------------|---|---------------------|---|
| APFD1       | ADU paper entry detection 1                 | Reflection type     | Detects the ADU paper pass.   |
| APFD2       | ADU paper entry detection 2                 | Reflection type     | Detects the ADU paper pass.   |
| CFM-PS      | PS cooling fan (120/105cpm machine only)    | Axial-flow fan (40) | Cools the PS section.   |
| DPFS-R      | Double feed sensor (receiving)              | Supersonic sensor   | Detects paper double feed.  |
| DPFS-T      | Double feed sensor (transmitting)           | Supersonic sensor   | Detects paper double feed.  |
| PPD2        | Transport detection 2                       | Reflection type     | Detects paper transport in the transport path.                                      |
| PPD3        | Transport detection 3                       | Reflection type     | Detects paper transport in the transport path.                                      |
| PPD4        | Transport detection 4                       | Reflection type     | Detects paper transport in the transport path.                                      |
| PSM         | PS motor                                    | Stepping motor      | Drive the PS roller.  |
| PTD         | PS section paper lead edge detection sensor | Reflection type     | Detects a shift at the paper lead edge in the PS section. (105/120cpm machine only) |
| TRM         | Transport motor                             | Stepping motor      | Drives the transport roller.  |
| VPM         | Vertical transport motor                    | Stepping motor      | Drives the vertical transport roller.   |

## 2. Operational descriptions

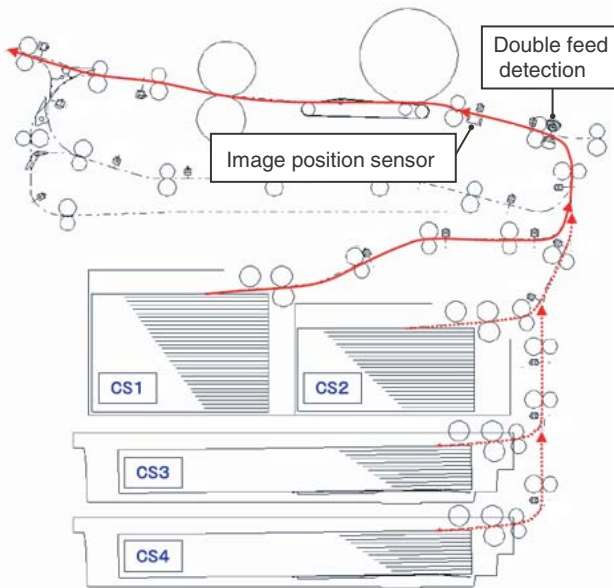
### A. Outline

The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

Paper from paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

The detection of double-feed is done before transferring paper to the registration roller, and the check of the off-center is carried out by the image position sensor.

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.



#### [Operation of Image position sensor]

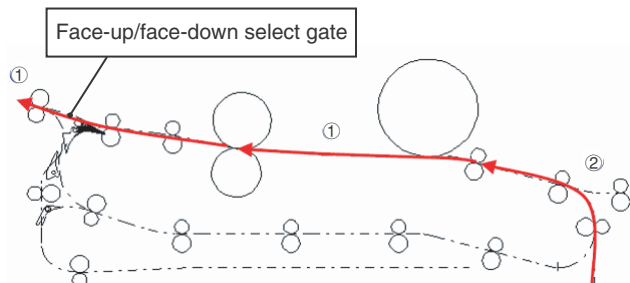
It detects the position of the paper transferred by the contact image sensor (CIS) and automatically adjusts the off center.

\* CIS: Contact Image Sensor

It is a contact image sensor integrated with the light source, the lens (Selfoc®) and the sensor.

### B. Paper transport operation

Straight-Through Path (No Inversion, No Duplexing)



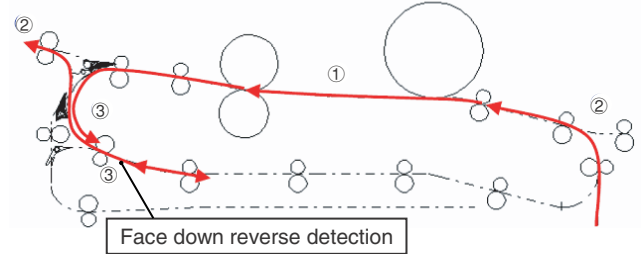
The paper transported from the each tray section is sent to the paper exit roller (which is driven by the paper exit motor (POM)) with the transport roller).

### Paper transportation speed

|                  | Papaer transport speed | Unit (mm/s)                 |
|------------------|------------------------|-----------------------------|
| ①: Normal speed  | 540                    | (Process speed)             |
| ②: High speed I  | 600                    | (Paper feed and exit speed) |
| ③: High speed II | 1000                   | (Switchback speed)          |

### C. Paper face-down output operation

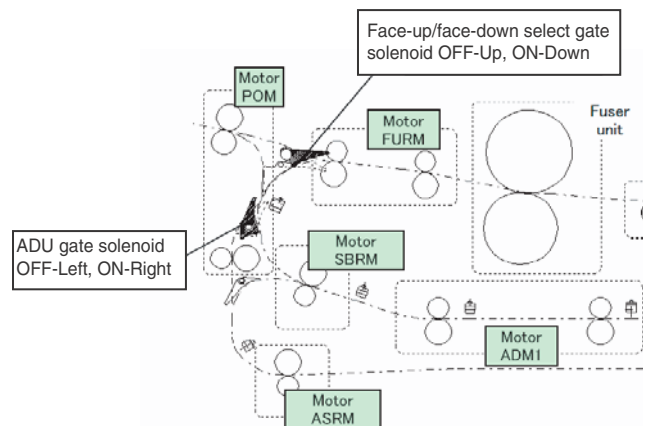
Inversion Path (Face-down Output, No Duplexing)



When face-down print is selected, the paper is passed under the Face-up/face-down select gate.

After paper passing, the paper exit gate guide falls down by its own weight.

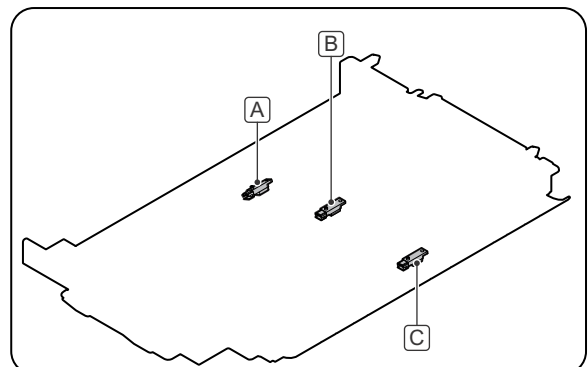
When the specified time has passed from detection of the paper lead edge by Face down reverse detection, Paper exit reverse motor (SBRM) rotates reverse direction in the specified time. (The rotation time differs depending on the paper size.)



## 3. Disassembly and assembly

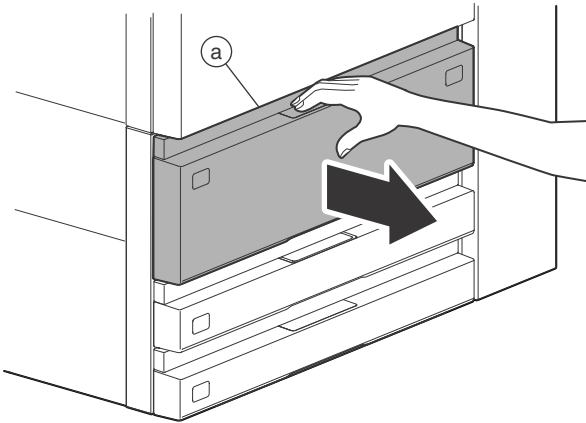
### A. Paper pass unit

| Unit            | Parts | Page                             |         |
|-----------------|-------|----------------------------------|---------|
| Paper pass unit | A     | Cassette 1 paper entry detection | F - 6/a |
|                 | B     | Cassette 1 transport detection 1 |         |
|                 | C     | Cassette 1 transport detection 2 |         |

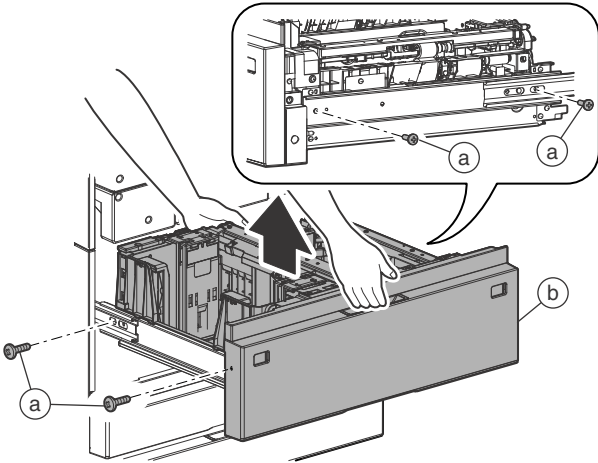


## (1) Paper pass unit

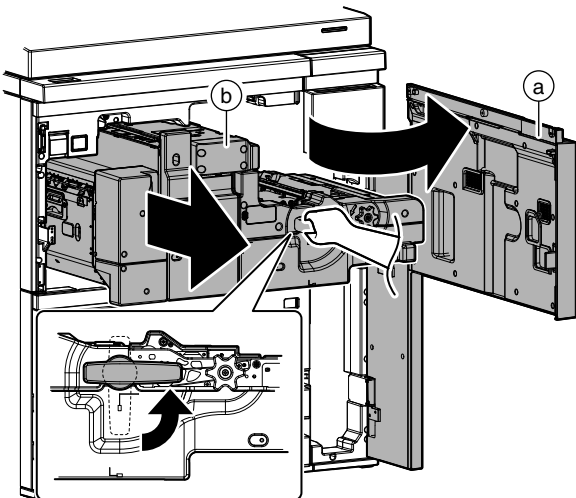
- 1) Pull out the tray 1, 2 (a).



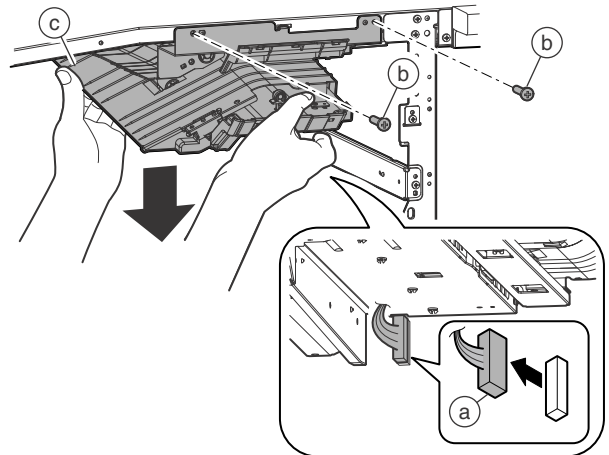
- 2) Remove the screw (a), and remove the tray 1, 2 (b).



- 3) Open the front cover (a), and pull out the intermediate frame (b).

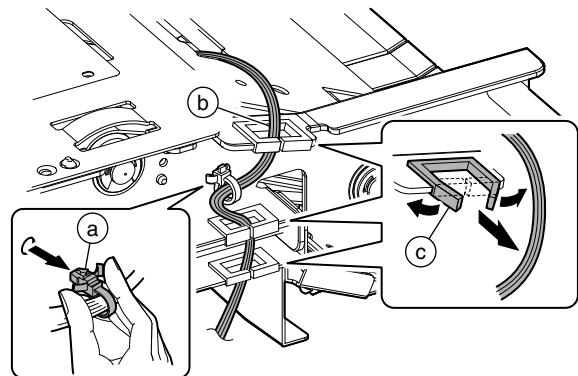


- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper pass unit (c).

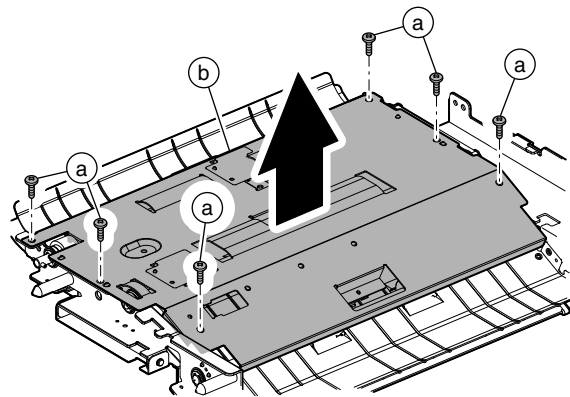


### a. Cassette 1 paper entry detection / Cassette 1 transport detection 1 / Cassette 1 transport detection 2

- 1) Remove the paper pass unit.
- 2) Remove the snap band (a). Remove the harness (b) from the harness holder (c).

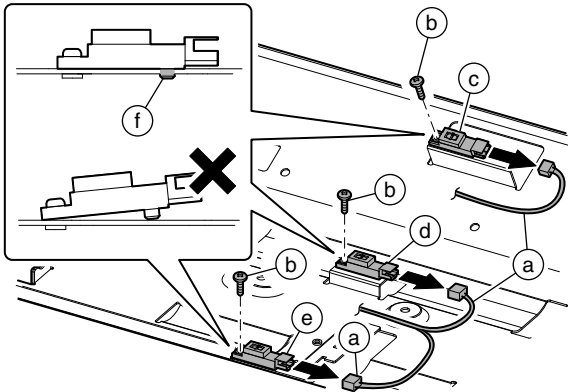


- 3) Remove the screw (a), and remove the frame (b).



- 4) Disconnect the connector (a), and screw (b). Remove the cassette 1 paper entry detection (c), the cassette 1 transport detection 1 (d) and the cassette 1 transport detection 2 (e).

\* When installing the sensor, check to confirm that the sensor boss (f) is securely engaged and fix it with the screw.



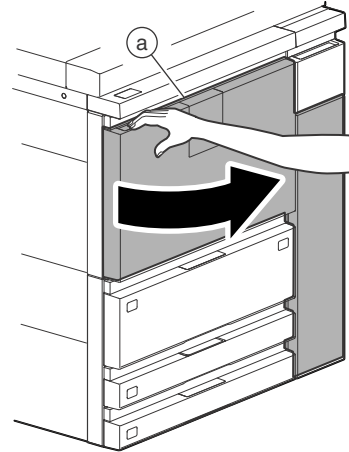
## B. Vertical transport unit

| Unit                    | Parts                              | Page  |
|-------------------------|------------------------------------|-------|
| Vertical transport unit | A Cassette 2 paper entry detection | F-7/a |
|                         | B Transport detection 1            |       |
|                         | C Vertical transport detection     | F-8/b |

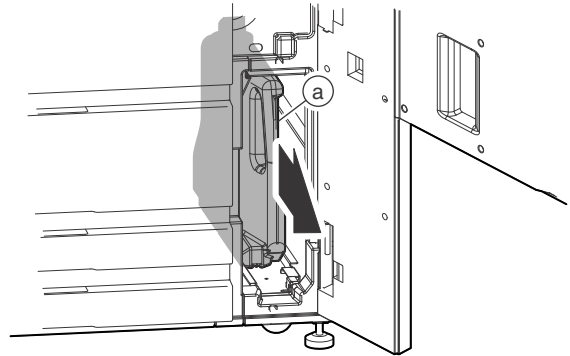


## (1) Vertical transport unit

- 1) Open the front cover (a).



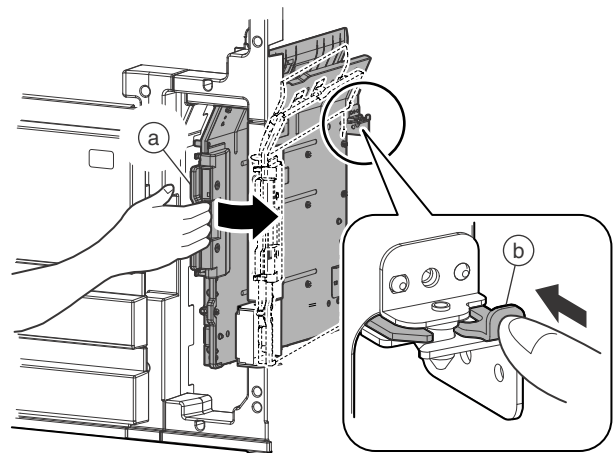
- 2) Remove the toner collection container (a).



- 3) Remove the right cabinet middle.

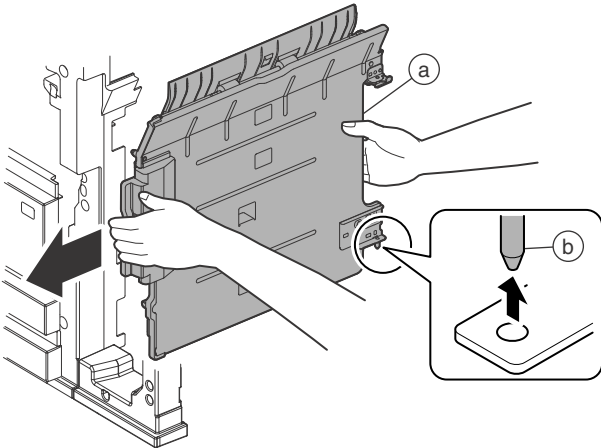
\* The following procedures can be performed without removing the right cabinet middle. However, it is advisable to remove it for easier work.

- 4) Open the vertical transport door unit (a). Release the lock of the vertical transport door unit (a) by pushing the lever (b).

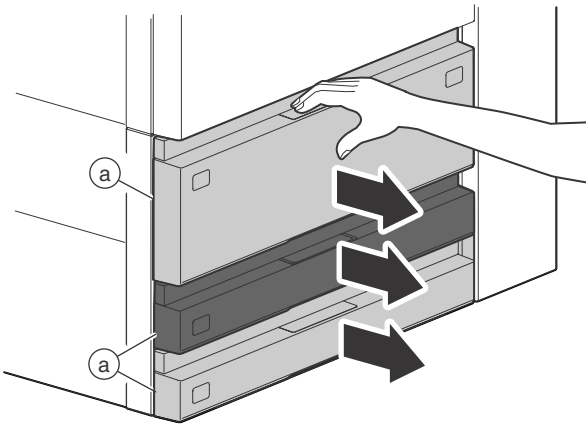




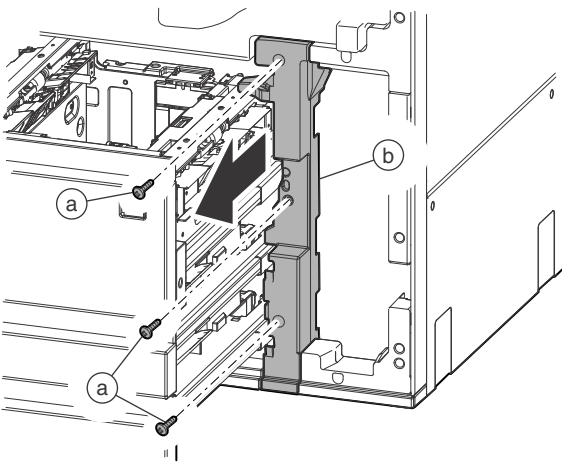
- 5) Lift the vertical transport door unit (a) and disengage the fulcrum (b) on the lower side, and remove the vertical transport door unit (a).



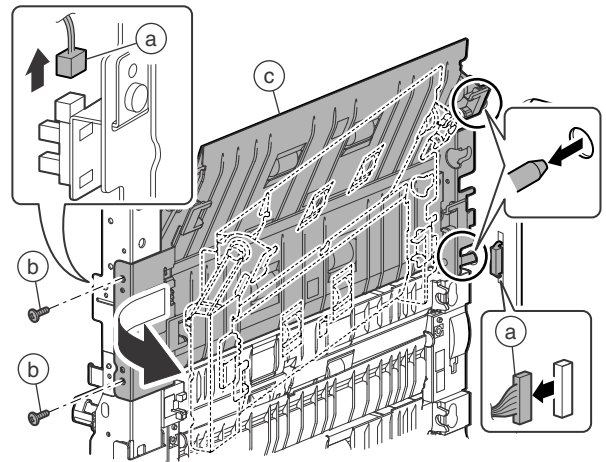
- 6) Pull out all paper feed tray (a).



- 7) Remove the screw (a), and remove the cover (b).

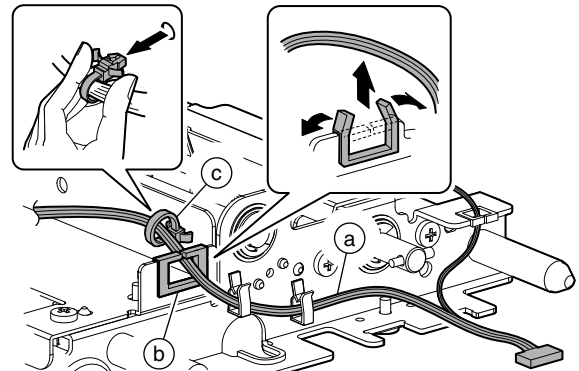


- 8) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport unit (c).

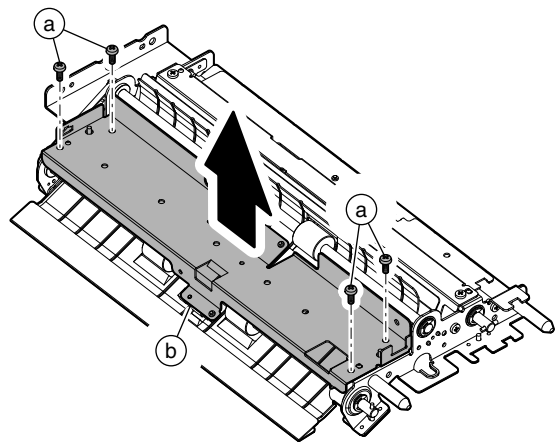


#### a. Cassette 2 paper entry detection / Transport detection 1

- 1) Remove the vertical transport unit.
- 2) Remove the harness (a) from the harness holder (b). Remove the snap band (c).

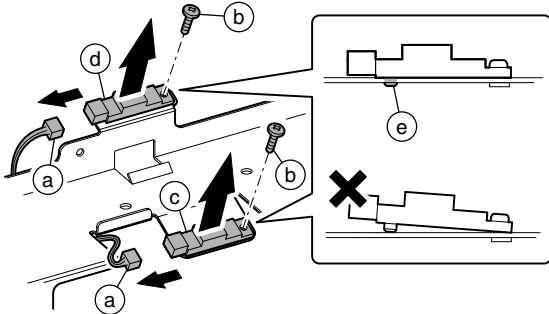


- 3) Remove the screw (a), and remove the frame (b).



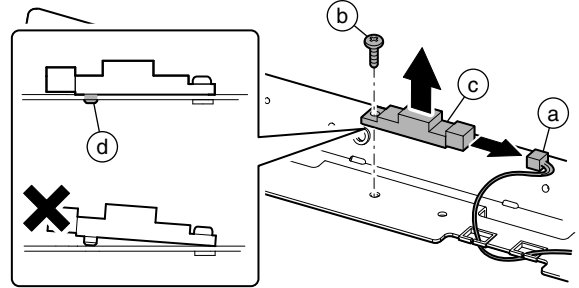
- 4) Disconnect the connector (a), and remove the screw (b). Remove the cassette 2 paper entry detection (c) and the transport detection 1 (d).

\* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



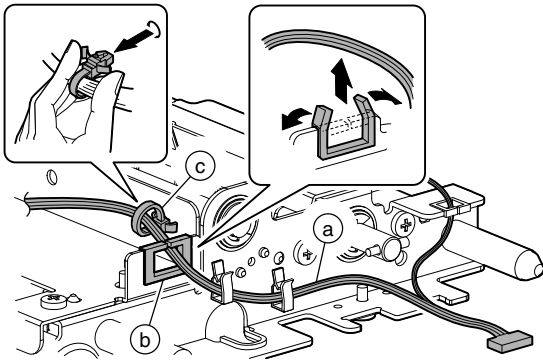
- 4) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport detection 1 (c).

\* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.

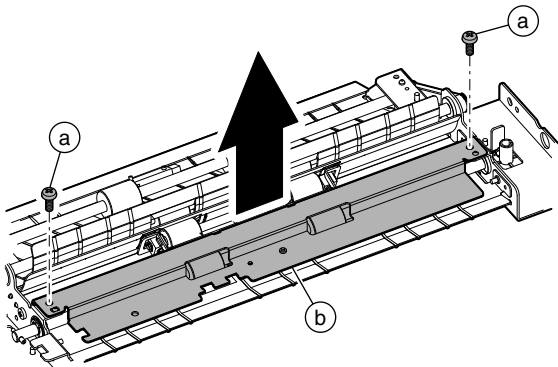


### b. Vertical transport detection

- 1) Remove the vertical transport unit.
- 2) Remove the harness (a) from the harness holder (b). Remove the snap band (c).

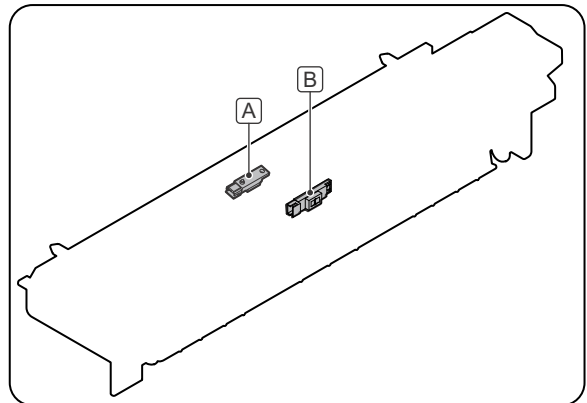


- 3) Remove the screw (a), and remove the frame (b).



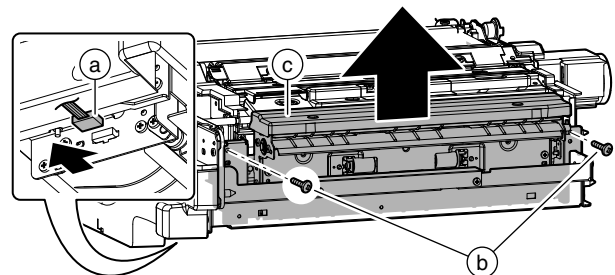
### C. Upper transport unit

| Unit                 | Parts                         | Page  |
|----------------------|-------------------------------|-------|
| Upper transport unit | A ADU paper entry detection 1 | F-9/a |
|                      | B ADU paper entry detection 2 |       |



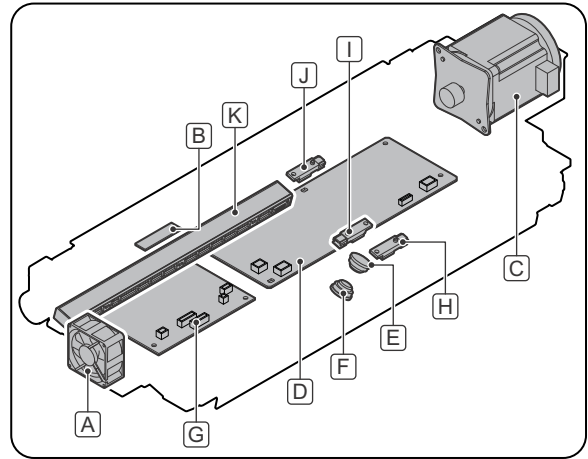
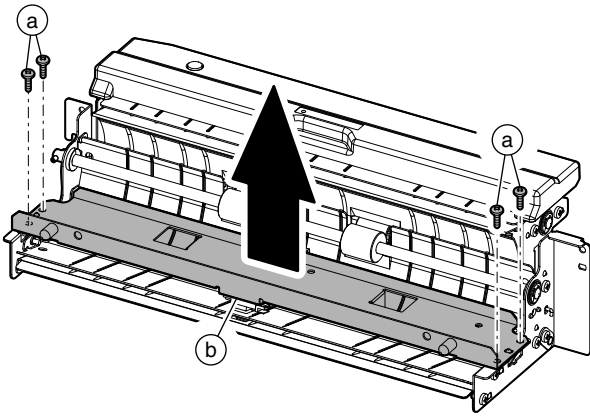
#### (1) Upper transport unit

- 1) Remove the PS roller unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the upper transport unit (c).



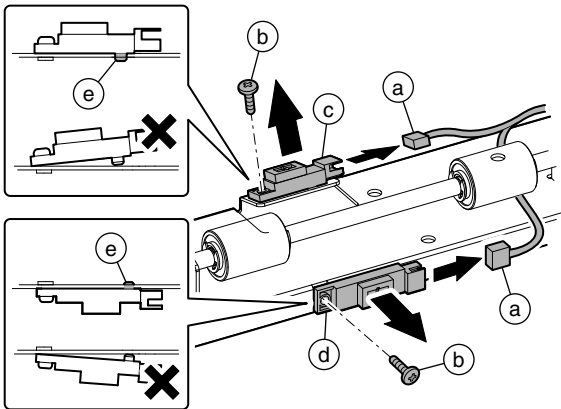
**a. ADU paper entry detection 1 / ADU paper entry detection 2**

- 1) Remove the PS roller unit.
- 2) Remove the upper transport unit.
- 3) Remove the screw (a), and remove the frame (b).



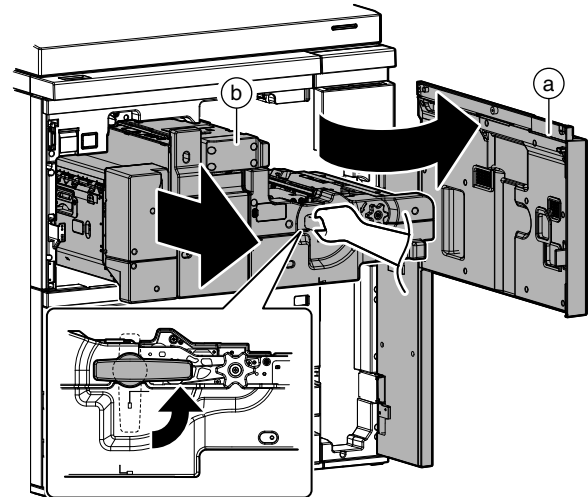
- 4) Disconnect the connector (a), and remove the screw (b). Remove the ADU paper entry detection 1 (c) and the ADU paper entry detection 2 (d).

\* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



**(1) PS roller unit**

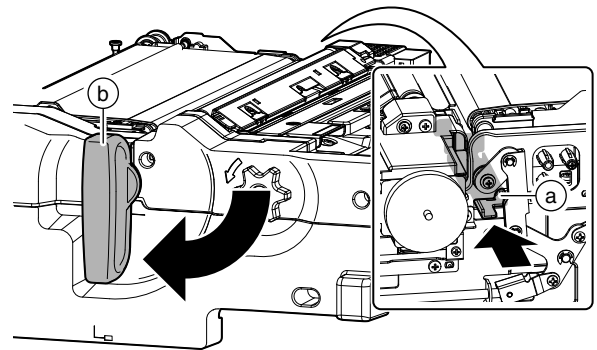
- 1) Open the front cover (a), and pull out the intermediate frame (b).



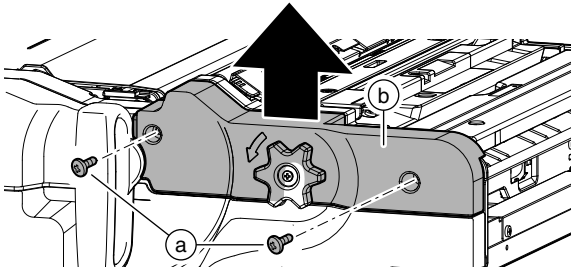
**D. PS roller unit**

| Unit           | Parts                                     | Page   |
|----------------|---|--------|
| PS roller Unit | A PS cooling fan (120cpm/105cpm machines) | F-10/a |
|                | B High voltage resistor PWB               | F-10/b |
|                | C PS motor                                | F-11/c |
|                | D PED cis PWB                             |        |
|                | E Double feed sensor (transmitting)       | F-12/d |
|                | F Double feed sensor (receiving)          |        |
|                | G Double feed detection PWB               | F-14/e |
|                | H Transport detection 2                   |        |
|                | I Transport detection 3                   |        |
|                | J Transport detection 4                   | F-15/f |
|                | K CIS                                     |        |

- 2) Push the lever (a) on the intermediate frame rear side to release the lock, and rotate the handle (b) to put it straight.

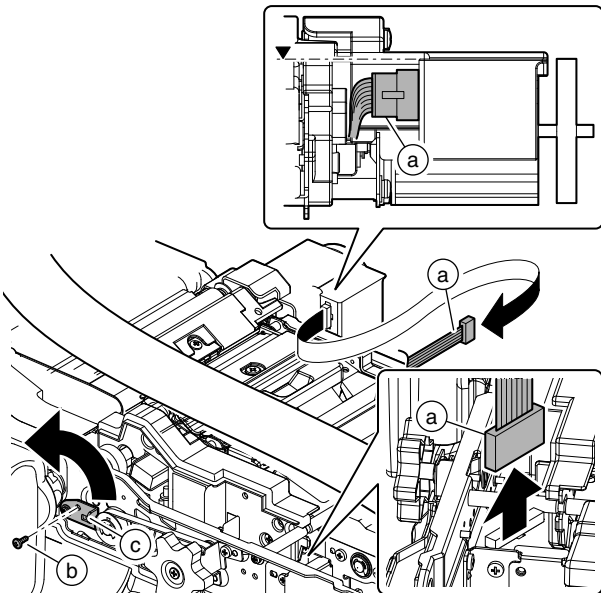


- 3) Remove the screw (a), and remove the cover (b).

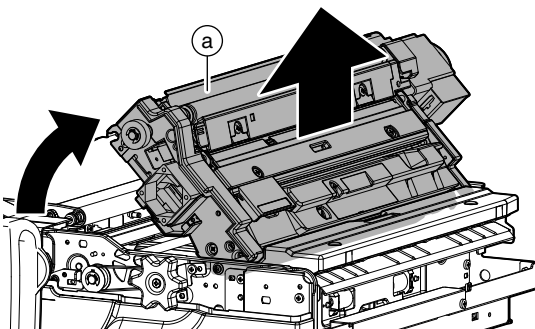


- 4) Disconnect the connector (a). Remove the screw (b), and rotate the plate (c).

\* When connecting, arrange so that the connector (a) does not extend over the PS roller unit.

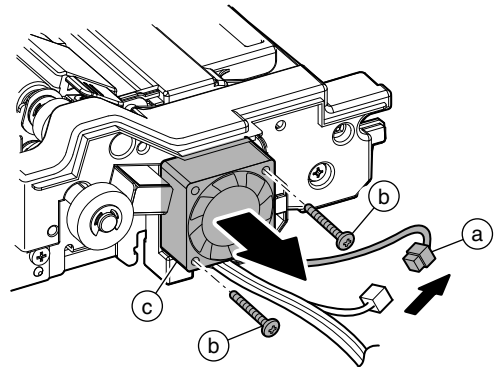


- 5) Remove the PS roller unit (a).



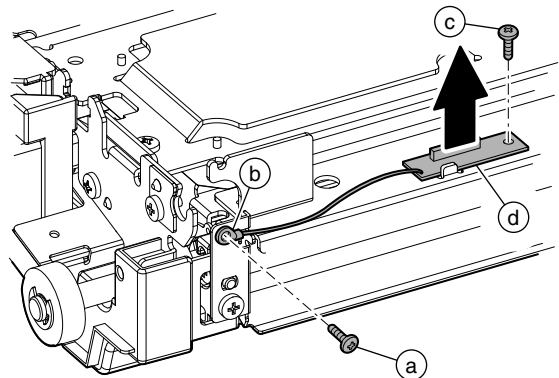
#### a. PS cooling fan (120cpm/105cpm machines)

- 1) Remove the PS roller unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the PS cooling fan (c).



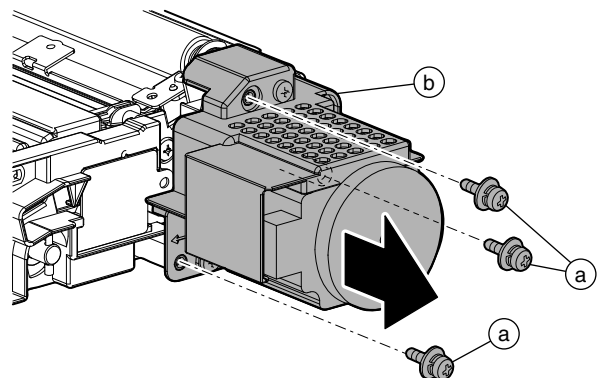
#### b. High voltage resistor PWB

- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the earth wire (b). Remove the screw (c), and remove the high voltage resistor PWB (d).

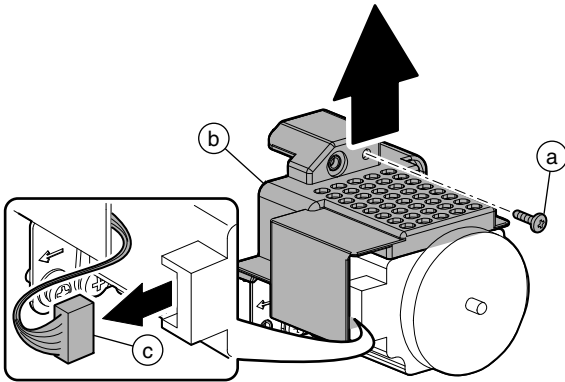


#### c. PS motor / PED cis PWB

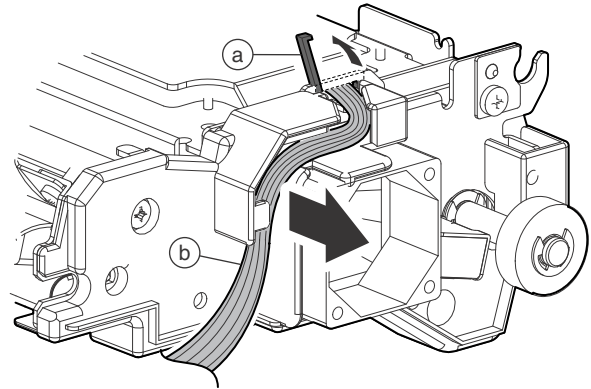
- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the PS motor unit (b).



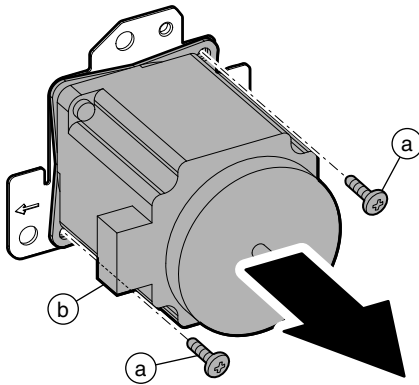
- 3) Remove the screw (a), and remove the cover (b). Remove the connector (c).



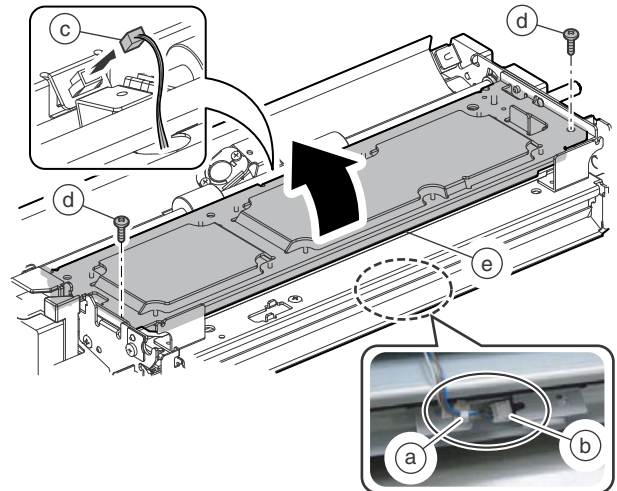
- 6) Open the harness holder (a), and remove the harness (b).



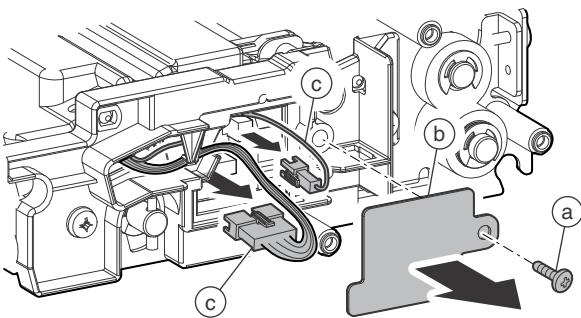
- 4) Remove the screw (a), and remove the PS motor (b).



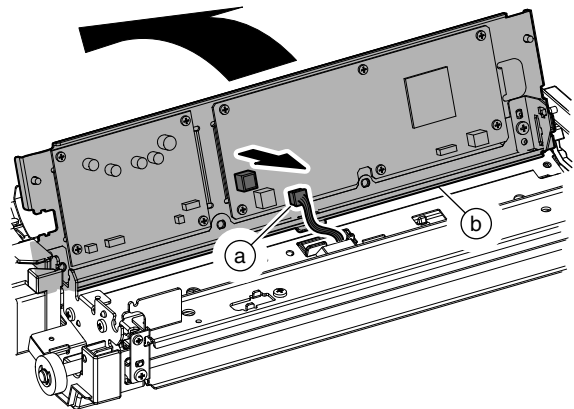
- 7) Remove the reuse band (a) and disconnect the connector (b). Disconnect the connector (c), and remove the screw (d). Open the frame (e).



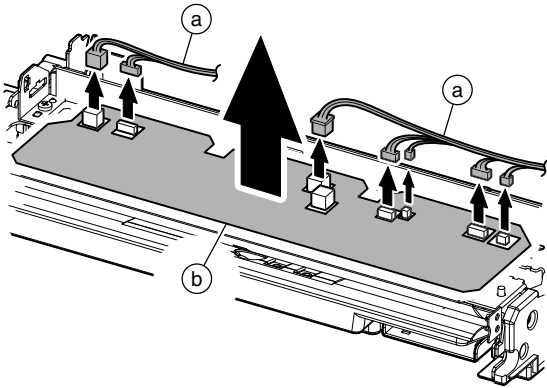
- 5) Remove the screw (a), and remove the cover (b). Remove the connector (c).



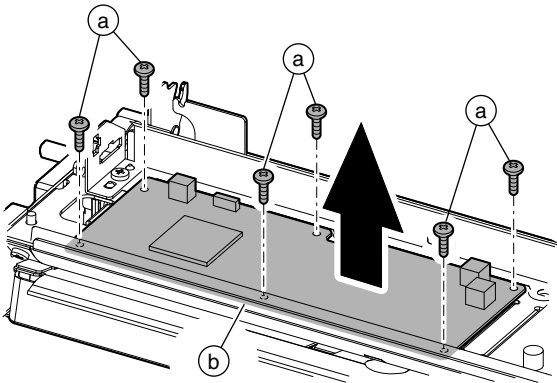
- 8) Disconnect the connector (a), and open the frame (b) further out.



- 9) Disconnect the connector (a), and remove the PS section PWB protection sheet (b).

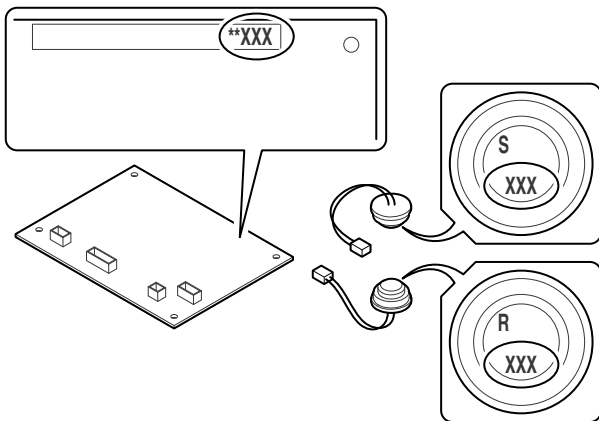


- 10) Remove the screw (a), and remove the PED CIS PWB (b).

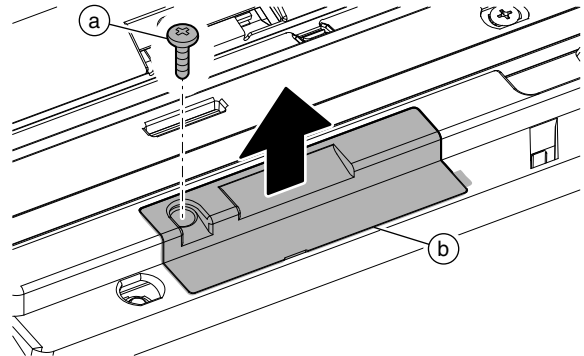


**d. Double feed sensor (transmitting) / Double feed sensor (receiving) / Double feed detection PWB**

\* Since the double feed sensor (transmitting), the double feed sensor (receiving), and the double feed detection PWB comprise one set, do not replace each one of them separately. Always replace them in one set. Each part is marked with its serial number. Before replacement, check to confirm that the serial number of each part corresponds.

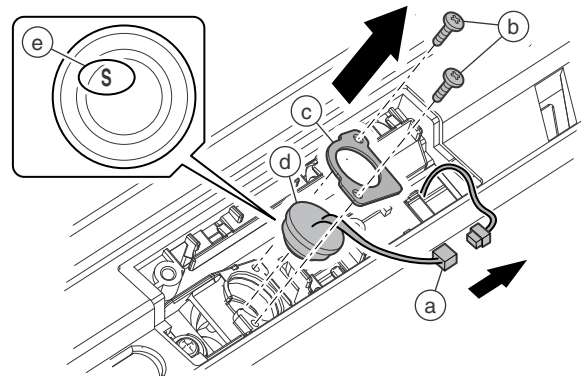


- 1) Remove the PS roller unit.  
2) Remove the screw (a), and remove the cover (b).

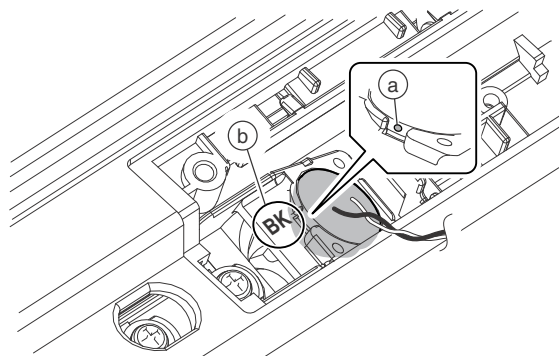


- 3) Disconnect the connector (a). Remove the screw (b) and the plate (c). Remove the double feed sensor (transmitting) (d).

\* When installing the double feed sensor (transmitting), confirm that the mark (e) on top of the sensor is "S".

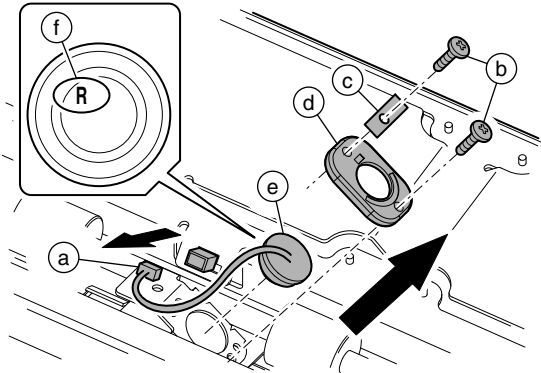


\* Install so that the white dot (a) on side of the sensor faces toward the marking (b) and so that the white dot (a) can be seen from the slit.

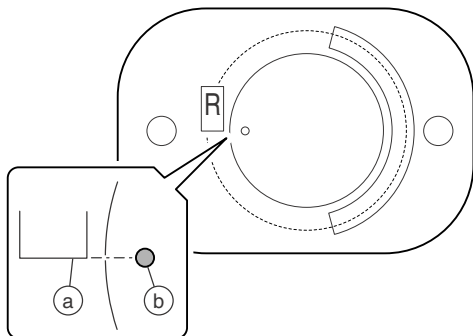


- 4) Disconnect the connector (a). Remove the screw (b), the mylar (c), and the plate (d). Remove the double feed sensor (receiving) (e).

\* When installing the double feed sensor (receiving), confirm that the mark (f) on top of the sensor is "R".

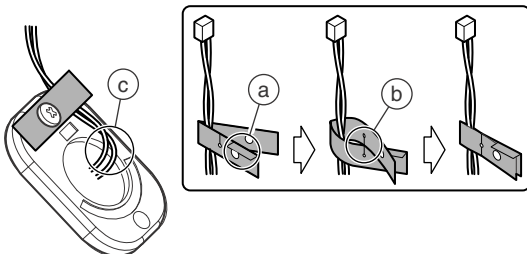


\* When installing the double feed sensor (receiving), arrange so that the bottom line (a) of the square encircling the "R" mark on the holder is on the same side of the white dot (b) on the back of the sensor. (Within  $\square$  10 degrees)

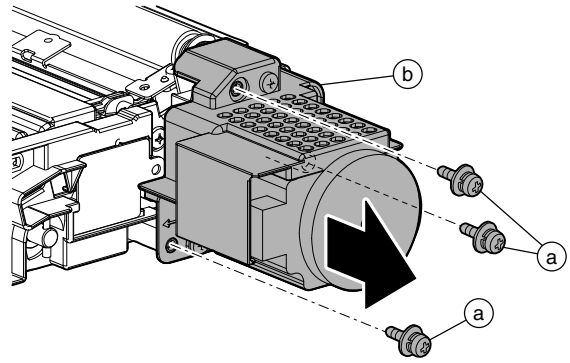


\* Mylar attachment procedure

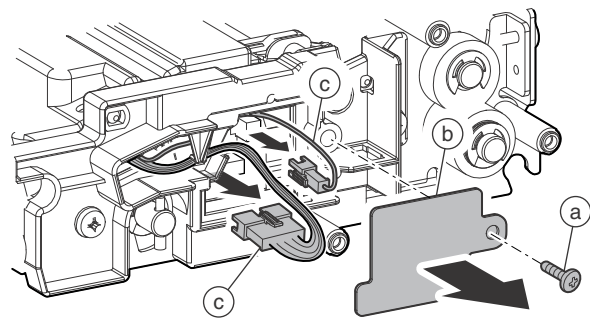
Hold the harness so that the Mylar bend section (a) faces upward, and cross the cut sections (b) and attach it. When fixing the Mylar with a screw, allow looseness in the harness section (c).



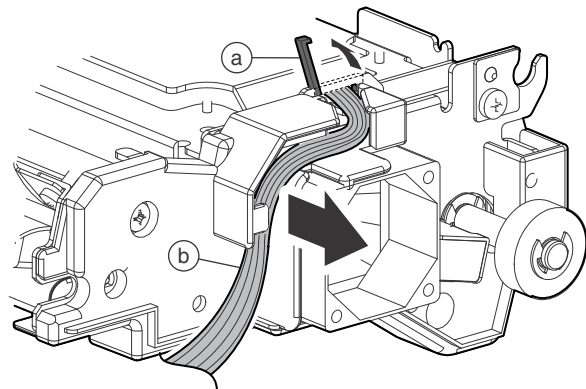
- 5) Remove the screw (a), and remove the PS motor unit (b).



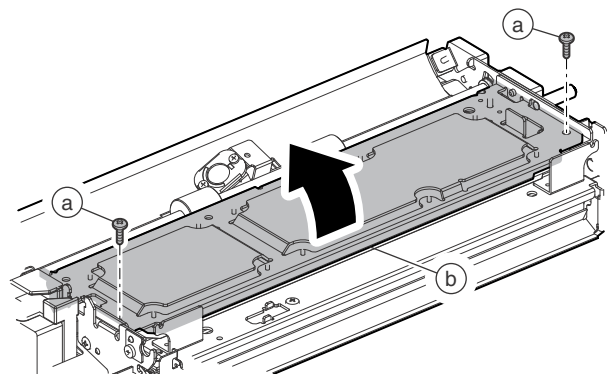
- 6) Remove the screw (a), and remove the cover (b). Disconnect the connector (c).



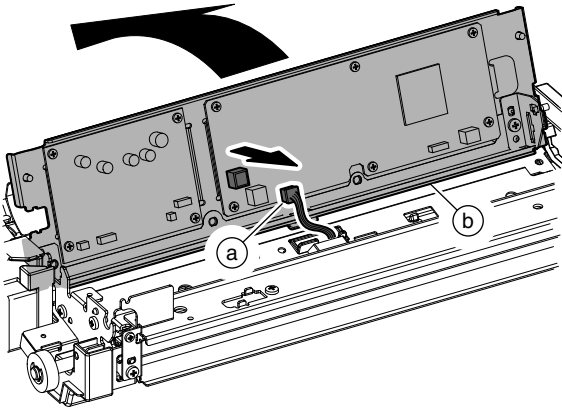
- 7) Open the harness holder (a), and remove the harness (b).



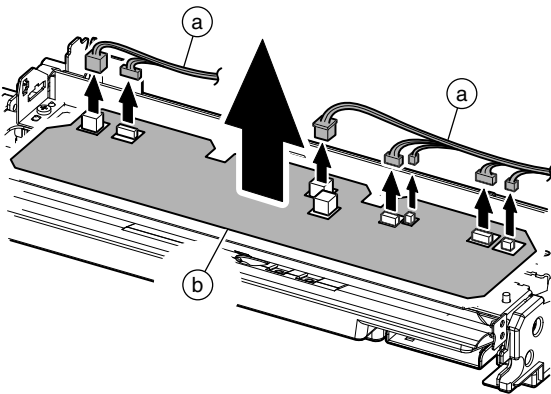
- 8) Remove the screw (a), and open the frame (b).



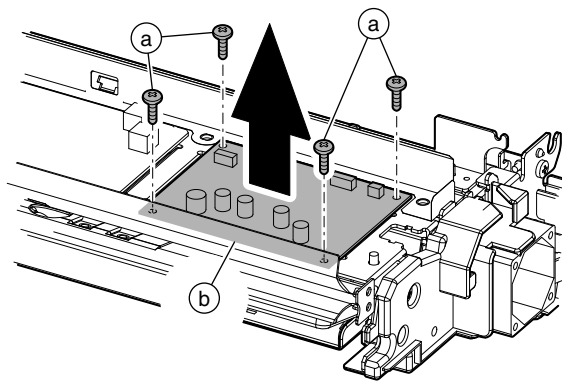
- 9) Disconnect the connector (a), and open the frame (b) further out.



- 10) Disconnect the connector (a), and remove the PS section PWB protection sheet (b).

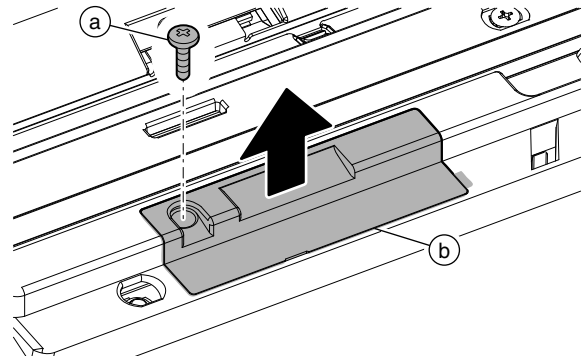


- 11) Remove the screw (a), and remove the double feed detector PWB (b).

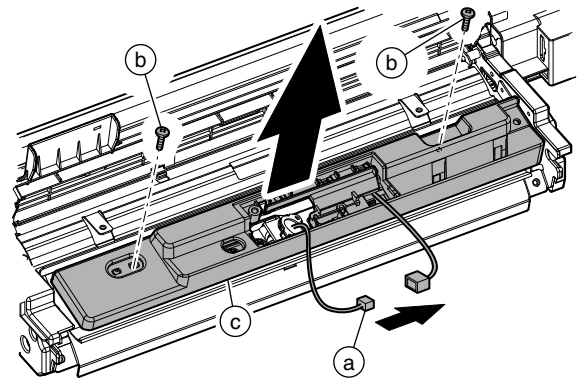


**e. Transport detection 2 / Transport detection 3**

- 1) Remove the PS roller unit.
- 2) Remove the screw (a), and remove the cover (b).

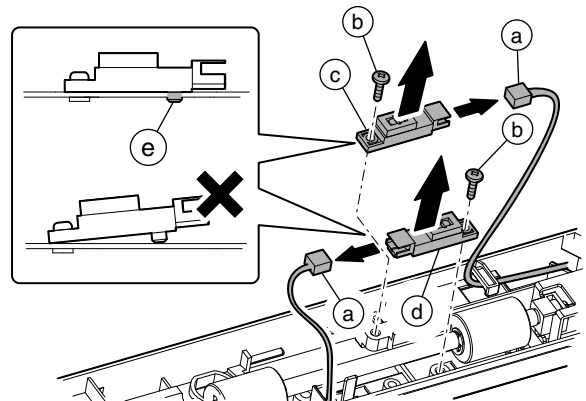


- 3) Disconnect the connector (a). Remove the screws (b), and remove the cover (c).



- 4) Disconnect the connector (a), and remove the screw (b). Remove the transport detection 2 (c) and the transport detection 3 (d).

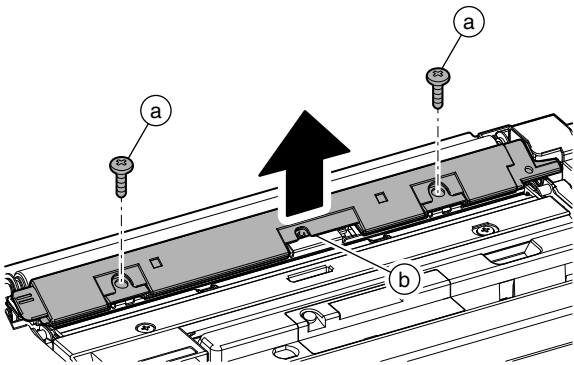
\* When installing the sensor, check to confirm that the sensor boss (e) is securely engaged and fix it with the screw.



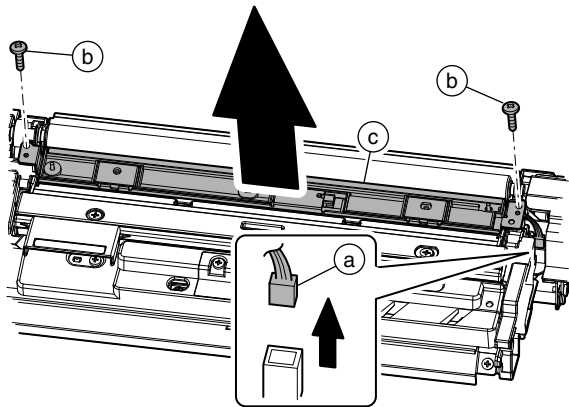


**f. Transport detection 4 / CIS**

- 1) Remove the PS roller unit.
- 2) Remove the blue screw (a), and remove the paper dust cleaner (b).

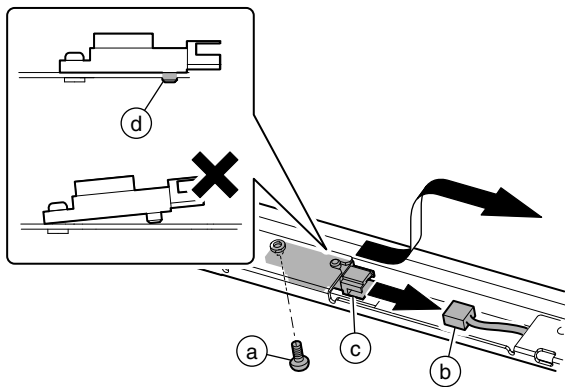


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper guide (c).

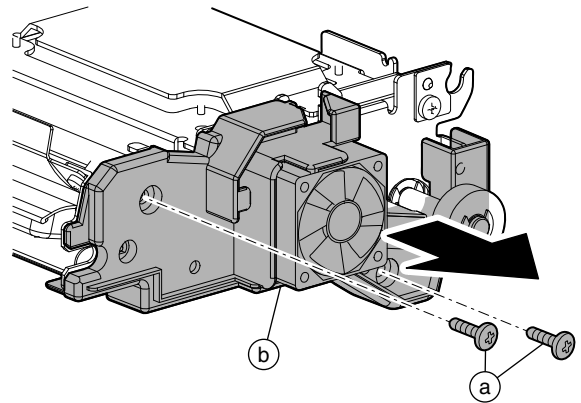


- 4) Disconnect the connector (a), and remove the screw (b). Remove the transport detection 4 (c).

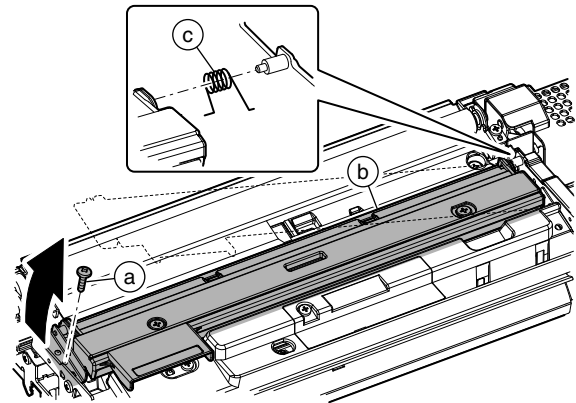
\* When installing the sensor, check to confirm that the sensor boss (d) is securely engaged and fix it with the screw.



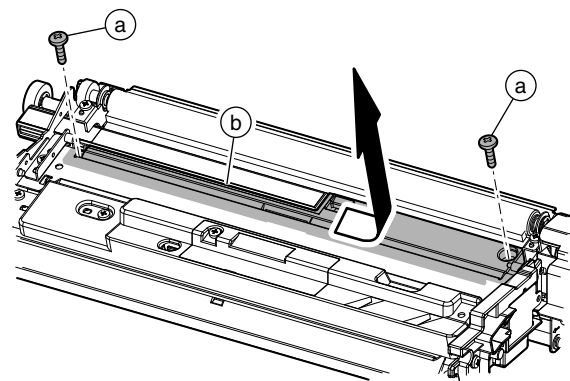
- 5) Remove the screw (a), and remove the cover (b).



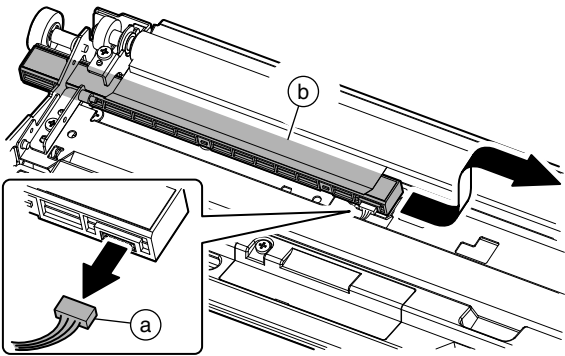
- 6) Remove the screw (a). Remove the paper guide (b) and the spring (c).



- 7) Remove the screw (a). Slide the cover (b) and remove it.

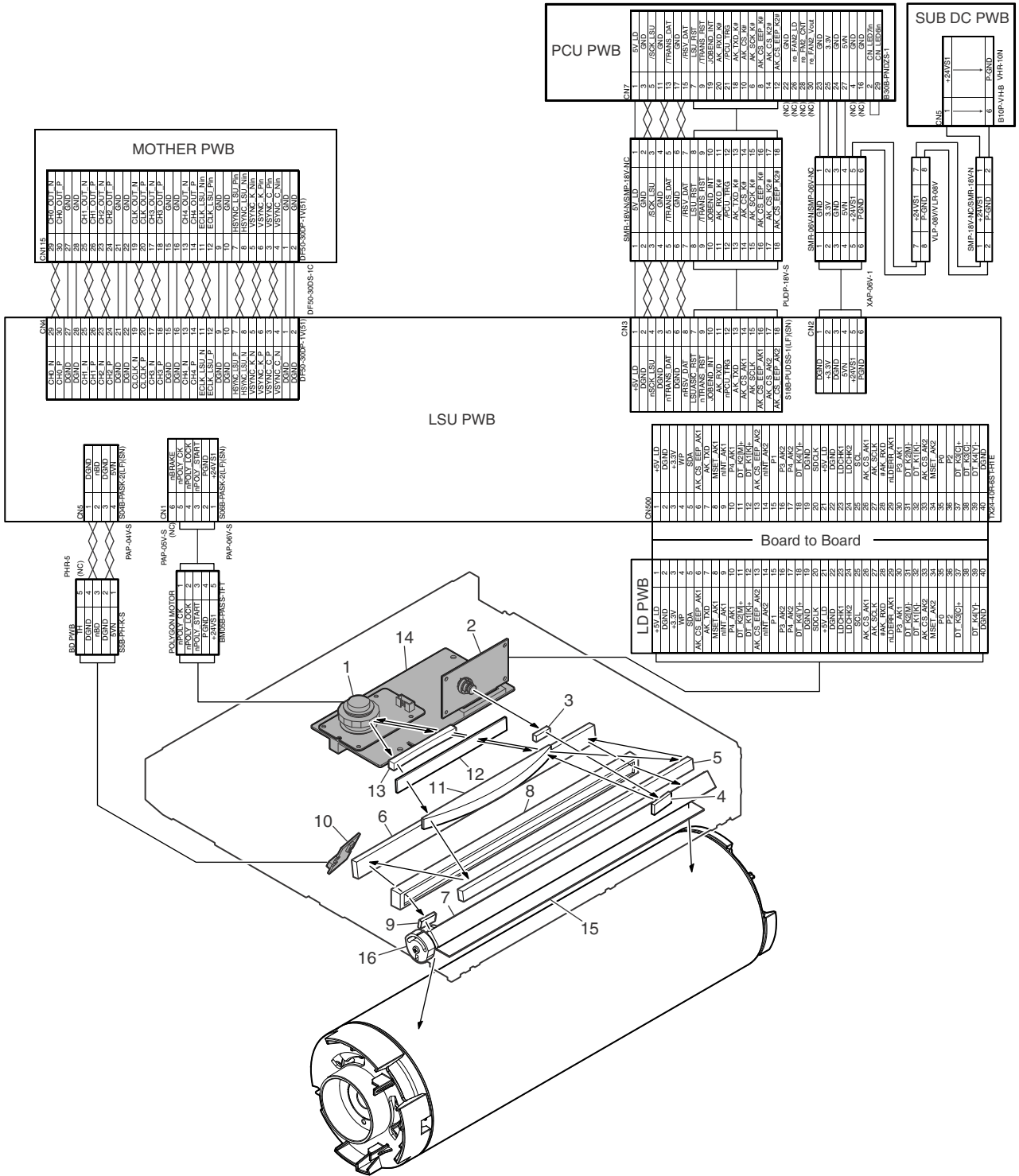


8) Disconnect the connector (a), and remove the CIS (b).



# [G] LSU SECTION

## 1. Electrical and mechanism relation diagram

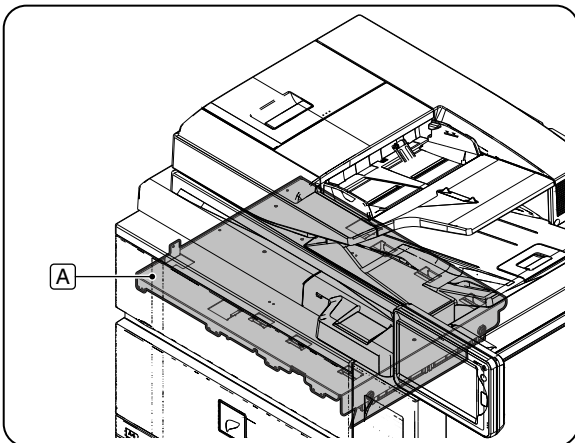


| No | Name                                   | Function   |
|----|--|--|
| 1  | Scanning mirror (Polygon mirror motor) | Reflects the laser beam to expose the drum surface. Writes in the main scan direction.                         |
| 2  | Laser unit                             | Emits the laser beam.  |
| 3  | No.1 cylindrical lens                  | Gathers the laser beams from the laser unit.   |
| 4  | Incident mirror                        | Reflects the laser beams from the laser unit to send to the scanning mirror.                                   |
| 5  | No.1 mirror                            | Reflects the laser beams from the scanning mirror to send to No.2 mirror.                                      |
| 6  | No.2 mirror                            | Reflects the laser beams from No.1 mirror to send to No.3 mirror.  |
| 7  | No.3 mirror                            | Reflects the laser beams from No.2 mirror to send to the photoreceptor.  |
| 8  | No.2 cylindrical lens                  | Corrects the deflection caused by the tilted scanning mirror.  |
| 9  | BD mirror                              | Guides the laser beams to BD PWB.  |
| 10 | BD PWB                                 | Detects the start timing of the laser scan.<br>Detects the troubles of laser beams.                            |
| 11 | f $\theta$ lens 2                      | Bends the laser beams to equalize the laser scanning pitches on the OC drum.                                   |
| 12 | Filter glass                           | Prevents contamination of dusts and foreign material.  |
| 13 | f $\theta$ lens 1                      | Bends the laser beams to equalize the laser scanning pitches on the OC drum.                                   |
| 14 | Laser control PWB                      | Converts the image signals to video signals and laser beams.<br>Controls ON/OFF and output power of the laser. |
| 15 | Filter glass                           | Prevents contamination of dusts and foreign material from the outside.   |
| 16 | Distortion adjustment cam              | The cam for adjusting distortion of the print image.   |

## 2. Disassembly and assembly

### A. LSU

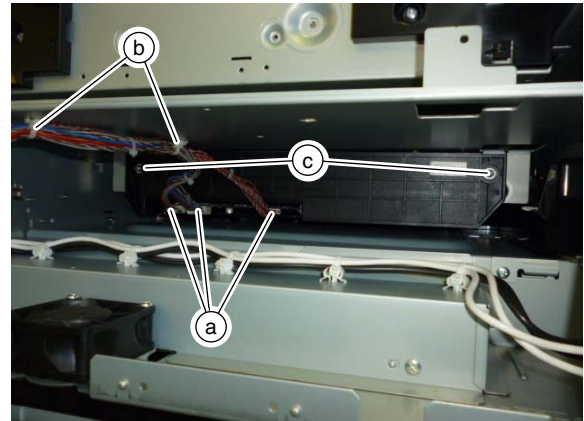
| Parts |     | Page    |
|-------|-----|---------|
| A     | LSU | G-2/(1) |



### (1) LSU

- 1) Remove the left upper cabinet.
- 2) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the LSU.

NOTE: Connector (a) is provided with lock for prevention against breakage.



# [H] IMAGE PROCESS SECTION

## 1. Image process section operations

### A. General

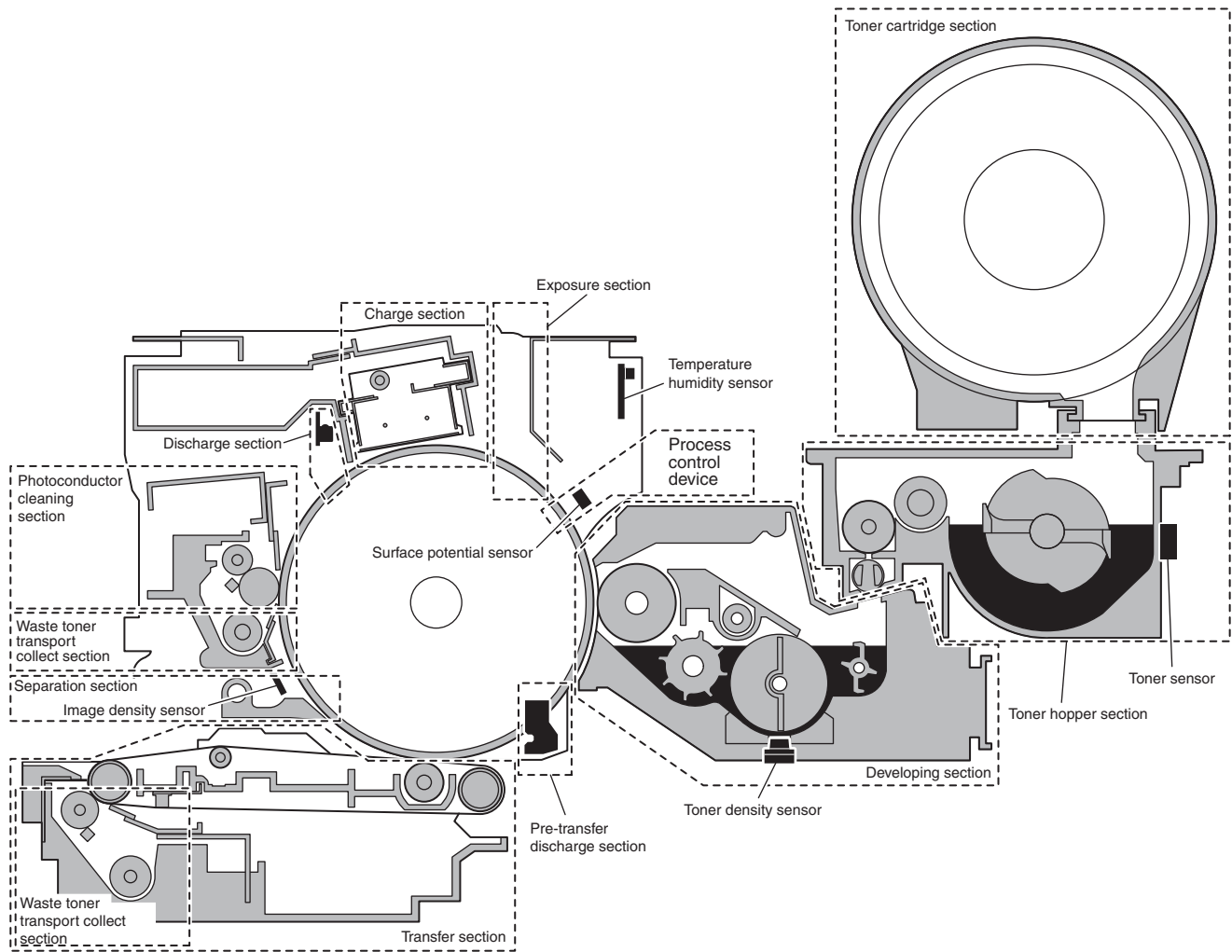
The optical dot image outputted from the LSU is converted into a visible toner image and transferred onto paper.

The image process section is composed of multiple sections and is controlled by the PCU PWB.

There are three models available in this series. Each model has a different process speed with a different print speed.

| Model              | Process speed |
|--------------------|---------------|
| 90cpm machine      | 420mm/sec     |
| 120/105cpm machine | 580mm/sec     |

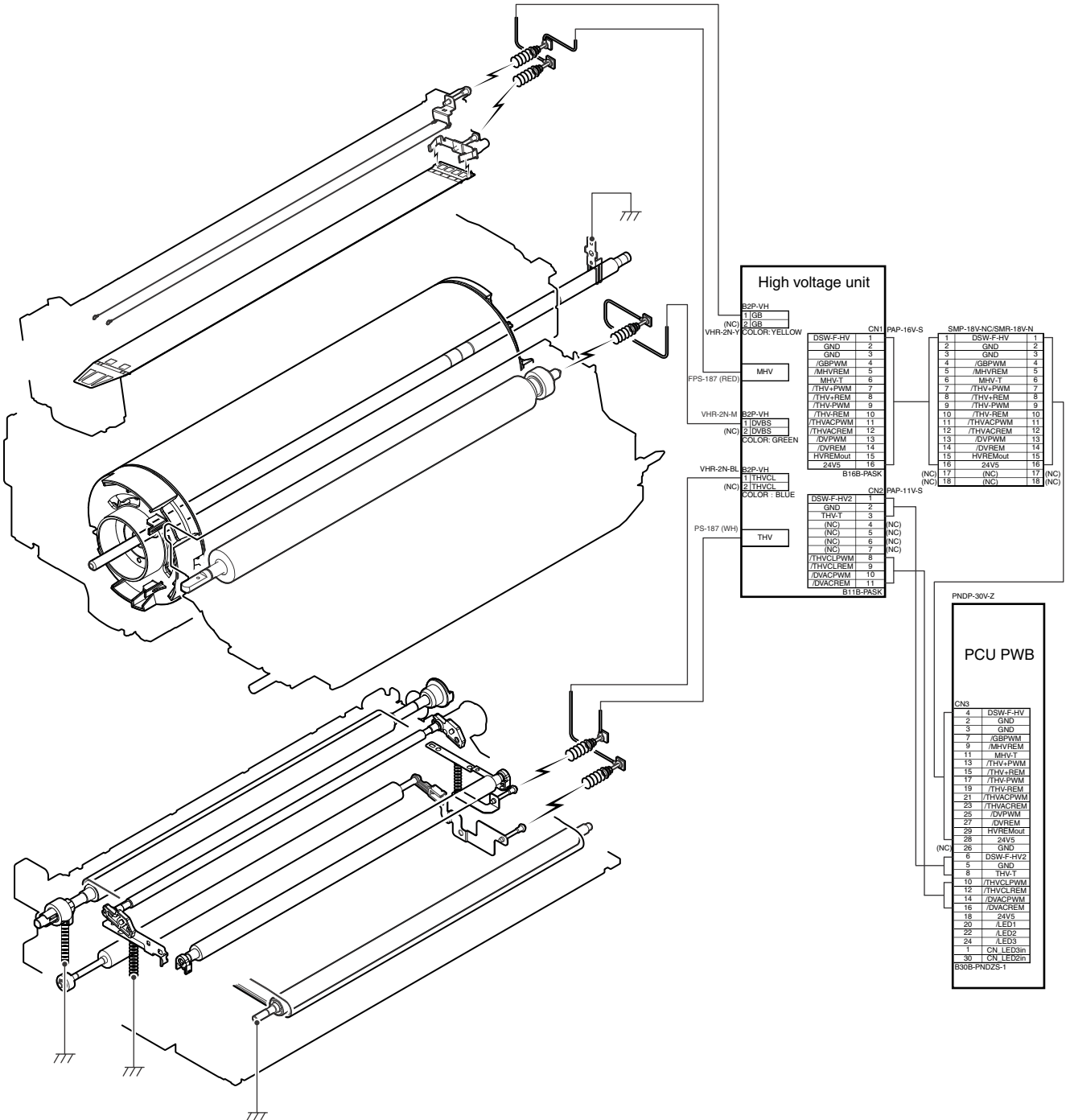
### B. Process section composition



| Section name                    | General of operations   |
|---------------------------------|---|
| Charge section                  | This section charges the OPC drum surface negatively with the main charger.   |
| Exposure section                | This section radiates laser beams onto the negatively charged OPC drum surface to form an electrostatic latent image.   |
| Developing section              | This section attaches toner to the electrostatic latent image generated in the exposure section, converting the image into a visible one.   |
| Toner cartridge section         | This section supplies toner to the hopper.  |
| Toner hopper section            | This section supplies toner to the developing section.  |
| Pre-transfer discharge section  | This section radiates light onto the OPC drum after development to discharge negative electric charges on the OPC drum, improving the transfer efficiency and the separation performance. |
| Transfer section                | This section applies a high positive voltage to paper to transfer the toner image on the OPC drum onto paper.   |
| Separation section              | This section separates paper from the OPC drum mechanically by the separation pawl when paper is not separated from the OPC drum naturally.   |
| Photoconductor cleaning section | This section removes residual toner from the OPC drum surface by the cleaning blade after transfer operation.   |
| Discharge section               | This section radiates light onto the OPC drum by the discharge lamp to discharge the whole surface of the OPC drum, resetting the surface potential of the OPC drum to the initial level. |

| Section name                          | General of operations   |
|---------------------------------------|---|
| Waste toner transport collect section | This section cleans unnecessary residual toner from the OPC drum and transport it to the waste toner collection section. It cleans unnecessary residual toner in the transfer section and transports it to the waste toner collection section.            |
| Process control device                | This section controls each voltage and the laser power and the toner density control level and keeps them to the proper levels based on the outputs of the front surface potential sensor, the image density sensor, and the temperature/humidity sensor. |

### C. Image process section actual wiring diagram

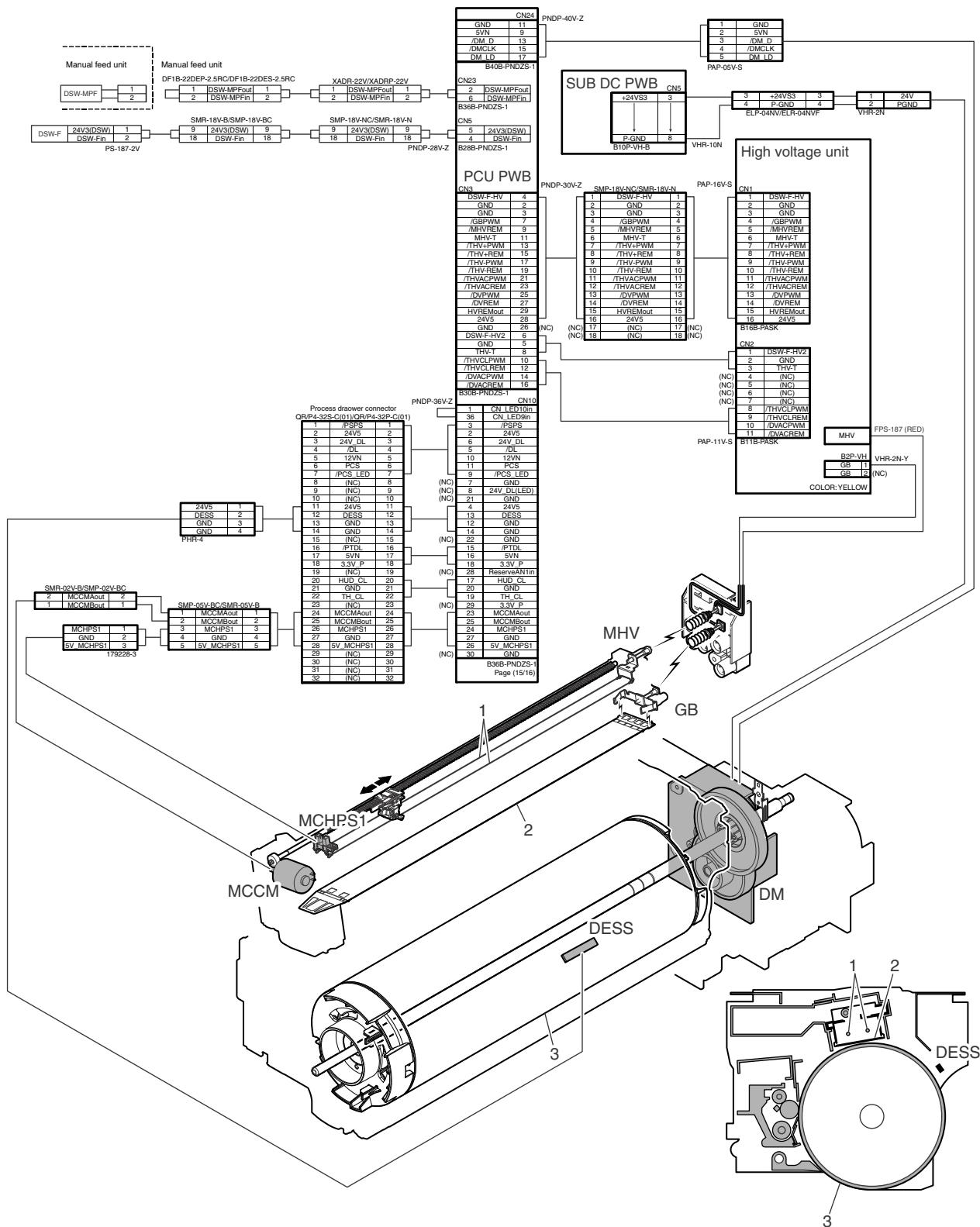


# [i] PHOTOCONDUCTOR SECTION

## 1. Charging section

This section charges the OPC drum with a negative charge.

### A. Electrical and mechanism relation diagram



| No. | Name                  | Function / Operation  |
|-----|-----------------------|---|
| 1   | Charger wire          | Charges the OPC drum.   |
| 2   | Screen grid           | Charges the OPC drum evenly.  |
| 3   | OPC drum              | Forms electrostatic latent images by laser beams. Forms toner images from the electrostatic latent images through the developing process. |
| 4   | Main high voltage PWB | Outputs the main charger voltage.   |

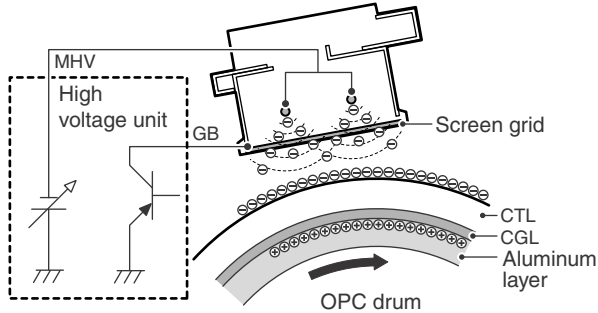
| Code  | Name                                      | Function / Operation  | Type   |
|-------|---|---|--|
| MCCM  | Charger wire cleaning motor               | Drives the charger wire cleaner.  | DC brush motor                               |
| MCHPS | Charger wire cleaner home position sensor | Detects the home position of the charger wire cleaner.                        | Transmission type photo sensor               |
| DESS  | Surface potential sensor                  | Detects the OPC drum surface potential after exposure and after non-exposure. | Feed-back type drum surface potential sensor |
| DM    | OPC drum motor                            | Drives the OPC drum, the OPC drum cleaner section, and the transfer section.  | DC brushless motor                           |



## B. Operational descriptions

### (1) Charging operation

The screen grid is attached to the main charger unit, and the OPC drum is charged at a voltage virtually similar to the voltage applied to the screen grid.



#### Main charger grid voltage

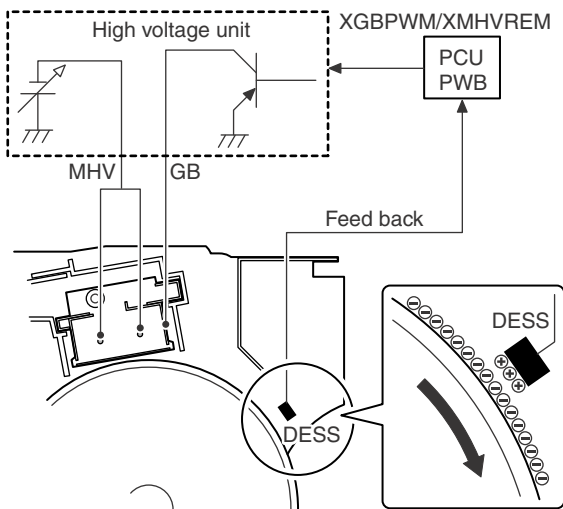
| Operation mode | Output voltage |                     |
|----------------|----------------|---------------------|
|                | 90cpm machine  | 105/120cpm machines |
| COPY           | - 595v         | - 625v              |

### (2) Drum surface potential sensor

The front surface potential on the OPC drum is detected after charging and exposure. The drum surface is detected by potential sensor to ensure its specified charge level.

The output (DESS) of the drum surface potential sensor is inputted to the PCU PWB. The main charger grid voltage control signal (XGBPWM) duty is varied by the PCU PWB so that the OPC drum surface potential is specified level.

The main charger ON/OFF is controlled by the signal (XMHVREM).

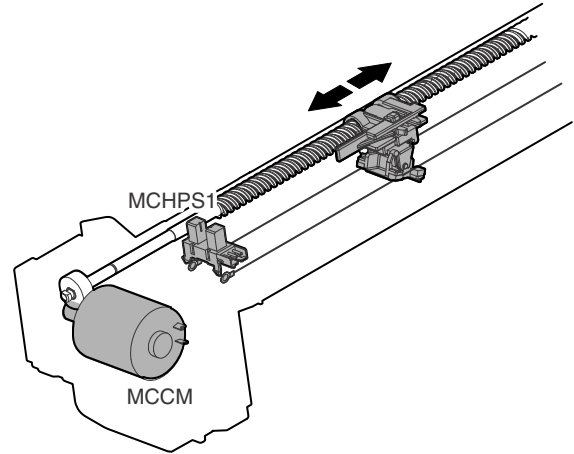


### (3) Charger wire cleaning operation

The main charger wire is cleaned by the charger wire cleaner at the specified interval. The charger wire cleaner is reciprocated once for one cleaning operation.

The cleaning operation can be also executed with Sim. 6-4.

The charger wire cleaner is driven by the charger wire cleaning motor (MCCM), and the home position of the charger wire cleaner is detected by the sensor (MCHPS1).



## 2. Exposure section

### A. Operational descriptions

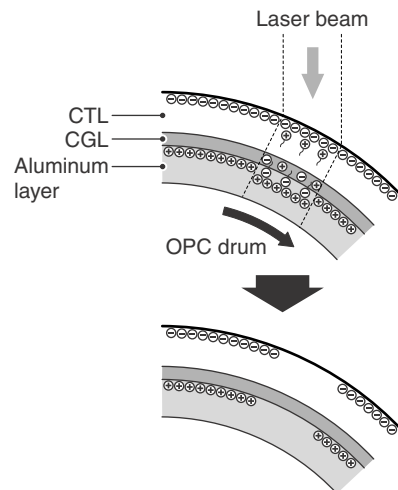
In this section, laser beams are exposed onto the negatively charged OPC drum surface to form electrostatic latent images.

When laser beams are exposing the CGL of the OPC drum, positive and negative electric charges are generated. The positive charges generated on the CGL are attracted and shifted by negative electric charges on the OPC drum surface. On the other hand, negative charges are attracted and shifted by positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are counterbalanced each other on the surface and in the aluminum layer of the OPC drum, reducing positive and negative charges and lowering the OPC drum surface potential.

In the section where laser beams are not exposed, negative charges remain.

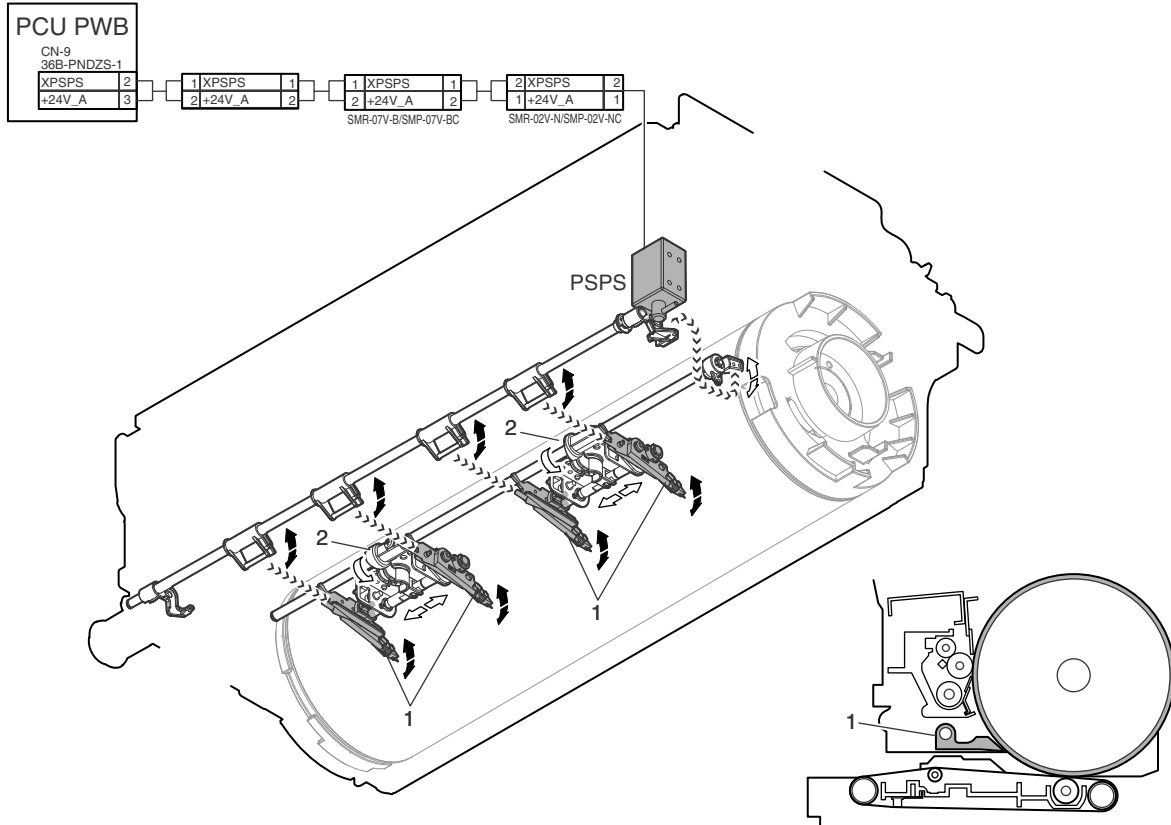
Through this operation, electrostatic latent images are formed on the OPC drum surface.



### 3. Separation section

When paper is not separated from the OPC drum naturally, the separation pawl separates paper mechanically.

#### A. Electrical and mechanism relation diagram



| No. | Name  | Function / Operation   |
|-----|---|--|
| 1   | OPC drum separation pawl                    | Separates paper from the OPC drum.   |
| 2   | Separation pawl oscillation shaft drive cam | Converts the drive power of the OPC drum motor into the reciprocating rotation power of the separation pawl oscillation shaft. |

| Code | Name                     | Function / Operation        | Type     |
|------|--------------------------|-----------------------------|----------|
| PSPS | Separation pawl solenoid | Drives the separation pawl. | Solenoid |

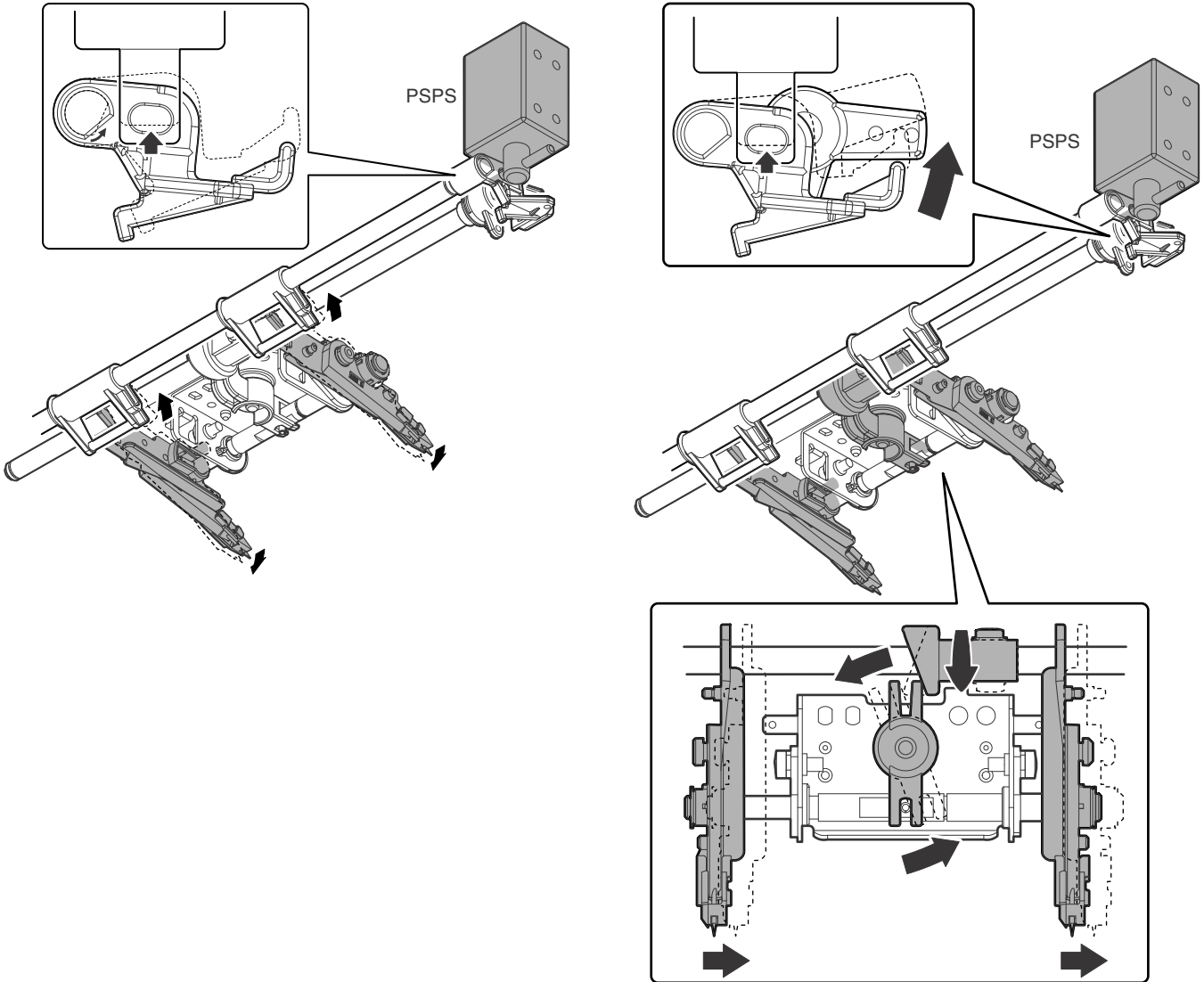
## B. Operational descriptions

When paper is not separated from the OPC drum naturally, the separation pawl separates paper mechanically.

The separation pawl is driven by the separation solenoid (XSPSS), and is in contact with the OPC drum when paper passes through the transfer section.

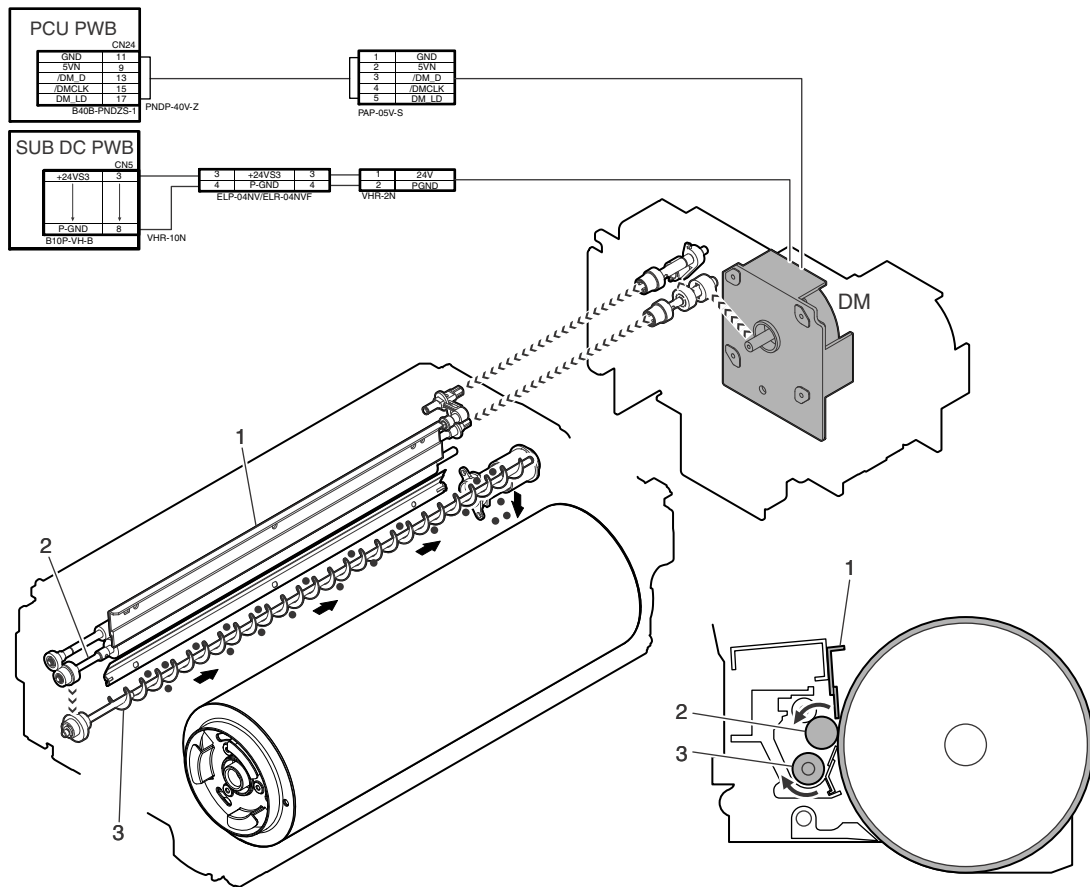
In the other cases, the separation pawl is separated from the OPC drum.

In addition, the separation pawl operates in conjunction with the separation solenoid and oscillates back and forth.



## 4. OPC drum cleaning section

### A. Electrical and mechanism relation diagram



| No | Name   | Function / Operation   |
|----|--|--|
| 1  | OPC drum cleaning blade                                    | Removes unnecessary residual toner from the OPC drum for cleaning.                 |
| 2  | OPC drum cleaning brush roller                             | Removes unnecessary residual toner from the OPC drum for cleaning.                 |
| 3  | Waste toner transport screw<br>(OPC drum cleaning section) | Transports waste toner in the transfer unit to the waste toner collection section. |

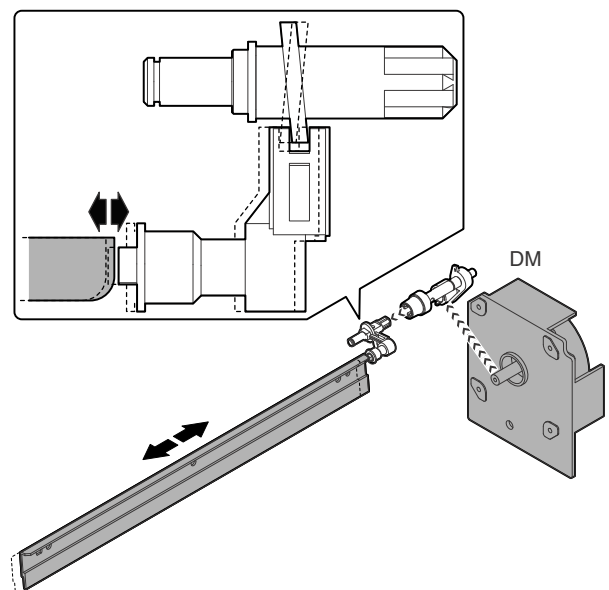
| Code | Name           | Function / Operation                 | Type                |
|------|----------------|--------------------------------------|---------------------|
| DM   | OPC drum motor | Drives the OPC drum cleaner section. | DC brush-less motor |

### B. Operational descriptions

Residual toner on the OPC drum is removed by the cleaning roller and cleaning blade.

The residual toner removed from the OPC drum surface is transported to the waste toner collection section by the waste toner transport screw.

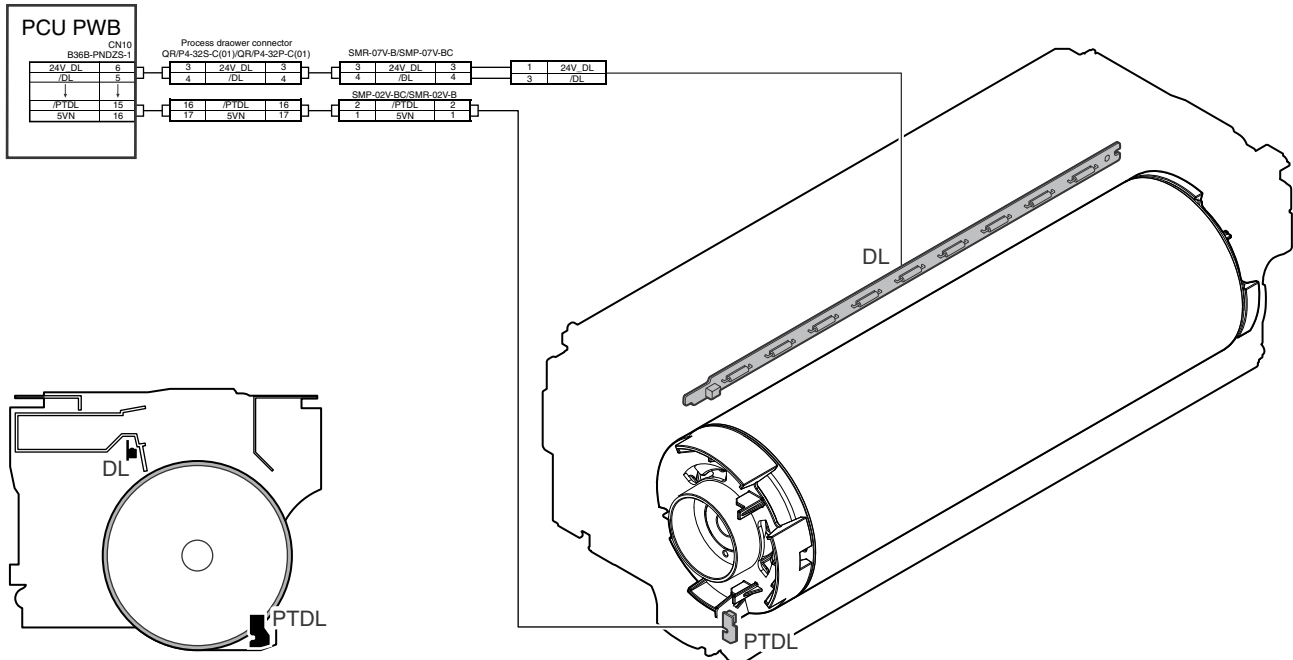
The cleaning blade oscillates back and forward in synchronization with the drum drive motor. By this movement, the cleaning performance is improved.



## 5. Discharge section

In this section, light is exposed onto the OPC drum to discharge the whole surface of the OPC drum.

### A. Electrical and mechanism relation diagram



| Code | Name           | Function / Operation                               | Type |
|------|----------------|--|------|
| DL1  | Discharge lamp | Discharges the residual potential on the OPC drum. | LED  |

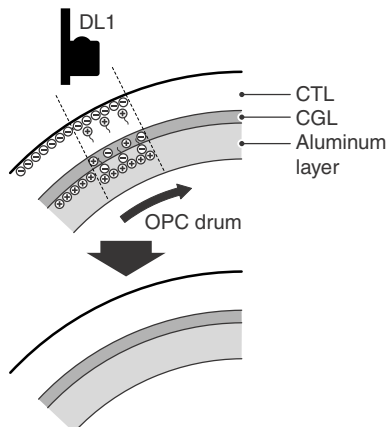
### B. Operational descriptions

When the discharge lamp light is exposed to the OPC drum CGL layer, positive and negative charges are generated. Positive charges generated in the CGL are attracted by negative charges generated on the OPC drum surface.

On the other hand, negative charges are attracted by positive charges in the aluminum layer of the OPC drum.

Therefore, positive charges and negative charges are counterbalanced on the surface and in the aluminum layer of the OPC drum to reduce positive and negative charges, lowering the potential of the whole surface of the OPC drum.

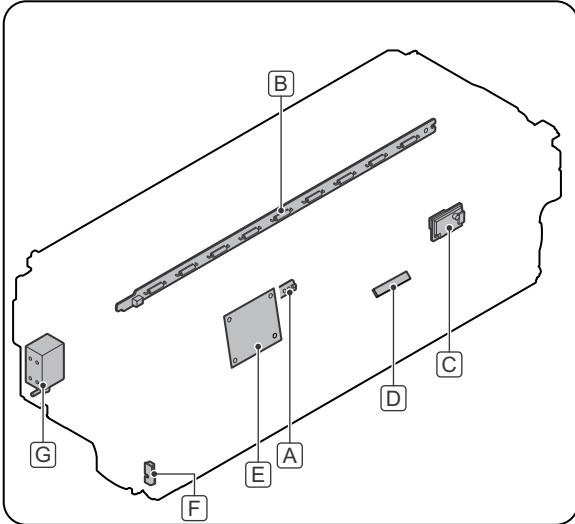
As a result, the surface potential of the OPC drum is reset to the initial level.



## 6. Disassembly and assembly

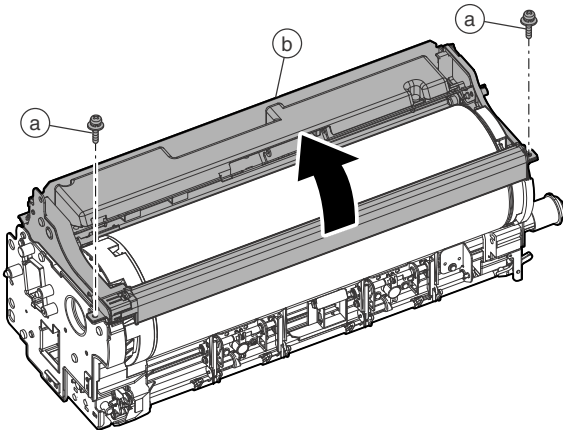
### A. Process unit

| Unit         | Parts | Page                          |        |
|--------------|-------|-------------------------------|--------|
| Process unit | A     | Process control sensor        | i-10/a |
|              | B     | Discharge lamp                |        |
|              | C     | Temperature humidity sensor 1 |        |
|              | D     | Surface potential sensor      | i-10/b |
|              | E     | Process control sensor PWB    | i-11/c |
|              | F     | PTDL unit                     |        |
|              | G     | Separation solenoid           |        |
|              |       | i-12/d                        |        |

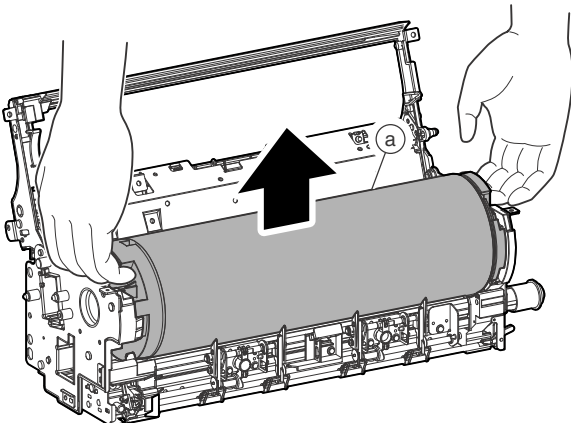


\* When disassembling or assembling the process unit, remove the OPC drum unit by the following and keep it for a while.

- 1) Remove the blue screw (a), and open the frame (b).



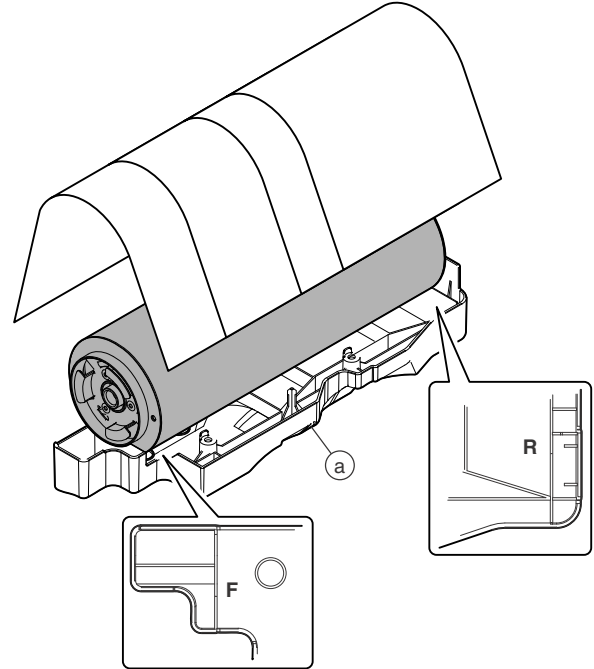
- 2) Remove the OPC drum unit.



- 3) Turn back the cover (a) that have been removed in step 2) of "(1)-Process unit" procedure, and put the OPC drum unit on the cover.

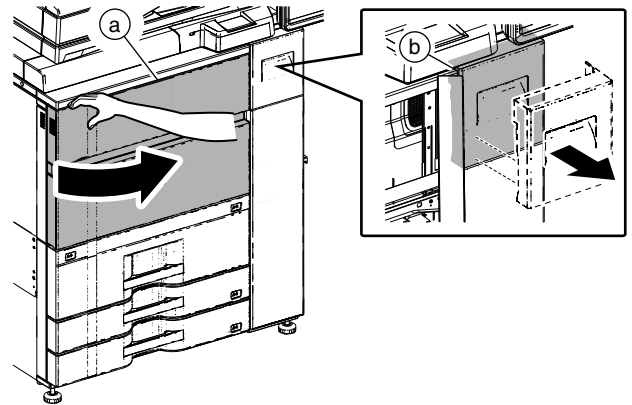
When putting the OPC drum unit on the cover, in advance remove the bearing, place it according to "F" and "R" marked on the cover (a).

Cover the OPC drum unit with paper to prevent exposure.

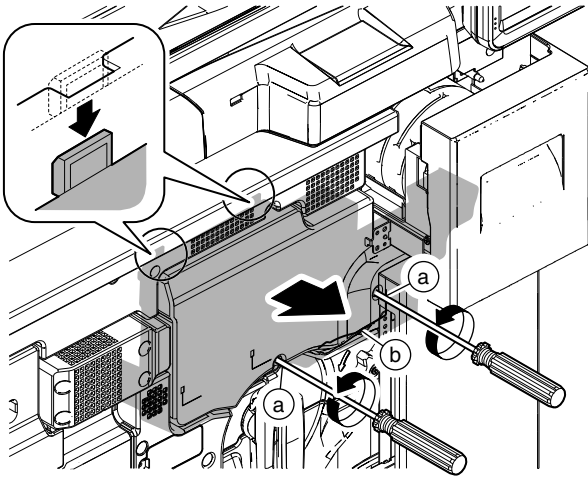


#### (1) Process unit

- 1) Open the front cover (a), and pull out the toner tray (b) slightly.

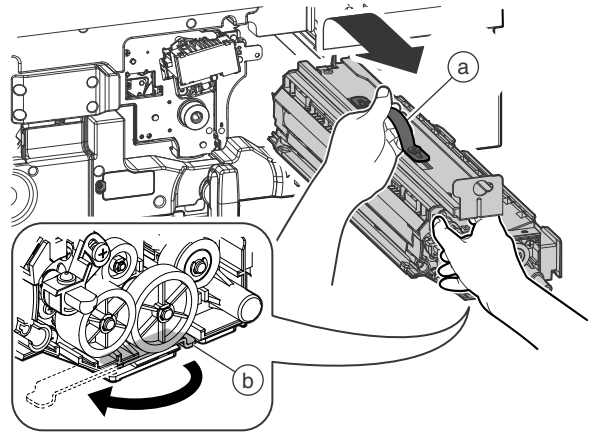


2) Remove the screw (a), and remove the cover (b).

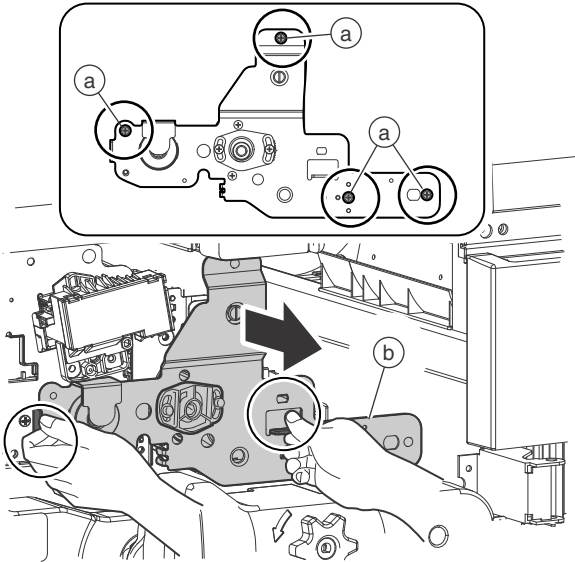


5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

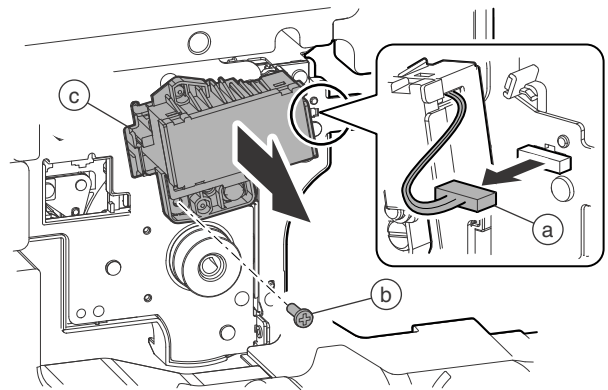
\* When placing the developing unit on a floor, use the stand (b) and put the unit on it.



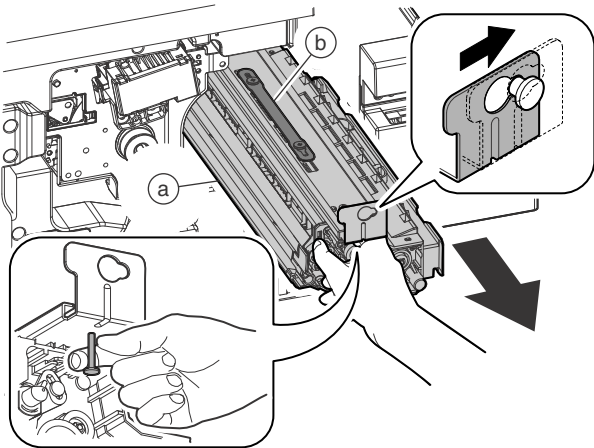
3) Remove the blue screw (a), and remove the plate (b).



6) Disconnect the connector (a), and remove the blue screw (b). Pull out the main charger unit (c).

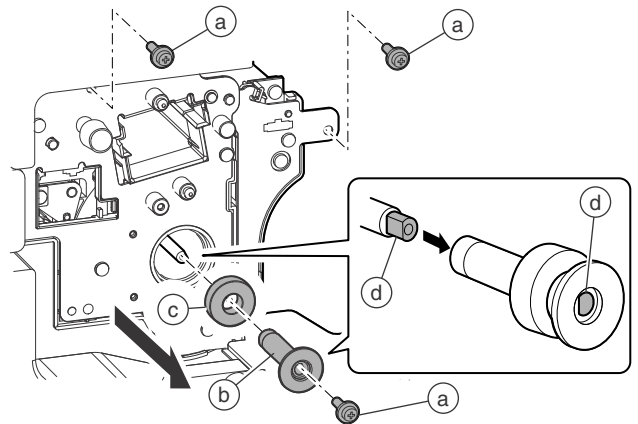


4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.

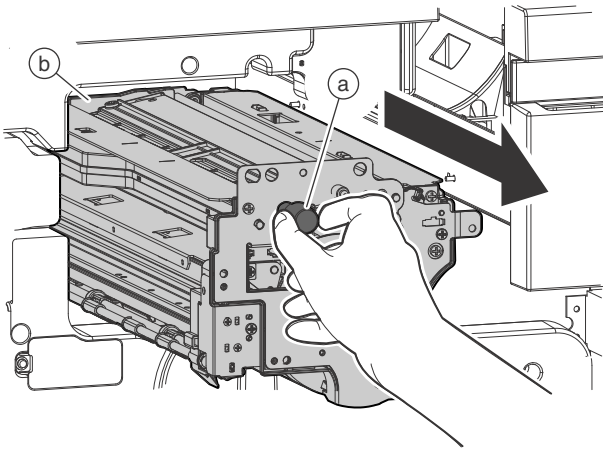


7) Remove the blue screw (a). Remove the bearing (b) and the bearing (c).

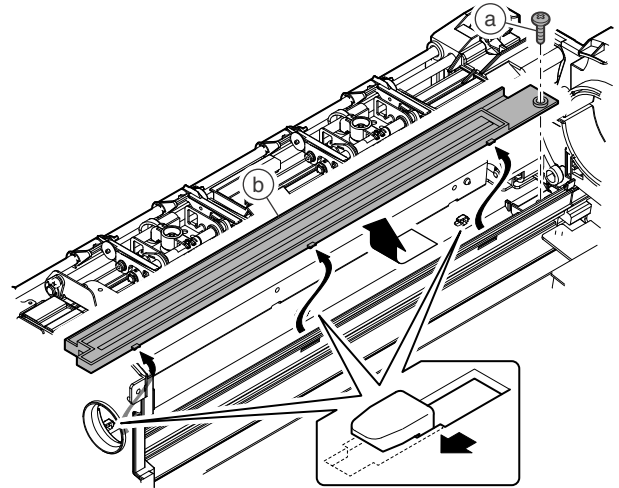
\* When installing the bearing, fit the D-cut direction and engage it properly.



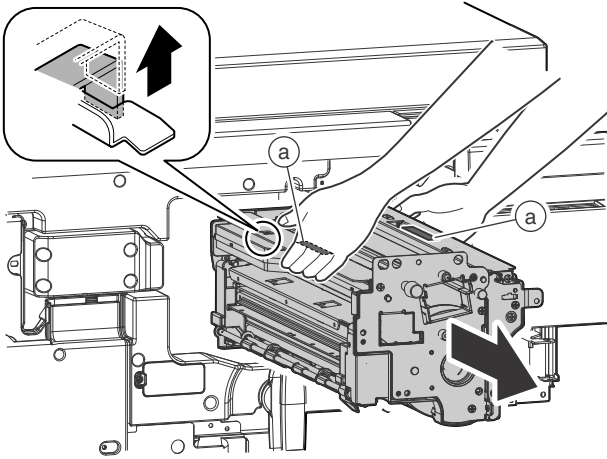
- 8) Hold the handle (a), and pull out the process unit (b) until it stops.



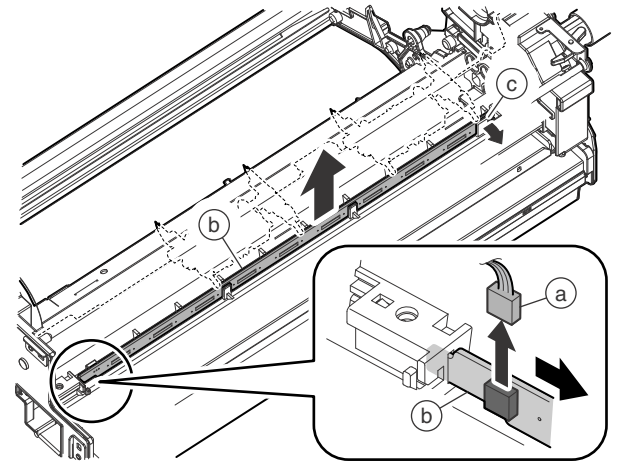
- 4) Remove the blue screw (a), and remove the cover (b).



- 9) Hold the green label section (a) on the process unit frame, and lift it up to remove completely.

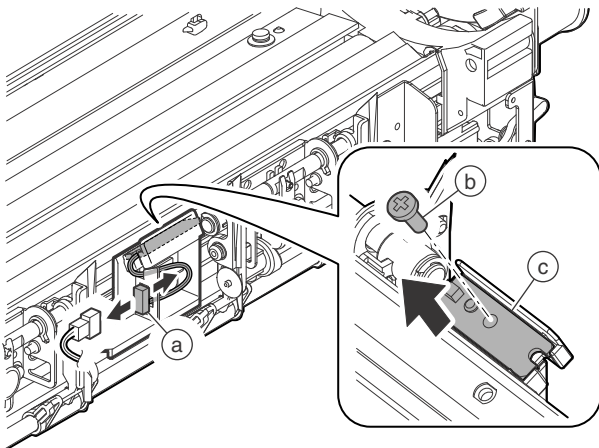


- 5) Disconnect the connector (a), extend the pawl (c), and remove the discharge lamp (b).  
\* Be careful not to break the pawl. (c).



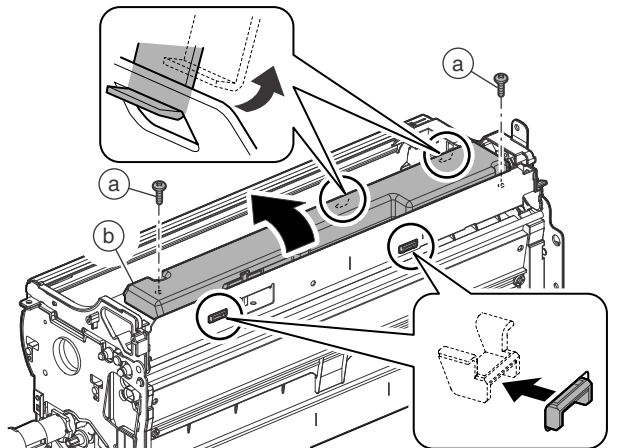
**a. Process control sensor / Discharge lamp**

- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Disconnect the connector (a), and remove the screw (b). Remove the process control sensor (c).



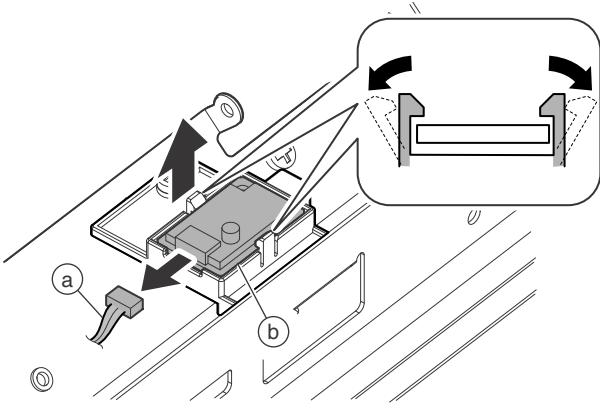
**b. Temperature humidity sensor 1 / Surface potential sensor / Process control sensor PWB**

- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Remove the screw (a), and remove the cover (b).



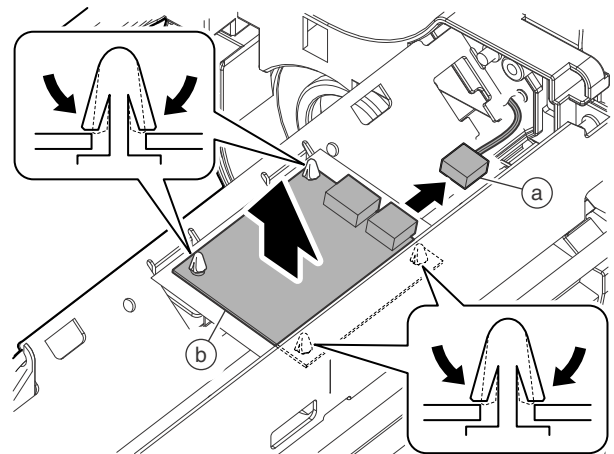


- 4) Disconnect the connector (a), and remove the temperature humidity sensor 1 (b).

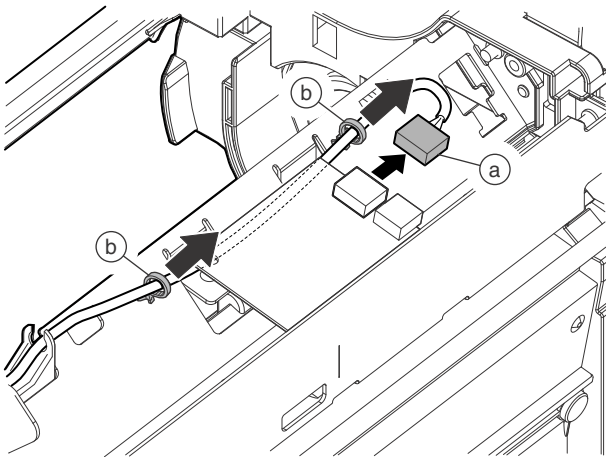


- 7) Disconnect the connector (a), and remove the process control sensor PWB (b).

\* When replacing the process control sensor PWB, replace it together with the surface potential sensor.

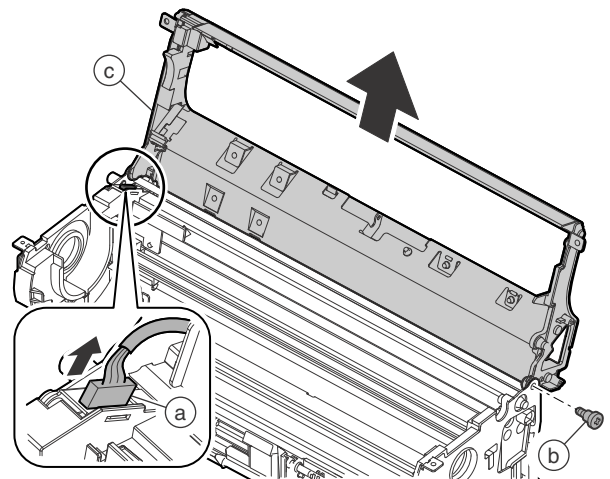


- 5) Disconnect the connector (a), and remove the snap band (b).

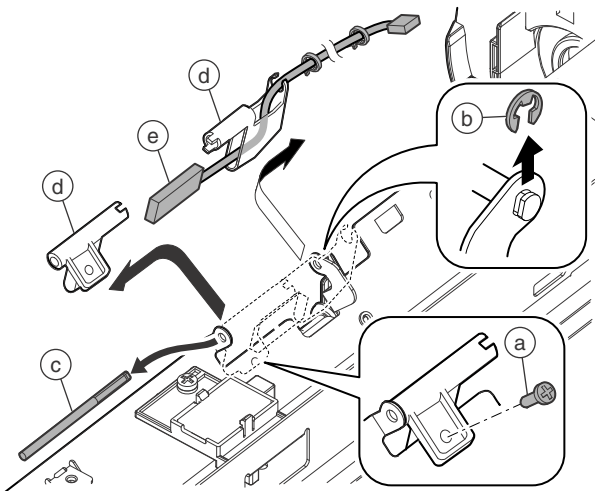


### c. PTDL unit

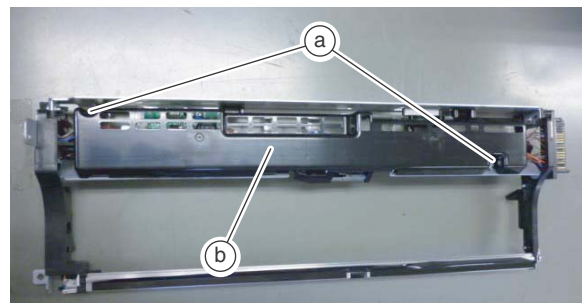
- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Disconnect the connector (a), and remove the step screw (b). Remove the frame (c).



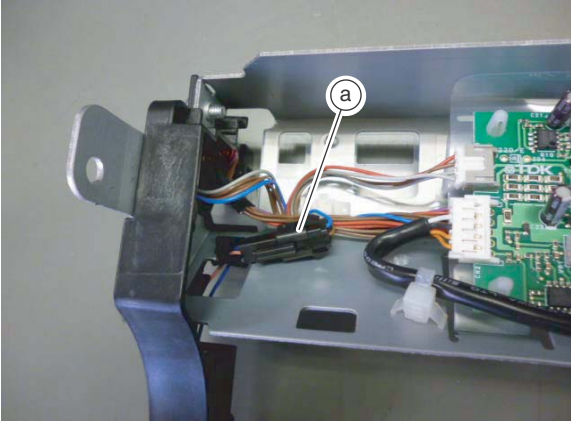
- 6) Remove the screw (a) and the E-ring (b). Remove the shaft (c). Remove the holder (d) from the surface potential sensor (e).



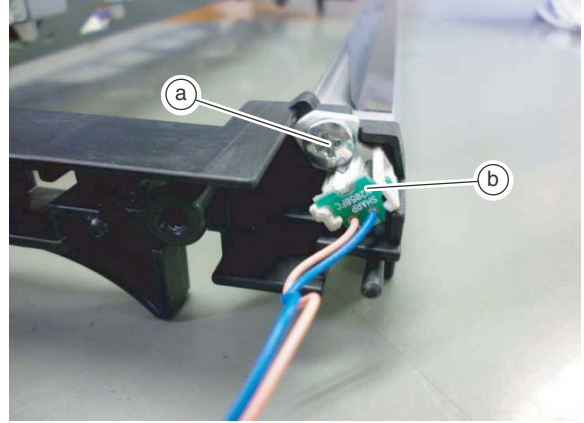
- 4) Remove the screw (a), and remove the cover (b).



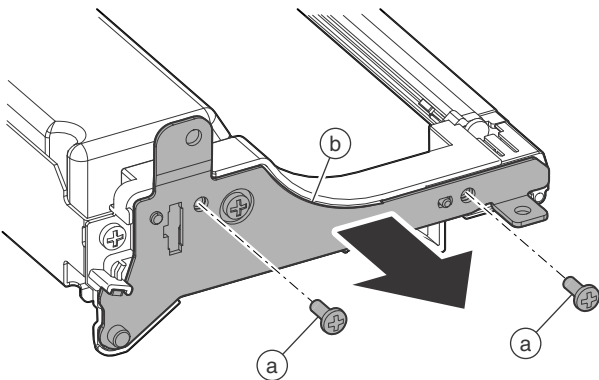
5) Disconnect the connector (a).



9) Remove the screw (a), and remove the PTDL unit.

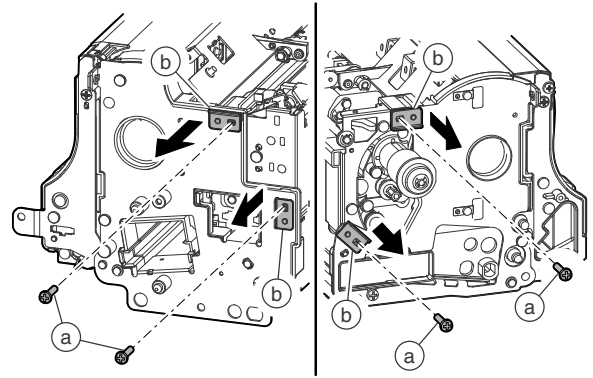


6) Remove the screw (a), and remove the plate (b).

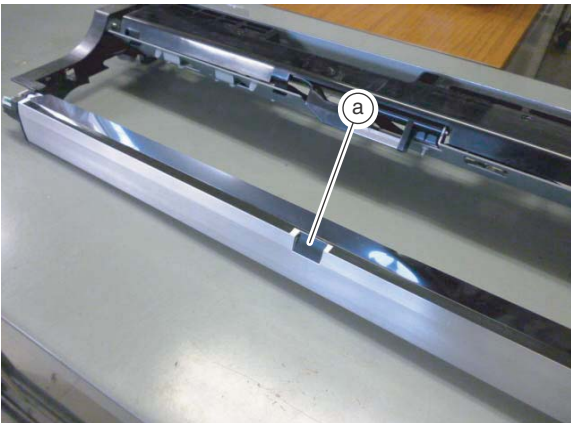


**d. Separation solenoid**

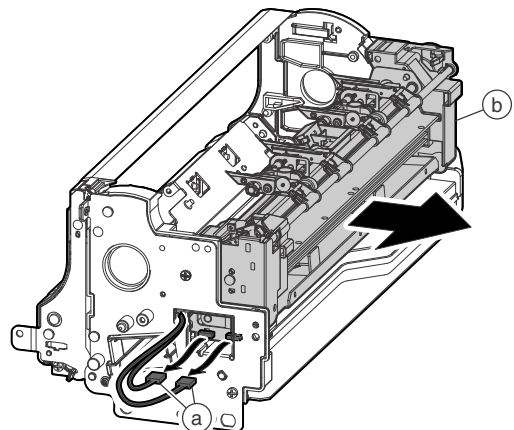
- 1) Remove the process unit.
- 2) Remove the OPC drum unit.
- 3) Remove the screw (a), and remove the plate (b).



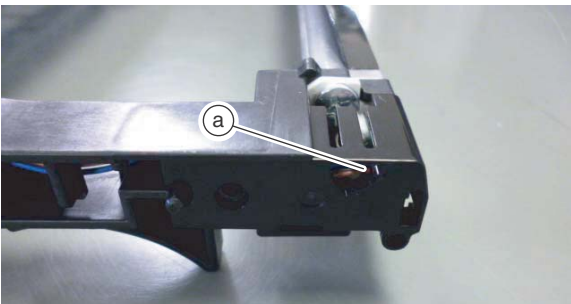
7) Remove the black mylar (a).



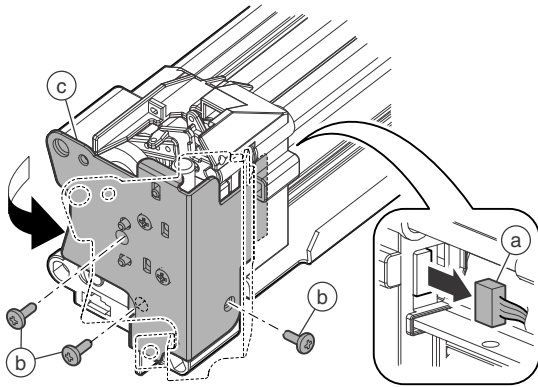
4) Disconnect the connector (a), and remove the frame (b).



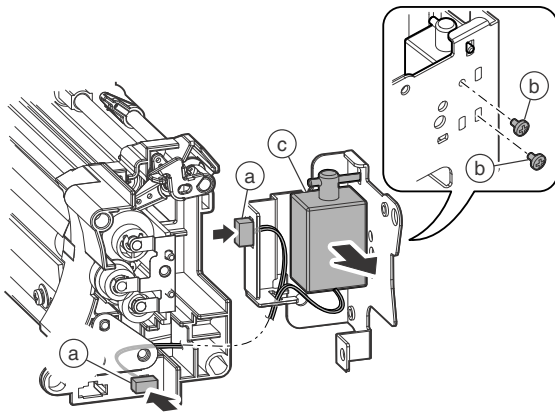
8) Remove the cover (a).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the separation solenoid unit (c).

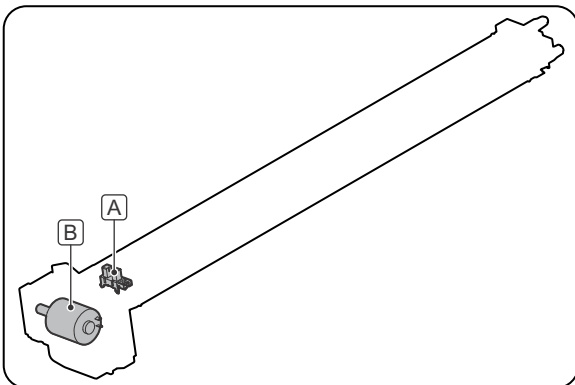


- 6) Disconnect the connector (a), and remove the screw (b). Remove the separation solenoid (c).



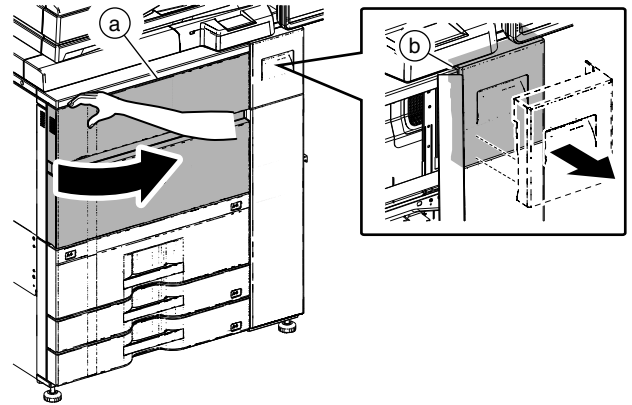
## B. Main charger unit

| Unit              | Parts                                | Page   |
|-------------------|--------------------------------------|--------|
| Main charger unit | A MC cleaner home position detection | i-14/a |
|                   | B Main charger cleaning motor        | i-14/b |

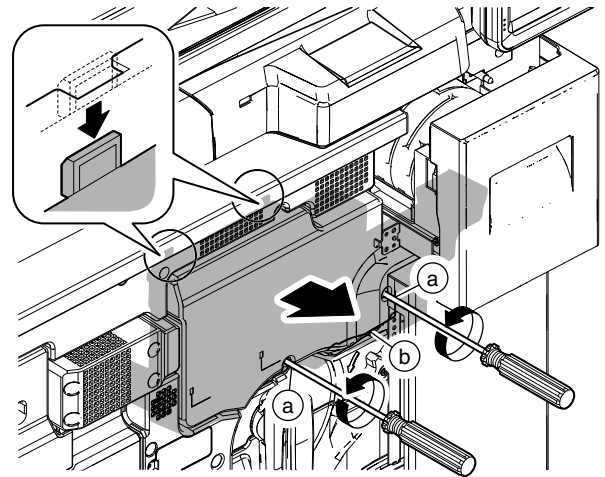


## (1) Main charger unit

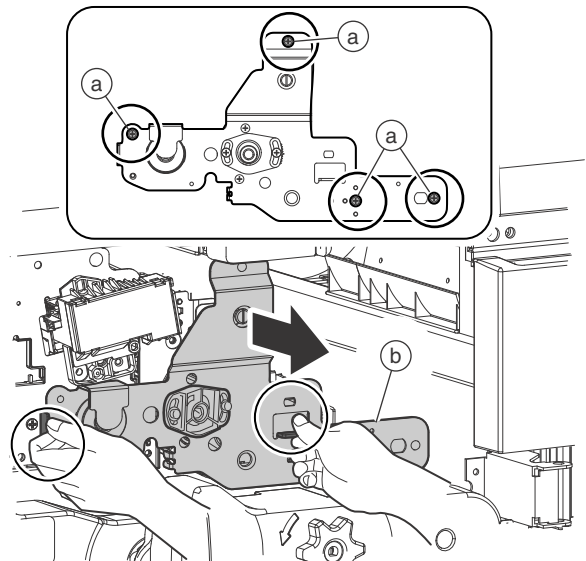
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



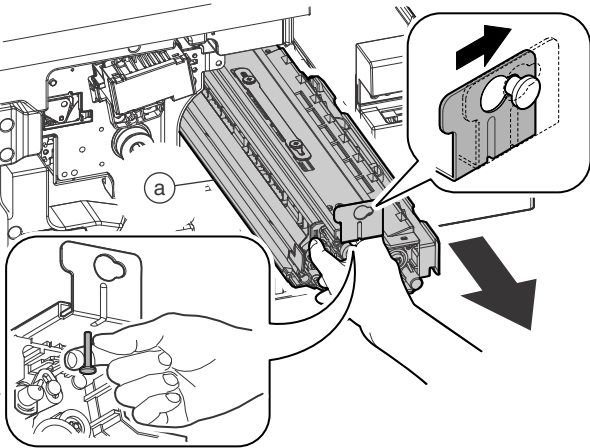
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

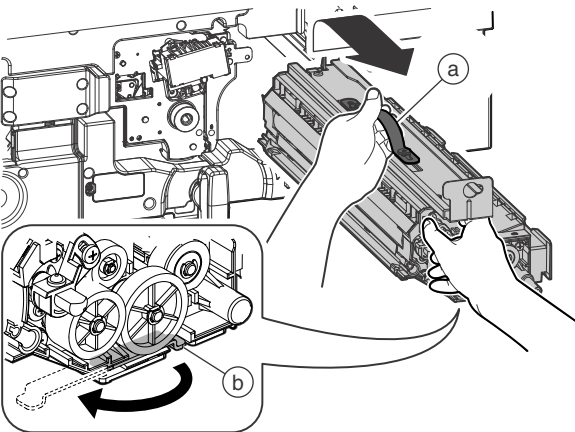


- Slide the developing unit (a) to the right, and pull it out until it stops.

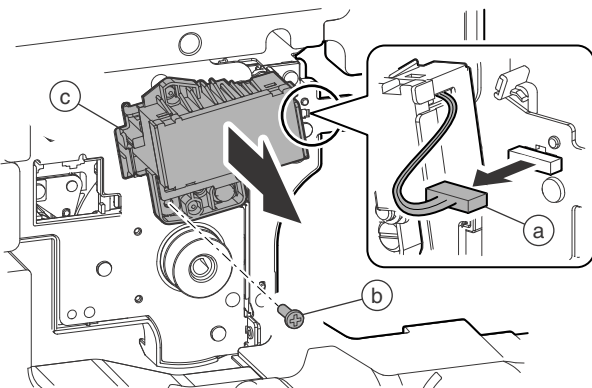


- Hold the handle (a) of the developing unit, and lift it up to remove completely.

\* When placing the developing unit on a floor, use the stand (b) and put the unit on it.

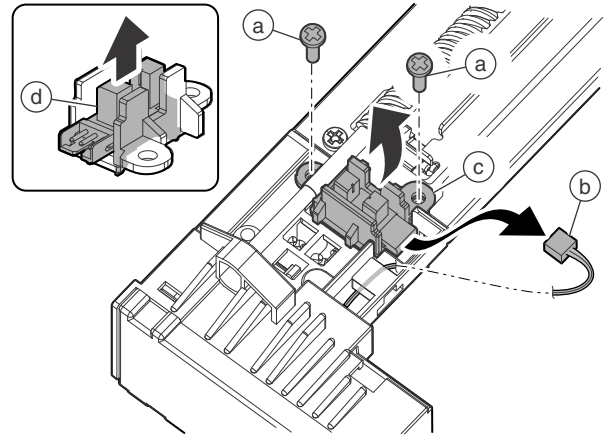


- Disconnect the connector (a), and remove the blue screw (b). Pull out the main charger unit (c).



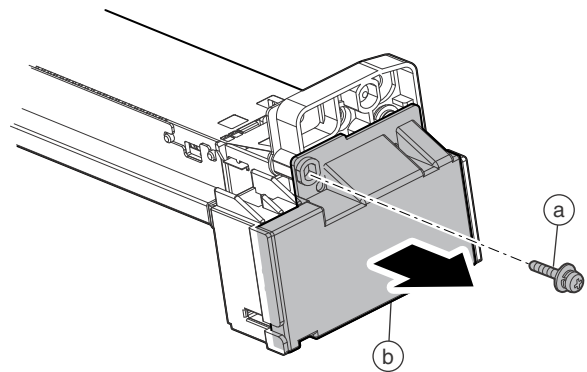
#### a. MC cleaner home position detection

- Remove the main charger unit.
- Remove the screw (a), and disconnect the connector (b). Remove the holder (c), and remove the MC cleaner home position detection (d).

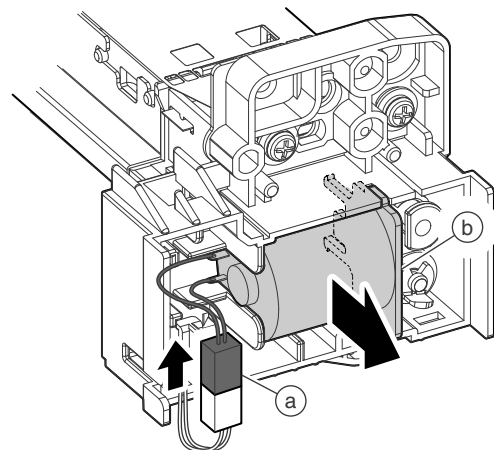


#### b. Main charger cleaning motor

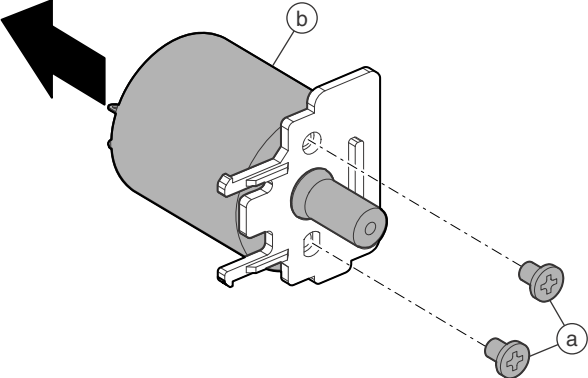
- Remove the main charger unit.
- Remove the blue screw (a), and remove the cover (b).



- Disconnect the connector (a), and remove the main charger cleaning motor unit (b).



4) Remove the screw (a), and remove the main charger cleaning motor (b).

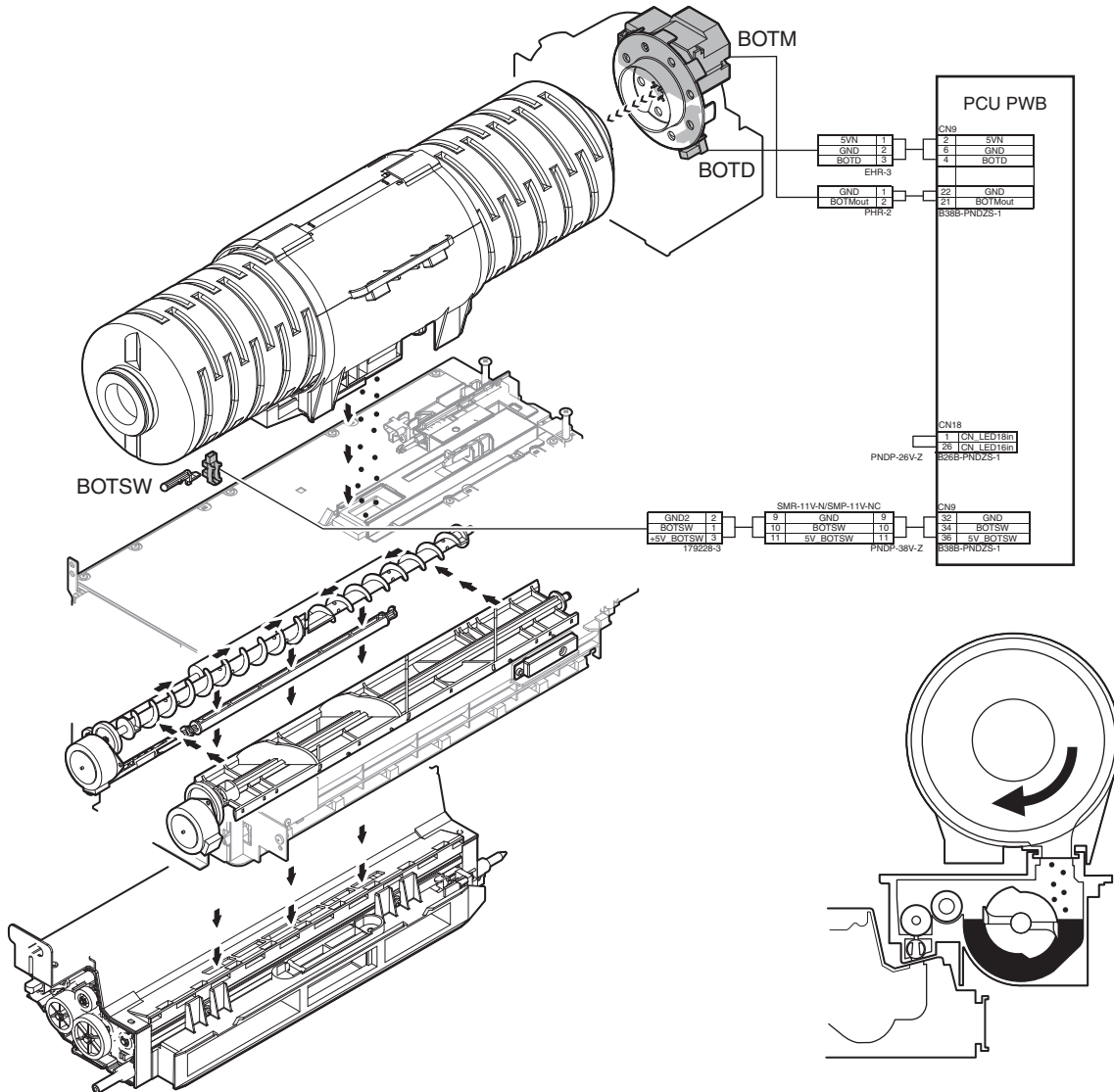


# [J] TONER SUPPLY SECTION

## 1. Electrical and mechanism relation diagram

### A. Toner cartridge section

This section supplied toner in the toner cartridge to the toner hopper.

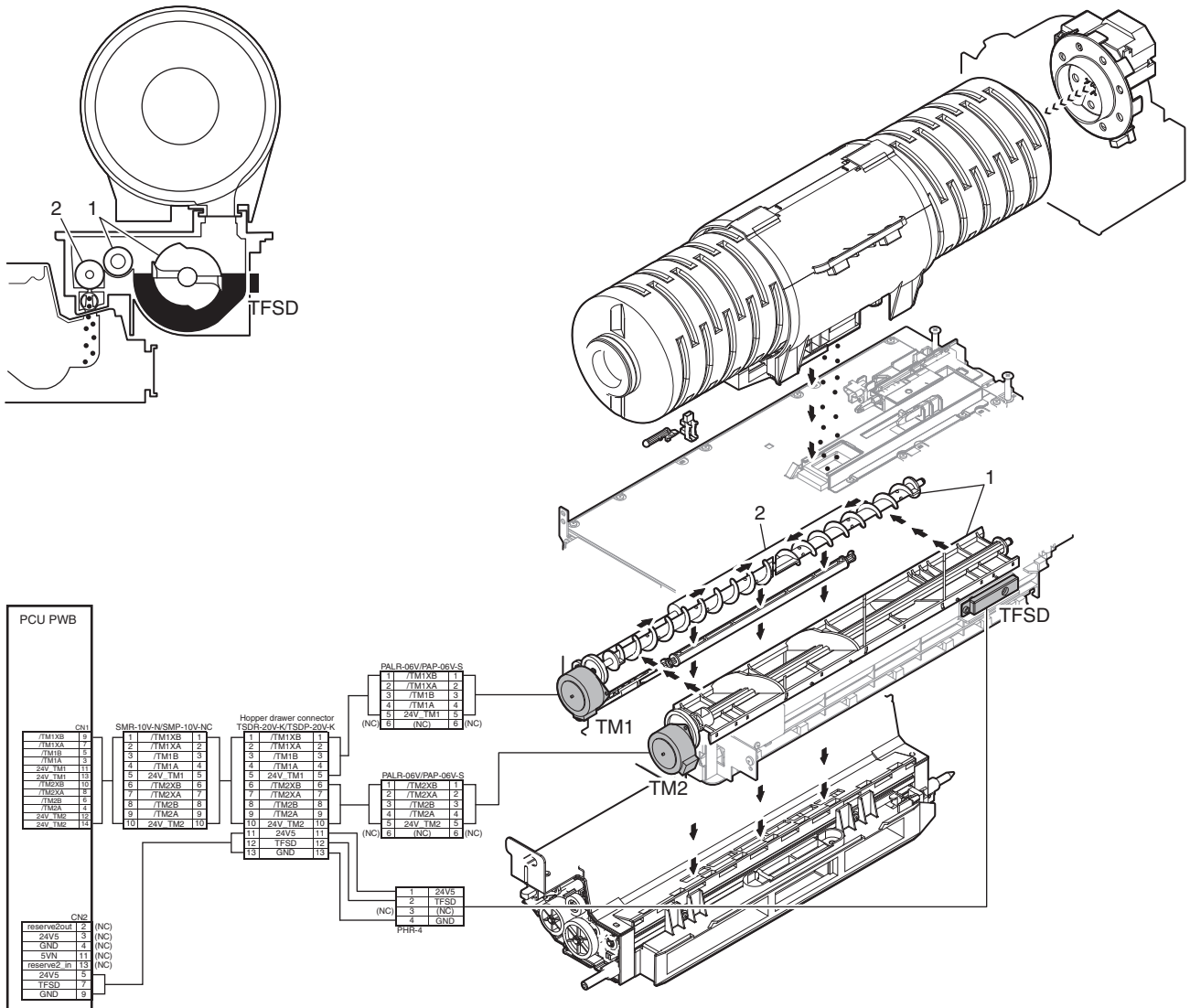


| Code  | Name                            | Function / Operation   | Type                           |
|-------|---------------------------------|--|--------------------------------|
| BOTM  | Toner cartridge motor           | Rotates the toner cartridge to supply toner in the toner cartridge to the toner hopper unit. | DC brush motor                 |
| BOTD  | Toner cartridge rotation sensor | Detects rotation of the toner cartridge.   | Transmission type photo sensor |
| BOTSW | Toner cartridge sensor          | Detects open/close of the toner tray.  | Transmission type photo sensor |

The toner cartridge contains of toner.

## B. Toner hopper section

This section supply toner to the developing section.



| No. | Name                | Function / Operation  |
|-----|---------------------|---|
| 1   | Toner mixing roller | Mixes toner in the toner hopper.                              |
| 2   | Toner supply roller | Supplies toner in the toner hopper to the developing section. |

| Code | Name                                   | Function / Operation  | Type            |
|------|--|---|-----------------|
| TM1  | Toner motor 1                          | Drives the toner supply roller to supply toner in the toner hopper to the developing section. | Stepping motor  |
| TM2  | Toner motor 2                          | Mixes toner in the toner hopper.  | Stepping motor  |
| TFSD | Hopper toner remaining quantity sensor | Detects the remaining quantity of toner in the toner hopper.                                  | Magnetic sensor |

When the toner cartridge is empty and the hopper toner remaining quantity sensor (TFSD) detects toner near end, the message to replacement of the toner cartridge is displayed. At that time, toner remains in the toner hopper.

## 2. Operational descriptions

### A. Toner end judgment criteria

There are following two conditions for judging as Toner End.

When one of them is satisfied, it is judged as Toner End.

- 1) When the accumulated rotation time of the toner motor (TM1) reaches 840sec from the toner near end timing.  
(This condition can be ignored by setting with the simulation.)
- 2) When Toner Low is detected by the toner density sensor (TCS) and Toner Near End is judged by the hopper toner remaining quantity sensor (TFSD). Or when the toner cartridge is not installed.

When Toner Low is detected by the toner density sensor in a state other than the Toner Near End condition, it is judged that toner is not supplied from the toner hopper to the developing section and that there is an abnormality in the toner hopper, displaying the F2-64 error and disabling the printing operation.

### B. Relationship between toner cartridge installation and operation

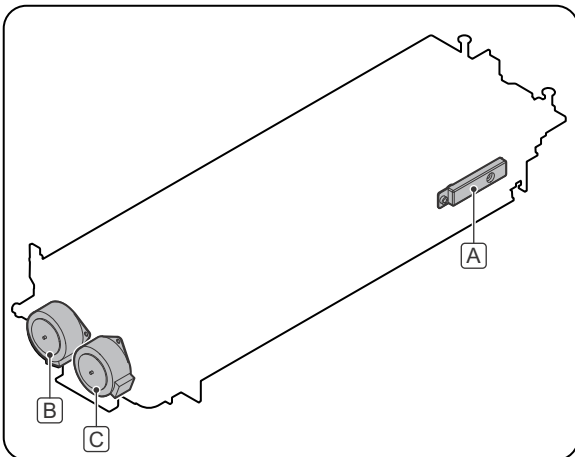
When the power is turned ON under toner empty with no toner cartridge installed, the message to urge installation of the toner cartridge is displayed and no print job can be executed.

When, however, in the normal state or in toner near end state with no toner cartridge installed, the message to urge installation of the toner cartridge but a job under execution is continued and a new job is accepted.

## 3. Disassembly and assembly

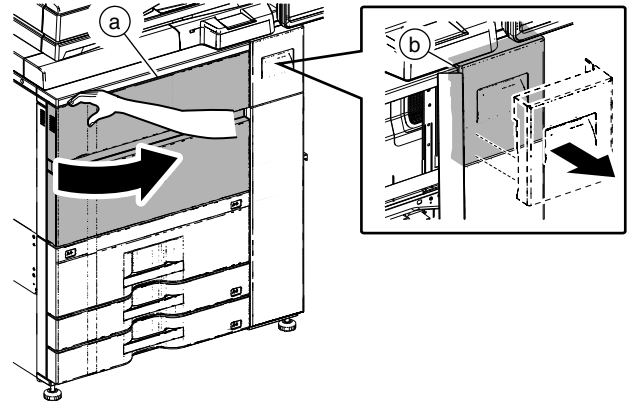
### A. Toner hopper unit

| Unit              | Parts                             | Page  |
|-------------------|-----------------------------------|-------|
| Toner hopper unit | A Toner remaining quantity sensor | J-5/a |
|                   | B Toner motor 1                   | J-5/b |
|                   | C Toner motor 2                   |       |

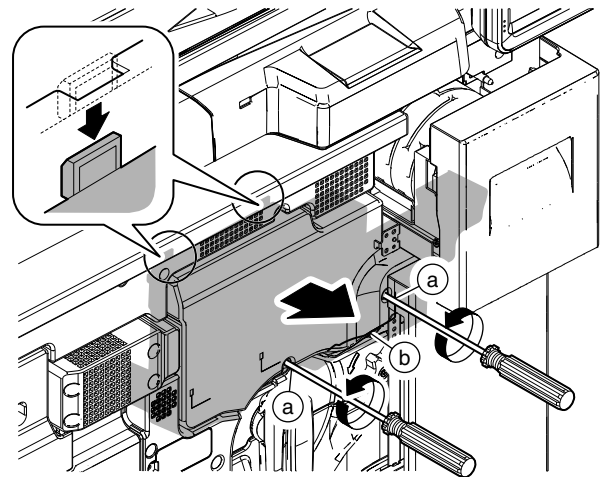


### (1) Toner hopper unit

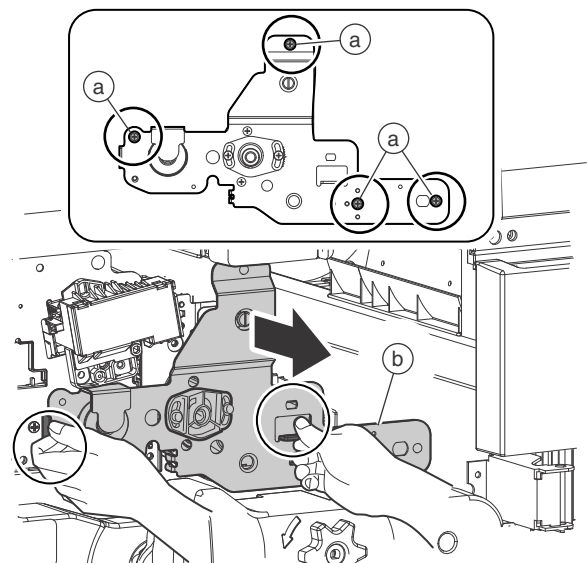
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



- 2) Remove the screw (a), and remove the cover (b).

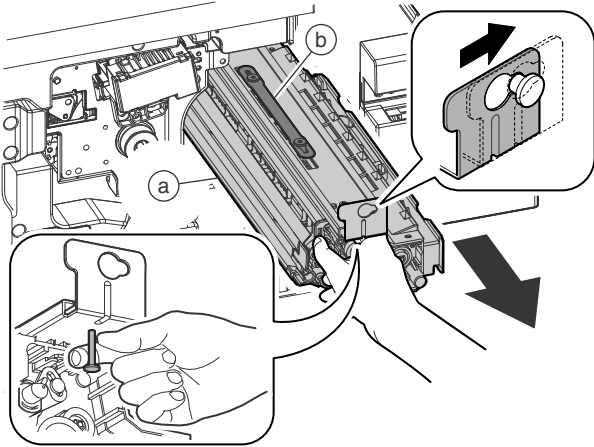


- 3) Remove the blue screw (a), and remove the plate (b).

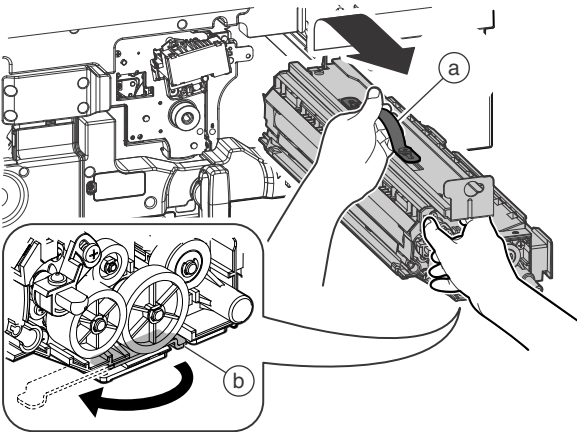




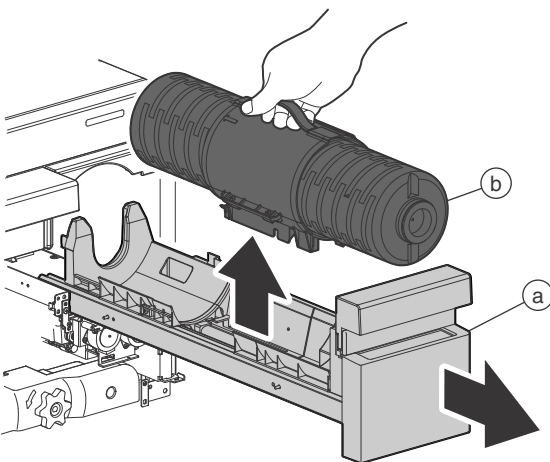
- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.



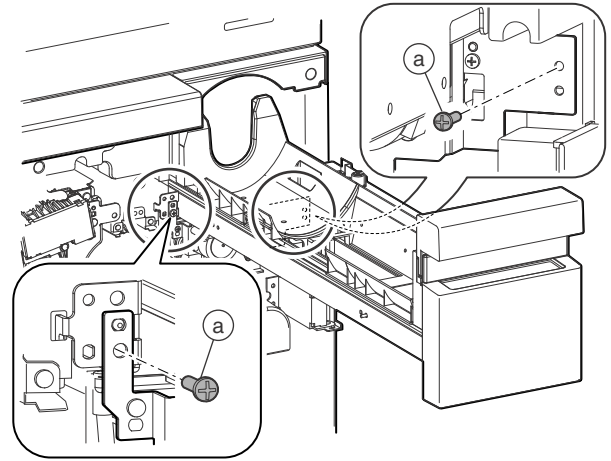
- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.  
 \* When placing the developing unit, use the stand (b) and place the unit on it.



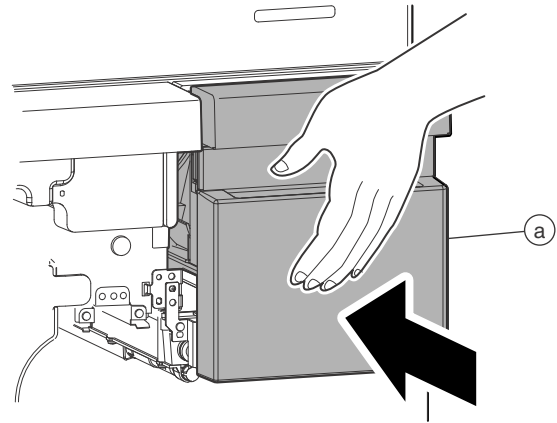
- 6) Pull out the toner tray (a), and remove the toner cartridge (b).



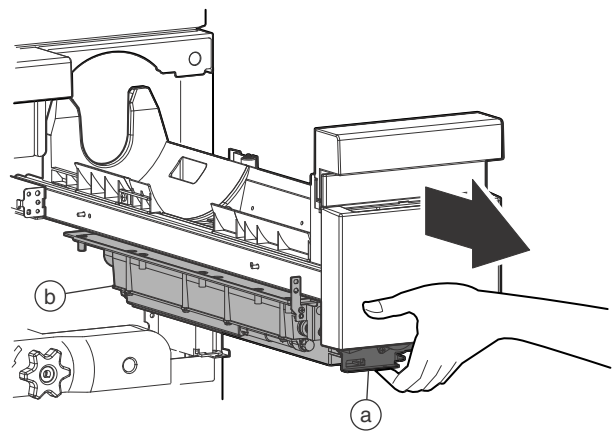
- 7) Remove the screw (a).



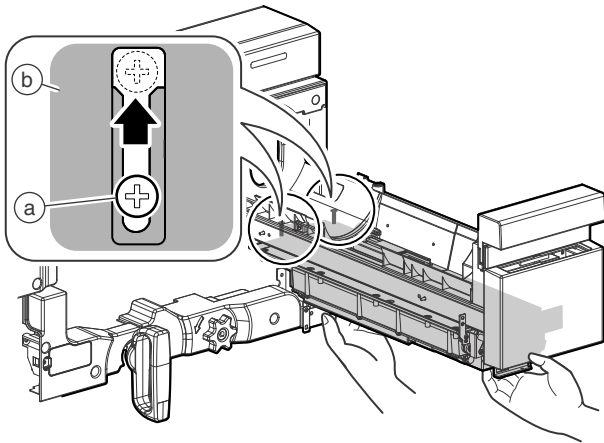
- 8) Install the toner tray (a).



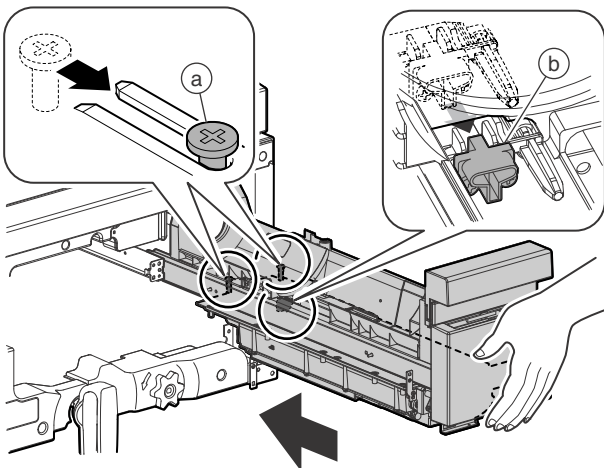
- 9) Hold the motor section (a), and pull out the toner hopper unit (b) together with the toner tray.



- 10) Remove the step screw (a) in the rear section of the toner hopper unit from the toner tray (b).

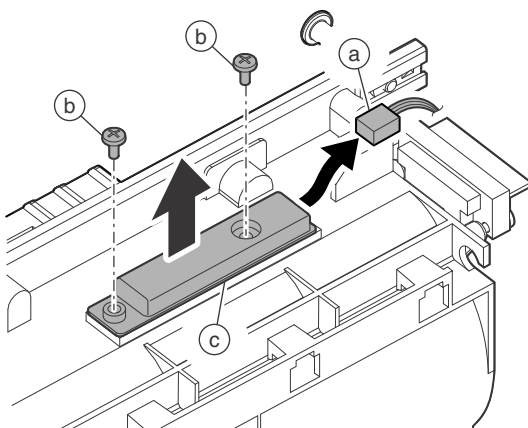


\* When installing the toner hopper unit, pull out the toner tray and engage the step screw (a) and the connector (b), and store the toner hopper unit together with the toner tray.



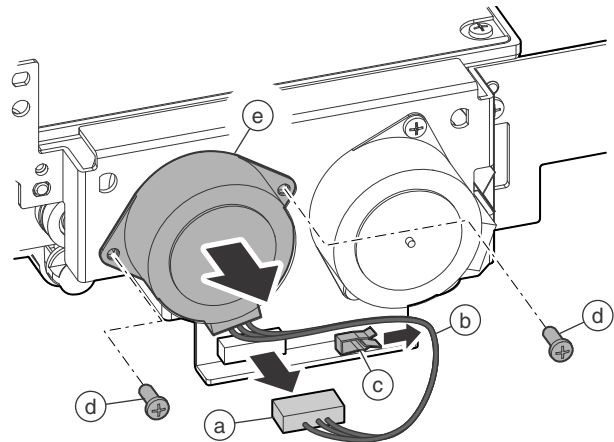
#### a. Toner remaining quantity sensor

- 1) Remove the toner hopper unit.
  - 2) Disconnect the connector (a), and remove the screw (b). Remove the toner remaining quantity sensor (c).
- \* Use extra care not to foul the connector (a) terminal section.

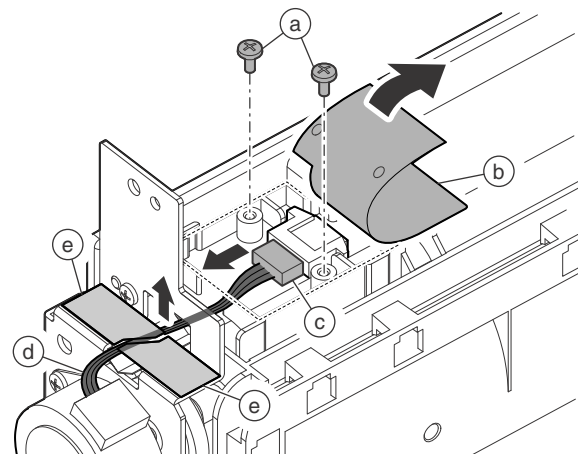


#### b. Toner motor 1 / Toner motor 2

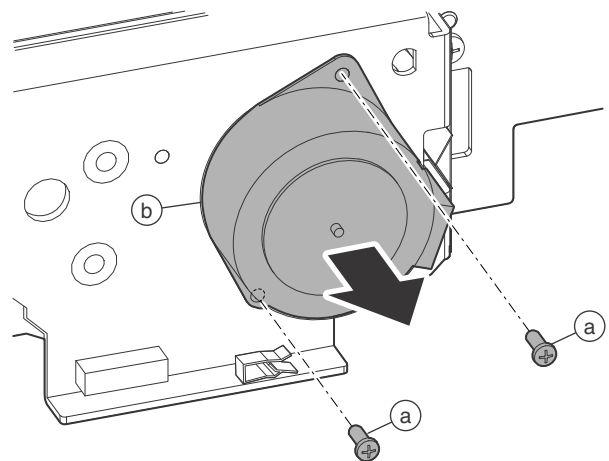
- 1) Remove the toner hopper unit.
- 2) Disconnect the connector (a), and remove the harness (b) from the harness holder (c). Remove the screw (d), and remove the toner motor 1 (e).



- 3) Remove the screw (a). Pull up the sheet (b) and disconnect the connector (c). Remove the harness (d) from the sheet (e).

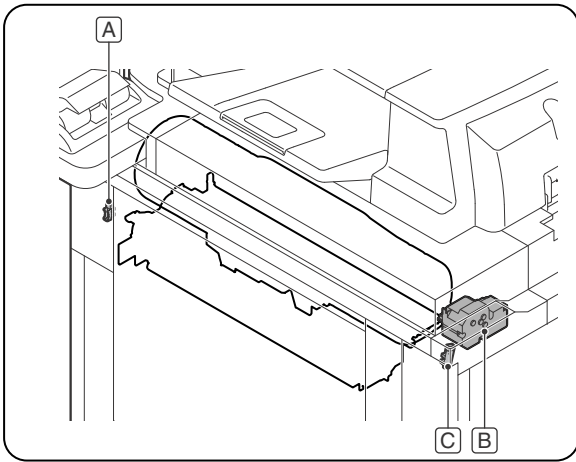


- 4) Remove the screw (a), and remove the toner motor 2 (b).



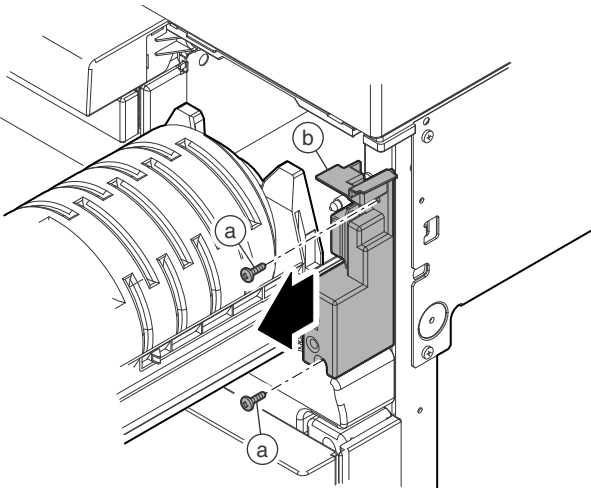
## B. Others

|   | Parts                              | Page    |
|---|------------------------------------|---------|
| A | Toner tray detection               | J-6/(1) |
| B | Toner cartridge motor              | J-6/(2) |
| C | Toner cartridge rotation detection |         |

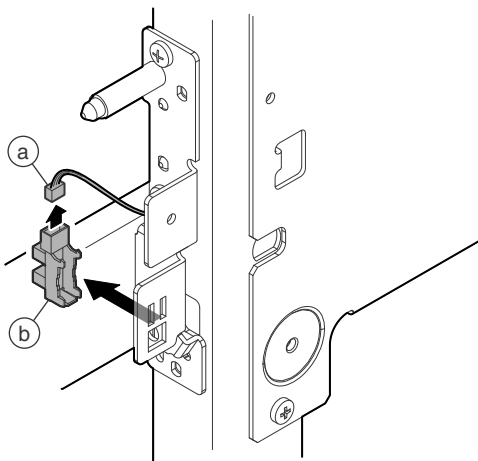


### (1) Toner tray detection

- 1) Remove the upper cabinet right and the upper cabinet front cover right.
- 2) Remove the screw (a), and remove the cover (b).

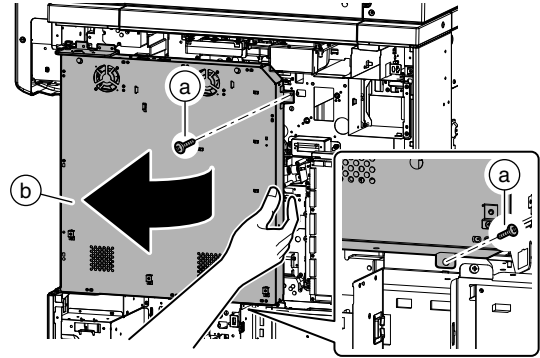


- 3) Disconnect the connector (a), and remove the toner tray detection (b).

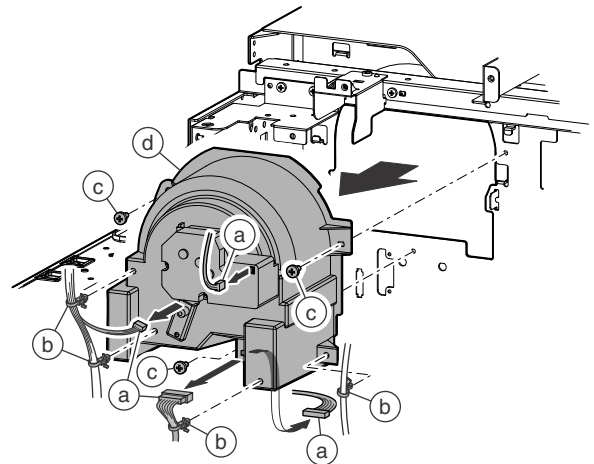


### (2) Toner cartridge motor / Toner cartridge rotation detection

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the upper cabinet rear cover.
- 3) Remove the upper cabinet right.
- 4) Remove the screw (a), and open the control box (b).



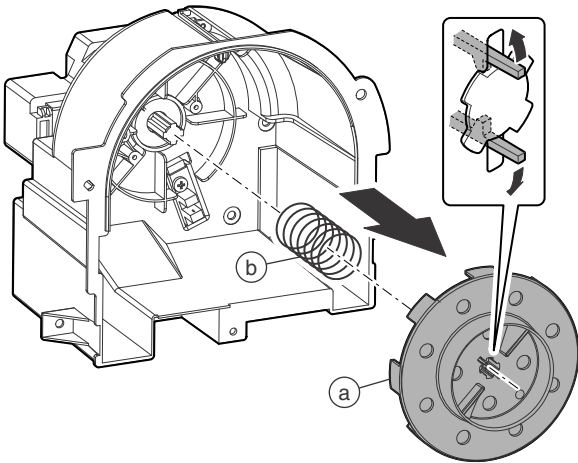
- 5) Disconnect the connector (a), and remove the snap band (b). Remove the screw (c), and remove the cover (d).



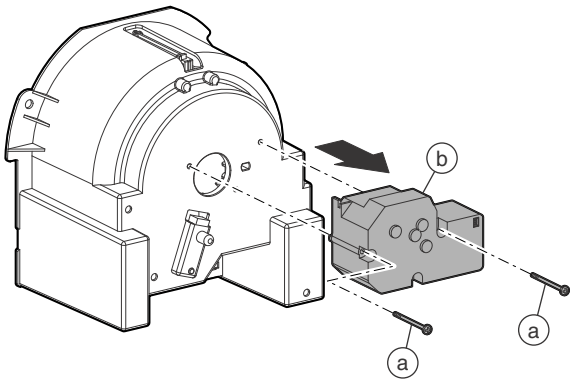
- 6) Remove the screw (a), and remove the bottle lever.



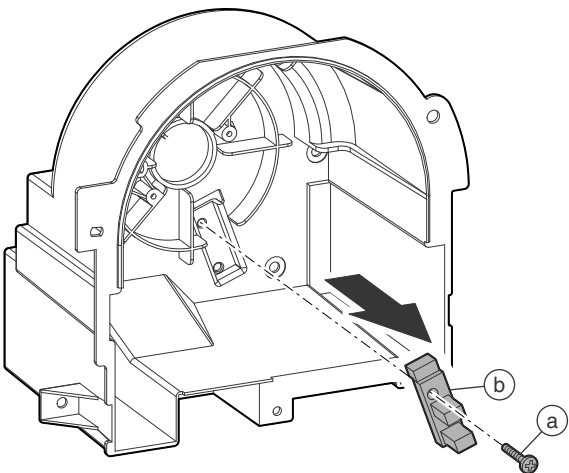
7) Remove the coupling (a) and remove the spring (b).



8) Remove the screw (a), and remove the toner cartridge motor (b).



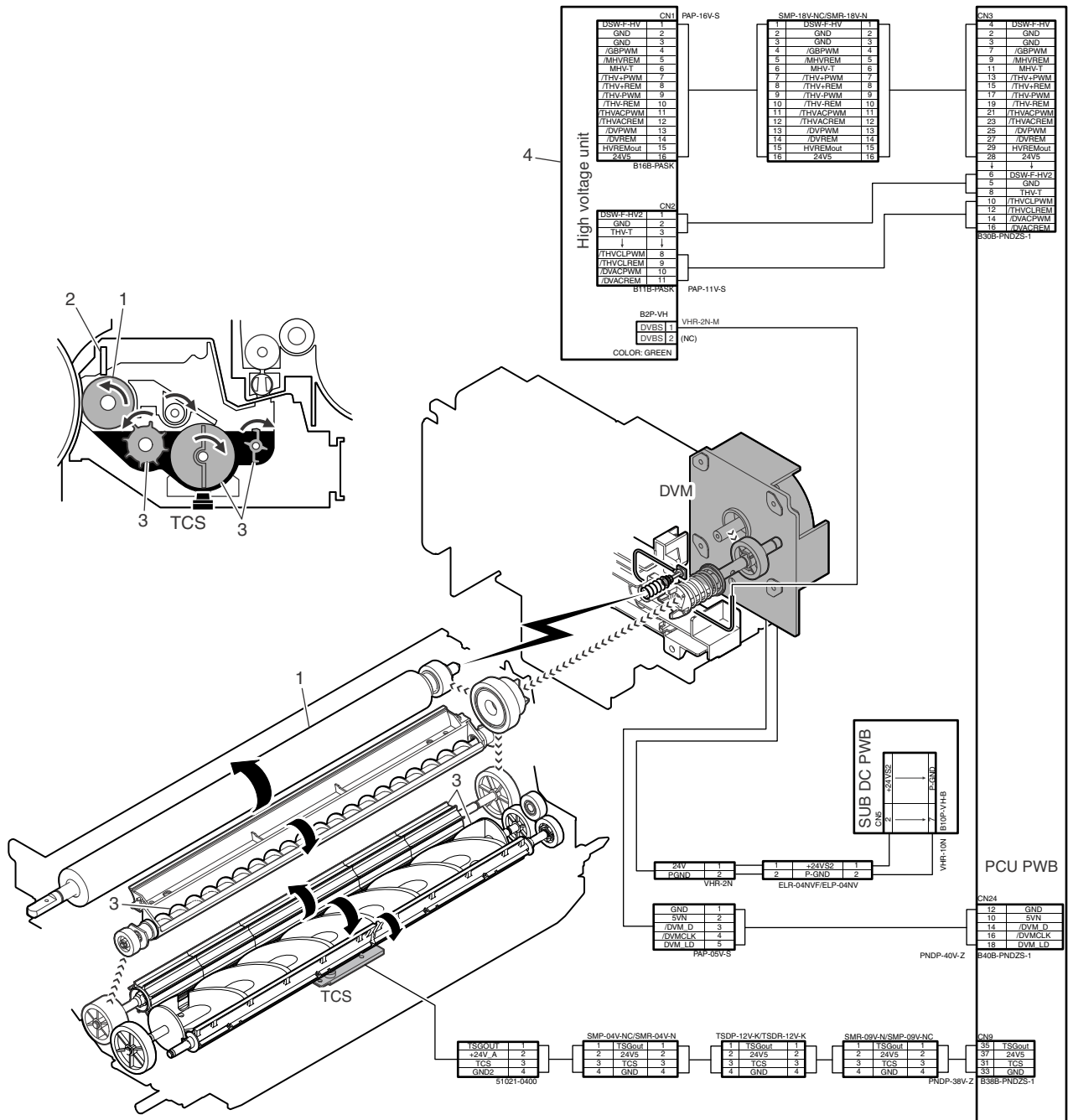
9) Remove the screw (a), and remove the toner cartridge rotation detection (b).



# [K] DEVELOPING SECTION

## 1. Electrical and mechanism relation diagram

In this section, toner is attracted to electrostatic latent images generated in the exposure section, forming visible images.



| No. | Name                                     | Function / Operation   |
|-----|--|--|
| 1   | Developer roller                         | Forms a magnetic brush with developer, and forms toner images on the OPC drum.   |
| 2   | Developing doctor                        | Controls the thickness and the quantity of developer and toner (magnetic brush) on the MG roller to the proper levels. |
| 3   | Toner mixing roller (Developing section) | Mixes and circulates developer (carrier) and toner to uniformize the toner density and to charge toner negatively.     |
| 4   | Main high voltage PWB                    | Outputs the developing bias voltage.   |

| Code | Name                 | Function / Operation   | Type               |
|------|----------------------|--|--------------------|
| TCS  | Toner density sensor | Detects the toner density in the developing tank. The magnetic sensor is employed. | Magnetic sensor    |
| DVM  | Developing motor     | Drives the developing unit.  | DC brushless motor |

## 2. Operational descriptions

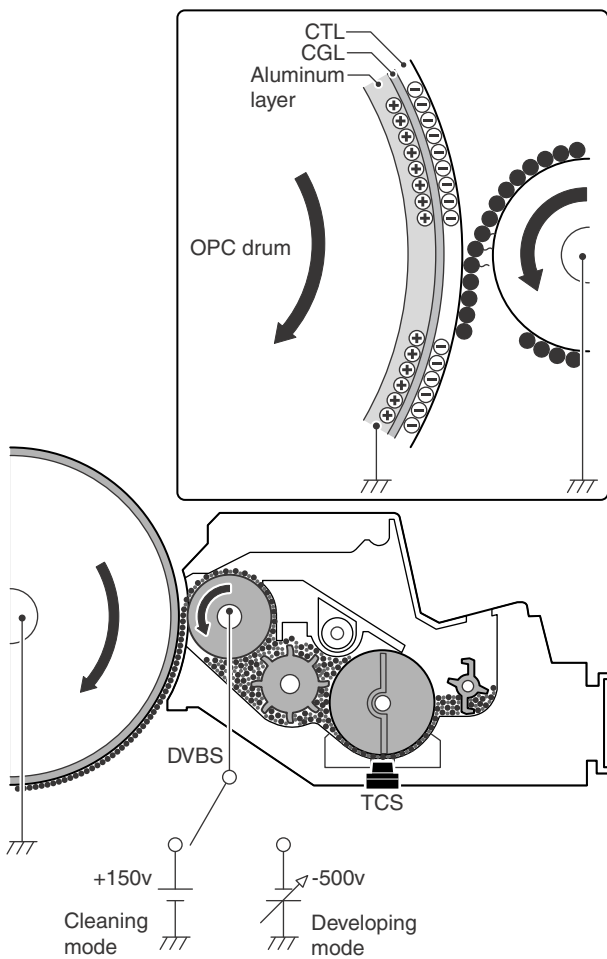
Toner and carrier in the developing unit are mixed and transported. At that time, toner is charged negatively by mechanical contact with carrier.

This process is known as triboelectrification. The suffix tribo means to rub in Greek, thus triboelectrification simply means to electrify (or charge) by rubbing, or by contact. Interestingly, it is not friction that results in the charging process, but rather a chemical reaction that occurs between the two dissimilar materials. By rubbing the two materials together a larger surface area is contacted resulting in a greater exchange in charge.

In addition, the developing bias voltage is applied to the developing roller.

Negatively charged toner is attached to the exposed section on the OPC drum surface (where the negative potential is reduced) by the developing bias voltage.

On the other hand, the surface potential of the non-exposed section on the OPC drum surface is higher than the developing bias, and toner is not attached to that section. Through this operation, visible images are formed on the OPC drum with toner.



### A. Developing bias voltage

Immediately after starting rotation of the OPC drum and when the developing roller is stationary, the reverse bias (positive voltage) is applied to the developing roller, preventing unnecessary toner from attaching to the OPC drum.

| Operation mode  | Output voltage |
|-----------------|----------------|
| When developing | -500v          |

By changing the developing bias voltage control signal (XDVPWM) duty, the polarity and the output voltage are controlled.

The developing bias voltage ON/OFF is controlled with the signal XDVREM.

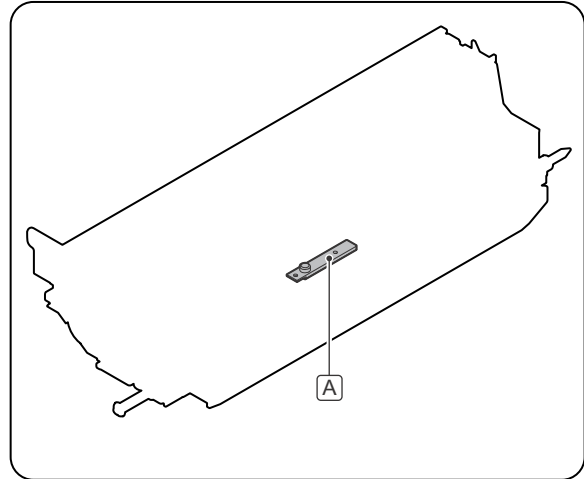
The toner density sensor (TCS) is provided in the lower section of the developing section to always detect the toner density.

This signal is inputted to the PCU PWB, which controls the toner supply quantity from the toner hopper and the toner cartridge so that the proper density is always maintained.

## 3. Disassembly and assembly

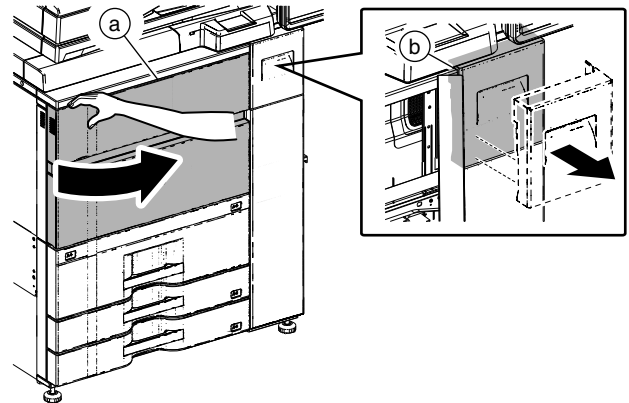
### A. Development unit

| Unit             | Parts        | Page  |
|------------------|--------------|-------|
| Development unit | A TCS sensor | K-3/a |

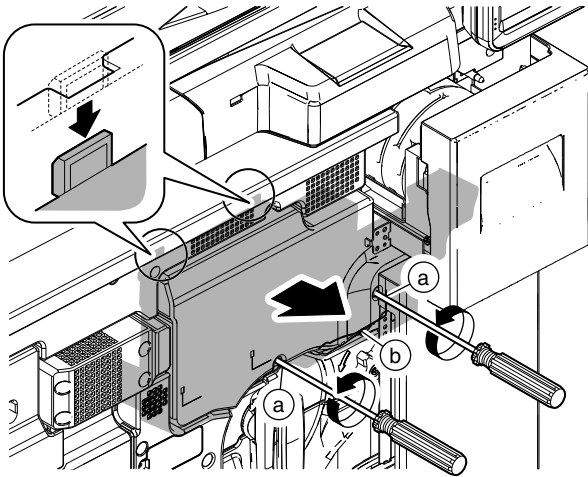


#### (1) Development unit

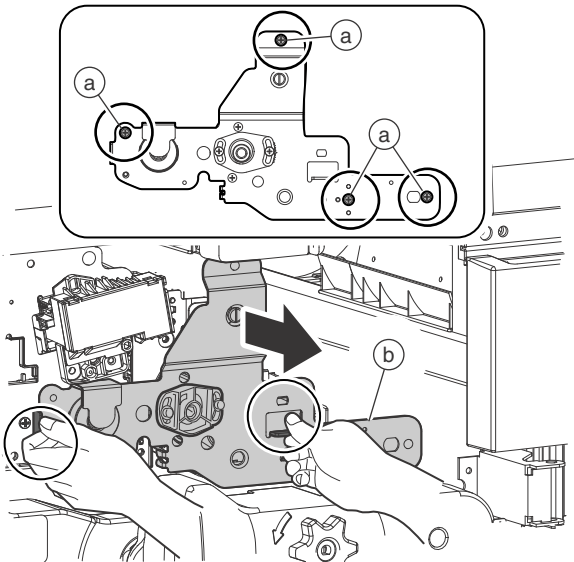
- 1) Open the front cover (a), and pull out the toner tray (b) slightly.



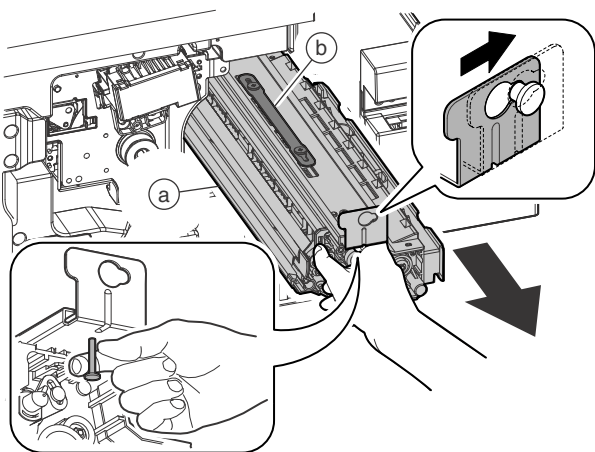
- 2) Remove the screw (a), and remove the cover (b).



- 3) Remove the blue screw (a), and remove the plate (b).

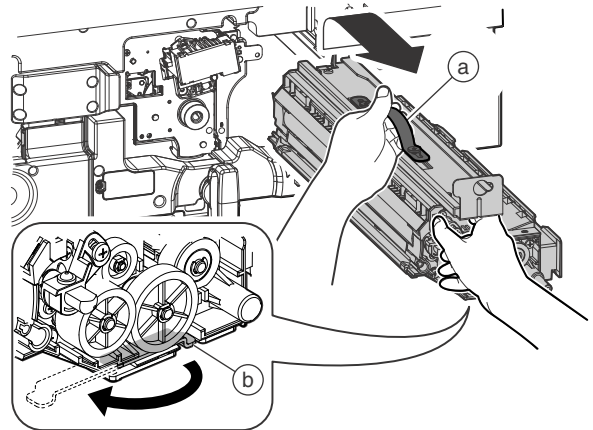


- 4) Slide the developing unit (a) to the right, and pull it out until the grip (b) can be held.



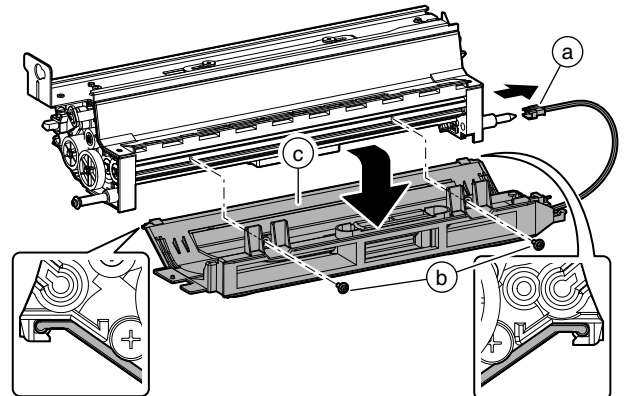
- 5) Hold the handle (a) of the developing unit, and lift it up to remove completely.

\* When placing the developing unit, use the stand (b) and place the unit on it.



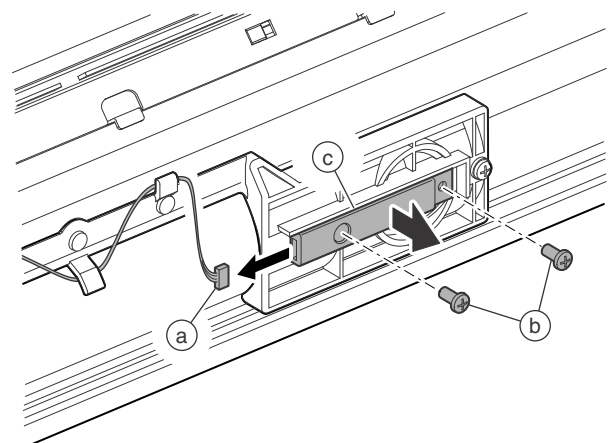
#### a. TCS sensor

- 1) Remove the development unit
  - 2) Disconnect the connector (a), and remove the screw (b). Remove the cover (c).
- \* Use extra care not to foul the connector (a) terminal section.



- 3) Disconnect the connector (a), and remove the screw (b). Remove the TCS sensor (c).

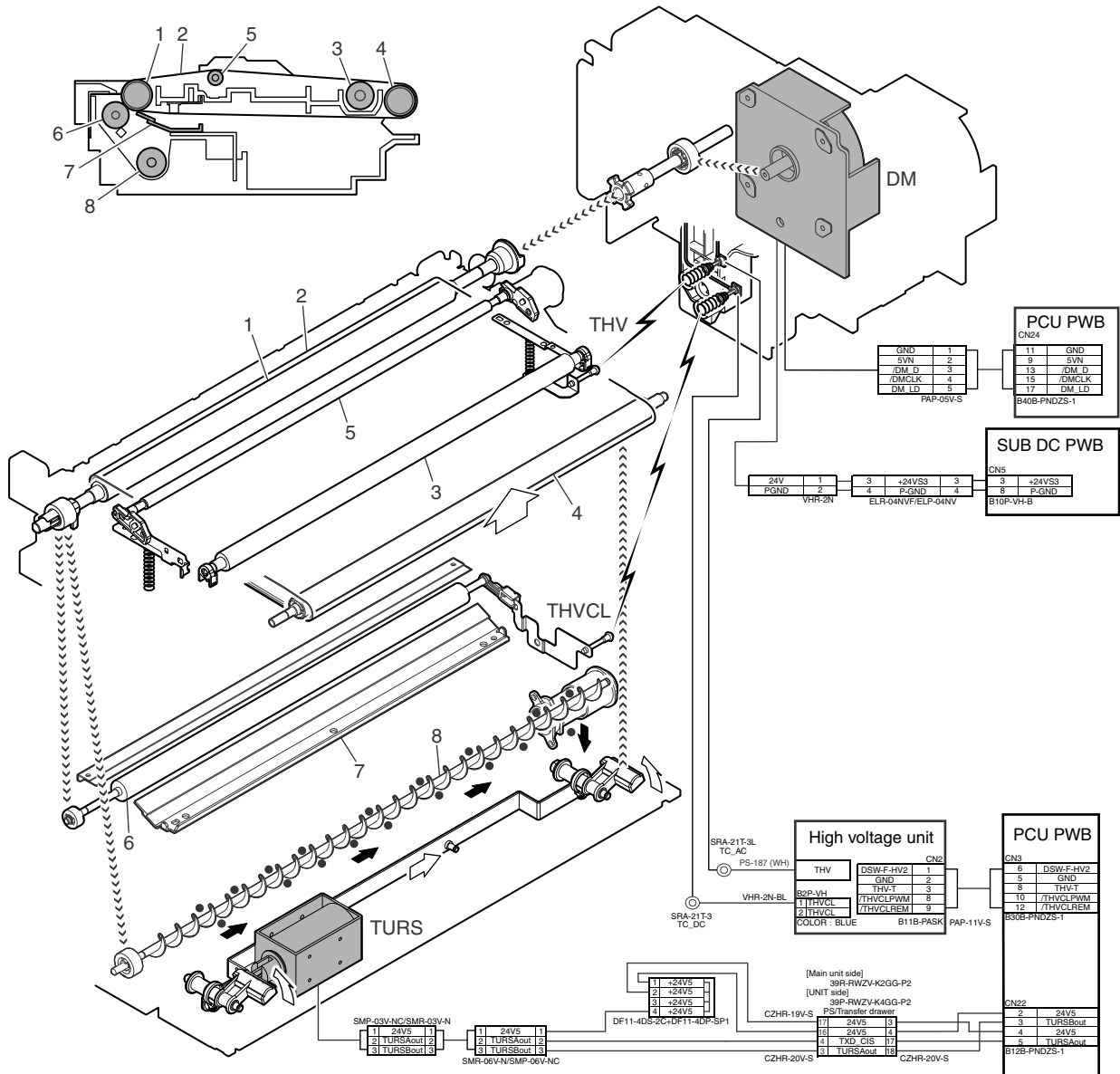
\* Use extra care not to foul the connector (a) terminal section.



# [L] TRANSFER SECTION

## 1. Electrical and mechanism relation diagram

In this section, a positive high voltage is applied to paper to transfer toner images from the OPC drum to paper.



| No. | Name   | Function / Operation   |
|-----|--|--|
| 1   | Transfer drive roller                          | Drives the transfer belt.  |
| 2   | Transfer belt                                  | Transfers toner images from the OPC drum to paper.                                   |
| 3   | Transfer roller                                | Applies a voltage for transfer of toner from the OPC drum to paper.                  |
| 4   | Transfer idle roller                           | Applies a pressure required for cleaning the transfer belt to the cleaning blade.    |
| 5   | Transfer tension roller                        | Applies a proper tension to the transfer belt.                                       |
| 6   | Transfer cleaning brush                        | Scrapes away residual toner from the transfer belt after transfer for cleaning.      |
| 7   | Transfer cleaning blade                        | Scrapes away residual toner from the transfer belt after transfer for cleaning.      |
| 8   | Waste toner transport screw (Transfer section) | Transports waste toner from the transfer unit to the waste toner collection section. |
| 9   | Main high voltage PWB                          | Outputs the transfer voltage and the transfer cleaning voltage.                      |
| 10  | Sub high voltage PWB                           | Outputs the transfer cleaning voltage.   |

| Code | Name                        | Function / Operation   | Type               |
|------|-----------------------------|--|--------------------|
| PTDL | Pre-transfer discharge lamp | Reduces the OPC drum potential before transfer to improve the transfer efficiency. | LED                |
| TURS | Transfer solenoid           | Separates/attaches the transfer belt from/to the OPC drum.                         | Solenoid           |
| DM   | OPC drum motor              | Drives the transfer section.   | DC brushless motor |

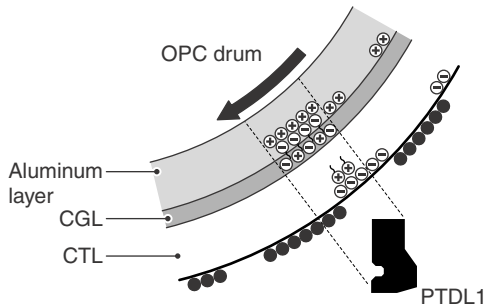


## 2. Operational descriptions

### A. Pre-transfer discharge operation

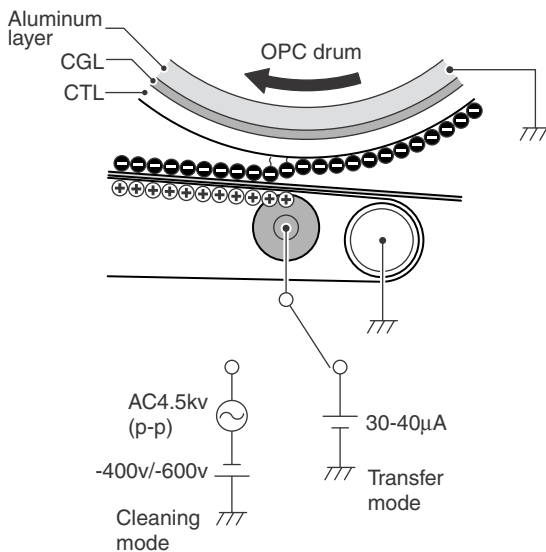
Light is radiated onto the OPC drum after development to reduce negative charges on the OPC drum. In the areas where toner is attached to, an electric attraction force between the OPC drum and toner is weakened to improve the efficiency in transfer operations.

In the areas where toner is not attached to, an electric attraction force between paper and the OPC drum after transfer is weakened to improve the separation performance.



### B. Transfer operation

A positive high voltage is applied to the transfer roller to charge paper on the transfer belt positively, transferring negatively charged toner images onto paper.



#### (Transfer current)

| Model          | Operation mode           | Output current |
|----------------|--------------------------|----------------|
| 105cpm machine | Front print / Back print | 40uA           |
| 120cpm machine | Front print / Back print | 40uA           |

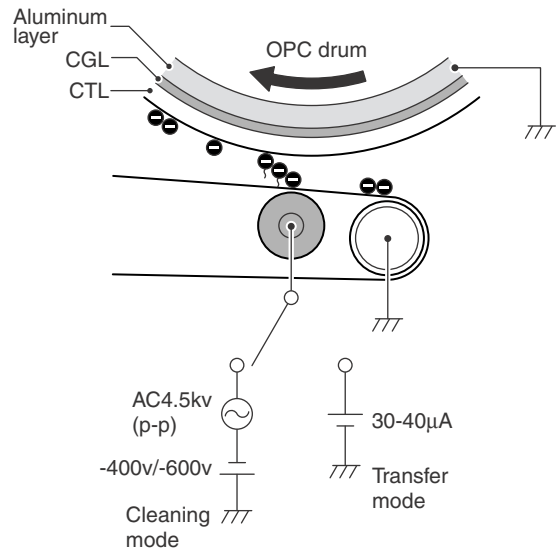
The transfer current control signal (XTHV+PWM) duty is changed to control the output current.

The transfer current ON/OFF is controlled by the signal (XTHV + REM).

In addition, the other transfer current control signal XTHV-PWM and the transfer current ON/OFF control signal (XTHV-REM) are outputted simultaneously.

### C. Transfer belt cleaning operation

In the transfer belt cleaning operation, a negative high voltage including the AC component is applied to the transfer roller to attach unnecessary residual toner from the transfer belt to the OPC drum, cleaning the transfer belt.



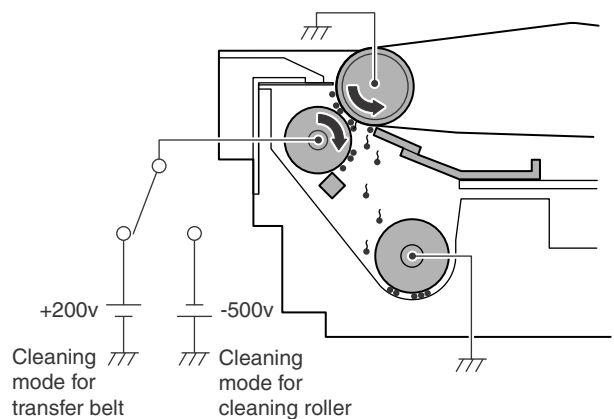
The transfer belt cleaning control signal (XTHV-PWM) duty is changed to control the output voltage.

The transfer belt cleaning ON/OFF is controlled by the signal (XTHV-REM).

On the other hand, the AC component controls the output voltage by changing the duty of XTHVACPWM. The AC component ON/OFF is controlled by the signal (XTHVACREM).

The transfer belt cleaning is executed mainly by the transfer blade belt cleaning belt.

Unnecessary residual toner on the transfer belt is removed and transported to the waste toner collection section by the waste toner transport screw.



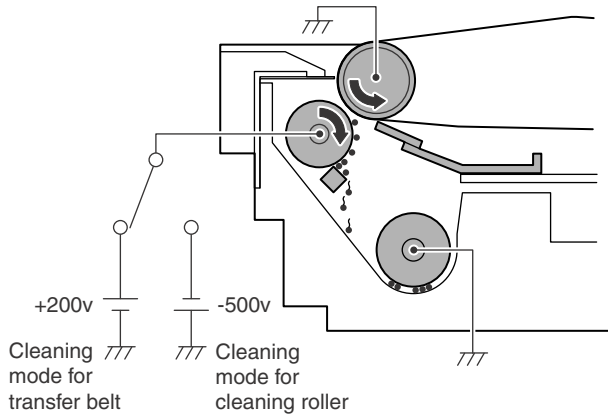
In addition, the cleaning brush is provided in the transfer section, where the transfer belt is cleaned, too.

In the transfer belt cleaning, the cleaning roller (brush type) removes unnecessary residual toner from the transfer belt, and a positive voltage (+200V) is applied to the removed toner to attach them to the cleaning roller.

The toner attached to the cleaning roller is then cleaned by the cleaning roller cleaning blade.

The transfer cleaning control signal (XTHVCLPWM) duty is changed to control the polarity and the output voltage.

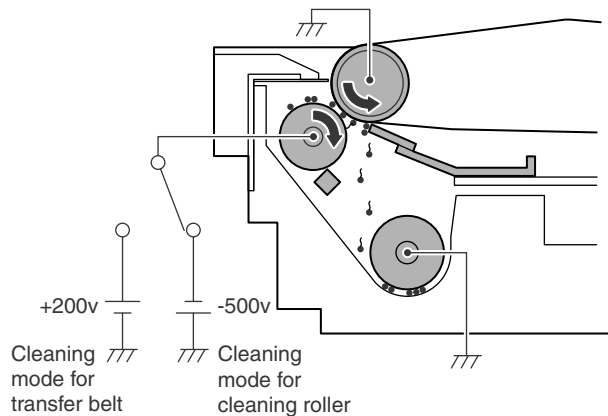
The transfer cleaning ON/OFF is controlled by the signal (XTHVCL-REM).



The cleaning roller itself is also cleaned. In this mode, a negative voltage (-500V) is applied to attach residual toner on the cleaning roller to the transfer belt. Then toner attached on the transfer belt is cleaned by the transfer belt cleaning blade.

The transfer cleaning control signal (XTHVCLPWM) duty is changed to control the polarity and the output voltage.

The transfer cleaning ON/OFF is controlled by the signal (XTHVCL-REM).

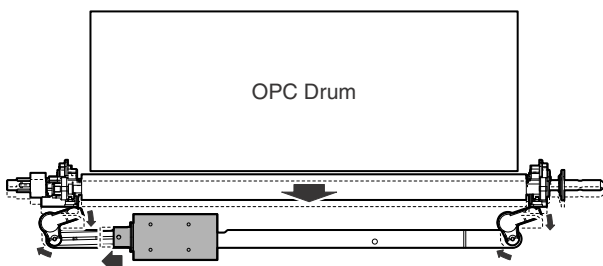


#### D. Transfer belt separation operation

The transfer belt separation is executed by the transfer solenoid. When the print engine receives print data and performs printing, the transfer belt is in close contact with the OPC drum.

In the following cases, the transfer belt is separated from the OPC drum.

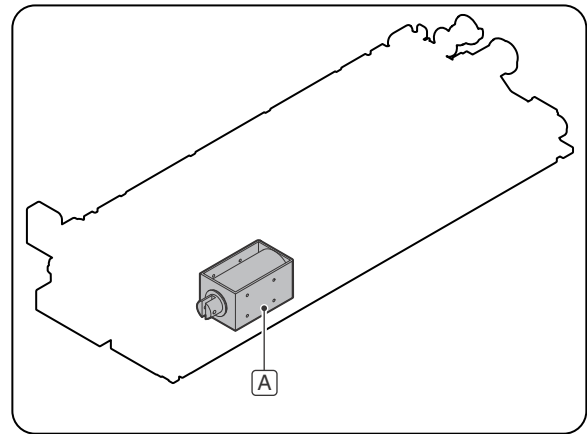
- \* When the process control is executed.
- \* When a jam occurs.
- \* When the power is turned OFF.



### 3. Disassembly and assembly

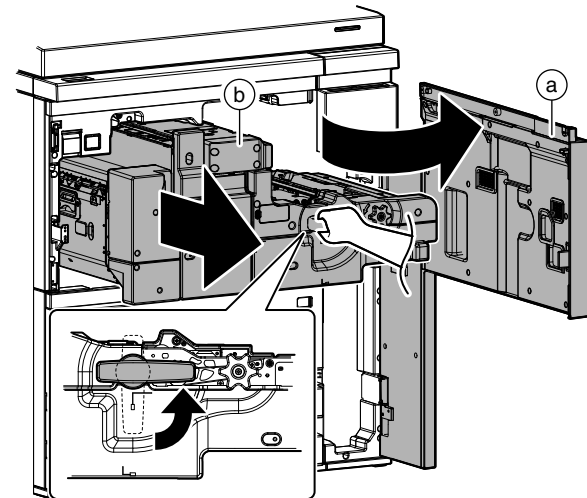
#### A. Transfer unit

| Unit          | Parts |                              | Page  |
|---------------|-------|------------------------------|-------|
| Transfer unit | A     | Transfer separation solenoid | L-4/a |

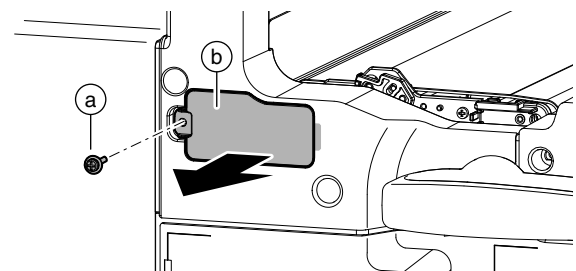


#### (1) Transfer unit

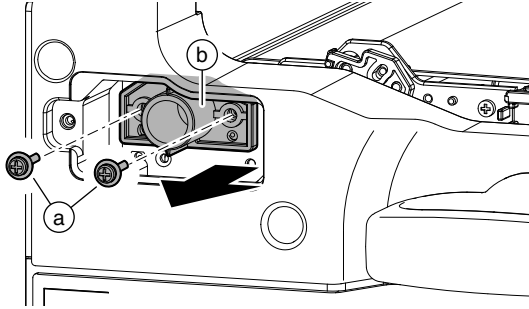
- 1) Open the front cover (a), and pull out the intermediate frame (b).



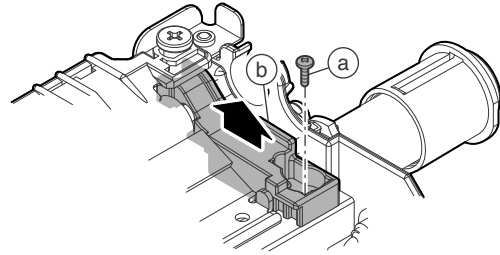
- 2) Remove the screw (a), and remove the cover (b).



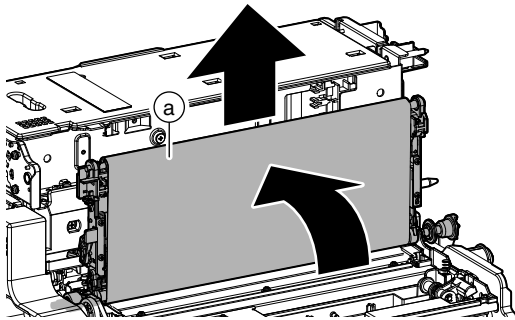
- 3) Remove the screw (a), and remove the holder (b).



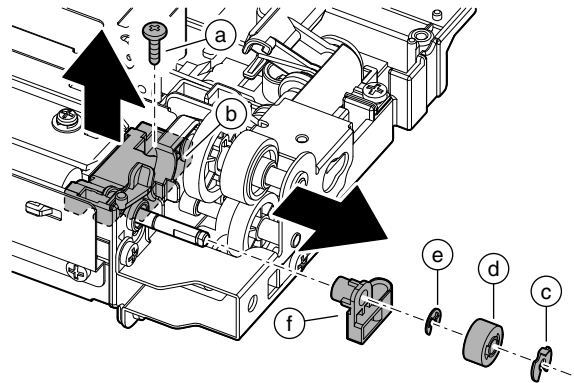
- 3) Remove the screw (a), and remove the mounting plate (b).



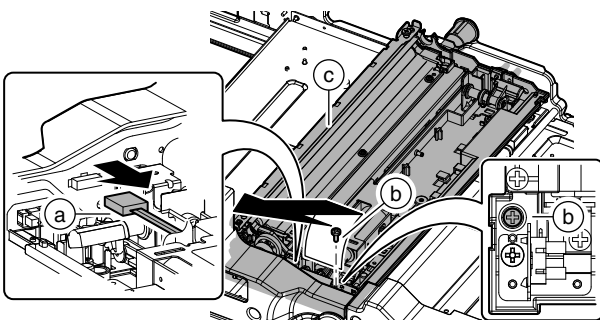
- 4) Remove the transfer belt unit (a).



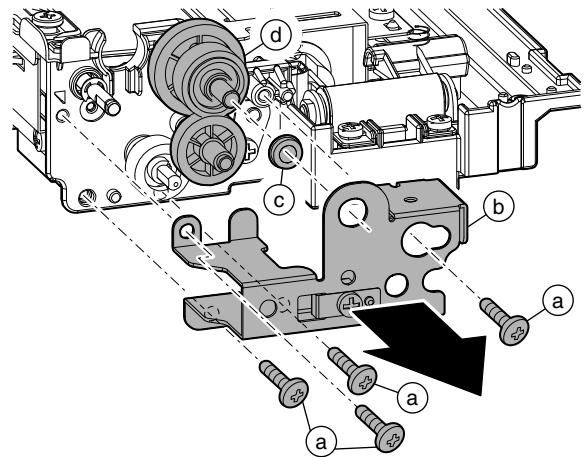
- 4) Remove the screw (a), and remove the mounting plate (b). Remove the stopper (c), the gear (d), the E-ring (e), and the bearing (f).



- 5) Disconnect the connector (a), and remove the screw (b). Remove the transfer belt frame unit (c).

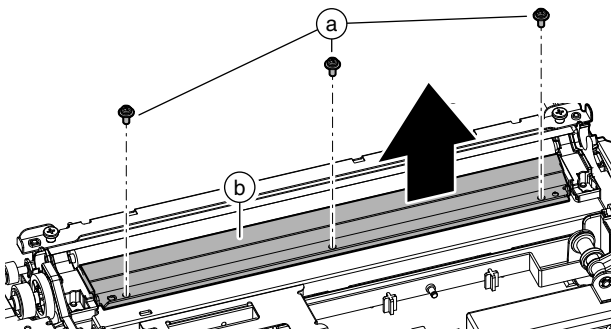


- 5) Remove the screw (a), and remove the plate (b). Remove the bearing (c) and the gear unit (d).

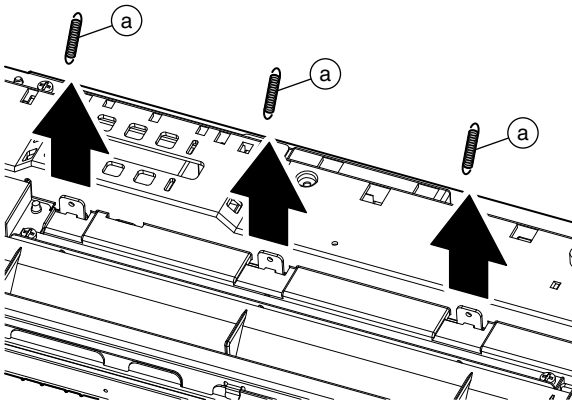


### a. Transfer separation solenoid

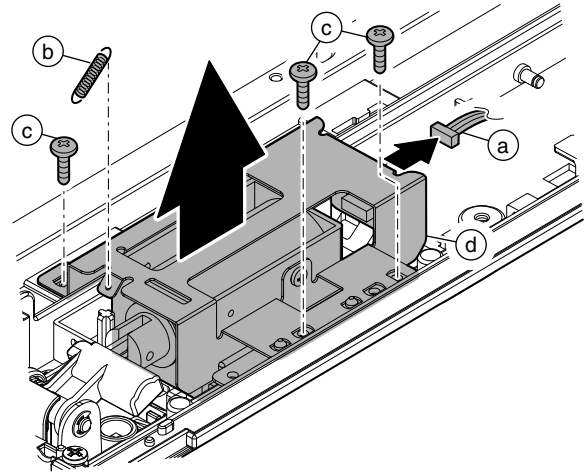
- 1) Remove the transfer unit.
- 2) Remove the screw (a), and remove the transfer cleaning blade (b).



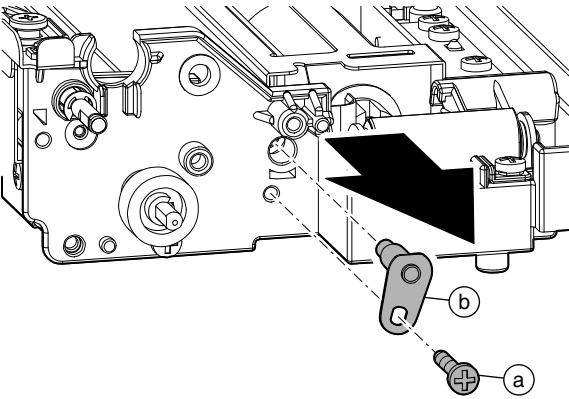
6) Remove the spring (a) from bottom side.



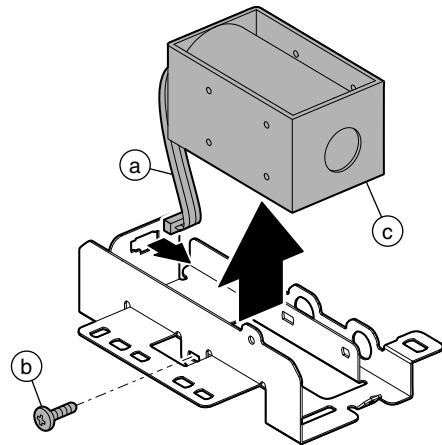
9) Disconnect the connector (a) and remove the spring (b). Remove the screw (c), and remove the transfer separation solenoid unit (d).



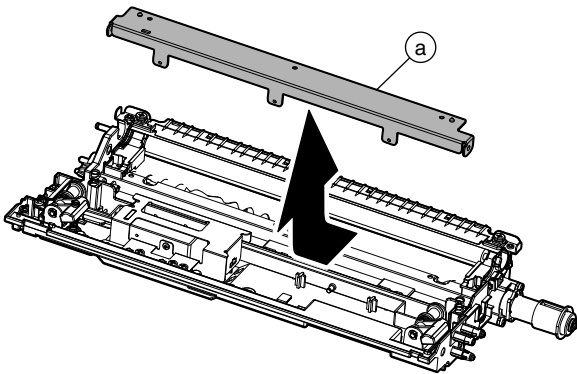
7) Remove the screw (a), and remove the positioning plate (b).



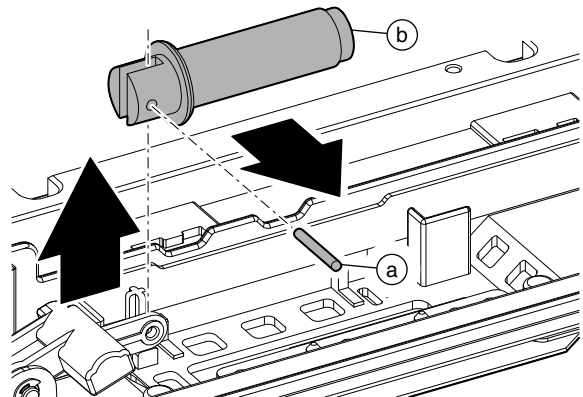
10) Disconnect the connector (a), and remove the screw (b). Remove the transfer separation solenoid (c).



8) Remove the stay (a).



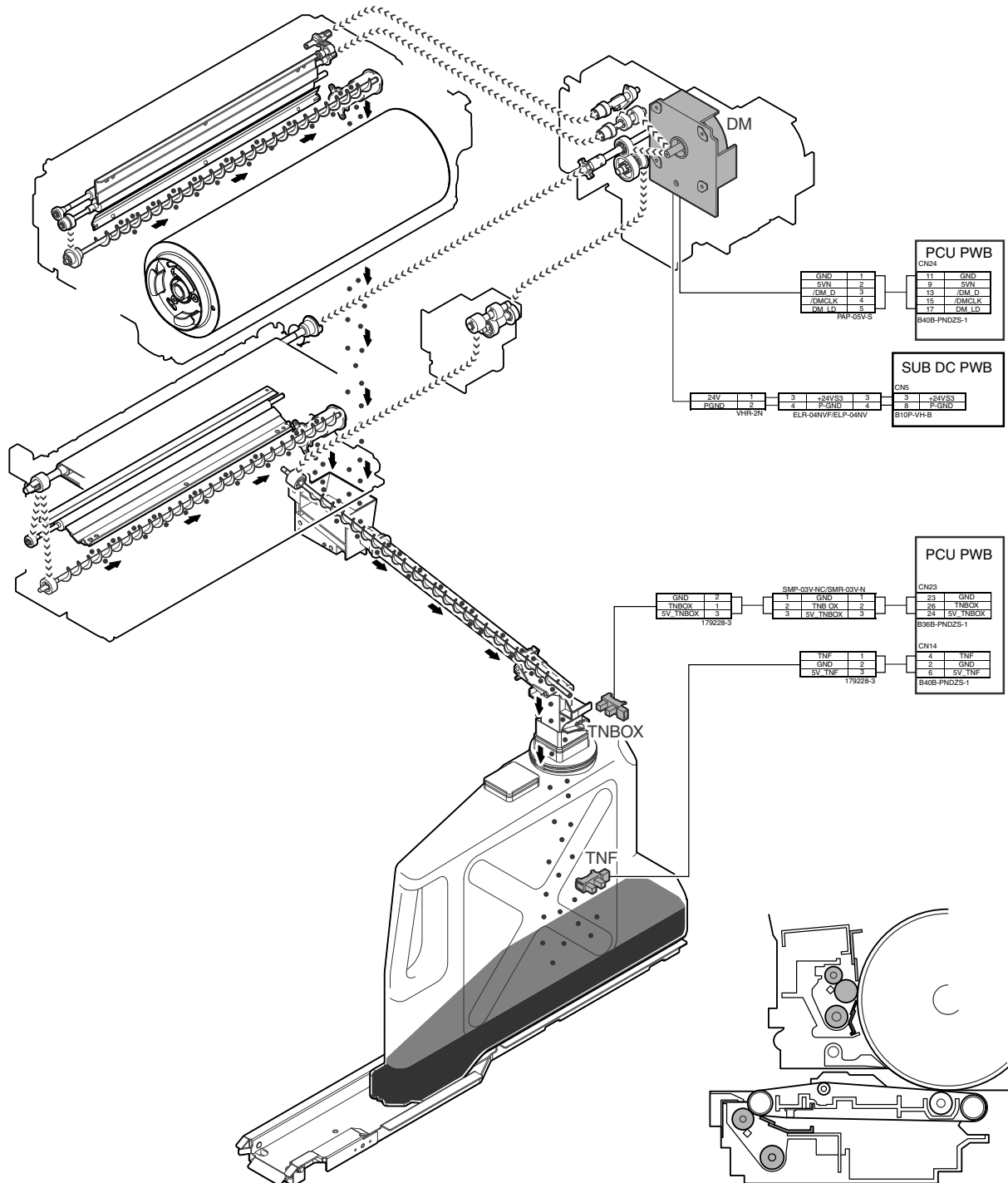
11) Remove the pin (a), and remove the solenoid plunger (b).



# [M] WASTE TONER SECTION

## 1. Electrical and mechanism relation diagram

In this section, waste toner from the OPC cleaner section and the transfer cleaner section is collected.



| Code  | Name  | Function / Operation   | Type                     |
|-------|---|--|--------------------------|
| DM    | OPS drum motor                              | Transports waste toner in the OPC drum cleaner section and the transfer cleaner section. | DC brushless motor       |
| TNBOX | Toner collection container detection sensor | Detects presence of the toner collection container.                                      | Transmission type sensor |
| TNF   | Waste toner full detection                  | Detects the waste toner full.  | Transmission type sensor |

## 2. Operational descriptions

### A. Toner collection operation

Waste toner generated in the OPC drum cleaner and the transfer cleaner is transported to the waste toner collection section by the waste toner transport screw and collected in the toner collection container.

When the quantity of waste toner in the toner collection container reaches 2,500 g, the waste toner full sensor (TNF) detects it to indicate that the toner collection container full is near.

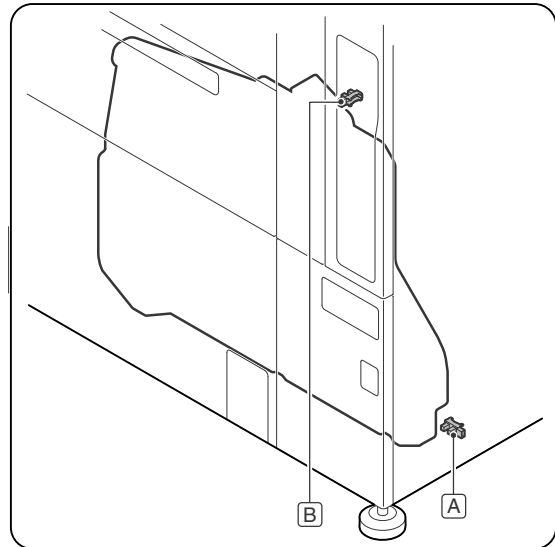
After 10K prints from the previous timing, the waste toner full is detected to urge replacement of the toner collection container. Unless it is replaced, printing cannot be performed further.

When the unit satisfied conditions of the waste toner full space while printing, the printing job is terminated.

## 3. Disassembly and assembly

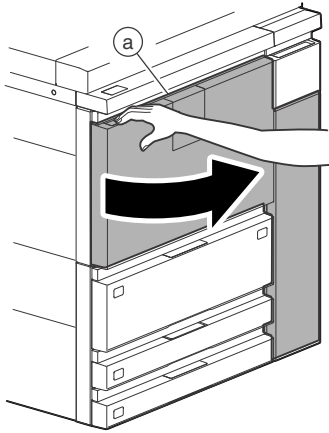
### A. Waste toner section

| Parts |   | Page    |
|-------|---|---------|
| A     | Toner collection container full detection     | M-3/(1) |
| B     | Toner collection container presence detection |         |

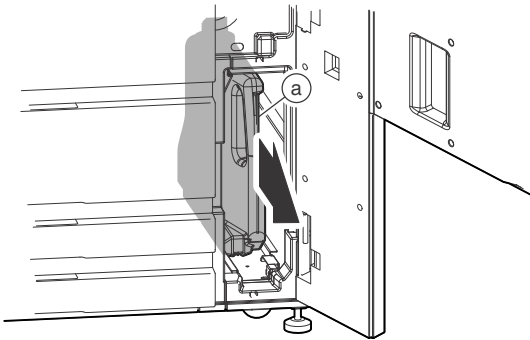


**(1) Toner collection container full detection/  
Toner collection container presence detection**

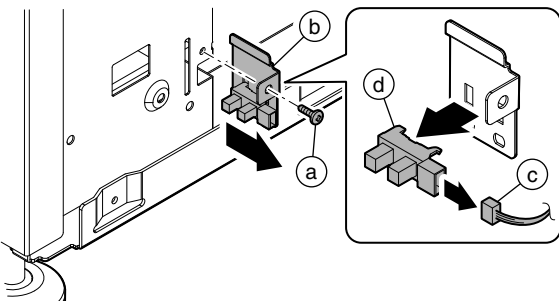
- 1) Remove the rear cabinet.
- 2) Open the front cover (a).



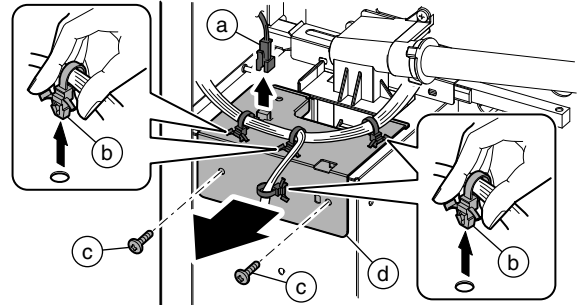
- 3) Remove the toner collection container (a).



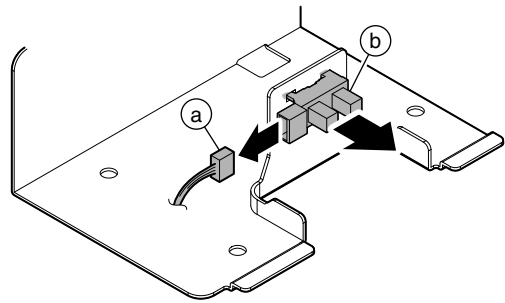
- 4) Remove the screw (a), and remove the mounting plate (b).  
Disconnect the connector (c), and remove the toner collection  
container full detection (d).



- 5) Disconnect the connector (a), and remove the snap band (b).  
Remove the screw (c), and remove the mounting plate (d).

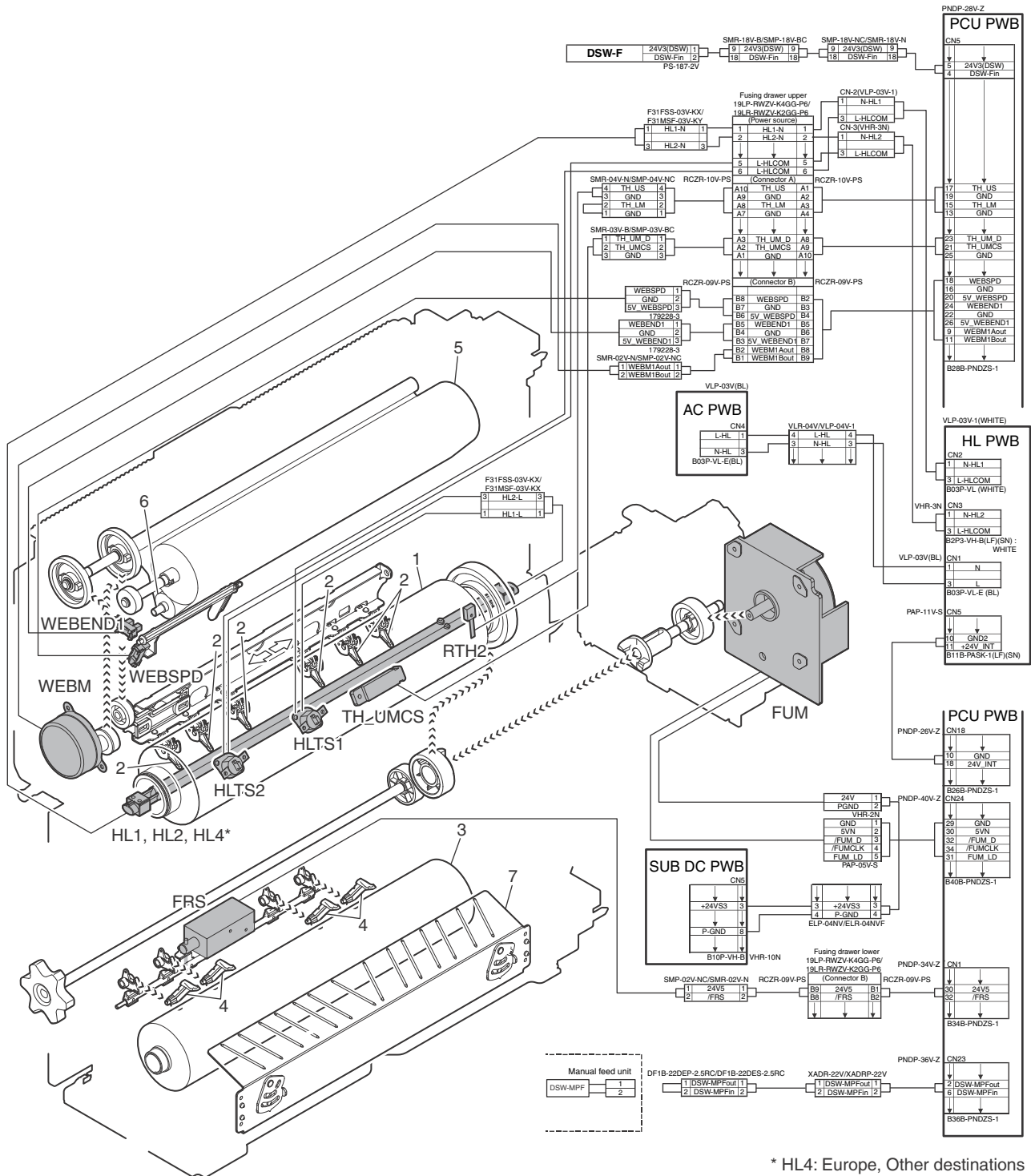


- 6) Disconnect the connector (a), and remove the toner collection  
container presence detection (b).



# [N] FUSING SECTION

## 1. Electrical and mechanism relation diagram



| Code     | Name                            | Type       | Function / Operation  |
|----------|---------------------------------|------------|---|
| FRS      | Lower pawl separation solenoid  |            | Controls the lower pawl separation solenoid.  |
| FUM      | Fusing roller drive motor       |            | Drives the fusing roller.   |
| HL1      | Upper heat roller heater lamp 1 |            | Controls heating the center section of the upper heat roller.                                   |
| HL2      | Upper heat roller heater lamp 2 |            | Controls heating the both edges of the upper heat roller.                                       |
| HL4      | Upper heat roller heater lamp 4 |            | Upper heat roller heater lamp control. (Europe, Other destinations)                             |
| HLTS1    | Thermostat (1)                  |            | Cuts conduction to the heater lamp when the temperature rises abnormally. (HL1, HL4)            |
| HLTS2    | Thermostat (2)                  |            | Cuts conduction to the heater lamp when the temperature rises abnormally. (HL2)                 |
| RTH1_com | Upper heat roller thermistor    | Thermistor | Detects the temperature of the upper heat roller [Center section] (Non-contact, detection side) |
| RTH1_d   | Upper heat roller thermistor    | Thermistor | Detects the temperature of the upper heat roller [Center section] (Non-contact, detection side) |



| Code    | Name                           | Type              | Function / Operation  |
|---------|--------------------------------|-------------------|---|
| RTH2    | Upper heat roller thermistor 2 | Thermistor        | Detects the temperature of the upper heat roller (Both edges) |
| WEBEND1 | Web end sensor                 | Photo interrupter | Detects Web End.  |
| WEBM    | Web roller drive motor         |                   | Controls the web motor.                                       |
| WEBSPD  | Web remaining quantity sensor  | Transmission      | Detects the web remaining quantity.                           |

| No. | Name                              | Function / Operation  |
|-----|-----------------------------------|---|
| 1   | Upper heat roller                 | Applies heat and pressure to toner on paper to fuse.                                      |
| 2   | Upper heat roller separation pawl | Mechanically separates paper which is not separated naturally from the upper heat roller. |
| 3   | Lower heat roller                 | Applies heat and pressure to toner on paper to fuse.                                      |
| 4   | Lower heat roller separation pawl | Mechanically separates paper which is not separated naturally from the lower heat roller. |
| 5   | Web roller                        | Cleans the upper heat roller.   |
| 6   | Web backup roller                 | Applies a pressure to web paper to bring it into contact with the upper heat roller.      |
| 7   | Fusing paper guide                | Determines the height of paper stack in the fusing section.                               |

## 2. Operational descriptions

### (1) Outline

This section performs the following functions and operations.

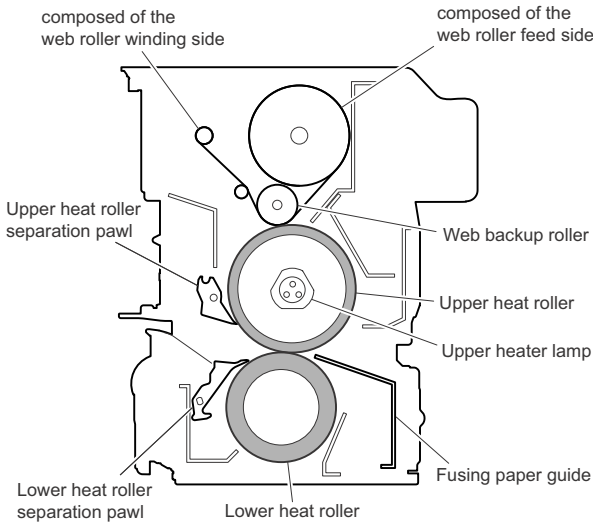
- 1) The fusing roller applies heat and pressure to toner attached to paper in the transfer section and fuses toner images onto paper.

- **Heat roller diameter:**  
Upper heat roller 70 mm  
Lower heat roller 60 mm

- **Heater lamp:**  
HL1, HL2, HL4 (Europe, Other destinations)

- 2) To clean the upper heat roller, the web unit is provided in the upper section of the upper heat roller. It is composed of the web sheet feed side, the winding side, and the back-up roller which is used to press the web sheet onto the upper heat roller.

In addition, the sensor is provided to detect the remaining quantity of the web sheet and the end of the websheet.



- 3) The thermistor is provided to detect the temperature in the fusing section.

- **Upper heat roller center:**  
Non-contact type thermistor (Main thermistor)
- **Upper heat roller edges:**  
Contact type thermistor (Sub thermistor)
- **Lower heat roller edges:**  
Contact type thermistor (Europe, Other destinations)

- 4) The thermostats are provided for safety of the fusing section.

- **HLTS1:** Thermostat (1) Cuts conduction to HL1 and HL4.
- **HLTS2:** Thermostat (2) Cuts conduction to HL2.

### (2) Fusing roller drive

To drive the fusing roller, 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.

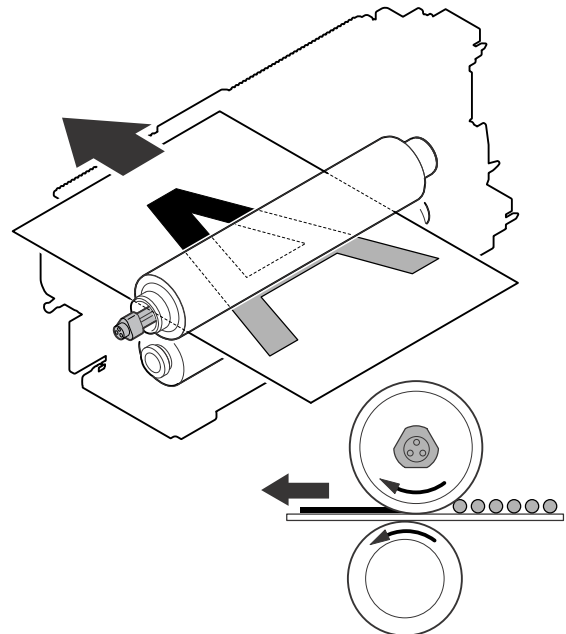
### (3) Heater lamp drive

The surface temperature of the heat roller detected by the thermistor is sent to the PCU. When it is lower than the specified level, the PCU sends the heater lamp lighting signal to the heater lamp drive circuit in the HL PWB.

When the power triac is turned ON through the photo triac coupler in the heater lamp drive circuit, the AC power is supplied to the heater lamp to turn it on and heat the heat roller.

### (4) Fusing operation

The upper and lower heat rollers apply heat and pressure to toner on paper, fusing toner images on paper.



A heat roller of silicon rubber is used in this fuser. This is due to the following:

- 1) The upward separation is executed. (Since the hardness of the upper heat roller is high, the lower heat roller is deformed to face up paper).

- 2) The nip quantity is increased as it will increase the heating capacity of the paper. (Nip quantity: 10 - 11mm)
- 3) A flexible roller allows the toner to fuse without deforming the toner shape.

### (5) Fusing temperature control

Thermistors are provided at the center and the edges of the upper heat roller.

The roller temperature is detected by the installed thermistor, and the heater lamp is controlled to maintain the temperature at the specified level.

The initial values of the specified temperature are as shown in the table.

|                   | State           | Fusing temperature |                                   |
|-------------------|-----------------|--------------------|-----------------------------------|
|                   |                 | 90cpm machine      | 105/120cpm machine                |
| Upper heat roller | Ready standby   | 180 °C             | 200 °C                            |
|                   | Preheat standby | 170 °C             | 180 °C/<br>190 °C<br>(for Europe) |

### (6) Fusing temperature control when heavy paper is fed through the fuser

When heavy paper is fed, the heater lamp is controlled to maintain the heat roller temperatures at the specified levels below. In addition, the SM (resist roller control motor) operation start temperature is set to improve the job efficiency and the fusing performance.

The default values of the specified levels are as shown in the table below. (The fusing temperature can be corrected to be the set value  $\pm 5^{\circ}\text{C}$  or  $\pm 10^{\circ}\text{C}$  with SIM43-1.)

|                   |  | Fusing temperature |                    |
|-------------------|--|--------------------|--------------------|
|                   |  | 90cpm machine      | 105/120cpm machine |
| Upper heat roller | Fusing control temperature                             | 200 °C             | 210 °C             |
|                   | PSM operation start temperature (RTH1, center section) | 200 °C             | 210 °C             |
|                   | PSM operation start temperature (RTH2, edge section)   | 200 °C             | 210 °C             |

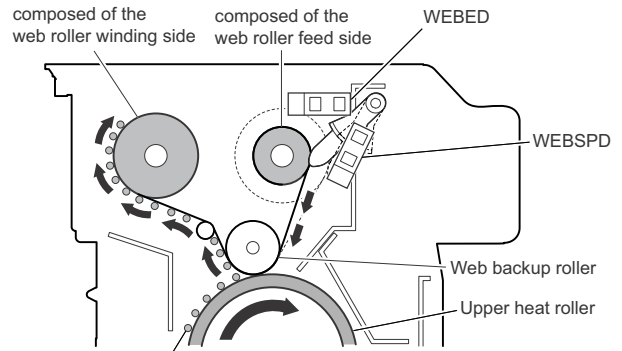
When paper is fed from the tray which is set as a heavy paper tray, the fusing temperature is changed to that for feeding heavy paper and CPM falls to about 75%. (The process speed is not changed.)

After completion of paper feed from the heavy paper tray (when the tray is set to a normal paper tray, or the job is completed and the machine enters the ready state, etc.), the fusing temperature is set to the normal setting.

Heavy paper: Heavy paper 1/2/3/4 and tab sheet.

### (7) Cleaning operation

The heat roller is cleaned by the web unit.



The remaining toner or paper dust etc. on the upper heat roller.

The web diameter is 54mm, and the web sheet length is 50m.

After completion of a job, there is feed of 7mm (Max.) to 2mm. The difference of 7mm to 2mm depends on the job quantity and the pixel counter.

Also after completion of warming up, it is fed by 7mm. This is because the web sheet is pushed against the upper heat roller by the backup roller and dirt on the web sheet must be removed.

The feed quantity of the web sheet is 0.5mm/7 copies (variable with Sim. 43-32).

The web sheet remaining quantity is detected by two sensors (WEBEND1, WEBSPD) attached to the web unit.

In case of Web Near End, "Ready to scan for copy. (Maintenance required.Code: FK3)" is displayed.

In case of Web End, the code FK3 is displayed and the machine is stopped.

Replace the web unit, and clear the web feed counter with Sim. 24-4. (The display of FK3 is also deleted.)

When the web unit is not installed, the FK3 code is displayed. In this case, set the web unit and cancel it with Sim.14. (The FK3 code is deleted, but the web feed counter continues the operation.)

### (8) Fusing separation pawl operation

The separation pawl of the upper heat roller is of the oscillation type (oscillation width 3mm), and its operation is synchronized with the web sheet feed.

To clean the upper heat roller separation pawl, slow rising is performed when rotating the heat roller, and dirt on the pawl is attached to the upper heat roller and cleaned with the web sheet.

The separation pawl of the lower heat roller is of the separation type.

The separation pawl of the lower heat roller separates and makes contact when the heat roller is rotating and stopped, cleaning the separation pawl.

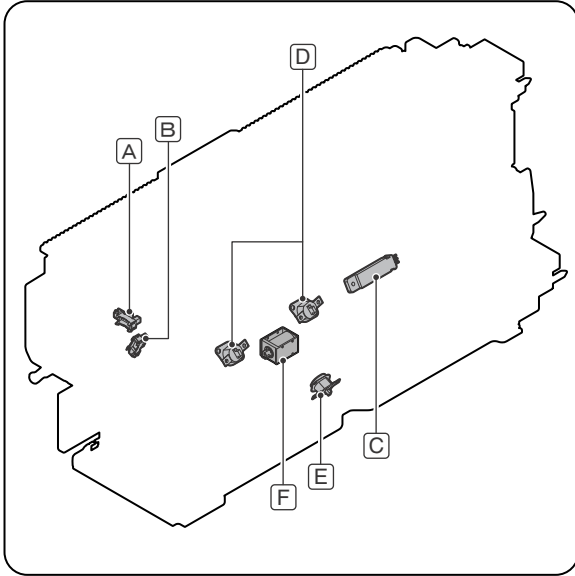
By the separation operation, dirt on the pawl is removed. The dirt of the pawl attached to the roller is collected through the upper heat roller and cleaned with the web sheet.

This separation operation is controlled by the FRS (lower pawl separation solenoid). When starting rotation, separation is executed for 1sec. When stopping, separation is executed for 1.5 sec.

### 3. Disassembly and assembly

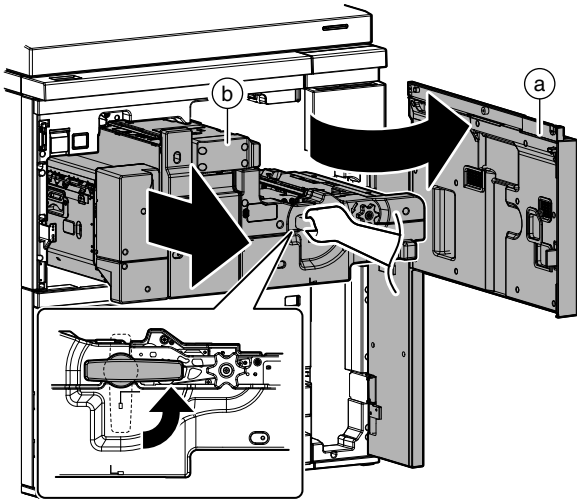
#### A. Fusing unit

| Unit        | Parts                            | Page    |
|-------------|----------------------------------|---------|
| Fusing unit | A WEB end detection              | N - 5/a |
|             | B WEB near end detection         |         |
|             | C Non-contact thermistor         | N - 5/b |
|             | D Thermostat                     |         |
|             | E Thermostat                     | N - 6/c |
|             | F Lower pawl separation solenoid | N - 6/d |

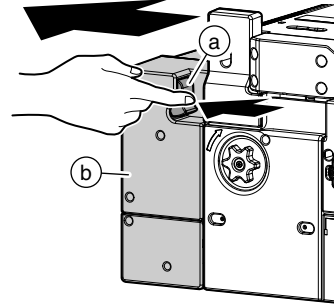


#### (1) Fusing unit

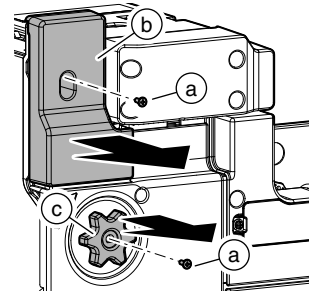
- 1) Open the front cover (a), and pull out the intermediate frame (b).



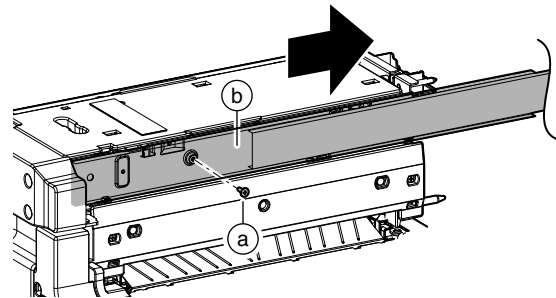
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



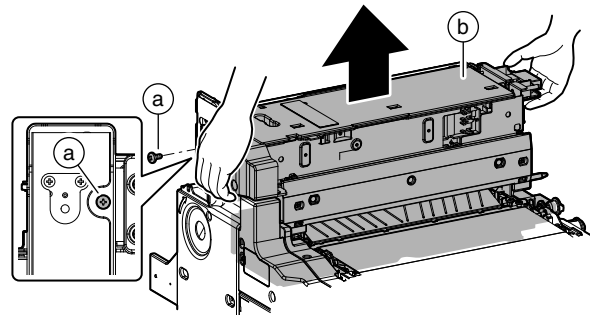
- 3) Remove the screw (a), and remove the cover (b) and the knob (c).



- 4) Remove the screw (a), and remove the rail (b).

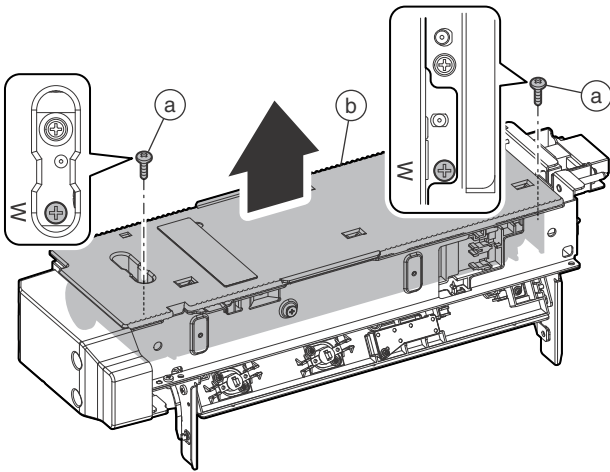


- 5) Remove the screw (a), and remove the fusing unit (b).  
\* Note that the fusing unit is heated to a high temperature. When removing it, be sure to hold the resin section as indicated below.

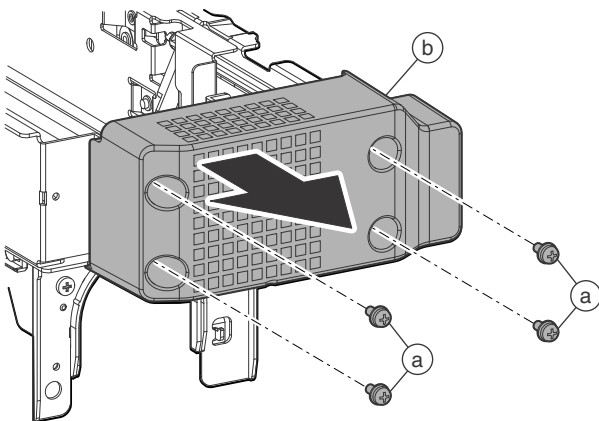


**a. WEB end detection / WEB near end detection**

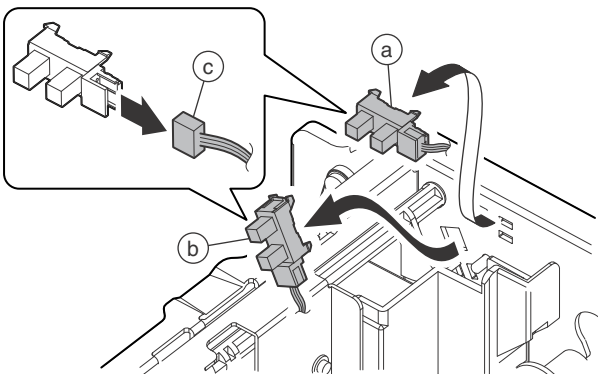
- 1) Remove the fusing unit.
- 2) Remove the screw (a) on the side of "W" mark, and remove the web unit (b).



- 3) Remove the screw (a), and remove the cover (b).



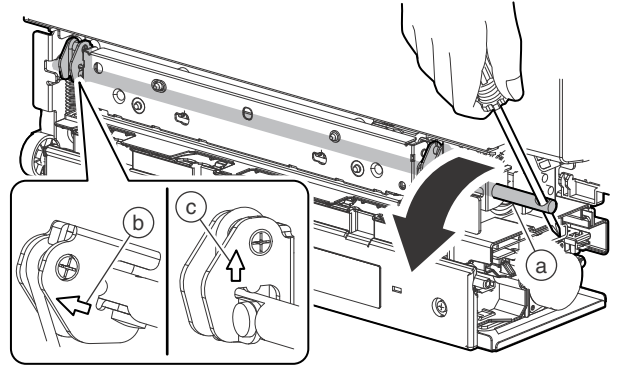
- 4) Remove the WEB end detection (a) and WEB near end detection (b). Disconnect the connector (c).



**b. Non-contact thermistor / Thermostat**

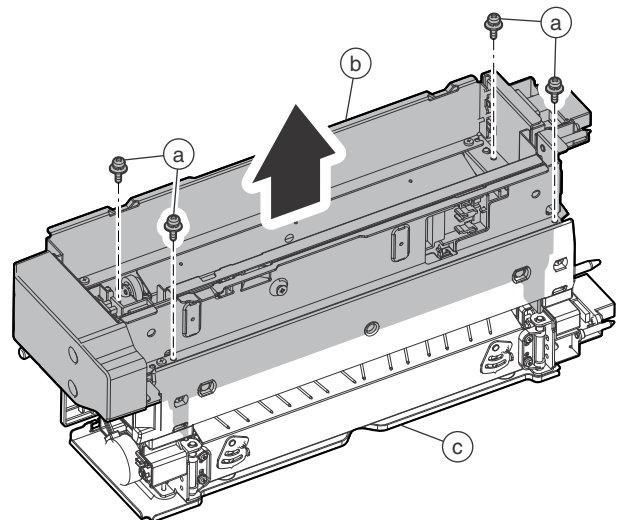
- 1) Remove the fusing unit.
- 2) Insert a screwdriver into the pressure release shaft (a) to release the pressure.

\* When the pressure is released, the arrow mark on the pressure release shaft faces obliquely (b). When the pressure is applied, it faces upward (c).

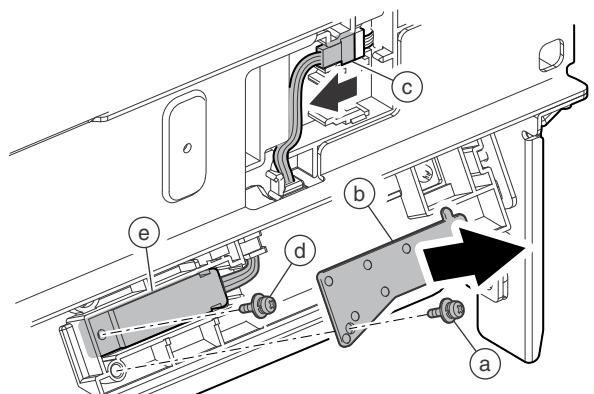


- 3) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).

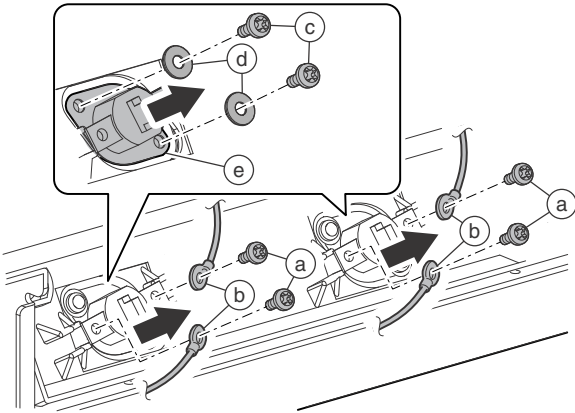
\* Do not perform pressing operation with the fusing upper unit and the fusing lower unit separated from each other.



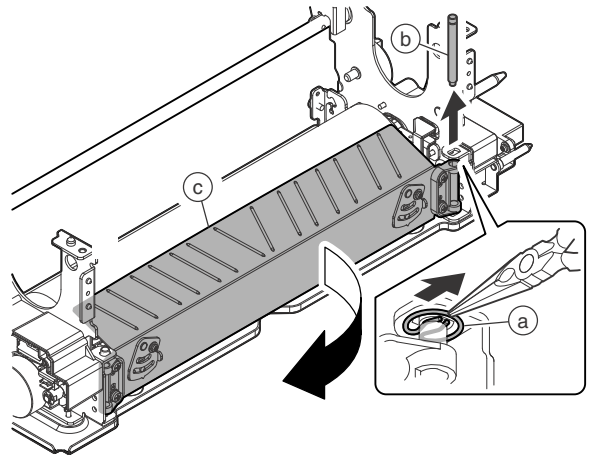
- 4) Remove the screw (a), and remove the cover (b). Disconnect the connector (c), and remove the screw (d). Remove the Non-contact thermistor (e).



- 5) Remove the screw (a), and remove the terminal (b). Remove the screw (c) and the washer (d). Remove the thermostat (e).
  - \* When tightening the screw (a), use a great care to tighten it securely.
  - \* When the screw becomes loose, replace the screw (a) and the thermostat (e).

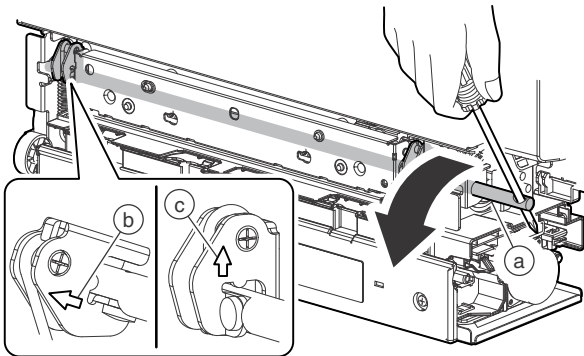


- 4) Remove the clip (a), and pull out the shaft (b). Open the paper guide (c).

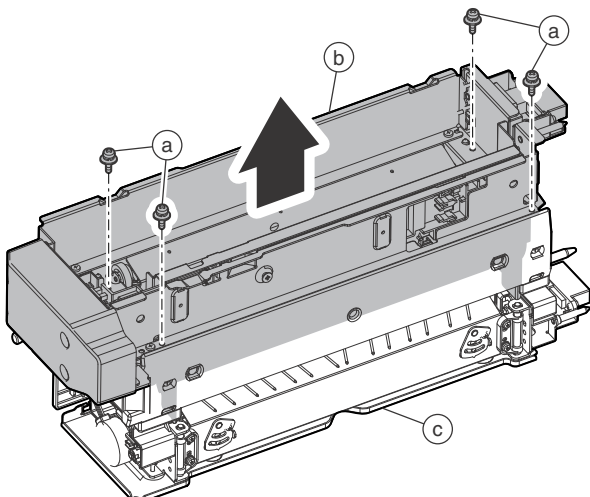


### c. Thermostat

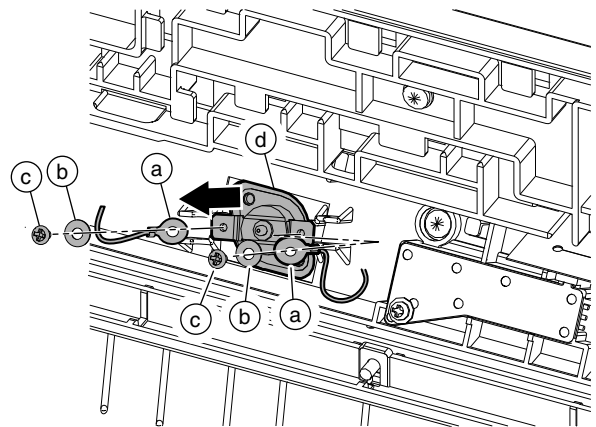
- 1) Remove the fusing unit.
- 2) Insert a screwdriver into the pressure release shaft (a) to release the pressure.
  - \* When the pressure is released, the arrow mark on the pressure release shaft faces obliquely (b). When the pressure is applied, it faces upward (c).



- 3) Remove the screw (a), and separate the fusing upper unit (b) and the fusing lower unit (c).
  - \* Do not perform pressing operation with the fusing upper unit and the fusing lower unit separated from each other.

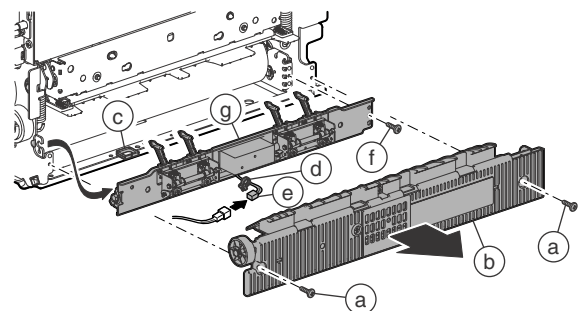


- 5) Remove the terminal (a). Remove the screw (b) and the washer (c). Remove the thermostat (d).
  - \* Insert the terminal (a) fully to the bottom until it clicks. Check to confirm that it is securely connected.

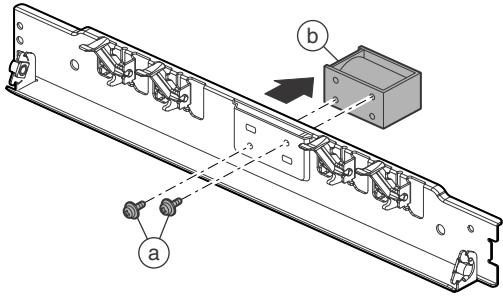


### d. Lower pawl separation solenoid

- 1) Remove the fusing unit.
- 2) Remove the screw (a) and the cover (b). Remove the harness from the edge saddle (c). Remove the snap band (d) and disconnect the connector (e).
  - Remove the screw (f), and remove the lower heat roller separation pawl unit (g).



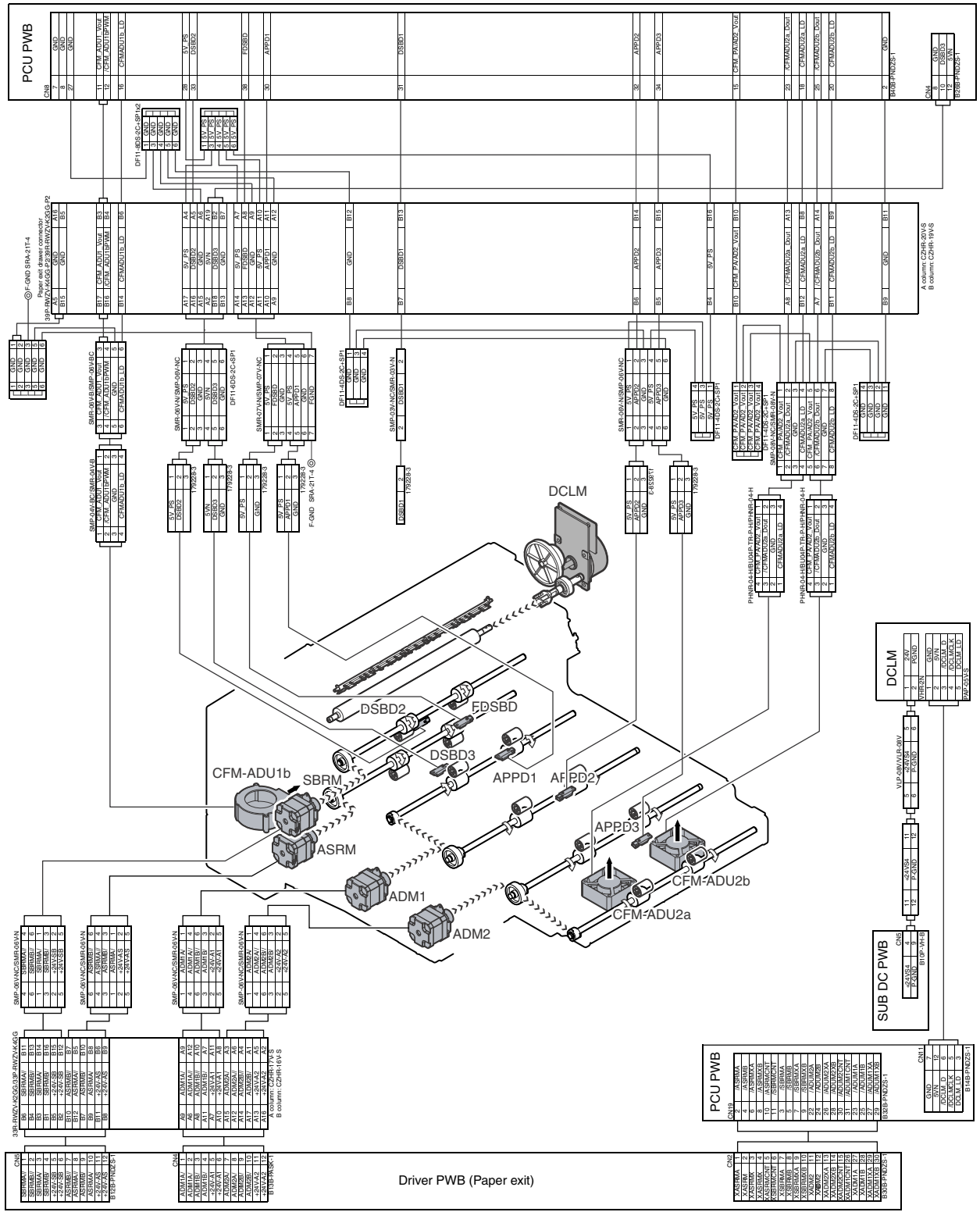
- 3) Remove the screw (a) and remove the lower pawl separation solenoid (b).



# [O] ADU PAPER EXIT SECTION

## 1. Electrical and mechanism relation diagram

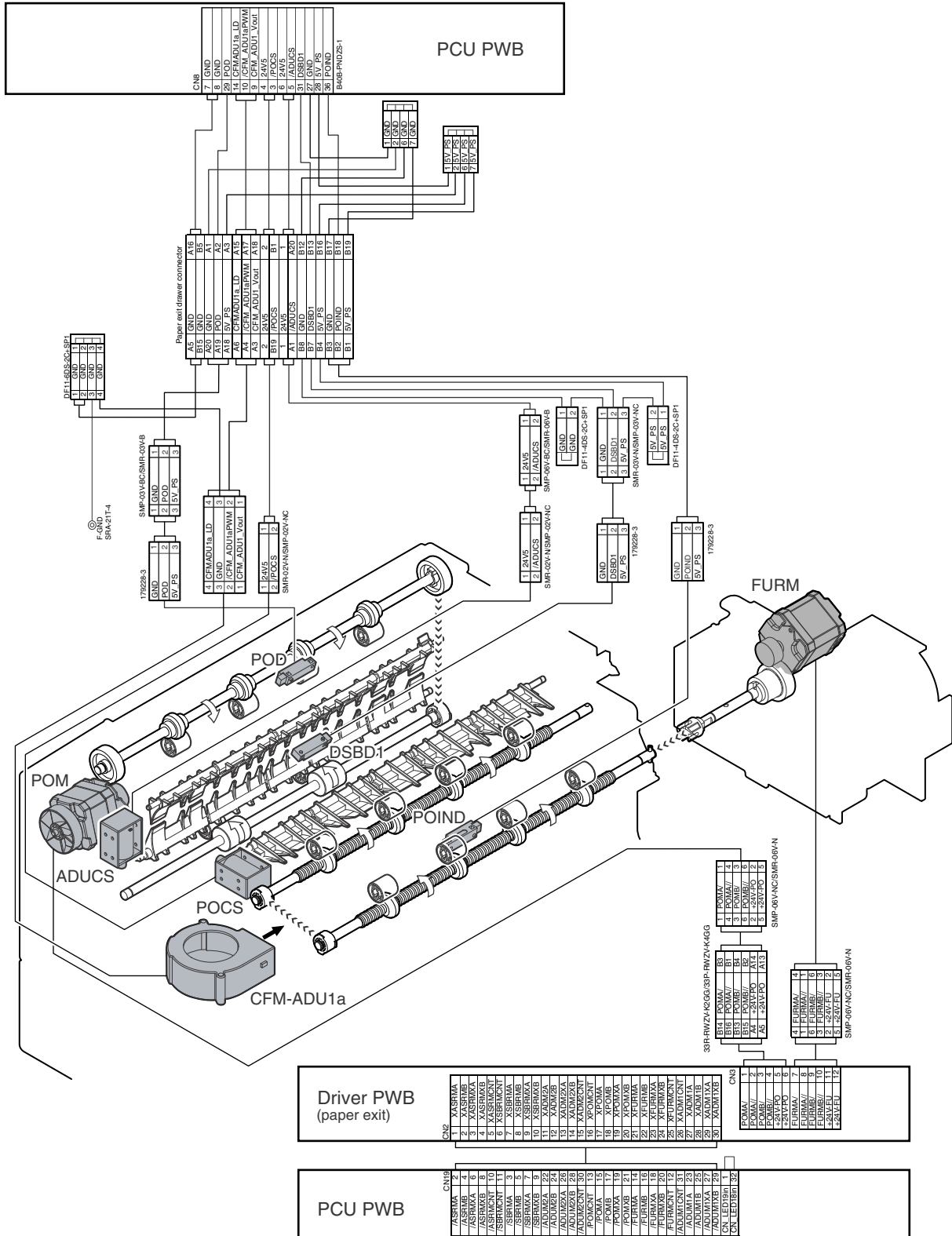
### A. ADU section



| Signal name | Name                      | Type            | Function / Operation               |
|-------------|---------------------------|-----------------|------------------------------------|
| ADM1        | ADU transport motor 1     | Stepping motor  | Drives the ADU transport roller 1. |
| ADM2        | ADU transport motor 2     | Stepping motor  | Drives the ADU transport roller 2. |
| APPD1       | ADU transport detection 1 | Reflection type | Detects the ADU paper transport.   |
| APPD2       | ADU transport detection 2 | Reflection type | Detects the ADU paper transport.   |
| APPD3       | ADU transport detection 3 | Reflection type | Detects the ADU paper transport.   |

| Signal name | Name                            | Type                | Function / Operation                        |
|-------------|---------------------------------|---------------------|---|
| ASRM        | ADU reverse motor               | Stepping motor      | Drives the ADU reverse roller.              |
| CFM-ADU1b   | Reverse cooling fan             | Sirocco fan         | Cools the reverse section.                  |
| CFM-ADU2a   | ADU section paper cooling fan 1 | Axial-flow fan (60) | Cools paper in the ADU section.             |
| CFM-ADU2b   | ADU section paper cooling fan 2 | Axial-flow fan (60) | Cools paper in the ADU section.             |
| DSBD2       | Duplex reverse detection 2      | Reflection type     | Detects the duplex reverse paper pass.      |
| FDSBD       | Face down reverse detection     | Reflection type     | Detects face down reverse paper pass.       |
| SRBM        | Paper exit reverse motor        | Stepping motor      | Drives the paper exit reverse roller.       |
| DSBD3       | Duplex reverse detection 3      | Reflection type     | Detects the duplex reverse paper remaining. |
| DCLM        | Decurler motor DC               | Brush-less motor    | Drives the decurler motor.                  |

## B. Paper exit section





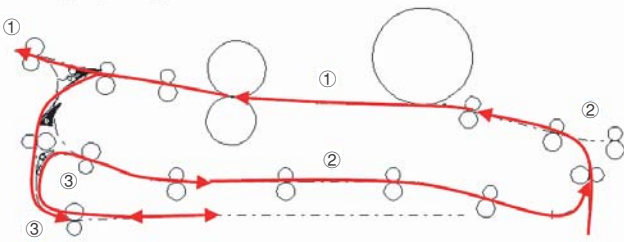
| Signal name | Name                                   | Type                   | Function / Operation                                   |
|-------------|--|------------------------|--|
| ADUCS       | Duplex select gate solenoid            | Electromagnetic clutch | Select gate solenoid for transport in the ADU section. |
| CFM-ADU1a   | Reverse transport cooling fan          | Sirocco fan            | Cools paper in the reverse section.                    |
| DSBD1       | Duplex reverse detection 1             | Reflection type        | Detects the duplex reverse paper pass.                 |
| FURM        | Fusing rear motor                      | Stepping motor         | Drives the fusing rear roller.                         |
| POCS        | Face-up/face-down select gate solenoid | Electromagnetic clutch | Face-up/face-down select gate solenoid.                |
| POD         | Paper exit detection                   | Reflection type        | Detects paper exit.                                    |
| POIND       | Paper exit paper entry detection       | Reflection type        | Detects the paper pass at the paper exit port.         |
| POM         | Paper exit motor                       | Stepping motor         | Drives the paper exit roller.                          |

## 2. Operational descriptions

### A. Outline

When duplex print is selected, paper printed on the first side is switched back to feed to the duplex section to make duplex print.

#### Inverting / Duplexing Path



#### Paper transportation speed

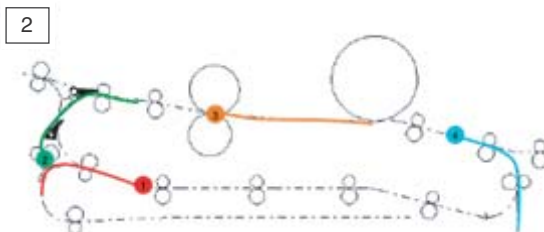
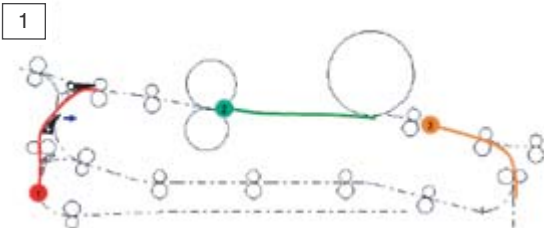
|                   | Transport speed | Unit (mm/s)  |
|-------------------|-----------------|--|
| ①: Normal speed   | 540             | (Process speed)  |
| ②: High speed I   | 600             | (Paper feed and exit speed)  |
| ③: High speed II  | 1000            | (Switchback speed)   |
| ④: High speed III | 800             | (Paper exit option receiving and sending speed : when paper exit option installed) |

### B. Paper transport operation in duplex print

When duplex print is selected, the paper is passed under the face-up/face-down select gate.

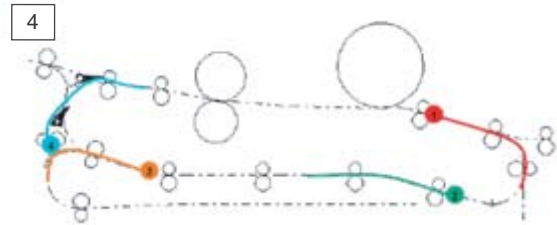
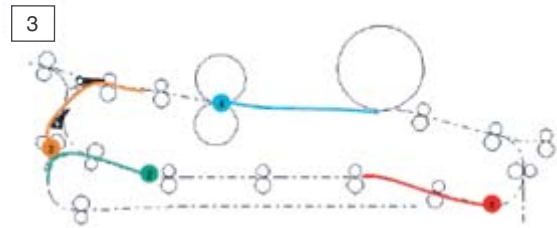
At the same time the duplex select gate is on, the paper is passed to ADU paper guide.

Paper is reversed by ADU reverse motor.



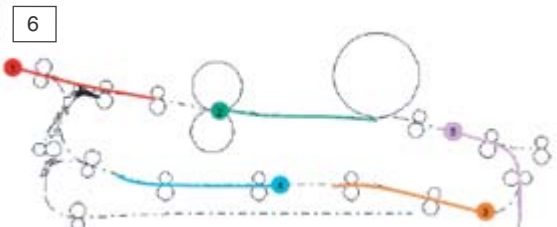
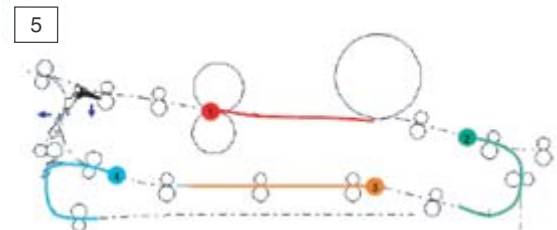
The second paper completes switchback and is passed to the reverse gate.

The first paper is reversed from the reverse gate and passed to copy operation of the back surface.



The fourth paper is transported to the ADU and then the face-up/face-down select gate is turned OFF to discharge the first paper.

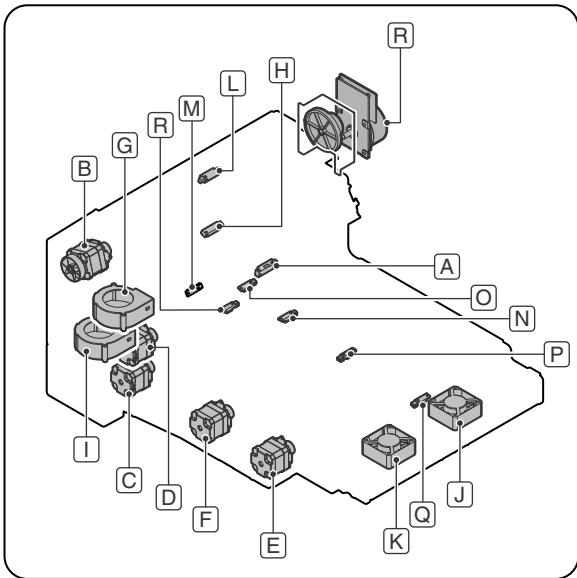
The front surface of the 5th sheets is copied on the first sheet. After that, back → front copy is made for each sheet.



### 3. Disassembly and assembly

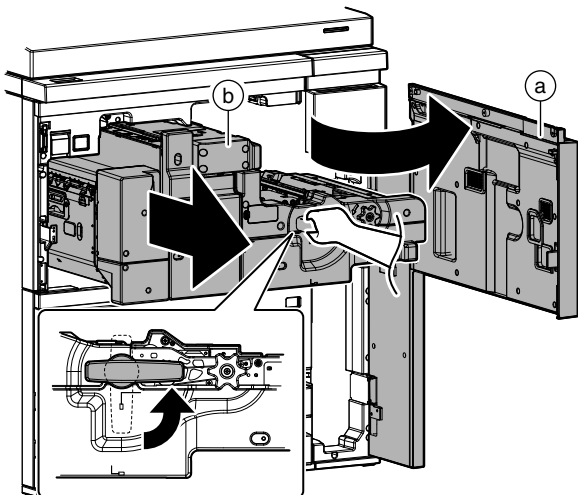
#### A. ADU paper exit unit

| Unit                | Parts | Page  |        |
|---------------------|-------|---|--------|
| ADU paper exit unit | A     | Paper exit paper entry detection                        | O-5/a  |
|                     | B     | Paper exit motor  | O-5/b  |
|                     | C     | ADU reverse motor                                       | O-6/c  |
|                     | D     | Paper exit reverse motor                                |        |
|                     | E     | ADU transport motor 2                                   | O-7/d  |
|                     | F     | ADU transport motor 1                                   |        |
|                     | G     | Reverse transport cooling fan                           | O-7/e  |
|                     | H     | Duplex reverse detection 1                              |        |
|                     | I     | Reverse cooling fan                                     | O-9/f  |
|                     | J     | ADU section paper cooling fan 2                         | O-9/g  |
|                     | K     | ADU section paper cooling fan 1                         |        |
|                     | L     | Paper exit detection                                    | O-10/h |
|                     | M     | Duplex reverse detection 2 / Duplex reverse detection 3 | O-10/i |
|                     | N     | Face down reverse detection                             |        |
|                     | O     | ADU transport detection 1                               | O-11/j |
|                     | P     | ADU transport detection 2                               |        |
|                     | Q     | ADU transport detection 3                               |        |
|                     | R     | Decurler drive unit                                     | O-12/l |

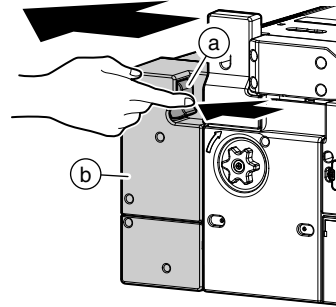


#### (1) ADU paper exit unit

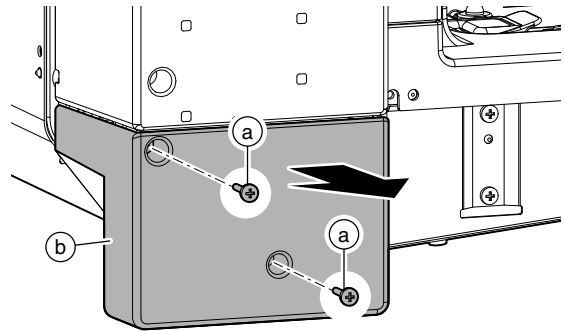
- 1) Open the front cover (a), and pull out the intermediate frame (b).



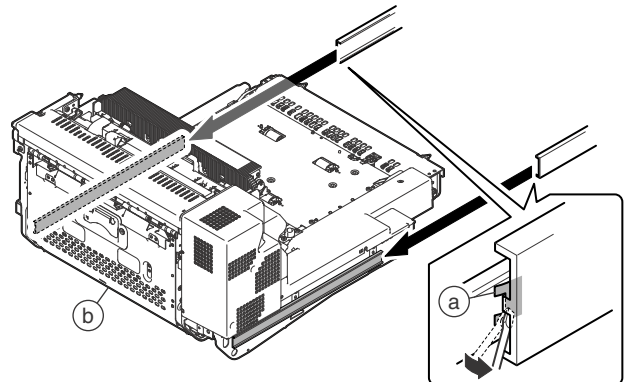
- 2) While pushing the lever (a), slide the ADU paper exit unit (b).



- 3) Remove the screw (a), and remove the cover (b).



- 4) Release the lock (a) of the rail at two positions. Pull out the ADU paper exit unit (b) furthermore to remove.

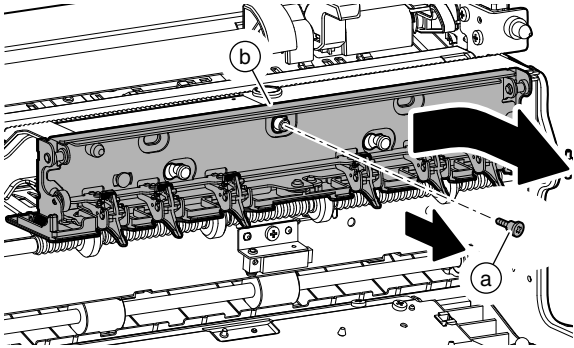


**<Note for replacing the ADU unit>**

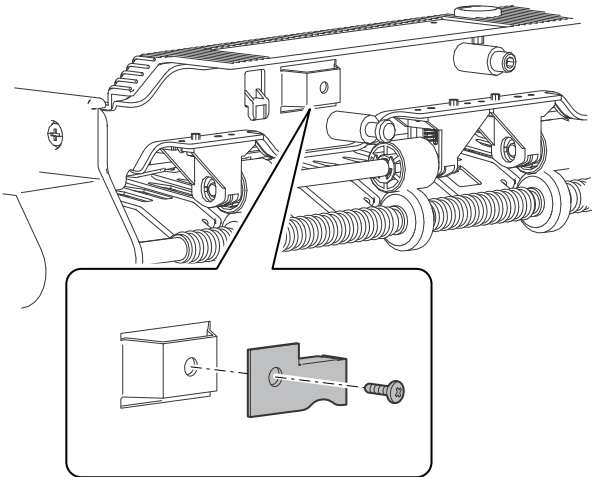
When replacing the ADU unit, the upper pawl protection plate and the fixing screw must be replaced. (If not, a jam or breakage of the fusing upper separation pawl may occur.)

\* When obtaining an ADU unit as a service part and replacing the ADU unit.

- 1) Remove the screw (a), and remove the upper heat roller separation pawl unit 1 (b).

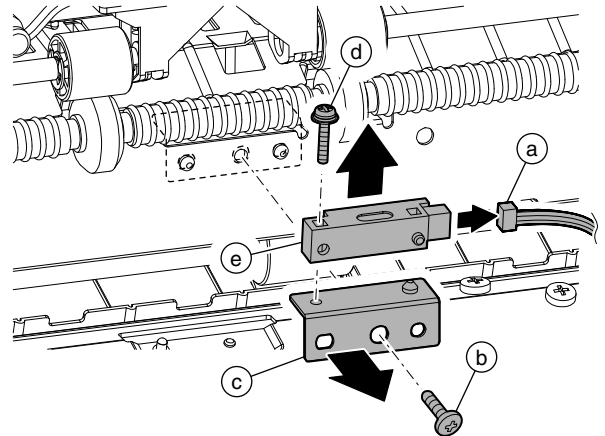


- 2) Remove the upper pawl protection plate and the fixing screw, and attach the new ADU unit.



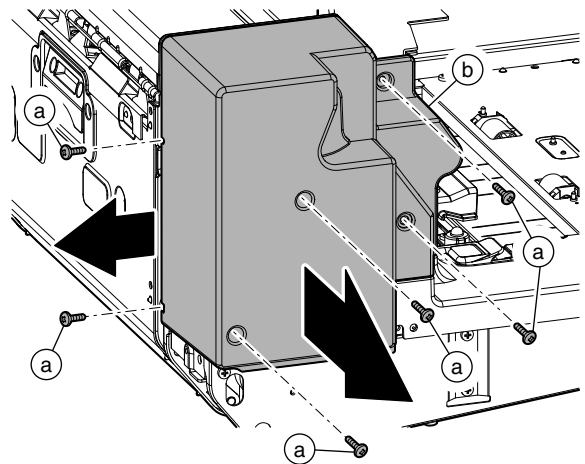
**a. Paper exit paper entry detection**

- 1) Remove the ADU paper exit unit.
- 2) Disconnect the connector (a), and remove the screw (b). Remove the mounting plate (c). Remove the screw (d), and remove the paper exit paper entry detection (e).

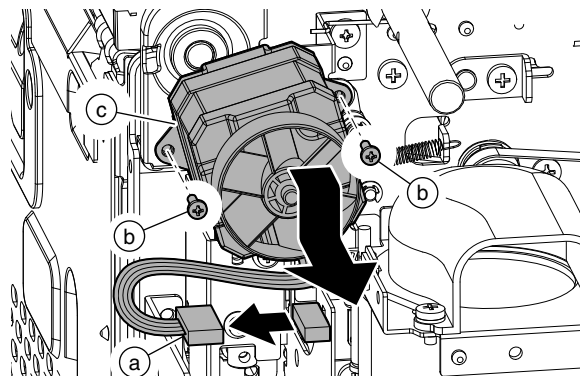


**b. Paper exit motor**

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b).

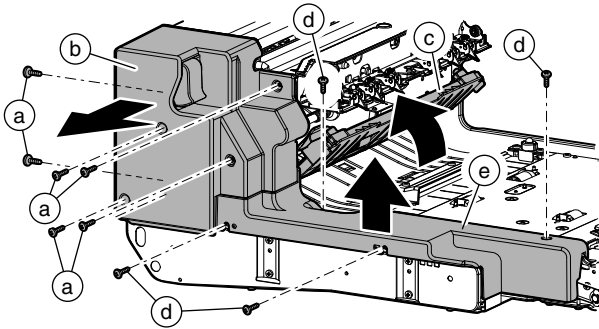


- 3) Disconnect the connector (a). Remove the screw (b), and remove the paper exit motor (c).

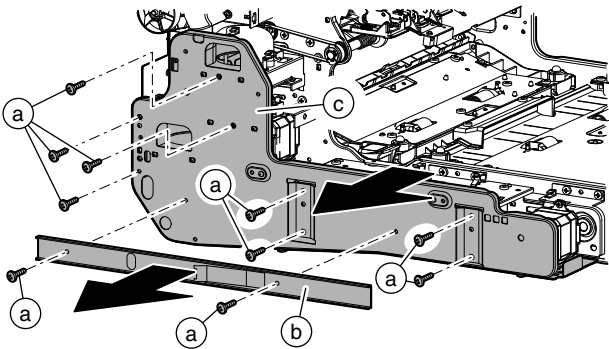


**c. ADU reverse motor / Paper exit reverse motor**

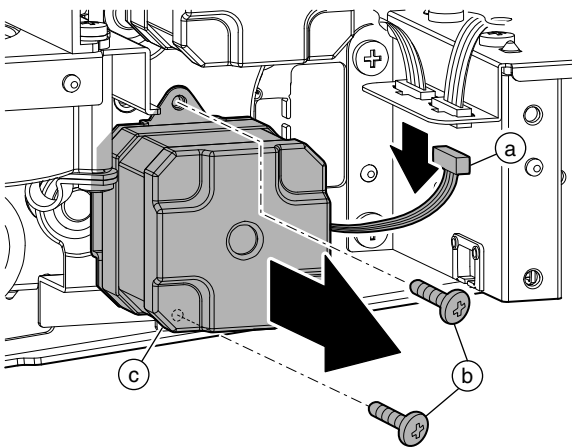
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c), and remove the screw (d) and the cover (e).



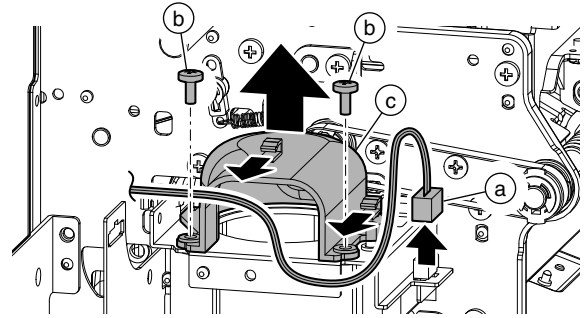
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



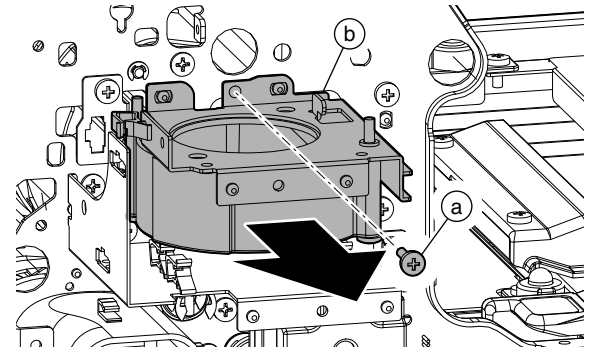
- 4) Disconnect the connector (a). Remove the screw (b), and remove the ADU reverse motor (c).



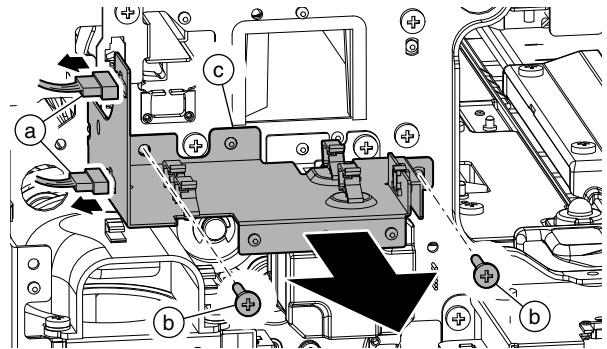
- 5) Disconnect the connector (a), and remove the screw (b). Remove the duct (c).



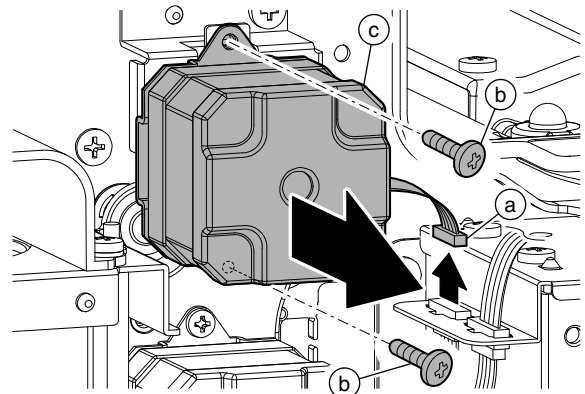
- 6) Remove the screw (a), and remove the reverse transport cooling fan unit (b).



- 7) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).

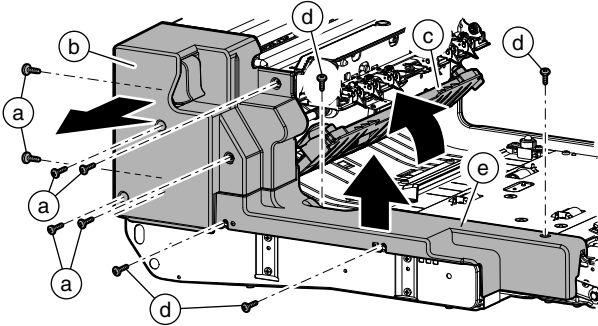


- 8) Disconnect the connector (a). Remove the screw (b), and remove the paper exit reverse motor (c).

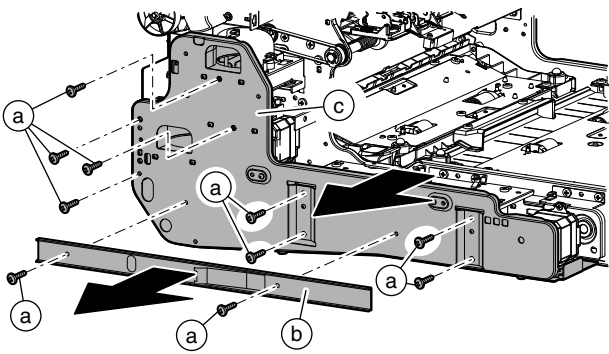


**d. ADU transport motor 2 / ADU transport motor 1**

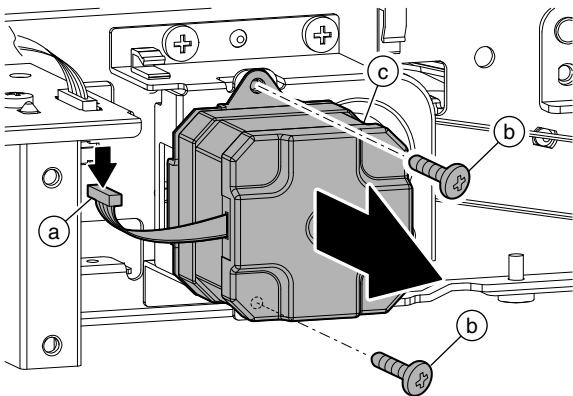
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



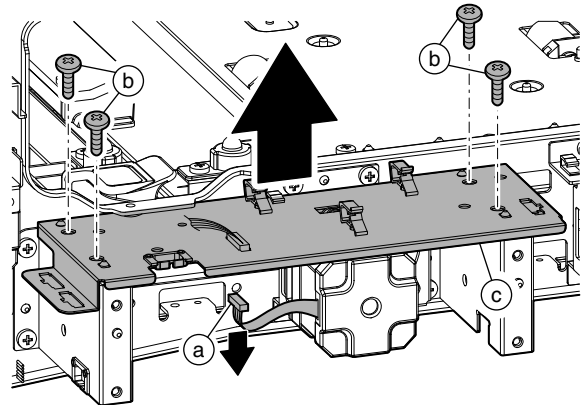
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



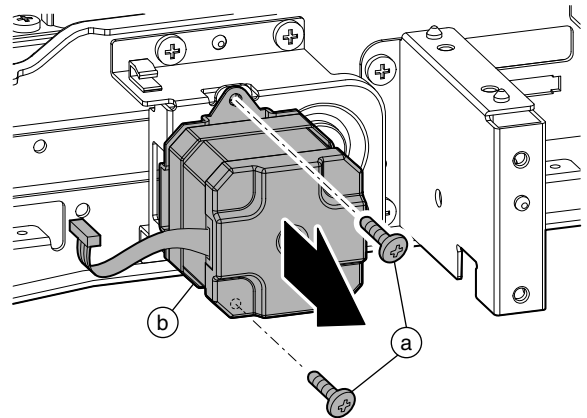
- 4) Disconnect the connector (a). Remove the screw (b), and remove the ADU transport motor 2 (c).



- 5) Disconnect the connector (a). Remove the screw (b), and remove the plate (c).

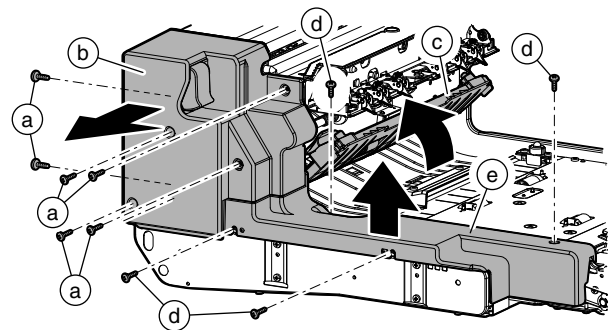


- 6) Remove the screw (a), and remove the ADU transport motor 1 (b).

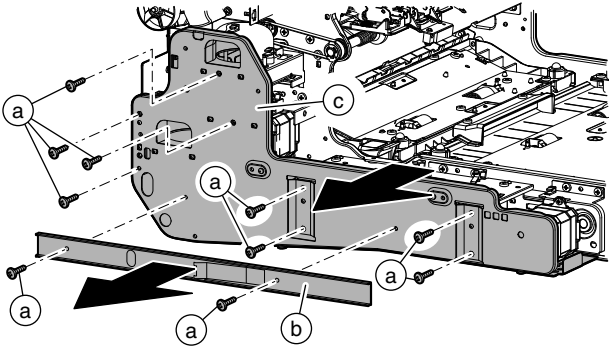


**e. Reverse transport cooling fan / Duplex reverse detection 1**

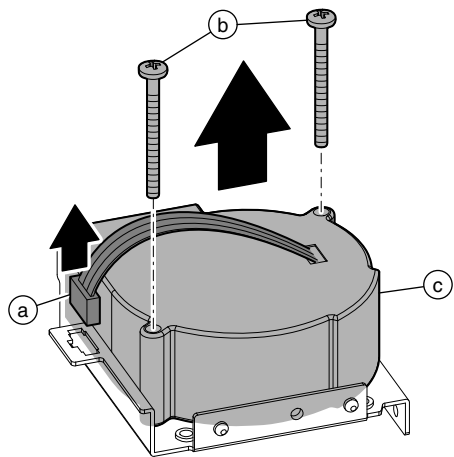
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



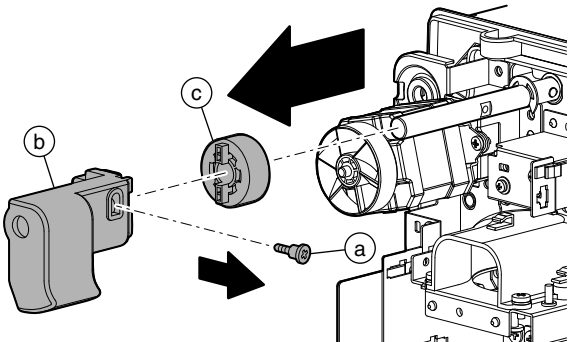
3) Remove the screw (a). Remove the rail (b), and the frame (c).



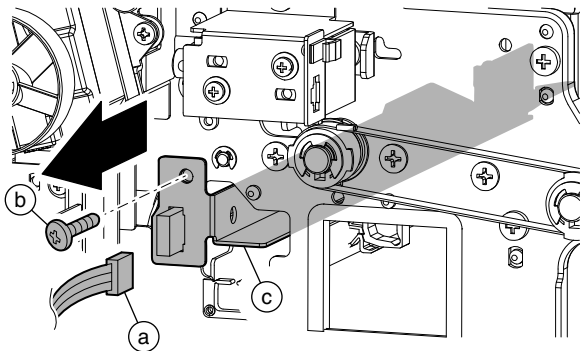
7) Disconnect the connector (a), and remove the screw (b). Remove the reverse transport cooling fan (c).



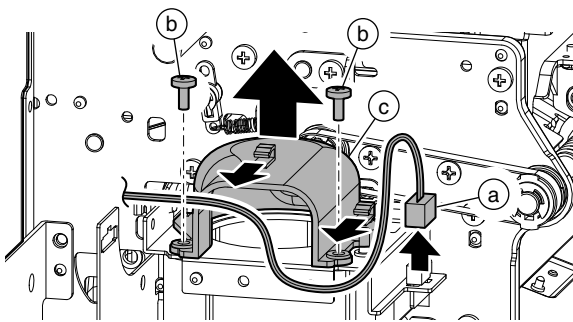
4) Remove the screw (a). Remove the lever (b) and the one-way clutch (c).



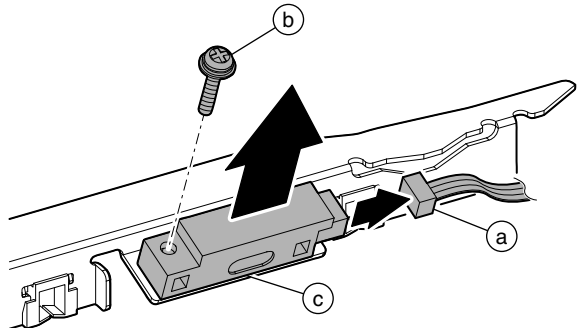
8) Disconnect the connector (a), and remove the screw (b). Pull out the stay (c).



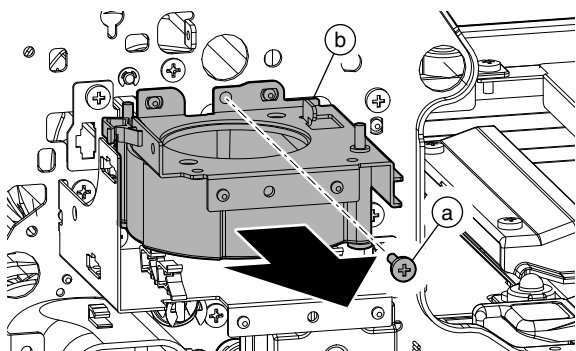
5) Remove the screw (a), and remove the duct (b).



9) Disconnect the connector (a), and remove the screw (b). Remove the duplex reverse detection 1 (c).

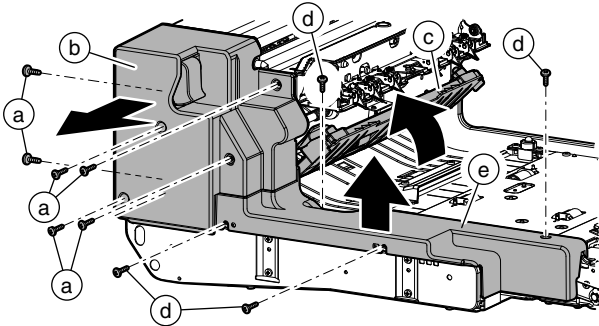


6) Remove the screw (a), and remove the reverse transport cooling fan unit (b).

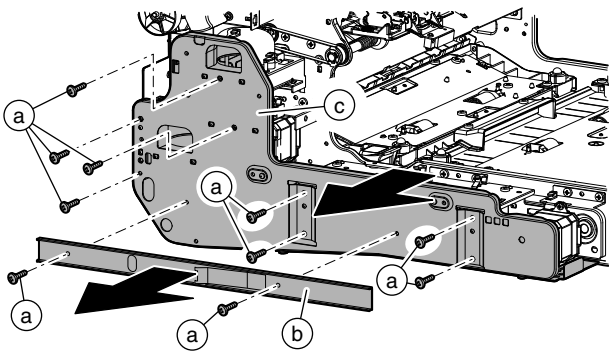


**f. Reverse cooling fan**

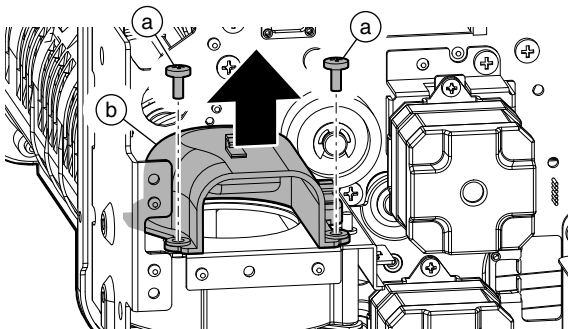
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



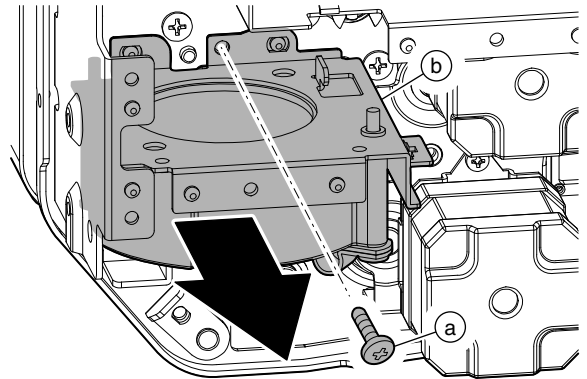
- 3) Remove the screw (a). Remove the rail (b) and the frame (c).



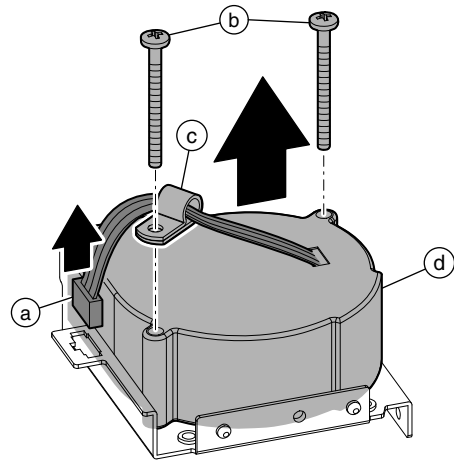
- 4) Remove the screw (a), and remove the duct (b).



- 5) Remove the screw (a), and remove the reverse cooling fan unit (b).

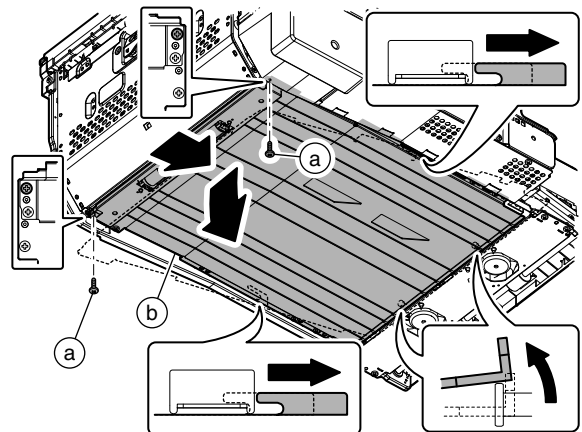


- 6) Disconnect the connector (a). Remove the screw (b) and clamp (c). Remove the reverse cooling fan (d).

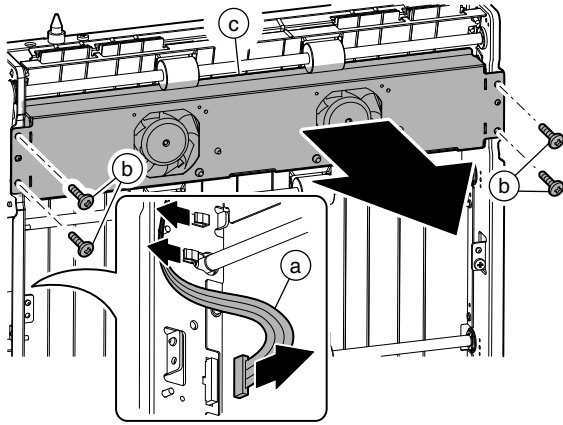


**g. ADU section paper cooling fan 2 / ADU section paper cooling fan 1**

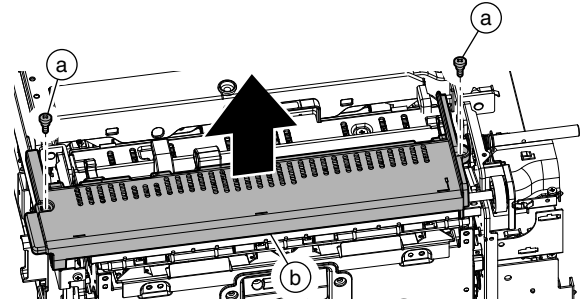
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), push into the paper guide (b) once, then remove it.



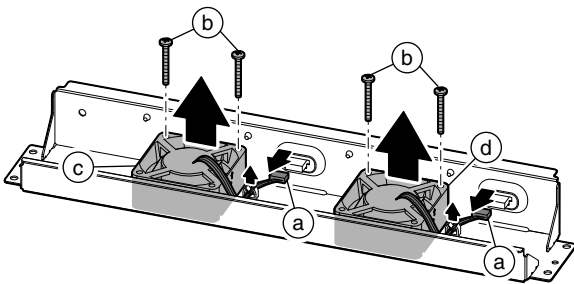
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fan unit (c).



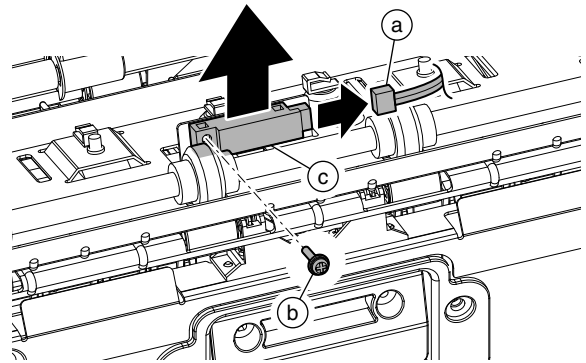
- 3) Remove the screw (a), and remove the cover (b).



- 4) Disconnect the connector (a), and remove the screw (b). Remove the ADU section paper cooling fan 2 (c) and ADU section paper cooling fan 1 (d).

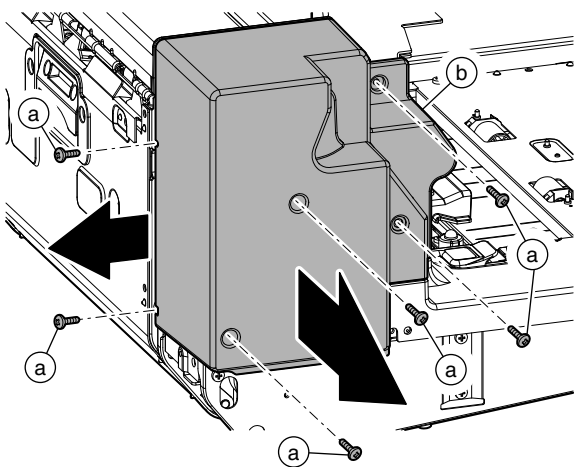


- 4) Disconnect the connector (a), and remove the screw (b). Remove the paper exit detection (c).



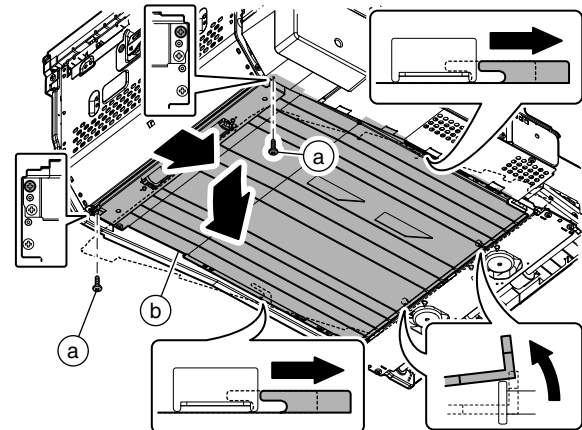
## h. Paper exit detection

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b).



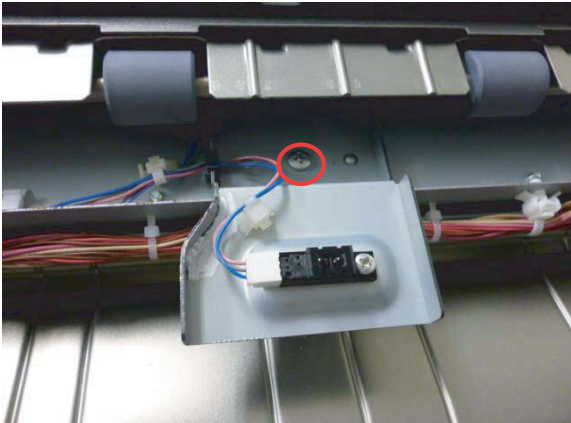
## i. Duplex reverse detection 2 / Duplex reverse detection 3

- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), push into the paper guide (b) once, then remove it.

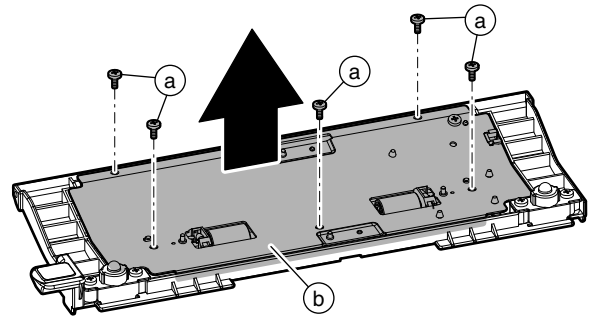




- 3) Remove the screw, and remove the stay. Remove the duplex reverse detection 2/3.

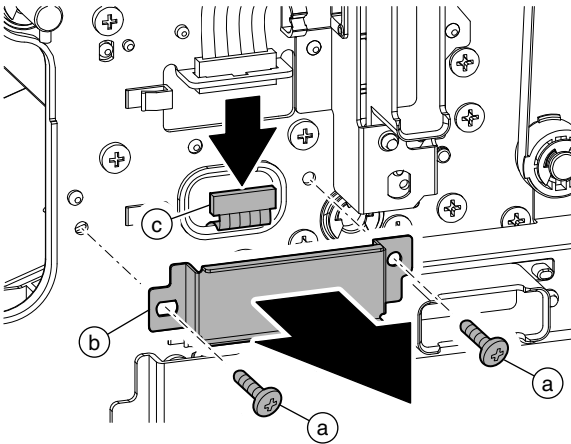


- 4) Remove the screw (a), and remove the plate (b).

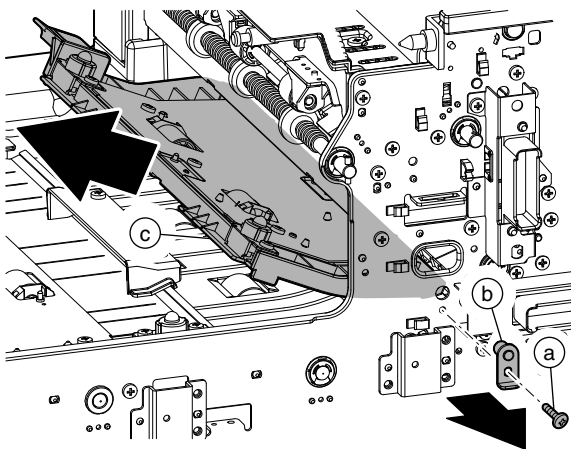


#### j. Face down reverse detection / ADU transport detection 1

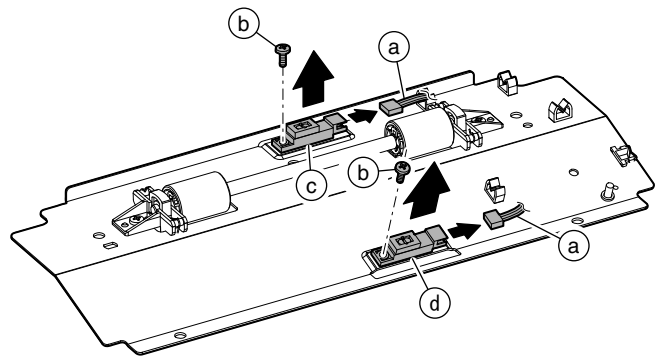
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the plate (b). Disconnect the connector (c).



- 3) Remove the screw (a), and remove the fulcrum plate (b). Remove the paper guide (c).

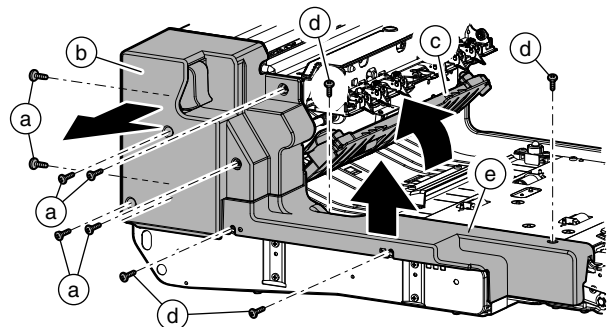


- 5) Disconnect all connectors (a), and remove the screw (b). Remove the face down reverse detection (c) and ADU transport detection 1 (d).

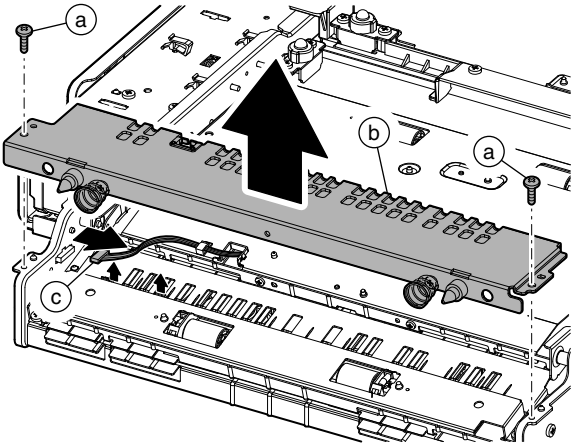


#### k. ADU transport detection 2 / ADU transport detection 3

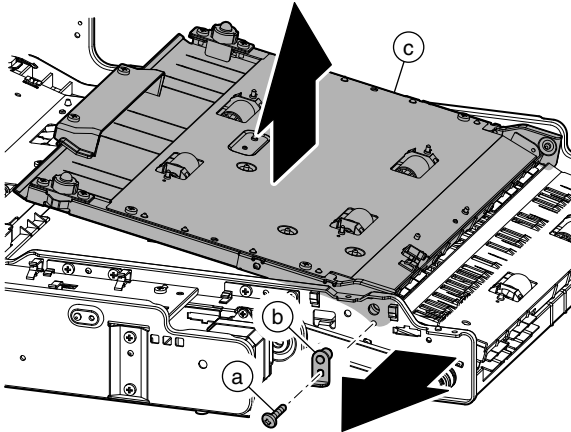
- 1) Remove the ADU paper exit unit.
- 2) Remove the screw (a), and remove the cover (b). Open the paper guide (c). Remove the screw (d), and remove the cover (e).



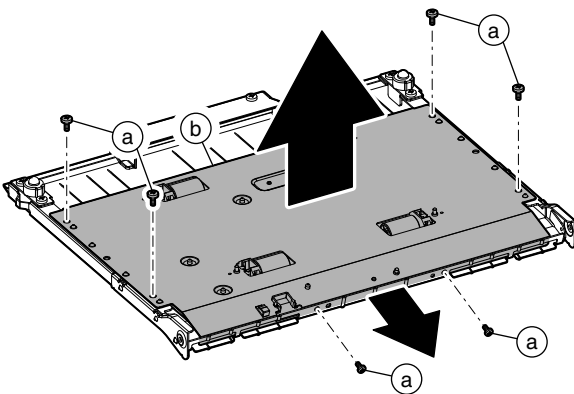
- 3) Remove the screw (a), and remove the plate (b). Disconnect the connector (c).



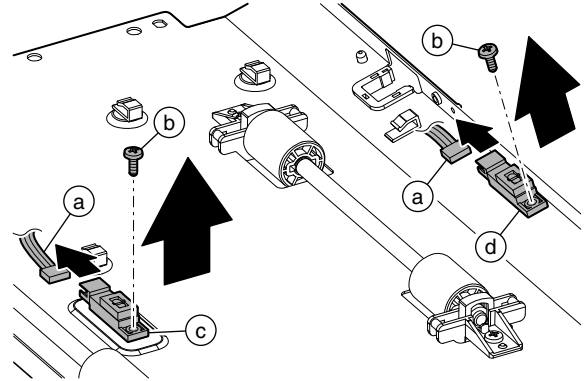
- 4) Remove the screw (a), and remove the fulcrum plate (b). Remove the paper guide (c).



- 5) Remove the screw (a), and remove the plate (b).



- 6) Disconnect the connector (a), and remove the screw (b). Remove the ADU transport detection 2 (c) and ADU transport detection 3 (d).

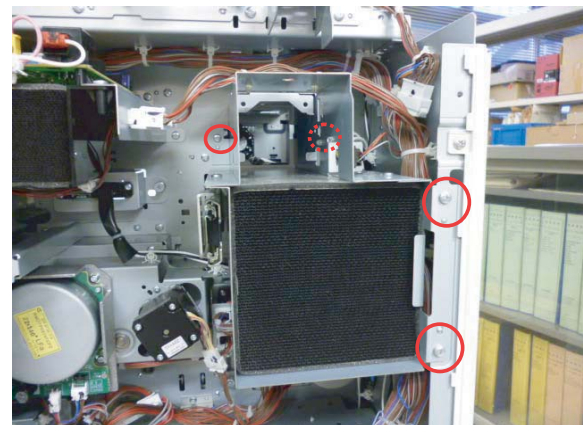


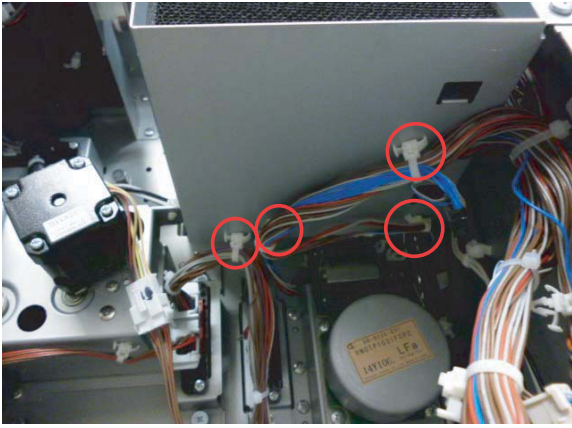
#### I. Decurler drive unit

- 1) Remove the rear cabinet.
- 2) Remove the PCU PWB.

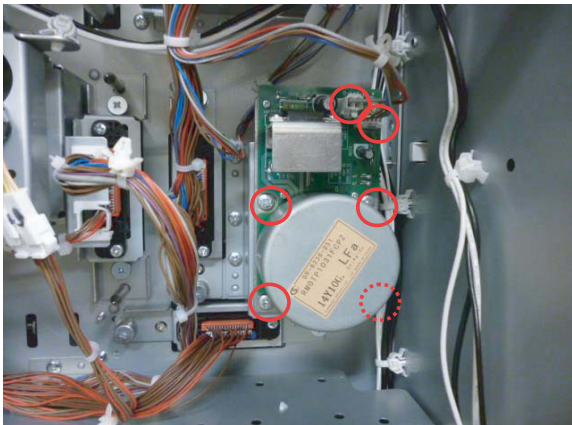


- 3) Disconnect the connector, and remove the snap band and the screw. Remove the exhaust duct.

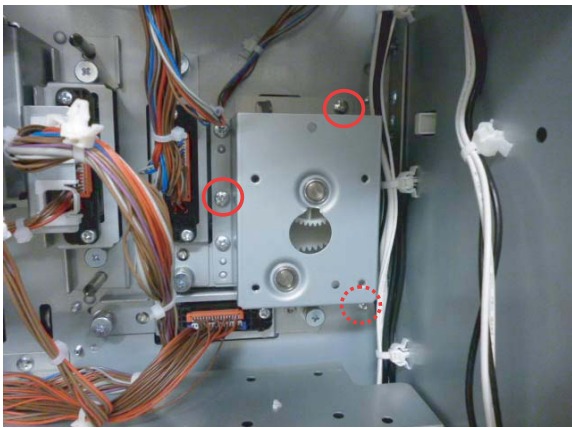




4) Disconnect the connector, and remove the screw. Remove the decurler motor.



5) Remove the screw, and remove the decurler drive unit.

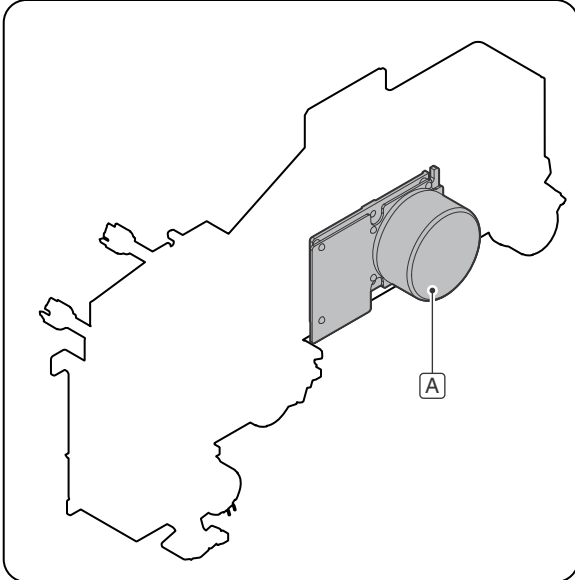


# [P] DRIVE SECTION

## 1. Disassembly and assembly

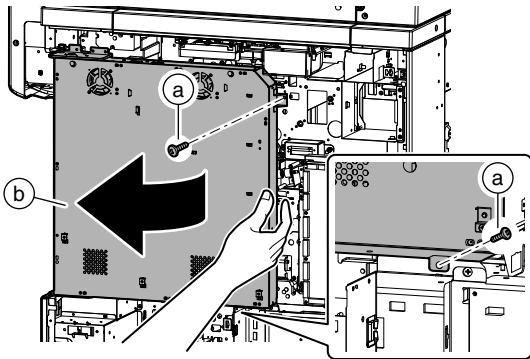
### A. Tandem drive unit

| Unit              | Parts                | Page  |
|-------------------|----------------------|-------|
| Tandem drive unit | A Paper feed motor 1 | P-1/a |

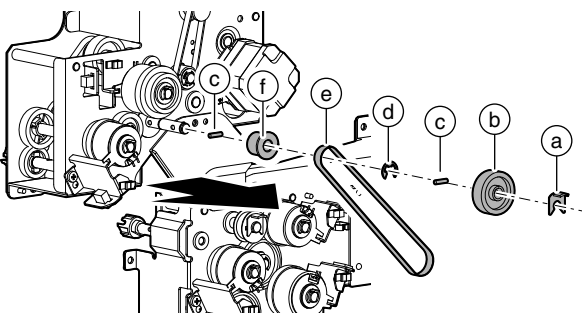


#### (1) Tandem drive unit

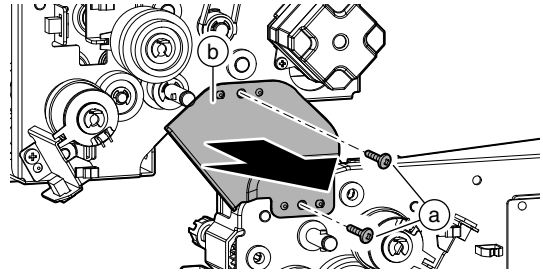
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



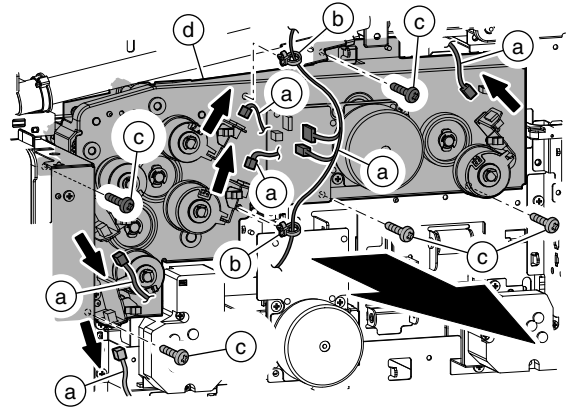
- 3) Remove the resin E-ring (a). Remove the gear (b) and the parallel pin (c). Remove the E-ring (d), the belt (e), the pulley (f), and the parallel pin (c).



- 4) Remove the screw (a), and remove the plate (b).

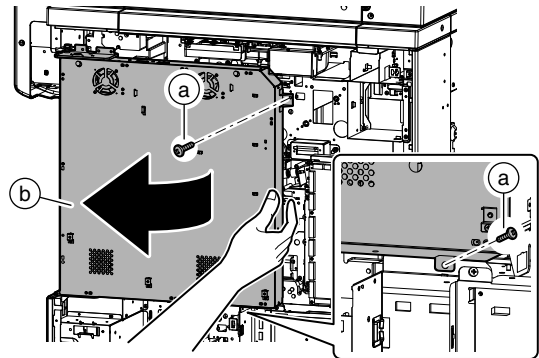


- 5) Disconnect the connector (a), and remove the snap band (b) and the screw (c). Remove the tandem drive unit (d).

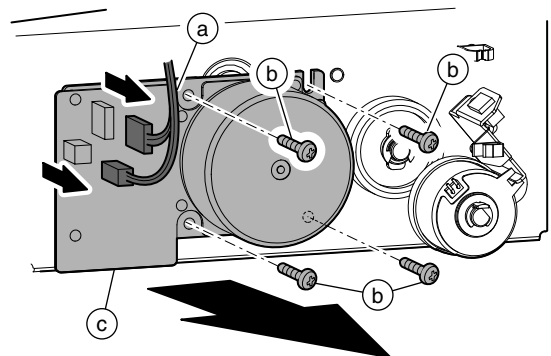


#### a. Paper feed motor 1

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

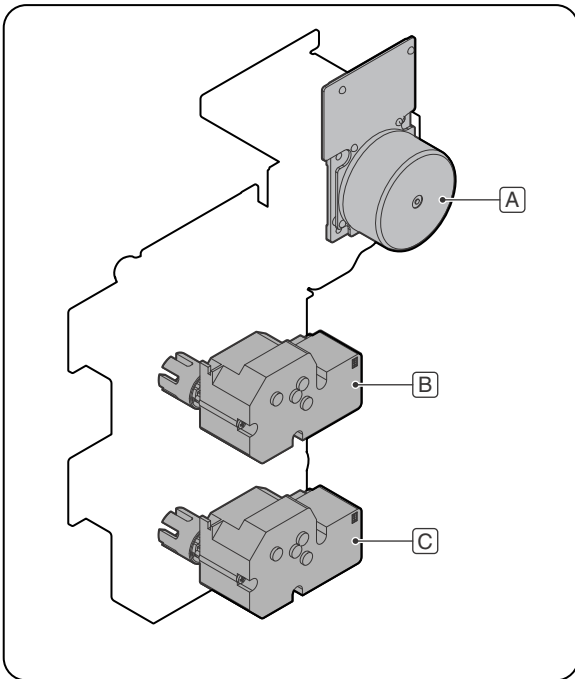


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 1 (c).



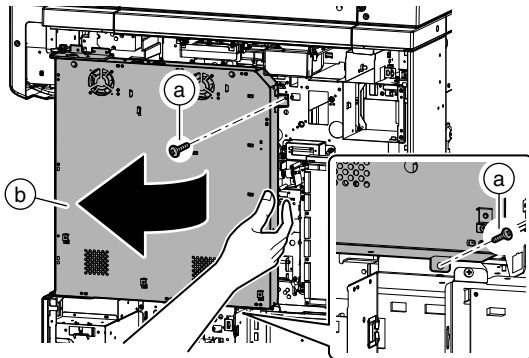
## B. Multi-stage drive unit

| Unit                     | Parts                       | Page    |
|--------------------------|-----------------------------|---------|
| Multi-stage drive unit   | A Paper feed motor 2        | P - 2/a |
| Multi-stage drive B unit | B Paper lift motor (Tray 3) | P - 3/a |
|                          | C Paper lift motor (Tray 4) |         |

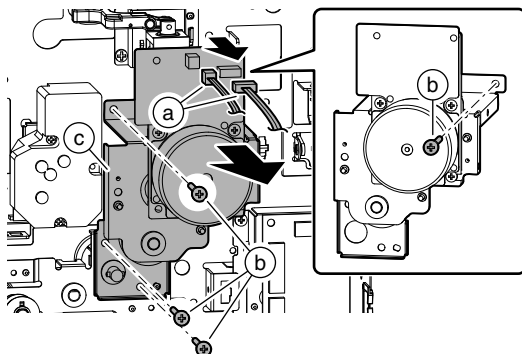


### (1) Multi-stage drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

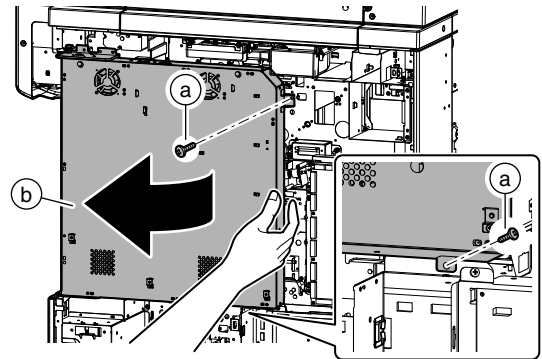


- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive unit (c).

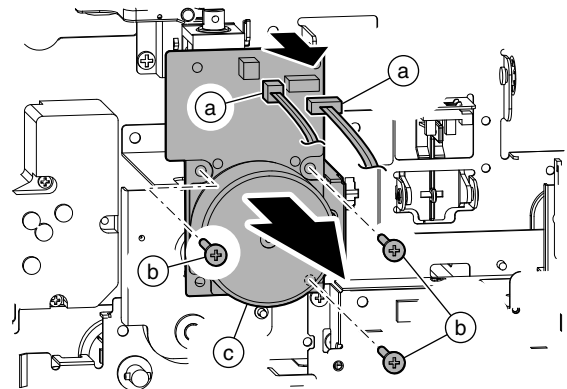


### a. Paper feed motor 2

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

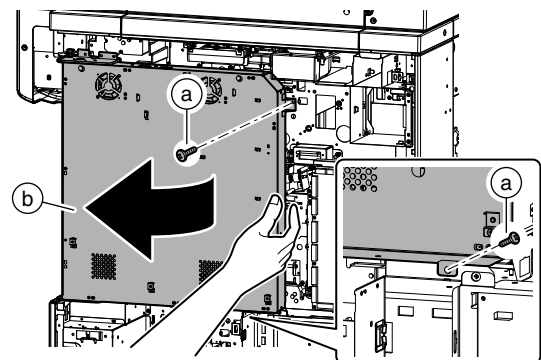


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper feed motor 2 (c).

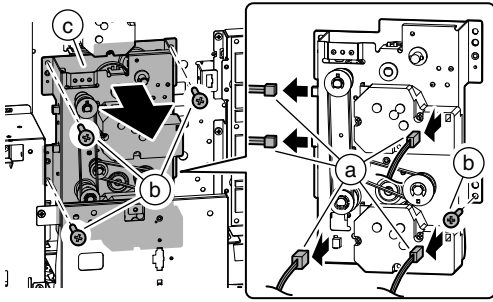


### (2) Multi-stage drive B unit

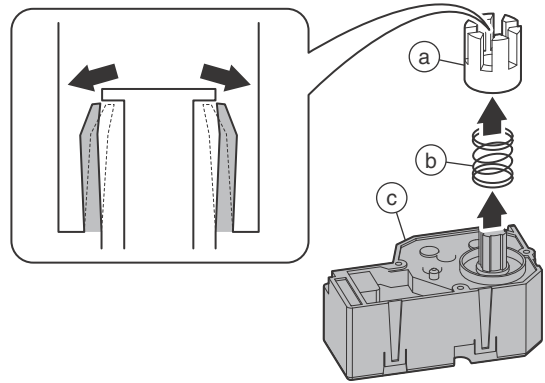
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the multi-stage drive B unit (c).

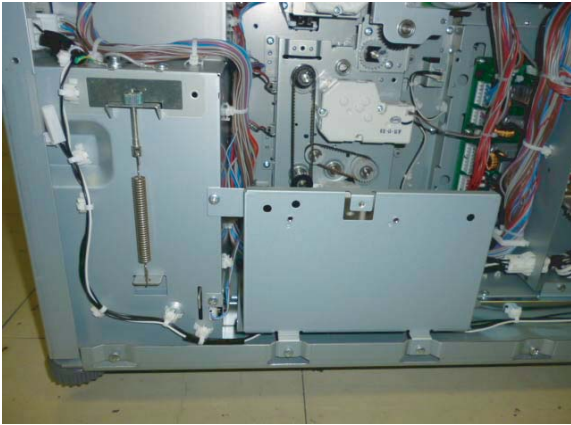


- 4) Remove the coupling (a) and the spring (b) from the paper lift motor (c).

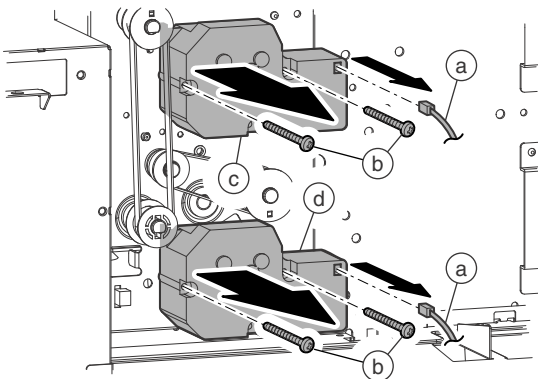


#### a. Paper lift motor (Tray 3) / Paper lift motor (Tray 4)

- 1) Remove the rear cabinet.
- 2) Remove the screw, and remove the plate.

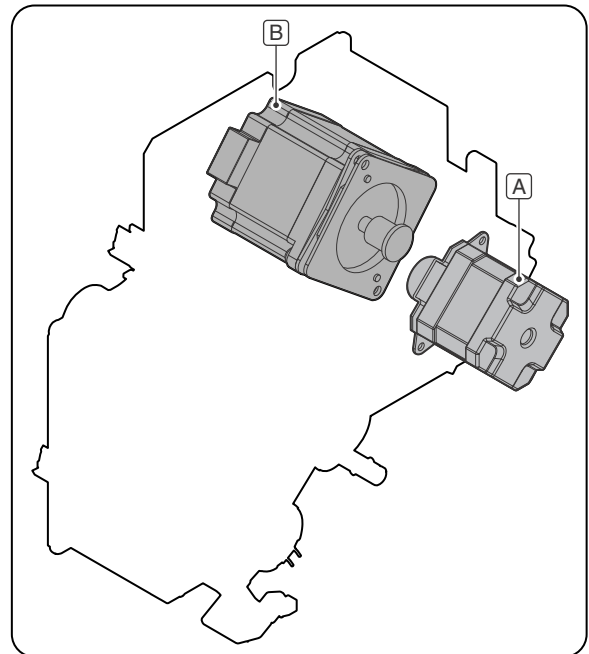


- 3) Disconnect the connector (a), and remove the screw (b). Remove the paper lift motor (Tray 3) (c), and the paper lift motor (Tray 4) (d).



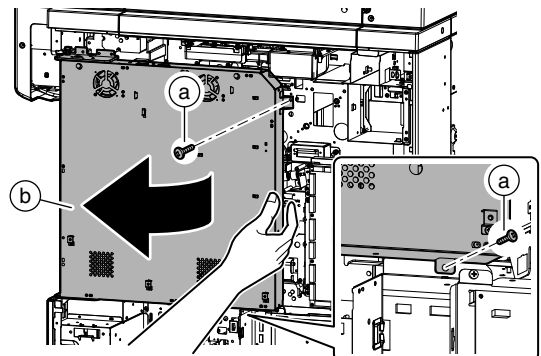
#### C. Transport drive unit

| Unit                 | Parts | Page                     |         |
|----------------------|-------|--------------------------|---------|
| Transport drive unit | A     | Transport motor          | P - 4/a |
|                      | B     | Vertical transport motor | P - 4/b |

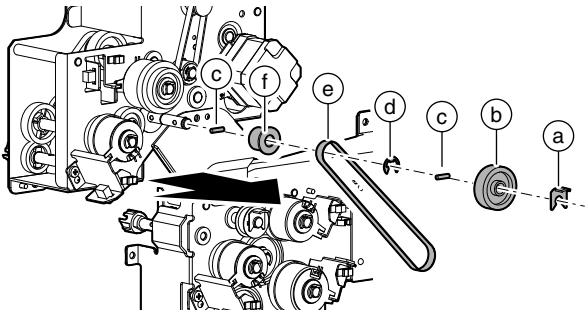


#### (1) Transport drive unit

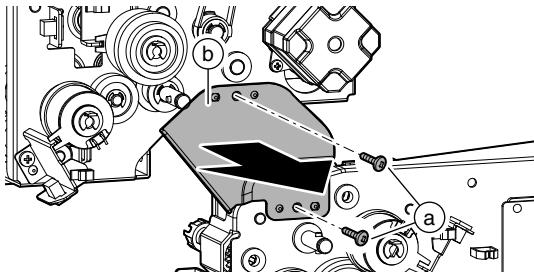
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



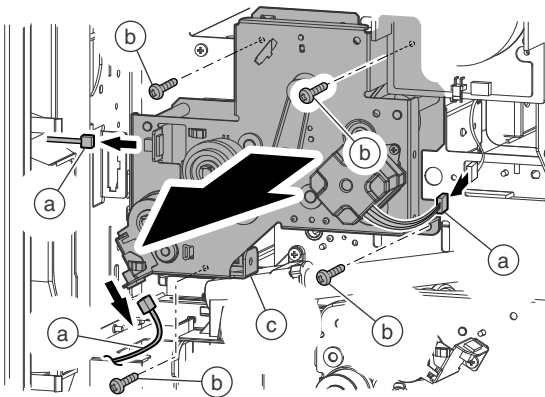
- 3) Remove the resin E-ring (a), the gear (b), and remove the parallel pin (e). Remove the E-ring (d), the belt (e), and the pulley (f).



- 4) Remove the screw (a), and remove the plate (b).

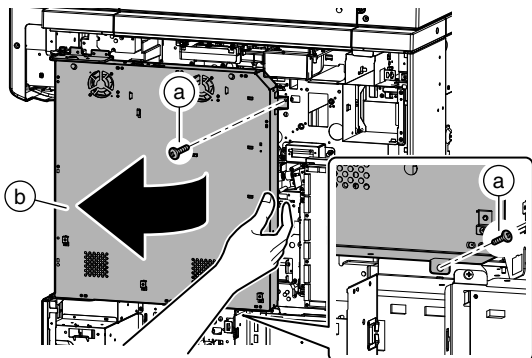


- 5) Disconnect the connector (a), and remove the screw (b). Remove the transport drive unit (c).

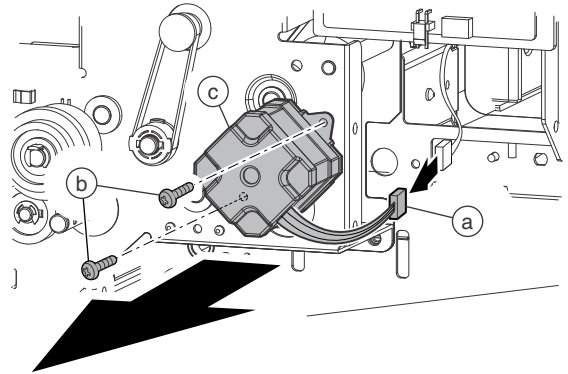


#### a. Transport motor

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).

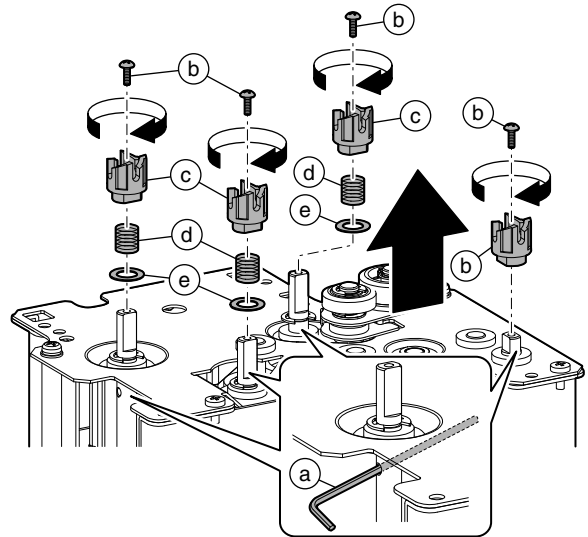


- 3) Disconnect the connector (a), and remove the screw (b). Remove the transport motor (c).

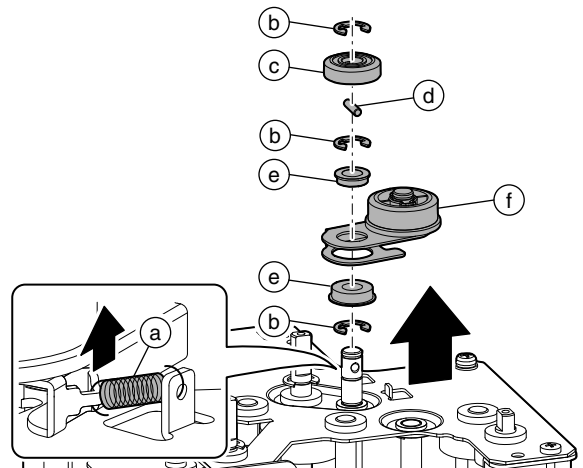


#### b. Vertical transport motor

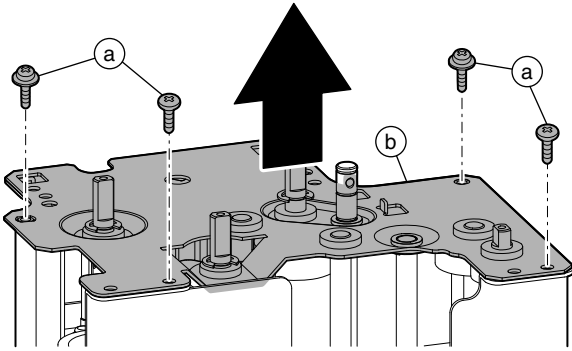
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the transport drive unit.
- 3) Insert the stopper (a) into the shaft, and rotate the screw (b) **clockwise** to remove it. Remove the coupling (c), the spring (d), and the washer (e).



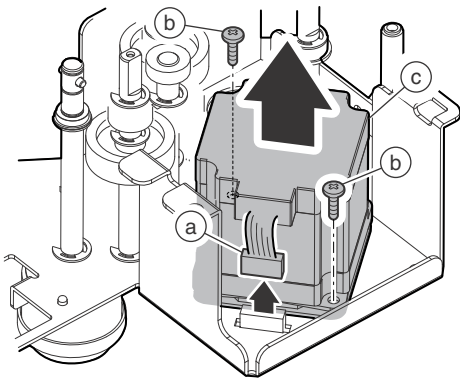
- 4) Remove the spring (a), the E-ring (b), the gear (c), the parallel pin (d), the bearing (e), and the plate (f).



5) Remove the screw (a), and remove the plate (b).

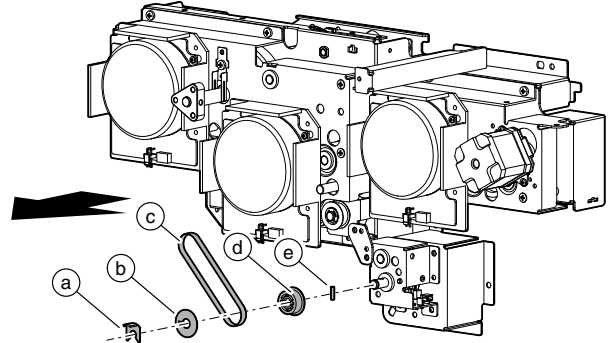


6) Disconnect the connector (a), and remove the screw (b). Remove the vertical transport motor (c).

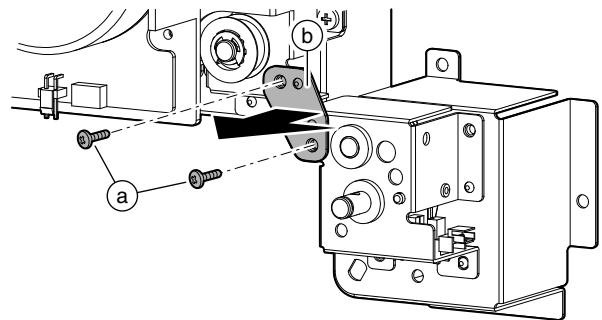


## (1) Drum drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the developing motor and the drum motor.
- 3) Remove the resin E-ring, and remove the sheet (b), the belt (c), the pulley (d) and the parallel pin (e).

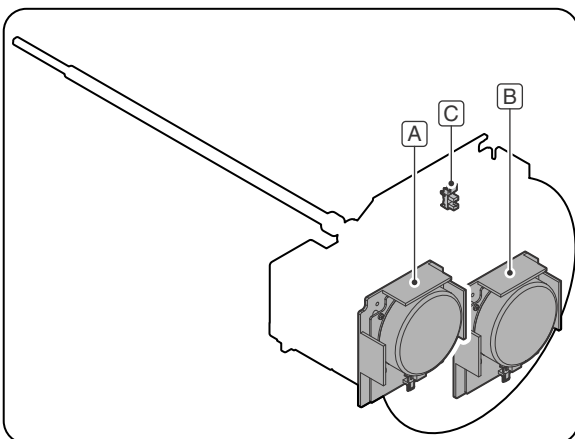


4) Remove the screw (a), and remove the plate (b).

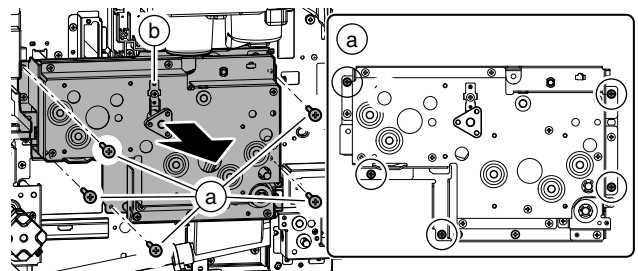


## D. Drum drive unit

| Unit            | Parts                        | Page    |
|-----------------|------------------------------|---------|
| Drum drive unit | A Developing motor           | P - 6/a |
|                 | B Drum motor                 |         |
|                 | C Waste toner lock detection | P - 6/b |



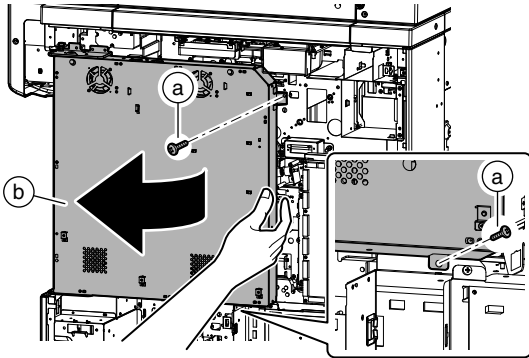
5) Remove the screw (a), and remove the drum drive unit (b).



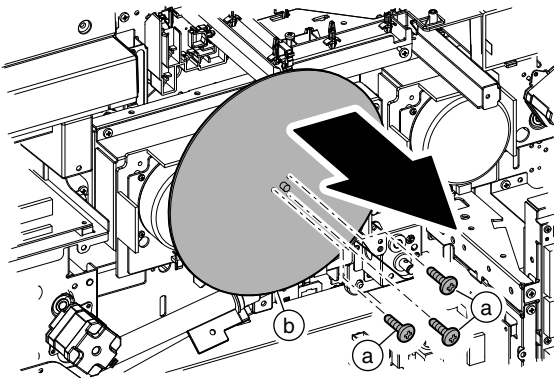


**a. Developing motor / Drum motor**

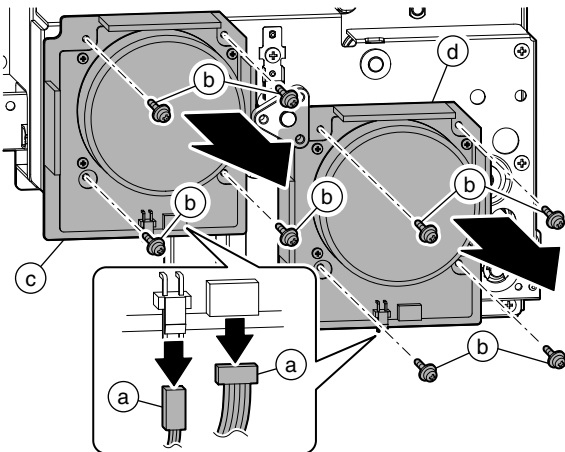
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Remove the screw (a), and remove the flywheel (b).

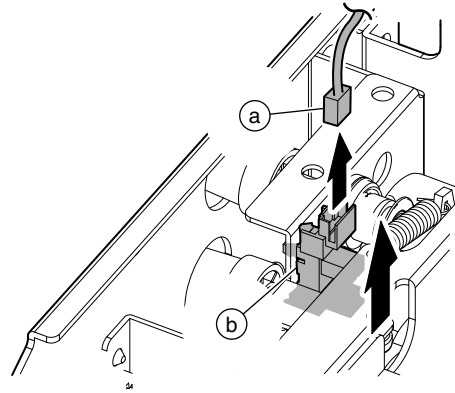


- 4) Disconnect the connector (a), and remove the screw (b). Remove the developing motor (c) and the drum motor (d).



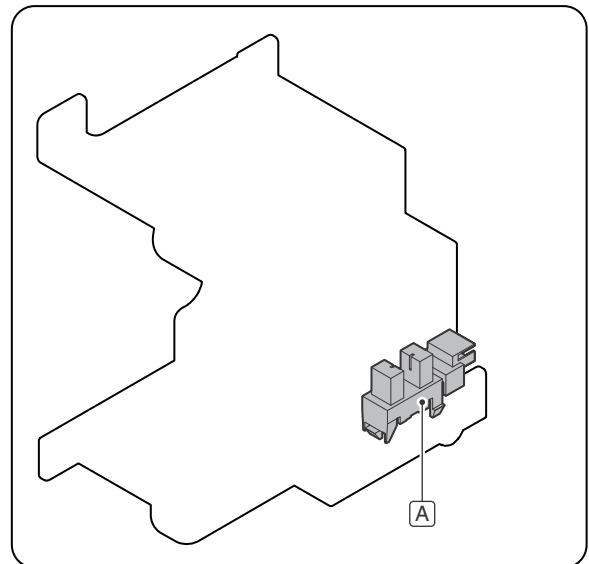
**b. Waste toner lock detection**

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the drum drive unit.
- 3) Disconnect the connector (a), and remove the waste toner lock detection (b).



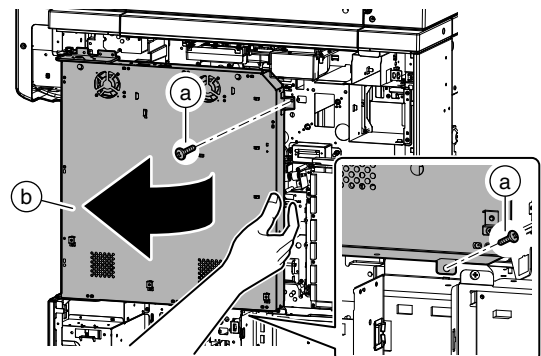
**E. Waste toner transport drive unit**

| Unit                             | Parts                          | Page    |
|----------------------------------|--------------------------------|---------|
| Waste toner transport drive unit | A Waste toner lock detection 2 | P - 7/a |

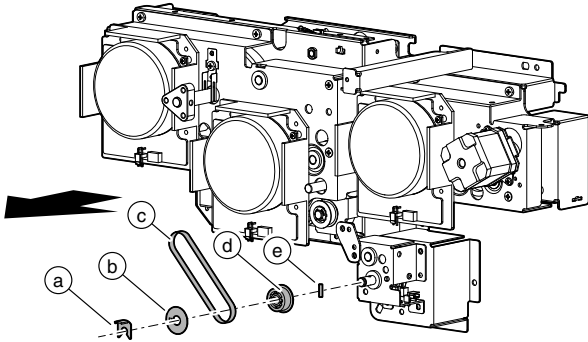


**(1) Waste toner transport drive unit**

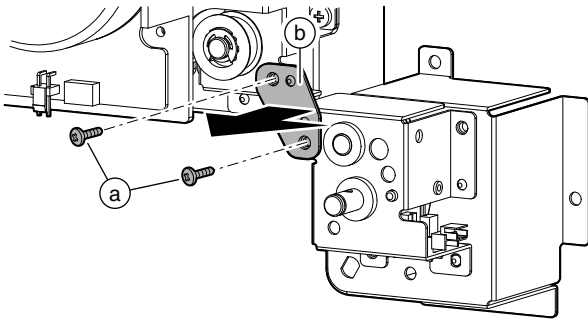
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



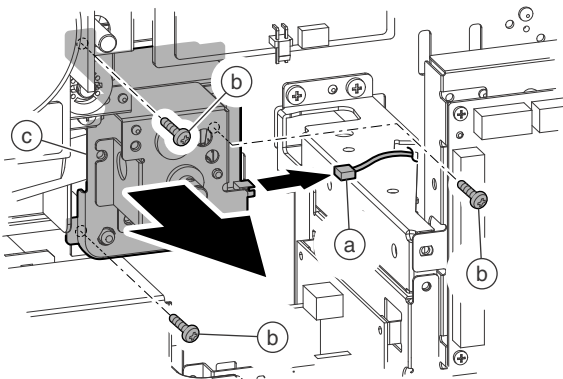
- 3) Remove the resin E-ring, and remove the sheet (b), the belt (c), the pulley (d) and the parallel pin (e).



- 4) Remove the screw (a), and remove the plate (b).

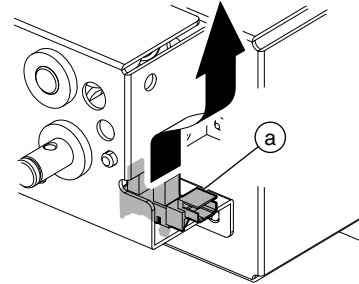


- 5) Disconnect the connector (a), and remove the screw (b). Remove the waste toner transport drive unit (c).



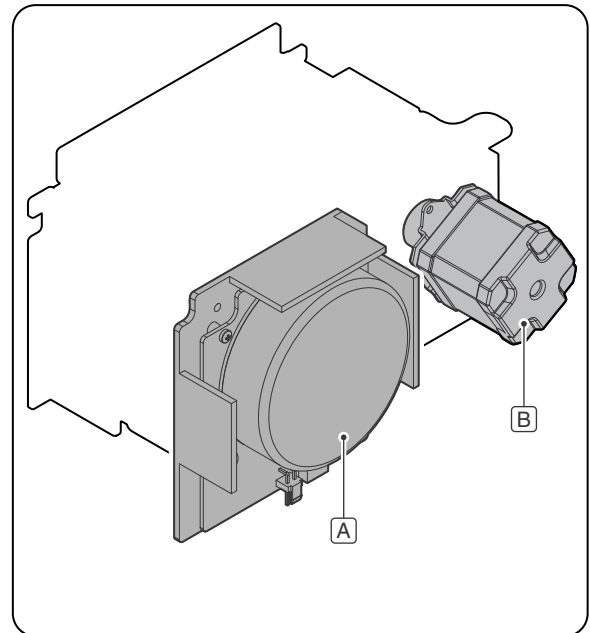
#### a. Waste toner lock detection 2

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the waste toner transport drive unit.
- 3) Remove the waste toner lock detection 2 (a).



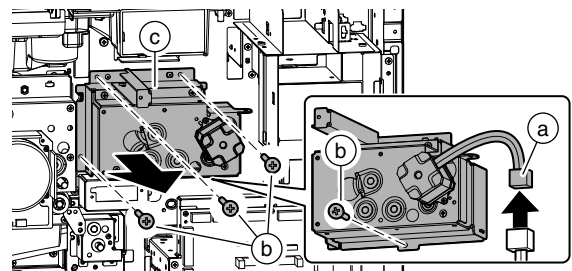
#### F. Fusing drive unit

| Unit              | Parts |                   | Page    |
|-------------------|-------|-------------------|---------|
| Fusing drive unit | A     | Fusing motor      | P - 8/a |
|                   | B     | Fusing rear motor |         |



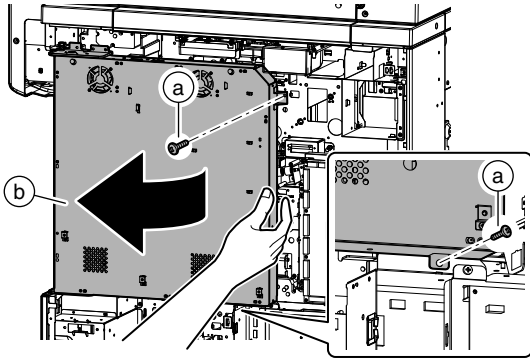
#### (1) Fusing drive unit

- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the fusing motor.
- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing drive unit (c).

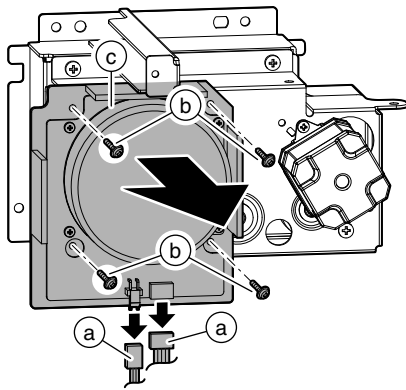


**a. Fusing motor/ Fusing rear motor**

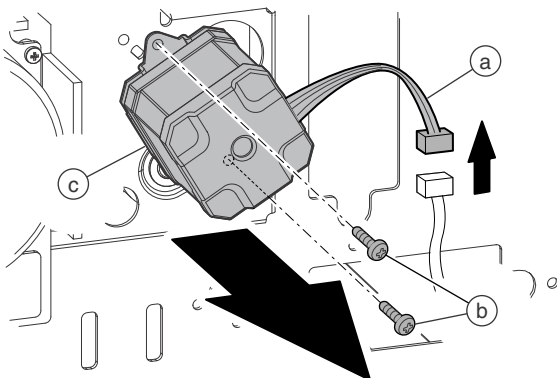
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



- 3) Disconnect the connector (a), and remove the screw (b). Remove the fusing motor (c).



- 4) Disconnect the connector (a), and remove the screw (b). Remove the fusing rear motor (c).



# [Q] PWB SECTION

## 1. Disassembly and assembly

### A. PWB

| Parts |                          | Page        |
|-------|--------------------------|-------------|
| A     | MFPC PWB                 | Q - 1/(1)   |
| B     | HDD                      |             |
| C     | SOC memory PWB           |             |
| D     | WH PWB                   | Q - 3/(2)   |
| E     | AC PWB                   |             |
| F     | OPTION power             | Q - 3/(3)   |
| G     | MAIN power               |             |
| H     | PCU-Flash PWB            |             |
| I     | PCU PWB                  | Q - 5/(4)   |
| J     | HL PWB                   |             |
| K     | SUB power                | Q - 7/(6)   |
| L     | High voltage PWB         | Q - 7/(7)   |
| M     | Driver PWB (Paper exit)  | Q - 8/(8)   |
| N     | Driver PWB (Paper feed)  | Q - 9/(9)   |
| O     | AC terminal PWB          | Q - 10/(10) |
| P     | Size detection PWB       |             |
| Q     | SCNcnt PWB               |             |
| R     | KEY PWB / POWER LAMP PWB |             |

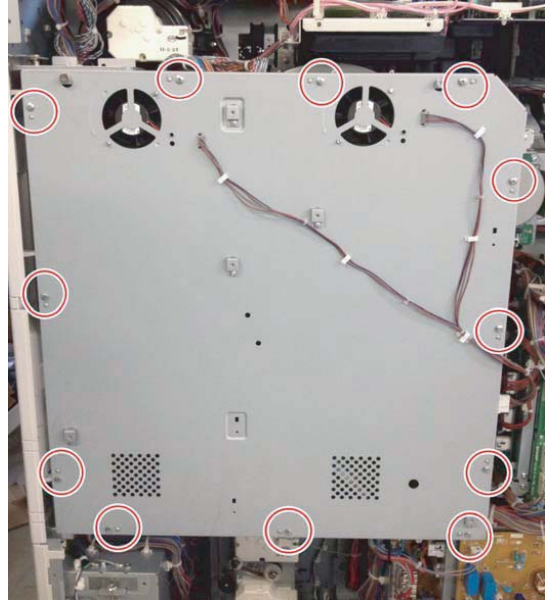
### (1) MFPC PWB / HDD / SOC memory PWB

#### a. MFPC removal

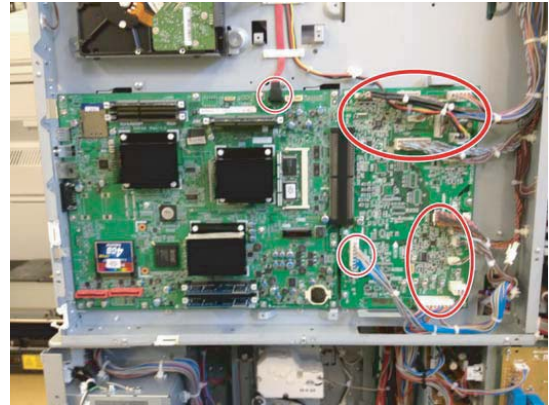
- 1) Disconnect the connector.



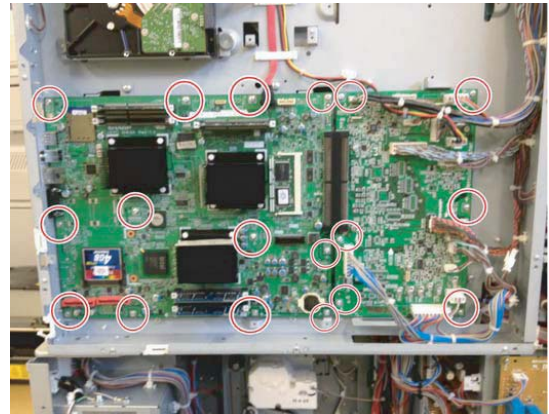
- 2) Remove the screw.



- 3) Disconnect the connector.

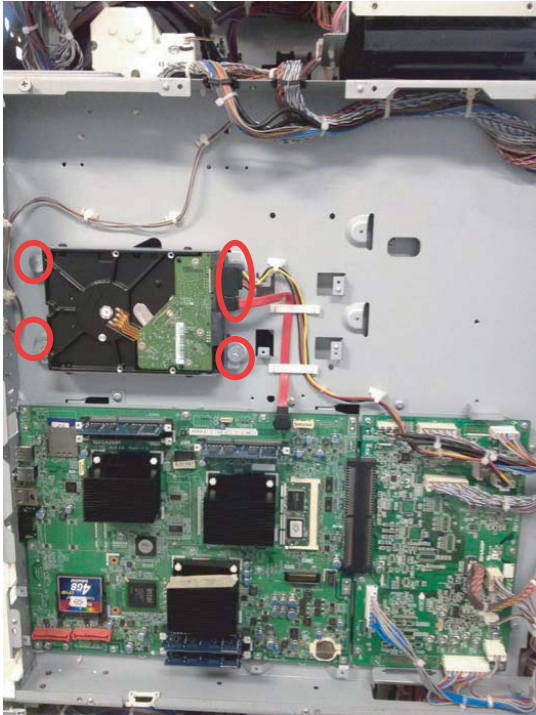


- 4) Remove the screw, and remove the MFPC PWB.

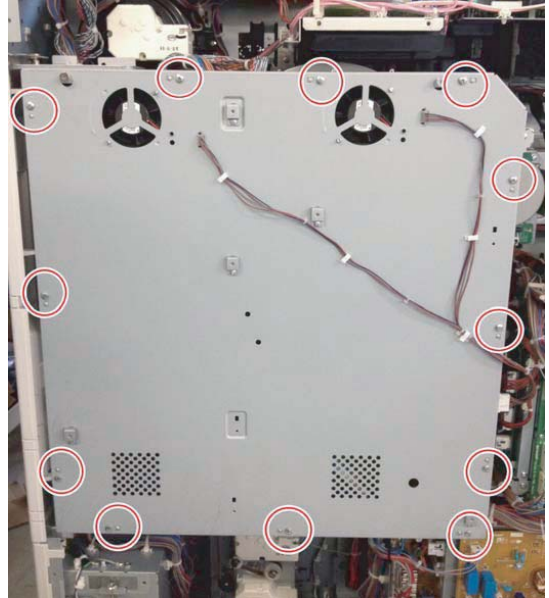


**b. HDD removal**

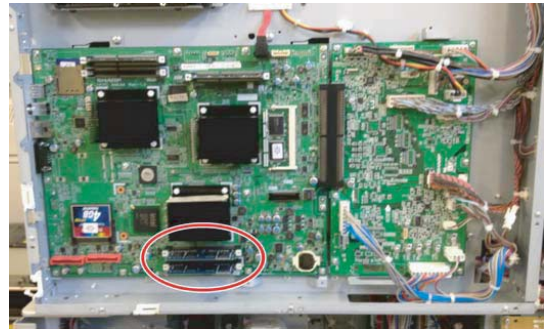
- 1) Disconnect the connector, and remove the screw. Remove the HDD.



- 2) Remove the screw.

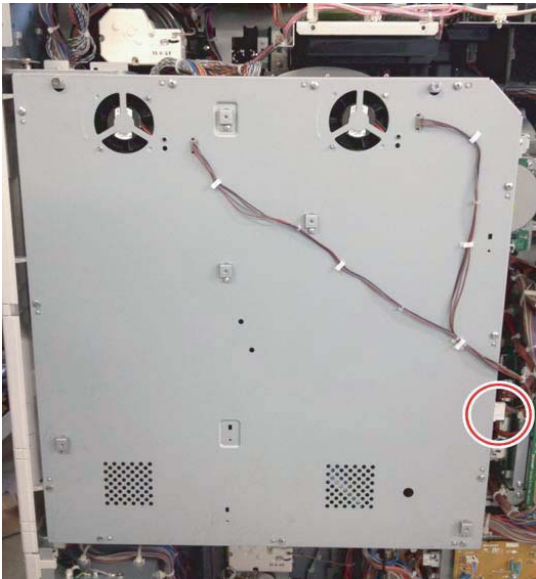


- 3) Remove the SOC memory PWB.  
NOTE: Remove carefully without damage.



**c. SOC memory PWB removal**

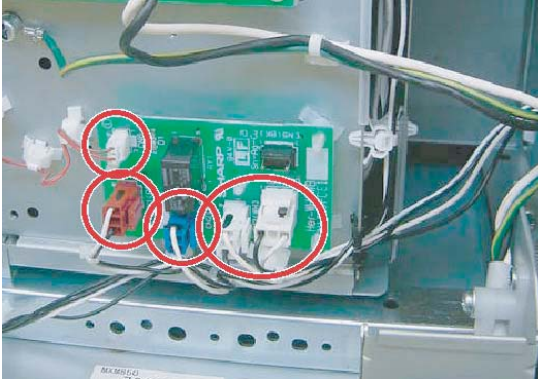
- 1) Disconnect the connector.



## (2) WH PWB / AC PWB

### a. WH PWB removal

- 1) Disconnect the connector, and remove the WH PWB.

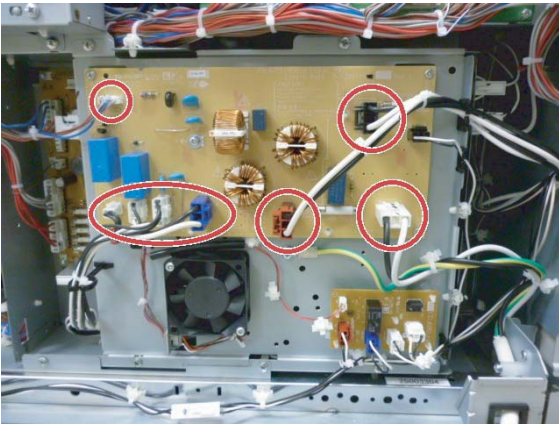


### b. AC PWB removal

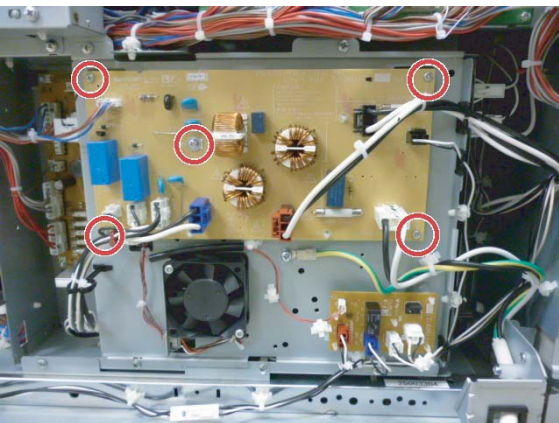
(The option WH PWB on the photo is different from the actual board.)

- 1) Disconnect the connector.

NOTE: When the dehumidifier heater is installed, disconnect the connector of the dehumidifier heater, too.



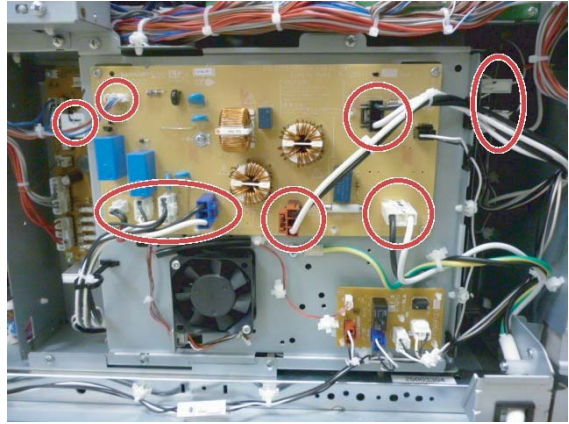
- 2) Remove the screw, and remove the AC PWB.



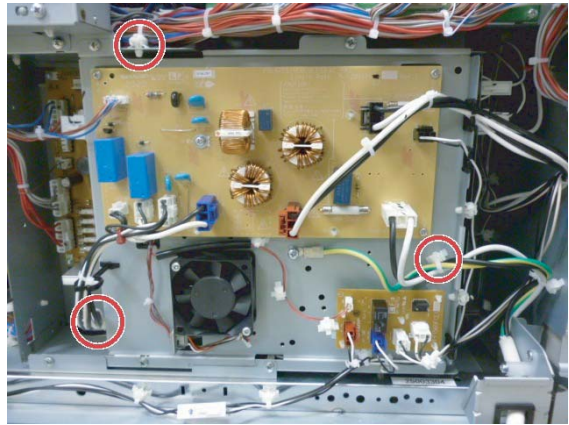
## (3) OPTION power / MAIN power

### a. OPTION power removal

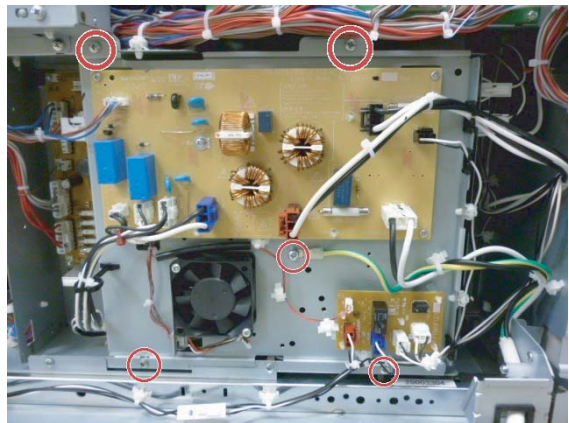
- 1) Disconnect the connector from the section where the AC PWB is installed.



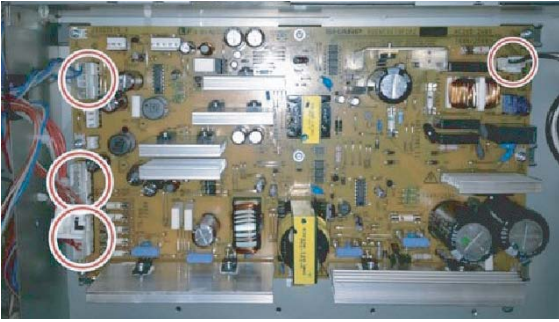
- 2) Remove the snap band.



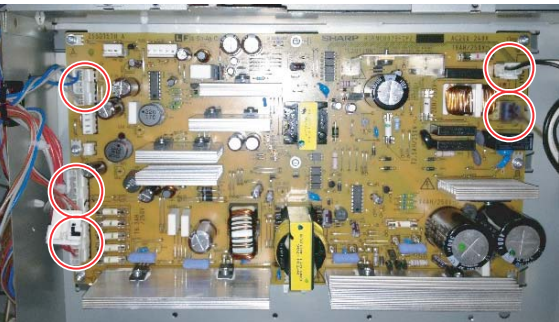
- 3) Remove the screw, and remove the plate.



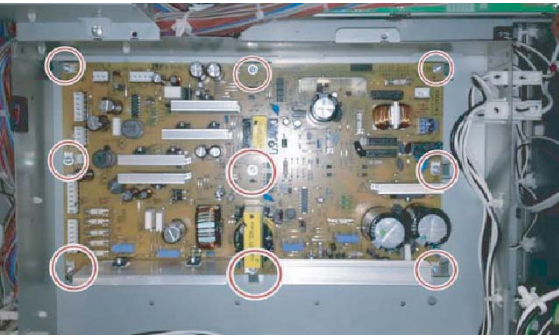
- 4) Disconnect the connector.  
**(North America)**



**(Except North America)**



- 5) Remove the screw, and remove the OPTION power.

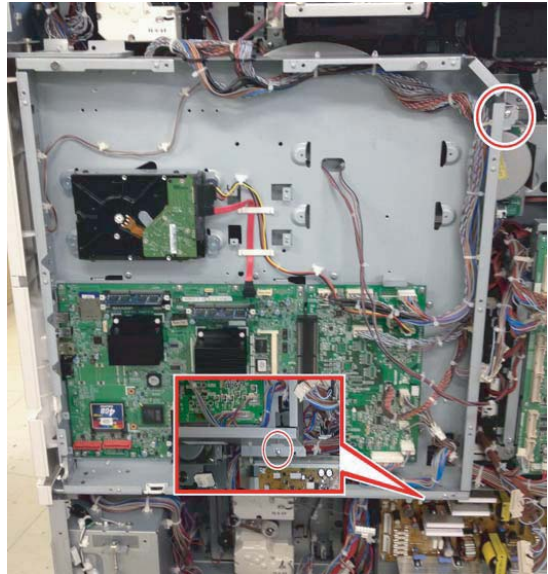


**b. MAIN power removal**

- 1) Remove the plate on which the AC PWB is mounted.
- 2) Remove the right rear upper cabinet.



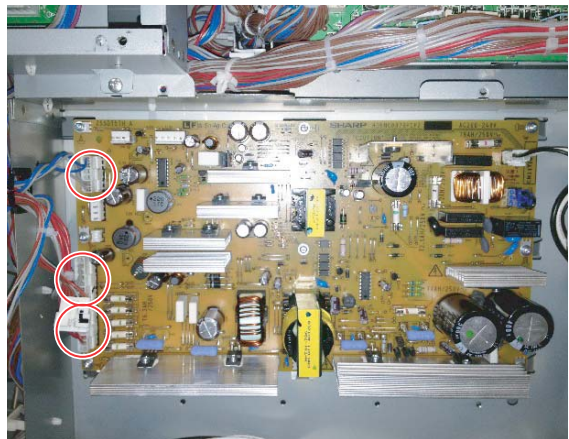
- 3) Remove the screw from the plate on which the MFPC PWB is mounted.



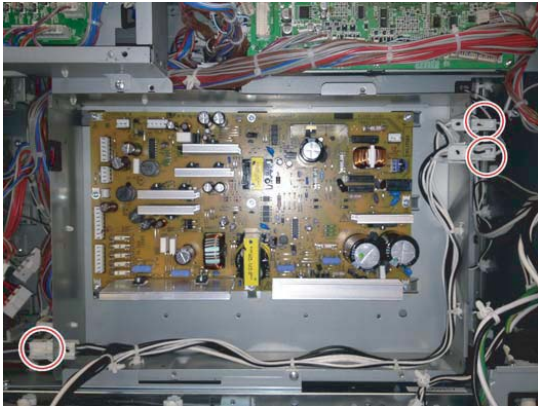
- 4) Open the plate on which the MFPC PWB is mounted.



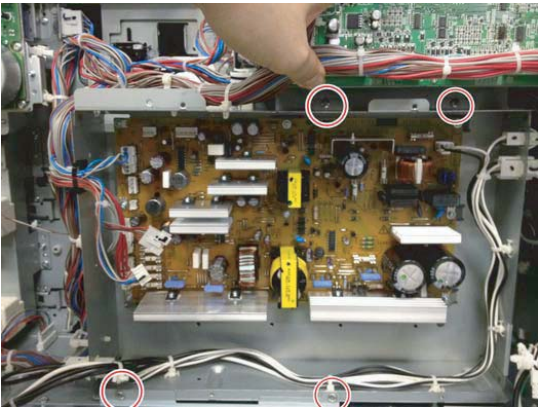
- 5) Disconnect the connector of the OPTION power.



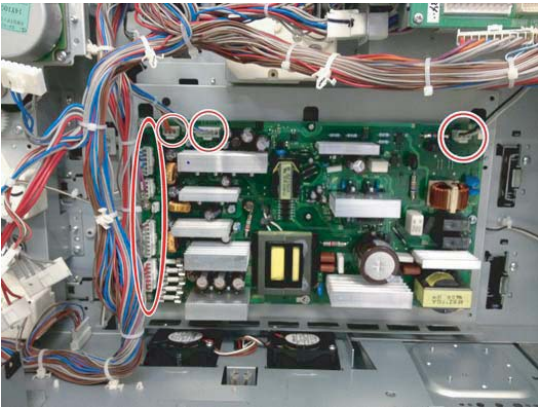
- 6) Disconnect the connector and remove the snap band from the plate on which the OPTION power is mounted.



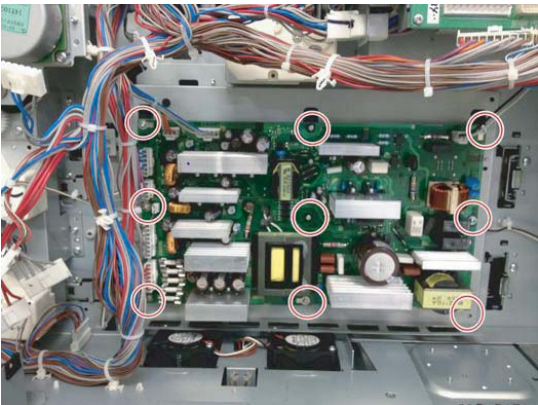
- 7) Remove the screw, and remove the plate.



- 8) Disconnect the connector.



- 9) Remove the screw, and remove the MAIN power.

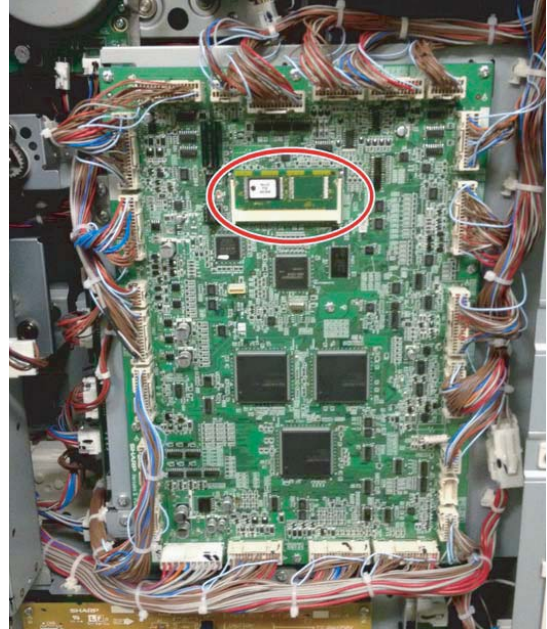


#### (4) PCU-Flash PWB / PCU PWB

##### a. PCU-Flash PWB removal

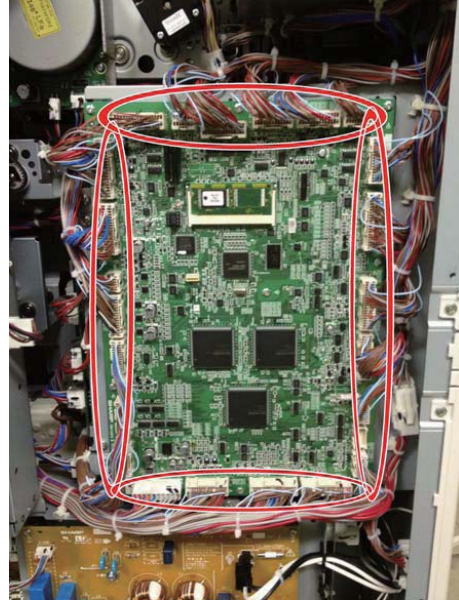
- 1) Remove the rear cabinet.
- 2) Remove the PCU-Flash PWB.

NOTE: Remove carefully without damage.



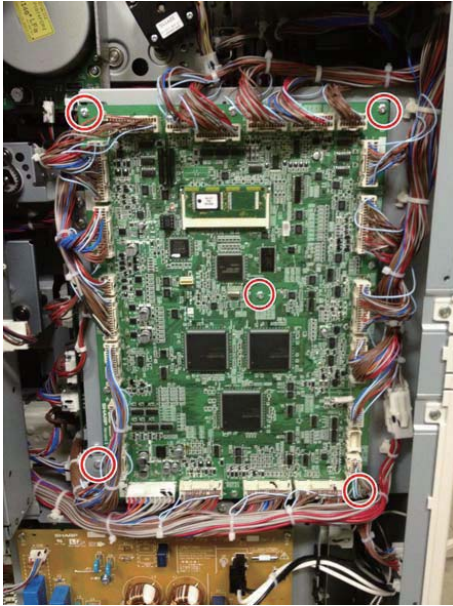
##### b. PCU PWB removal

- 1) Disconnect the connector.

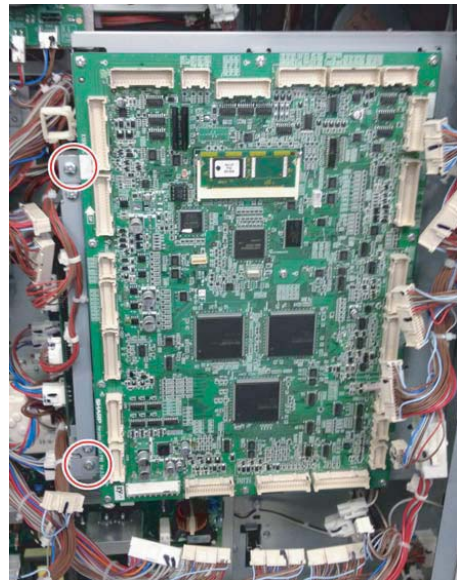




2) Remove the screw, and remove the PCU PWB.



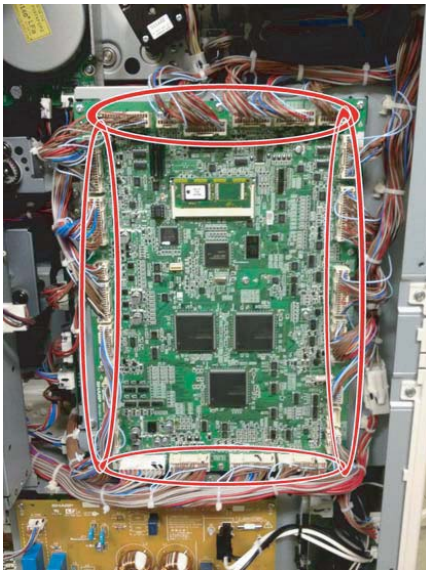
- 2) Remove the snap band, and disengage the clamp to release the HL PWB.
- 3) Remove the screw, and remove the plate.



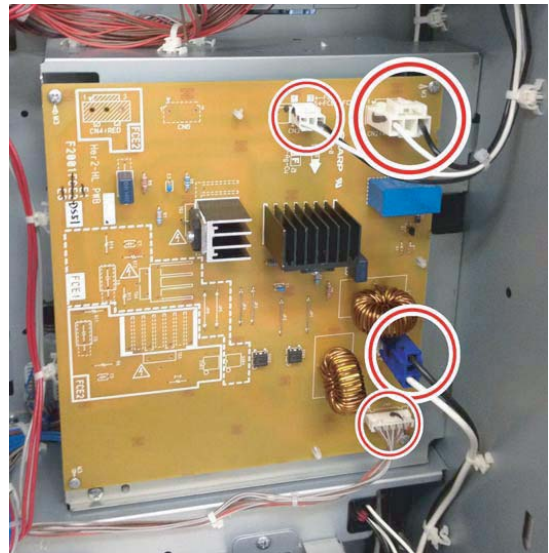
**(5) HL PWB**

**a. HL PWB removal**

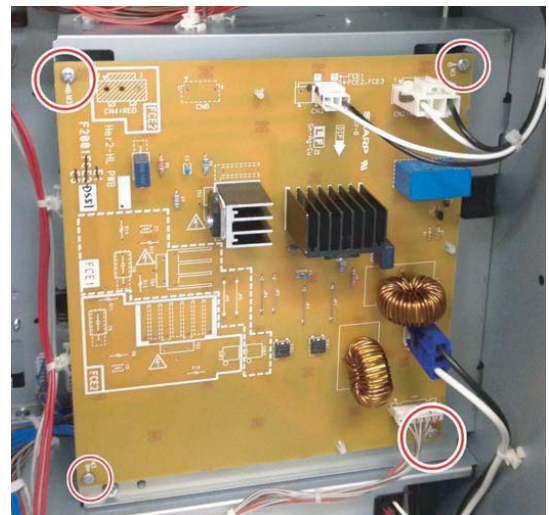
1) Disconnect the connector of the PCU PWB.



4) Disconnect the connector.



5) Remove the screw, and remove the HL PWB.



## (6) SUB power

### a. SUB PWB removal

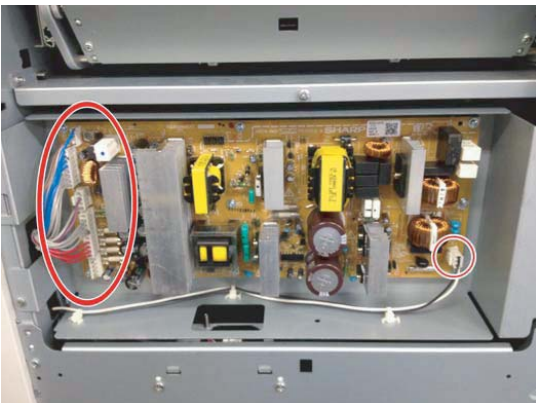
- 1) Remove the screw (main unit right side).



- 2) Loosen the screw, and remove the plate.



- 3) Disconnect the connector.



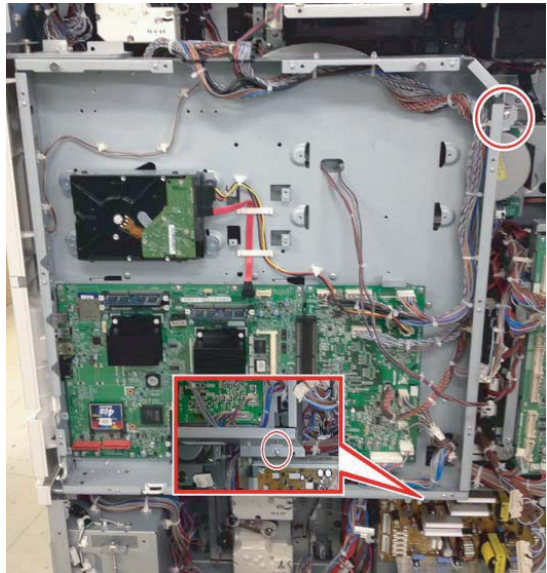
- 4) Remove the screw, and remove the SUB PWB.



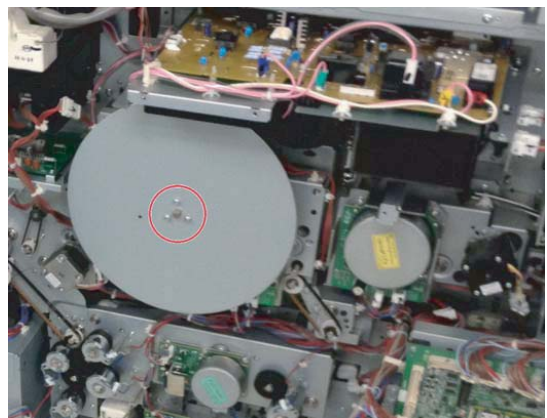
## (7) High voltage PWB

### a. High voltage PWB removal

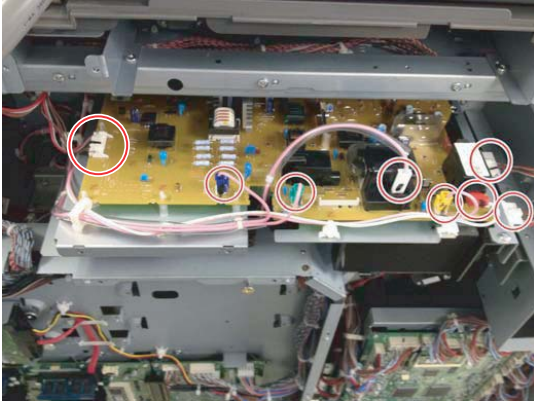
- 1) Remove the screw from the plate on which the MFPC PWB is mounted, and open it.



- 2) Remove the screw, and remove the flywheel.

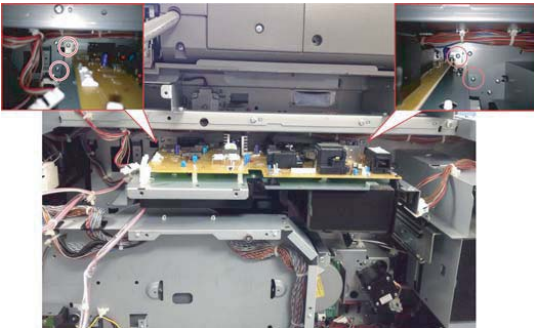


3) Disconnect the connector.

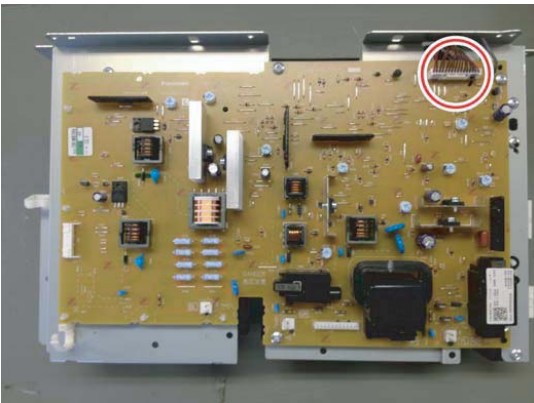


4) Remove the snap band, and disengage the clamp to release the harness.

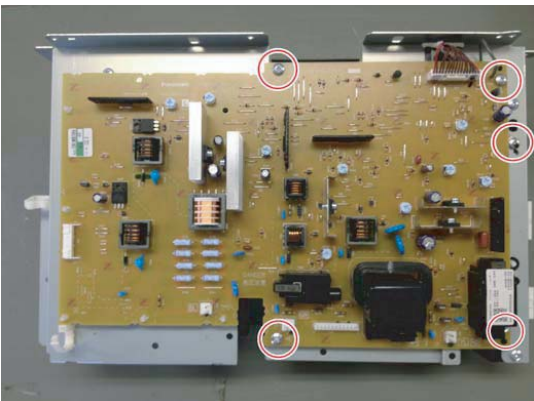
5) Remove the screw, and remove the plate on which the high voltage PWB is mounted.



6) Disconnect the connector.



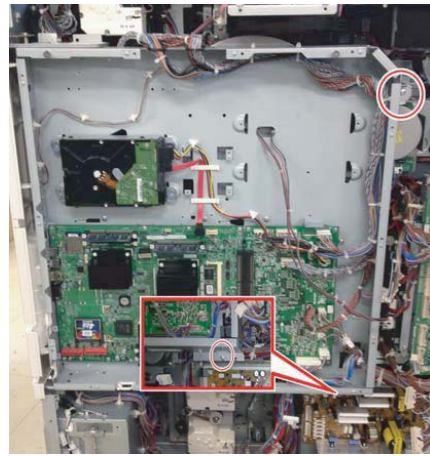
7) Remove the screw, and remove the high voltage PWB.



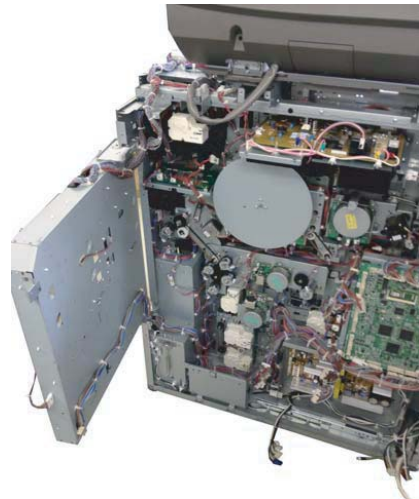
## (8) Driver PWB (Paper exit)

### a. Driver PWB (Paper exit) removal

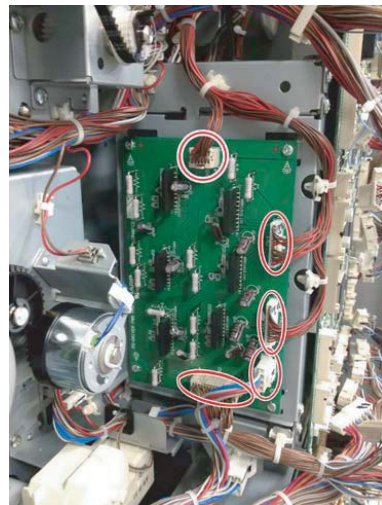
1) Remove the screw from the plate on which the MFPC PWB is mounted.



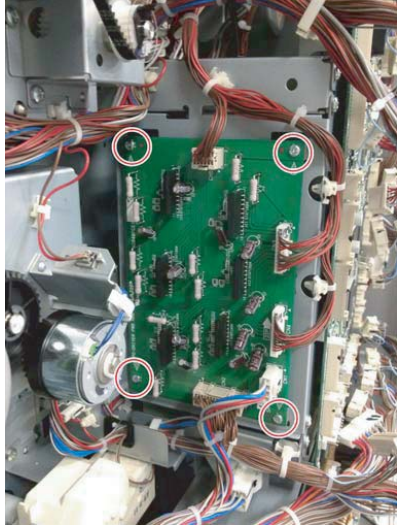
2) Open the plate on which the MFPC PWB is mounted.



3) Disconnect the connector.



4) Remove the screw, and remove the driver PWB (paper exit).



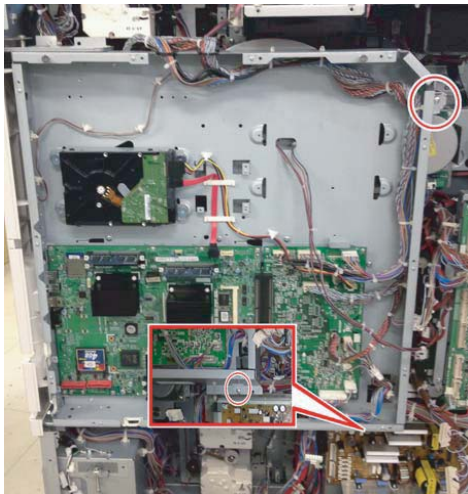
3) Remove the right side screw.



### (9) Driver PWB (Paper feed)

#### a. Driver PWB (Paper feed) removal

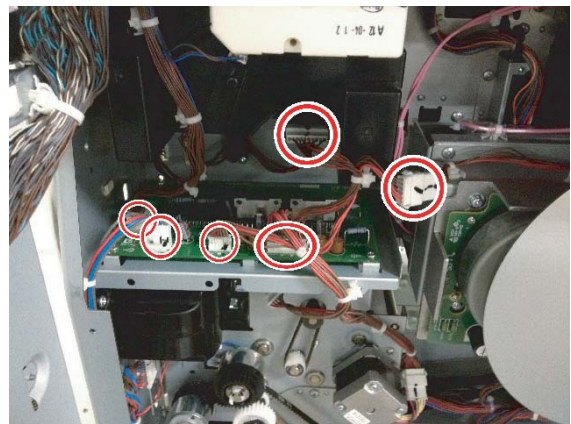
1) Remove the screw from the plate on which the MFPC PWB is mounted.



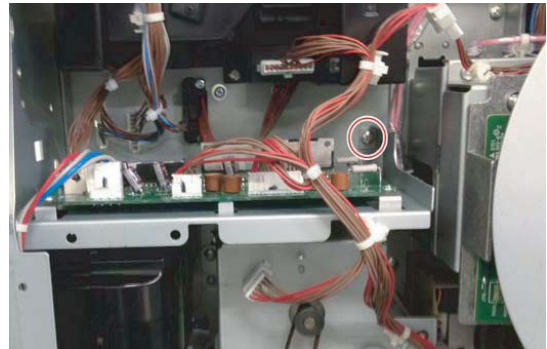
2) Remove the right cabinet.



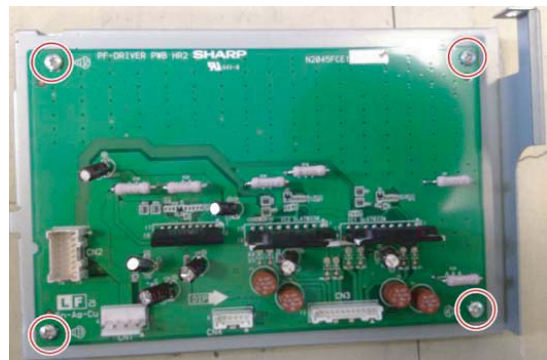
4) Disconnect the connector, and remove the snap band.



5) Remove the screw, and remove the whole plate.



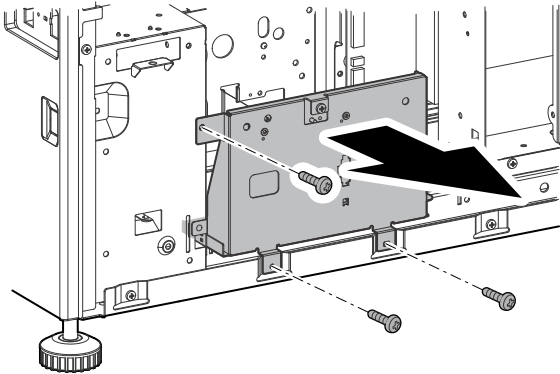
6) Remove the screw, and remove the driver PWB (paper feed).



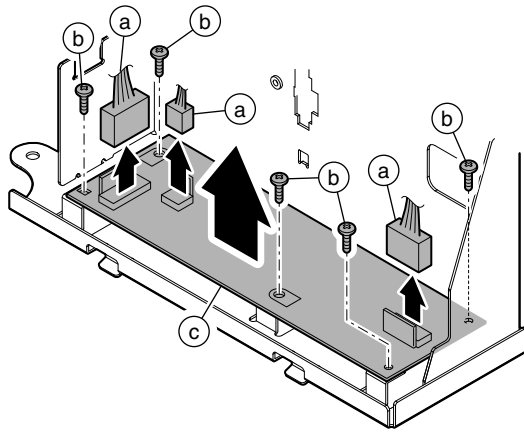
**(10) AC terminal PWB / Size detection PWB / SCNcnt PWB / KEY PWB, POWER LAMP PWB**

**a. AC terminal PWB removal**

- 1) Remove the screw, and remove the plate.

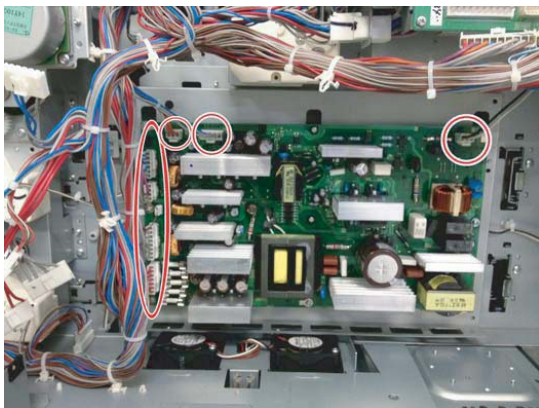


- 2) Disconnect the connector (a). Remove the screw (b), and remove the AC terminal PWB (c).

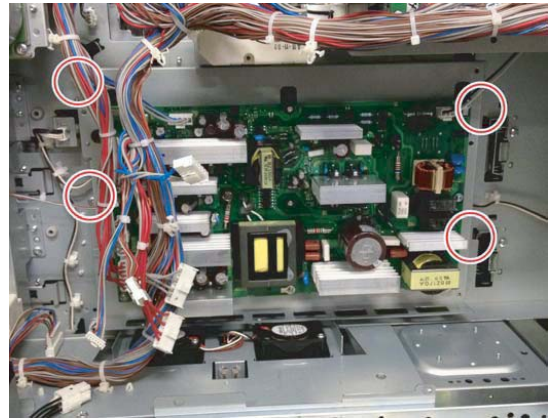


**b. Size detection PWB removal**

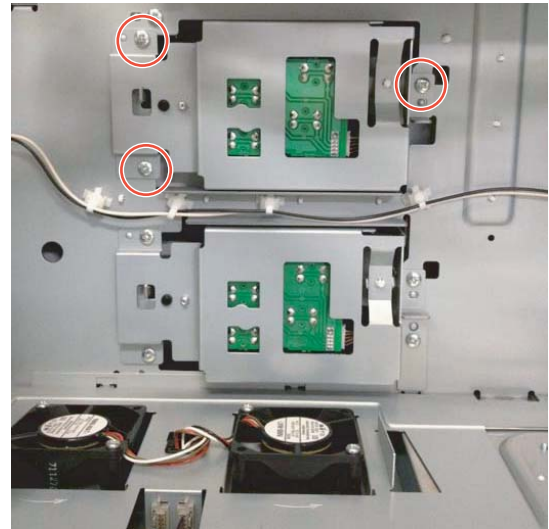
- 1) Disconnect the connector.



- 2) Disconnect the connector, and remove the plate.



- 3) Remove the screw.

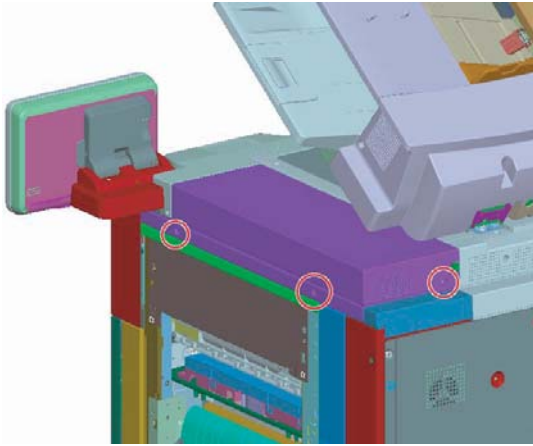


- 4) Remove the plate, and remove the screw to access the PWB.  
NOTE: Be careful not to damage the harness.

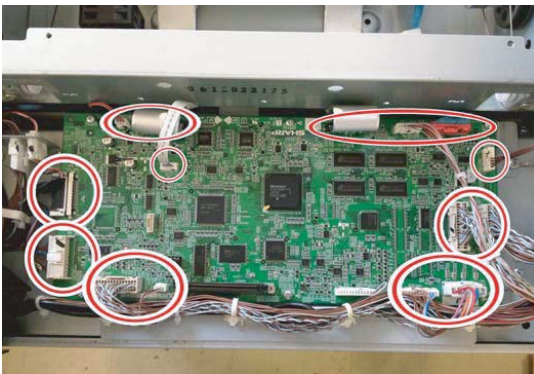


**c. SCNcnt PWB removal**

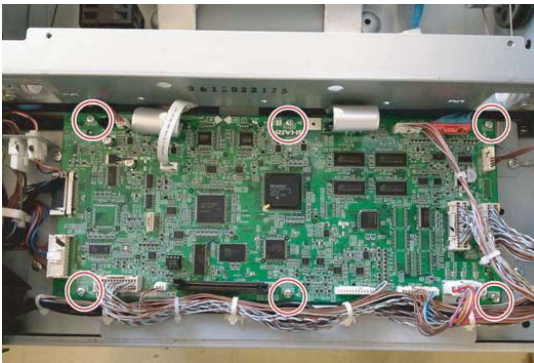
- 1) Remove the upper right rear cabinet.



- 2) Disconnect the connector.

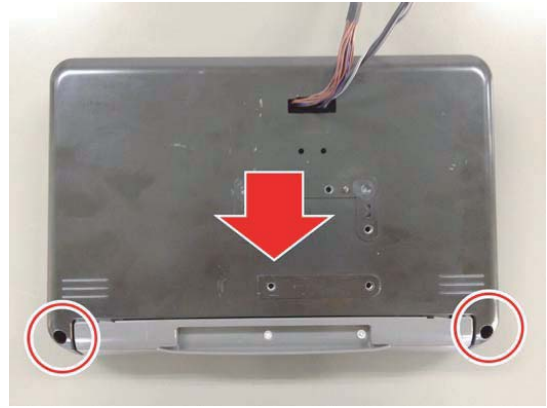


- 3) Remove the screw, and remove the SCNcnt PWB.



**d. KEY PWB, POWER LAMP PWB removal**

- 1) Remove the rear cover of the operation panel unit.  
NOTE: Remove the screw, and slide the arrow direction.



- 2) Disconnect the connector.

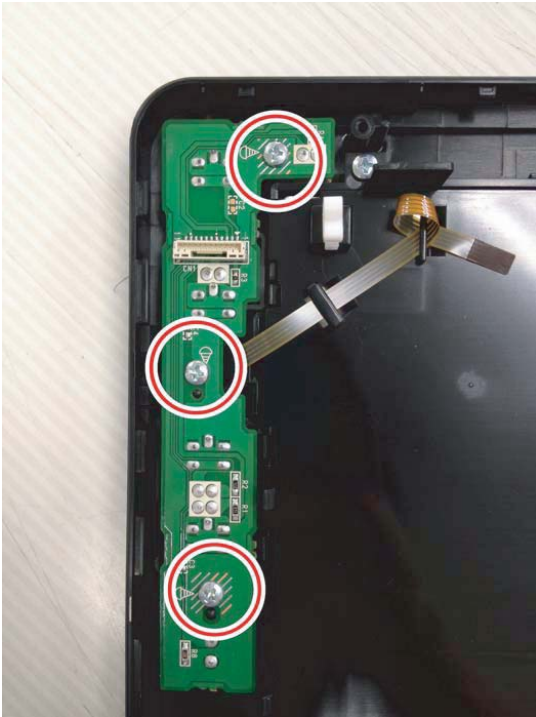


- 3) Remove the screw, and remove the POWER LAMP PWB.



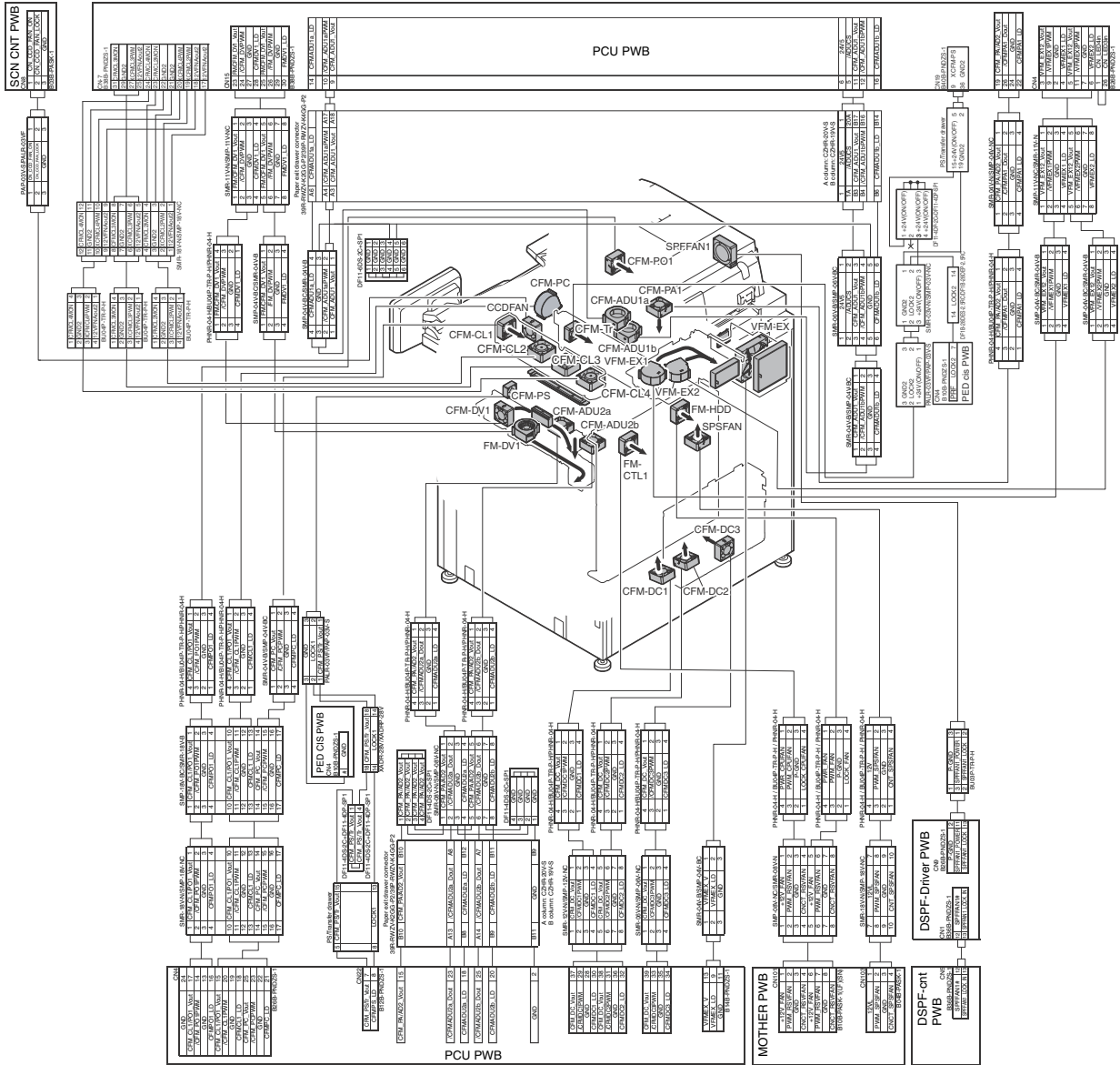
4) Remove the screw, and remove the KEY PWB.

NOTE: When assembling, arrange the wiring of the FFC as shown in the figure. (Do not wind reversely.)



# [R] FAN, FILTER SECTION

## 1. Electrical and mechanism relation diagram



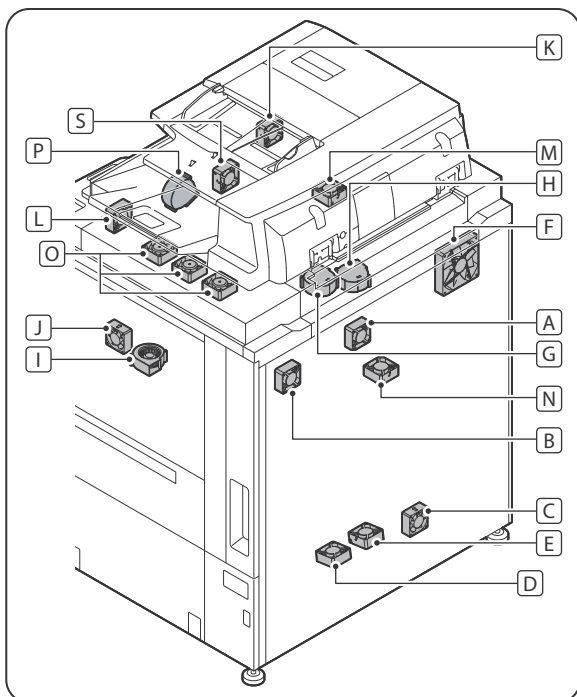


| Signal name | Name                        | Type                  | Function / Operation                     |
|-------------|-----------------------------|-----------------------|--|
| CFM-CL1     | Process cooling fan 1       | Axial-flow fan (□60)  | Cools the process section.               |
| CFM-CL2     | Process cooling fan 2       | Axial-flow fan (□60)  | Cools the process section.               |
| CFM-CL3     | Process cooling fan 3       | Axial-flow fan (□60)  | Cools the process section.               |
| CFM-CL4     | Process cooling fan 4       | Axial-flow fan (□60)  | Cools the process section.               |
| CFM-DC1     | Power cooling fan 1         | Axial-flow fan (□60)  | Cools the power section.                 |
| CFM-DC2     | Power cooling fan 2         | Axial-flow fan (□60)  | Cools the power section.                 |
| CFM-DC3     | Power cooling fan 3         | Axial-flow fan (□60)  | Cools the power section.                 |
| CFM-DV1     | Developing cooling fan 1    | Axial-flow fan (□60)  | Cools the developing section.            |
| CFM-PA1     | Paper cooling fan           | Axial-flow fan (□60)  | Cools paper in the paper exit section.   |
| CFM-PC      | Process section cooling fan | Sirocco fan           | Cools the process section.               |
| CFM-PS      | PS cooling fan              | Axial-flow fan (□40)  | Cools the PS section.                    |
| CFM-PO1     | Polygon cooling fan         | Axial-flow fan (□60)  | Cools the polygon section.               |
| CFM-Tr      | Process cooling fan         | Axial-flow fan (□40)  | Cools the process section.               |
| FM-CTL1     | CTL cooling fan             | Axial-flow fan (□60)  | Cools the controller section.            |
| FM-DV1      | Toner suction fan           | Sirocco fan           | Sucks toner.                             |
| FM-HDD      | HDD cooling fan             | Axial-flow fan (□60)  | Cools the HDD.                           |
| SPSFM       | Sub power cooling fan       | Axial-flow fan (□60)  | Cools the sub power.                     |
| VFM-EX      | Machine exhaust fan 1       | Axial-flow fan (□120) | Discharges heat from the fusing section. |
| VFM-EX1     | Ozone exhaust fan 1         | Sirocco fan           | Discharges ozone.                        |
| VFM-EX2     | Ozone exhaust fan 2         | Sirocco fan           | Discharges ozone.                        |

## 2. Disassembly and assembly

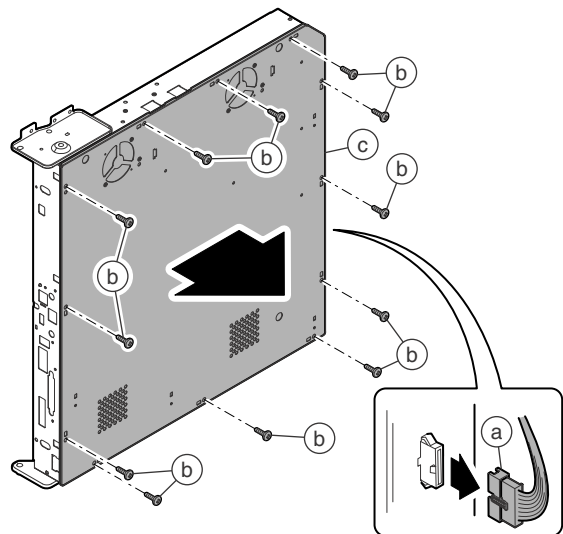
### A. Fan

| Parts |                             | Page     |
|-------|-----------------------------|----------|
| A     | HDD cooling fan             | R-2/(1)  |
| B     | CTL cooling fan             |          |
| C     | Power cooling fan 3         | R-3/(2)  |
| D     | Power cooling fan 1         |          |
| E     | Power cooling fan 2         | R-3/(3)  |
| F     | Machine exhaust fan 1       | R-4/(4)  |
| G     | Ozone exhaust fan 1         |          |
| H     | Ozone exhaust fan 2         | R-4/(5)  |
| I     | Toner suction fan           |          |
| J     | Developing cooling fan 1    | R-5/(6)  |
| K     | Polygon cooling fan         |          |
| L     | Process cooling fan 1       | R-5/(7)  |
| M     | Paper cooling fan           | R-6/(8)  |
| N     | Sub power cooling fan       | R-6/(9)  |
| O     | Process section cooling fan | R-7/(10) |
| P     | Process cooling fan         | R-8/(12) |

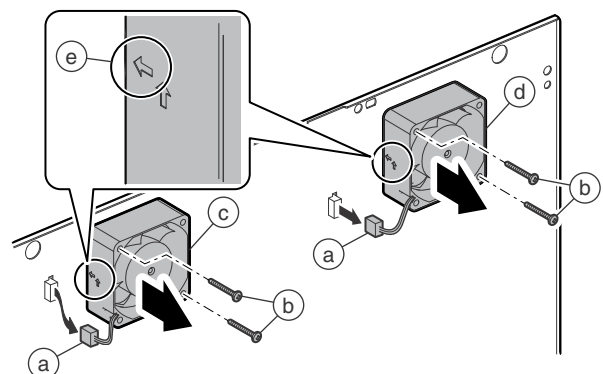


#### (1) HDD cooling fan / CTL cooling fan

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the cover (c).

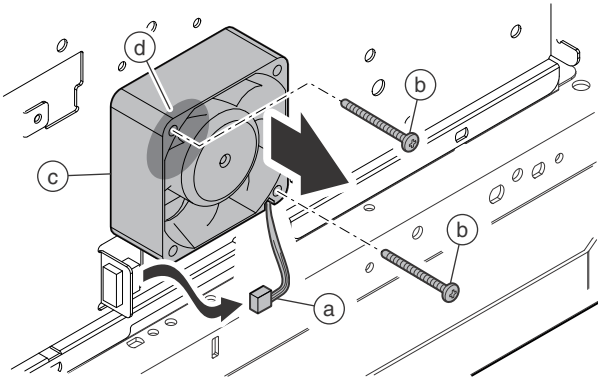


- 3) Disconnect the connector (a). Remove the screw (b), and remove the HDD cooling fan (c), and the CTL cooling fan (d).  
\* When installing, be careful to the direction of the arrow mark (e).



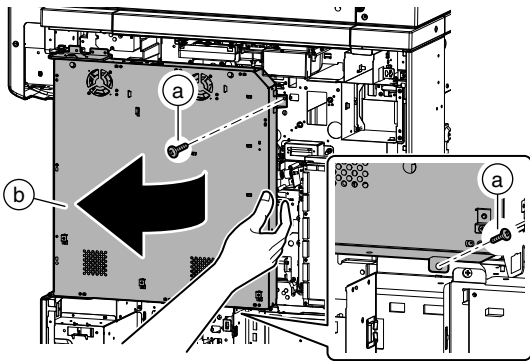
## (2) Power cooling fan 3

- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the power cooling fan 3 (c).
  - \* When installing, be careful to the direction of the fan label (d).
  - \* Check to confirm that the resin part is engaged with the notch of the fan.

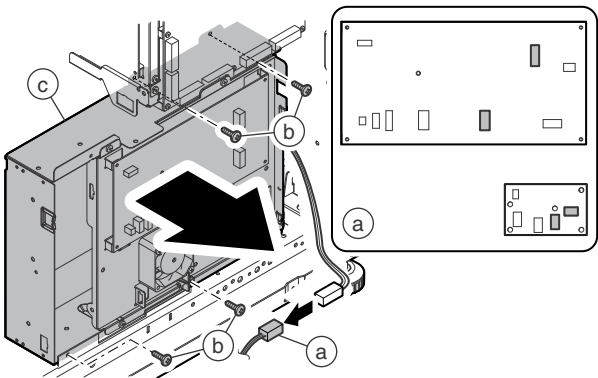


## (3) Power cooling fan 1 / Power cooling fan 2

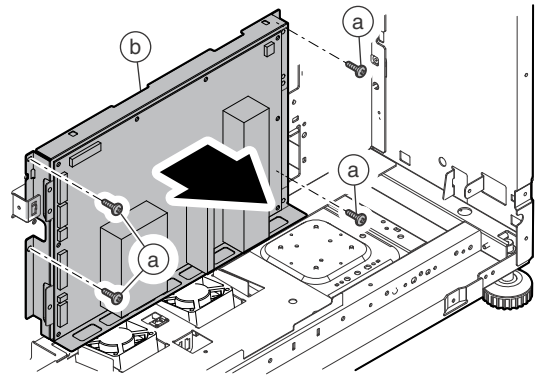
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



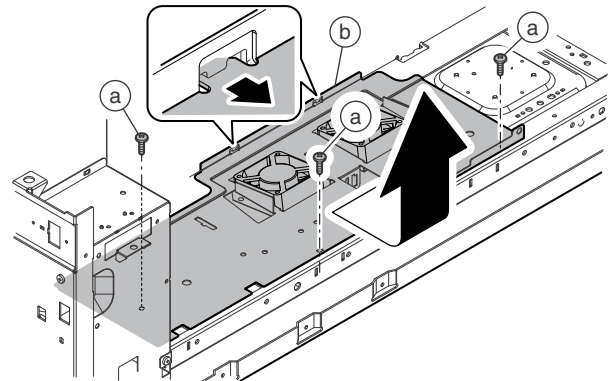
- 3) Disconnect the connector (a). Remove the screw (b), and remove the AC-OP power unit (c).



- 4) Remove the screw (a), and remove the main power unit (b).

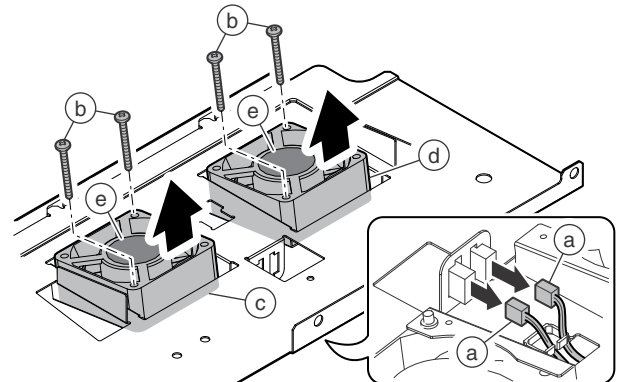


- 5) Remove the screw (a), and remove the fan unit (b).



- 6) Disconnect the connector (a). Remove the screw (b), and remove the power cooling fan 1 (c), and the power cooling fan 2 (d).

- \* When installing, be careful to the direction of the fan label (e).
- \* Check to confirm that the projection of the plate is engaged with the notch of the fan.
- \* The connector (a) may be connected to either side.

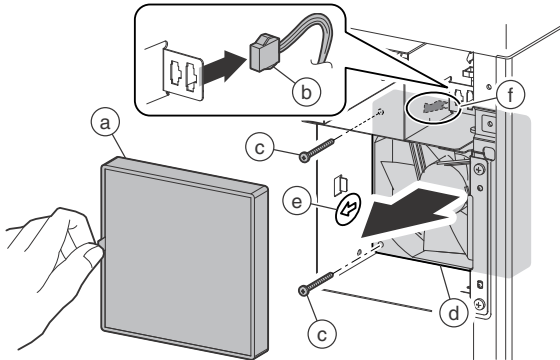


#### (4) Machine exhaust fan 1

- 1) Remove the rear cabinet.
- 2) Remove the exhaust filter (a). Disconnect the connector (b), and remove the screw (c). Remove the machine exhaust fan 1 (d).

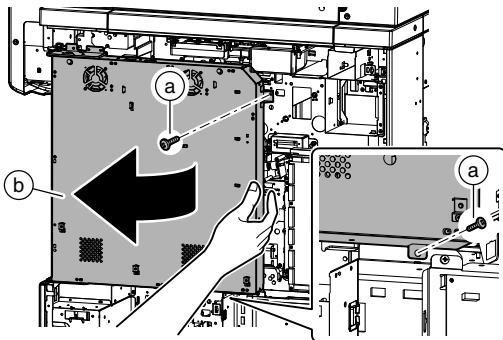
\* When installing, be careful to arrange so that the direction of the arrow mark (e) on the side of the duct and the arrow mark (f) on the side of the fan are same.

\* Check to confirm that the bent section of the duct is engaged with the notch of the fan.

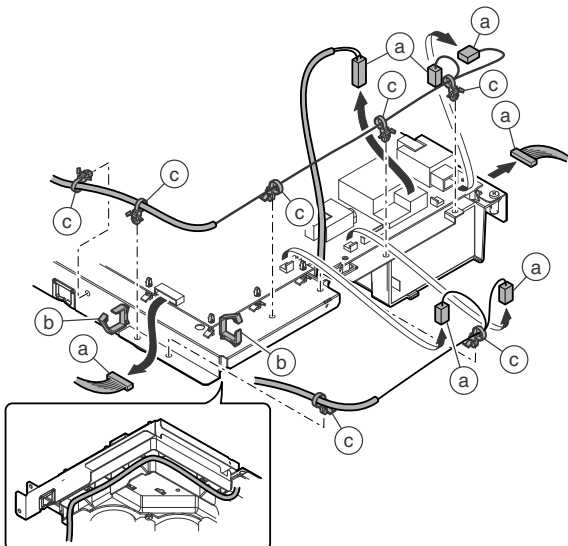


#### (5) Ozone exhaust fan 1 / Ozone exhaust fan 2

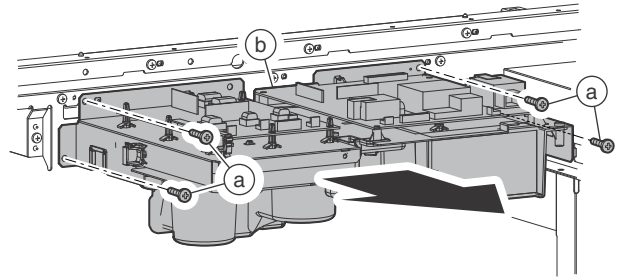
- 1) Remove the rear cabinet and the right cabinet rear upper.
- 2) Remove the screw (a), and open the control box (b).



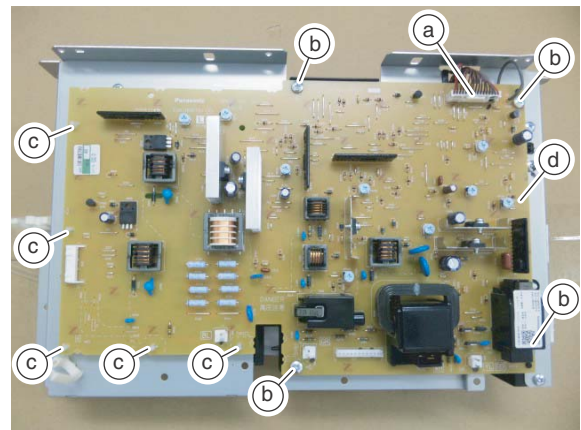
- 3) Disconnect the connector (a). Open the wire saddle (b), and remove the snap band (c).



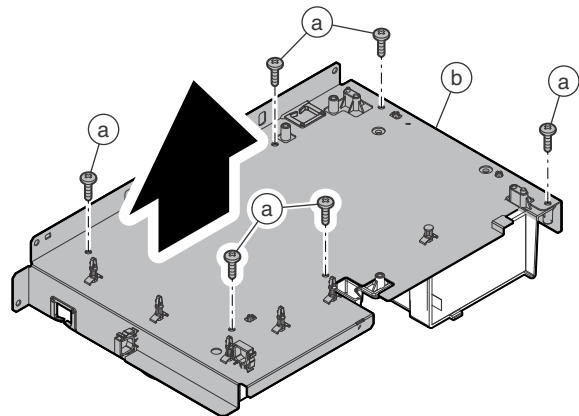
- 4) Remove the screw (a), and remove the ozone duct unit (b).



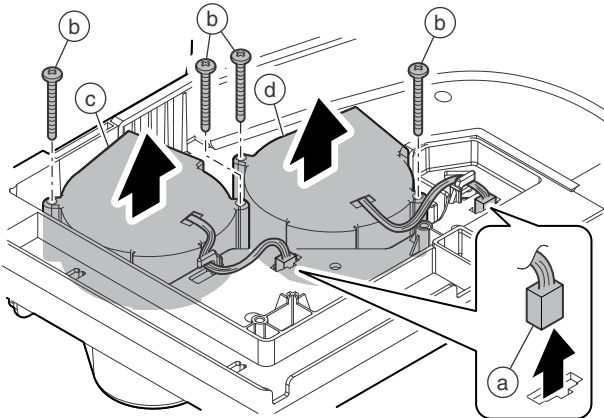
- 5) Disconnect the connector (a). Remove the screw (b) and the PWB support (c), and remove the high voltage PWB (d).



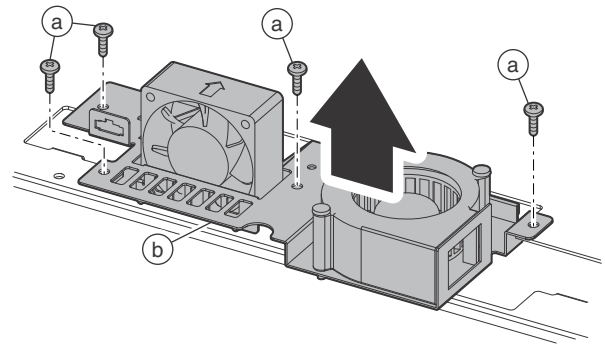
- 6) Remove the screw (a), and remove the cover (b).



- 7) Disconnect the connector (a), and remove the screw (b). Remove the ozone exhaust fan 1 (c) and the ozone exhaust fan 2 (d).

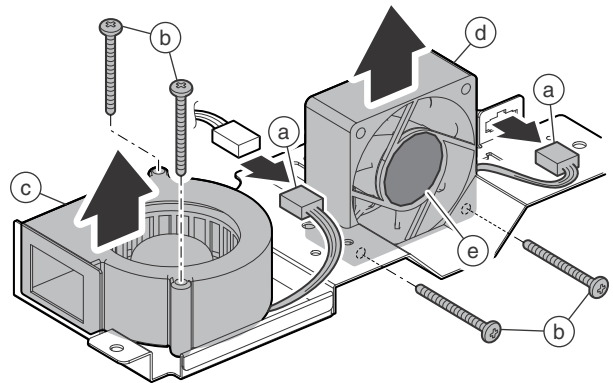


- 5) Remove the screw (a), and remove the fan unit (b).



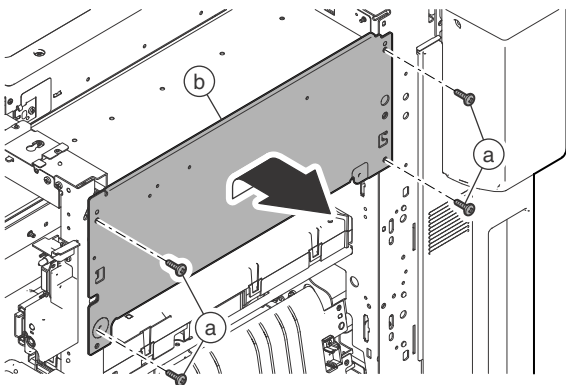
- 6) Disconnect the connector (a), and remove the screw (b). Remove the toner suction fan (c) and developing cooling fan (d).

\* When installing the fan ensure that the label is installed as indicated (e). Proper air flow thru the fan is essential.

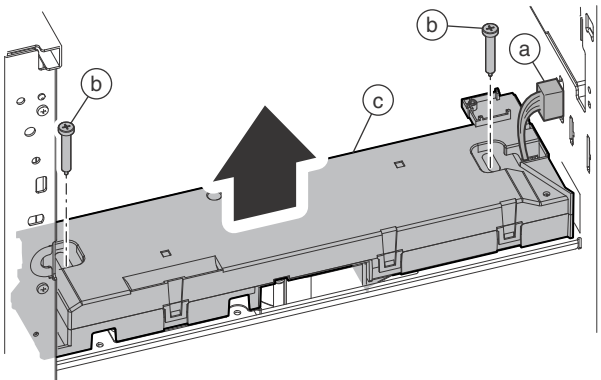


## (6) Toner suction fan / Developing cooling fan 1

- 1) Remove the toner hopper unit.
- 2) Remove the upper cabinet right, the upper cabinet front cover right, the upper cabinet front cover left, and the upper cabinet front.
- 3) Remove the screw (a), and remove the cover (b).

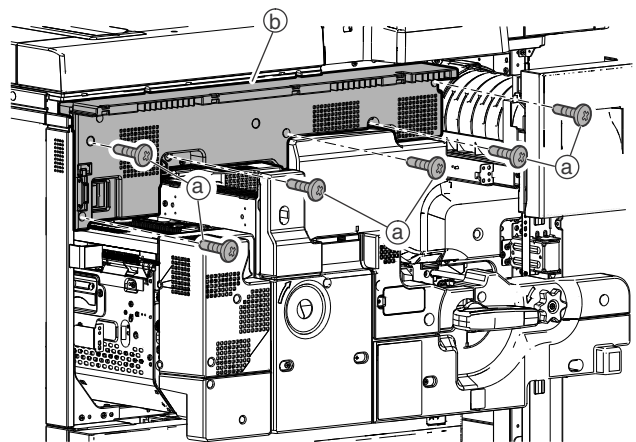


- 4) Disconnect the connector (a), and remove the step screw (b), and remove the cover (c).



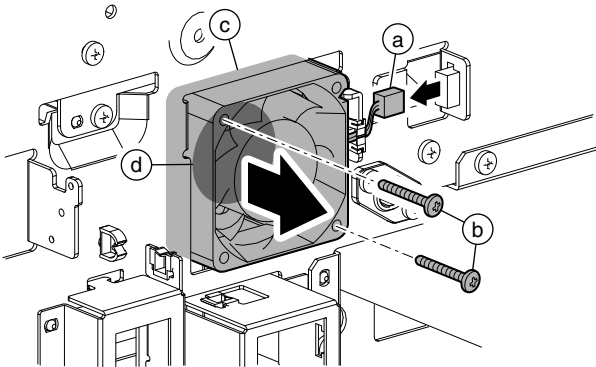
## (7) Polygon cooling fan / Process cooling fan 1

- 1) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 2) Pull out the intermediate frame.
- 3) Remove the screw (a), and remove the front cover lower panel (b).



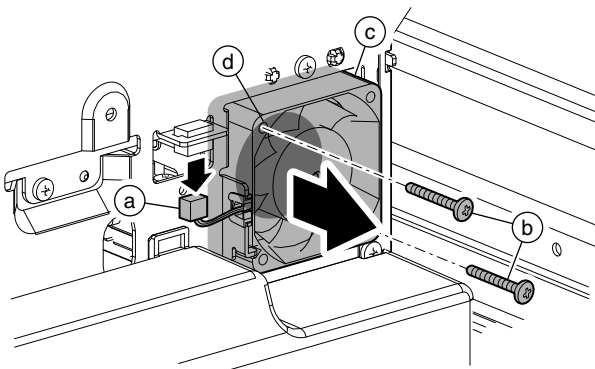
- 4) Disconnect the connector (a). Remove the screw (b), and remove the polygon cooling fan (c).

- \* When installing, be careful to the direction of the fan label (d).
- \* Check to confirm that the bent section of the plate is engaged with the notch of the fan.



- 5) Disconnect the connector (a). Remove the screw (b), and remove the process cooling fan 1 (c).

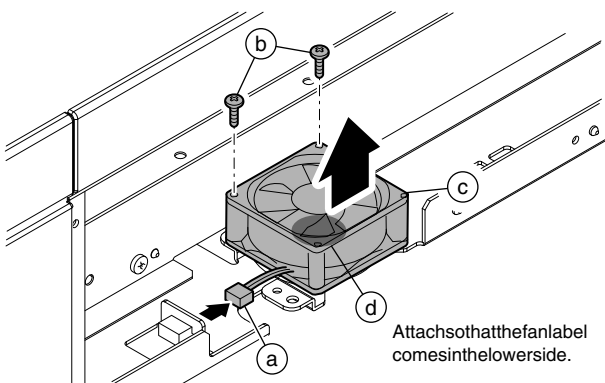
- \* When installing, be careful to the direction of the fan label (d).
- \* Check to confirm that the bent section of the plate is engaged with the notch of the fan.)



### (8) Paper cooling fan

- 1) Remove the left upper cabinet.
- 2) Disconnect the connector (a). Remove the screw (b), and remove the paper cooling fan (c).

- \* When installing, face the fan label (d) downward.

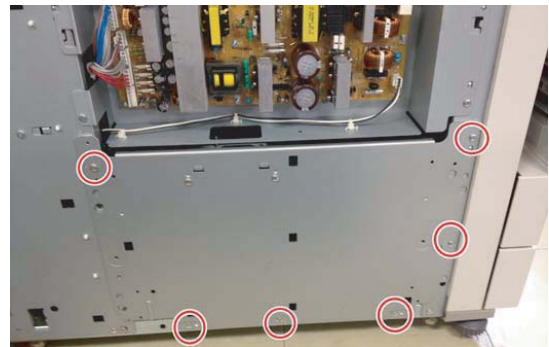


### (9) Sub power cooling fan

- 1) Remove the rear cabinet.
- 2) Remove the right rear cabinet.

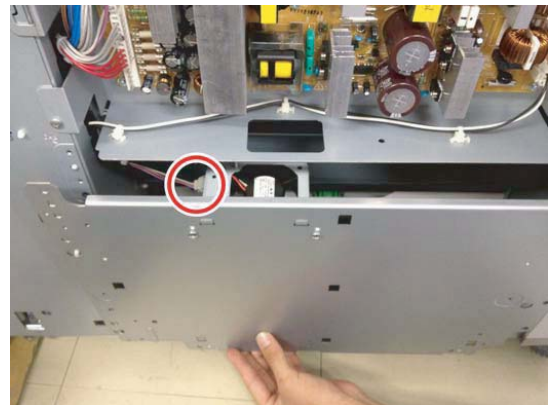


- 3) Remove the left side plate.

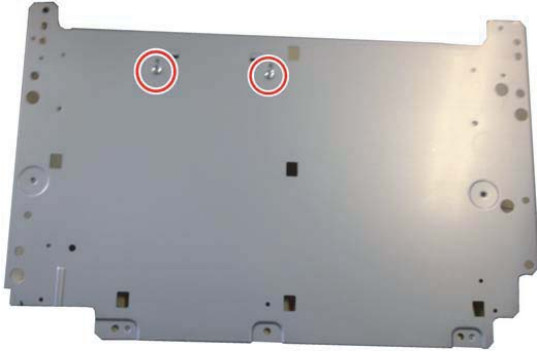


#### NOTE:

Before removing the plate, disconnect the connector of the fan mounted inside.

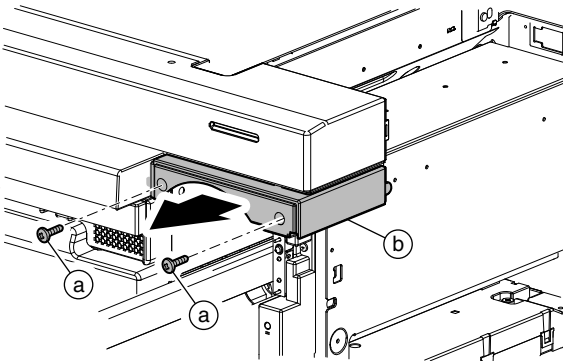


- 4) Remove the screw, and remove the fan.

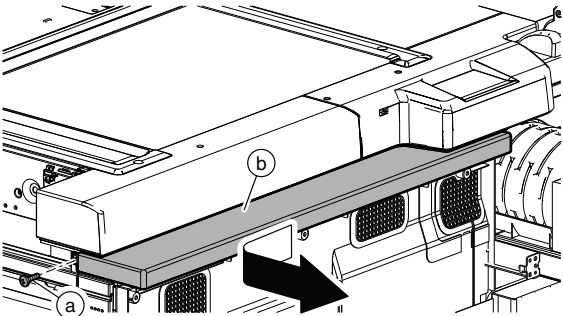


### (10) Process section cooling fan

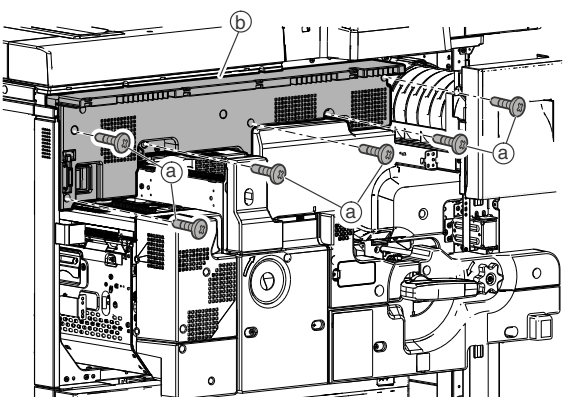
- 1) Open the front cover, and pull out the intermediate frame.
- 2) Remove the screw (a), and remove the upper cabinet front cover right (b).



- 3) Remove the screw (a), and slide the upper cabinet front cover left (b) to remove.



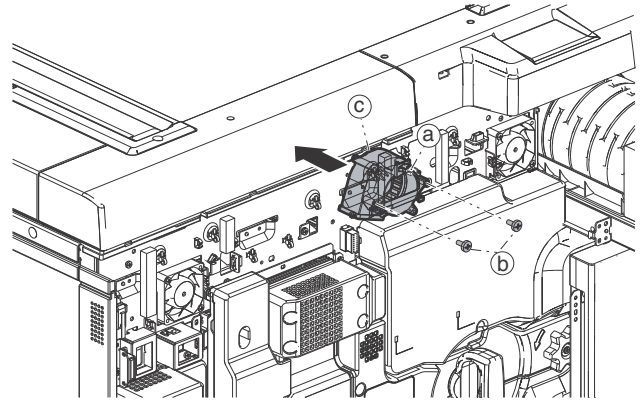
- 4) Remove the screw (a), and remove the front cover lower panel (b).



- 5) Remove the LSU.
- 6) Disconnect the connector (a) of the process section cooling fan.  
Remove the screw (b), and remove the process section cooling fan (c).

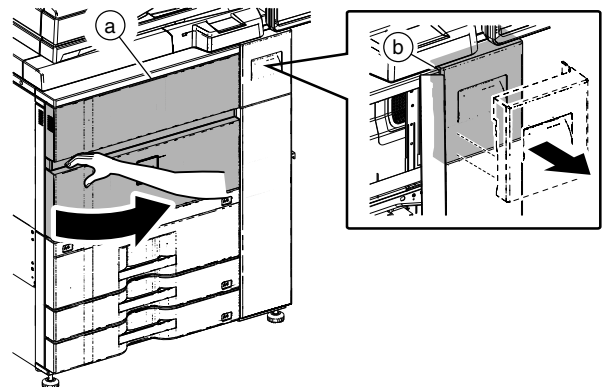
**NOTE:**

When assembling, check to confirm that the screw hole matches with the screw and that the hook is securely engaged.

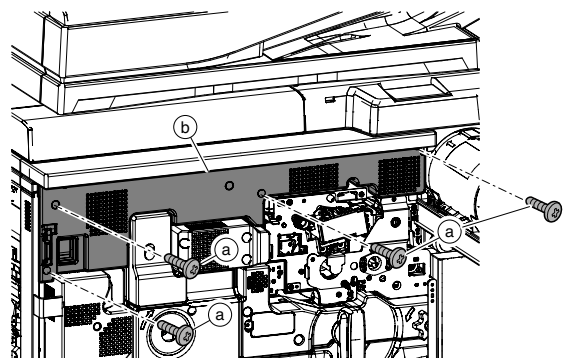


### (11) Process cooling fan 2/ Process cooling fan 3/ Process cooling fan 4

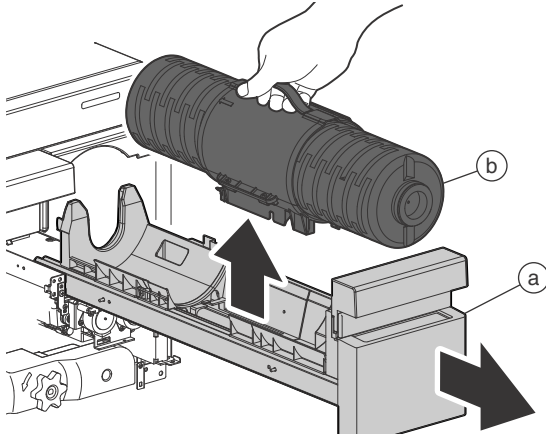
- 1) Remove the rear cabinet.
- 2) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 3) Open the front cover (a), and pull out the toner tray (b) slightly.



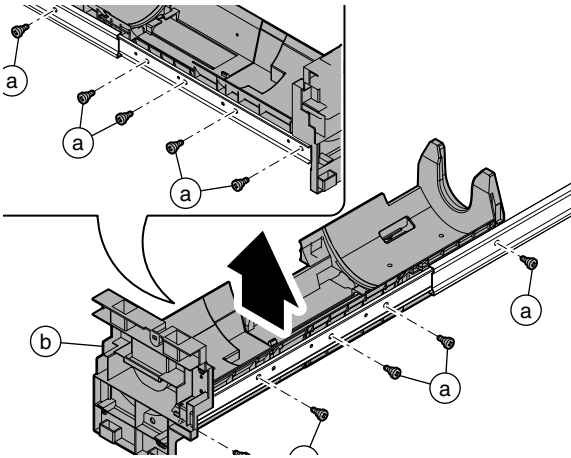
- 4) Remove the screw (a), and remove the front cover (b).



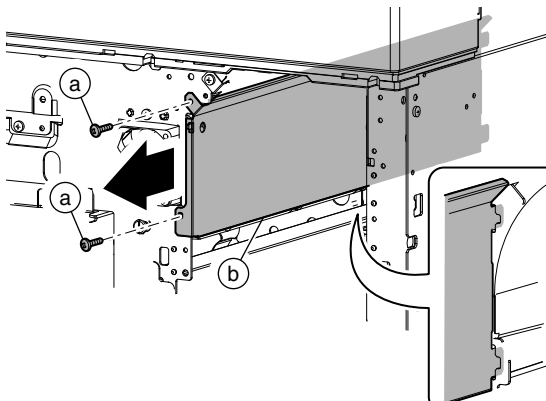
- 5) Pull out the toner tray (a), and remove the toner bottle (b).



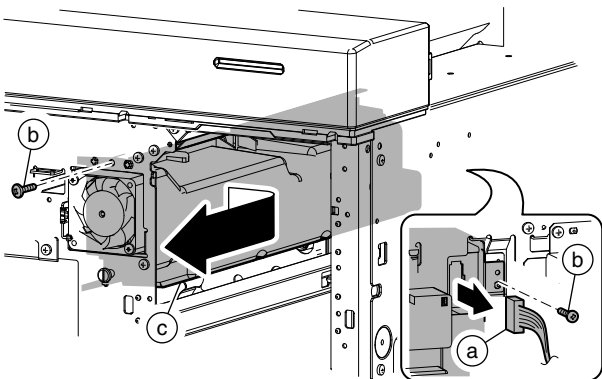
- 6) Remove the screw (a), and remove the toner tray (b).



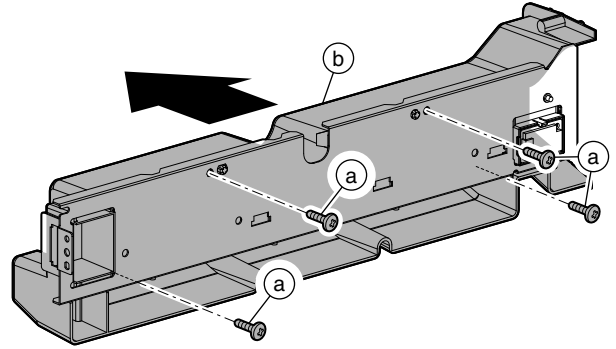
- 7) Remove the screw (a), and remove the cover (b).



- 8) Disconnect the connector (a), and remove the screw (b). Remove the duct unit (c).

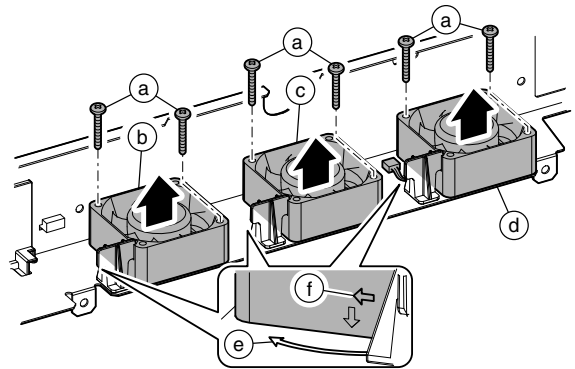


- 9) Remove the screw (a), and remove the duct (b).



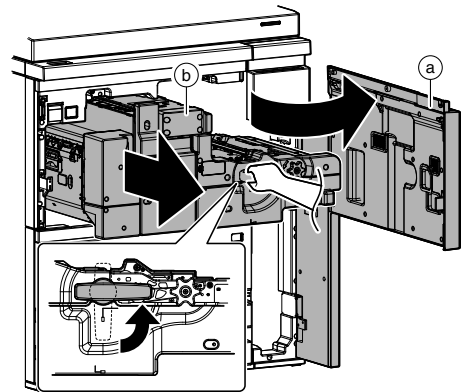
- 10) Remove the screw (a). Remove the process cooling fan 2 (c), the process cooling fan 3 (d), and the process cooling fan 4 (e).

\* When installing, be careful to arrange the fan so that the direction of the arrow mark (f) on the duct and the arrow mark (g) on the fan are same.

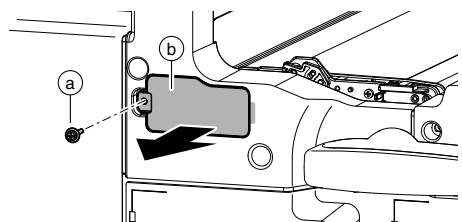


## (12) Process cooling fan

- 1) Open the front cover (a), and pull out the intermediate frame (b).



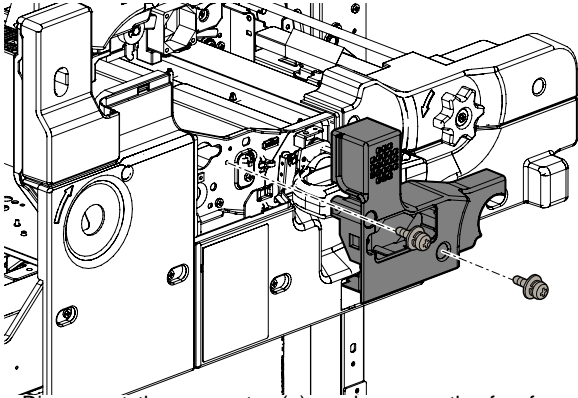
- 2) Remove the screw (a), and remove the cover (b).



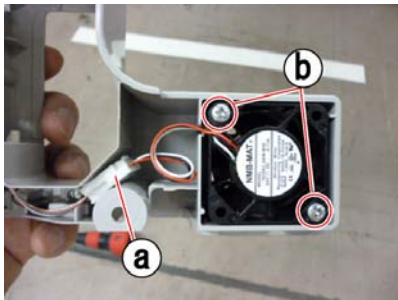
3) Disconnect the connector.



4) Remove the transfer cover.



5) Disconnect the connector (a), and remove the fan from the transfer cover.



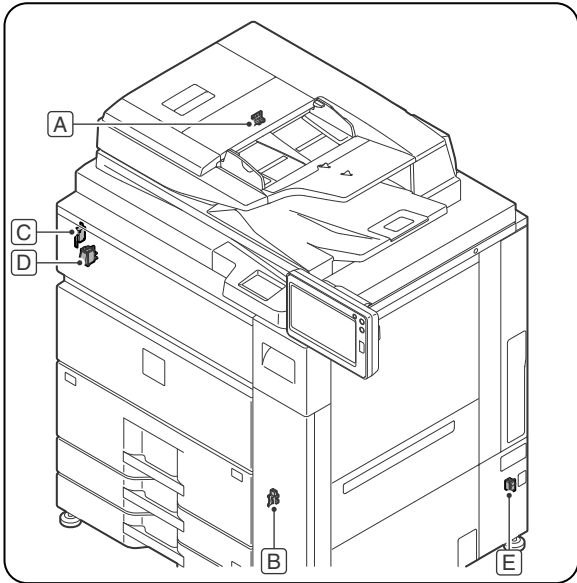


# [S] SENSOR, SWITCH SECTION

## 1. Disassembly and assembly

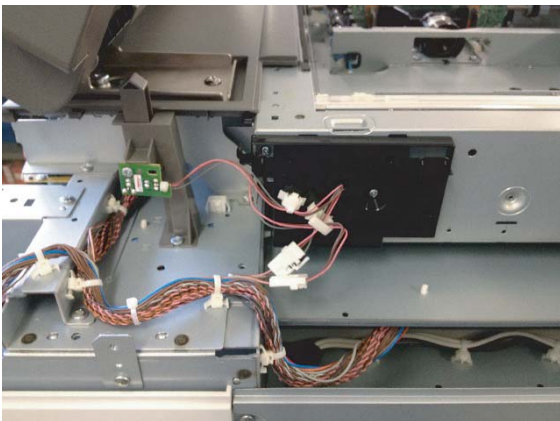
### A. Sensor, switch

| Parts |  | Page    |
|-------|--|---------|
| A     | Original cover SW                        | S-1/(1) |
| B     | Cassette right door open/close detection | S-1/(2) |
| C     | Front door switch                        | S-2/(3) |
| D     | Main switch                              |         |
| E     | Dehumidifying heater switch              | S-3/(4) |
| F     | Temperature/humidity sensor 2            | S-3/(5) |



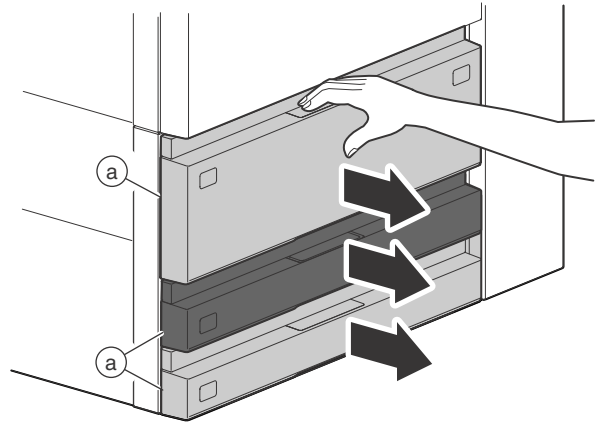
#### (1) Original cover SW

- 1) Remove the upper cabinet left.
- 2) Disconnect the connector and remove the snap band. Remove the screw, and remove the original cover SW.

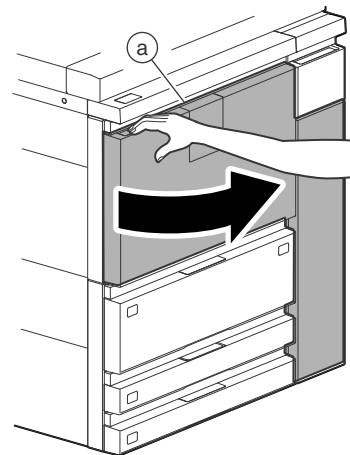


#### (2) Cassette right door open/close detection

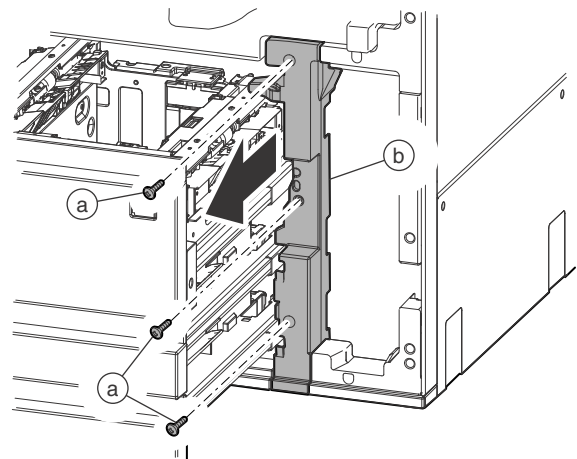
- 1) Pull out all tray (a).



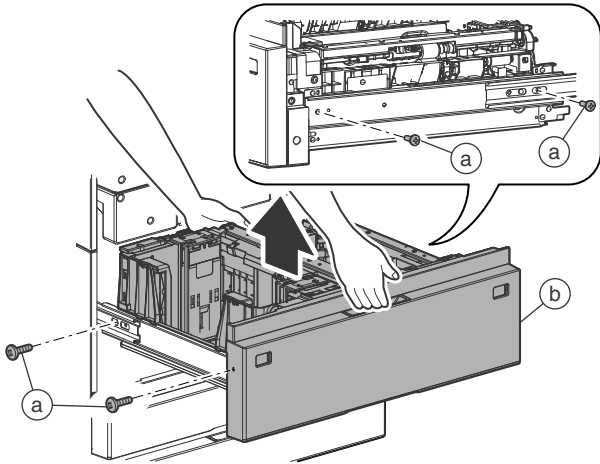
- 2) Open the front cover (a).



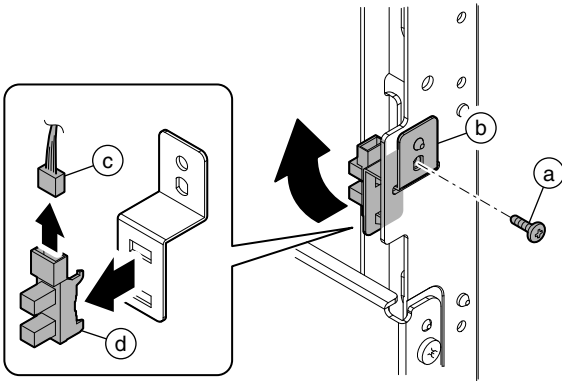
- 3) Remove the screw (a), and remove the cover (b).



4) Remove the screw (a), and remove the tray 1 and 2 (b).

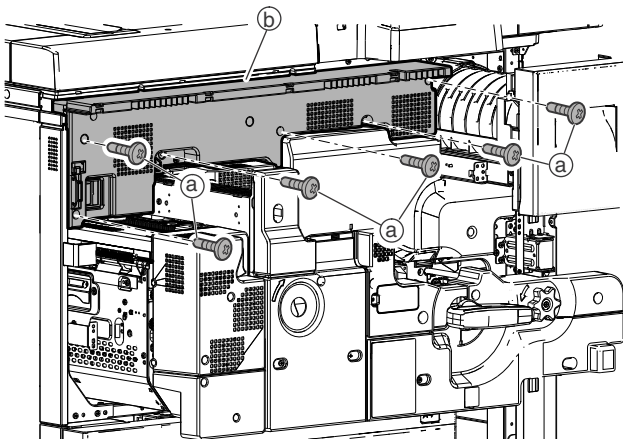


5) Remove the screw (a), and remove the mounting plate (b). Disconnect the connector (c), and remove the cassette right door open/close detection (d).



### (3) Front door switch / Main switch

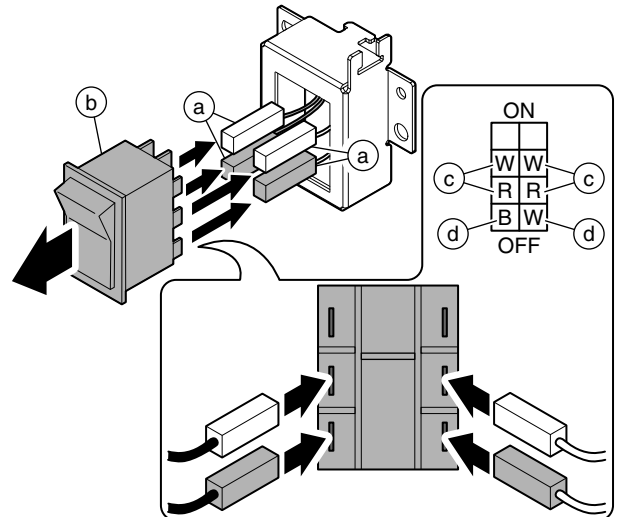
- 1) Remove the upper cabinet left, the upper cabinet right, the upper cabinet front cover right, and the upper cabinet front cover left.
- 2) Pull out the intermediate frame.
- 3) Remove the screw (a), and remove the front cover lower panel (b).



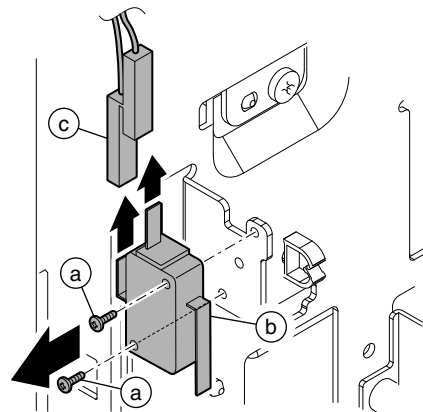
4) Remove the screw, and remove the main switch unit.



- 5) Disconnect the connector (a), and remove the main switch (b).
  - \* For the installing direction of the main switch and the connecting positions of the connectors, refer to the connector color (c) and the harness color (d) on the mark.
  - \* When inserting the connector (a), push it completely until it clicks.



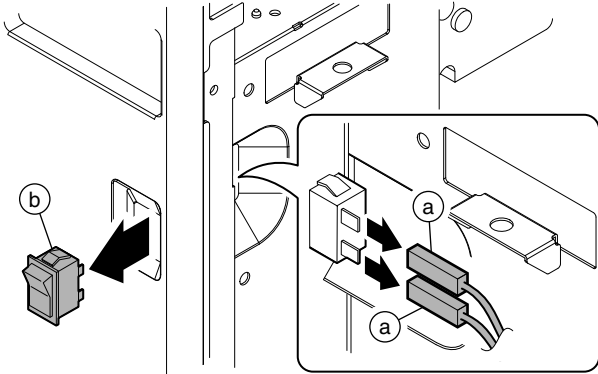
- 6) Remove the left cabinet front upper.
- 7) Remove the screw (a), and disconnect the connector (c) from the front door switch (b).
  - \* When inserting the connector (c), push it completely until it clicks.



#### (4) Dehumidifying heater switch

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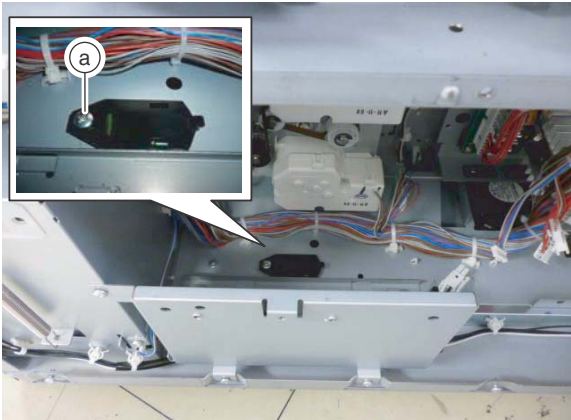
- 1) Remove the rear cabinet.
- 2) Disconnect the connector (a), and remove the dehumidifying heater switch (b).
  - \* Be careful of the attaching direction of the dehumidifying heater switch.
  - \* When inserting the connector (a), push it completely until it clicks.



#### (5) Temperature/humidity sensor 2

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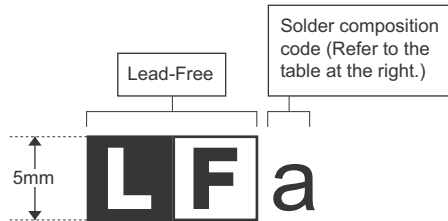
- 1) Remove the rear cabinet.
- 2) Remove the screw (a), and remove the temperature/humidity sensor 2.



# 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<br>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<br>Bi-Sn-Ag  | p                       |

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

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

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

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

**(2) NOTE FOR SOLDERING WORK**

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

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

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

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

### CAUTION FOR BATTERY REPLACEMENT

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

(English) Caution !  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type  
recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

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

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

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

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

### CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

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

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

