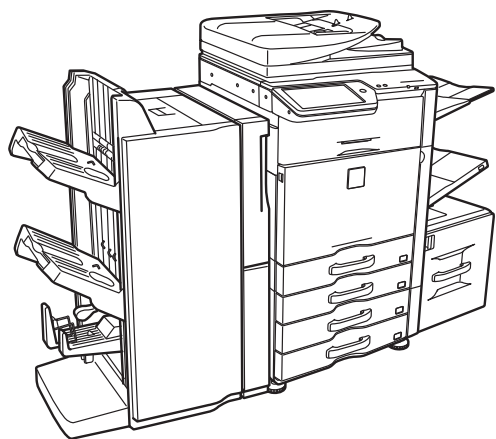


# SHARP SERVICE MANUAL

CODE: 00ZMXM565/S1E



## DIGITAL MULTIFUNCTIONAL SYSTEM

**MX-M365N/M364N**  
**MX-M465N/M464N**  
**MX-M565N/M564N**

## MODEL

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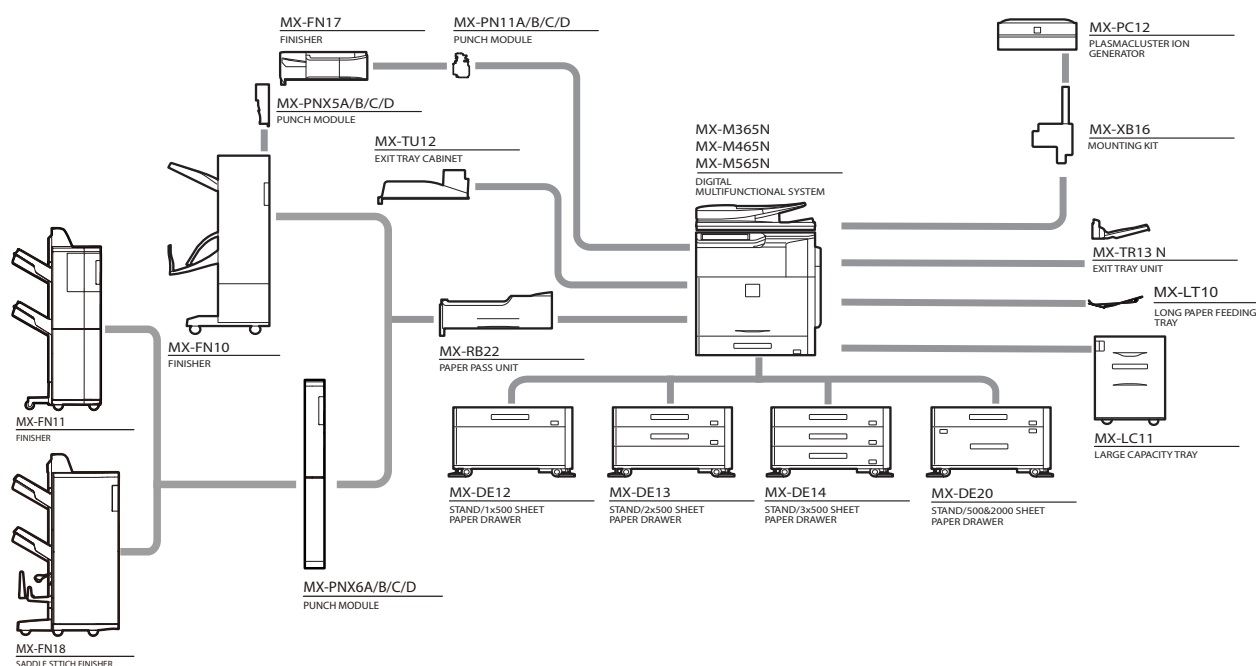
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Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

[1] PRODUCT OUTLINE

1. System diagram

A. MX-M365N/M465N/M565N



|                                                                                         |                                                                                         |                                                                                          |                                                                                          |                                                                                           |                                                                      |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <div>MX-KB11 N</div> <div>KEYBOARD</div> <div></div>                                    | <div>MX-PUX1</div> <div>XPS EXPANSION KIT</div> <div></div>                             | <div>MX-PF10</div> <div>BARCODE FONT KIT</div> <div></div>                               | <div>MX-FX11</div> <div>FACSIMILE EXPANSION KIT</div> <div></div>                        | <div>AR-SU1</div> <div>STAMP UNIT</div> <div></div>                                       | <div>MX-FWX1</div> <div>INTERNET FAX EXPANSION KIT</div> <div></div> |
| <div>MX-EB11</div> <div>ENHANCED COMPRESSION KIT</div> <div></div>                      | <div>MX-FR44U/FR44</div> <div>DATA SECURITY KIT</div> <div></div>                       | <div>MX-EB12 N</div> <div>MIRRORING KIT</div> <div></div>                                | <div>MX-AMX1</div> <div>APPLICATION INTEGRATION MODULE</div> <div></div>                 | <div>MX-AMX2</div> <div>APPLICATION COMMUNICATION MODULE</div> <div></div>                | <div>MX-AMX3</div> <div>EXTERNAL ACCOUNT MODULE</div> <div></div>    |
| <div>MX-AM10</div> <div>WEB BROWSING EXPANSION KIT</div> <div></div>                    | <div>MX-USX1</div> <div>SHARPPDESK 1 LICENSE KIT</div> <div></div>                      | <div>MX-USX5</div> <div>SHARPPDESK 5 LICENSE KIT</div> <div></div>                       | <div>MX-US10</div> <div>SHARPPDESK 10 LICENSE KIT</div> <div></div>                      | <div>MX-US50</div> <div>SHARPPDESK 50 LICENSE KIT</div> <div></div>                       | <div>MX-USA0</div> <div>SHARPPDESK 100 LICENSE KIT</div> <div></div> |
| <div>MX-UN01A</div> <div>Sharp OSA Network Scanner Tool 1 License Kit</div> <div></div> | <div>MX-UN05A</div> <div>Sharp OSA Network Scanner Tool 5 License Kit</div> <div></div> | <div>MX-UN10A</div> <div>Sharp OSA Network Scanner Tool 10 License Kit</div> <div></div> | <div>MX-UN50A</div> <div>Sharp OSA Network Scanner Tool 50 License Kit</div> <div></div> | <div>MX-UN1HA</div> <div>Sharp OSA Network Scanner Tool 100 License Kit</div> <div></div> |                                                                      |



## 2. Machine configuration

|                 | MX-M365N/M465N    | MX-M565N    | MX-M364N/M464N/M564N |
|-----------------|-------------------|-------------|----------------------|
| Copy            | STD               |             |                      |
| PCL printer     | STD               |             |                      |
| PS printer      | STD               |             | OPT                  |
| Main body LCD   | COLOR WSVGA 10.1" |             | COLOR WSVGA 7.0"     |
| FAX             | OPT*1             |             |                      |
| Scan            | STD               |             |                      |
| Document Feeder | STD DSPF          |             | STD RSPF             |
| Sharp OSA       | STD / STD DSPF*2  |             | OPT                  |
| Key Board       | STD / OPT*2       |             |                      |
| Web Browsing    | OPT               | STD / OPT*2 |                      |
| Wireless LAN    | STD*1             |             | OPT*1                |
| HDD (GB)        | 320               |             |                      |

STD: Standard provision. OPT: Option.

\*1: No support in some region

\*2: Option in some region.

## 3. Combination of options

| Section                          | Name                                | Model name     | MX-M365N<br>MX-M465N | MX-M565N | MX-M364N<br>MX-M464N | MX-M564N | Remarks                    |
|----------------------------------|-------------------------------------|----------------|----------------------|----------|----------------------|----------|----------------------------|
| Document Feed System             | DUPLEX SINGLE PASS FEEDER           | —              | STD                  | STD      | —                    | —        |                            |
|                                  | REVERSING SINGLE PASS FEEDER        | —              | —                    | —        | STD                  | STD      |                            |
| Paper Feed System                | STAND/1 x 500 SHEET PAPER DRAWER    | MX-DE12        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | STAND/2 x 500 SHEET PAPER DRAWER    | MX-DE13        | OPT                  | —        | OPT                  | —        | For 56 under study         |
|                                  | STAND/3 x 500 SHEET PAPER DRAWER    | MX-DE14        | OPT                  | —        | OPT                  | —        | For 56 under study         |
|                                  | STAND/500 & 2000 SHEET PAPER DRAWER | MX-DE20        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | LARGE CAPACITY TRAY                 | MX-LC11        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | LONG PAPER FEEDING TRAY             | MX-LT10        | OPT                  | OPT      | OPT                  | OPT      |                            |
| Paper Exit System                | EXIT TRAY UNIT                      | MX-TR13 N      | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | EXIT TRAY CABINET                   | MX-TU12        | STD/OPT              | STD/OPT  | STD/OPT              | STD/OPT  | *1                         |
|                                  | FINISHER                            | MX-FN17        | OPT                  | —        | OPT                  | —        | For 56 under study         |
|                                  | PUNCH MODULE                        | MX-PN11A/B/C/D | OPT                  | —        | OPT                  | —        | For MX-FN17                |
|                                  | PAPER PASS UNIT                     | MX-RB22        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | SADDLE STITCH FINISHER              | MX-FN10        | OPT                  | —        | OPT                  | —        | For 56 under study         |
|                                  | FINISHER (4K)                       | MX-FN11        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | SADDLE STITCH FINISHER              | MX-FN18        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | PUNCH MODULE                        | MX-PNX5A/B/C/D | OPT                  | —        | OPT                  | —        | For MX-FN10 56 under study |
| Printer Expansion                | PUNCH MODULE                        | MX-PNX6A/B/C/D | OPT                  | OPT      | OPT                  | OPT      | For MX-FN11/FN18           |
|                                  | PS3 EXPANSION                       | MX-PK11        | STD                  | STD      | OPT                  | OPT      |                            |
|                                  | BARCODE FONT KIT                    | MX-PF10        | OPT                  | OPT      | OPT                  | OPT      |                            |
| Image send expansion             | XPS EXPANSION KIT                   | MX-PUX1        | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | FACSIMILE EXPANSION KIT             | MX-FX11        | OPT                  | OPT      | OPT                  | OPT      | *2                         |
|                                  | STAMP UNIT                          | AR-SU1         | OPT                  | OPT      | OPT                  | OPT      |                            |
|                                  | INTERNET FAX EXPANSION KIT          | MX-FWX         | OPT                  | OPT      | OPT                  | OPT      |                            |
| Authenticata-<br>tion / Security | ENHANCED COMPRESSION KIT            | MX-EB11        | OPT                  | OPT      | —                    | —        |                            |
|                                  | DATA SECURITY KIT                   | MX-FR44U       | OPT                  | OPT      | —                    | —        |                            |
|                                  | DATA SECURITY KIT                   | MX-FR45U       | —                    | —        | OPT                  | OPT      |                            |
|                                  | CARD COLUTION KIT                   | MX-EC50        | OPT                  | OPT      | —                    | —        | *2                         |
|                                  | MIRRORING KIT                       | MX-EB12 N      | OPT                  | OPT      | —                    | —        |                            |

| Section                   | Name                                              | Model name | MX-M365N<br>MX-M465N | MX-M565N | MX-M364N<br>MX-M464N | MX-M564N | Remarks |
|---------------------------|---------------------------------------------------|------------|----------------------|----------|----------------------|----------|---------|
| Application /<br>Solution | SHARPDESH 1 LICENSE KIT                           | MX-USX1    | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARPDESH 5 LICENSE KIT                           | MX-USX5    | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARPDESH 10 LICENSE KIT                          | MX-US10    | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARPDESH 50 LICENSE KIT                          | MX-US50    | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARPDESH 100 LICENSE KIT                         | MX-USA0    | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARP OSA NETWORK SCANNER<br>TOOL 1 LICENSE KIT   | MX-UN01A   | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARP OSA NETWORK SCANNER<br>TOOL 5 LICENSE KIT   | MX-UN05A   | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARP OSA NETWORK SCANNER<br>TOOL 10 LICENSE KIT  | MX-UN10A   | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARP OSA NETWORK SCANNER<br>TOOL 50 LICENSE KIT  | MX-UN50A   | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | SHARP OSA NETWORK SCANNER<br>TOOL 100 LICENSE KIT | MX-UN1HA   | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | APPLICATION INTEGRATION MODULE                    | MX-AMX1    | OPT                  | OPT      | OPT                  | OPT      |         |
|                           | APPLICATION COMMUNICATION<br>MODULE               | MX-AMX2    | STD/OPT              | STD/OPT  | OPT                  | OPT      | *1      |
|                           | EXTERNAL ACCOUNT MODULE                           | MX-AMX3    | STD/OPT              | STD/OPT  | OPT                  | OPT      | *1      |
|                           | WEB BROWSING EXPANSION KIT                        | MX-AM10    | OPT                  | STD/OPT  | —                    | —        | *1      |
| OTHER                     | KEYBOARD                                          | MX-KB11 N  | STD/OPT              | STD/OPT  | —                    | —        | *1      |
|                           | KEYBOARD                                          | MX-KB14 N  | —                    | —        | OPT                  | OPT      |         |
|                           | USB WIRELESS LAN ADAPTER                          | MX-EB13    | —                    | —        | OPT                  | OPT      |         |
|                           | PLASMACLUSTER ION GENERATOR                       | MX-PC12    | OPT                  | OPT      | OPT                  | OPT      | *2      |
|                           | PLASMACLUSTER ION GENERATOR<br>MOUNTING KIT       | MX-XB16    | OPT                  | OPT      | OPT                  | OPT      |         |

STD: Standard provision. OPT: Installable. —: Cannot be connected.

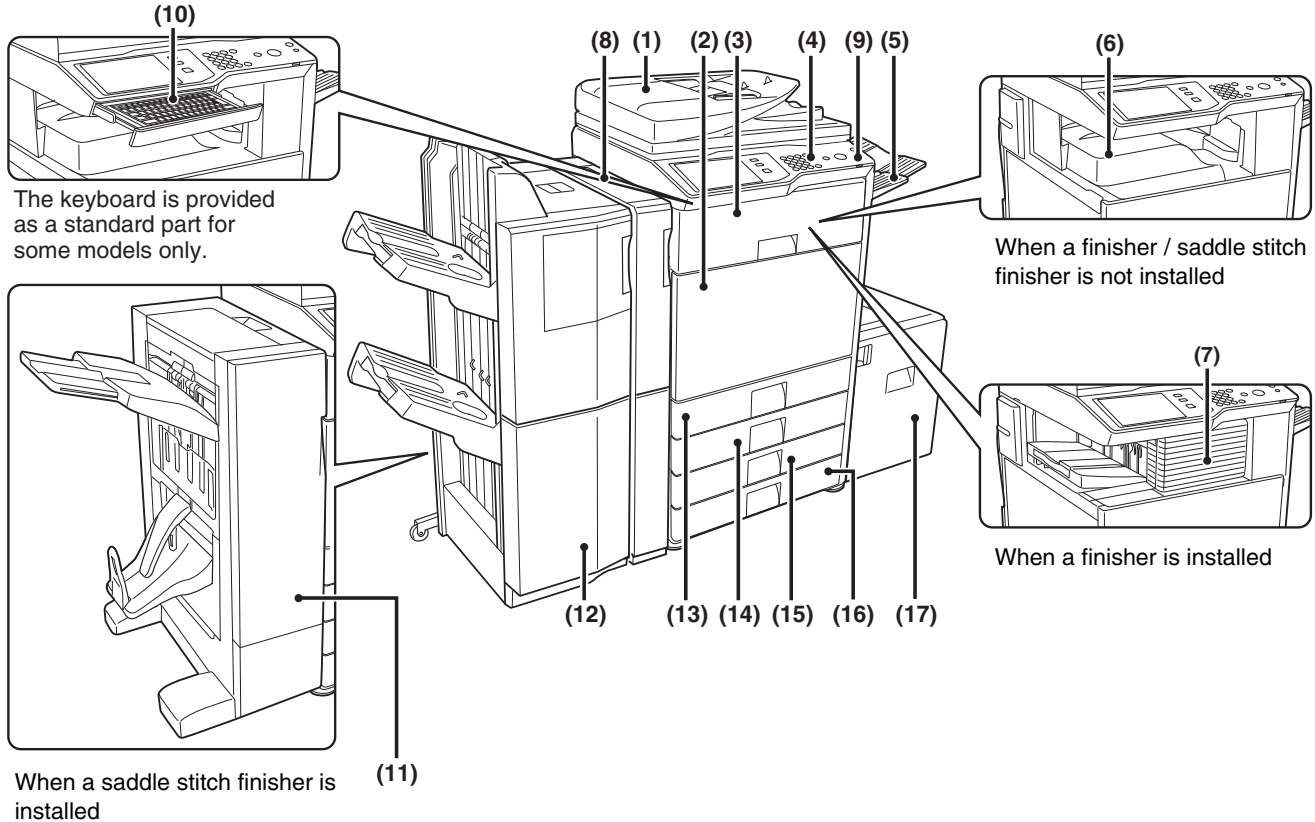
\*1: Option in some region.

\*2: No support in some region

### [3] EXTERNAL VIEW AND INTERNAL STRUCTURE

#### 1. Identification of each section and functions

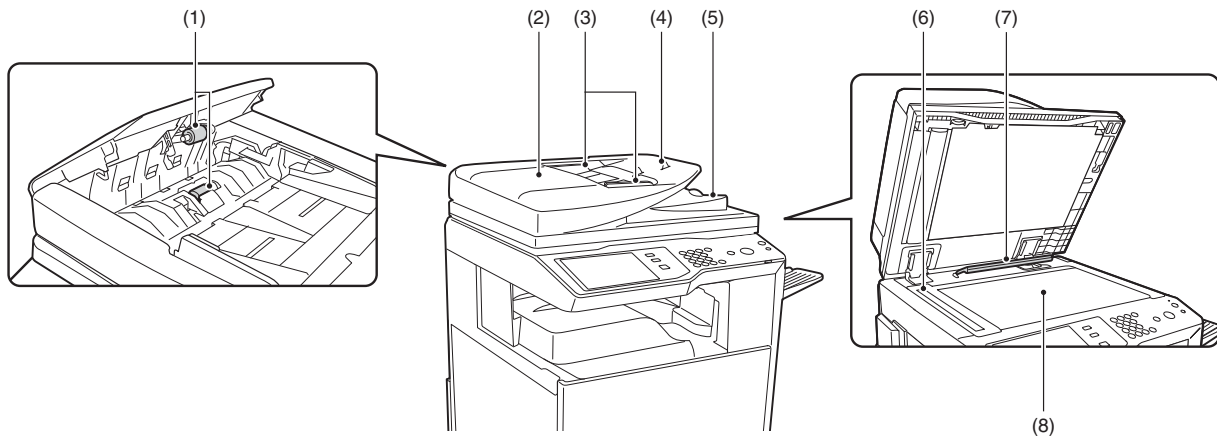
##### A. External view



| No. | Name                                                                                                 | Function/Operation                                                                                                                                                                                                                | NOTE                                                                                      |
|-----|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1   | Automatic document feeder                                                                            | This automatically feeds and scans multiple originals. Both sides of 2-sided originals can be automatically scanned.                                                                                                              |                                                                                           |
| 2   | Front cover                                                                                          | Open this cover to switch the main power switch to "On" or "Off" or to replace a toner cartridge.                                                                                                                                 |                                                                                           |
| 3   | Paper pass unit*                                                                                     | This transfers output to the finisher (large capacity) or the saddle stitch finisher.                                                                                                                                             |                                                                                           |
| 4   | Operation panel                                                                                      | This is used to select functions and enter the number of copies.                                                                                                                                                                  |                                                                                           |
| 5   | Right tray*                                                                                          | When installed, output can be delivered to this tray.                                                                                                                                                                             |                                                                                           |
| 6   | Output tray (center tray)                                                                            | Output is delivered to this tray.                                                                                                                                                                                                 |                                                                                           |
| 7   | Finisher*                                                                                            | This can be used to staple output. A punch module can also be installed to punch holes in output.                                                                                                                                 |                                                                                           |
| 8   | Punch module*                                                                                        | This is used to punch holes in output. Requires the finisher (large capacity).                                                                                                                                                    |                                                                                           |
| 9   | USB connector (A type)                                                                               | Supports USB 2.0. This is used to connect a USB device such as USB memory to the machine. For the USB cable, use a shielded cable.                                                                                                | When using the USB port, be careful of the total current consumption not to exceed 500mA. |
| 10  | Keyboard*                                                                                            | This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel.                                                                                                              | A standard part or an option depending on the model and the destination.                  |
| 11  | Saddle stitch finisher*                                                                              | This can be used to staple output. The saddle stitch function for folding and stapling output and the fold function for folding output in half are also available. A punch module can also be installed to punch holes in output. |                                                                                           |
| 12  | Finisher (large capacity)*                                                                           | This can be used to staple output.                                                                                                                                                                                                |                                                                                           |
| 13  | Tray 1                                                                                               | This holds paper.                                                                                                                                                                                                                 |                                                                                           |
| 14  | Tray 2                                                                                               | This holds paper.                                                                                                                                                                                                                 |                                                                                           |
| 15  | Tray 3 (when a stand/1 x 500 sheet paper drawer or a stand/2 x 500 sheet paper drawer is installed)* | This holds paper.                                                                                                                                                                                                                 |                                                                                           |
| 16  | Tray 4 (when a stand/2 x 500 sheet paper drawer is installed)*                                       | This holds paper.                                                                                                                                                                                                                 |                                                                                           |
| 17  | Tray 5 (when a large capacity tray is installed)*                                                    | This holds paper.                                                                                                                                                                                                                 |                                                                                           |

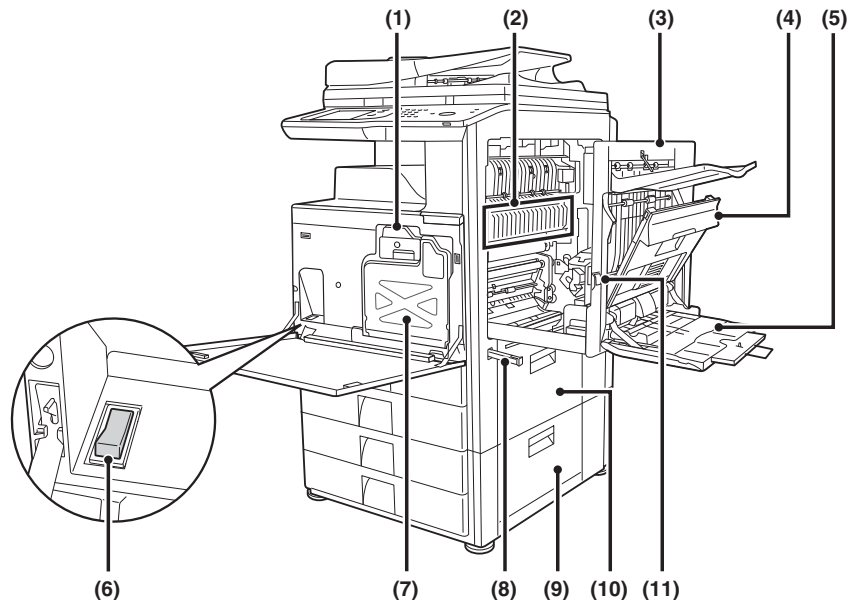
\*: Peripheral device.

## [Automatic document feeder and document glass]



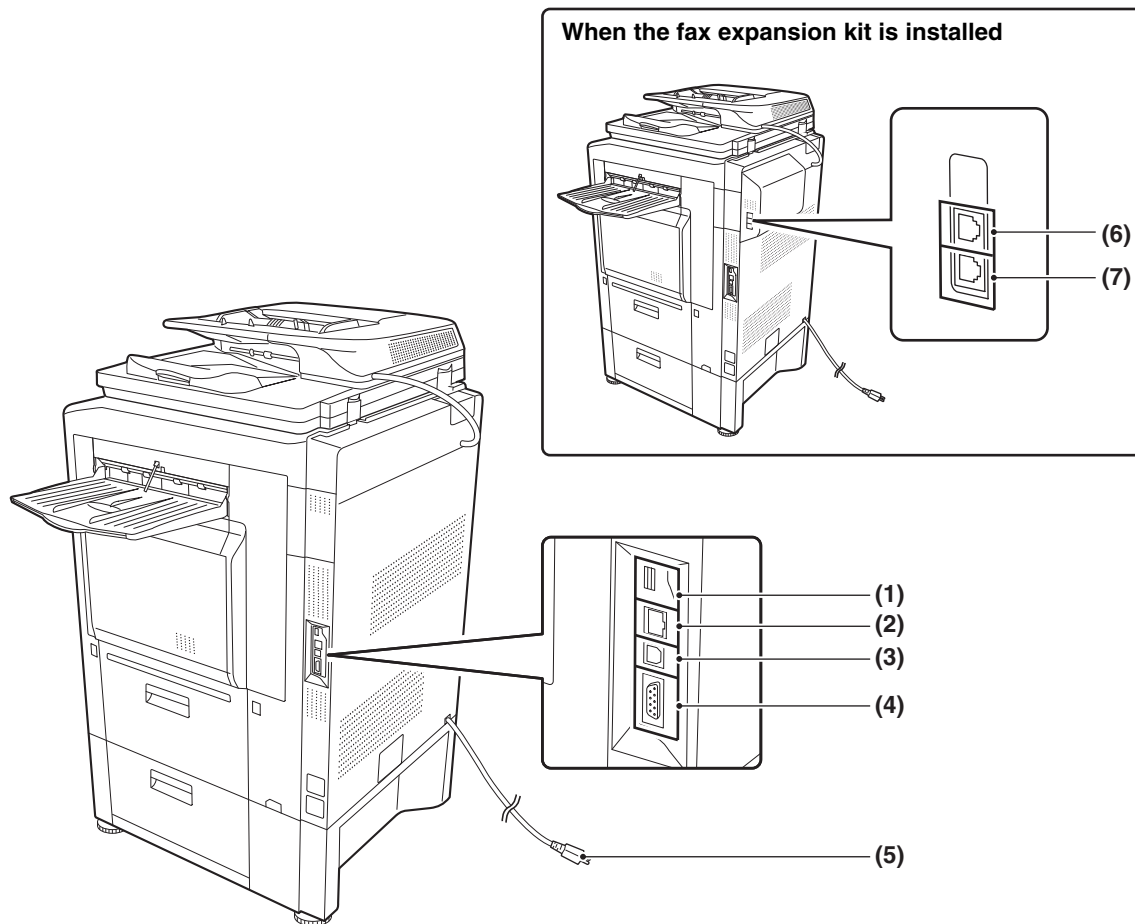
| No. | Name                        | Function/Operation                                                                                        |
|-----|-----------------------------|-----------------------------------------------------------------------------------------------------------|
| 1   | Paper feed roller           | This roller rotates to automatically feed the original.                                                   |
| 2   | Document feeding area cover | Open this cover to remove an original mis-feed or clean the paper feed roller.                            |
| 3   | Original guides             | These help ensure that the original is scanned correctly. Adjust the guides to the width of the original. |
| 4   | Document feeder tray        | Place originals in this tray. 1-sided originals must be placed face up.                                   |
| 5   | Original exit tray          | Originals are delivered to this tray after scanning.                                                      |
| 6   | Scanning area               | Originals placed in the document feeder tray are scanned here.                                            |
| 7   | Original size detector      | This detects the size of an original placed on the document glass.                                        |
| 8   | Document glass              | Use this to scan a book or other thick original that cannot be fed through the automatic document feeder. |

## B. Internal operation parts



| No. | Name                                                                                                                                                                                                         | Function/Operation                                                                                                                        |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Toner cartridges                                                                                                                                                                                             | These contain toner for printing. When the toner runs out in a cartridge, the cartridge of the color that ran out must be replaced.       |
| 2   | Fusing unit                                                                                                                                                                                                  | Heat is applied here to fuse the transferred image onto the paper.                                                                        |
| 3   | Right side cover                                                                                                                                                                                             | Open this cover to remove a paper mis-feed.                                                                                               |
| 4   | Paper reversing section cover                                                                                                                                                                                | This is used when 2-sided printing is performed. Open this cover to remove a paper mis-feed.                                              |
| 5   | 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. |
| 6   | 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.                |
| 7   | Waste toner box                                                                                                                                                                                              | This collects excess toner that remains after printing.                                                                                   |
| 8   | Handle                                                                                                                                                                                                       | Pull this out and grasp it when moving the machine.                                                                                       |
| 9   | Right cover of stand/<br>1 x 500 sheet paper drawer right cover of stand/<br>2 x 500 sheet paper drawer (when a stand/<br>1 x 500 sheet paper drawer or a stand/<br>2 x 500 sheet paper drawer is installed) | Open this to remove a paper mis-feed in tray 3 or tray 4.                                                                                 |
| 10  | Paper tray right side cover                                                                                                                                                                                  | Open this to remove a paper mis-feed in tray 1 or tray 2.                                                                                 |
| 11  | Right side cover release lever                                                                                                                                                                               | To remove a paper mis-feed, pull and hold this lever up to open the right side cover.                                                     |

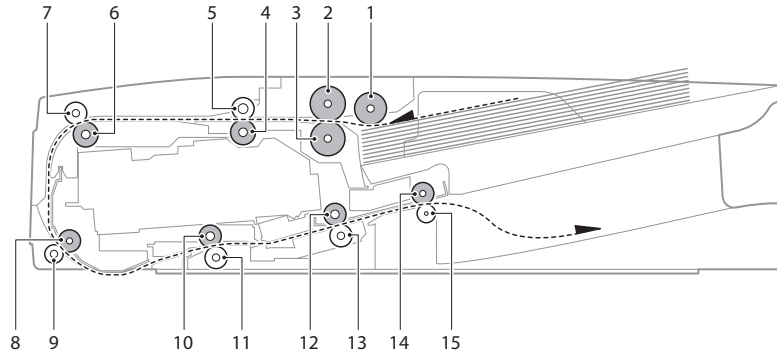
## C. Connectors



| No. | Name                   | Function/Operation                                                                                                                                                                                                                                                                                                                                     | NOTE                                                                                      |
|-----|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1   | USB connector (A type) | Supports USB 2.0. This is used to connect a USB device such as USB memory to the machine. This connector cannot be used under the factory setting. The connector on the front section can be used under the factory setting. When the keyboard is installed to the machine, an exclusive connection is enabled. (Simultaneous connection is disabled.) | When using the USB port, be careful of the total current consumption not to exceed 500mA. |
| 2   | 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.                                                                                                                                                                                                                           |                                                                                           |
| 3   | USB connector (B type) | Supports USB 2.0. A computer can be connected to this connector to use the machine as a printer. For the USB cable, use a shielded cable.                                                                                                                                                                                                              |                                                                                           |
| 4   | Service-only connector | CAUTION: This connector is for use only by service technicians. Connecting a cable to this connector may cause the machine to malfunction.<br>Important note for service technicians: The cable connected to the service connector must be less than 118" (3 m) in length.                                                                             |                                                                                           |
| 5   | Power plug             |                                                                                                                                                                                                                                                                                                                                                        |                                                                                           |
| 6   | Extension phone socket | When the fax function of the machine is used, an extension phone can be connected to this socket.                                                                                                                                                                                                                                                      |                                                                                           |
| 7   | Telephone line socket  | When the fax function of the machine is used, the telephone line is connected to this socket.                                                                                                                                                                                                                                                          |                                                                                           |

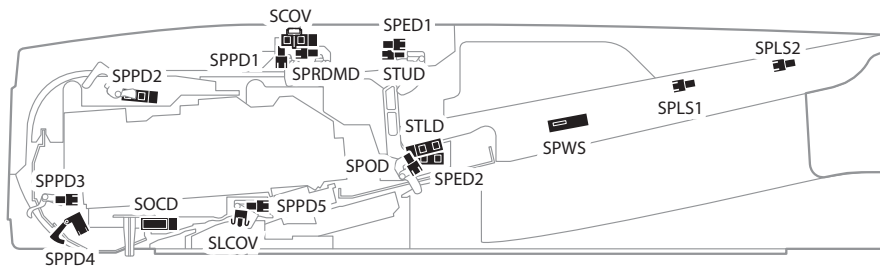
## E. DSPF

### (1) Roller



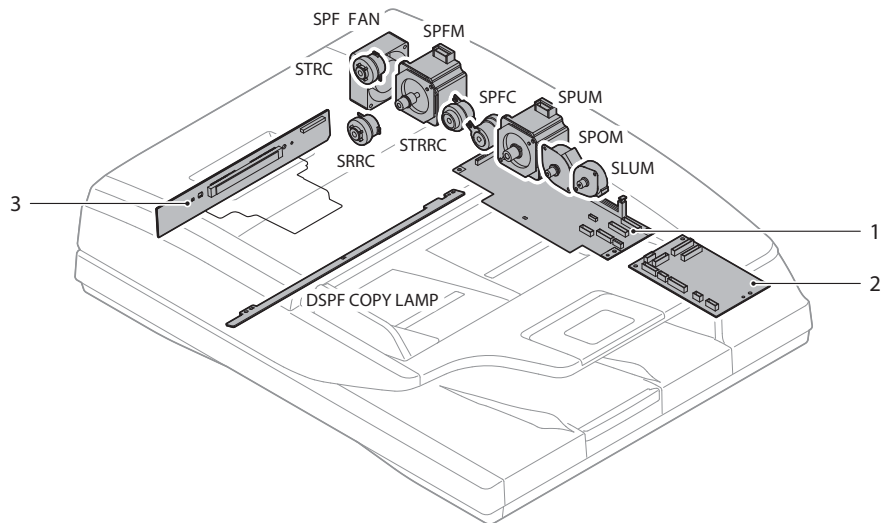
| No. | Name                              | Function/ Operation                                                                                                               |
|-----|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1   | Pickup roller                     | Picks up a document and feeds it to the document feed roller.                                                                     |
| 2   | Document feed roller              | Performs the document feed operation of documents.                                                                                |
| 3   | Separation roller                 | Separate a document to prevent against double-feed.                                                                               |
| 4   | No. 1 registration roller (Drive) | Performs resist of document transport.                                                                                            |
| 5   | No. 1 registration roller (Idle)  | Applied a pressure to document and the registration roller, and provides transport power of the registration roller to document.  |
| 6   | Transport roller 1 (Drive)        | Transports document from No. 1 registration roller to No. 2 registration roller.                                                  |
| 7   | Transport roller 1 (Idle)         | Applied a pressure to document and the transport roller, and provides the transport power of the transport roller to document.    |
| 8   | No. 2 registration roller (Drive) | Make synchronization between the lead edge of a document and the scan start position.                                             |
| 9   | No. 2 registration roller (Idle)  | Applies a pressure to document and the registration roller, and provides transport power of the registration roller to document.  |
| 10  | Transport roller 2 (Drive)        | Transports document from the No. 1 scan section to the transport roller 3.                                                        |
| 11  | Transport roller 2 (Idle)         | Applies a pressure to document and the transport roller and provides transport power of the transport roller to document.         |
| 12  | Transport roller 3 (Drive)        | Transports document from the transport roller 2 to the document exit roller.                                                      |
| 13  | Transport roller 3 (Idle)         | Applies a pressure to document and the transport roller and provides transport power of the transport roller to document.         |
| 14  | Document exit roller (Drive)      | Discharges document.                                                                                                              |
| 15  | Document exit roller (Idle)       | Applies a pressure to document and the document exit roller and provides transport power of the document exit roller to document. |

### (2) Sensors and Switches



| Signal name | Name                                          | Type              | Function/Operation                                           |
|-------------|-----------------------------------------------|-------------------|--------------------------------------------------------------|
| SCOV        | DSPF upper door open/close detector           | Transmission type | Detects open/close of the upper door.                        |
| SPCOV       | DSPF lower door open/close detector           | Micro switch      | Detects open/close of the lower door.                        |
| SOCD        | DSPF open/close detector                      | Transmission type | Detects open/close of the DSPF unit.                         |
| SPED1       | DSPF document upper limit detector            | Transmission type | Detects the upper limit of the DSPF document.                |
| SPED2       | DSPF document empty detector                  | Transmission type | Detects document empty in the document feed tray.            |
| SPLS1       | DSPF document length detection short detector | Transmission type | Detects the document length of the document feed tray upper. |
| SPLS2       | DSPF document length detection long detector  | Transmission type | Detects the document length of the document feed tray upper. |
| SPOD        | DSPF document exit detector                   | Transmission type | Detects document exit of the document.                       |
| SPPD1       | DSPF document pass detector 1                 | Transmission type | Detects pass of the document.                                |
| SPPD2       | DSPF document pass detector 2                 | Transmission type | Detects pass of the document.                                |
| SPPD3       | DSPF document pass detector 3                 | Transmission type | Detects pass of the document.                                |
| SPPD4       | DSPF document pass detector 4                 | Transmission type | Detects pass of the document.                                |
| SPPD5       | DSPF document pass detector 5                 | Transmission type | Detects pass of the document.                                |
| SPRDMD      | DSPF document random detector                 | Transmission type | Detects the document size in random document feed.           |
| SPWS        | DSPF document width detector                  | Volume resistor   | Detects the document width of the document feed tray upper.  |
| STLD        | DSPF document feed tray lower limit detector  | Transmission type | Detects the lower limit of the document feed tray.           |
| STUD        | DSPF document feed tray upper limit detector  | Transmission type | Detects the upper limit of the document feed tray.           |

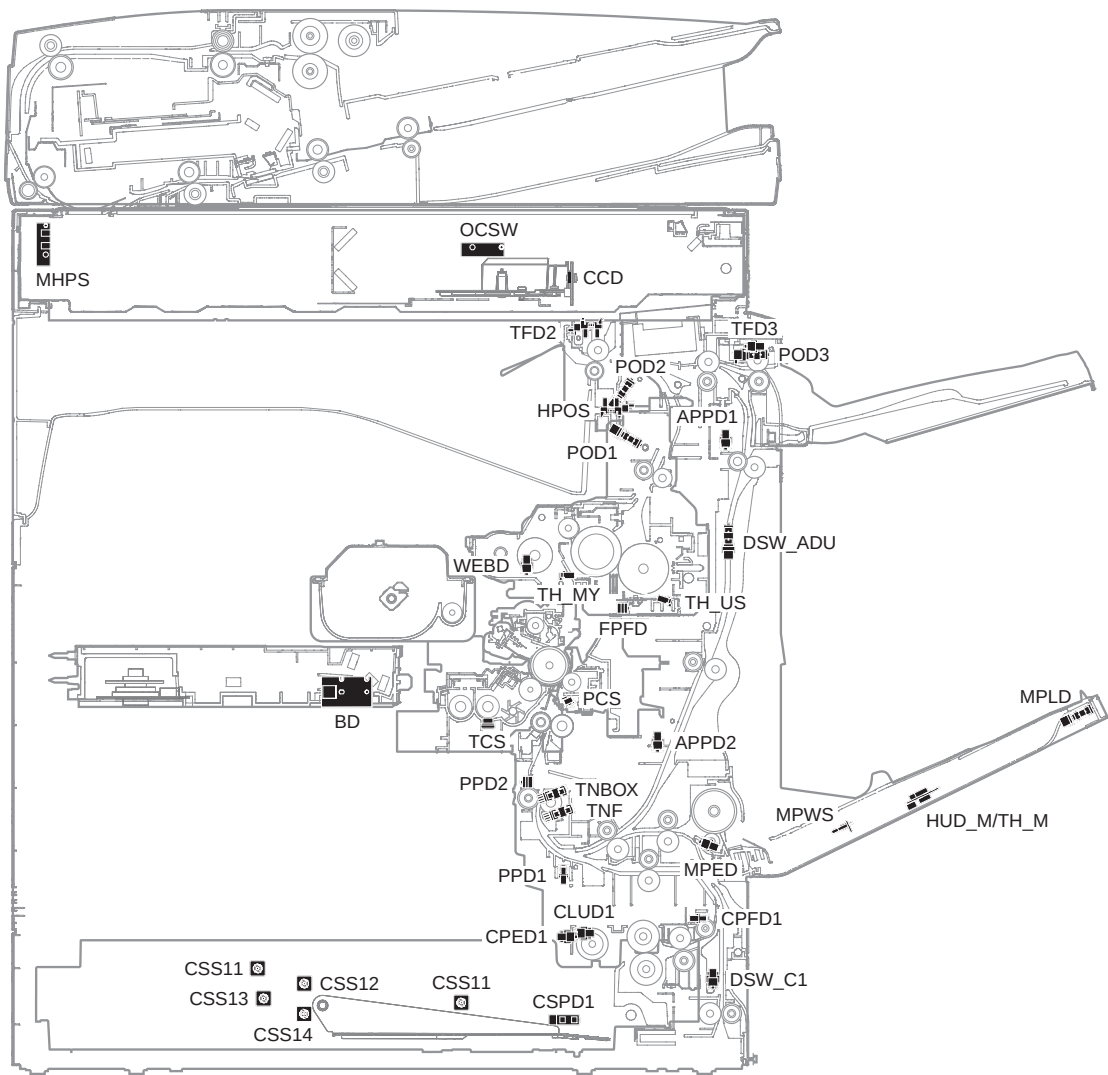
(3) Motors, clutches, solenoids, PWB and lamps



| Signal name    | Name                                 | Type                   | Function/Operation                                                       |
|----------------|--------------------------------------|------------------------|--------------------------------------------------------------------------|
| DSPF COPY LAMP | DSPF copy lamp                       | LED lamp               | Radiates light onto a document to allow the CCD to scan document images. |
| SLUM           | DSPF lift-up motor                   | PM step motor          | Lifts up or moves down the document feed tray.                           |
| SPFC           | DSPF document feed clutch            | Electromagnetic clutch | Controls ON/OFF of the rollers in the document feed section.             |
| SPFFAN         | DSPF cooling fan motor               | DC brush-less motor    | Cools the motors and the clutches.                                       |
| SPFM           | DSPF transport motor                 | Hybrid step motor      | Drives the transport roller.                                             |
| SPOM           | DSPF document exit motor             | PM step motor          | Drives the document exit roller.                                         |
| SPUM           | DSPF document feed motor             | Hybrid step motor      | Drives the rollers and transport rollers in the document feed section.   |
| SRRRC          | DSPF No.2 registration roller clutch | Electromagnetic clutch | Controls ON/OFF of No. 2 registration roller.                            |
| STRC           | DSPF transport roller clutch         | Electromagnetic clutch | Controls ON/OFF of the transport roller 1.                               |
| STRRC          | DSPF No.1 registration roller clutch | Electromagnetic clutch | Controls ON/OFF of No. 1 registration roller.                            |

| No. | Name             | Function/Operation     |
|-----|------------------|------------------------|
| 1   | DSPF control PWB | Control PWB for DSPF   |
| 2   | DSPF driver PWB  | Driver PWB for DSPF    |
| 3   | DSPF CCD PWB     | Scans document images. |

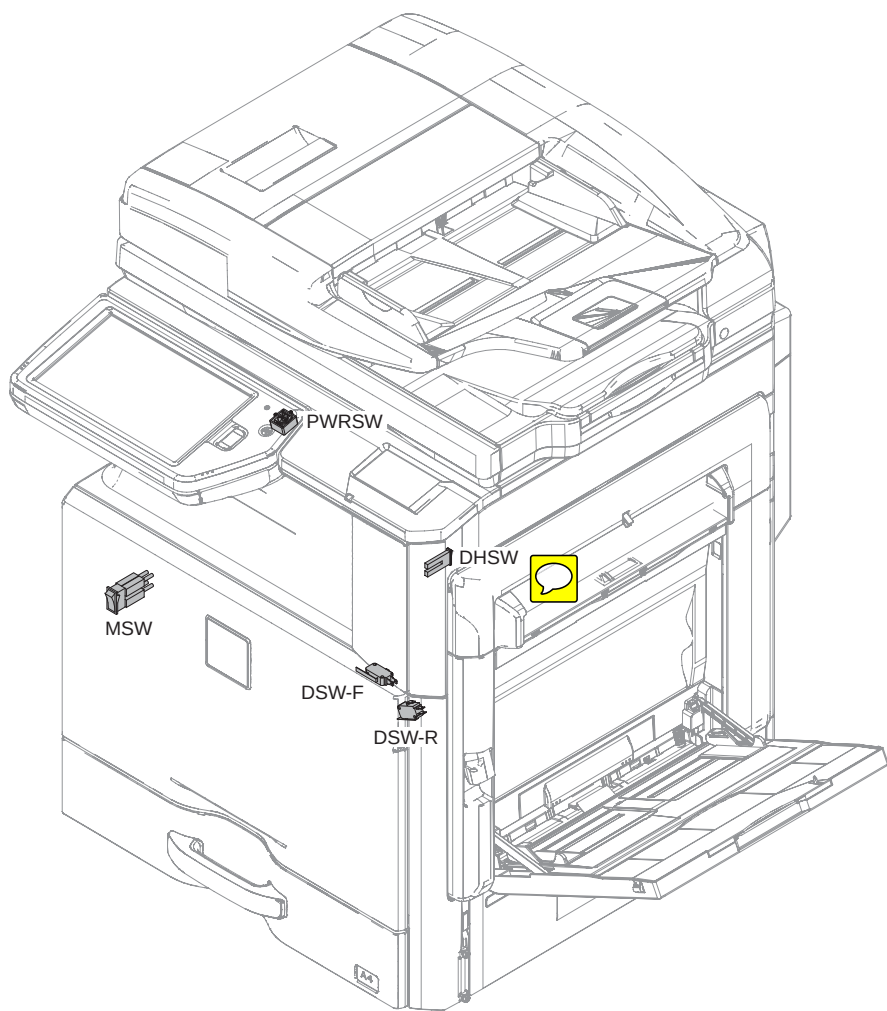
G. Sensors





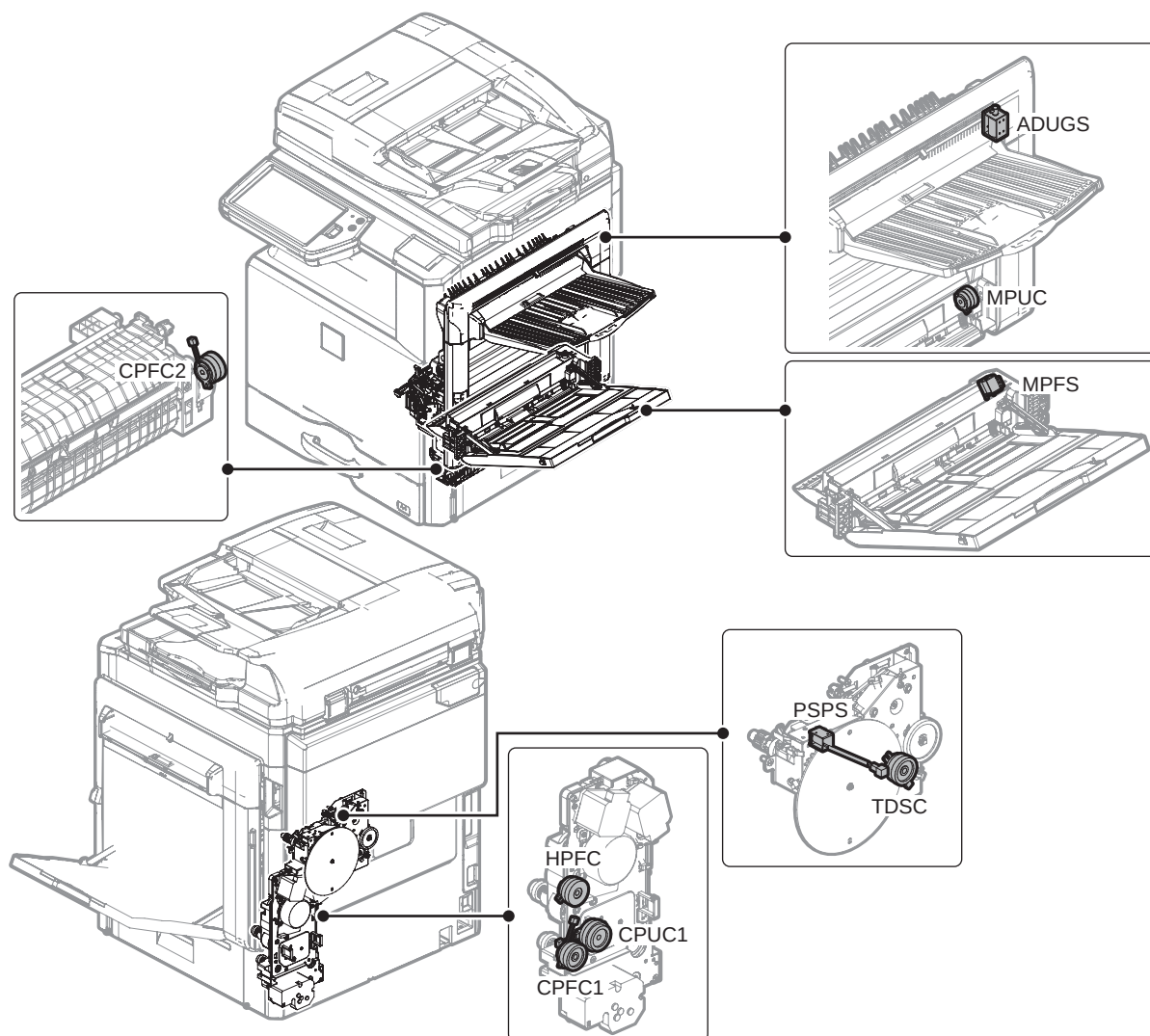
| Signal name | Name                                               | Function/Operation                                                                                                                  | Type              |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| APPD1       | ADU transport path detection 1                     | Detects the duplex (ADU) upstream paper pass.                                                                                       | Transmission type |
| APPD2       | ADU transport path detection 2                     | Detects the duplex (ADU) midstream paper pass.                                                                                      | Transmission type |
| BD          | Laser beam detection                               | Detects the laser scan start timing.                                                                                                |                   |
| CCD         | CCD unit                                           | Converts document images (optical signals) into electrical signals.                                                                 |                   |
| CLUD1       | Tray 1 upper limit detection (Lift HP detection)   | Detects the tray 1 upper limit.                                                                                                     | Transmission type |
| CPED1       | Tray 1 paper empty detection                       | Detects the tray 1 paper empty.                                                                                                     | Transmission type |
| CPFD1       | Tray 1 transport detection (Paper entry detection) | Detects tray 1 paper pass.                                                                                                          | Transmission type |
| CSPD1       | Tray 1 paper remaining quantity detection          | Detects the tray 1 paper remaining quantity.                                                                                        |                   |
| CSS11       | Tray 1 rear edge detection 1                       | Insertion of the tray is detected by detecting either of tray 1 rear edge detection 1 - 4.<br>The paper size of tray 1 is detected. | Duct switch       |
| CSS12       | Tray 1 rear edge detection 2                       |                                                                                                                                     | Duct switch       |
| CSS13       | Tray 1 rear edge detection 3                       |                                                                                                                                     | Duct switch       |
| CSS14       | Tray 1 rear edge detection 4                       |                                                                                                                                     | Duct switch       |
| DSW_ADU     | ADU transport open/close detection                 | Detects the duplex (ADU) cover open/close                                                                                           | Transmission type |
| DSW_C1      | Tray 1 transport cover open/close detection        | Detects the tray 1 transport cover open/close.                                                                                      |                   |
| FPPD        | Fusing front paper pass detector                   | Detects paper pass in front of the fusing section.                                                                                  | Reflection type   |
| HPOS        | Shifter home position detection                    | Detects the shifter home position.                                                                                                  |                   |
| HUD_M/TH_M  | Temperature/humidity sensor                        | Detects the temperature and humidity                                                                                                |                   |
| MHPS        | Scanner home position sensor                       | Detects the scanner home position.                                                                                                  | Transmission type |
| MPED        | Manual feed paper empty detection                  | Detects the manual feed paper empty.                                                                                                | Transmission type |
| MPFD        | Manual feed paper entry detection                  | Detects the manual feed paper entry.                                                                                                | Transmission type |
| MPLD        | Manual feed paper length detector                  | Detects the manual paper feed tray paper length.                                                                                    |                   |
| MPWS        | Manual paper feed tray paper width detector        | Detects the manual paper feed tray paper width.                                                                                     | Volume resistor   |
| OCSW        | Original cover SW                                  | Detects the trigger for document size.                                                                                              | Transmission type |
| POD1        | Fusing rear detection                              | Detects the paper exit from fusing.                                                                                                 | Transmission type |
| POD2        | Paper exit detection                               | Detects the paper from paper exit.                                                                                                  | Transmission type |
| POD3        | Right tray paper exit detection                    | Detects the paper exit to right tray.                                                                                               |                   |
| PPD1        | Resist pre-detection                               | Detects the paper in front of resist roller.                                                                                        | Transmission type |
| PPD2        | Resist detection                                   | Detects the paper in rear of resist roller.                                                                                         | Reflection type   |
| PCS         | Image density sensor                               | Detects toner patch density.                                                                                                        | Reflection type   |
| TCS         | Toner density sensor                               | Detects the toner density (K).                                                                                                      | Magnetic sensor   |
| TFD2        | Paper exit full detection                          | Detects the face down paper exit tray full.                                                                                         | Transmission type |
| TFD3        | Right tray paper exit full detection               | Detects the right tray paper exit full.                                                                                             |                   |
| TH_MY       | Main thermistor                                    | Fusing temperature detection (main)                                                                                                 | Thermistor        |
| TH_US       | Sub thermistor                                     | Fusing temperature detection (sub)                                                                                                  | Thermistor        |
| TNF         | Waste toner box remaining quantity detection       | Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full.                             | Transmission type |
| TNBOX       | Waste toner box remaining quantity detection       | Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full.                             | Transmission type |
| WEBD        | Web end detection                                  | Detects life end of the web cleaner.                                                                                                | Electrode switch  |

H. Switches



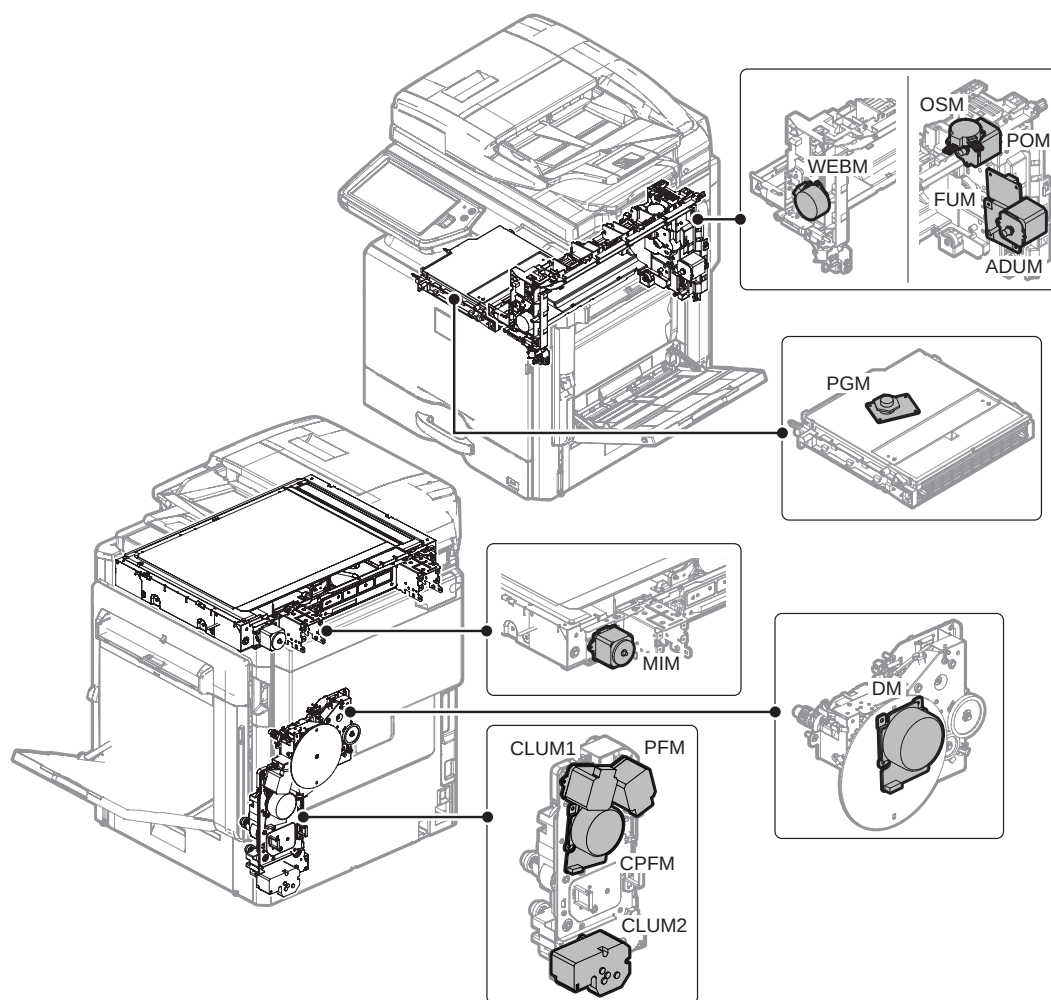
| Signal name | Name                         | Type          | Function/Operation                                                                                            |
|-------------|------------------------------|---------------|---------------------------------------------------------------------------------------------------------------|
| DSW-F       | Front door open/close switch | Micro switch  | Detects open/close of the front door, and turns ON/OFF the power line of the fusing, motor and the LSU laser. |
| DSW-R       | Right door open/close switch | Micro switch  | Detects open/close of the right door, and turns ON/OFF the power line of the fusing, motor and the LSU laser. |
| MSW         | Main switch                  | Seesaw switch | Turns ON/OFF the DC power source.                                                                             |
| PWRSW       | Operation panel power switch | Push switch   | Controls ON/OFF of the DC power source.                                                                       |

## I. Clutches and solenoids



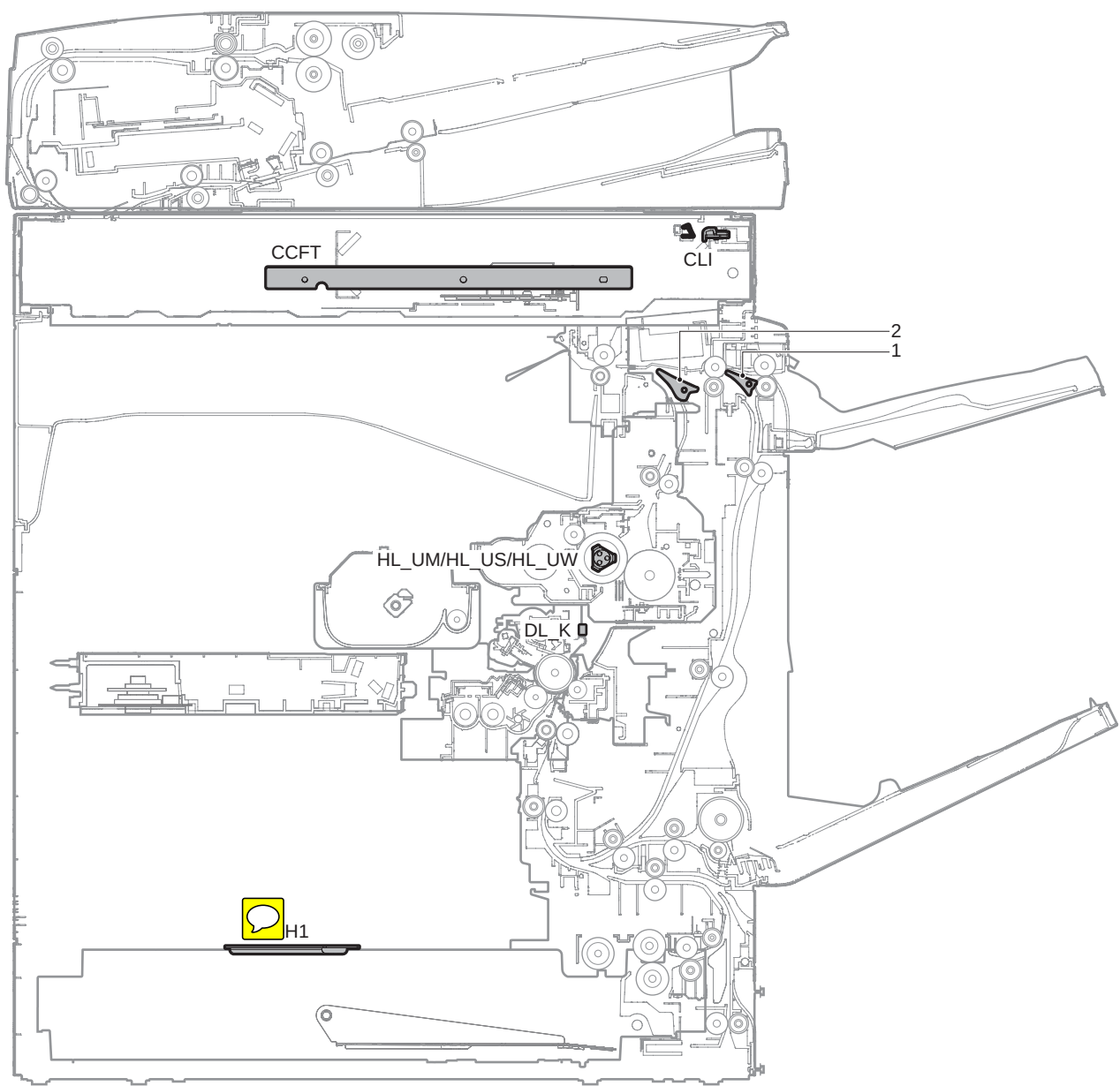
| Signal name | Name                                         | Type                     | Function/Operation                                                                                           |
|-------------|----------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------|
| ADUGS       | ADU gate solenoid                            | Electromagnetic solenoid | Controls the ADU gate.                                                                                       |
| CPFC1       | Paper transport clutch 1                     | Electromagnetic clutch   | Controls ON/OFF of the paper transport roller.                                                               |
| CPFC2       | Paper transport clutch 2                     | Electromagnetic clutch   | Controls ON/OFF of the paper transport roller in the paper transport section of the paper feed tray section. |
| CPUC1       | Paper feed clutch<br>(Paper feed tray 1)     | Electromagnetic clutch   | Controls ON/OFF of the roller in the paper feed tray 1 section.                                              |
| HPFC        | Transport roller clutch                      | Electromagnetic clutch   | Controls the transport roller                                                                                |
| MPFS        | Paper pickup solenoid<br>(Manual paper feed) | Electromagnetic solenoid | Paper pickup solenoid (Manual paper feed)                                                                    |
| MPUC        | Manual paper feed clutch                     | Electromagnetic clutch   | Controls the manual paper feed section paper feed roller ON/OFF.                                             |
| PSPS        | Separation solenoid                          | Electromagnetic solenoid | Separates paper from the OPC drum.                                                                           |
| TDSC        | Toner supply clutch                          | Electromagnetic clutch   | Controls ON/OFF of toner supply.                                                                             |

## J. Drive motor



| Signal name | Name                                            | Type                | Function/Operation                                                                                                                                                                       |
|-------------|-------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADUM        | ADU motor upper                                 | Stepping motor      | Drives the transport roller                                                                                                                                                              |
| CLUM1       | Paper tray lift-up motor<br>(Paper feed tray 1) | DC brush motor      | Drives the lift plate of the paper feed tray.                                                                                                                                            |
| CLUM2       | Paper tray lift-up motor                        | DC brush motor      | Drives the lift plate of the paper feed tray.                                                                                                                                            |
| CPFM        | Paper feed motor                                | Brush-less motor    | Drives the paper feed section.                                                                                                                                                           |
| DM          | Drum motor                                      | Brush-less motor    | Drives the OPC drum and the developing unit.                                                                                                                                             |
| FUM         | Fusing drive motor                              | Brush-less motor    | Drives the fusing unit.                                                                                                                                                                  |
| MIM         | Scanner motor                                   | Stepping motor      | Drives the scanner (reading) unit.                                                                                                                                                       |
| OSM         | Shifter motor                                   | Stepping motor      | Performs offset of paper.                                                                                                                                                                |
| PFM         | Transport motor                                 | Stepping motor      | Drives the transport roller which is between the resist roller and the paper feed section.<br>Drives the transport roller which is between the resist roller and the right door section. |
| PGM         | Polygon motor                                   | DC brush-less motor | Scans the laser beam.                                                                                                                                                                    |
| POM         | Paper exit drive motor                          | Stepping motor      | Drives the paper exit roller.                                                                                                                                                            |
| RRM         | Resist motor                                    | Stepping motor      | Drives the resist roller and controls ON/OFF.                                                                                                                                            |
| WEBM        | Fusing web cleaning motor                       | Synchronous motor   | Drives the fusing web cleaning paper.                                                                                                                                                    |

K. Lamps and gates

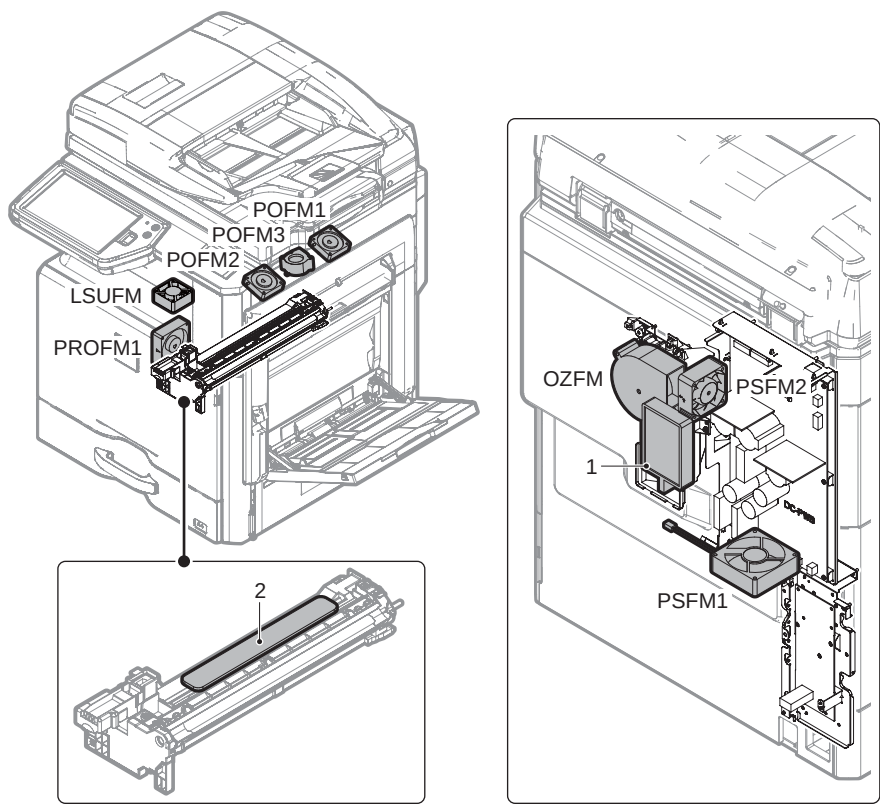


| Signal name | Name                      | Type                          | Function/Operation                                                      |
|-------------|---------------------------|-------------------------------|-------------------------------------------------------------------------|
| CCFT        | LCD back-light            | Cold Cathode Fluorescent Tube | Back-light for LCD                                                      |
| CLI         | Scanner lamp              | LED                           | Radiates lights onto a document for the CCD to scan the document image. |
| DL_K        | Discharge lamp            | LED                           | Discharges electric charges on the OPC drum                             |
| HL_UM       | Heater lamp (main)        |                               | Heats the heat roller (main).                                           |
| HL_US       | Heater lamp (sub)         |                               | Heats the heat roller (sub).                                            |
| HL_UW       | Heater lamp (for warm-up) |                               | Heats up supplementarily when warming-up.                               |

| No. | Name                  | Type | Function/Operation                                                                                             |
|-----|-----------------------|------|----------------------------------------------------------------------------------------------------------------|
| 1   | Right paper exit gate |      | Selects the paper path to transport paper to the duplex (ADU) section or to discharge paper to the right tray. |
| 2   | ADU reverse gate      |      | Switches the transport route of paper to the duplex (ADU) section.                                             |

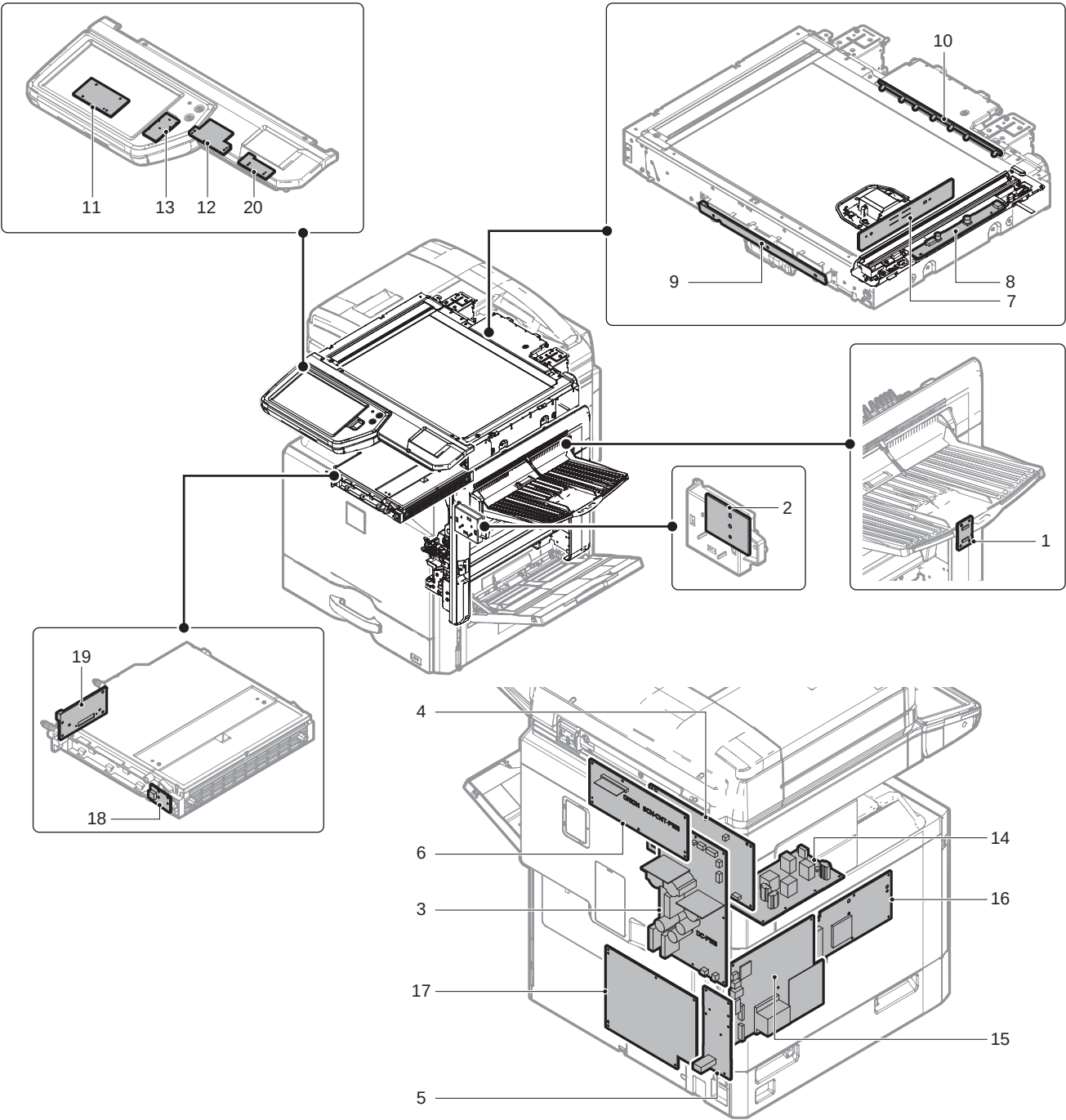
L. Fans and filters



| Signal name | Name                     | Function/Operation                           |
|-------------|--------------------------|----------------------------------------------|
| LSUCFM      | LSU cooling fan          | Cools the LSU section.                       |
| OZFM1       | Ozone fan                | Exhausts ozone.                              |
| PSFM1       | Power cooling fan 1      | Cools the power unit.                        |
| PSFM2       | Power cooling fan 2      | Cools the power unit.                        |
| POFM1       | Paper exit cooling fan 1 | Cools the fusing and the paper exit section. |
| POFM2       | Paper exit cooling fan 2 | Cools the fusing and the paper exit section. |
| POFM3       | Paper exit cooling fan 3 | Cools the paper.                             |
| PROFM1      | Process fan              | Cools process section.                       |

| No. | Name         | Function/Operation                                    |
|-----|--------------|-------------------------------------------------------|
| 1   | Ozone filter | Absorbs ozone generated in the image process section. |
| 2   | Toner filter | Prevents dispersing of toner.                         |

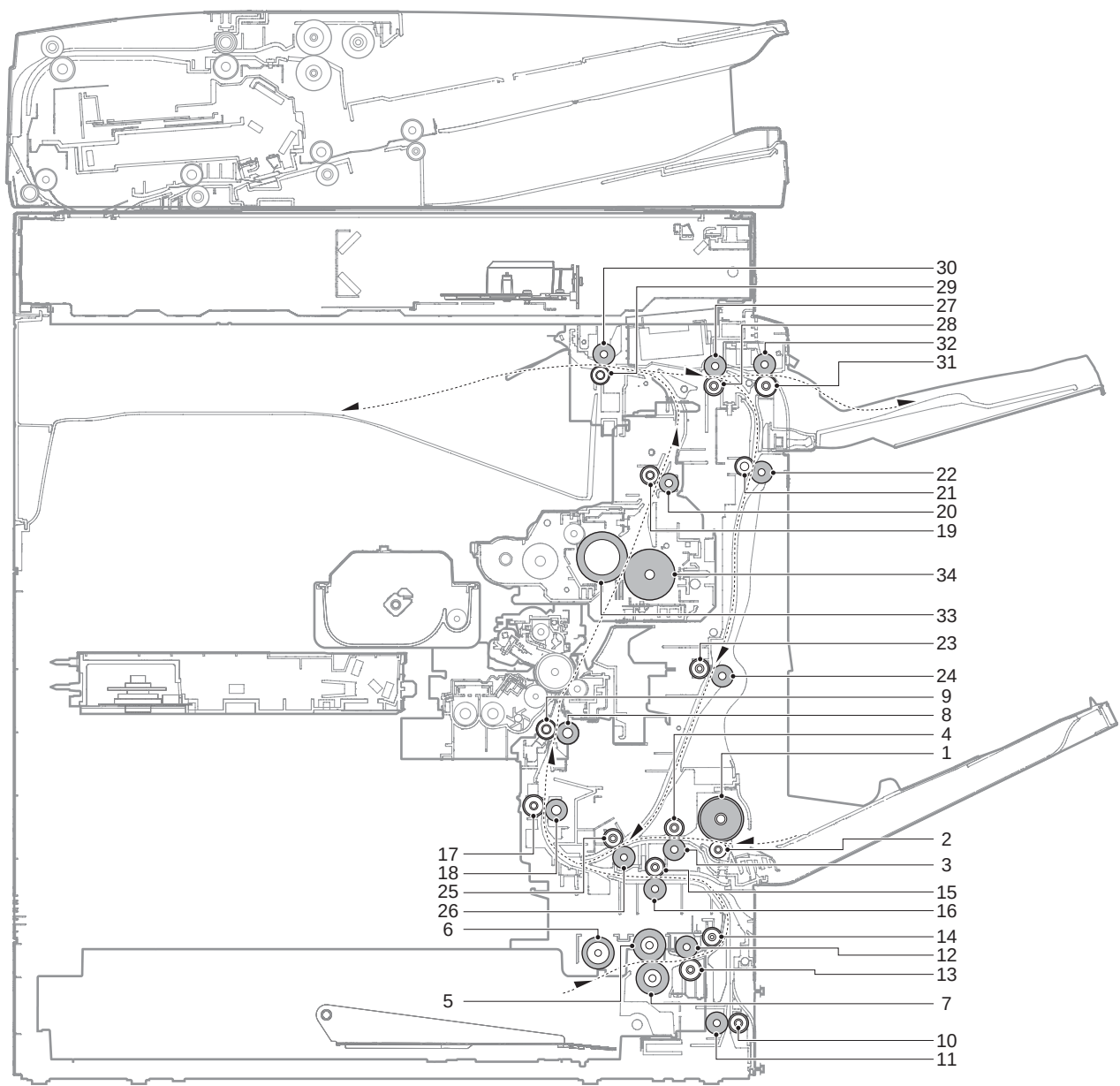
M. PWB



| No. | Name                                   | Function/Operation                                                                         |
|-----|----------------------------------------|--------------------------------------------------------------------------------------------|
| 1   | RD I/F PWB                             | Interfaces each sensor signal in the right door unit section.                              |
| 2   | Paper size detection PWB               | Detects the paper size in the paper feed tray.                                             |
| 3   | DC power PWB                           | Generates a DC voltage.                                                                    |
| 4   | HV PWB                                 | Generates the main charger voltage, the developing bias voltage, and the transfer voltage. |
| 5   | AC power PWB                           | Controls the power source in the primary side.                                             |
| 6   | Scanner control PWB                    | Controls the scanner and the operation panel section.                                      |
| 7   | CCD PWB                                | Scans document images.                                                                     |
| 8   | LED drive PWB                          | Drives the scanner lamp.                                                                   |
| 9   | Document detection light collector PWB | Outputs the document size detection signal.                                                |
| 10  | Document detection light emitting PWB  | Drives the document size detection LED.                                                    |
| 11  | LVDS PWB                               | Converts display signals into LCD display signals.                                         |
| 12  | PW-KEY PWB                             | Turns ON/OFF the power on the secondary side.                                              |
| 13  | HW-KEY-PWB                             | Outputs the key operation signal.                                                          |
| 14  | HL PWB                                 | Controls the heater lamp.                                                                  |
| 15  | MFP PWB                                | Controls data related to images, and controls the whole machine.                           |
| 16  | LSU-Mother PWB                         | Interfaces signals of the MFP PWB and another PWB.                                         |
| 17  | PCU PWB                                | Controls the engine section.                                                               |
| 18  | BD PWB                                 | Detects laser and outputs the synchronous signal.                                          |
| 19  | LD PWB                                 | Controls laser lighting.                                                                   |
| 20  | USB I/F PWB                            | USB I/F                                                                                    |



O. Rollers



| No. | Name                                       | Function/Operation                                                                                                                                                             |
|-----|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Paper feed roller (Manual paper feed tray) | Feeds paper to the paper transport section.                                                                                                                                    |
| 2   | Separation roller (Manual paper feed tray) | Separates paper to prevent Double Feed.                                                                                                                                        |
| 3   | Transport roller 10 (Drive)                | Transports paper from manual paper feed section to the transport roller 9.                                                                                                     |
| 4   | Transport roller 10 (Idle)                 | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 5   | Paper feed roller (Paper feed tray)        | Feeds paper to the paper transport section                                                                                                                                     |
| 6   | Paper pickup roller (Paper feed tray)      | Feeds paper to the paper feed roller.                                                                                                                                          |
| 7   | Separation roller (Paper feed tray)        | Separates paper to prevent double feeding                                                                                                                                      |
| 8   | Registration roller (Drive)                | Transports paper to the transfer section / controls the transport timing of paper and adjusts relative relations between the image and paper.                                  |
| 9   | Registration roller (Idle)                 | Apply a pressure to paper and the registration roller to provide the transport power of the transport roller to paper.                                                         |
| 10  | Transport roller 1 (Idle)                  | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 11  | Transport roller 1 (Drive)                 | Transports paper fed from the paper feed desk tray to the transport roller 4.                                                                                                  |
| 12  | Transport roller 2 (Drive)                 | Transports paper fed from the paper feed tray to the transport roller 3.                                                                                                       |
| 13  | Transport roller 2 (Idle)                  | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 14  | Transport roller 3                         | Transports paper from the transport roller 2 to the transport roller 4.                                                                                                        |
| 15  | Transport roller 4 (Idle)                  | Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.                                                         |
| 16  | Transport roller 4 (Drive)                 | Transports paper from the transport roller 1 and 3 to the transport roller 5.                                                                                                  |
| 17  | Transport roller 5 (Idle)                  | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 18  | Transport roller 5 (Drive)                 | Transports paper to the registration roller. Paper is buckled between the registration roller and this roller to correct the paper skew and relation between images and paper. |
| 19  | Transport roller 6 (Drive)                 | Transports paper transported from the fusing section to the paper exit section and the switchback section.                                                                     |
| 20  | Transport roller 6 (Idle)                  | Applies a pressure to paper and the transport roller to give the transport power of the transport roller to the paper.                                                         |
| 21  | Transport roller 7 (Idle)                  | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 22  | Transport roller 7 (Drive)                 | Transports paper transported from the switchback section to the transport roller 8.                                                                                            |
| 23  | Transport roller 8 (Idle)                  | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 24  | Transport roller 8 (Drive)                 | Transports paper transported from the transport roller 7 to the transport roller 9.                                                                                            |
| 25  | Transport roller 9 (Idle)                  | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.                                                            |
| 26  | Transport roller 9 (Drive)                 | Transports paper transported from the transport roller 8 to the transport roller 5.                                                                                            |
| 27  | Paper exit roller 3 (Drive)                | Transports paper to paper exit roller 2 or transport roller 7.                                                                                                                 |
| 28  | Paper exit roller 3 (Idle)                 | Applies a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper.                                                        |
| 29  | Paper exit roller 1 (Idle)                 | Apply a pressure to paper and paper exit roller to provide the transport power of the paper exit roller to paper.                                                              |
| 30  | Paper exit roller 1 (Drive)                | Transports paper to the left paper exit section.                                                                                                                               |
| 31  | Paper exit roller 2 (Idle)                 | Apply a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper.                                                          |
| 32  | Paper exit roller 2 (Drive)                | Discharges paper to the right paper exit tray.                                                                                                                                 |
| 33  | Fusing roller (Heating)                    | Heat and press toner onto paper to fuse images.                                                                                                                                |
| 34  | Fusing roller (Pressing)                   | Applies a pressure to the fusing roller.                                                                                                                                       |

## [4] ADJUSTMENTS AND SETTINGS

### 1. General

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

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

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

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

### 2. Adjustment item list

| Job No | Adjustment item list                                                                                           |                                             |                                                                                                                                                                                | Simulation |
|--------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| ADJ 1  | Adjust the developing unit                                                                                     | 1A                                          | Adjust the developing doctor gap                                                                                                                                               |            |
|        |                                                                                                                | 1B                                          | Adjust the developing roller main pole position                                                                                                                                |            |
|        |                                                                                                                | 1C                                          | Toner density control reference value setting                                                                                                                                  | 25-2       |
| ADJ 2  | Adjusting high voltage values                                                                                  | 2A                                          | Adjust the main charger grid voltage                                                                                                                                           | 8-2        |
|        |                                                                                                                | 2B                                          | Adjust the developing bias voltage                                                                                                                                             | 8-1        |
|        |                                                                                                                | 2C                                          | Transfer current and voltage adjustment                                                                                                                                        | 8-6        |
|        |                                                                                                                | 2D                                          | Transfer separation bias voltage adjustment                                                                                                                                    | 8-17       |
| ADJ 3  | Print engine image skew, image position, image magnification ratio, void area adjustments (Manual adjustments) | 3A                                          | Print engine image skew adjustment (LSU parallelism adjustment)                                                                                                                | 64-2       |
|        |                                                                                                                | 3B                                          | Print engine image magnification ratio adjustment (Main scanning direction)                                                                                                    | 50-10      |
|        |                                                                                                                | 3C                                          | Print engine print area (void area) adjustment                                                                                                                                 | 50-10/50-1 |
|        |                                                                                                                | 3D                                          | Print engine image off-center adjustment                                                                                                                                       | 50-10      |
| ADJ 4  | Scan image distortion adjustment (OC mode)                                                                     | 4A                                          | Scanner (reading) unit parallelism adjustment                                                                                                                                  |            |
|        |                                                                                                                | 4B                                          | Scan image sub scanning direction distortion adjustment                                                                                                                        |            |
|        |                                                                                                                | 4C                                          | Scan image main scanning direction distortion adjustment                                                                                                                       |            |
|        |                                                                                                                | 4D                                          | Scan image distortion adjustment (Whole scanner unit)                                                                                                                          |            |
| ADJ 5  | Scanner image skew adjustment (DSPF mode)                                                                      | 5A                                          | DSPF parallelism adjustment                                                                                                                                                    |            |
|        |                                                                                                                | 5B                                          | DSPF skew adjustment (Front surface mode)                                                                                                                                      | 64-2       |
|        |                                                                                                                | 5C                                          | DSPF skew adjustment (Back surface mode)                                                                                                                                       | 64-2       |
| ADJ 6  | Scan image focus adjustment                                                                                    | 6A                                          | Image focus adjustment (Document table mode/DSPF front surface mode)                                                                                                           | 48-1       |
|        |                                                                                                                | 6B                                          | Image focus adjustment (DSPF back surface mode)                                                                                                                                |            |
| ADJ 7  | Scan image magnification ratio adjustment (Manual adjustment)                                                  | 7A                                          | Main scanning direction image magnification ratio adjustment (Document table mode)                                                                                             | 48-1       |
|        |                                                                                                                | 7B                                          | Sub scanning direction image magnification ratio adjustment (Document table mode)                                                                                              | 48-1/48-5  |
|        |                                                                                                                | 7C                                          | Main scanning direction image magnification ratio adjustment (DSPF mode)                                                                                                       | 48-1       |
|        |                                                                                                                | 7D                                          | Sub scanning direction image magnification ratio adjustment (DSPF mode)                                                                                                        | 48-1       |
| ADJ 8  | Scan image off-center adjustment (Manual adjustment)                                                           | 8A                                          | Scan image off-center adjustment (Document table mode)                                                                                                                         | 50-12      |
|        |                                                                                                                | 8B                                          | Scan image off-center adjustment (DSPF mode)                                                                                                                                   | 50-12/50-6 |
| ADJ 9  | Print lead edge image position, void area adjustment (Printer mode)                                            |                                             |                                                                                                                                                                                | 50-5       |
| ADJ 10 | Copy image position, image loss, and void area adjustment (Manual adjustment)                                  | 10A                                         | Copy image position, image loss, void area adjustment (Document table mode)                                                                                                    | 50-1       |
|        |                                                                                                                | 10B                                         | Document scan position adjustment (DSPF mode scanner scan position adjustment)                                                                                                 | 53-8       |
|        |                                                                                                                | 10C                                         | Copy mode image loss adjustment (DSPF mode)                                                                                                                                    | 50-6       |
| ADJ 11 | Scanner calibration (CCD calibration)                                                                          | 11A                                         | CCD gamma adjustment (CCD calibration) (Document table mode)                                                                                                                   | 63-3/63-5  |
|        |                                                                                                                | 11B                                         | CCD gamma adjustment (CCD calibration) (DSPF mode)                                                                                                                             | 63-3       |
|        |                                                                                                                | 11C                                         | Shading adjustment (Calibration) (DSPF mode)                                                                                                                                   | 63-2       |
| ADJ 12 | Copy quality adjustment (Auto printer density and gradation adjustment)                                        | 12A                                         | Auto copy density and gradation adjustment, and auto printer density and gradation adjustment                                                                                  | 46-74      |
|        |                                                                                                                | 12B                                         | Manual copy density and gradation adjustment                                                                                                                                   | 46-16      |
|        |                                                                                                                | 12C                                         | Copy density in each copy mode (Overall density adjustment) (Normally unnecessary to adjust)                                                                                   | 46-2       |
|        |                                                                                                                | 12D                                         | Density and gradation adjustment in each copy mode (Normally not required)                                                                                                     | 46-10      |
|        |                                                                                                                | 12E                                         | Document background density reproducibility adjustment in the auto copy mode (Normally unnecessary to adjust)                                                                  | 46-32      |
|        |                                                                                                                | 12F                                         | Color document reproducibility adjustment in the copy mode (Normally unnecessary to adjust)                                                                                    | 46-37      |
|        |                                                                                                                | 12G                                         | Copy density and gradation adjustment (DSPF mode) (Individual adjustment of the low density area and the high density area)                                                    | 46-9       |
|        |                                                                                                                | 12H                                         | Copy density and gradation adjustment (RSPF mode) (Individual adjustment of the low density area and the high density area) (In the case of RSPF)                              | 46-9       |
|        |                                                                                                                | 12I                                         | Automatic copy and printer density and gradation adjustment by the user (Setting of ENABLE/DISABLE of the automatic copy density and gradation adjustment, and the adjustment) |            |
| ADJ 13 | Printer quality adjustment (Printer density and gradation adjustment)                                          | 13A                                         | Manual printer density and gradation adjustment                                                                                                                                | 67-25      |
| ADJ 14 | Automatic setting of exposure mode                                                                             | operating conditions in copy, scan, and FAX |                                                                                                                                                                                | 46-19      |
| ADJ 15 | Paper size detection adjustment                                                                                | 15A                                         | Manual paper feed tray paper width sensor adjustment                                                                                                                           | 40-2       |
|        |                                                                                                                | 15B                                         | DSPF/RSPF paper feed tray paper width sensor adjustment                                                                                                                        | 53-6       |
| ADJ 16 | Document size detection adjustment (Document table mode)                                                       | 16A                                         | Document size sensor detection point adjustment                                                                                                                                | 41-1       |
|        |                                                                                                                | 16B                                         | Adjust the sensitivity of the original size sensor                                                                                                                             | 41-2       |

| Job No | Adjustment item list                                                                                    |     |                                                                                                                                                                   | Simulation |
|--------|---------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| ADJ 17 | Touch panel coordinate setting                                                                          |     |                                                                                                                                                                   | 65-1       |
| ADJ 18 | Image lead edge position, image off-center, image magnification ratio adjustment (Automatic adjustment) | 18A | Print image main scanning direction image magnification ratio automatic adjustment (Document table mode)                                                          | 50-28      |
|        |                                                                                                         | 18B | Image off-center automatic adjustment (Each paper feed tray)                                                                                                      | 50-28      |
|        |                                                                                                         | 18C | Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment (Document table mode) | 50-28      |
|        |                                                                                                         | 18D | Copy image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment (DSPF mode)                                | 50-28      |
| ADJ 19 | Fusing paper guide position adjustment                                                                  |     |                                                                                                                                                                   |            |

### 3. Details of adjustment

#### ADJ 1 Adjust the developing unit

##### 1-A Adjust the developing doctor gap

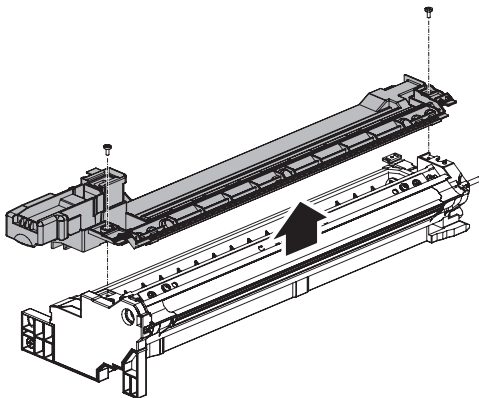
This adjustment is needed in the following situations:

- \* The developing unit has been disassembled.
- \* When the print image density is low.
- \* When there is a blur on the print image.
- \* When there is unevenness in the print image density.
- \* The toner is excessively dispersed.

NOTE: Be careful not to put fingerprints, oil, grease, or foreign materials on the roller during the work.

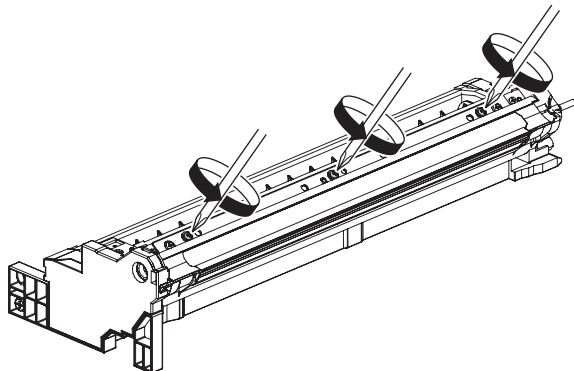
NOTE: Do not hold the adjacent section of the MG roller strongly.

- 1) Remove the developing unit from the main unit, and remove the developing unit upper cover.



NOTE: All DV material must be removed before beginning step 2.

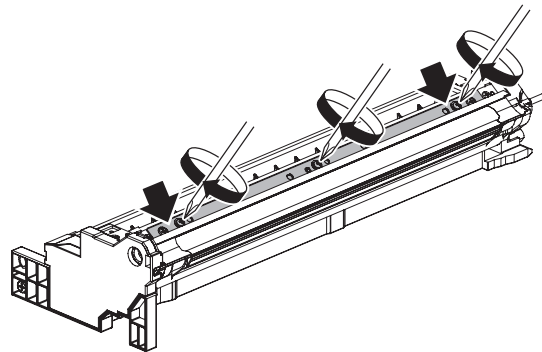
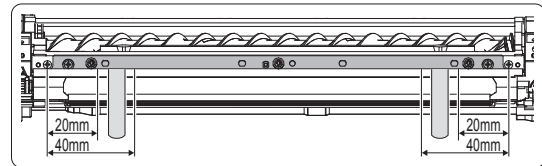
- 2) Loosen the developing doctor fixing screw.



- 3) Insert a thickness gauge of 0.65mm in between 20mm - 40mm from the edge of the developing doctor.
- 4) Push the developing doctor in the arrow direction, and tighten the fixing screw of the developing doctor. (Perform the similar procedure for the front frame and the rear frame.)

- 5) Check that the doctor gaps at two positions in 20mm - 40mm from the both sides of the developing doctor are in the range of 0.65 ± 0.02mm.

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



Note for use of a thickness gauge

- \* Do not insert the gauge diagonally.
- \* The gauge must pass freely.
- \* The advisable point of measurement is the MIN point of the MG roller oscillation.

##### 1-B Adjust the developing roller main pole position

This adjustment is needed in the following situations:

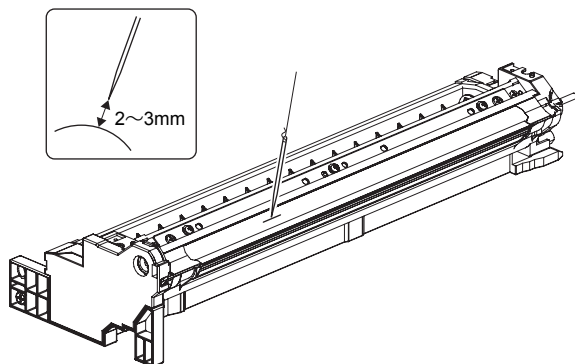
- \* The developing unit has been disassembled.
- \* When the print image density is low.
- \* When there is a blur on the print image.
- \* When there is unevenness in the print image density.
- \* The toner is excessively dispersed.

NOTE: Be careful not to put fingerprints, oil, grease, or foreign materials on the roller during the work.

- 1) Remove the developing doctor cover, and place the developing unit on a flat surface.

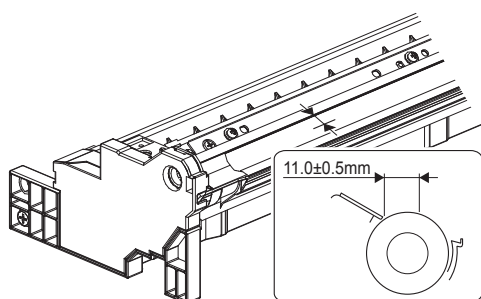
NOTE: All DV material must be removed before beginning step 2.

- 2) Attach a piece of string to a sewing needle or pin.
- 3) Hold the thread and bring the needle near the developing roller. (Do not use a paper clip because too heavy. It will not provide a correct position.)
- 4) Mark the developing roller surface on the extension line of the needle with the needle at 2 - 3mm from the developing roller surface. (Never touch the needle tip with the developing roller.)

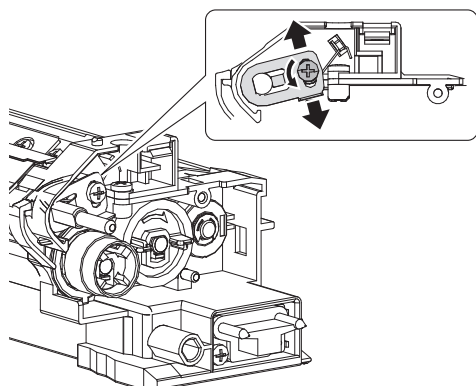


- 5) Measure the distance between the marking position and the doctor tip of the developing unit, and check that it is  $11.0 \pm 0.5\text{mm}$ .

If the distance is not within the above range, adjust the developing roller main pole position in the following procedures.



- 6) Remove the developing unit front cover, loosen the fixing screw of the developing roller main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



Repeat procedures 3) - 6) until the developing roller main pole position comes to the specified range.

- 7) After completion of the adjustment of the developing roller main pole position, fix the developing roller main pole adjustment plate with the fixing screw.

## 1-C Toner density control reference value setting

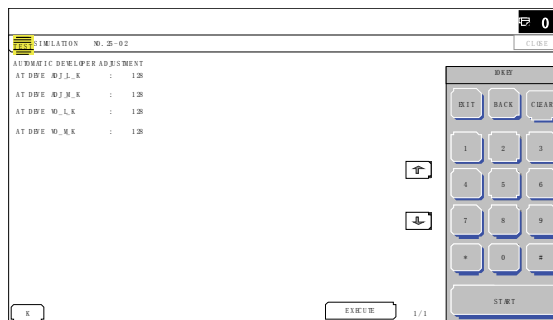
This adjustment is needed in the following situations:

- \* When developer is replaced.

NOTE: Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.

- 1) With the front cabinet open, enter SIM 25-2.

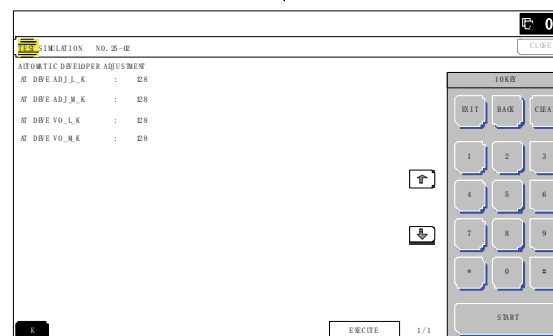
When setting the toner density control reference value, pull out the toner cartridge in advance.



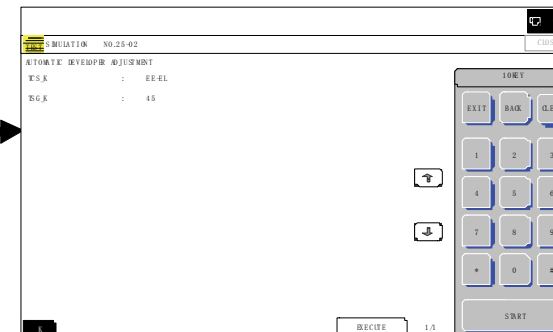
- 2) Close the front cabinet and press [EXECUTE] button.



Adjustment completed



Abnormal end



- 3) After completion of the adjustment of the toner density control reference value, insert the toner cartridge.

- 4) Close the front cabinet.
- 5) When [EXECUTE] key is pressed, it is highlighted. The developing roller rotates, and the toner density sensor detects toner density, and the output value is displayed. The above operation is executed for 2 minutes, and the average value of the toner density sensor detection level is set (saved) as the reference toner density control value. When the reference toner density control adjustment operation is completed, [EXECUTE] key returns to normal from highlight. This makes known about whether the adjustment operation is completed or not.

**NOTE:**

If the operation is interrupted within 2 minutes, the adjustment result is not reflected. When [EXECUTE] key is pressed during rotation, the operation is stopped and [EXECUTE] key returns to the normal display. If [EE-EU], [EE-EL] or [EE-EC] is displayed, setting of the reference toner density control value is not completed normally.

| Error display | Content        | Details of content                                                          |
|---------------|----------------|-----------------------------------------------------------------------------|
| EE-EL         | EL abnormality | Sensor output level less than 77, or sensor control voltage level over 207  |
| EE-EU         | EU abnormality | Sensor output level over 177, or sensor control voltage level less than 52  |
| EE-EC         | EC abnormality | Sensor output level less than 125, or sensor control voltage level over 131 |

**NOTE:** When not replacing the developer, do not execute SIM25-2.

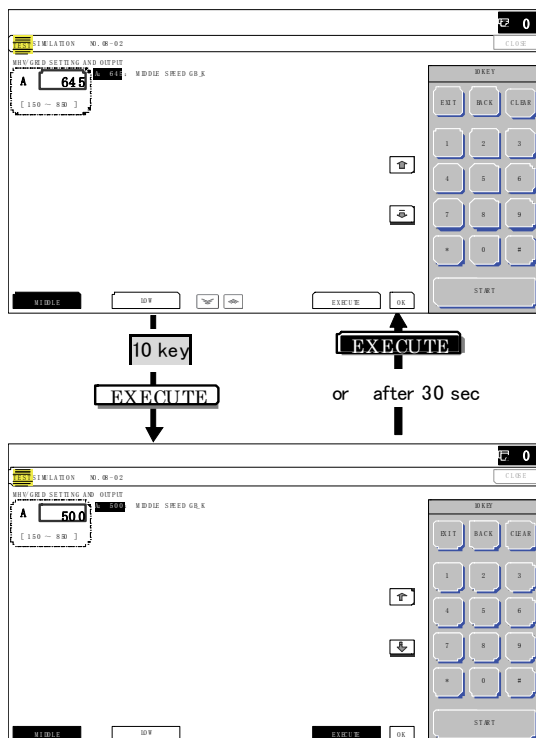
## ADJ 2 Adjusting high voltage values

### 2-A Adjust the main charger grid voltage

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 an output mode and an item to be adjusted.

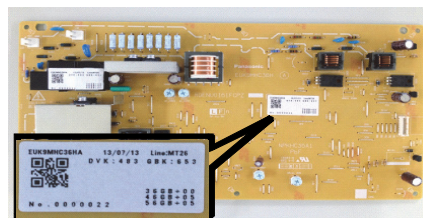
| Item/Display | Content           | Setting range                             | Actual voltage |              |                  |
|--------------|-------------------|-------------------------------------------|----------------|--------------|------------------|
|              |                   |                                           | 36             | 46           | 56               |
| MIDDLE       | MIDDLE SPEED GB_K | Charging/grid bias set value<br>150 - 850 | -665V<br>±5V   | -665V<br>±5V | -<br>665V<br>±5V |
| LOW          | LOW SPEED GB_K    | Charging/grid bias set value<br>150 - 850 | -665V<br>±5V   | -665V<br>±5V | -665V<br>±5V     |

- 3) Enter the adjustment value (specified value) in the middle speed mode and press [OK] key.

Enter the adjustment value of each mode which is specified on the label attached on the high voltage power PWB.

GBK: XXX

The default values specified for each model must be changed as follows. 46cpm/56cpm machine: +5



**Important**

Note that the adjustment value may differ depending on the high voltage power PWB. Since the adjustment value label is attached on the high voltage PWB, the PWB must be removed in order to check the adjustment value. This is a troublesome procedure. Therefore, it is advisable to put down the adjustment value in advance. When the adjustment value (specified value) of the middle speed mode is set, the adjustment values of the other modes are automatically set according to the middle speed mode setting in a certain relationship.

**Important**

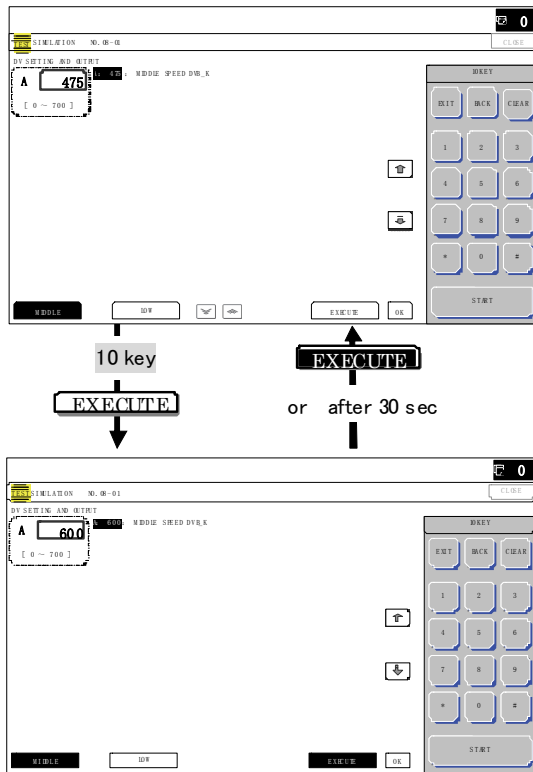
Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

### 2-B Adjust the developing bias voltage

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 8-1 mode.



- 2) Select an output mode and an item to be adjusted.

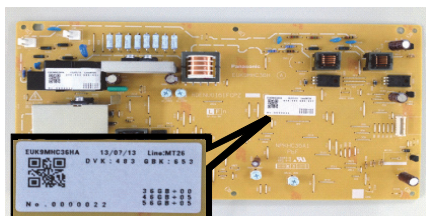
| Item/Display |   |                    | Content                   | Setting range | Default value |    |    |
|--------------|---|--------------------|---------------------------|---------------|---------------|----|----|
| MID DLE      | A | MIDDLE SPEED DVB_K | Developing bias set value | 0 - 700       | 36            | 46 | 56 |
| LOW          | A | LOW SPEED DVB_K    | Developing bias set value | 0 - 700       | -475V±5V      |    |    |
|              |   |                    |                           |               | -475V±5V      |    |    |

- 3) Enter the adjustment value (specified value) in the middle speed mode and press [OK] key.

Enter the adjustment value of each mode which is specified on the label attached on the high voltage power PWB.

GBK: XXX

The default value s specified for each model must be changed as follows. 46cpm/56cpm machine: +5



**Important**

Note that the adjustment value may differ depending on the high voltage power PWB. Since the adjustment value label is attached on the high voltage PWB, the PWB must be removed in order to check the adjustment value. This is a troublesome procedure. Therefore, it is advisable to put down the adjustment value in advance.

**Important**

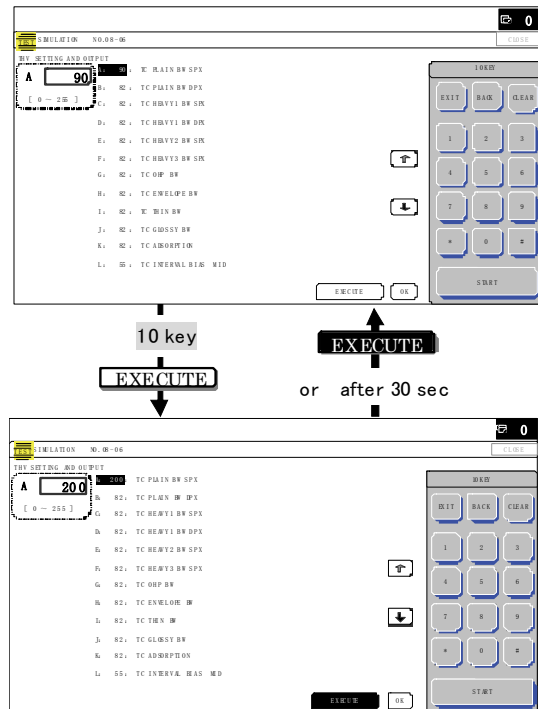
Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

## 2-C Transfer current and 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 8-6 mode.



- 2) Select a mode to be adjusted with scroll key.
- 3) Enter the adjustment value (specified value) and press [OK] key. By setting the default value the specified voltage is out-putted.

| Item/Display |                  | Content                                       | Setting range | Default value |        |        |
|--------------|------------------|-----------------------------------------------|---------------|---------------|--------|--------|
|              |                  |                                               |               | 36 cpm        | 46 cpm | 56 cpm |
| A            | TC PLAIN BW SPX  | Transfer current standard paper front surface | 0 - 255       | 90            | 107    | 111    |
| B            | TC PLAIN BW DPX  | Transfer current standard paper back surface  | 0 - 255       | 82            | 94     | 99     |
| C            | TC HEAVY1 BW SPX | Transfer current heavy paper front surface    | 0 - 255       | 82            | 82     | 82     |
| D            | TC HEAVY1 BW DPX | Transfer current heavy paper back surface     | 0 - 255       | 82            | 82     | 82     |
| E            | TC HEAVY2 BW SPX | Transfer current heavy paper2                 | 0 - 255       | 82            | 82     | 82     |
| F            | TC HEAVY3 BW SPX | Transfer current heavy paper3                 | 0 - 255       | 82            | 82     | 82     |
| G            | TC OHP BW        | Transfer current OHP                          | 0 - 255       | 82            | 82     | 82     |
| H            | TC ENVELOPE BW   | Transfer current envelope                     | 0 - 255       | 82            | 82     | 82     |
| I            | TC THIN BW       | Transfer current thin paper                   | 0 - 255       | 82            | 82     | 82     |
| J            | TC GLOSSY BW     | Transfer current glossy paper                 | 0 - 255       | 82            | 82     | 82     |



| Item/Display | Content              | Setting range                               | Default value |        |        |
|--------------|----------------------|---------------------------------------------|---------------|--------|--------|
|              |                      |                                             | 36 cpm        | 46 cpm | 56 cpm |
| K            | TC ADSORPTION BW     | Transfer current adsorption process         | 0 - 255       | 82     | 94     |
| L            | TC INTERVAL BIAS MID | Transfer current between paper middle speed | 0 - 255       | 55     | 55     |
| M            | TC INTERVAL BIAS LOW | Transfer current between paper low speed    | 0 - 255       | 55     | 55     |
| N            | TC BACKEND           | Transfer bias backend                       | 0 - 255       | 73     | 77     |
| O            | TCCLEANING           | Transfer cleaning bias                      | 0 - 255       | 160    | 160    |
| P            | TC CLEANING PROCON   | Transfer cleaning bias procon               | 0 - 255       | 160    | 160    |

## 2-D Transfer separation bias voltage adjustment

This adjustment is needed in the following situations:

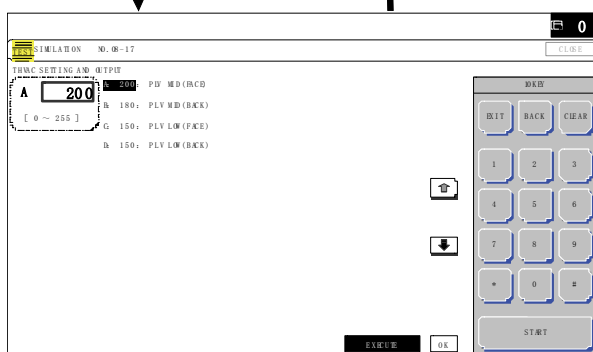
- \* When the high voltage PWB is replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 8-17 mode.



10 key  
EXECUTE

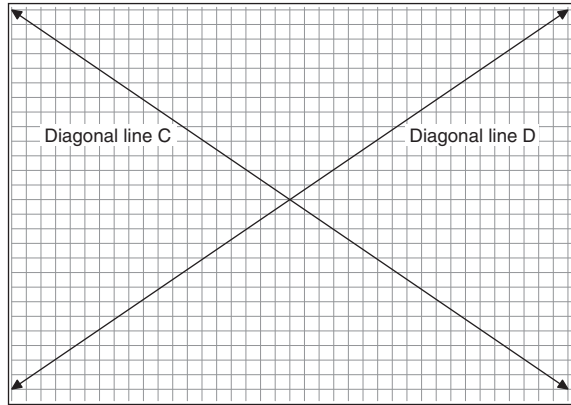
or after 30 sec





### (Method 1)

- a) Measure the length of the diagonal lines of the rectangle print pattern.



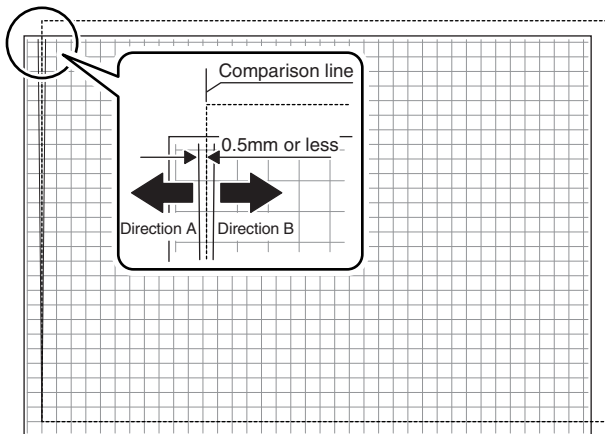
- b) Calculate the difference between the measured lengths C and D of the diagonal lines.

- c) Check to insure that the difference between C and D is in the following range.  $C - D = \pm 0.8\text{mm}$

If the difference between C and D is in the above range, there is no need to adjust.

### (Method 2)

- a) Fit the side of A3 or 11" x 17" paper to the long side of the rectangle print pattern.

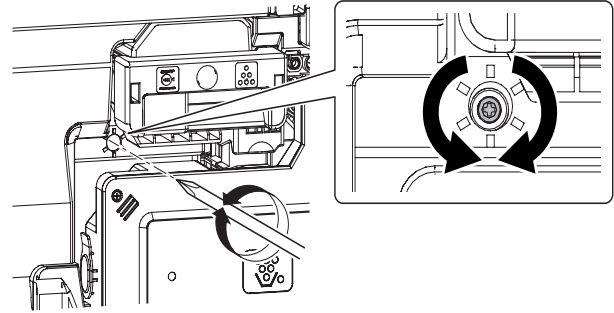


- b) Measure the shift distance between vertical side of paper and side of the rectangle print pattern.

If the above distance is 0.5mm or less, there is no need to adjust.

If not, execute the following procedures.

- 6) Open the front cover.  
7) Adjust the print image distortion adjustment screw to set the print image distortion to the minimum.



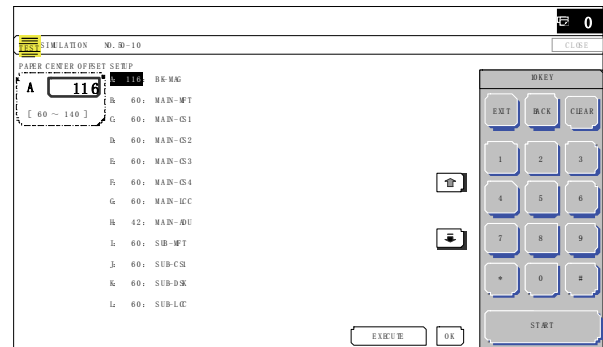
- 8) Execute procedures 4) and 5).  
(Repeat procedures 4), 5) and 7) until a satisfactory result is obtained.)

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

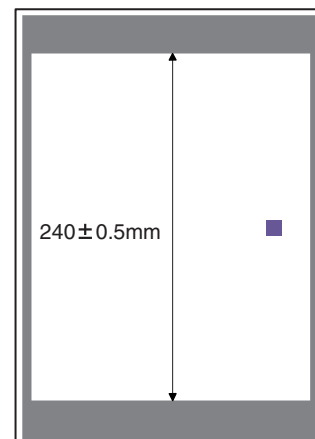
This adjustment is needed in the following situations:

- \* When the LSU (writing) unit 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 50-10 mode.



- 2) Set A4 (11" x 8.5") paper in the paper feed tray.  
3) Select the paper feed tray set in procedure 2) with the scroll key.  
4) Press [EXECUTE] key.  
The check pattern is printed out.  
5) 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.

- 6) 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 BK image magnification ratio in the main scanning direction is increased. When the set value is decreased, the BK image magnification ratio in the main scanning direction is decreased.
- Repeat procedures 2) - 6) until a satisfactory result is obtained.

### 3-C Print engine print area (void area) adjustment

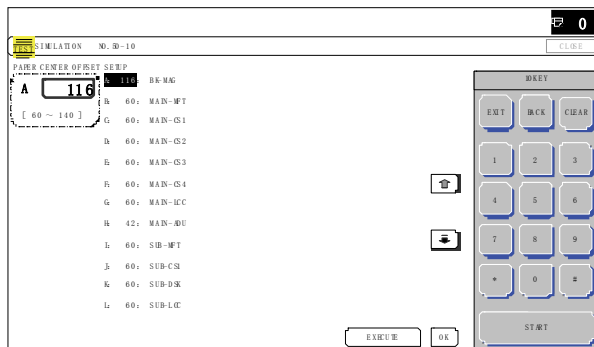
This adjustment is needed in the following situations:

- \* When the LSU is replaced or removed.
- \* When a paper tray is replaced.
- \* When the paper tray section is disassembled.
- \* When the manual feed tray is replaced.
- \* When the manual feed tray is disassembled.
- \* When the duplex section is disassembled.
- \* When the duplex section is installed or replaced.
- \* When the large capacity paper feed tray is installed or replaced.
- \* When the large capacity paper feed tray section is disassembled.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

(Note)

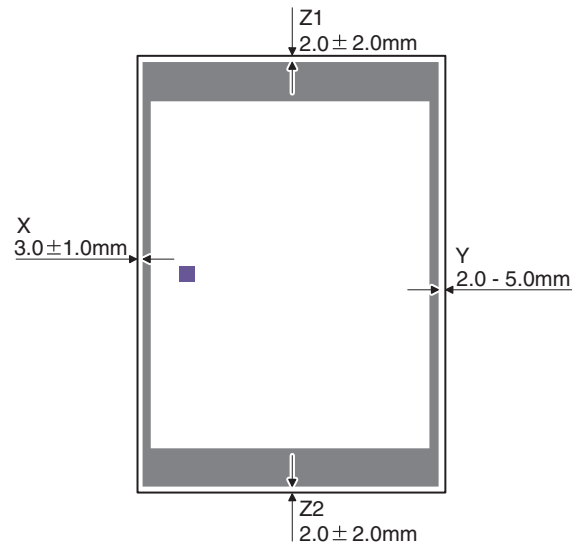
Before executing this adjustment, be sure to execute ADJ 3B print engine image magnification ratio adjustment (Main scanning direction) in advance.

- 1) Enter the SIM 50-10 mode.



- 2) Set A4 (11" x 8.5") paper to all the trays, and select the set item J with the scroll key. Enter the value corresponding to the adjustment target paper feed tray.
- 3) Press [EXECUTE] key.
- The adjustment pattern is printed.
- 4) Check the adjustment pattern to confirm that the items below are in the range of the standard values.

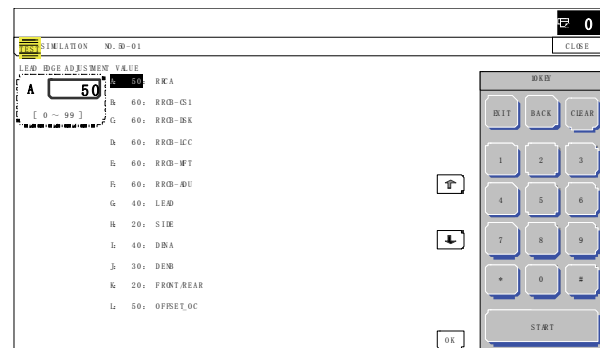
|       | Content              | Standard adjustment value |
|-------|----------------------|---------------------------|
| X     | Lead edge void area  | 3.0 ± 1.0mm               |
| Y     | Rear edge void area  | 2.0 - 5.0mm               |
| Z1/Z2 | FRONT/REAR void area | 2.0 ± 2.0mm               |



If the above condition is not satisfied, or if it is set to a desired condition, execute the simulation 50-1.

(Note) Feed paper from all the paper feed trays to confirm.

- 5) Enter the SIM 50-1 mode.



- 6) Select the adjustment item I, J, K with the scroll key, and enter the adjustment value and press [OK] key.

| Item/Display |                                 |                       | Content                                                |                                | Setting range | Default value |    |
|--------------|---------------------------------|-----------------------|--------------------------------------------------------|--------------------------------|---------------|---------------|----|
| A            | Lead edge adjust-ment value     | RRCA                  | Document lead edge reference position (OC)             |                                | 0 - 99        | 50            |    |
| B            |                                 | RRCB-CS1              | Resist motor ON timing adjust-ment                     | Standard Tray                  | 1 - 99        | 60            |    |
| C            |                                 | RRCB-DSK              |                                                        | Desk                           | 1 - 99        | 60            |    |
| D            |                                 | RRCB-LCC              |                                                        | LCC                            | 1 - 99        | 60            |    |
| E            |                                 | RRCB-MFT              |                                                        | Manual paper feed              | 1 - 99        | 60            |    |
| F            |                                 | RRCB-ADU              |                                                        | ADU                            | 1 - 99        | 60            |    |
| G            | Image loss area setting value   | LEAD                  | Lead edge image loss area setting                      |                                | 0 - 99        | 40            |    |
| H            |                                 | SIDE                  | Side image loss area adjustment                        |                                | 0 - 99        | 20            |    |
| I            |                                 | Void area adjust-ment | DENA                                                   | Lead edge void area adjustment |               | 1 - 99        | 40 |
| J            |                                 |                       | DENB                                                   | Rear edge void area adjustment |               | 1 - 99        | 30 |
| K            | FRONT/ REAR                     |                       | FRONT/REAR void area adjustment                        |                                | 1 - 99        | 20            |    |
| L            | Off-center adjust-ment          | OFFSET_ OC            | OC document off-center adjustment                      |                                | 1 - 99        | 50            |    |
| M            | Magnifi-cation ratio correction | SCAN_ SPEED_OC        | SCAN sub scanning magnification ratio adjustment (CCD) |                                | 1 - 99        | 50            |    |

| Item/Display |                                                    |          | Content                      | Setting range | Default value |
|--------------|----------------------------------------------------|----------|------------------------------|---------------|---------------|
| N            | Sub scanning direction print area correction value | DENB-MFT | Manual feed correction value | 1 - 99        | 50            |
| O            |                                                    | DENB-CS1 | Tray 1 correction value      | 1 - 99        | 50            |
| P            |                                                    | DENB-CS2 | Tray 2 correction value      | 1 - 99        | 50            |
| Q            |                                                    | DENB-CS3 | Tray 3 correction value      | 1 - 99        | 50            |
| R            |                                                    | DENB-CS4 | Tray 4 correction value      | 1 - 99        | 50            |
| S            |                                                    | DENB-LCC | LCC correction value         | 1 - 99        | 50            |
| T            |                                                    | DENB-ADU | ADU correction value         | 1 - 99        | 50            |
| U            |                                                    | DENB-HV  | Heavy paper correction value | 1 - 99        | 50            |

When the adjustment value is increased, the void area is increased. When the adjustment value is decreased, the void area is decreased.

When the adjustment value is changed by 1, the void area is changed by 0.1mm.

NOTE: The adjustment value and the actual void area are related as follows:

Adjustment value/10 = Actual void area

NOTE: When the amount of the rear edge void is different between each paper feed tray, change the adjustment value of item N, O, P, Q, R, S, T (DENB-XXX) in SIM50-1 and adjust.

The adjustment item J (DENB) have a effect on the paper of all paper feed tray.

That is, adjustment value of item N, O, P, Q, R, S, T (DENB-XXX) fine adjusts to adjustment item J (DENB) for each paper tray.

After execution of the above, perform procedures 1) - 4) to check that the void area is within the specified range.

Though the lead edge void area adjustment value is proper, if the lead edge void area is not within the specified range, change the adjustment value of RRCB-XXX (item B, C, D, E, F) of SIM 50-1.

Repeat the above procedures until a satisfactory result is obtained.

### 3-D Print engine image off-center adjustment

This adjustment is needed in the following situations:

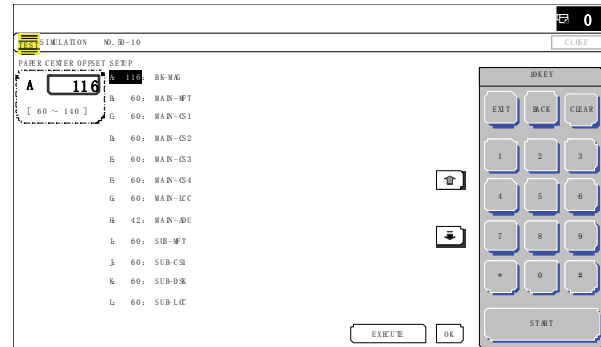
- \* When the LSU is replaced or removed.
- \* When a paper tray is replaced.
- \* When the paper tray section is disassembled.
- \* When ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction) is performed.
- \* When the manual feed tray is replaced.
- \* When the manual feed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

(Note)

Before execution of this adjustment, check to insure the following item.

- \* Check that the ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction) has been properly adjusted.

- 1) Enter SIM 50-10 mode.



- 2) Use the scroll key to select a paper feed tray which is to be adjusted. (Items B - H)

| Item/Display |             | Content |                                                                                                                                                                                                                       | Setting range     |          | Default value |         |
|--------------|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|---------------|---------|
| A            | BK-MAG      |         | Main scan print magnification ratio BK                                                                                                                                                                                |                   | 60 - 140 |               | 116     |
| B            | MAIN-MFT    |         | Print off center adjustment value (Manual paper feed)                                                                                                                                                                 |                   | 1 - 99   |               | 60      |
| C            | MAIN-CS1    |         | Print off center adjustment value (Tray 1)                                                                                                                                                                            |                   | 1 - 99   |               | 60      |
| D            | MAIN-CS2    |         | Print off center adjustment value (Tray 2)                                                                                                                                                                            |                   | 1 - 99   |               | 60      |
| E            | MAIN-CS3    |         | Print off center adjustment value (Tray 3)                                                                                                                                                                            |                   | 1 - 99   |               | 60      |
| F            | MAIN-CS4    |         | Print off center adjustment value (Tray 4)                                                                                                                                                                            |                   | 1 - 99   |               | 60      |
| G            | MAIN-LCC    |         | Print off center adjustment value (LCC)                                                                                                                                                                               |                   | 1 - 99   |               | 60      |
| H            | MAIN-ADU    |         | Print off center adjustment value (ADU)<br>NOTE:<br>Before execution of this adjustment check to insure that the adjustment items A - G have been properly adjusted. If not, this adjustment cannot be made properly. |                   | 1 - 99   |               | 50      |
| I            | SUB-MFT     |         | Registration motor ON<br>Timing adjustment                                                                                                                                                                            | Manual paper feed | 1 - 99   |               | 50      |
| J            | SUB-CS1     |         |                                                                                                                                                                                                                       | Standard tray     | 1 - 99   |               | 50      |
| K            | SUB-DSK     |         |                                                                                                                                                                                                                       | DESK              | 1 - 99   |               | 50      |
| L            | SUB-LCC     |         |                                                                                                                                                                                                                       | LCC               | 1 - 99   |               | 50      |
| M            | SUB-ADU     |         |                                                                                                                                                                                                                       | ADU               | 1 - 99   |               | 50      |
| N            | MULTI COUNT |         | Number of print                                                                                                                                                                                                       |                   | 1 - 999  |               | 1       |
| O            | PAPER       | MFT     | Tray selection                                                                                                                                                                                                        | Manual paper 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             |         |
| P            | DUPLEX      | YES     | Duplex print selection                                                                                                                                                                                                | Yes               | 0 - 1    | 0             | 1 (NO)  |
|              |             | NO      |                                                                                                                                                                                                                       | No                |          | 1             |         |

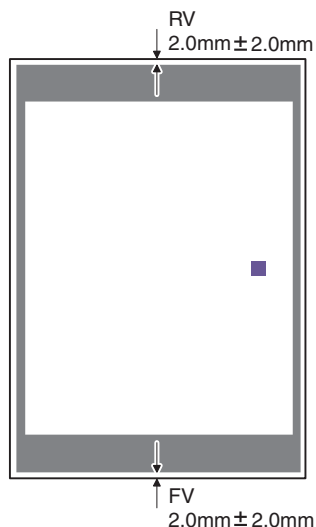
- 3) Set A4 (11" x 8.5") paper in the paper feed tray selected in procedure 2).

- 4) Press [EXECUTE] key.

The adjustment pattern is printed.

- 5) Check that the adjustment pattern image is printed in the correct position.

Measure the dimension of the void area in the front and the rear frame direction of the adjustment pattern, and check that all the following conditions are satisfied.



RV: REAR VOID AREA

FV: FRONT VOID AREA

RV + FV □ 4.0mm

RV = 2.0 □ 2.0mm

FV = 2.0 □ 2.0mm

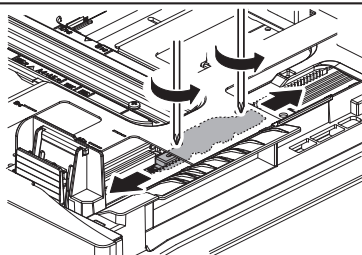
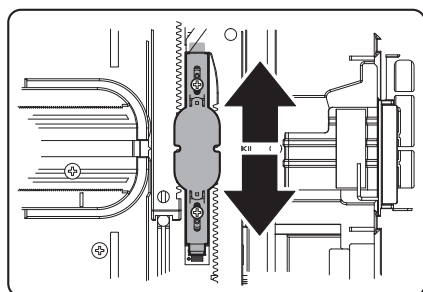
If the above requirement is not met, do the following steps.

- 6) Change the adjustment value.

Enter the adjustment value and press the [OK] key or the [EXECUTE] key.

When [EXECUTE] key is pressed, the adjustment pattern is printed. When the adjustment value is increased, the adjustment pattern is shifted to the front frame side. When it is decreased, the adjustment pattern is shifted to the rear frame side. When the set value is changed by 1, the shift distance is changed by about 0.1mm. Repeat procedures 3) - 6) until the conditions of procedure 5) are satisfied. In case a satisfactory result cannot be obtained by repeating the above procedures, perform the following procedure.

- 7) Loosen the paper feed tray off-center adjustment screws (2 pcs.) at the center section of the lift plate of the paper feed tray, and change the gear unit position in the front/rear frame direction. Repeat the adjustment procedures from 4).



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

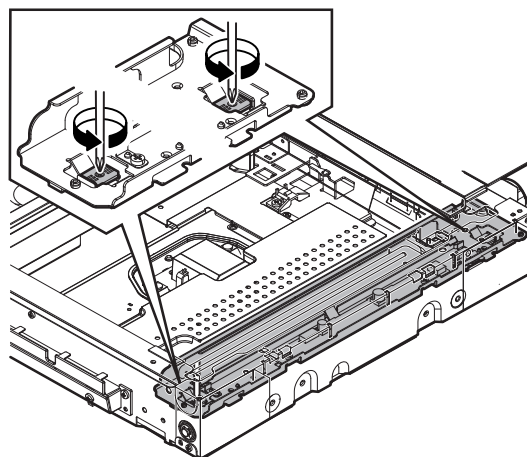
This adjustment is needed in the following situations:

- \* When the scanner (reading) section is disassembled.
- \* When the copy image is distorted.

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

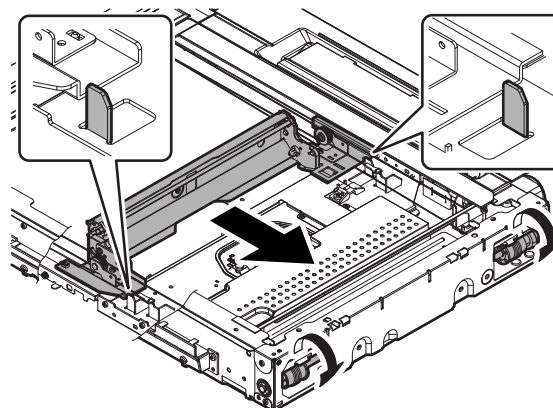
Before execution of this adjustment, remove the document table glass.

- 1) Remove the LED lamp unit, and then loosen the screws which are fixing the scanner unit A and the drive wire. Release the scanner unit A from the drive wire.



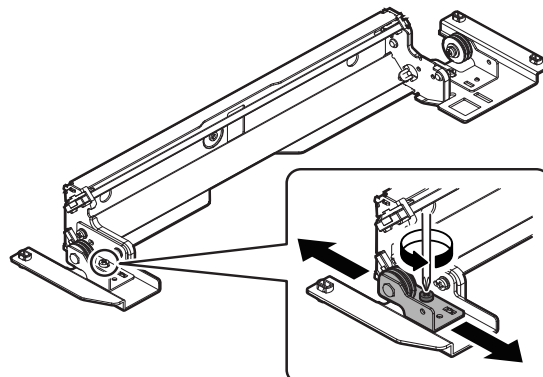
- 2) Turn the scanner drive pulley manually and shift the scanner unit B to bring it into contact with the stopper.

When the scanner unit B is in contact with the two stoppers on the front and the rear frames simultaneously, the parallelism is proper.



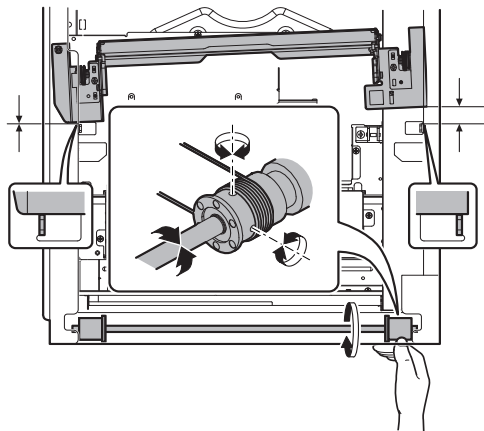
If this requirement is not met, do the following steps.

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

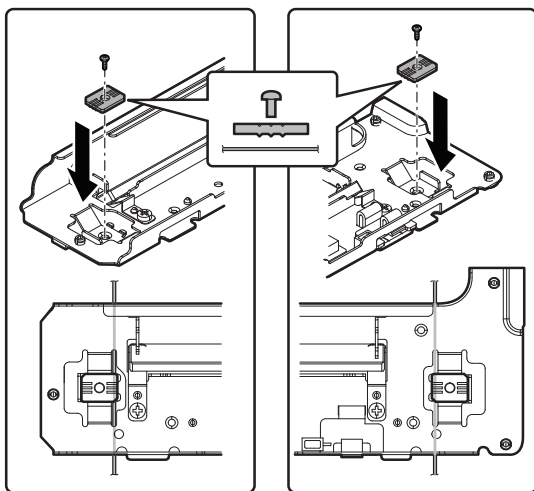


- 4) Adjust the position of the pulley angle on the front frame side of the scanner unit B so that it is in contact with two stoppers on the front and the rear frames simultaneously.
- 5) Fix the pulley angle on the front frame side of the scanner unit B. If a satisfactory result is not obtained from the above procedures, perform the following procedures. Loosen the fixing screw of the scanner unit drive pulley which is not in contact.

Without moving the scanner unit drive shaft, turn the scanner unit drive pulley manually and adjust so that the scanner unit B is in contact with both stoppers on the front frame and the rear frame simultaneously. (Change the relative position of the scanner unit drive pulley and the drive shaft.) Fix the scanner unit drive pulley fixing screw.

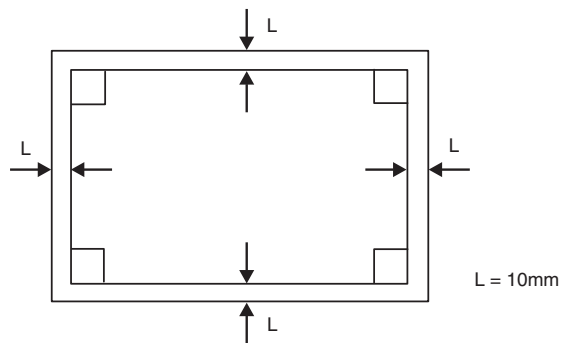


- 6) With the scanner unit B in contact with both stoppers, fit the edge of the scanner unit A with the right edge of the frame, and fix the scanner unit A with the fixing screw.

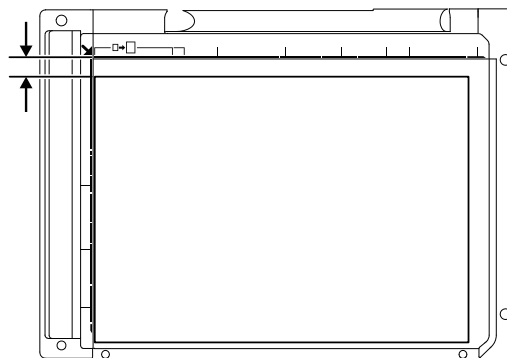


#### 4-B Scan image sub scanning direction distortion adjustment

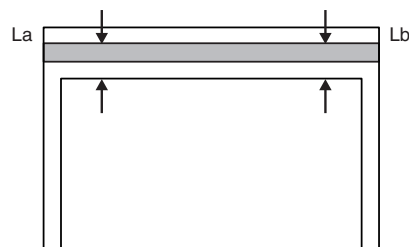
- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



- 2) Set the test chart prepared in the procedure 1) on the document table. (Shift the test chart edge 30mm from the reference position as shown below.) With the document cover open, make a copy on A3 (11" x 17") paper.

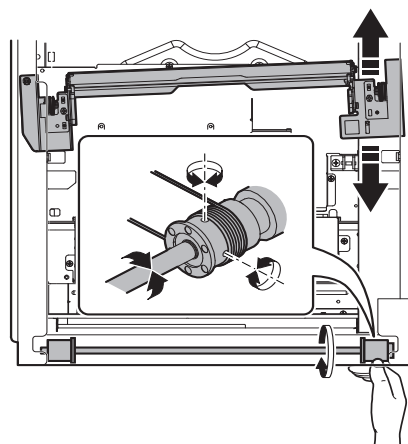


- 3) Check for distortion in the sub scanning direction. If  $L_a = L_b$ , there is no distortion.



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

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

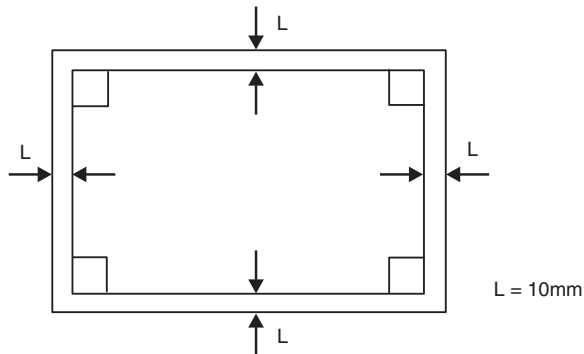


- 5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to change the parallelism of the scanner unit A and B. (Change the relative position of the scanner unit drive pulley and the drive shaft.)
- 6) Tighten the scanner unit drive pulley fixing screw.

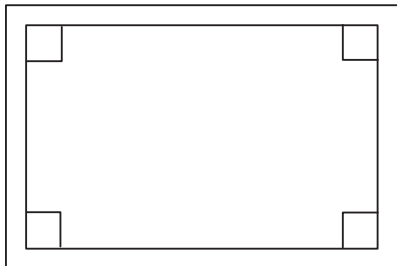
Repeat the procedures 2) - 6) until the condition of the procedure 3) is satisfied. If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform ADJ 4D Scan image distortion adjustment (Whole scanner unit).

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

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

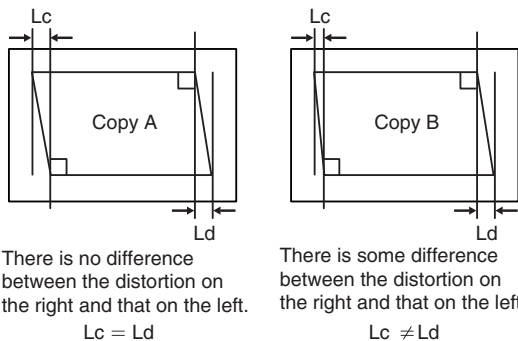


- 2) Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11" x 17") paper.
- 3) Check for distortion in the main scanning direction.  
If the four angles of the rectangle of the copy image are right angles, it is judged that there is no distortion. (The work is completed.)



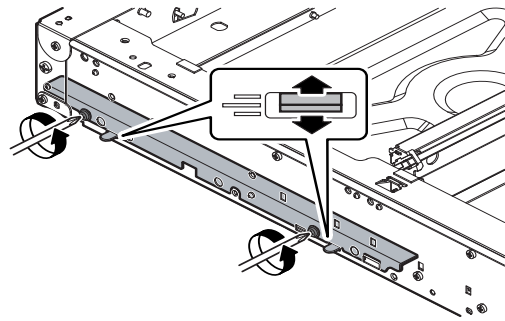
If there is any distortion in the main scanning direction, perform the following procedure.

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



If  $L_c = L_d$ , the distortion on the left is equal to that on the right. (The distortions are balanced.) If the above condition is satisfied, go to the procedure 6). If not, perform the following procedures.

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



Remove the lower cabinet of the operation panel. Loosen the scanner rail fixing screw to change the balance between the right and the left heights of the scanner rail. Repeat the procedures 2) - 5) until the difference between the image distortions (distortion balance) is deleted.

- 6) Without changing the balance of the scanner rail on the front frame side, change the overall height.
- 7) Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11" x 17") paper. Check that the distortion in the main scanning direction is within the specified range. Repeat the procedures 6) and 7) until the distortion in the main scanning direction is in the specified range.

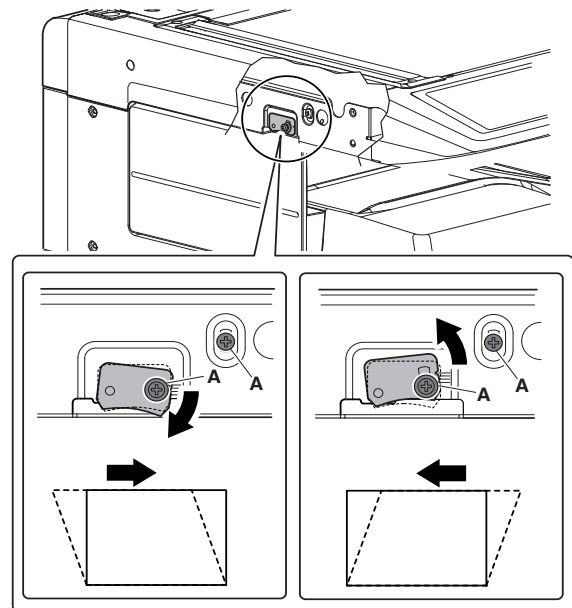
If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform ADJ 4D Scan image distortion adjustment (whole scanner unit).

#### 4-D Scan image distortion adjustment (Whole scanner unit)

This adjustment is executed when scan image distortion cannot be adjusted with ADJ 4A, ADJ 4B, and ADJ 4C related to the scan image distortion adjustment.

Change the upper and lower positions of the scanner unit distortion adjustment plate on the right edge of the scanner unit so that the scan image distortion is minimized. By adjusting the distortion of the whole scanner unit, the scan image distortion is adjusted.

- 1) Loosen the fixing screw (A).
- 2) Adjust the scanner unit distortion adjustment plate.





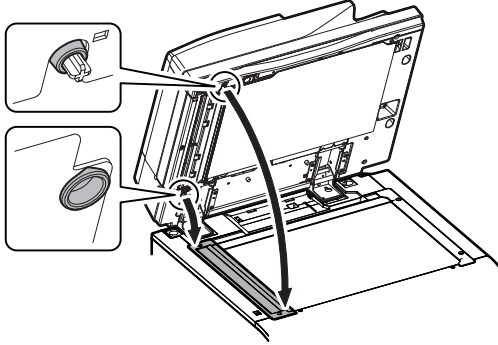
## ADJ 5 Scanner image skew adjustment (DSPF model)

### 5-A DSPF parallelism adjustment

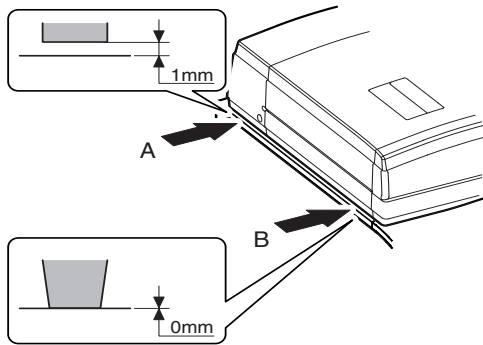
This adjustment must be performed in the following cases:

- \* The DSPF section has been disassembled.

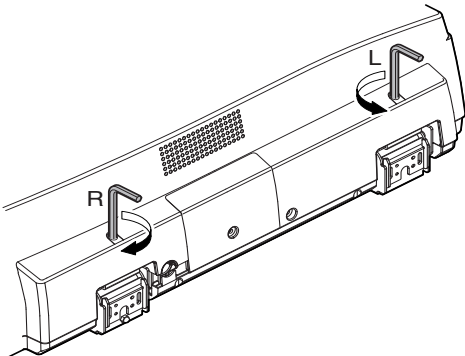
Cut copy paper in the longitudinal direction.



- 2) Visually check to insure that the clearance A is 1mm or less and the clearance B is 0mm (in contact). If the above requirement is not met, do step 3).



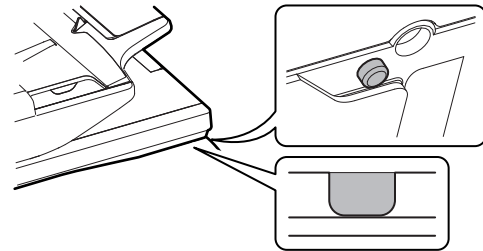
- 3) Turn the height adjustment screw to adjust the DSPF front/rear frame horizontal level.



When the front frame side is higher (there is a clearance in B): Turn the height adjustment screw R of the DSPF rear frame clockwise. When the rear frame side is higher (clearance A is more than 1mm): Turn the height adjustment screw L of the DSPF rear frame counterclockwise. Repeat steps 2) to 3) until an acceptable result is obtained.

- 4) After adjustments of A and B, check to insure that the projection on the front right side is in contact with the glass surface of the main unit.

- \* The DSPF unit has been replaced.
  - \* When a DSPF JAM is generated.
  - \* When a skew is generated in the document feed operation.
  - \* When there is a distortion (skew) in the scan image in the DSPF unit.
- 1) Close the DSPF unit and check the clearance between the projections in the front side and the rear side and the SPF glass holding resin surface.



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

This adjustment must be performed in the following cases:

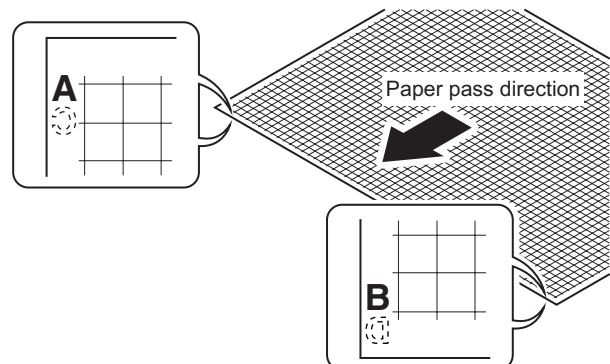
- \* The DSPF section has been disassembled.
- \* When replacing the DSPF unit.
- \* The DSPF unit generates skewed scanned images.

- 1) Make an adjustment chart by printing in duplex mode the self-print pattern (grid pattern) specified in Simulation 64-2.

SIM 64-2 set values

A = 1, B = 1, C = 254, D = 255

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



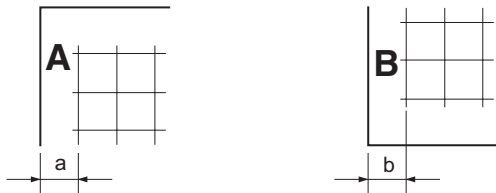
- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

\* Check with one of the following methods.

[Check Method 1]

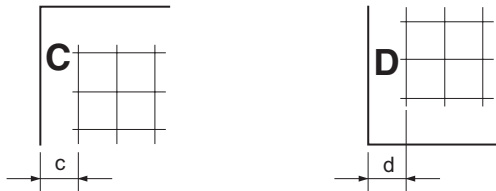
(Front side)

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



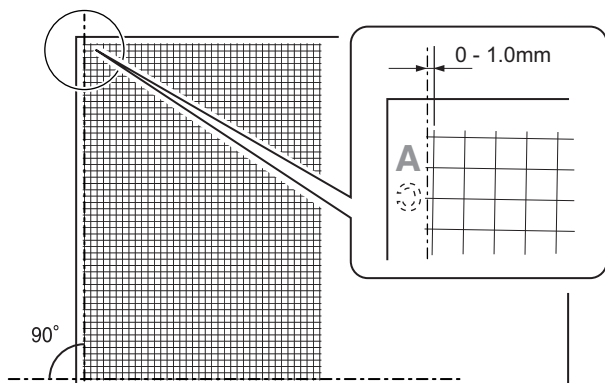
(Back side)

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



[Check Method 2]

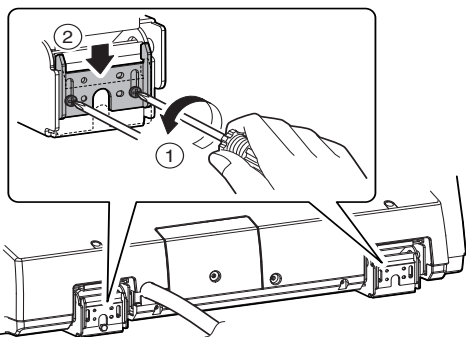
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



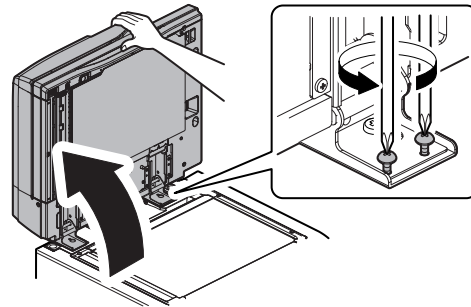
If the front surface copy image is as shown above and the back surface copy is not as shown above, go to the step 3) of "ADJ 5C DSPF skew adjustment (Back surface mode)".

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

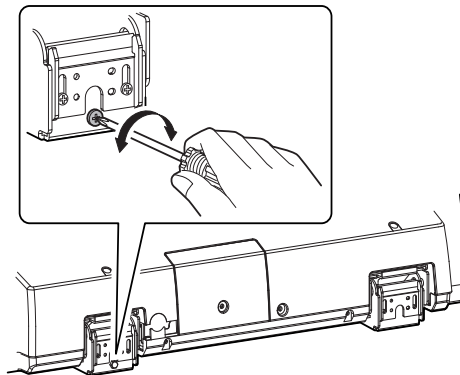
- 3) Loosen the hinge screws and lower the two attachments.



- 4) Open the DSPF unit and loosen the screw.



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



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

This adjustment is needed in the following situations:

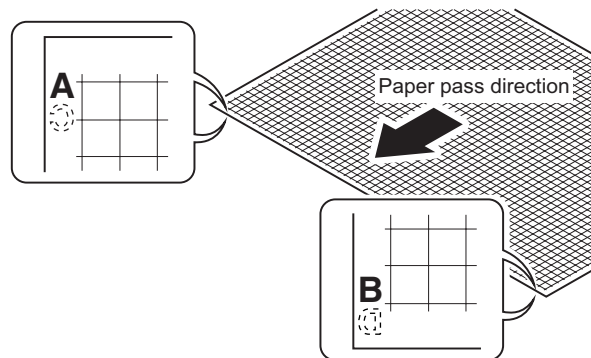
- \* The DSPF section has been disassembled.
- \* When replacing the DSPF unit.
- \* The DSPF unit generates skewed scanned images.

- 1) Create an adjustment chart by printing in duplex mode the self-print pattern (grid pattern) specified in Simulation 64-2.

SIM 64-2 set values

A = 1, B = 1, C = 254, D = 255

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



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

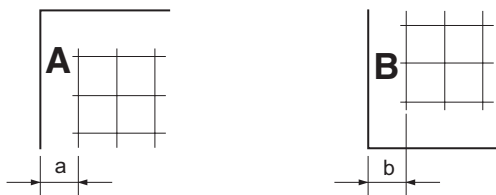
\* Check with one of the following methods.

[Check Method 1]



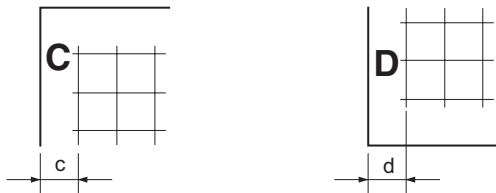
(Front side)

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



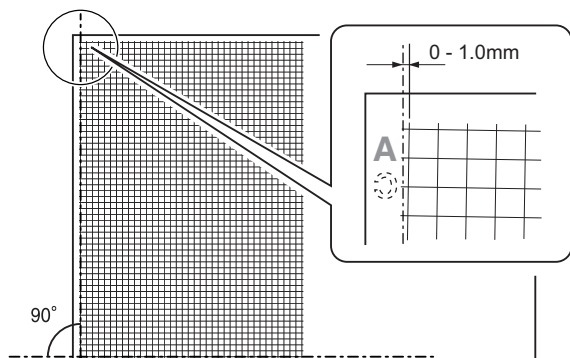
(Back side)

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



[Check Method 2]

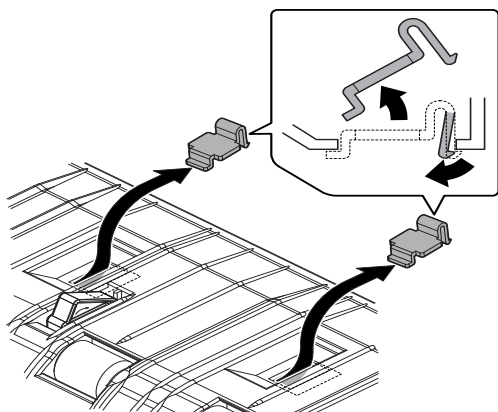
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



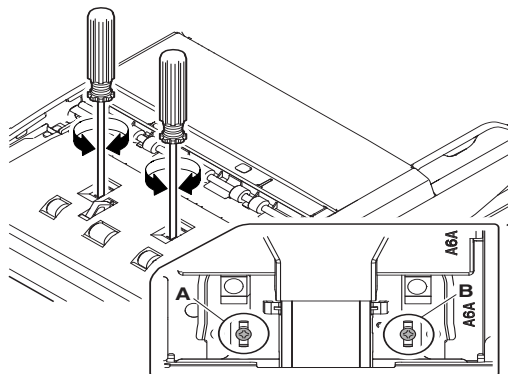
If the back surface copy image is as shown above and the front surface copy is not as shown above, go to the step 3) of "ADJ 5B DSPF skew adjustment (Front surface mode)".

If the back surface copy is not as shown above, perform the procedures of step 3) or later.

- 3) Open the upper door and remove the adjustment cover.



- 4) Turn the DSPF skew adjustment screw on the CCD unit to adjust.



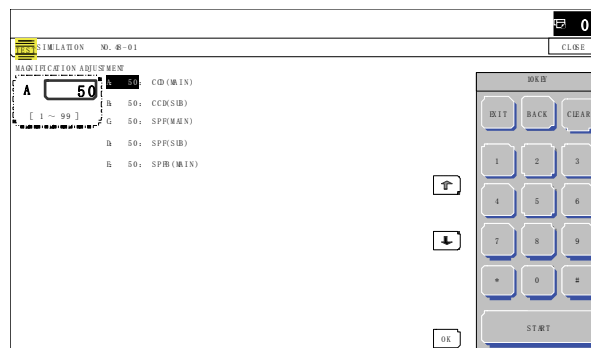
## ADJ 6 Scan image focus adjustment

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

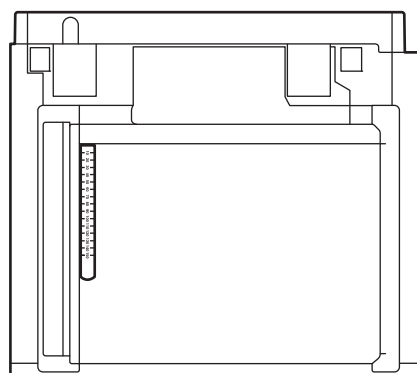
This adjustment is needed in the following situations:

- \* The CCD unit has been removed from the machine.
- \* The CCD unit has been replaced.
- \* When the copy image focus is not properly adjusted.
- \* When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.
- \* U2 trouble has occurred.

- 1) Enter the SIM 48-1 mode.



- 2) Set the adjustment item CCD (MAIN) to 50 (default value).  
Select the adjustment item with the scroll key, and enter the adjustment value with 10-key and press [OK] key.
- 3) Place a scale on the original table as illustrated below.



- 4) Make a normal copy on A4 paper.  
Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.
- 5) Compare the copied image of the scale and the actual scale length in terms of length.

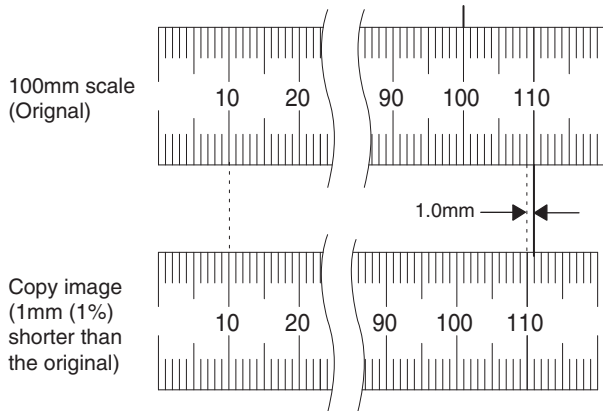
- 6) Obtain the copy magnification ratio correction ratio in the main scanning direction from the following formula.

Main scanning direction copy magnification ratio correction ratio = (Original size - Copy image size) / Original size x 100%

(Example)

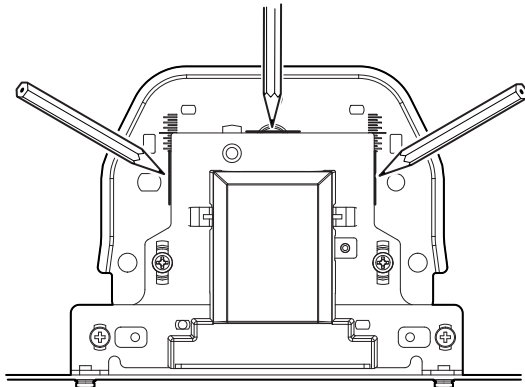
Compare the scale of 10mm with the scale of 10mm on the copy image.

Main scanning direction copy magnification ratio correction ratio = (100 - 99) / 100 x 100 = 1



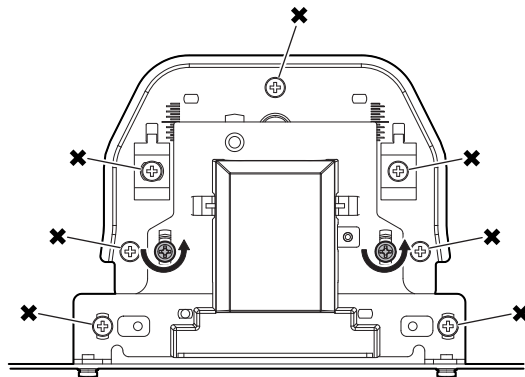
If the copy magnification ratio is not satisfactory, perform the following procedures.

- 7) Remove the document table glass.
- 8) Remove the dark box cover.
- 9) To prevent against shift of the CCD unit optical axis, mark the CCD unit base as shown below.



\* This procedure must be executed also when the CCD unit is replaced.

- 10) Loosen the CCD unit fixing screws.



\* Never loosen the screws marked with X.

If any one of these screws is loosened, the position and the angle of the CCD unit base may be changed to cause a problem, which cannot be adjusted in the market. In that case, the whole scanner unit must be replaced.

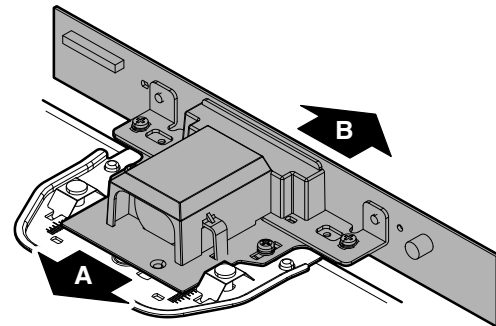
- 11) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

When the copy image is longer than the original scale, shift the CCD unit in the direction B. When the copy image is shorter than the original scale, shift the CCD unit in the direction A.

One scale of mark-off line corresponds to 0.2%.

At that time, fix the CCD unit so that it is in parallel with the scale on the front and the rear side of the CCD unit base.

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



- 12) Make a copy and check the copy magnification ratio again.

If the copy magnification ratio is not in the range of 100 ± 1%, repeat the procedures of 9) - 11) until the condition is satisfied.

NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range (100 ± 1.0%) and the specified resolution is obtained based on the optical system structure.

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

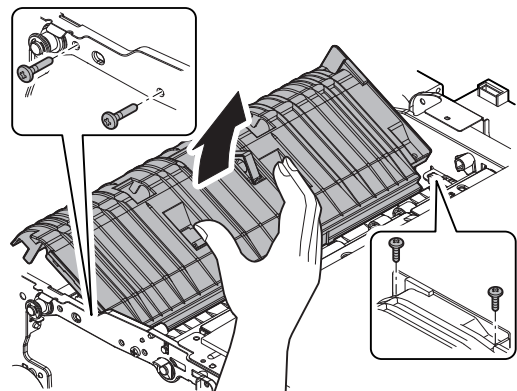
This adjustment is required in the following cases:

- \* When the DSPF CCD unit is replaced.
- \* When the COPY/SCAN/FAX image focus is not properly adjusted.
- \* When the DSPF unit is removed.
- \* When the DSPF unit is replaced.

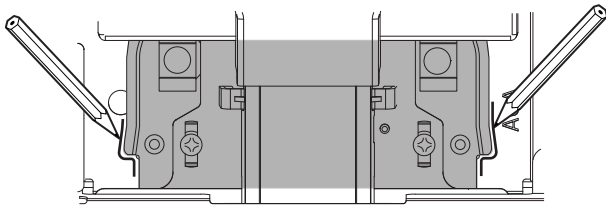
- 1) Make a duplex copy in DSPF mode.
- 2) Make sure that the copied image on the back side of the paper is satisfactorily focused.

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

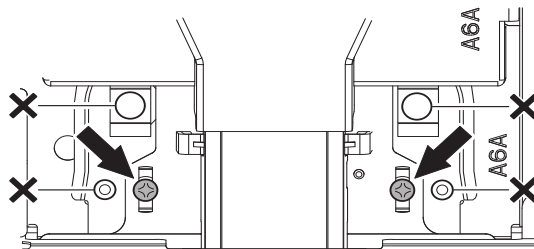
- 3) Open the door. Remove the screws and transport PG upper.



- 4) To prevent against shift of the CCD unit optical axis, mark the CCD unit base as shown below.



- 5) Loosen the CCD unit fixing screws.

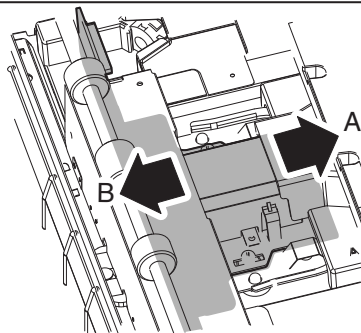
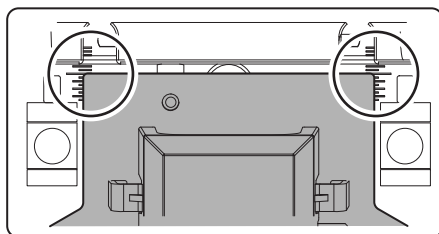


**\* Never loosen the screws marked with 5.**

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

- 6) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position. When the copy image is longer than the original scale, shift the CCD unit in the direction B. When the copy image is shorter than the original scale, shift the CCD unit in the direction A. One scale of mark-off line corresponds to 0.2%. At that time, fix the CCD unit so that it is in parallel with the scale on the front and the rear side of the CCD unit base.

\* Fix the CCD unit so that it is in parallel with the line marked in procedure 4).



- 7) Make a copy and check the copy magnification ratio again.

If the copy magnification ratio is not in the range of 100 +/- 1%, repeat the procedures of 4) - 6) until the condition is satisfied.

**NOTE:** By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range (100 +/- 1.0%) and the specified resolution is obtained based on the optical system structure.

## ADJ 7 Scan image magnification ratio adjustment (Manual adjustment)

This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

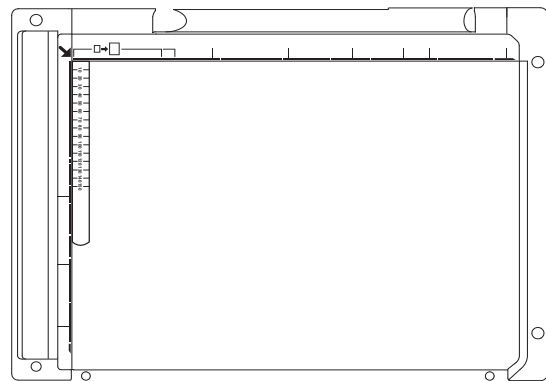
This adjustment is needed in the following situations:

- \* When the copy image magnification ratio in the sub scanning direction is not properly adjusted.
- \* When the scanner motor is replaced.
- \* When a U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

Before this adjustment, the focus adjustment (CCD unit installing position adjustment) must have been completed.

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

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



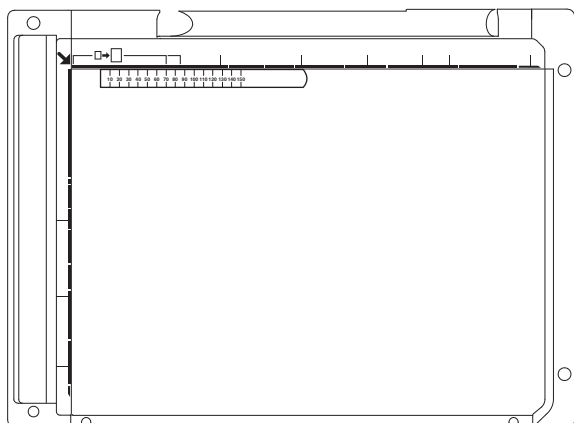
- 2) Enter the SIM 48-1 mode.



- 3) Make a normal copy and obtain the copy magnification ratio. Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.
- 4) Check that the copy magnification ratio is within the specified range (100 ± 1.0%). If the copy magnification ratio is within the specified range (100 ± 1.0%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.
- 5) Change the CCD (MAIN) adjustment value of Simulation 48-1. When the adjustment value is increased, the copy magnification ratio is increased. When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.02%. Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 ± 1.0%).

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

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

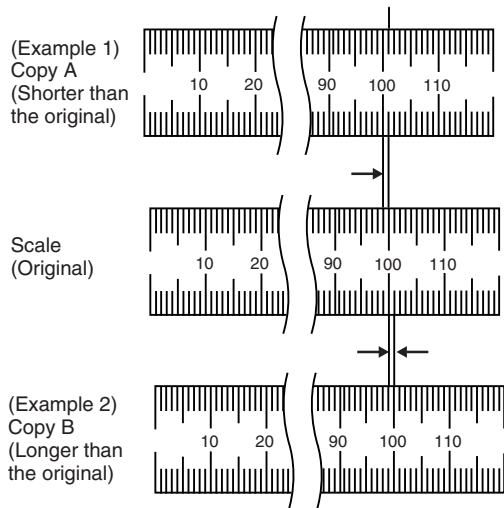


- 2) Enter the SIM 48-1 mode.



- 3) Make a normal copy and obtain the copy magnification ratio.  
Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.

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



- 4) Check that the copy magnification ratio is within the specified range (100 ± 1.0%). If the copy magnification ratio is within the specified range (100 ± 1.0%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.
- 5) Change the CCD (SUB) adjustment value of Simulation 48-1.

When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased. When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 ± 1.0%).

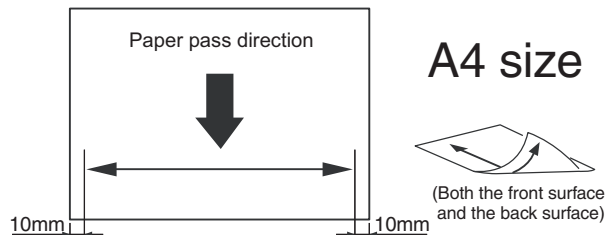
## 7-C Main scanning direction image magnification ratio adjustment (DSPF mode)

This adjustment must be performed in the following cases:

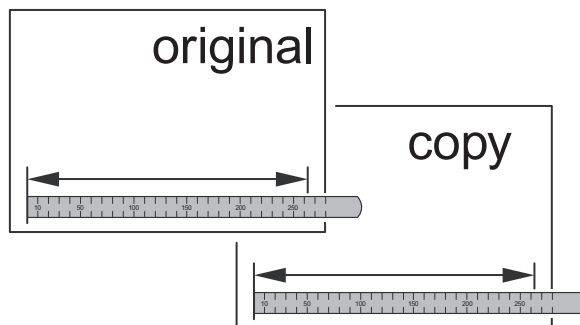
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When U2 trouble occurs.
- \* When the copy magnification ratio is not matched.
- \* When the DSPF is disassembled.

### a. Adjustment procedures

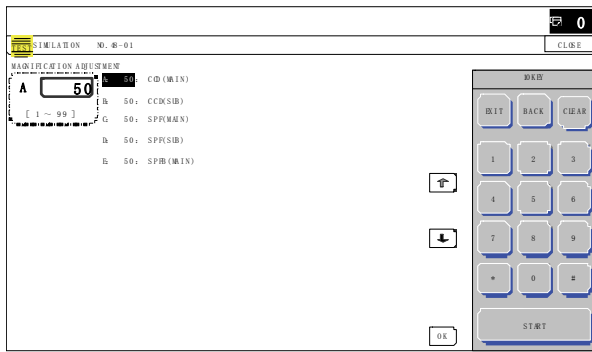
- 1) Place the duplex adjustment chart shown below on the document tray of the DSPF. The adjustment chart is prepared by the following procedures. Use A4 (11" x 8.5") paper, and put marks on both sides and both surfaces of the paper at 10mm from each edge.



- 2) Make a duplex copy at the normal ratio on A4 paper.
- 3) Measure the images on the copy paper and the original images.



- 4) Obtain the image magnification ratio according to the following formula:  
Image magnification ratio = Original size / Original size x 100 (%)  
Image magnification ratio = 99 / 100 x 100 = 99 (%)  
If the image magnification ratio is within the specified range (100 ± 0.8%), there is no need to perform the adjustment.  
If it is not within the specified range, perform the following procedures.
- 5) Enter the SIM 48-1 mode.



| Item | Display    | Content                                                                | Setting range | Default value |
|------|------------|------------------------------------------------------------------------|---------------|---------------|
| A    | CCD(MAIN)  | SCAN main scanning magnification ratio adjustment (CCD)                | 1 - 99        | 50            |
| B    | CCD(SUB)   | SCAN sub scanning magnification ratio adjustment (CCD)                 | 1 - 99        | 50            |
| C    | SPF(MAIN)  | DSPF document front surface magnification ratio adjustment (Main scan) | 1 - 99        | 50            |
| D    | SPF(SUB)   | DSPF document front surface magnification ratio adjustment (Sub scan)  | 1 - 99        | 50            |
| E    | SPFB(MAIN) | DSPF document back surface magnification ratio adjustment (Main scan)  | 1 - 99        | 50            |

\* Items A, C, E: When the set value is increased by 1, the magnification ratio is increased by 0.02%.

\* Items B, D: When the set value is increased by 1, the magnification ratio is increased by 0.1%.

\* It affects scanning (PC scanning, etc.) as well as copying.

- Select an adjustment item of SPF (MAIN)/SPFB (MAIN) with the scroll key.

SPF (MAIN) Main scanning direction image magnification ratio (Front surface)

SPFB (MAIN) Main scanning direction image magnification ratio (Back surface)

- Enter an adjustment value with 10-key, and press [OK] key.  
When the adjustment value is increased, the image magnification ratio is increased. When the adjustment value is changed by 1, the image magnification ratio is changed by 0.02%.

Repeat the procedures of 1) - 7) until a satisfactory result is obtained.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

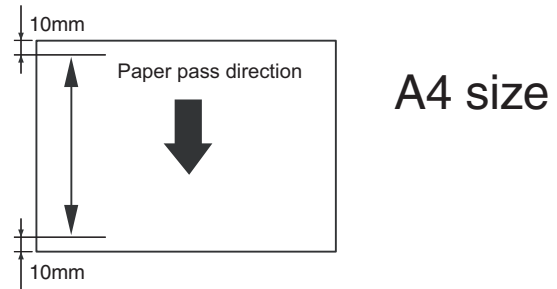
## 7-D Sub scanning direction image magnification ratio adjustment (DSPF mode)

This adjustment must be performed in the following cases:

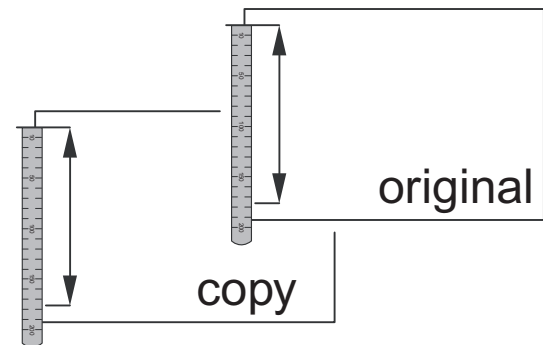
- \* When the scan control PWB is replaced.
- \* When the EEPROM on the scan control PWB is replaced.
- \* When U2 trouble occurs.
- \* When the copy magnification ratio is not matched.
- \* When the DSPF is disassembled.

## a. Adjustment procedures

- Place the duplex adjustment chart shown below on the document tray of the DSPF. The adjustment chart is prepared by the following procedures. Use A4 (11" x 8.5") paper, and put marks on both sides and both surfaces of the paper at 10mm from each edge.



- Make a duplex copy at the normal ratio on A4 paper.
- Measure the images on the copy paper and the original images.



- Obtain the image magnification ratio according to the following formula:

Image magnification ratio = Original size / Original size x 100 (%)

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

If the image magnification ratio is within the specified range (100 ± 0.8%), there is no need to perform the adjustment.

If it is not within the specified range, perform the following procedures.

- Enter the SIM 48-1 mode.



| Item | Display   | Content                                                                | Setting range | Default value |
|------|-----------|------------------------------------------------------------------------|---------------|---------------|
| A    | CCD(MAIN) | SCAN main scanning magnification ratio adjustment (CCD)                | 1 - 99        | 50            |
| B    | CCD(SUB)  | SCAN sub scanning magnification ratio adjustment (CCD)                 | 1 - 99        | 50            |
| C    | SPF(MAIN) | DSPF document front surface magnification ratio adjustment (Main scan) | 1 - 99        | 50            |

| Item | Display    | Content                                                               | Setting range | Default value |
|------|------------|-----------------------------------------------------------------------|---------------|---------------|
| D    | SPF(SUB)   | DSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99        | 50            |
| E    | SPFB(MAIN) | DSPF document back surface magnification ratio adjustment (Main scan) | 1 - 99        | 50            |

\* Items A, C, E: When the set value is increased by 1, the magnification ratio is increased by 0.02%.

\* Items B, D: When the set value is increased by 1, the magnification ratio is increased by 0.1%.

\* It affects scanning (PC scanning, etc.) as well as copying.

6) Select an adjustment item with the scroll key.

SPF (SUB) Sub scanning direction image magnification ratio (Front surface)

SPFB (SUB) Sub scanning direction image magnification ratio (Back surface)

7) Enter an image magnification ratio adjustment value with 10-key, and press [OK] key.

When the adjustment value is increased, the image magnification ratio is increased. When the adjustment value is changed by 1, the image magnification ratio is changed by 0.01%.

Repeat the procedures of 1) - 7) until a satisfactory result is obtained.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

## ADJ 8 Scan image off-center adjustment (Manual adjustment)

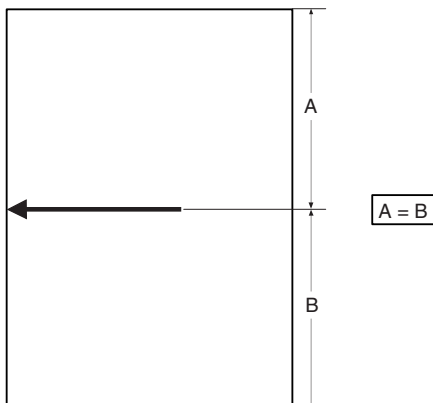
This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

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

This adjustment is needed in the following situations:

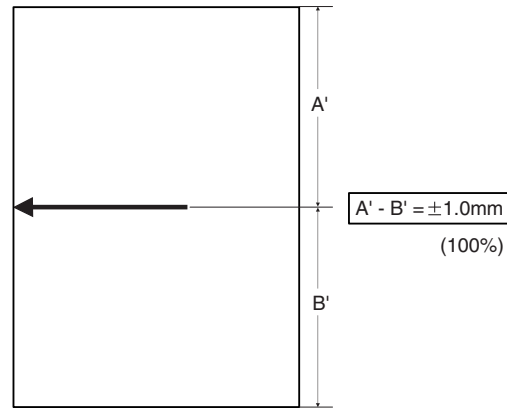
- \* When the scanner (reading) section is disassembled.
- \* When the scanner (reading) unit is replaced.
- \* When a U2 trouble occurs.
- \* When the scanner control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

1) Make a copy of the adjustment chart (made by yourself) in the adjustment mode (document table).



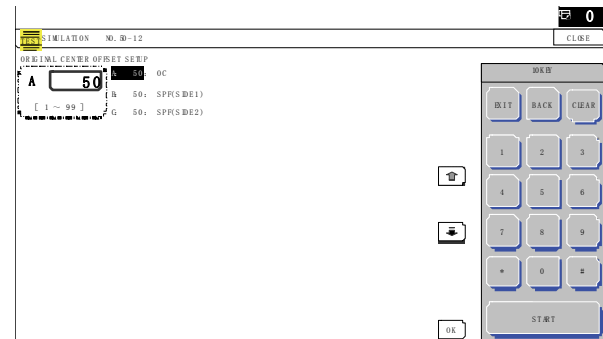
2) Check the copy image center position.

If  $A' - B' = \pm 1.0\text{mm}$ , the adjustment is not required.



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

3) Enter the SIM 50-12 mode.



4) Select the adjustment mode with the scroll key.

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

The entered value is set. When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.

6) Press [CLOSE] key and shift from the simulation mode to the copy mode and make a copy. Repeat the procedures of 2) - 6) until the above condition is satisfied.

### 8-B Scan image off-center adjustment (DSPF mode)

This adjustment must be performed in the following cases:

- \* 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) section is replaced.
- \* When U2 trouble occurs.
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.

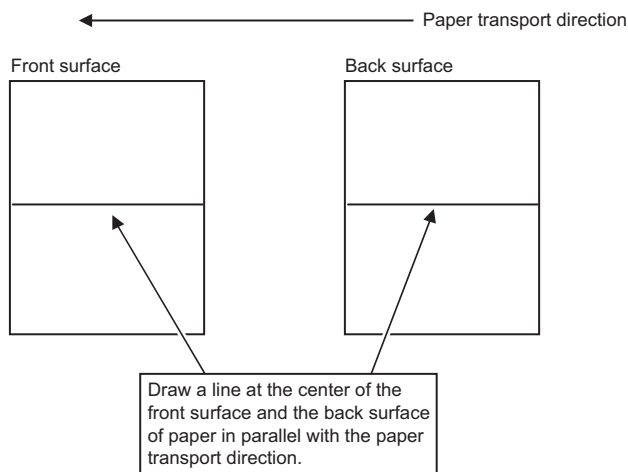
NOTE: To execute this adjustment, it is required that the ADJ 8A Scan image off-center adjustment (Document table mode) must have been properly adjusted.

#### a. Adjustment procedures

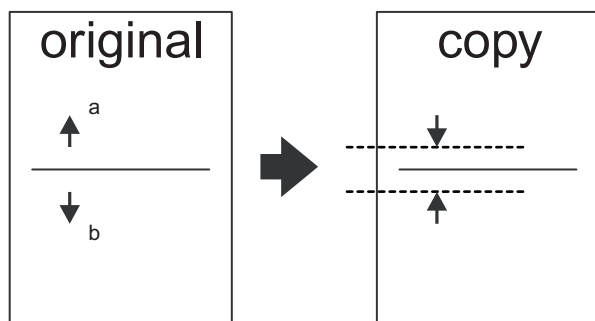
1) Prepare the adjustment chart.

Draw a line at the center of the front surface and the back surface of A4 (11" x 8.5") paper in parallel with the paper transport direction.



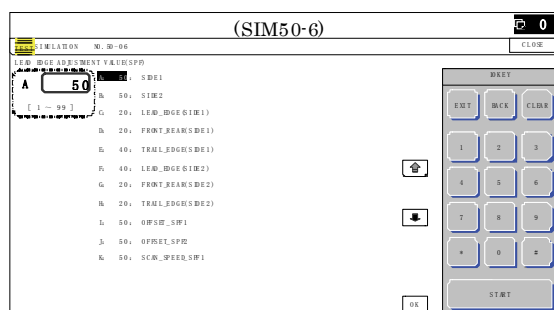
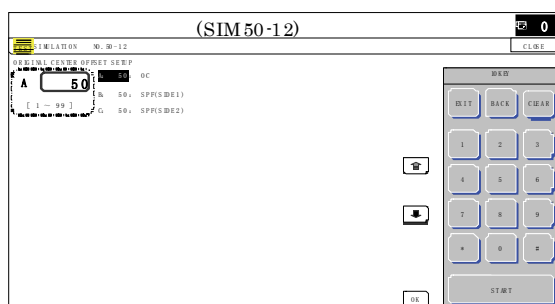


- 2) Set the adjustment chart to the DSPF.
- 3) Make a duplex copy in the normal magnification ratio from the manual paper feed tray, and check the image position on the front surface and the back surface of the copy paper.



If the difference is within the range of 0 □ 2.7mm there is no need to perform the adjustment. If the adjustment is required, perform the following procedures.

- 4) Enter the SIM 50-12 or 50-6 mode.



#### SIM50-12

| Item | Display    | Content                                       | Setting range | Default value |
|------|------------|-----------------------------------------------|---------------|---------------|
| A    | OC         | Document table image off-center adjustment    | 1 - 99        | 50            |
| B    | SPF(SIDE1) | SPF front surface image off-center adjustment | 1 - 99        | 50            |
| C    | SPF(SIDE2) | SPF back surface image off-center adjustment  | 1 - 99        | 50            |

A - C: When the adjustment value is increased, the image position is shifted to the rear frame side.

1step = 0.1mm

#### SIM50-6 (DSPF)

| Item/Display |                                 | Content                                                                 | Setting range | Default value |
|--------------|---------------------------------|-------------------------------------------------------------------------|---------------|---------------|
| A            | SIDE1                           | Front surface document scan position adjustment (CCD)                   | 1 - 99        | 50            |
| B            | SIDE2                           | Back surface document scan position adjustment (CIS)                    | 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            |                                 | 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        | 40            |
| F            | Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2)<br>Back surface lead edge image loss amount setting   | 0 - 99        | 40            |
| G            |                                 | 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 document off-center adjustment                       | 1 - 99        | 50            |
| J            | OFFSET_SPF2                     | DSPF back surface document off-center adjustment                        | 1 - 99        | 50            |
| K            | SCAN_SPEED_SPF1                 | DSPF document front surface magnification ratio adjustment (Sub scan)   | 1 - 99        | 50            |

\* Item A, B: When the adjustment value is increased, the scan timing is delayed.

\* Item C - H: When the adjustment value is increased, the image loss is increased.

\* Item A - H: 1 step = 0.1mm change

\* The DSPF rear edge image loss setting is provided for countermeasures against the case when shades are produced.

- 5) Select an adjustment mode with the scroll key.

#### (SIM50-12)

SPF(SIDE1)      Front surface mode  
SPF(SIDE2)      Back surface mode

#### (SIM50-6)

OFFSET\_SPF1      Front surface mode  
OFFSET\_SPF2      Back surface mode

- 6) Enter an adjustment value with 10-key, and press [OK] key.  
(Change for change in the adjustment value: 0.1mm/step)



(When the adjustment value is increased, the print image is shifted to the rear.) Repeat the procedures of 2) - 6) until a satisfactory result is obtained.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

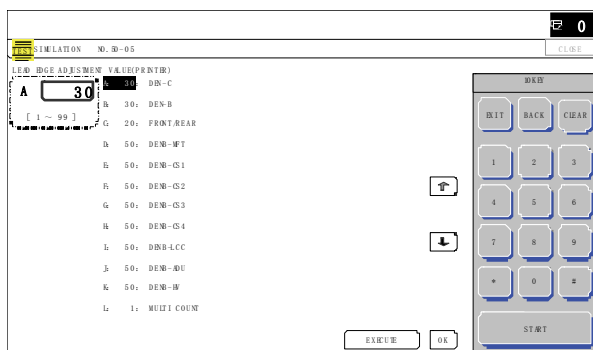
## ADJ 9 Print lead edge image position, void area adjustment (Printer mode)

This adjustment is needed in the following situations:

- \* When the registration 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.

NOTE: This adjustment is performed by the user to increase the lead edge void area to greater than the standard value (3mm) in the printer mode.

- 1) Enter the SIM 50-5 mode.

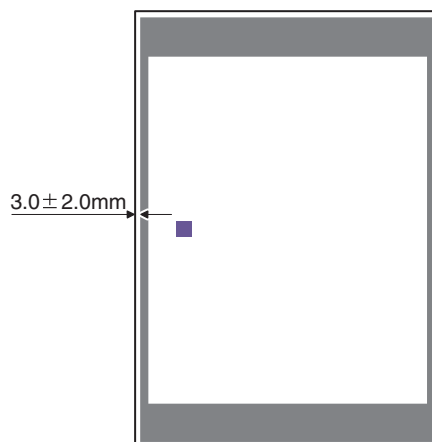


- 2) Select the set item L with the scroll key, and enter the value corresponding to the paper feed tray with A4 (11" x 8.5") paper in it.

| Item/Display | Content     | Setting range                                                     | Default value |
|--------------|-------------|-------------------------------------------------------------------|---------------|
| A            | DEN-C       | Used to adjust the print lead edge image position. (PRINTER MODE) | 1 - 99<br>30  |
| B            | DEN-B       | Rear edge void area adjustment                                    | 1 - 99<br>30  |
| C            | FRONT/REAR  | FRONT/REAR void area adjustment                                   | 1 - 99<br>20  |
| D            | DENB-MFT    | Manual feed rear edge void area adjustment correction value       | 1 - 99<br>50  |
| E            | DENB-CS1    | Tray 1 rear edge void area adjustment correction value            | 1 - 99<br>50  |
| F            | DENB-CS2    | Tray 2 rear edge void area adjustment correction value            | 1 - 99<br>50  |
| G            | DENB-CS3    | Tray 3 rear edge void area adjustment correction value            | 1 - 99<br>50  |
| H            | DENB-CS4    | Tray 4 rear edge void area adjustment correction value            | 1 - 99<br>50  |
| I            | DENB-LCC    | LCC rear edge void area adjustment correction value               | 1 - 99<br>50  |
| J            | DENB-ADU    | ADU rear edge void area adjustment correction value               | 1 - 99<br>50  |
| K            | DENB-HV     | Heavy paper rear edge void area adjustment correction value       | 1 - 99<br>50  |
| L            | MULTI COUNT | Number of print                                                   | 1 - 999<br>1  |

| Item/Display |        |     | Content                |                   | Setting range | Default value |
|--------------|--------|-----|------------------------|-------------------|---------------|---------------|
| M            | PAPER  | MFT | Tray selection         | Manual paper feed | 1 - 6         | 2 (CS1)       |
|              |        | CS1 |                        | Tray 1            |               |               |
|              |        | CS2 |                        | Tray 2            |               |               |
|              |        | CS3 |                        | Tray 3            |               |               |
|              |        | CS4 |                        | Tray 4            |               |               |
|              |        | LCC |                        | LCC               |               |               |
| N            | DUPLEX | YES | Duplex print selection | Yes               | 0 - 1         | 1 (NO)        |
|              |        | NO  |                        | No                |               |               |

- 3) Press [EXECUTE] key.  
The adjustment pattern is printed.
- 4) Measure the distance from the paper lead edge the adjustment pattern to the image lead edge, and check to confirm that it is in the standard adjustment value range.  
Standard adjustment value: 3.0 ± 2.0mm



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

- 5) Select the adjustment target of the paper feed mode adjustment item DENC with the scroll key.
- 6) Change the adjustment value.

Enter the adjustment value and press the [OK] key or the [EXECUTE] key.

When [EXECUTE] key is pressed, the adjustment pattern is printed. When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance is decreased. When the set value is changed by 1, the distance is changed by about 0.1mm.

Repeat the procedures 4) - 6) until the condition of 4) is satisfied.

NOTE: To adjust the void area, change the adjustment values of items B and C.

## ADJ 10 Copy image position, image loss, and void area adjustment (Manual adjustment)

This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

### 10-A Copy image position, 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 replaced or removed.
- \* When the registration roller section is disassembled.
- \* U2 trouble has occurred.



| Item/Display | Content               |                                 | Adjustment range | Default value | Standard adjustment value |
|--------------|-----------------------|---------------------------------|------------------|---------------|---------------------------|
| LEAD         | Image loss adjustment | Lead edge image loss adjustment | 0 - 99           | 30            | 3.0<br>± 1.0mm            |
| SIDE         |                       | Side image loss adjustment      | 0 - 99           | 20            | 2.0<br>± 1.0mm            |

When the adjustment value is increased, the image loss is increased. When the adjustment value is decreased, the image loss is decreased. When the adjustment value is changed by 1, the void area is changed by 0.1mm.

## 10-B Document scan position adjustment (DSPF mode scanner scan position adjustment)

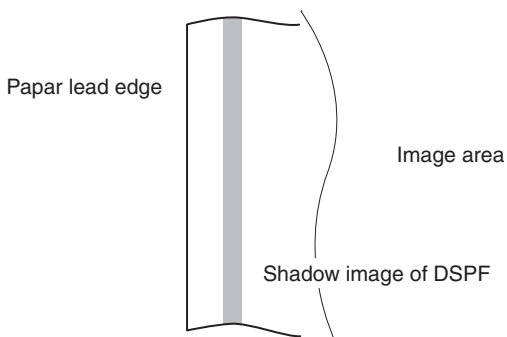
This adjustment must be performed in the following cases:

- \* 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) section is replaced.
- \* When U2 trouble occurs.
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.

This simulation is to adjust the scanner reading position when scanning the front surface in the DSPF mode. If this adjustment is made improperly, the scanner stop position is shifted to the specified position and a shade of the document table may be reflected on the lead edge section of the scan image in the DSPF (front surface) mode.

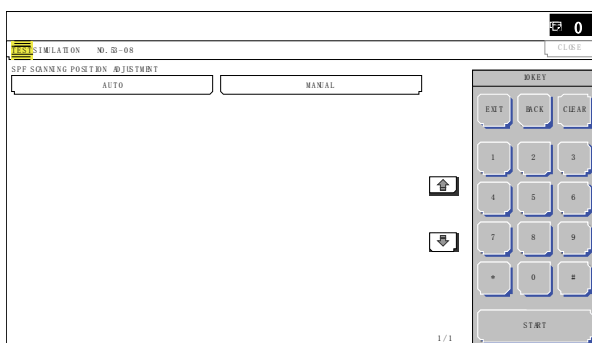
### a. Adjustment procedures

- 1) Make a copy in the DSPF (front surface) mode, and check for any shade on the lead edge section of the copy image.



If there is any shade of the document table on the lead edge section of the copy image, perform the following procedures.

- 2) Enter the SIM 53-8 mode, and press [MANUAL] key.



- 3) Enter an adjustment value with 10-key, and press [OK] key.

When the set value is increased, the distance from the home position to the DSPF scanning position is increased. When the set value is changed by 1, the scanning position is changed by 0.1mm.

Perform the procedures of 1) - 3) until a satisfactory result is obtained.

NOTE: After execution of this adjustment, be sure to execute ADJ 10C Copy mode image loss adjustment (DSPF mode).

## 10-C Copy mode image loss adjustment (DSPF mode)

This adjustment must be performed in the following cases:

- \* 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 U2 trouble occurs.
- \* When the DSPF section is disassembled.
- \* When the DSPF unit is replaced.

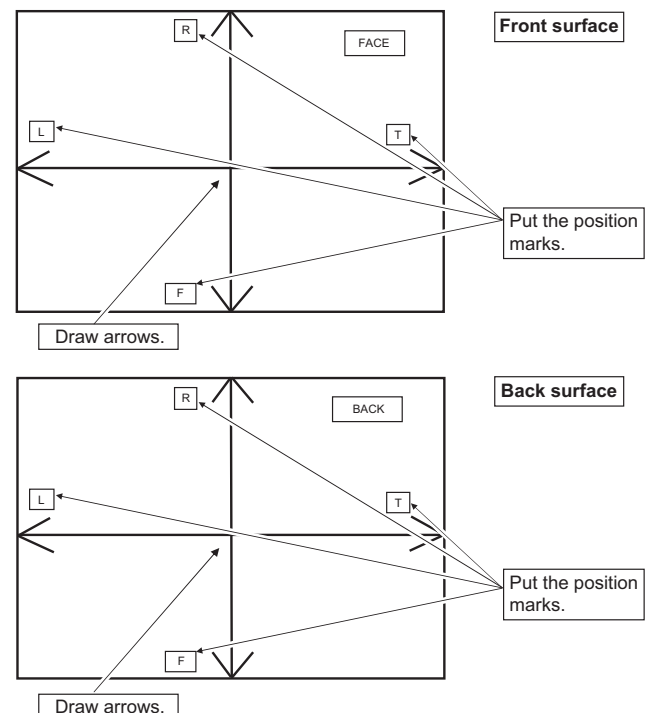
NOTE: To execute this adjustment, the following items must have been properly adjusted.

- ADJ 3C Print engine print area (void area) adjustment
- ADJ 7C Main scanning direction image magnification ratio adjustment (DSPF mode)
- ADJ 7D Sub scanning direction image magnification ratio adjustment (DSPF mode)
- ADJ 8B Scan image off-center adjustment (DSPF mode)
- ADJ 10B Document scan position adjustment (DSPF mode scanner scan position adjustment)

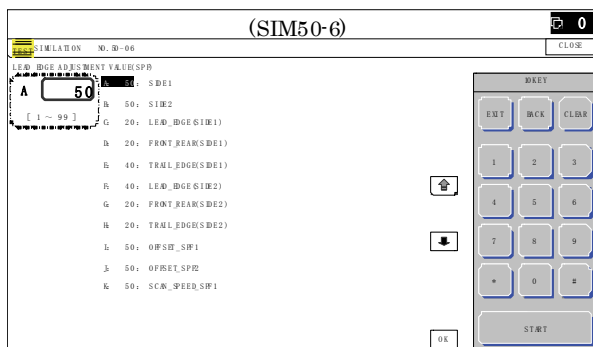
### a. Adjustment procedures

- 1) Prepare the adjustment chart.

The adjustment chart can be made by the following procedures. Use A4 (11" x 8.5") paper and draw arrow marks vertically and horizontally on the front and the back surfaces. At the same time, put marks of the lead edge, the trail edge, the front end, and the rear end as well as the identification marks of the front surface and the back surface.



- 2) Enter the SIM 50-6 mode.



#### (DSPF)

| Item | Display                         | Content                                                                 | Setting range | Default value |
|------|---------------------------------|-------------------------------------------------------------------------|---------------|---------------|
| A    | SIDE1                           | Front surface document scan position adjustment (CCD)                   | 1 - 99        | 50            |
| B    | SIDE2                           | Back surface document scan position adjustment (CIS)                    | 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    |                                 | 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        | 40            |
| F    | Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2)<br>Back surface lead edge image loss amount setting   | 0 - 99        | 40            |
| G    |                                 | 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 document off-center adjustment                       | 1 - 99        | 50            |
| J    | OFFSET_SPF2                     | DSPF back surface document off-center adjustment                        | 1 - 99        | 50            |
| K    | SCAN_SPEED_SPF1                 | DSPF document front surface magnification ratio adjustment (Sub scan)   | 1 - 99        | 50            |

- \* Item A, B: When the adjustment value is increased, the scan timing is delayed.
- \* Item C - H: When the adjustment value is increased, the image loss is increased.
- \* Item A - H: 1 step = 0.1mm change
- \* The DSPF rear edge image loss setting is provided for counter-measures against the case when shades are produced.

NOTE: When [CLOSE] key is pressed in this simulation mode, the machine goes into the normal operation mode. Under this state, copy check can be normally performed. When the system key is pressed, the machine returns to the simulation mode.

#### (Lead edge image loss adjustment)

- 1) Set the lead edge image loss adjustment values (LEAD EDGE (SIDE1/SIDE2)) on the front surface and the back surface to the following values.  
(Standard set value)

#### LEAD EDGE(SIDE 1):

20 Lead edge image loss set value (Front surface)

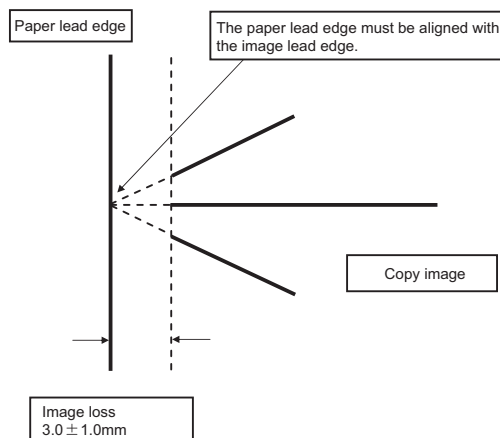
#### LEAD EDGE(SIDE 2):

30 Lead edge image loss set value (Back surface)

(When the set value is increased, the lead edge image loss is increased.)

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

- 2) Make a duplex copy in 100% in the DSPF/RSPF mode. Check to confirm that the lead edge image loss is within  $3.0 \pm 1.0\text{mm}$  on the front surface and the back surface. The paper lead edge must be aligned with the presumed image lead edge.



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

- 3) Enter the adjustment value of SIDE1/SIDE2 with 10-key, and press [OK] key.

Adjust so that the paper lead edge is aligned with the presumed image lead edge.

SIDE1: Front surface lead edge scan position adjustment

SIDE2: Back surface lead edge scan position adjustment

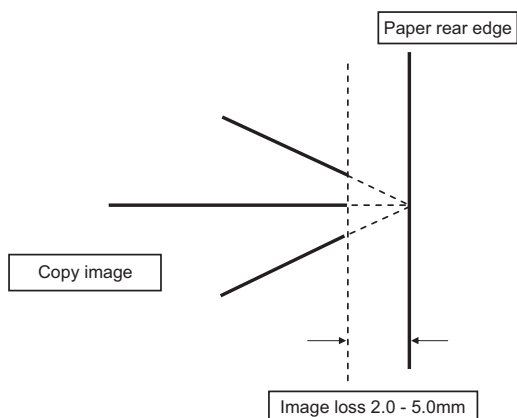
(When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.)

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

Perform the procedures of 2) - 3) until a satisfactory result is obtained.

#### (Rear edge image loss adjustment)

- 1) Make a duplex copy in 100% in the DSPF/RSPF mode. Check to confirm that the rear edge image loss is 2.0 - 5.0mm on the front surface and the back surface.



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

- 2) Enter the adjustment value of TRAIL EDGE (SIDE1/SIDE2) with 10-key, and press [OK] key.

TRAIL EDGE (SIDE 1):

Rear edge image loss adjustment value (Front surface)

#### TRAIL EDGE (SIDE 2):

Rear edge image loss adjustment value (Back surface)

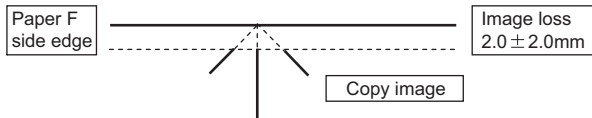
(When the adjustment value is increased, the rear edge image loss is increased.)

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

Perform the procedures of 1) - 2) until a satisfactory result is obtained.

#### (Front/rear frame direction image loss adjustment)

- 1) Make a duplex copy in 100% in the DSPF/RSPF mode. Check to confirm that the image losses on the front frame side and the rear frame side are  $2.0 \pm 2.0\text{mm}$  on the front surface and the back surface.



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

- 2) Enter the adjustment value of FRONT/REAR (SIDE 1) / FRONT/REAR (SIDE 2), and press [OK] key.

FRONT/REAR (SIDE 1):

Front/Rear image loss adjustment value (Front surface)

FRONT/REAR (SIDE 2):

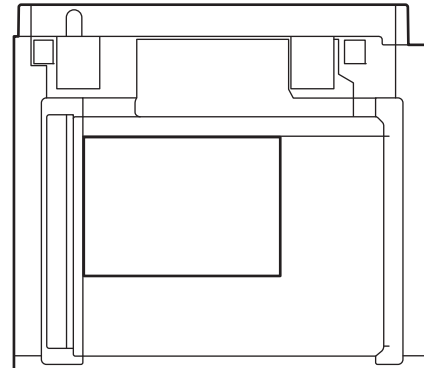
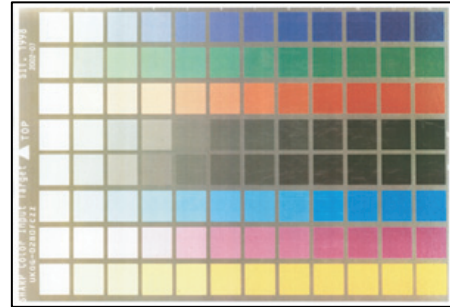
Front/Rear image loss adjustment value (Back surface)

(When the adjustment value is increased, the front/rear image loss is increased.)

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

Perform the procedures of 1) - 2) until a satisfactory result is obtained.

- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) 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 (UKOG-0280FCZZ or UKOG-0280FCZ1) is in close contact with the document table.

NOTE: UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

- 2) Enter the SIM 63-3 mode.

Select [OC] key, 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.

## ADJ 11 Scanner calibration (CCD calibration)

### 11-A CCD gamma adjustment (CCD calibration) (Document table mode)

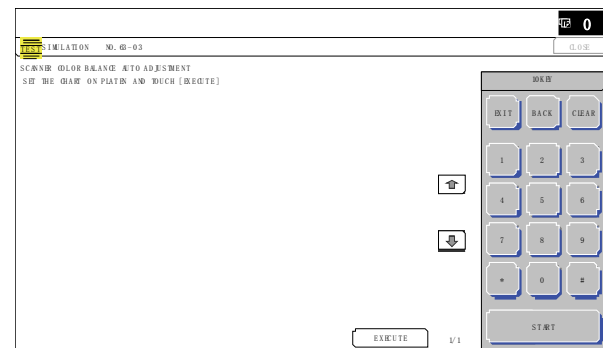
This adjustment is needed in the following situations:

- \* 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

- 1) 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.)
- 2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) 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



NOTE: Since the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) 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.

### 11-B CCD gamma adjustment (CCD calibration) (DSPF mode)

This adjustment is required in the following cases:

- \* When the DSPF CCD unit is replaced.

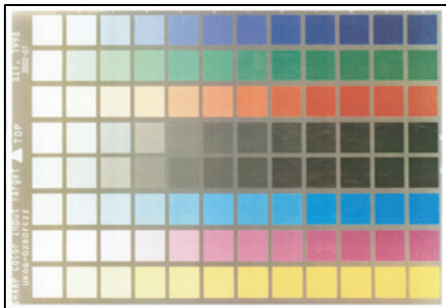
- \* When a U2 trouble occurs.
- \* When the DSPF control PWB is replaced.
- \* When the EEPROM on the scanner control PWB is replaced.

#### (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 (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches. If they are dirty, clean them. If they are scratched or streaked, replace with new one.

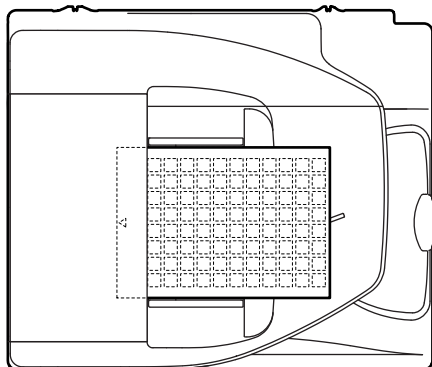
##### NOTE:

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

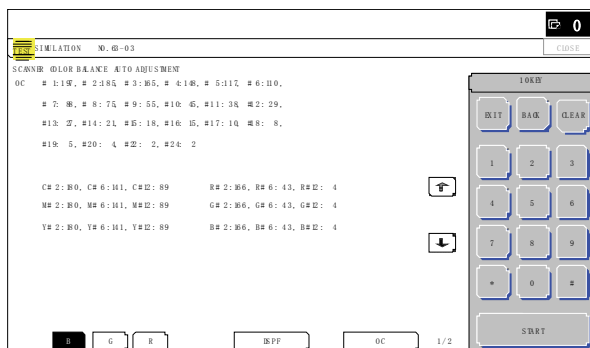
- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) face-down in the DSPF paper feed tray.



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

NOTE: UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

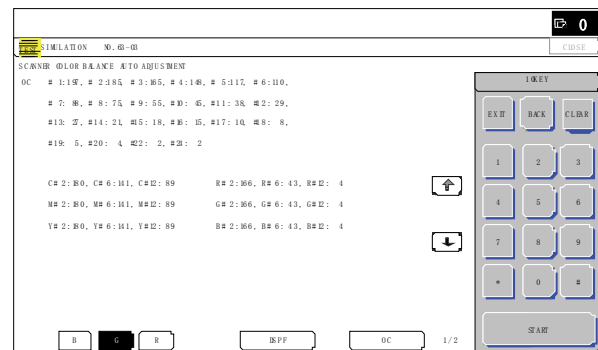
- 2) Enter the SIM 63-3 mode.



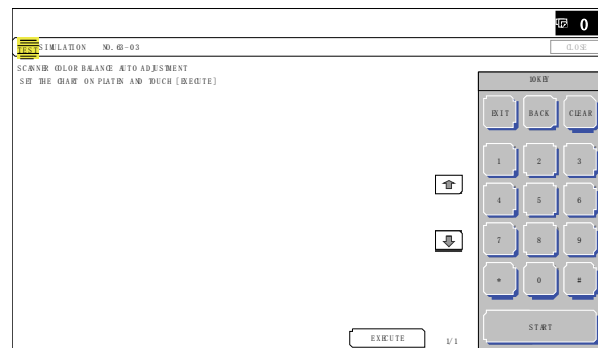
- 3) When a color button is selected, the adjustment value of the selected color is displayed.

\* When [B] (Blue), [G] (Green), or [R] (Red) button is selected, the selected button is highlighted and the adjustment value of the selected color is displayed.

\* Only one color button can be selected, and the selected button is highlighted. In the initial state, [B] is selected.



- 4) When [DSPF] button is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.



- 5) Press [EXECUTE] button and it is highlighted and the color auto adjustment is executed.

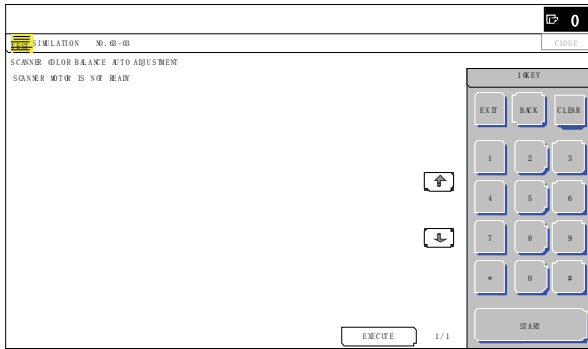
\* When [EXECUTE] button is pressed during the automatic adjustment, the automatic adjustment is interrupted.



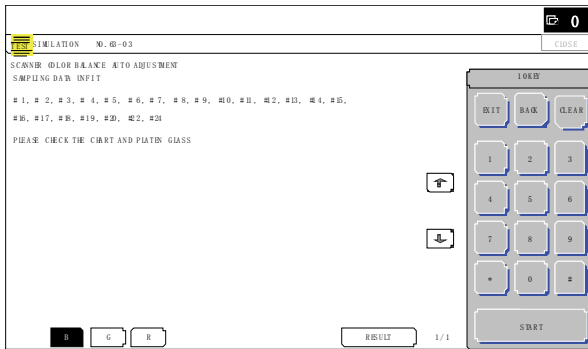
- 6) After normal completion, the result of calculation is displayed in the initial screen.

\* When an error occurs in execution, the following screen is displayed. When [CA] key is pressed, the simulation is terminated. When [SUB SYSTEM SETTINGS] key is pressed, the display returns to the sub number entry screen.





- \* When an error occurs in the automatic adjustment, all the error patch numbers are displayed. When [RESULT] button 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] button is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)

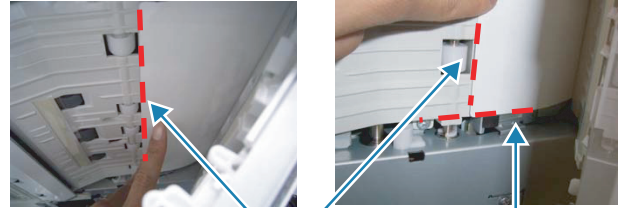
## 11-C Shading adjustment (Calibration) (DSPF mode)

- 1) Open the DSPF document scan section, and insert the white reference adjustment sheet (PSHEP5859FCZZ).



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.

- \* When inserting the white reference adjustment sheet, insert it straight along the guide on the rear frame until the paper detection actuator can be seen through the cut-out section of the white reference adjustment sheet.
- 2) Close the DSPF paper exit section.
  - 3) Enter the SIM 63-2 mode.
  - 4) Select [DSPF SHADING].



- 5) When [EXECUTE] key is pressed, it is highlighted and shading is started.
  - \* During execution, "SHADING EXECUTING..." is displayed.
  - \* When [EXECUTE] key is pressed during execution, the operation is interrupted.
  - \* When shading is completed normally, [EXECUTE] key returns to the normal display and "COMPLETED" is displayed.

### <Descriptions of keys>

| 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)          |

### <Result display>

| Display    | Content                  |
|------------|--------------------------|
| COMPLETE   | Normal completion        |
| ERROR      | Abnormal completion      |
| INCOMPLETE | Incomplete, interruption |



## ADJ 12 Copy quality adjustment (Auto printer density and gradation adjustment)

### (1) Note before execution of the copy density and gradation adjustment

\* Requisite conditions before execution of the copy density and gradation adjustment Before execution of the copy density and gradation adjustment, be sure to check to confirm that the related adjustments which will affect the copy density and gradation have been properly completed. The importance levels of them are shown below.

(Items which will affect the copy density and gradation but are not required to be adjusted frequently. However, they must be checked and adjusted when a trouble occurs.)

1) The following items must be adjusted properly.

| Job No | Adjustment item list          |         |                                                    | Simulation |
|--------|-------------------------------|---------|----------------------------------------------------|------------|
| ADJ 1  | Adjust the developing unit    | ADJ 1A  | Adjust the developing doctor gap                   |            |
|        |                               | ADJ 1B  | Adjust the developing roller main pole position    |            |
| ADJ 2  | Adjusting high voltage values | ADJ 2A  | Adjust the main charger grid voltage               | 8-2        |
|        |                               | ADJ 2B  | Adjust the developing bias voltage                 | 8-1        |
|        |                               | ADJ 2C  | Transfer current and voltage adjustment            | 8-6        |
| ADJ 6  | Scan image focus adjustment   |         |                                                    |            |
| ADJ 11 | CCD calibration               | ADJ 11B | CCD gamma adjustment (CCD calibration) (DSPF mode) | 63-3       |
|        |                               | ADJ 11C | Shading adjustment (Calibration) (DSPF mode)       | 63-2       |

### (Relationship between the servicing job contents and the copy density and gradation adjustment)

Note that the preliminary jobs before execution of the copy density and gradation adjustment depend on the machine status and the servicing conditions. Follow the flowchart of the copy density and gradation adjustment procedures depending on the actual conditions.

There are following four, major cases.

- 1) When installing (as needed)
- 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)

### (2) Copy density and gradation check

(Note)

Before checking the copy density and gradation, 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)

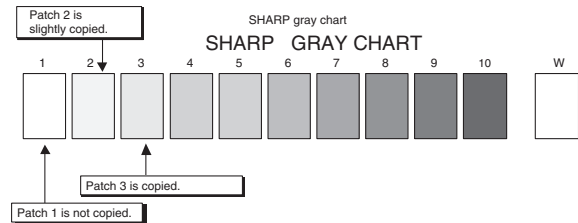
Make a copy of the gray test chart (UKOG-0162FCZZ), and check that it is proper.

Note for checking the copy mode density

To check the density, use the gray test chart (UKOG-0162FCZZ). or servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual). In addition, all the picture quality adjustment settings in the user adjustment mode must be set to the default (center).

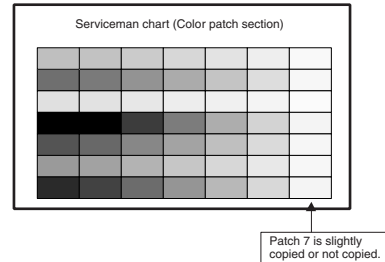
[Check with the gray test chart (UKOG-0162FCZZ)]

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



[Check with the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11 or UKOG-0326FCZZ/UKOG-0326FC11)]

Check to confirm that it is in the conditions shown below.



Copy check items (Check to confirm the following:)

|   | Display/Item                                                                     | Adjustment items                                                                        |                                                                                                                     |
|---|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1 | There are 12 void areas.                                                         | ADJ18-A to D                                                                            | Sim50-28                                                                                                            |
| 2 | The resolution of 5.0 (5 points) can be seen.                                    | Check the dirt of the OC glass<br>Clean the OC glass<br>Clean the mirror of the scanner | 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. | ADJ12-A                                                                                 | Sim61-11<br>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, Main charger and mirror of the scanner.                    |                                                                                                                     |
| 5 | The background density is not so light.                                          | ADJ12-A                                                                                 | Sim46-74<br>Copy/Printer gray balance and density adjustment (Automatic adjustment) (Basic adjustment)              |
| 6 | The black low-density gradation is copied slightly.                              | ADJ12-A                                                                                 | Sim46-74<br>Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment)             |



## 12-A Auto copy density and gradation adjustment, and auto printer density and gradation adjustment

This adjustment is needed in the following situations:

- \* 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.

### a. General

There are following two modes in the auto copy density and gradation adjustment.

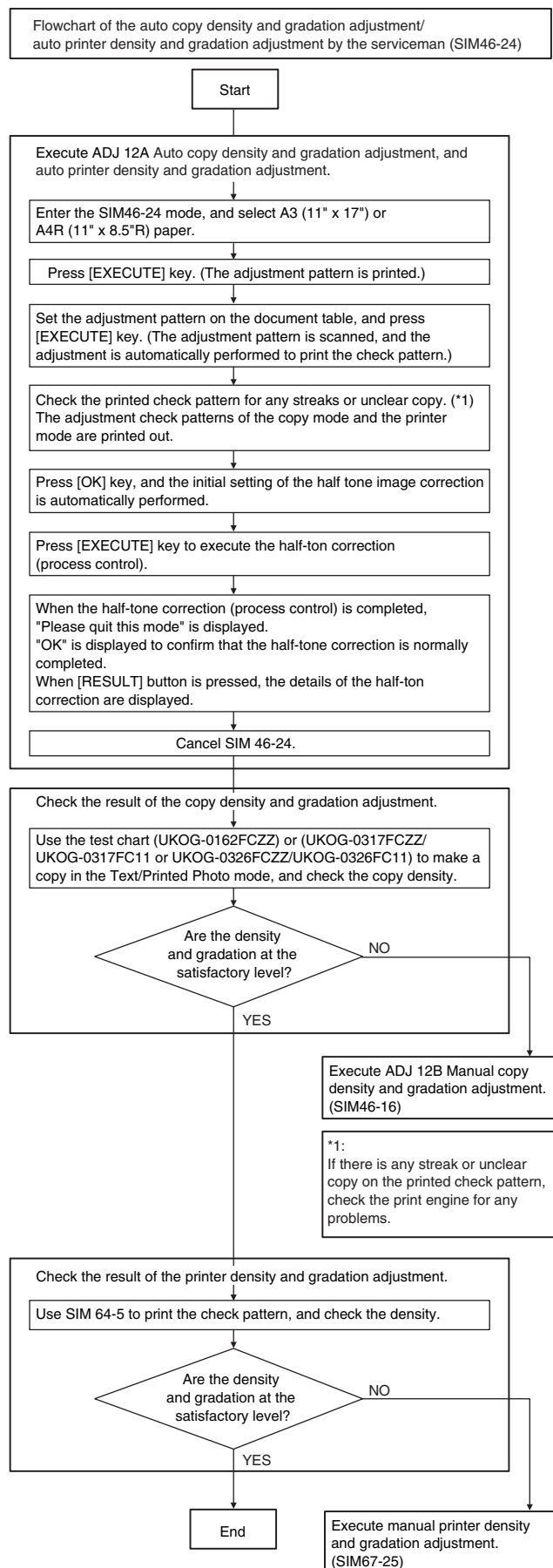
- 1) Auto copy density and gradation adjustment, and auto printer density and gradation adjustment by the serviceman (SIM 46-24 is used.) SIM 46-24 allows simultaneous execution of the automatic copy density and gradation adjustment, and the automatic printer density and gradation adjustment. There is no method to execute the automatic density and gradation adjustment separately in the copy mode and in the printer mode. To execute the printer density and gradation adjustment automatically, use this method.
- 2) Auto copy density and gradation adjustment by the user (The user program mode is used.) The auto copy density and gradation adjustment by the user is provided to reduce the number of service calls. If the balance of the copy density or gradation is lost for some reason, the user can use this adjustment to recover the image quality. 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 automatic copy density and gradation adjustment by the serviceman can be used to obtain normal picture quality even though the machine environment is greatly changed. In addition, if there is a fatal problem on the machine, repair and adjustment of the machine can provide normal images. To perform the adjustment, the above difference must be fully understood.

### b. Note for execution of the auto copy density and gradation adjustment

- 1) The print engine section must have been adjusted properly.
- 2) The CCD gamma adjustment must have been adjusted properly.
- 3) Set the adjustment pattern sheet on the document table, and place 5 sheet of white paper on the adjustment pattern sheet.

### c. Adjustment procedure

(Auto copy density and gradation adjustment, and auto printer density and gradation adjustment by the serviceman)



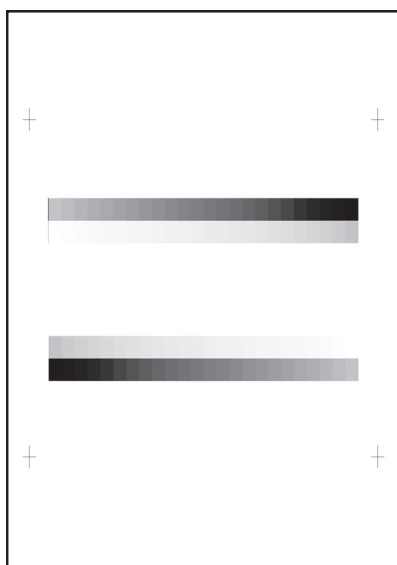
- 1) Enter the SIM 46-74 mode.



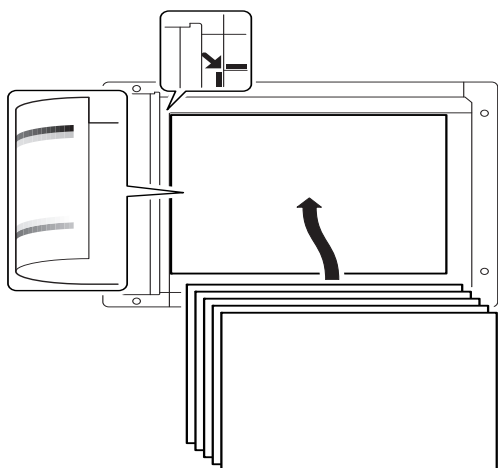
- 2) Press [EXECUTE] key.

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)

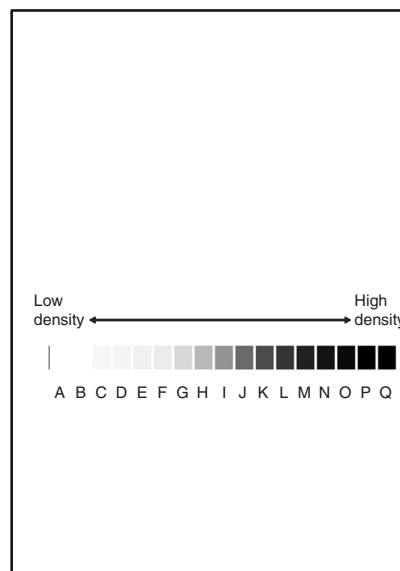


- 3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table. Place the printed patch image (adjustment pattern) paper on the document table so that the fine lines on the paper are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment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



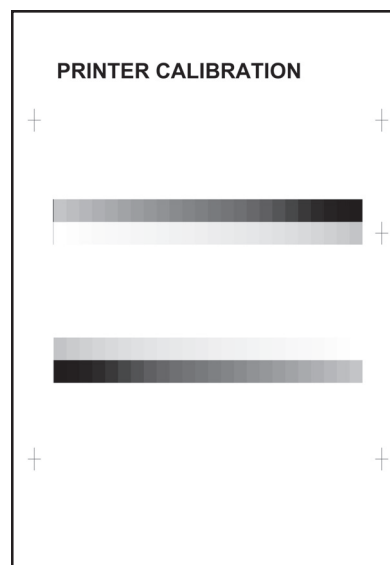
- 4) Press [EXECUTE] key.

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.

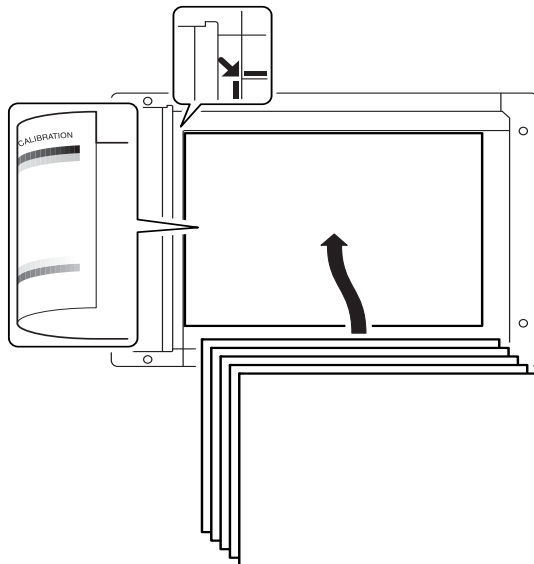


- 5) Press [EXECUTE] key.

The printer gray patch image (adjustment pattern) is printed out (A4/11" x 8.5" or A3/11" x 17" is automatically selected).

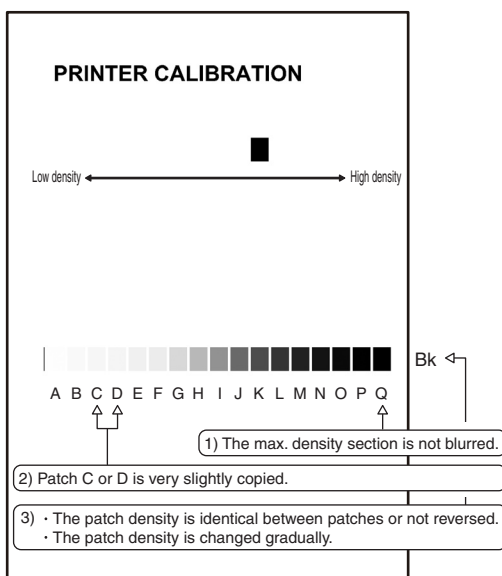


- 6) Set the gray patch image (adjustment pattern) printed in the procedure 5) on the document table. Set the gray patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the gray patch image so that the fine lines are on the left side and place 5 sheets of white paper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



#### 7) Press [EXECUTE] key.

When the gray balance is customized with the manual gray balance adjustment according to the user's request. The printer gray balance adjustment procedure 1) is automatically performed and the gray balance check patch image is printed out.



#### 8) The initial setting menu of the halftone images correction is displayed. Press [OK] key.

### 12-B Manual copy density and gradation adjustment

This adjustment is needed in the following situations:

- \* 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) section 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.

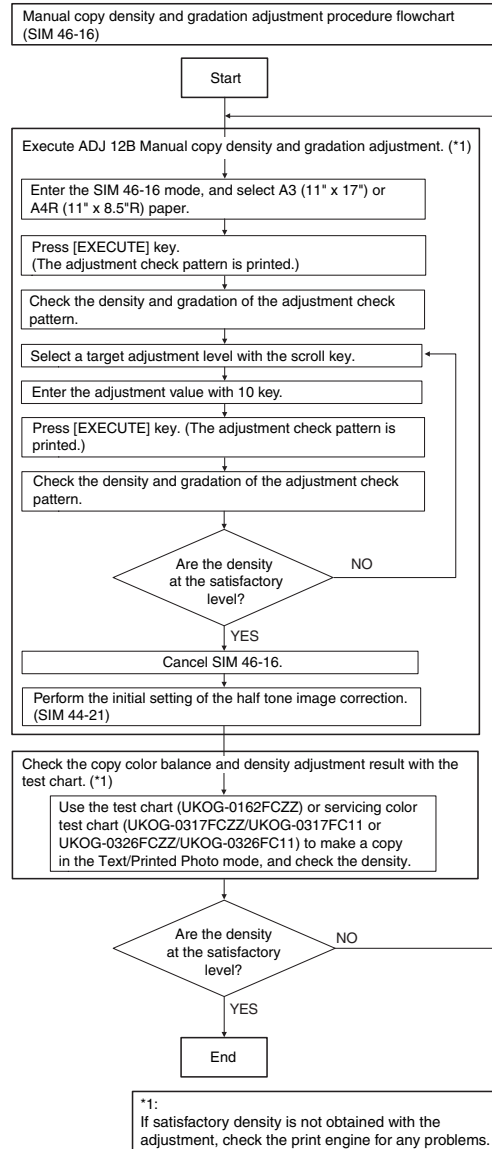
#### a. General

The manual copy density and gradation adjustment (manual adjustment) is used when the automatic adjustment previously stated cannot obtain the specified result or a fine adjustment is required and the user requests for customization. Execute the automatic color balance adjustment in advance, and then execute this adjustment for better efficiency.

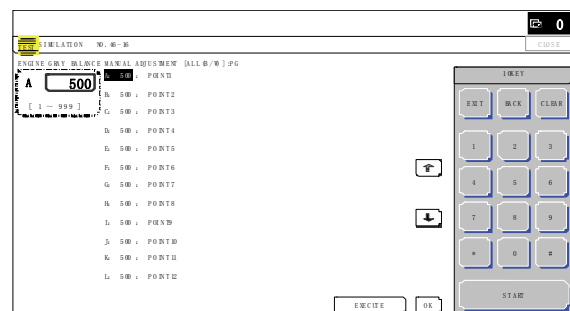
#### b. Note for the copy density and gradation adjustment (Manual adjustment)

- 1) The print engine section must have been properly adjusted.

#### c. Adjustment procedure



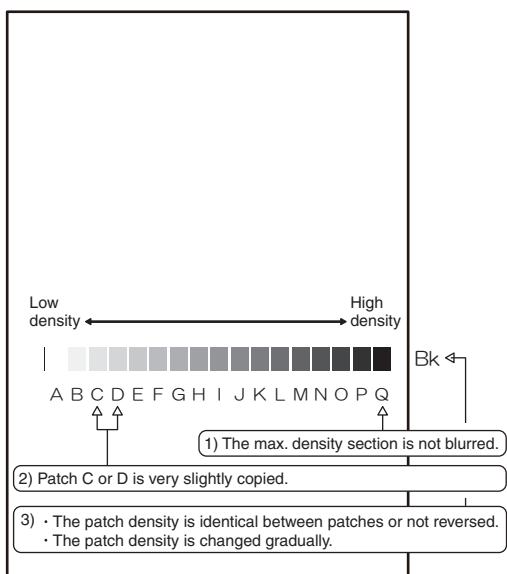
#### 1) Enter the SIM46-16 mode.



#### 2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

The adjustment check pattern is printed.

- 3) Check that the following specification is satisfied or the density and gradation is satisfactory.



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 color balance is adjusted on the request from the user, there is no need to set to the standard color balance stated above.

- 4) Select the point to be adjusted with the scroll key.

| Item/Display | Density level (Point) | Adjustment value range | Default |
|--------------|-----------------------|------------------------|---------|
| A POINT1     | Point 1               | 245 - 755              | 500     |
| B POINT2     | Point 2               | 245 - 755              | 500     |
| C POINT3     | Point 3               | 245 - 755              | 500     |
| D POINT4     | Point 4               | 245 - 755              | 500     |
| E POINT5     | Point 5               | 245 - 755              | 500     |
| F POINT6     | Point 6               | 245 - 755              | 500     |
| G POINT7     | Point 7               | 245 - 755              | 500     |
| H POINT8     | Point 8               | 245 - 755              | 500     |
| I POINT9     | Point 9               | 245 - 755              | 500     |
| J POINT10    | Point 10              | 245 - 755              | 500     |
| K POINT11    | Point 11              | 245 - 755              | 500     |
| L POINT12    | Point 12              | 245 - 755              | 500     |
| M POINT13    | Point 13              | 245 - 755              | 500     |
| N POINT14    | Point 14              | 245 - 755              | 500     |
| O POINT15    | Point 15              | 245 - 755              | 500     |
| P POINT16    | Point 16              | 245 - 755              | 500     |
| Q POINT17    | Point 17              | 245 - 755              | 500     |

- 5) Enter the adjustment value with 10-key and press [OK] key.  
The adjustment value can be set in the range of 245 - 755. When SIM 46-24 is used to execute the automatic density and gradation adjustment, all the set values of this simulation are set to 500. To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value. Repeat procedures of 2) - 5) 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.
- 6) Check the density and gradation of the adjustment check pattern. (Refer to the item of the copy density and gradation check.)
- 7) Execute SIM 44-21.



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. This adjustment is required to memory the data as the reference data for half-tone correction. Immediately after execution of ADJ 12B (Copy density and gradation adjustment (Manual)), be sure to execute this adjustment. When ADJ 12A (Copy/printer density and gradation adjustment (Automatic)) is executed, this adjustment is automatically executed.

- 8) Use SIM 44-26 to execute the halftone image correction.  
Press [EXECUTE] key.
- 9) Make a copy of the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11 or UKOG-0326FCZZ/UKOG-0326FC11) and a user's document according to necessity in the Text/Printed Photo mode (Manual), and check the adjustment result again. If the copy density and gradation 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.

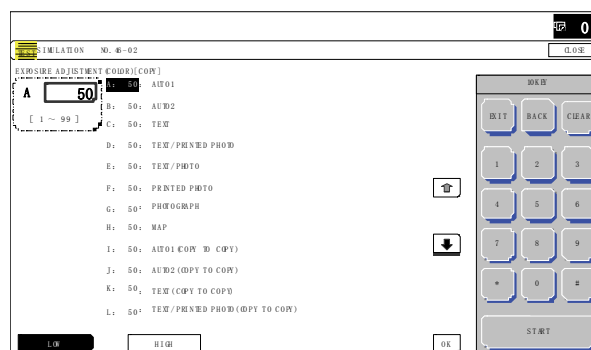
## 12-C Copy density in each copy mode (Overall density adjustment) (Normally unnecessary to adjust)

This adjustment is needed in the following situations:

- \* When there is necessity to change copy density of the low density and high density part at each copy mode 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.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

The density is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

- 1) Enter the SIM 46-2 mode.



- 2) Select the copy mode to be adjusted with the scroll key.



| Item/Display | Content                          | Setting range                     | Default value  |
|--------------|----------------------------------|-----------------------------------|----------------|
| A            | AUTO1                            | Auto 1                            | LOW 1 - 99 50  |
| B            | AUTO2                            | Auto 2                            | HIGH 1 - 99 50 |
| C            | TEXT                             | Text                              | LOW 1 - 99 50  |
| D            | TEXT/PRINTED PHOTO               | Text/Printed Photo                | HIGH 1 - 99 50 |
| E            | TEXT/PHOTO                       | Text/Photograph                   | LOW 1 - 99 50  |
| F            | PRINTED PHOTO                    | Printed Photo                     | HIGH 1 - 99 50 |
| G            | PHOTOGRAPH                       | Photograph                        | LOW 1 - 99 50  |
| H            | MAP                              | Map                               | HIGH 1 - 99 50 |
| I            | AUTO1(COPY TO COPY)              | Auto1(copy document)              | LOW 1 - 99 50  |
| J            | AUTO2(COPY TO COPY)              | Auto2(copy document)              | HIGH 1 - 99 50 |
| K            | TEXT(COPY TO COPY)               | Text(copy document)               | LOW 1 - 99 50  |
| L            | TEXT/PRINTED PHOTO(COPY TO COPY) | Text/printed photo(copy document) | HIGH 1 - 99 50 |
| M            | PRINTED PHOTOP(COPY TO COPY)     | Printed photo(copy document)      | LOW 1 - 99 50  |
| N            | LIGHT                            | Light                             | HIGH 1 - 99 50 |

- 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.
- Press [CLOSE] key in this simulation mode to jump to the normal copy mode. Make a copy and check the adjustment result.  
Switch the simulation mode and the normal copy mode alternately, and adjust and check the adjustment result. Repeat switching the adjustment mode (SIM 46-2) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained. To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

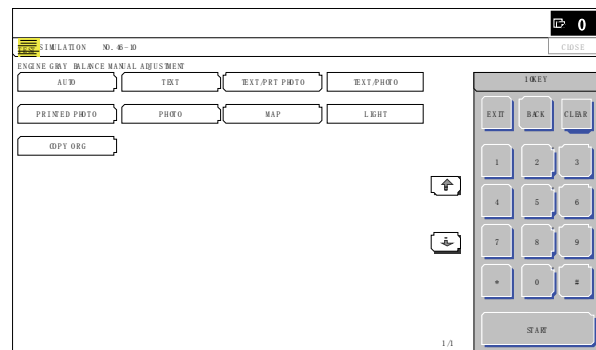
## 12-D Density and gradation adjustment in each copy mode (Normally not required)

This adjustment is needed in the following situations:

- \* When there is a necessity to change the density and gradation in each copy mode individually.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

This is to adjust the density in each copy mode. Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

- Enter the SIM 46-10 mode.



- Select the copy mode to be adjusted with the mode key.
- Select the density level (point) to be adjusted with the scroll key.

| Item/Display | Density level (Point) | Adjustment value range | Default value |
|--------------|-----------------------|------------------------|---------------|
| A            | POINT1                | Point 1                | 245 - 755 500 |
| B            | POINT2                | Point 2                | 245 - 755 500 |
| C            | POINT3                | Point 3                | 245 - 755 500 |
| D            | POINT4                | Point 4                | 245 - 755 500 |
| E            | POINT5                | Point 5                | 245 - 755 500 |
| F            | POINT6                | Point 6                | 245 - 755 500 |
| G            | POINT7                | Point 7                | 245 - 755 500 |
| H            | POINT8                | Point 8                | 245 - 755 500 |
| I            | POINT9                | Point 9                | 245 - 755 500 |
| J            | POINT10               | Point 10               | 245 - 755 500 |
| K            | POINT11               | Point 11               | 245 - 755 500 |
| L            | POINT12               | Point 12               | 245 - 755 500 |
| M            | POINT13               | Point 13               | 245 - 755 500 |
| N            | POINT14               | Point 14               | 245 - 755 500 |
| O            | POINT15               | Point 15               | 245 - 755 500 |
| P            | POINT16               | Point 16               | 245 - 755 500 |
| Q            | POINT17               | Point 17               | 245 - 755 500 |

- 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. A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected. The density at each density level (point) can be checked by referring to this adjustment pattern. However, it is more practically to make a copy and check it.

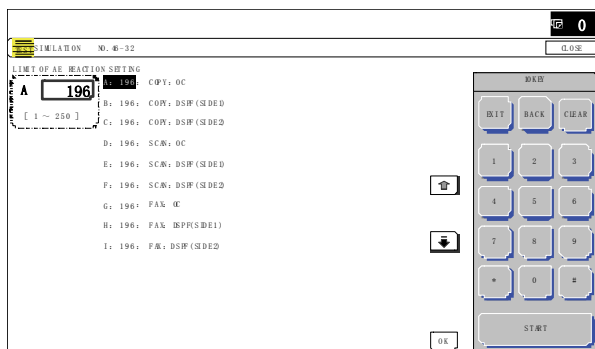
## 12-E Document background density reproducibility adjustment in the auto copy mode (Normally unnecessary to adjust)

Use for the reproducibility adjustment of document background density in 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.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.
- \* When there is request from the user.

- Enter the SIM 46-32 mode.



- 2) Select the adjusting 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.

#### (DSPF)

| Item/Display | Content            | Setting range                         | Default value |
|--------------|--------------------|---------------------------------------|---------------|
| A            | COPY: OC           | Copy mode (for OC)                    | 1 - 250       |
| B            | COPY: DSPF (SIDE1) | Copy mode (for DSPF front surface)    | 196           |
| C            | COPY: DSPF (SIDE2) | Copy mode (for DSPF back surface)     | 196           |
| D            | SCAN: OC           | Scanner mode (for OC)                 | 1 - 250       |
| E            | SCAN: DSPF (SIDE1) | Scanner mode (for DSPF front surface) | 196           |
| F            | SCAN: DSPF (SIDE2) | Scanner mode (for DSPF back surface)  | 196           |
| G            | FAX: OC            | FAX mode (for OC)                     | 1 - 250       |
| H            | FAX: DSPF (SIDE1)  | FAX mode (for DSPF front surface)     | 196           |
| I            | FAX: DSPF (SIDE2)  | FAX mode (for DSPF back surface)      | 196           |

### 12-F Color document reproducibility adjustment in the copy mode (Normally unnecessary to adjust)

Use to adjust the reproducibility of the red image and the yellow image when copying a color document that includes the red/yellow images.

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 copy mode.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

- 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      |
| B            | G-Ratio     | Gray making setting (G)       | 0 - 1000      |
| C            | R-Ratio RIP | Print gray making setting (R) | 0 - 1000      |
| D            | G-Ratio RIP | Print gray making setting (G) | 0 - 1000      |

- 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 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.

### 12-G Copy density and gradation adjustment (DSPF mode) (Individual adjustment of the low density area and the high density area)

It is normally not necessary to perform this adjustment. In the following cases, however, this adjustment must be performed.

- \* When the copy density differs in the DSPF mode and in the document table mode.
- \* When the copy density differs on the front surface and on the back surface in the DSPF mode.
- \* When the copy density in the DSPF mode is too low or too high.
- \* When the DSPF unit is replaced.
- \* When the DSPF unit is disassembled.
- \* When the DSPF CCD unit is replaced.
- \* When U2 trouble occurs.

#### a. Adjustment procedures

##### (Front surface copy density adjustment)

- 1) Enter the SIM 46-9 mode.



| 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 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            |

- Press [OC] or [DSPF] key to select the front/back surface copy density adjustment mode.
  - Select an adjustment mode with the scroll key.  
To adjust the density in the low density area, select "COPY SIDE A or B" To adjust the density in the high density area, select "COPY SIDE A or B HIGH."
  - Enter an adjustment value with 10-key.  
To increase the density, enter a greater number. To decrease the density, enter a smaller number.
  - Press [OK] key.
  - Press [CLOSE] key to exit the simulation mode.
  - Make a copy and check the copy density.
- Repeat the above procedures until a satisfactory result is obtained.

## 12-H Copy density and gradation adjustment (RSPF mode) (Individual adjustment of the low density area and the high density area)

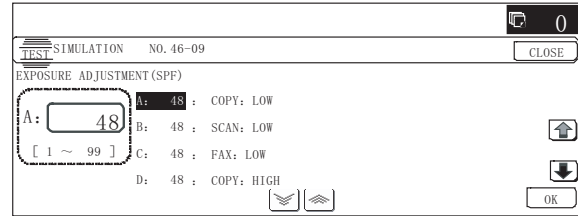
It is normally not necessary to perform this adjustment. In the following cases, however, this adjustment must be performed.

- \* When the copy density differs in the RSPF mode and in the document table mode.
- \* When the copy density in the RSPF mode is too low or too high.
- \* When the RSPF unit is replaced.
- \* When the RSPF unit is disassembled.
- \* When U2 trouble occurs.

### a. Adjustment procedures

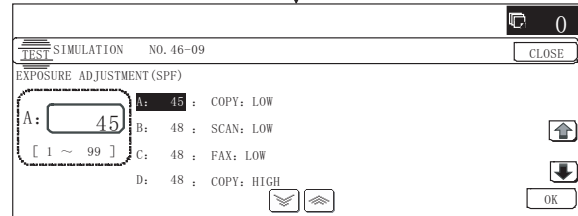
#### (Front surface copy density adjustment)

- Enter the SIM 46-9 mode.



10-key

OK



- Select an adjustment mode with the scroll key.  
To adjust the density in the low density area, select "COPY LOW." To adjust the density in the high density area, select "COPY HIGH."

| Item | Display    | Content                                                   | Setting range | Default value |
|------|------------|-----------------------------------------------------------|---------------|---------------|
| A    | COPY: LOW  | RSPF copy mode exposure adjustment (Low density side)     | 1 - 99        | 48            |
| B    | SCAN: LOW  | RSPF scanner mode exposure adjustment (Low density side)  | 1 - 99        | 48            |
| C    | FAX: LOW   | RSPF FAX mode exposure adjustment (Low density side)      | 1 - 99        | 48            |
| D    | COPY: HIGH | RSPF copy mode exposure adjustment (High density side)    | 1 - 99        | 53            |
| E    | SCAN: HIGH | RSPF scanner mode exposure adjustment (High density side) | 1 - 99        | 53            |
| F    | FAX: HIGH  | RSPF FAX mode exposure adjustment (High density)          | 1 - 99        | 53            |

- Enter an adjustment value with 10-key.  
To increase the density, enter a greater number. To decrease the density, enter a smaller number.
  - Press [OK] key.
  - Press [CLOSE] key to exit the simulation mode.
  - Make a copy and check the copy density.
- Repeat the above procedures until a satisfactory result is obtained.

## 12-I Automatic copy and printer density and gradation adjustment by the user (Setting of ENABLE/DISABLE of the automatic copy density and gradation adjustment, and the adjustment)

### a. General

In the user program mode, the user can execute the automatic adjustment of the copy and the printer density and gradation.

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 and the printer density and gradation as well as the user's operational ability is 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.



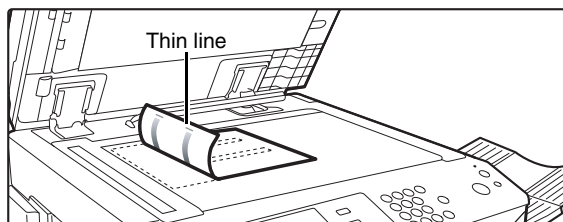
- 2) Select ENABLE or DISABLE with 10-key.  
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
- 3) Press [OK] key.

When this is set to DISABLE, the menu of the automatic adjustment of the user copy color balance and density is not displayed in the user program mode.

(Automatic adjustment of the copy and the printer density and gradation)

Remark:

- 1) Enter the system setting mode.
- 2) Enter the copy setting mode.
- 3) Press the auto calibration key.
- 4) Press [EXECUTE] key.  
The patch image (adjustment pattern) is printed out.  
A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.
- 5) Set the patch image (adjustment pattern) printed in procedure 4) on the document table. Set the patch image so that the light density area is on the left side. Place the adjustment pattern on the document table so that the adjustment pattern patch faces in the sub scanning direction. (When the adjustment pattern is printed on A4R or 11" x 8.5"R paper, place the adjustment pattern paper vertically on the document table.) At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).



- 6) Press [EXECUTE] key.  
The copy and the printer density and gradation adjustment is automatically executed. After completion of the adjustment, the display returns to the original operation screen.

## ADJ 13 Printer quality adjustment (Printer density and gradation adjustment)

### (1) Note before execution of the printer density and gradation adjustment

#### (2) Printer density and gradation check

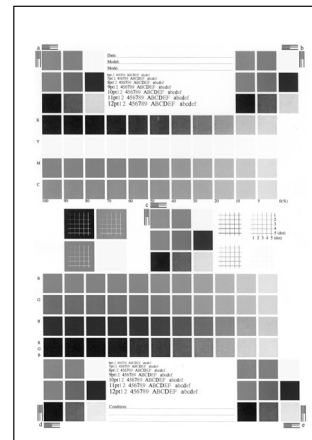
(Note)

Before checking the printer density and gradation, 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.

(Method 2)

Execute SIM 67-25 to print the adjustment check pattern.

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

## 13-A Manual printer density and gradation adjustment

This adjustment is needed in the following situations:

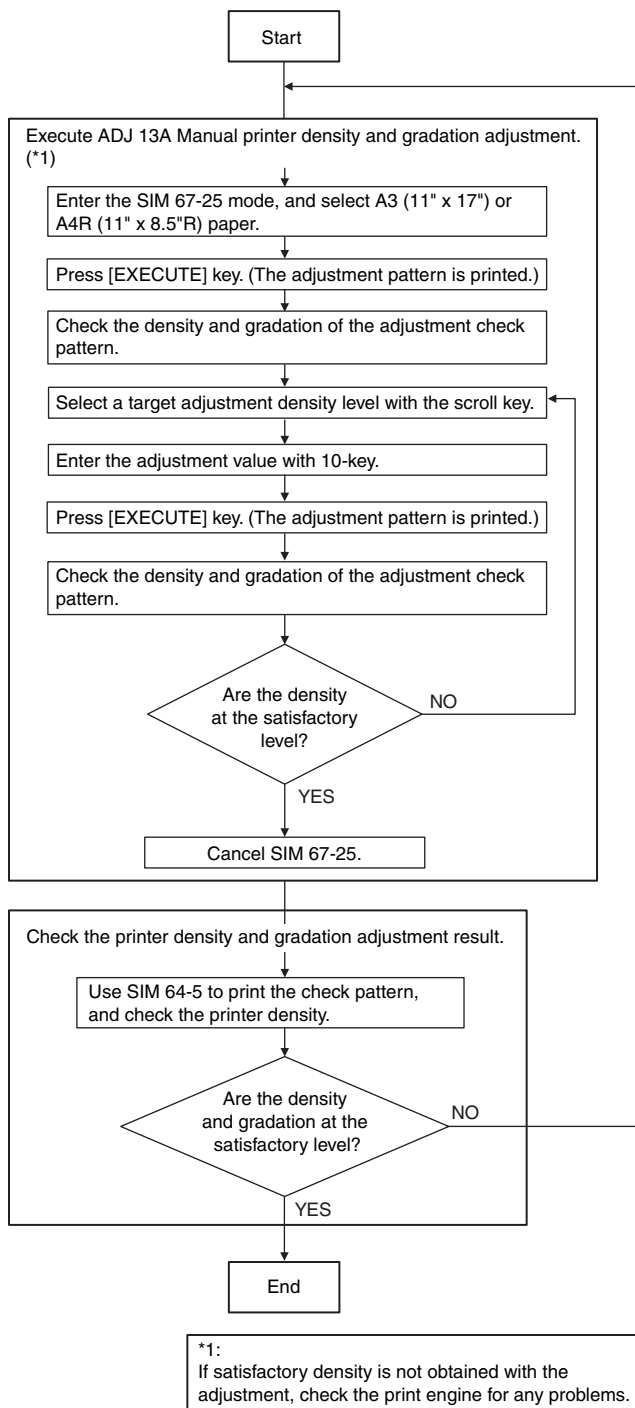
- \* When the copy density and gradation adjustment is required.

#### a. General

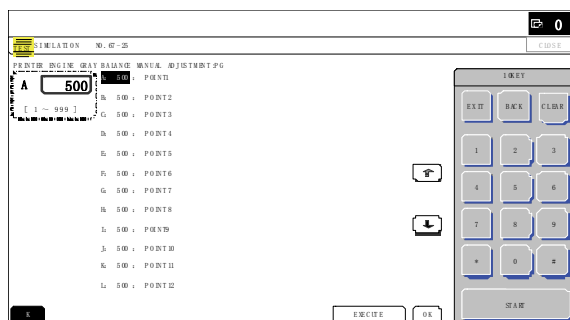
When the printer density and gradation are not within the specified range in the previous automatic adjustment of ADJ 12A, or when a fine adjustment is required, or when the user requests for customization, this adjustment is executed manually. Execute the automatic adjustment of ADJ 12A in advance, and then execute this adjustment for better efficiency.

#### b. Adjustment procedure

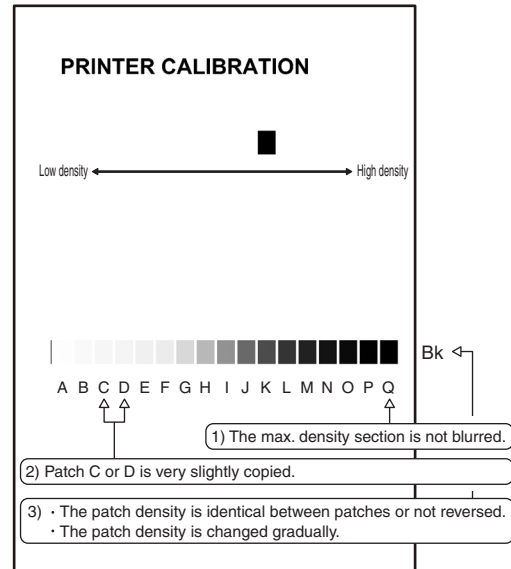
Manual printer density and gradation adjustment procedure flowchart (SIM 67-25)



- 1) Enter the SIM 67-25 mode.



- 2) Press [EXECUTE] key. (A3 (11" x 17") or A4R (11" x 8.5"R) paper is selected.)  
The adjustment check pattern is printed.
- 3) Check that the following specification is satisfied or the density and the gradation are 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 A or B is slightly copied.

When, however, the density and the gradation are adjusted on the request by the user, there is no need to set to the standard density and gradation stated above.

- 4) Select the adjustment point with the scroll key.
- 5) 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 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) - 5) 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.
- 6) Cancel SIM 67-25.
- 7) Use SIM 64-5 to print the print test pattern and check the print density and gradation. Set each set value to the default and press [EXECUTE] key. The print test pattern is printed.

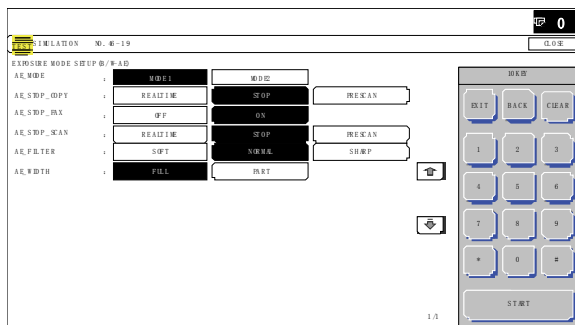
## ADJ 14 Automatic setting of exposure mode operating conditions in copy, scan, and FAX

Use for setting the condition of read operation (Exposure) for document density in auto copy mode. When a copy with correct density is not obtained by type of document, change the setting.

This adjustment is required in the following cases.

- \* When a copy with correct density is not obtained in auto mode.
- \* U2 trouble has occurred.
- \* When the MFP PWB is replaced.
- \* When the EEPROM on the MFP PWB is replaced.

- 1) Enter the SIM 46-19 mode.



- 2) Set REALTIME or STOP 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.

| Item/Display | Content                              | Set value               | Default value |
|--------------|--------------------------------------|-------------------------|---------------|
| AE_MODE      | Auto exposure mode                   | MODE1, MODE2            | MODE2         |
| AE_STOP_COPY | Auto B/W exposure Stop (for copy)    | REALTIME/STOP           | 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           | STOP          |
| AE_FILTER    | Auto exposure filter setting         | SOFT<br>NORMAL<br>SHARP | NORMAL        |
| AE_WIDTH     | AE exposure width                    | FULL / PART             | FULL          |

NOTE: MODE1: High gamma (Improves the image contrast)

MODE2: Normal gamma

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.)

AE WIDTH FULL:

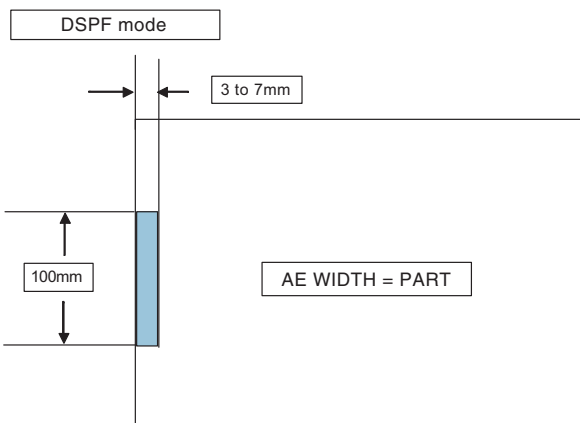
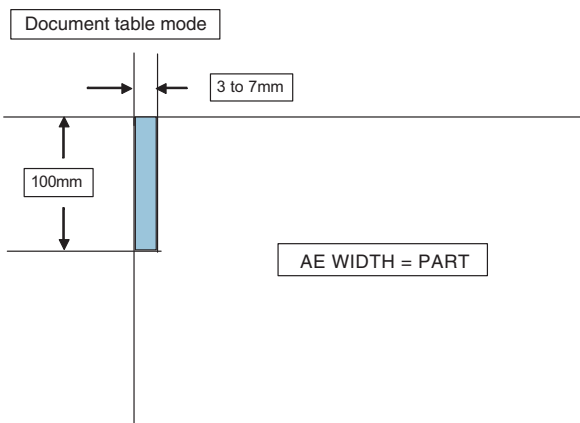
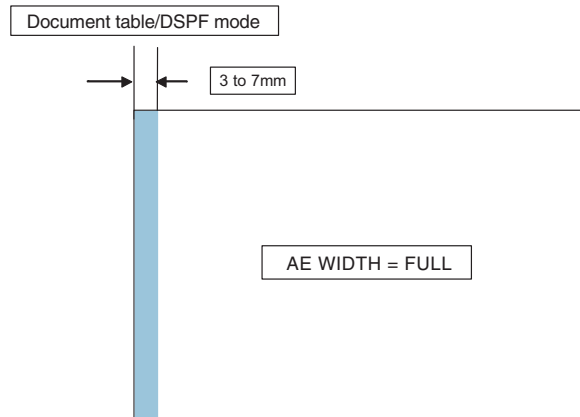
Document density reading area in auto mode is 3 - 7 mm (leading edge of document) x Document width. No relationship to PRESCAN MODE

AE WIDTH PART:

Document density reading area in auto mode is 3 - 7 mm (leading edge of document) x 100 mm (width). No relationship to PRESCAN MODE

Operation in 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

## ADJ 15 Paper size detection adjustment

### 15-A Manual paper feed tray paper width sensor adjustment

This adjustment is needed in the following situations:

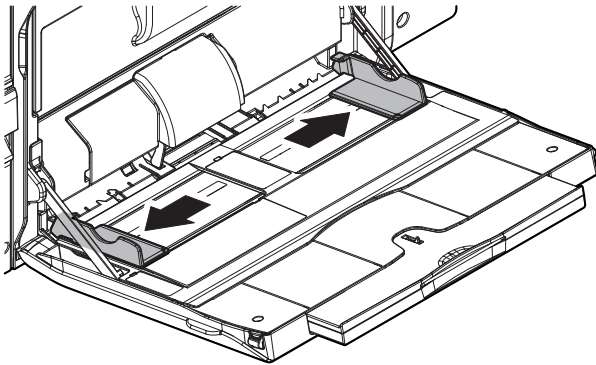
- \* The manual paper feed tray section has been disassembled.
- \* The manual paper feed tray unit has been replaced.
- \* U2 trouble has occurred.
- \* The PCU PWB has been replaced.
- \* The EEPROM of the PCU PWB has been replaced.

- 1) Enter the SIM 40-2 mode.

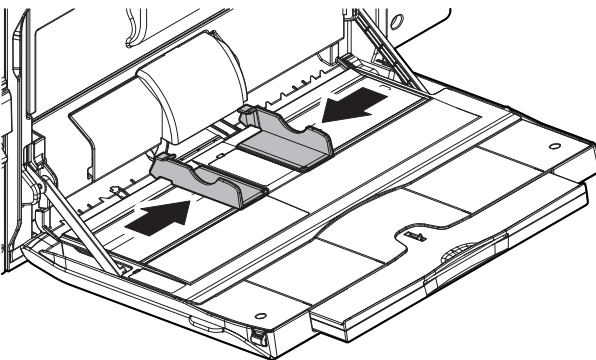




- 2) Open the manual paper feed guide to the maximum width position.



- 3) Press [EXECUTE] key.  
[EXECUTE] key is highlighted. Then it returns to the normal display. The maximum width position detection level of the manual paper feed guide is recognized.
- 4) Set the manual paper feed guide to the A4 size.
- 5) Press [EXECUTE] key.  
[EXECUTE] key is highlighted. Then it returns to the normal display. The A4 size width position detection level of the manual paper feed guide is recognized.
- 6) Set the manual paper feed guide to the width for the A4R size.
- 7) Press [EXECUTE] key.  
[EXECUTE] key is highlighted. Then it returns to the normal display. Set the manual paper feed guide to the width for the A4R size.
- 8) Open the manual paper feed guide to the minimum width position.



- 9) Press [EXECUTE] key.  
[EXECUTE] key is highlighted. Then it returns to the normal display. The minimum width position detection level of the manual paper feed guide is recognized. If the above operation is not completed normally, "ERROR" is displayed. When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

## 15-B DSPF paper feed tray paper width sensor adjustment

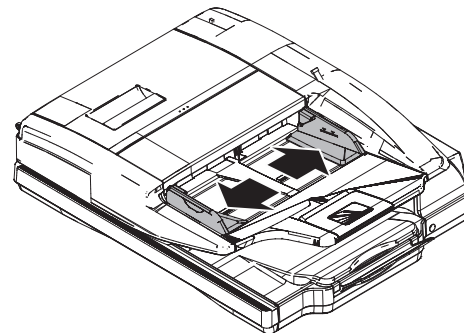
This adjustment is needed in the following situations:

- \* The DSPF paper feed tray section has been disassembled.
- \* The DSPF paper feed tray unit has been replaced.
- \* When a U2 trouble occurs.
- \* The scanner PWB has been replaced.
- \* The EEPROM on the scanner PWB has been replaced.

- 1) Enter the SIM 53-6 mode.



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



- 3) Press [EXECUTE] key.  
The maximum width detection level is recognized.
  - 4) Open the DSPF paper feed guide to the width for the A4R size.
  - 5) Press [EXECUTE] key.  
The A4R width detection level is recognized.
  - 6) Open the DSPF paper feed guide to the width for the A5R size.
  - 7) Press [EXECUTE] key.  
The A5R width detection level is recognized.
  - 8) Open the DSPF paper feed guide to the minimum width position.
  - 9) Press [EXECUTE] key.  
The minimum width detection level is recognized.
- \* When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

## ADJ 16 Document size detection adjustment (Document table mode)

This adjustment is needed in the following situations:

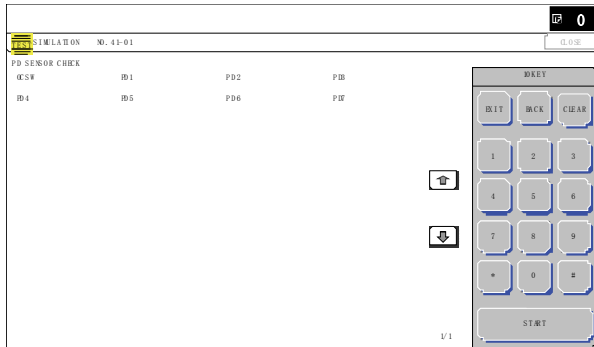
- \* When the original size sensor section has been disassembled.
- \* When the original size sensor section has been replaced.
- \* When U2 trouble has occurred.
- \* When the scanner control PWB is replaced.



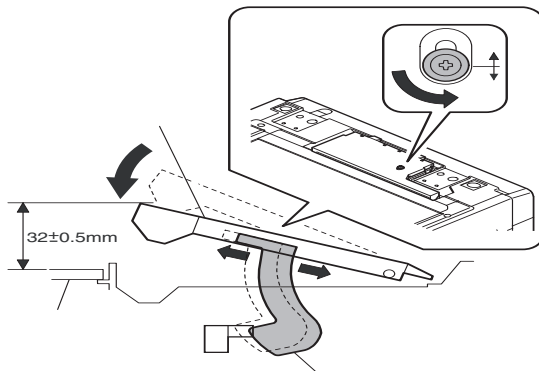
\* When the EEPROM on the scanner control PWB is replaced.

## 16-A Document size sensor detection point adjustment

- 1) Enter the SIM 41-1 mode.



Loosen the original cover switch actuator adjustment screw and slide the actuator position so that the display OCSW is returned to the normal display when the height of the arm unit top from the table glass is  $32 \pm 0.5\text{mm}$  by slowly tilting the document detection arm unit in the arrow direction and adjust. (If the ON timing of the original cover switch is shifted, the document detection function may malfunction.)



## 16-B Adjust the sensitivity of the original size sensor

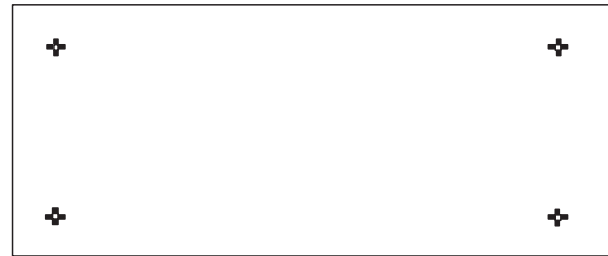
- 1) Enter the SIM 41-2 mode.
- 2) Execute the sensor adjustment without document.  
With the document cover open, without placing a document on the table glass, press [EXECUTE] key.
- 3) Place A3 (11" x 17") paper on the document table and press [EXECUTE] key.  
If the adjustment is completed normally, "DOCUMENT PHOTO SENSOR LEVEL IS ADJUSTED" is displayed.

## ADJ 17 Touch panel coordinate setting

This adjustment is needed in the following situations:

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

- 1) Enter the SIM 65-1 mode.



- 2) Precisely press the cross mark points (4 positions).

When the cross mark is pressed precisely, a buzzer sounds and the display is reversed. When all the four points are pressed and the touch panel adjustment is completed, the display returns to the simulation sub number entry screen. In case of an error, the display returns to the entry screen again.

Check to confirm that there is no shift between the display frame and the detection position when the touch panel is pressed.

- \* When pressing the touch panel, never use a sharp tip (such as a needle or a pin).

## ADJ 18 Image lead edge position, image off-center, image magnification ratio adjustment (Automatic adjustment)

The following adjustment items can be executed automatically with SIM 50-28. It takes less time to use this adjustment than to use the following manual adjustments.

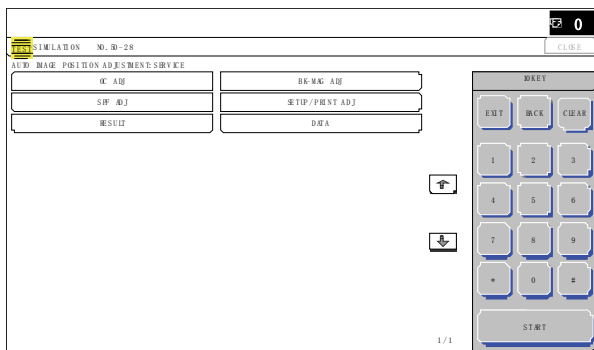
- \* ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)
- \* ADJ 3C Print engine print area (void area) adjustment
- \* ADJ 3D Print engine image off-center adjustment
- \* ADJ 7 Scan image magnification ratio adjustment (Manual adjustment)
- \* ADJ 10 Copy image position, image loss, and void area adjustment (Manual adjustment)

(Menu in SIM 50-28 mode)

| Item/Display    | Content                                                                                                 |
|-----------------|---------------------------------------------------------------------------------------------------------|
| OC ADJ          | Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode) |
| BK-MAG ADJ      | Main scanning direction image magnification ratio adjustment                                            |
| SPF ADJ         | Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)           |
| SETUP/PRINT ADJ | Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment             |
| RESULT          | Adjustment result display                                                                               |
| DATA            | Display of data used when an adjustment is executed                                                     |

## 18-A Print image main scanning direction image magnification ratio automatic adjustment (Document table mode)

- 1) Enter the SIM50-28 mode.

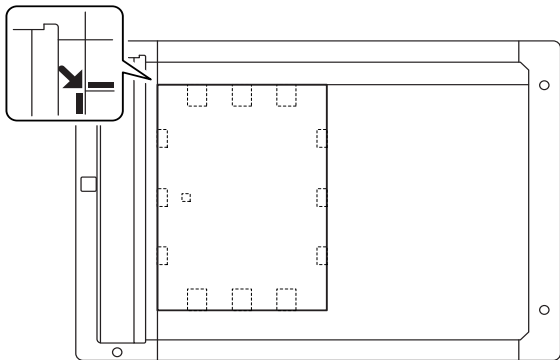


- 2) Select [BK-MAG ADJ] with the key button.
- 3) Select the paper feed tray with paper in it with the key button.  
(Any paper size will do.)

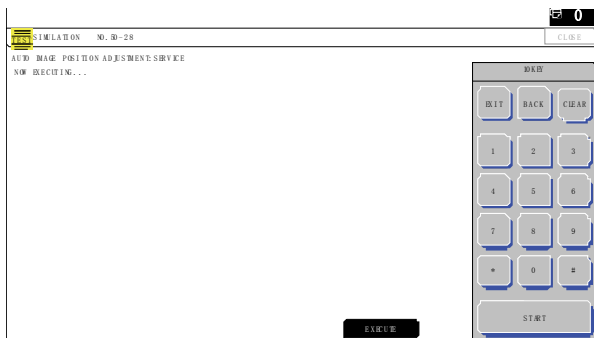


- 4) Press [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- 5) Set the adjustment pattern on the document table. (Any direction)

NOTE: Fit the adjustment pattern correctly with the document guide.



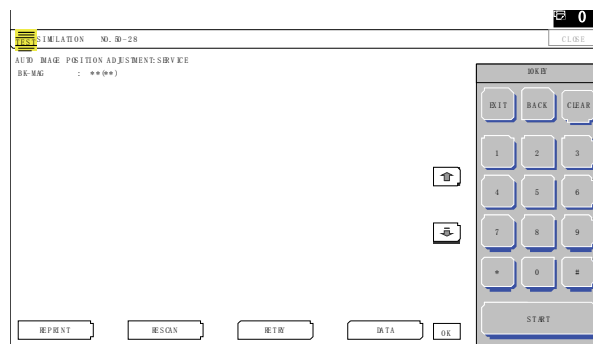
- 6) Press [EXECUTE] key.



The following item is automatically adjustment.

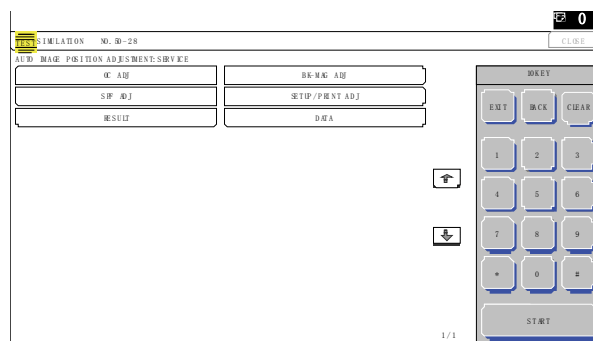
\* Print image main scanning direction image magnification ratio

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



## 18-B Image off-center automatic adjustment (Each paper feed tray)

- 1) Enter the SIM50-28 mode.



- 2) Select [SETUP/PRINT] ADJ with the key button.
- 3) Select [ALL] with the key button.



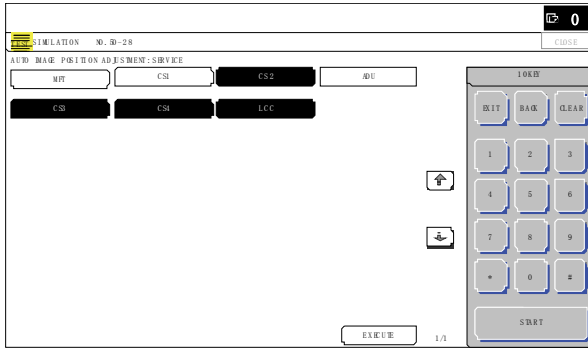
(Note)

By pressing [LEAD] or [OFFSET] button, the following items can be executed individually.

- \* [LEAD]: Print image lead edge image position adjustment
- \* [OFFSET]: Print image off-center adjustment

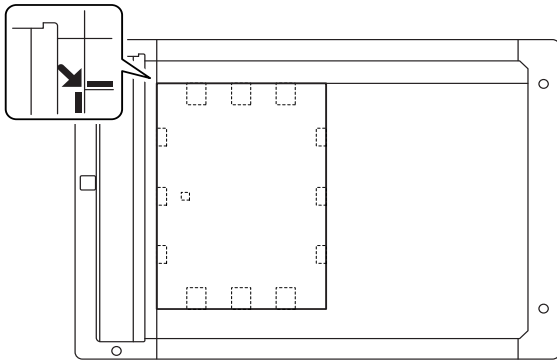
When [ALL] is selected, both of the above two items are executed simultaneously.

- 4) Select a paper feed tray to be adjusted.



- 5) Press [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- 6) Set the adjustment pattern on the document table. (Any direction)

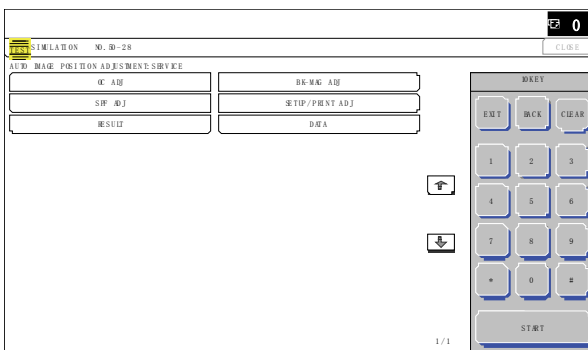
NOTE: Fit the adjustment pattern correctly with the document guide.



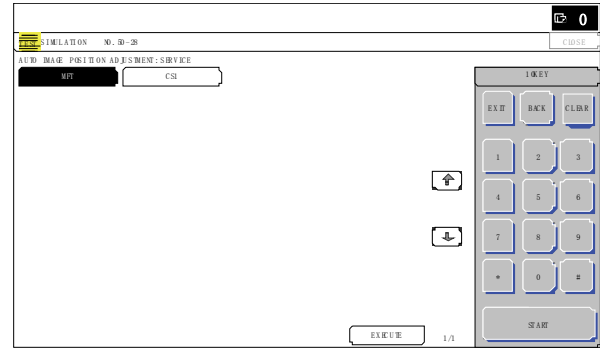
- 7) Press [EXECUTE] key.  
The following item is automatically adjustment.  
\* Print image lead edge image position adjustment  
\* Print image off-center adjustment
- 8) Press [OK] key.  
The adjustment result becomes valid.  
Perform procedures 4) to 7) for each paper feed tray.

### 18-C Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment (Document table mode)

- 1) Enter the SIM50-28 mode.

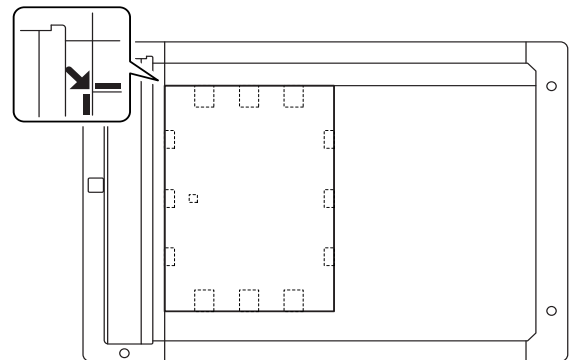


- 2) Select [OC ADJ] with the key button.
- 3) Select the paper feed tray with paper in it with the key button.  
(Any paper size will do.)

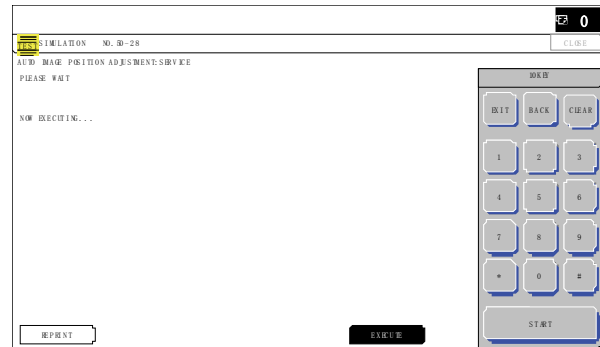


- 4) Press [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- 5) Set the adjustment pattern on the document table. (Any direction)

NOTE: Fit the adjustment pattern correctly with the document guide.



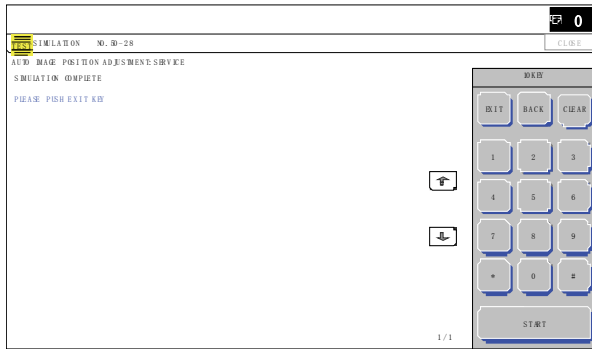
- 6) Press [EXECUTE] key.



The following item is automatically adjustment.

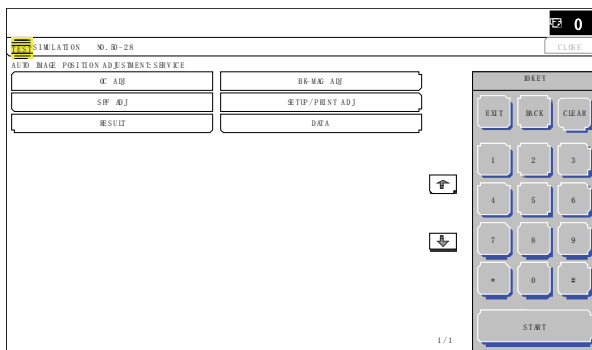
- \* Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

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

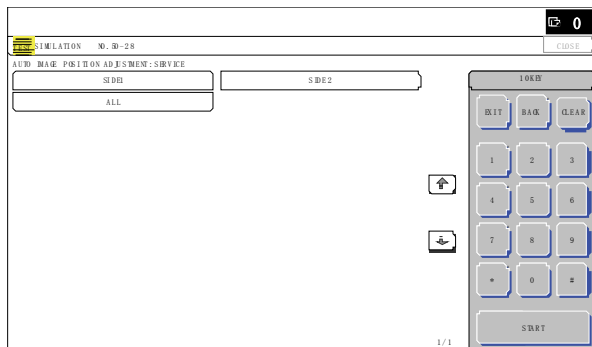


## 18-D Copy image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment (DSPF mode)

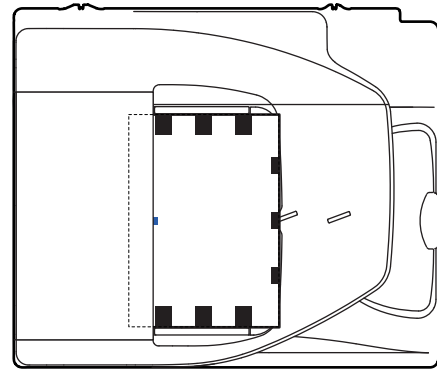
- 1) Enter the SIM50-28 mode.



- 2) Press the [SPF ADJ] button.



- 3) Proceed to one of the three screens for selecting the cassette used to print DSPF adjustment patterns by selecting the corresponding button. Select [ALL] with the key button.  
SIDE1: DSPF adjustment for the front side  
SIDE2: DSPF adjustment for the back side  
ALL: DSPF adjustment for both the front and back sides
- 4) Select one of the cassettes that can be used to print DSPF adjustment patterns. (Multiple selection is not allowed.)
- 5) Press the [EXECUTE] button, and the machine starts self-print of DSPF adjustment patterns.  
\* The screen shows a message indicating that the machine is self-printing DSPF adjustment patterns.  
When self-print finishes, the next screen appears where you can start DSPF adjustments.
- 6) DSPF adjustment patterns are loaded into the DSPF.



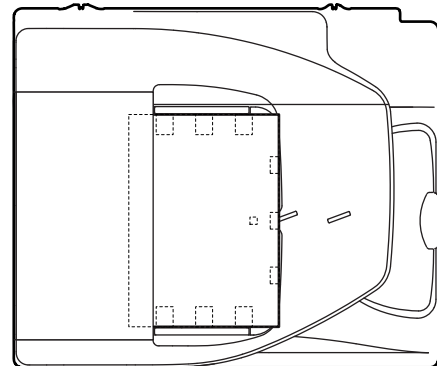
\* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print DSPF adjustment patterns again.

- 7) Press the [EXECUTE] button, and the machine starts reading DSPF adjustment patterns (for the front side).  
\* The screen shows a message indicating that the machine is reading and calculating DSPF adjustment patterns (for the front side). The machine starts calculating the adjustment amount (for the front side) after it has read the patterns for the front side. After the machine has finished calculating the adjustment amount for the front side, the next screen appears where you can have the machine start reading DSPF adjustment patterns (for the back side).

### <Adjustment item list>

- \* DSPF original leading edge adjustment (front side)
- \* DSPF original off-center adjustment (front side)
- \* DSPF sub-scan magnification ratio adjustment (front side)

- 8) DSPF adjustment patterns are loaded into the DSPF.



\* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print DSPF adjustment patterns again.

- 9) Press the [EXECUTE] button, and the machine starts loading DSPF adjustment patterns (for the back side).  
\* The screen shows a message indicating that the machine is reading DSPF adjustment patterns (for the back side). The machine starts calculating the adjustment amount (for the back side) after it has read the patterns for the back side. After the machine has finished calculating the adjustment amount for the back side, the next screen appears where you can view the results of the adjustments.

### <Adjustment item list>

- \* DSPF original leading edge adjustment (back side)
- \* DSPF original off-center adjustment (back side)
- \* DSPF sub-scan magnification ratio adjustment (back side)

- 10) The adjustment result screen appears.

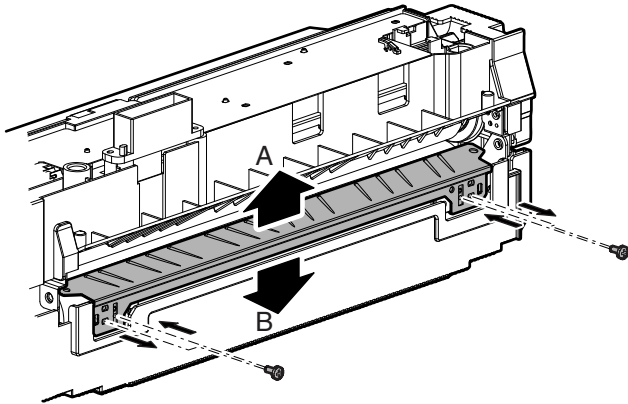
This screen shows the current values along with the previous values in parentheses.

- \* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print DSPF adjustment patterns (for the front and back sides) again.
  - \* To have the machine start re-reading the DSPF adjustment patterns (front and back sides), press the [RESCAN] button.
  - \* To return to the top menu without saving the adjustment values into EEPROM and RAM, press the [RETRY] button.
  - \* To display the data used for adjustment, press the [DATA] button.
- 11) To save the adjustment values into EEPROM and RAM and return to the top menu, press the [OK] button.
    - \* To return to the result screen, press the [BACK] button.

## ADJ 19 Fusing paper guide position adjustment

Normally there is no need to perform this adjustment. In the following cases, perform this adjustment.

- \* When a paper jam occurs in the fusing section.
  - \* When wrinkles are made on paper in the fusing section.
  - \* When an image deflection or an image blur is generated in the paper rear edge section.
- 1) Loosen the fusing paper guide fixing screws which are on two position in the front/rear frame direction.
  - 2) Use the fusing paper guide position scale as the reference to shift the paper guide in the arrow direction A or B.



The standard fixing position is one scale lower than the center of the marking scale. Change the actual fixing position according to the condition.

- \* When wrinkles are generated on paper, change the position in the arrow direction B.
- \* When an image deflection or an image blur is generated in the paper rear edge section, change the position in the arrow direction A.

## [5] SIMULATION

### 1. General (Including basic operations)

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

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

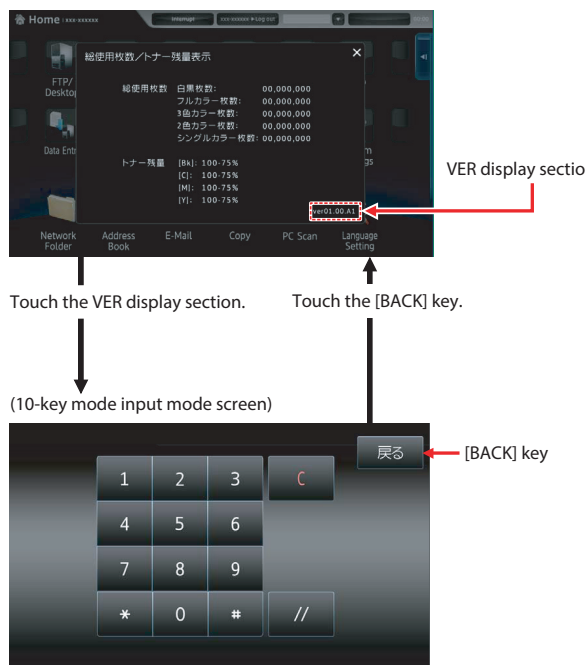
The operating procedures and displays depend on the design of the operation panel of the machine.

#### A. Basic operation

##### (1) Starting the simulation

###### Entering the simulation mode

- 1) Double-click the [HOME] key. (Total use quantity/Toner remaining quantity display 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.

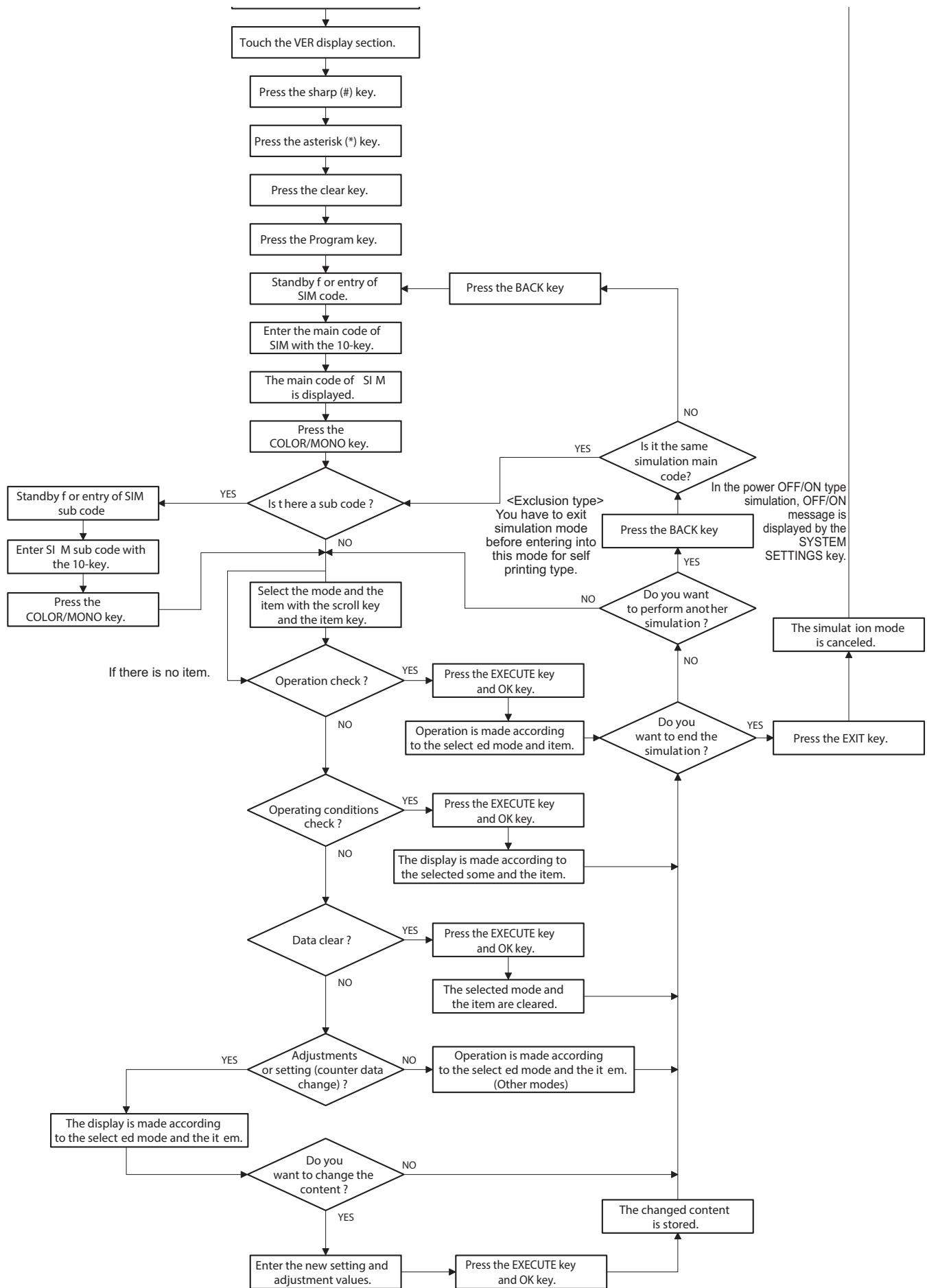
To cancel the current simulation mode and change the main code and the sub code, press [BACK] key.

\* Canceling the simulation mode to return to the normal mode

- 1) Press [EXIT] key.

##### (Note for the simulation mode)

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.





## 2. List of simulation codes

| Main | Sub | Functions                                                                                                                                                                 | Section                                |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| 1    | 1   | Check the operation of the scanner (reading) unit and the control circuit.                                                                                                | Scanner (reading)                      |
|      | 2   | Check the sensors in the scanner (reading) section and the related circuits.                                                                                              | Scanner                                |
|      | 5   | Check the operation of the scanner (reading) unit and the control circuit.                                                                                                | Scanner (reading)                      |
| 2    | 1   | Check the operation of the automatic document feed unit and the control circuit.                                                                                          | Automatic document feeder              |
|      | 2   | Check the operation of sensors and detectors in the SPF unit section and the control circuits.                                                                            | Automatic document feeder              |
|      | 3   | Check the operation of the loads in the automatic document feed unit and the control circuit.                                                                             | Automatic document feeder              |
| 3    | 2   | Check the operation of the sensors and the detectors in the finisher and the control circuit.                                                                             | Finisher                               |
|      | 3   | Check the operation of the load in the finisher and the control circuit.                                                                                                  | Finisher                               |
|      | 10  | Adjust the finisher.                                                                                                                                                      | Finisher                               |
| 4    | 2   | Check the paper feed section (Desk/LCC) sensors and detectors and their control circuits.                                                                                 | Paper feed, paper reverse/transport    |
|      | 3   | Check the paper feed section (Desk/LCC) loads and their control circuits.                                                                                                 | Paper feed, paper reverse/transport    |
|      | 5   | Check the operation of the paper transport clutch for the paper feed tray unit.                                                                                           | Paper feed, paper reverse/transport    |
| 5    | 1   | Check the operation of the display, LCD in the operation panel, and control circuit.                                                                                      | Operation unit (Operation/Display PWB) |
|      | 2   | Check the operation of the heater lamp and the control circuit.                                                                                                           | Fusing                                 |
|      | 3   | Check the operation of the scanner lamp and the control circuit.                                                                                                          | Scanner (reading)                      |
|      | 4   | Check the operation of discharge lamp and the control circuit.                                                                                                            | Process                                |
| 6    | 1   | Check the operation of load in paper transport system (clutches, solenoids) and control circuits.                                                                         | Paper feed, paper reverse/transport    |
|      | 2   | Check the operations of each fan and its control circuit.                                                                                                                 | Others                                 |
|      | 90  | Reset the machine to the factory setting. (The scanner is set to the lock enable position)                                                                                | Scanner                                |
| 7    | 1   | Set the operating conditions of aging.                                                                                                                                    |                                        |
|      | 6   | Set the operating intermittent aging cycle.                                                                                                                               |                                        |
|      | 8   | Display the warm-up time.                                                                                                                                                 | Fusing                                 |
|      | 12  | The document reading number of sheets setting (for aging operation)                                                                                                       | Automatic document feeder              |
| 8    | 1   | Check/Adjust the operation of the developing voltage in each print mode and control circuit.                                                                              | Toner supply, developing               |
|      | 2   | Check/Adjust the operation of the main charger grid voltage in each printer mode and control circuit.                                                                     | Photo-conductor                        |
|      | 6   | Check/Adjust the operation of the transport voltage and the control circuit.                                                                                              | Transfer                               |
|      | 17  | Check/Adjust the operation of the separation bias voltage and the control circuit.                                                                                        |                                        |
| 9    | 2   | Check the operation of sensors and detectors in the duplex section and its control circuit.                                                                               | Paper feed, paper reverse/transport    |
|      | 3   | Check the operation of the load in the paper reverse section (duplex section) and its control circuit.                                                                    | Duplex                                 |
| 10   | 1   | Check the operation of the toner supply mechanism (toner clutch) and the related circuit.                                                                                 | Toner supply, developing               |
| 13   | -   | Cancel the self diag "U1" trouble.                                                                                                                                        | MFP (ICU) PWB                          |
| 14   | -   | Cancel the self diag "H3, H4, H5" trouble.                                                                                                                                | Fusing                                 |
| 15   | -   | Cancel the self diag "U6-09" trouble.                                                                                                                                     | LCC                                    |
| 16   | -   | Cancel the self diag "U2" trouble.                                                                                                                                        |                                        |
| 21   | 1   | Set the maintenance cycle.                                                                                                                                                |                                        |
| 22   | 1   | Check the print count value in each operation mode.                                                                                                                       |                                        |
|      | 2   | Check the total number of mis-feed and the troubles.(when the number of total jam is considerably great, it is judged as necessary for repair)                            |                                        |
|      | 3   | Check the mis-feed position and the mis-feed count of each position.                                                                                                      |                                        |
|      | 4   | Check the trouble (self diag) history.                                                                                                                                    |                                        |
|      | 5   | Check the ROM version of each unit (section).                                                                                                                             |                                        |
|      | 6   | Print settings, adjustments data (simulation, FAX soft switch, counters), firmware version, and counter list.                                                             |                                        |
|      | 8   | Check the number of operations (counter value) of the finisher, the SPF, and scanning (reading).                                                                          |                                        |
|      | 9   | Check the number of use (print quantity) of each paper feed section.                                                                                                      | Paper feed, paper reverse/transport    |
|      | 10  | Check the system configuration (options and internal hardware).                                                                                                           |                                        |
|      | 11  | Check the use frequency of send/receive of FAX. (Only when FAX is installed.)                                                                                             | FAX unit (TEL/LIU, FAX control PWB)    |
|      | 12  | Check the DSPF mis-feed position and the number of mis-feed at the position.(when the number of mis-feed is considerably great, it can be judged as necessary for repair) | Automatic document feeder              |
|      | 13  | Check the use quantity of the process section (OPC drum, DV unit, toner cartridge).and fusing.                                                                            | Process                                |
|      | 14  | Display the use status of the toner cartridge                                                                                                                             | Process                                |
|      | 18  | Display the user data delete history                                                                                                                                      |                                        |
|      | 19  | Check various counter values related to scan - image send.                                                                                                                |                                        |
|      | 40  | Display the error code list and the contents                                                                                                                              |                                        |
|      | 42  | Check the JAM/trouble data                                                                                                                                                |                                        |
|      | 43  | Display JAM data details                                                                                                                                                  |                                        |
|      | 90  | Output the various set data lists.                                                                                                                                        |                                        |
| 23   | 2   | Output the trouble history list of paper jam and mis-feed.                                                                                                                |                                        |
|      | 80  | Output the operation data of paper feed and paper transport in the paper feed/transport section.                                                                          | Paper feed, paper reverse/transport    |
|      | 81  | Backup the paper feed time data to the USB memory                                                                                                                         |                                        |
| 24   | 1   | Clear the jam counter, and the trouble counter.                                                                                                                           |                                        |
|      | 2   | Clear the number of use (the number of prints) of each paper feed section.                                                                                                | Paper feed, paper reverse/transport    |
|      | 3   | Clear the finisher, SPF, and the scan (reading) unit counter.                                                                                                             |                                        |
|      | 4   | Clear the maintenance counter, the printer counters of the transfer unit and the fusing unit.                                                                             |                                        |
|      | 5   | Clear the developer counter.                                                                                                                                              | Toner supply, developing               |
|      | 6   | Clear the copy counter.                                                                                                                                                   |                                        |
|      | 9   | Clear the printer mode print counter and the self print mode print counter.                                                                                               |                                        |
|      | 10  | Clear the FAX counter. (Only when FAX is installed)                                                                                                                       | FAX unit (TEL/LIU, FAX control PWB)    |
|      | 12  | Clear the document filing counter                                                                                                                                         |                                        |

| Main | Sub | Functions                                                                                                                                       | Section                             |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 24   | 15  | Clear the counters related to the scan mode and the image send.                                                                                 |                                     |
|      | 35  | Clear the toner cartridge use status data                                                                                                       |                                     |
| 25   | 1   | Check the operations of the developing section.                                                                                                 | Toner supply, developing            |
|      | 2   | Make the initial setting of toner density when replacing developer. (Automatic adjustment)                                                      | Image process                       |
|      | 4   | Display the operation data of the toner supply quantity                                                                                         | Process                             |
| 26   | 1   | Set the paper exit operation from the right side.                                                                                               | Paper exit section                  |
|      | 2   | Set the paper size of the large capacity tray (LCC) .                                                                                           | Paper feed                          |
|      | 3   | Set the specifications of the auditor.                                                                                                          | Auditor                             |
|      | 5   | Set the count mode of the total counter and the maintenance counter (A3/11" x 17" size).                                                        |                                     |
|      | 6   | Set the specifications (paper, fixed magnification ratio) of the destination.                                                                   |                                     |
|      | 7   | Set the machine ID                                                                                                                              |                                     |
|      | 8   | Counter mode setting for long scale paper size                                                                                                  |                                     |
|      | 10  | Set the trial mode of the network scanner.                                                                                                      |                                     |
|      | 18  | Set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)                                                       |                                     |
|      | 30  | Set the operation mode corresponding to the CE mark (Europe safety standards).                                                                  |                                     |
|      | 32  | Set the specifications of the fusing cleaning operation                                                                                         | Fusing                              |
|      | 35  | Set the trouble history display mode.                                                                                                           |                                     |
|      | 38  | Set "Print continue" or "Print stop" when the maintenance timing is reached or the consumable part life is over.                                |                                     |
|      | 41  | Set Enable/Disable of magnification ratio automatic select function (AMS) in center binding mode.                                               |                                     |
|      | 49  | Set the print speed of postcards mode.                                                                                                          |                                     |
|      | 50  | Set the operation specifications and functions.                                                                                                 |                                     |
|      | 51  | Set the specifications of the serial port operation                                                                                             | PCI                                 |
|      | 52  | Set whether non-printed paper (insertion paper, cover paper) is counted up or not.                                                              |                                     |
|      | 53  | Set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the copy mode.                                                |                                     |
|      | 65  | Set the limit of the staple process.                                                                                                            |                                     |
|      | 69  | Set the operating conditions for toner near end.                                                                                                |                                     |
|      | 71  | Set the trial mode of the web browsing function                                                                                                 |                                     |
|      | 73  | Adjust the image loss (shade removal amount) in the poster, the continuous enlargement copy, the card scan, and the A3 wide copy mode.          |                                     |
|      | 74  | Set the OSA trial mode.                                                                                                                         |                                     |
|      | 78  | Set the password of the remote operation panel mode.                                                                                            |                                     |
|      | 79  | Set YES/NO of the pop-up display of user data delete result                                                                                     |                                     |
| 27   | 1   | Set non-detection of communication error (U7-00) with RIC. (FSS function)                                                                       |                                     |
|      | 2   | Set the sender's registration number and the HOST server telephone number. (FSS function)                                                       |                                     |
|      | 4   | Set the initial call and toner order auto send. (FSS function)                                                                                  |                                     |
|      | 5   | Set the machine tag No. (FSS function)                                                                                                          |                                     |
|      | 6   | Set of the manual service call. (FSS function)                                                                                                  |                                     |
|      | 7   | Set of the enable, alert call out. (FSS function)                                                                                               |                                     |
|      | 9   | Set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)                          |                                     |
|      | 10  | Clear the trouble prediction history information. (FSS function)                                                                                |                                     |
|      | 11  | Check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)                                |                                     |
|      | 12  | Check the high-density and the half-tone process control error history. (FSS Function)                                                          |                                     |
|      | 13  | Check the history of paper transport time between sensors. (FSS function)                                                                       |                                     |
|      | 14  | Set the FSS function connection test mode.                                                                                                      |                                     |
|      | 15  | Display the FSS connection status                                                                                                               |                                     |
|      | 16  | Set the FSS alert send                                                                                                                          |                                     |
|      | 17  | Set the FSS paper order alert                                                                                                                   |                                     |
|      | 18  | Clear the FSS paper feed retry counter                                                                                                          |                                     |
| 30   | 1   | Check the operation of sensors and detectors in other than paper feed section and control circuits.                                             | Paper feed, paper reverse/transport |
|      | 2   | Check the operations of the sensors and the detectors in the paper feed section and control circuits.                                           | Paper feed, paper reverse/transport |
| 40   | 2   | Manual paper feed tray paper width sensor adjustment.                                                                                           | Paper feed, paper reverse/transport |
|      | 7   | Set the adjustment value of the manual paper feed tray paper width sensor.                                                                      | Paper feed, paper reverse/transport |
| 41   | 1   | Check the operation of the document size sensor and the control circuit.                                                                        | Others                              |
|      | 2   | Adjust the document size sensor detection level.                                                                                                | Others                              |
|      | 3   | Check the operation of the document size sensor and the control circuit.                                                                        | Others                              |
| 43   | 1   | Set the fusing temperature in each operation mode.                                                                                              | Fusing                              |
|      | 2   | Set the fusing temperature and pre-heat each operation mode.                                                                                    | Fusing                              |
|      | 20  | Set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) in each paper mode. | Fusing                              |
|      | 21  | Set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-2) in each paper mode. | Fusing                              |
|      | 24  | Set the fusing operation mode.                                                                                                                  | Fusing                              |
|      | 31  | Check the operation of the fusing web cleaning motor.                                                                                           | Fusing                              |
|      | 32  | Set various items related to the forcible operation of web cleaning when job end.                                                               | Fusing                              |
|      | 34  | Check the fusing lower web cleaning motor operation.                                                                                            | Fusing                              |
|      | 35  | Check fusing nip operation.                                                                                                                     | Fusing                              |
| 44   | 1   | Set each correction operation function in the image forming (process) section.                                                                  | Image process                       |
|      | 2   | Adjust the sensitivity of the image density sensor. (registration sensor)                                                                       | Process                             |
|      | 4   | Set the conditions of the high density process control operation.                                                                               | Process                             |

| Main | Sub | Functions                                                                                                                                                                           | Section                  |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 44   | 6   | Execute the high density process control forcibly.                                                                                                                                  | Process                  |
|      | 9   | Display the result data of the high density process control operation.                                                                                                              | Image process            |
|      | 12  | Display the operation data of the high density process control and the image density sensor.(registration sensor)                                                                   | Image process            |
|      | 14  | Display the output level of the temperature and humidity sensor.                                                                                                                    | Process                  |
|      | 15  | Set the OPC drum idle rotation.                                                                                                                                                     | Process                  |
|      | 17  | Process refresh execution                                                                                                                                                           |                          |
|      | 21  | Set the halftone process control target.                                                                                                                                            | Process                  |
|      | 22  | Display the toner patch density level in the half tone process control operation.                                                                                                   | Process                  |
|      | 24  | Display the correction target and the correction level in the half tone process control operation.                                                                                  | Process                  |
|      | 25  | Set the calculating conditions of the correction value for the half tone process control.                                                                                           | Process                  |
|      | 26  | Execute the half tone process control compulsory.                                                                                                                                   | Process                  |
|      | 27  | Clear the correction data of the half tone process control.                                                                                                                         | Process                  |
|      | 28  | Set the process control execution conditions.                                                                                                                                       | Process                  |
|      | 29  | Set the operating conditions of the process control during a job.                                                                                                                   | Process                  |
|      | 34  | Set the process control execution conditions.                                                                                                                                       | Process                  |
|      | 37  | Set the development bias correction level in the continuous printing operation.                                                                                                     | Toner supply, developing |
|      | 43  | Display the identification information of the developing unit.                                                                                                                      | Developing               |
|      | 62  | Set the process control execution conditions                                                                                                                                        | Process                  |
| 46   | 2   | Adjust the copy density in each copy mode.                                                                                                                                          |                          |
|      | 4   | Adjust the density in the image send mode (color mode)                                                                                                                              |                          |
|      | 5   | Adjust the density in the image send mode (monochrome mode).                                                                                                                        |                          |
|      | 8   | Adjust the image send mode color balance RGB.                                                                                                                                       |                          |
|      | 9   | Adjust scan image density (copy, image send mode)                                                                                                                                   |                          |
|      | 10  | Adjust the copy density (in each copy mode).                                                                                                                                        |                          |
|      | 16  | Adjust the copy density and gamma.                                                                                                                                                  |                          |
|      | 19  | Set the operating conditions of document density scanning (copy, image send mode).                                                                                                  | Scanner                  |
|      | 23  | Set the density correction of copy high density section (High density tone gap supported).                                                                                          |                          |
|      | 24  | Copy half tone adjustment (Auto adjustment)                                                                                                                                         |                          |
|      | 32  | Adjust the document background density reproducibility in the auto copy mode.                                                                                                       |                          |
|      | 37  | Adjust the reproduction capability of the scan image color document (copy, image send mode).                                                                                        |                          |
|      | 39  | Adjust the sharpness of FAX send images.                                                                                                                                            |                          |
|      | 40  | Adjust the FAX send image density. (Collective adjustment of all the modes)                                                                                                         |                          |
|      | 41  | Adjust the FAX send image density. (Normal)                                                                                                                                         |                          |
|      | 42  | Adjust the FAX send image density. (Fine)                                                                                                                                           |                          |
|      | 43  | Adjust the FAX send image density. (Super Fine)                                                                                                                                     |                          |
|      | 44  | Adjust the FAX send image density. (Ultra fine)                                                                                                                                     |                          |
|      | 45  | Adjust the FAX send image density. (600dpi).                                                                                                                                        |                          |
|      | 46  | Adjust the FAX send image density (RGB RIP)                                                                                                                                         |                          |
|      | 47  | Set the JPEG compression rate in copy and scan images.                                                                                                                              |                          |
|      | 48  | Set the output resolution in each copy mode.                                                                                                                                        |                          |
|      | 51  | Adjust the gamma for copy, heavy paper mode and image process mode (manual adjustment).                                                                                             |                          |
|      | 52  | 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) |                          |
|      | 54  | Perform the engine halftone automatic density adjustment (dither)                                                                                                                   |                          |
|      | 55  | Adjust the drop out color in the image send mode (monochrome manual text mode)                                                                                                      |                          |
|      | 58  | Set the copy mode pseudo resolution (smoothing process)                                                                                                                             |                          |
|      | 59  | Perform the copy mode pseudo resolution image process adjustment                                                                                                                    |                          |
|      | 60  | Adjust the sharpness in the color auto mode                                                                                                                                         |                          |
|      | 61  | Adjust the area separation recognition level in image send mode (color, gray, auto exposure mode).                                                                                  |                          |
|      | 62  | Set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.                                                             |                          |
|      | 63  | Adjust the density in the copy low density section.                                                                                                                                 |                          |
|      | 66  | Adjust the reproduction capability of watermark in the copy/printer mode.                                                                                                           |                          |
|      | 74  | Adjust copy gray balance (Auto adjustment) / printer gray balance (Auto adjustment)                                                                                                 |                          |
|      | 90  | Set the process operation of high-compression PDF images.                                                                                                                           |                          |
|      | 91  | Adjust the reproduction capability of black text.                                                                                                                                   |                          |
| 48   | 1   | Adjust the scan image magnification ratio (main scanning direction and sub scanning direction).                                                                                     | Scanner                  |
|      | 5   | Correction the scan image magnification ratio (sub scanning direction).                                                                                                             | Scanner                  |
|      | 6   | Adjust the rotation speed of each motor.                                                                                                                                            |                          |
| 49   | 1   | Perform the firmware update.                                                                                                                                                        |                          |
|      | 3   | Update the operation manual data stored in the HDD.                                                                                                                                 |                          |
|      | 5   | Update the watermark data stored in the HDD.                                                                                                                                        |                          |
|      | 10  | Perform the ACU firmware update.                                                                                                                                                    |                          |
| 50   | 1   | Copy image position, image loss adjustment                                                                                                                                          |                          |
|      | 5   | Adjust the print lead edge image position. (PRINTER MODE)                                                                                                                           |                          |
|      | 6   | Adjust the copy image position and the image loss (SPF mode).                                                                                                                       |                          |
|      | 7   | Adjust DSPF document lead edge (simple method) and copy image position on print paper and the void area (image loss) in the copy mode.                                              |                          |
|      | 10  | Adjust the image off-center position.<br>(The adjustment is made separately for each paper feed section.)                                                                           |                          |

| Main | Sub | Functions                                                                                                                           | Section                             |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 50   | 12  | Perform the scan image off-center position adjustment.<br>(The adjustment is made separately for each scan mode.)                   |                                     |
|      | 27  | Adjust the image loss of a scan image in the FAX/scanner mode.                                                                      |                                     |
|      | 28  | Perform the OC adjustment, main scan magnification ration correction, the SPF adjustment and the print position adjustment.         |                                     |
| 51   | 1   | Adjust the ON/OFF timing of the transfer voltage                                                                                    |                                     |
|      | 2   | Adjust the contact pressure (deflection amount) on paper by the main unit and the SPF resist roller.                                | Paper feed, paper reverse/transport |
| 53   | 6   | Used to adjust the detection level of the SPF document width.                                                                       |                                     |
|      | 7   | Used to adjust the SPF document size width sensor.                                                                                  | Automatic document feeder           |
|      | 8   | Used to adjust the document lead edge reference and the SPF mode document scan position.                                            | Automatic document feeder           |
|      | 9   | SPF dirt detection setting.                                                                                                         |                                     |
|      | 10  | SPF dirt detection execution.                                                                                                       |                                     |
| 55   | 1   | Set the specifications of the engine control operations. (SOFT SW)                                                                  |                                     |
|      | 2   | Set the specifications of the scanner control operation. (SOFT SW)                                                                  |                                     |
|      | 3   | Set the specifications of the controller operation. (SOFT SW)                                                                       |                                     |
| 56   | 1   | Transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)                                                         |                                     |
|      | 2   | Backup the data in the EEPROM. SRAM, and HDD (including user authentication data and address data) to the USB memory.               |                                     |
|      | 3   | Backup the document filing data to the USB memory.                                                                                  | HDD                                 |
|      | 4   | Backup the JOB log data to the USB memory.                                                                                          | HDD                                 |
|      | 5   | Import the SIM22-6 data to the USB memory in the TEXT format.                                                                       |                                     |
|      | 6   | Import the SIM23-2 data to the USB memory in the TEXT format.                                                                       |                                     |
|      | 7   | Import SYSLOG data into the USB memory.                                                                                             |                                     |
| 60   | 1   | Check the operations (read/write) of the MFP PWB memory.                                                                            | MFP (ICU) PWB                       |
| 61   | 1   | Check the LSU polygon motor rotation and laser detection.                                                                           | LSU                                 |
|      | 3   | Set the laser power                                                                                                                 | LSU                                 |
|      | 4   | Print the print image skew adjustment pattern                                                                                       |                                     |
|      | 11  | Correct the laser power automatically                                                                                               |                                     |
|      | 12  | Laser power manual correction LSU.                                                                                                  |                                     |
|      | 13  | Clear the laser power correction value.                                                                                             |                                     |
| 62   | 1   | Format HDD/SD card (HDD: excluding the operation manual and the watermark data) (SD card user data).                                | HDD                                 |
|      | 2   | Check read/write of the hard disk (partial).                                                                                        | HDD                                 |
|      | 3   | Check read/write of the hard disk (all areas).                                                                                      | HDD                                 |
|      | 6   | Perform the self diagnostics of the hard disk.                                                                                      | HDD                                 |
|      | 7   | Print the hard disk self diagnostics error log.                                                                                     | HDD                                 |
|      | 8   | Format the HDD/SD card (HDD: excluding the operation manual , watermark data and the system area) (SD card: user data)              | HDD                                 |
|      | 10  | Clear the job completion list .                                                                                                     | HDD                                 |
|      | 11  | Clear the document filing data.                                                                                                     | HDD                                 |
|      | 12  | Set Enable/Disable of auto format in a hard disk trouble.                                                                           | HDD                                 |
|      | 13  | Format the hard disk. (operation manual and watermark area only)                                                                    | HDD                                 |
|      | 14  | Delete the document filing management data.                                                                                         |                                     |
|      | 20  | Check the operation of the mirroring HDD.                                                                                           | Mirroring HDD                       |
| 63   | 1   | Used to display the shading correction result.                                                                                      | Scanner                             |
|      | 2   | Used to perform shading.                                                                                                            | Scanner                             |
|      | 3   | Used to perform scanner (CCD/CIS) color balance and gamma auto adjustment.                                                          | Scanner                             |
|      | 4   | Used to display the SIT chart patch density.                                                                                        | Scanner                             |
|      | 5   | Used to perform the scanner (CCD/CIS) color balance and gamma default setting.                                                      | Scanner                             |
|      | 11  | Set the target color balance of the copy mode.                                                                                      |                                     |
| 64   | 2   | Test print. (Self print) (Monochrome mode)                                                                                          |                                     |
|      | 4   | Printer test print. (Self print)<br>* This simulation functions only for the machines which are provided with the printer function. |                                     |
|      | 5   | Printer test print. (Self print) (PCL)                                                                                              |                                     |
|      | 6   | Printer test print. (Self print) (PS)                                                                                               |                                     |
| 65   | 1   | Adjust the touch panel (LCD display section) detection coordinates.                                                                 | Operation unit                      |
|      | 2   | Display the touch panel (LCD display section) detection coordinates.                                                                | Operation unit                      |
|      | 5   | Check the operation panel key input.                                                                                                | Operation unit                      |
| 67   | 17  | Printer controller reset                                                                                                            |                                     |
|      | 24  | Printer density adjustment (auto adjustment)                                                                                        |                                     |
|      | 25  | Printer density adjustment (Manual adjustment)                                                                                      |                                     |
|      | 26  | Set the target the halftone of the printer mode                                                                                     |                                     |
|      | 31  | Clear the printer calibration value (Half-tone process control data).                                                               |                                     |
|      | 33  | Set the gamma of the each printer screen.                                                                                           |                                     |
|      | 34  | Set the density correction in the printer high density section.<br>(Support for the high density section tone gap)                  |                                     |
|      | 36  | Adjust the density in the low density section.                                                                                      |                                     |
|      | 45  | Adjust the printer image filter and trapping.                                                                                       |                                     |
|      | 52  | Set the default of the gamma of the printer screen.                                                                                 |                                     |
|      | 54  | Printer engine halftone auto adjustment.                                                                                            |                                     |

### 3. Details of simulation

1

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| 1-1                       |                                                                            |
| <b>Purpose</b>            | Operation test/check                                                       |
| <b>Function (Purpose)</b> | Check the operation of the scanner (reading) unit and the control circuit. |
| <b>Section</b>            | Scanner (reading)                                                          |

#### Operation/Procedure

- 1) Select the operation resolution (scan speed) with the touch panel key.
- 2) Press [EXECUTE] key.  
Scanning is once performed at the speed corresponding to the scan resolution (operation speed).

| Item/Display | Operation mode | Default value    |
|--------------|----------------|------------------|
| OC SCAN      | 300DPI         | 300DPI (372mm/s) |
|              | 400DPI         |                  |
|              | 600DPI         |                  |
|              | 1200DPI        |                  |

|                           |                                                                              |
|---------------------------|------------------------------------------------------------------------------|
| 1-2                       |                                                                              |
| <b>Purpose</b>            | Operation test/check                                                         |
| <b>Function (Purpose)</b> | Check the sensors in the scanner (reading) section and the related circuits. |
| <b>Section</b>            | Scanner                                                                      |

#### Operation/Procedure

The operating status of the sensor is displayed. When "MHPS" is highlighted, the scanner unit is in the home position.

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| 1-5                       |                                                                            |
| <b>Purpose</b>            | Operation test/check                                                       |
| <b>Function (Purpose)</b> | Check the operation of the scanner (reading) unit and the control circuit. |
| <b>Section</b>            | Scanner (reading)                                                          |

#### Operation/Procedure

- 1) Select the operation speed with the touch panel key.
- 2) Press [EXECUTE] key.  
Scanning is repeated at the speed corresponding to the scan resolution (operation speed). When [EXECUTE] key is pressed, the operation is terminated.

| Item/Display | Operation mode | Default value    |
|--------------|----------------|------------------|
| OC SCAN      | 300DPI         | 300DPI (372mm/s) |
|              | 400DPI         |                  |
|              | 600DPI         |                  |
|              | 1200DPI        |                  |

2

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| 2-1                       |                                                                                   |
| <b>Purpose</b>            | Operation test/check                                                              |
| <b>Function (Purpose)</b> | Check the operations of the automatic document feed unit and the control circuit. |
| <b>Section</b>            | Automatic document feeder                                                         |

#### Operation/Procedure

- 1) Select the operation mode and the speed with the touch panel key.
- 2) Press [EXECUTE] key.

The DSPF repeats paper feed, transport, and paper exit operations at the speed corresponding to the scan resolution (operation speed). When [EXECUTE] key is pressed, the operation is terminated.

| Item/Display | Operation mode | Default value    |
|--------------|----------------|------------------|
| (SINGLE)     | 300DPI         | 300DPI (372mm/s) |
|              | 400DPI         |                  |
|              | 600DPI         |                  |
| (DOUBLE)     | 300DPI         | 300DPI (372mm/s) |
|              | 400DPI         |                  |
|              | 600DPI         |                  |

2-2

|                           |                                                                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                                              |
| <b>Function (Purpose)</b> | Check the operations of the sensors and the detectors in the document feed unit section and the control circuits. |
| <b>Section</b>            | Automatic document feeder                                                                                         |

#### 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.

|         |                                                                                      |
|---------|--------------------------------------------------------------------------------------|
| SSET    | DSPF installation detector                                                           |
| SODC    | DSPF open/close detector                                                             |
| SCOV    | DSPF upper door open/close detector                                                  |
| SLCOV   | DSPF lower door open/close sensor                                                    |
| SPED1   | DSPF document upper limit detector                                                   |
| SPED2   | DSPF document empty detector                                                         |
| SPPD1   | DSPF document pass detector 1 (Paper entry detection)                                |
| SPPD2   | DSPF document pass detector 2 (Resist roller front document transport detection)     |
| SPPD3   | DSPF document pass detector 3 (Document scanning front document transport detection) |
| SPPD4   | DSPF document pass detector 4                                                        |
| SPPD5   | DSPF document pass detector 5 (Document transport detection)                         |
| SPOD    | DSPF document exit detector                                                          |
| SPRDM   | DSPF document random detector                                                        |
| SPLS1   | DSPF document length detection short detector                                        |
| SPLS2   | DSPF document length detection long detector                                         |
| STLD    | DSPF document feed tray lower limit detector                                         |
| STUD    | DSPF document feed tray upper limit detector                                         |
| STMPU   | DSPF stamp unit installation detector                                                |
| 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> | Check the operations of the loads in the automatic document feed unit and the control circuit. |
| <b>Section</b>            | Automatic document feeder                                                                      |

#### 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.

|        |                                     |
|--------|-------------------------------------|
| SPUM   | DSPF document feed motor            |
| SPFM   | DSPF transport motor                |
| SPOM   | DSPF document exit motor            |
| SLUM   | DSPF lift up motor                  |
| SPFFAN | DSPF cooling fan motor              |
| SPFC   | DSPF document feed clutch           |
| SRRC   | DSPF No2 registration roller clutch |
| STRRC  | DSPF No1 registration roller clutch |

|       |                                                                        |
|-------|------------------------------------------------------------------------|
| STRC  | DSPF transport roller clutch                                           |
| STMP5 | Stamp solenoid<br>(Displayed only when the finish stamp is installed.) |

### 3

#### 3-2

|                           |                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                           |
| <b>Function (Purpose)</b> | Check the operations of the sensors and the detectors in the finisher and the control circuit. |
| <b>Section</b>            | Finisher                                                                                       |

#### 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.

#### <Inner finisher / Punch module>

|          |                                    |
|----------|------------------------------------|
| FABHS    | Paper alignment belt HP sensor     |
| FAPHPS_F | Paper alignment plate HP sensor F  |
| FAPHPS_R | Paper alignment plate HP sensor R  |
| FDRPS    | Paper exit roller position sensor  |
| FDTLLS   | Paper exit tray lower limit sensor |
| FDTPD    | Delivery tray paper detector       |
| FDTULS   | Paper exit tray upper limit sensor |
| FFL      | Fan lock signal                    |
| FPLD1    | Paper height sensor 1              |
| FPLD2    | Paper height sensor 2              |
| FPPD1    | Paper entry sensor                 |
| FSED     | Staple empty sensor                |
| FSHPS    | Staple HP sensor                   |
| FSLD     | Staple lead edge sensor            |
| FSSHPS   | Staple shift home position sensor  |
| FSSS     | Staple safety sensor               |
| FSSW     | Safety switch                      |
| FSTPD    | Staple tray paper sensor           |
| FTPS     | Tray position sensor               |
| FPCHPS   | Punch home position sensor         |
| FPD      | Punch unit sensor (connector)      |
| FPDFS    | Punch dust sensor                  |
| FPES1    | Punch paper edge sensor 1          |
| FPES2    | Punch paper edge sensor 2          |
| FPES3    | Punch paper edge sensor 3          |
| FPES4    | Punch paper edge sensor 4          |
| FPES5    | Punch paper edge sensor 5          |
| FPES6    | Punch paper edge sensor 6          |
| FPES7    | Punch paper edge sensor 7          |
| FPHPS    | Punch unit home position sensor    |
| FPMRS    | Punch motor rotation sensor        |
| FPMS     | Punch mode sensor                  |
| FPTS     | Punch timing sensor                |

#### <1K Saddle stitch finisher / Punch module>

|          |        |                                              |
|----------|--------|----------------------------------------------|
| PDPPD1   | FJPID  | Paper pass paper transport detector 1        |
| PDPPD2   | FJPOD  | Paper pass paper transport detector 2        |
| PDCS     | FJPDD  | Paper pass cover Open/Close sensor           |
| FPPD1    | FED    | Paper delivery detector 1                    |
| FPAPHS_F | FFJHPD | Paper alignment plate home position sensor F |
| FPAPHS_R | FRJHPD | Paper alignment plate home position sensor R |
| FATPD    | FAD    | Paper alignment tray paper detector          |
| FGHPS    | FGHPD  | Gripper home position sensor                 |
| FDTPD    | EMPS   | Delivery tray paper detector                 |
| FPLD     | FSLD   | Paper surface detector                       |
| FPPD2    | FFPD   | Paper transport detector 2                   |
| FSPHS    | FFHPD  | Saddle plate home position sensor            |
| FSTPD    | FFED   | Saddle exit tray paper detector              |
| F5MRS    | FFE    | Saddle motor rotation sensor                 |
| FTULD    | FULD   | Tray upper limit detector                    |
| FTLLD    | FLLD   | Tray lower limit detector                    |

|        |         |                                                    |
|--------|---------|----------------------------------------------------|
| FTLMRS | FLE     | Tray lift motor rotation sensor                    |
| FSHS   | FSHPD   | Staple home position sensor                        |
| FSSHPS | FSTHPD  | Stapler shift home position sensor                 |
| FSED   | FSD     | Staple empty detector                              |
| FSLD   | FSPD    | Staple lead edge sensor                            |
| FTPS   | FMLD    | Tray position sensor                               |
| FCD1   | FFDD    | Cover detector 1                                   |
| FCD2   | FCD     | Cover detector 2                                   |
| FSSW1  | FFDDW   | Safety switch 1                                    |
| FCD    | FJSW    | Finisher connection detector                       |
| FSSSW1 | FSSSW   | Staple safety switch                               |
| FFL    | FFANLK  | Fan lock signal                                    |
| FDRHS  | FNHPD   | Delivery roller home position sensor               |
| FPPD3  | FSPD    | Paper transport detector 3                         |
| FSATPD | FSDTPD  | Saddle paper alignment tray paper detector         |
| FSSSW2 | FSJPD   | Stapler safety switch 2                            |
| FPHHD  | FPHHPD  | Paper hold home position sensor                    |
| FSAPHS | FSJHPD  | Saddle alignment plate home position sensor        |
| FSPGHS | FAHPD   | Saddle paper guide home position sensor            |
| FSRHS  | FSR3HPD | Saddle roller home position sensor                 |
| FPDD   | FGED    | Delivery detector                                  |
| FSSH   | FSSHPD  | Saddle staple home position sensor                 |
| FSSS   | FSSD    | Saddle staple sensor                               |
| FSSCS  | FSSDSW  | Saddle staple cover sensor                         |
| FSSSHS | FSSTHPD | Finisher saddle stapler shift home position sensor |
| FPMRS  | FPMCK   | Punch motor rotation sensor                        |
| FPD    | FPUC    | Punch unit detection (connector)                   |
| FPCHPS | FPHPD   | Punch home position sensor                         |
| FPDFS  | FPDD    | Punch dust sensor                                  |
| FPHPS  | FPSHPD  | Punch unit home position sensor                    |
| FPTS   | FPTD    | Punch timing sensor                                |
| FPES1  | FPSD1   | Punch paper edge sensor 1                          |
| FPES2  | FPSD2   | Punch paper edge sensor 2                          |
| FPES3  | FPSD3   | Punch paper edge sensor 3                          |
| FPES4  | FPSD4   | Punch paper edge sensor 4                          |
| FPPS   | FPPD    | Punch paper position sensor                        |

#### <4K Finisher>

|        |                                               |
|--------|-----------------------------------------------|
| FJPID  | Interface transport unit entry port detection |
| FJPOD  | Interface transport unit exit port detection  |
| FJPDD  | Interface transport unit cover detection      |
| FED    | Entry port paper detection                    |
| FAED1  | Tray 1 area detection 1                       |
| FAED2  | Tray 1 area detection 2                       |
| FAED3  | Tray 1 area detection 3                       |
| FFJHPD | Alignment plate HP detection front            |
| FRJHPD | Alignment plate HP detection rear             |
| FBED1  | Tray 1 paper detection                        |
| FBED2  | Tray 2 paper detection                        |
| FCCD   | Tray approach detection                       |
| FSLD1  | Tray 1 paper surface detection                |
| FPDD1  | Discharged paper detection                    |
| FSLD2  | Tray 2 paper surface detection                |
| FASHPD | Rear edge assist HP detection                 |
| FSWHPD | Oscillation guide HP detection                |
| FSWOPD | Oscillation guide open detection              |
| FSTPD  | Staple tray paper detection                   |
| FSHPD  | Staple drive HP detection                     |
| FSTHPD | Staple shift HP detection                     |
| FSD    | Staple empty detection                        |
| FSTD   | Needle lead edge position detection           |
| FFANLK | Fan motor lock detection                      |
| FSJOGD | Stapler alignment interference detection      |
| FSAD   | Staple safety SW                              |
| FSHTD  | Shutter open detection                        |
| FCD    | Upper door open detection                     |
| FFDD   | Front cover open detection                    |
| FFDSW  | Front cover close detection                   |
| F24V   | 24V output interruption detection             |
| FPSW1  | PUSHSW1 detection                             |
| FPSW2  | PUSHSW2 detection                             |



|        |                                      |
|--------|--------------------------------------|
| FPSW3  | PUSHSW3 detection                    |
| FAED21 | Tray 2 area detection 1              |
| FAED22 | Tray 2 area detection 2              |
| FAED23 | Tray 2 area detection 3              |
| FDSW1  | DIPSW1 detection                     |
| FDSW2  | DIPSW2 detection                     |
| FDSW3  | DIPSW3 detection                     |
| FDSW4  | DIPSW4 detection                     |
| FDSW5  | DIPSW5 detection                     |
| FDSW6  | DIPSW6 detection                     |
| FDSW7  | DIPSW7 detection                     |
| FDSW8  | DIPSW8 detection                     |
| FPE    | Punch motor lock detection           |
| FPUC   | Punch unit connection detection      |
| FPHPD  | Punch HP detection                   |
| FPSHPD | Punch horizontal resist HP detection |
| FPFDD  | Punch front door open detection      |
| FPDD   | Punch dust detection                 |
| FPUDSW | Punch upper cover open detection SW  |

#### <4K Finisher saddle unit>

|         |                                                                              |
|---------|------------------------------------------------------------------------------|
| FS1PD   | Saddle paper detection 1                                                     |
| FS2PD   | Saddle paper detection 2                                                     |
| FS3PD   | Saddle paper detection 3                                                     |
| FAHPD   | Alignment plate home position detection                                      |
| FSBHPC  | Paper pushing plate home position sensor connector connection detection      |
| FSCRPD  | Semi-circular roller phase detection                                         |
| FSDTPD  | Saddle tray paper detection                                                  |
| FSFOE   | Paper folding motor lock detection                                           |
| FSFOHPC | Paper folding home position sensor connector connection detection            |
| FSFOHPD | Paper folding home position detection                                        |
| FSGHPC  | Paper folding guide home position sensor connection detection                |
| FSGHPD  | Guide home position detection                                                |
| FSINDD  | Inlet port cover open detection                                              |
| FSINDSW | Saddle inlet port door detection                                             |
| FSLGE   | Paper pushing plate motor lock detection                                     |
| FSLGHPD | Paper pushing plate home position detection                                  |
| FSLGTC  | Paper pushing plate lead edge position sensor connector connection detection |
| FSLGTD  | Paper pushing plate lead edge position detection                             |
| FSPDD   | Saddle paper exit detection                                                  |
| FSPIND  | Saddle entry port paper detection                                            |
| FSPPHPD | Paper positioning plate home position detection                              |
| FSPPPD  | Paper positioning plate paper detection                                      |
| FSPSW1  | S-PUSHSW detection                                                           |
| FSSD1   | Saddle needle presence detection 1                                           |
| FSSD2   | Saddle needle presence detection 2                                           |
| FSSHP1  | Switch operation home position detection 1                                   |
| FSSHP2  | Switch operation home position detection 2                                   |
| FSSHPC  | Stitcher home position sensor connection detection                           |
| FSSHPD  | Stitcher home position detection                                             |
| FSSUC   | Saddle staple unit detection                                                 |
| FSVPPD  | Vertical path paper detection                                                |

3-3

|                           |                                                                          |
|---------------------------|--------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                     |
| <b>Function (Purpose)</b> | Check the operation of the load in the finisher and the control circuit. |
| <b>Section</b>            | Finisher                                                                 |

#### Operation/Procedure

- 1) Select the item to be operation 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.

#### <Inner finisher / Punch module>

|     |             |
|-----|-------------|
| FCF | Cooling fan |
|-----|-------------|

|        |                                |
|--------|--------------------------------|
| FDRLM  | Paper exit roller lift motor   |
| FPAM_F | Paper alignment motor F        |
| FPAM_R | Paper alignment motor R        |
| FPAS   | Paper alignment solenoid       |
| FPDM   | Paper exit motor               |
| FPGS   | Paper gate solenoid            |
| FPLDS  | Paper height detector solenoid |
| FPS    | Paddle solenoid                |
| FPTM   | Paper transport motor          |
| FSM    | Staple motor                   |
| FSSM   | Staple shift motor             |
| FTLM   | Tray lift motor                |
| FPM    | Punch motor                    |
| FPSM   | Punch shift motor              |

#### <1K Saddle stitch finisher / Punch module>

|        |        |                                       |
|--------|--------|---------------------------------------|
| PDPGS  | FINRPS | Paper pass paper gate solenoid        |
| PDPTM  | FJPM   | Paper pass paper transport motor      |
| PDCF   | FJFM   | Paper pass cooling fan                |
| FPTM1  | FFM    | Paper transport motor 1               |
| FDRLM  | FNM    | Finisher paper exit roller lift motor |
| FGM    | FGM    | Gripper motor                         |
| FPAM-F | FFJM   | Paper alignment motor F               |
| FPAM-R | FRJM   | Paper alignment motor R               |
| FSSM   | FSM    | Stapler shift motor                   |
| FSM    | FFSM   | Staple motor                          |
| FPTM2  | FLM    | Paper transport motor 2               |
| FSDM   | FFM2   | Saddle motor                          |
| FSPTM  | FTM    | Saddle paper transport motor          |
| FSPAM  | FSR3M  | Saddle paper alignment motor          |
| FSPM   | FSJM   | Saddle positioning motor              |
| FSDSM  | FPPM   | Saddle staple motor                   |
| FPHS1  | FSSM   | Paper holding solenoid 1              |
| FPHS2  | FPHS   | Paper holding solenoid 2              |
| FTLM   | FPS    | Tray lift motor                       |
| FPM    | FPNM   | Punch motor                           |
| FPSM   | FPSM   | Punch shift motor                     |

#### <4K Finisher / Punch module>

|        |                                       |
|--------|---------------------------------------|
| FAM    | Bundle paper exit motor               |
| FAORC  | Bundle exit lower roller clutch       |
| FASM   | Rear edge assist motor                |
| FBES   | Buffer rear edge holding solenoid     |
| FBRRS  | Buffer roller separation solenoid     |
| FFDRRS | Delivery roller separation solenoid   |
| FFJM   | Alignment motor front                 |
| FFM    | Entry port transport motor            |
| FFSM   | Staple motor                          |
| FINRRS | Inlet port roller separation solenoid |
| FRJM   | Alignment motor rear                  |
| FSHC   | Shutter open/close clutch             |
| FSM    | Staple shift motor                    |
| FSWM   | Oscillation motor                     |
| FTLM1  | Tray 1 lift motor                     |
| FTLM2  | Tray 2 lift motor                     |
| PDCF   | Paper pass cooling fan                |
| PDPGS  | Paper pass paper gate solenoid        |
| PDPTM  | Paper pass paper transport motor      |
| FPNM   | Punch motor                           |
| FPSM   | Punch horizontal resist motor         |

#### <4K Finisher saddle unit>

|        |                                   |
|--------|-----------------------------------|
| FPPM   | Saddle paper positioning motor    |
| FS1DFS | Paper deflection plate 1 solenoid |
| FS2DFS | Paper deflection plate 2 solenoid |
| FSFCS  | Transport plate contact solenoid  |
| FSFM   | Saddle transport motor            |
| FSFOM  | Paper folding motor               |
| FSFS   | Saddle flapper solenoid           |
| FSFSTM | Stitch motor front                |
| FSGM   | Guide motor                       |
| FSIFM  | Saddle entry port transport motor |



|        |                        |
|--------|------------------------|
| FSJM   | Saddle alignment motor |
| FSLGM  | Paper holding motor    |
| FSRSTM | Stitch motor rear      |

3-10

|                           |                      |
|---------------------------|----------------------|
| <b>Purpose</b>            | Adjustment           |
| <b>Function (Purpose)</b> | Adjust the finisher. |
| <b>Section</b>            | Finisher             |

#### Operation/Procedure

- 1) Select an adjustment target item with scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

#### <Inner finisher>

| Item/Display   | Content                                                                       | Setting range | Default value |
|----------------|-------------------------------------------------------------------------------|---------------|---------------|
| A FRONT ADJUST | Alignment position adjustment (front)                                         | 2 - 18        | 10            |
| B REAR ADJUST  | Alignment position adjustment (rear)                                          | 2 - 18        | 10            |
| C STAPLE REAR  | Staple binding position adjustment (one position at the rear)                 | 68 - 132      | 100           |
| D STAPLE FRONT | Staple binding position adjustment (one position in front)                    | 68 - 132      | 100           |
| E STAPLE BOTH  | Staple binding position adjustment (center position of two positions binding) | 68 - 132      | 100           |
| F STAPLE PITCH | Staple binding position adjustment (staple pitch of two positions binding)    | 68 - 132      | 100           |
| G PUNCH CENTER | Punch center positioning sensor                                               | 37 - 63       | 50            |
| H PUNCH HOLE   | Punch hole adjustment (paper transport direction)                             | 42 - 58       | 50            |

#### <1K Saddle stitch finisher>

| Item/Display       | Content                                                                                                    | Setting range | Default value |
|--------------------|------------------------------------------------------------------------------------------------------------|---------------|---------------|
| A SADDLE POSITION  | Saddle stitch position adjustment                                                                          | 25 - 75       | 50            |
| B FOLDING POSITION | Saddle folding position adjustment                                                                         | 25 - 75       | 50            |
| C FRONT ADJUST     | Paper alignment position adjustment (Front)                                                                | 35 - 65       | 50            |
| D REAR ADJUST      | Paper alignment position adjustment (Rear)                                                                 | 35 - 65       | 50            |
| E STAPLE REAR      | Staple binding position adjustment (one position at the rear) (When the paper width is greater than 232mm) | 25 - 75       | 50            |
| F STAPLE REAR R    | Staple binding position adjustment (one position at the rear) (When the paper width is 232mm or less)      | 45 - 75       | 50            |
| G STAPLE FRONT     | Staple binding position adjustment (one position in front) (When the paper width is greater than 232mm)    | 25 - 75       | 50            |
| H STAPLE FRONT R   | Staple binding position adjustment (one position in front) (When the paper width is 232mm or less)         | 25 - 55       | 50            |
| I STAPLE BOTH      | Staple binding position adjustment (two positions at the center)                                           | 45 - 55       | 50            |
| J STAPLE PITCH     | Staple binding position adjustment (two positions in pitch)                                                | 35 - 62       | 50            |
| K PUNCH CENTER     | Punch center adjustment                                                                                    | 35 - 65       | 50            |

| Item/Display        | Content                              | Setting range | Default value |
|---------------------|--------------------------------------|---------------|---------------|
| L PUNCH HOLE        | Punch hole position adjustment       | 30 - 60       | 50            |
| M SADDLE_ADJUST_POS | Saddle alignment position adjustment | 35 - 65       | 50            |
| N GRIPPER_POS       | Gripper exit position adjustment     | 35 - 65       | 50            |

NOTE: "A: SADDLE POSITION (Saddle binding position adjustment)" and "B: FOLDING POSITION (Saddle folding position adjustment)"

The saddle binding position adjustment and the saddle folding position adjustment can be executed in the system setting menu. However, the adjustments in the system setting are based on the adjustment value of this simulation. If, therefore, the adjustment value of this simulation is set to an extreme level, the adjustment range in the system setting may be narrowed. (Adjustment range in the system setting □5.0mm)

In general, when the saddle binding position and the saddle folding positions are adjusted to the center by this simulation, the above trouble will not occur.

#### <4K Finisher>

| Item | Display      | Item                                                          | Set range | Default value |
|------|--------------|---------------------------------------------------------------|-----------|---------------|
| A    | FRONT ADJUST | Alignment position adjustment (front)                         | 0 - 20    | 10            |
| B    | STAPLE REAR  | Staple binding position adjustment (one position at the rear) | 94 - 106  | 100           |
| C    | STAPLE FRONT | Staple binding position adjustment (one position in front)    | 94 - 106  | 100           |
| D    | PUNCH CENTER | Punch center adjustment                                       | 30 - 70   | 50            |
| E    | PUNCH HOLE   | Punch hole position adjustment                                | 46 - 52   | 50            |

#### <4K Saddle finisher>

| Item | Display          | Item                                                 | Set range | Default value |
|------|------------------|------------------------------------------------------|-----------|---------------|
| A    | SADDLE POSITION  | Saddle stitch position adjustment                    | 197 - 203 | 200           |
| B    | FOLDING POSITION | Saddle folding position adjustment                   | 192 - 208 | 200           |
| C    | FRONT ADJUST     | Alignment position adjustment (front)                | 0 - 20    | 10            |
| D    | STAPLE REAR      | Stapling position adjustment (Rear, one position)    | 94 - 106  | 100           |
| E    | STAPLE FRONT     | Stapling position adjustment (one position in front) | 94 - 106  | 100           |
| F    | PUNCH CENTER     | Punch center adjustment                              | 30 - 70   | 50            |
| G    | PUNCH HOLE       | Punch hole position adjustment                       | 46 - 52   | 50            |

## 4

4-2

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                      |
| <b>Function (Purpose)</b> | Check the paper feed section (Desk/LCC) sensors and detectors and their control circuits. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                                       |

## 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.

### <Desk>

|         |                                          |
|---------|------------------------------------------|
| D1MDC   | Tray 1 installation detection connector  |
| D1PED   | Tray 1 paper empty detector              |
| D1PPD   | Tray 1 paper transport detector          |
| D1PQD   | Tray 1 remaining paper quantity detector |
| D1PRED1 | Tray 1 paper rear edge detector 1        |
| D1PRED2 | Tray 1 paper rear edge detector 2        |
| D1PRED3 | Tray 1 paper rear edge detector 3        |
| D1PRED4 | Tray 1 paper rear edge detector 4        |
| D1ULD   | Tray 1 upper limit detector              |
| D2MDC   | Tray 2 installation detection connector  |
| D2PED   | Tray 2 paper empty detector              |
| D2PPD   | Tray 2 paper transport detector          |
| D2PQD   | Tray 2 remaining paper quantity detector |
| D2PRED1 | Tray 2 paper rear edge detector 1        |
| D2PRED2 | Tray 2 paper rear edge detector 2        |
| D2PRED3 | Tray 2 paper rear edge detector 3        |
| D2PRED4 | Tray 2 paper rear edge detector 4        |
| D2ULD   | Tray 2 upper limit detector              |

### <Tandem LCC>

|        |                                          |
|--------|------------------------------------------|
| DCDT   | Tandem tray insertion detection          |
| DPFD1  | Tray 1 paper transport detector          |
| D1LUD  | Tray 1 paper empty detector              |
| D1PED  | Tray 1 paper empty detector              |
| D1PQD  | Tray 1 remaining paper quantity detector |
| D1PPD1 | Tray 1 paper transport detector 1        |
| D1PPD2 | Tray 1 paper transport detector 2        |
| D2LUD  | Tray 2 upper limit detector              |
| D2PED  | Tray 2 paper empty detector              |
| D2PQD  | Tray 2 remaining paper quantity detector |

### <A4 LCC>

|       |                                    |
|-------|------------------------------------|
| LPFD  | LCC transport sensor               |
| LUD   | LCC tray upper limit sensor        |
| LDD   | LCC tray lower limit sensor        |
| LPED  | LCC tray paper empty sensor        |
| LCD   | LCC tray insertion detection       |
| LDSW  | LCC upper open/close detection SW  |
| LRE   | LCC lift motor encoder sensor      |
| L24VM | LCC24V power monitor               |
| LLSW  | LCC upper limit SW                 |
| LCCD  | LCC main unit connection detection |

### 4-3

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                              |
| <b>Function (Purpose)</b> | Used to check the paper feed section (Desk/LCC) loads and their control circuits. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                               |

### Operation/Procedure

- 1) Select the load item that is required to 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.

### <Desk>

|       |                             |
|-------|-----------------------------|
| D1LM  | Tray 1 lift up motor        |
| D1PFC | Tray 1 paper feed clutch    |
| D2LM  | Tray 2 lift up motor        |
| D2PFC | Tray 2 paper feed clutch    |
| DPFM  | Desk transport motor        |
| DPTRC | Desk paper transport clutch |

### <Tandem LCC>

|       |                             |
|-------|-----------------------------|
| D1LM  | Tray 1 lift up motor        |
| D1PFC | Tray 1 paper feed clutch    |
| D2LM  | Tray 2 lift up motor        |
| D2PFC | Tray 2 paper feed clutch    |
| D2PUS | Tray 2 paper feed solenoid  |
| DPFM  | Desk transport motor        |
| DPTRC | Desk paper transport clutch |

### <A4 LCC>

|      |                         |
|------|-------------------------|
| LPFM | LCC transport motor     |
| LLM  | LCC lift motor          |
| LPFC | LCC paper feed clutch   |
| LPFS | LCC paper feed solenoid |
| LTRC | LCC transport clutch    |

### 4-5

|                           |                                                                                 |
|---------------------------|---------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                            |
| <b>Function (Purpose)</b> | Check the operation of the paper transport clutch for the paper feed tray unit. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                             |

### Operation/Procedure

[Check the ON operation]

Press the clutch button of the target of the ON operation check. Checking is started. When the operation is normal, the button on the display is highlighted. When it is abnormal, the button is not highlighted.

[Check the OFF operation]

Press the highlighted button which is ON. When the operation is normal, the highlighted button on the display returns to the normal display. When it is abnormal, the highlighted display is maintained.

| button | Content               |
|--------|-----------------------|
| DTRC   | Desk transport clutch |
| LTRC   | LCC transport clutch  |

## 5

### 5-1

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                 |
| <b>Function (Purpose)</b> | Check the operation of the display, LCD in the operation panel, and control circuit. |
| <b>Section</b>            | Operation unit<br>(Operation/Display Control PWB)                                    |

### Operation/Procedure

The LCD is changed as shown below.

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

The LCD display contrast change and the LED lighting status are checked.

### 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 the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected heater lamp repeats ON/OFF operations 10 times at the interval of 500ms. When [EXECUTE] key is pressed, the operation is terminated.

Heater lamp operation check method:

Remove the rear cabinet, open the PWB holder, and the heater lamp lighting status can be checked from the clearance between the frames.

|       |                             |
|-------|-----------------------------|
| HL_UM | Main heater lamp (HL MAIN)  |
| HL_US | Sub heater lamp (HL SUB)    |
| HL_UW | Warm-up heater lamp (HL UW) |

### 5-3

|                           |                                                                  |
|---------------------------|------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                             |
| <b>Function (Purpose)</b> | Check the operation of the scanner lamp and the control circuit. |
| <b>Section</b>            | Scanner (reading)                                                |

#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The scanner lamp lights up for 10 sec. When [EXECUTE] key is pressed, the operation is terminated.

| Display        | Content           |
|----------------|-------------------|
| OC COPY LAMP   | OC scanner lamp   |
| DSPF COPY LAMP | DSPF scanner lamp |

### 5-4

|                           |                                                                    |
|---------------------------|--------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                               |
| <b>Function (Purpose)</b> | Check the operation of the discharge lamp and the control circuit. |
| <b>Section</b>            | Process                                                            |

#### Operation/Procedure

- 1) Select the item to be operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The discharge lamp lights up for 30 sec. When [EXECUTE] key is pressed, the operation is terminated.

## 6

### 6-1

|                           |                                                                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                                              |
| <b>Function (Purpose)</b> | Check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                                                               |

#### Operation/Procedure

- 1) Select the item to be operation 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.

Load operation check method:

The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.

| Section            | Item/Display | Content                               |
|--------------------|--------------|---------------------------------------|
| Transport/ process | CPFC1        | Tray vertical transport clutch 1      |
|                    | CPFC2        | Tray vertical transport clutch 2      |
|                    | CPFM         | Paper feed motor                      |
|                    | FRS          | Fusing lower pawl separation solenoid |
|                    | FUM          | Fusing motor                          |
|                    | HPFC         | Transport roller clutch               |
|                    | OSM          | Offset motor                          |
|                    | PFM          | Transport motor                       |
|                    | POMF         | Paper exit motor (normal rotation)    |
|                    | POMR         | Paper exit motor (reverse rotation)   |
| Paper feed         | PSPS         | Separation solenoid                   |
|                    | RRM          | Registration motor                    |
|                    | CLUM1        | Paper tray lift motor (Tray 1)        |
|                    | CLUM2        | Paper tray lift motor (Tray 2)        |
|                    | CPUC1        | Paper feed clutch (Tray 1)            |
|                    | CPUC2        | Paper feed clutch (Tray 2)            |
|                    | MPFS         | Paper feed solenoid (Manual tray)     |

### 6-2

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                      |
| <b>Function (Purpose)</b> | Check the operations of each fan and its control circuit. |
| <b>Section</b>            | Others                                                    |

#### Operation/Procedure

- 1) Select the item to be operation 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. Press [ALL] key to select all the fans collectively.

Load operation check method:

The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.

| Item/Display | Content                      |
|--------------|------------------------------|
| LSUFM        | LSU cooling fan              |
| OZFM         | Ozone fan motor              |
| POFM         | Power exit cooling fan 1,2,3 |
| PROFM1       | Process fan 1                |
| PSFM         | Power cooling fan1,2         |

### 6-90

|                           |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                     |
| <b>Function (Purpose)</b> | 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> | Set the operating conditions of aging. |
| <b>Section</b>            |                                        |

#### Operation/Procedure

- 1) Select the target to be set with the touch panel key.
- 2) Press [EXECUTE] key.  
The machine is rebooted in the aging mode.

The aging operation condition set by this mode is maintained here-after unless the power is turned off or the setting is changed.

|                  |                                        |
|------------------|----------------------------------------|
| AGING            | Aging operation setup                  |
| INTERVAL         | Intermittent setup                     |
| MISFEED DISABLE  | JAM detection enable/disable setup     |
| FUSING DISABLE   | Fusing operation enable/disable setup  |
| WARMUP DISABLE   | Warm-up skip setup                     |
| DV CHECK DISABLE | DV unit detection enable/disable setup |
| SHADING DISABLE  | Shading disable setup                  |
| CCD GAIN FREE    | No setting of the CCD gain adjustment  |

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>7-6</b>                |                                             |
| <b>Purpose</b>            | Setting                                     |
| <b>Function (Purpose)</b> | Set the operating intermittent aging cycle. |
| <b>Section</b>            |                                             |

#### Operation/Procedure

- 1) Enter the intermittent aging operation cycle (unit: sec) with 10-key.
- 2) Press [OK] key.  
The time entered in procedure 1) is set.  
\* The interval time that can be set is 1 to 900 (sec).

The aging operation condition set by this mode is maintained here-after unless the power is turned off or the setting is changed.

|                           |                           |
|---------------------------|---------------------------|
| <b>7-8</b>                |                           |
| <b>Purpose</b>            | Information display/print |
| <b>Function (Purpose)</b> | Display the warm-up time. |
| <b>Section</b>            | Fusing                    |

#### Operation/Procedure

Press [EXECUTE] key.

Counting of the warm-up time is started and the time required for warm-up is displayed

\* Interruption of counting by pressing [EXECUTE] key is inhibited.

|                           |                                                                     |
|---------------------------|---------------------------------------------------------------------|
| <b>7-12</b>               |                                                                     |
| <b>Purpose</b>            | Operation test/check                                                |
| <b>Function (Purpose)</b> | The document reading number of sheets setting (for aging operation) |
| <b>Section</b>            | Automatic document feeder                                           |

#### Operation/Procedure

- 1) Set document reading quantity with 10-key.  
(Setting range: 0 - 255)
- 2) Press [OK] key. The set value is saved.

The aging operation condition set by this mode is maintained here-after unless the power is turned off or the setting is changed.

## 8

|                           |                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------|
| <b>8-1</b>                |                                                                                                       |
| <b>Purpose</b>            | Adjustment                                                                                            |
| <b>Function (Purpose)</b> | Check and adjust the operations of the developing voltage in each print mode and the control circuit. |
| <b>Section</b>            | Toner supply, developing                                                                              |

#### Operation/Procedure

- 1) Enter the setting value with 10-key.
- 2) Press [EXECUTE] key.  
The entered voltage is outputted for 30 sec and the set value is saved. When [EXECUTE] key is pressed during outputting, the operation is terminated.

| Item/Display |   | Content                   | Setting range | Default value |
|--------------|---|---------------------------|---------------|---------------|
| MIDDLE       | A | Developing bias set value | 0-700         | 475           |
| LOW          | A | Developing bias set value | 0-700         | 475           |

### 8-2

|                           |                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                                                    |
| <b>Function (Purpose)</b> | Check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. |

|                |                 |
|----------------|-----------------|
| <b>Section</b> | Photo-conductor |
|----------------|-----------------|

#### Operation/Procedure

- 1) Enter the setting value with 10-key.
- 2) Press [EXECUTE] key.

The entered voltage is outputted for 30 sec and the set value is saved. When [EXECUTE] key is pressed during outputting, the operation is terminated.

| Item/Display |   | Content                   | Setting range | Default value |           |
|--------------|---|---------------------------|---------------|---------------|-----------|
|              |   |                           |               | 36 cpm        | 46/56 cpm |
| MIDDLE       | A | Main charger grid voltage | 150 - 850     | 645           | 650       |
| LOW          | A |                           |               |               | 645       |

### 8-6

|                           |                                                                                  |
|---------------------------|----------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                       |
| <b>Function (Purpose)</b> | Check and adjust the operation of the transport voltage and the control circuit. |

|                |          |
|----------------|----------|
| <b>Section</b> | Transfer |
|----------------|----------|

#### Operation/Procedure

- 1) Select a target item to be adjusted with scroll key.
- 2) Enter the set value with 10-key.  
Enter the default value specified on the following list.
- 3) Press [EXECUTE] key.

The set value is saved and the voltage corresponding to the set value is output for 30 sec. When [EXECUTE] key is pressed during outputting, the operation is terminated.

| Item/Display |                      | Content                        |               | Setting range | Default value 36/46/56 |
|--------------|----------------------|--------------------------------|---------------|---------------|------------------------|
| A            | TC PLAIN BW SPX      | Transfer current               | Front surface | 0 - 255       | 90/107/111             |
| B            | TC PLAIN BW DPX      |                                | Back surface  | 0 - 255       | 82/94/99               |
| C            | TC HEAVY1 BW SPX     |                                | Front surface | 0 - 255       | 82/82/82               |
| D            | TC HEAVY1 BW DPX     |                                | Back surface  | 0 - 255       | 82/82/82               |
| E            | TC HEAVY2 BW SPX     |                                | Heavy paper2  | 0 - 255       | 82/82/82               |
| F            | TC HEAVY3 BW SPX     |                                | Heavy paper3  | 0 - 255       | 82/82/82               |
| G            | TC OHP BW            |                                | OHP           | 0 - 255       | 82/82/82               |
| H            | TC ENVELOPE BW       |                                | Envelope      | 0 - 255       | 82/82/82               |
| I            | TC THIN RW           |                                | Thin paper    | 0 - 255       | 82/82/82               |
| J            | TC GROSSY BW         |                                | Gross paper   | 0 - 255       | 82/94/99               |
| K            | TC ADSORPTION        | Transfer current between paper |               | 0 - 255       | 82/94/99               |
| L            | TC INTERVAL BIAS MID | Interval bias                  |               | 0 - 255       | 55/55/55               |
| M            | TC INTERVAL BIAS LOW |                                |               | 0 - 255       | 55/55/55               |
| N            | TC BACKEND           | Transfer rear bias             |               | 0 - 255       | 73/77/82               |

| Item/Display         | Content                              | Setting range | Default value |
|----------------------|--------------------------------------|---------------|---------------|
| O TC CLEANING        | Transfer cleaning bias voltage       | 0 - 255       | 160/160/160   |
| P TC CLEANING PROCON | Cleaning in the process control mode | 0 - 255       | 160/160/160   |

8-17

|                           |                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                             |
| <b>Function (Purpose)</b> | Check and adjust the operation of the separation bias voltage and the control circuit. |
| <b>Section</b>            |                                                                                        |

#### Operation/Procedure

- 1) Select a target item to be adjusted with scroll key.
- 2) Enter the set value with 10-key.  
Enter the default value specified on the following list.
- 3) Press [EXECUTE] key.  
The set value is saved and the voltage corresponding to the set value is output for 30 sec. When [EXECUTE] key is pressed during outputting, the operation is terminated.

| Item/Display     | Content                                | Setting range | Default value |
|------------------|----------------------------------------|---------------|---------------|
| A PLV MID (FACE) | Separation bias output (Front surface) | 0 - 255       | 180           |
| B PLV MID (BACK) | Separation bias output (Back surface)  | 0 - 255       | 180           |
| C PLV LOW (FACE) | Separation bias output (Front surface) | 0 - 255       | 150           |
| D PLV LOW (BACK) | Separation bias output (Back surface)  | 0 - 255       | 150           |

9

9-2

|                           |                                                                                                                      |
|---------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                                                 |
| <b>Function (Purpose)</b> | Check the operation of the sensors and detectors in the switchback section (duplex section) and the control circuit. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                                                                  |

#### 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.

|         |                                    |
|---------|------------------------------------|
| DSW_ADU | ADU transport open/close detection |
| APPD1   | ADU transport detection 1          |
| APPD2   | ADU transport detection 2          |

9-3

|                           |                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                                    |
| <b>Function (Purpose)</b> | 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 operation checked with the touch panel key.
- 2) Press [EXECUTE] key.  
The selected load performs the operation. When [EXECUTE] key is pressed during operation, the operation is terminated.

|       |                   |
|-------|-------------------|
| ADUGS | ADU gate solenoid |
|-------|-------------------|

|      |           |
|------|-----------|
| ADUM | ADU motor |
|------|-----------|

10

10-1

|                           |                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                       |
| <b>Function (Purpose)</b> | Check the operations of the toner supply mechanism (toner clutch) and the related circuit. |
| <b>Section</b>            | Toner supply, developing                                                                   |

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
The selected load operation is performed for 10 sec. When [EXECUTE] key is pressed during operation, the operation is terminated.

NOTE: This simulation must be executed without installing the toner cartridges.

If this simulation is executed with the toner cartridges installed, toner will be forcibly supplied to the developing unit, resulting in over toner. If this simulation is erroneously executed with the toner cartridge installed, the over toner state may be canceled by making several background copies.

13

13--

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Purpose</b>            | Cancel                             |
| <b>Function (Purpose)</b> | Cancel the self-diag "U1" trouble. |
| <b>Section</b>            | MFP (ICU) PWB                      |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

14

14--

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Purpose</b>            | Cancel                                     |
| <b>Function (Purpose)</b> | Cancel the self-diag "H3, H4, H5" trouble. |
| <b>Section</b>            | Fusing                                     |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

15

15--

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Purpose</b>            | Cancel                                      |
| <b>Function (Purpose)</b> | Cancel the self-diag "U6-01/02/09" trouble. |
| <b>Section</b>            | LCC                                         |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 16

16--

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Purpose</b>            | Cancel                             |
| <b>Function (Purpose)</b> | Cancel the self-diag "U2" trouble. |
| <b>Section</b>            |                                    |

### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key to execute cancellation of the trouble.

## 21

21-1

|                           |                            |
|---------------------------|----------------------------|
| <b>Purpose</b>            | Setting                    |
| <b>Function (Purpose)</b> | Set the maintenance cycle. |
| <b>Section</b>            |                            |

### 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 MAINTENANCE COUNTER (TOTAL) | Maintenance counter (Total) | 0 : Default<br>1 - 300: 1K - 300K<br>999 : Free | 250K          |

## 22

22-1

|                           |                                                       |
|---------------------------|-------------------------------------------------------|
| <b>Purpose</b>            | Information display                                   |
| <b>Function (Purpose)</b> | Display the print count value of each operation mode. |
| <b>Section</b>            |                                                       |

### Operation/Procedure

| Target counter        | Display        | Content                            |
|-----------------------|----------------|------------------------------------|
| Total output quantity | TOTAL OUT (BW) | Total output quantity of black     |
| Total use quantity    | TOTAL (BW)     | Total use quantity of black        |
|                       | TOTAL (COL)    | Total use quantity of color        |
| Copy                  | COPY (BW)      | Copy counter                       |
| Print                 | PRINT (BW)     | Print counter                      |
| Document filing       | DOC FIL (BW)   | Document filing print counter      |
| Other                 | OTHER (BW)     | Black other counter                |
| PCI                   | PCI OPE-TIME   | PCI accumulated operation time (H) |

22-2

|                           |                                                                  |
|---------------------------|------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                              |
| <b>Function (Purpose)</b> | Display the number of total mis-feed and the number of troubles. |
| <b>Section</b>            |                                                                  |

### Operation/Procedure

The paper jam, trouble counter value is displayed.

| Item/Display  | Content             |
|---------------|---------------------|
| MACHINE JAM   | Machine JAM counter |
| RSPF/DSPF JAM | SPFJAM counter      |
| TROUBLE       | Trouble counter     |

22-3

|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                       |
| <b>Function (Purpose)</b> | Display the mis-feed position and the number of mis-feed at the position. |
| <b>Section</b>            |                                                                           |

### Operation/Procedure

The paper jam and mis-feed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

22-4

|                           |                                          |
|---------------------------|------------------------------------------|
| <b>Purpose</b>            | Information display                      |
| <b>Function (Purpose)</b> | Display the trouble (self diag) history. |
| <b>Section</b>            |                                          |

### Operation/Procedure

The trouble history is displayed from the latest one up to 30 items. (The old ones are deleted sequentially.)

22-5

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| <b>Purpose</b>            | Information display                             |
| <b>Function (Purpose)</b> | Display the ROM version of each unit (section). |
| <b>Section</b>            |                                                 |

### Operation/Procedure

The ROM version of the installed unit in each section is displayed. When there is any trouble in the software, use this simulation to check the ROM version, and upgrade the version if necessary.

| Item/Display | Content                                                                        |
|--------------|--------------------------------------------------------------------------------|
| S/N          | Serial No. (The codes for November and December are "X" and "Y" respectively.) |
| ICUM (MAIN)  | ICUM (Main)                                                                    |
| ICUM (BIOS)  | ICUM (Bios)                                                                    |
| ICU (MAIN)   | ICU (Main section)                                                             |
| ICU (BOOT)   | ICU (Boot section)                                                             |
| ICU (SUB)    | ICU (Sub)                                                                      |
| LANGUAGE     | Language support data version                                                  |
| UICONTENTS   | Contents data for LCD                                                          |
| PCU          | PCU                                                                            |
| SCU          | SCU                                                                            |
| SPF          | DSPF/RSPF                                                                      |
| FAX1 (MAIN)  | FAX 1-Line (Main section)                                                      |
| DESK         | Desk unit                                                                      |
| LCC          | Side LCC                                                                       |
| FINISHER     | Finisher                                                                       |
| SADDLE       | Saddle unit                                                                    |
| PUNCH        | Punch unit                                                                     |
| 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)                                                            |
| PCI          | PCI                                                                            |
| EOSA         | embedded OSA                                                                   |

22-6

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Information print                                                                     |
| <b>Function (Purpose)</b> | Print information on various settings, adjustments, counters, controls, and versions. |
| <b>Section</b>            |                                                                                       |

### Operation/Procedure

- \* When installing or servicing, this simulation is executed to print the adjustment data and set data for use in the next servicing. (Memory trouble, PWB replacement, etc.)



- 1) Select the print list mode with 10-key.

| Item         | Display | Print content                        |
|--------------|---------|--------------------------------------|
| DATA PATTERN | NO.1    | Firmware version, counter data, etc. |
|              | NO.3    | Data related to the process control  |
| 2SIDED PRINT | 1-SIDED | Simplex surface print (Default)      |
|              | 2-SIDED | Duplex surface print                 |

- 2) Press [EXECUTE] key to start printing the list selected in step 1).

|                                                                                              |                                                                                                        |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>22-8</b>                                                                                  |                                                                                                        |
| <b>Purpose</b>                                                                               | Information display                                                                                    |
| <b>Function (Purpose)</b>                                                                    | Display the number of operations (the counter value) of the finisher, the SPF, and scanning (reading). |
| <b>Section</b>                                                                               |                                                                                                        |
| <b>Operation/Procedure</b>                                                                   |                                                                                                        |
| The counter values of the finisher, the SPF, and the scanner related counters are displayed. |                                                                                                        |

|                |                                                                                                |
|----------------|------------------------------------------------------------------------------------------------|
| SPF            | Document feed quantity                                                                         |
| SCAN           | Number of times of scan                                                                        |
| STAPLER        | Staple counter                                                                                 |
| PUNCHER        | Puncher counter                                                                                |
| STAMP          | Stamp counter                                                                                  |
| SADDLE STAPLER | Saddle staple counter                                                                          |
| SADDLE V FOLD  | Saddle finisher V fold counter                                                                 |
| COVER          | Cover open/close counter                                                                       |
| HP_ON          | Number of scanner HP detection                                                                 |
| OC LAMP TIME   | Total lighting time of the lamp in OC section (* hour * minutes)                               |
| DSPF LAMP TIME | Total lighting time of the lamp in DSPF section (* hour * minutes) (DSPF-installed model only) |

|                                                         |                                                        |
|---------------------------------------------------------|--------------------------------------------------------|
| <b>22-9</b>                                             |                                                        |
| <b>Purpose</b>                                          | Information display                                    |
| <b>Function (Purpose)</b>                               | Display the print quantity of each paper feed section. |
| <b>Section</b>                                          | Paper feed, paper reverse/transport                    |
| <b>Operation/Procedure</b>                              |                                                        |
| The counter values related to paper feed are displayed. |                                                        |

|           |                                                |
|-----------|------------------------------------------------|
| TRAY1     | Tray 1 paper feed counter                      |
| TRAY2     | Tray 2 paper feed counter                      |
| TRAY3     | Tray 3 paper feed counter                      |
| TRAY4     | Tray 4 paper feed counter                      |
| MFT TOTAL | Manual paper feed counter (Total)              |
| MFT HEAVY | Manual paper feed counter (Heavy paper)        |
| MFT OHP   | Manual paper feed counter (OHP)                |
| MFT ENV   | Manual paper feed counter (Envelope)           |
| LCC       | Side LCC paper feed counter (A4 LCC)           |
| ADU       | ADU paper feed counter (Paper reverse section) |

|                                                                       |                                                                   |
|-----------------------------------------------------------------------|-------------------------------------------------------------------|
| <b>22-10</b>                                                          |                                                                   |
| <b>Purpose</b>                                                        | Information display                                               |
| <b>Function (Purpose)</b>                                             | Display the system configuration (options and internal hardware). |
| <b>Section</b>                                                        |                                                                   |
| <b>Operation/Procedure</b>                                            |                                                                   |
| The system configuration is displayed.                                |                                                                   |
| (The model names of the installed devices and options are displayed.) |                                                                   |

| Device  | Model name | Content              |
|---------|------------|----------------------|
| MACHINE | MX-M365N   | Main unit            |
|         | MX-M465N   |                      |
|         | MX-M565N   |                      |
| SPF     | STANDARD   | Auto document feeder |

| Device       | Model name         | Content                                    |
|--------------|--------------------|--------------------------------------------|
| STAMP        | AR-SU1             | Finish stamp                               |
| DESK         | MX-DE12            | Stand/1x500 sheet paper drawer             |
|              | MX-DE13            | Stand/2x500 sheet paper drawer             |
|              | MX-DE14            | Stand/3x500 sheet paper drawer             |
|              | MX-DE20            | Stand/500&2000 sheet paper drawer          |
| LCC          | MX-LC11            | A4 Large capacity tray (LCC)               |
| PUNCHER      | MX-PN11A           | Punch module                               |
|              | MX-PN11B           |                                            |
|              | MX-PN11C           |                                            |
|              | MX-PN11D           |                                            |
|              | MX-PNX5A           |                                            |
|              | MX-PNX5B           |                                            |
|              | MX-PNX5C           |                                            |
|              | MX-PNX5D           |                                            |
|              | MX-PNX6A           |                                            |
|              | MX-PNX6B           |                                            |
|              | MX-PNX6C           |                                            |
|              | MX-PNX6D           |                                            |
| FINISHER     | MX-FN17            | Inner finisher                             |
|              | MX-FN10            | Saddle stitch finisher (1K)                |
|              | MX-FN11            | Finisher (4K)                              |
|              | MX-FN18            | Saddle stitch finisher (4K)                |
| FAX1         | MX-FX11            | Facsimile expansion kit                    |
| PS           | STANDARD           | PS expansion                               |
| XPS          | MX-PUX1            | XPS expansion kit                          |
| SECURITY     | MX-FR44U           | Data security kit (commercial version)     |
|              | MX-FR44            | Data security kit (Authentication version) |
| AIM          | MX-AMX1            | Application integration module             |
| SDRAM (SYS)  | *****MB            | SDRAM capacity                             |
| SDRAM (ICU)  | *****MB            | SDRAM capacity                             |
| HDD          | *****MB            | Hard disk capacity                         |
| SD           | *****MB            | SD card capacity                           |
| NIC          | STANDARD           | NIC                                        |
| BARCODE      | MX-PF10            | Bar code font                              |
| INTERNET-FAX | MX-FWX1            | Internet Fax expansion kit                 |
| ACM (*)      | MX-AMX2 / STANDARD | Application communication module           |
| EAM (*)      | MX-AMX3 / STANDARD | External account module                    |
| WEB BROWSING | MX-AM10 / STANDARD | Web browsing kit                           |
| ACRE         | MX-EB11            | Enhanced compression kit (ACRE)            |
| MIRRORING    | MX-EB12 N          | Mirroring kit                              |
| PCI          | CONNECT            | Plasmacluster ion generator mounting kit   |
| CF           | *****MB            | Compact flash capacity                     |

|                           |                                                                                    |
|---------------------------|------------------------------------------------------------------------------------|
| <b>22-11</b>              |                                                                                    |
| <b>Purpose</b>            | Information display                                                                |
| <b>Function (Purpose)</b> | Display the use frequency of send/receive of FAX.<br>(Only when FAX is installed.) |
| <b>Section</b>            | FAX unit (TEL/LIU, FAX control PWB)                                                |

**Operation/Procedure**  
The values of the FAX send counter and the FAX receive counter are displayed.

|               |                                         |
|---------------|-----------------------------------------|
| FAX OUTPUT    | FAX print quantity counter (for line 1) |
| FAX SEND      | FAX send counter                        |
| FAX RECEIVED  | FAX receive counter                     |
| SEND IMAGES   | FAX send quantity counter (for line 1)  |
| SEND TIME     | FAX send time                           |
| RECEIVED TIME | FAX receive time                        |



|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>22-12</b>              |                                                                                      |
| <b>Purpose</b>            | Information display                                                                  |
| <b>Function (Purpose)</b> | Display the mis-feed position of the SPF and the number of mis-feed at the position. |
| <b>Section</b>            | Automatic document feeder                                                            |

#### Operation/Procedure

The paper jam and mis-feed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

\* For the list of the jam codes, Refer to "Paper JAM code list" in [6] SELF DIAG AND TROUBLE CODE.

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>22-13</b>              |                                                                                       |
| <b>Purpose</b>            | Information display                                                                   |
| <b>Function (Purpose)</b> | Display the use quantity of the process section (OPC drum, DV unit, toner cartridge). |
| <b>Section</b>            | Process                                                                               |

#### Operation/Procedure

The rotating time and the print quantity of the process section are displayed.

|                 |                                  |
|-----------------|----------------------------------|
| MAINTENANCE ALL | Maintenance counter (Total)      |
| FUSING ROLLER   | Fusing roller                    |
| PRESSURE ROLLER | Fusing pressure roller           |
| SEPARATION PAWL | Fusing separation pawl           |
| FUSING WEB UNIT | Fusing web unit                  |
| FUSING WEB SEND | Fusing web cleaning send counter |
| TC ROLLER       | Transfer roller                  |
| PS PAPER        | Paper dust cleaner               |
| OZONE FILTER    | Ozone filter                     |
| DEVE CTRG       | DV unit                          |
| DRUM            | OPC drum                         |
| MAIN CHARGER    | Main charger                     |
| DRUM BLADE      | OPC drum cleaning blade          |
| TONER CTRG      | Toner cartridge                  |

|                           |                                                |
|---------------------------|------------------------------------------------|
| <b>22-14</b>              |                                                |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check        |
| <b>Function (Purpose)</b> | 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                             |
| TONE R       | Toner cartridge use counter | 0 - 255                                        | 0 - 255                            | 0 - 255                       | 0-25%<br>25-50%<br>50-75%<br>75-100% |

|                           |                                         |
|---------------------------|-----------------------------------------|
| <b>22-18</b>              |                                         |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check |
| <b>Function (Purpose)</b> | Display the use data delete history.    |
| <b>Section</b>            |                                         |

#### Operation/Procedure

The date and time of the user data delete are displayed.

| Display item | Content                                           |
|--------------|---------------------------------------------------|
| Item         | Date                                              |
| START        | Year/month/day                                    |
| END          | /hour/min                                         |
|              | Delete history (Date and time of operation start) |
|              | Delete history (Date and time of operation end)   |

|                           |                                                              |
|---------------------------|--------------------------------------------------------------|
| <b>22-19</b>              |                                                              |
| <b>Purpose</b>            | Information display                                          |
| <b>Function (Purpose)</b> | Display various counter values related to scan - image send. |
| <b>Section</b>            |                                                              |

#### Operation/Procedure

Display the counter value related to the network scanner

|                          |                                                                 |
|--------------------------|-----------------------------------------------------------------|
| NET SCN ORG_B/W          | Network scanner document read quantity counter (B/W scan job)   |
| NET SCN ORG_CL           | Network scanner document read quantity counter (Color scan job) |
| INTERNET FAX OUTPUT      | Number of internet FAX output                                   |
| INTERNET FAX SEND OUTPUT | Number of internet FAX sending page                             |
| INTERNET FAX RECEIVE     | Number of internet FAX receive                                  |
| INTERNET FAX SEND        | Number of internet FAX send                                     |
| MAIL COUNTER             | Number of times of E-MAIL send                                  |
| FTP COUNTER              | Number of FTP send                                              |
| SMB SEND                 | Number of SMB send                                              |
| USB CNT                  | Number of times of USB storage                                  |
| TRIAL MODE_B&C           | Trial mode counter (B/W & COLOR scan job)                       |
| SCAN TO HDD_B/W          | SCAN TO HDD record quantity (B/W)                               |
| SCAN TO HDD_CL           | SCAN TO HDD record quantity (COLOR) (N model only)              |

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>22-40</b>              |                                               |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check       |
| <b>Function (Purpose)</b> | Display the error code list and the contents. |
| <b>Section</b>            |                                               |

#### Operation/Procedure

1) Select the error code.

|                           |                                         |
|---------------------------|-----------------------------------------|
| <b>22-42</b>              |                                         |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check |
| <b>Function (Purpose)</b> | Check the JAM/trouble data.             |
| <b>Section</b>            |                                         |

#### Operation/Procedure

1) Select the item to be checked with the touch panel key.

| Display item | Counter           | Content          |                       |
|--------------|-------------------|------------------|-----------------------|
|              |                   | JAM/Trouble code | Total count           |
| PAPER JAM    | Paper JAM counter | JAM code         | Total output quantity |
| SPF JAM      | SPF JAM counter   | JAM code (SPF)   |                       |
| TROUBLE      | Trouble counter   | Trouble code     |                       |

|                           |                                         |
|---------------------------|-----------------------------------------|
| <b>22-43</b>              |                                         |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check |
| <b>Function (Purpose)</b> | Display the JAM data.                   |
| <b>Section</b>            |                                         |

#### Operation/Procedure

1) Select the item to be checked with the touch panel.

Display data and contents (COUNTER)

| Item                     | Content                                                          |
|--------------------------|------------------------------------------------------------------|
| PAPER JAM COUNT          | Number of machine JAM troubles                                   |
| PAPER FEED COUNTER       | Paper feed counter (Similar with SIM22-9 display content)        |
| PAPER FEED RETRY COUNTER | Paper feed retry counter (Similar with SIM27-18 display content) |

|                           |                                    |
|---------------------------|------------------------------------|
| <b>22-90</b>              |                                    |
| <b>Purpose</b>            | Information print                  |
| <b>Function (Purpose)</b> | Output the various set data lists. |
| <b>Section</b>            |                                    |

#### Operation/Procedure

- 1) Change the display with scroll key.
- 2) Select the print target with the keys on the touch panel.
- 3) Press [EXECUTE] key to start self print of the list.

|                                              |                                   |
|----------------------------------------------|-----------------------------------|
| 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             |
|                                              | NIC PAGE                          |
| Address registration list (*)                | INDIVIDUAL LIST                   |
|                                              | GROUP LIST                        |
|                                              | PROGRAM LIST                      |
|                                              | MEMORY BOX LIST                   |
|                                              | ALL SENDING ADDRESS LIST          |
| Document filing 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 YES/NO number table                  | ANTI JUNK FAX NUMBER LIST         |
| Receive rejection/allow address domain table | ANTI JUNK MAIL/DOMAIN NAME LIST   |
| To network Transfer table list               | INBOUND ROUTING LIST              |
| To administrator Transfer list               | DOCUMENT ADMIN LIST               |
| Web setting list                             | WEB SETTING LIST                  |
| Meta data set list                           | METADATA SET LIST                 |

\* When the data list print of system setting is inhibition in DSK model, this setting is invalid.

## 23

|                           |                                                            |
|---------------------------|------------------------------------------------------------|
| <b>23-2</b>               |                                                            |
| <b>Purpose</b>            | Information print                                          |
| <b>Function (Purpose)</b> | Output the trouble history list of paper jam and mis-feed. |
| <b>Section</b>            |                                                            |

#### Operation/Procedure

Press [EXECUTE] key to execute print.

The trouble history of paper jams and mis-feed is printed.

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| <b>23-80</b>              |                                                                                                  |
| <b>Purpose</b>            | Information print                                                                                |
| <b>Function (Purpose)</b> | Output the operation data of paper feed and paper transport in the paper feed/transport section. |
| <b>Section</b>            | Paper feed, paper reverse/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.

|                |                               |
|----------------|-------------------------------|
| JAM CODE       | JAM code                      |
| DATE / TIME    | JAM occurrence date/time      |
| MODE           | Printing mode when JAM occurs |
| SIZE           | Paper size                    |
| TYPE           | Paper type                    |
| PIC TRAY       | Paper feed tray               |
| OUT TRAY       | Paper exit tray               |
| INF1 (ILLEGAL) | Illegal detection information |
| INF2(SENSOR)   | Sensor information            |

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| <b>23-81</b>              |                                                    |
| <b>Purpose</b>            | Data backup                                        |
| <b>Function (Purpose)</b> | Backup the paper feed time data to the USB memory. |
| <b>Section</b>            |                                                    |

#### Operation/Procedure

Insert the USB memory into the main unit, and press [OK] key and [EXECUTE] key.

## 24

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| <b>24-1</b>               |                                                 |
| <b>Purpose</b>            | Data clear/Reset                                |
| <b>Function (Purpose)</b> | Clear the jam counter, and the trouble 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.

|         |                       |
|---------|-----------------------|
| MACHINE | Machine JAM counter   |
| SPF     | DSPF/RSPF JAM counter |
| TROUBLE | Trouble counter       |

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| <b>24-2</b>               |                                                                            |
| <b>Purpose</b>            | Data clear/Reset                                                           |
| <b>Function (Purpose)</b> | Clear the number of use (the number of prints) of each paper feed section. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                        |

#### 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.

|           |                                         |
|-----------|-----------------------------------------|
| TRAY1     | Tray 1 paper feed counter               |
| TRAY2     | Tray 2 paper feed counter               |
| TRAY3     | Tray 3 paper feed counter               |
| TRAY4     | Tray 4 paper feed counter               |
| MFT TOTAL | Manual paper feed counter (Total)       |
| MFT HEAVY | Manual paper feed counter (Heavy paper) |
| MFT OHP   | Manual paper feed counter (OHP)         |
| MFT ENV   | Manual paper feed counter (Envelope)    |

|     |                                      |
|-----|--------------------------------------|
| LCC | Side LCC paper feed counter (A4 LCC) |
| ADU | ADU paper feed counter               |

#### 24-3

|                           |                                                              |
|---------------------------|--------------------------------------------------------------|
| <b>Purpose</b>            | Data clear/Reset                                             |
| <b>Function (Purpose)</b> | Clear the finisher, SPF and the scan (reading) unit 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.

|                |                                                                   |
|----------------|-------------------------------------------------------------------|
| SPF            | DSPF/RSPF document feed counter                                   |
| SCAN           | Scan counter                                                      |
| STAPLER        | Staple counter                                                    |
| PUNCHER        | Puncher counter                                                   |
| STAMP          | Stamp counter                                                     |
| SADDLE STAPLER | Saddle staple counter                                             |
| SADDLE V FOLD  | Saddle finisher V fold counter                                    |
| COVER          | Cover open/close counter                                          |
| HP_ON          | HP detection count                                                |
| OC LAMP TIME   | OC section lamp total lighting time                               |
| DSPF LAMP TIME | DSPF section lamp total lighting time (DSPF-installed model only) |

#### 24-4

|                           |                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Data clear/Reset                                                                              |
| <b>Function (Purpose)</b> | Clear the maintenance counter, the printer counters of the transfer unit and the fusing unit. |

|                |  |
|----------------|--|
| <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.

| Item / Display |                 | Content                                                                            |
|----------------|-----------------|------------------------------------------------------------------------------------|
| Maintenance    | MAINTENANCE ALL | Maintenance counter (Total)<br>Maintenance counter (Total)<br>(Number of use days) |
| Fusing         | FUSING ROLLER   | Counter<br>Number of use days<br>Accumulated number of rotation                    |
|                | PRESS ROLLER    | Counter<br>Number of use days<br>Accumulated number of rotation                    |
| Separation     | SEPARATION PAWL | Counter<br>Number of use days<br>Accumulated number of rotation                    |
|                | FUSING WEB      | Print counter<br>Number of use days<br>Web cleaning send counter                   |
| Transfer       | TC ROLLER       | Counter<br>Number of use days<br>Accumulated number of rotation                    |
| Drum           | DRUM            | Counter<br>Number of use days<br>Accumulated number of rotation                    |
| Main charger   | MAIN CHARGER    | Counter<br>Number of use days<br>Accumulated number of rotation                    |
| Drum blade     | DRUM BLADE      | Counter<br>Number of use days<br>Accumulated number of rotation                    |

|       |              |                    |
|-------|--------------|--------------------|
| Other | PS PAPER     | Counter            |
|       |              | Number of use days |
|       | OZONE FILTER | Counter            |
|       |              | Number of use days |

#### 24-5

|                           |                              |
|---------------------------|------------------------------|
| <b>Purpose</b>            | Data clear/Reset             |
| <b>Function (Purpose)</b> | Clear the developer counter. |
| <b>Section</b>            | Toner supply, developing     |

#### 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.

NOTE: When SIM25-2 is executed, this counter is also cleared automatically.

|                                                         |
|---------------------------------------------------------|
| Developer cartridge print counter                       |
| Developer cartridge accumulated traveling distance (cm) |
| Number of day that used developer (Day)                 |

#### 24-6

|                           |                         |
|---------------------------|-------------------------|
| <b>Purpose</b>            | Data clear/Reset        |
| <b>Function (Purpose)</b> | Clear the copy 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.

|         |              |
|---------|--------------|
| COPY BW | Copy counter |
|---------|--------------|

#### 24-9

|                           |                                                                             |
|---------------------------|-----------------------------------------------------------------------------|
| <b>Purpose</b>            | Data clear/Reset                                                            |
| <b>Function (Purpose)</b> | Clear the printer mode print counter and the self print mode print 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.

|          |               |
|----------|---------------|
| PRINT BW | Print counter |
| OTHER BW | Other counter |

#### 24-10

|                           |                                                        |
|---------------------------|--------------------------------------------------------|
| <b>Purpose</b>            | Data clear/Reset                                       |
| <b>Function (Purpose)</b> | Clear the FAX counter.<br>(Only when FAX is installed) |
| <b>Section</b>            | FAX unit (TEL/LIU, FAX control PWB)                    |

#### 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.

|               |                                         |
|---------------|-----------------------------------------|
| FAX OUTPUT    | FAX Print quantity counter (for line 1) |
| FAX SEND      | FAX send counter                        |
| FAX RECEIVED  | FAX receive counter                     |
| SEND IMAGES   | FAX send quantity counter (for line 1)  |
| SEND TIME     | FAX send time                           |
| RECEIVED TIME | FAX receive time                        |

|                           |                                    |
|---------------------------|------------------------------------|
| <b>24-12</b>              |                                    |
| <b>Purpose</b>            | Data clear/Reset                   |
| <b>Function (Purpose)</b> | 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.

|         |                               |
|---------|-------------------------------|
| DOC FIL | Document filing print counter |
|---------|-------------------------------|

|                           |                                                                 |
|---------------------------|-----------------------------------------------------------------|
| <b>24-15</b>              |                                                                 |
| <b>Purpose</b>            | Data clear/Reset                                                |
| <b>Function (Purpose)</b> | Clear the counters related to the scan mode and the image send. |
| <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.

|                          |                                                                 |
|--------------------------|-----------------------------------------------------------------|
| NET SCN ORG_B/W          | Network scanner document read quantity counter (B/W scan job)   |
| NET SCN ORG_CL           | Network scanner document read quantity counter (COLOR scan job) |
| INTERNET FAX OUTPUT      | Number of internet FAX output                                   |
| INTERNET FAX SEND OUTPUT | Number of internet FAX sending page                             |
| INTERNET FAX RECEIVE     | Number of internet FAX receive                                  |
| INTERNET FAX SEND        | Number of internet FAX send                                     |
| MAIL COUNTER             | Number of times of E-MAIL send                                  |
| FTP COUNTER              | Number of FTP send                                              |
| SMB SEND                 | Number of SMB send                                              |
| USB CNT                  | Number of times of USB storage                                  |
| TRIAL MODE_B&C           | Trial mode counter (B/W & COLOR scan job)                       |
| SCAN TO HDD_B/W          | SCAN TO HDD record quantity (B/W)                               |
| SCAN TO HDD_CL           | SCAN TO HDD record quantity (COLOR)                             |

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>24-35</b>              |                                            |
| <b>Purpose</b>            | Data clear/Reset                           |
| <b>Function (Purpose)</b> | Clear the toner cartridge use status data. |
| <b>Section</b>            |                                            |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
  - 2) Press [YES] key.
- The toner cartridge use status data (SIM22-14) are cleared.

## 25

|                           |                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------|
| <b>25-1</b>               |                                                                                                   |
| <b>Purpose</b>            | Operation test/check                                                                              |
| <b>Function (Purpose)</b> | Check the operations of the developing section, and to display the toner density detection level. |
| <b>Section</b>            | Toner supply, developing                                                                          |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- The developing motor and the OPC drum motor rotate for 3 minutes and the output level of the toner density sensor is displayed.

|       |                                            |
|-------|--------------------------------------------|
| TCS_K | Toner sensor output value                  |
| TSG_K | Toner density sensor control voltage level |

NOTE: The toner cartridge must be removed before executing this simulation. If this simulation is executed with the toner cartridge installed, toner will be forcibly supplied to the developing unit, resulting in over toner and a trouble.

|                           |                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------|
| <b>25-2</b>               |                                                                                            |
| <b>Purpose</b>            | Setting                                                                                    |
| <b>Function (Purpose)</b> | Make the initial setting of toner density when replacing developer. (Automatic adjustment) |
| <b>Section</b>            | Toner supply, developing                                                                   |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- The developing motor rotates for 3 minutes, and the toner density sensor makes sampling of the toner density. The detected level is displayed.
- After stopping the developing motor, the average value of the toner density sampling results is set as the reference toner density control level.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner density level is not set normally.

Do not execute this simulation unless new Developer material has been installed. If it is executed in other cases, under toner or over-toner may occur, causing a trouble.

#### Adjustment result data display

| Item/Display    | Content                                                                     |
|-----------------|-----------------------------------------------------------------------------|
| AT DEVE ADJ_L_K | Toner density control adjustment value in the low speed process mode.       |
| AT DEVE ADJ_M_K | Toner density control adjustment value in the middle speed process mode     |
| AT DEVE VO_L_K  | Toner density sensor control voltage level in the low speed process mode    |
| AT DEVE VO_M_K  | Toner density sensor control voltage level in the middle speed process mode |

#### Data display during execution

| Item/Display | Content                                    |
|--------------|--------------------------------------------|
| TCS_K        | Toner sensor output level                  |
| TSG_K        | Toner density sensor control voltage level |

#### Display in case of an error

| Error display | Content        | Details of content                                                                 |
|---------------|----------------|------------------------------------------------------------------------------------|
| EE-EL         | EL abnormality | Sensor output level less than 77, or sensor control voltage level over 207         |
| EE-EU         | EU abnormality | Sensor output level over 177, or sensor control voltage level less than 52         |
| EE-EC         | EC abnormality | The sampling level in the automatic toner density adjustment is outside of 128±10. |

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>25-4</b>               |                                                                                   |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check                                           |
| <b>Function (Purpose)</b> | 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..

|               |                                                    |
|---------------|----------------------------------------------------|
| DV CTRG       | Developer cartridge print counter                  |
| DV RANGE      | Developer cartridge accumulated traveling distance |
| HUMIDITY AREA | Current humidity area                              |

|                |                                                            |
|----------------|------------------------------------------------------------|
| ALL VREF       | All correction value for the toner density reference value |
| DELTA VREF     | Transition target correction amount                        |
| TONER DEN LT   | Toner density output level                                 |
| TONER DEN ST   | Toner density standard level                               |
| AUTO DEVE VO   | Toner density sensor control voltage                       |
| ALL V0         | All correction values for the control voltage value        |
| HUM V0         | Humidity correction amount                                 |
| LIFE V0        | Life correction amount                                     |
| PROCON V0      | Process control feedback correction amount                 |
| AREA V0        | Area correction amount                                     |
| PRINT RATE V0  | Print ratio correction amount                              |
| ENV V0         | Environment multiple correction amount                     |
| AUTO DEVE AREA | Humidity area                                              |
| PRINT RATE V0  | Print rate correction amount                               |

## 26

26-1

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| <b>Purpose</b>            | Setting                                           |
| <b>Function (Purpose)</b> | Set the paper exit operation from the right side. |
| <b>Section</b>            | Paper exit section                                |

### Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [OK] key. (The set value is saved.)

This setting is required to use the paper exit tray unit

| Item/Display |   |     | Content              |
|--------------|---|-----|----------------------|
| A            | 0 | YES | Paper exit tray: YES |
|              | 1 | NO  | Paper exit tray: NO  |

26-2

|                           |                                         |
|---------------------------|-----------------------------------------|
| <b>Purpose</b>            | Setting                                 |
| <b>Function (Purpose)</b> | Set the paper type and the weight type. |
| <b>Section</b>            | Paper feed, paper reverse/transport     |

### Operation/Procedure

Select a paper size to be changed with the touch panel.

|                |   |          |
|----------------|---|----------|
| TRAY3 (TANDEM) | 0 | 8.5 x 11 |
|                | 1 | A4       |
|                | 2 | B5       |
| LCC            | 0 | 8.5 x 11 |
|                | 1 | A4       |
|                | 2 | B5       |
| G/LBS SET      | 0 | GRAM     |
|                | 1 | LBS      |

26-3

|                           |                                       |
|---------------------------|---------------------------------------|
| <b>Purpose</b>            | Setting                               |
| <b>Function (Purpose)</b> | Set the specifications of the auditor |
| <b>Section</b>            | Auditor                               |

### Operation/Procedure

Select an item to be set with the touch panel.

| Item/Display     |     | Content                                          | Default value |
|------------------|-----|--------------------------------------------------|---------------|
| BUILT-IN AUDITOR | P10 | Built-in auditor mode (standard mode) operation. | P10           |

| Item/Display     |                        | Content                                                                                                                                                                                                                                                                   | Default value |
|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| OUTSIDE AUDITOR  | NONE                   | No external connection vendor is used.                                                                                                                                                                                                                                    | NONE          |
|                  | P_VENDOR1              | Coin vendor mode (Only the copy mode can be controlled.)                                                                                                                                                                                                                  |               |
|                  | P_VENDOR2              | Vendor mode communicating with the parallel I/F (for DocuLyzer) (Japan only)                                                                                                                                                                                              |               |
|                  | P_VENDOR3              | Vendor mode in which signals for the intercard connected to the PCU are used for communication in parallel I/F.                                                                                                                                                           |               |
|                  | VENDOR-EX (*1)         | Vendor I/F for EQUITRAC                                                                                                                                                                                                                                                   |               |
|                  | VENDOR-EX (MULTI) (*1) | VENDOR-EX + Multi job cueing Enable mode                                                                                                                                                                                                                                  |               |
|                  | P_OTHER                | NOT USED                                                                                                                                                                                                                                                                  |               |
|                  | S_VENDOR               | Serial vendor mode                                                                                                                                                                                                                                                        |               |
| DOC ADJ          | ON                     | Support for the auditor in document filing print                                                                                                                                                                                                                          | OFF           |
|                  | OFF                    | No support for the auditor in document filing print                                                                                                                                                                                                                       |               |
| PF ADJ           | ON                     | Continuous printing is performed in the duplex print mode.<br>If the remaining money expires during continuous printing, the sheets in the machine are discharged without being printed on the back surfaces.                                                             | OFF           |
|                  | OFF                    | Continuous printing is not performed in the duplex print mode. (The remaining amount is checked for printing every surface in all the printing process.)<br>If the remaining money expires during printing, the sheet is discharged without printing on the back surface. |               |
| VENDOR MODE (*2) | MODE1                  | Vendor mode 1                                                                                                                                                                                                                                                             | MODE 3        |
|                  | MODE2                  | Vendor mode 2                                                                                                                                                                                                                                                             |               |
|                  | MODE3                  | Vendor mode 3                                                                                                                                                                                                                                                             |               |
| COUNTUP TIMING   | FUSER_IN               | When the paper lead edge passes the fusing rear sensor.                                                                                                                                                                                                                   | EXIT_OUT      |
|                  | FUSER_OUT              | When the paper rear edge passes the fusing rear sensor.                                                                                                                                                                                                                   |               |
|                  | EXIT_OUT               | When the paper rear edge passes the paper exit sensor in the main unit, the right tray, and the after process unit.                                                                                                                                                       |               |
| IMS CONTROL      | ON                     | There is some restriction in the image send mode.                                                                                                                                                                                                                         | OFF           |
|                  | OFF                    | There is no restriction in the image send mode.                                                                                                                                                                                                                           |               |

(\*1) Displayed only when EQUITRAC.

### (\*2) Details of the vendor mode

| VENDER MODE | Completion of the specified quantity. (Money remaining) | Insufficient money during copy job<br>No money remaining | Completion of the specified quantity. (No money remaining) |
|-------------|---------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------|
|             | Condition 1                                             | Condition 2                                              | Condition 3                                                |
|             | Operation 1                                             | Operation 2                                              | Operation 1                                                |
| MODE1       | Operation 1                                             | Operation 2                                              | Operation 1                                                |
| MODE2       | Operation 1                                             | Operation 1                                              | Operation 1                                                |
| MODE3       | Operation 1                                             | Operation 3                                              | Operation 3                                                |

Operation 1:

Standby during setting time of auto clear. Default is 60 seconds, which can be changed in the system setting.

Operation 2:

Auto clear is not made.

Operation 3:

The display is shifted to the initial screen.

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>26-5</b>               |                                             |
| <b>Purpose</b>            | Setting                                     |
| <b>Function (Purpose)</b> | Set the count mode in A3 (11" x 17") print. |
| <b>Section</b>            |                                             |

#### Operation/Procedure

- 1) Select an item to be set with scroll key.
- 2) Enter the setting value with 10-key  
1 = Count up by 1, 2 = Count up by 2
- 3) Press [OK] key.  
The set value in step 2) is saved.

| Item/Display  | Content             | Default value |
|---------------|---------------------|---------------|
| A TOTAL (B/W) | Total counter       | 2             |
| B MAINT (B/W) | Maintenance counter | 2             |
| C DEV (B/W)   | Developer counter   |               |

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>26-6</b>               |                                            |
| <b>Purpose</b>            | Setting                                    |
| <b>Function (Purpose)</b> | Set the specifications of the destination. |
| <b>Section</b>            |                                            |

#### Operation/Procedure

- 1) Select an item to be set with the touch panel.
- 2) Press [EXECUTE] key.  
The selected set content is saved.

|        |                                              |
|--------|----------------------------------------------|
| U.S.A. | United States of America                     |
| CANADA | Canada                                       |
| INCH   | Inch series, other destinations              |
| JAPAN  | Japan                                        |
| AB_B   | AB series (B5 detection), other destinations |
| EUROPE | Europe                                       |
| U.K.   | United Kingdom                               |
| AUS.   | Australia                                    |
| AB_A   | AB series (A5 detection), other destinations |
| CHINA  | China                                        |

|                           |                     |
|---------------------------|---------------------|
| <b>26-7</b>               |                     |
| <b>Purpose</b>            | Setting             |
| <b>Function (Purpose)</b> | Set the machine ID. |
| <b>Section</b>            |                     |

#### 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 correction 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 | 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>26-8</b>               |                                  |
| <b>Purpose</b>            | Setting                          |
| <b>Function (Purpose)</b> | Set the count mode (Long scale). |
| <b>Section</b>            |                                  |

#### Operation/Procedure

- 1) Select an item to be set with scroll key.
- 2) Enter the set value with 10-key  
1 = Count up by 1, 2 = Count up by 2
- 3) Press [OK] key.  
The set value in step 2) is saved.

| Item/Display               | Content                                      | Setting range | Default value | Default value (Taiwan) |
|----------------------------|----------------------------------------------|---------------|---------------|------------------------|
| A TOTAL(B/W) LONG SIZE(S)  | Long scale (Small) Total counter             | 1 - 10        | 3             | 2                      |
| B MAINT (B/W) LONG SIZE(S) | Long scale (Small) Maintenance counter (B/W) | 1 - 10        | 3             | 2                      |
| C DEV(B/W) LONG SIZE(S)    | Long scale (Small) Developer counter (B/W)   | 1 - 10        | 3             | 2                      |
| D TOTAL(B/W) LONG SIZE(L)  | Long scale (Large) Total counter (B/W)       | 1 - 10        | 5             | 2                      |
| E MAINT (B/W) LONG SIZE(L) | Long scale (Large) Maintenance counter (B/W) | 1 - 10        | 5             | 2                      |
| F DEV(B/W) LONG SIZE(L)    | Long scale (Large) Developer counter (B/W)   | 1 - 10        | 5             | 2                      |

Long Scale (Small) : 631 - 1050mm

Long Scale (Large) : 1631 - 1200mm

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>26-10</b>              |                                            |
| <b>Purpose</b>            | Setting                                    |
| <b>Function (Purpose)</b> | 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 in step 1) is saved.

|                           |   |                             |
|---------------------------|---|-----------------------------|
| TRIAL MODE (0: YES 1: NO) | 0 | Trial mode setting          |
|                           | 1 | Trial mode cancel (Default) |

|                           |                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------|
| <b>26-18</b>              |                                                                                              |
| <b>Purpose</b>            | Setting                                                                                      |
| <b>Function (Purpose)</b> | Set Disable/Enable of the toner save mode operation.<br>(For the Japan and the UK versions.) |
| <b>Section</b>            |                                                                                              |



## Operation/Procedure

- 1) Select an item to be set with [UP] [DOWN] keys.
  - 2) Enter the set value with 10-key.
  - 3) Press [OK] key.
- The set value in step 2) is saved.

| Item | Display            | Content                                 | Default value                       |
|------|--------------------|-----------------------------------------|-------------------------------------|
| A    | COPY               | 0 Copy toner save mode is inhibited.    | 0                                   |
|      |                    | 1 Copy toner save mode 1                |                                     |
|      |                    | 2 Copy toner save mode 2                |                                     |
|      |                    | 3 Copy toner save mode 3                |                                     |
| B    | PRINTER            | 0 Printer toner save mode is inhibited. | 0                                   |
|      |                    | 1 Printer toner save mode 1             |                                     |
|      |                    | 2 Printer toner save mode 2             |                                     |
|      |                    | 3 Printer toner save mode 3             |                                     |
| C    | COPY TS DISPLAY    | 0 Toner save setting is displayed       | Refer to the destination list below |
|      |                    | 1 Toner save setting is not displayed   |                                     |
| D    | PRINTER TS DISPLAY | 0 Toner save setting is displayed       |                                     |
|      |                    | 1 Toner save setting is not displayed   |                                     |

| Destination | Default value C   | Default value D |
|-------------|-------------------|-----------------|
| U.S.A       | 0 (Displayed)     | 0 (Displayed)   |
| CANADA      | 0 (Displayed)     | 0 (Displayed)   |
| INCH        | 0 (Displayed)     | 0 (Displayed)   |
| JAPAN       | 1 (Not Displayed) | 0 (Displayed)   |
| AB_B        | 0 (Displayed)     | 0 (Displayed)   |
| EUROPE      | 0 (Displayed)     | 0 (Displayed)   |
| U.K.        | 1 (Not Displayed) | 0 (Displayed)   |
| AUS.        | 0 (Displayed)     | 0 (Displayed)   |
| AB_A        | 0 (Displayed)     | 0 (Displayed)   |
| CHINA       | 0 (Displayed)     | 0 (Displayed)   |

26-30

|                           |                                                                                |
|---------------------------|--------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                        |
| <b>Function (Purpose)</b> | Set the operation mode corresponding to the CE mark (Europe safety standards). |
| <b>Section</b>            |                                                                                |

## Operation/Procedure

- 1) Enter the set value with 10-key.

|   |                   |
|---|-------------------|
| 0 | Control allowed   |
| 1 | Control inhibited |

- 2) Press [OK] key.
- The set value in step 1) is saved.

\* Even in Enable state, the control may not be executed due to the power frequency, etc.

|        |                      |        |                  |
|--------|----------------------|--------|------------------|
| U.S.A  | 1 (CE not supported) | EUROPE | 0 (CE supported) |
| CANADA | 1 (CE not supported) | U.K.   | 0 (CE supported) |
| INCH   | 1 (CE not supported) | AUS.   | 0 (CE supported) |
| JAPAN  | 1 (CE not supported) | AB_A   | 0 (CE supported) |
| AB_B   | 1 (CE not supported) | CHINA  | 0 (CE supported) |

26-32

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                  |
| <b>Function (Purpose)</b> | Set the specifications of the fusing cleaning operation. |
| <b>Section</b>            | Fusing                                                   |

## Operation/Procedure

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.

| Item | Display            | Content                                    | Default value |
|------|--------------------|--------------------------------------------|---------------|
| A    | CLEANING PRINT SET | 0 User fusing cleaning function is Enable  | 1             |
|      |                    | 1 User fusing cleaning function is Disable |               |

26-35

|                           |                                                                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                                                                                                                 |
| <b>Function (Purpose)</b> | Set the display mode of SIM22-4 trouble history when a same trouble occurred repeatedly. There are two display modes: display as one trouble and display as several series of troubles. |

## Section

## Operation/Procedure

- 1) Enter the set value with 10-key.

|   |                    |
|---|--------------------|
| 0 | Only once display. |
| 1 | Any time display.  |

- 2) Press [OK] key.
- The set value in step 1) is saved.

26-38

|                           |                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                                          |
| <b>Function (Purpose)</b> | Set "Print continue" or "Print stop" when the maintenance timing is reached or the consumable part life is over. |

## Section

## Operation/Procedure

- 1) Enter the set value with 10-key.
  - 2) Press [OK] key.
- The set value in step 1) is saved.

| Item/Display                          | Content                                                                      | Default value |
|---------------------------------------|------------------------------------------------------------------------------|---------------|
| A MAINTENANCE LIFE OVER               | 0 When the maintenance life is over (Print Continue)                         | 0             |
|                                       | 1 When the maintenance life is over (Print Stop)                             |               |
| B FUSER WEB END (0: CONTINUE 1: STOP) | 0 Continue/Stop setting of print when the fusing web is end (Print Continue) | 0             |
|                                       | 1 Continue/Stop setting of print when the fusing web is end (Print Stop)     |               |

26-41

|                           |                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                                   |
| <b>Function (Purpose)</b> | Set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode. |

## Section

## Operation/Procedure

- 1) Enter the set value with 10-key.

|   |             |
|---|-------------|
| 0 | AMS Disable |
| 1 | AMS Enable  |

- 2) Press [OK] key.
- The set value in step 1) is saved.

## <Default value of each destination>

|        |             |        |             |
|--------|-------------|--------|-------------|
| U.S.A  | 0 (Disable) | EUROPE | 1 (Enable)  |
| CANADA | 0 (Disable) | U.K.   | 1 (Enable)  |
| INCH   | 0 (Disable) | AUS.   | 0 (Disable) |
| JAPAN  | 0 (Disable) | AB_A   | 0 (Disable) |
| AB_B   | 0 (Disable) | CHINA  | 0 (Disable) |

|                           |                                        |
|---------------------------|----------------------------------------|
| 26-49                     |                                        |
| <b>Purpose</b>            | Setting                                |
| <b>Function (Purpose)</b> | Set the print speed of postcards mode. |
| <b>Section</b>            |                                        |

#### Operation/Procedure

Select the copy speed mode with the touch panel. (Default: LOW)

When the setting is changed, the paper feed interval in print or copy in the postcard mode is changed and the job speed is changed accordingly.

LOW: The paper feed interval is long. (Normal mode)

HIGH: The paper feed interval is short. (when a paper jam occurs, the number of sheets of jam paper is greater than that in the LOW mode.)

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| 26-50                     |                                                 |
| <b>Purpose</b>            | Setting                                         |
| <b>Function (Purpose)</b> | Set the operation specifications and functions. |
| <b>Section</b>            |                                                 |

#### 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. (The set value is saved.)

| Item/Display |                   | Content |                                                                    | Default value    |
|--------------|-------------------|---------|--------------------------------------------------------------------|------------------|
| A            | BW REVERSE        | 0       | BW reverse copy Disable                                            | Refer to *1      |
|              |                   | 1       | BW reverse copy Enable                                             |                  |
| B            | FINISHER FUNCTION | 0       | Finisher special paper<br>The number of paper exit is limited.     | 0<br>Refer to *2 |
|              |                   | 1       | Finisher special paper<br>The number of paper exit is not limited. |                  |
| C            | FEED TRAY COLOR   | 0       | Paper feed tray color display ON during paper feed                 | 0                |
|              |                   | 1       | Paper feed tray color display OFF during paper feed                |                  |
| D            | LONG SIZE PRINT   | 0       | Disable                                                            | 0                |
|              |                   | 1       | Enable                                                             |                  |
| E            | WIRELESS SET      | 0       | Disable                                                            | 0                |
|              |                   | 1       | Enable                                                             |                  |

#### (\*1) Default values for each destination of item A

| Destination | Item A |
|-------------|--------|
| U S A       | 1      |
| CANADA      | 1      |
| INCH        | 1      |
| JAPAN       | 1      |
| AB_B        | 1      |
| EUROPE      | 1      |
| U K         | 0      |
| AUS         | 1      |
| AB_A        | 1      |
| CHINA       | 1      |

(\*2)

|                           | Target paper                | Target paper setting                                                                                                                                                                                                                                                                      |                                                                                                                 |
|---------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                           |                             | 0                                                                                                                                                                                                                                                                                         | 1                                                                                                               |
| 1K saddle stitch finisher | Postcard, envelope          | The operation is stopped when 30 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and less than 30 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1".   | The operation is stopped when the paper exit tray full, 500 sheets, or 94mm height of paper exit is detected.   |
|                           | Label sheet, tab sheet, OHP | The operation is stopped when 100 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and less than 100 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1". |                                                                                                                 |
| Inner finisher            | Postcard, envelope          | The operation is stopped when 10 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and less than 10 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1".   | The operation is stopped when the paper exit tray full, 250 sheets, or 33.5mm height of paper exit is detected. |
|                           | Label sheet, tab sheet, OHP | The operation is stopped when 100 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and less than 100 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1". |                                                                                                                 |
| 4K finisher               | Postcard, envelope          | The operation is stopped when 100 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and less than 100 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1". | The operation is stopped when the paper exit tray full, 650 sheets, or 94mm height of paper exit is detected.   |
|                           | Label sheet, tab sheet, OHP | The operation is stopped when 100 sheets of a same kind are discharged continuously. When, however, different kinds of sheets are mixed and discharged and less than 100 sheets of a kind are continuously discharged, the operation is performed similarly to that of setting value "1". |                                                                                                                 |

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| 26-51                     |                                                                |
| <b>Purpose</b>            | Setting                                                        |
| <b>Function (Purpose)</b> | Set the specifications of the serial port operation. (For PCI) |
| <b>Section</b>            |                                                                |

#### Operation/Procedure

- 1) Enter the set value with 10-key.  
When the PCI is installed, setting is made to 1 or 2.
- 2) Press [OK] key.

| Item/Display |             | Content |                                                                   | Default value |
|--------------|-------------|---------|-------------------------------------------------------------------|---------------|
| A            | PCI SETTING | 0       | Serial port PCI mode OFF. (For connecting the serial port vendor) | 0             |
|              |             | 1       | Serial port PCI mode ON. (JOB status LED MODE1)                   |               |
|              |             | 2       | Serial port PCI mode ON. (JOB status LED MODE2)                   |               |

MODE1: Red LED is light/blink/OFF, MODE2: Red LED always OFF

When PCI SETTING is changed from "0" to "1" or "2". if SIM26-3 "OUTSIDE AUDITOR" is set to "S\_VENDOR". "AUDITOR" is changed to "NONE".

26-52

|                           |                                                                                    |
|---------------------------|------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                            |
| <b>Function (Purpose)</b> | Set whether non-printed paper (insertion paper, cover paper) is counted up or not. |
| <b>Section</b>            |                                                                                    |

#### Operation/Procedure

- 1) Enter the set value with 10-key.

|   |             |
|---|-------------|
| 0 | Count up    |
| 1 | No count up |

- 2) Press [OK] key.

The set value in step 1) is saved.

| Destination | Default         |
|-------------|-----------------|
| U.S.A       | 0 (Counted)     |
| CANADA      | 0 (Counted)     |
| INCH        | 0 (Counted)     |
| JAPAN       | 1 (Not counted) |
| AB_B        | 0 (Counted)     |
| EUROPE      | 0 (Counted)     |
| U.K.        | 0 (Counted)     |
| AUS.        | 1 (Not counted) |
| AB_A        | 0 (Counted)     |
| CHINA       | 0 (Counted)     |

26-53

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                          |
| <b>Function (Purpose)</b> | Set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the copy mode. |
| <b>Section</b>            |                                                                                                  |

#### Operation/Procedure

- 1) Enter the set value with 10-key.

| Item/Display |         | Content |         | Default value |
|--------------|---------|---------|---------|---------------|
| A            | COPY    | 0       | Inhibit | 1             |
|              |         | 1       | Allow   |               |
| B            | PRINTER | 0       | Inhibit | 1             |
|              |         | 1       | Allow   |               |

- 2) Press [OK] key.

The set value in step 1) is saved.

26-65

|                           |                              |
|---------------------------|------------------------------|
| <b>Purpose</b>            | Setting                      |
| <b>Function (Purpose)</b> | Set the finisher alarm mode. |
| <b>Section</b>            |                              |

#### Operation/Procedure

Use the touch key to set.

| Item            | Set value | Content                                                                                                                                                                       | Setting range | Default value | NOTE                                                                            |
|-----------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------------------------------------------------------------------------|
| LIMIT SHEETS    | 30        | Number of sheets of stapling: Max. 30                                                                                                                                         | 30 or 50      | 50            | A4,A4R,B5, 8.5x11, 8.5x11R, 16K,16KR For saddle finisher                        |
|                 | 50        | Number of sheets of stapling: Max. 50                                                                                                                                         |               |               |                                                                                 |
| LIMIT COPIES    | ON        | Inner finisher: 30 sheets for all sizes<br>1K saddle finisher: 50 sheets for all sizes<br>4K finisher: A4, B5, 8.5 x 11, 16K → 100 sheets<br>Other than the above → 50 sheets | ON or OFF     | ON            |                                                                                 |
|                 | OFF       | Number of sets of stapling: Not Limited                                                                                                                                       |               |               |                                                                                 |
| LIMIT SHEETS(L) | 25        | Number of sheets of stapling: Max. 25                                                                                                                                         | 25 or 30      | 25            | A3,B4, 11x17, 8.5x14, 8.5x13.5, 8.5x13.4, 8.5x13, 8K For saddle stitch finisher |
|                 | 30        | Number of sheets of stapling: Max. 30                                                                                                                                         |               |               |                                                                                 |
| SADDLE COPIES   | ON        | Number of sets loaded in the saddle staple: Limited (*1)                                                                                                                      | ON or OFF     | ON            | For saddle stitch finisher                                                      |
|                 | OFF       | Number of sets loaded in the saddle staple: Not Limited                                                                                                                       |               |               |                                                                                 |

\* LIMIT SHEETS: The 4K finisher is fixed to 50 sheets.

\* LIMIT SHEETS(L): Valid only for the 1K saddle finisher. The 4K finisher is fixed to 30 sheets.

\*1: 1-5sheets (20 sets) / 6-10 sheets (15 sets) / 10-15 sheets (10 sets)

26-69

|                           |                                                  |
|---------------------------|--------------------------------------------------|
| <b>Purpose</b>            | Setting                                          |
| <b>Function (Purpose)</b> | Set the operating conditions for toner near end. |
| <b>Section</b>            |                                                  |

#### Operation/Procedure

- 1) Select an item to be set with scroll key.
- 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       | The toner preparation message is displayed.     | 0 - 1         | Refer to the list below |
|              |                   | 1       | The toner preparation message is not displayed. |               |                         |

| Item/Display |                       | Content |                                                                    | Setting range | Default value           |                         |
|--------------|-----------------------|---------|--------------------------------------------------------------------|---------------|-------------------------|-------------------------|
| B            | REMAINING TONER LEVEL | 0       | Remaining toner level of 5%                                        | 0 - 9         | 1                       |                         |
|              |                       | 1       | Remaining toner level of 10%                                       |               |                         |                         |
|              |                       | 2       | Remaining toner level of 15%                                       |               |                         |                         |
|              |                       | 3       | Remaining toner level of 20%                                       |               |                         |                         |
|              |                       | 4       | Remaining toner level of 25%                                       |               |                         |                         |
|              |                       | 5       | Remaining toner level of 30%                                       |               |                         |                         |
|              |                       | 6       | Remaining toner level of 35%                                       |               |                         |                         |
|              |                       | 7       | Remaining toner level of 40%                                       |               |                         |                         |
|              |                       | 8       | Remaining toner level of 45%                                       |               |                         |                         |
|              |                       | 9       | Remaining toner level of 50%                                       |               |                         |                         |
| C            | TONER NEAR END        | 0       | The toner near end message is displayed                            | 0 - 1         | Refer to the list below |                         |
|              |                       | 1       | The toner near end message is not displayed                        |               |                         |                         |
| D            | TONER END             | 1       | Operation Enable in TONER END                                      | 0 - 1         |                         | Refer to the list below |
|              |                       | 2       | Operation STOP in TONER END                                        |               |                         |                         |
|              |                       | 3       | Operation STOP in TONER END                                        |               |                         |                         |
| E            | TONER END COUNT       | 0       | Setting of the number of print outputs Enable after TONER NEAR END | 1 - 5         | 3                       |                         |
| F            | TONER E-MAIL ALERT    | 0       | Low status send of E-mail alert toner near end                     | 0 - 1         | 1                       |                         |
|              |                       | 1       | Low status send of E-mail alert toner near end                     |               |                         |                         |

<List of Default values and set values for each destination>

| Destination | Set value                           |                                  |                               |
|-------------|-------------------------------------|----------------------------------|-------------------------------|
|             | Item A<br>Toner preparation message | Item C<br>Toner near end message | Item D<br>Toner end           |
| U.S.A       | 0 (Displayed)                       | 0 (Displayed)                    | 2 (Print operation stopped)   |
| CANADA      | 0 (Displayed)                       | 0 (Displayed)                    |                               |
| INCH        | 0 (Displayed)                       | 0 (Displayed)                    |                               |
| JAPAN       | 0 (Displayed)                       | 1 (Not Displayed)                |                               |
| AB_B        | 0 (Displayed)                       | 0 (Displayed)                    |                               |
| EUROPE      | 0 (Displayed)                       | 0 (Displayed)                    |                               |
| U.K.        | 0 (Displayed)                       | 0 (Displayed)                    |                               |
| AUS.        | 0 (Displayed)                       | 0 (Displayed)                    | 1 (Print operation continued) |
| AB_A        | 0 (Displayed)                       | 0 (Displayed)                    |                               |
| CHINA       | 0 (Displayed)                       | 0 (Displayed)                    |                               |

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display when the toner remaining quantity reaches 25%.

B: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

C: Enable/Disable setting of the machine operation when the toner end status is reached.

For except Japan, performs operation of set value "3" regardless of the setting value.

D: Setting of the allowable quantity of copy/print/FAX after displaying the message when item B is set to "0" (the message is displayed at toner near end). (Range: 0 - 200 sheets)

The number of output print allowed in item D is based on the assumption that the sheets are of A4 size with print ratio of 6%. (The number of outputs allowed differs depending on the paper size and the print ratio.)

Set values of Item D and the number of output print allowed

- 1: Print Disable after toner near end
- 2: 25 sheets print Enable after toner near end
- 3: 50 sheets print Enable after toner near end
- 4: 100 sheets print Enable after toner near end
- 5: 200 sheets print Enable after toner near end

NOTE: When item B is set to "0" and item D to a desired number, printing can be made after toner near end. However, insufficient density, thin spots, or improper color balance may be resulted depending on the using conditions. When item D is set to "1" printing is disabled after toner near end. this case, toner end display is made in the toner near end status, and copy/print/FAX outputs are disabled.

26-71

**Purpose**

Setting

**Function (Purpose)**

Set the trial mode of the web browsing function.

**Section**

**Operation/Procedure**

- 1) Enter the set value with 10-key.
- 2) Press [OK] key.

| Item/Display |                         | Content |                                   | Setting range | Default value |
|--------------|-------------------------|---------|-----------------------------------|---------------|---------------|
| A            | WEB BROWSING TRIAL MODE | 0       | Web browsing trial mode setting   | 0 - 1         | 1             |
|              |                         | 1       | Web browsing trial mode canceling |               |               |

|                                                                                              |                                                                                                |  |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--|
| 26-73                                                                                        |                                                                                                |  |
| Purpose                                                                                      | Setting                                                                                        |  |
| Function (Purpose)                                                                           | Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment. |  |
| Section                                                                                      |                                                                                                |  |
| Operation/Procedure                                                                          |                                                                                                |  |
| 1) Select an item to be set with scroll key.                                                 |                                                                                                |  |
| 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<br>(Adjustment amount: 0.1mm/step) |
|              |                         | Lead edge image loss quantity (shade delete quantity) adjustment       |               | 0<br>(Adjustment amount: 0.1mm/step) |

|                                     |                         |  |
|-------------------------------------|-------------------------|--|
| 26-74                               |                         |  |
| Purpose                             | Setting                 |  |
| Function (Purpose)                  | Set the OSA trial mode. |  |
| Section                             |                         |  |
| Operation/Procedure                 |                         |  |
| 1) Enter the set value with 10-key. |                         |  |
| 2) Press [OK] key.                  |                         |  |

| Item/Display |                                  | Content |                                 | Setting range | Default value |
|--------------|----------------------------------|---------|---------------------------------|---------------|---------------|
| A            | OSA TRIAL MODE<br>(0: YES 1: NO) | 0       | Used to set the OSA trial mode. | 0 - 1         | 1             |
|              |                                  | 1       | OSA trial mode is canceled.     |               |               |

26-78

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| <b>Purpose</b>            | Setting                                              |
| <b>Function (Purpose)</b> | Set the password of the remote operation panel mode. |

**Section**

#### Operation/Procedure

- 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.
- Press [SET] key.

26-79

|                           |                                                             |
|---------------------------|-------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                     |
| <b>Function (Purpose)</b> | Set YES/NO of the popup display of user data delete result. |

**Section**

#### Operation/Procedure

- Enter the set value with 10-key.
- Press [OK] key.

| Item/Display |          | Content |                                           | Setting range | Default value |
|--------------|----------|---------|-------------------------------------------|---------------|---------------|
| A            | DISP SET | 0       | User data delete result popup display OFF | 0 - 1         | 0             |
|              |          | 1       | User data delete result popup display ON  |               |               |

## 27

27-1

|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                   |
| <b>Function (Purpose)</b> | Set non-detection of communication error (U7-00) with RIC. (FSS function) |

**Section**

#### Operation/Procedure

- Enter the set value with 10-key.

|   |               |
|---|---------------|
| 0 | Not detection |
| 1 | Detection     |

- Press [OK] key.  
The set value in step 1) is saved.

27-2

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                   |
| <b>Function (Purpose)</b> | Set the sender's registration number and the HOST server telephone number. (FSS function) |

**Section**

#### Operation/Procedure

- Select an item to be set with touch panel.  
[USER FAX NO] [SERVA TEL NO]
- Enter the set value with 10-key.
- Press [SET] key.

The set value in step 2) is saved.

|               |                                                                                                                                                                                                                                                                                                           |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USER FAX_NO.  | Sender registration number (Max. 16 digits)                                                                                                                                                                                                                                                               |
| SERVA TEL_NO. | Host server telephone number (Max. 16 digits)<br>If the connection process is not completed normally when registering the FSS, calling to the HOST may be continuously made every time when the power is turned ON (from OFF) or rebooted.<br>In this case, enter "*****" to inhibit calling to the HOST. |

27-4

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                        |
| <b>Function (Purpose)</b> | Set the initial call and toner order auto send. (FSS function) |

**Section**

#### Operation/Procedure

- Select an item to be set with scroll keys.
- Enter the set value with 10-key.
- Press [OK] key.

The set value in step 2) is saved.

| Item/Display |                               | Content  |                                                                      | Default value |
|--------------|-------------------------------|----------|----------------------------------------------------------------------|---------------|
| A            | FSS MODE                      | 0        | Exclusive for send in NE-B mode                                      | 1             |
|              |                               | 1        | Send/Receive in NE-B mode                                            |               |
|              |                               | 2        | Exclusive for send in NE-F mode                                      |               |
|              |                               | 3        | Send/Receive in NE-F mode                                            |               |
| B            | RETRY_BUSY                    | 0 - 15   | Resend number setting when busy                                      | 2             |
| C            | TIMER (MINUTE) _BUSY          | 1 - 15   | Resend timer setting (minute) when busy                              | 3             |
| D            | RETRY_ERROR                   | 0 - 15   | Resend number setting when error                                     | 1             |
| E            | TIMER (MINUTE) _ERROR         | 1 - 15   | Resend timer setting (minute) when error                             | 1             |
| F            | FAX RETRY                     | 0 - 15   | Toner order auto send timing setting (K)                             | 2             |
| G            | TONER ORDER TIMING            | 0        | Empty                                                                | 11            |
|              |                               | 1        | Near end                                                             |               |
|              |                               | 2        | 5%                                                                   |               |
|              |                               | 3        | 10%                                                                  |               |
|              |                               | 4        | 15%                                                                  |               |
|              |                               | 5        | 20%                                                                  |               |
|              |                               | 6        | 25%                                                                  |               |
|              |                               | 7        | 30%                                                                  |               |
|              |                               | 8        | 35%                                                                  |               |
|              |                               | 9        | 40%                                                                  |               |
|              |                               | 10       | 45%                                                                  |               |
|              |                               | 11       | 50%                                                                  |               |
| H            | TEMP HISTORY CYCLE            | 1 - 1440 | Frequency of acquiring the temperature and humidity history (Minute) | 60            |
| I            | LOG OUTPUT CAPACITY           | 0 - 50   | Log output capacity (KB)                                             | 30            |
| J            | TONER ORDER TIMING CONTROL    | 0        | Toner order alert send at the fixed toner remaining quantity         | 0             |
|              |                               | 1        | Toner under alert send when presuming the toner consumption          |               |
| K            | TONER ORDER DELIVERY SETTING  | 0        | Toner order delivery setting OFF                                     | 0             |
|              |                               | 1        | Toner order delivery setting ON                                      |               |
| L            | TONER ORDER DELIVERY INTERVAL | 1 - 15   | Toner order delivery setting delivery threshold setting (DATE)       | 3             |

|                           |                                        |
|---------------------------|----------------------------------------|
| <b>27-5</b>               |                                        |
| <b>Purpose</b>            | Setting                                |
| <b>Function (Purpose)</b> | Set the machine tag No. (FSS function) |

#### Section

#### Operation/Procedure

- Enter the password (max. 8 digits) with 10-key.  
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.
- Press [SET] key.

|                           |                                                |
|---------------------------|------------------------------------------------|
| <b>27-6</b>               |                                                |
| <b>Purpose</b>            | Setting                                        |
| <b>Function (Purpose)</b> | Set of the manual service call. (FSS function) |

#### Section

#### Operation/Procedure

- Enter the set value with 10-key.

|   |                 |
|---|-----------------|
| 0 | Allow (Default) |
| 1 | Inhibit         |

- Press [OK] key.  
The set value in step 1) is saved.

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| <b>27-7</b>               |                                                   |
| <b>Purpose</b>            | Setting                                           |
| <b>Function (Purpose)</b> | Set of the enable, alert call out. (FSS function) |

#### Section

#### Operation/Procedure

- Select an item to be set with scroll keys.
- Enter the set value with 10-key.
- Press [OK] key.  
The set value in step 2) is saved.

|   |              |   |                                     |
|---|--------------|---|-------------------------------------|
| A | FSS FUNCTION | 0 | FSS function enable                 |
|   |              | 1 | FSS function disable (*1) (Default) |
| B | ALERT        | 0 | Alert call enable (*2) (Default)    |
|   |              | 1 | Alert call disable                  |
| C | CONNECTION   | 0 | FAX connection enable               |
|   |              | 1 | E-MAIL connection enable            |

\*1 The FSS function setting can be changed only from Disable to Enable. (Cannot be changed from Enable to Disable.)

\*2 Alert send timing

|                          |                                                                  |
|--------------------------|------------------------------------------------------------------|
| No alert cause           | Initial state / Trouble / Continuous JAM alert                   |
| Maintenance              | When the maintenance timing is reached.                          |
| Service call             | When pressing Service call.                                      |
| Toner send request       | When the toner order automatic send setting is reached.          |
| Toner collection request | Revision of the toner installation date (only for a new product) |
| Alert resend             |                                                                  |

|                           |                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>27-9</b>               |                                                                                                                         |
| <b>Purpose</b>            | Setting                                                                                                                 |
| <b>Function (Purpose)</b> | Set the paper transport time recording YES/ NO threshold value and shading gain adjustment retry number. (FSS function) |

#### Section

#### Operation/Procedure

- Select an item to be set with scroll keys.

- Enter the set value with 10-key.
- Press [OK] key.  
The set value in step 2) is saved.

|   |                       |         |                                                                                                                                                                                                                                               |
|---|-----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | FEED TIME 1           | 0 - 100 | Threshold value of the paper transport time between sensors (Main unit) (50: Default)                                                                                                                                                         |
| B | FEED TIME 2           | 0 - 100 | Threshold value of the paper transport time between sensors (DSPF/RSPF) (50: Default)                                                                                                                                                         |
| C | GAIN ADJUSTMENT RETRY | 0 - 20  | Threshold value of the gain adjustment retry number (11: Default)                                                                                                                                                                             |
| D | JAM ALERT             | 1 - 100 | Alert judgment threshold value for occurrence of continuous jams<br>Alert judgment threshold value for occurrence of continuous jams (Setting of the number of times of continuous jams as the alert for continuous jams) (Default: 10 times) |
| E | JAM ALERT PERIOD      | 0 - 99  | Continuous JAM alert period setting (Default: 30days)                                                                                                                                                                                         |

\* Items A, B: 0%, standard passing time between sheets of paper; 100%, time for judgment as a jam between sheets of paper.

\* Item C: Because of a trouble in shading operation, the number of retry is actually not registered.

|                           |                                                                  |
|---------------------------|------------------------------------------------------------------|
| <b>27-10</b>              |                                                                  |
| <b>Purpose</b>            | Data clear/Reset                                                 |
| <b>Function (Purpose)</b> | Clear the trouble prediction history information. (FSS function) |

#### Section

#### Operation/Procedure

- Press [EXECUTE] key.
- Press [YES] key.  
The history information of trouble prediction is cleared.

|                |                                                      |
|----------------|------------------------------------------------------|
| Target history | Serial communication retry number history            |
|                | High density process control error history           |
|                | Half tone process control error history              |
|                | Scanner gain adjustment retry history                |
|                | DSPF gain adjustment retry history (DSPF model only) |
|                | Paper transport time between sensors                 |

|                           |                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>27-11</b>              |                                                                                                                  |
| <b>Purpose</b>            | Information display                                                                                              |
| <b>Function (Purpose)</b> | Check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function) |

#### Section

#### Operation/Procedure

The serial communication retry number history and the scanner gain adjustment retry number history are displayed.

| Display Item |                           |              | Content                                                                                                    |
|--------------|---------------------------|--------------|------------------------------------------------------------------------------------------------------------|
| Item name    | Occurrence date (Display) | Retry number |                                                                                                            |
| LSU1         | 99/99/99 99:99:99         | 8 digits     | Serial communication retry number history display<br>* For DSPF1/ DSPF2, only the DSPF model is displayed. |
| LSU2         | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |
| DESK1        | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |
| DESK2        | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |
| DSPF1        | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |
| DSPF2        | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |
| FINISHER1    | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |
| FINISHER2    | 99/99/99 99:99:99         | 8 digits     |                                                                                                            |



| Display Item   |                           |              | Content                                                                   |
|----------------|---------------------------|--------------|---------------------------------------------------------------------------|
| Item name      | Occurrence date (Display) | Retry number |                                                                           |
| SCAN GAIN ADJ1 | 99/99/99 99:99:99         | 8 digits     | Scanner gain adjustment retry history                                     |
| SCAN GAIN ADJ2 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| SCAN GAIN ADJ3 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| SCAN GAIN ADJ4 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| SCAN GAIN ADJ5 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| DSPF GAIN ADJ1 | 99/99/99 99:99:99         | 8 digits     | DSPF gain adjustment retry history<br>(Only the DSPF model is displayed.) |
| DSPF GAIN ADJ2 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| DSPF GAIN ADJ3 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| DSPF GAIN ADJ4 | 99/99/99 99:99:99         | 8 digits     |                                                                           |
| DSPF GAIN ADJ5 | 99/99/99 99:99:99         | 8 digits     |                                                                           |

27-12

|                           |                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                                    |
| <b>Function (Purpose)</b> | Check the high-density and the half-tone process control error history. (FSS Function) |

**Section**

#### Operation/Procedure

The high density and the half-tone process control error history are displayed.

|             |                              |
|-------------|------------------------------|
| HV_ERR1     | High density error history 1 |
| HV_ERR2     | High density error history 2 |
| HV_ERR3     | High density error history 3 |
| HV_ERR4     | High density error history 4 |
| HV_ERR5     | High density error history 5 |
| H_TONE_ERR1 | Half tone error history 1    |
| H_TONE_ERR2 | Half tone error history 2    |
| H_TONE_ERR3 | Half tone error history 3    |
| H_TONE_ERR4 | Half tone error history 4    |
| H_TONE_ERR5 | Half tone error history 5    |

27-13

|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                       |
| <b>Function (Purpose)</b> | Check the history of paper transport time between sensors. (FSS function) |

**Section**

#### Operation/Procedure

Change the display with scroll key.

| Item/Display |                 | Content                                                    | Occurrence date   | Code between sensors | Passing time  | Reference passing time |
|--------------|-----------------|------------------------------------------------------------|-------------------|----------------------|---------------|------------------------|
| Main unit    | FEED TIME1 - 10 | History of paper transport time between sensors 1 - 10     | 99/99/99 99:99:99 | 5 digits             | 5 digits (ms) | 5 digits (ms)          |
| SPF          | FEED TIME1 - 10 | History of paper transport time between SPF sensors 1 - 10 | 99/99/99 99:99:99 | 5 digits             | 5 digits (ms) | 5 digits (ms)          |

27-14

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Purpose</b>            | Setting                                    |
| <b>Function (Purpose)</b> | Set the FSS function connection test mode. |
| <b>Section</b>            |                                            |

#### Operation/Procedure

- Enter the set value with 10-key.

|   |                   |
|---|-------------------|
| 0 | Disable (Default) |
| 1 | Enable            |

- Press [OK] key.

The set value in step 1) is saved.

27-15

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Purpose</b>            | Operation test/check               |
| <b>Function (Purpose)</b> | Display the FSS connection status. |
| <b>Section</b>            |                                    |

#### Operation/Procedure

The FSS operating status is displayed.

|                |                                   |   |                        |
|----------------|-----------------------------------|---|------------------------|
| FSS CONNECTION | Display the FSS connection status | 0 | Not operated (Default) |
|                |                                   | 1 | Operated               |

27-16

|                           |                         |
|---------------------------|-------------------------|
| <b>Purpose</b>            | Setting                 |
| <b>Function (Purpose)</b> | Set the FSS alert send. |
| <b>Section</b>            |                         |

#### Operation/Procedure

- Enter the set value with 10-key  
The value for the FSS alert operation specification is set.
- Press [OK] key.

| Item/Display |                   | Content |                    | Default value |
|--------------|-------------------|---------|--------------------|---------------|
| A            | MAINTENANCE ALERT | 0       | Alert send Enable  | 0             |
|              |                   | 1       | Alert send Disable |               |
| B            | TONER OEDER ALERT | 0       | Alert send Enable  | 0             |
|              |                   | 1       | Alert send Disable |               |
| C            | TONER CTRG ALERT  | 0       | Alert send Enable  | 0             |
|              |                   | 1       | Alert send Disable |               |
| D            | JAM ALERT         | 0       | Alert send Enable  | 0             |
|              |                   | 1       | Alert send Disable |               |
| E            | TROUBLE ALERT     | 0       | Alert send Enable  | 0             |
|              |                   | 1       | Alert send Disable |               |
| F            | PAPER ORDER ALERT | 0       | Alert send Enable  | 0             |
|              |                   | 1       | Alert send Disable |               |

27-17

|                           |                                |
|---------------------------|--------------------------------|
| <b>Purpose</b>            | Setting                        |
| <b>Function (Purpose)</b> | Set the FSS paper order alert. |
| <b>Section</b>            |                                |

#### Operation/Procedure

- Select an item to be set.
- Enter the set value with 10-key.  
The value for the FSS paper order alert operation specification is set.
- Press [SET] key.

| Item/Display   | Content                                       | Setting range | Default value | NOTE                                                                                     |
|----------------|-----------------------------------------------|---------------|---------------|------------------------------------------------------------------------------------------|
| PAPER TYPE SET | Setting of paper kind for paper order alert   | 0 - 2         | 0             | 0: Standard paper and recycled paper<br>1: Standard paper only<br>2: Recycled paper only |
| A3             | Paper order number setting [Number of sheets] | 500 - 5000    | 1250          | Unit: No. of sheets for a box                                                            |
| A4             |                                               |               | 2500          |                                                                                          |
| B5             |                                               |               |               |                                                                                          |

| Item/Display | Content                                                     | Setting range | Default value | NOTE                                         |
|--------------|-------------------------------------------------------------|---------------|---------------|----------------------------------------------|
| A3:<br>FIRST | Paper order alert number setting<br>(Number of used sheets) | 500 - 10000   | 1000          | Unit: No. of alert sheets for the first time |
| A4:<br>FIRST |                                                             |               |               |                                              |
| B4:<br>FIRST |                                                             |               |               |                                              |
| B5:<br>FIRST |                                                             |               |               |                                              |

27-18

|                           |                                         |
|---------------------------|-----------------------------------------|
| <b>Purpose</b>            | Setting                                 |
| <b>Function (Purpose)</b> | Clear the FSS paper feed retry counter. |
| <b>Section</b>            |                                         |

#### Operation/Procedure

- 1) Select an item to be cleared.
- 2) Press [EXECUTE] key..
- 3) Press [YES] key.

| Item/Display | Content                         |
|--------------|---------------------------------|
| TRAY1        | Tray1 paper feed retry counter  |
| TRAY2        | Tray2 paper feed retry counter  |
| TRAY3        | Tray3 paper feed retry counter  |
| TRAY4        | Tray4 paper feed retry counter  |
| MFT          | Manual paper feed retry counter |

30

30-1

|                           |                                                                                                                      |
|---------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                                                 |
| <b>Function (Purpose)</b> | Check the operations of the sensors and the detectors in other than the paper feed section and the control circuits. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                                                                  |

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The sensors and the detectors which are turned ON are highlighted.

|        |                                                         |
|--------|---------------------------------------------------------|
| PPD1   | Paper transport detector 1                              |
| PPD2   | Paper transport detector 2                              |
| POD1   | Paper exit detector 1                                   |
| POD2   | Paper exit detector 2                                   |
| POD3   | Paper exit detector 3                                   |
| TFD2   | Paper exit tray full detector (Face down tray)          |
| TFD3   | Paper exit tray full detector (Right paper exit tray)   |
| SHPOS  | Shifter home position sensor                            |
| DSW_R  | ADU open/close detector                                 |
| DSW_C  | Transport cover open/close detector                     |
| DSW_F  | Front cover open/close detection                        |
| TNFD   | Waste toner full detector                               |
| TNBOX  | Waste toner near end detection                          |
| FPFD   | Fusing upper paper entry detector                       |
| DSW_C2 | Transport cover open/close detector (Paper feed tray 2) |
| PRTPD  | Paper exit tray paper detector (Right paper exit tray)  |
| WEBEND | Web end detector                                        |

30-2

|                           |                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                                                      |
| <b>Function (Purpose)</b> | Check the operations of the sensors and the detectors in the paper feed section and the control circuits. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                                                       |

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The sensors and the detectors which are turned ON are highlighted.

|       |                                             |
|-------|---------------------------------------------|
| CPFD1 | Tray 1 paper transport detector             |
| CLUD1 | Tray 1 paper feed tray upper limit detector |
| CPED1 | Tray 1 paper empty detector                 |
| CSPD1 | Tray 1 paper remaining quantity detector    |
| CSS11 | Tray 1 paper feed tray size detector        |
| CSS12 |                                             |
| CSS13 |                                             |
| CSS14 |                                             |
| CPFD2 | Tray 2 paper transport detector             |
| CLUD2 | Tray 2 paper feed tray upper limit detector |
| CPED2 | Tray 2 paper empty detector                 |
| CSPD2 | Tray 2 paper remaining quantity detector    |
| CSS21 | Tray 2 paper feed tray paper size detector  |
| CSS22 |                                             |
| CSS23 |                                             |
| CSS24 |                                             |
| MPLD  | Manual feed paper length detector           |
| MPED  | Manual feed paper empty detector            |

40

40-2

|                           |                                                       |
|---------------------------|-------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                            |
| <b>Function (Purpose)</b> | Manual paper feed tray paper width sensor adjustment. |
| <b>Section</b>            | Paper feed, paper reverse/transport                   |

#### Operation/Procedure

- 1) Open the manual paper feed guide to the max. width (MAX).
- 2) Press [EXECUTE] key.  
The max. width (MAX) detection level is recognized.
- 3) Open the manual paper feed guide to P1 width (A4).
- 4) Press [EXECUTE] key.  
The P1 width (A4) detection level is recognized.
- 5) Open the manual paper feed guide to P2 width (A4R).
- 6) Press [EXECUTE] key.  
The P2 width (A4R) detection level is recognized.
- 7) Open the manual paper feed guide to the min. width (MIN).
- 8) Press [EXECUTE] key.  
The min. width (MIN) detection level is recognized.

The min. width (MIN) detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed. When completed normally, "COMPLETE" is displayed.

|                 |                                     |
|-----------------|-------------------------------------|
| 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>            | Setting                                                                    |
| <b>Function (Purpose)</b> | Set the adjustment value of the manual paper feed tray paper width sensor. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                        |

#### Operation/Procedure

- 1) Select a target item to be adjusted with scroll.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.  
The set value in step 2) is saved.

| Item/Display |                  | Content                             | Default value |
|--------------|------------------|-------------------------------------|---------------|
| A            | MAX POSITION     | Manual feed max. width              | 241           |
| B            | P1(A4) POSITION  | Manual feed P1 position width (A4)  | 231           |
| C            | P2(A4R) POSITION | Manual feed P2 position width (A4R) | 140           |
| D            | MIN POSITION     | Manual feed min. width              | 19            |

## 41

### 41-1

|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                      |
| <b>Function (Purpose)</b> | Check the operations of the document size sensor and the control circuit. |
| <b>Section</b>            | Others                                                                    |

#### Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The sensors and the detectors which are turned ON are highlighted.

|         |                                  |                                                              |
|---------|----------------------------------|--------------------------------------------------------------|
| OCSW    | Document cover status            | Open: Normal display<br>Close: Highlighted                   |
| PD1 - 7 | Document detection sensor status | No document: Normal display<br>Document present: Highlighted |

### 41-2

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                     |
| <b>Function (Purpose)</b> | Used to adjust the document size sensor detection level. |
| <b>Section</b>            | Others                                                   |

#### Operation/Procedure

1) Open the document cover, and press [EXECUTE] key without place a document on the document table.

The sensor level without document is recognized.

2) Set A3 (11" x 17") paper on the document table, and press [EXECUTE] key.

The sensor level when detecting the document is displayed

When the above operation is normally completed, it is displayed.

### 41-3

|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                                                      |
| <b>Function (Purpose)</b> | Check the operations of the document size sensor and the control circuit. |
| <b>Section</b>            | Others                                                                    |

#### Operation/Procedure

The detection output level (A/D value) of OCSW and the document sensor (PD1 - PD7) is displayed in real time. The light receiving range of PD1 - PD7 is 1 - 255. (Default: 128)

| Item/Display | Content            | Detection level range |
|--------------|--------------------|-----------------------|
| OCSW         | Original cover SW  | 0-1 ("1" to Close)    |
| PD1 - PD7    | Document detection | 0 - 255               |

## 43

### 43-1

|                           |                                          |
|---------------------------|------------------------------------------|
| <b>Purpose</b>            | Setting                                  |
| <b>Function (Purpose)</b> | Set the fusing temperature in each mode. |
| <b>Section</b>            | Fusing                                   |

#### Operation/Procedure

1) Select the SW-A or the SW-B.

2) Select an item to be set with scroll key.

| Display                     | Content                                                                    | Setting range | Default value |
|-----------------------------|----------------------------------------------------------------------------|---------------|---------------|
| PLAIN<br>PAP&WUP<br>&RDY GR | Change the fusing temperature setting of plain paper, WUP and Ready series | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0             |               |
|                             |                                                                            | +5            |               |
|                             |                                                                            | +10           |               |
| HEAVY<br>PAPER<br>GR        | Change the fusing temperature setting of heavy paper series                | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0             |               |
|                             |                                                                            | +5            |               |
|                             |                                                                            | +10           |               |
| THIN<br>PAPER<br>GR         | Change the fusing temperature setting of thin paper series                 | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0             |               |
|                             |                                                                            | +5            |               |
|                             |                                                                            | +10           |               |
| RECYCLED<br>PAPER<br>GR     | Change the fusing temperature setting of recycled paper series             | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0°            |               |
|                             |                                                                            | +5°           |               |
|                             |                                                                            | +10           |               |
| GLOSS<br>PAPER<br>GR        | Change the fusing temperature setting of gloss paper series                | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0             |               |
|                             |                                                                            | +5            |               |
|                             |                                                                            | +10           |               |
| ENV<br>PAPER<br>GR          | Change the fusing temperature setting of envelope series                   | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0             |               |
|                             |                                                                            | +5            |               |
|                             |                                                                            | +10           |               |
| PAP CURL<br>IMPROVE<br>MENT | Change the fusing temperature setting of paper curl improvement            | -10           | 0             |
|                             |                                                                            | -5            |               |
|                             |                                                                            | 0             |               |
|                             |                                                                            | +5            |               |
|                             |                                                                            | +10           |               |

#### <List of destination groups>

| Group   | Destination |        |      |        |
|---------|-------------|--------|------|--------|
| Group A | Japan       | China  | AB_B |        |
| Group B | U.S.A.      | Canada | Inch |        |
|         | AB_A        | U.K.   | AUS  | Europe |

SW-A Setting value when plain paper is selected in the system setting/device setting/fusing control setting.

SW-B Set value when heavy paper is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on plain paper or heavy paper which is selected in the system setting/device setting/fusing control setting.

(Example) When plain paper is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

### 43-2

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Purpose</b>            | Setting                                     |
| <b>Function (Purpose)</b> | Set the fusing temperature and pre-heating. |
| <b>Section</b>            | Fusing                                      |

#### Operation/Procedure

1) Select the SW-A or SW-B .

2) Select an item to be set with scroll key.

| Item | Display                    | Content                                                                                       | Setting range | Default value (SW-A)<br>36/<br>46/<br>56 cpm |                     | Default value (SW-B)<br>36/<br>46/<br>56 cpm |                     |
|------|----------------------------|-----------------------------------------------------------------------------------------------|---------------|----------------------------------------------|---------------------|----------------------------------------------|---------------------|
|      |                            |                                                                                               |               | Gr. B                                        | Gr. C               | Gr. B                                        | Gr. C               |
| A    | WARMUP<br>FUMON<br>HL UM T | Fusing motor previous rotation start TH_UM set value                                          | 30 - 200      | 165/<br>150/<br>150                          | 165/<br>150/<br>150 | 165/<br>150/<br>150                          | 165/<br>150/<br>150 |
| B    | WARMUP<br>FUMOFF           | Fusing motor previous rotation complete time                                                  | 0 - 255       | 10/<br>10/<br>10                             | 10/<br>10/<br>10    | 10/<br>10/<br>10                             | 10/<br>10/<br>10    |
| C    | WARMUP<br>END<br>TIME      | Warm up complete time                                                                         | 1 - 255       | 10/<br>10/<br>10                             | 10/<br>10/<br>10    | 10/<br>10/<br>10                             | 10/<br>10/<br>10    |
| D    | HI WU<br>FM ON<br>TMP      | FM preliminary rotation start TH_UM when warming up at alpha degree C or above                | 30 - 200      | 165/<br>160/<br>160                          | 165/<br>160/<br>160 | 170/<br>165/<br>165                          | 170/<br>165/<br>165 |
| E    | HI WU<br>END<br>TIME       | Warm up completion time when warm up at alpha degree C or above                               | 0 - 255       | 10/<br>10/<br>10                             | 10/<br>10/<br>10    | 10/<br>10/<br>10                             | 10/<br>10/<br>10    |
| F    | LO<br>WARMUP<br>TIME       | Setting value applying time in warm up of 120 degree C or below (Time from ready completion)  | 0 - 255       | 10/<br>10/<br>10                             | 10/<br>10/<br>10    | 10/<br>10/<br>10                             | 10/<br>10/<br>10    |
| G    | HI<br>WARMUP<br>TIME       | Setting value applying time in warm up of 120 degree C or above (Timer from ready completion) | 0 - 255       | 10/<br>10/<br>10                             | 10/<br>10/<br>10    | 10/<br>10/<br>10                             | 10/<br>10/<br>10    |
| H    | HI<br>WARMUP<br>BORDER     | Threshold value alpha to apply the setting value in warm up of alpha degree C or above        | 1 - 119       | 70/<br>70/<br>70                             | 70/<br>70/<br>70    | 70/<br>70/<br>70                             | 70/<br>70/<br>70    |
| I    | JOBEND<br>FUMON<br>TIME    | After-rotation time after completion of a job                                                 | 0 - 255       | 5/<br>5/<br>5                                | 5/<br>5/<br>5       | 5/<br>5/<br>5                                | 5/<br>5/<br>5       |
| J    | HL UM<br>E-STAR            | TH_UM set value when preheating                                                               | 30 - 200      | 95/<br>130/<br>135                           | 95/<br>130/<br>135  | 95/<br>130/<br>135                           | 95/<br>130/<br>135  |
| K    | HL US<br>E-STAR            | TH_US set value when preheating                                                               | 30 - 200      | 95/<br>130/<br>135                           | 95/<br>130/<br>135  | 95/<br>130/<br>134                           | 95/<br>130/<br>135  |
| L    | HL UM<br>PRE-JOB           | Resetting from preheating TH_UM set value                                                     | 30 - 200      | 180/<br>170/<br>180                          | 180/<br>170/<br>180 | 185/<br>175/<br>185                          | 185/<br>175/<br>185 |

#### <Code descriptions>

|       |                              |
|-------|------------------------------|
| TH_UM | Fusing upper thermistor main |
| TH_US | Fusing upper thermistor sub  |
| HL_UM | Heater lamp upper main       |
| HL_US | Heater lamp upper sub        |

#### <List of destination groups>

| Group   | Destination |        |       |
|---------|-------------|--------|-------|
| Group A | Japan       |        |       |
| Group B | U.S.A.      | Canada | Inch  |
| Group C | AB_A        | Europe | U.K   |
|         | AUS         | AB_A   | CHINA |

SW-A Setting value when plain paper is selected in the system setting/  
device setting/fusing control setting.

SW-B Set value when heavy paper is selected in the system setting/  
device setting/fusing control setting.  
The set value displayed in this simulation differs depending on  
plain paper or heavy paper which is selected in the system setting/  
device setting/fusing control setting.  
(Example) When plain paper is selected in the system setting/  
device setting/fusing control setting, the value of SW-A is  
displayed.

43-20

|                           |                                                                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                                                                         |
| <b>Function (Purpose)</b> | Set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) in each paper mode. |

|                |        |
|----------------|--------|
| <b>Section</b> | Fusing |
|----------------|--------|

#### 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.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Correction value: -49 - +49, 1 Count = 1°C change/1sec change

|                  |     |     |    |    |    |     |     |
|------------------|-----|-----|----|----|----|-----|-----|
| Correction value | -49 | -25 | -5 | 0  | +5 | +25 | +49 |
| Input value      | 1   | 25  | 45 | 50 | 55 | 75  | 99  |

| Item | Display                         | Content                                                                                                                         | Setting range | Default value |
|------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| A    | WARMUP<br>FUMON<br>HL UM<br>TLL | Correction value for fusing motor pre-rotation start TH_UM set value under LL environment                                       | 1 - 99        | 40            |
| B    | WARMUP<br>FUMOFF<br>LL          | Fusing motor prior rotation completion time under LL environment                                                                | 1 - 99        | 50            |
| C    | WARMUP<br>END<br>TIME LL        | Correction value for warm up completion time under LL environment                                                               | 1 - 99        | 80            |
| D    | HI WU FM<br>ON TMP<br>LL        | Correction value for FM prior rotation start TH_UM in warm up at alpha degree C or above under LL environment                   | 1 - 99        | 40            |
| E    | HI WU<br>END<br>TIME LL         | Correction value for warm up completion time in warm up at alpha degree C or above under LL environment                         | 1 - 99        | 50            |
| F    | LO<br>WARMUP<br>TIME LL         | Correction value of the setting value applying time in warm up of 120 degree C or below under LL environment                    | 1 - 99        | 50            |
| G    | HI<br>WARMUP<br>TIME LL         | Correction value of the setting value applying time in warm up of 120 degree C or above under LL environment                    | 1 - 99        | 50            |
| H    | HI<br>WARMUP<br>BORDER<br>LL    | Correction value of threshold value alpha to apply the setting value in warm up of alpha degree C or above under LL environment | 1 - 99        | 50            |
| I    | JOBEND<br>FUMON<br>TIME LL      | Correction value for after rotation time when completing a job under LL environment                                             | 1 - 99        | 50            |
| J    | HL UM E-<br>STAR LL             | Correction value for preheating TH_UM set value under LL environment                                                            | 1 - 99        | 55            |
| K    | HL US E-<br>STAR LL             | Correction value for preheating TH_US set value under LL environment                                                            | 1 - 99        | 55            |

| Item | Display                | Content                                                                                     | Setting range | Default value |
|------|------------------------|---------------------------------------------------------------------------------------------|---------------|---------------|
| L    | HL UM<br>PRE-JOB<br>LL | Correction value for set value of TH_UM when restoring from preheating under LL environment | 1 - 99        | 55            |

#### <Code descriptions>

|       |                              |
|-------|------------------------------|
| TH_UM | Fusing upper thermistor main |
| TH_US | Fusing upper thermistor sub  |
| HL_UM | Heater lamp upper main       |
| HL_US | Heater lamp upper sub        |

43-21

|                           |                                                                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                                                                                         |
| <b>Function (Purpose)</b> | Set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-2) in each paper mode. |
| <b>Section</b>            | Fusing                                                                                                                                          |

#### 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.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Correction value: -49 - +49, 1 Count = 1°C change/1sec change

|                  |     |     |    |    |    |     |     |
|------------------|-----|-----|----|----|----|-----|-----|
| Correction value | -49 | -25 | -5 | 0  | +5 | +25 | +49 |
| Input value      | 1   | 25  | 45 | 50 | 55 | 75  | 99  |

| Item | Display                       | Content                                                                        | Setting range | Default value |
|------|-------------------------------|--------------------------------------------------------------------------------|---------------|---------------|
| A    | WARMUP<br>FUMON<br>HL_UM T HH | Fusing motor previous rotation start TH_UM set value                           | 1 - 99        | 50            |
| B    | WARMUP<br>FUMOFF HH           | Fusing motor previous rotation completion time                                 | 1 - 99        | 50            |
| C    | WARMUP<br>END TIME<br>HH      | Warm up completion time                                                        | 1 - 99        | 50            |
| D    | HI WU FM<br>ON TMP HH         | FM preliminary rotation start TH_UM when warming up at alpha degree C or above | 1 - 99        | 50            |
| E    | HI WU END<br>TIME HH          | Warm up completion time when warm up at alpha degree C or above                | 1 - 99        | 50            |
| F    | LOW WARMUP<br>TIME HH         | Correction value for AF-AH application time (Time from ready complete)         | 1 - 99        | 50            |
| G    | HI WARMUP<br>TIME HH          | Correction value for AJ-AL application time (time from ready complete)         | 1 - 99        | 50            |
| H    | HL WARMUP<br>BORDER HH        | Threshold value alpha to which AN-AP is applied                                | 1 - 99        | 50            |
| I    | JOBEND_FU<br>MON TIME<br>HH   | After-rotation time after completion of a job                                  | 1 - 99        | 50            |
| J    | HL UM E-<br>STAR HH           | TH_UM set value when preheating                                                | 1 - 99        | 50            |
| K    | HL US E-<br>STAR HH           | TH_US set value under HH environment                                           | 1 - 99        | 50            |
| L    | HL UM PRE-<br>JOB HH          | Resetting from preheating TH_UM set value                                      | 1 - 99        | 50            |

#### <Code descriptions>

|       |                              |
|-------|------------------------------|
| TH_UM | Fusing upper thermistor main |
| TH_US | Fusing upper thermistor sub  |
| HL_UM | Heater lamp upper main       |

|       |                       |
|-------|-----------------------|
| HL_US | Heater lamp upper sub |
|-------|-----------------------|

43-24

|                           |                           |
|---------------------------|---------------------------|
| <b>Purpose</b>            | Setting                   |
| <b>Function (Purpose)</b> | Set the fusing operation. |
| <b>Section</b>            | Fusing                    |

#### 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.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Correction value: -49 - +49, 1 Count = 1°C change

|                  |     |     |    |    |    |     |     |
|------------------|-----|-----|----|----|----|-----|-----|
| Correction value | -49 | -25 | -5 | 0  | +5 | +25 | +49 |
| Input value      | 1   | 25  | 45 | 50 | 55 | 75  | 99  |

| Item | Display               | Content                                                    | Setting range | Default value |       |
|------|-----------------------|------------------------------------------------------------|---------------|---------------|-------|
|      |                       |                                                            |               | Gr. B         | Gr. C |
| A    | COOL DOWN<br>HEAVY    | Cool down time (Heavy paper)                               | 1 - 60        | 5             | 5     |
| B    | COOL DOWN<br>OHP      | Cool down time (OHP)                                       | 1 - 60        | 10            | 10    |
| C    | COOL DOWN<br>ENVELOPE | Cool down time (Envelope)                                  | 1 - 60        | 15            | 15    |
| D    | FUS MOTOR             | Fusing web motor operating interval                        | 3 - 200       | 80            | 80    |
| E    | POWER SET             | Power voltage setting<br>1:100V, 2:110-230V,<br>3:220-240V | 1 - 3         | 2             | 3     |

#### <Code descriptions>

|       |                              |
|-------|------------------------------|
| TH_UM | Fusing upper thermistor main |
| TH_US | Fusing upper thermistor sub  |
| HL_UM | Heater lamp upper main       |
| HL_US | Heater lamp upper sub        |

#### <List of destination groups>

| Group   | Destination |        |       |
|---------|-------------|--------|-------|
| Group A | Japan       |        |       |
| Group B | U.S.A.      | Canada | Inch  |
| Group C | AB_A        | Europe | U.K   |
|         | AUS         | AB_A   | CHINA |

43-31

|                           |                                                       |
|---------------------------|-------------------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                                      |
| <b>Function (Purpose)</b> | Check the operation of the fusing web cleaning motor. |
| <b>Section</b>            | Fusing                                                |

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
Perform the fusing web cleaning motor drive.
- 2) When driving the fusing web cleaning motor is completed, "COMPLETE" is displayed.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

| Fusing web unit installation detection state | Operation                 | Remark                                                                           |
|----------------------------------------------|---------------------------|----------------------------------------------------------------------------------|
| Fusing web unit not installed                | Not operate               | * During this operation, the fusing web cleaning feed counter is not counted up. |
| Fusing web unit installed                    | 10sec continuous rotation |                                                                                  |

43-32

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                                                                  |
| <b>Function (Purpose)</b> | Set various items related to the forcible operation of web cleaning when job end. |
| <b>Section</b>            | Fusing                                                                            |

#### 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.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

| Item | Display                         | Item                                                                                   | Setting range   | Default value |
|------|---------------------------------|----------------------------------------------------------------------------------------|-----------------|---------------|
| A    | JOB END<br>COMP ACT<br>CHECK    | Fusing web motor forcible operation condition when job end<br>Enable<br>Disable        | 0 - 1<br>0<br>1 | 1             |
| B    | JOB END<br>COMP ACT<br>INTERVAL | Interval of the print quantity of compulsory action of the fusing web motor at job end | 1 - 200         | 100           |
| C    | JOB END<br>COMP ACT<br>CNT      | Number of forcible operations of the fusing web motor when job end                     | 1 - 5           | 1             |

43-34

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                                     |
| <b>Function (Purpose)</b> | Check the fusing lower web cleaning motor operation. |
| <b>Section</b>            | Fusing                                               |

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
Perform the fusing web cleaning motor drive.
- 2) When driving the fusing web cleaning motor is completed, "COMPLETE" is displayed.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

| Fusing web unit installation detection state | Operation                 | Remarks                                                                      |
|----------------------------------------------|---------------------------|------------------------------------------------------------------------------|
| Fusing lower web unit not installed          | Not operate               | * During this operation, the fusing web cleaning feed counter is counted up. |
| Fusing lower web unit installed              | 10sec continuous rotation |                                                                              |

43-35

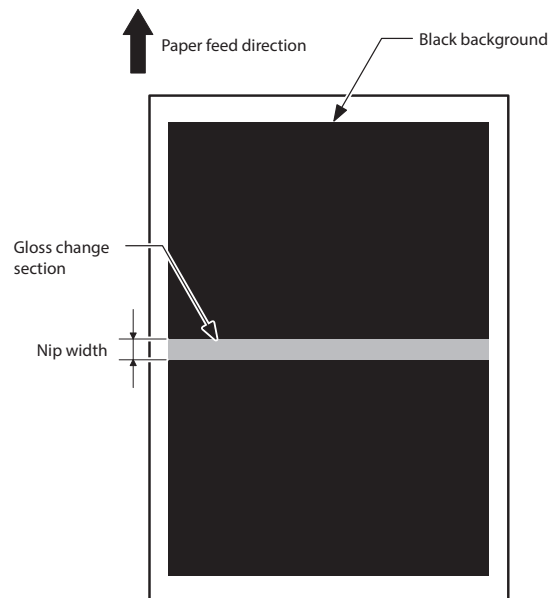
|                           |                             |
|---------------------------|-----------------------------|
| <b>Purpose</b>            | Setting                     |
| <b>Function (Purpose)</b> | Check fusing nip operation. |
| <b>Section</b>            | Fusing                      |

#### Operation/Procedure

- 1) Prepare a black background image and put it on the cassette with the black background facing upward.

- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key  
[EXECUTE] key is highlighted and printing is started. when printing is executed a jam is always generated. (As shown in the photo below).
- 4) Leave the jam paper for about 30sec, then remove the jam paper.
- 5) Measure the width of the gloss change section (nip) of the jam paper and check to confirm that it is in the range of about 10.5mm - 12mm.

| Item/Display | Content | Default value |
|--------------|---------|---------------|
| A PAPER      | 1 MFT   | 2             |
|              | 2 CS1   |               |
|              | 3 CS2   |               |
|              | 4 CS3   |               |
|              | 5 CS4   |               |



## 44

44-1

|                           |                                                                                |
|---------------------------|--------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                        |
| <b>Function (Purpose)</b> | Set each correction operation function in the image forming (process) section. |
| <b>Section</b>            | Process                                                                        |

#### Operation/Procedure

- 1) Select an item to be set with the touch panel.  
(The selected item is highlighted.)
- 2) Press [EXECUTE] key. (The set value is saved.)

NOTE: Set the items to the default values unless a change is specially required.

| Item/Display | Content                                                                 | Setting range                        | Default value |
|--------------|-------------------------------------------------------------------------|--------------------------------------|---------------|
| HV           | Normal operation high density process control<br>Enable/Disable setting | Normal (Disable)<br>Reverse (Enable) | Enable        |
| HT           | Normal operation halftone process control<br>Enable/Disable setting     |                                      | Enable        |



| Item/Display | Content                                                                                                 | Setting range | Default value |
|--------------|---------------------------------------------------------------------------------------------------------|---------------|---------------|
| TC           | Transfer output correction Enable/Disable setting                                                       |               | Enable        |
| MD VG        | Membrane decrease grid voltage correction Enable/Disable setting                                        |               | Enable        |
| MD EV        | Membrane decrease environment grid voltage correction Enable/Disable setting                            |               | Enable        |
| MD LD        | Membrane laser power voltage correction Enable/Disable setting                                          |               | Enable        |
| MD LD EV     | Environment laser power correction for the OPC drum membrane decrease correction Enable/Disable setting |               | Enable        |
| MD LD HV     | The process control laser power correction Enable/Disable setting                                       |               | Enable        |
| MD DL        | Membrane decrease discharge light quantity correction Enable/Disable setting                            |               | Enable        |
| MD DL EV     | Membrane decrease environment discharge light quantity correction Enable/Disable setting                |               | Enable        |
| PRT HT       | Half tone process control printer correction feedback Enable/Disable setting                            |               | Enable        |
| AT DL        | Discharge correction Enable/Disable setting                                                             |               | Enable        |
| TN HUM       | Toner density humidity correction Enable/Disable setting                                                |               | Enable        |
| TN AREA      | Toner density area correction Enable/Disable setting                                                    |               | Enable        |
| TN LIFE      | Toner density life correction Enable/Disable setting                                                    |               | Enable        |
| TN COV       | Toner density print ration correction Enable/Disable setting                                            |               | Enable        |
| TN PROCON    | Toner density process control correction Enable/Disable setting                                         |               | Enable        |
| TN ENV       | Toner density environment correction Enable/Disable setting                                             |               | Disable       |
| TN DRIP      | Toner density correction unconditional supply Enable/Disable setting                                    |               | Enable        |
| TN SPEND     | Toner compulsory consumption mode Enable/Disable setting                                                |               | Disable       |
| TN INT       | Toner compulsory supply correction for the development traveling distance Enable/Disable setting        |               | Enable        |
| TN ABS       | Toner unconditional supply Enable/Disable setting                                                       |               | Enable        |
| TN P RET     | Toner difference return correction Enable/Disable setting                                               |               | Enable        |
| TN VREF      | V re correction Enable/Disable setting                                                                  |               | Enable        |
| TN DIS       | Toner density low print area correction Enable/Disable setting                                          |               | Disable       |

44-2

|                           |                                                     |
|---------------------------|-----------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                          |
| <b>Function (Purpose)</b> | Adjust the sensitivity of the image density sensor. |

|                |         |
|----------------|---------|
| <b>Section</b> | Process |
|----------------|---------|

#### Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is executed automatically. After completion of the adjustment, the adjustment result is displayed. If the adjustment is not executed normally, "ERROR" is displayed.

| Item/Display | Content        | Setting range                                                           | Default value |
|--------------|----------------|-------------------------------------------------------------------------|---------------|
| A            | PCS_K LED ADJ  | Image density sensor sensitivity (light quantity) adjustment value      | 1 - 255<br>21 |
| B            | PCS_K DARK     | Image density sensor dark voltage                                       | 0 - 255<br>0  |
| C            | PCS_K GRND     | Belt surface detection level when the adjustment of item A is completed | 0 - 255<br>0  |
| D            | PCS_K DRUM MAX | OPC drum surface detection level Max. value                             | 0 - 255<br>0  |
| E            | PCS_K DRUM MIN | OPC drum surface detection level Min. value                             | 0 - 255<br>0  |
| F            | PCS_K DRUM DIF | OPC drum surface detection level differential (Item D - Item E)         | 0 - 255<br>0  |

| Error name                    | Error content                                                                                                                                                                                          |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor adjustment abnormality | PCS_K LED ADJ error<br>The adjustment target level is not reached by three times of retry operations.                                                                                                  |
| Surface scanning abnormality  | PCS_K GRND error<br>The difference between the max. value and the min. value of the OPC drum surface detection level is out of the specified range in detection of one circle of the OPC drum surface. |

44-4

|                           |                                                                   |
|---------------------------|-------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                           |
| <b>Function (Purpose)</b> | Set the conditions of the high density process control operation. |

|                |         |
|----------------|---------|
| <b>Section</b> | Process |
|----------------|---------|

#### Operation/Procedure

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

| Item/Display | Content              | Setting range                                                                                                   | Default value  |
|--------------|----------------------|-----------------------------------------------------------------------------------------------------------------|----------------|
| A            | PCS_K TARGET         | Image density sensor sensitivity adjustment target value                                                        | 1 - 255<br>210 |
| B            | LED_K OUTPUT         | Initial current level black sensor LED light emitting quantity set value in the image density sensor adjustment | 1 - 255<br>21  |
| C            | PCS ADJUSTMENT LIMIT | Adjustment error allowance level in the sensor sensitivity adjustment                                           | 1 - 255<br>10  |

| Item/Display | Content              | Setting range                                                                                                                                                                  | Default value |
|--------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| D            | DRUM GROUND DIF      | The difference between the max. value and the min. value of the OPC drum surface detection level is in the allowable range in detection of one circle of the OPC drum surface. | 0 - 255<br>1  |
| E            | BIAS_BK STANDARD DIF | Developing bias reference value in the high density process control                                                                                                            | 0 - 255<br>0  |
| F            | BIAS PATCH INTERVAL  | Patch-forming developing bias voltage interval (voltage difference) in the high density process control                                                                        | 1 - 255<br>45 |
| G            | K_PAT TARGET ID      | Toner patch density target value (black) in the high density process control                                                                                                   | 1 - 255<br>50 |
| H            | HV BK_GROUND LIMIT   | Error judgment criterion for the difference between the max. level and the min. level of the OPC drum surface detection                                                        | 1 - 255<br>29 |

44-6

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| <b>Purpose</b>            | Operation test/check                               |
| <b>Function (Purpose)</b> | Execute the high density process control forcibly. |
| <b>Section</b>            | Process                                            |

#### Operation/Procedure

Press [EXECUTE] key. In case of a normal completion, the result is saved. In case of an abnormal completion, "ERROR" is displayed. (Refer to the table below.) In case of an ERROR, the previous correction data are saved.

| Result display | Content description   |
|----------------|-----------------------|
| COMPLETE       | Normal complete       |
| ERROR          | Abnormal end          |
| INTERRUPTION   | Forcible interruption |

| Details of error display | Content description                               |
|--------------------------|---------------------------------------------------|
| BK_SEN_ADJ_ERR           | Image density sensor sensitivity adjustment error |
| K_HV_ERR                 | Density process control operation error           |
| TIMEOUT_ERR              | Density process control operation time-out        |

44-9

|                           |                                                                                |
|---------------------------|--------------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                            |
| <b>Function (Purpose)</b> | Used to display the result data of the high density process control operation. |
| <b>Section</b>            | Process                                                                        |

#### Operation/Procedure

Select a target display mode with [CPY/PRN],[OTHER] keys.

| Mo de      | Item/Display (*: Correction value) | Content                                                                                                | Display range                  |
|------------|------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------|
| CPY / PR N | BLACK : GB ***/***<br>DV ***/***   | High density process control mode<br>GB/DV data (K) (Actual output voltage level / Base voltage level) | GB<br>150-850<br>DV:<br>0-700  |
|            | BLACK : GB ***/***<br>DV ***/***   | Actual operation mode<br>GB/DV data (K) (Actual output voltage level / Base voltage level)             | GB:<br>150-850<br>DV:<br>0-700 |
|            | BLACK : GB ***/***<br>DV ***/***   | Actual operation mode<br>GB/DV data (K) (Actual output voltage level / Base voltage level)             | GB:<br>150-850<br>DV:<br>0-700 |
| OT HE R    | TN HUD AREA                        | Toner density correction humidity area                                                                 | 1-14                           |
|            | TN HUD DATA                        | Toner density correction humidity AD value                                                             | 0-1023                         |
|            | TC TMP AREA                        | Transfer voltage correction temperature area                                                           | 1-11                           |
|            | TC TMP DATA                        | Transfer voltage correction temperature AD value                                                       | 0-1023                         |
|            | TC HUD AREA                        | Transfer voltage correction humidity area                                                              | 1-10                           |
|            | TC HUD DATA                        | Transfer voltage correction humidity AD value                                                          | 0-1023                         |
|            | MD HUD AREA                        | OPC drum membrane decrease correction humidity area                                                    | 1-9                            |
|            | MD HUD DATA                        | OPC drum membrane decrease correction humidity AD value                                                | 0-1023                         |
|            | MD K STEP                          | OPC drum membrane decrease correction STEP number display (K)                                          | 0-4                            |
|            | MD K DRUM COUNTER                  | OPC drum membrane decrease correction counter (rotation distance)                                      | 0-30                           |
|            | MD K REVISE (LIFE)                 | MC grid correction voltage level                                                                       | -255-255                       |
|            | MD K REVISE (EV)                   | MC grid voltage correction level                                                                       | -255-255                       |
|            | MD K REVISE (ALL)                  | MC grid voltage correction level                                                                       | -255-255                       |
|            | MD K REVISE (LD LIFE)              | Drum membrane decrease laser power voltage correction                                                  | -255-255                       |
|            | MD K REVISE (LD EV)                | Drum environment laser power voltage correction                                                        | -255-255                       |
|            | MD K REVISE (LD HV)                | Laser power voltage correction                                                                         | -255-255                       |
|            | MD K REVISE (LD ALL)               | Display of laser power total correction amount                                                         | -255-255                       |
|            | MD K REVISE (DL)                   | Drum membrane decrease discharge light quantity correction                                             | -255-255                       |
|            | MD K REVISE (DL EV)                | Drum membrane decrease environment discharge light quantity correction                                 | -255-255                       |
|            | DESTINATION                        | CRUM destination data stored in the PCU PWB of the machine                                             | -                              |
|            | MODEL TYPE                         | Model type of the machine                                                                              | 0-1                            |
|            | CRUM DEST_K                        | Crum destination data                                                                                  | -                              |
|            | PROCON COUNT HV                    | High density process control execution number                                                          | 0-99999999                     |
|            | PROCON COUNT HT                    | Half-tone process control execution number                                                             | 0-99999999                     |

44-12

|                           |                                                                                              |
|---------------------------|----------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                                          |
| <b>Function (Purpose)</b> | Display the operation data of the high density process control and the image density sensor. |
| <b>Section</b>            | Process                                                                                      |

#### Operation/Procedure

Select a display mode with [TARGET] [PATCH] keys.

| Item/Display | Content                                                                                   | Display range  | Default value |
|--------------|-------------------------------------------------------------------------------------------|----------------|---------------|
| ADK_SL (K)   | Development characteristics gradient coefficient (High density process control operation) | -9.99 - 9.99   | 0             |
| ADK_INT(K)   | Development characteristics intercept level (High density process control operation 0V)   | -999.9 - 999.9 | 0             |
| TARGET (K)   | High density process control target density level (K)                                     | 0.00 - 255.00  | 0             |
| n-1          | High density process control nth time patch density level 1 (n=1-5)                       | 0 - 255        | 0             |
| n-2          | Patch data nth time patch 2 (n=1-5)                                                       | 0 - 255        | 0             |
| n-3          | Patch data nth time patch 3 (n=1-5)                                                       | 0 - 255        | 0             |
| n-4          | Patch data nth time patch 4 (n=1-5)                                                       | 0 - 255        | 0             |
| n-1          | Patch data nth time patch 1 (n=6-10)                                                      | 0 - 255        | 0             |
| n-2          | Patch data nth time patch 2 (n=6-10)                                                      | 0 - 255        | 0             |
| n-3          | Patch data nth time patch 3 (n=6-10)                                                      | 0 - 255        | 0             |
| n-4          | Patch data nth time patch 4 (n=6-10)                                                      | 0 - 255        | 0             |

44-14

|                           |                                                                  |
|---------------------------|------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                              |
| <b>Function (Purpose)</b> | Display the output level of the temperature and humidity sensor. |

**Section**

#### Operation/Procedure

The output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor are displayed.

| Item/Display | Content                                                  | Display range                               |
|--------------|----------------------------------------------------------|---------------------------------------------|
| TH_UM        | Fusing upper thermistor main A/D value, temperature      | Temperature: 0 - 255C<br>AD value: 0 - 1023 |
| TH_UM_CS     | Fusing upper main thermistor temperature and AD value    | Temperature: 0 - 255C<br>AD value: 0 - 1023 |
| TH_UM_D      | Fusing upper main thermistor AD value                    | AD value: 0 - 1023                          |
| TH_LM        | Fusing lower main thermistor temperature and AD value    | Temperature: 0 - 255C<br>AD value: 0 - 1023 |
| TH_US        | Fusing sub thermistor A/D value                          | Temperature: 0 - 255C<br>AD value: 0 - 1023 |
| TH_M         | External air temperature sensor temperature and AD value | Temperature: -40-150C<br>AD value: 0 - 1023 |
| HUD_M        | External air humidity sensor and AD value                | Temperature: 0 - 100%<br>AD value: 0 - 1023 |
| TH1_LSU      | LSU thermistor detection level                           | Temperature: 0 - 255C<br>AD value: 0 - 1023 |

44-15

|                           |                                 |
|---------------------------|---------------------------------|
| <b>Purpose</b>            | Setting                         |
| <b>Function (Purpose)</b> | Set the OPC drum idle rotation. |
| <b>Section</b>            | Process                         |

#### Operation/Procedure

- 1) Select an item to be set with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: 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 | 0 - 255<br>6  |

| Item/Display | Content | Setting range                                                                                                                            | Default value |
|--------------|---------|------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| B            | AREA1   | Environment area difference judgment threshold value setting (different between the previous OPC drum idle rotation and the current one) | 0 - 5<br>2    |
| C            | AREA2   | Environment area conditions (condition of the previous OPC drum idle rotation and the current one)                                       | 1 - 15<br>1   |
| D            | CYCLE   | Previous rotation time setting in the process control when recovered from power ON                                                       | 0 - 255<br>0  |

44-17

|                           |                            |
|---------------------------|----------------------------|
| <b>Purpose</b>            | Information display        |
| <b>Function (Purpose)</b> | Execution process refresh. |
| <b>Section</b>            | Process                    |

#### Operation/Procedure

- 1) Select a refresh item with touch panel key.
- 2) Press [EXECUTE]

|              |                     |
|--------------|---------------------|
| DEVE REFRESH | Development refresh |
|--------------|---------------------|

44-21

|                           |                                           |
|---------------------------|-------------------------------------------|
| <b>Purpose</b>            | Registration                              |
| <b>Function (Purpose)</b> | Set the half tone process control target. |
| <b>Section</b>            | Process                                   |

#### Operation/Procedure

Press [EXECUTE] key.

The half tone process control target is set and the operation data are displayed.

| Display                       | Content                                           |
|-------------------------------|---------------------------------------------------|
| COMPLETE                      | Normal complete                                   |
| ERROR BLACK SENSOR ADJUSTMENT | Image density sensor sensitivity adjustment error |
| [K]                           | High density process control error                |
| OTHER                         | Other errors                                      |

44-22

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                               |
| <b>Function (Purpose)</b> | Display the toner patch density level in the half tone process control operation. |
| <b>Section</b>            | Process                                                                           |

#### Operation/Procedure

- 1) The toner patch density level made in the half tone process control operation is displayed.

| Item/Display | Content                         |
|--------------|---------------------------------|
| BASE1        | Belt substrate data (START)     |
| ID_n         | Patch data display (n = 1 - 24) |

44-24

|                           |                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Information display                                                                                |
| <b>Function (Purpose)</b> | Display the correction target and the correction level in the half tone process control operation. |
| <b>Section</b>            | Process                                                                                            |

#### Operation/Procedure

- 1) Select the display category with [NEXT] key.

| Category                  | Item/Display              | Content                                                                                            |
|---------------------------|---------------------------|----------------------------------------------------------------------------------------------------|
| Coefficient               | EX-LOW                    | Coefficient value of the approximate formula of the minimum density                                |
|                           | LOW                       | Coefficient of the approximation formula of the low density                                        |
|                           | CONNECT1                  | Coefficient of the approximation formula of when connecting the low density and the medium density |
|                           | MID                       | Coefficient of the approximation formula of when connecting the low density and the medium density |
|                           | CONNECT2                  | Coefficient of the approximation formula of when connection the medium density and high density    |
|                           | HIGH                      | Coefficient of the approximation formula of the high density                                       |
|                           | CONNECT POINT             | Each density section connection output ratio                                                       |
| Reference value           | SENSOR_TARGET             | Half tone process control reference value                                                          |
| Correction value          | S_VALUE                   | Half tone process control correction value                                                         |
| For printer               | PRINTER_S_VALUE           | Printer half tone process control correction value                                                 |
|                           | PRINTER_BASE_DITHER_VALUE | Printer half tone process control reference dither value                                           |
|                           | PRINTER_AUTO_HT_VALUE     | Printer auto density adjustment correction value                                                   |
| Previous correction value | BEFORE S_VALUE            | Previous half tone process control value                                                           |

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| <b>44-25</b>              |                                                                                           |
| <b>Purpose</b>            | Setting                                                                                   |
| <b>Function (Purpose)</b> | Set the calculating conditions of the correction value for the half tone process control. |
| <b>Section</b>            | Process                                                                                   |

#### Operation/Procedure

- 1) Select a target adjustment density level with scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

|   | Item/Display           | Content                                                      | Setting range | Default value |
|---|------------------------|--------------------------------------------------------------|---------------|---------------|
| A | LOW FIELD LOWER LIMIT  | Low density approximate expression data lower limit value    | 0 - 255       | 98            |
| B | LOW FIELD UPPER LIMIT  | Low density approximate expression data upper limit value    | 0 - 255       | 60            |
| C | MID FIELD LOWER LIMIT  | Medium density approximate expression data lower limit value | 0 - 255       | 80            |
| D | MID FIELD UPPER LIMIT  | Medium density approximate expression data lower limit value | 0 - 255       | 7             |
| E | HIGHLIGHT POINT        | Reference point of the highlight correction amount           | 1 - 8         | 7             |
| F | HIGHLIGHT VALUE LIMIT  | Highlight correction amount limit value                      | 0 - 128       | 20            |
| G | MAX VALUE LIMIT        | Maximum density value correction limit value                 | 0 - 128       | 0             |
| H | HIGH FIELD LOWER LIMIT | High density approximate expression data lower limit value   | 0 - 255       | 15            |

|   | Item/Display           | Content                                                    | Setting range | Default value |
|---|------------------------|------------------------------------------------------------|---------------|---------------|
| I | HIGH FIELD UPPER LIMIT | High density approximate expression data lower limit value | 0 - 255       | 1             |

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| <b>44-26</b>              |                                                   |
| <b>Purpose</b>            | Operation test/check                              |
| <b>Function (Purpose)</b> | Execute the half tone process control compulsory. |
| <b>Section</b>            | Process                                           |

#### Operation/Procedure

Press [EXECUTE] key.

The half tone process control is performed and the operation data are displayed.

|                               |                                                   |
|-------------------------------|---------------------------------------------------|
| COMPLETE                      | Normal complete                                   |
| ERROR BLACK SENSOR ADJUSTMENT | Image density sensor sensitivity adjustment error |
| [K]                           | High density process control error                |
| OTHER                         | Other errors                                      |

|                           |                                                             |
|---------------------------|-------------------------------------------------------------|
| <b>44-27</b>              |                                                             |
| <b>Purpose</b>            | Data clear/Reset                                            |
| <b>Function (Purpose)</b> | Clear the correction data of the half tone process control. |
| <b>Section</b>            | Process                                                     |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

The correction data of the half tone process control are cleared.

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>44-28</b>              |                                               |
| <b>Purpose</b>            | Setting                                       |
| <b>Function (Purpose)</b> | Set the process control execution conditions. |
| <b>Section</b>            | Process                                       |

#### Operation/Procedure

- 1) Select a target item of setting with scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

| Item/Display | Content | Setting range                                                                  | Default value |
|--------------|---------|--------------------------------------------------------------------------------|---------------|
| A            | INITIAL | When warm-up after clearing the counter of the OPC drum and the developer unit | 0             |
|              |         |                                                                                | 1             |
| B            | SW ON   | When supplying the power (when canceling shut-off.)                            | 1             |
|              |         |                                                                                | 2             |
|              |         |                                                                                | 3             |

| Item/Display |                 | Content                                                                                                                                                                                                                                                                                 |                                                                          |         | Default value |
|--------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------|---------------|
| C            | TIME            | After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)                                                                                                                                                                                 | Process control Disable                                                  | 1       | 3             |
|              |                 |                                                                                                                                                                                                                                                                                         | BK process control Enable                                                | 2       |               |
|              |                 |                                                                                                                                                                                                                                                                                         | Pixel count judgment (Judgment is based on the setting value of item I.) | 3       |               |
| D            | HUM_LI<br>MIT   | HUM judgment is made when turning ON the power and after passing TIME.                                                                                                                                                                                                                  | Process control Disable                                                  | 1       | 2             |
|              |                 |                                                                                                                                                                                                                                                                                         | BK process control Enable                                                | 2       |               |
| E            | HUM             | The temperature and humidity in side the machine are monitored only during a job for every 2hours (set by item M). When the changes in the temperature and the humidity are greater than the specified level (the set value of item N) in comparison with the previous process control. | Process control Disable                                                  | 1       | 2             |
|              |                 |                                                                                                                                                                                                                                                                                         | BK process control Enable                                                | 2       |               |
| F            | REV1            | When the accumulated rotation time of the OPC drum unit reaches a certain level after supply the power.                                                                                                                                                                                 | Enable                                                                   | 0       | 0             |
|              |                 |                                                                                                                                                                                                                                                                                         | Inhibit                                                                  | 1       |               |
| G            | REV2_ BK        | When the accumulated rotation time of the BK position OPC drum unit reaches a certain level after execution of the previous density correction.                                                                                                                                         | Enable                                                                   | 0       | 0             |
|              |                 |                                                                                                                                                                                                                                                                                         | Inhibit                                                                  | 1       |               |
| H            | REFRESH<br>MODE | YES/NO setting of the display of the manual process control key by key operations                                                                                                                                                                                                       | Key operation display YES                                                | 0       | 1             |
|              |                 |                                                                                                                                                                                                                                                                                         | Key operation display NO                                                 | 1       |               |
| I            | DAY             | When the next warm-up if there is no job after a job after passing the specified days from execution of the previous process control                                                                                                                                                    | 0: Disable of the specified days judgment                                | 0       | 1             |
|              |                 |                                                                                                                                                                                                                                                                                         | 1 - 999: 1 - 999 days passing                                            | 1 - 999 |               |

| Item/Display |                  | Content                                                                                                                                |                                                                                                                                                             |         | Default value |
|--------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------|
| J            | HI-COV           | Setting of the execution conditions of the process control for the print ration                                                        | The process control is performed by considering the average print ration of every 10 pages as the judgment criteria                                         | 0       | 0             |
|              |                  |                                                                                                                                        | Print ration judgment inhibit (The process control for the target of print ration is not performed)                                                         | 1       |               |
|              |                  |                                                                                                                                        | The process control is performed by considering the average print ration of 30 pages as the judgment criteria in a continuous print job of 30 or more pages | 2       |               |
| K            | LO-COV           | Setting of the execution judgment of the process control in continuous printing of low print ratio images                              | Enable                                                                                                                                                      | 0       | 0             |
|              |                  |                                                                                                                                        | Inhibit                                                                                                                                                     | 1       |               |
| L            | TonerC<br>A-END  | Setting of the process control interval reduction when the toner cartridge remaining quantity is 25% or less                           | Enable                                                                                                                                                      | 0       | 1             |
|              |                  |                                                                                                                                        | Inhibit                                                                                                                                                     | 1       |               |
| M            | JOB<br>STOP      | Execution setting of item G,J,K judgment during a job                                                                                  | Allow                                                                                                                                                       | 0       | 0             |
|              |                  |                                                                                                                                        | Inhibit                                                                                                                                                     | 1       |               |
| N            | AVERAGE<br>PAGE  | Setting of the number of average print ratio                                                                                           | 1:10 pages, 5:50 pages 1 step corresponds to 10 pages                                                                                                       | 1 - 5   | 5             |
| O            | LIMIT<br>PAGE    | Setting of the number of connected jobs of the process control and of the limit number of the process control                          | 1:10 pages 10:100 pages 1 step corresponds 10 pages                                                                                                         | 1 - 10  | 10            |
| P            | PIX_RATIO<br>BK  | Magnification ratio setting (%) of the toner count specified value entry of 100 corresponds to 1k of A4 5% print.                      |                                                                                                                                                             | 1 - 999 | 10            |
| Q            | INTERVAL<br>TIME | Setting of the leaving time when turning ON the power (h:hour)                                                                         |                                                                                                                                                             | 1 - 255 | 2             |
| R            | HUM<br>HOUR      | Interval setting of the temperature and humidity monitoring time of "HUM" (h: hour)                                                    |                                                                                                                                                             | 1 - 24  | 2             |
| S            | HUM_D<br>IF      | The specified value of the area difference in humidity between the level at execution of the previous control and the current humidity |                                                                                                                                                             | 1 - 9   | 2             |
| T            | BK_RATIO         | Magnification ratio setting (%) of the specified value of the BK position OPC drum traveling distance of "REV2_BK"                     |                                                                                                                                                             | 1 - 999 | 30            |
| U            | REV1_RATIO       | OPC drum traveling distance value magnification ratio setting                                                                          |                                                                                                                                                             | 1 - 255 | 20            |
| V            | HT_DIF           | HT process control execution judgment developing bias variation value                                                                  |                                                                                                                                                             | 1 - 255 | 60            |

| Item/Display |               | Content                               |         |   | Default value |
|--------------|---------------|---------------------------------------|---------|---|---------------|
| W            | DRUM REVER SE | Drum reverse rotation control setting | Enable  | 0 | 1             |
|              |               |                                       | Disable | 1 |               |
|              |               |                                       |         |   |               |

44-29

|                           |                                                                   |
|---------------------------|-------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                           |
| <b>Function (Purpose)</b> | 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.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

| Item/Display |                  | Content                                                          |                                               |  | Default value |
|--------------|------------------|------------------------------------------------------------------|-----------------------------------------------|--|---------------|
| A            | COPY             | During copy job                                                  | 0: No execution<br>1: HV only<br>2: HV->HT    |  | 2             |
| B            | PRINTER          | During print job                                                 |                                               |  | 2             |
| C            | FAX              | During FAX print job                                             |                                               |  | 2             |
| D            | SELF PRINT       | During self print                                                |                                               |  | 2             |
| E            | CPY TO PRT TABLE | Half tone process control copier printer conversion table select | 0: Gray balance calculation value<br>1: Fixed |  | 0             |

HV: High density process control

HT: Half tone process control

44-37

|                           |                                                                                 |
|---------------------------|---------------------------------------------------------------------------------|
| <b>Purpose</b>            | Setting                                                                         |
| <b>Function (Purpose)</b> | Set the development bias correction level in the continuous printing operation. |
| <b>Section</b>            | Toner supply, developing                                                        |

#### Operation/Procedure

- 1) Select a target item with scroll key
- 2) Enter the set value with 10-key.
- 3) Press [OK] key

| Item/Display |                    | Content                                                                  | Setting range | Default value |
|--------------|--------------------|--------------------------------------------------------------------------|---------------|---------------|
| A            | DV_ADJ_K_L_DATA_1  | DV bias correction data 1-3 in printing (low speed)                      | 0 - 5         | 0             |
| B            | DV_ADJ_K_L_DATA_2  |                                                                          |               |               |
| C            | DV_ADJ_K_L_DATA_3  |                                                                          |               |               |
| D            | DV_ADJ_K_M_DATA_1  | DV bias correction data 1-3 in printing (middle speed)                   | 0 - 5         | 0             |
| E            | DV_ADJ_K_M_DATA_2  |                                                                          |               |               |
| F            | DV_ADJ_K_M_DATA_3  |                                                                          |               |               |
| G            | DV_ADJ_START_K_L_1 | DV bias correction starting position data 1-4 in printing (low speed)    | 1 - 12        | 4             |
| H            | DV_ADJ_START_K_L_2 |                                                                          |               | 3             |
| I            | DV_ADJ_START_K_L_3 |                                                                          |               | 1             |
| J            | DV_ADJ_START_K_L_4 |                                                                          |               | 1             |
| K            | DV_ADJ_START_K_M_1 | DV bias correction starting position data 1-4 in printing (middle speed) | 1 - 12        | 4             |
| L            | DV_ADJ_START_K_M_2 |                                                                          |               | 3             |
| M            | DV_ADJ_START_K_M_3 |                                                                          |               | 1             |
| N            | DV_ADJ_START_K_M_4 |                                                                          |               | 1             |

44-43

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| <b>Purpose</b>            | Data display                                                   |
| <b>Function (Purpose)</b> | Display the identification information of the developing unit. |
| <b>Section</b>            | Developing                                                     |

#### Operation/Procedure

The identification number and the identification signal level of the developing unit are displayed.

The half tone process control is performed and the operation data are displayed.

| Item/Display |             | Content                               |
|--------------|-------------|---------------------------------------|
| A            | DVCH KIND K | Developing unit identification number |

44-62

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>Purpose</b>            | Setup/Adjustment                              |
| <b>Function (Purpose)</b> | 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.A suitable one is selected among a number of options depending on the condition.

Select an item to be set.

- To change the image density in the high density area, select PROCON TARGET.
- To change the frequency of the process control operations select PROCON MODE.

| Display/Item  |                       | Content                                                                                                     |
|---------------|-----------------------|-------------------------------------------------------------------------------------------------------------|
| PROCON TARGET | ID DOWN(-2)           | The registered value of the process control reference value are collectively changed                        |
|               | ID DOWN(-1)           |                                                                                                             |
|               | ID UP(+1)             |                                                                                                             |
|               | ID UP(+2)             |                                                                                                             |
|               | NORMAL(0)             | The registered values of the process control reference values are collectively changed to the default value |
|               | CUSTOM                | The value set by SIM44-4 is restored                                                                        |
| PROCON MODE   | HIGH QUALITY(+2)      | The values of the density correction execution timing mode are collectively changed                         |
|               | HIGH QUALITY(+1)      |                                                                                                             |
|               | PRINT PERFORMANCE(-1) |                                                                                                             |
|               | PRINT PERFORMANCE(-2) |                                                                                                             |
|               | NORMAL(0)             | The value of the density correction execution timing mode are collectively changed to the default value     |
|               | CUSTOM                | The value set by SIM44-28 is stored                                                                         |

**When PROCON TARGET is selected.**

- 1) Select the density level.

**When PROCON MODE is selected.**

- 1) Select the execution frequency of the process control.
- 2) Press [EXECUTE] key.
- 3) Press [YES] key.

46

46-2

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Purpose</b>            | Adjustment                                 |
| <b>Function (Purpose)</b> | Adjust the copy density in each copy mode. |
| <b>Section</b>            |                                            |



### Operation/Procedure

- 1) Select an adjustment target item with scroll key.
- 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        |
|              |                    |                                   | HIGH          | 1 - 99        |
| B            | AUTO2              | Auto 2                            | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| C            | TEXT               | Text                              | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| D            | TEXT/PRINTED PHOTO | Text/Printed Photo                | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| E            | TEXT/PHOTO         | Text/Photograph                   | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| F            | PRINTED PHOTO      | Printed Photo                     | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| G            | PHOTOGRAPH         | Photograph                        | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| H            | MAP                | Map                               | LOW           | 1 - 99        |
|              |                    |                                   | HIGH          | 1 - 99        |
| I            | AUTO1              | Auto 1 (copy to copy)             | LOW           | 1 - 99        |
| J            | AUTO2              | Auto 2 (copy to copy)             | LOW           | 1 - 99        |
| K            | TEXT               | Text (copy to copy)               | LOW           | 1 - 99        |
| L            | TEXT/PRINTED PHOTO | Text printed photo (copy to copy) | LOW           | 1 - 99        |
| M            | PRINTED PHOTO      | Printed photo (copy to copy)      | LOW           | 1 - 99        |
| N            | LIGHT              | Light                             | LOW           | 1 - 99        |

46-4

|                           |                                                        |
|---------------------------|--------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                             |
| <b>Function (Purpose)</b> | Adjust the density in the image send mode (color mode) |
| <b>Section</b>            |                                                        |

### Operation/Procedure

- 1) Select an adjustment target item with scroll key.
- 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.

| Mo de | Item/Display |                    | Content            | Setting range | Default value |
|-------|--------------|--------------------|--------------------|---------------|---------------|
| LOW   | A            | AUTO               | Auto               | 1 - 99        | 50            |
|       | B            | TEXT               | Text               | 1 - 99        |               |
|       | C            | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        |               |
|       | D            | TEXT/PHOTO         | Text/Photograph    | 1 - 99        |               |
|       | E            | PRINTED PHOTO      | Printed Photo      | 1 - 99        |               |
|       | F            | PHOTOGRAPH         | Photograph         | 1 - 99        |               |
|       | G            | MAP                | Map                | 1 - 99        |               |
|       | H            | RIP                | -                  | 1 - 99        |               |

| Mo de | Item/Display |                    | Content            | Setting range | Default value |
|-------|--------------|--------------------|--------------------|---------------|---------------|
| HIGH  | A            | AUTO               | Auto               | 1 - 99        | 50            |
|       | B            | TEXT               | Text               | 1 - 99        |               |
|       | C            | TEXT/PRINTED PHOTO | Text/Printed photo | 1 - 99        |               |
|       | D            | TEXT/PHOTO         | Text/Photo         | 1 - 99        |               |
|       | E            | PRINTED PHOTO      | Printed photo      | 1 - 99        |               |
|       | F            | PHOTOGRAPH         | Photograph         | 1 - 99        |               |
|       | G            | MAP                | Map                | 1 - 99        |               |
|       | H            | RIP                | -                  | 1 - 99        |               |

46-5

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>Purpose</b>            | Adjustment                                 |
| <b>Function (Purpose)</b> | Adjust the density in the image send mode. |
| <b>Section</b>            |                                            |

### Operation/Procedure

- 1) Select an adjustment target item with scroll key.
- 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.

| Mo de | Item/Display |                    | Content            | Setting range | Default value |
|-------|--------------|--------------------|--------------------|---------------|---------------|
| LOW   | A            | AUTO               | Auto               | 1 - 99        | 50            |
|       | B            | TEXT               | Text               | 1 - 99        |               |
|       | C            | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99        |               |
|       | D            | TEXT/PHOTO         | Text/Photograph    | 1 - 99        |               |
|       | E            | PRINTED PHOTO      | Printed Photo      | 1 - 99        |               |
|       | F            | PHOTOGRAPH         | Photograph         | 1 - 99        |               |
|       | G            | MAP                | Map                | 1 - 99        |               |
|       | H            | RIP                | -                  | 1 - 99        |               |
| HIGH  | A            | AUTO               | Auto               | 1 - 99        | 50            |
|       | B            | TEXT               | Text               | 1 - 99        |               |
|       | C            | TEXT/PRINTED PHOTO | Text/Printed photo | 1 - 99        |               |
|       | D            | TEXT/PHOTO         | Text/Photo         | 1 - 99        |               |
|       | E            | PRINTED PHOTO      | Printed photo      | 1 - 99        |               |
|       | F            | PHOTOGRAPH         | Photograph         | 1 - 99        |               |
|       | G            | MAP                | Map                | 1 - 99        |               |
|       | H            | RIP                | -                  | 1 - 99        |               |

46-8

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>Purpose</b>            | Adjustment                                    |
| <b>Function (Purpose)</b> | Adjust the image send mode color balance RGB. |
| <b>Section</b>            |                                               |

### Operation/Procedure

- 1) Select an adjustment target with [R] [G] [B] keys on the touch panel.
- 2) Select an adjustment target item with scroll key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

The color balance can be adjusted separately for the low density area and the high density area.

When the adjustment value is increased, the image density of the target color is increased, and vice versa.

| Item/Display |                    | Content                        | Default value |
|--------------|--------------------|--------------------------------|---------------|
| A            | LOW DENSITY POINT  | Low density correction amount  | 50            |
| B            | HIGH DENSITY POINT | High density correction amount | 50            |

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| <b>46-9</b>               |                                                                |
| <b>Purpose</b>            | Adjustment (DSPF mode)                                         |
| <b>Function (Purpose)</b> | Adjust the SPF mode scan image density (copy, image send mode) |

#### Section

#### Operation/Procedure

- 1) Select an adjustment target mode with [OC] and [DSPF] keys on the touch panel.
- 2) Select an adjustment target item with scroll key on the touch panel.
- 3) 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.
- 4) Press [OK] key. (The set value is saved.)

This adjustment result affects the image send mode, the copy mode, and the fax mode. When the adjustment value is increased, the image density is increased, and vice versa.

#### [DSPF-installed model]

| Button | Item | Display                | Content                                                         | Setting range | Default value |
|--------|------|------------------------|-----------------------------------------------------------------|---------------|---------------|
| OC     | A    | COPY<br>SIDEA:<br>LOW  | OC copy mode<br>exposure adjustment<br>(Low density side)       | 1 - 99        | 47            |
|        | B    | SCAN<br>SIDEA:<br>LOW  | OC scanner mode<br>exposure adjustment<br>(Low density side)    | 1 - 99        | 47            |
|        | C    | FAX<br>SIDEA:<br>LOW   | OC FAX mode<br>exposure adjustment<br>(Low density side)        | 1 - 99        | 47            |
|        | D    | COPY<br>SIDEA:<br>HIGH | OC copy mode<br>exposure adjustment<br>(High density side)      | 1 - 99        | 52            |
|        | E    | SCAN<br>SIDEA:<br>HIGH | OC scanner mode<br>exposure adjustment<br>(High density side)   | 1 - 99        | 52            |
|        | F    | FAX<br>SIDEA:<br>HIGH  | OC FAX mode<br>exposure adjustment<br>(High density)            | 1 - 99        | 52            |
| DSPF   | A    | COPY<br>SIDEB:<br>LOW  | DSPF copy mode<br>exposure adjustment<br>(Low density side)     | 1 - 99        | 47            |
|        | B    | SCAN<br>SIDEB:<br>LOW  | DSPF scanner mode<br>exposure adjustment<br>(Low density side)  | 1 - 99        | 47            |
|        | C    | FAX<br>SIDEB:<br>LOW   | DSPF FAX mode<br>exposure adjustment<br>(Low density side)      | 1 - 99        | 47            |
|        | D    | COPY<br>SIDEB:<br>HIGH | DSPF copy mode<br>exposure adjustment<br>(High density side)    | 1 - 99        | 50            |
|        | E    | SCAN<br>SIDEB:<br>HIGH | DSPF scanner mode<br>exposure adjustment<br>(High density side) | 1 - 99        | 50            |
|        | F    | FAX<br>SIDEB:<br>HIGH  | DSPF FAX mode<br>exposure adjustment<br>(High density)          | 1 - 99        | 50            |
|        | G    | BALANCE<br>SIDEB: R    | DSPF color balance<br>R                                         | 1 - 99        | 50            |
|        | H    | BALANCE<br>SIDEB: G    | DSPF color balance<br>G                                         | 1 - 99        | 50            |
|        | I    | BALANCE<br>SIDEB: B    | DSPF color balance<br>B                                         | 1 - 99        | 50            |

|                           |                                              |
|---------------------------|----------------------------------------------|
| <b>46-10</b>              |                                              |
| <b>Purpose</b>            | Adjustment                                   |
| <b>Function (Purpose)</b> | Adjust the copy density (in each copy mode). |

#### Section

#### Operation/Procedure

- 1) Select an adjustment target mode with the touch panel key.

- 2) Select 600dpi or 1200dpi with the resolution select button.
- 3) 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.
- 4) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa. A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

| Item           | Content            |
|----------------|--------------------|
| AUTO           | Auto 1/Auto 2      |
| TEXT           | Text               |
| TEXT/PRT PHOTO | Text/Printed Photo |
| TEXT/PHOTO     | Text/Photograph    |
| PRINTED PHOTO  | Printed Photo      |
| PHOTO          | Photograph         |
| MAP            | Map                |
| LIGHT          | Light              |
| COPY ORG       | Copy document      |

| Item/Display |             | Density level | Setting range | Default value |
|--------------|-------------|---------------|---------------|---------------|
| A - Q        | POINT1 - 17 | Point 1 - 17  | 1 - 999       | 500           |

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>46-16</b>              |                                   |
| <b>Purpose</b>            | Adjustment                        |
| <b>Function (Purpose)</b> | Adjust the copy density manually. |
| <b>Section</b>            |                                   |

#### Operation/Procedure

- 1) Select an adjustment target item with scroll key.
- 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. A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

| Item/Display |             | Density level | Setting range | Default value |
|--------------|-------------|---------------|---------------|---------------|
| A - Q        | POINT1 - 17 | Point 1 - 17  | 1 - 999       | 500           |

|                           |                                                                                    |
|---------------------------|------------------------------------------------------------------------------------|
| <b>46-19</b>              |                                                                                    |
| <b>Purpose</b>            | Setting                                                                            |
| <b>Function (Purpose)</b> | Set the operating conditions of document density scanning (copy, image send mode). |
| <b>Section</b>            | Scanner                                                                            |

#### Operation/Procedure

Select an item to be set with touch panel. When an item is selected, it is highlighted and the setting change is saved.

| Item/Display | Content                             | Set value                     | Default value |
|--------------|-------------------------------------|-------------------------------|---------------|
| AE MODE      | Auto exposure mode                  | MODE1,<br>MODE2               | MODE2         |
| AE STOP COPY | Auto exposure Stop<br>(for copy)    | REALTIME/<br>STOP/<br>PRESCAN | STOP          |
| AE STOP FAX  | Auto exposure Stop<br>(for FAX)     | ON/OFF                        | ON            |
| AE STOP SCAN | Auto exposure Stop<br>(for scanner) | REALTIME/<br>STOP/<br>PRESCAN | STOP          |
| AE FILTER    | Auto exposure filter<br>setting     | SOFT/<br>NORMAL/<br>SHARP     | NORMAL        |
| AE WIDTH     | AE exposure width                   | FULL/PART                     | FULL          |

NOTE:

|               |                                                                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MODE 1        | High gamma (high contrast images)                                                                                                                                                                                           |
| MODE 2        | Normal gamma                                                                                                                                                                                                                |
| STOP          | The image density in 3 - 7mm area at the lead edge is scanned, and the output image density is determined according to the density in each area of document. (The output image density is even for all the surface.)        |
| REALTIME      | The densities of the document width are scanned sequentially, and the output image density is determined according to the density in each area of document. (The output image density may not be even for all the surface.) |
| AE WIDTH FULL | The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x the document width. This is not related to the PRESCAN mode.                                                              |
| AE WIDTH PART | The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x 100mm width. This is not related to the PRESCAN mode.                                                                     |

|                           |                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------|
| <b>46-23</b>              |                                                                                            |
| <b>Purpose</b>            | Setting                                                                                    |
| <b>Function (Purpose)</b> | Set the density correction of copy high density section (High density tone gap supported). |

#### Section

#### Operation/Procedure

- 1) Enter the set value with 10-key.

|   |         |
|---|---------|
| 0 | Enable  |
| 1 | Inhibit |

- 2) Press [OK] key. (The set value is saved.)

| Item/Display | Content          | Setting range                                       | Default value |
|--------------|------------------|-----------------------------------------------------|---------------|
| A            | K                | 0                                                   | 1             |
|              |                  | 1                                                   |               |
| B            | BLACK MAX TARGET | Scanner target value for maximum density correction | 0 - 999       |
| C            | RATIO LOW        | High density correction ration (LOW)                | 0 - 100       |
| D            | RATIO HIGH       | High density correction ration (HIGH)               | 0 - 100       |
| E            | DITHER THRESHOLD | Dither threshold                                    | 0 - 255       |
| F            | SLOPE THRESHOLD  | Slope threshold                                     | 100 - 500     |

\* When tone gap is generated in the high density area, set item A to "0". The density of high density part decreases. However, the tone gap is better.

\* To increase the density in the high density area further, set item A to "1". The tone gap may occur in high density part.

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| <b>46-24</b>              |                                                   |
| <b>Purpose</b>            | Adjustment                                        |
| <b>Function (Purpose)</b> | Adjust copy and printer density (Auto adjustment) |

#### Section

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
The adjustment pattern is printed out.
- 2) Place the printed adjustment pattern on the document table then press [EXECUTE] key. The automatic adjustment of copy and printer density is executed, and then the adjustment result pattern of the copy mode as well as that of the printer mode is printed.
- 3) Press [OK] key.  
The half tone correction target registration is processed.

- 4) The half-tone correction execution menu is displayed. Press [EXECUTE] key. Half-tone correction is executed. When [RESULT] button is pressed after completion of correction, the data of the half-tone correction can be checked.

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| <b>46-32</b>              |                                                                                           |
| <b>Purpose</b>            | Adjustment                                                                                |
| <b>Function (Purpose)</b> | Adjust the reproducibility of the document background density in the automatic copy mode. |

#### Section

#### Operation/Procedure

- 1) Select a target item of setting with scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

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.

#### [DSPF-installed model]

| 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           |
| G    | FAX: OC            | FAX mode (for OC)                     | 1 - 250       | 196           |
| H    | FAX: DSPF (SIDE1)  | FAX mode (for DSPF front surface)     | 1 - 250       | 196           |
| I    | FAX: DSPF (SIDE2)  | FAX mode (for DSPF back surface)      | 1 - 250       | 196           |

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>46-37</b>              |                                                                                      |
| <b>Purpose</b>            | Adjustment                                                                           |
| <b>Function (Purpose)</b> | Adjust the reproducibility of the scan image color document (copy, image send mode). |

#### Section

#### Operation/Procedure

- 1) Select a target item with scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key.
- 4) Press [YES] key.

This simulation is used to adjust the reproducibility of red and yellow images when copy a color document of red and yellow images in the monochrome mode.

| Item/Display | Content      | Setting range                 | Default value |
|--------------|--------------|-------------------------------|---------------|
| A            | R-Ratio      | Gray making setting (R)       | 0 - 1000      |
| B            | G-Ratio      | Gray making setting (G)       | 0 - 1000      |
| C            | R-Ratio RIP  | Print gray making setting (R) | 0 - 1000      |
| D            | G-Ration RIP | Print gray making setting (G) | 0 - 1000      |

\* B-Ratio: The value of gray making setting (B) is obtained from the formula below.  
1000-R-Ratio - G-Ratio

When [DEFAULT] key is pressed, the values are set to the initial values (default). When the adjustment values of items A and B are decreased, the copy density of yellow images is increased. When the adjustment values are increased, the density is decreased. When the adjustment value of item A is decreased and the adjustment value of item B is increased, the copy density of red images is increased. When the adjustment value of item A is increased and the adjustment value of item B is decreased, the copy density is decreased.

46-39

|                           |                                          |
|---------------------------|------------------------------------------|
| <b>Purpose</b>            | Adjustment                               |
| <b>Function (Purpose)</b> | Adjust the sharpness of FAX send images. |
| <b>Section</b>            |                                          |

#### Operation/Procedure

- 1) Select a target item with scroll key.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

Input large numeric value to obtain crispy image. Input small numeric value to decrease moire.

| Item/Display             | Content                          | Setting range | Default value |
|--------------------------|----------------------------------|---------------|---------------|
| A 200 x 100 [DPI]<br>OFF | 200 x 100 [DPI]<br>half tone OFF | 0 - 2         | 1             |
| B 200 x 200 [DPI]<br>OFF | 200 x 200 [DPI]<br>half tone OFF | 0 - 2         | 1             |
| C 200 x 200 [DPI]<br>ON  | 200 x 200 [DPI]<br>half tone ON  | 0 - 2         | 1             |
| D 200 x 400 [DPI]<br>OFF | 200 x 400 [DPI]<br>half tone OFF | 0 - 2         | 1             |
| E 200 x 400 [DPI]<br>ON  | 200 x 400 [DPI]<br>half tone ON  | 0 - 2         | 1             |
| F 400 x 400 [DPI]<br>OFF | 400 x 400[DPI]<br>half tone OFF  | 0 - 2         | 1             |
| G 400 x 400 [DPI]<br>ON  | 400 x 400[DPI]<br>half tone ON   | 0 - 2         | 1             |
| H 600 x 600 [DPI]<br>OFF | 600 x 600[DPI]<br>half tone OFF  | 0 - 2         | 1             |
| I 600 x 600 [DPI]<br>ON  | 600 x 600[DPI]<br>half tone ON   | 0 - 2         | 1             |

46-40

|                           |                                                                             |
|---------------------------|-----------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                  |
| <b>Function (Purpose)</b> | Adjust the FAX send image density. (Collective adjustment of all the modes) |
| <b>Section</b>            |                                                                             |

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

| Item/Display          | Content                                                                             | Setting range | Default value |
|-----------------------|-------------------------------------------------------------------------------------|---------------|---------------|
| A EXPOSURE LEVEL(ALL) | Used to adjust the FAX send image density. (Collective adjustment of all the modes) | 1 - 99        | 50            |

46-41

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Purpose</b>            | Adjustment                        |
| <b>Function (Purpose)</b> | Adjust the FAX send image density |
| <b>Section</b>            |                                   |

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.

- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

| Item/Display   | Content                                                    | Setting range                                                              | Default value                        |
|----------------|------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------|
| A AUTO         | Auto                                                       | 1 - 99                                                                     | 50                                   |
| B EXPOSURE1    | Exposure 1                                                 | 1 - 99                                                                     | 50                                   |
| C EXPOSURE2    | Exposure 2                                                 | 1 - 99                                                                     | 50                                   |
| D EXPOSURE3    | Exposure 3                                                 | 1 - 99                                                                     | 50                                   |
| E EXPOSURE4    | Exposure 4                                                 | 1 - 99                                                                     | 50                                   |
| F EXPOSURE5    | Exposure 5                                                 | 1 - 99                                                                     | 50                                   |
| G EXECUTE MODE | Print mode<br>AUTO<br>EXP1<br>EXP2<br>EXP3<br>EXP4<br>EXP5 | Auto<br>Exposure 1<br>Exposure 2<br>Exposure 3<br>Exposure 4<br>Exposure 5 | 1<br>2<br>3<br>4<br>5<br>6<br>(AUTO) |

To check the adjustment density level of items A - F, set the document and set the setting value of item G according to items A - F, and press [EXECUTE] key.

46-42

|                           |                                           |
|---------------------------|-------------------------------------------|
| <b>Purpose</b>            | Adjustment                                |
| <b>Function (Purpose)</b> | Adjust the FAX send image density. (Fine) |
| <b>Section</b>            |                                           |

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key  
When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

| Item/Display       | Content                       | Setting range | Default value |
|--------------------|-------------------------------|---------------|---------------|
| A AUTO             | Fine/Automatic                | 1 - 99        | 50            |
| B EXPOSURE1        | Fine/Exposure 1               | 1 - 99        | 50            |
| C EXPOSURE2        | Fine/Exposure 2               | 1 - 99        | 50            |
| D EXPOSURE3        | Fine/Exposure 3               | 1 - 99        | 50            |
| E EXPOSURE4        | Fine/Exposure 4               | 1 - 99        | 50            |
| F EXPOSURE5        | Fine/Exposure 5               | 1 - 99        | 50            |
| G AUTO H_TONE      | Fine/Automatic/<br>Half tone  | 1 - 99        | 50            |
| H EXPOSURE1 H_TONE | Fine/Exposure 1/<br>Half tone | 1 - 99        | 50            |
| I EXPOSURE2 H_TONE | Fine/Exposure 2/<br>Half tone | 1 - 99        | 50            |
| J EXPOSURE3 H_TONE | Fine/Exposure 3/<br>Half tone | 1 - 99        | 50            |
| K EXPOSURE4 H_TONE | Fine/Exposure 4/<br>Half tone | 1 - 99        | 50            |
| L EXPOSURE5 H_TONE | Fine/Exposure 5/<br>Half tone | 1 - 99        | 50            |

| Item/Display |              |             | Content                    | Setting range |    | Default value |
|--------------|--------------|-------------|----------------------------|---------------|----|---------------|
| M            | EXECUTE MODE | AUTO        | Fine/Auto                  | 1 - 12        | 1  | 1 (AUTO)      |
|              |              | EXP1        | Fine/Exposure 1            |               | 2  |               |
|              |              | EXP2        | Fine/Exposure 2            |               | 3  |               |
|              |              | EXP3        | Fine/Exposure 3            |               | 4  |               |
|              |              | EXP4        | Fine/Exposure 4            |               | 5  |               |
|              |              | EXP5        | Fine/Exposure 5            |               | 6  |               |
|              |              | AUTO H_TONE | Fine/Automatic/half tone   |               | 7  |               |
|              |              | EXP1 H_TONE | Fine/Exposure 1 /Half tone |               | 8  |               |
|              |              | EXP2 H_TONE | Fine/Exposure 2 /Half tone |               | 9  |               |
|              |              | EXP3 H_TONE | Fine/Exposure 3 /Half tone |               | 10 |               |
|              |              | EXP4 H_TONE | Fine/Exposure 4 /Half tone |               | 11 |               |
|              |              | EXP5 H_TONE | Fine/Exposure 5 /Half tone |               | 12 |               |

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| <b>46-43</b>              |                                                 |
| <b>Purpose</b>            | Adjustment                                      |
| <b>Function (Purpose)</b> | Adjust the FAX send image density. (Super Fine) |
| <b>Section</b>            |                                                 |

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

| Item/Display |                  | Content                          | Setting range | Default value |
|--------------|------------------|----------------------------------|---------------|---------------|
| A            | AUTO             | Super Fine/Auto                  | 1 - 99        | 50            |
| B            | EXPOSURE1        | Super Fine/Exposure 1            | 1 - 99        | 50            |
| C            | EXPOSURE2        | Super Fine/Exposure 2            | 1 - 99        | 50            |
| D            | EXPOSURE3        | Super Fine/Exposure 3            | 1 - 99        | 50            |
| E            | EXPOSURE4        | Super Fine/Exposure 4            | 1 - 99        | 50            |
| F            | EXPOSURE5        | Super Fine/Exposure 5            | 1 - 99        | 50            |
| G            | AUTO H_TONE      | Super Fine /Auto/Half tone       | 1 - 99        | 50            |
| H            | EXPOSURE1 H_TONE | Super Fine/Exposure 1 /Half tone | 1 - 99        | 50            |
| I            | EXPOSURE2 H_TONE | Super Fine/Exposure 2 /Half tone | 1 - 99        | 50            |
| J            | EXPOSURE3 H_TONE | Super Fine/Exposure 3 /Half tone | 1 - 99        | 50            |
| K            | EXPOSURE4 H_TONE | Super Fine/Exposure 4 /Half tone | 1 - 99        | 50            |
| L            | EXPOSURE5 H_TONE | Super Fine/Exposure 5 /Half tone | 1 - 99        | 50            |

| Item/Display |              |            | Content                          | Setting range |    | Default value |
|--------------|--------------|------------|----------------------------------|---------------|----|---------------|
| M            | EXECUTE MODE | AUTO       | Super Fine/Auto                  | 1 - 12        | 1  | 1 (AUTO)      |
|              |              | EXP1       | Super Fine/Exposure 1            |               | 2  |               |
|              |              | EXP2       | Super Fine/Exposure 2            |               | 3  |               |
|              |              | EXP3       | Super Fine/Exposure 3            |               | 4  |               |
|              |              | EXP4       | Super Fine/Exposure 4            |               | 5  |               |
|              |              | EXP5       | Super Fine/Exposure 5            |               | 6  |               |
|              |              | AUTO H_TOE | Super Fine/Auto /Half tone       |               | 7  |               |
|              |              | EXP1 H_TOE | Super Fine/Exposure 1 /Half tone |               | 8  |               |
|              |              | EXP2 H_TOE | Super Fine/Exposure 2 /Half tone |               | 9  |               |
|              |              | EXP3 H_TOE | Super Fine/Exposure 3 /Half tone |               | 10 |               |
|              |              | EXP4 H_TOE | Super Fine/Exposure 4 /Half tone |               | 11 |               |
|              |              | EXP5 H_TOE | Super Fine/Exposure 5 /Half tone |               | 12 |               |

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| <b>46-44</b>              |                                                 |
| <b>Purpose</b>            | Adjustment                                      |
| <b>Function (Purpose)</b> | Adjust the FAX send image density. (Ultra fine) |
| <b>Section</b>            |                                                 |

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

| Item/Display |                  | Content                          | Setting range | Default value |
|--------------|------------------|----------------------------------|---------------|---------------|
| A            | AUTO             | Ultra Fine/Auto                  | 1 - 99        | 50            |
| B            | EXPOSURE1        | Ultra Fine/Exposure 1            | 1 - 99        | 50            |
| C            | EXPOSURE2        | Ultra Fine/Exposure 2            | 1 - 99        | 50            |
| D            | EXPOSURE3        | Ultra Fine/Exposure 3            | 1 - 99        | 50            |
| E            | EXPOSURE4        | Ultra Fine/Exposure 4            | 1 - 99        | 50            |
| F            | EXPOSURE5        | Ultra Fine/Exposure 5            | 1 - 99        | 50            |
| G            | AUTO H_TONE      | Ultra Fine/Auto/Half tone        | 1 - 99        | 50            |
| H            | EXPOSURE1 H_TONE | Ultra Fine/Exposure 1 /Half tone | 1 - 99        | 50            |
| I            | EXPOSURE2 H_TONE | Ultra Fine/Exposure 2 /Half tone | 1 - 99        | 50            |
| J            | EXPOSURE3 H_TONE | Ultra Fine/Exposure 3 /Half tone | 1 - 99        | 50            |
| K            | EXPOSURE4 H_TONE | Ultra Fine/Exposure 4 /Half tone | 1 - 99        | 50            |
| L            | EXPOSURE5 H_TONE | Ultra Fine/Exposure 5 /Half tone | 1 - 99        | 50            |

| Item/Display |              | Content     | Setting range | Default value |
|--------------|--------------|-------------|---------------|---------------|
| M            | EXECUTE MODE | AUTO        | 1 - 12        | 1 (AUTO)      |
|              |              | EXP1        |               | 2             |
|              |              | EXP2        |               | 3             |
|              |              | EXP3        |               | 4             |
|              |              | EXP4        |               | 5             |
|              |              | EXP5        |               | 6             |
|              |              | AUTO H_TONE |               | 7             |
|              |              | EXP1 H_TONE |               | 8             |
|              |              | EXP2 H_TONE |               | 9             |
|              |              | EXP3 H_TONE |               | 10            |
|              |              | EXP4 H_TONE |               | 11            |
|              |              | EXP5 H_TONE |               | 12            |

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

|                           |                                              |
|---------------------------|----------------------------------------------|
| <b>46-45</b>              |                                              |
| <b>Purpose</b>            | Adjustment                                   |
| <b>Function (Purpose)</b> | Adjust the FAX send image density. (600dpi). |
| <b>Section</b>            |                                              |

#### Operation/Procedure

- 1) Set the original on the original table.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key, or [OK] key

When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

| Item/Display |                  | Content                      | Setting range | Default value |
|--------------|------------------|------------------------------|---------------|---------------|
| A            | AUTO             | 600dpi/Auto 1                | 1 - 99        | 50            |
| B            | EXPOSURE1        | 600dpi/Exposure 1            | 1 - 99        | 50            |
| C            | EXPOSURE2        | 600dpi/Exposure 2            | 1 - 99        | 50            |
| D            | EXPOSURE3        | 600dpi/Exposure 3            | 1 - 99        | 50            |
| E            | EXPOSURE4        | 600dpi/Exposure 4            | 1 - 99        | 50            |
| F            | EXPOSURE5        | 600dpi/Exposure 5            | 1 - 99        | 50            |
| G            | AUTO H_TONE      | 600dpi/Auto /Half tone 1     | 1 - 99        | 50            |
| H            | EXPOSURE1 H_TONE | 600dpi/Exposure 1 /Half tone | 1 - 99        | 50            |
| I            | EXPOSURE2 H_TONE | 600dpi/Exposure 2 /Half tone | 1 - 99        | 50            |
| J            | EXPOSURE3 H_TONE | 600dpi/Exposure 3 /Half tone | 1 - 99        | 50            |
| K            | EXPOSURE4 H_TONE | 600dpi/Exposure 4 /Half tone | 1 - 99        | 50            |
| L            | EXPOSURE5 H_TONE | 600dpi/Exposure 5 /Half tone | 1 - 99        | 50            |

| Item/Display |              | Content     | Setting range | Default value |
|--------------|--------------|-------------|---------------|---------------|
| M            | EXECUTE MODE | AUTO        | 1 - 12        | 1 (AUTO)      |
|              |              | EXP1        |               | 2             |
|              |              | EXP2        |               | 3             |
|              |              | EXP3        |               | 4             |
|              |              | EXP4        |               | 5             |
|              |              | EXP5        |               | 6             |
|              |              | AUTO H_TONE |               | 7             |
|              |              | EXP1 H_TONE |               | 8             |
|              |              | EXP2 H_TONE |               | 9             |
|              |              | EXP3 H_TONE |               | 10            |
|              |              | EXP4 H_TONE |               | 11            |
|              |              | EXP5 H_TONE |               | 12            |

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>46-46</b>              |                                               |
| <b>Purpose</b>            | Adjustment                                    |
| <b>Function (Purpose)</b> | Adjust the FAX send image density. (RGB RIP). |
| <b>Section</b>            |                                               |

#### Operation/Procedure

- 1) Select a target mode for adjustment and place the document on the document table
- 2) Enter the set value with 10-key.
- 3) Press [OK] key

When the set value is in crease , the density becomes higher. when the set value is decreased, the density becomes lower.

| Item/Display |                       | Content                      | Setting range | Default value |
|--------------|-----------------------|------------------------------|---------------|---------------|
| A            | STANDARD RIP          | 600dpi/Auto 1                | 1 - 99        | 50            |
| B            | FINE RIP              | 600dpi/Exposure 1            | 1 - 99        | 50            |
| C            | FINE RIP H TONE       | 600dpi/Exposure 2            | 1 - 99        | 50            |
| D            | SUPER FINE RIP        | 600dpi/Exposure 3            | 1 - 99        | 50            |
| E            | SUPER FINE RIP H TONE | 600dpi/Exposure 4            | 1 - 99        | 50            |
| F            | ULTRA FINE RIP        | 600dpi/Exposure 5            | 1 - 99        | 50            |
| G            | ULTRA FINE RIP H TONE | 600dpi/Auto /Half tone 1     | 1 - 99        | 50            |
| H            | 600DPI RIP            | 600dpi/Exposure 1 /Half tone | 1 - 99        | 50            |
| I            | 600DPI RIP H TONE     | 600dpi/Exposure 2 /Half tone | 1 - 99        | 50            |

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| <b>46-47</b>              |                                                          |
| <b>Purpose</b>            | Setting                                                  |
| <b>Function (Purpose)</b> | Set the compression rate of copy and scan images (JPEG). |
| <b>Section</b>            |                                                          |

#### Operation/Procedure

- 1) Select a target item with scroll keys.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.



| Operation mode                                | Item/Display |             | Content  | Setting range                                | Default value |
|-----------------------------------------------|--------------|-------------|----------|----------------------------------------------|---------------|
| FILING (COLOR mode)                           | A            | FILIN G (C) | LOW      | Low compression (Color)                      | 0             |
|                                               |              |             | MIDDLE   | Meddle compression (Color)                   | 1             |
|                                               |              |             | HIGH     | High compression (Color)                     | 2             |
| FILING (GRAY) (Monochrome half tone mode)     | B            | FILIN G (G) | LOW      | Low compression (Gray)                       | 0             |
|                                               |              |             | MIDDLE   | Meddle compression (Gray)                    | 1             |
|                                               |              |             | HIGH     | High compression (Gray)                      | 2             |
| PRINT HOLD (COLOR mode)                       | C            | PRIN T (C)  | LOW      | Low compression (Color)                      | 0             |
|                                               |              |             | MIDDLE   | Meddle compression (Color)                   | 1             |
|                                               |              |             | HIGH     | High compression (Color)                     | 2             |
| PRINT HOLD (GRAY) (Monochrome half tone mode) | D            | PRIN T (G)  | LOW      | Low compression (Gray)                       | 0             |
|                                               |              |             | MIDDLE   | Meddle compression (Gray)                    | 1             |
|                                               |              |             | HIGH     | High compression (Gray)                      | 2             |
| PUSH SCAN (COLOR mode)                        | E            | SCAN (C)    | MIDDLE 1 | Middle compression mode 1 Low compression    | 0             |
|                                               |              |             | MIDDLE 2 | Middle compression mode 3 Medium compression | 1             |
|                                               |              |             | MIDDLE 3 | Middle compression mode 3 High compression   | 2             |
| PUSH SCAN (GRAY) (Monochrome half tone mode)  | F            | SCAN (G)    | MIDDLE 1 | Middle compression mode 1 Low compression    | 0             |
|                                               |              |             | MIDDLE 2 | Middle compression mode 2 Medium compression | 1             |
|                                               |              |             | MIDDLE 3 | Middle compression 3 High compression        | 2             |

\*1: Setting of compression rate for images when the image compression rate is set to "Medium" in the user mode.

NOTE: When the compression rate is increased, the HDD capacity in the document filing mode is decreased. On the other hand, however, the image quality of some documents may be remarkably reduced.

|                           |                                              |
|---------------------------|----------------------------------------------|
| <b>46-48</b>              |                                              |
| <b>Purpose</b>            | Setting                                      |
| <b>Function (Purpose)</b> | Set the output resolution in each copy mode. |
| <b>Section</b>            |                                              |

#### Operation/Procedure

- 1) Select the output resolution of each copy mode with the key.  
In order to change the reproducibility of line images, change this setting.

600dpi mode: Line images becomes thicker. The reproducibility of line images is increased. 1200dpi mode: Line images are reproduced finer than 600dpi mode.

| Item           | Button display | Content            | Default value |
|----------------|----------------|--------------------|---------------|
| AUTO           | 600DPI ED      | Automatic          | 600DPI ED     |
|                | 600DPI DT      |                    |               |
|                | 1200DPI DT     |                    |               |
| TEXT/PRT PHOTO | 600DPI ED      | Text Printed photo | 600DPI ED     |
|                | 600DPI DT      |                    |               |
|                | 1200DPI DT     |                    |               |
| TEXT/PHOTO     | 600DPI DT      | Text photograph    | 600DPI DT     |
|                | 1200DPI DT     |                    |               |
| PRINTED PHOTO  | 600DPI DT      | Printed photo      | 1200DPI DT    |
|                | 1200DPI DT     |                    |               |
| PHOTO          | 600DPI DT      | Photograph         | 1200DPI DT    |
|                | 1200DPI DT     |                    |               |

\* ED: Error diffusion DT: Dither .

|                           |                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------|
| <b>46-51</b>              |                                                                                                     |
| <b>Purpose</b>            | Adjustment                                                                                          |
| <b>Function (Purpose)</b> | Adjust the gamma for the copy mode heavy paper mode and the image process mode (manual adjustment). |

#### 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.
- 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. A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

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.

| Item/Display | Content        |                                                          |
|--------------|----------------|----------------------------------------------------------|
| HEAVY        | Heavy paper    |                                                          |
| DITH1        | 600dpi Dither  | For PRINTED PHOTO/ PHOTO MODE                            |
| DITH2        | 1200dpi dither | For TEXT PRINTED PHOTO / TEXT PHOTO / PRINTED PHOTO MODE |

| Item/Display |             | Setting range | Default value |
|--------------|-------------|---------------|---------------|
| A - Q        | POINT1 - 17 | 1 - 999       | 500           |

|                           |                                                                                 |
|---------------------------|---------------------------------------------------------------------------------|
| <b>46-52</b>              |                                                                                 |
| <b>Purpose</b>            | Data clear/Reset                                                                |
| <b>Function (Purpose)</b> | Set the gamma default for the copy mode heavy paper and the image process mode. |
| <b>Section</b>            |                                                                                 |

#### 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.

|                           |                                                                    |
|---------------------------|--------------------------------------------------------------------|
| <b>46-54</b>              |                                                                    |
| <b>Purpose</b>            | Adjustment                                                         |
| <b>Function (Purpose)</b> | Perform the engine halftone automatic density adjustment (dither). |
| <b>Section</b>            |                                                                    |

#### 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.)

- 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.

- Press [OK] key.

After completion of the correction amount registration, the screen shifts to the dither selection menu.

- Press [EXECUTE] key.

The 48 patch self print is printed.

- 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.

- After completion of the adjustment of all the density adjustment items (dither), press [OK] key.

#### 46-55

**Purpose** Adjustment/Setup

**Function (Purpose)** 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.

- 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             |

- Scan the document in the image send mode (monochrome manual text mode), and check the adjustment result.

#### 46-58

**Purpose** Adjustment/Setup

**Function (Purpose)** Set the copy mode pseudo resolution (Smoothing process).

**Section**

#### Operation/Procedure

- Select an item (mode) to be set with the button and the scroll key.

- Enter the set value with 10-key.

- Press [OK] key.

1(ON): 9600 (equivalent) x 600 dpi

0 (OFF): 600 x 600 dpi

The setting is reflected only the image edge area.

| Item/Display    | Content (copy mode) | Setting range | Default value |
|-----------------|---------------------|---------------|---------------|
| A AUTO          | Auto                | OFF 0<br>ON 1 | 0 (OFF)       |
| B TEXT          | Text                | OFF 0<br>ON 1 | 1 (ON)        |
| C TEXT PRT      | Text print          | OFF 0<br>ON 1 | 0 (OFF)       |
| D PRINTED PHOTO | Printed Photo       | OFF 0<br>ON 1 | 0 (OFF)       |

| Item/Display         | Content (copy mode)           | Setting range | Default value |
|----------------------|-------------------------------|---------------|---------------|
| E TEXT PHOTO         | Text photograph               | OFF 0<br>ON 1 | 0 (OFF)       |
| F PHOTO              | Photograph                    | OFF 0<br>ON 1 | 0 (OFF)       |
| G MAP                | Map                           | OFF 0<br>ON 1 | 1 (ON)        |
| H LIGHT              | Light document                | OFF 0<br>ON 1 | 0 (OFF)       |
| I CPY TO CPY/AUTO    | Auto (copy document)          | OFF 0<br>ON 1 | 1 (ON)        |
| J CPY TO CPY/TXTE    | Text (copy document)          | OFF 0<br>ON 1 | 0 (OFF)       |
| K CPY TO CPY/TXT PRT | Text print                    | OFF 0<br>ON 1 | 0 (OFF)       |
| L CPY TO CPY/PHOTO   | Printed Photo (copy document) | OFF 0<br>ON 1 | 0 (OFF)       |

#### 46-59

**Purpose** Adjustment/Setup

**Function (Purpose)** Perform the copy mode pseudo resolution image process adjustment.

**Section**

#### Operation/Procedure

- Select the MAIN (main scanning direction) or the SUB (sub scanning direction) button.
- Press the button of the adjustment value of the target copy mode.

**Important**

This adjustment is valid when SIM46-58 Pseudo resolution setting is set to ON. The thickness of images in the section processed by smoothing is changed.

Positive: The image in the section processed by smoothing becomes thicker.

Negative: The image in the section processed by smoothing becomes thinner.

| Mode | Item       | button | Content          | Default value | NOTE                                                                                                                                                                                  |
|------|------------|--------|------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAIN | MONO COPY  | (-)2   | Monochrome copy  | 0             | Main scanning direction smoothing fine adjustment<br>Negative (-) direction: The smoothing section becomes thinner.<br>Positive (+) direction: The smoothing section becomes thicker. |
|      |            | (-)1   |                  |               |                                                                                                                                                                                       |
|      |            | 0      |                  |               |                                                                                                                                                                                       |
|      |            | (+)1   |                  |               |                                                                                                                                                                                       |
|      |            | (+)2   |                  |               |                                                                                                                                                                                       |
|      | MONO PRINT | (-)2   | Monochrome print | 0             |                                                                                                                                                                                       |
|      |            | (-)1   |                  |               |                                                                                                                                                                                       |
|      |            | 0      |                  |               |                                                                                                                                                                                       |
|      |            | (+)1   |                  |               |                                                                                                                                                                                       |
|      |            | (+)2   |                  |               |                                                                                                                                                                                       |
| SUB  | MONO COPY  | (-)2   | Monochrome copy  | 0             |                                                                                                                                                                                       |
|      |            | (-)1   |                  |               |                                                                                                                                                                                       |
|      |            | 0      |                  |               |                                                                                                                                                                                       |
|      |            | (+)1   |                  |               |                                                                                                                                                                                       |
|      |            | (+)2   |                  |               |                                                                                                                                                                                       |
|      | MONO PRINT | (-)2   | Monochrome print | 0             |                                                                                                                                                                                       |
|      |            | (-)1   |                  |               |                                                                                                                                                                                       |
|      |            | 0      |                  |               |                                                                                                                                                                                       |
|      |            | (+)1   |                  |               |                                                                                                                                                                                       |
|      |            | (+)2   |                  |               |                                                                                                                                                                                       |

#### 46-60

**Purpose** Adjustment/Setup

**Function (Purpose)** 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 copy mode and the smoothness (roughness) in the dark area.

| Item/Display | button                     | Content                                                                                                     | Default value | NOTE |
|--------------|----------------------------|-------------------------------------------------------------------------------------------------------------|---------------|------|
| A            | CPY PUSH AUTO FILTER LEVEL | Sharpness (filter) adjustment for the automatic push scan mode (Text, Printed Photo / Printed Photo images) | SOFT 1        | 2    |
|              |                            |                                                                                                             | CENTER 2      |      |
|              |                            |                                                                                                             | HIGH 3        |      |
| B            | B/W COPY                   | Soft filter applying setting in monochrome copy mode                                                        | OFF 0         | 1    |
|              |                            |                                                                                                             | ON 1          |      |
| C            | COLOR PUSH RGB             | Soft filter applying setting to image in push scan color mode                                               | OFF 0         | 1    |
|              |                            |                                                                                                             | ON 1          |      |
| D            | B/W PUSH                   | Soft filter applying setting to image in push scan monochrome mode                                          | OFF 0         | 1    |
|              |                            |                                                                                                             | ON 1          |      |
| E            | B/W PRINT                  | Setting of ON/OFF of soft filter application to monochrome print images                                     | OFF 0         | 0    |
|              |                            |                                                                                                             | ON 1          |      |

46-61

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                              |
| <b>Function (Purpose)</b> | 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.

**Important**

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       |

| Item/Display | Content                                 | Setting range                                              | Default value |
|--------------|-----------------------------------------|------------------------------------------------------------|---------------|
| 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     |
| 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> | Set the operating conditions of the ACS, the area separation, the background image process and the auto exposure mode. |
| <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.

**Important**

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         |
| B            | TEXT_IMAGE       | Text/Image judgment priority level adjustment                           | 0 - 6         |
| C            | TEXT_BLANK       | Text/Blank judgment priority level adjustment                           | 0 - 6         |
| D            | HT_LV            | Dot area judgment threshold value adjustment                            | 0 - 6         |
| E            | AE_AREA_LV       | Color AE judgment target area adjustment                                | 0 - 6         |
| F            | AE_LV_CC         | AE background detection division result adjustment:                     | 0 - 8         |
| G            | AE_LV_MC         | AE background detection division result adjustment:                     | 0 - 8         |
| H            | AE_LV_CS         | AE background detection division result adjustment: For color scan      | 0 - 8         |
| I            | AE_LV_MS         | AE background detection division result adjustment: For monochrome scan | 0 - 8         |
| J            | AE_JUDGE_LV_L_U  | Color AE background density threshold value adjustment (lower limit)    | 0 - 4         |
| K            | AE_JUDGE_LV_L_O  | Color AE background density threshold value adjustment (upper limit)    | 0 - 10        |
| L            | AE_JUDGE_LV_C    | Color AE background detection level adjustment (chroma)                 | 0 - 10        |
| M            | AE_ONOFF_CC      | AE mode ON/OFF switch:                                                  | ON 0<br>OFF 1 |
| N            | AE_ONOFF_MC      | AE mode ON/OFF switch:                                                  | ON 0<br>OFF 1 |
| O            | AE_ONOFF_CS      | AE mode ON/OFF switch : For color scan                                  | ON 0<br>OFF 1 |
| P            | AE_ONOFF_MS      | AE mode ON/OFF switch : For monochrome scan                             | ON 0<br>OFF 1 |
| Q            | BLANK_JUDGE_LV_L | Blank judgment level adjustment (value)                                 | 0 - 10        |
| R            | BLANK_JUDGE_LV_C | Blank judgment level adjustment (chroma)                                | 0 - 10        |
| S            | MODE0_UNDER      | Mode 0 developing paper mode select                                     | 0 - 6         |
| T            | MODE1_UNDER      | Mode 1 developing paper mode select                                     | 0 - 6         |
| U            | MODE5_UNDER      | Mode 5 developing paper mode select                                     | 0 - 6         |
| V            | MODE6_UNDER      | Mode 6 developing paper mode select                                     | 0 - 6         |
| W            | SW_CHANGE_MODE0  | Mode 0: Mode judgment select                                            | 0 - 6         |
| X            | SW_CHANGE_MODE1  | Mode 1: Mode judgment select                                            | 0 - 6         |
| Y            | SW_CHANGE_MODE2  | Mode 2: Mode judgment select                                            | 0 - 6         |
| Z            | SW_CHANGE_MODE3  | Mode 3: Mode judgment select                                            | 0 - 6         |
| AA           | SW_CHANGE_MODE4  | Mode 4: Mode judgment select                                            | 0 - 6         |
| AB           | SW_CHANGE_MODE5  | Mode 5: Mode judgment select                                            | 0 - 6         |
| AC           | SW_CHANGE_MODE6  | Mode 6: Mode judgment select                                            | 0 - 6         |

46-63

|                           |                                                             |
|---------------------------|-------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                  |
| <b>Function (Purpose)</b> | Adjust the density in the low density area of a scan image. |
| <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: TEXT/PRINTED PHOTO | Text print (Color PUSH)      | 1 - 9         |
| B            | COLOR PUSH: TEXT               | Text (Color PUSH)            | 1 - 9         |
| C            | COLOR PUSH: PRINTED PHOTO      | Printed photo (Color PUSH)   | 1 - 9         |
| D            | COLOR PUSH: PHOTOGRAPH         | Photograph (Color PUSH)      | 1 - 9         |
| E            | COLOR PUSH: TEXT/PHOTO         | Text photograph (Color PUSH) | 1 - 9         |
| F            | COLOR PUSH: MAP                | Map (Color PUSH)             | 1 - 9         |

46-66

|                           |                                                                             |
|---------------------------|-----------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                  |
| <b>Function (Purpose)</b> | Adjust the reproduction capability of water marks 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.

| Cat<br>eg<br>ory    | Item/<br>Display |                                      | Content                                          | Sett<br>ing<br>ran<br>ge | Def<br>ault<br>valu<br>e | NOTE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|------------------|--------------------------------------|--------------------------------------------------|--------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PA<br>TT<br>ER<br>N | A                | WOV<br>EN<br>DEN<br>BK<br>LOW        | Watermark<br>density level<br>(LOW)              | 0 -<br>255               | 15                       | The adjustment<br>value is changed to<br>increase or<br>decrease the<br>density of the<br>watermark of<br>background<br>documents.<br>To increase the<br>watermark density,<br>increase the<br>adjustment value.<br>NOTE: When the<br>adjustment value is<br>increased, the<br>watermark area<br>which is originally<br>not reproduced<br>becomes difficult to<br>disappear. When<br>the adjustment<br>value is decreased,<br>the watermark area<br>which is originally<br>reproduced<br>becomes easy to<br>disappear. |
|                     | B                | WOV<br>EN<br>DEN<br>BK<br>MIDD<br>LE | Watermark<br>density level<br>(MIDDLE)           | 0 -<br>255               | 19                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                     | C                | WOV<br>EN<br>DEN<br>BK<br>HIGH       | Watermark<br>density level<br>(HIGH)             | 0 -<br>255               | 23                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                     | D                | CONT<br>RAST                         | Contrast<br>adjustment                           | 0 -<br>255               | 2                        | This is used to<br>adjust the variation<br>in the watermark<br>density when the<br>adjustment value of<br>the watermark print/<br>contrast adjustment<br>in the system<br>setting is changed<br>by 1. When this<br>value is increased,<br>the variation is also<br>increased. When<br>the adjustment<br>value is 0, the result<br>of the contrast<br>adjustment is not<br>reflected. (* The<br>adjustment value<br>must be set to 1 or<br>greater.)                                                                    |
|                     | E                | HT<br>TYPE<br>(POS<br>I)             | For halftone<br>index watermark<br>type positive | 42 -<br>43               | 42                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                     | F                | HT<br>TYPE<br>(NEG<br>A)             | For halftone<br>index watermark<br>type negative | 42 -<br>43               | 42                       | To reproduce the<br>containing<br>characters of<br>watermark copy<br>more clearly, set to<br>43. In that case,<br>however, the<br>containing<br>characters of the<br>watermark<br>document can be<br>easily reproduced.                                                                                                                                                                                                                                                                                                |

| Cat<br>eg<br>ory     | Item/<br>Display |                                                         | Content                                                                                                                               | Sett<br>ing<br>ran<br>ge                                                                                                                                     | Def<br>ault<br>valu<br>e                       | NOTE                                                                   |
|----------------------|------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------|
| CO<br>PY<br>MO<br>DE | A                | TEXT/<br>PRIN<br>TED<br>PHOT<br>O                       | Text/<br>Printed<br>Photo<br>mode                                                                                                     | OFF<br>ON                                                                                                                                                    | 0<br>1                                         | Normally set to the<br>default.<br>No need to change<br>in the market. |
|                      | B                | TEXT                                                    | Text<br>mode                                                                                                                          | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | C                | PRIN<br>TED<br>PHOT<br>O                                | Printed<br>Photo<br>mode                                                                                                              | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | D                | PHOT<br>OGR<br>APH                                      | Photogr<br>aph<br>mode                                                                                                                | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | E                | TEXT/<br>PHOT<br>O                                      | Text/<br>Photogr<br>aph<br>mode                                                                                                       | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | F                | MAP                                                     | Map<br>mode                                                                                                                           | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | G                | LIGH<br>T                                               | Light<br>density<br>docume<br>nt mode                                                                                                 | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | H                | TEXT/<br>PRIN<br>TED<br>PHOT<br>O<br>(CPY<br>TO<br>CPY) | Copy<br>docume<br>nt:<br>selectio<br>n of the<br>text<br>print<br>mode                                                                | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | I                | TEXT<br>(CPY<br>TO<br>CPY)                              | Copy<br>docume<br>nt:<br>selectio<br>n of the<br>text<br>mode                                                                         | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | J                | PRIN<br>TED<br>PHOT<br>O<br>(CPY<br>TO<br>CPY)          | Copy<br>docume<br>nt:<br>selectio<br>n of the<br>printed<br>photo<br>mode                                                             | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | K                | AUTO                                                    | Automa<br>tic<br>mode                                                                                                                 | OFF<br>ON                                                                                                                                                    | 0<br>1                                         |                                                                        |
|                      | L                | DEFA<br>ULT<br>MOD<br>E                                 | When<br>the<br>default<br>exposur<br>e mode<br>backgro<br>und is<br>ON, the<br>exposur<br>e mode<br>to be<br>set is<br>specifie<br>d. | TEX<br>T/<br>PRIN<br>TED<br>PHO<br>TO<br><br>TEX<br>T<br><br>PRIN<br>TED<br>PHO<br>TO<br><br>PHO<br>TOG<br>RAP<br>H<br><br>TEX<br>T/<br>PHO<br>TO<br><br>MAP | 0<br><br>1<br><br>2<br><br>3<br><br>4<br><br>5 |                                                                        |

| Cat<br>eg<br>ory | Item/<br>Display |                     | Content                                                                       | Sett<br>ing<br>ran<br>ge | Def<br>ault<br>valu<br>e | NOTE |
|------------------|------------------|---------------------|-------------------------------------------------------------------------------|--------------------------|--------------------------|------|
| PO<br>SIT<br>ION | A                | LINE<br>SPAC<br>E 1 | Line space in<br>the watermark<br>print box<br>(24P - 36P)                    | 0 -<br>200               | 20                       |      |
|                  | B                | LINE<br>SPAC<br>E 2 | Line space in<br>the watermark<br>print box<br>(37P - 48P)                    | 0 -<br>200               | 20                       |      |
|                  | C                | LINE<br>SPAC<br>E 3 | Line space in<br>the watermark<br>print box<br>(49P - 64P)                    | 0 -<br>200               | 20                       |      |
|                  | D                | LINE<br>SPAC<br>E 4 | Line space in<br>the watermark<br>print box<br>(65P - 80P)                    | 0 -<br>200               | 20                       |      |
|                  | E                | BLAN<br>K H/B<br>1  | Upper margin/<br>Lower margin in<br>the watermark<br>print box (24P -<br>36P) | 0 -<br>200               | 10                       |      |
|                  | F                | BLAN<br>K H/B<br>2  | Upper margin/<br>Lower margin in<br>the watermark<br>print box (37P -<br>48P) | 0 -<br>200               | 10                       |      |
|                  | G                | BLAN<br>K H/B<br>3  | Upper margin/<br>Lower margin in<br>the watermark<br>print box (49P -<br>64P) | 0 -<br>200               | 10                       |      |
|                  | H                | BLAN<br>K H/B<br>4  | Upper margin/<br>Lower margin in<br>the watermark<br>print box (65P -<br>80P) | 0 -<br>200               | 10                       |      |
|                  | I                | BLAN<br>K L/R<br>1  | Left margin/<br>Right margin in<br>the watermark<br>print box (24P -<br>36P)  | 0 -<br>200               | 60                       |      |
|                  | J                | BLAN<br>K L/R<br>2  | Left margin/<br>Right margin in<br>the watermark<br>print box (37P -<br>48P)  | 0 -<br>200               | 90                       |      |
|                  | K                | BLAN<br>K L/R<br>3  | Left margin/<br>Right margin in<br>the watermark<br>print box (49P -<br>64P)  | 0 -<br>200               | 120                      |      |
|                  | L                | BLAN<br>K L/R<br>4  | Left margin/<br>Right margin in<br>the watermark<br>print box (65P -<br>80P)  | 0 -<br>200               | 150                      |      |

46-74

#### Purpose

Adjustment

#### Function (Purpose)

Copy balance adjustment (Auto adjust-  
ment)/Printer balance adjustment (Auto  
adjustment).

#### Section

#### Operation/Procedure

This simulation is used to perform SIM46-24 and SIM67-24 contin-  
uously.

To perform both the copy balance adjustment (Automatic adjust-  
ment) and the printer 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 balance adjustment pattern is  
printed.
- 2) Place the printed adjustment pattern on the document table.
- 3) Press [EXECUTE] key, and the copy balance adjustment is  
performed and the adjustment result pattern is printed.
- 4) Press [EXECUTE] key, and the printer balance adjustment pat-  
tern is printed.
- 5) Place the printed adjustment pattern on the document table
- 6) Press [EXECUTE] key, and the printer 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 adjust-  
ment is completed.

#### Important

The adjustment result becomes effective only when the adjustment  
procedure for both copy and print mode have completed success-  
fully. For example, when the copy balance adjustment (automatic  
adjustment) is performed and the simulation is canceled, the  
adjustment result is not effective.

46-90

#### Purpose

Adjustment

#### Function (Purpose)

Set the process operation of high-compres-  
sion PDF images.

#### Section

#### Operation/Procedure

- 1) Select a target adjustment mode with [TEXT], [COLOR] and  
[BG LAYER] keys.
- 2) Select a target adjustment item with scroll key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key.

The set value is saved.

| Item | Button      | Display                 | Content                               | Setting<br>range | Default<br>value |
|------|-------------|-------------------------|---------------------------------------|------------------|------------------|
| A    | TEXT        | GLYPH<br>SENSITIVITY    | Text handling<br>selection            | 0 - 2            | 0                |
| B    |             | BG SW FOR<br>FINDLINES  | Line handling<br>selection            | 0 - 1            | 0                |
| C    |             | HOR<br>FINDLINES SW     | Line detection<br>SW (H)              | 0 - 2            | 0                |
| D    |             | VERT<br>FINDLINES SW    | Line detection<br>SW (V)              | 0 - 2            | 0                |
| E    |             | FGCOLOR<br>INDEXING SEL | Text color<br>number<br>adjustment SW | 0 - 3            | 0                |
| F    |             | FGCOLOR<br>INDEXING ADJ | Text color<br>adjustment              | 0 - 4            | 2                |
| A    | COLOR       | LUMINANCE<br>ADJUSTMENT | Luminance<br>adjustment               | 0 - 4            | 2                |
| B    |             | CHROMA<br>INTENT        | Chroma<br>selection                   | 0 - 2            | 1                |
| C    |             | NEUTRAL<br>ADJUSTMENT   | Neutral<br>adjustment                 | 0 - 2            | 0                |
| D    |             | R-RATIO<br>ADJUSTMENT   | Gray scale<br>adjustment (R)          | 0 -<br>1000      | 299              |
| E    |             | G-RATIO<br>ADJUSTMENT   | Gray scale<br>adjustment (G)          | 0 -<br>1000      | 587              |
| A    | BG<br>LAYER | BG LAYER<br>INTENT 1    | Speed priority<br>setting             | 0 - 2            | 1                |
| B    |             | BG LAYER<br>INTENT 2    | Image quality<br>priority setting     | 0 - 2            | 1                |



|                           |                                                  |
|---------------------------|--------------------------------------------------|
| <b>46-91</b>              |                                                  |
| <b>Purpose</b>            | Adjustment                                       |
| <b>Function (Purpose)</b> | Adjust the reproduction capability of black text |
| <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. The adjustment value is set.

| Item | Display                               | Content                                    | Description                                                                                       | Setting range | Default value |
|------|---------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------|---------------|---------------|
| A    | SEGMENT PARAM                         | Area separation setting select             | 0: Other than image send mode black text emphasis<br>1: Image send mode black text emphasis       | 0 - 1         | 0             |
| B    | BG: JPEG QUALITY LV [COL: COMPACT]    | JPEG recompression level adjustment        | 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        |                                                                                                   | 0 - 2         | 1             |
| D    | BG: JPEG QUALITY LV [GRY: COMPACT]    | JPEG recompression level adjustment        |                                                                                                   | 0 - 2         | 1             |
| E    | BG: JPEG QUALITY LV [GRY: ULTRA FINE] | JPEG recompression level adjustment        |                                                                                                   | 0 - 2         | 1             |
| F    | FG: TARGET AREA                       | Front ground extraction area select        | 0: type0<br>1: type1<br>2: type2                                                                  | 0 - 2         | 0             |
| G    | FG: TEXT DENSITY [COL]                | Front ground black text density adjustment | The black text density in the front ground layer is changed.                                      | 0 - 10        | 5             |
| H    | FG: TEXT DENSITY [GRY]                | Front ground black text density adjustment | 0: Dark - 5:<br>Default - 10:<br>Light                                                            | 0 - 10        | 5             |
| I    | ULTRA FINE MODE                       | High compression/ Ultra Fine mode select   | 0: High compression mode<br>1: Ultra fine mode                                                    | 0 - 1         | 0             |

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

|                           |                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------|
| <b>48-1</b>               |                                                                                                            |
| <b>Purpose</b>            | Adjustment                                                                                                 |
| <b>Function (Purpose)</b> | Adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction). |
| <b>Section</b>            | Scanner                                                                                                    |

#### Operation/Procedure

- 1) Select a target adjustment item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value is saved.

When the adjustment value is increased, the image magnification ratio is increased.

A change of "1" in the adjustment value of item A, C or E corresponds to a change of about 0.02% in the copy magnification ratio.

A change of "1" in the adjustment value of item B or D corresponds to a change of about 0.1% in the copy magnification ratio.

#### [DSPF-installed model]

| Item/Display | Content    | Setting range                                                          | Default value |
|--------------|------------|------------------------------------------------------------------------|---------------|
| A            | CCD(MAIN)  | SCAN main scanning magnification ratio adjustment (CCD)                | 1 - 99<br>50  |
| B            | CCD(SUB)   | SCAN sub scanning magnification ratio adjustment (CCD)                 | 1 - 99<br>50  |
| C            | SPF(MAIN)  | DSPF document front surface magnification ratio adjustment (Main scan) | 1 - 99<br>50  |
| D            | SPF(SUB)   | DSPF document front surface magnification ratio adjustment (Sub scan)  | 1 - 99<br>50  |
| E            | SPFB(MAIN) | DSPF document back surface magnification ratio adjustment (Main scan)  | 1 - 99<br>50  |

|                           |                                                                                |
|---------------------------|--------------------------------------------------------------------------------|
| <b>48-5</b>               |                                                                                |
| <b>Purpose</b>            | Adjustment                                                                     |
| <b>Function (Purpose)</b> | Correction the scan image magnification ratio (in the sub scanning direction). |
| <b>Section</b>            | Scanner                                                                        |

#### Operation/Procedure

- 1) Select a target adjustment item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key.

The set value is saved.

When the image magnification ratio in the sub scanning direction is adjusted with SIM48-1, and a different magnification ratio is specified, and the image magnification ratio is not satisfactory, perform this adjustment. When there is an error in the image magnification ratio in reduction, change the adjustment value in the high speed mode. When there is an error in the image magnification ratio in enlargement, change the adjustment value in the low speed mode.

| Item/Display | Content  | Setting range                               | Default value |
|--------------|----------|---------------------------------------------|---------------|
| A            | MR (HI)  | Scanner motor (High speed)                  | 1 - 99<br>50  |
| B            | MR(MID)  | Scanner motor (Reference speed)             | 1 - 99<br>50  |
| C            | MR(LO)   | Scanner motor (Low speed)                   | 1 - 99<br>50  |
| D            | SPF(HI)  | Document feed (SPF) motor (High speed)      | 1 - 99<br>50  |
| E            | SPF(MID) | Document feed (SPF) motor (Reference speed) | 1 - 99<br>50  |

#### Scan speed

| Unit | Reference speed |         |        |
|------|-----------------|---------|--------|
|      | HI              | MID     | LO     |
| OC   | 372mm/s         | 186mm/s | 93mm/s |
| DSPF | 372mm/s         | 186mm/s | —      |

|                           |                                          |
|---------------------------|------------------------------------------|
| 48-6                      |                                          |
| <b>Purpose</b>            | Adjustment                               |
| <b>Function (Purpose)</b> | Adjust the rotation speed of each motor. |
| <b>Section</b>            |                                          |

#### Operation/Procedure

- 1) Select a target adjustment item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) 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                                | Setting range | Default value |
|-----------------|----------------------------------------|---------------|---------------|
| A RRM           | Resist motor correction value          | 1 - 99        | 50            |
| B DVM_K         | Developing K motor correction value    | 1 - 99        | 50            |
| C FSM           | Fusing motor correction value          | 1 - 99        | 50            |
| D PFM           | Paper transport motor correction value | 1 - 99        | 50            |
| E POM           | Paper exit motor correction value      | 1 - 99        | 50            |
| F FUSER SETTING | Fusing speed select timing             | 1 - 99        | 50            |
| G RRM START     | RRM speed increasing start timing      | 0 - 255       | 50            |
| H RRM END       | RRM speed increasing end timing        | 0 - 255       | 50            |

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, a jam, paper wrinkle, or image quality trouble may occur.

## 49

|                           |                              |
|---------------------------|------------------------------|
| 49-1                      |                              |
| <b>Purpose</b>            | Version upgrade              |
| <b>Function (Purpose)</b> | Perform the firmware update. |
| <b>Section</b>            |                              |

#### Operation/Procedure

- 1) Save the firmware to the USB memory.
- 2) Insert the USB memory into the main unit. (Use USB I/F of the operation panel section.)
- 3) Select a target firmware file for update with the touch panel.
- 4) Select a target firmware.  
Press [ALL] key to select all the Firmware collectively.
- 5) Press [EXECUTE] key.
- 6) Press [YES] key.  
The selected firmware is updated. When the operation is normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

| Item/Display | Content                                      |
|--------------|----------------------------------------------|
| ICUM(MAIN)   | ICUM Main section                            |
| ICUM(BOOT)   | ICUM boot section                            |
| ICUM(BIOS)   | ICUM BIOS                                    |
| ICU (MAIN)   | ICU Main section former half                 |
| ICU (BOOTM)  | ICU Boot section main                        |
| ICU (SUB)    | ICU sub section                              |
| LANGUAGE     | Language support data program (General term) |
| SLIST        | SLIST data for L-LCD                         |
| PCU (BOOT)   | PCU Boot section                             |
| PCU (MAIN)   | PCU Main section                             |
| DESK (BOOT)  | Desk unit BOOT section                       |
| DESK (MAIN)  | Desk unit MAIN section                       |

| Item/Display   | Content                                 |
|----------------|-----------------------------------------|
| A4LCC (BOOT)   | Side LCC (A4) Boot section              |
| A4LCC (MAIN)   | Side LCC (A4) main section              |
| FIN (BOOT)     | Inner finisher BOOT section             |
| FIN (MAIN)     | Inner finisher MAIN section             |
| SADDLE (BOOT)  | Saddle finisher boot section            |
| SADDLE (MAIN)  | Saddle finisher main section            |
| 1KFIN (BOOT)   | 1K finisher Boot section                |
| 1KFIN (MAIN)   | 1K finisher Main section                |
| 4KFIN(BOOT)    | 4K finisher Boot section                |
| 4KFIN(MAIN)    | 4K finisher Main section                |
| 1KPUNCH (BOOT) | Punch unit Boot section for 1K finisher |
| 1KPUNCH (MAIN) | Punch unit Main section for 1K finisher |
| 4KPUNCH (BOOT) | Punch unit Boot section for 4K finisher |
| 4KPUNCH (MAIN) | Punch unit Main section for 4K finisher |
| SCU (BOOT)     | SCU Boot section                        |
| SCU (MAIN)     | SCU Main section                        |
| DSPF (BOOT)    | DSPF Boot section                       |
| DSPF (MAIN)    | DSPF Main section                       |
| FAX (BOOT)     | FAX1 Boot section                       |
| FAX(MAIN)      | FAX1 Main section                       |
| ACRE (BOOT)    | ACRE Boot section                       |
| ACREM (MAIN)   | ACRE Main section                       |
| ACRE_DATA      | ACRE table                              |

|                           |                                                                 |
|---------------------------|-----------------------------------------------------------------|
| 49-3                      |                                                                 |
| <b>Purpose</b>            | Install                                                         |
| <b>Function (Purpose)</b> | Install and update the Operation Manual data stored in the HDD. |
| <b>Section</b>            |                                                                 |

#### Operation/Procedure

- 1) Insert the USB memory into the main unit.  
\* When the USB is not inserted, "INSERT A STORAGE E-MANUAL STORED ON" is displayed. When [OK] key is pressed, the display is shifted to the folder select menu 1.
- 2) Press the folder button of the operation manual data. (The display is shifted to the operation manual update menu.) The current version and the update version are displayed.
- 3) Press [EXECUTE] key.  
[EXECUTE] key is highlighted, and [YES] [NO] keys becomes active from gray out.
- 4) When [YES] key is pressed, the selected operation manual is updated. When update is completed normally, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| 49-5                      |                                                          |
| <b>Purpose</b>            | Install                                                  |
| <b>Function (Purpose)</b> | Install and update the watermark data stored in the HDD. |
| <b>Section</b>            |                                                          |

#### 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.

|                           |                                  |
|---------------------------|----------------------------------|
| 49-10                     |                                  |
| <b>Purpose</b>            | Install                          |
| <b>Function (Purpose)</b> | Perform the ACU firmware update. |
| <b>Section</b>            |                                  |

#### Operation/Procedure

- 1) Press [EXECUTE] key.

2) Press [YES] key.

**50**

|                           |                                            |
|---------------------------|--------------------------------------------|
| <b>50-1</b>               |                                            |
| <b>Purpose</b>            | Adjustment                                 |
| <b>Function (Purpose)</b> | Copy image position, image loss adjustment |

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

#### Operation/Procedure

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.  
Set the items other than RRCA, LEAD, and SIDE to the default.  
RRCA: Image lead edge reference position adjustment  
LEAD: Lead edge image loss adjustment  
SIDE: Side image loss adjustment
- 3) Press [OK] key. (The set value is saved.)

| Item/Display |                                | Content       |                                                        | Setting range | Default value |
|--------------|--------------------------------|---------------|--------------------------------------------------------|---------------|---------------|
| A            | Lead edge adjustment value     | RRCA          | Document lead edge reference position (OC)             | 0 - 99        | 50            |
| B            |                                | RRCB-CS1      | Resist motor                                           | 1 - 99        | 60            |
| C            |                                | RRCB-DSK      | Standard Tray                                          | 1 - 99        | 60            |
| D            |                                | RRCB-LCC      | Desk                                                   | 1 - 99        | 60            |
| E            |                                | RRCB-MFT      | LCC                                                    | 1 - 99        | 60            |
| F            |                                | RRCB-ADU      | Manual paper feed                                      | 1 - 99        | 60            |
| G            | Image loss area                | LEAD          | Lead edge image loss area setting                      | 0 - 99        | 40            |
| H            | setting value                  | SIDE          | Side image loss area adjustment                        | 0 - 99        | 20            |
| I            | Void area adjustment           | DENA          | Lead edge void area adjustment                         | 1 - 99        | 40            |
| J            |                                | DENB          | Rear edge void area adjustment                         | 1 - 99        | 30            |
| K            |                                | FRONT/REAR    | FRONT/REAR void area adjustment                        | 1 - 99        | 20            |
| L            | Off-center adjustment          | OFFSET_OC     | OC document off-center adjustment                      | 1 - 99        | 50            |
| M            | Magnification ratio correction | SCAN_SPEED_OC | SCAN sub scanning magnification ratio adjustment (CCD) | 1 - 99        | 50            |
| N            | Sub scanning direction         | DENB-MFT      | Manual feed correction value                           | 1 - 99        | 50            |
| O            | print area correction value    | DENB-CS1      | Tray 1 correction value                                | 1 - 99        | 50            |
| P            |                                | DENB-CS2      | Tray 2 correction value                                | 1 - 99        | 50            |
| Q            |                                | DENB-CS3      | Tray 3 correction value                                | 1 - 99        | 50            |
| R            |                                | DENB-CS4      | Tray 4 correction value                                | 1 - 99        | 50            |
| S            |                                | DENB-LCC      | LCC correction value                                   | 1 - 99        | 50            |
| T            |                                | DENB-ADU      | ADU correction value                                   | 1 - 99        | 50            |
| U            |                                | DENB-HV       | Heavy paper correction value                           | 1 - 99        | 50            |

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (0.1mm/step)

\* When the value is decreased, the timing is advanced. When the value is increased, the timing is delayed.

B - F. (RRC-B) Timing of paper (resist roller ON) for the image position on the transfer belt is adjusted. (0.1mm/step)

\* When the value is decreased, the timing is delayed. When the value is increased, the timing is advanced.

G. (LEAD) The lead edge image loss amount is adjusted. (0.1mm/step)

\* When the value is increased, the image loss is increased.

H. (SIDE) The side image loss amount is adjusted.

\* When the value is increased, the image loss is increased. (0.1mm/step)

I. (DEN-A) The paper lead edge void amount is adjusted. (0.1mm/step)

\* When the value is increased, the void is increased.

J. (DEN-B) The paper rear edge void amount is adjusted. (0.1mm/step)

\* When the value is increased, the void is increased.

K. (FRONT/REAR) The void amount on the right and left edges of paper is adjusted. (0.1mm/step)

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| <b>50-5</b>               |                                                          |
| <b>Purpose</b>            | Adjustment                                               |
| <b>Function (Purpose)</b> | Adjust the print lead edge image position (PRINTER MODE) |

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

#### Operation/Procedure

- 1) Select a target adjustment with scroll key on the touch panel.
- 2) Enter the adjustment value using the 10-key.
- 3) Press [EXECUTE] key.  
The set value is saved, and the adjustment check pattern is printed.
- 4) Measure the distance from the paper lead edge the adjustment pattern to the image lead edge, and check to confirm that it is in the standard adjustment value range.  
Standard reference value: 3.0±2.0mm

When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance is decreased. When the set value is changed by 1, the distance is changed by about 0.1mm.

| Item/Display | Content                                            | Setting range | Default value | NOTE                                                                                                                                                                                                                              |
|--------------|----------------------------------------------------|---------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A DEN-C      | Used to adjust the print lead edge image position. | 1 - 99        | 30            | Adjustment value too align the print lead edge for the printer. 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. |

| Item/Display  | Content                                                     | Setting range     | Default value | NOTE                                                                                                                                                                                                                                   |
|---------------|-------------------------------------------------------------|-------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B DEN-B       | Rear edge void area 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 area adjustment                             | 1 - 99            | 20            | Adjustment of the void amount generated on the left and right edges of paper. When the adjustment value is increased, the void amount is increased.                                                                                    |
| D DENB-MFT    | Manual feed rear edge void area adjustment correction value | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| E DENB-CS1    | Tray 1 rear edge void area adjustment correction value      | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| F DENB-CS2    | Tray 2 rear edge void area adjustment correction value      | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| G DENB-CS3    | Tray 3 rear edge void area adjustment correction value      | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| H DENB-CS4    | Tray 4 rear edge void area adjustment correction value      | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| I DENB-LCC    | LCC rear edge void area adjustment correction value         | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| J DENB-ADU    | ADU rear edge void area adjustment correction value         | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| K DENB-HV     | Heavy paper rear edge void area correction value            | 1 - 99            | 50            |                                                                                                                                                                                                                                        |
| L MULTI COUNT | Number of print                                             | 1 - 999           | 1             |                                                                                                                                                                                                                                        |
| M PAPER       | Tray                                                        | Manual paper feed | 1             | 2                                                                                                                                                                                                                                      |
|               |                                                             | Tray 1            | 2             |                                                                                                                                                                                                                                        |
|               |                                                             | Tray 2            | 3             |                                                                                                                                                                                                                                        |
|               |                                                             | Tray 3            | 4             |                                                                                                                                                                                                                                        |
|               |                                                             | Tray 4            | 5             |                                                                                                                                                                                                                                        |
|               |                                                             | LCC               | 6             |                                                                                                                                                                                                                                        |

| Item/Display | Content | Setting range | Default value | NOTE |
|--------------|---------|---------------|---------------|------|
| N DUPL EX    | Duplex  | Yes           | 0             | 1    |
|              |         | No            | 1             |      |

50-6

#### Purpose

Adjustment

#### Function (Purpose)

Adjust the copy image position and the image loss (DSPF 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.
- 3) Press [OK] key. (The set value is saved.)

#### [DSPF-installed model]

| Item/Display                      | Content                                                               | Setting range | Default value |
|-----------------------------------|-----------------------------------------------------------------------|---------------|---------------|
| A SIDE1                           | Front surface document scan position adjustment                       | 1 - 99        | 50            |
| B SIDE2                           | Back surface document scan position adjustment                        | 1 - 99        | 50            |
| C Image loss amount setting SIDE1 | LEAD_EDGE (SIDE1)                                                     | 0 - 99        | 20            |
| D Image loss amount setting SIDE1 | FRONT_REAR (SIDE1)                                                    | 0 - 99        | 20            |
| E Image loss amount setting SIDE1 | TRAIL_EDGE (SIDE1)                                                    | 0 - 99        | 40            |
| F Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2)                                                     | 0 - 99        | 40            |
| G Image loss amount setting SIDE2 | FRONT_REAR (SIDE2)                                                    | 0 - 99        | 20            |
| H Image loss amount setting SIDE2 | TRAIL_EDGE (SIDE2)                                                    | 0 - 99        | 20            |
| I OFFSET_SPF1                     | DSPF front surface document off-center adjustment                     | 1 - 99        | 50            |
| J OFFSET_SPF2                     | DSPF back surface document off-center adjustment                      | 1 - 99        | 50            |
| K SCAN_SPEED_SPF1                 | DSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99        | 50            |

Item A, B: When the adjustment value is increased, the scan timing is delayed.

Item C - H: When the adjustment value is increased, the image loss is increased.

All adjustment items: 1 step = 0.1mm change

50-7

#### Purpose

Adjustment

#### Function (Purpose)

Adjust the copy image position and the image loss (DSPF mode) (simple adjustment).

#### Section

#### Operation/Procedure

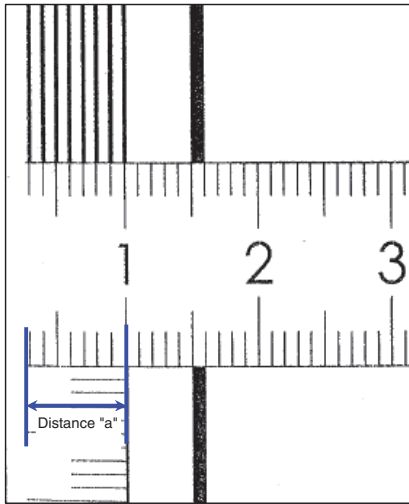
- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Set item A (L4) and item B (L5) to 0.

- 3) Set the magnification ratio to 200%, and make a copy in the DSPF duplex mode.
- 4) Measure the size of the printed image. Enter the actual measurement value of distance a (DSPF) to L4 and L5 in the unit of 0.1mm.

(Adjustment value "1" for 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.)

| Item/Display         | Content                                                                                      | Setting range | Default value |
|----------------------|----------------------------------------------------------------------------------------------|---------------|---------------|
| A L4                 | Distance (SPF 200%, 0.1mm unit) from the front surface image lead edge to the scale of 10mm. | 0 - 999       | -             |
| B L5                 | Distance (SPF 200%, 0.1mm unit) from the back surface image lead edge to the scale of 10mm.  | 0 - 999       | -             |
| C LEAD_EDGE (SIDE1)  | Front surface lead edge image loss amount setting                                            | 0 - 99        | 20            |
| D FRONT_REAR (SIDE1) | Front surface side image loss amount setting                                                 | 0 - 99        | 20            |
| E TRAIL_EDGE (SIDE1) | Front surface rear edge image loss amount setting                                            | 0 - 99        | 30            |
| F LEAD_EDGE (SIDE2)  | Back surface lead edge image loss amount setting                                             | 0 - 99        | 30            |
| G FRONT_REAR (SIDE2) | Back surface side image loss amount setting                                                  | 0 - 99        | 20            |
| H TRAIL_EDGE (SIDE2) | Back surface rear edge image loss amount setting                                             | 0 - 99        | 20            |

Item C - H: When the adjustment value is increased, the image loss is increased.

All adjustment items: 1 step = 0.1mm change

Items C - H are linked with items C - H of SIM50-06.

|                           |                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------|
| <b>50-10</b>              |                                                                                                        |
| <b>Purpose</b>            | Adjustment                                                                                             |
| <b>Function (Purpose)</b> | Adjust the image off-center position. (The adjustment is made separately for each paper feed section.) |
| <b>Section</b>            |                                                                                                        |

#### Operation/Procedure

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [EXECUTE] key. (The set value is saved.)

| Item/Display  | Content                                                                                                                                                 | Setting range     | Default value |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------|
| A BK-MAG      | Main scan print magnification ratio BK                                                                                                                  | 60 - 140          | 116           |
| B MAIN-MFT    | Print off center adjustment value (Manual paper feed)                                                                                                   | 1 - 99            | 60            |
| C MAIN-CS1    | Print off center adjustment value (Tray 1)                                                                                                              | 1 - 99            | 60            |
| D MAIN-CS2    | Print off center adjustment value (Tray 2)                                                                                                              | 1 - 99            | 60            |
| E MAIN-CS3    | Print off center adjustment value (Tray 3)                                                                                                              | 1 - 99            | 60            |
| F MAIN-CS4    | Print off center adjustment value (Tray 4)                                                                                                              | 1 - 99            | 60            |
| G MAIN-LCC    | Print off center adjustment value (Large capacity tray)                                                                                                 | 1 - 99            | 60            |
| H MAIN-ADU    | Print off center adjustment value (Duplex) (NOTE) If the adjustment items A - G are not properly adjusted, this adjustment cannot be executed properly. | 1 - 99            | 42            |
| I SUB-MFT     | Resist motor ON timing adjustment                                                                                                                       | Manual paper feed | 1 - 99        |
| J SUB-CS1     |                                                                                                                                                         | Standard cassette | 1 - 99        |
| K SUB-DESK    |                                                                                                                                                         | Desk              | 1 - 99        |
| L SUB-LCC     |                                                                                                                                                         | LCC               | 1 - 99        |
| M SUB-ADU     |                                                                                                                                                         | ADU               | 1 - 99        |
| N MULTI COUNT | Number of print                                                                                                                                         | 1 - 999           | 1             |
| O PAPER       | Tray selection                                                                                                                                          | Manual paper feed | 1 - 99        |
|               |                                                                                                                                                         | Tray 1            | 1 - 99        |
|               |                                                                                                                                                         | Tray 2            | 1 - 99        |
|               |                                                                                                                                                         | Tray 3            | 1 - 99        |
|               |                                                                                                                                                         | Tray 4            | 1 - 99        |
|               |                                                                                                                                                         | LCC               | 1 - 99        |
| P DUPLEX      | Duplex print selection                                                                                                                                  | Yes               | 1 - 99        |
|               |                                                                                                                                                         | No                | 1 - 99        |

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>50-12</b>              |                                                                                                                |
| <b>Purpose</b>            | Adjustment                                                                                                     |
| <b>Function (Purpose)</b> | Perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.) |
| <b>Section</b>            |                                                                                                                |

#### Operation/Procedure

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image position is shifted to the rear frame side. When the adjustment value is decreased, it is shifted to the front frame side. 1step = 0.1mm

| Item/Display | Content                                       | Setting range | Default value |
|--------------|-----------------------------------------------|---------------|---------------|
| A OC         | Document table image off-center adjustment    | 1 - 99        | 50            |
| B SPF(SIDE1) | SPF front surface image off-center adjustment | 1 - 99        | 50            |
| C SPF(SIDE2) | SPF back surface image off-center adjustment  | 1 - 99        | 50            |



|                           |                                                                                    |
|---------------------------|------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                         |
| <b>Function (Purpose)</b> | Perform the image loss adjustment of scanned images in the FAX or image send mode. |

**Section****Operation/Procedure**

- 1) Select a target adjustment mode with [FAX] or [SCANNER] key.
- 2) Select an adjustment target 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.)

| But ton | Item/Display             | Content                                           | Setting range | Default value |
|---------|--------------------------|---------------------------------------------------|---------------|---------------|
| FAX     | A LEAD EDGE (OC)         | OC lead edge image loss amount setting            | 0 - 100       | 30 (3mm)      |
|         | B FRONT REAR (OC)        | OC side image loss amount setting                 | 0 - 100       | 20 (2mm)      |
|         | C TRAIL EDGE (OC)        | OC rear edge image loss amount setting            | 0 - 100       | 20 (2mm)      |
|         | D LEAD EDGE (SPF SIDE1)  | Front surface lead edge image loss amount setting | 0 - 100       | 20 (2mm)      |
|         | E FRONT REAR (SPF SIDE1) | Front surface side image loss amount setting      | 0 - 100       | 20 (2mm)      |
|         | F TRAIL EDGE (SPF SIDE1) | Front surface rear edge image loss amount setting | 0 - 100       | 30 (3mm)      |
|         | G LEAD EDGE (SPF SIDE2)  | Back surface lead edge image loss amount setting  | 0 - 100       | 30 (3mm)      |
|         | H FRONT REAR (SPF SIDE2) | Back surface side image loss amount setting       | 0 - 100       | 20 (2mm)      |
|         | I TRAIL EDGE (SPF SIDE2) | Back surface rear edge image loss amount setting  | 0 - 100       | 20 (2mm)      |
| SCANNER | A LEAD EDGE (OC)         | OC lead edge image loss amount setting            | 0 - 100       | 0 (0mm)       |
|         | B FRONT REAR(OC)         | OC side image loss amount setting                 | 1 - 99        | 0 (0mm)       |
|         | C TRAIL EDGE(OC)         | OC rear edge image loss amount setting            | 1 - 99        | 0 (0mm)       |
|         | D LEAD EDGE (SPF SIDE1)  | Front surface lead edge image loss amount setting | 1 - 99        | 0 (0mm)       |
|         | E FRONT REAR (SPF SIDE1) | Front surface side image loss amount setting      | 1 - 999       | 0 (0mm)       |
|         | F TRAIL EDGE(SPF SIDE1)  | Front surface rear edge image loss amount setting | 1 - 99        | 0 (0mm)       |
|         | G LEAD EDGE (SPF SIDE2)  | Back surface lead edge image loss amount setting  | 1 - 99        | 0 (0mm)       |
|         | H FRONT REAR (SPF SIDE2) | Back surface side image loss amount setting       | 1 - 99        | 0 (0mm)       |
|         | I TRAIL EDGE(SPF SIDE2)  | Back surface rear edge image loss amount setting  | 1 - 99        | 0 (0mm)       |

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                                                       |
| <b>Function (Purpose)</b> | Automatically adjust the image loss, void area, image off-center, and image magnification ratio. |

**Section****Operation/Procedure**

The following adjustment items can be executed automatically with SIM50-28.

- \* Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
- \* Image off-center adjustment (Print engine section)
- \* Scan image magnification ratio adjustment
- \* Scan image off-center adjustment
- \* Print area (void area) adjustment (Print engine section)
- \* Copy image position, image loss adjustment

| Item/Display    | Content                                                                                                 |
|-----------------|---------------------------------------------------------------------------------------------------------|
| OC ADJ          | Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode) |
| BK-MAG ADJ      | Main scanning direction image magnification ratio adjustment                                            |
| SPF ADJ         | Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)           |
| SETUP/PRINT ADJ | Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment             |
| RESULT          | Adjustment result display                                                                               |
| DATA            | Adjustment operation data display                                                                       |

**(1) Image loss off-center sub scan direction image magnification ratio adjustment (Document table mode)**

- 1) Select [OC ADJ] on the touch panel.
- 2) Select the paper tray to be used for the adjustment pattern print.
- 3) Press [EXECUTE] key, and the adjustment pattern is printed.
- 4) Set the adjustment pattern on the document table.
- 5) Press [EXECUTE] key, and the adjustment pattern is scanned.
- 6) Press [OK] key.

**(2) Main scan direction image magnification ration adjustment**

- 1) Select [BK-MAG ADJ] on the touch panel.
- 2) Select the paper tray to be used for the adjustment pattern print.
- 3) Press [EXECUTE] key, and the adjustment pattern is printed.
- 4) Set the adjustment pattern on the document table.
- 5) Press [EXECUTE] key, and the adjustment pattern is scanned.
- 6) Press [OK] key.

**(3) Image loss off-center sub scan direction image magnification ratio adjustment (DSPF mode)**

- 1) Select [SPF ADJ] on the touch panel.
- 2) Select the adjustment mode; SIDE 1 (Front surface) or SIDE 2 (Back surface) or ALL (Both modes).
- 3) Select the paper tray to be used for the adjustment pattern print.
- 4) Press [EXECUTE] key, and the adjustment pattern is printed.
- 5) Set the adjustment pattern on the DSPF.
- 6) Press [EXECUTE] key, and the adjustment pattern is scanned.  
When ALL is selected in the procedure 2), perform procedures 5) and 6) for both of the front surface and the back surface.
- 7) Press [OK] key.

**(4) Print lead edge adjustment image off-center (Each paper feed tray, duplex mode) adjustment**

- 1) Select [SETUP/PRINT ADJ] on the touch panel.
- 2) Select the adjustment mode; LEAD (print lead edge adjustment) or OFF SET (image off-center) or ALL (both modes).
- 3) Select the paper feed tray for the adjustment pattern print. (Two or more trays can be selected.)
- 4) Press [EXECUTE] key, and the adjustment pattern is printed.
- 5) Set the adjustment pattern on the document table.
- 6) Press [EXECUTE] key, and the adjustment pattern is scanned.



When two or more paper feed trays are selected in the procedure 3), perform procedures 5) and 6) for the adjustment pattern printed with each paper.

7) Press [OK] key.

RESCAN: The adjustment pattern is scanned.

REPRINT: The adjustment pattern is printed again.

RETRY: Shifts to the top menu.

## 51

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| <b>51-1</b>               |                                                    |
| <b>Purpose</b>            | Adjustment                                         |
| <b>Function (Purpose)</b> | Adjust the ON/OFF timing of the transport voltage. |
| <b>Section</b>            | Paper feed, paper reverse/transport                |

### Operation/Procedure

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

When the adjustment value is decreased, the transfer ON/OFF timing for the paper is advanced. When the adjustment value is increased, the timing is delayed. When the adjustment value is changed by 1, the timing is changed by about 10ms. The setting range is -490 - +490ms.

|   | Item/Display  | Content                             | Default value |
|---|---------------|-------------------------------------|---------------|
| A | TC ON TIMING  | Transfer voltage ON timing setting  | 40            |
| B | TC OFF TIMING | Transfer voltage OFF timing setting | 50            |

|                           |                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------|
| <b>51-2</b>               |                                                                                                       |
| <b>Purpose</b>            | Adjustment                                                                                            |
| <b>Function (Purpose)</b> | Adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF resist roller. |
| <b>Section</b>            | Paper feed, paper reverse/transport                                                                   |

### Operation/Procedure

- 1) (When DSPF model)  
Select a target adjustment mode with [REGI1] or [REGI2] or [ENGINE] keys.
- 2) Select a target item to be adjusted with scroll key.
- 3) Enter the set value with 10-key.
- 4) Press [OK] key. (The set value is saved.)

| But ton |   | Item/Display      | Content                                   | Setting range | Default value |
|---------|---|-------------------|-------------------------------------------|---------------|---------------|
| RE GI1  | A | NORMAL PLAIN HIGH | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | B | NORMAL PLAIN LOW  | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | C | NORMAL THIN HIGH  | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | D | NORMAL THIN LOW   | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | E | RANDOM PLAIN HIGH | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | F | RANDOM PLAIN LOW  | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | G | RANDOM THIN HIGH  | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |
|         | H | RANDOM THIN LOW   | DSPF deflection amount adjustment value 1 | 1 - 99        | 50            |

| But ton |   | Item/Display      | Content                                   | Setting range | Default value |
|---------|---|-------------------|-------------------------------------------|---------------|---------------|
| RE GI2  | A | NORMAL PLAIN HIGH | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | B | NORMAL PLAIN LOW  | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | C | NORMAL THIN HIGH  | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | D | NORMAL THIN LOW   | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | E | RANDOM PLAIN HIGH | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | F | RANDOM PLAIN LOW  | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | G | RANDOM THIN HIGH  | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |
|         | H | RANDOM THIN LOW   | DSPF deflection amount adjustment value 2 | 1 - 99        | 50            |

| But<br>ton     | Item/Display |                               | Content                                                   | Setting<br>range | Default<br>value |
|----------------|--------------|-------------------------------|-----------------------------------------------------------|------------------|------------------|
| EN<br>GI<br>NE | A            | TRAY1(S)                      | Main unit cassette deflection adjustment value Small size | 1 - 99           | 66               |
|                | B            | TRAY1(L)                      | Main unit cassette deflection adjustment value Large size | 1 - 99           | 66               |
|                | C            | TRAY1<br>HEAVY A<br>PAPER(S)  | Main unit cassette deflection adjustment value Small size | 1 - 99           | 40               |
|                | D            | TRAY1<br>HEAVY A<br>PAPER(L)  | Main unit cassette deflection adjustment value Large size | 1 - 99           | 40               |
|                | E            | TRAY2(S)                      | Desk cassette deflection adjustment value Small size      | 1 - 99           | 66               |
|                | F            | TRAY2(L)                      | Desk cassette deflection adjustment value Large size      | 1 - 99           | 66               |
|                | G            | TRAY2<br>HEAVY A<br>PAPER(S)  | Desk cassette deflection adjustment value Small size      | 1 - 99           | 40               |
|                | H            | TRAY2<br>HEAVY A<br>PAPER(L)  | Desk cassette deflection adjustment value Large size      | 1 - 99           | 40               |
|                | I            | MANUAL<br>PLAIN<br>PAPER(S)   | Manual feed tray deflection adjustment value Small size   | 1 - 99           | 66               |
|                | J            | MANUAL<br>PLAIN<br>PAPER(L)   | Manual feed tray deflection adjustment value Large size   | 1 - 99           | 66               |
|                | K            | MANUAL<br>HEAVY A<br>PAPER(S) | Manual feed tray deflection adjustment value Small size   | 1 - 99           | 40               |
|                | L            | MANUAL<br>HEAVY A<br>PAPER(L) | Manual feed tray deflection adjustment value Large size   | 1 - 99           | 40               |
|                | M            | MANUAL<br>HEAVY B<br>PAPER(S) | Manual feed tray deflection adjustment value Small size   | 1 - 99           | 40               |
|                | N            | MANUAL<br>HEAVY B<br>PAPER(L) | Manual feed tray deflection adjustment value Large size   | 1 - 99           | 30               |
|                | O            | MANUAL<br>OHP                 | Manual feed tray deflection adjustment value OHP          | 1 - 99           | 40               |
|                | P            | MANUAL<br>ENV                 | Manual feed tray deflection adjustment value Envelope     | 1 - 99           | 40               |
|                | Q            | ADU PLAIN<br>PAPER(S)         | ADU deflection adjustment value Small size                | 1 - 99           | 66               |
|                | R            | ADU PLAIN<br>PAPER(L)         | ADU deflection adjustment value Large size                | 1 - 99           | 66               |
|                | S            | ADU HEAVY<br>A PAPER(S)       | ADU deflection adjustment value Small size                | 1 - 99           | 40               |
|                | T            | ADU HEAVY<br>A PAPER(L)       | ADU deflection adjustment value Large size                | 1 - 99           | 40               |
|                | U            | DESK(S)                       | DESK deflection adjustment value Small size               | 1 - 99           | 66               |
|                | V            | DESK(L)                       | DESK deflection adjustment value Large size               | 1 - 99           | 66               |
|                | W            | DESK<br>HEAVY A<br>PAPER(S)   | DESK deflection adjustment value Small size               | 1 - 99           | 40               |
|                | X            | DESK<br>HEAVY A<br>PAPER(L)   | DESK deflection adjustment value Large size               | 1 - 99           | 40               |
|                | Y            | A4LCC                         | A4LCC/deflection adjustment value                         | 1 - 99           | 66               |

<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).

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

53-6

|                           |                                                        |
|---------------------------|--------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                             |
| <b>Function (Purpose)</b> | Adjust the detection level of the DSPF document width. |

### Section

#### Operation/Procedure

- 1) Open the DSPF paper feed guide to the maximum width.
- 2) Press [EXECUTE] key.  
The maximum width detection level is recognized.
- 3) Open the DSPF paper feed guide to the A4R width.
- 4) Press [EXECUTE] key.  
The A4R width detection level is recognized.
- 5) Open 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 minimum width.
- 8) Press [EXECUTE] key.  
The minimum width detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed and. When the above operation is completed normally, "COMPLETE" is displayed.

|   |            |                                       |
|---|------------|---------------------------------------|
| 1 | TRAYVOLMAX | Tray size volume maximum value        |
| 2 | TRAYVOLA4R | Tray volume A4R size adjustment value |
| 3 | TRAYVOLA5R | Tray volume A5R size adjustment value |
| 4 | TRAYVOLMIN | Tray size volume minimum value        |

53-7

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Purpose</b>            | Adjustment                                  |
| <b>Function (Purpose)</b> | Adjust the DSPF document size width sensor. |

### Section

Automatic document feeder

#### Operation/Procedure

- 1) Select an adjustment target item with scroll key on the touch panel.
- 2) Enter the set value with 10-key.
- 3) Press [OK] key. (The set value is saved.)

| Item/Display |        |                     | Setting<br>range | Default<br>value |
|--------------|--------|---------------------|------------------|------------------|
| A            | AD_MAX | Max. width position | 0 - 1023         | 66               |
| B            | AD_P1  | A4R width position  | 0 - 1023         | 438              |
| C            | AD_P2  | A5R width position  | 0 - 1023         | 699              |
| D            | AD_MIN | Min. width position | 0 - 1023         | 893              |

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>53-8</b>               |                                                                                   |
| <b>Purpose</b>            | Adjustment                                                                        |
| <b>Function (Purpose)</b> | Adjust the document lead edge reference and the DSPF mode document scan position. |
| <b>Section</b>            | Automatic document feeder                                                         |

#### Operation/Procedure

Select an adjustment item with [AUTO] [MANUAL] key.

<AUTO: Document lead edge reference (RRCA) adjustment>  
(Auto adjustment)

- 1) Set a sheet of black paper of A4 or 11"x 8.5" on the document table.
- 2) Press [EXECUTE] key. (The adjustment is performed and the adjustment value is saved.)

| Item/Display         | Content                                 | Setting range         | Default value |
|----------------------|-----------------------------------------|-----------------------|---------------|
| MEASUREMENT DISTANCE | Document lead edge measurement distance | 0-255<br>(0.1mm unit) | -             |
| RRCA                 | Document lead edge reference position   | 0 - 99                | 50            |

NOTE: The AUTO mode must not be used.

<MANUAL: DSPF mode document scan position adjustment>

- 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 ADJUST VALUE | DSPF mode document scan position adjustment (Scanner stop position adjustment) | 1 - 99        | 10            |

When the adjustment value is increased, the scanner stop position in the DSPF mode is shifted to the right.

When the adjustment value is changed by 1, the position is shifted by 0.1mm.

|                           |                                                |
|---------------------------|------------------------------------------------|
| <b>53-9</b>               |                                                |
| <b>Purpose</b>            | Adjustment                                     |
| <b>Function (Purpose)</b> | Set dirt detection for DSPF scanning position. |
| <b>Section</b>            | Automatic document feeder                      |

#### Operation/Procedure

- 1) Select an items to be set with scroll key.
- 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            | SIDEA_SCAN_POSITION_START | SPF front surface optimum scan position detection setting       | OFF    | 0             | 1             |
|              |                           |                                                                 | ON     | 1             |               |
| B            | SIDEA_SCAN_POSITION_STOP  | SPF front surface optimum scan position detection setting       | OFF    | 0             | 1             |
|              |                           |                                                                 | ON     | 1             |               |
| C            | SIDEA_SCAN_POSITION_LEVEL | SPF front surface optimum scan position detection level setting | WEAK   | 0             | 1             |
|              |                           |                                                                 | MIDDLE | 1             |               |
|              |                           |                                                                 | STRONG | 2             |               |
| D            | OC_DIRT_LEVEL             | OC dirt level setting                                           | WEAK   | 0             | 1             |
|              |                           |                                                                 | MIDDLE | 1             |               |
|              |                           |                                                                 | STRONG | 2             |               |
| E            | SIDEA_DIRT_ALARM_LEVEL    | SPF front surface dirt alarm level setting                      | WEAK   | 0             | 1             |
|              |                           |                                                                 | MIDDLE | 1             |               |
|              |                           |                                                                 | STRONG | 2             |               |

| Item/Display |                            | Content                                         |        | Setting range | Default value |
|--------------|----------------------------|-------------------------------------------------|--------|---------------|---------------|
| F            | SIDEB_DIRT_ALARM_LV        | SPF back surface dirt alarm level setting       | WEAK   | 0             | 1             |
|              |                            |                                                 | MIDDLE | 1             |               |
|              |                            |                                                 | STRONG | 2             |               |
| G            | SIDEA_DIRT_SHADIN_G_SET    | SPF front surface streak delete shading setting | OFF    | 0             | 1             |
|              |                            |                                                 | ON     | 1             |               |
| H            | SIDEB_DIRT_SHADIN_G_SET    | SPF back surface streak delete shading setting  | OFF    | 0             | 1             |
|              |                            |                                                 | ON     | 1             |               |
| I            | SCAN_POSITION_PRIORITY_SET | SPF front surface MVIEW/SCU priority setting    | MVIEW  | 0             | 1             |
|              |                            |                                                 | SCU    | 1             |               |
| J            | DIRT_ALARM_PRIORITY_SET    | SPF MVIEW/SCU priority                          | MVIEW  | 0             | 0             |
|              |                            |                                                 | SCU    | 1             |               |

|                           |                               |
|---------------------------|-------------------------------|
| <b>53-10</b>              |                               |
| <b>Purpose</b>            | Adjustment                    |
| <b>Function (Purpose)</b> | SPF dirt detection execution. |
| <b>Section</b>            | Automatic document feeder     |

#### Operation/Procedure

- 1) Press [EXECUTE] key.

| Item      | Content                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------|
| SPF SIDEA | RSPF front surface dirt detection position (main scan position 1 to 8)<br>"-": No dirt, A***: Dirt |
| OC        | OC surface dirt detection position (main scan position 1 to 8)<br>"-": No dirt, ***: Dirt          |

## 55

|                            |                                                                    |
|----------------------------|--------------------------------------------------------------------|
| <b>55-1</b>                |                                                                    |
| <b>Purpose</b>             | Setting                                                            |
| <b>Function (Purpose)</b>  | Set the specifications of the engine control operations. (SOFT SW) |
| <b>Section</b>             |                                                                    |
| <b>Operation/Procedure</b> |                                                                    |

|                            |                                                                    |
|----------------------------|--------------------------------------------------------------------|
| <b>55-2</b>                |                                                                    |
| <b>Purpose</b>             | Setting                                                            |
| <b>Function (Purpose)</b>  | Set the specifications of the scanner control operation. (SOFT SW) |
| <b>Section</b>             |                                                                    |
| <b>Operation/Procedure</b> |                                                                    |

|                            |                                                               |
|----------------------------|---------------------------------------------------------------|
| <b>55-3</b>                |                                                               |
| <b>Purpose</b>             | Setting                                                       |
| <b>Function (Purpose)</b>  | Set the specifications of the controller operation. (SOFT SW) |
| <b>Section</b>             |                                                               |
| <b>Operation/Procedure</b> |                                                               |

|                           |                            |
|---------------------------|----------------------------|
| <b>55-10</b>              |                            |
| <b>Purpose</b>            | Setting                    |
| <b>Function (Purpose)</b> | Set the special stamp text |
| <b>Section</b>            |                            |

#### Operation/Procedure

- 1) Select an item to be set (digit, color, type) with the scroll key.
- 2) Enter the value corresponding to the setting item with 10-key.
- 3) Press [OK] key.

| Item/Display |           |           | Content                  |                            | Setting range                              | Default value |
|--------------|-----------|-----------|--------------------------|----------------------------|--------------------------------------------|---------------|
| A            | 1ST DIGIT |           | First digit (left edge)  |                            | 1 - 90                                     | 1             |
| B            | 2ND DIGIT |           | Second digit             |                            |                                            |               |
| C            | 3RD DIGIT |           | Third digit              |                            | 32 [blank: 20H]                            |               |
| D            | 4TH DIGIT |           | Fourth digit             |                            | 65 - 90<br>[Alphabet: 41H("A") - 5AH("Z")] |               |
| E            | 5TH DIGIT |           | Fifth digit              |                            | 48 - 57<br>[Numeral: 30H("0") - 39H("9")]  |               |
| F            | 6TH DIGIT |           | Sixth digit (right edge) |                            |                                            |               |
| G            | TYPE      | PATTERN 1 | Print composing method   | Edging type                | 0                                          | 1             |
|              |           | PATTERN 2 |                          | OR process type            | 1                                          |               |
|              |           | PATTERN 3 |                          | No-delete-composition type | 2                                          |               |
|              |           |           |                          |                            |                                            |               |

#### Input value

|             |       |    |    |    |    |    |    |
|-------------|-------|----|----|----|----|----|----|
| Print       | Blank | A  | B  | C  | E  | F  | G  |
| Input value | 32    | 65 | 66 | 67 | 69 | 70 | 71 |

|             |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|
| Print       | H  | I  | J  | K  | L  | M  | N  |
| Input value | 72 | 73 | 74 | 75 | 76 | 77 | 78 |

|             |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|
| Print       | O  | P  | Q  | R  | T  | U  | V  |
| Input value | 79 | 80 | 81 | 82 | 84 | 85 | 86 |

|             |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|
| Print       | W  | X  | Y  | Z  | 0  | 1  | 2  |
| Input value | 87 | 88 | 89 | 90 | 48 | 49 | 50 |

|             |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|
| Print       | 3  | 5  | 6  | 7  | 8  | 9  |
| Input value | 51 | 53 | 54 | 55 | 56 | 57 |

## 56

|      |  |
|------|--|
| 56-1 |  |
|------|--|

|                           |                                                                   |
|---------------------------|-------------------------------------------------------------------|
| <b>Purpose</b>            | Data transfer                                                     |
| <b>Function (Purpose)</b> | Transport data between HDD - EEPROM.<br>(Used to repair the PWB.) |

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

#### 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 |

NOTE: The backup data must not be installed to another machine.  
If installed, the adjustment data will be overwritten and a trouble may be generated.

|      |  |
|------|--|
| 56-2 |  |
|------|--|

|                           |                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Data backup                                                                                                             |
| <b>Function (Purpose)</b> | Backup the data in the EEPROM. SD card, and HDD (including user authentication data and address data) to the USB memory |

|                |  |
|----------------|--|
| <b>Section</b> |  |
|----------------|--|

#### 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, HDD  
<EXPORT>  
From EEPROM, SD, 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.

(Machine with the DSK installed)

- 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, HDD  
<EXPORT>  
From EEPROM, SD, HDD to USB MEMORY DEVICE
- 3) Enter the password with 10-key.
- 4) Press [SET] key.
- 5) 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                    | Copy counter/FAX send counter etc. |
|            | 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                                                                             |                          |
| Document filing  | Document filing data                                                                 |                          |

NOTE: The backup data must not be installed to another machine.  
If installed, the adjustment data will be overwritten and a trouble may be generated.

|      |  |
|------|--|
| 56-3 |  |
|------|--|

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| <b>Purpose</b>            | Data backup                                       |
| <b>Function (Purpose)</b> | Backup the document filing data to the USB memory |

|                |     |
|----------------|-----|
| <b>Section</b> | HDD |
|----------------|-----|

#### 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 DEVICE

- 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.

|                           |                                            |
|---------------------------|--------------------------------------------|
| 56-4                      |                                            |
| <b>Purpose</b>            | Data backup                                |
| <b>Function (Purpose)</b> | Backup the JOB log data to the USB memory. |
| <b>Section</b>            | HDD                                        |

#### Operation/Procedure

- Insert the USB memory into the main unit.
- Press [JOB LOG EXPORT] key.
- 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.

|                           |                                                            |
|---------------------------|------------------------------------------------------------|
| 56-5                      |                                                            |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check                    |
| <b>Function (Purpose)</b> | Import the SIM22-6 data to a USB memory in the TEXT format |
| <b>Section</b>            |                                                            |

#### Operation/Procedure

- Insert the USB memory into the main unit.
- Select a kind of data to be imported.
- 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.

|                           |                                                             |
|---------------------------|-------------------------------------------------------------|
| 56-6                      |                                                             |
| <b>Purpose</b>            | Operation data check                                        |
| <b>Function (Purpose)</b> | Import the SIM23-2 data to a USB memory in the TEXT format. |
| <b>Section</b>            | HDD                                                         |

#### Operation/Procedure

- Insert the USB memory into the main unit.
- Select a kind of data to be imported.
- Press [EXECUTE] key, and press [YES] key.

|                           |                                         |
|---------------------------|-----------------------------------------|
| 56-7                      |                                         |
| <b>Purpose</b>            | Adjustment/Setting/Operation data check |
| <b>Function (Purpose)</b> | Import the syslog data to a USB memory. |
| <b>Section</b>            | HDD                                     |

#### Operation/Procedure

- Insert the USB memory into the main unit.
- Select SYSLOG EXPORT to be imported.
- Press [EXECUTE] key, and press [YES] key.

## 60

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| 60-1                      |                                                          |
| <b>Purpose</b>            | Operation test/check                                     |
| <b>Function (Purpose)</b> | Check the operations (read/write) of the MFP PWB memory. |
| <b>Section</b>            | MFP (ICU) PWB                                            |

#### Operation/Procedure

- Press [EXECUTE] key.  
Start the test.

| Result display | Description                            |
|----------------|----------------------------------------|
| OK             | Success                                |
| NG             | Fail                                   |
| NONE           | Not installed (Including DIMM trouble) |
| INVALID        | Execution disable                      |

| SLOT       | Description      |          |
|------------|------------------|----------|
| ICUM SLOT1 | ICUM (standard)  | ON BOARD |
| ICUM SLOT2 | ICUM (expansion) | DIMM     |
| ICU1 SLOT1 | ICU1 (standard)  | ON BOARD |
| ACRE SLOT  | ACRE             | ACRE-    |

## 61

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| 61-1                      |                                                           |
| <b>Purpose</b>            | Operation test/check                                      |
| <b>Function (Purpose)</b> | Check the LSU polygon motor rotation and laser detection. |
| <b>Section</b>            | LSU                                                       |

#### Operation/Procedure

- Press [EXECUTE] key.  
When the operation is completed normally, [OK] is displayed.  
In case of an abnormal end, [NG] is displayed.

| Display               | Content                             |
|-----------------------|-------------------------------------|
| LSU TESTRESULT NG: PG | Polygon mirror rotation abnormality |
| LSU TESTRESULT NG: K  | Laser abnormality (K)               |

|                           |                     |
|---------------------------|---------------------|
| 61-3                      |                     |
| <b>Purpose</b>            | Setting             |
| <b>Function (Purpose)</b> | Set the laser power |
| <b>Section</b>            | LSU                 |

#### Operation/Procedure

- Select a target mode for adjustment with [COPY600], [COPY1200], [PR600/FAX] and [PR1200] on the touch panel.
- Select an adjustment target item with scroll key on the touch panel.
- Enter the adjustment value using the 10-key.
- Press [OK] key. (The set value is saved.)

When the laser power and the DUTY adjustment value are increased, the print density is increased and the line width of line images are increased.

| Item/Display         |   |                              | Content                                    | Setting range | Default value (cpm) |     |     |
|----------------------|---|------------------------------|--------------------------------------------|---------------|---------------------|-----|-----|
|                      |   |                              |                                            |               | 36                  | 46  | 56  |
| CO<br>PY<br>600      | A | LASER POWER MIDDLE (BW)      | Laser power setting/middle speed           | 0 - 255       | 102                 | 118 | 130 |
|                      | B | LASER POWER LOW (BW)         | Laser power setting/low speed              | 0 - 255       | 102                 | 102 | 102 |
|                      | C | LASER POWER MIDDLE SAVE (BW) | Laser power setting/middle speed save mode | 0 - 255       | 102                 | 118 | 130 |
|                      | D | LASER POWER LOW SAVE (BW)    | Laser power setting/low speed save mode    | 0 - 255       | 102                 | 102 | 102 |
|                      | E | LASER DUTY MIDDLE (BW)       | Laser duty select middle speed             | 0 - 255       | 0                   | 0   | 0   |
|                      | F | LASER DUTY LOW (BW)          | Laser duty select low speed                | 0 - 255       | 0                   | 0   | 0   |
|                      | G | LASER DUTY MIDDLE SAVE (BW)  | Laser duty select middle speed save mode   | 0 - 255       | 0                   | 0   | 0   |
|                      | H | LASER DUTY LOW SAVE (BW)     | Laser duty select low speed save mode      | 0 - 255       | 0                   | 0   | 0   |
|                      | I | LASER POWER K1               | Laser power setting K1                     | 0 - 255       | 100                 | 100 | 100 |
|                      | J | LASER POWER K2               | Laser power setting K2                     | 0 - 255       | 100                 | 100 | 100 |
|                      | K | LASER POWER K3               | Laser power setting K3                     | 0 - 255       | 100                 | 100 | 100 |
|                      | L | LASER POWER K4               | Laser power setting K4                     | 0 - 255       | 100                 | 100 | 100 |
| CO<br>PY<br>12<br>00 | A | LASER POWER MIDDLE (BW)      | Laser power setting/middle speed           | 0 - 255       | 102                 | 118 | 130 |
|                      | B | LASER POWER LOW (BW)         | Laser power setting/low speed              | 0 - 255       | 102                 | 102 | 102 |
|                      | C | LASER POWER MIDDLE SAVE (BW) | Laser power setting/middle speed save mode | 0 - 255       | 102                 | 118 | 130 |
|                      | D | LASER POWER LOW SAVE (BW)    | Laser power setting/low speed save mode    | 0 - 255       | 102                 | 102 | 102 |
|                      | E | LASER DUTY MIDDLE (BW)       | Laser duty select middle speed             | 0 - 255       | 0                   | 0   | 0   |
|                      | F | LASER DUTY LOW (BW)          | Laser duty select low speed                | 0 - 255       | 0                   | 0   | 0   |
|                      | G | LASER DUTY MIDDLE SAVE (BW)  | Laser duty select middle speed save mode   | 0 - 255       | 0                   | 0   | 0   |
|                      | H | LASER DUTY LOW SAVE (BW)     | Laser duty select low speed save mode      | 0 - 255       | 0                   | 0   | 0   |

| Item/Display      |   |                              | Content                                    | Setting range | Default value (cpm) |     |     |
|-------------------|---|------------------------------|--------------------------------------------|---------------|---------------------|-----|-----|
|                   |   |                              |                                            |               | 36                  | 46  | 56  |
| PR<br>600/<br>FAX | A | LASER POWER MIDDLE (BW)      | Laser power setting/middle speed           | 0 - 255       | 102                 | 118 | 130 |
|                   | B | LASER POWER LOW (BW)         | Laser power setting/low speed              | 0 - 255       | 102                 | 102 | 102 |
|                   | C | LASER POWER MIDDLE SAVE (BW) | Laser power setting/middle speed save mode | 0 - 255       | 102                 | 118 | 130 |
|                   | D | LASER POWER LOW SAVE (BW)    | Laser power setting/low speed save mode    | 0 - 255       | 102                 | 102 | 102 |
|                   | E | LASER DUTY MIDDLE (BW)       | Laser duty select middle speed             | 0 - 255       | 40                  | 40  | 40  |
|                   | F | LASER DUTY LOW (BW)          | Laser duty select low speed                | 0 - 255       | 40                  | 40  | 40  |
|                   | G | LASER DUTY MIDDLE SAVE (BW)  | Laser duty select middle speed save mode   | 0 - 255       | 40                  | 40  | 40  |
|                   | H | LASER DUTY LOW SAVE (BW)     | Laser duty select low speed save mode      | 0 - 255       | 40                  | 40  | 40  |
| PR1<br>200        | A | LASER POWER MIDDLE (BW)      | Laser power setting/middle speed           | 0 - 255       | 102                 | 118 | 130 |
|                   | B | LASER POWER LOW (BW)         | Laser power setting/low speed              | 0 - 255       | 102                 | 102 | 102 |
|                   | C | LASER POWER LOW SAVE (BW)    | Laser power setting/low speed save mode    | 0 - 255       | 102                 | 118 | 130 |
|                   | D | LASER POWER LOW SAVE (BW)    | Laser power setting/low speed save mode    | 0 - 255       | 102                 | 102 | 102 |
|                   | E | LASER DUTY MIDDLE (BW)       | Laser duty select middle speed             | 0 - 255       | 0                   | 0   | 0   |
|                   | F | LASER DUTY LOW (BW)          | Laser duty select low speed                | 0 - 255       | 0                   | 0   | 0   |
|                   | G | LASER DUTY MIDDLE SAVE (BW)  | Laser duty select middle speed save mode   | 0 - 255       | 0                   | 0   | 0   |
|                   | H | LASER DUTY LOW SAVE (BW)     | Laser duty select low speed save mode      | 0 - 255       | 0                   | 0   | 0   |

61-4

Purpose

Adjustment

Function (Purpose)

Print the print image skew adjustment pattern

Section

LSU

#### Operation/Procedure

- 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.

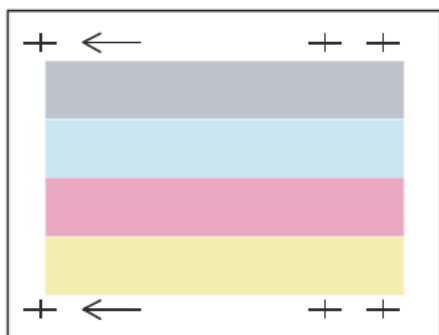


| Item/Display |            | Content                |                |   |                   | Default value            |
|--------------|------------|------------------------|----------------|---|-------------------|--------------------------|
| A            | MULTICOUNT | Print quantity (1-999) |                |   |                   | 1                        |
| B            | PAPER      | MFT                    | Tray selection | 1 | Manual paper feed | 2<br>(Paper feed tray 1) |
|              |            | CS1                    |                | 2 | Paper feed tray 1 |                          |
|              |            | CS2                    |                | 3 | Paper feed tray 2 |                          |
|              |            | CS3                    |                | 4 | Paper feed tray 3 |                          |
|              |            | CS4                    |                | 5 | Paper feed tray 4 |                          |
|              |            | LCC                    |                | 6 | LCC               |                          |

|                           |                                       |
|---------------------------|---------------------------------------|
| <b>61-11</b>              |                                       |
| <b>Purpose</b>            | Adjustment                            |
| <b>Function (Purpose)</b> | Correct the laser power automatically |
| <b>Section</b>            | LSU                                   |

#### Operation/Procedure

- 1) Press [AUTO CORRECTION] key.
- 2) Select a density to be corrected.
- 3) Press [EXECUTE] key.
- 4) Place the printed sample for scanning on the OC in the A4R(LTR) direction.



- 5) Press [EXECUTE] key.

|                           |                               |
|---------------------------|-------------------------------|
| <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.

#### 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.

|                           |                                        |
|---------------------------|----------------------------------------|
| <b>61-13</b>              |                                        |
| <b>Purpose</b>            | Adjustment                             |
| <b>Function (Purpose)</b> | Clear the laser power correction value |
| <b>Section</b>            | LSU                                    |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

|                                                         |  |
|---------------------------------------------------------|--|
| <b>Reference value reset item</b>                       |  |
| Laser power automatic correction amount 32 data (point) |  |
| Laser power manual correction amount 32 data (point)    |  |

## 62

|                           |                                                                                    |
|---------------------------|------------------------------------------------------------------------------------|
| <b>62-1</b>               |                                                                                    |
| <b>Purpose</b>            | Data clear/Reset                                                                   |
| <b>Function (Purpose)</b> | Format the hard disk/SD card (HDD:except operation manual area/SD card:user data). |
| <b>Section</b>            | HDD                                                                                |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

|                           |                                              |
|---------------------------|----------------------------------------------|
| <b>62-2</b>               |                                              |
| <b>Purpose</b>            | Operation test/check                         |
| <b>Function (Purpose)</b> | Check read/write of the hard disk (partial). |
| <b>Section</b>            | HDD                                          |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

|                           |                                                |
|---------------------------|------------------------------------------------|
| <b>62-3</b>               |                                                |
| <b>Purpose</b>            | Operation test/check                           |
| <b>Function (Purpose)</b> | Check read/write of the hard disk (all areas). |
| <b>Section</b>            | HDD                                            |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.

|                           |                                                |
|---------------------------|------------------------------------------------|
| <b>62-6</b>               |                                                |
| <b>Purpose</b>            | Operation test/check                           |
| <b>Function (Purpose)</b> | Perform the self diagnostics of the hard disk. |
| <b>Section</b>            | HDD                                            |

#### Operation/Procedure

- 1) Select the self diag area.
  - 2) Press [EXECUTE] key.
- The self diag operation is performed.

#### NOTE:

E7-03 error occurs. If there may be a trouble in the HDD, use this simulation to check the HDD.

|              |                   |
|--------------|-------------------|
| SHORT S.T    | Partial area diag |
| EXTENDED S.T | All area diag     |

When the operation is completed, [EXECUTE] key returns to the normal display.

Normal completion □ "OK(RESET:0)" is displayed.

Abnormal end □ "NG(RESET: Other than 0)" is displayed.

\* If the simulation cannot be executed or terminated abnormally for some reason, "ERROR" is displayed on the corresponding section.

|                                                                                |                                                 |
|--------------------------------------------------------------------------------|-------------------------------------------------|
| <b>62-7</b>                                                                    |                                                 |
| <b>Purpose</b>                                                                 | Operation test/check                            |
| <b>Function (Purpose)</b>                                                      | Print the hard disk self diagnostics error log. |
| <b>Section</b>                                                                 | HDD                                             |
| <b>Operation/Procedure</b>                                                     |                                                 |
| 1) Press [EXECUTE] key.                                                        |                                                 |
| ERROR LOG SECTOR of the SMART function is executed, and the result is printed. |                                                 |

|                            |                                                                                                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>62-8</b>                |                                                                                                               |
| <b>Purpose</b>             | Data clear/Reset                                                                                              |
| <b>Function (Purpose)</b>  | Format the hard disk/SD card. (HDD:Excluding the system area and the operation manual area/SD card:user area) |
| <b>Section</b>             | HDD                                                                                                           |
| <b>Operation/Procedure</b> |                                                                                                               |
| 1) Press [EXECUTE] key.    |                                                                                                               |
| 2) Press [YES] key.        |                                                                                                               |

|                            |                                     |
|----------------------------|-------------------------------------|
| <b>62-10</b>               |                                     |
| <b>Purpose</b>             | Data clear                          |
| <b>Function (Purpose)</b>  | Clear the job completion list data. |
| <b>Section</b>             | HDD                                 |
| <b>Operation/Procedure</b> |                                     |
| 1) Press [EXECUTE] key.    |                                     |
| 2) Press [YES] key.        |                                     |

|                            |                                 |
|----------------------------|---------------------------------|
| <b>62-11</b>               |                                 |
| <b>Purpose</b>             | Data clear                      |
| <b>Function (Purpose)</b>  | Delete the document filing data |
| <b>Section</b>             | HDD                             |
| <b>Operation/Procedure</b> |                                 |
| 1) Press [EXECUTE] key.    |                                 |
| 2) Press [YES] key.        |                                 |

|                                     |                                                           |
|-------------------------------------|-----------------------------------------------------------|
| <b>62-12</b>                        |                                                           |
| <b>Purpose</b>                      | Setting                                                   |
| <b>Function (Purpose)</b>           | Set Enable/Disable of auto format in a hard disk trouble. |
| <b>Section</b>                      | HDD                                                       |
| <b>Operation/Procedure</b>          |                                                           |
| 1) Enter the set value with 10-key. |                                                           |
| 2) Press [OK] key.                  |                                                           |
| The set value is saved.             |                                                           |

When it is set to Enable, if a read error of HDD occurs in the system data storage area (FAX/device cloning data, etc.), only the system data storage area is cleared.

|   |   |                   |
|---|---|-------------------|
| A | 0 | Enable            |
|   | 1 | Disable (Default) |

|                           |                                                                  |
|---------------------------|------------------------------------------------------------------|
| <b>62-13</b>              |                                                                  |
| <b>Purpose</b>            | Data clear/Reset                                                 |
| <b>Function (Purpose)</b> | Format the hard disk. (only operation manual and watermark data) |
| <b>Section</b>            | HDD                                                              |

## Operation/Procedure

- 1) Press [EXECUTE] key.
  - 2) Press [YES] key.
- The operation manual data are deleted.

|                                                             |                                            |
|-------------------------------------------------------------|--------------------------------------------|
| <b>62-14</b>                                                |                                            |
| <b>Purpose</b>                                              | Data clear                                 |
| <b>Function (Purpose)</b>                                   | Delete the document filing management data |
| <b>Section</b>                                              | HDD                                        |
| <b>Operation/Procedure</b>                                  |                                            |
| 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.                     |                                            |

## Note

This simulation may not function with some firmware versions. In such a case, the firmware must be upgraded to the latest version.

|                                                                              |                                                |
|------------------------------------------------------------------------------|------------------------------------------------|
| <b>62-20</b>                                                                 |                                                |
| <b>Purpose</b>                                                               | Data clear/Reset                               |
| <b>Function (Purpose)</b>                                                    | Check the operation of the mirroring hard disc |
| <b>Section</b>                                                               | HDD                                            |
| <b>Operation/Procedure</b>                                                   |                                                |
| 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

|                                                                             |                                        |
|-----------------------------------------------------------------------------|----------------------------------------|
| <b>63-1</b>                                                                 |                                        |
| <b>Purpose</b>                                                              | Information display                    |
| <b>Function (Purpose)</b>                                                   | Display the shading correction result. |
| <b>Section</b>                                                              | Scanner                                |
| <b>Operation/Procedure</b>                                                  |                                        |
| 1) Select a mode.                                                           |                                        |
| 2) Select a target color to display with [R] [G] [B] key on the touch panel |                                        |

| Button | Item/Display | Content |
|--------|--------------|---------|
|--------|--------------|---------|

|      |                           |                                                                          |
|------|---------------------------|--------------------------------------------------------------------------|
| OC   | 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                                   |
|      | SMP AVE EVEN              | Reference plate sampling average value                                   |
|      | TARGET VALUE              | Target value                                                             |
|      | BLACK LEVEL               | Black output level                                                       |
|      | ERROR CODE                | 0: No error                                                              |
|      |                           | 1: Loop number over                                                      |
|      |                           | 2: The target value is under the specified value                         |
|      |                           | 3: The gain set value is negative                                        |
|      |                           | 4: END is not asserted (gain adjustment)                                 |
|      |                           | 5: Retry max                                                             |
|      |                           | 6: Underflow                                                             |
|      |                           | 7: Black shading error                                                   |
|      |                           | 8: Other error                                                           |
|      |                           | 9: END is not asserted (white shading)                                   |
|      |                           | 10: END is not asserted (black shading)                                  |
|      |                           | 11: END is not asserted (light quantity correction)                      |
|      |                           | 12: END is not asserted (scan)                                           |
|      |                           | 13: Register check error (white booting/gain)                            |
|      |                           | 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 |
| DSPF | ANALOG GAIN ODD           | Max. density judgment value                                              |
|      | ANALOG GAIN EVEN          | Max. density position                                                    |
|      | DIGITAL GAIN ODD          | LED DA adjustment value                                                  |
|      | DIGITAL GAIN EVEN         | LED DA adjustment save value                                             |
|      | SMP AVE ODD               | Gain adjustment save value                                               |
|      | SMP AVE EVEN              | Target save value                                                        |
|      | TARGET VALUE              | White plate scan ratio                                                   |
|      | BLACK LEVEL               | Black offset set value (1-12 area)                                       |
|      | ERROR CODE                | 0: No error                                                              |
|      |                           | 1: Loop number over                                                      |
|      |                           | 2: The target value is under specified value                             |
|      |                           | 3: The gain set value is negative                                        |
|      |                           | 4: END is not asserted (gain adjustment)                                 |
|      |                           | 5: Retry max                                                             |
|      |                           | 6: Underflow                                                             |
|      |                           | 7: Black shading error                                                   |
|      |                           | 8: Other error                                                           |
|      |                           | 9: END is not asserted (white shading)                                   |
|      |                           | 10: END is not asserted (black shading)                                  |
|      |                           | 11: END is not asserted (light quantity correction)                      |
|      |                           | 12: END is not asserted (scan)                                           |
|      |                           | 13: Register check error (white booting/gain)                            |
|      |                           | 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       |
| <b>Function (Purpose)</b> | Perform shading. |
| <b>Section</b>            | Scanner          |

**Operation/Procedure**

DSPF-installed model

- 1) Select [OC SHADING] key or [DSPF SHADING] key, and press [EXECUTE] key.

63-3

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment                                                     |
| <b>Function (Purpose)</b> | Perform scanner (CCD) color balance and gamma auto adjustment. |
| <b>Section</b>            | Scanner                                                        |

**Operation/Procedure**

- 1) Place the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) on the reference position of the left rear frame side of the document table and place the SIT chart backside up on the DSPF tray.
- 2) Select [OC] key or [DSPF] key.
- 3) Press [EXECUTE] key.  
The scanner (CCD) color balance automatic adjustment is performed.

After completion of the operation, press [RESULT] key, and the adjustment data are displayed. At that time, the target color of data display can be selected with [R] [G] [B] key.

63-4

|                           |                                      |
|---------------------------|--------------------------------------|
| <b>Purpose</b>            | Information display                  |
| <b>Function (Purpose)</b> | Display the SIT chart patch density. |
| <b>Section</b>            | Scanner                              |

**Operation/Procedure**

- 1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) to the reference position on the left rear frame side of the document table and place the SIT chart backside up on the DSPF tray.
- 2) Select [OC] key or [DSPF] key.
- 3) Press [EXECUTE] key.  
The patch of the SIT chart is scanned.  
When the operation is completed, [EXECUTE] key returns to the normal display.
- 4) Select a data display mode.

|               |                                                               |
|---------------|---------------------------------------------------------------|
| THROUGH GAMMA | SIT chart scan data                                           |
| COPY GAMMA    | Copy mode gamma process data of the SIT chart scan data       |
| SCANNER GAMMA | Image send mode gamma process data of the SIT chart scan data |

Select an target display color with [R] [G] [B] keys

63-5

|                           |                                                                    |
|---------------------------|--------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                                                   |
| <b>Function (Purpose)</b> | Perform the scanner (CCD) color balance and gamma default setting. |
| <b>Section</b>            | Scanner                                                            |

**Operation/Procedure**

- 1) Select [SIDE A(OC)] key or [SIDE B(DSPF)] key.
- 2) Press [EXECUTE] key, and press [OK] key  
The scanner (CCD) color balance and gamma are set to the default.

|                                                                         |                                                         |
|-------------------------------------------------------------------------|---------------------------------------------------------|
| <b>63-11</b>                                                            |                                                         |
| <b>Purpose</b>                                                          | Adjustment/Setup                                        |
| <b>Function (Purpose)</b>                                               | Set standard target of engine halftone auto adjustment. |
| <b>Section</b>                                                          | Scanner                                                 |
| <b>Operation/Procedure</b>                                              |                                                         |
| 1) Select the target color balance with the touch panel<br>Default.DEF1 |                                                         |

## 64

|                                                                                                                                 |                          |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>64-2</b>                                                                                                                     |                          |
| <b>Purpose</b>                                                                                                                  | Self print               |
| <b>Function (Purpose)</b>                                                                                                       | Test print (Self print). |
| <b>Section</b>                                                                                                                  | Scanner                  |
| <b>Operation/Procedure</b>                                                                                                      |                          |
| 1) Set the print conditions.<br>Select an item to be print condition with scroll keys.<br>Set the print conditions with 10-key. |                          |
| 2) Press [EXECUTE] key.<br>The test print (self print) is performed.                                                            |                          |

| Item/Display | Content                                                    | Setting range                                                                                                                                            | Default value |
|--------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| A            | PRINT PATTERN<br>(1,2,9 - 11,17 - 19, 21, 22, 29, 33 - 35) | Print pattern specification (* For details, refer to the description below.)<br>1, 2, 9 - 11, 15 - 19, 21, 22, 29, 33 - 35                               | 1             |
| B            | DOT1<br>(DOT1>=2 IF A:2,11)                                | Setting of print dot number (M parameter) (Self print pattern: m by n)<br>Pattern 2,11: 2-255 except above: 1-255                                        | 1             |
| C            | DOT2<br>(DOT2>=2 IF A:2,11)                                | Setting of blank dot number (N parameter) (Self print pattern: m by n)<br>Pattern2, 11: 2-255 except above: 0-255                                        | 254           |
| D            | DENSITY<br>(FIXED "255" IF A: 9)                           | Used to specify the print gradation.<br>Pattern 9: 255 Fixed except above: 1-255                                                                         | 255           |
| E            | MULTI COUNT                                                | Number of print<br>1 - 999                                                                                                                               | 1             |
| F            | EXPOSURE<br>(2 - 9 IF A: 15 - 19, 33 - 35)                 | Exposure mode specification<br>THROUGH 1<br>CHAR/PIC 2<br>CHAR/PRPIC 3<br>CHAR 4<br>PRINT PIC 5<br>PRINT PAPER 6<br>MAP 7<br>STANDARD DITHER 8<br>AUTO 9 | 8             |
| G            | PAPER                                                      | Tray selection<br>Manual paper feed 1<br>Tray 1 2<br>Tray 2 3<br>Tray 3 4<br>Tray 4 5<br>LCC 6                                                           | 2             |
| H            | DUPLEX                                                     | Duplex print<br>YES 0<br>NO 1                                                                                                                            | 1             |

| Item/Display | Content    | Setting range                                                                                                                | Default value |
|--------------|------------|------------------------------------------------------------------------------------------------------------------------------|---------------|
| I            | PAPER TYPE | Paper type<br>Standard paper 1<br>Heavy paper 2<br>OHP 3<br>Envelope 4<br>Heavy paper2 5<br>Glossy paper 6<br>Heavy paper3 7 | 1             |

### <Print pattern of Item A>

| Pattern No. | Content                                      | Pattern generating section |
|-------------|----------------------------------------------|----------------------------|
| 1           | Grid pattern                                 | LSU-ASIC                   |
| 2           | Dot print                                    |                            |
| 9           | 10% area (A4/A4R) density print              |                            |
| 10          | Belt print                                   |                            |
| 11          | Dot print (sub scan)                         |                            |
| 17          | Halftone pattern (all over the page)         | Controller (Memory)        |
| 18          | 256 gradations pattern (Other dither)        |                            |
| 19          | 256 gradations pattern (straight) 600dpi     |                            |
| 21          | 4-point dot print (main scan)                | LSU-ASIC                   |
| 22          | Slant line                                   |                            |
| 29          | Dot print 1200dpi                            |                            |
| 33          | Halftone pattern 1200dpi (all over the page) | Controller (Memory)        |
| 34          | 256 gradation pattern 1200dpi                |                            |
| 35          | 256 gradation pattern (straight) 1200dpi     |                            |

|                                                                                                                                 |                                  |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>64-4</b>                                                                                                                     |                                  |
| <b>Purpose</b>                                                                                                                  | Self print                       |
| <b>Function (Purpose)</b>                                                                                                       | Printer test print (Self print). |
| <b>Section</b>                                                                                                                  | Scanner                          |
| <b>Operation/Procedure</b>                                                                                                      |                                  |
| 1) Set the print conditions.<br>Select an item to be print condition with scroll keys.<br>Set the print conditions with 10-key. |                                  |
| 2) Press [EXECUTE] key.                                                                                                         |                                  |
| 3) The test print (self print) is performed.                                                                                    |                                  |

| Item/Display | Content       | Setting range                                                                                             | Default value |
|--------------|---------------|-----------------------------------------------------------------------------------------------------------|---------------|
| A            | PRINT PATTERN | Print pattern specification (* For details, refer to the description below.)<br>1 - 3                     | 3             |
| B            | DENSITY       | specify the print gradation.<br>1 - 255                                                                   | 128           |
| C            | MULTI COUNT   | Number of print<br>1 - 999                                                                                | 1             |
| D            | PAPER         | Paper feed tray selection<br>Manual paper feed 1<br>Tray 1 2<br>Tray 2 3<br>Tray 3 4<br>Tray 4 5<br>LCC 6 | 2             |
| E            | HALFTONE      | Halftone<br>Low line number 0<br>High line number 1                                                       | 0             |
| F            | QUALITY       | Image quality setting<br>Standard 0<br>High quality 1<br>Fine 2                                           | 1             |
| G            | DITHER        | Dither correction<br>Straight 0<br>Calibration 1                                                          | 1             |
| H            | PAPER TYPE    | Paper type<br>Standard paper 0<br>Heavy paper 1<br>Heavy paper2 2<br>Heavy paper3 3<br>Glossy paper 4     | 0             |

# <Print pattern of Item A>

| Pattern No. | Content                |
|-------------|------------------------|
| 1           | 256 gradations pattern |
| 2           | Half tone pattern      |
| 3           | Dot, background        |

|                           |                                  |
|---------------------------|----------------------------------|
| 64-5                      |                                  |
| <b>Purpose</b>            | Self print                       |
| <b>Function (Purpose)</b> | Printer test print (Self print). |
| <b>Section</b>            | Scanner                          |

## Operation/Procedure

- Set the print conditions.  
Select an item to be print condition with scroll keys.  
Set the print conditions with 10-key.
- Press [EXECUTE] key.  
The test print (self print) is performed.

| Item/Display | Content         | Setting range                 | Default value           |
|--------------|-----------------|-------------------------------|-------------------------|
| A            | PRINT PATTERN   | Print pattern specification   | 1                       |
| B            | DENSITY         | Print gradation specification | 1 - 255                 |
| C            | MULTI COUNT     | Number of print               | 1 - 999                 |
| D            | PAPER           | Paper feed tray selection     | Manual paper feed       |
|              |                 | Tray 1                        | 2                       |
|              |                 | Tray 2                        | 3                       |
|              |                 | Tray 3                        | 4                       |
|              |                 | Tray 4                        | 5                       |
|              |                 | LCC                           | 6                       |
| E            | HALFTONE        | Halftone                      | Image                   |
|              |                 | Text                          | 0                       |
| F            | QUALITY         | Image quality setting         | Standard (600dpi, 1bit) |
|              |                 | High quality (600dpi, 4bit)   | 1                       |
|              |                 | Fine (1200dpi, 1bit)          | 2                       |
| G            | DITHER          | Dither correction             | straight                |
|              |                 | calibration                   | 0                       |
| H            | PAPER TYPE      | Paper type                    | Standard paper          |
|              |                 | Heavy paper                   | 1                       |
|              |                 | Heavy paper2                  | 2                       |
|              |                 | Heavy paper3                  | 3                       |
|              |                 | Glossy paper                  | 4                       |
| I            | TONER SAVE MODE | Toner save mode               | not set                 |
|              |                 | set                           | 0                       |

|                           |                                       |
|---------------------------|---------------------------------------|
| 64-6                      |                                       |
| <b>Purpose</b>            | Self print                            |
| <b>Function (Purpose)</b> | Printer test print (Self print) (PS). |
| <b>Section</b>            | Scanner                               |

## Operation/Procedure

- Set the print conditions.  
Select an item to be print condition with scroll keys.  
Set the print conditions with 10-key.
- Press [EXECUTE] key.  
The test print (self print) is performed.

| Item/Display | Content       | Setting range                 | Default value |
|--------------|---------------|-------------------------------|---------------|
| A            | PRINT PATTERN | Print pattern specification   | 1             |
| B            | DENSITY       | Print gradation specification | 1 - 255       |
| C            | MULTI COUNT   | Number of print               | 1 - 999       |

| Item/Display | Content         | Setting range               | Default value           |
|--------------|-----------------|-----------------------------|-------------------------|
| D            | PAPER           | Paper feed tray selection   | Manual paper feed       |
|              |                 | Tray 1                      | 2                       |
|              |                 | Tray 2                      | 3                       |
|              |                 | Tray 3                      | 4                       |
|              |                 | Tray 4                      | 5                       |
|              |                 | LCC                         | 6                       |
| E            | HALFTONE        | Halftone                    | Image                   |
|              |                 | Text                        | 0                       |
| F            | QUALITY         | Image quality setting       | Standard (600dpi, 1bit) |
|              |                 | High quality (600dpi, 4bit) | 1                       |
|              |                 | Ultra Fine (1200dpi, 1bit)  | 2                       |
| G            | DITHER          | Dither correction           | straight                |
|              |                 | calibration                 | 0                       |
| H            | PAPER TYPE      | Paper type                  | Standard paper          |
|              |                 | Heavy paper                 | 1                       |
|              |                 | Heavy paper2                | 2                       |
|              |                 | Heavy paper3                | 3                       |
|              |                 | Glossy paper                | 4                       |
| I            | TONER SAVE MODE | Toner save mode             | not set                 |
|              |                 | set                         | 0                       |

## 65

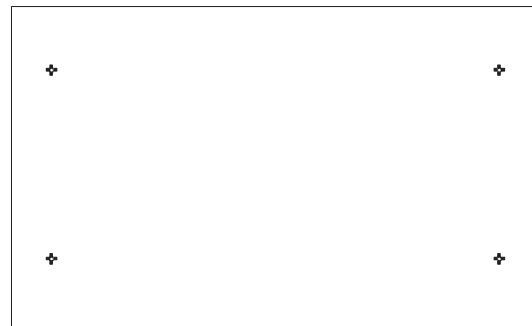
|                           |                                                                     |
|---------------------------|---------------------------------------------------------------------|
| 65-1                      |                                                                     |
| <b>Purpose</b>            | Adjustment                                                          |
| <b>Function (Purpose)</b> | Adjust the touch panel (LCD display section) detection coordinates. |
| <b>Section</b>            | Operation unit<br>(Operation/Display control PWB)                   |

## Operation/Procedure

Touch the center of the cross mark at the four corners of the screen.

When the adjustment is completed normally, the screen shifts to the simulation sub number entry menu.

In case of an error, the screen returns to the adjustment menu.

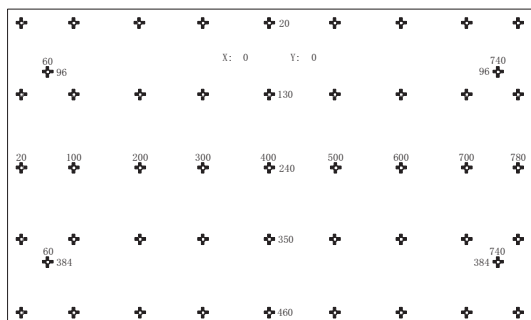


|                           |                                                                      |
|---------------------------|----------------------------------------------------------------------|
| <b>65-2</b>               |                                                                      |
| <b>Purpose</b>            | Information display                                                  |
| <b>Function (Purpose)</b> | Display the touch panel (LCD display section) detection coordinates. |
| <b>Section</b>            | Operation unit<br>(Operation/Display control PWB)                    |

#### Operation/Procedure

Touch the touch panel.

The coordinates X (horizontal direction) and Y (vertical direction) of the touched position is displayed in real time.



|                           |                                                   |
|---------------------------|---------------------------------------------------|
| <b>65-5</b>               |                                                   |
| <b>Purpose</b>            | Operation test/check                              |
| <b>Function (Purpose)</b> | Used to check the operation panel key input.      |
| <b>Section</b>            | Operation unit<br>(Operation/Display control PWB) |

#### Operation/Procedure

Press the keys sequentially according to the guidance displayed on the screen.

If the key entry is effective, the guidance for pressing the next key is displayed. When all the key entries are completed, "COMPLETE" is displayed.

## 67

|                           |                          |
|---------------------------|--------------------------|
| <b>67-17</b>              |                          |
| <b>Purpose</b>            | Data clear/Reset         |
| <b>Function (Purpose)</b> | Printer controller reset |
| <b>Section</b>            |                          |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The set data related to the printer are initialized.

|                           |                                              |
|---------------------------|----------------------------------------------|
| <b>67-24</b>              |                                              |
| <b>Purpose</b>            | Adjustment/Setup                             |
| <b>Function (Purpose)</b> | Printer density adjustment (Auto adjustment) |
| <b>Section</b>            |                                              |

#### Operation/Procedure

- 1) Press [EXECUTE] key.  
The patch image (adjustment pattern) is printed out.
- 2) Place the printed adjustment pattern on the document table.
- 3) Press [EXECUTE] key.  
The printer density auto adjustment is performed, and the adjustment result is printed.
- 4) Press [OK] key.

|                           |                                                |
|---------------------------|------------------------------------------------|
| <b>67-25</b>              |                                                |
| <b>Purpose</b>            | Adjustment                                     |
| <b>Function (Purpose)</b> | Printer density adjustment (Manual adjustment) |
| <b>Section</b>            |                                                |

#### Operation/Procedure

- 1) Select a target adjustment density level 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.

When [EXECUTE] key is pressed, the check pattern in printed in the density corresponding to the adjustment value.

A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

| Item/Display           | Setting range | Default value |
|------------------------|---------------|---------------|
| A - Q POINT1 - POINT17 | 1 - 99        | 50            |

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| <b>67-26</b>              |                                                                                           |
| <b>Purpose</b>            | Adjustment/Setup                                                                          |
| <b>Function (Purpose)</b> | Set the standard scanner target of Printer engine halftone adjustment (Manual adjustment) |
| <b>Section</b>            |                                                                                           |

#### Operation/Procedure

- 1) Select the target color balance with the touch panel.  
Default DEF1.

|                           |                                                                       |
|---------------------------|-----------------------------------------------------------------------|
| <b>67-31</b>              |                                                                       |
| <b>Purpose</b>            | Data clear                                                            |
| <b>Function (Purpose)</b> | Clear the printer calibration value (Half-tone process control data). |
| <b>Section</b>            |                                                                       |

#### Operation/Procedure

- 1) Press [EXECUTE] key.
- 2) Press [YES] key.  
The printer calibration data (Half tone correction data) are cleared.  
(The printer density correction is canceled.)

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| <b>67-33</b>              |                                                          |
| <b>Purpose</b>            | Adjustment                                               |
| <b>Function (Purpose)</b> | Adjust the gamma and the density in each printer screen. |
| <b>Section</b>            |                                                          |

#### Operation/Procedure

- 1) Select a target screen with [SCREEN] key.
  - 2) Select a target adjustment density level with scroll key.
  - 3) Enter the set value with 10-key.
  - 4) Press [OK] key. (The set value is saved.)
- When [EXECUTE] key is pressed, the check pattern in printed in the density corresponding to the adjustment value.
- A4R (11" x 8.5"R) paper is selected by priority. If there is no A4R (11" x 8.5"R) paper, A3 (11" x 17") paper is selected.

| Screen      | Content                  |
|-------------|--------------------------|
| HEAVY PAPER | Heavy paper mode         |
| SCREEN1     | 600dpi 1bit screen       |
| SCREEN2     | 600dpi 4 bit low (photo) |



| Screen  | Content                      |
|---------|------------------------------|
| SCREEN3 | 600dpi 4 bit high (graphics) |
| SCREEN4 | 1200dpi 1 bit low            |
| SCREEN5 | 1200dpi 1 bit high           |

| Item/Display | Content          | Setting range      | Default value |
|--------------|------------------|--------------------|---------------|
| A - Q        | POINT1 - POINT17 | Point 1 - Point 17 | 0 - 255       |
|              |                  |                    | 128           |

67-34

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                                                                                               |
| <b>Function (Purpose)</b> | Set the density correction in the printer high density section (Support for the high density section tone gap) |
| <b>Section</b>            |                                                                                                                |

#### Operation/Procedure

- 1) Select a target item with scroll key.
- 2) Enter the set value with 10-key.

|   |         |
|---|---------|
| 0 | Enable  |
| 1 | Disable |

- 3) Press [OK] key. (The set value is saved.)

| Item/Display | Content                        | Setting range                                   | Default value |
|--------------|--------------------------------|-------------------------------------------------|---------------|
| A            | K<br>(0: ENABLE<br>1: DISABLE) | K engine highest density correction mode        | 0             |
|              |                                | K engine highest density correction mode        | 1             |
| B            | BLACK MAX TARGET               | Scanner target value maximum density correction | 0 - 999       |
|              |                                |                                                 | 500           |
| C            | RATIO LOW                      | Ratio value for high density correction         | 0 - 100       |
|              |                                |                                                 | 50            |
| D            | RATION HIGH                    | Ration value for high density correction        | 0 - 100       |
|              |                                |                                                 | 5             |
| E            | DITHER THRESHOLD               | Dither threshold value                          | 0 - 255       |
|              |                                |                                                 | 250           |
| F            | SLOPE THRESHOLD                | Slope threshold value                           | 100 - 500     |
|              |                                |                                                 | 400           |

67-36

|                           |                                               |
|---------------------------|-----------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                              |
| <b>Function (Purpose)</b> | Adjust the density in the low density section |
| <b>Section</b>            |                                               |

#### Operation/Procedure

- 1) Enter the adjustment value using the 10-key.
- 2) Press [OK] key.

When the adjustment value is increased, the low density images are strongly reduced. When the adjustment value is decreased, the low density are images are weakly reproduced.

When tone gap is generated in the low density section (highlight section), changing this adjustment value may improve the trouble.

| Item/Display | Content       | Setting range       | Default value |
|--------------|---------------|---------------------|---------------|
| A            | A PATCH INPUT | A patch input value | 0 - 13        |
|              |               |                     | 1             |

67-45

|                           |                                              |
|---------------------------|----------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                             |
| <b>Function (Purpose)</b> | Adjust the printer image filter and trapping |
| <b>Section</b>            |                                              |

#### Operation/Procedure

- 1) Select an adjustment item with the scroll key.
- 2) Enter the set value.
- 3) Press [OK] key.

| Item/Display | Content              | Setting range    | Default value |
|--------------|----------------------|------------------|---------------|
| A            | SHARPNESS: B/W PRINT | Monochrome print | 0 - 4         |
|              |                      |                  | 2             |
| B            | BOLD B/W PRINT       | Bold text        | 0 - 4         |
|              |                      |                  | 1             |

67-52

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| <b>Purpose</b>            | Adjustment/Setup                                   |
| <b>Function (Purpose)</b> | Set the default of the gamma of the printer screen |
| <b>Section</b>            |                                                    |

#### Operation/Procedure

- 1) Select a target default setting mode with the touch panel.  
Press [ALL] key to select all the modes.
- 2) Press [EXECUTE] key and press [YES] key.

When the printer screen gamma was changed by SIM 67-33, SIM67-54, it is reset to the default.

| Item/Display | Content                         |
|--------------|---------------------------------|
| Screen       | HEAVYPAPER                      |
|              | Heavy paper screen              |
|              | 600DPI 1BIT                     |
|              | SCREEN1 (600dpi 1bit)           |
|              | 4BIT HIGH                       |
|              | SCREEN3 (600dpi 4bit graphic    |
|              | 1200DPI LOW                     |
|              | SCREEN4 (1200dpi 1bit Photo)    |
|              | 1200DPI HIGH                    |
|              | SCREEN5 (1200dpi 1bit Graphics) |

67-54

|                           |                                     |
|---------------------------|-------------------------------------|
| <b>Purpose</b>            | Adjustment                          |
| <b>Function (Purpose)</b> | Printer halftone balance adjustment |
| <b>Section</b>            |                                     |

#### Operation/Procedure

This simulation is used to adjust the halftone balance, the density, and the gradation in the monochrome mode, the heavy paper mode, the 1200dpi mode, and the 600dpi 1bit mode.

This simulation is used to improve image quality in these modes and images.

- 1) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)  
The patch image (adjustment pattern) is printed out.
- 2) Set the patch image (adjustment pattern) printed in the procedure 1) 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).
- 3) Press [EXECUTE] key.  
The halftone balance adjustment is automatically performed.  
The adjustment pattern is printed out. Check it for any abnormality.
- 4) Press [OK] key.  
The list of the adjustment items (for each dither) is displayed.
- 5) Select an adjustment item (for each dither).
- 6) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)  
The patch image (adjustment pattern) is printed out.
- 7) Set the patch image (adjustment pattern) printed in the procedure 6) 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).
- 8) Press [EXECUTE] key.  
The halftone balance adjustment is automatically performed, and the halftone balance check patch image is printed out.

- 9) 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.
- 10) Make a print, and check the print image quality.

**Note**

Use SIM67-52 to reset the adjustment values to the default values.

## [6] SELF DIAG AND TROUBLE CODE

### 1. Self diag

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

#### A. Function and purpose

- 1) Securing safety. (The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

#### B. Self diag message kinds

The self diag messages are classified as shown in the table below.

|         |         |                                                                                                                |
|---------|---------|----------------------------------------------------------------------------------------------------------------|
| Class 1 | User    | Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)     |
|         | Service | 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  | -                                                                                                              |

### C. Self diag operation

#### (1) Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

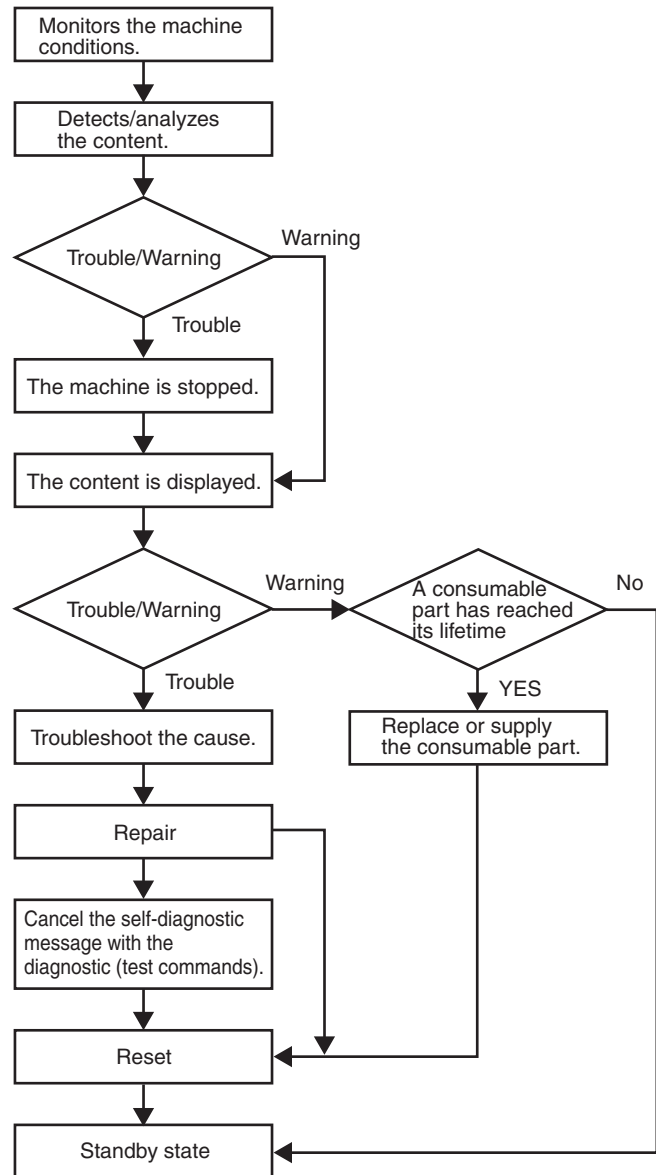
A warning message is displayed when a consumable part life is nearly expired or is expired.

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.



## D. Breakdown sequence

### (1) Breakdown mode processing

| Kind of trouble                                         | Judgment block | Trouble code                                                                                                                                                                                             | Operatable mode                       |                |                |                    |       |               |             |              |
|---------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------|----------------|--------------------|-------|---------------|-------------|--------------|
|                                                         |                |                                                                                                                                                                                                          | Copy scan<br>(including interruption) | Scan<br>(Push) | Scan<br>(Pull) | Scan-<br>To<br>HDD | Print | List<br>print | FAX<br>Send | FAX<br>print |
| FAX board trouble                                       | MFP            | F6<br>(00,01,04,21,30,97,98)                                                                                                                                                                             | ○                                     | ○              | ○              | ○                  | ○     | ○             | x           | x            |
| CF card trouble                                         |                | E7 (A6)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| SD card trouble                                         |                | E7 (07)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| HDD trouble                                             |                | E7 (03,A5)                                                                                                                                                                                               | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| HDD-ASIC trouble                                        |                | E7 (04)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| SCU communication trouble                               |                | E7 (80)<br>A0 (02)                                                                                                                                                                                       | x                                     | x              | x              | x                  | ○     | ○             | x           | ○            |
| PCU communication trouble                               |                | E7 (90)<br>A0 (01)                                                                                                                                                                                       | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| ACU communication trouble                               |                | A0 (04)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Backup battery voltage fall                             |                | U1 (01)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| External communication disable (RIC)                    |                | U7 (50,51)                                                                                                                                                                                               | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Memory error (included not installed the expansion RAM) |                | U2 (00,11,40,41,42)                                                                                                                                                                                      | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Connection trouble (MFP detection)                      |                | A0 (15,17,20,60,61)                                                                                                                                                                                      | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Serial number discrepancy                               |                | U2 (30)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| HDD registration data sum error                         |                | U2 (50)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Image memory trouble, decode error                      |                | E7 (01,49,91,92,93,94)                                                                                                                                                                                   | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Image memory trouble, decode error (ACRE-related 1)     |                | E7 (42,46,47,48)                                                                                                                                                                                         | x                                     | △ 17           | x              | x                  | x     | ○             | ○           | ○            |
| Personal counter installation trouble                   |                | PC (00)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Power controller trouble                                |                | L8 (20)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| Special function error                                  |                | P1 (00,01,02) U2<br>(60)                                                                                                                                                                                 | ○                                     | ○              | ○              | ○                  | ○     | ○             | ○           | ○            |
| Laser trouble                                           | PCU            | L6 (10)                                                                                                                                                                                                  | x                                     | x              | x              | x                  | x     | x△ 10         | x           | x            |
| Connection trouble (PCU detection)                      |                | E7 (50,55)<br>A0 (21)<br>F1 (50)                                                                                                                                                                         | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| PCU section troubles (motor, fusing, etc.)              |                | C1 (10),<br>C4 (20)<br>F2 (40,64,70,74,91),<br>H2 (00,01,02),<br>H3 (00,01,02),<br>H4 (00,02),<br>H5 (01),<br>H7 (10),<br>L4<br>(02,03,04,11,31,32,34,<br>35,40,43,44,50),<br>L8 (01,02),<br>U2 (90,91), | x                                     | x              | x              | x                  | x     | x△ 10         | x           | x            |
| Paper feed tray 1 trouble                               |                | F3 (12)                                                                                                                                                                                                  | △ 3                                   | ○              | ○              | ○                  | △ 3   | △ 3/10        | ○           | △ 3          |
| Paper feed tray 2 trouble                               |                | F3 (22)                                                                                                                                                                                                  | △ 3                                   | ○              | ○              | ○                  | △ 3   | △ 3/10        | ○           | △ 3          |
| Paper feed tray 3 trouble                               |                | U6 (01)                                                                                                                                                                                                  | △ 3                                   | ○              | ○              | ○                  | △ 3   | △ 3/10        | ○           | △ 3          |
| Paper feed tray 4 trouble                               |                | U6 (02)                                                                                                                                                                                                  | △ 3                                   | ○              | ○              | ○                  | △ 3   | △ 3/10        | ○           | △ 3          |
| Paper feed tray 5 trouble                               |                | U6<br>(09,20,21,22,51)                                                                                                                                                                                   | △ 3                                   | ○              | ○              | ○                  | △ 3   | △ 3/10        | ○           | △ 3          |
| Paper feed tray other troubles                          |                | U6 (00,10,50,52)                                                                                                                                                                                         | △ 11                                  | ○              | ○              | ○                  | △ 11  | △ 10/11       | ○           | △ 11         |
| Staple trouble                                          |                | F1 (08,10)                                                                                                                                                                                               | △ 4                                   | △ 4            | △ 4            | △ 4                | △ 4   | △ 4/10        | △ 4         | △ 4          |
| Saddle stitch section trouble                           |                | F1<br>(41,42,43,44,45,46,47,<br>51)                                                                                                                                                                      | △ 4                                   | △ 4            | △ 4            | △ 4                | △ 4   | △ 4/17        | △ 4         | △ 4          |
| After-process trouble                                   | PCU            | F1<br>(00,03,11,15,19,20,21,<br>22,23,30,32,33,34,36,<br>37,38,39,52)                                                                                                                                    | △ 4                                   | △ 4            | △ 4            | △ 4                | △ 4   | △ 4/10        | △ 4         | △ 4          |
| Other troubles                                          |                | EE (EC,EL,EU)                                                                                                                                                                                            | ○                                     | ○              | ○              | ○                  | ○     | ○             | ○           | ○            |
| Process control trouble (PCU detection)                 |                | F2 (22,39,50,58,78)                                                                                                                                                                                      | ○<br>△ 12                             | ○              | ○              | ○                  | ○     | ○             | ○           | ○            |

| Kind of trouble                                            | Judgment block | Trouble code     | Operatable mode                       |                |                |                    |       |               |             |              |
|------------------------------------------------------------|----------------|------------------|---------------------------------------|----------------|----------------|--------------------|-------|---------------|-------------|--------------|
|                                                            |                |                  | Copy scan<br>(including interruption) | Scan<br>(Push) | Scan<br>(Pull) | Scan-<br>To<br>HDD | Print | List<br>print | FAX<br>Send | FAX<br>print |
| Connection trouble<br>(SCU detection)                      | SCU            | A0 (22)          | x                                     | x              | x              | x                  | x     | x             | x           | x            |
| SCU color system troubles (SCU detection)                  |                | UC (02)          | △ 9                                   | △ 9            | △ 9            | △ 9                | ○     | ○             | △ 9         | ○            |
| Anti copy system                                           |                | UC (20)          | x                                     | x              | x              | x                  | ○     | ○             | x           | ○            |
| EEPROM faction                                             |                | U2 (80,81)       | x                                     | x              | x              | x                  | ○     | ○             | x           | ○            |
| Scanner section troubles (mirror motor, lens, copy lamp)   |                | L1 (00), L3 (00) | x                                     | x              | x              | x                  | ○     | ○             | x           | ○            |
| CCD troubles (shading, etc.)                               |                | E7 (10,11,14)    | x                                     | x              | x              | x                  | ○     | ○             | x           | ○            |
| DSPF/DF trouble                                            |                | U5 (00,16,30,31) | △ 6                                   | △ 6            | △ 6            | △ 6                | ○     | ○             | △ 6         | ○            |
| General troubles in the DSPF back surface scanning section |                | E6 (10, 11, 14)  | △ 7                                   | △ 7            | △ 7            | △ 7                | ○     | ○             | △ 7         | ○            |

□ : 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.

△ 9 : When detected during other than a job, the operation is enabled in the monochrome mode.

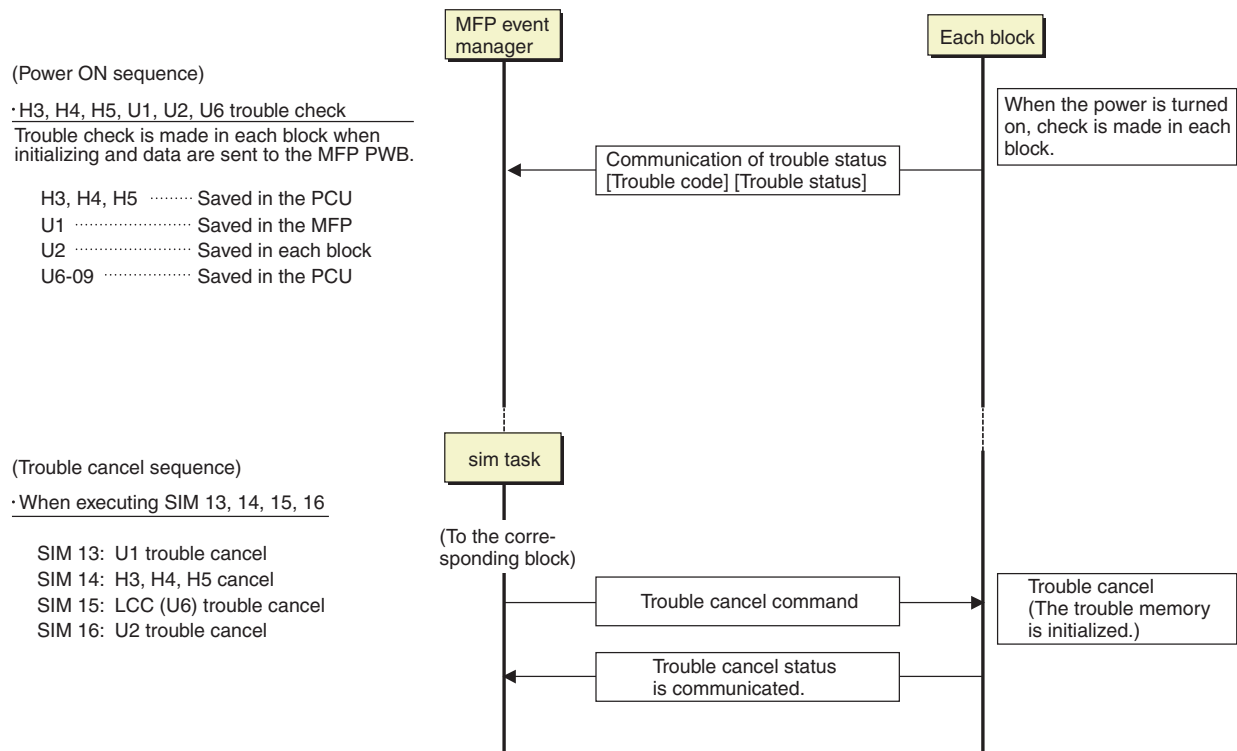
△ 10: Since communication is enabled, reception can be transferred.

△ 11: When detected during other than a job, the operation is enabled in other than the DESK and the LCC.

△ 12: Trouble message is displayed (Example: Ready to copy. F2 trouble)

△ 17 : Job execution enable only in a format other high compression PDF.

## (2) Power ON trouble detection sequence.



## 2. Trouble code list

| Trouble code |          | Trouble code content                                          | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|--------------|----------|---------------------------------------------------------------|-------------------|-----------|--------|-------------|-----|--------|
| Main code    | Sub code |                                                               |                   |           |        |             |     |        |
| C1           | 10       | Main charger trouble                                          | PCU               |           |        | ○           |     |        |
| C4           | 20       | Transfer output trouble                                       | PCU               |           |        | ○           |     |        |
| E6           | 10       | DSPF (CIS) shading error (Black correction)                   | SCU               |           |        | ○           |     |        |
|              | 11       | DSPF (CIS) shading error (White correction)                   | SCU               |           |        | ○           |     |        |
|              | 14       | CIS-ASIC error                                                | SCU               |           |        | ○           |     |        |
| E7           | 01       | MFP image data error                                          | MFP               |           |        | ○           |     |        |
|              | 02       | HDD trouble when the mirroring kit is installed               | MFP               |           |        | ○           |     |        |
|              | 03       | HDD trouble / Mirroring kit error                             | 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 error                                     | PCU               |           |        | ○           |     |        |
|              | 21       | LSU laser deterioration trouble                               | PCU               |           |        | ○           |     |        |
|              | 24       | LSU LD driver error                                           | PCU               |           |        | ○           |     |        |
|              | 28       | LSU-PCU connection error                                      | PCU               |           |        | ○           |     |        |
|              | 42       | Image data error (ACRE ASIC)                                  | MFP               |           |        | ○           |     |        |
|              | 46       | Image data decode error (ACRE ASIC)                           | MFP               |           |        | ○           |     |        |
|              | 47       | Combination error between MFP PWB and ACRE firmware           | MFP               |           |        | ○           |     |        |
|              | 48       | Scanner expansion PWB (ACRE) ASIC memory error                | MFP               |           |        | ○           |     |        |
|              | 50       | Engine connection trouble                                     | PCU               |           |        | ○           |     |        |
|              | 55       | PWB information sum error (Engine detection)                  | PCU               |           |        | ○           |     |        |
|              | 60       | Combination error between the MFP PWB and other PWB, firmware | MFP               |           |        | ○           |     |        |
|              | 61       | Combination error between the MFP PWB and the PCU PWB         | MFP               |           |        | ○           |     |        |
|              | 80       | MFP-SCU PWB communication error                               | MFP               |           |        | ○           |     |        |
|              | 90       | MFP-PCU PWB communication error                               | MFP               |           |        | ○           |     |        |
|              | 91       | FAX reception image data error                                | MFP               |           |        | ○           |     |        |
|              | 92       | Copy image data error                                         | MFP               |           |        | ○           |     |        |
|              | 93       | Copy, image send, FAX, filing, print image data process error | MFP               |           |        | ○           |     |        |
|              | 94       | Image file data process error (when importing file data)      | MFP               |           |        | ○           |     |        |
|              | A0       | LSU LD PWB EEPROM read/write error                            | PCU               |           |        | ○           |     |        |
|              | A5       | Installation error of HDD which was used in the mirroring kit | MFP               |           |        | ○           |     |        |
|              | A6       | Compact flash memory trouble                                  | 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               |           |        | ○           |     |        |
| F1           | 00       | Finisher - PCU PWB communication error                        | PCU               |           | ○      |             |     |        |
|              | 08       | Stapler shift trouble                                         | PCU               |           | ○      |             |     |        |
|              | 10       | Staple operation trouble                                      | PCU               |           | ○      |             |     |        |
|              | 11       | Finisher grip operation trouble                               | PCU               |           | ○      |             |     |        |
|              | 15       | Finisher paper exit tray lift operation trouble               | PCU               |           | ○      |             |     |        |
|              | 19       | Finisher alignment operation trouble F                        | PCU               |           | ○      |             |     |        |
|              | 20       | Finisher alignment operation trouble R                        | PCU               |           | ○      |             |     |        |
|              | 21       | Finisher fan trouble                                          | PCU               |           | ○      |             |     |        |
|              | 22       | Finisher assist motor trouble                                 | PCU               |           | ○      |             |     |        |
|              | 23       | Finisher shutter trouble                                      | PCU               |           | ○      |             |     |        |
|              | 30       | Finisher - saddle unit communication trouble                  | PCU               |           | ○      |             |     |        |
|              | 31       | Saddle paper folding trouble                                  | PCU               |           | ○      |             |     |        |
|              | 32       | Finisher - Punch unit communication error                     | PCU               |           | ○      |             |     |        |
|              | 33       | Punch unit shift operation trouble                            | PCU               |           | ○      |             |     |        |
|              | 34       | Punch operation trouble                                       | PCU               |           | ○      |             |     |        |
|              | 36       | Punch paper edge detection error                              | PCU               |           | ○      |             |     |        |
|              | 37       | Finisher data backup RAM error                                | PCU               |           | ○      |             |     |        |
|              | 38       | Punch data backup RAM error                                   | PCU               |           | ○      |             |     |        |
|              | 39       | Punch paper dust sensor error                                 | PCU               |           | ○      |             |     |        |
|              | 41       | Saddle paper positioning operation trouble                    | PCU               |           | ○      |             |     |        |
|              | 42       | Saddle guide motor trouble                                    | PCU               |           | ○      |             |     |        |
|              | 43       | Saddle alignment operation trouble                            | PCU               |           | ○      |             |     |        |
|              | 45       | Saddle staple trouble                                         | PCU               |           | ○      |             |     |        |
|              | 46       | Saddle pushing plate motor trouble                            | PCU               |           | ○      |             |     |        |
|              | 47       | Saddle paper transport motor trouble                          | PCU               |           | ○      |             |     |        |
|              | 50       | Main unit - Finisher combination error                        | PCU               |           | ○      |             |     |        |
|              | 51       | Saddle sensor connection trouble                              | PCU               |           | ○      |             |     |        |
|              | 52       | Finisher micro switch trouble                                 | PCU               |           | ○      |             |     |        |



| Trouble code |          | Trouble code content                                                                                   | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|--------------|----------|--------------------------------------------------------------------------------------------------------|-------------------|-----------|--------|-------------|-----|--------|
| Main code    | Sub code |                                                                                                        |                   |           |        |             |     |        |
| F2           | 22       | Discharge lamp trouble                                                                                 | PCU               |           |        |             |     | ○      |
|              | 39       | Process thermistor trouble                                                                             | PCU               |           |        |             |     | ○      |
|              | 40       | Toner density sensor trouble                                                                           | PCU               |           |        |             |     | ○      |
|              | 45       | Image density sensor trouble                                                                           | PCU               |           |        |             |     | ○      |
|              | 50       | Drum phase sensor trouble                                                                              | PCU               |           |        |             |     | ○      |
|              | 58       | Process humidity sensor trouble                                                                        | PCU               |           |        |             |     | ○      |
|              | 64       | Toner supply operation trouble                                                                         | PCU               |           |        |             |     | ○      |
|              | 70       | Improper toner cartridge detection                                                                     | PCU               |           |        |             |     | ○      |
|              | 74       | Toner cartridge CRUM error                                                                             | PCU               |           |        |             |     | ○      |
|              | 78       | Registration image density sensor trouble                                                              | PCU               |           |        |             |     | ○      |
|              | 91       | High density process control high voltage error                                                        | PCU               |           |        |             |     | ○      |
| F3           | 12       | Paper feed tray 1 lift operation trouble                                                               | PCU               | ○         |        |             |     |        |
|              | 22       | Paper feed tray 2 lift operation trouble                                                               | PCU               | ○         |        |             |     |        |
| F6           | 00       | MFP-FAX communication trouble                                                                          | MFP               |           |        |             | ○   |        |
|              | 01       | FAX board EEPROM read/write error                                                                      | FAX               |           |        |             | ○   |        |
|              | 04       | FAX MODEM operation trouble                                                                            | FAX               |           |        |             | ○   |        |
|              | 21       | Combination error between the TEL/LIU PWB and the FAX soft switch                                      | FAX               |           |        |             | ○   |        |
|              | 30       | Access error to 1-chip microprocessor on the FAX board (FAX detection)                                 | FAX               |           |        |             | ○   |        |
|              | 97       | The FAX PWB does not match with the machine model.                                                     | FAX               |           |        |             | ○   |        |
|              | 98       | Combination error between the FAX-BOX destination information and the machine destination information. | FAX               |           |        |             | ○   |        |
| H2           | 00       | Thermistor open trouble (TH_UM)                                                                        | PCU               | ○         |        |             |     |        |
|              | 01       | Thermistor open trouble (TH_LM)                                                                        | PCU               | ○         |        |             |     |        |
|              | 02       | Thermistor open trouble (TH_US)                                                                        | PCU               | ○         |        |             |     |        |
| H3           | 00       | Fusing section high temperature trouble (TH_UM)                                                        | PCU               | ○         |        |             |     |        |
|              | 01       | Fusing section high temperature trouble (TH_LM)                                                        | PCU               | ○         |        |             |     |        |
|              | 02       | Fusing section high temperature trouble (TH_US)                                                        | PCU               | ○         |        |             |     |        |
| H4           | 00       | Fusing section low temperature trouble (TH_UM)                                                         | PCU               | ○         |        |             |     |        |
|              | 02       | Fusing section low temperature trouble (TH_US)                                                         | PCU               | ○         |        |             |     |        |
| H5           | 01       | 5 times continuous POD1 not-reach jam                                                                  | PCU               | ○         |        |             |     |        |
| H7           | 10       | Recovery error from low fuser temp. (TH_UM_AD2)                                                        | PCU               | ○         |        |             |     |        |
| L1           | 00       | Scanner feed trouble                                                                                   | SCU               | ○         |        |             |     |        |
| L3           | 00       | Scanner return trouble                                                                                 | SCU               | ○         |        |             |     |        |
| L4           | 02       | Paper feed motor trouble                                                                               | PCU               |           |        | ○           |     |        |
|              | 03       | Fusing motor trouble                                                                                   | PCU               |           |        | ○           |     |        |
|              | 04       | Drum motor trouble                                                                                     | PCU               |           |        | ○           |     |        |
|              | 11       | Shift motor trouble                                                                                    | PCU               |           |        | ○           |     |        |
|              | 31       | Paper exit cooling fan (POFM1/2) trouble                                                               | PCU               |           |        | ○           |     |        |
|              | 32       | Power source cooling fan trouble                                                                       | PCU               |           |        | ○           |     |        |
|              | 34       | LSU cooling fan trouble                                                                                | PCU               |           |        | ○           |     |        |
|              | 35       | Paper exit cooling fan 2 trouble                                                                       | PCU               |           |        | ○           |     |        |
|              | 40       | Ozone fan trouble                                                                                      | PCU               |           |        | ○           |     |        |
|              | 43       | Paper exit cooling fan (POFM3) trouble                                                                 | PCU               |           |        | ○           |     |        |
|              | 44       | Ozone exhaust fan trouble                                                                              | PCU               |           |        | ○           |     |        |
|              | 50       | Process fan 1 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 MFP PWB/Mother board                                                            | MFP               |           |        | ○           |     |        |
| PC           | -        | Personal counter not detected                                                                          | MFP               | ○         |        |             |     |        |
| U1           | 01       | Battery trouble                                                                                        | MFP               |           |        | ○           |     |        |
| U2           | 00       | MFP EEPROM read/write error                                                                            | MFP               |           |        | ○           |     |        |
|              | 05       | Erroneous detection of account management data /HDD internal authentication DB table error             | MFP               |           |        | ○           |     |        |
|              | 11       | MFP PWB EEPROM counter check sum error                                                                 | MFP               |           |        | ○           |     |        |
|              | 30       | MFP 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 motor trouble                                                                   | SCU               |           |        | ○           |     |        |
|              | 30       | Document feed unit tray lift up trouble                                                                | SCU               |           |        | ○           |     |        |
|              | 31       | Document feed unit tray lift down trouble                                                              | SCU               |           |        | ○           |     |        |

| Trouble code |          | Trouble code content                                           | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|--------------|----------|----------------------------------------------------------------|-------------------|-----------|--------|-------------|-----|--------|
| Main code    | Sub code |                                                                |                   |           |        |             |     |        |
| U6           | 00       | Communication error of PCU PWB/Desk paper feed unit            | PCU               |           |        | ○           |     |        |
|              | 01       | Desk paper feed tray 1 lift trouble                            | PCU               |           | ○      |             |     |        |
|              | 02       | Desk paper feed tray 2 lift trouble                            | PCU               |           | ○      |             |     |        |
|              | 09       | LCC lift motor trouble                                         | PCU               |           | ○      |             |     |        |
|              | 10       | Desk paper feed unit paper transport motor trouble             | PCU               |           | ○      |             |     |        |
|              | 20       | PCU PWB - LCC communication error                              | PCU               |           | ○      |             |     |        |
|              | 21       | LCC paper transport motor trouble                              | PCU               |           | ○      |             |     |        |
|              | 22       | LCC 24V power trouble                                          | PCU               |           | ○      |             |     |        |
|              | 50       | Desk - Main unit combination trouble                           | PCU               |           | ○      |             |     |        |
|              | 51       | LCC - Main unit combination trouble                            | PCU               |           | ○      |             |     |        |
|              | 52       | PCU - Paper feed desk communication trouble                    | PCU               |           | ○      |             |     |        |
| U7           | 50       | MFP PWB - Vendor machine communication error                   | MFP               |           |        | ○           |     |        |
|              | 51       | Vendor machine error                                           | MFP               |           |        | ○           |     |        |
| U9           | 01       | Touch panel trouble                                            | SCU               |           |        | ○           |     |        |
| UC           | 02       | IPD/DOCC ASIC IPD section error (N model only)                 | SCU               |           |        | ○           |     |        |
|              | 20       | IPD/DOCC ASIC DOCC section error (N model only)                | SCU               |           |        | ○           |     |        |
| A0           | 01       | PCU PWB ROM error                                              | MFP               |           |        | ○           |     |        |
|              | 02       | SCU PWB ROM error                                              | MFP               |           |        | ○           |     |        |
|              | 04       | ACU PWB ROM error (when scanner expansion kit is installed)    | MFP               |           |        | ○           |     |        |
|              | 15       | DSK BOOT version disagreement                                  | 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               |           |        | ○           |     |        |

### 3. Details of trouble code

#### C1-10 Main charger trouble

|                |                                                                                                                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                                      |
| Cause          | The main charger unit is not installed properly.<br>There is an abnormality in the main charger unit.<br>Disconnection of the high voltage PWB connector.<br>MC/DV 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 MC/DV high voltage PWB.<br>Replace the PCU PWB. |

#### C4-20 Transfer output trouble

|                |                                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                     |
| Cause          | Transfer unit abnormality.<br>Transfer unit insertion trouble.<br>TC output harness disconnection, breakage.<br>OPC drum abnormality (does not rotate).<br>High voltage PWB trouble<br>PCU PWB trouble. |
| 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.                                            |

#### E6-10 Shading error (Black correction)

|                |                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------|
| 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 / the DSPF PWB. |

#### E6-11 Shading error (White correction)

|                |                                                                                                                                                                                        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | SCU                                                                                                                                                                                    |
| Cause          | Installation error of the CCD unit harness.<br>Copy lamp lighting trouble.<br>Dirt on the reference white plate.<br>CCD unit trouble.<br>DSPF PWB trouble.<br>Shading adjustment error |
| Check & Remedy | Check the installing state of the harness the CCD unit.<br>Clean the reference white plate.<br>Check the CCD unit / the DSPF PWB.                                                      |

#### E6-14 CIS-ASIC error

|                |                       |
|----------------|-----------------------|
| Section        | SCU                   |
| Cause          | DSPF PWB trouble.     |
| Check & Remedy | Replace the DSPF PWB. |

#### E7-01 MFP image data error

|                |                                                                                           |
|----------------|-------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                       |
| Cause          | Image data transfer error in the MFP PWB.<br>MFP PWB trouble.                             |
| Check & Remedy | Check connection of the connector and the harness of the MFP PWB.<br>Replace the MFP PWB. |

#### E7-02 HDD trouble (when the mirroring kit is installed)

|         |     |
|---------|-----|
| 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>MFP PWB trouble. |
| Check & Remedy | Use SIM62-20 to check the trouble.<br>Check installation of the mirroring kit and replace if necessary.<br>Replace the broken HDD.<br>Replace the mirroring kit.<br>Replace the MFP PWB.                                                                                                                             |

### E7-03 HDD trouble

|                 |                                                                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trouble content |                                                                                                                                                                                   |
| Detail          | MFP                                                                                                                                                                               |
| Cause           | Connector, harness connection trouble in the MFP PWB and HDD.<br>HDD error file management area data abnormality (FAT breakage).<br>MFP PWB trouble.                              |
| Check & Remedy  | Check connection of the connector and the harness of the MFP PWB and HDD.<br>Use SIM62-2,3 to check read/write operations of the HDD.<br>Replace the HDD.<br>Replace the MFP PWB. |

### E7-04 HDD-ASIC error

|                 |                                                                              |
|-----------------|------------------------------------------------------------------------------|
| Trouble content |                                                                              |
| Detail          | MFP                                                                          |
| Cause           | HDD-ASIC trouble.<br>An error occurs in the HDD-ASIC self test when booting. |
| Check & Remedy  | Replace the MFP PWB.                                                         |

### E7-07 SD card error

|                |                                                                            |
|----------------|----------------------------------------------------------------------------|
| Section        | MFP                                                                        |
| Cause          | SD card trouble or contact error.<br>MFP 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)

|                |                                                                                                                                                                                        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 / the SCU PWB.                                                                                                  |

### E7-11 Shading error (White correction)

|         |                                                                                                                                                                                                                                                                                                     |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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>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>Clean the mirror, the lens, and the reference white plate.<br>Check the CCD unit / the SCU PWB. |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### E7-14 CCD-ASIC error

|                |                                            |
|----------------|--------------------------------------------|
| Section        | SCU                                        |
| Cause          | SCU PWB trouble.                           |
| Check & Remedy | Check the SCU PWB.<br>Replace the SCU PWB. |

### E7-20 LSU laser detection error

|                |                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                              |
| Cause          | Optical axis shift.<br>Reduced laser power, lighting error, laser diode trouble.<br>Harness and connector trouble between the LD/BD PWB and the LSU control PWB. |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check the PWB and connection of the harness in the LSU.<br>Replace the LSU.                                    |

### E7-21 LSU laser deterioration trouble

|                |                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                              |
| Cause          | Power reduction due to laser deterioration.<br>Harness and connector disconnection/insertion trouble between the LD PWB and the LSU control PWB. |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check the PWB and connection of the harness in the LSU.<br>Replace the LSU.                    |

### E7-24 LSU LD driver error

|                |                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 SIM61-1 to check the operation 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

|                |                                                                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>Harness trouble between the PCU PWB and the LSU control PWB.<br>PCU PWB or LSU control PWB 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.                                                                                                                                |

### E7-29 LSU ASIC frequency error

|         |     |
|---------|-----|
| Section | PCU |
|---------|-----|

|                |                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Oscillation abnormality of the external oscillator and the internal oscillating circuit used in the LSU ASIC.<br>LSU ASIC abnormality on the LSU ASIC PWB. |
| Check & Remedy | Replace the LSU control PWB.                                                                                                                               |

#### **E7-42 Data error (ACRE ASIC)**

|                |                                                                                          |
|----------------|------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                      |
| Cause          | Image transfer trouble.                                                                  |
| Check & Remedy | Check the connection state of the ACRE ASIC PWB connector.<br>Replace the ACRE ASIC PWB. |

#### **E7-46 Decode error (ACRE ASIC)**

|                |                                                                                                                         |
|----------------|-------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                     |
| Cause          | Compression data abnormality.<br>Garbled data are produced in image compression/transmission.<br>ACRE ASIC PWB trouble. |
| Check & Remedy | Check the installation state of the PWB.<br>Check connection of the ACRE ASIC PWB.<br>Replace the ACRE ASIC PWB.        |

#### **E7-47 Combination error between MFP PWB and ACRE firmware**

|                |                                                                                              |
|----------------|----------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                          |
| Cause          | Connect to the scanner expansion PWB (ACRE) with the firmware which does not support MFP PWB |
| Check & Remedy | Update the firmware on SIM49-1 or SIM49-10.                                                  |

#### **E7-48 Memory error (ACRE ASIC)**

|                |                                                                                        |
|----------------|----------------------------------------------------------------------------------------|
| Section        | MFP                                                                                    |
| Cause          | DIMM trouble, memory slot trouble.<br>DIMM insertion trouble, different DIMM inserted. |
| Check & Remedy | DIMM trouble.<br>Replace the PWB.                                                      |

#### **E7-49 Water Mark data error**

|                |                                                               |
|----------------|---------------------------------------------------------------|
| Section        | MFP                                                           |
| Cause          | Watermark data trouble                                        |
| Check & Remedy | Use SIM49-5 to upload the watermark data.<br>Replace the HDD. |

#### **E7-50 Engine connection trouble**

|                |                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                               |
| Cause          | A PWB, or firmware, or LSU which is not supported by the machine specifications is detected in the PCU PWB.<br>PCU PWB trouble.<br>LSU trouble.   |
| Check & Remedy | Check the kind and the version of the firmware.<br>Check the LSU, and replace it if necessary.<br>Check the PCU PWB, and replace it if necessary. |

#### **E7-55 PWB information sum error (Engine detection)**

|         |     |
|---------|-----|
| Section | PCU |
|---------|-----|

|                |                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------|
| Cause          | PCU EEPROM sum check error.<br>PCU EEPROM trouble.<br>PCU EEPROM contact trouble.<br>Malfunction due to noises |
| Check & Remedy | Replace the PCU PWB.<br>Replace the PCU EEPROM.                                                                |

#### **E7-60 Combination error between the MFP PWB and other PWB, firmware**

|                |                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                                                                                                           |
| Cause          | A PWB or firmware which is not supported by the machine specifications is detected in the MFP PWB.<br>MFP PWB trouble.<br>The PWB/firmware which is not supported by the machine specifications is connected. |
| Check & Remedy | Check the kind and the version of the firmware.<br>Check the MFP PWB, and replace it if necessary.                                                                                                            |

#### **E7-61 Combination error between the MFP PWB and the PCU PWB**

|                |                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                        |
| Cause          | Combination error between the MFP PWB and the PCU PWB.<br>MFP PWB trouble.<br>PCU PWB trouble.             |
| Check & Remedy | Check the combination between the MFP PWB and the PCU PWB.<br>Replace the MFP PWB.<br>Replace the PCU PWB. |

#### **E7-65 MFP EEPROM sum check error**

|                |                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                         |
| Cause          | MFP PWB EEPROM device breakdown.<br>Contact trouble of the MFP EEPROM device.<br>Malfunction due to noises. |
| Check & Remedy | Replace the MFP PWB.<br>Replace the MFP PWB EEPROM.                                                         |

#### **E7-80 MFP-SCU PWB communication error**

|                |                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                                                                                         |
| Cause          | SCU PWB connector connection trouble.<br>SCU PWB - MFP PWB connection trouble.<br>SCU PWB mother board connection trouble.<br>SCU PWB trouble.<br>MFP PWB trouble.<br>Mother board trouble. |
| Check & Remedy | Check connection of the SCU PWB, the MFP PWB, and the mother board.<br>Check the ground.<br>Replace the SCU PWB.<br>Replace the MFP PWB.<br>Replace the mother board.                       |

#### **E7-90 MFP - PCU PWB communication error**

|                |                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                             |
| Cause          | PCU PWB - MFP PWB connection trouble.<br>PCU PWB trouble.<br>MFP PWB trouble.                                   |
| Check & Remedy | Check connection of the PCU PWB, the MFP PWB, Check the ground.<br>Replace the PCU PWB.<br>Replace the MFP PWB. |

**E7-91 FAX reception image data error**

| Section        | MFP                                                                                                                                                                                        |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Image data process abnormality.<br>HDD trouble.<br>SD card trouble or contact error.<br>Image compression data corruption.<br>MFP PWB trouble.<br>FAX control PWB trouble.                 |
| Check & Remedy | Use SIM60-1 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace or check installation of the SD card.<br>Replace the MFP PWB.<br>Replace the FAX control PWB. |

**E7-92 Copy image data error**

| Section        | MFP                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------|
| Cause          | Image data process abnormality.<br>HDD trouble.<br>Image compression data corruption.<br>MFP PWB trouble. |
| Check & Remedy | Use SIM60-1 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFP PWB. |

**E7-93 Copy, image send, filing, print image data process error**

| Section        | MFP                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------|
| Cause          | Image data process abnormality.<br>HDD trouble.<br>Image compression data corruption.<br>MFP PWB trouble. |
| Check & Remedy | Use SIM60-1 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFP PWB. |

**E7-94 Image file data process error (when importing file data)**

| Section        | MFP                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------|
| Cause          | Image data process abnormality.<br>HDD trouble.<br>Image compression data corruption.<br>MFP PWB trouble. |
| Check & Remedy | Use SIM60-1 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFP PWB. |

**E7-A0 LSU LD PWB EEPROM read/write error**

| 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**

| Section        | MFP                                                                                        |
|----------------|--------------------------------------------------------------------------------------------|
| Cause          | 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.                     |

**E7-A6 Compact flash memory trouble**

| Section        | MFP                                                                                         |
|----------------|---------------------------------------------------------------------------------------------|
| Cause          | Compact flash memory trouble.<br>MFP PWB trouble.<br>File system control area data trouble. |
| Check & Remedy | Replace the compact flash memory.<br>Replace the MFP PWB.                                   |

**EE-EC Automatic toner density adjustment error**

| Trouble content | The sampling level in the automatic toner density adjustment is outside of 128±3.         |
|-----------------|-------------------------------------------------------------------------------------------|
| 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 | The sampling level in the automatic toner density adjustment is 77 or less or the control voltage is 207 or above.                                    |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section         | PCU                                                                                                                                                   |
| Cause           | Toner density sensor trouble.<br>Charging voltage/ developing voltage trouble, toner density trouble, or 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 | The sampling level in the automatic toner density adjustment is 177 or above or the control voltage is 56 or less.                                    |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section         | PCU                                                                                                                                                   |
| Cause           | Toner density sensor trouble.<br>Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble.<br>PCU PWB trouble. |
| Check & Remedy  | Replace the toner density sensor.<br>Replace the developing unit.<br>Replace the PCU PWB.                                                             |

**F1-00 Finisher - PCU PWB communication error**

| 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.<br>Strong external noises. |
| 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.                                    |

### F1-03 Finisher paper exit roller lifting operation trouble

| Section        | PCU                                                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Finisher paper exit roller lift motor trouble.<br>Harness and connector connection trouble.<br>Home position sensor trouble.<br>Finisher control PWB trouble.                                                                                       |
| Check & Remedy | Use SIM3-3 to check the operation of the paper exit roller lift motor.<br>Replace the paper exit roller lift motor.<br>Check connection of the connector and the harness.<br>Replace the home position sensor.<br>Replace the finisher control PWB. |

### F1-08 Stapler shift trouble

| 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>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. |

### F1-10 Staple operation trouble

| 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>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 grip operation trouble

| Section        | PCU                                                                                                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Grip motor trouble.<br>Finisher control PWB trouble.<br>Grip arm trouble.<br>Home position sensor trouble.                                                                         |
| Check & Remedy | Use SIM3-3 to check the operation of the grip motor.<br>Replace the grip motor.<br>Replace the finisher control PWB.<br>Replace the grip arm.<br>Replace the home position sensor. |

### F1-15 Finisher paper exit tray lift operation trouble

| Section | PCU                                                                  |
|---------|----------------------------------------------------------------------|
| Cause   | Paper exit tray lift motor trouble.<br>Finisher control PWB trouble. |

|                |                                                                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check & Remedy | Use SIM3-3 to check the operation of the paper exit tray lift motor.<br>Replace the finisher control PWB.<br>Replace the paper exit tray lift motor. |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

### F1-19 Finisher alignment operation trouble F

| Section        | PCU                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Finisher paper alignment motor lock.<br>Motor speed abnormality.<br>Over-current to the motor.<br>Finisher control PWB trouble.                |
| Check & Remedy | Use SIM3-3 to check the operation of the paper alignment motor F.<br>Replace the finisher control PWB.<br>Replace the paper alignment motor F. |

### F1-20 Finisher alignment operation trouble R

| Section        | PCU                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Finisher paper alignment motor lock.<br>Motor speed abnormality.<br>Over-current to the motor.<br>Finisher control PWB trouble.                |
| Check & Remedy | Use SIM3-3 to check the operation of the paper alignment motor R.<br>Replace the finisher control PWB.<br>Replace the paper alignment motor R. |

### F1-21 Finisher fan trouble

| Section        | PCU                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Finisher fan motor trouble.<br>Finisher control PWB trouble.<br>Harness and connector connection trouble.                                                                      |
| Check & Remedy | Use SIM3-3 to check the operation of the fan motor.<br>Check connection between the finisher control PWB and the fan.<br>Replace the fan.<br>Replace the finisher control PWB. |

### F1-22 Finisher assist motor trouble

| Section        | PCU                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Motor harness short/open trouble.<br>Control PWB trouble.<br>Connection harness/connector connection trouble                                      |
| Check & Remedy | Check the operation of the rear edge assist motor with SIM3-3.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB. |

### F1-23 Finisher shutter trouble

| Section        | PCU                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Motor lock trouble.<br>Control PWB trouble, home position sensor trouble.<br>Connection harness/connector connection trouble.                     |
| Check & Remedy | Check the operation of the rear edge assist motor with SIM3-3.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB. |

### F1-30 Finisher - saddle unit communication trouble

| Section | PCU |
|---------|-----|
|---------|-----|



|                |                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| Cause          | Connector and harness connection trouble.<br>Finisher control PWB trouble.                                        |
| Check & Remedy | Check connection of the connector and the harness.<br>Turn OFF/ON the power.<br>Replace the finisher control PWB. |

### F1-31 Saddle paper folding trouble

|                |                                                                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                            |
| Cause          | Motor lock trouble.<br>Control PWB trouble, home position sensor trouble.<br>Connection harness/connector connection trouble.                                  |
| Check & Remedy | Check the operation of the saddle motor with SIM3-3.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB.<br>Replace the sensor. |

### F1-32 Finisher - Punch unit communication error

|                |                                                                                                                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                            |
| Cause          | Connector/harness connection trouble or disconnection between the finisher and the punch unit.<br>Finisher control PWB trouble.<br>PCU PWB trouble.<br>Malfunction due to noises.<br>The punch unit is in the adjustment mode. |
| Check & Remedy | Check the connector and the harness between the finisher and the punch unit.<br>Replace the finisher control PWB.<br>Replace the PCU PWB.<br>Cancel the adjustment mode of the punch unit.                                     |

### F1-33 Punch unit shift operation trouble

|                |                                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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>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

|                |                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                     |
| Cause          | Punch motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble.                                                     |
| Check & Remedy | Check the punch operation.<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. |

### F1-36 Punch paper edge detection error

|         |                                                                                                                           |
|---------|---------------------------------------------------------------------------------------------------------------------------|
| Section | PCU                                                                                                                       |
| Cause   | Punch paper edge sensor trouble.<br>Harness disconnection.<br>Finisher control PWB trouble.<br>Punch control PWB trouble. |

|                |                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check & Remedy | Use SIM3-2 to check the operation of the sensor.<br>Replace the punch paper edge sensor.<br>Replace the finisher control PWB.<br>Replace the punch control PWB. |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

### F1-37 Finisher data backup RAM error

|                |                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                |
| Cause          | Finisher control PWB trouble.<br>Malfunction due to noises                                                         |
| Check & Remedy | Replace the finisher control PWB.<br>Readjust the finisher. (Use SIM3-10, Finisher control PWB DIP SW adjustment.) |

### F1-38 Punch data backup RAM error

|                |                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                     |
| Cause          | Punch control PWB trouble.<br>Malfunction due to noises                                                                                 |
| Check & Remedy | Replace the punch control PWB.<br>Set the punch unit specifications, and adjust the sensor. (Punch unit control PWB DIP SW adjustment.) |

### F1-39 Punch paper dust sensor error

|                |                                                                                                                                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                   |
| Cause          | Punch dust sensor trouble.<br>Harness and connector connection trouble.<br>Finisher control PWB trouble.<br>Punch unit control PWB trouble.                                                                           |
| Check & Remedy | Use SIM3-2 to check the operation of the sensor.<br>Check connection of the connectors and the harness.<br>Replace the punch dust sensor.<br>Replace the finisher control PWB.<br>Replace the punch unit control PWB. |

### F1-41 Saddle paper positioning operation trouble

|                |                                                                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                          |
| Cause          | Saddle paper positioning guide drive 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 paper positioning 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. |

### F1-42 Saddle guide motor trouble

|                |                                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                     |
| Cause          | Saddle roller guide 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 roller guide 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. |

### F1-43 Saddle alignment operation trouble

|         |     |
|---------|-----|
| Section | PCU |
|---------|-----|

|                |                                                                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Saddle alignment 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 alignment motor (FSPAM).<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

|                |                                                                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 Saddle pushing plate 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 Saddle paper transport motor trouble

|                |                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                              |
| Cause          | Saddle paper transport motor trouble.<br>Finisher control PWB trouble.<br>Harness and connector connection trouble.<br>Fuse blown (24V line).                                    |
| Check & Remedy | Use SIM3-3 to check the operation of the saddle paper transport motor.<br>Check connection from the control PWB to the motor.<br>Replace the control PWB.<br>Replace the sensor. |

### F1-50 Main unit - Finisher combination error

|                |                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------|
| 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.                                           |

### F1-51 Saddle sensor connection trouble

|         |                                                                                                             |
|---------|-------------------------------------------------------------------------------------------------------------|
| Section | PCU                                                                                                         |
| Cause   | Firmware control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble. |

|                |                                                                                                                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check & Remedy | Use SIM3-2 to check the operations of the guide HP sensor and the push plate lead edge sensor.<br>Check connection from the control PWB to the sensor.<br>Replace the control PWB.<br>Replace the sensor. |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### F1-52 Finisher micro switch trouble

|                |                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                                   |
| Cause          | Finisher control PWB trouble.<br>Each micro switch trouble.<br>Harness and connector connection trouble.                                                                                                                              |
| Check & Remedy | Use SIM3-2 to check the operations of the front door/ upper door open detection and the oscillation guide close detection.<br>Check connection from the control PWB to the sensor.<br>Replace the control PWB.<br>Replace the sensor. |

### F2-22 Discharge lamp trouble

|                |                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                |
| Cause          | Contact trouble between the discharge lamp PWB and the PCU PWB.<br>Discharge lamp PWB trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the discharge lamp PWB.<br>Check the harness and connector.<br>Replace the PCU PWB.                        |

### F2-39 Process thermistor trouble

|                |                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------|
| 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 harness and the connector.<br>Replace the PCU PWB. |

### F2-40 Toner density sensor trouble

|                |                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                     |
| Cause          | Toner density sensor output abnormality (Sample level 25 or less, or 201 or above)<br>Connection trouble of the connector and the harness.<br>Developing unit trouble. PCU PWB trouble. |
| Check & Remedy | Replace the toner density sensor.<br>Check connection of the connector and the harness.<br>Replace the developing unit.<br>Replace the PCU PWB.                                         |

### F2-45 Image density sensor trouble

|                |                                                                                                                                                        |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                    |
| Cause          | Image density sensor trouble.<br>Sensor harness and connector connection trouble.<br>Image density sensor dirt.<br>PCU PWB trouble.                    |
| Check & Remedy | Replace the image density sensor .<br>Check connection of the sensor harness and connector.<br>Clean the image density sensor.<br>Replace the PCU PWB. |

### F2-50 Drum phase sensor trouble

|         |     |
|---------|-----|
| Section | PCU |
|---------|-----|

|                |                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Drum phase sensor trouble.<br>Drum phase sensor harness and connector connection trouble.<br>Drum drive section trouble.<br>PCU PWB trouble.                     |
| Check & Remedy | Replace the drum phase sensor.<br>Check connection of the drum phase sensor harness and the connector.<br>Repair the drum drive section.<br>Replace the PCU PWB. |

## F2-58 Process humidity sensor trouble

|                |                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                 |
| Cause          | Process humidity sensor trouble.<br>Harness and connector connection trouble.<br>PCU PWB trouble.                   |
| Check & Remedy | Replace the process humidity sensor.<br>Check connection of the connectors and the harness.<br>Replace the PCU PWB. |

## F2-64 Toner supply operation trouble

|                |                                                                                                                                                                                        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                    |
| Cause          | Toner clutch trouble.<br>Toner density sensor trouble.<br>Connector/harness trouble.<br>PCU PWB trouble.<br>Toner cartridge trouble.<br>Developing unit trouble.                       |
| Check & Remedy | Replace the toner clutch.<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. |

## F2-70 Improper toner cartridge detection

|                |                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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

|                |                                                                                      |
|----------------|--------------------------------------------------------------------------------------|
| Section        | PCU                                                                                  |
| Cause          | Toner cartridge (CRUM) trouble.<br>PCU PWB trouble.<br>Connector/harness trouble.    |
| Check & Remedy | Replace the toner cartridge.<br>Replace the PCU PWB.<br>Connector and harness check. |

## F2-78 Registration image density sensor trouble

|                |                                                                                                                                                          |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                      |
| Cause          | 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 |
| Check & Remedy | Check the sensor and the harness.<br>Replace the registration image sensor.<br>Replace the PCU PWB.                                                      |

## F2-91 High density process control high voltage error

|                |                                                                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                            |
| Cause          | Image density sensor trouble.<br>Harness connection trouble between the PCU PWB and image density sensor.<br>Dirt on the image density sensor.<br>Developing tank abnormality. |
| Check & Remedy | Use SIM44-2 to execute the gain adjustment of the process control sensor.<br>Check the drum surface.<br>Replace the developing tank.                                           |

## F3-12 Paper feed tray 1 lift operation trouble

|                |                                                                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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>Harness and connector connection trouble. |
| Check & Remedy | Check connection of the harness and the connector of LUD1.<br>Replace the lift-up unit.<br>Replace the PCU PWB.                                                                   |

## F3-22 Paper feed tray 2 lift operation trouble

|                |                                                                                                                                                                                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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>Harness and connector connection trouble. |
| Check & Remedy | Check the harness and the connector of LUD2.<br>Replace the lift-up unit.<br>Replace the PCU PWB.                                                                                  |

## F6-00 MFP-FAX communication trouble

|                 |                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------|
| Trouble content | Communication establishment error/Framing/Parity/Protocol error                           |
| Section         | MFP                                                                                       |
| Case 1          | Cause FAX unit PWB connector connection error                                             |
|                 | Check/ remedy Check the connector connection between the FAX unit PWB and the MFPcnt PWB. |
| Case 2          | Cause FAX unit PWB - MFPcnt PWB harness trouble                                           |
|                 | Check/ remedy Check the connector harness between the FAX unit PWB and the MFPcnt PWB.    |
| Case 3          | Cause FAX unit PWB mother board connector pin breakage                                    |
|                 | Check/ remedy Check the machine grounding.                                                |
| Case 4          | Cause FAX unit ROM trouble/ROM pin breakage                                               |
|                 | Check/ remedy Check the FAX unit PWB ROM.                                                 |

## F6-01 FAX board EEPROM read/write error

|                 |                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Trouble content | EEPROM access error (read/write)                                                                                                                   |
| Section         | FAX                                                                                                                                                |
| Case 1          | Cause EEPROM trouble                                                                                                                               |
|                 | Check/ remedy Check that no trouble occurs after replacement of EEPROM. Execute the memory check of SIM66-3 to insure that EEPROM can be accessed. |
| Case 2          | Cause FAX PWB EEPROM access circuit trouble                                                                                                        |
|                 | Check/ remedy Replace the PWB. In this case, not need to execute the simulation.                                                                   |

**F6-04 FAX MODEM operation trouble**

|                 |               |                                            |
|-----------------|---------------|--------------------------------------------|
| Trouble content |               | FAX PWB MODEM chip operation trouble       |
| Section         |               | FAX                                        |
| Case 1          | Cause         | FAX PWB MODEM chip operation trouble       |
|                 | Check/ remedy | Replace the FAX PWB MODEM chip.            |
| Case 2          | Cause         | The FAX PWB MODEM chip cannot be accessed. |
|                 | Check/ remedy | Replace the FAX PWB.                       |

**F6-21 Combination error between the TEL/LIU PWB and the FAX soft switch**

|                 |               |                                                                                     |
|-----------------|---------------|-------------------------------------------------------------------------------------|
| Trouble content |               | Combination error between the TEL/LIU PWB and the FAX PWB information (soft switch) |
| Section         |               | FAX                                                                                 |
| Case 1          | Cause         | The destination of the installed TEL/LIU PWB differs.                               |
|                 | Check/ remedy | Check the destination of the installed TEL/LIU PWB.                                 |
| Case 2          | Cause         | The FAX PWB information (soft switch) differs.                                      |
|                 | Check/ remedy | Check the FAX PWB information (soft switch).                                        |
| Case 3          | Cause         | TEL/LIU PWB trouble                                                                 |
|                 | Check/ remedy | Replace the TEL/LIU PWB.                                                            |

**F6-30 Access error to 1-chip microprocessor on the FAX board (FAX detection)**

|                 |               |                                                                                                                    |
|-----------------|---------------|--------------------------------------------------------------------------------------------------------------------|
| Trouble content |               | Access error (read/write) to 1-chip microprocessor on the FAX board                                                |
| Section         |               | FAX                                                                                                                |
| Case 1          | Cause         | Program writing error (or no writing) to the 1-chip microprocessor                                                 |
|                 | Check/ remedy | Use SIM66-24 to rewrite the 1-chip microprocessor program.                                                         |
| Case 2          | Cause         | 1-chip microprocessor trouble                                                                                      |
|                 | Check/ remedy | Replace the 1-chip microprocessor chip. When replacing, use SIM66-42 to rewrite the 1-chip microprocessor program. |
| Case 3          | Cause         | FAX PWB 1-chip microprocessor access circuit trouble                                                               |
|                 | Check/ remedy | Replace the FAX PWB.                                                                                               |

**F6-97 The FAX PWB does not match with the machine model.**

|                 |               |                                                                         |
|-----------------|---------------|-------------------------------------------------------------------------|
| Trouble content |               | The FAX PWB identification model does not match with the machine model. |
| Section         |               | FAX                                                                     |
| Case 1          | Cause         | An improper type of FAX PWB is installed to the machine.                |
|                 | Check/ remedy | Replace the FAX PWB with a proper one.                                  |

**F6-98 Combination error between the FAX-BOX destination information and the machine destination information.**

|                 |  |                                                                                                        |
|-----------------|--|--------------------------------------------------------------------------------------------------------|
| Trouble content |  | Combination error between the FAX PWB destination information and the machine destination information. |
| Section         |  | FAX                                                                                                    |

|        |               |                                                                                                                                                               |
|--------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case 1 | Cause         | Combination error between the destination information written in EEPROM on the FAX PWB and the destination information of the machine (set with SIM26-6).     |
|        | Check/ remedy | 1) Check the destination of the FAX PWB.<br>2) Check the destination of the machine. (SIM26-6)<br>3) Use a proper combination of the machine and the FAX PWB. |

**H2-00 Thermistor open trouble (TH\_UM)**

|                |  |                                                                                                                              |
|----------------|--|------------------------------------------------------------------------------------------------------------------------------|
| Section        |  | PCU                                                                                                                          |
| Cause          |  | Thermistor trouble.<br>PCU PWB trouble<br>Connection trouble of the connector and the harness.<br>Fusing unit not installed. |
| Check & Remedy |  | Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness.                        |

**H2-01 Thermistor open trouble (TH\_LM)**

|                |  |                                                                                                                                                                                                                  |
|----------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 harness.<br>Check the connector in the fusing section. |

**H2-02 Thermistor open trouble (TH\_US)**

|                |  |                                                                                                                               |
|----------------|--|-------------------------------------------------------------------------------------------------------------------------------|
| Section        |  | PCU                                                                                                                           |
| Cause          |  | Thermistor trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness.<br>Fusing unit not installed. |
| Check & Remedy |  | Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness.                         |

**H3-00 Fusing section high temperature trouble (TH\_UM)**

|                |  |                                                                                                                                                                                                                                    |
|----------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        |  | PCU                                                                                                                                                                                                                                |
| Cause          |  | The fusing temperature exceeds the specified level.<br>Thermistor trouble.<br>PCU PWB trouble<br>Connection trouble of the fusing section connector and the harness.<br>HL PWB trouble.                                            |
| Check & Remedy |  | 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 connector and the harness.<br>Replace the HL PWB. |

**H3-01 Fusing section high temperature trouble (TH\_LM)**

|         |  |     |
|---------|--|-----|
| 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 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 connector and the harness.<br>Replace the HL PWB. |

### H3-02 Fusing section high temperature trouble (TH\_US)

| Section        | PCU                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The fusing temperature exceeds the specified level.<br>Thermistor trouble.<br>PCU PWB trouble.<br>HL PWB trouble. Fusing section connector connection trouble.<br>HL PWB trouble.                                                                                                                                                                 |
| Check & Remedy | Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble.<br>Check connection of the thermistor and the harness.<br>Check the PCU PWB thermistor input circuit section.<br>(When the lamp is ON:) Check the HL PWB and the PCU PWB lamp circuit.<br>Replace the thermistor, the HL PWB, and the PCU PWB. |

### H4-00 Fusing section low temperature trouble (TH\_UM)

| Section        | PCU                                                                                                                                                                                                                                                                                                                        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay.<br>Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL PWB trouble.<br>Interlock switch 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 PWB.<br>Replace the interlock switch.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble. |

### H4-02 Fusing section low temperature trouble (TH\_US)

| Section | PCU                                                                                                                                                                                                                                                                                                     |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause   | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay.<br>Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL PWB trouble.<br>Interlock switch 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 PWB.<br>Replace the interlock switch.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### H5-01 5 times continuous POD1 not-reach jam

| Section        | PCU                                                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | A fusing jam is not canceled completely. (A jam paper remains.)<br>POD1 sensor trouble.<br>Fusing unit installation trouble.<br>Connector, harness connection trouble.<br>PCU PWB trouble                                   |
| Check & Remedy | Replace the POD1 sensor.<br>Check the installing position of the fusing unit.<br>Replace the fusing unit.<br>Check connection of the 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)

| Section        | PCU                                                                                                                                                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature.<br>Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL PWB 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 PWB.<br>Use SIM5-2 to check the flashing operation of the heater lamp.                                                |

### H7-12 Recovery error from low fuser temp. (TH\_US)

| Section        | PCU                                                                                                                                                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature.<br>Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL PWB 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 PWB.<br>Use SIM5-2 to check the flashing operation of the heater lamp.                                                |

**L1-00 Scanner feed trouble**

| Section        | SCU                                                                                                                                                                                                                                                  |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Scanner feed is not completed within the specified time.<br>Scanner unit trouble.<br>SCU PWB trouble<br>Scanner control 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.                       |

**L3-00 Scanner return trouble**

| Section        | SCU                                                                                                                                                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Scanner return is not completed within the specified time.<br>Scanner unit trouble.<br>SCU PWB trouble<br>Scanner control 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.                         |

**L4-02 Paper feed motor trouble**

| Section        | PCU                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | A lock signal is detected during ON period of the paper feed motor in warming up or canceling a jam.<br>Paper feed motor trouble.<br>Harness and connector connection trouble.<br>PCU PWB trouble |
| Check & Remedy | Use SIM6-1 to check the operation of the paper feed motor.<br>Replace the paper feed motor.<br>Check connection of the connectors and the harness.<br>Replace the PCU PWB.                        |

**L4-03 Fusing motor trouble**

| Section        | PCU                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The motor lock signal is detected during rotation of the fusing motor.<br>Fusing motor trouble.<br>Connection trouble of the connector and the harness.<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 connectors and the harness.<br>Replace the PCU PWB.          |

**L4-04 Drum motor trouble**

| Section | PCU |
|---------|-----|
|---------|-----|

|                |                                                                                                                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The motor lock signal is detected during rotation of the drum motor.<br>Drum motor trouble.<br>Drum unit trouble.<br>Harness and connector connection trouble.<br>PCU PWB trouble<br>Developing unit trouble.             |
| Check & Remedy | Use SIM25-1 to check the operation of the drum motor.<br>Replace the drum motor.<br>Check connection of the connectors and the harness.<br>Replace the PCU PWB.<br>Replace the drum unit.<br>Replace the developing unit. |

**L4-11 Shift motor trouble**

| Section        | PCU                                                                                                                                                                                                                                                                        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | No change in the shifter home position sensor signal is detected in the operation of the shifter initializing.<br>Shift motor trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness.<br>Shifter home position sensor trouble.                |
| Check & Remedy | Use SIM6-1 to check the shift operation.<br>Use SIM30-1 to check the operation of the shifter home position sensor.<br>Replace the shift motor.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness.<br>Replace the shifter home position sensor. |

**L4-31 Paper exit cooling fan (POFM1) trouble**

| Section        | PCU                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The fan operation signal is not detected within the specified time in the paper exit cooling fan operation.<br>Paper exit cooling fan trouble.<br>PCU PWB trouble<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Check connection of the connectors and the harness.<br>Use SIM6-2 to check the rotating operation of the fan.<br>Replace the paper exit cooling fan.<br>Replace the PCU PWB.                                              |

**L4-32 Power source cooling fan (PSFM1) trouble**

| Section        | PCU                                                                                                                                                                                                              |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The fan operation signal is not detected within the specified time in the power cooling fan operation.<br>Power cooling fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Use SIM6-2 to check the operation of the fan motor.<br>Replace the power cooling fan.<br>Replace the PCU PWB.<br>Check/replace the connector or the harness.                                                     |

**L4-34 LSU cooling fan (LSUCFM) trouble**

| Section | PCU                                                                                                                                                                                                               |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause   | When the LSU cooling fan is operated, the fan operation signal is not detected within the specified time.<br>LSU cooling fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |



|                |                                                                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check & Remedy | Use SIM6-2 to check the operation of the fan motor.<br>Replace the LSU cooling fan.<br>Replace the PCU PWB.<br>Replace the LSU control PWB.<br>Check connection of the connector and the harness. |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### **L4-35 Paper exit cooling fan (POFM2) trouble**

|                |                                                                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                      |
| Cause          | Paper exit cooling fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness.                                                              |
| Check & Remedy | Use SIM6-2 to check the operation of the fan motor.<br>Replace the paper exit cooling fan.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness. |

#### **L4-40 Ozone fan (OZFM1) trouble**

|                |                                                                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>Replace the fan motor / the PCU PWB.<br>Check connection of the connector and the harness.                                                     |

#### **L4-43 Paper exit cooling fan (POFM3) trouble**

|                |                                                                                                                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                       |
| Cause          | The fan operation signal is not detected within the specified time in the paper exit cooling fan operation.<br>Paper exit cooling fan trouble.<br>PCU PWB trouble<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Check connection of the connector and the harness.<br>Use SIM6-2 to check the operation of the fan motor.<br>Replace the paper exit cooling fan.<br>Replace the PCU PWB.                                                  |

#### **L4-44 Power source cooling fan (PSFM2) trouble**

|                |                                                                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>Check the harness and the connector between the PCU PWB and the fan motor..<br>Replace the fan motor / the PCU PWB.                            |

#### **L4-50 Process cooling fan (PROFM1) trouble**

|         |                                                                                                                                                                                                       |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>Check the harness and the connector between the PCU PWB and the fan motor..<br>Replace the fan motor / the PCU PWB. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### **L6-10 Polygon motor trouble**

|                |                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                             |
| Cause          | The motor does not reach the specified rpm in 8 sec after starting rotation of the polygon motor.<br>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 polygon motor.<br>Replace the LSU.<br>Replace the LSU control PWB.                |

#### **L8-01 Full wave signal detection error**

|                |                                                                                                                                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                |
| Cause          | No full wave signal is detected.<br>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**

|                |                                                                                                                                                                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                                                                       |
| Cause          | An abnormality in the full wave signal frequency is detected. (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 MFP PWB/ Mother board**

|                |                                                                                                                                                        |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                                                    |
| Cause          | Mother board PWB - MFP PWB connection trouble.<br>MFP PWB trouble.<br>Mother trouble.                                                                  |
| Check & Remedy | Check connection between the mother board and the MFP PWB.<br>Check the ground of the main unit.<br>Replace the MFPC PWB.<br>Replace the mother board. |

#### **PC-- Personal counter not detected**

|                |                                                                                 |
|----------------|---------------------------------------------------------------------------------|
| Section        | MFP                                                                             |
| Cause          | The personal counter is not installed.<br>The personal counter is not detected. |
| Check & Remedy | Check connection of the connectors and the harness.<br>Replace the SCU PWB.     |

## U1-01 Battery trouble

| Section        | MFP                                                               |
|----------------|-------------------------------------------------------------------|
| Cause          | Battery life<br>Battery circuit abnormality                       |
| Check & Remedy | Check to confirm that the battery voltage is about 2.0V or above. |

## U2-00 MFP EEPROM read/write error

| Section        | MFP                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------|
| Cause          | MFP PWB EEPROM trouble.<br>EEPROM socket contact trouble.<br>MFP PWB trouble.<br>Strong external noises. |
| Check & Remedy | Replace the MFP PWB EEPROM.<br>Replace the MFP PWB.<br>Check the power environment.                      |

## U2-05 HDD/MFP PWB SRAM contents inconsistency

| Section        | MFP                                                                                                                           |
|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The HDD or the MFP PWB which differs from that before turning OFF the power is installed.<br>HDD trouble.<br>MFP PWB trouble. |
| Check & Remedy | Use SIM16 to cancel the error.<br>If there is backup data (export data by device cloning), import it.                         |

## U2-11 MFP PWB EEPROM counter check sum error

| Section        | MFP                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------|
| Cause          | MFP PWB EEPROM trouble.<br>EEPROM socket contact trouble.<br>MFP PWB trouble.<br>Strong external noises. |
| Check & Remedy | Use SIM16 to cancel the error.<br>Replace the MFP PWB.                                                   |

## U2-30 MFP PWB and PCU PWB manufacturing No. data inconsistency

| Section        | MFP                                                                                                                                                                                                                                                                      |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFP PWB.<br>When replacing the PCU PWB or the MFP PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB.<br>MFP 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 MFP PWB.<br>Replace the PCU PWB.                                                                    |

## U2-40 SD card system storage data area error

| Section | MFP |
|---------|-----|
|---------|-----|

|                |                                                                                                                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | File error occurs in the SD card system storage data partition.<br>SD card trouble.<br>MFP 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 MFP PWB and replace if necessary.<br>Check the SD card and replace if necessary. |

## U2-41 HDD system storage data area error

| Section        | MFP                                                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | File error occurs in the HDD system saved data area disabling backup of the saved file of the machine adjustment value in the SD card.<br>HDD trouble.<br>MFP PWB trouble.                                     |
| Check & Remedy | Check the HDD, and replace if necessary.<br>Check the MFP PWB, and replace if necessary.<br>When replacing the HDD and MFP PWB, refer to the chapter of "necessary procedures of HDD and MFP PWB replacement." |

## U2-42 Machine adjustment data (system storage data area) error

| Section        | MFP                                                                                                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The saved file of the machine adjustment values in the SD card and the HDD cannot be found or is broken .<br>Both of the SD card set data and HDD system saved data area are corrupted.<br>HDD trouble.<br>MFP PWB trouble.<br>SD card trouble. |
| Check & Remedy | Check the HDD, and replace if necessary.<br>Check the MFP PWB, and replace if necessary.<br>Check the SD card, and replace if necessary.<br>Use SIM to adjust the machine again and set the adjustment values.                                  |

## U2-50 HDD user authentication data check sum error

| Section        | MFP                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | HDD trouble.<br>MFP PWB trouble.<br>Strong external noises                                                                                                                       |
| Check & Remedy | Check the data related to the check sum error (address book, image send system registration data)<br>Use SIM16 to cancel U2 trouble.<br>Replace the HDD.<br>Replace the MFP PWB. |

## U2-60 Water Mark check error

| Section        | MFP                                       |
|----------------|-------------------------------------------|
| Cause          | Watermark data trouble                    |
| Check & Remedy | Use SIM49-5 to upload the watermark data. |

## U2-80 SCU PWB EEPROM read/write error

| Section | SCU                                                                           |
|---------|-------------------------------------------------------------------------------|
| Cause   | SCU PWB EEPROM trouble.<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>Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values.<br>Use SIM16 to cancel the trouble. |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **U2-81 SCU PWB EEPROM check sum error**

|                |                                                                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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>Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values.<br>Use SIM16 to cancel the trouble. |

## **U2-90 PCU PWB EEPROM read/write error**

|                |                                                                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                                                               |
| Cause          | PCU PWB EEPROM trouble.<br>Installation of non-initialized EEPROM.<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>Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values.<br>Use SIM16 to cancel the trouble. |

## **U2-91 PCU PWB EEPROM check sum error**

|                |                                                                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                                                               |
| Cause          | PCU PWB EEPROM trouble.<br>Installation of non-initialized EEPROM.<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>Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values.<br>Use SIM16 to cancel the trouble. |

## **U5-00 Document feed unit communication error**

|                |                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| 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 (SPFFAN) trouble**

|         |     |
|---------|-----|
| Section | SCU |
|---------|-----|

|                |                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------|
| Cause          | Fan motor trouble.<br>Connection trouble of the connector and the harness.                                               |
| Check & Remedy | Use SIM2-3 to check the operation.<br>Check the DSPF PWB and the driver PWB connection of the connector and the harness. |

## **U5-30 Document feed unit tray lift up trouble**

|                |                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 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**

|                |                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.                                                |

## **U6-00 Communication error of PCU PWB/ Desk paper feed unit**

|                |                                                                                                                                                                                                                        |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                    |
| Cause          | Error when testing the communication line after turning ON the power or canceling the simulation.<br>Connector, harness connection trouble.<br>Desk control PWB trouble.<br>PCU PWB trouble<br>Strong external noises. |
| Check & Remedy | Turn OFF/ON the power to cancel.<br>Check the connector and the harness in the communication line.<br>Replace the desk control PWB.<br>Replace the PCU PWB.                                                            |

## **U6-01 Desk paper feed tray 1 lift trouble**

|                |                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section        | PCU                                                                                                                                                                                                                             |
| Cause          | DLUD1 does not turn ON within the specified time when lift-up operation.<br>DLUD1 sensor trouble.<br>Desk control PWB trouble.<br>Lift unit trouble.<br>Connection trouble of the connector and the harness.<br>PCU PWB trouble |
| Check & Remedy | Replace the DLUD1 sensor.<br>Replace the desk control PWB.<br>Replace the lift unit.<br>Check connection of the connector and the harness.<br>Replace the PCU PWB.                                                              |

## **U6-02 Desk paper feed tray 2 lift trouble**

|         |     |
|---------|-----|
| Section | PCU |
|---------|-----|

|                |                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | DLUD2 does not turn ON within the specified time when lift-up operation.<br>DLUD2 sensor trouble.<br>Desk control PWB trouble.<br>Lift unit trouble.<br>Connection trouble of the connector and the harness.<br>PCU PWB trouble |
| Check & Remedy | Replace the DLDU2 sensor.<br>Replace the desk control PWB.<br>Replace the lift unit.<br>Check connection of the connector and the harness.<br>Replace the PCU PWB.                                                              |

## U6-09 LCC lift trouble

| Section        | PCU                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | No change in the lift motor rotation sensor signal is detected within the specified time after outputting the lift motor ON signal.<br>The lift motor rotation sensor signal varies though the lift motor is stopped.<br>Lift motor rotation sensor trouble.<br>LCC control PWB trouble<br>Lift mechanism trouble.<br>Lift motor trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Use SIM4-2 and 4-3 to check the operation of the sensor and the lift motor.<br>Replace the lift motor rotation sensor.<br>Replace the LCC control PWB.<br>Replace the lift mechanism.<br>Replace the lift motor.<br>Check connection of the connector and the harness.<br>Use SIM15 to cancel the trouble.                                                                                        |

## U6-10 Desk paper feed unit paper transport motor trouble

| Section        | PCU                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Desk paper feed motor trouble (motor lock, motor rpm abnormality, over-current to the motor).<br>Desk control PWB trouble.<br>Connection trouble of the connector and the harness.          |
| Check & Remedy | Use SIM4-3 to check the operation of the desk transport motor.<br>Replace the desk control PWB.<br>Replace the desk paper feed motor.<br>Check connection of the connector and the harness. |

## U6-20 PCU PWB - LCC communication error

| Section        | PCU                                                                                                                                                                                                                                                                               |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | Error when testing the communication line after turning ON the power or canceling the simulation.<br>LCC control PWB trouble.<br>PCU PWB trouble.<br>Connector, harness connection trouble.<br>Strong external noises.<br>Improper combination between the main unit and the LCC. |
| Check & Remedy | Cancel the error by turning OFF/ON the power.<br>Check the connector and the harness in the communication line.<br>Replace the LCC control PWB.<br>Replace the PCU PWB.                                                                                                           |

## U6-21 LCC paper transport motor trouble

| Section | PCU |
|---------|-----|
|---------|-----|

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | No change in the paper transport motor rotation sensor signal is detected within the specified time after outputting the paper transport motor ON signal.<br>The paper transport motor rotation sensor signal varies though the paper transport motor is stopped.<br>Paper transport motor rotation sensor trouble.<br>LCC control PWB trouble.<br>Mechanism trouble.<br>Paper transport motor trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Use SIM4-3 to check the operation of the paper transport motor.<br>Replace the paper transport motor.<br>Replace the LCC control PWB.<br>Replace the mechanism.<br>Replace the paper transport motor.<br>Check connection of the connector and the harness.                                                                                                                                                                                                     |

## U6-22 LCC 24V power trouble

| Section        | PCU                                                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause          | The DC24V power is not supplied from the main unit to the LCC.<br>Connector, harness connection trouble.<br>LCC control PWB trouble.<br>Power source unit trouble. |
| Check & Remedy | Check the connector and the harness in the power line.<br>Replace the power unit.<br>Replace the LCC control PWB.                                                  |

## U6-50 Desk - Main unit combination trouble

| Section        | PCU                                                                                     |
|----------------|-----------------------------------------------------------------------------------------|
| Cause          | Improper combination between the main unit and the desk.<br>Desk control PWB trouble.   |
| Check & Remedy | Install a desk which is proper for the main unit mode.<br>Replace the desk control PWB. |

## U6-51 LCC - Main unit combination trouble

| Section        | PCU                                                                                   |
|----------------|---------------------------------------------------------------------------------------|
| Cause          | Improper combination between the main unit and the LCC.<br>LCC control PWB trouble.   |
| Check & Remedy | Install a LCC which is proper for the main unit mode.<br>Replace the LCC control PWB. |

## U6-52 PCU - Paper feed desk communication trouble

| Section        | PCU                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------|
| Cause          | Connection failure between the machine and the paper feed tray 2 (desk unit).<br>PCU PWB trouble. |
| Check & Remedy | Check connection of the connector and the harness.<br>Replace the PCU PWB.                        |

## U7-50 MFP PWB - Vendor machine communication error

| Section | MFP                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause   | Improper setting of the vendor machine specifications (SIM126-3).<br>Vendor machine trouble.<br>MFP 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. Change the specifications of the vendor machine (SIM26-3).<br>Replace the MFP PWB. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### U7-51 Vendor machine error

|                |                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. |

### U9-01 Touch panel trouble

|                |                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------|
| Section        | SCU                                                                                                                 |
| Cause          | SCU PWB trouble.<br>Connector and harness related with the touch panel connection trouble.                          |
| Check & Remedy | Replace the SCU PWB.<br>Check the connector and the harness related with the touch panel in the communication line. |

### UC-02 IPD/DOCC ASIC IPD section error

|                |                                          |
|----------------|------------------------------------------|
| Section        | SCU                                      |
| Cause          | SCU PWB trouble (IPD/DOCC ASIC trouble). |
| Check & Remedy | Replace the SCU PWB.                     |

### UC-20 IPD/DOCC ASIC DOCC section error

|                |                                          |
|----------------|------------------------------------------|
| Section        | SCU                                      |
| Cause          | SCU PWB trouble (IPD/DOCC ASIC trouble). |
| Check & Remedy | Replace the SCU PWB.                     |

### A0-01 PCU PWB ROM error

|                |                                                                                                                                      |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                                  |
| Cause          | The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc.<br>ROM trouble. |
| Check & Remedy | Use SIM49-1 to perform the version-up procedure again.<br>Replace the ROM.                                                           |

### A0-02 SCU PWB ROM error

|                |                                                                                                                                      |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                                  |
| Cause          | The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc.<br>ROM trouble. |
| Check & Remedy | Use SIM49-1 to perform the version-up procedure again.<br>Replace the ROM.                                                           |

## A. JAM cause code list

### (1) Main unit/Desk

| JAM code | JAM content           |
|----------|-----------------------|
| APPD1_N  | APPD1 not-reached JAM |
| APPD1_S  | APPD1 remaining JAM   |

### A0-04 ACU PWB ROM error (when scanner expansion kit is installed)

|                |                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------------|
| Section        | MFP                                                                                                                       |
| Cause          | The firmware update is failed because of turning OFF the power during the firmware update operation, etc.<br>ROM trouble. |
| Check & Remedy | Use SIM49-1 to execute update of the firmware.<br>Replace the ROM.                                                        |

### A0-15 DSK BOOT version disagreement

|                |                                                          |
|----------------|----------------------------------------------------------|
| Section        | MFP                                                      |
| Cause          | Firmware combination error between the DSK and the BOOT. |
| Check & Remedy | Check the combination between the DSK and the BOOT.      |

### A0-17 Inconsistency between the UI data and the CPU firmware version

|                |                                                                                 |
|----------------|---------------------------------------------------------------------------------|
| 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)

|                |                                                                             |
|----------------|-----------------------------------------------------------------------------|
| 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)

|                |                                                                             |
|----------------|-----------------------------------------------------------------------------|
| 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)

|                |                                                                             |
|----------------|-----------------------------------------------------------------------------|
| Section        | SCU                                                                         |
| Cause          | Inconsistency between the SCU firmware version and the EEPROM data version. |
| Check & Remedy | Check the combination of the firmware.                                      |

## 4. Paper JAM code

| JAM code   | JAM content                                             |
|------------|---------------------------------------------------------|
| APPD2_N    | APPD2 not-reached JAM                                   |
| APPD2_S    | APPD2 remaining JAM                                     |
| CPFD1_N2   | CPFD1 not-reached JAM (Main tray 2 feed paper)          |
| CPFD1_N3   | CPFD1 not-reached JAM (Desk upper tray feed paper)      |
| CPFD1_N4   | CPFD1 not-reached JAM (Desk lower tray feed paper)      |
| CPFD1_NT1  | CPFD1 not-reached JAM (Tandem left tray feed paper)     |
| CPFD1_NT2  | CPFD1 not-reached JAM (Tandem right tray feed paper)    |
| CPFD1_S1   | CPFD1 remaining JAM (Main tray 1 feed paper)            |
| CPFD1_S2   | CPFD1 remaining JAM (Main tray 2 feed paper)            |
| CPFD1_S3   | CPFD1 remaining JAM (Desk upper tray feed paper)        |
| CPFD1_S4   | CPFD1 remaining JAM (Desk lower tray feed paper)        |
| CPFD1_ST1  | CPFD1 remaining JAM (Tandem left tray feed paper)       |
| CPFD1_ST2  | CPFD1 remaining JAM (Tandem right tray feed paper)      |
| CPFD2_DESK | CPFD2 JAM (Desk communication abnormality detection)    |
| CPFD2_N3   | CPFD2 not-reached JAM (Desk upper tray feed paper)      |
| CPFD2_N4   | CPFD2 not-reached JAM (Desk lower tray feed paper)      |
| CPFD2_NT1  | CPFD2 not-reached JAM (Tandem left tray feed paper)     |
| CPFD2_NT2  | CPFD2 not-reached JAM (Tandem right tray feed paper)    |
| CPFD2_S2   | CPFD2 remaining JAM (Main tray 2 feed paper)            |
| CPFD2_S3   | CPFD2 remaining JAM (Desk upper tray feed paper)        |
| CPFD2_S4   | CPFD2 remaining JAM (Desk lower tray feed paper)        |
| CPFD2_ST1  | CPFD2 remaining JAM (Tandem left tray feed paper)       |
| CPFD2_ST2  | CPFD2 remaining JAM (Tandem right tray feed paper)      |
| D1PPD1_ST1 | D1PPD1 remaining JAM (Tandem left tray feed paper)      |
| D1PPD2_NT1 | D1PPD2 not-reached JAM (Tandem left tray feed paper)    |
| D1PPD2_ST1 | D1PPD2 remaining JAM (Tandem left tray feed paper)      |
| DPFD1_N4   | DPFD1 not-reached JAM (Desk lower tray feed paper)      |
| DPFD1_NT1  | DPFD1 not-reached JAM (Tandem left tray feed tray)      |
| DPFD1_S3   | DPFD1 remaining JAM (Desk upper tray feed paper)        |
| DPFD1_S4   | DPFD1 remaining JAM (Desk lower tray feed paper)        |
| DPFD1_ST1  | DPFD1 remaining JAM (Tandem left tray feed paper)       |
| DPFD1_ST2  | DPFD1 remaining JAM (Tandem right tray feed paper)      |
| DPFD2_S4   | DPFD2 remaining JAM (Desk lower tray feed paper)        |
| MFT        | Manual feed tray paper feed JAM (PPD1 not-reached)      |
| MPFD_S     | MPFD remaining JAM                                      |
| MTR_ILG    | Motor driver trouble JAM                                |
| NO_MATCH   | Parameter inconsistency                                 |
| POD1_FUS   | POD1 JAM (Fusing winding detection)                     |
| POD1_N     | POD1 not-reached JAM                                    |
| POD1_S     | POD1 remaining JAM                                      |
| POD2_N     | POD2 not-reached JAM                                    |
| POD2_S     | POD2 remaining JAM                                      |
| POD3_N     | POD3 not-reached JAM                                    |
| POD3_S     | POD3 remaining JAM                                      |
| PPD1_LCC   | PPD1 JAM (LCC communication abnormality detection)      |
| PPD1_N1    | PPD1 not-reached JAM (Main tray 1 feed paper)           |
| PPD1_N2    | PPD1 not-reached JAM (Main tray 2 feed paper)           |
| PPD1_N3    | PPD1 not-reached JAM (Desk upper tray feed paper)       |
| PPD1_N4    | PPD1 not-reached JAM (Desk lower tray feed paper)       |
| PPD1_NA    | PPD1 not-reached JAM (ADU refeed paper)                 |
| PPD1_NL    | PPD1 not-reached JAM (LCC feed paper)                   |
| PPD1_NM    | PPD1 not-reached JAM (Manual tray feed paper)           |
| PPD1_NT1   | PPD1 not-reached JAM (Tandem left tray feed paper)      |
| PPD1_NT2   | PPD1 not-reached JAM (Tandem right tray feed paper)     |
| PPD1_S1    | PPD1 remaining JAM (Main tray 1 feed paper)             |
| PPD1_S2    | PPD1 remaining JAM (Main tray 2 feed paper)             |
| PPD1_S3    | PPD1 remaining JAM (Desk upper tray feed paper)         |
| PPD1_S4    | PPD1 remaining JAM (Desk lower tray feed paper)         |
| PPD1_SA    | PPD1 remaining JAM (ADU refeed paper)                   |
| PPD1_SL    | PPD1 remaining JAM (LCC refeed paper)                   |
| PPD1_SM    | PPD1 remaining JAM (Manual tray feed paper)             |
| PPD1_ST1   | PPD1 remaining JAM (Tandem left tray feed paper)        |
| PPD1_ST2   | PPD1 remaining JAM (Tandem right tray feed paper)       |
| PPD2_DRUM  | PPD2 JAM (Drum lock detection)                          |
| PPD2_FIN   | PPD2 JAM (Finisher communication abnormality detection) |
| PPD2_N1    | PPD2 not-reached JAM (Main tray 1 feed paper)           |
| PPD2_N2    | PPD2 not-reached JAM (Main tray 2 feed paper)           |
| PPD2_N3    | PPD2 not-reached JAM (Desk upper tray feed paper)       |
| PPD2_N4    | PPD2 not-reached JAM (Desk lower tray feed paper)       |
| PPD2_NA    | PPD2 not-reached JAM (ADU refeed paper)                 |

| JAM code | JAM content                                         |
|----------|-----------------------------------------------------|
| PPD2_NL  | PPD2 not-reached JAM (LCC feed paper)               |
| PPD2_NM  | PPD2 not-reached JAM (Manual tray feed paper)       |
| PPD2_NT1 | PPD2 not-reached JAM (Tandem left tray feed paper)  |
| PPD2_NT2 | PPD2 not-reached JAM (Tandem right tray feed paper) |
| PPD2_PRI | PPD2 JAM (Image preparation wait timeout)           |
| PPD2_S1  | PPD2 remaining JAM (Main tray 1 feed paper)         |
| PPD2_S2  | PPD2 remaining JAM (Main tray 2 feed paper)         |
| PPD2_S3  | PPD2 remaining JAM (Desk upper tray feed paper)     |
| PPD2_S4  | PPD2 remaining JAM (Desk lower tray feed paper)     |
| PPD2_SA  | PPD2 remaining JAM (ADU refeed paper)               |
| PPD2_SL  | PPD2 remaining JAM (LCC feed paper)                 |
| PPD2_SM  | PPD2 remaining JAM (Manual tray feed paper)         |
| PPD2_ST1 | PPD2 not-reached JAM (Tandem left tray feed paper)  |
| PPD2_ST2 | PPD2 not-reached JAM (Tandem right tray feed paper) |
| SIZE_ILG | Size irregular JAM                                  |
| STOP_JAM | Emergency stop JAM                                  |
| TRAY1    | CPFD1 not-reached JAM (Main tray 1 feed paper)      |
| TRAY2    | CPFD2 not-reached JAM (Main tray 2 feed paper)      |
| TRAY3    | Paper feed JAM (Desk upper tray/Tandem left tray)   |
| TRAY4    | Paper feed JAM (Desk lower tray/Tandem right tray)  |

## (2) DSPF

| JAM code | JAM content                           |
|----------|---------------------------------------|
| ICU_REQ  | ICU factor stop JAM                   |
| P_SHORT  | Short size JAM                        |
| SDFS_S   | Paper JAM                             |
| SPOD_N   | SPOD not-reached JAM                  |
| SPOD_S   | SPOD remaining JAM                    |
| SPPD1_N  | SPPD1 not-reached JAM                 |
| SPPD1_S  | SPPD1 remaining JAM                   |
| SPPD2_N  | SPPD2 not-reached JAM                 |
| SPPD2_NR | SPPD2 reverse not-reached JAM         |
| SPPD2_S  | SPPD2 remaining JAM                   |
| SPPD2_SR | SPPD2 reverse 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                   |
| SPSD_SCN | Exposure start notification timer end |
| STOP_JAM | Emergency stop request JAM            |

## (3) LCC

| JAM code | JAM content                           |
|----------|---------------------------------------|
| LCC      | LCC paper feed JAM (LPFD not reached) |
| LPFD_SL  | LPFD remaining JAM (LCC feed paper)   |

## (4) Inner finisher

| JAM code | JAM content                         |
|----------|-------------------------------------|
| FED_N    | Finisher inlet port not-reached JAM |
| FED_S    | Finisher inlet port remaining JAM   |
| FEXIT_S  | Bundle exit remaining JAM           |
| FIN_TIME | Finisher paper early reaching JAM   |
| FSTPD_S  | Finisher paper exit remaining JAM   |
| FSTPLJ   | Staple JAM                          |

## (5) 1K finisher

| JAM code | JAM content                             |
|----------|-----------------------------------------|
| FDRLMJ   | Paper exit roller lift motor JAM        |
| FGMJ     | Gripper motor JAM                       |
| FIN_PAOF | Paper attribute data reception overflow |
| FIN_TIME | Finisher paper early reaching JAM       |
| FPDD_S   | Bundle exit remaining JAM               |
| FPNCHJ   | Punch JAM                               |
| FPPD1_N  | Finisher inlet port not-reached JAM     |
| FPPD1_S  | Finisher inlet port remaining JAM       |
| FPPD2_N  | Saddle section not-reached JAM          |
| FPPD2_S  | Saddle section remaining JAM            |



| JAM code | JAM content                           |
|----------|---------------------------------------|
| FPPD3_N  | Saddle paper exit not-reached JAM     |
| FPPD3_S  | Saddle paper exit remaining JAM       |
| FSATPD_S | Saddle transport remaining JAM        |
| FSDMJ    | Saddle motor JAM                      |
| FSPTMJ   | Saddle paper transport motor JAM      |
| FSSMJ    | Staple shift motor JAM                |
| FSSTPLJ  | Saddle staple JAM                     |
| FSTPLJ   | Staple JAM                            |
| PDPPD1_N | Interface inlet port not-reached JAM  |
| PDPPD1_S | Interface inlet port remaining JAM    |
| PDPPD2_N | Interface outlet port not-reached JAM |
| PDPPD2_S | Interface outlet port remaining JAM   |

#### (6) 4K finisher

| JAM code | JAM content                           |
|----------|---------------------------------------|
| FED_N    | Finisher inlet port not-reached JAM   |
| FED_S    | Finisher inlet port remaining JAM     |
| FFPD_N   | Saddle section not-reached JAM        |
| FFPD_S   | Saddle section remaining JAM          |
| FHS_N    | Finisher paper exit not-reached JAM   |
| FHS_S    | Finisher paper exit remaining JAM     |
| FIN_TIME | Finisher paper early reaching JAM     |
| FPNCHJ   | Punch JAM                             |
| FSFS_N   | Saddle paper exit not-reached JAM     |
| FSFS_S   | Saddle paper exit remaining JAM       |
| FSHS_N   | Saddle transport not-reached JAM      |
| FSHS_S   | Saddle transport remaining JAM        |
| FSSTPLJ  | Saddle staple JAM                     |
| FSTPLJ   | Staple JAM                            |
| PDPPD1_N | Interface inlet port not-reached JAM  |
| PDPPD1_S | Interface inlet port remaining JAM    |
| PDPPD2_N | Interface outlet port not-reached JAM |
| PDPPD2_S | Interface outlet port remaining JAM   |

## [7] FIRMWARE UPDATE

### 1. Outline

#### A. Cases where update is required

ROM update is required in the following cases:

- 1) When there is a necessity to upgrade the performance.
- 2) When installing a new spare part ROM for repair to the machine.
- 3) When installing a new spare parts PWB unit (with ROM) for repair to the machine.
- 4) When there is a trouble in the ROM program and it must be repaired.

#### B. Notes for update

##### (1) Relationship between each ROM and update

Before execution of ROM update, check combinations with ROMs installed in the other PWBs including options. Some combinations of each ROMs versions may cause malfunctions of the machine.

#### C. Update procedures and kinds of firmware

There are following methods of update of the firmware.

- 1) Update method using SIM 49-1
- 2) Update method using FTP
- 3) Update method using the Web page
- 4) Update method using the CN update function (There are three methods.)

Normally, one of 1) - 3) is used to update the firmware.

When any one of 1) - 3) is interrupted by an error such as power-off during updating, etc., and when retries of these methods are failed, the method 4) is employed.

##### Firmware types

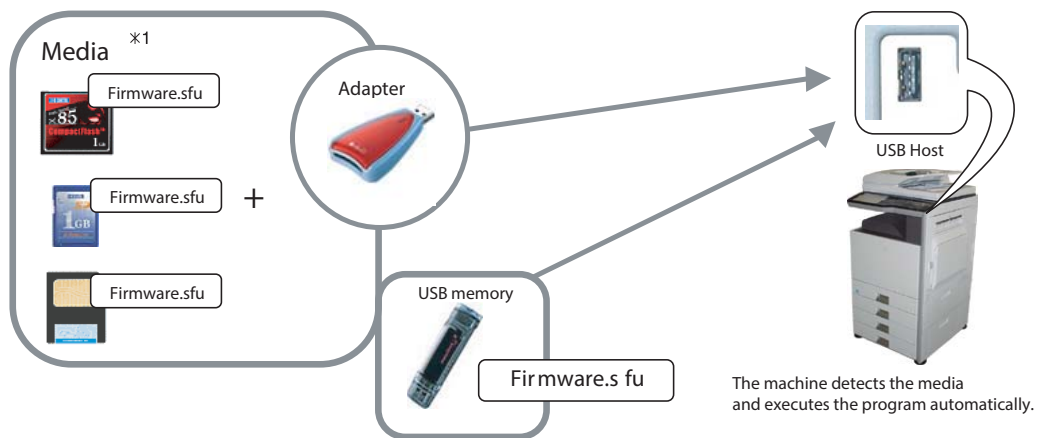
The firmware type can be displayed by SIM22-5.

Use SIM22-5 to check the firmware type.

### 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.

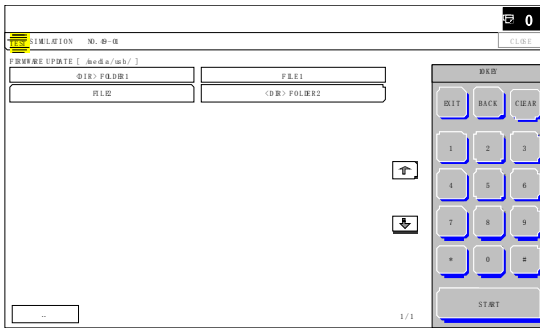


\*1:

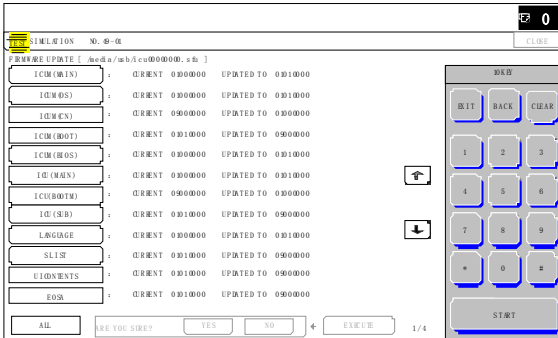
- Store the firmware data (XXX.sfu) to the media or USB memory beforehand.
- The media used for the update must have an enough capacity for storing the firmware data.
- The USB memory equipped with the security (secure) function cannot be used.

## Execution of the firmware by SIM49-01

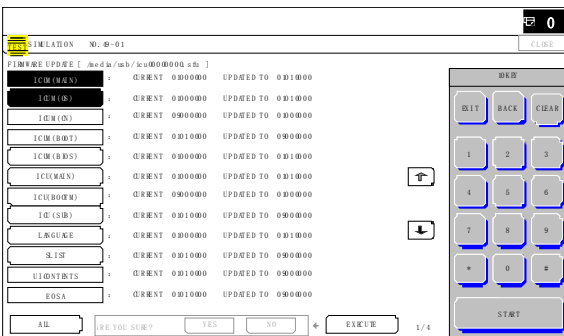
- 1) Insert the media or USB memory which stores the firmware into the main unit. (Be sure to use the USB I/F on the operation panel.)
  - 2) Enter the SIM49-01.
- Press the key of the file to be updated. The screen transfers to the update screen.



- \* 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.

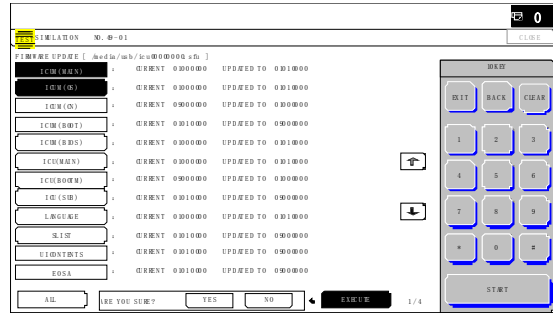


- 4) Press [ALL] key.  
All the firmware programs are selected.



- \* Normally select all the firmware and execute updating.
- \* In this case, firmware which does 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.)

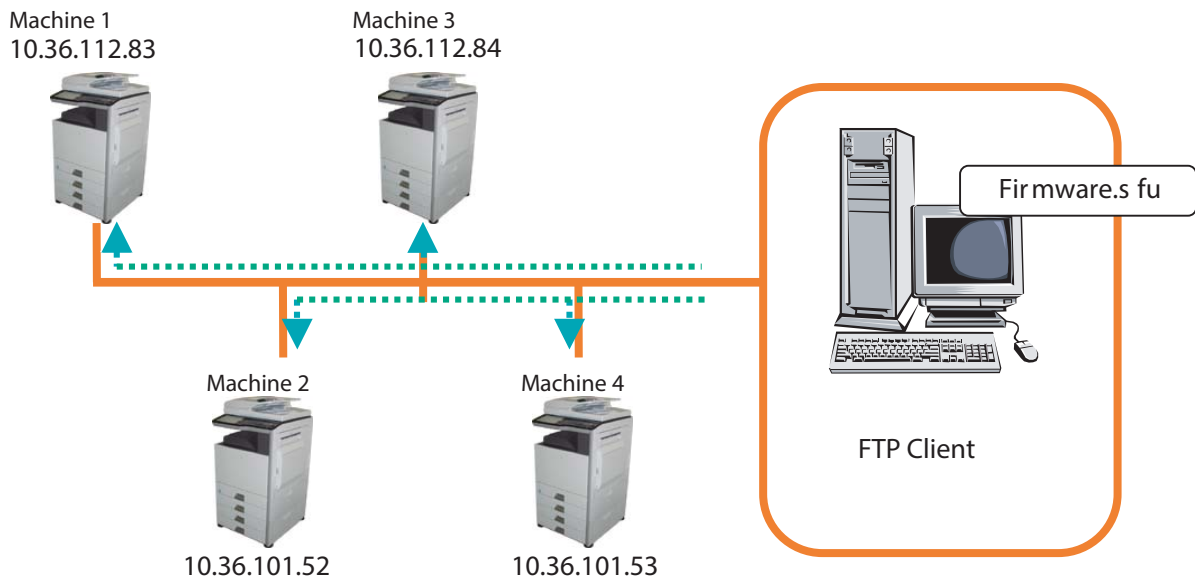
Go to SIM22-05 and confirm the firmware has upgraded successfully.

- 7) If the update is not normal completion, following screen is displayed.



## B. Firmware update using FTP

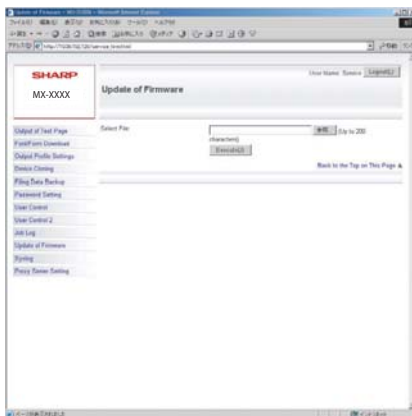
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



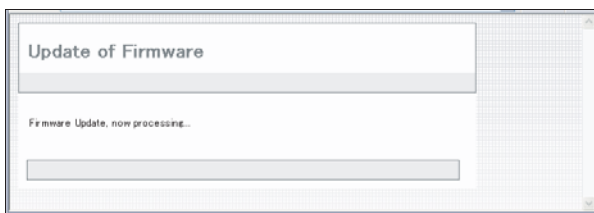
## C. Firmware update using the Web page

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.

##### 1) 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, the FAX 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 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.

##### 2) 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.)

##### 3) ROM making function

(This function is not used in the market, and not described in this manual.)

#### b. Purpose

This function is used in the following cases:

##### 1) 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, however, an abnormality occurs in the boot program, the SD card must be replaced with a new one having the normal boot program.

If an error occurs in the boot program, this method cannot be used. In such a case, the SD card must be replaced with a new one having the normal boot program.

#### c. DIP-SW used in the CN update mode

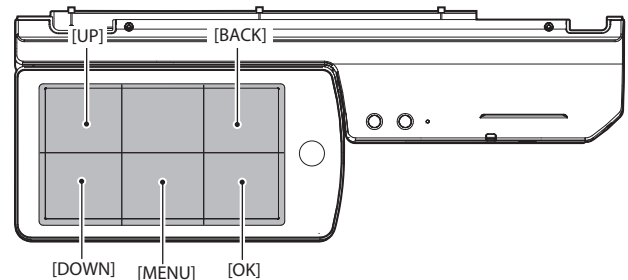
To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

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, the FAX PWB, and each option.

It is basically same as SIM 49-01, but differs in the following points.

- 1) The update target ROM is automatically selected.
- 2) 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 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).

#### a-1. Necessary items

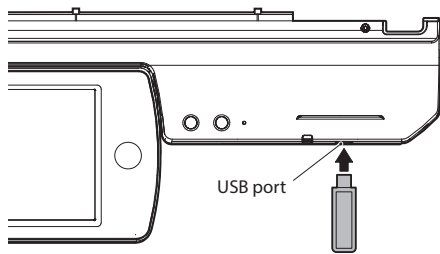
- 1) Insert the SD card to the MFP PWB of the machine.
- 2) USB memory with the firmware file (SFU) saved in it.

NOTE: Save the firmware file in the main directory or in a one-level lower directory.

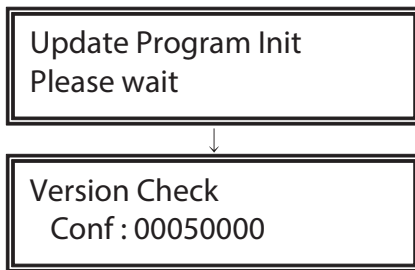
#### a-2. Procedures

- 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.

##### USB memory installing position



- 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.

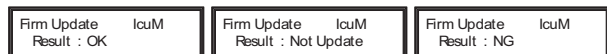


Display of the firmware update process

\* 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.

## [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         | 13 |
| Check the print count mode in each section and each operation mode.                         | 22         | 1  |
| Check the number of paper jam troubles.                                                     | 22         | 2  |
| Check the positions and contents of paper jams.                                             | 22         | 3  |
| Check the positions and contents of paper jams (DSPF section).                              | 22         | 12 |
| Check the contents of troubles.                                                             | 22         | 4  |
| Print the setting values and the adjustment values.                                         | 22         | 6  |
| Check the number of use of the DSPF, the scanner, the finisher, the 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

Perform the work items listed in the maintenance list (parts) and details of works as well as the items described below.

(The necessary execution items are marked with "○" in the table below.)

| No. | Work item                                           | Simulation | When repairing (replacing consumable parts) / maintenance |                             |                          |                                      |                                           |                      |
|-----|-----------------------------------------------------|------------|-----------------------------------------------------------|-----------------------------|--------------------------|--------------------------------------|-------------------------------------------|----------------------|
|     |                                                     |            | Installation                                              | When replacing the OPC drum | When replacing developer | When replacing the fusing web roller | After cleaning the scanner (read) section | Periodic maintenance |
| 1   | Toner concentration reference control level setting | 25-2       |                                                           |                             | ○                        |                                      |                                           |                      |
| 2   | The photo-conductor counter is cleared.             | 24-7       |                                                           | ○                           |                          |                                      |                                           |                      |
| 3   | Clear the fusing web cleaning send counter.         | 24-4       |                                                           |                             |                          | ○                                    |                                           |                      |
| 4   | Copy/Printer image quality check and adjustment     | 46-24      | ○                                                         | ○                           | ○                        |                                      | ○                                         | ○                    |

#### 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 stapler, and the punch are cleared. | 24         | 3 |
| The maintenance counter is cleared. (Select MAINTENANCE ALL)                                       | 24         | 4 |
| The list of setting values and adjustment values is printed.                                       | 22         | 6 |



## 2. Contents of the maintenance codes (Relationship between various counters values and display messages)

The message of maintenance execution timing is displayed when each counter reaches the specified value.

The relationships between the kinds of messages and counters are as shown below.

### A. Maintenance counter

| Counter name                | Near end conditions       | Message when near end over        |                                 |
|-----------------------------|---------------------------|-----------------------------------|---------------------------------|
|                             |                           | Sim.26-38A<br>"0"<br>Print Enable | Sim.26-38A<br>"1"<br>Print Stop |
| Maintenance counter (Total) | 90% of Sim.21-1 set value |                                   | Message (1)                     |

| Counter name                | End conditions     | Message when end over             |                                 |
|-----------------------------|--------------------|-----------------------------------|---------------------------------|
|                             |                    | Sim.26-38A<br>"0"<br>Print Enable | Sim.26-38A<br>"1"<br>Print Stop |
| Maintenance counter (Total) | Sim.21-1 set value | Message (1)                       | Message (2)                     |

| Message No. | Message                                             | Print job Enable/Disable |
|-------------|-----------------------------------------------------|--------------------------|
| (1)         | Maintenance required.Code: TA                       | Enable                   |
| (2)         | Maintenance required.Code: TA<br>(With parentheses) | Disable                  |

After completion of maintenance, clear the maintenance counter of SIM24-4.

### B. Transfer unit section counters

| Counter name | Near end conditions      | Message when near end over        |                                 |
|--------------|--------------------------|-----------------------------------|---------------------------------|
|              |                          | Sim.26-38A<br>"0"<br>Print Enable | Sim.26-38A<br>"1"<br>Print Stop |
| Waste toner  | After near end detection | Message (4)                       | Message (4)                     |

| Counter name                | End conditions      | Message when end over             |                                 |
|-----------------------------|---------------------|-----------------------------------|---------------------------------|
|                             |                     | Sim.26-38A<br>"0"<br>Print Enable | Sim.26-38A<br>"1"<br>Print Stop |
| Transfer unit print counter | 300K sheets         | Message (3)                       | Message (3)                     |
| Waste toner                 | After end detection | Message (5)                       | Message (5)                     |

| Message No. | Message                                                                                      | Print job Enable/Disable |
|-------------|----------------------------------------------------------------------------------------------|--------------------------|
| (3)         | Maintenance required Code: TK                                                                | Enable                   |
| (4)         | Please replace the toner collection container. (with OK key)<br>(Displayed with parentheses) | Enable                   |
| (5)         | Please replace the toner collection container. (Displayed with parentheses)                  | Disable                  |

After completion of maintenance, clear the transfer unit counter of maintenance counter of SIM24-4(transfer unit print counter, transfer unit accumulated traveling distance and transfer unit usage days).

### C. Fusing section counters

| Counter name                     | Near end conditions | Message when near end over        |                                 |
|----------------------------------|---------------------|-----------------------------------|---------------------------------|
|                                  |                     | Sim.26-38B<br>"0"<br>Print Enable | Sim.26-38B<br>"1"<br>Print Stop |
| Fusing web cleaning feed counter | 300K sheets         | Message (7)                       | Message (7)                     |

| Counter name                         | End conditions                                                                                  | Message when end over             |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------|
|                                      |                                                                                                 | Sim.26-38B<br>"0"<br>Print Enable | Sim.26-38B<br>"1"<br>Print Stop |
| Fusing roller print counter          | 300 K sheets                                                                                    | Message (5)                       | Message (6)                     |
| Fusing pressure roller print counter | 300 K sheets                                                                                    | Message (6)                       | Message (6)                     |
| Fusing web cleaning feed counter     | Judged by the fusing web life end detection signal, not by the fusing web cleaning feed counter | Message (7)                       | Message (8)                     |

Judgment is made at the earlier timing of the fusing web print counter or the web life end detection.

| Message No. | Message                                                        | Print job Enable/Disable |
|-------------|----------------------------------------------------------------|--------------------------|
| (5)         | Maintenance required.Code: FK1                                 | Enable                   |
| (6)         | Maintenance required.Code: FK2                                 | Enable                   |
| (7)         | Maintenance required Code: FK3                                 | Enable                   |
| (8)         | Maintenance required Code: FK3<br>(Displayed with parentheses) | Disable                  |

After completion of maintenance, clear the fusing unit counter of SIM24-4 (fusing unit print counter and fusing unit usage days).

### D. OPC drum section counters

| Counter name                             | End conditions  | Message when end over             |                                 |
|------------------------------------------|-----------------|-----------------------------------|---------------------------------|
|                                          |                 | Sim.26-38A<br>"0"<br>Print Enable | Sim.26-38A<br>"1"<br>Print Stop |
| Drum print counter                       | 300K sheets     | Message (9)                       | Message (9)                     |
| Drum accumulated rotation number         | 2000K rotations | Message (9)                       | Message (9)                     |
| Main charger print counter               | 300K sheets     | Message (10)                      | Message (10)                    |
| Main charger accumulated rotation number | 1150K rotations | Message (10)                      | Message (10)                    |

Judgment is made at the earlier timing of the drum print counter or the drum rotations accumulated number counter.

| Message No. | Message                       | Print job Enable/Disable |
|-------------|-------------------------------|--------------------------|
| (9)         | Maintenance required.Code: DK | Enable                   |
| (10)        | Maintenance required Code: MC | Enable                   |

After completion of maintenance, clear the drum counter of SIM24-7 (drum print counter and drum accumulated traveling distance).

## E. Developer section counters

| Counter name                          | End conditions  | Message when end over             |                                 |
|---------------------------------------|-----------------|-----------------------------------|---------------------------------|
|                                       |                 | Sim.26-38A<br>“0”<br>Print Enable | Sim.26-38A<br>“1”<br>Print Stop |
| Developer print counter               | 600K sheets     | Message (11)                      | Message (11)                    |
| Developer accumulated rotation number | 2000K rotations | Message (11)                      | Message (11)                    |

Judgment is made at the earlier timing of the developer print counter or the developer accumulated rotation number counter.

The developer rotation number is synchronized with the drum motor rotation number.

| Message No. | Message                       | Print job Enable/Disable |
|-------------|-------------------------------|--------------------------|
| (11)        | Maintenance required.Code: VK | Enable                   |

After replacement of developer, use SIM25-2 to set the toner density control level. By this setting, the developer counters (the developer print counter and the developer accumulated traveling distance counter) are cleared.

## F. Toner cartridge section counters

| Sensor name                         | Near near end conditions                                                        | Toner preparation message      |                                    |
|-------------------------------------|---------------------------------------------------------------------------------|--------------------------------|------------------------------------|
|                                     |                                                                                 | Sim.26-69A<br>“0”<br>Displayed | Sim.26-69A<br>“1”<br>Not displayed |
| Toner remaining quantity sensor (K) | Total toner supply time (Equivalent to 25% or less of toner remaining quantity) | Message (12)                   |                                    |

| Sensor name                         | Near end conditions                                               | Message when near end over     |                                    |
|-------------------------------------|-------------------------------------------------------------------|--------------------------------|------------------------------------|
|                                     |                                                                   | Sim.26-69B<br>“0”<br>Displayed | Sim.26-69B<br>“1”<br>Not displayed |
| Toner remaining quantity sensor (K) | When a low toner state continues for more than the specified time | Message (14)                   |                                    |

| Counter name                        | End conditions                                                                     | Message when end over             |                                 |
|-------------------------------------|------------------------------------------------------------------------------------|-----------------------------------|---------------------------------|
|                                     |                                                                                    | Sim.26-38A<br>“0”<br>Print Enable | Sim.26-38A<br>“1”<br>Print Stop |
| Toner remaining quantity sensor (K) | When the pixel count value reaches the specified level from the near end condition | Message (13)                      | Message (13)                    |

| Message No. | Message                                                  | Print job Enable/Disable |
|-------------|----------------------------------------------------------|--------------------------|
| (12)        | Prepare a new one                                        | Enable                   |
| (13)        | Replace the toner cartridge (Displayed with parentheses) | Disable                  |
| (14)        | Replace the Toner cartridge.                             | Enable                   |

## 3. Maintenance list (parts) and details of works

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆: Lubricate

| Section                 | Part name                       | When calling                                                                                                               | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                                                             |
|-------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|-------|-------|------------------------------------------------------------------------------------|
| Photo-conductor section | Drum                            | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Cleaner blade                   | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Toner reception seal            | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Toner reception side sheet F/R  | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Side seal F/R                   | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Drum separation pawl unit       | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | MC unit                         | x                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Waste toner box                 | Replacement is made by the user every time when the waste toner box is full.<br>When a serviceman calls, be sure to check. |      |      |      |       |       |       |       |       | Check when a serviceman calls. It is advisable to replace in advance if necessary. |
| Developing section      | Developer                       | —                                                                                                                          |      | ▲    |      | ▲     |       | ▲     |       | ▲     |                                                                                    |
|                         | DV seal                         | —                                                                                                                          | x    | x    | x    | x     | x     | x     | x     | x     |                                                                                    |
|                         | DV side seal F/R                | —                                                                                                                          | x    | x    | x    | x     | x     | x     | x     | x     |                                                                                    |
|                         | Toner filter                    | —                                                                                                                          |      | ▲    |      | ▲     |       | ▲     |       | ▲     |                                                                                    |
|                         | Connector                       | —                                                                                                                          | x    | x    | x    | x     | x     | x     | x     | x     |                                                                                    |
| Toner supply section    | Toner cartridge                 | User replacement for every toner empty.                                                                                    |      |      |      |       |       |       |       |       |                                                                                    |
| LSU section             | Dust-proof glass                | ○                                                                                                                          | x    | x    | x    | x     | x     | x     | x     | x     |                                                                                    |
| Transfer section        | Transfer roller                 | x                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Discharge plate                 | x                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Transfer roller bearing F and R | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Transfer roller collar          | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
|                         | Transfer rear star ring         | —                                                                                                                          | x    | x    | x    | x     | x     | x     | x     | x     |                                                                                    |
|                         | Pre-transfer paper guide        | ○                                                                                                                          | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                                    |
|                         | Process control sensor          | x                                                                                                                          | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Air cleaning                                                                       |

| Section                   | Part name                                     | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                           |
|---------------------------|-----------------------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------------------------------------------------|
| Fusing section            | Lower heat roller                             | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Lower heat roller bearing                     | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Upper separation pawl                         | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Thermistor                                    | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Lower separation pawl                         | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Web pressure roller bearing                   | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Web pressure roller                           | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Web roller                                    | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Fusing paper exit roller                      | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Gears                                         | ☆            | ☆    | ☆    | ☆    | ☆     | ☆     | ☆     | ☆     | ☆     |                                                  |
|                           | Paper guides                                  | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Upper heat roller                             | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Upper heat roller gear                        | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Upper heat roller bearing                     | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
|                           | Upper heat roller heat-insulation bush        | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| Filter section            | Ozone filter                                  | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| Paper feed section        | Paper pick-up roller                          | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace 100K of each paper feed counter.         |
|                           | Paper feed roller                             | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Separation roller                             | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Torque limiter                                | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
| Paper transport section   | Resist roller (Idle)                          | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Paper dust removing unit                      | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Transport rollers                             | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Transport paper guides                        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
| Duplex/paper exit section | Discharge brush                               | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Transport rollers                             | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Sensors                                       | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Gears                                         | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Transport paper guides                        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
| Drive section             | Gears (Grease)                                | —            | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions. |
|                           | Shaft earth sections (Conduction grease)      | —            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Belts                                         | —            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
| Scanner section           | Mirror/Lens/Reflection sheet/CCD              | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Table glass/SPF glass                         | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Scanner lamp                                  | x            | x    | x    | x    | x     | x     | x     | x     | x     | Air cleaning for the LED section                 |
|                           |                                               | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Rails                                         | ☆            | ☆    | ☆    | ☆    | ☆     | ☆     | ☆     | ☆     | ☆     |                                                  |
|                           | Drive belt/drive wire                         | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Sensors                                       | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           |                                               |              |      |      |      |       |       |       |       |       |                                                  |
| DSPF section              | Paper feed roller                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace at 100K of the SPF paper feed counter    |
|                           | Pickup roller                                 | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Separation roller                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Torque limiter SPF (for separation)           | -            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Call-in torque limiter (for PIC)              | -            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | Transport rollers                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | No. 1 scanning plate                          | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | No. 2 scanning section, scanning glass        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | No. 2 scanning section, white reference glass | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Paper exit roller                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Discharge brush                               | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|                           | OC mat                                        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
|                           | Belts                                         | -            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |

## Option

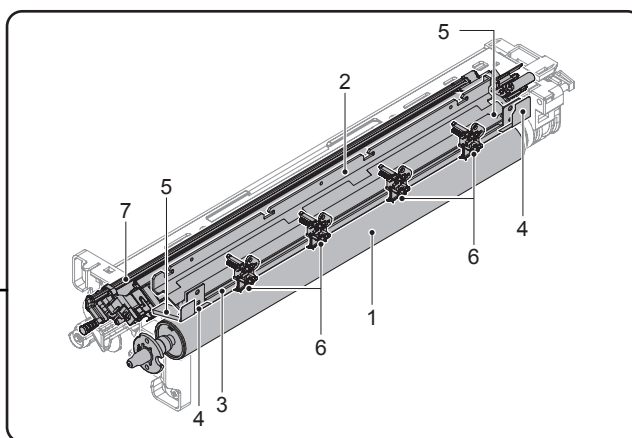
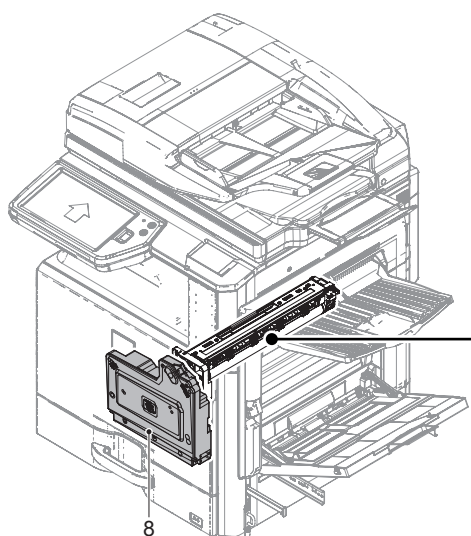
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆: Lubricate

| Section                                                                      | Part name                              | When calling                                                  | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                                         |
|------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------|------|------|------|-------|-------|-------|-------|-------|----------------------------------------------------------------|
| Inner finisher/<br>Punch unit<br>for Inner finisher                          | Transport rollers                      | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Transport paper guides                 | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Gears                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions.               |
|                                                                              | Belts                                  |                                                               | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Knurling belt                          | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace at every 1000K of the finisher paper exit count value. |
|                                                                              | Paddle                                 | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Sensors                                | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Discharge brush                        | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Stapler unit                           | Replacement reference: Replace the unit at every 200K staple. |      |      |      |       |       |       |       |       |                                                                |
| Saddle stitch finisher<br>(1K)/Punch unit for Saddle stitch finisher<br>(1K) | Punch unit                             | Replacement reference: Replace the unit at every 1000K.       |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Staple cartridge                       | Replacement is made by the user at every 5,000 pcs.           |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Transport rollers                      | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Transport paper guides                 | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Gears                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions.               |
|                                                                              | Belts                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Knurling belt                          | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace at every 1000K of the finisher paper exit count value. |
|                                                                              | Sensors                                | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Discharge brush                        | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
| Finisher<br>(4K)/Punch unit for Finisher<br>(4K)                             | Stapler unit                           | Replacement reference: Replace the unit at every 200K staple. |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Stapler unit (For saddle finisher)     | Replacement reference: Replace the unit at every 100K staple. |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Punch unit                             | Replacement reference: Replace the unit at every 1000K.       |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Staple cartridge                       | Replacement is made by the user at every 5,000 pcs.           |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Staple cartridge (For saddle finisher) | Replacement is made by the user at every 2,000 pcs.           |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Transport rollers                      | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Transport paper guides                 | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Gears                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions.               |
|                                                                              | Belts                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
| Paper pass unit                                                              | Sensors                                | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Discharge brush                        | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Stapler unit                           | Replacement reference: Replace the unit at every 100K staple. |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Punch unit                             | Replacement reference: Replace the unit at every 1000K.       |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Staple cartridge                       | Replacement is made by the user at every 5,000 pcs.           |      |      |      |       |       |       |       |       |                                                                |
|                                                                              | Transport rollers                      | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Transport paper guides                 | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Sensors                                | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
| A4 large capacity tray                                                       | Pickup roller/<br>Paper feed rollers   | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace at 100K of paper feed counter                          |
|                                                                              | Torque limiter                         | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Transport rollers                      | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Transport paper guides                 | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Gears                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions.               |
|                                                                              | Belts                                  |                                                               | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Sensors                                | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
| Paper feed tray (Desk)                                                       | Pickup roller                          | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace at 100K of paper feed counter                          |
|                                                                              | Paper feed roller                      | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Separation roller                      | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Torque limiter                         | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |
|                                                                              | Transport rollers                      | x                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Transport paper guides                 | ○                                                             | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                |
|                                                                              | Gears                                  | x                                                             | x    | x    | x    | x     | x     | x     | x     | x     |                                                                |

## A. Photo-conductor section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name                      | When calling                                                                                                               | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                                                             |
|-----|--------------------------------|----------------------------------------------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|-------|-------|------------------------------------------------------------------------------------|
| 1   | Drum                           | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 2   | Cleaner blade                  | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 3   | Toner reception seal           | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 4   | Toner reception side sheet F/R | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 5   | Side seal F/R                  | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 6   | Drum separation pawl unit      | —                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 7   | MC unit                        | x                                                                                                                          | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                                                    |
| 8   | Waste toner box                | Replacement is made by the user every time when the waste toner box is full.<br>When a serviceman calls, be sure to check. |      |      |      |       |       |       |       |       | Check when a serviceman calls. It is advisable to replace in advance if necessary. |



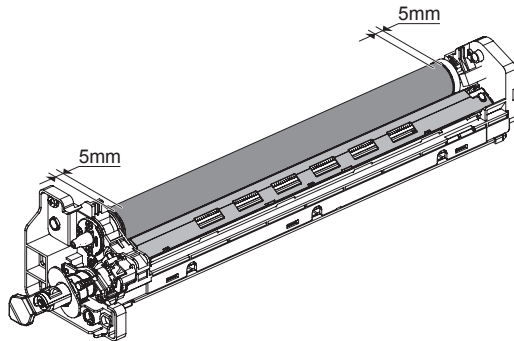
**(Note for servicing the OPC drums)**

**1. Prevention of oily dirt attachment**

[Note]

- \* Be careful not to attach fingerprints or oily dirt on the OPC drum surface. (Keep the unit away from oils and dust.)
- \* When replacing the OPC drum, cover the OPC drum with the protection sheet and hold the protection sheet.

If it is required to hold the OPC drum directly, use enough care not to touch the cleaning blade area, 5mm inside from both edges of the OPC drum. (If a fingerprint or oily dirt is attached to the cleaning blade area of the OPC drum, the cleaning blade may flip.)



[Countermeasures]

If a fingerprint is attached to the OPC drum surface erroneously, perform the following countermeasures.

- 1) Use dry cloth to clean and remove the dirt.
- 2) Apply KYNAR to prevent blade flip.

[Check method]

Check to confirm that the OPC drum is free from fingerprints or oily dirt and that the cleaning blade is completely cleaned by the following method.

- \* Make a print of a half tone image on all the surface of A4 (11" x 8.5") paper, and check the printed paper for any abnormality in the image.

**2. Prior exposure prevention**

[Note]

- \* Avoid servicing in a place where there is strong light.
- \* Do not expose the unit to light for a long time.
- \* Cover the OPC drum with light-blocking material. (When using paper, use about 10 sheets of paper to block light.)

[Countermeasures]

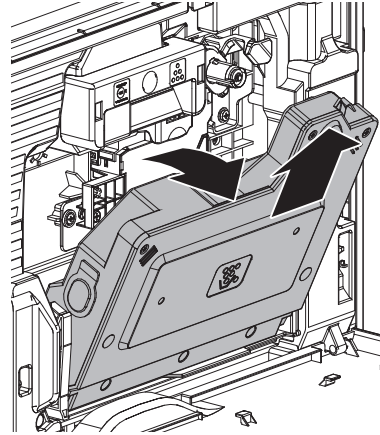
If the OPC drum is erroneously exposed to light too much (prior exposure), perform the following countermeasures.

- 1) Print half tone images on the whole surface of A4 (11" x 8.5") paper, and check to confirm that there is no irregular density area in the previously exposed section.
- 2) Damages due to prior exposure may be recovered by keeping the OPC drum for several hours. If, however, image are not recovered, replace the OPC drum.

**(1) Waste toner box replacement**

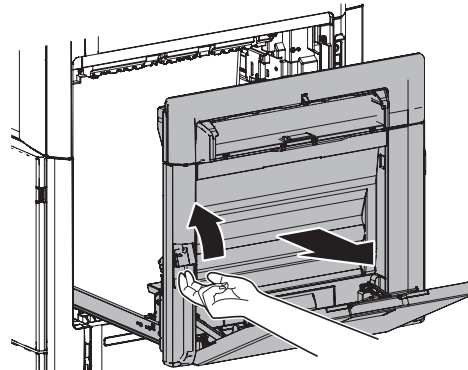
- 1) Open the front cover.
- 2) Tilt the waste toner box forward to remove it.

Maintenance: Replace the waste toner box with a new one every time when it is full (By the user). Check it every-time when a serviceman calls. (Replace it in advance if necessary.)

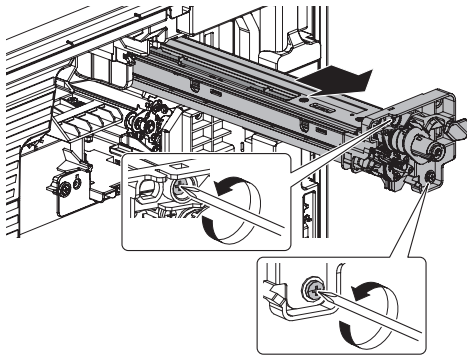


**(2) Photo-conductor unit removal**

- 1) Remove the toner cartridge.
- 2) Remove the developing unit.
- 3) Pull the lock lever, and open the right door.



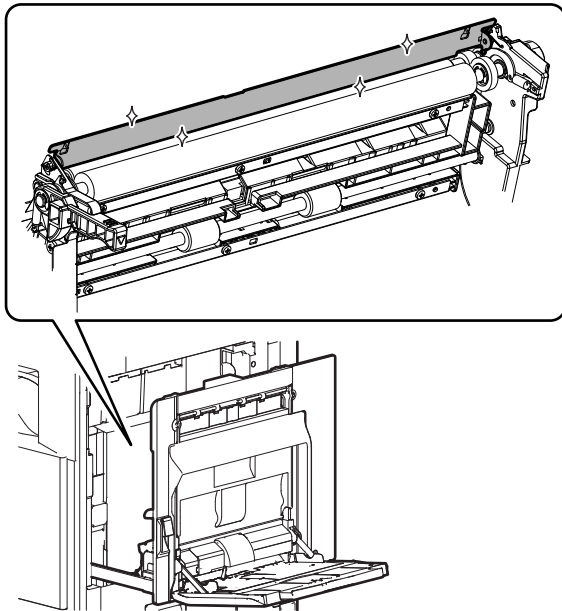
- 4) Remove the blue screw. Pull the photo-conductor unit, and hold the handle to remove the unit.



NOTE: Before installing the photo-conductor unit, clean the both surfaces of the resist unit paper guide.

Clean the metal section of the paper guide with alcohol, and clean the cushion section without alcohol.

At that time, be careful not to deform the paper guide.



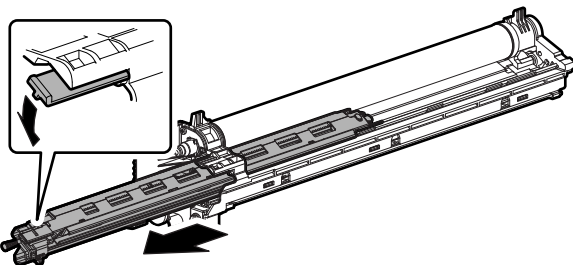
### (3) MC unit replacement

- 1) Disengage the pawl, and remove the MC unit.

\* Maintenance

Replace at every 300K.

NOTE: When inserting the MC unit, be careful not to scratch the drum.



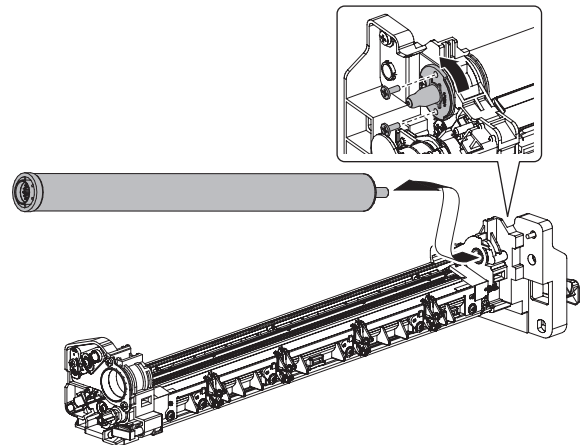
### (4) Drum replacement

- 1) Remove the blue screw, and rotate the fixing shaft to remove. Slide the drum to the front side to remove.

\* Maintenance

Replace at every 300K.

NOTE: When removing and installing, be careful not to scratch the drum by making it into contact with the separation pawl.



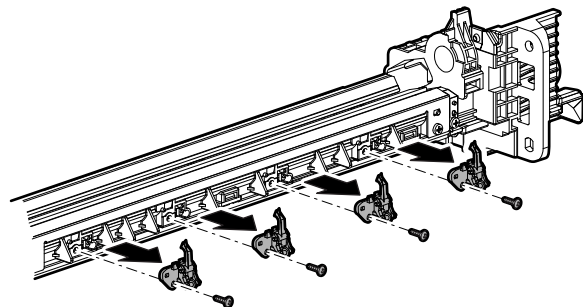
### (5) Drum separation pawl unit replacement

- 1) Remove the blue screw, and remove the drum separation pawl unit.

\* Maintenance

Replace at every 300K.

NOTE: Be careful not to scratch or put dirt on the tip of the separation pawl.





## (6) Toner reception seal, toner reception side sheets F and R replacement

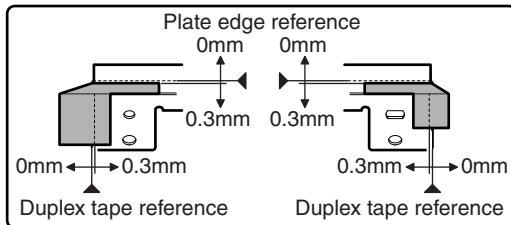
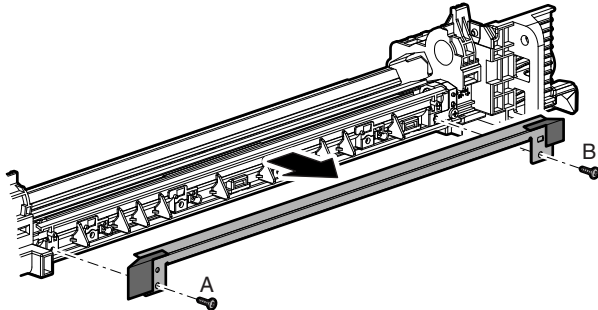
- 1) Remove the blue screw, and remove the toner reception seal.

\* Maintenance

Replace at every 300K.

NOTE: When installing, tighten the blue screws in the sequence of A and B.

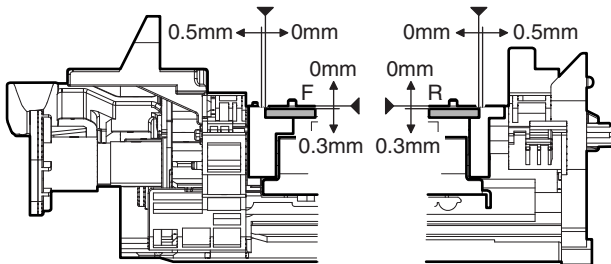
NOTE: Attach the toner reception side sheets F and R according to the reference.



## (7) Toner reception lower molt replacement

- 1) Remove the toner reception lower molt.

NOTE: Attach with the edges of the side seals F and R as the reference so that there is no clearance with the side seals F and R.



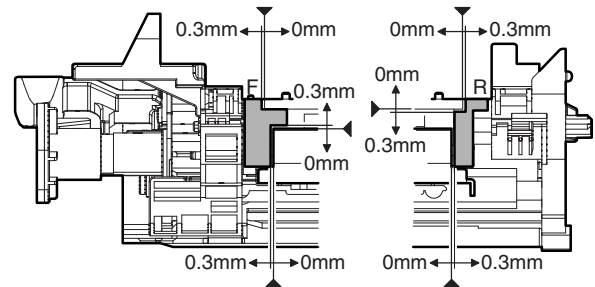
## (8) Side seals F and R replacement

- 1) Remove the side seals F and R.

\* Maintenance

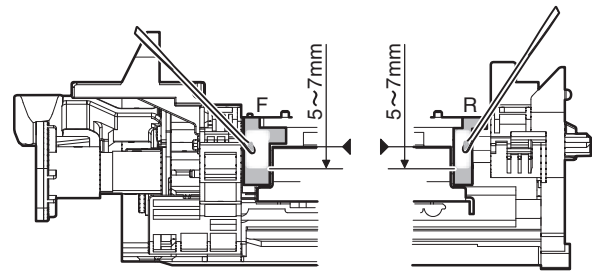
Replace at every 300K.

NOTE: Attach with the cleaner blade edge as the reference so that the clearance is within 0 - 0.3mm. Press to secure attachment.



- 2) After replacement of the side seals F and R, apply stearic acid (UKOG-0309FCZZ) evenly to the side seals F and R by using the micro-spatula (UKOG-0311FCZZ).

NOTE: Be careful not to apply excessively to the parts on the periphery.



## (9) Cleaner blade replacement

- 1) Remove the blue screw, and slide the cleaner blade to the rear side to remove.

\* Maintenance

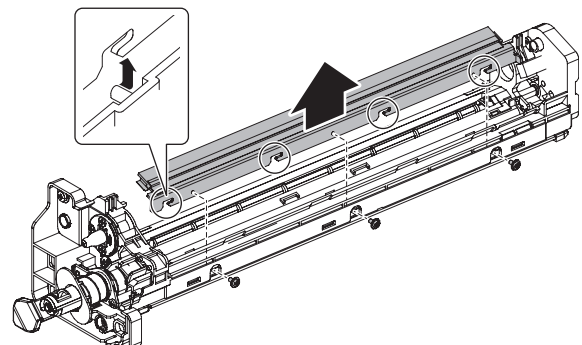
Replace at every 300K.

NOTE: Before removing the cleaner blade, remove the side seals F and R in advance. When, therefore, the cleaner blade is replaced, replace the side seals F and R with new ones as well.

If this note is ignored, a trouble such as improper cleaning or toner leakage may occur.

NOTE: Be careful not to touch or scratch the tip of the cleaner blade.

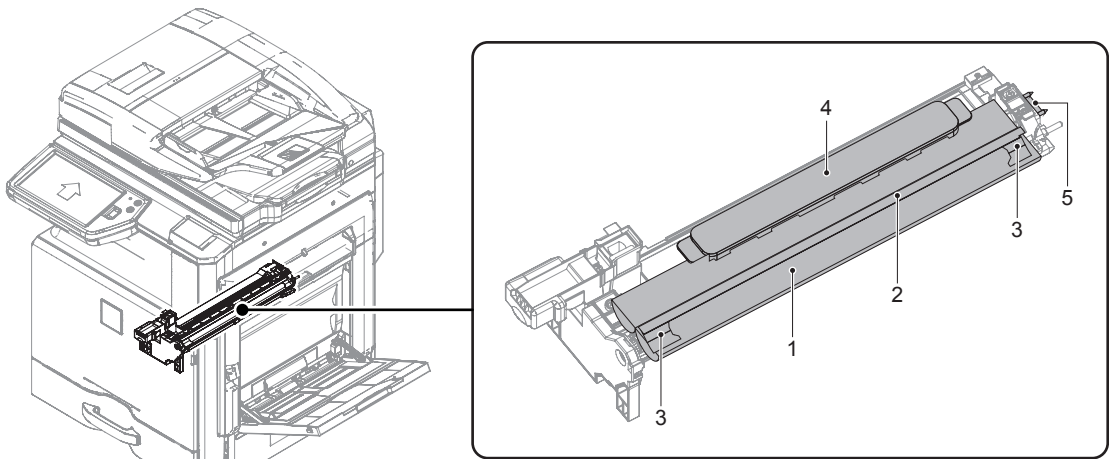
NOTE: When installing, tighten the blue screws in the sequence of A -> B -> C.



**B. Developing section**

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name        | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark |
|-----|------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| 1   | Developer        | —            |      | ▲    |      | ▲     |       | ▲     |       | ▲     |        |
| 2   | DV seal          | —            | x    | x    | x    | x     | x     | x     | x     | x     |        |
| 3   | DV side seal F/R | —            | x    | x    | x    | x     | x     | x     | x     | x     |        |
| 4   | Toner filter     | —            |      | ▲    |      | ▲     |       | ▲     |       | ▲     |        |
| 5   | Connector        | —            | x    | x    | x    | x     | x     | x     | x     | x     |        |

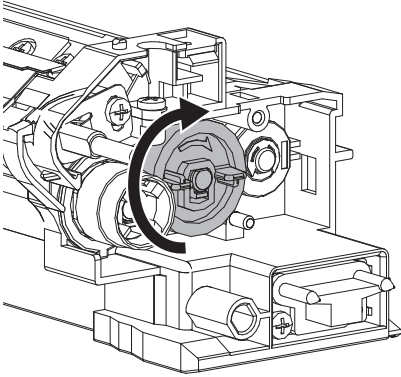


**(Note for servicing the DV roller)**

**1. Prevent roller contamination**

[Note]

- \* Be careful not to attach fingerprints or oily dirt on the DV roller surface.
- \* When rotating the DV roller manually, hold the drive gear section to rotate it.



[Countermeasures]

If a fingerprint is attached to the DV roller surface erroneously, perform the following countermeasures.

- 1) Remove developer material from the developer unit and the developer mag roller.
- 2) Remove oily dirt on the DV roller with alcohol.
- 3) When alcohol dries completely, supply developer and perform SIM 25-02.

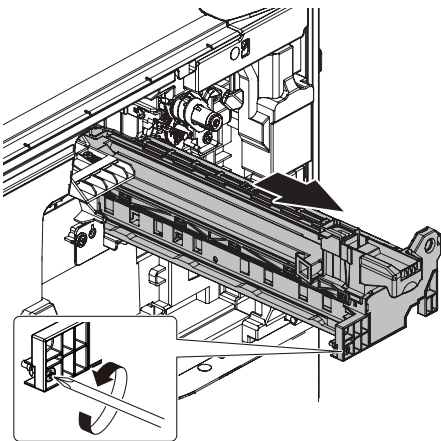
[Check method]

Check to confirm that the DV roller is free from fingerprints or oily dirt and that cleaning is completely executed or not by the following method.

- \* Make a print of a half tone image on all the surface of A4 (11" x 8.5") paper, and check the printed paper for any abnormality in the image.

**(1) Developing unit removal**

- 1) Remove the waste toner box.
- 2) Remove the toner cartridge.
- 3) Remove the blue screw, and pull the developing unit to remove.

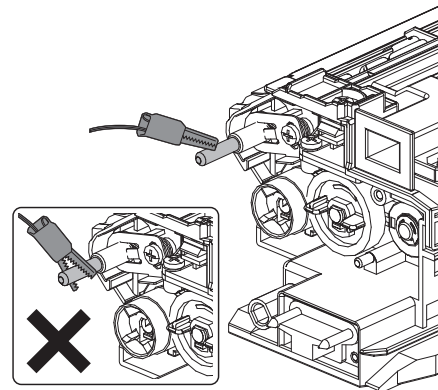


**(Note for cleaning the developing unit)**

If the developing unit is cleaned with a cleaner or an air blower with much developer in the developing unit, static electricity may be accumulated in the unit.

- \* Metal part is brought into contact with the magnet roller surface when transporting developer or removing foreign material from the magnet roller, developer may adhere to the magnet roller surface. Be careful to avoid this when handling the magnet roller.
- \* Remove developer in the development unit as well as developer attached to the magnet roller as far as possible.

NOTE: Before cleaning with a vacuum, remove ground the magnet roller rear side cored bar as shown in the figure below and clean the unit with a vacuum. (Do not pinch the grounding wire with a crocodile clip connector in order to prevent against damage on the cored bar.)

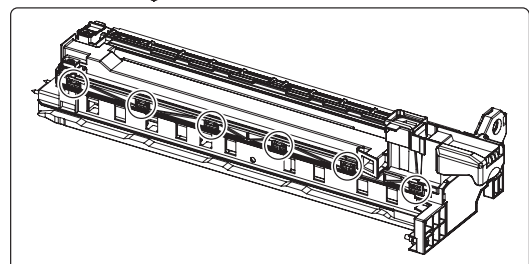
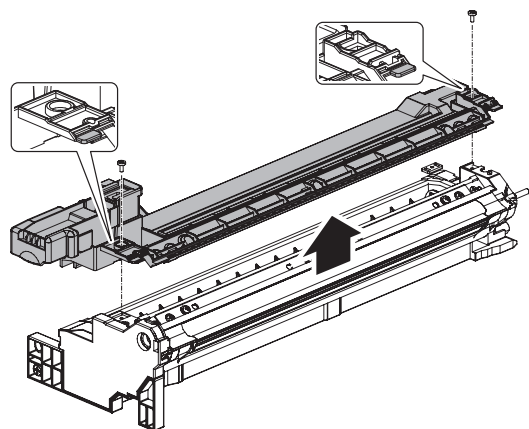


**(2) Developer replacement**

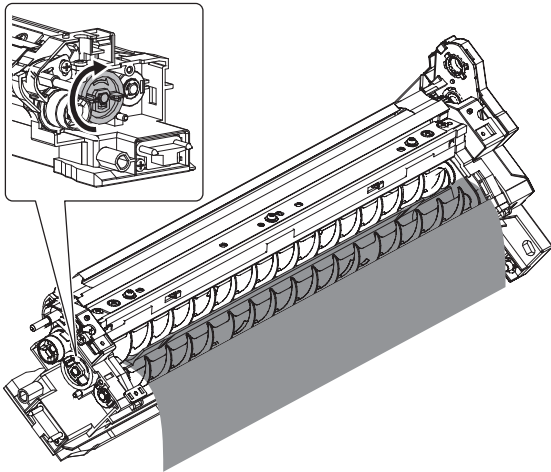
NOTE: Supply of developer must be performed after completion of all the maintenance works of the developing unit.

- 1) Remove the screw, and hold the rib to remove the cover.

NOTE: After installing, check to confirm that the cover is securely engaged with the frame pawl.



- 2) While rotating the mixing roller, discharge developer from the unit.



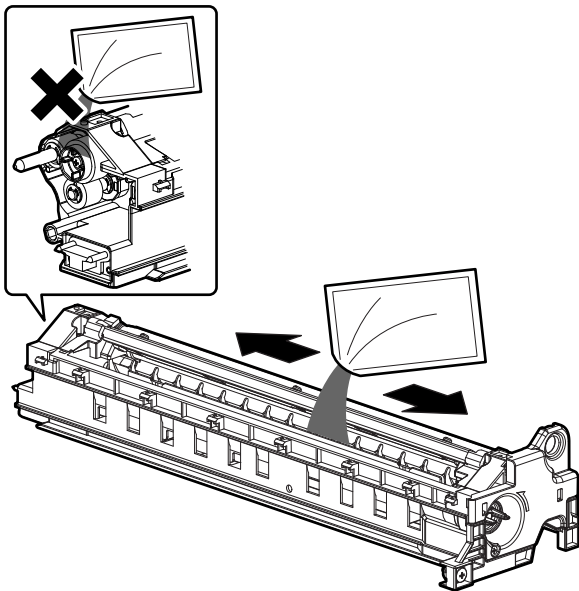
- 3) Supply new developer.

□ Maintenance

Replace at every 600K.

NOTE: When supplying developer, use care not to spill it. Especially, take a great care not to spill developer on the drive section.

NOTE: After supplying developer, do not tilt the developing unit.

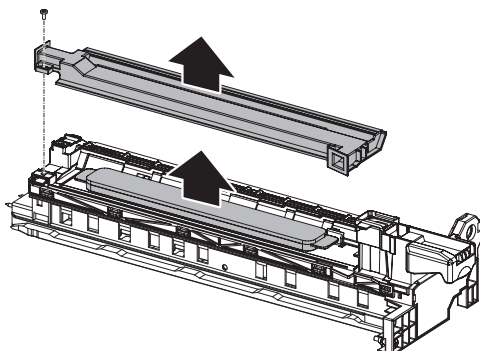


### (3) Toner filter replacement

- 1) Remove the cover and the toner filter.

□ Maintenance

Replace at every 600K.



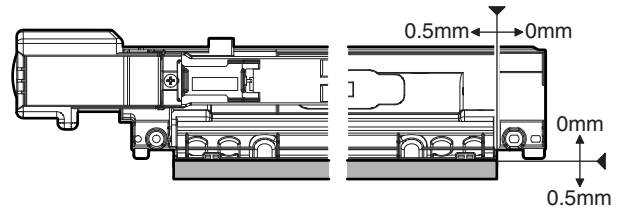
### (4) DV seal replacement

- 1) Remove the DV seal.

□ Maintenance

Replace as needed.

NOTE: Attach the seal according to the reference, and press and hold securely after attachment.



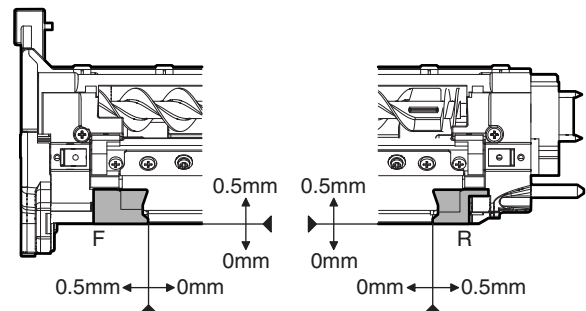
### (5) DV side seal F and R replacement

- 1) Remove the DV side seal F and R.

□ Maintenance

Replace as needed.

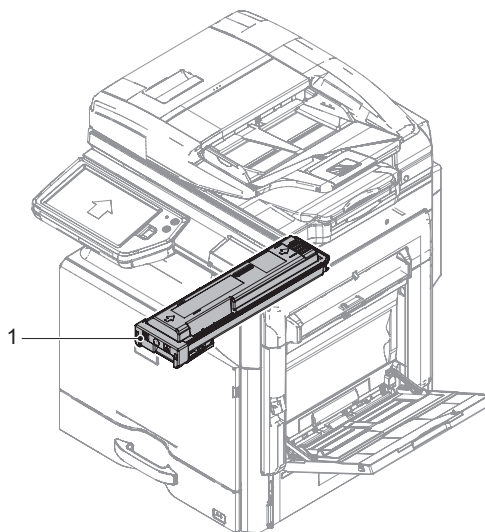
NOTE: Attach the seal according to the reference, and press and hold securely after attachment.



## C. Toner supply section

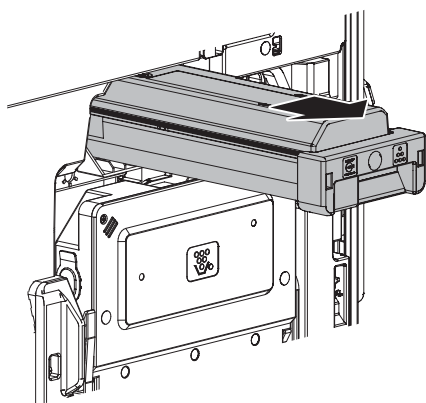
X: Check (Clean, replace, or adjust according to necessity.) ○ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name       | When calling | 300k                                    | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark |
|-----|-----------------|--------------|-----------------------------------------|------|------|-------|-------|-------|-------|-------|--------|
| 1   | Toner cartridge |              | User replacement for every toner empty. |      |      |       |       |       |       |       |        |



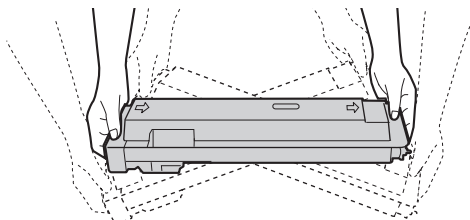
### (1) Toner cartridge replacement

- 1) Open the front cover.
  - 2) Pull out the toner cartridge to remove.
- Maintenance: Replace every-time when toner empty. (By the user)



NOTE: When installing, hold the toner cartridge horizontally and inset it slowly.

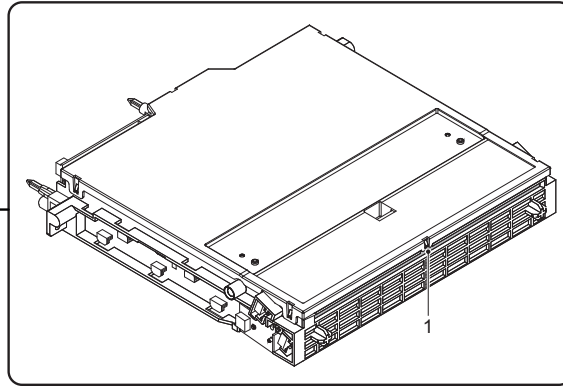
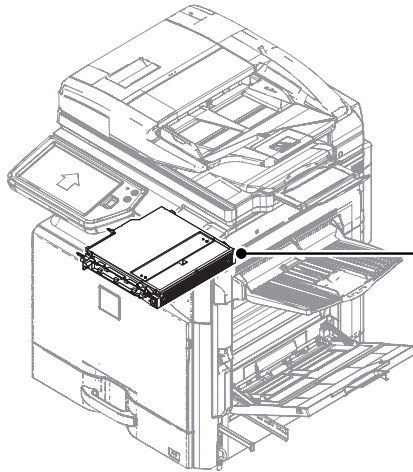
NOTE: Shake the toner cartridge several times.



## D. LSU section

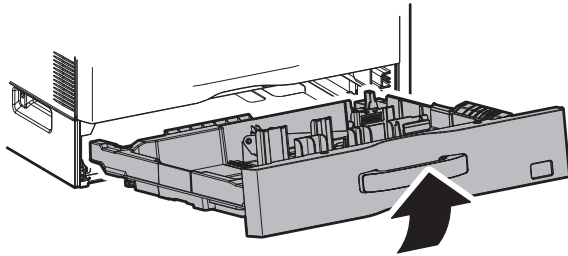
X: Check (Clean, replace, or adjust according to necessity.) ○ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name        | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark |
|-----|------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| 1   | Dust-proof glass | ○            | x    | x    | x    | x     | x     | x     | x     | x     |        |

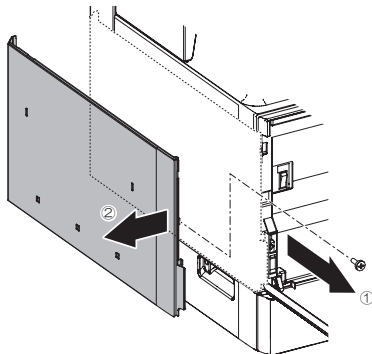


### (1) LSU removal

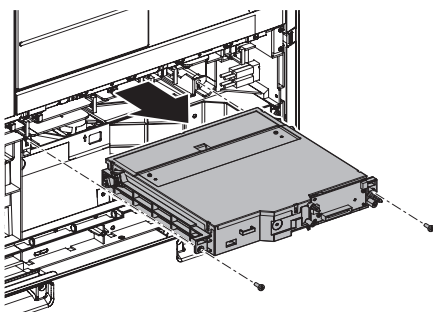
- 1) Remove the tray 1.



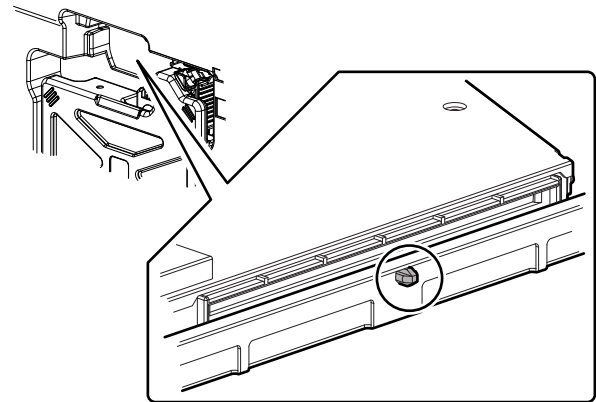
- 2) Remove the left cabinet.



- 3) Remove the screw, and the LSU unit.



NOTE: Lift the LSU tip and insert it so that the LSU boss comes in the frame hole. After insertion, remove the toner cartridge and check.

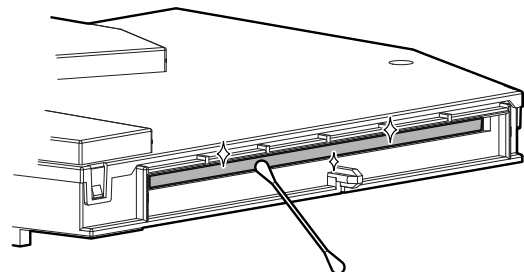


### (2) Dust-proof glass cleaning

- 1) Clean the dust-proof glass.

□ Maintenance  
Clean at needed.

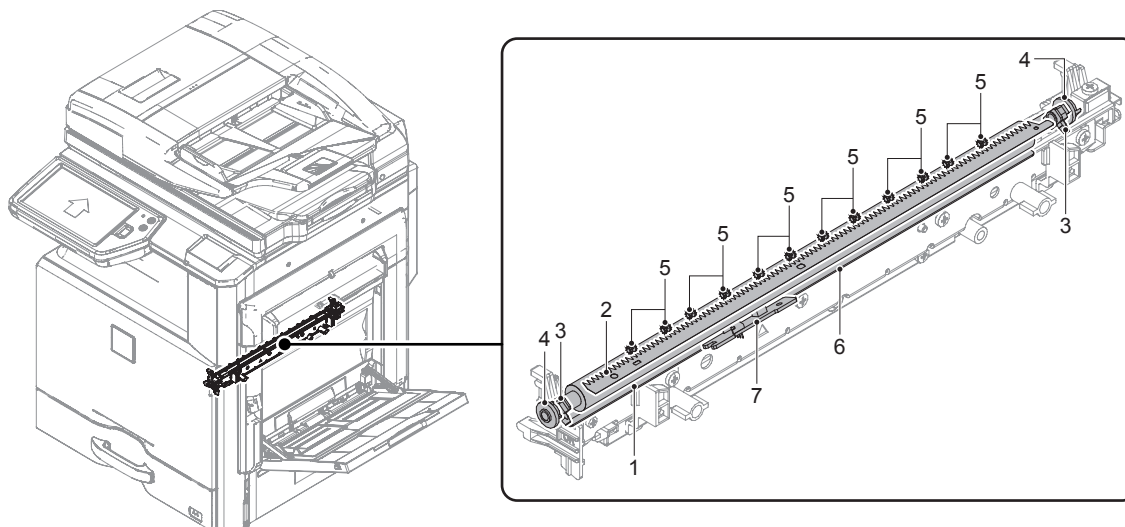
NOTE: Do not touch the dust-proof glass with bare hands.



## E. Transfer section

X: Check (Clean, replace, or adjust according to necessity.) ○ : Clean ▲: Replace △: Adjust ☆ : Lubricate

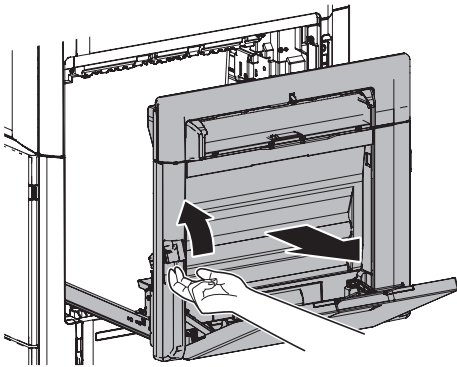
| No. | Part name                       | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark       |
|-----|---------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------------|
| 1   | Transfer roller                 | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |              |
| 2   | Discharge plate                 | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |              |
| 3   | Transfer roller bearing F and R | —            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |              |
| 4   | Transfer roller collar          | —            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |              |
| 5   | Transfer rear star ring         | —            | x    | x    | x    | x     | x     | x     | x     | x     |              |
| 6   | Pre-transfer paper guide        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |              |
| 7   | Process control sensor          | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Air cleaning |



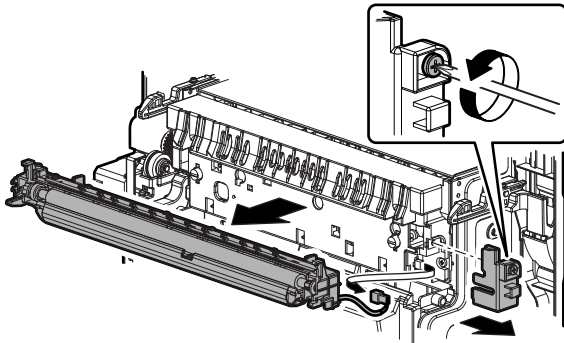


## (1) Transfer unit removal

- 1) Pull the lock lever, and open the right door.



- 2) Remove the blue screw, and remove the cover. Disconnect the connector, and remove the transfer unit.



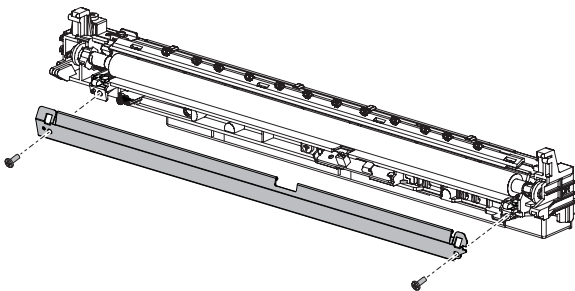
## (2) Pre-transfer paper guide and process control sensor cleaning

- 1) Remove the pre-transfer paper guide. Clean the pre-transfer paper guide and the process control sensor.

□ Maintenance

Clean at every 300K.

NOTE: When installing, engage the boss in the rear side, and then engage the boss in the front side.



## (3) Transfer roller, transfer roller bearing F and R, and transfer roller collar replacement

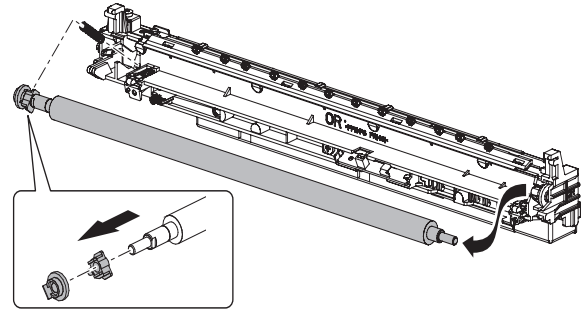
- 1) Disengage the pawl, and remove the transfer roller. Remove the transfer roller bearing R, the transfer roller collar, and the transfer roller gear from the transfer roller.

□ Maintenance

Replace at every 300K.

NOTE: When installing, be sure to insert the spring into the transfer roller bearing R and the holder boss securely.

NOTE: Be careful of the installing direction of the transfer roller gear and the transfer roller collar.



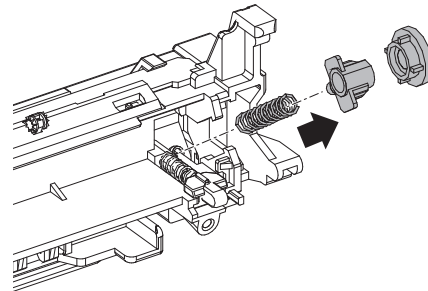
- 2) Remove the transfer roller collar and the transfer roller bearing F from the holder.

□ Maintenance

Replace at every 300K.

NOTE: When installing, be sure to insert the spring into the transfer roller bearing F and the holder boss securely.

NOTE: Be careful of the installing direction of the transfer roller collar.



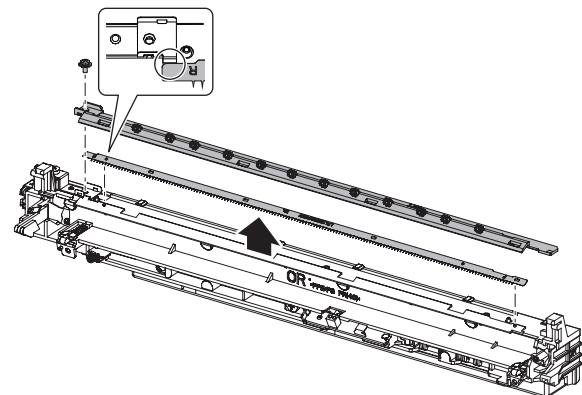
## (4) Discharge plate replacement

- 1) Remove the blue screw, and remove the discharge plate holder. Remove the discharge plate.

□ Maintenance

Replace at every 300K.

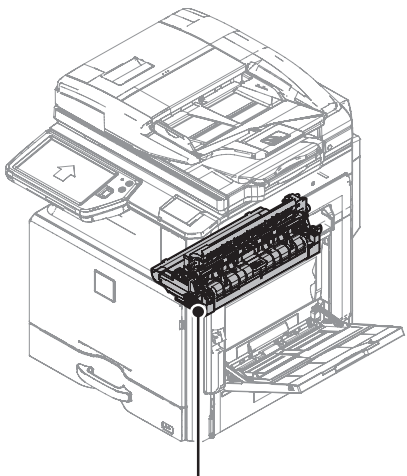
NOTE: When installing, insert the discharge plate into the boss and check to confirm that it is securely on the ground electrode.



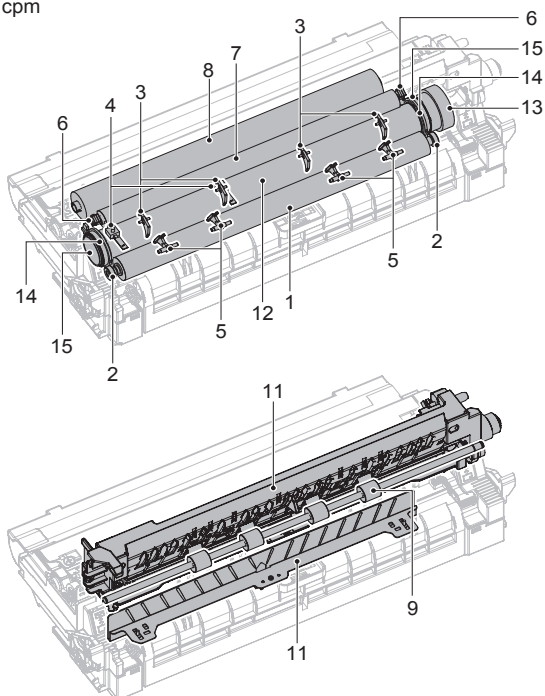
## F. Fusing section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

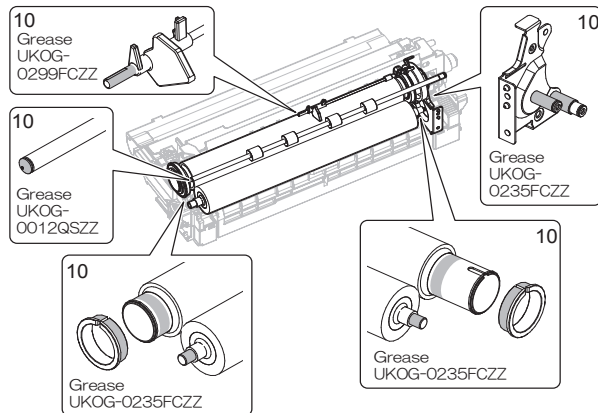
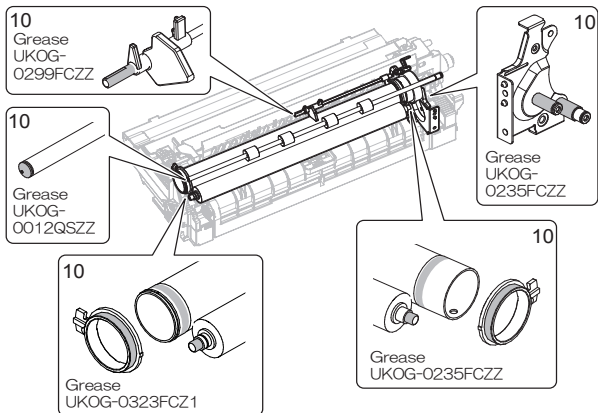
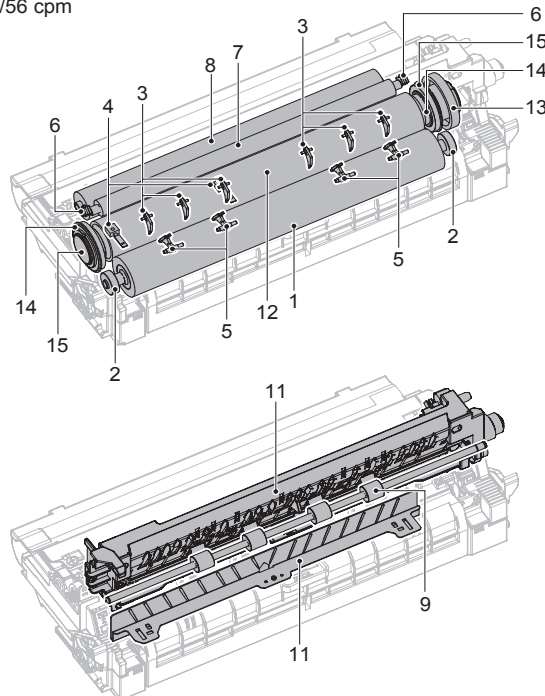
| No. | Part name                              | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                           |
|-----|----------------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------------------------------------------------|
| 1   | Lower heat roller                      | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     | Apply grease                                     |
| 2   | Lower heat roller bearing              | x            | x    | x    | x    | x     | x     | x     | x     | x     | Apply grease when assembling to the heat roller. |
| 3   | Upper separation pawl                  | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 4   | Thermistor                             | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
| 5   | Lower separation pawl                  | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 6   | Web pressure roller bearing            | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 7   | Web pressure roller                    | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 8   | Web roller                             | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 9   | Fusing paper exit roller               | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
| 10  | Gears                                  | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
| 11  | Paper guides                           | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
| 12  | Upper heat roller                      | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 13  | Upper heat roller gear                 | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |
| 14  | Upper heat roller bearing              | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     | Apply grease when assembling to the heat roller. |
| 15  | Upper heat roller heat-insulation bush | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |                                                  |



36 cpm

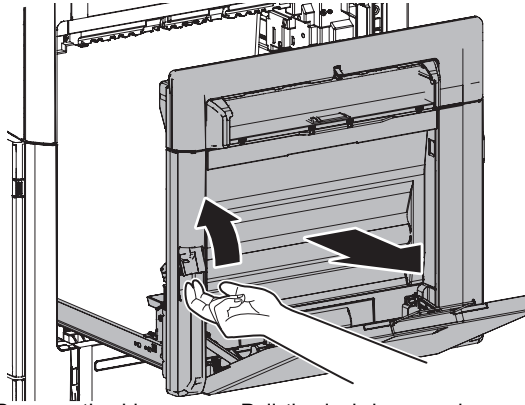


46/56 cpm

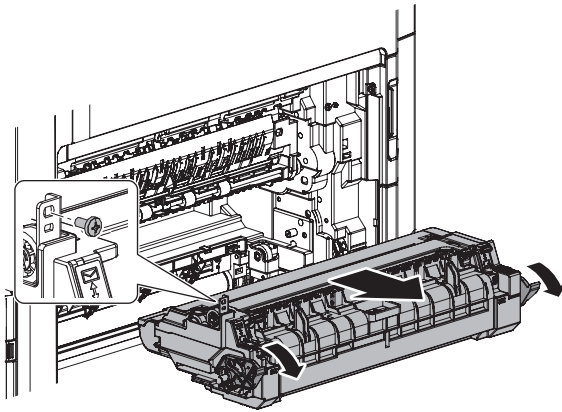


### (1) Fusing unit replacement

- 1) Pull the lock lever, and open the right door.



- 2) Remove the blue screw. Pull the lock lever and remove the fusing unit.

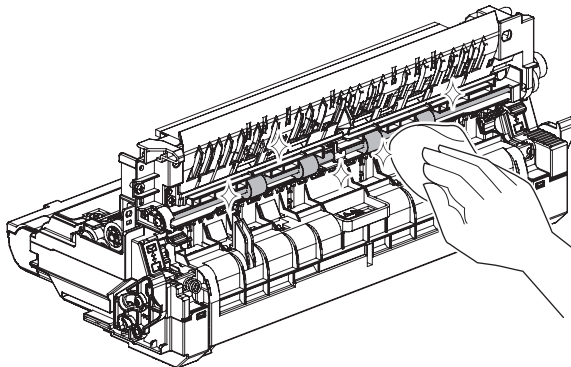


## (2) Fusing paper exit roller cleaning

- 1) Clean the fusing paper exit roller.

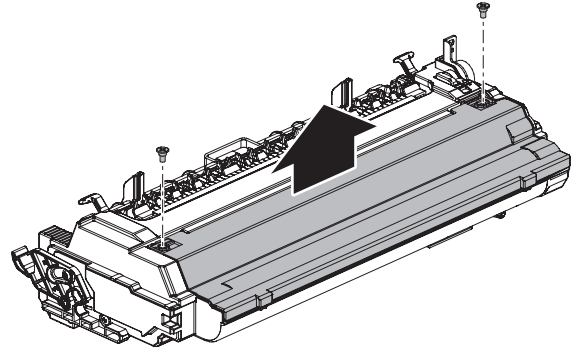
☐ Maintenance

Clean at every 300K.



**(3) Web pressure roller bearing and web pressure roller replacement**

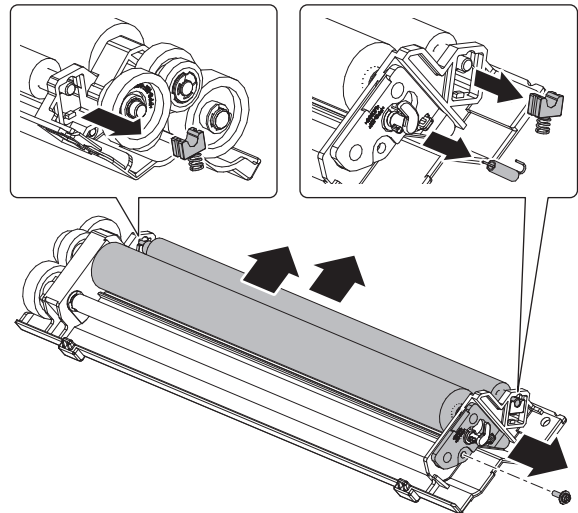
- 1) Remove the screw, and remove the web unit.



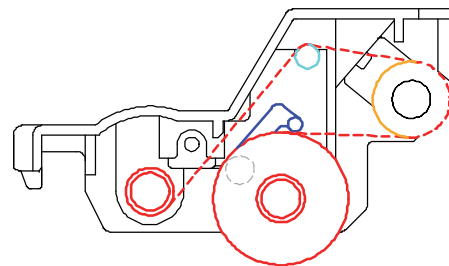
- 2) Remove the web spring, the web pressure roller bearing. and the web pressure roller

☐ Maintenance

Replace at every 300K.

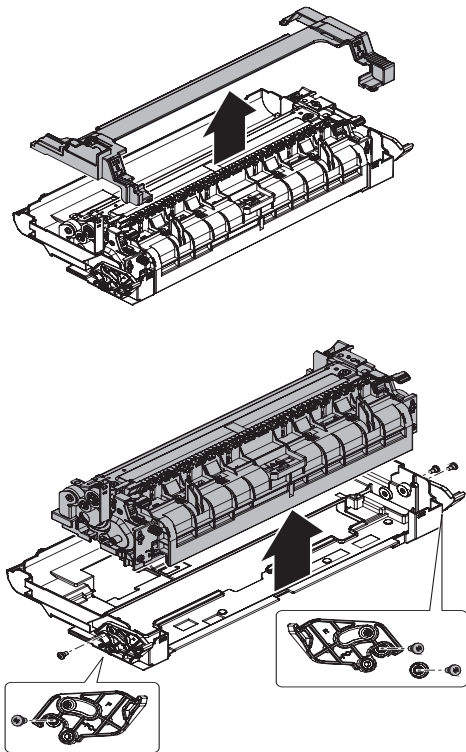


[Route diagram]



#### (4) Thermistor replacement

- 1) Remove the screw and the cover.

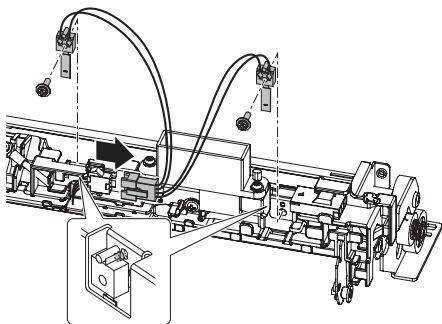


- 2) Disconnect the connector, and remove the harness, the screw, and the thermistor.

##### □ Maintenance

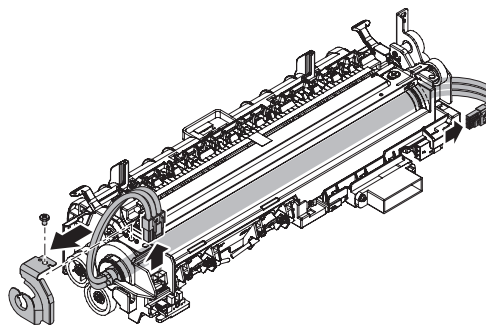
Check and clean at every 300K.

NOTE: When installing, be sure to insert into the thermistor boss.

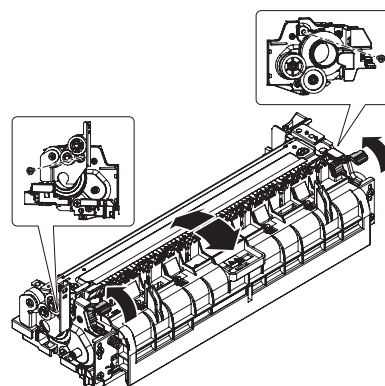


#### (5) Upper heat roller, upper heat roller gear, upper heat roller insulation bush, upper heat roller bearing, and heater lamp replacement

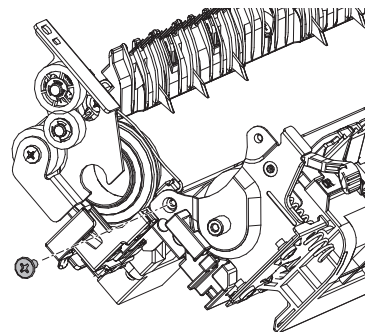
- 1) Remove the screw, and heater lamp.



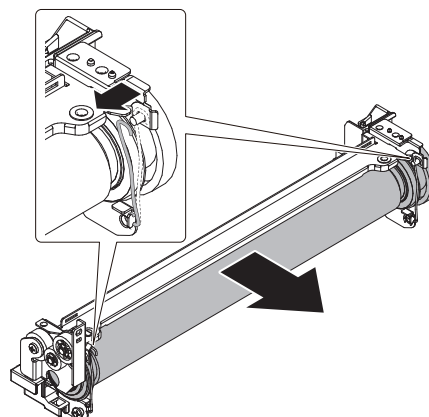
- 2) Remove the screw, and release the pressure of the heat roller and open the fusing unit.



- 3) Put the screw to keep opened.



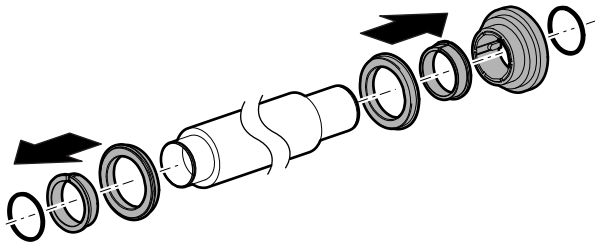
- 4) Remove the stopper and upper heat roller unit.



- 5) Remove the roller stopper from the upper heat roller, and remove the upper heat roller gear, the upper heat roller insulation bush, and the upper heat roller bearing.

□ Maintenance

Replace at every 300K.

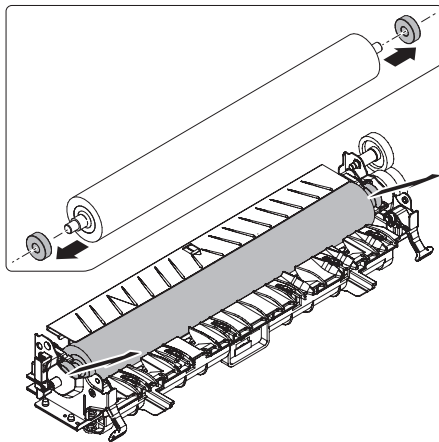


#### (6) Lower heat roller and lower heat roller bearing replacement

- 1) Remove the lower heat roller unit. Remove the lower heat roller bearing from the lower heat roller.

□ Maintenance

Replace at every 300K.

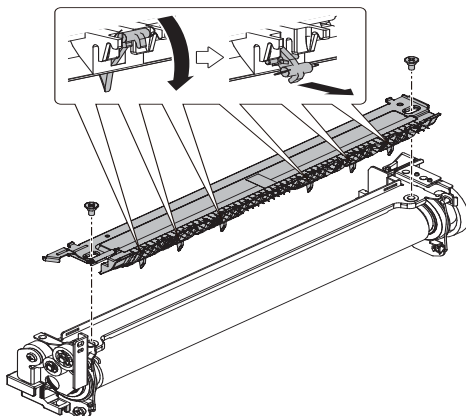


#### (7) Upper separation pawl replacement

- 1) Remove the screw, the upper separation pawl unit, and the upper separation pawl.

□ Maintenance

Replace at every 300K.



#### (8) Lower separation pawl replacement

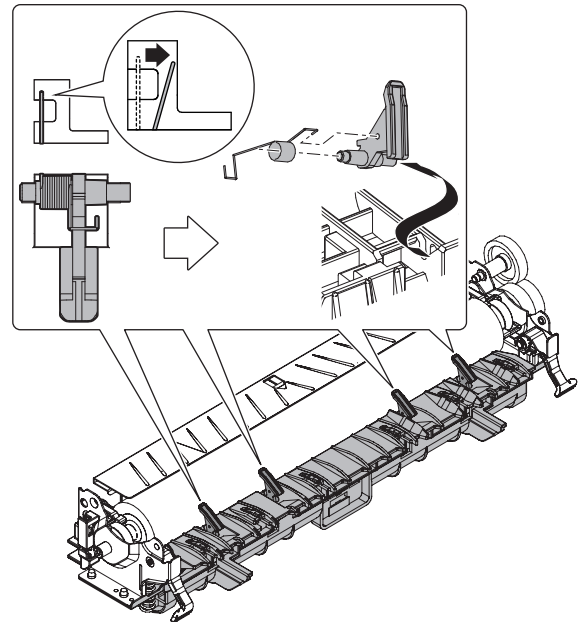
- 1) Release the spring edge on the paper guide side from the paper guide spring stopper. Precisely speaking, slide the spring edge and push it down to the back surface of the paper guide. In addition, disengage the lower separation pawl from the lower separation pawl shaft side where the spring is attached. Remove the spring from the lower separation pawl.

□ Maintenance

Replace at every 300K.

NOTE: When installing the spring, pass the spring hook through the hole in the lower separation pawl.

NOTE: When installing the lower separation pawl, first install the shaft which is not provided with the spring to the paper guide.

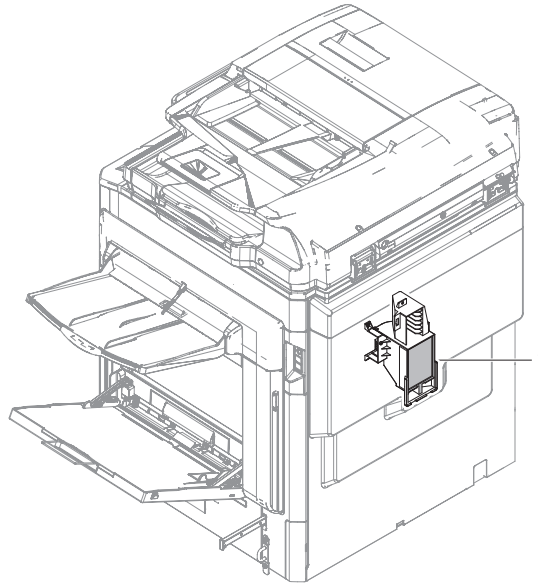




## G. Filter section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name    | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark |
|-----|--------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| 1   | Ozone filter | x            | ▲    | ▲    | ▲    | ▲     | ▲     | ▲     | ▲     | ▲     |        |



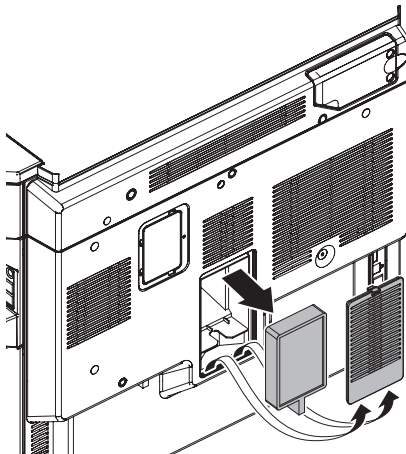
### (1) Ozone filter replacement

- 1) Remove the screw, and remove the cover. Remove the ozone filter.

□ Maintenance

Replace at every 300K.

When installing the filter, be careful not to turn out the peripheral molt and to insert the filter straight.

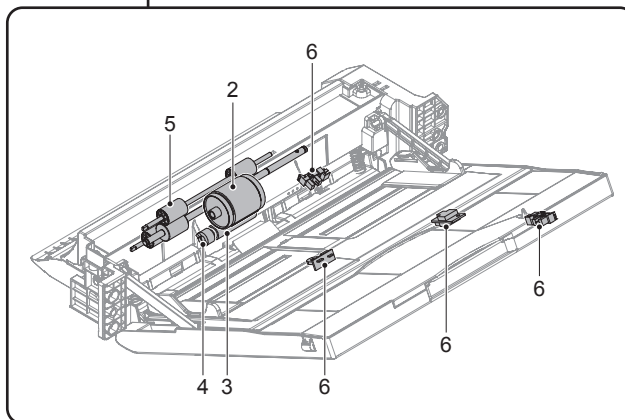
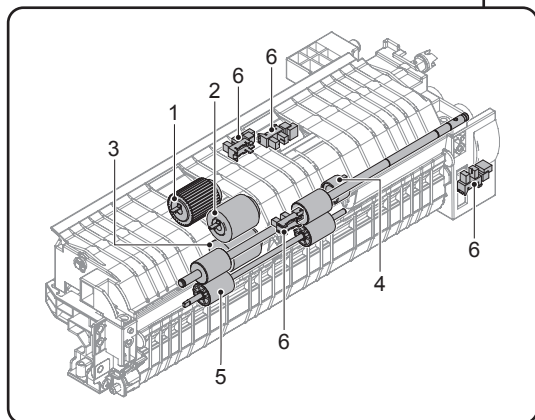
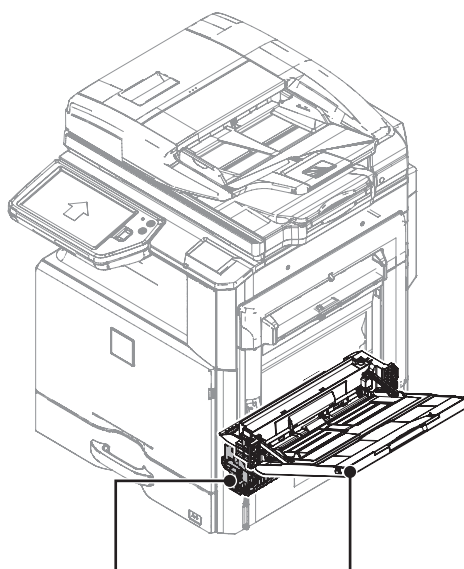




## H. Paper feed section

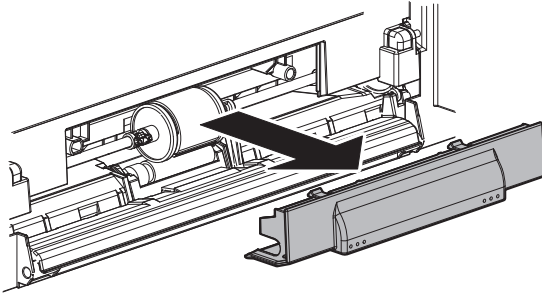
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name            | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                                                                                                                                                                         |
|-----|----------------------|--------------|------|------|------|-------|-------|-------|-------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Paper pick-up roller | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replacement reference:<br>Replace according to each<br>paper feed counter value.<br>Paper feed tray: Replace at<br>100K or 1 year of use.<br>Manual feed: Replace at 100K<br>or 1 year of use. |
| 2   | Paper feed roller    | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                                                                                                                                                |
| 3   | Separation roller    | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                                                                                                                                                |
| 4   | Torque limiter       | x            | x    | x    | x    | x     | x     | x     | x     | x     | Replacement reference:<br>Replace according to each<br>paper feed counter value.<br>Paper feed tray: 100K<br>Manual feed: 100K                                                                 |
| 5   | Transport rollers    | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                                                                                                                                                                |
| 6   | Sensors              | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                                                                                                                                                                |

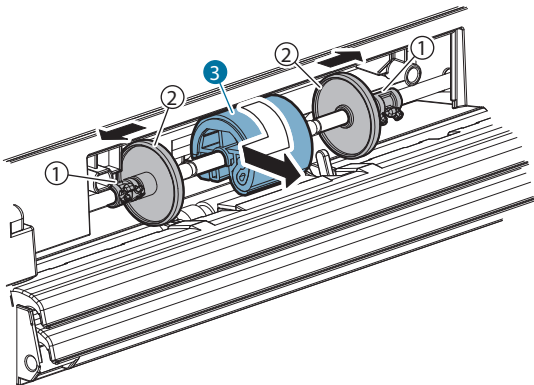


**(1) Manual paper feed roller, separation roller, and torque limiter replacement**

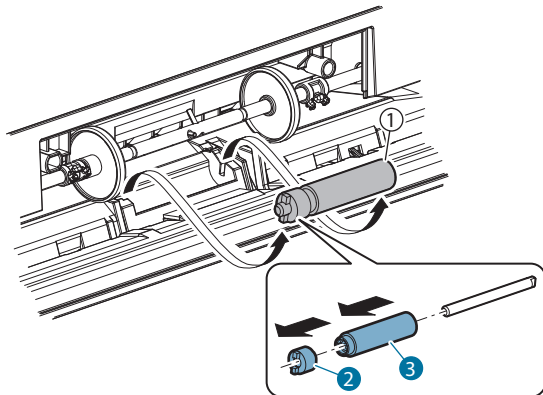
- 1) Remove the cover.



- 2) Slide the stopper and the collar and remove the paper feed roller

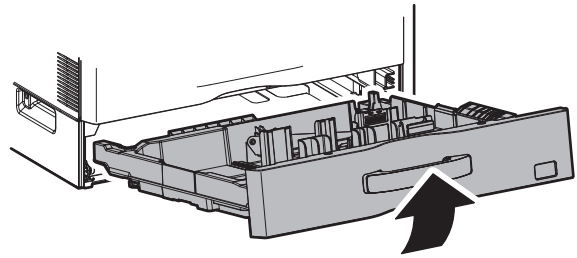


- 3) Remove the separation roller and the torque limiter.

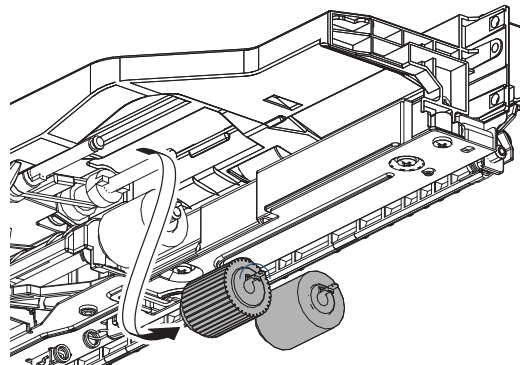


**(2) Tray paper feed unit paper pickup roller, paper feed roller, and separation roller replacement**

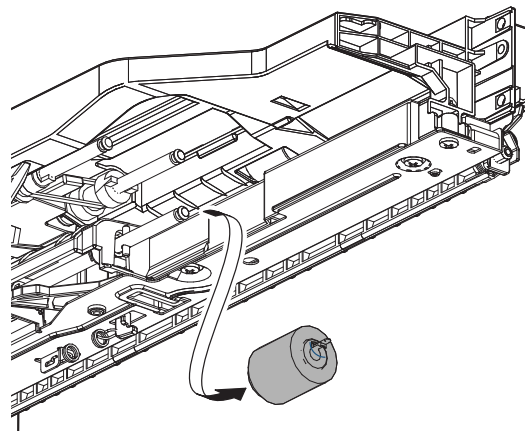
- 1) Remove the tray 1.



- 2) Remove the paper pickup roller and the paper feed roller.  
Maintenance: Replace at every 100K of each paper feed counter.

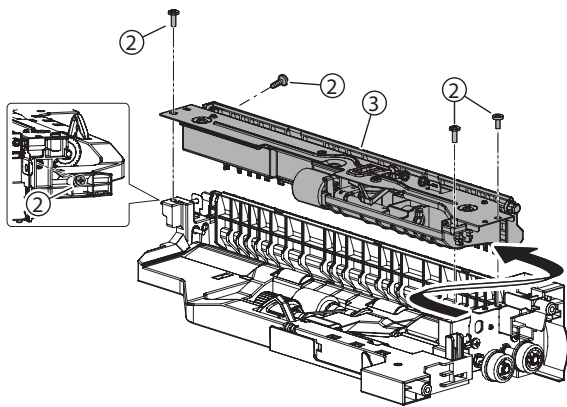


- 3) Remove the separation roller.  
Maintenance: Replace at every 100K of each paper feed counter.

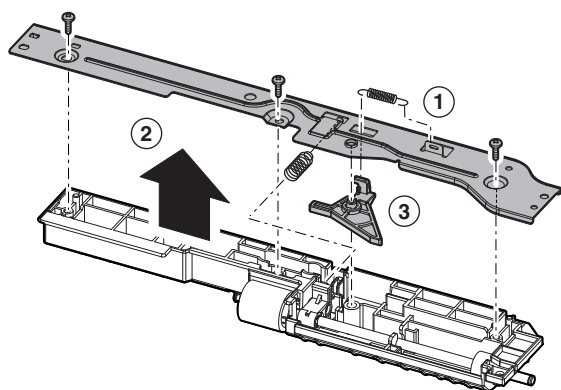


**(3) Tray paper feed unit torque limiter replacement**

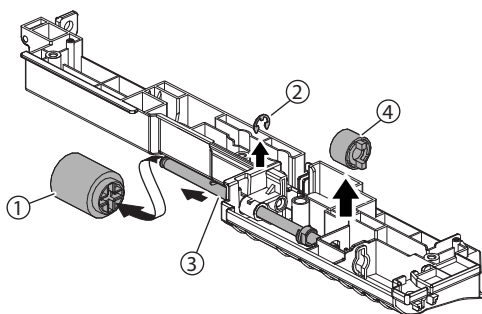
- 1) Remove the E-ring, the bearing, and the paper feed lower PG unit.



- 2) Remove the pressure release spring, and remove the paper feed lower PG supporting plate. Remove the separation pressure spring, and the separation pressure release plate.



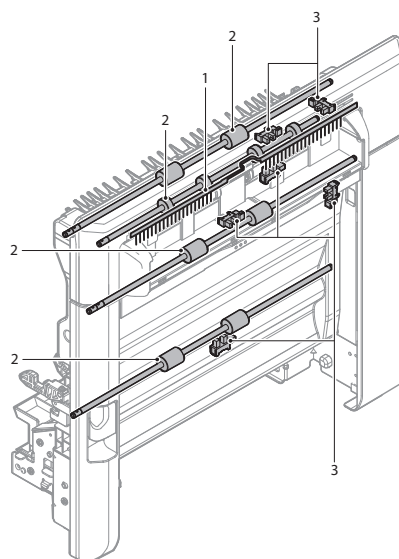
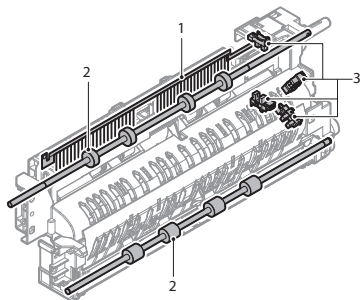
- 3) Remove the separation roller. Remove the E-ring and the separation shift. Remove the torque limiter.  
Maintenance: Replace at every 100K of each paper feed counter.



## I. Paper transport section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name                | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark |
|-----|--------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| 1   | Resist roller (Idle)     | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |        |
| 2   | Paper dust removing unit | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |        |
| 3   | Transport rollers        | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |        |
| 4   | Sensors                  | x            | x    | x    | x    | x     | x     | x     | x     | x     |        |
| 5   | Transport paper guides   | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |        |

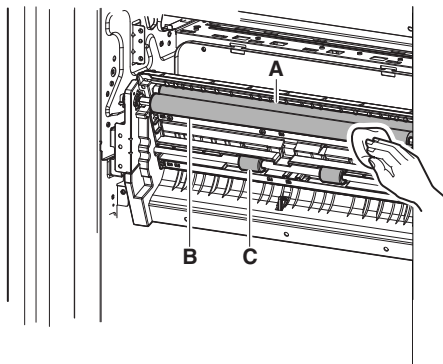


### (1) Resist roller (idle), and each transport roller cleaning

- 1) Open the right door.
- 2) Clean the resist roller (Idle) (A), resist roller (Drive) (B) and the transport roller 8 (Drive) (C).

#### □ Maintenance

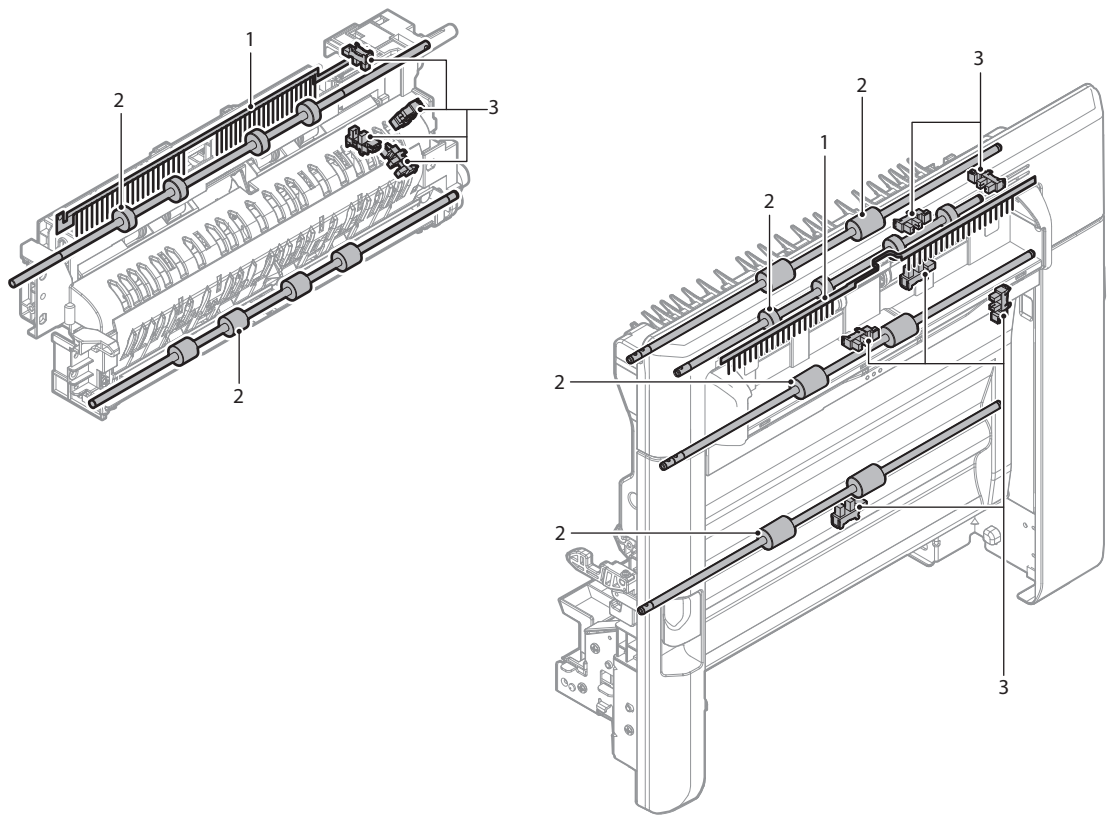
Clean at every 300K.



**J. Duplex/Paper exit section**

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

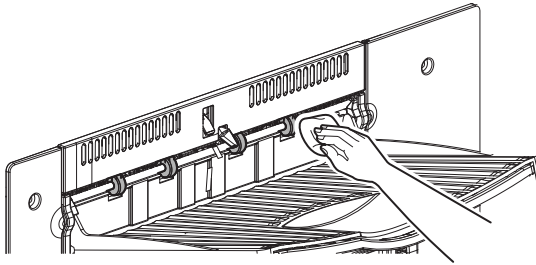
| No. | Part name              | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                           |
|-----|------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------------------------------------------------|
| 1   | Discharge brush        | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
| 2   | Transport rollers      | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |
| 3   | Sensors                | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
|     | Gears                  | x            | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions. |
|     | Transport paper guides | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                                  |



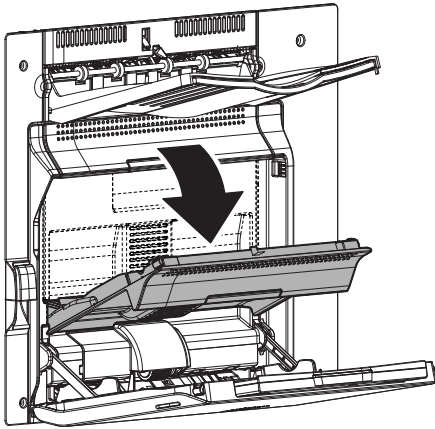
**(1) Each transport roller cleaning**

- 1) Clean the paper exit roller 2 (Drive).

□ Maintenance  
Clean at every 300K.

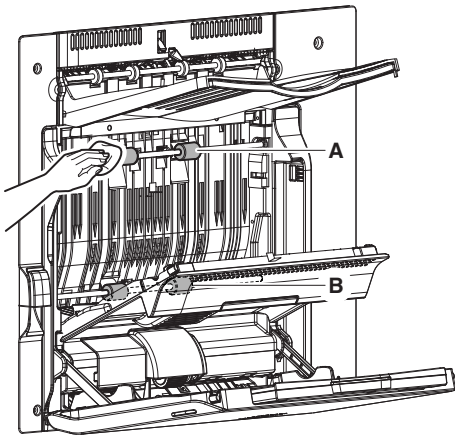


- 2) Open the ADU open/close door.

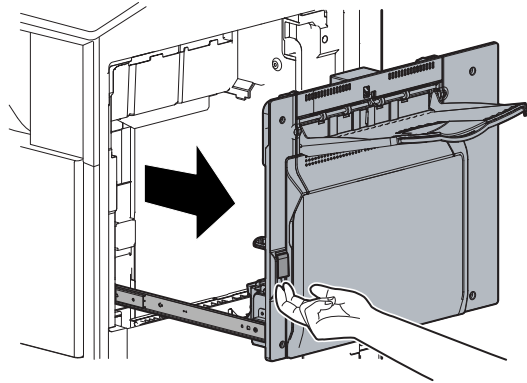


- 3) Clean the transport roller (Drive) (A), and the transport roller (Drive) (B).

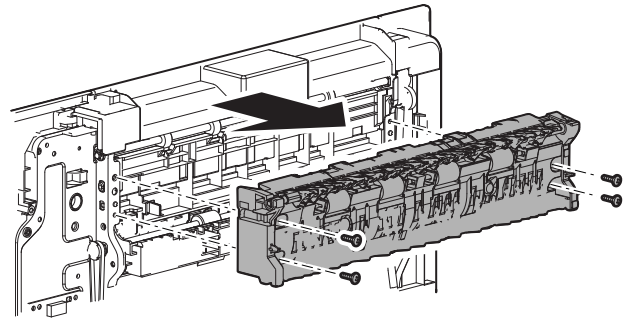
□ Maintenance  
Clean at every 300K.



- 4) Open the right door.

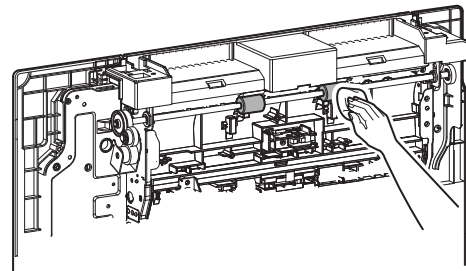


- 5) Remove the reverse PG unit.



- 6) Clean the transport roller (Drive).

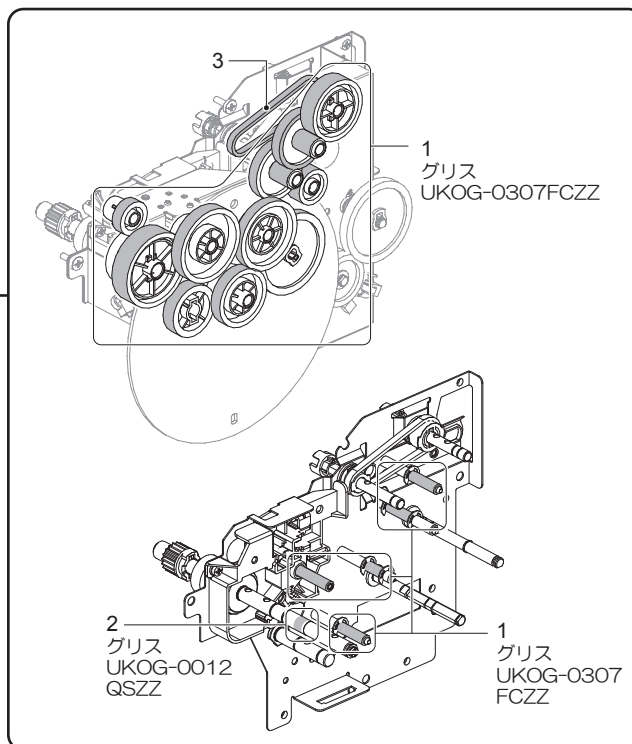
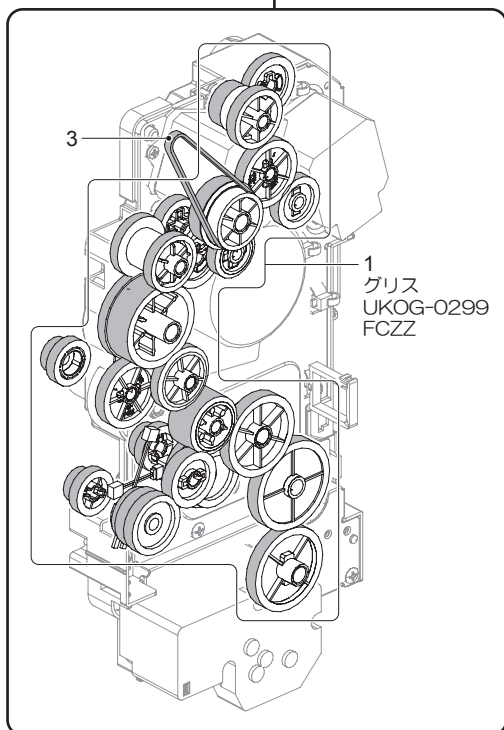
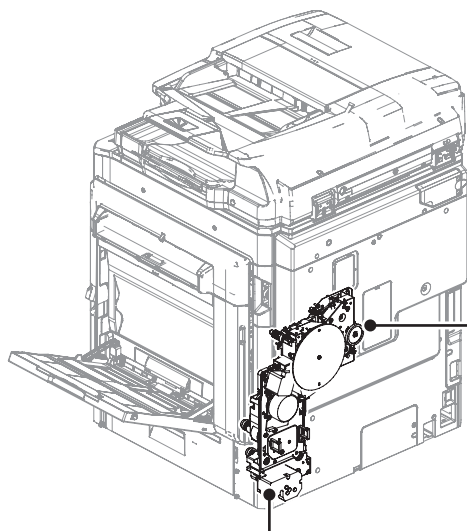
□ Maintenance  
Clean at every 300K.



## K. Drive section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name                                | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                           |
|-----|------------------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------------------------------------------------|
| 1   | Gears (Grease)                           | —            | x    | x    | x    | x     | x     | x     | x     | x     | When checking, apply to the necessary positions. |
| 2   | Shaft earth sections (Conduction grease) | —            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |
| 3   | Belts                                    | —            | x    | x    | x    | x     | x     | x     | x     | x     |                                                  |

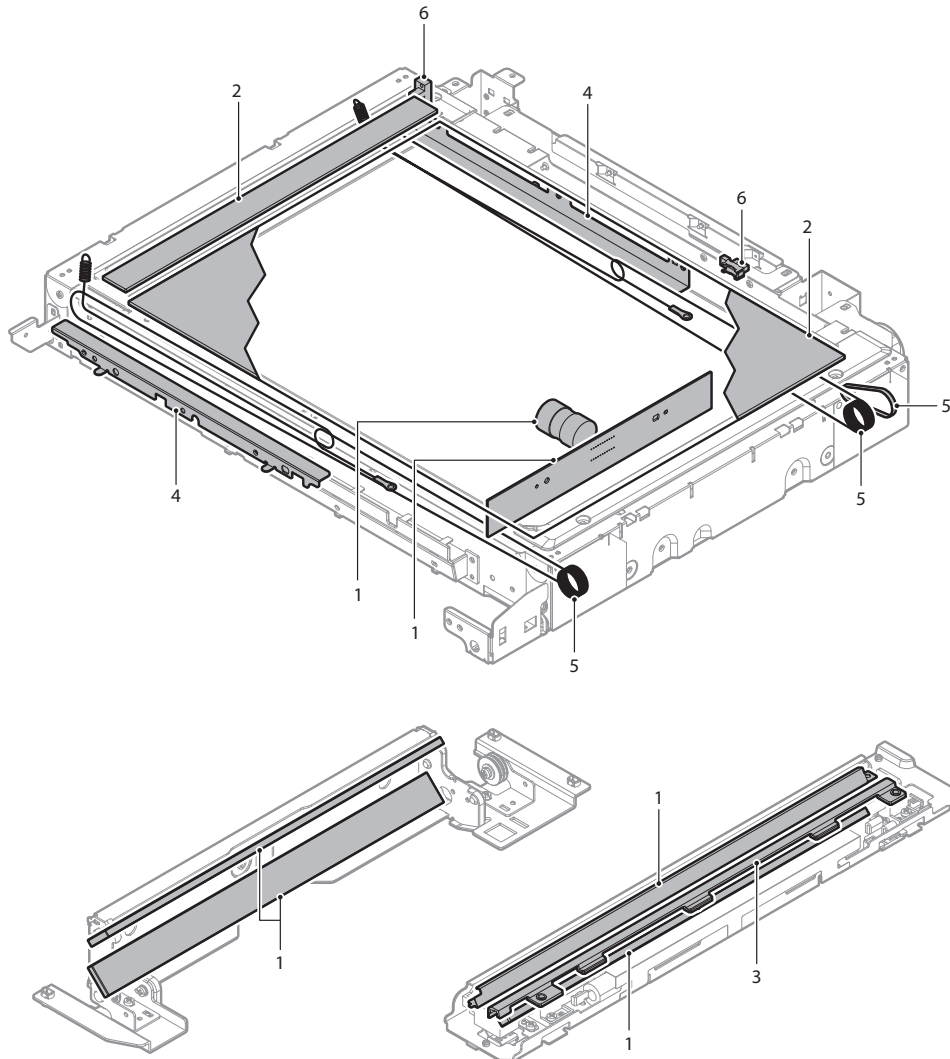




## L. Scanner section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

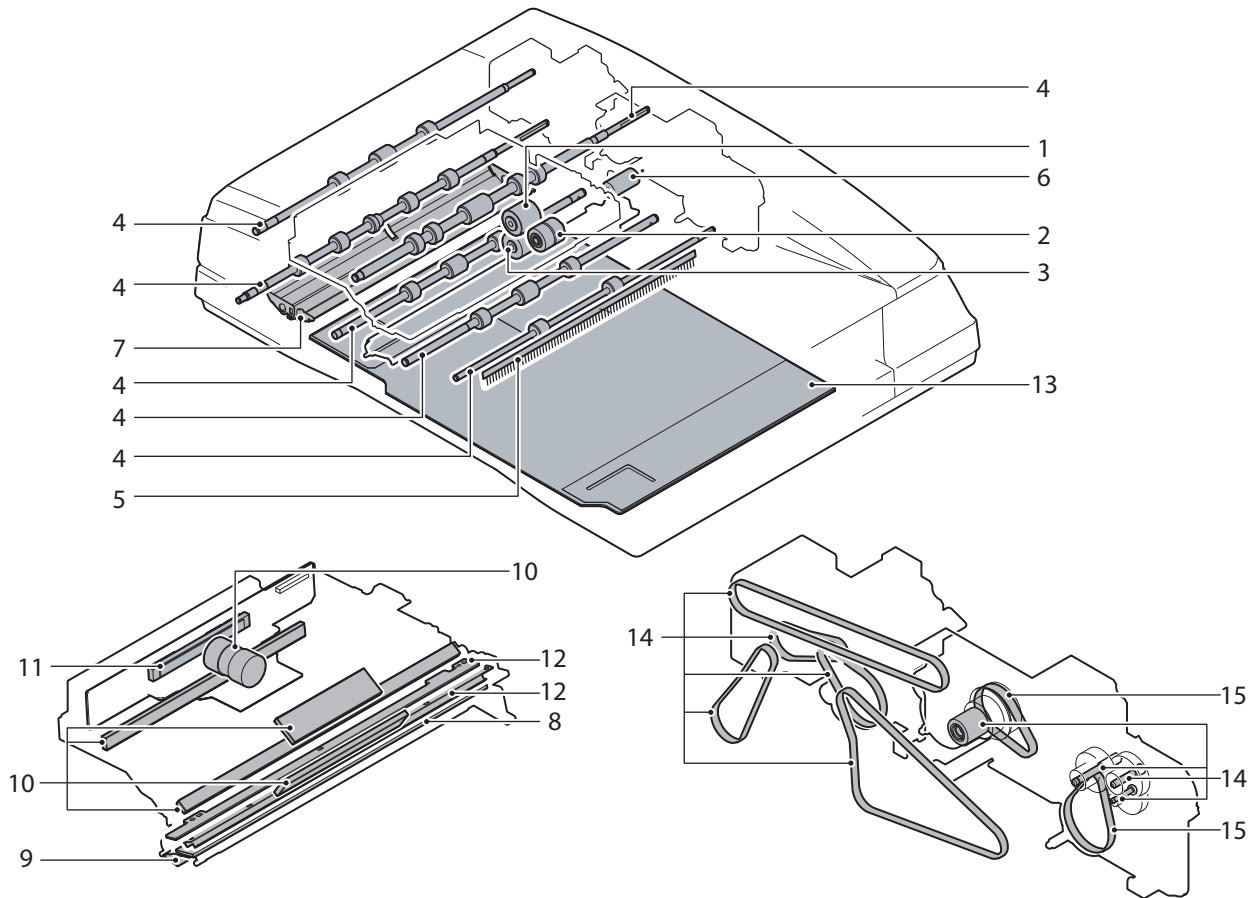
| No. | Part name                                           | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                           |
|-----|-----------------------------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|----------------------------------|
| 1   | Mirror/Lens/<br>Reflection sheet<br>(Reflector)/CCD | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                  |
| 2   | Table glass/SPF glass                               | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                  |
| 3   | Scanner lamp                                        | x            | x    | x    | x    | x     | x     | x     | x     | x     | Air cleaning for the LED section |
| 4   | Rails                                               | ☆            | ☆    | ☆    | ☆    | ☆     | ☆     | ☆     | ☆     | ☆     |                                  |
| 5   | Drive belt/drive wire                               | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                  |
| 6   | Sensors                                             | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                  |



## M. DSPF section

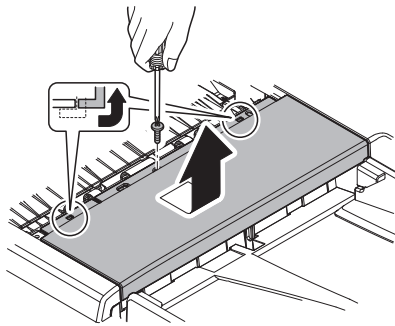
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

| No. | Part name                                     | When calling | 300k | 600k | 900k | 1200k | 1500k | 1800k | 2100k | 2400k | Remark                                |
|-----|-----------------------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------------------------------|
| 1   | Paper feed roller                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     | Replace at 100K of paper feed counter |
| 2   | Pickup roller                                 | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 3   | Separation roller                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 4   | Transport rollers                             | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 5   | Discharge brush                               | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                       |
| 6   | Torque limiter                                | x            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 7   | No. 1 scanning plate                          | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 8   | No. 2 scanning section, scanning glass        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 9   | No. 2 scanning section, white reference glass | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 10  | Mirror                                        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 11  | Lens/CCD                                      | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 12  | Scanner lamp/Reflector                        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 13  | OC mat                                        | ○            | ○    | ○    | ○    | ○     | ○     | ○     | ○     | ○     |                                       |
| 14  | Gears                                         | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                       |
| 14  | Belts                                         | x            | x    | x    | x    | x     | x     | x     | x     | x     |                                       |

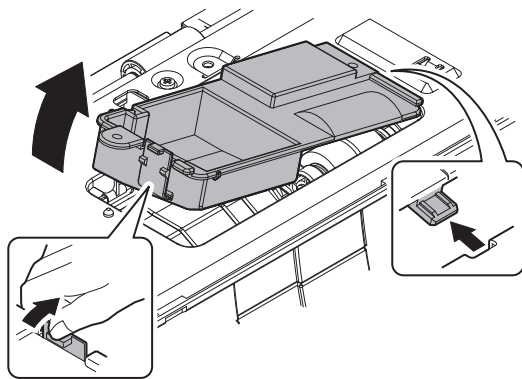


### (1) Pickup roller, paper feed roller replacement

- 1) Open the upper door. Remove the screw and the paper feed cover.

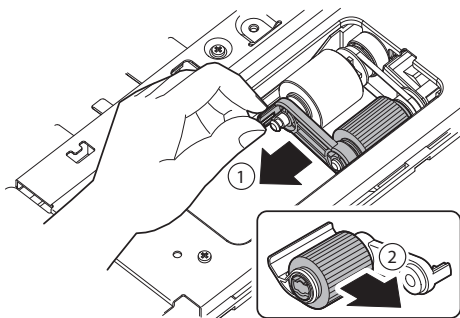


- 2) Remove the pawl and the paper feed PG upper cover.



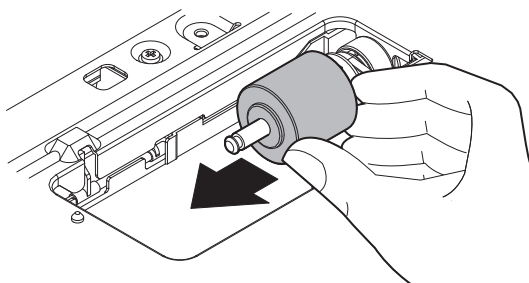
- 3) Disengage the pawl, and remove the holder guide, the pickup roller and the paper feed roller.

Maintenance: Replace at every 100K of each paper feed counter.



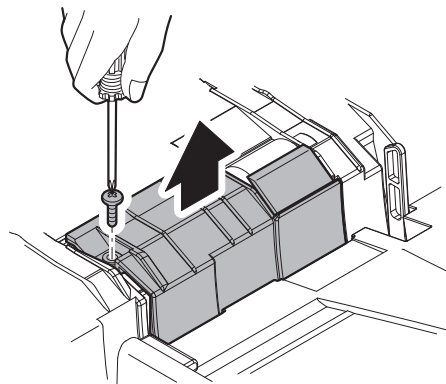
- 4) Remove the paper feed roller.

Maintenance: Replace at every 100K of each paper feed counter.



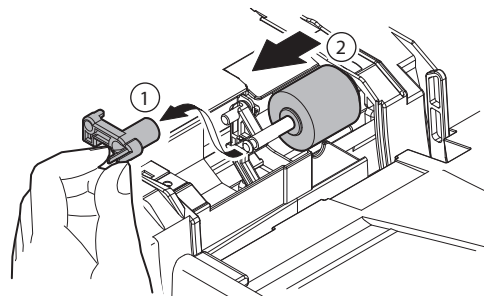
### (2) Separation roller replacement

- 1) Remove the screw and the paper feed PG lower cover.



- 2) Disengage the pawl, and remove the reverse pressure release lever and separation roller.

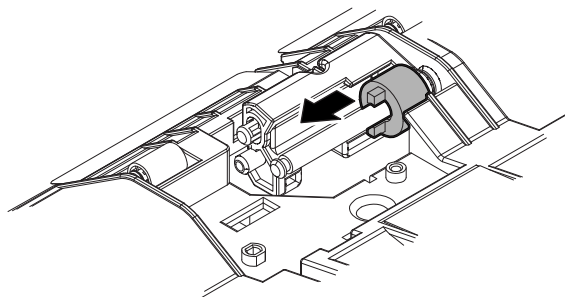
Maintenance: Replace at every 100K of each paper feed counter.



### (3) Torque limiter SPF replacement

- 1) Remove the torque limiter SPF.

Maintenance: Replace at every 800K of each paper feed counter.

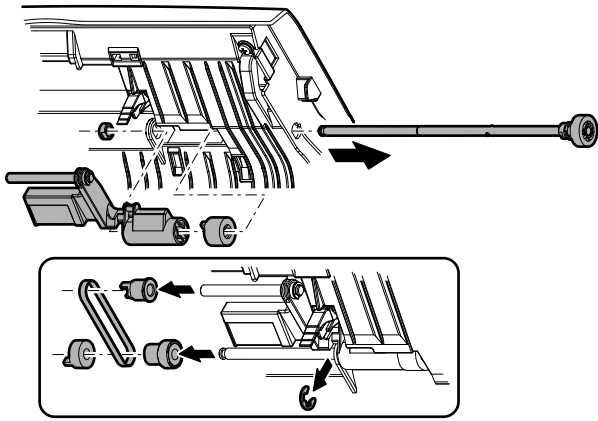


### (4) Take-up torque limiter replacement

- 1) Remove the one-way coupling, the belt, and the pulley. Remove the E-ring.

Pull out the shaft, and remove the bearing, the holder, and the take-up torque limiter.

Maintenance: Replace at every 800K of each paper feed counter.

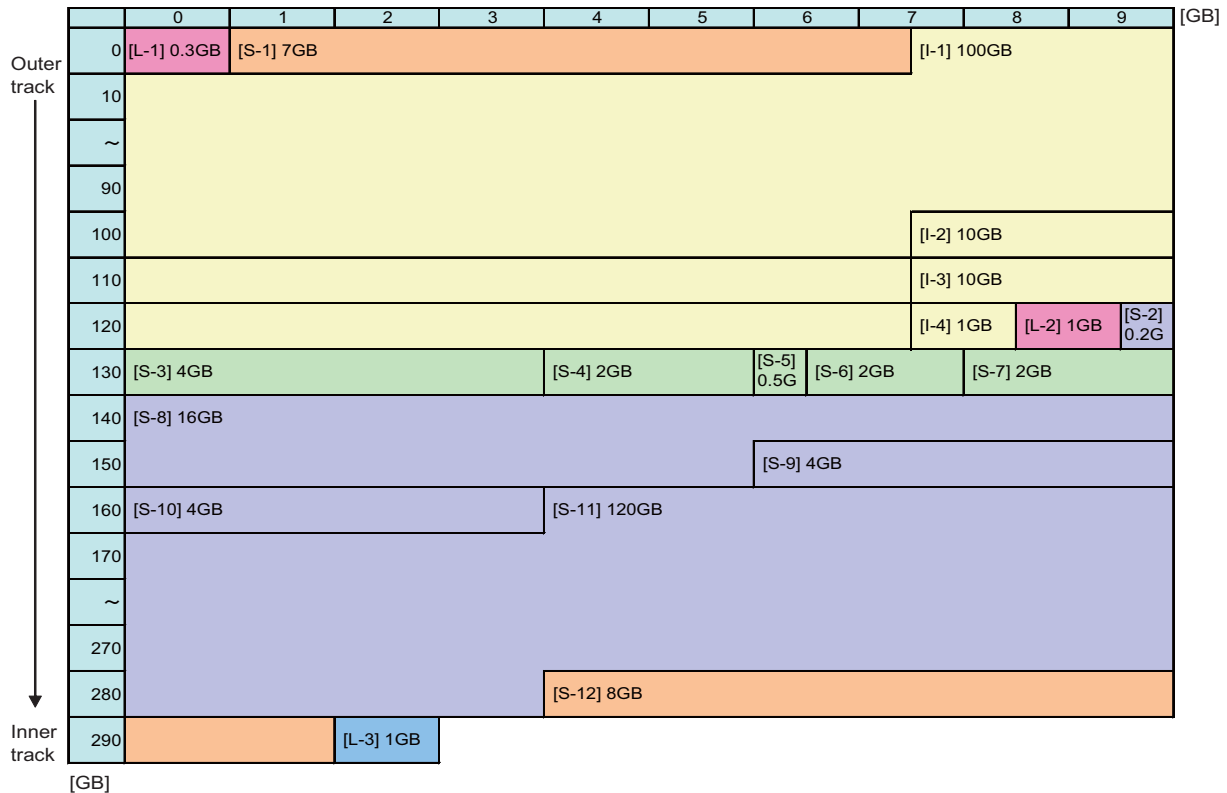


## [9] VARIOUS STORAGE DATA HANDLING

### 1. HDD/SD card/CF card memory map

#### A. HDD partition

HDD size = 320GB (Actual size 289GB)



#### B. HDD data contents

| No   | File system   | Stored data                                                                                                                                                       | NOTE                         |
|------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| L-1  | Not available | UI content data                                                                                                                                                   |                              |
| S-1  | Universal     | e-manual / html<br>Watermark                                                                                                                                      |                              |
| I-1  | Image data    | Image data (ERDH / Document filing)                                                                                                                               | 3000 documents, 20000 images |
| I-2  | Image data    | Image data (Temporary storage)                                                                                                                                    | 1000 documents, 10000 images |
| I-3  | Image data    | User watermark / Stamp                                                                                                                                            | 1000 documents, 10000 images |
| I-4  | Image data    | FAX / Internet FAX receive images                                                                                                                                 | 3000 documents, 5000 images  |
| L-2  | Not available | System storage data                                                                                                                                               |                              |
| L-3  | Not available | RAID system information                                                                                                                                           |                              |
| S-2  | Universal     | System storage data (for backup)                                                                                                                                  |                              |
| S-3  | Universal     | Download font<br>User profile<br>User macro<br>storage data<br>System setting data                                                                                |                              |
| S-4  | Universal     | System log                                                                                                                                                        |                              |
| S-5  | Universal     | Document filing (Database)<br>Job log (Database)<br>Job completion list                                                                                           |                              |
| S-6  | Universal     | Address book (Database)<br>Account management information (Database)<br>Individual setting information for direct WEB browsing<br>Coolie file for OSA application |                              |
| S-7  | Universal     | Database file                                                                                                                                                     |                              |
| S-8  | Universal     | Spool area for printer                                                                                                                                            |                              |
| S-9  | Universal     | Application work area (User file used in SMB direct print)                                                                                                        |                              |
| S-10 | Universal     | OSA application file                                                                                                                                              |                              |
| S-11 | Universal     | User file saved in the SMB server                                                                                                                                 |                              |
| S-12 | Universal     | User data of set value etc which must not be erased when installing the DSK.<br>(Address book, account information)                                               |                              |

## C. CF card partition

CF card size = 8GB (Actual size 7.8GB)

|   | 0              | 100 | 200 | 300 | 400 | 500           | 600 | 700 | 800 | 900 | [MB] |
|---|----------------|-----|-----|-----|-----|---------------|-----|-----|-----|-----|------|
| 0 | [L-201] 7080MB |     |     |     |     |               |     |     |     |     |      |
| 1 |                |     |     |     |     |               |     |     |     |     |      |
| 2 |                |     |     |     |     |               |     |     |     |     |      |
| 3 |                |     |     |     |     |               |     |     |     |     |      |
| 4 |                |     |     |     |     |               |     |     |     |     |      |
| 5 |                |     |     |     |     |               |     |     |     |     |      |
| 6 |                |     |     |     |     |               |     |     |     |     |      |
| 7 | [S-201] 512MB  |     |     |     |     | [S-203] 200MB |     |     |     |     |      |

[GB]

## D. CF card data contents

| No.   | File system | Stored data                                                   | NOTE |
|-------|-------------|---------------------------------------------------------------|------|
| L-201 | Universal   | ICU firmware (Boot/Main)<br>Log data<br>Snapshot<br>Swap area |      |
| S-201 | Universal   | font<br>web help<br>spdl<br>Option Font ROM                   |      |
| S-203 | Universal   | System setting value data file                                |      |

## E. SD card partition

SD card size = 4GB (Actual size 3.6GB)

|   | 0             | 100 | 200 | 300 | 400 | 500          | 600 | 700 | 800 | 900 | [MB] |
|---|---------------|-----|-----|-----|-----|--------------|-----|-----|-----|-----|------|
| 0 | [L-101] 500MB |     |     |     |     | [I-101] 1GMB |     |     |     |     |      |
| 1 |               |     |     |     |     |              |     |     |     |     |      |

[GB]

## F. SD card data contents

| No.   | File system   | Stored data                     | NOTE |
|-------|---------------|---------------------------------|------|
| L-101 | Not available | ICU (Reus) firmware (Boot/Main) |      |
| I-101 | Image data    | FAX/Internet FAX receive images |      |

## 2. Necessary steps when replacing the PWB, HDD, the SD Card and the CF Card

### A. MFP substrate replacement procedure (work flow)

**Important**

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.

**Important**

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.

At this timing, F6-21 may occur. Whether it may occur or not, go to execute procedure 1.  
(1) Set the appropriate country code by Sim66-2 (clear the software switches related to FAX).

### Important

Make sure to execute even if the fax option is not installed on the machine.

Note for the handling of EEPROM

#### WARNING:

Never execute Sim16 to clear U2 trouble WITHOUT investigating the root cause of U2 trouble using the following note.

- 1) Make sure to put an earth band while handling PWB. EEPROM data may be garbled due to the static charge.  
(It is mentioned in Note for Serving.)
- 2) Never to insert EEPROM to the socket in reverse. U2 trouble occurs 100% if the machine is turned on after inserting the EEPROM in reverse.  
Execution of Sim16 to clear this U2 trouble will lead to the garbled data. Data won't recover once the data is garbled.
- 3) Make sure that PCU, MFP, SCAN EEPROMs will not be switched. U2 trouble occurs 100% if the machine is turned on while the EEPROMs are being switched. Execution of Sim16 to clear this U2 trouble will lead to the garbled data. Data won't recover once the data is garbled. To prevent such troubles, put a mark such as "MFP" to each EEPROM before removing from PWB so that it is easy to distinguish.
- 4) Please handle EEPROMs with care to prevent bending of pins.  
They will be broken if bent several of times. (This type of trouble has been reported many times.).
- 5) Do not use foamed styrol etc. for packing during the transportation of EEPROM. Foamed styrol easily generates static charge. In some cases, EEPROM is damaged just by sticking it into foamed styrol. Make sure to use the black sponge for packing during transportation. The black sponge is used to pack EEPROM provided as service parts. Special material is used for this black sponge so that it will not generate a static charge. Make sure that PCU, MFP, SCAN EEPROMs won't be switched. U2 trouble occurs 100% if the machine is turned on while the EEPROMs are being switched. Execution of Sim16 to clear this U2 trouble will lead to the garbled data. Data won't recover once the data is garbled. To prevent such troubles, put a mark such as "MFP" to each EEPROM before removing from PWB so that it is easy to distinguish.

CAUTION: Please note that counter data and machine adjustment values are recorded in the EEPROM.

If the data in EEPROM is garbled, it is impossible to recover. In such cases, the only solution will be the initialization of the EEPROM.

Counter data and adjustment values will be reset to "0" or "default" once the data are initialized.

Once all the adjustment values are set to default, it will be necessary to readjust all the adjustment values, which requires tremendous workload.

Caution to prevent damage on EEPROM

- ? In case any trouble other than U2 trouble occurs to the machine, replace PWB (remove and install EEPROM) to fix, and U2 trouble occurs right after power on, never execute Sim16 under the condition.  
As previously mentioned, the data in EEPROM will be garbled after the execution of Sim16.
- ? In such cases, EEPROM may have been inserted in reverse or MFP and PCU EEPROM may have been switched.
- ? Turn off the machine without execution of Sim16, install proper EEPROM in proper position (on PWB), turn on the machine again, and then execute Sim16. This way U2 error will be cleared.
- ? Sim16 is executed to clear U2 errors if it occurred without performing any services (such as machine repair or maintenance).  
As previously mentioned, execution of Sim16 won't clear artificially-generated U2 errors. Instead, it actually damages the EEPROM.HDD storage data and backup

## 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 back up is possible before replacement, perform data back up 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 back up.
- Replacement procedures when HDD storage data can be back up.
- Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD.
- Re-install and update procedures of operation manual data saved in HDD.
- Re-install 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 from the factory) | After installation<br>(After use by 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                                  |                                                                                  |                       |
| 12  | Document filing                                                                                             | Not available                                           | Available                                                    | Enable                                  | Perform with<br>WEB PAGE.                       | Enable                                  |                                                                                  |                       |
| 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     | When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the SD card to the USB memory. (The backup image data are of PDF file type, and cannot be restored to the machine. The backup data are given to the user.)                                                                                  |                                                             |
| Step 4     | Replace the HDD.                                                                                                                                                                                                                                                                                                                     |                                                             |
| Step 5     | Boot the complex machine.<br>→ Formatting is automatically performed.                                                                                                                                                                                                                                                                | Boot the complex machine.                                   |
| Step 6     |                                                                                                                                                                                                                                                                                                                                      | The trouble code, U2-05, is displayed. → Cancel with SIM16. |
| Step 7     | 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 8     | Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to keep compliance between the HDD data and the image related memory and to prevent malfunctions. (The memory must be cleared not only in the FAX model but in the scanner and the Internet Fax models.)                                                  |                                                             |
| Step 9     | Use SIM49-3 to install the manual data to the HDD.                                                                                                                                                                                                                                                                                   |                                                             |
| Step 10    | The trouble code, U2-60, is displayed. → Use SIM49-5 to install the watermark data to the HDD. → After booting the machine, use SIM16 to cancel the "U2-60" trouble.                                                                                                                                                                 |                                                             |
| Step 11    | 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 12    | Import the data backed up with the Web page function in Step 2. 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.

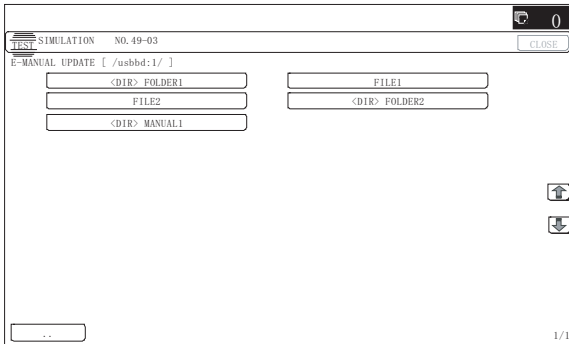
### b. Work contents and procedures

| 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>→ Formatting is automatically performed.                                                                                                                                                                             | Install a HDD to the machine, and boot the complex machine. |
| Step 2     |                                                                                                                                                                                                                                                                                     | The trouble code, U2-05, is displayed. → 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     | When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the SD card to the USB memory. (The backup image data are of PDF file type, and cannot be restored to the machine. The backup data are given to the user.)                                 |                                                             |
| Step 5     | Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to keep compliance between the HDD data and the image related memory and to prevent malfunctions. (The memory must be cleared not only in the FAX model but in the scanner and the Internet Fax models.) |                                                             |
| Step 6     | Use SIM49-3 to install the manual data to the HDD.                                                                                                                                                                                                                                  |                                                             |
| Step 7     | The trouble code, U2-60, is displayed. → Use SIM49-5 to install the watermark data to the HDD. → 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 (\*\*.uar) from the utility menu on the web site (Tech-DS home page).  
Copy the downloaded file to the USB device without changing the file hierarchy.
- 2) Enter the SIM49-3 mode.



- 3) Insert the USB memory into the machine.  
- When the USB memory is not inserted, "INSERT A STORAGE E-MANUAL STORED ON" is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.
- 4) Select the file 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

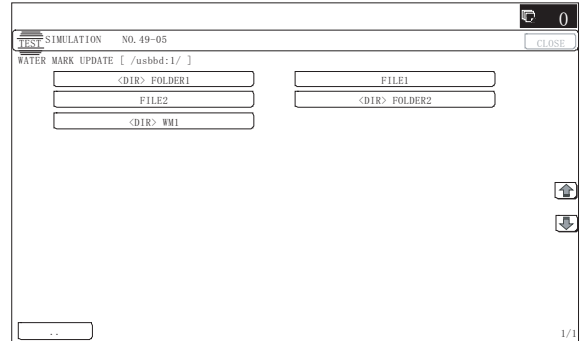
- 1) Obtain the watermark data.  
Download the watermark data from the utility menu on the web site (Tech-DS home page).  
Copy the downloaded files to the USB device without changing the file hierarchy.

##### 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.  
- When the USB memory is not inserted, "INSERT A STORAGE E-MANUAL STORED ON" is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.
- 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-101            | ICU firmware data  | ICU firmware (Boot/Main)<br>ARM9 firmware | Disable                       |              | Enable                           | SIM49-1<br>(BOOT cannot be installed again.) |
| I-101            | FAX reception data | FAX/Internet Fax reception image data     | Enable                        | SIM66-62     | Disable                          |                                              |

- 1) Use SIM56-2 to backup the SD card data to the USB memory.
- 2) When the operation panel home screen has been customized, backup the SD card data by using the device cloning function.
- 3) When there are some FAX/Internet Fax data received, use SIM66-62 to backup the image data to the USB memory in the PDF file type, and give the PDF file to the user. (The data cannot be restored to the machine.)
- 4) Replace the SD card with a new one.
- 5) Upgrade the firmware to the latest version.
- 6) Use SIM66-10 to clear the image send memory. (This is in order to obtain consistency between the HDD data and the image related memory.)
- 7) Use SIM56-2 to restore the data backed up in procedure 1).
- 8) Restore the data backed up in procedure 2) by using the device cloning function.

#### Important

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 U2-40 error occurs, if the error cannot be canceled by SIM16, or when E7-07 error occurs, there may be some trouble in the SD card.

#### Important

The data backed up with SIM56-2 must not be installed to another machine. If installed, the adjustment data will be overwritten and a trouble may be generated.

## 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 data       | ICU firmware (Boot/Main)<br>ARM9 firmware                                                                                       | Disable                       |              | Enable                           | SIM49-1<br>(BOOT cannot be installed again.) |
| S201             | ICU firmware fixed data | font<br>web help<br>spdl<br>UI content file<br>lang (message data)<br>Graph (graphic data)<br>eOSA delegator<br>Option font ROM | Disable                       |              | Enable                           | SIM49-1                                      |
| S-203            | System data             | Setting value data (system setting/<br>SIM setting data)                                                                        | Enable                        | SIM56-2      | Enable                           | SIM56-2                                      |

- 1) Use SIM56-2 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) Update the firmware to the latest version.
- 5) Use SIM56-2 to restore the data backed up in procedure 1).
- 6) Restore the data backed up in procedure 2) by using the device cloning function.

#### Important

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.

### 3. Necessary procedure 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: Mirroring kit HDD

HDD2: Standard HDD for the machine

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                                                                  |

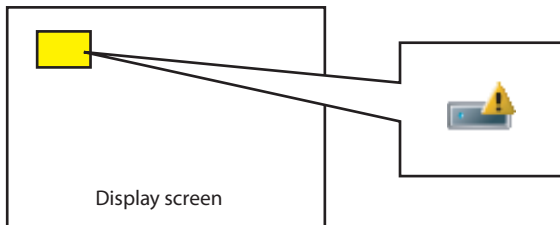
#### Mirroring kit status and status icons

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. | ? The HDD which indicates the status other than OK is in trouble.<br>? Connection failure of the connectors and harness of the mirroring kit | ? Replace the HDD. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine")<br>? Replace the mirroring kit. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine") |

- 4) Refer to the details of the remedy and perform the necessary procedures.

## B. Causes and remedies when the E7-03 error display is displayed

- 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.                                | ? Communication trouble through the SATA harness of HDD.<br>? Trouble of HDD which indicates the status other than OK.<br>? Broken data in HDD<br>? The mirroring side HDD is normal. The machine side HDD is in trouble or rebuild operation is not completed.<br>? RAID PWB trouble | ? Replace the cable. Remove and connect.<br>? 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.")<br>? Replace both of the HDD's 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.")                                                                                                                                                                                                 |
| C    | When at least one HDD is NONE.                              | ? Communication trouble through the SATA harness of HDD.<br>? Connection failure between the RAID PWB and the HDD.<br>? HDD trouble<br>? HDD SATA harness and connector trouble<br>? Both the mirroring side HDD and the machine side HDD are in trouble.<br>? RAID PWB trouble       | ? Replace the cable. Remove and connect.<br>? Check connection between the mirroring kit and the HDD.<br>? Replace the HDD which indicates NONE. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")<br>? Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")<br>? Replace both of the HDD's 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.") |
| D    | When in TROUBLE-TROUBLE.                                    | ? RAID PWB trouble<br>? (Both or one) HDD trouble<br>? Raid PWB is in trouble. The mirroring side HDD is normal. The machine side HDD is other than OK.                                                                                                                               | ? Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")<br>? Replace both of the HDD's 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.")                                                                                                                                                                                                                                                                 |
| E    | When in TROUBLE-TROUBLE. (Occurring when replacing the HDD) | ? 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.)                                                                                                          | ? Replace both of the HDD's 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.")                                                                                                                                                                                                                                                                                                                                                                                                             |

- 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 | ? RAID PWB trouble<br>? Both HDD's trouble | ? Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.")<br>? 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.") |

## 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 displayed, 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 SD card 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 mirroring kit. If HDD2 is in trouble, replace the HDD of the machine. (*2)                                                                                                                                                                                      |
| Step 5    | Boot the machine.<br>→ Rebuilding is automatically executed.<br>→ 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 one 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.                                                                                                                               |

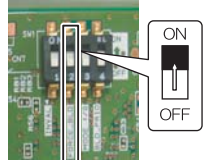
## D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine (Details of the remedies and the procedures)

### (1) Work contents and procedures

#### Data backup

|        |                                                                                                                                                                                                                                                                    |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | When there is some received data of FAX and Internet FAX, use SIM66-62 to back up the image data from the SD card 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 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>→ Forcible rebuilding is executed.<br>→ 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 SIM66-10 to clear the FAX image memory. The memory is cleared in order to ensure consistency between the HDD data and the image memory and to prevent against malfunctions. (Not only the FAX model, but also the scanner and the Internet FAX models require memory clearing.)                                                                                                                                                                      |
| Step 6    | Use SIM49-3 to install the e-Operation Manual data to the HDD.                                                                                                                                                                                                                                                                                                                                                                                           |
| Step 7    | The trouble code "U2-60" is displayed.<br>→ Use SIM49-5 to install the watermark data to the HDD.<br>→ 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."



## 4. 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 previously used.
- When replacing the HDD because of a HDD trouble, do not replace it with a HDD which has been previously 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 previously 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.

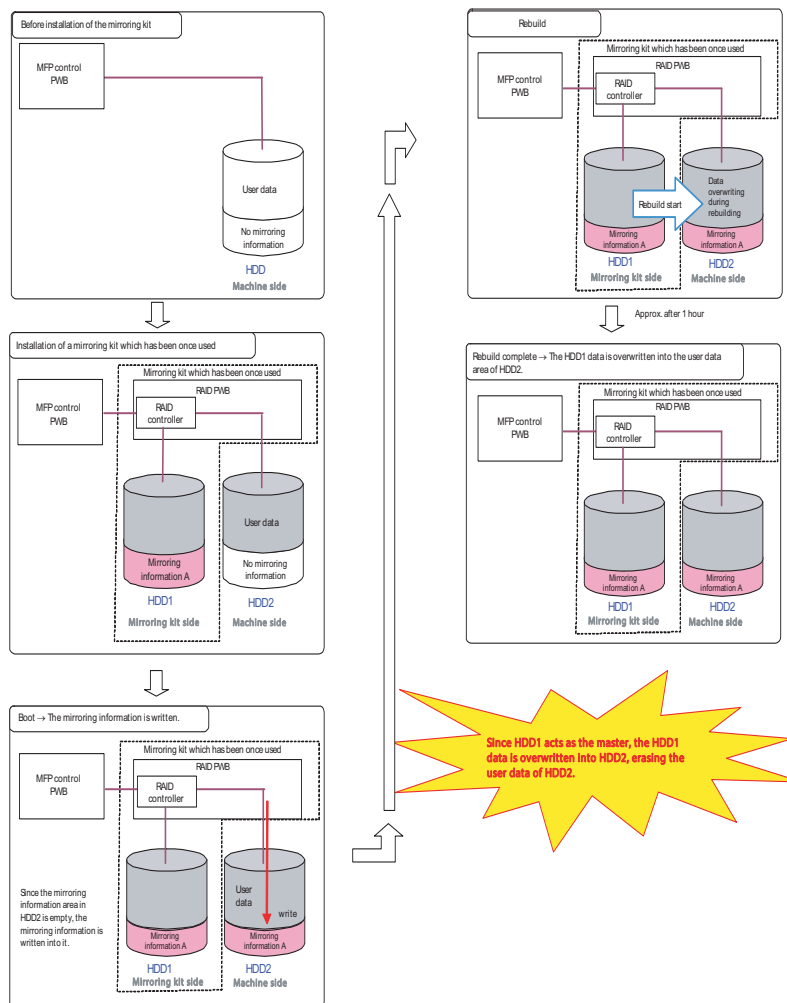
The details of inhibited items, results of erroneous procedures, and precautions for avoiding those errors are described below.

### A. Details of inhibited items

#### (1) When newly installing a mirroring kit, do not use one which has been previously used.

##### Trouble contents

If HDD1 which has been previously used is used for new installation of a mirroring kit, the data in HDD1 will be written into HDD2. This causes erasure of the original user data, freeze of the machine, or other troubles. The "HDD which has been previously used" includes a HDD which was just installed and connected only.



### Countermeasures

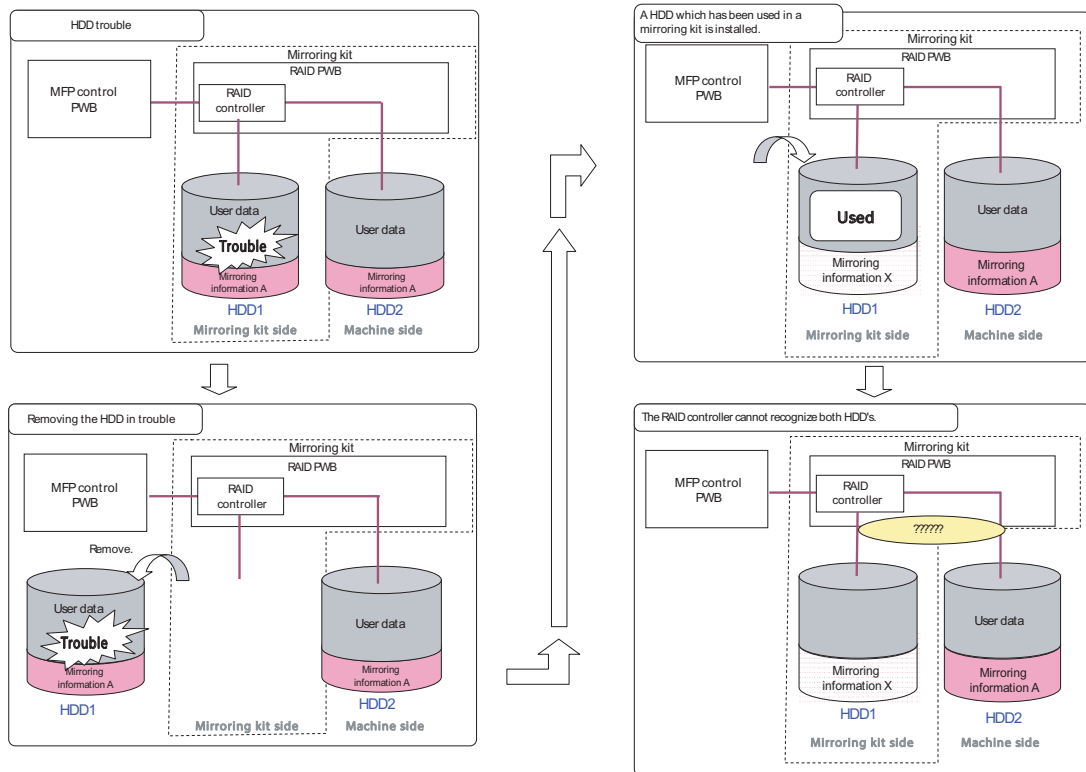
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been previously 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 destroyed 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**

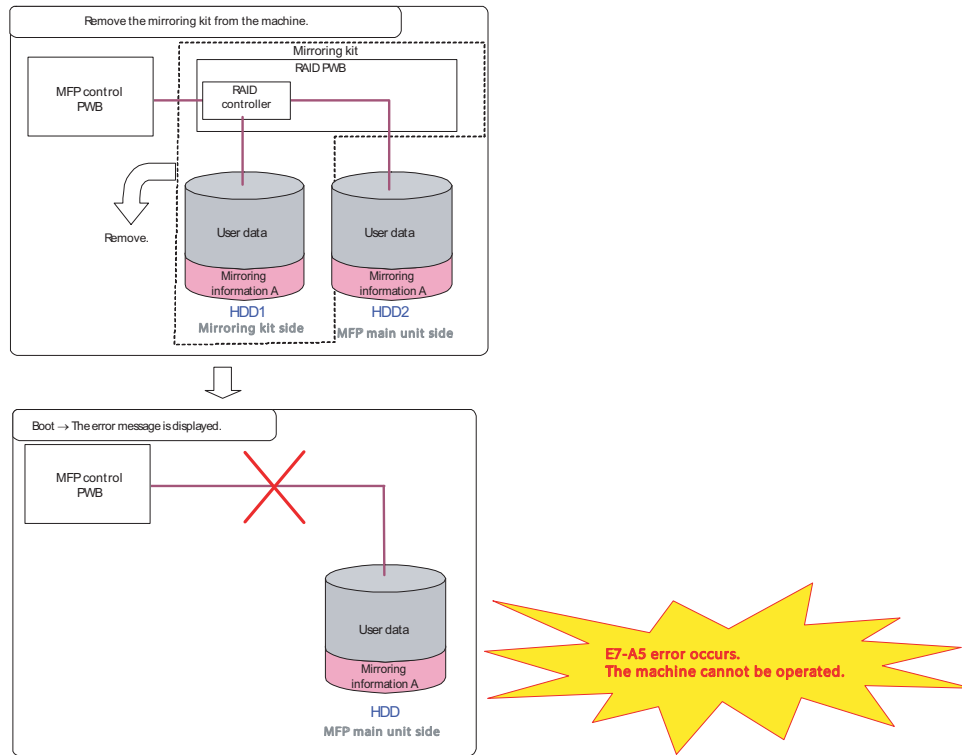
**In the case of a machine produced before March/2011**

If a HDD which has been used in another mirroring kit is installed, the operation and the data safety cannot be assured. If a HDD which has been used in another mirroring kit is installed, the original data may be erased.

**Support from production of May/2011.**

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

Be deleting the HDD mirroring information, the HDD can be used under the mirroring kit environment.

### (1) Necessary tools

? RIB Buster software

The software is composed of the following two files. (They can be downloaded from Tech DS Web site.)

? RIB Buster{YYYYMMDD}.exe

? Setup.ini

? Commercially available USB HDD case unit (SATA support)



? USB cable

? Windows PC

(Support OS: Windows XP, Windows VISTA, Windows 7 (32/64bit))

### (2) Procedures

- 1) Assemble the HDD (the mirroring information of which is to be deleted) to the USB HDD case unit (SATA support), and connect the USB cable.



### IMPORTANT:

When removing or attaching a HDD to the HDD case, be sure to disconnect the USB cable from the PC in advance.

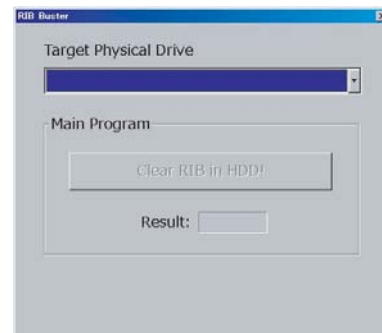
If this precaution is ignored, the HDD may be damaged.

- 2) Copy the RIB Buster software files (RIB Buster {YYYYMMDD}.exe and Setup.ini) to a same directory of the PC.  
? RIB Buster{YYYYMMDD}.exe  
? Setup.ini
- 3) Connect the PC and the USB HDD case unit assembled in procedure 1) with 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.



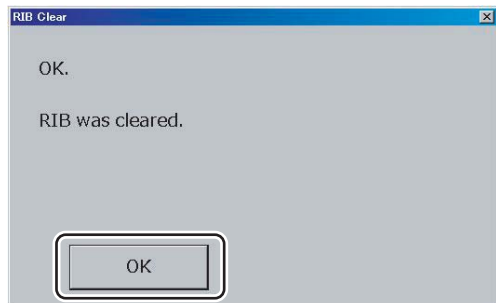
- 5) Select the target HDD to delete the mirroring information.



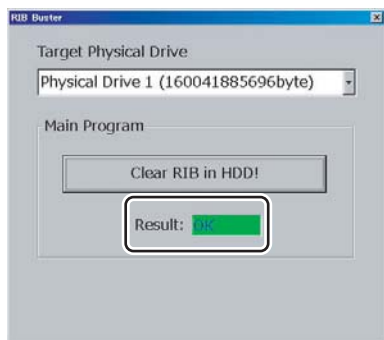
6) Click [Clear RIB in HDD] button.



7) Click [OK] button. (The mirroring information is deleted.)



8) After completion of deleting the mirroring information, "OK" is displayed.

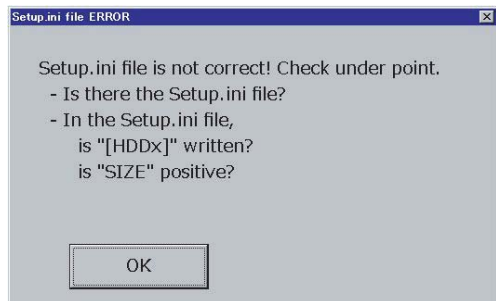


**(3) Kinds of errors, causes and remedies**

**Phenomenon 1**

An error indicating an abnormality in the Setup.ini file when booting the RIB Buster software.

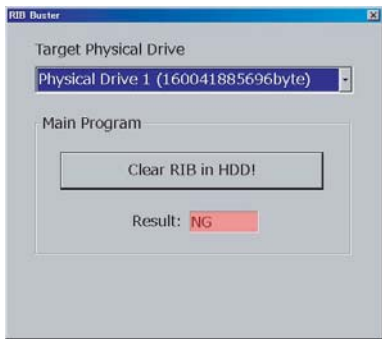
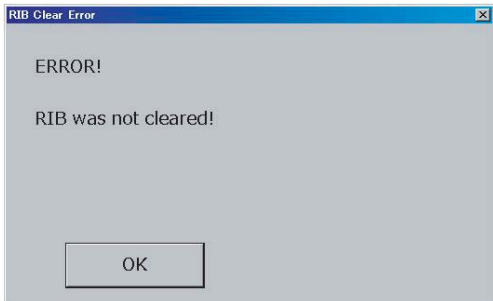
|                 |                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
| Cause           | Setup.ini file does not exists, 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.

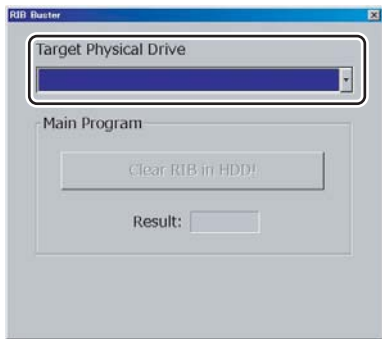
|                 |                                                                                                                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. 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. . |



# [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. Font/Form of PCL and PostScript, macro, and other resources are downloaded to the HDD and controlled. (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. (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 *1           | 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.                                                                                                                                                                                                                                                                     |

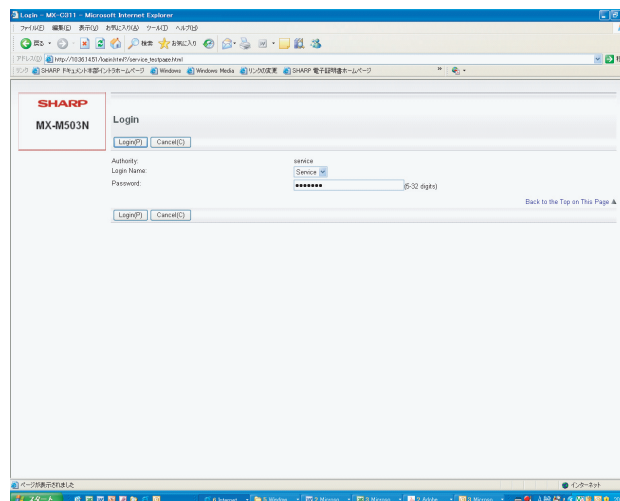
\*1: This may be useful for troubleshooting when a trouble occurs.

When submission of the log data file is requested in order to troubleshoot, use the log file save mode to export the log data file to the client PC.

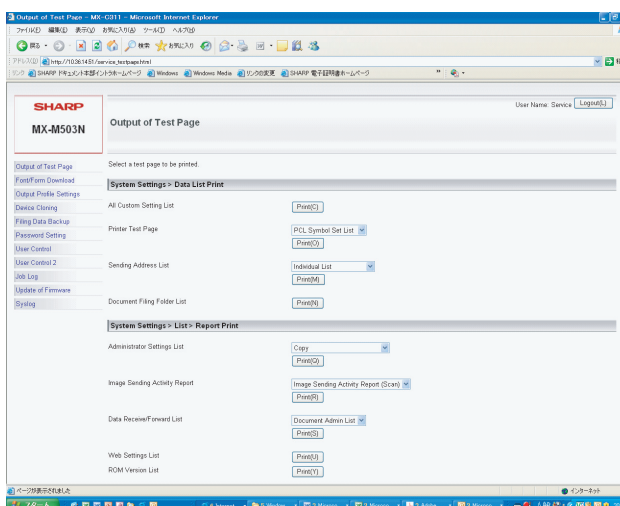
## 2. Details and operation procedures

### 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"

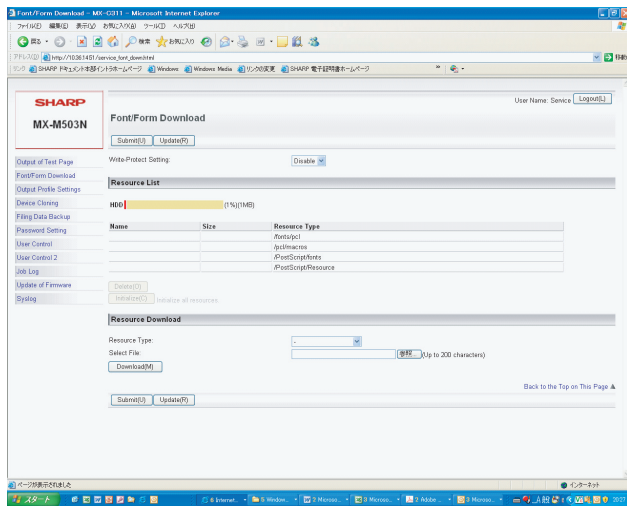


### B. Output of Test Page



- 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)

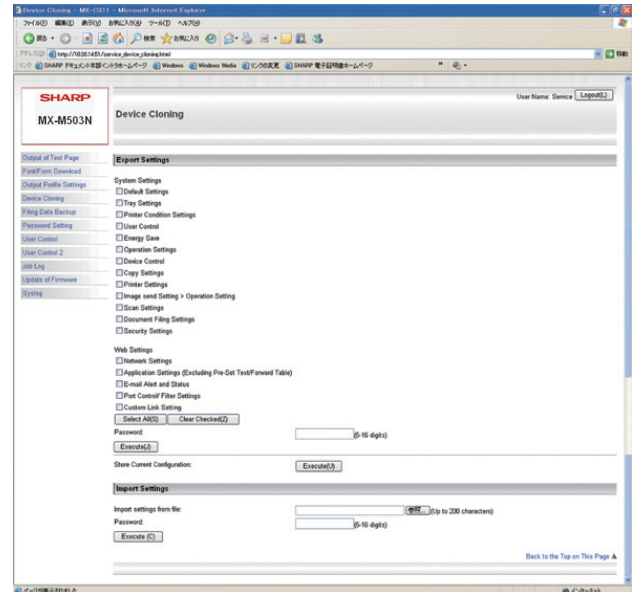
- 1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
- 2) Check that the confirmation message is displayed, and press Yes key.
- 3) Click "Submit" (registration) button.  
The file in the HDD is deleted.

### (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

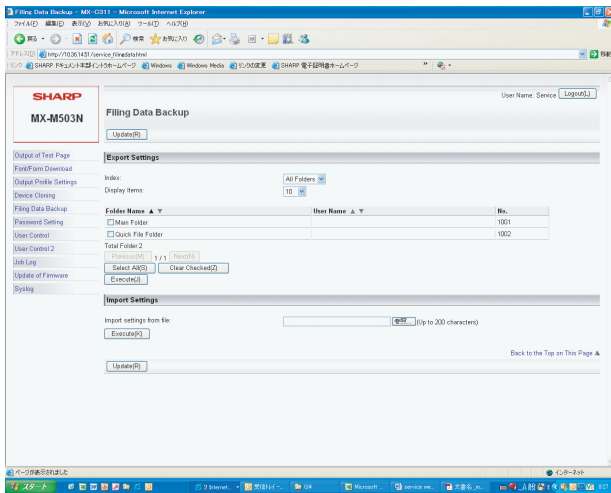
- 1) Select an item to be backed up.
- 2) Click "Execute" button.  
Specify the save position of the file, and save the file.  
(File name: \*\*\*\*\*.bin)  
When the password is set, the set password must be entered when importing.

### (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



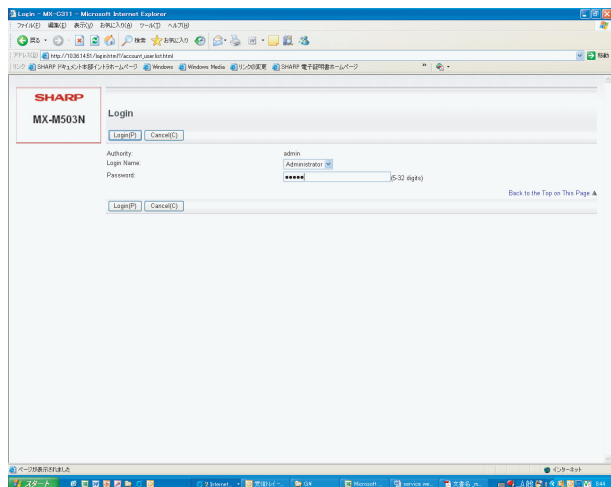
### (1) Export

- 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

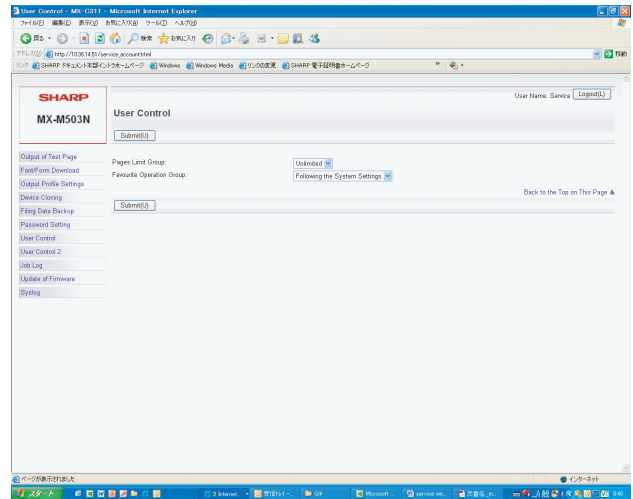
- 1) Click "Refer" button to select a target file. (File name: \*\*\*\*\*.bin)
- 2) Click "Execute" button.  
The target file is imported.
- 3) Click "Update" button.

## F. User Control



- 1) Enter the password to log in.  
Default Password: admin  
The screen is shifted to the setting menu of user management.

## G. User Control 2



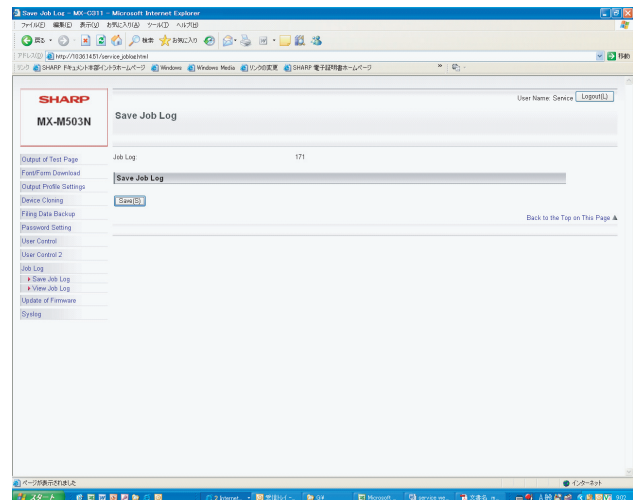
Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

(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.

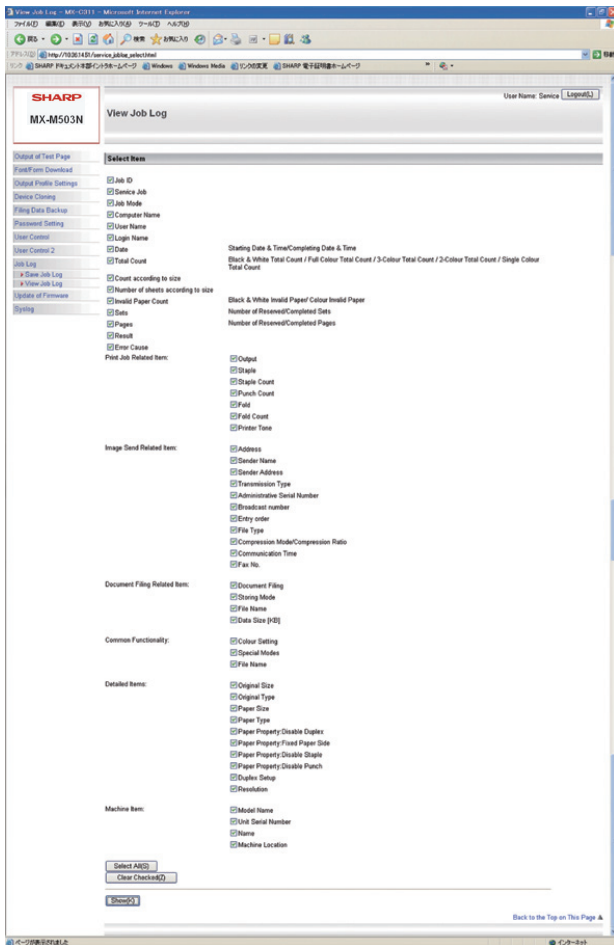
## H. Job Log

### (1) Save Job Log



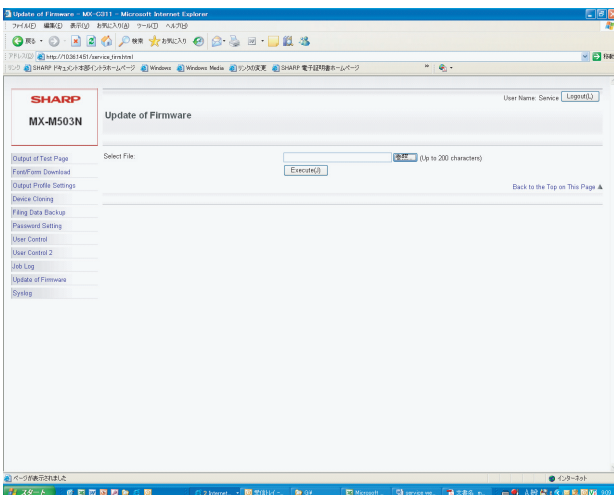
- 1) Click "Save" button, and specify the save position of the Job Log to save it.

## (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.

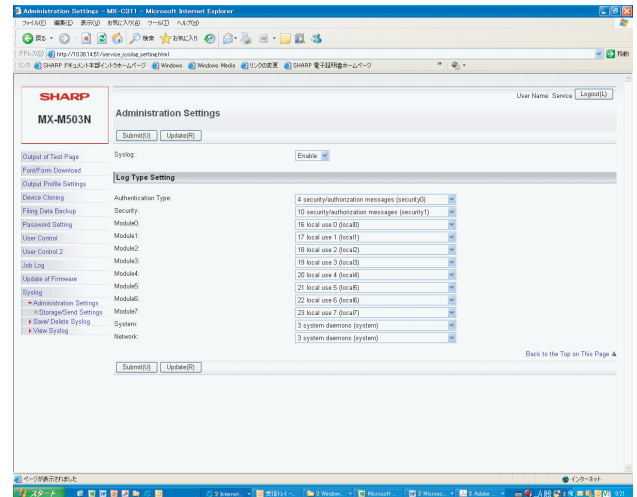
## J. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to trouble-shoot when a trouble occurs.

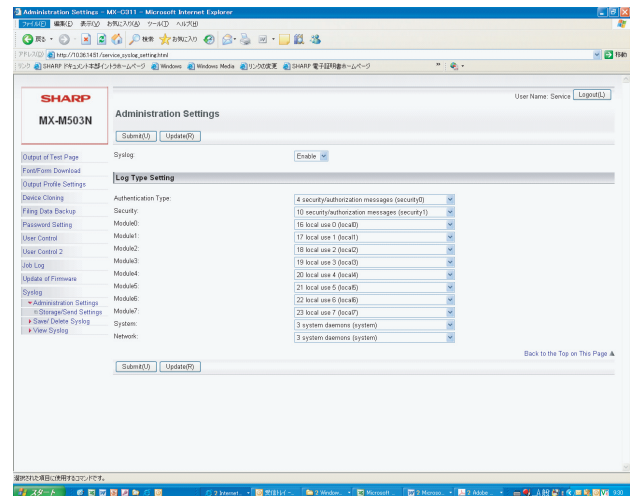
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

|        |                         |                                        |
|--------|-------------------------|----------------------------------------|
| 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                       |



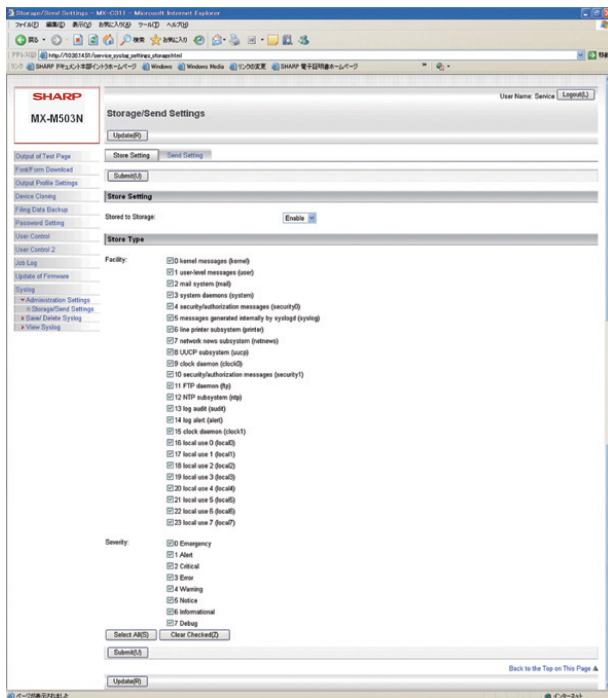
## (1) Administration Settings/ Log Type Setting

Set to the default.

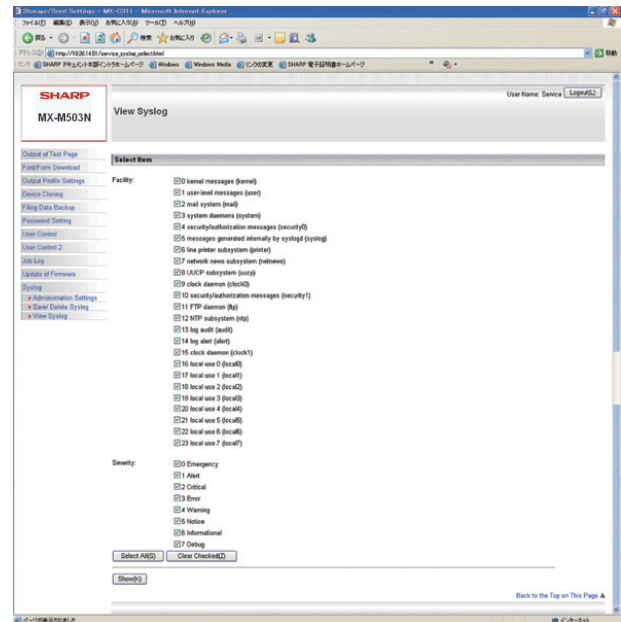


## (2) Storage/Send Settings

Keep all the items selected.

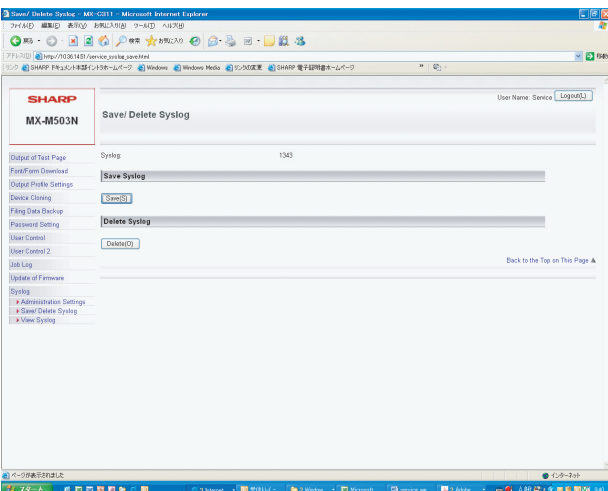


## (4) View Syslog



- 1) Select a Syslog item to be displayed.
  - 2) Click "Show" button.
- The Syslog is displayed.

## (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.

# [11] SPECIFICATIONS

## 1. Basic specifications

### A. Base engine

#### (1) Type

|      |         |
|------|---------|
| Type | Desktop |
|------|---------|

#### (2) Engine composition

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| Photo-conductor kind | OPC (Drum diameter: $\phi$ 30mm)                      |
| Copying method       | Electronic photo (Laser)                              |
| Developing system    | Dry, 2-component magnetic brush development           |
| Charging system      | Charged saw-tooth method                              |
| Transfer system      | Transfer roller                                       |
| Cleaning system      | Counter blade                                         |
| Fusing system        | Heat roller                                           |
| Waste toner disposal | No toner recycling system / Waste toner bottle system |

#### (3) Dimension / Weight

|                                                         |                                                            |
|---------------------------------------------------------|------------------------------------------------------------|
| Outer dimension (W x D x H)                             | 618 x 713 x 843 mm                                         |
| Machine dimension with the bypass tray extended (W x D) | 925 x 713 mm                                               |
| Weight                                                  | Main unit (including OPC drum) (not including consumables) |
|                                                         | Approx. 78 kg 171 lbs                                      |

#### (4) Warm-up

|              |                    |
|--------------|--------------------|
| Warm-up time | 12 seconds or less |
| Pre-heat     | Yes                |

#### (5) First copy time

| Engine | 36 cpm machine | 46 cpm machine | 56 cpm machine |
|--------|----------------|----------------|----------------|
| Platen | 4.5 second     | 3.9 second     | 3.7 second     |
| DSPF   | 7.4 second     | 7.0 second     | 6.6 second     |

\* Measuring conditions: A4 (8.5" x 11")

#### (6) Engine resolution

|               | Copy                                          | Print                                          |
|---------------|-----------------------------------------------|------------------------------------------------|
| Resolution *1 | 600 x 600dpi<br>1200 x 1200dpi                | 600 x 600dpi<br>1200 x 1200dpi                 |
| Gradation *2  | 600 x 600dpi 4bit<br>1200 x 1200dpi 1bit, 4bi | 600 x 600dpi 1bit, 4bit<br>1200 x 1200dpi 1bit |

\*1: Default resolution (Copy)

- Printed photo, Text/Photograph, Photograph: 1200dpi
- Automatic, Text, Text/Printed photo, Map: 600dpi

\*2: Equivalent to 256 gradation

#### (7) Printable area

|           |             |              |             |
|-----------|-------------|--------------|-------------|
| A3 Wide * | 297 x 420mm | 12" x 18" *  | 279 x 432mm |
| A3        | 293 x 413mm | 11" x 17"    | 275 x 425mm |
| B4        | 253 x 357mm | 8.5" x 14"   | 212 x 349mm |
| A4        | 206 x 290mm | 8.5" x 13.5" | 212 x 336mm |
| B5        | 178 x 250mm | 8.5" x 13.4" | 212 x 333mm |
| A5        | 144 x 203mm | 8.5" x 13"   | 212 x 323mm |
| Postcard  | 96 x 141mm  | Executive    | 180 x 260mm |
| 8K        | 266 x 383mm | 8.5" x 11"   | 212 x 272mm |
| 16K       | 191 x 263mm | 5.5" x 8.5"  | 136 x 209mm |

\* The printable area for A3W/12" x 18" must be as large as the A3/11" x 17" page dimension (297 x 450mm) by PCL/PS driver.

|                      |                                                                                                                                                                 |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Void area Image loss | Lead edge: 4mm or less<br>Rear edge: 2 mm or more, and 5 mm or less<br>Total of the lead edge and the rear edge: 8mm or less<br>FR total: 4mm $\pm$ 2mm or less |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### (8) Engine speed (ppm)

##### a. In case of tray (1-4, LCC) paper feeding

| Paper type  | Paper size                                             | 36 cpm machine | 46 cpm machine | 56 cpm machine |
|-------------|--------------------------------------------------------|----------------|----------------|----------------|
| Plain paper | A3, 11" x 17", 8K                                      | 17             | 22             | 26             |
|             | B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5" | 20             | 26             | 31             |
|             | A4R, 8.5" x 11"R, 16KR                                 | 25             | 32             | 39             |
|             | B5R, 7.25" x 10.5"R                                    |                |                |                |
|             | A5R, 5.5" x 8.5"R                                      | 18             | 19             | 28             |
|             | A4, B5, 8.5" x 11", 16K                                | 36             | 46             | 56             |
|             | Extra, User-Extra: Paper width 150mm or less           | 16             | 20             | 25             |
|             | Extra, User-Extra: Paper width over 150mm              |                |                |                |
|             |                                                        |                |                |                |
|             |                                                        |                |                |                |
| Heavy paper | A3, 11" x 17", 8K                                      | 15             | 15             | 15             |
|             | B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5" | 17             | 17             | 17             |
|             | A4R, 8.5" x 11"R, 16KR                                 | 20             | 20             | 20             |
|             | B5R, 7.25" x 10.5"R                                    |                |                |                |
|             | A5R, 5.5" x 8.5"R                                      | 18             | 23             | 28             |
|             | A4, B5, 8.5" x 11", 16K                                | 25             | 25             | 25             |
|             | Extra, User-Extra: Paper width 150mm or less           | 11             | 14             | 17             |
|             | Extra, User-Extra: Paper width over 150mm              |                |                |                |
|             |                                                        |                |                |                |
|             |                                                        |                |                |                |

##### b. In case of manual paper feed tray paper feeding

| Paper type  | Paper size                                             | 36 cpm machine | 46 cpm machine | 56 cpm machine |
|-------------|--------------------------------------------------------|----------------|----------------|----------------|
| Plain paper | A3, 11" x 17", 8K                                      | 17             | 22             | 26             |
|             | B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5" | 20             | 26             | 31             |
|             | A4, 8.5" x 11", 16K, B5                                | 32             | 41             | 50             |
|             | B5R, 7.25" x 10.5"R                                    | 23             | 29             | 36             |
|             | A4R, 16KR, 8.5" x 11"R                                 |                |                |                |
|             | A5R, 5.5" x 8.5"R                                      | 18             | 23             | 28             |
|             | 12" x 18", A3W *1                                      | 16             | 20             | 25             |
|             | Extra, User-Extra: Paper width 150mm or less           |                |                |                |
|             | Extra, User-Extra: Paper width over 150mm              |                |                |                |
|             |                                                        |                |                |                |
| Heavy paper | A3, 11" x 17", 8K                                      | 15             | 15             | 15             |
|             | B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5" | 17             | 17             | 17             |
|             | A4, 8.5" x 11", 16K, B5                                | 25             | 25             | 25             |
|             | B5R, 7.25" x 10.5"R                                    | 20             | 20             | 20             |
|             | A4R, 16KR, 8.5" x 11"R                                 |                |                |                |
|             | A5R, 5.5" x 8.5"R                                      | 18             | 23             | 28             |
|             | 12" x 18", A3W *1                                      | 11             | 14             | 17             |
|             | Extra, User-Extra: Paper width 150mm or less           |                |                |                |
|             | Extra, User-Extra: Paper width over 150mm              |                |                |                |
|             | Envelope                                               | 17             | 17             | 17             |
|             | Postcard HIGH *2                                       | 18             | 23             | 28             |
|             | Postcard LOW *2                                        | 11             | 14             | 17             |
|             | OHP (A4, 8.5" x 11")                                   | 30             | 38             | 47             |
|             | OHP (A4R, 8.5" x 11"R)                                 | 17             | 22             | 26             |

\*1: ppm when exiting to the finisher (A3W/12" x 18" cannot exit to the center tray)

\*2: Switched by the service simulation setting. Postcard is set Low before shipment.

## (9) Power source

NOTE: Check the shape of the power plug of the machine, and insert it into a power outlet of the acceptable shape.

|                   | 100V series                                                                                  | 200V series   |
|-------------------|----------------------------------------------------------------------------------------------|---------------|
| Voltage / Current | 100 - 127V 12A                                                                               | 220 - 240V 8A |
| Frequency         | 50/60Hz                                                                                      |               |
| Power source code | Fixed type<br>(Direct connection)                                                            | Inlet         |
| Power switch      | 2 switches<br>(Primary switch: in the front cover;<br>Secondary switch: the operation panel) |               |

## (10) Power consumption

|                                 | 100V series         | 200V series |
|---------------------------------|---------------------|-------------|
| Max. Rated Power Consumption *1 | 1.44kW              | 1.84kW      |
| Moving time to Pre-heat mode    | 1 minutes (default) |             |
| Moving time to Sleep mode       | 1 minutes (default) |             |

\*1: When the power supply is turned on, when the dehumidification heater is OFF.

## B. Controller board

### (1) Controller board

|                                                                                                                |                                                                                                           |                                             |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------|
| CPU                                                                                                            | ARM11 600MHz<br>ARM 9 400MHz                                                                              |                                             |
| SOC                                                                                                            | Intel Atom D525 1.8GHz                                                                                    |                                             |
| Interface                                                                                                      |                                                                                                           |                                             |
| Ethernet                                                                                                       | 1 port                                                                                                    |                                             |
|                                                                                                                | Interface                                                                                                 | 10Base-T, 100Base-TX,<br>1000Base-T         |
|                                                                                                                | Support Protocol                                                                                          | TCP/IP (IPv4, IPv6), IPX/<br>SPX, EtherTalk |
| USB 2.0 (Host)<br>* Simultaneous connection is inhibited. The total current consumption must not exceed 500mA. | The ports on the front and on the side of the rear section cannot be used simultaneously. (Exclusive use) |                                             |
| USB 2.0 (high speed) Device                                                                                    | 1 port                                                                                                    |                                             |
| Scanner expansion I/F                                                                                          | Yes                                                                                                       |                                             |
| Memory slot                                                                                                    | 1 slots                                                                                                   |                                             |

### (2) Memory, hard disk

|               |       |           |
|---------------|-------|-----------|
| SD card       | 4GB   |           |
| Compact Flash | 8GB   |           |
| HDD*1         | 320GB |           |
| MFP PWB       | Reus  | 1GB (STD) |
|               | SOC   | 2GB (STD) |
|               |       | 1GB (OPT) |

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

### (3) Wireless LAN

|                      |                                                   |
|----------------------|---------------------------------------------------|
| Type                 | Built-in type                                     |
| Compliance standards | Wireless LAN standard protocol<br>IEEE802.11n/g/b |

## (3) Automatic document feeder

|            |                                                                                                                                                                                                                                                                     |                         |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Type       | DSPF (Duplex single pass feeder):                                                                                                                                                                                                                                   |                         |
| Scan speed | Monochrome (A4 / 8.5" x 11")                                                                                                                                                                                                                                        | Color (A4 / 8.5" x 11") |
| Copy       | <b>DSPF</b><br>Single: 85-sheet/min. (600 x 300 dpi, 4bit)<br>56-sheet/min. (600 x 400 dpi, 4bit)<br>41-sheet/min. (600 x 600 dpi, 4bit)<br>Duplex: 170-page/min. (600 x 300 dpi, 4bit)<br>80-page/min. (600 x 400 dpi, 4bit)<br>50-page/min. (600 x 600 dpi, 4bit) | N/A                     |

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| Transmission method          | OFDM (IEEE802.11n)<br>DS-SS (IEEE802.11b)                   |
| Transmission frequency range | IEEE802.11n/g/b 2.4GHz 11b'1-14ch) 11g(1-13ch) 11ng(3-11ch) |
| Access method                | Infrastructure mode, soft AP mode                           |
| Security                     | WEP, WPA-PSK, WPA-EAP, WPA2-PSK, WPA2-EAP                   |

## C. Operation panel

### (1) Display device

#### a. LCD

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| Size                      | 10.1inch                                             |
| Type                      | Dot matrix LCD, touch panel                          |
| Display dot number        | 1024 x 600 dot (WSVGA)                               |
| Color                     | Yes                                                  |
| LCD back-light            | LED lamp back-light system                           |
| Angle/position adjustment | Yes                                                  |
| Touch panel method        | Resistive touch display<br>(effective 2 point touch) |

## D. Scanner section

### (1) Resolution/Gradation

|                             |                 |                                                                          |  |                                                    |
|-----------------------------|-----------------|--------------------------------------------------------------------------|--|----------------------------------------------------|
| Scanning Resolution (dpi)   | Platen          | 600 x 600 dpi<br>600 x 400 dpi<br>600 x 300 dpi (Default)                |  |                                                    |
|                             | DSPF            | 600 x 600 dpi<br>600 x 400 dpi<br>600 x 300 dpi (Default)                |  |                                                    |
| In sending Resolution (dpi) | Scanner         | Internet Fax / Direct SMTP                                               |  | Fax                                                |
|                             | 100dpi x 100dpi | 200dpi x 100dpi (halftone not allowed)                                   |  | Standard (203.2 x 97.8 dpi) (halftone not allowed) |
|                             | 200dpi x 200dpi | 200dpi x 200dpi                                                          |  | Fine (203.2 x 195.6 dpi)                           |
|                             | 300dpi x 300dpi | 200dpi x 400dpi                                                          |  | Super Fine (203.2 x 391 dpi)                       |
|                             | 400dpi x 400dpi | 400dpi x 400dpi                                                          |  | Ultra Fine (406.4 x 391 dpi)                       |
|                             | 600dpi x 600dpi | 600dpi x 600dpi                                                          |  | ---                                                |
| Exposure lamp               |                 | White LED                                                                |  |                                                    |
| Reading gradation           |                 | 10bits                                                                   |  |                                                    |
| Output gradation            |                 | B/W : 1bit<br>Gray scale : 8bit<br>Full color : RGB colors are 8bit each |  |                                                    |

### (2) Document table

|                                        |                                        |
|----------------------------------------|----------------------------------------|
| Type                                   | Document table fixed system (Flat bed) |
| Scanning area                          | 297 x 432mm                            |
| Original standard position             | Left bottom reference                  |
| Detection                              | Yes                                    |
| Detection size                         | Automatic detection                    |
| Dehumidifying heater (Scanner section) | Supplied as a service part             |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------|--------|---------------------------------------------------------------------|--------|---------------------------------------------------------------------|--------|-----------------------------------------------------------------------|------|-----------------------------------------------------------------|------|-----------------------------------------------------------------|------|-----------------------------------------------------------------------|------|-------------------------------------------------------------------|------|-------------------------------------------------------------------|
| Fax / Internet Fax                      | <b>DSPF</b><br>Single: 85-sheet/min. (200 x 200 dpi, 1 bit)<br>Duplex: 170-page/min. (200 x 200 dpi, 1 bit)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | N/A                                                                                                          |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Scanner                                 | <b>DSPF</b><br>Single : 85-sheet/min. (200 x 200 dpi, 1 bit)<br>Duplex: 170-page/min. (200 x 200 dpi, 1 bit)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>DSPF</b><br>Single : 85-sheet/min. (200 x 200 dpi, 8 bit)<br>Duplex: 170-page/min. (200 x 200 dpi, 8 bit) |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Original setup direction                | Upward standard (1 to N feeding standard)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Original standard position              | Center standard (Rear one-side standard for random feeding)<br>Face Up (1 to N Feeding standard)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Original transport method               | Sheet-through method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Original size                           | Standard size: (Refer to the "paper detection size")<br>Long paper: 1000 mm (Monochrome binary only)<br>Internet Fax 600 x 600 dpi: Max. 800 mm. When scan 400 dpi or more, long paper is not available.<br>Mix paper feed (Same series, same width paper) enabled<br>Random paper feed combination<br>Mix feeding available. (same system, same width)<br>Random feeding (feeding of different types / different widths)<br>Only the following combinations of 2 size types are allowed:<br>either A3 or A4 and either B4 or B5; either B4 or B5 and either A4R or A5 and 11-inch and 8.5-inch. AMS available.<br>2-sided scanning is disabled during random feeding (when the RSPF is used).                                                                                                                                                                                                                                                                                   |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Original copy weight                    | Single: (Thin paper) 9 - 13 lb bond (35 - 49 g/m <sup>2</sup> ), (plain paper) 13 - 32 lb bond (50 - 128 g/m <sup>2</sup> )<br>* Thin paper mode (46pages/minute (A4, 8.5" x 11", 600dpi)) is set up for the thin paper.<br>Duplex: 13 - 32 lb bond (50 - 128 g/m <sup>2</sup> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Max. loading capacity of documents      | Max. 150 sheets (21lbs Bond, 80g/m <sup>2</sup> ), or Max. height: 50/64 inch, 19.5mm or less                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| 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 (Platen/DSPF/RSPF) | Auto detection (Switching one type of detection unit) <table border="1"> <tr> <td rowspan="8">DSPF</td><td>Inch-1</td><td>11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4</td></tr> <tr> <td>Inch-2</td><td>11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4</td></tr> <tr> <td>Inch-3</td><td>11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4</td></tr> <tr> <td>AB-1</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11"</td></tr> <tr> <td>AB-2</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"</td></tr> <tr> <td>AB-3</td><td>8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"</td></tr> <tr> <td>AB-4</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11"</td></tr> <tr> <td>AB-5</td><td>A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11"</td></tr> </table> * 5.5" x 8.5"R, A5R cannot be detected. |                                                                                                              | DSPF | Inch-1 | 11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4 | Inch-2 | 11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4 | Inch-3 | 11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4 | AB-1 | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11" | AB-2 | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11" | AB-3 | 8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11" | AB-4 | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11" | AB-5 | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11" |
| DSPF                                    | Inch-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4                                          |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | Inch-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4                                          |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | Inch-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4                                        |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | AB-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11"                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | AB-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | AB-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"                                        |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | AB-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11"                                            |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
|                                         | AB-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11"                                            |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Paper feeding direction                 | Right hand feeding                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Finish stamp                            | Option                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Power source                            | Provided from main unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |
| Dimensions                              | W23-13/16 x D20-5/64 x H6-3/32 inch (W605 x D510 x H155 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                              |      |        |                                                                     |        |                                                                     |        |                                                                       |      |                                                                 |      |                                                                 |      |                                                                       |      |                                                                   |      |                                                                   |

## E. Paper feed section

### (1) Type

|                      |                                                                                                                                                |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                 | Standard:<br>1-stage paper feed tray + multi manual paper feed tray<br>Full option:<br>4-stage paper feed tray + multi manual paper feed + LCC |
| Dehumidifying heater | Service parts                                                                                                                                  |

### (2) Tray 1 (Main unit)

|                                  |                                                                                                                                                                    |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paper capacity                   | Plain paper: 500 sheets (80 g/m <sup>2</sup> )                                                                                                                     |
| Paper size                       | A3, B4, A4, A4R, B5, B5R, A5R, 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, 8K, 16K, 16KR |
| Paper type                       | Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper                                                                 |
| Paper Weight                     | Plain paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> )<br>Heavy paper: 28 lb bond - 110 lb index (106 - 220g/m <sup>2</sup> )                                    |
| Paper size setting when shipping | AB series; Tray 1: A4<br>Inch series; Tray 1: 8.5" x 11",                                                                                                          |
| Paper remaining detection        | Yes (Paper empty and 3 levels)                                                                                                                                     |

### (3) Manual paper feed tray (main unit)

|                |                                                                                                                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paper capacity | Plain paper: 100 sheets (80 g/m <sup>2</sup> )<br>envelope/OHP: 20 sheets                                                                                                                                          |
| Paper size     | A3W, A3, B4, A4, A4R, B5, B5R, A5R, 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, envelope, 8K, 16K, 16KR                       |
| Paper type     | Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper, thin paper, envelope, OHP, label sheet, tab paper                                                              |
| Paper Weight   | Thin paper:<br>13 lb bond - 16 lb bond (55 - 59g/m <sup>2</sup> )<br>Plain paper:<br>16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> )<br>Heavy paper:<br>28 lb bond - 110 lb cover (106 - 300g/m <sup>2</sup> ) |

### (4) Tray 2, 3, 4 (MX-DE12/DE13/DE14)

|                                  |                                                                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Paper capacity                   | Plain paper: 500 sheets (80 g/m <sup>2</sup> )                                                                                                   |
| Paper size                       | A3, B4, A4, A4R, B5, B5R, 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, 8K, 16K, 16KR |
| Paper type                       | Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper                                               |
| Paper Weight                     | Plain paper:<br>16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> )<br>Heavy paper:<br>28 lb bond - 110 lb index (106 - 220g/m <sup>2</sup> )    |
| Paper size setting when shipping | Maximum position of paper guide width                                                                                                            |
| Paper remaining detection        | Yes (Paper empty and 3 levels)                                                                                                                   |
| Power consumption                | 20W (Power is supplied from main unit)                                                                                                           |
| Dimensions (W x D x H)           | 583(W) x 577(D) x 382(H)                                                                                                                         |

### (5) Tray 2, 3, 4 (MX-DE20)

|                                  | Tray 2                                                                                                                                                                     | Tray 3 (LCC left)                                                                     | Tray 4 (LCC right)                  |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------|
| Paper capacity                   | 500 sheets (80 g/m <sup>2</sup> )                                                                                                                                          | 1150 sheets (80 g/m <sup>2</sup> )                                                    | 850 sheets (80 g/m <sup>2</sup> )   |
| Paper size                       | A3, B4, A4, A4R, B5, B5R<br>11" x 17",<br>8.5" x 14",<br>8.5" x 13.5",<br>8.5" x 13.4",<br>8.5" x 13",<br>8.5" x 11",<br>8.5" x 11" R,<br>7.25" x 10.5"R,<br>8K, 16K, 16KR | A4<br>8.5" x 11"                                                                      | A4,<br>8.5" x 11"                   |
| Paper type                       | Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper                                                                         | Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper |                                     |
| Paper weight                     | Plain paper:<br>16 lb bond-28 lb bond (60-105g/m <sup>2</sup> )<br>Heavy paper:<br>28 lb bond-110 lb index (106-220g/m <sup>2</sup> )                                      | Plain paper:<br>16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> )                   |                                     |
| Paper size setting when shipping | Maximum position of paper guide width                                                                                                                                      | AB series: A4<br>Inch series: 8.5 x 11                                                |                                     |
| Paper remaining detection        | Yes (3 levels: 100%, 67%, 33%, none)                                                                                                                                       | Yes (3 levels: 100%, 33%, 6%, none)                                                   | Yes (3 levels: 100%, 50%, 9%, none) |
| Power consumption                | Power is supplied from main unit)                                                                                                                                          |                                                                                       |                                     |
| Dimensions (W x D x H)           | 583(W) x 577(D) x 382(H)                                                                                                                                                   |                                                                                       |                                     |

### (6) Tray 5 (LCC)

|                                      |                                                                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Type                                 | 3,500-Sheet Large Capacity Tray                                                                                                    |
| Transport speed                      | 124 mm/s - 360 mm/s                                                                                                                |
| Paper size                           | A4, B5, 8.5" x 11"                                                                                                                 |
| Paper size setting                   | Simulation setup                                                                                                                   |
| Paper size setting when shipping     | AB series: A4<br>Inch series: 8.5 x 11                                                                                             |
| Paper type setting                   | Yes                                                                                                                                |
| paper type and weight for paper feed | Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper: 16 - 28 lb bond (60 - 105g/m <sup>2</sup> ) |
| Paper capacity                       | 3,500 sheets (80 g/m <sup>2</sup> )<br>Effective height: 385 mm                                                                    |
| Paper remaining detection            | Yes (5 levels: 100%, 75%, 50%, 25%, none)                                                                                          |
| Driving form                         | The transport motor (DC brush-less motor) and control PWB are built-in to LCC.                                                     |
| Off-center adjustment                | ± 3mm<br>(Move the regulation plate F/R to adjustment)                                                                             |
| Power consumption (without heater)   | Normal operation : 26.4W<br>During lift-up : 40.8W                                                                                 |
| Power source                         | 5V±5% and 24V±5% are supplied from main unit                                                                                       |
| External dimensions (W x D x H)      | 14-9/16 x 21-21/32 x 20-15/32 inch,<br>370 x 575 x 520 mm                                                                          |
| Weight                               | Approx. 66.1 lbs, 30 kg                                                                                                            |
| Thermal heater                       | Standard equipment: AC power is supplied from main unit. And main unit can control ON/OFF operation.                               |
| Optional detection                   | Auto detection system                                                                                                              |



## F. Paper exit section

### (1) Center tray of main unit

|                              |                                                                                                                                                                                                                                                                               |                                                |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Paper exit section           | Center section of the main unit                                                                                                                                                                                                                                               | Right side paper exit section of the main unit |
| Paper exit system            | Face-down paper exit system                                                                                                                                                                                                                                                   |                                                |
| Paper exit capacity          | 400 sheets (A4, 8.5" x 11")                                                                                                                                                                                                                                                   | 100 sheets (A4, 8.5" x 11")                    |
| Paper exit paper size/weight | Thin paper:<br>13 lb bond - 16 lb bond (55 - 59g/m <sup>2</sup> )<br>Plain paper:<br>16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> )<br>Heavy paper:<br>28 lb bond - 110 lb cover (106 - 300g/m <sup>2</sup> )<br>Envelope:<br>20 - 24 lb bond (75 - 90g/m <sup>2</sup> ) |                                                |
| Shifter function             | Yes                                                                                                                                                                                                                                                                           | No                                             |
| Paper exit detection         | No                                                                                                                                                                                                                                                                            |                                                |
| Paper exit full detection    | Yes                                                                                                                                                                                                                                                                           |                                                |

### (2) Shifter

|                 |                                                       |                                                                                                                                                |
|-----------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Paper weight    | 15 lb bond - 110 lb index (56 - 209g/m <sup>2</sup> ) |                                                                                                                                                |
| Paper size/type | Non-offset mode                                       | Size:<br>A3W and 12" x 18" are not acceptable<br>Type:<br>Glossy paper are not acceptable                                                      |
|                 | Offset mode                                           | Size:<br>A3W, 12" x 18", envelope and are not acceptable<br>Type:<br>Envelope, OHP, label paper, tab paper and glossy paper are not acceptable |
| Offset width    | 30 mm                                                 |                                                                                                                                                |

### (3) Paper exit tray

|                                 |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
| Type                            | Exit tray unit                                                                     |
| Paper exit position/system      | Paper exit to external in the right side of the main unit/Paper exits in face-down |
| Paper exit capacity             | 100 sheets (A4 / 8.5" x 11")                                                       |
| Paper exit paper size/type      | All of allowable paper for paper feed except envelope, tab paper and gloss paper.  |
| Shifter function                | No                                                                                 |
| Paper exit paper full detection | Yes                                                                                |

## G. Copy functions

### (1) Copy magnification ratio

|                            |                               |                                                             |
|----------------------------|-------------------------------|-------------------------------------------------------------|
| Copy magnification ratio   | Normal ratio                  | 1: 1 ±0.8%                                                  |
|                            | AB series                     | 25%, 50%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 200%, 400% |
|                            | Inch series                   | 25%, 50%, 64%, 77%, 100%, 121%, 129%, 200%, 400%            |
| Zoom                       | 25-400% (DSPF: 25-200%)       |                                                             |
| Preset magnification ratio | 4 (Reduction 2/Enlargement 2) |                                                             |
| XY zoom                    | Yes                           |                                                             |

### (2) Density/copy image quality process

|                        |                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------|
| Exposure mode          | Automatic, Text, Text/Printed Photo, Map (600 dpi)<br>Printed Photo, Text/Photograph, Photograph (1200 dpi) |
| Number of manual steps | 9 steps                                                                                                     |
| Toner save mode        | Yes<br>* Available for Automatic (AE), Text/Printed Photo                                                   |

### (3) Duplex

|                                              |                                                                                                                                                                                                    |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System                                       | Non stack system                                                                                                                                                                                   |
| Paper size                                   | 11" x 17", 8.5" x 14" (216 x 356), 8.5" x 13.5" (216 x 343), 8.5" x 13.4" (216 x 340), 8.5" x 13" (216 x 330), 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5"R, A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR |
| Type and weight of paper which can be passed | Plain paper:<br>16 lb bond - 28 lb bond (60 - 105g/m <sup>2</sup> )<br>Heavy paper:<br>28 lb bond - 110 lb index (106 - 220 g/m <sup>2</sup> )                                                     |
| Paper type                                   | Plain paper, recycled paper, colored paper, letter head, printed paper, punched paper, heavy paper                                                                                                 |

### (4) Copy functions

| Functions                               |          |
|-----------------------------------------|----------|
| Automatic paper selection               | Yes      |
| Automatic magnification ratio selection | Yes      |
| Paper type selection                    | Yes      |
| Auto tray switching                     | Yes      |
| Rotation copy                           | Yes      |
| Large rotated copy over A4 width        | Yes      |
| Electronic sort                         | Yes      |
| Rotation sort                           | No       |
| Job reservation                         | Yes (99) |
| Tray installation priority              | Yes      |
| Program call / registration             | Yes (48) |
| Program name registration               | Yes      |
| Document paper size registration        | Yes      |
| Preview function                        | Yes      |

## H. Printer function

### (1) Platform

|                        |
|------------------------|
| - IBM PC/AT, Macintosh |
|------------------------|

### (2) Support OS

| OS      |                  | Custom PCL6 | Custom PS | PPD |
|---------|------------------|-------------|-----------|-----|
| Windows | XP               | Yes         | Yes       | Yes |
|         | XP x 64          | Yes         | Yes       | Yes |
|         | Server 2003      | Yes         | Yes       | Yes |
|         | Server 2003 x 64 | Yes         | Yes       | Yes |
|         | Vista            | Yes         | Yes       | Yes |
|         | Vista x 64       | Yes         | Yes       | Yes |
|         | Server 2008      | Yes         | Yes       | Yes |
|         | Server 2008 x 64 | Yes         | Yes       | Yes |
|         | Windows 7        | Yes         | Yes       | Yes |
|         | Windows 7 x 64   | Yes         | Yes       | Yes |
|         | Windows 8        | Yes         | Yes       | Yes |
|         | Windows 8 x 64   | Yes         | Yes       | Yes |
| Mac     | Server 2012 x 64 | Yes         | Yes       | Yes |
|         | X 10.4           | No          | No        | Yes |
|         | X 10.5           | No          | No        | Yes |
|         | X 10.6           | No          | No        | Yes |
|         | X 10.7           | No          | No        | Yes |
|         | X 10.8           | No          | No        | Yes |

### (3) PDL emulation

|                            |                                         |
|----------------------------|-----------------------------------------|
| PCL6 compatibility         | Compatible with PCL of Hewlett-Packard. |
| PostScript 3 compatibility | Compatible with PS3 of Adobe Systems.   |

### (4) Font

| Emulation                  | Built-in fonts                                                     | Option font                  |
|----------------------------|--------------------------------------------------------------------|------------------------------|
| PCL6 compatibility         | Roman outline fonts = 80 fonts<br>Line printer font (BMP) = 1 font | Font for bar code = 28 fonts |
| PostScript 3 compatibility | Roman outline fonts = 136 fonts                                    | -                            |

### (5) Print channel

|                                          |                                                                           |
|------------------------------------------|---------------------------------------------------------------------------|
| USB                                      | USB 1.1:<br>USB 2.0 (High Speed):                                         |
| PSERVER / RPRINT for NetWare environment | Print channel in PSERVER/PRINT mode to be used in netware environment     |
| LPR                                      | UNIX LPR/LPD command-compatible print channel                             |
| IPP                                      | Print channel in compliance with IPP1.0                                   |
| PAP: EtherTalk (AppleTalk)               | Print channel to be used for Macintosh environment                        |
| FTP                                      | Equipped with the function to print data received via built-in FTP server |
| Raw Port (Port9100)                      | 9100 TCP port (Raw Port) supported                                        |
| HTTP (Web Submit Print)                  |                                                                           |
| POP3 (E-Mail To Print)                   |                                                                           |

IPP, HTTP and POP3 support SSL.

### (6) Environment setting

| Setting item    | General                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------|
| Default setting | Basic settings for using the printer such as the number of copies and the print direction       |
| PCL             | Setting of the PCL symbol and fonts                                                             |
| PS              | Setting of enabling/disabling of print in case of a PS error, setting of binary data outputting |

## I. Image send function

### (1) Mode

|              |                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scanner      | <ul style="list-style-type: none"> <li>- Scan to e-mail</li> <li>- Scan to Desktop</li> <li>- Scan to FTP</li> <li>- Scan to Folder (SMB)</li> <li>- Scan to USB memory</li> <li>- Scan to e-mail with Meta</li> <li>- Scan to Desktop with Meta</li> <li>- Scan to FTP with Meta</li> <li>- Scan to SMB with Meta</li> <li>- Scan to e-mail/FTP/Desktop/SMB (Document Admin)</li> </ul> |
| Fax          | <ul style="list-style-type: none"> <li>- Fax to Fax (Manual)</li> <li>- Fax to e-mail/Internet Fax/Fax (Relay transfer)</li> <li>- Fax to e-mail/FTP/Desktop/SMB (Inbound routing)</li> <li>- Fax to e-mail/FTP/Desktop/SMB (Inbound routing)</li> </ul>                                                                                                                                 |
| Internet Fax | <ul style="list-style-type: none"> <li>- Internet Fax to internet FAX with (Manual)</li> <li>- Internet Fax to e-mail/FTP/Desktop/SMB (Inbound routing)</li> <li>- Internet Fax to e-mail/FTP/Desktop/SMB (Document Admin)</li> </ul>                                                                                                                                                    |

### (2) Support system

| Mode                          | Scanner                                                   | Internet Fax Direct SMTP                  | Fax |
|-------------------------------|-----------------------------------------------------------|-------------------------------------------|-----|
| Corresponding server/protocol | SMTP/SMTP-SSL<br>FTP (TCP / IP)/FTPS<br>SMB<br>HTTP/HTTPS | POP server<br>SMTP server<br>ESMTP server | N/A |

### (3) Support image

| Mode                                                                     |                                      | Support image                                                            |
|--------------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------|
| Scanner                                                                  | File format (Monochrome)             | TIFF, PDF, Encrypted PDF, XPS                                            |
|                                                                          | File format (Color/Grayscale)        | Color TIFF, JPEG, PDF, PDF/A, Encrypted PDF, XPS                         |
|                                                                          | Compression system (Monochrome)      | Non-compression,<br>G3 = MH (Modified Huffman)<br>G4 = MMR (Modified MR) |
|                                                                          | Compression system (Color/Grayscale) | JPEG (High/Middle/Low)<br>High compression PDF                           |
| Internet Fax Direct SMTP                                                 | File format (Monochrome)             | TIFF-FX (TIFF-F, TIFF-S)                                                 |
|                                                                          | Compression system (Monochrome)      | G3 = MH (Modified Huffman)<br>G4 = MMR (Modified MR)                     |
| Fax                                                                      | Compression system (Monochrome)      | MH, MR, MMR, JBIG                                                        |
| Conversion for each page to a file (Available to quantity specification) |                                      |                                                                          |

### (4) Item number of registration items

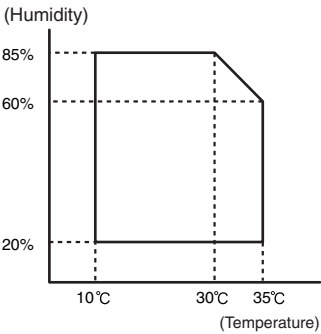
| Item                            | No. of registration items                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------------------|
| One-touch/Group                 | 2000 items<br>Max. number of registration items for one group (500 items)                     |
| Program                         | 48 items                                                                                      |
| Memory box                      | Total of bulletin board / confidential letter / relay and broadcast: 100*1 / 30*2 items (Fax) |
| Sender registration             | Fax, Internet Fax*1: 1 item                                                                   |
| User list (Return address list) | Scanner: 1,000*1 / 200*2 items                                                                |
| Transfer table list             | Fax, Internet Fax*1: 1 item                                                                   |
| Sender selection                | 18 items                                                                                      |
| Item name                       | 30 items                                                                                      |
| File name                       | 30 items                                                                                      |
| Polling allow number            | Fax: 10 items                                                                                 |

## (5) Image processing

| Mode                                                              |                           | Scanner                             | Internet Fax<br>Direct<br>SMTP            | Fax                                                              |
|-------------------------------------------------------------------|---------------------------|-------------------------------------|-------------------------------------------|------------------------------------------------------------------|
| Original<br>scanning<br>color                                     | Black-white               | Yes                                 | Yes                                       |                                                                  |
|                                                                   | Grayscale                 | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Full color                | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Auto Color<br>Selection   | Yes                                 | N/A                                       |                                                                  |
| Halftone reproduction                                             |                           | Equivalent to 256 gradations levels |                                           |                                                                  |
| Density<br>adjustment                                             | Auto                      | Yes                                 |                                           |                                                                  |
|                                                                   | Manual                    | 5 steps                             |                                           |                                                                  |
| Original<br>document<br>type<br>(Selectable<br>in manual<br>mode) | Text                      | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Text/<br>Photograph       | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Text/<br>Printed<br>photo | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Photograph                | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Printed<br>photo          | Yes                                 | N/A                                       |                                                                  |
|                                                                   | Map                       | Yes                                 | N/A                                       |                                                                  |
| Selection of image quality                                        |                           | N/A                                 | Halftone (Black-white only)<br>ON/OFF     |                                                                  |
| Resolution<br>(depends on file format/<br>transmission method)    |                           | 100 x 100dpi                        | 200 x 100dpi<br>(Halftone not<br>allowed) | Normal text<br>(203.2 x<br>97.8dpi)<br>(Halftone not<br>allowed) |
|                                                                   |                           | 200 x 200dpi                        | 200 x 200dpi                              | Fine (203.2<br>x 195.6dpi)                                       |
|                                                                   |                           | 300 x 300dpi                        | 200 x 400dpi                              | Super Fine<br>(203.2 x<br>391dpi)                                |
|                                                                   |                           | 400 x 400dpi                        | 400 x 400dpi                              | Ultra Fine<br>(406.4 x<br>391dpi)                                |
|                                                                   |                           | 600 x 600dpi                        | 600 x 600dpi                              | N/A                                                              |

**J. Ambient conditions**

**(1) Working environment**

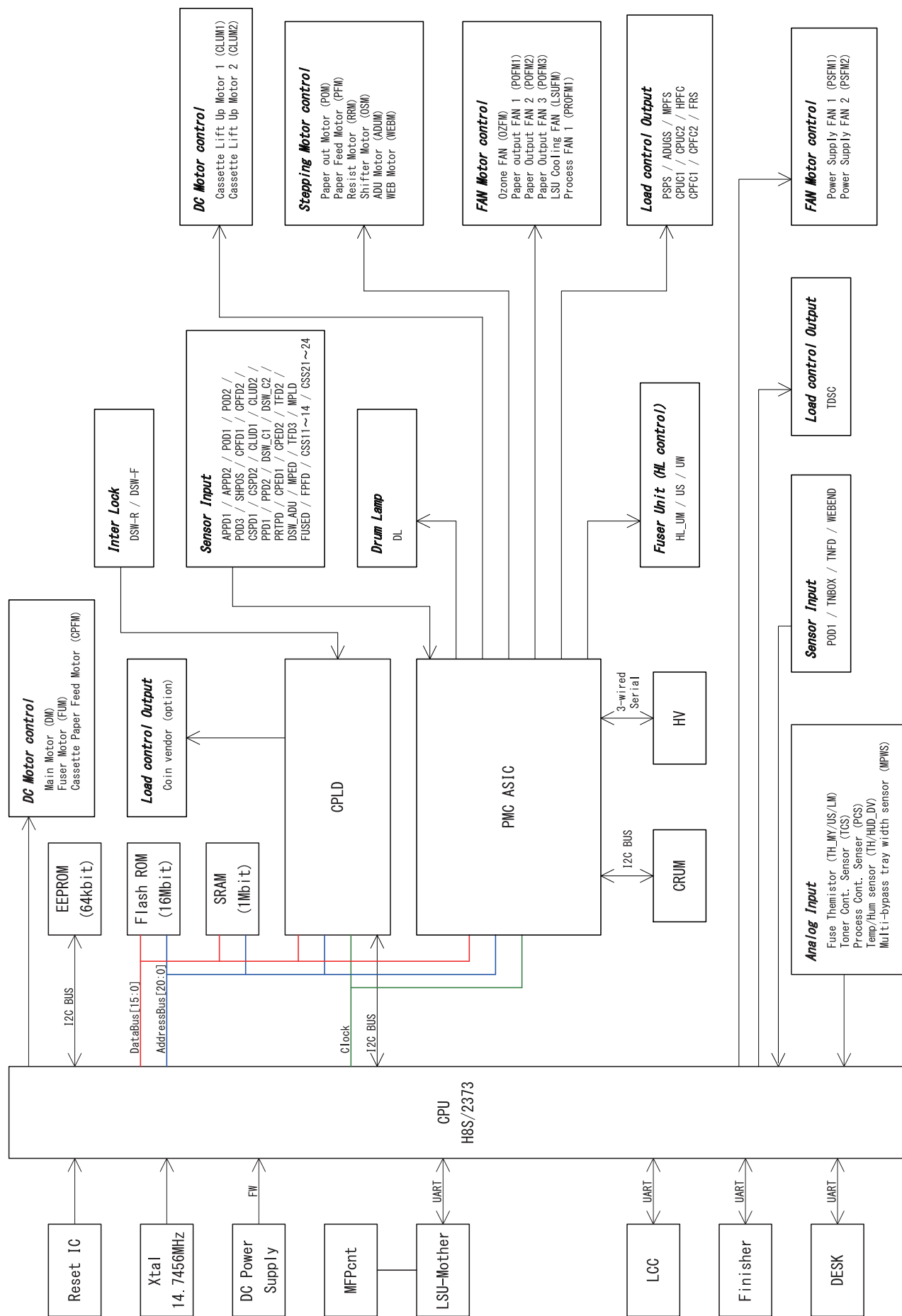


|                                   |                                                                                                                                                                              |                                       |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Standard environmental conditions | Temperature                                                                                                                                                                  | 20 – 25 °C                            |
|                                   | Humidity                                                                                                                                                                     | 65 ± 5 %RH                            |
| Usage environmental conditions    | Temperature                                                                                                                                                                  | 10 – 35 °C                            |
|                                   | Humidity                                                                                                                                                                     | 20 – 85 %RH                           |
|                                   | Atmospheric pressure                                                                                                                                                         | 590 – 1013 hPa<br>(height: 0 – 2000m) |
| Storage period                    | Toner/Developer:<br>24 months from the manufactured month<br>(Production lot) under unsealed state<br>Drum:<br>36 months from the manufactured month<br>under unsealed state |                                       |

### A. System block diagram

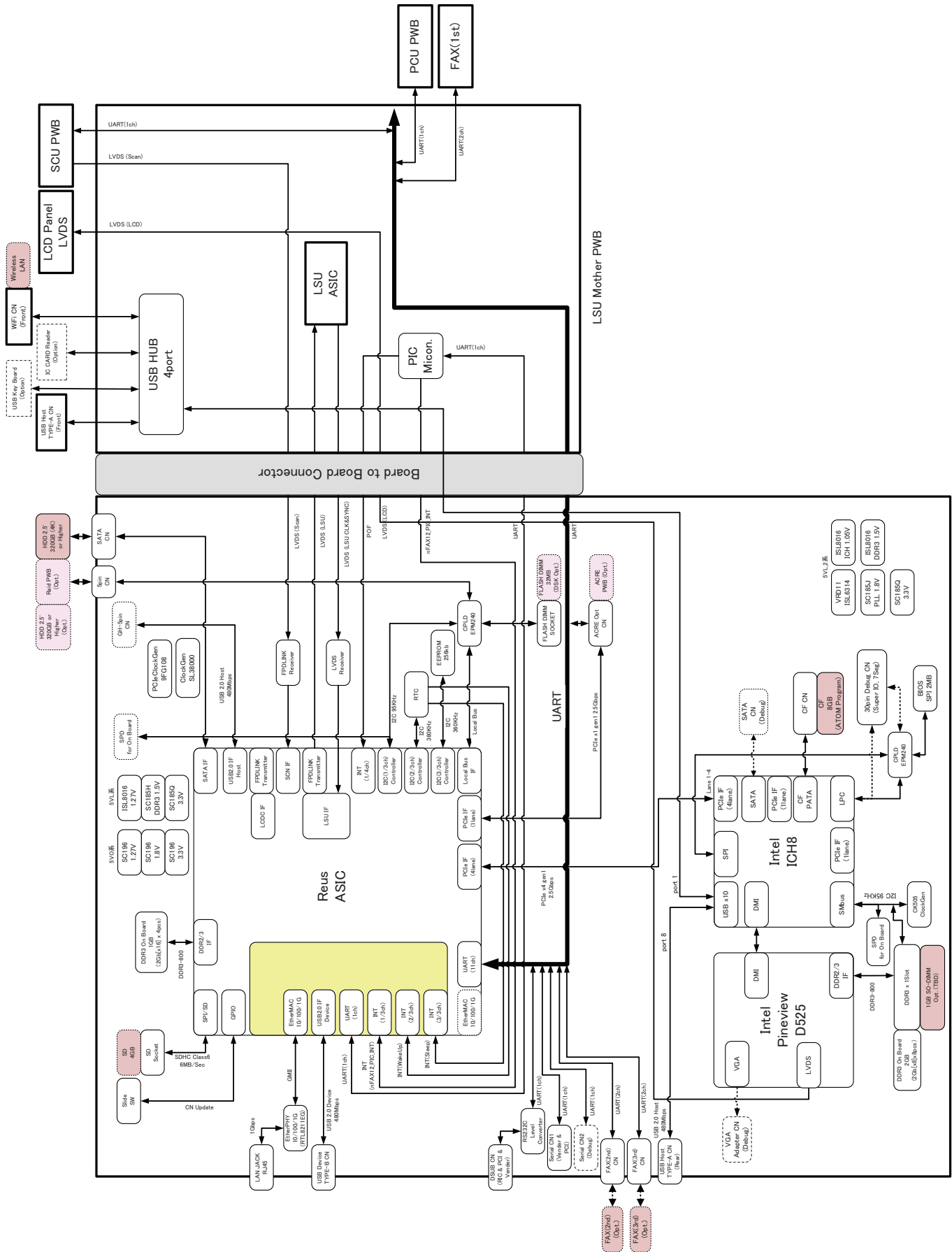


B. PCU PWB

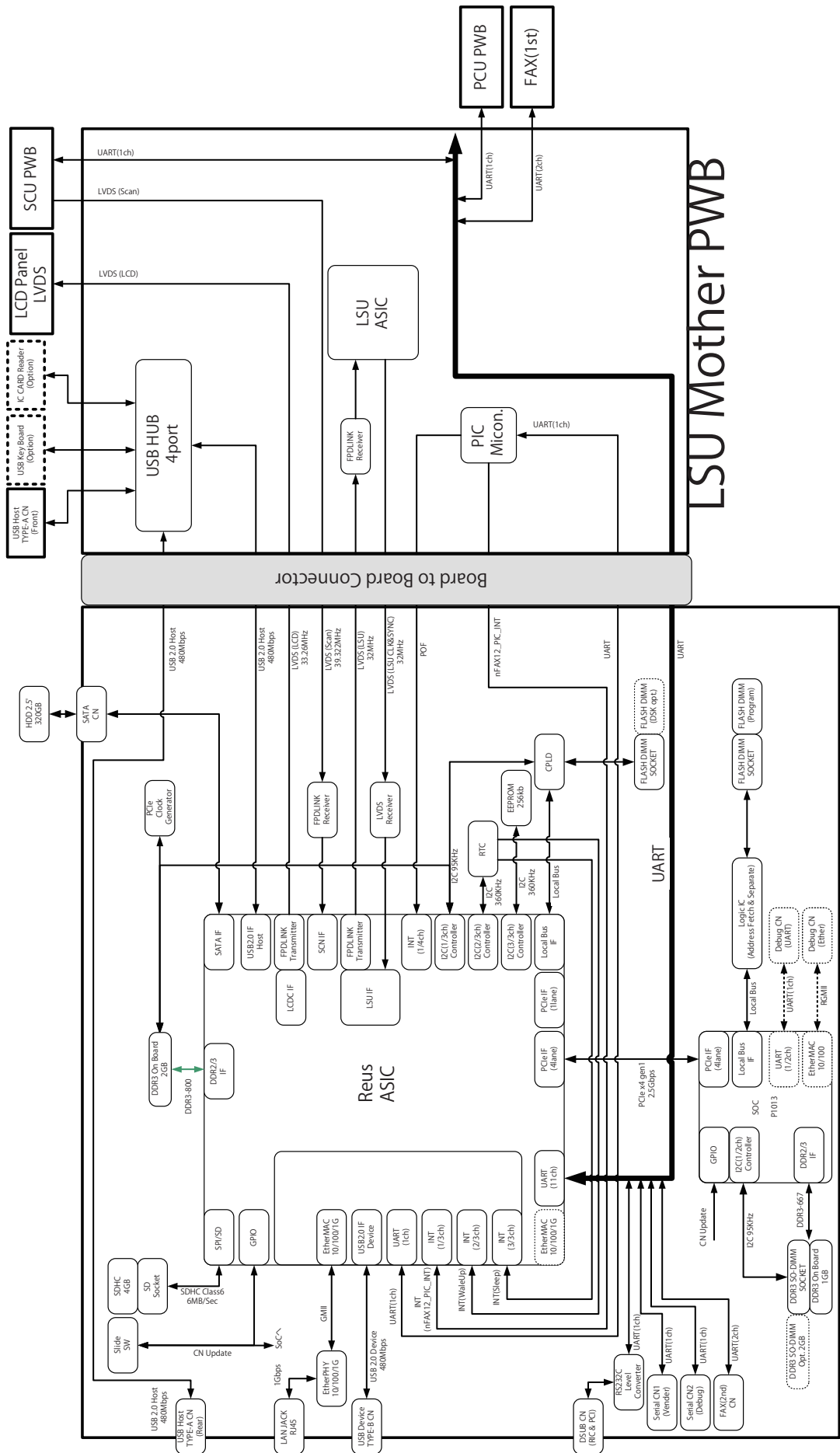


## C. MFP control PWB

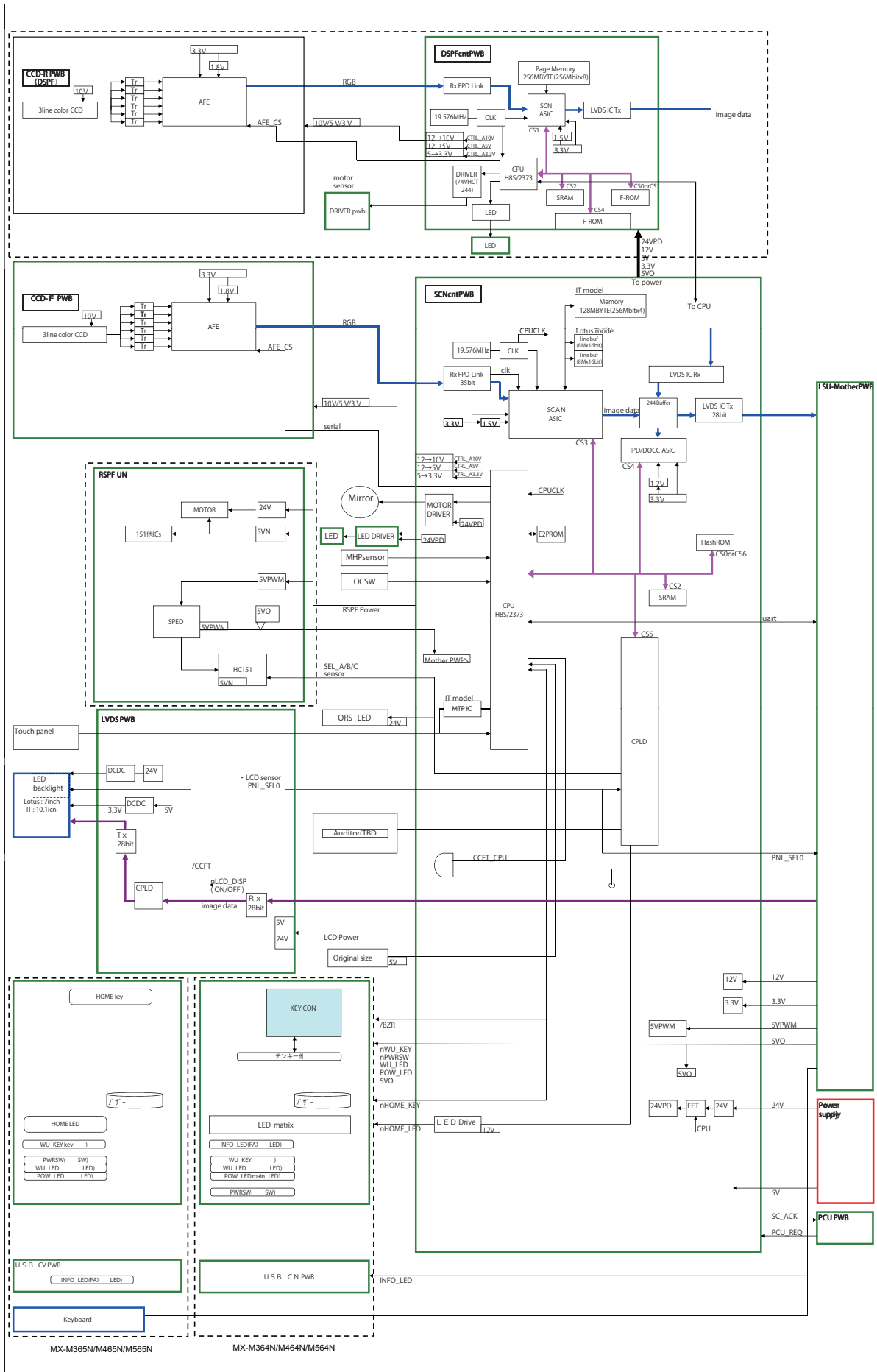
MX-M365N/M465N/M565N machine



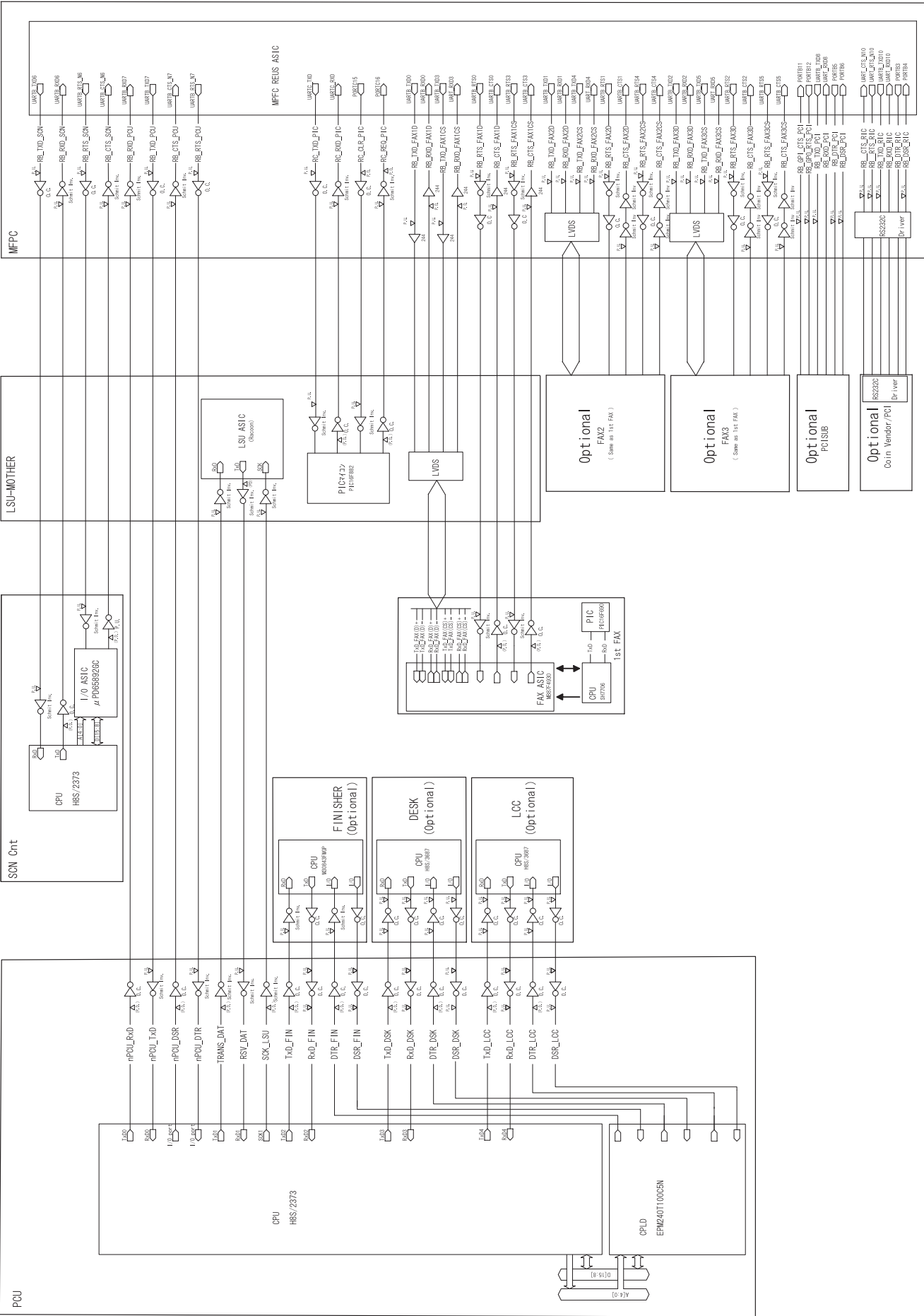




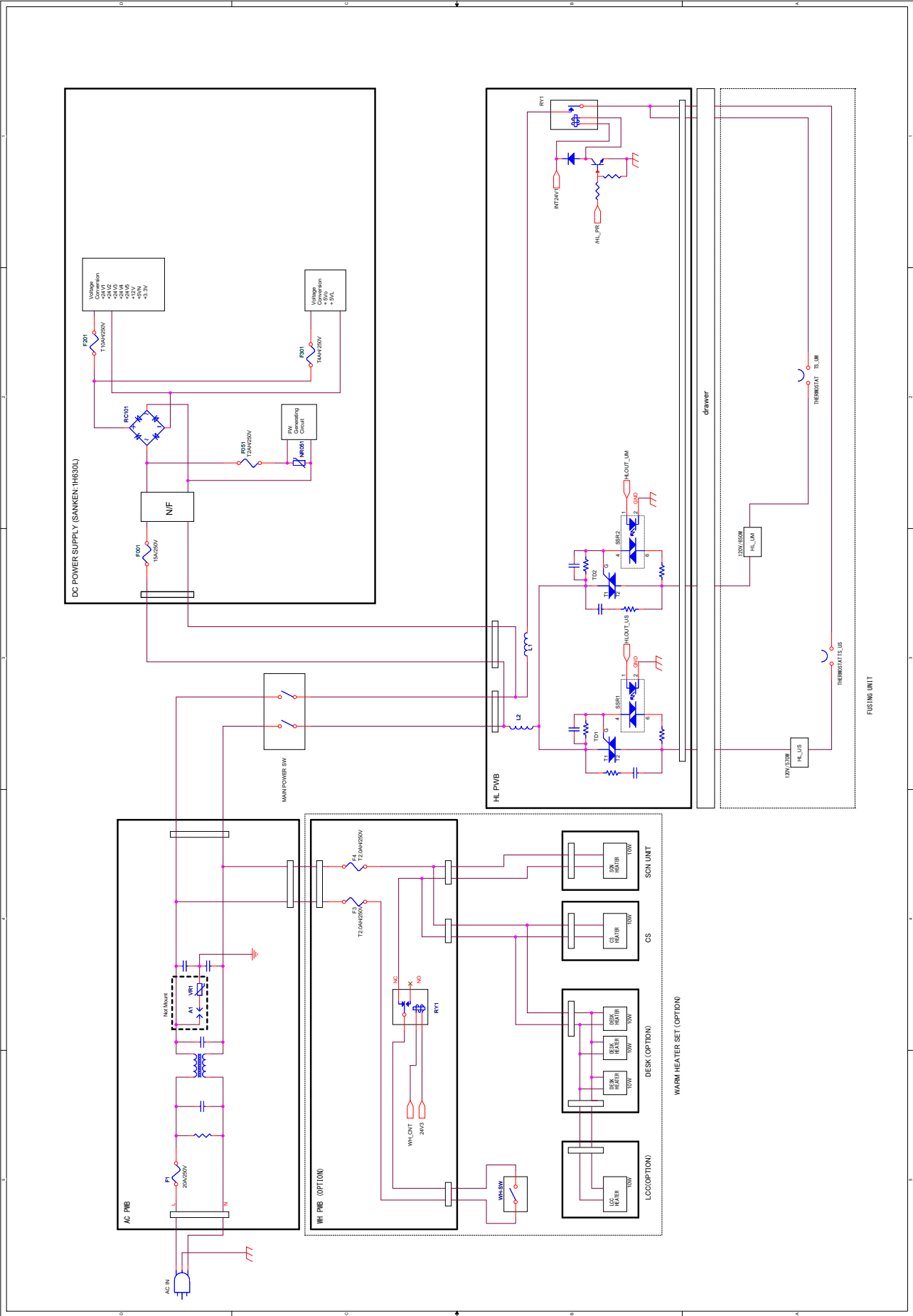
#### D. Scanner PWB



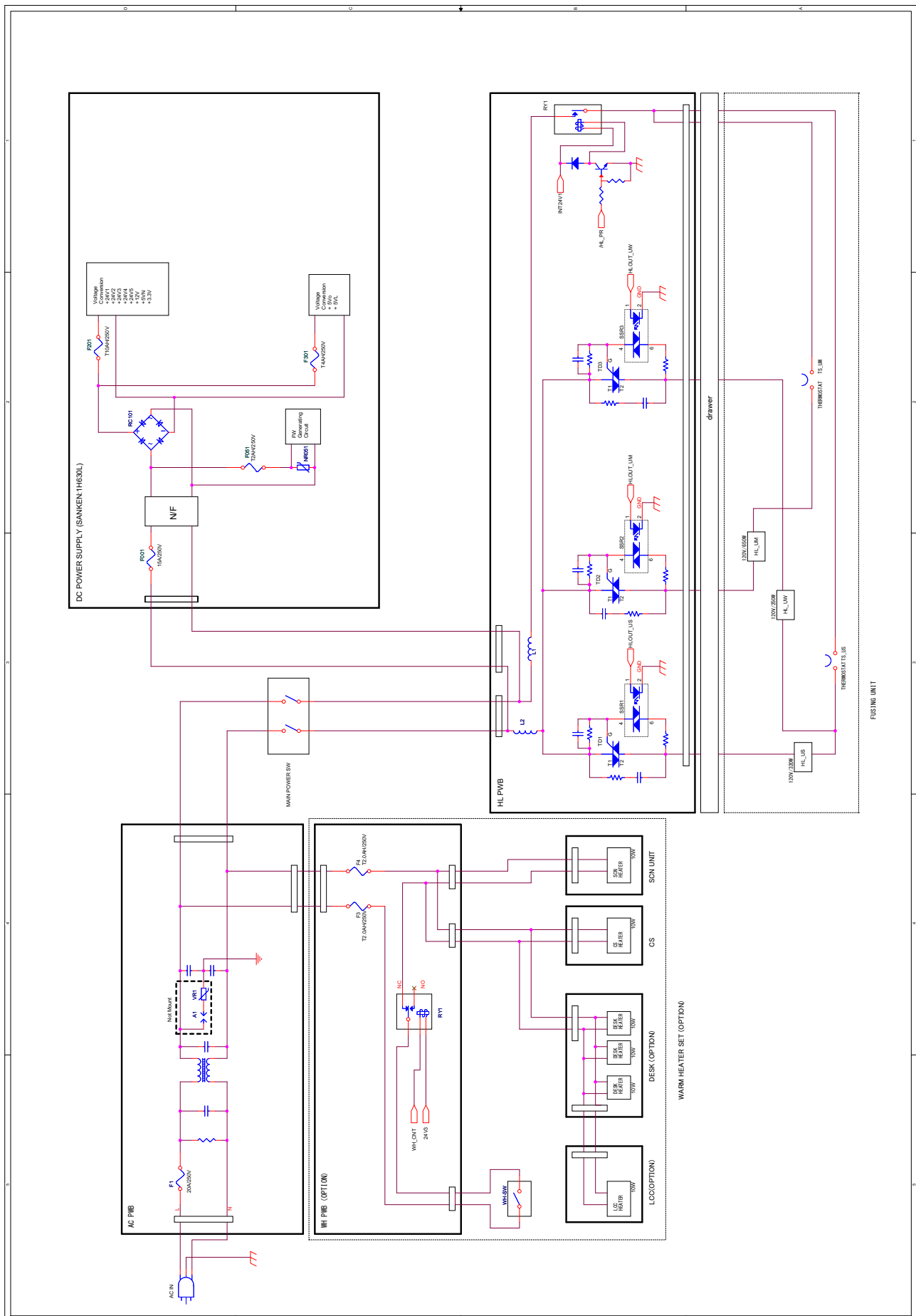
E. Serial communication



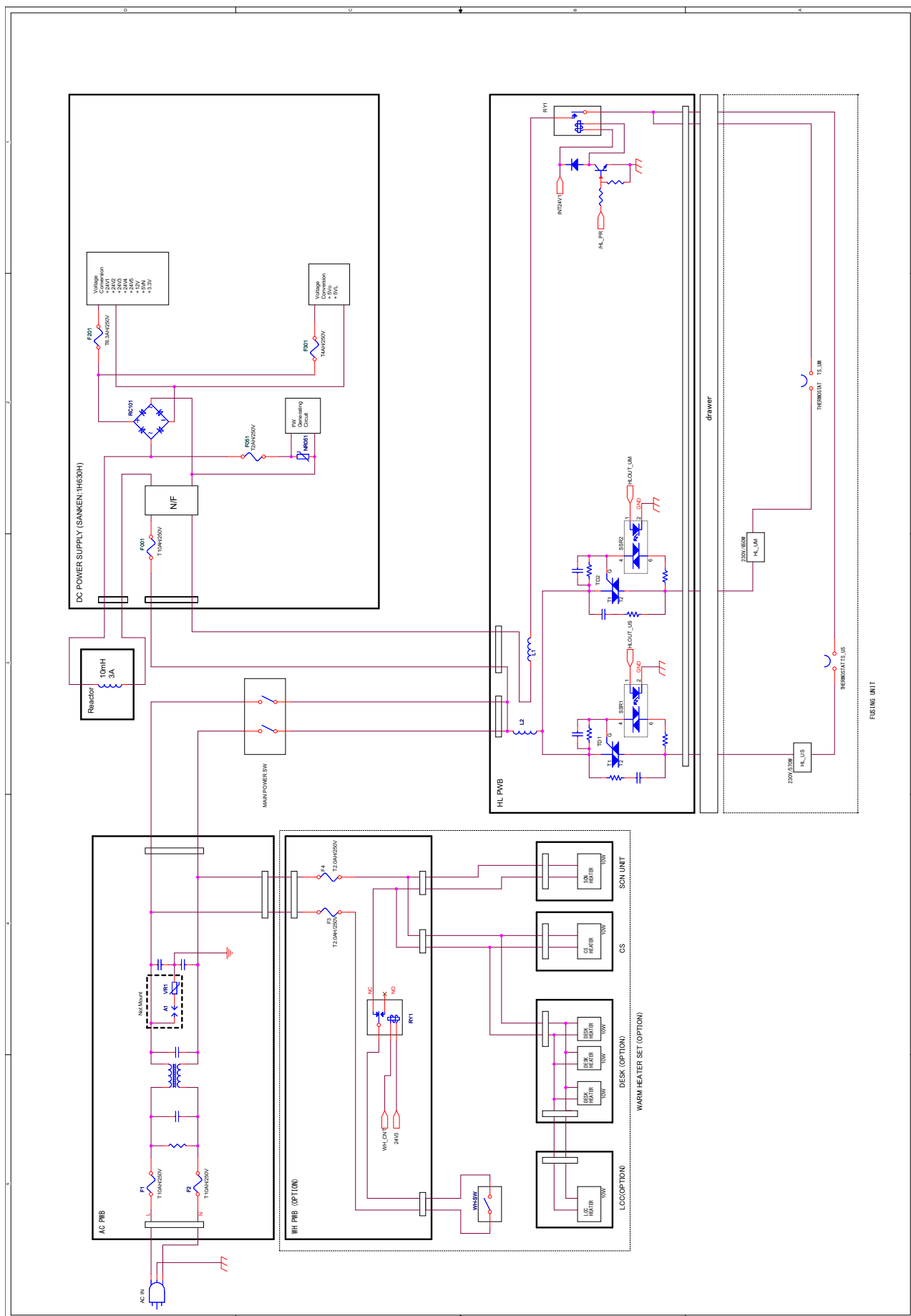
F. AC power line diagram (36cpm machine) (100V)



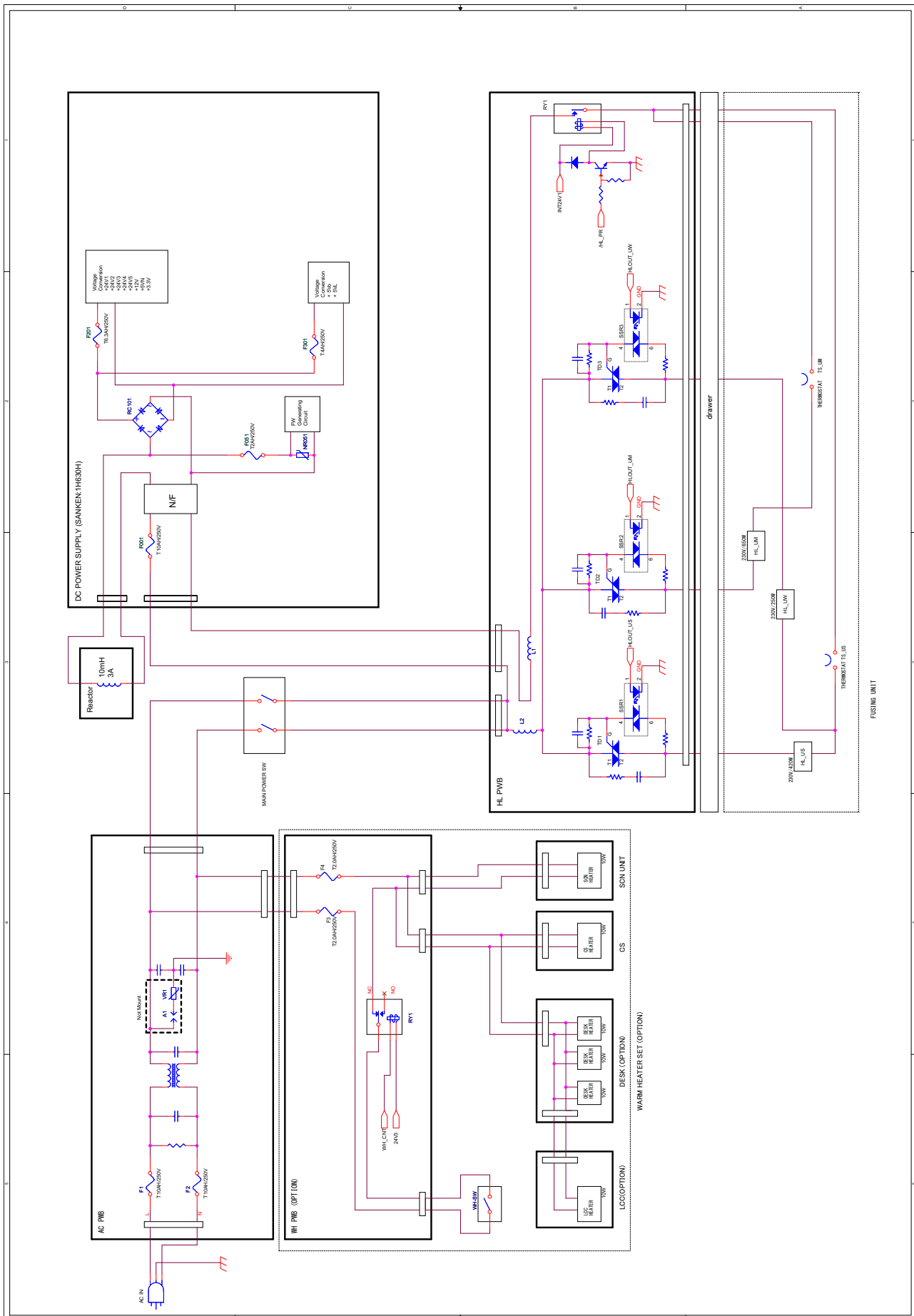
**G. AC power line diagram (46/56cpm machine) (100V)**



#### H. AC power line diagram (36cpm machine) (200V)

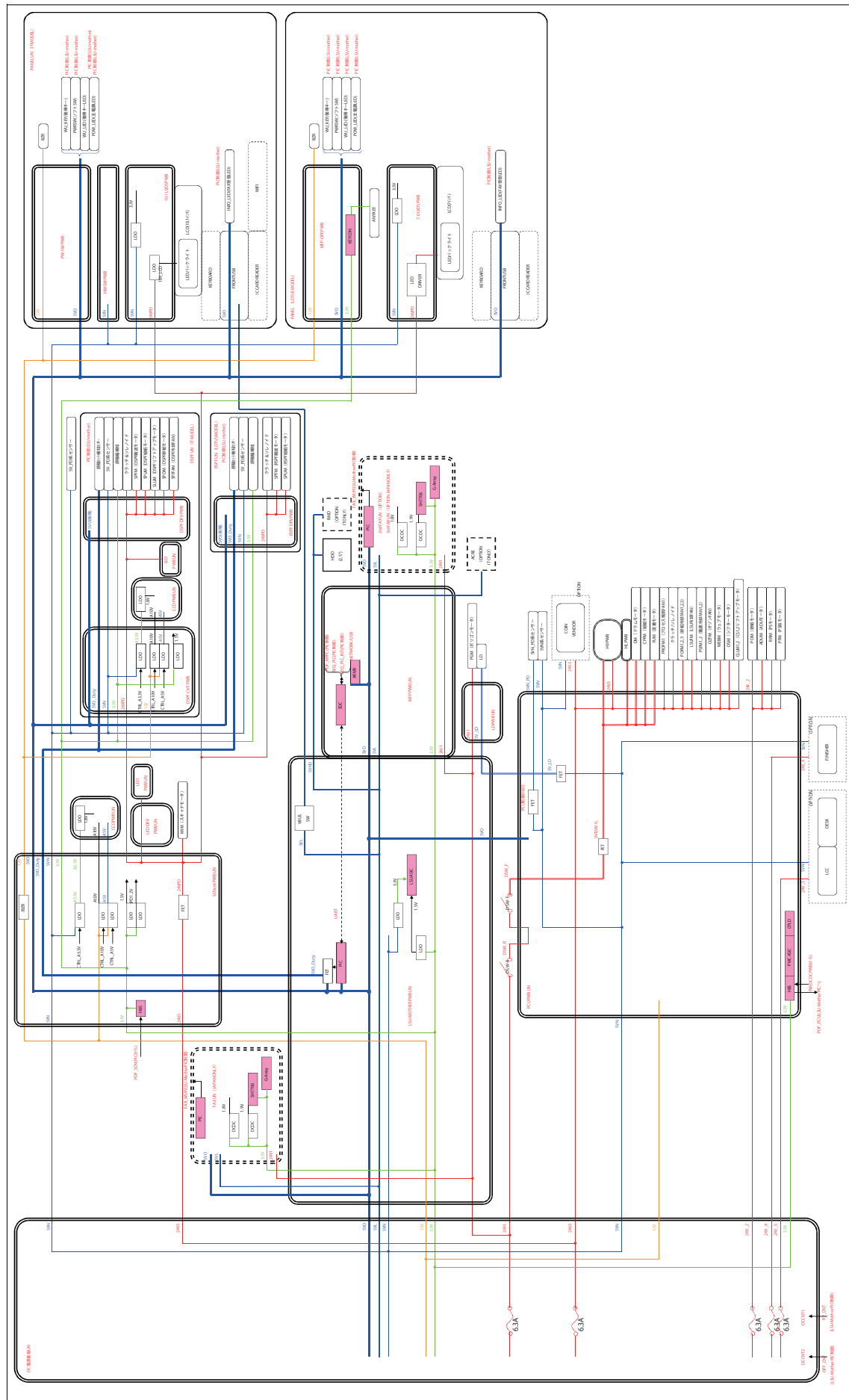


# I. AC power line diagram (46/56cpm machine) (200V)





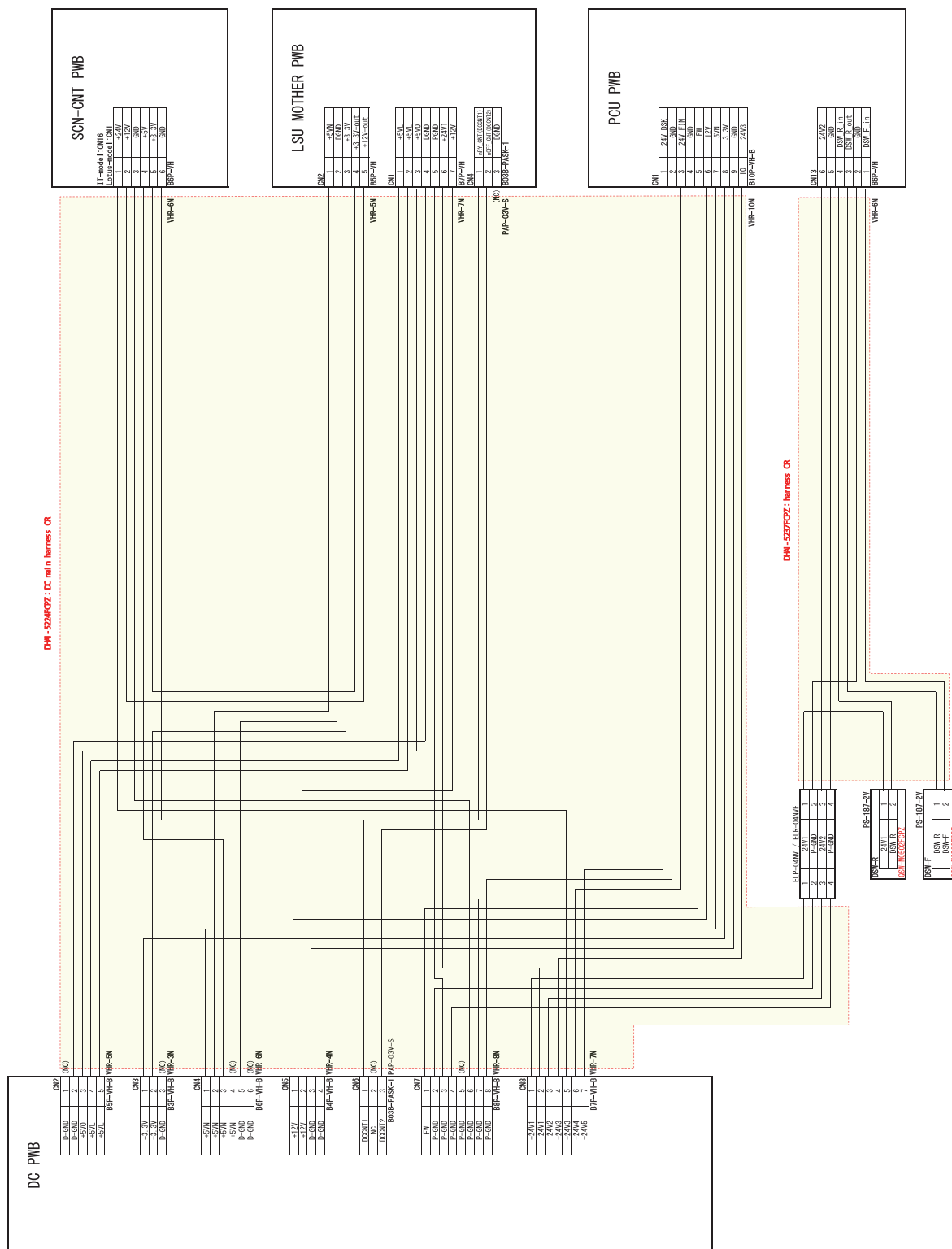
## J. DC power line diagram



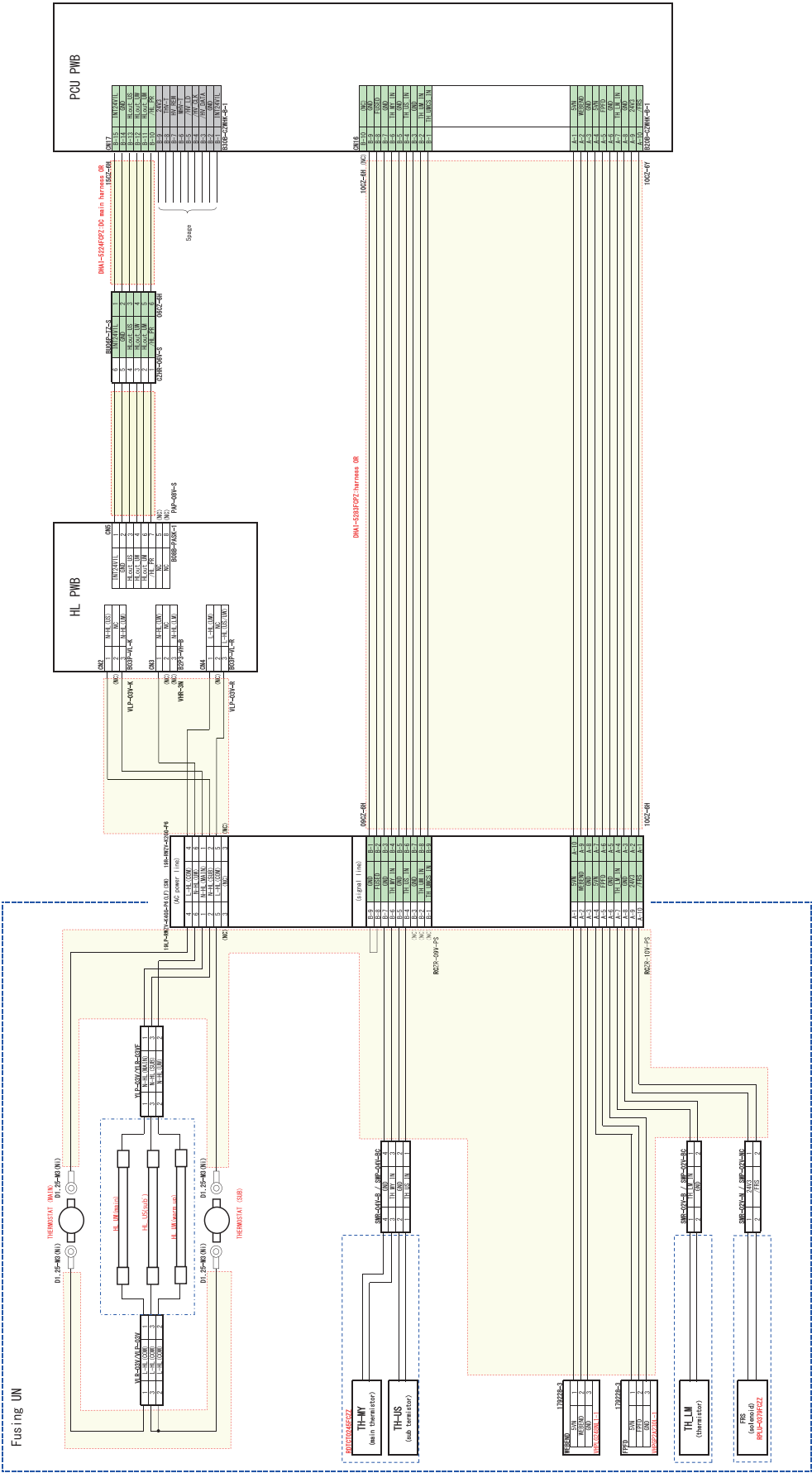
### A. AC Power supply section (P1)



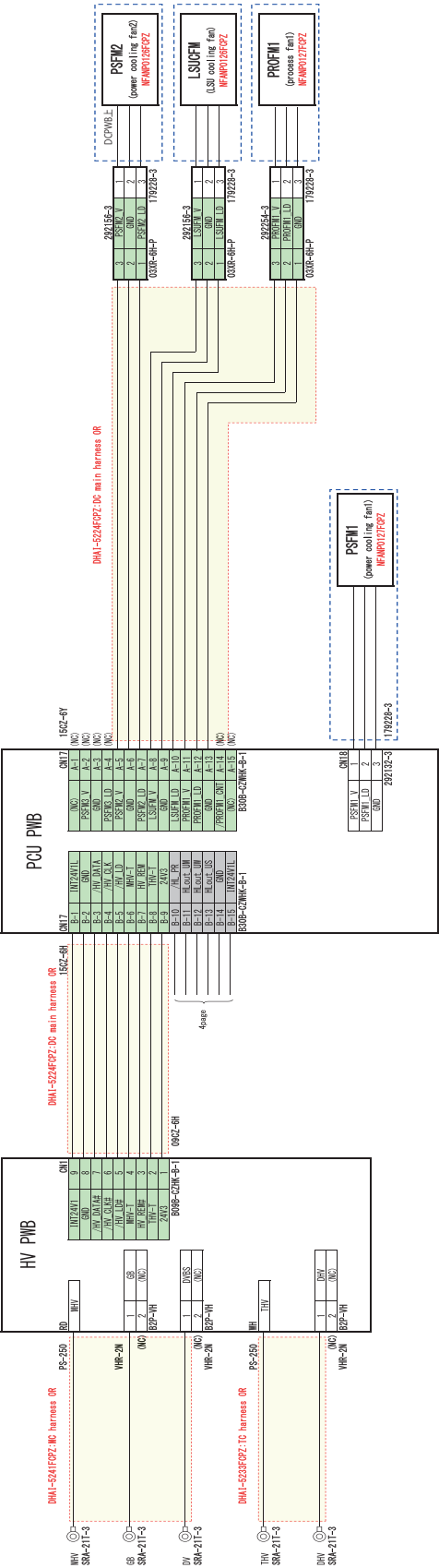
### B. DC Power supply section (P2)



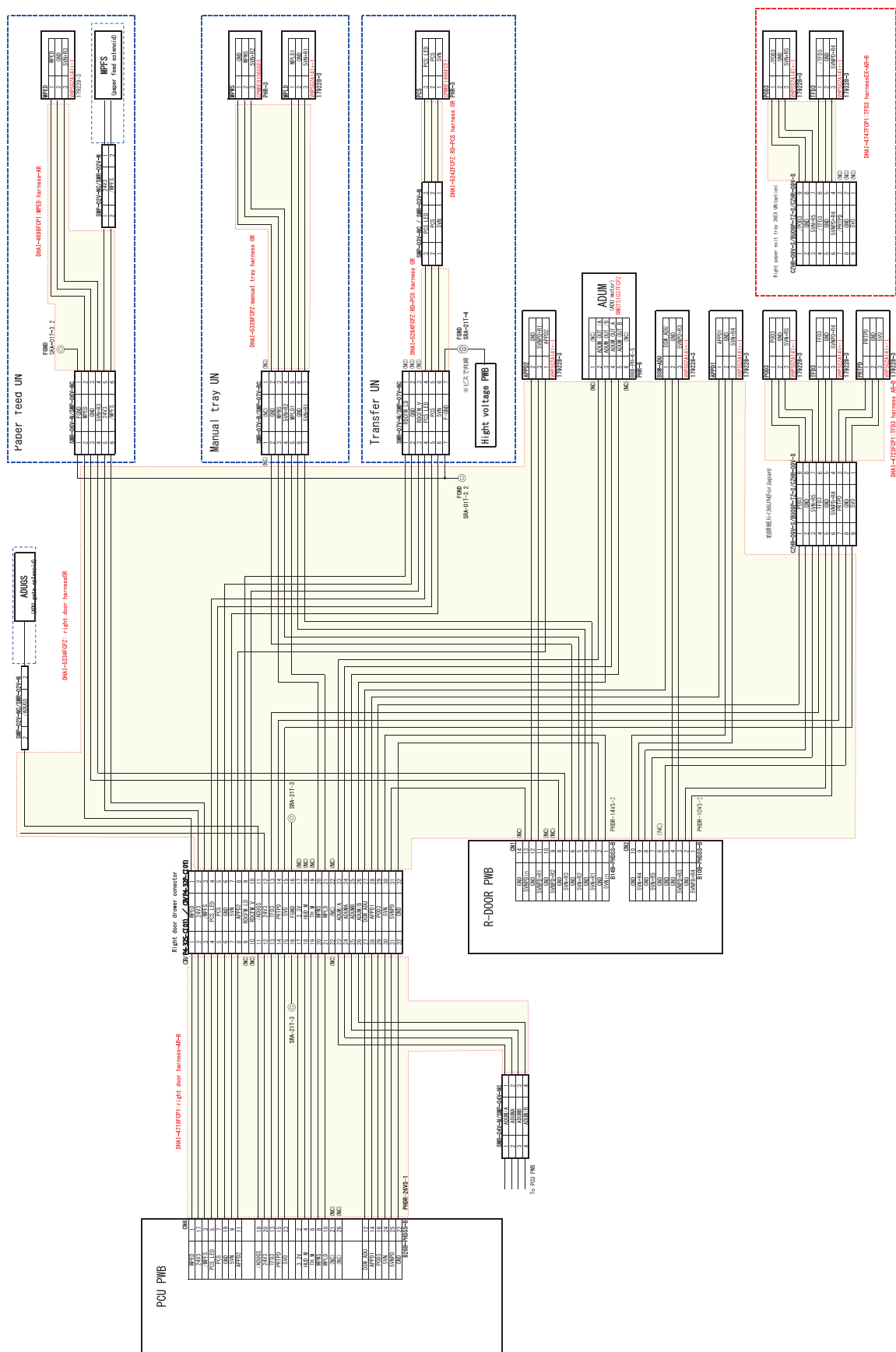
C. Fuser unit section (P3)



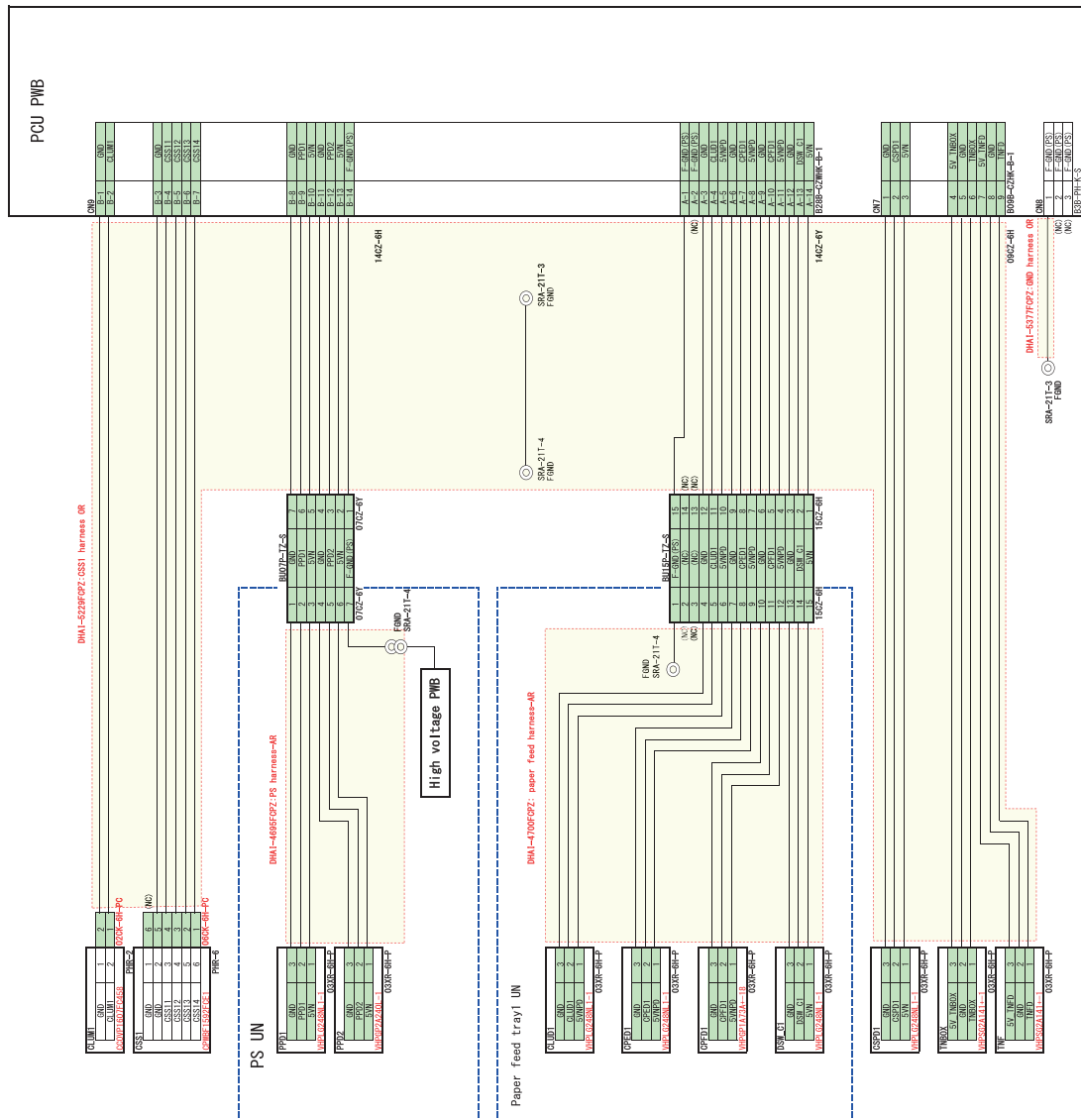
D. High voltage section, Fan section (P4)



### E. Right door unit section, Manual paper feed unit section (P5)

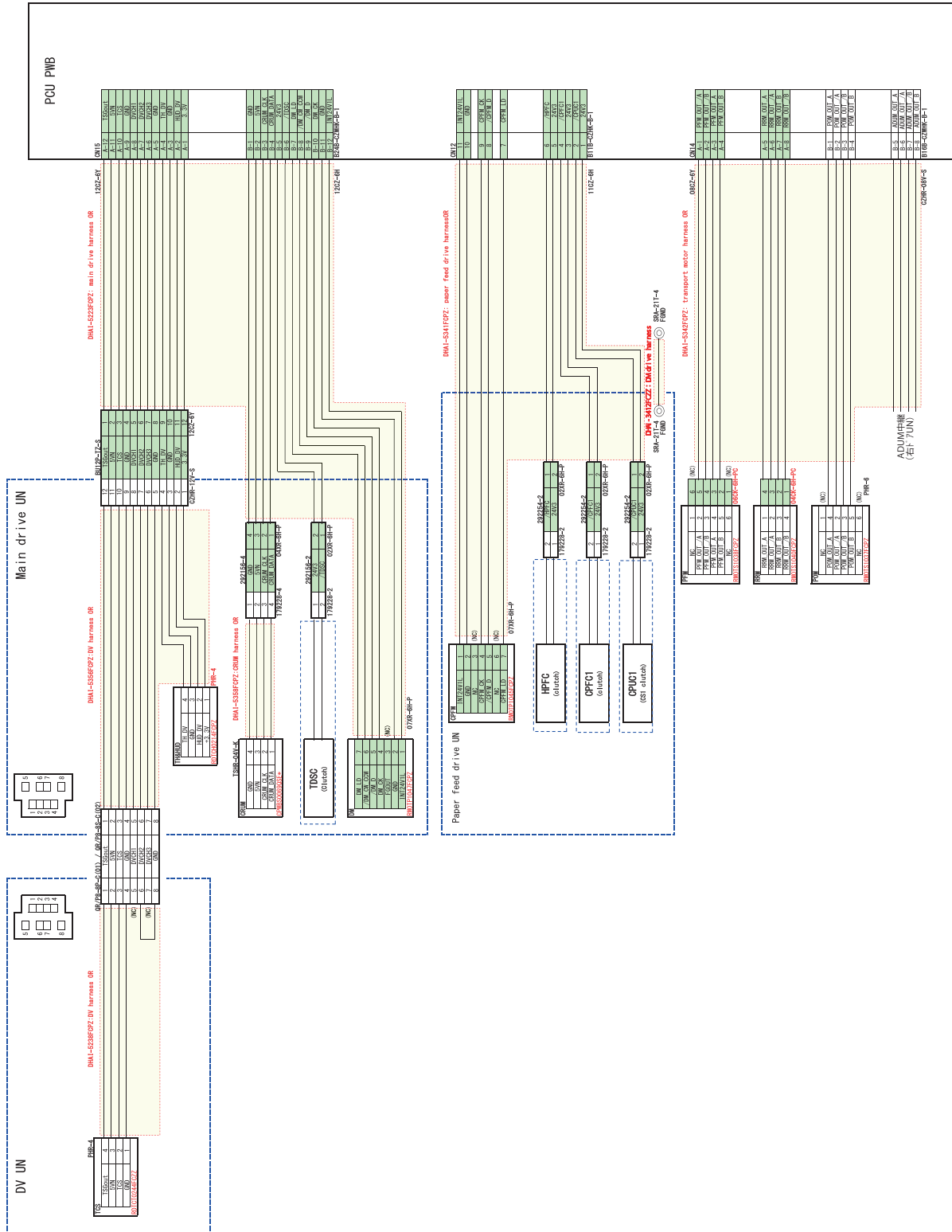


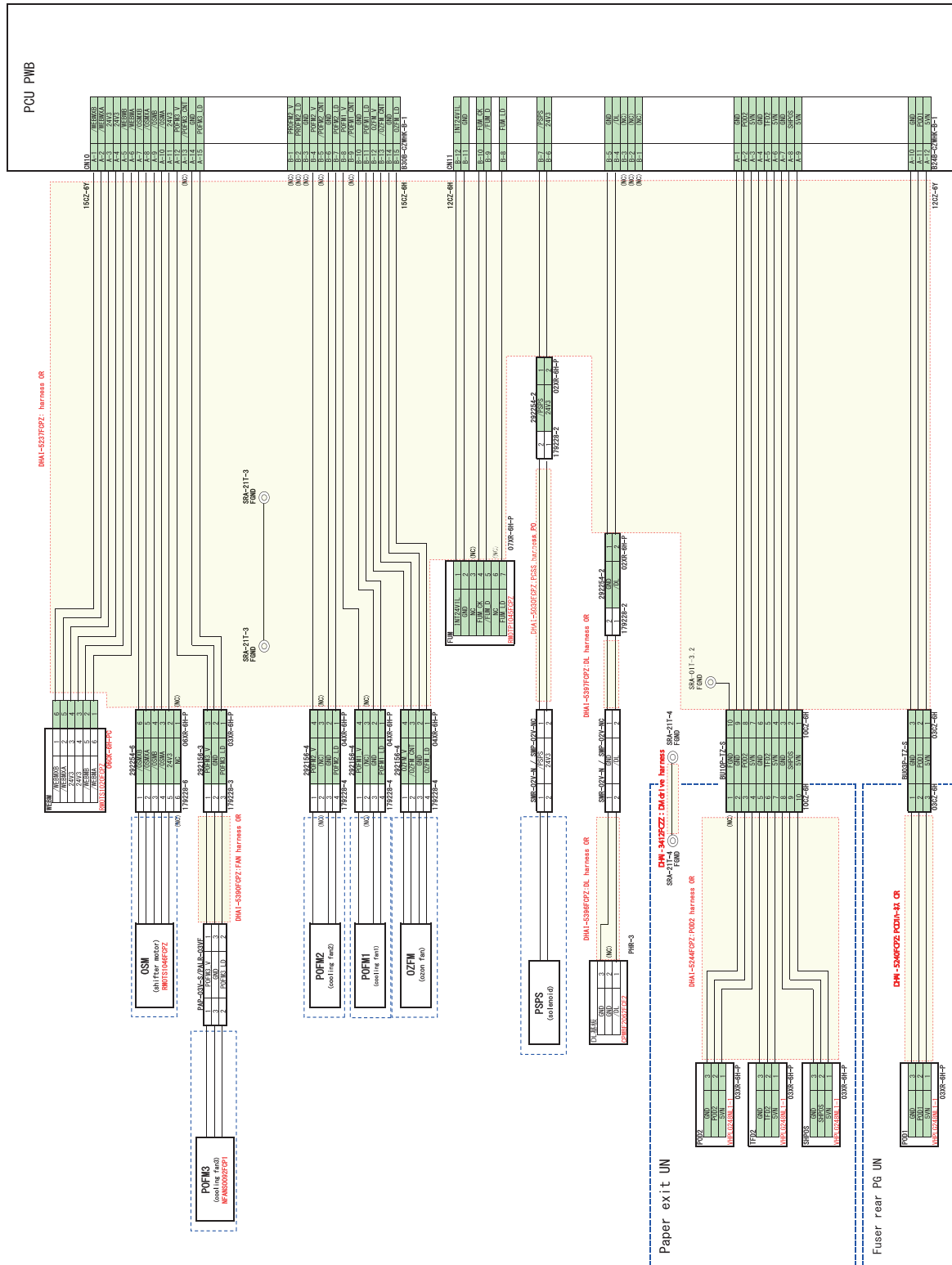
### F. Paper feed unit section, PS unit section (P6)



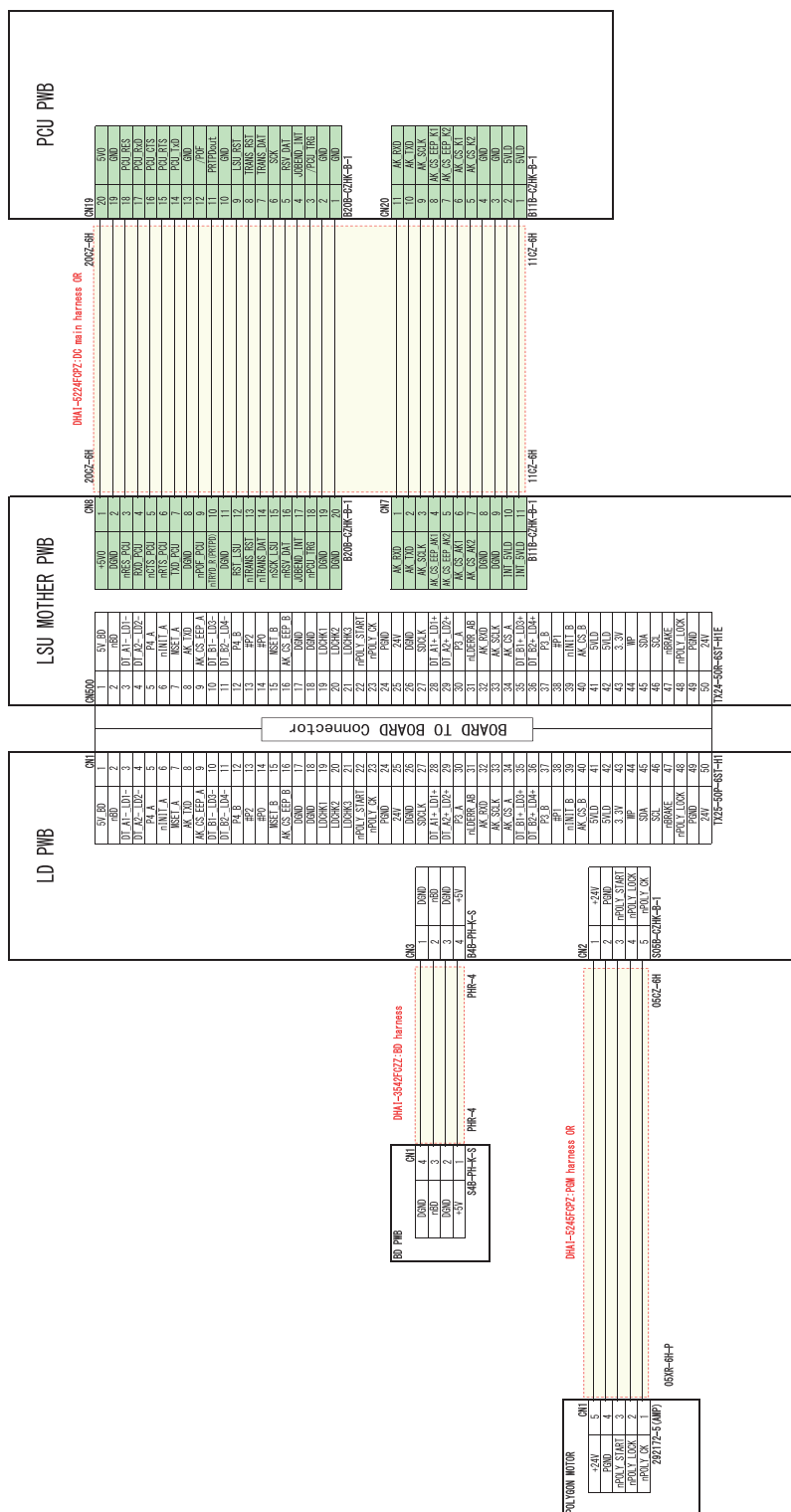


## G. DV unit section, Stepping motor section (P7)

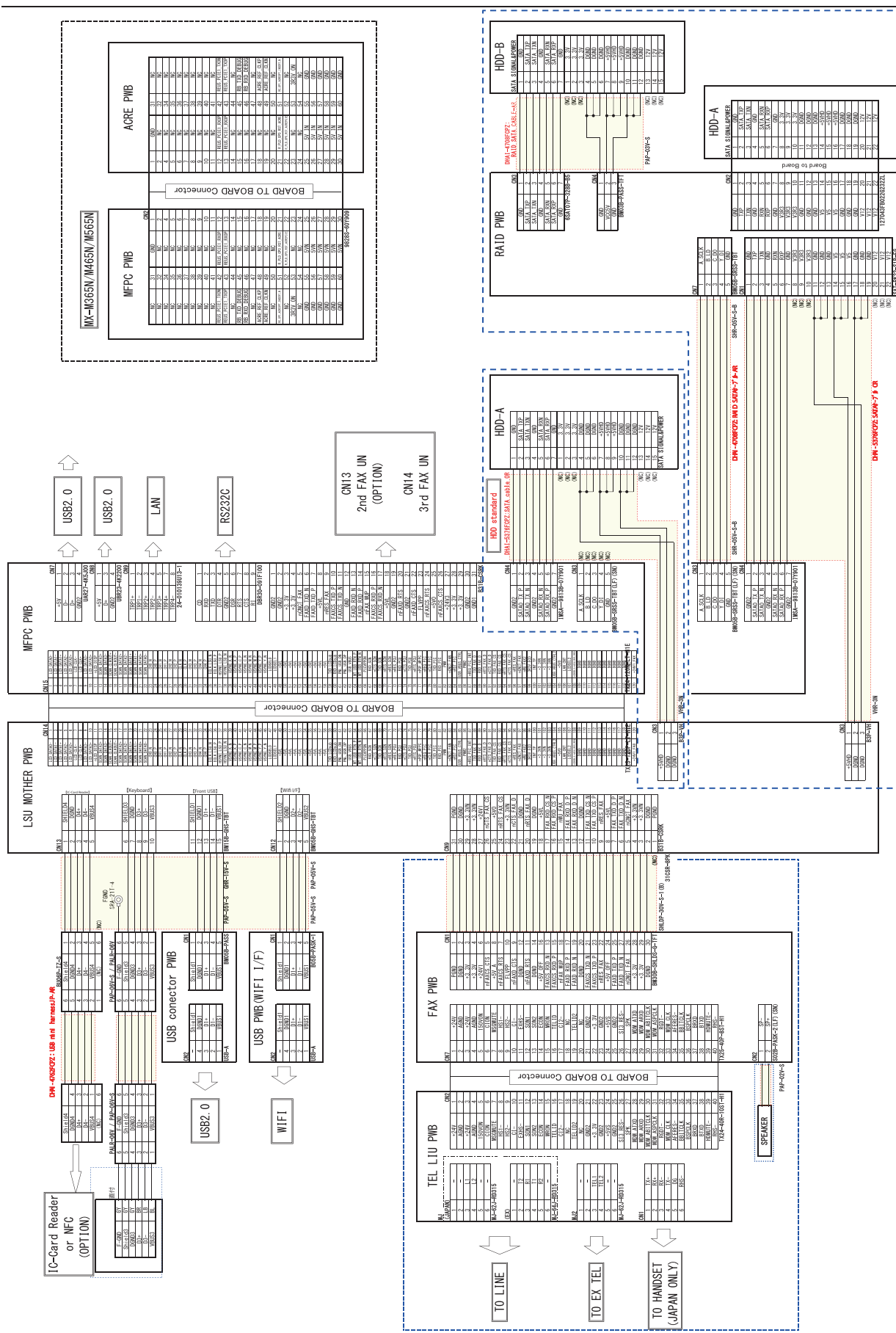




### I. LSU section (P9)



## J. FAX section, MFP section, HDD section (P10)



**PCU PWB**

**Q93**

|    |        |
|----|--------|
| 1  | Q93-1  |
| 2  | Q93-2  |
| 3  | Q93-3  |
| 4  | Q93-4  |
| 5  | Q93-5  |
| 6  | Q93-6  |
| 7  | Q93-7  |
| 8  | Q93-8  |
| 9  | Q93-9  |
| 10 | Q93-10 |
| 11 | Q93-11 |
| 12 | Q93-12 |

**Q92**

|    |        |
|----|--------|
| 1  | Q92-1  |
| 2  | Q92-2  |
| 3  | Q92-3  |
| 4  | Q92-4  |
| 5  | Q92-5  |
| 6  | Q92-6  |
| 7  | Q92-7  |
| 8  | Q92-8  |
| 9  | Q92-9  |
| 10 | Q92-10 |
| 11 | Q92-11 |
| 12 | Q92-12 |

**Q91**

|    |        |
|----|--------|
| 1  | Q91-1  |
| 2  | Q91-2  |
| 3  | Q91-3  |
| 4  | Q91-4  |
| 5  | Q91-5  |
| 6  | Q91-6  |
| 7  | Q91-7  |
| 8  | Q91-8  |
| 9  | Q91-9  |
| 10 | Q91-10 |
| 11 | Q91-11 |
| 12 | Q91-12 |

**Q90**

|    |        |
|----|--------|
| 1  | Q90-1  |
| 2  | Q90-2  |
| 3  | Q90-3  |
| 4  | Q90-4  |
| 5  | Q90-5  |
| 6  | Q90-6  |
| 7  | Q90-7  |
| 8  | Q90-8  |
| 9  | Q90-9  |
| 10 | Q90-10 |
| 11 | Q90-11 |
| 12 | Q90-12 |

**Q89**

|    |        |
|----|--------|
| 1  | Q89-1  |
| 2  | Q89-2  |
| 3  | Q89-3  |
| 4  | Q89-4  |
| 5  | Q89-5  |
| 6  | Q89-6  |
| 7  | Q89-7  |
| 8  | Q89-8  |
| 9  | Q89-9  |
| 10 | Q89-10 |
| 11 | Q89-11 |
| 12 | Q89-12 |

**Q88**

|    |        |
|----|--------|
| 1  | Q88-1  |
| 2  | Q88-2  |
| 3  | Q88-3  |
| 4  | Q88-4  |
| 5  | Q88-5  |
| 6  | Q88-6  |
| 7  | Q88-7  |
| 8  | Q88-8  |
| 9  | Q88-9  |
| 10 | Q88-10 |
| 11 | Q88-11 |
| 12 | Q88-12 |

**Q87**

|    |        |
|----|--------|
| 1  | Q87-1  |
| 2  | Q87-2  |
| 3  | Q87-3  |
| 4  | Q87-4  |
| 5  | Q87-5  |
| 6  | Q87-6  |
| 7  | Q87-7  |
| 8  | Q87-8  |
| 9  | Q87-9  |
| 10 | Q87-10 |
| 11 | Q87-11 |
| 12 | Q87-12 |

**Q86**

|    |        |
|----|--------|
| 1  | Q86-1  |
| 2  | Q86-2  |
| 3  | Q86-3  |
| 4  | Q86-4  |
| 5  | Q86-5  |
| 6  | Q86-6  |
| 7  | Q86-7  |
| 8  | Q86-8  |
| 9  | Q86-9  |
| 10 | Q86-10 |
| 11 | Q86-11 |
| 12 | Q86-12 |

**Q85**

|    |        |
|----|--------|
| 1  | Q85-1  |
| 2  | Q85-2  |
| 3  | Q85-3  |
| 4  | Q85-4  |
| 5  | Q85-5  |
| 6  | Q85-6  |
| 7  | Q85-7  |
| 8  | Q85-8  |
| 9  | Q85-9  |
| 10 | Q85-10 |
| 11 | Q85-11 |
| 12 | Q85-12 |

**Q84**

|    |        |
|----|--------|
| 1  | Q84-1  |
| 2  | Q84-2  |
| 3  | Q84-3  |
| 4  | Q84-4  |
| 5  | Q84-5  |
| 6  | Q84-6  |
| 7  | Q84-7  |
| 8  | Q84-8  |
| 9  | Q84-9  |
| 10 | Q84-10 |
| 11 | Q84-11 |
| 12 | Q84-12 |

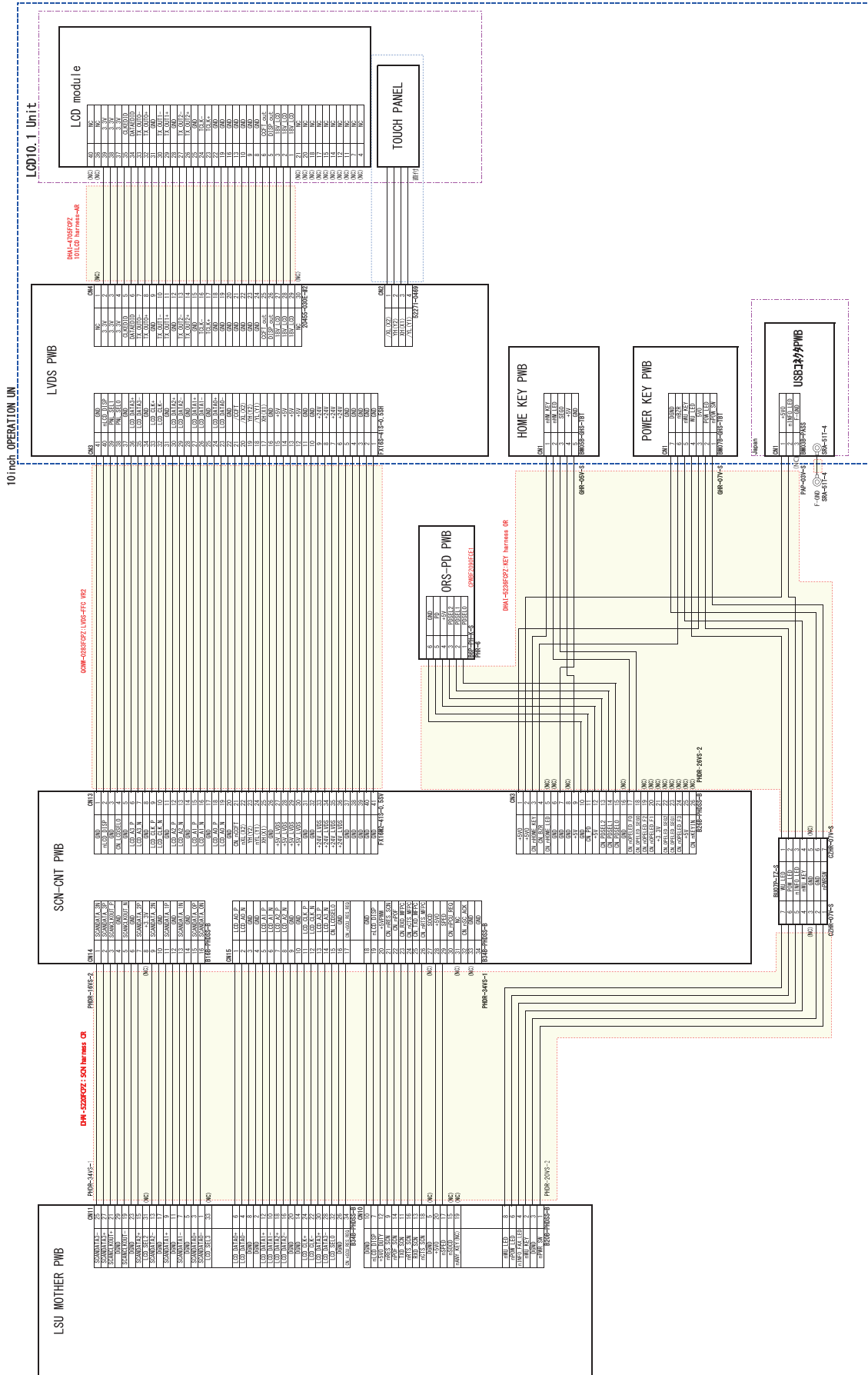
**Q83**

|    |        |
|----|--------|
| 1  | Q83-1  |
| 2  | Q83-2  |
| 3  | Q83-3  |
| 4  | Q83-4  |
| 5  | Q83-5  |
| 6  | Q83-6  |
| 7  | Q83-7  |
| 8  | Q83-8  |
| 9  | Q83-9  |
| 10 | Q83-10 |
| 11 | Q83-11 |
| 12 | Q83-12 |

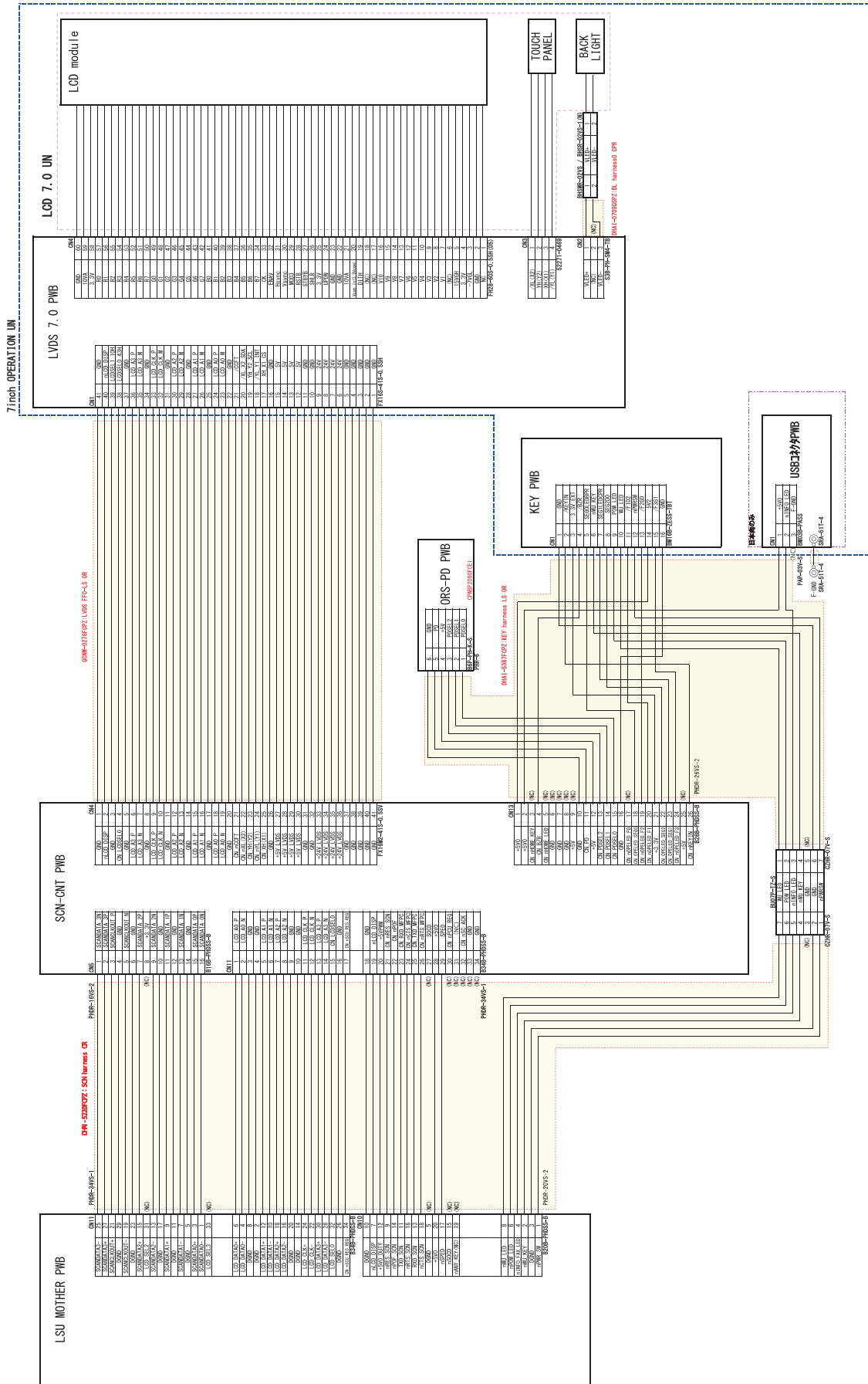
**Q82**

|   |       |
|---|-------|
| 1 | Q82-1 |
| 2 | Q82-2 |
| 3 | Q82-3 |
| 4 | Q82-4 |
| 5 | Q82-5 |
| 6 | Q82-6 |
| 7 |       |

**L. 10.1 inch operation system (P11A)**

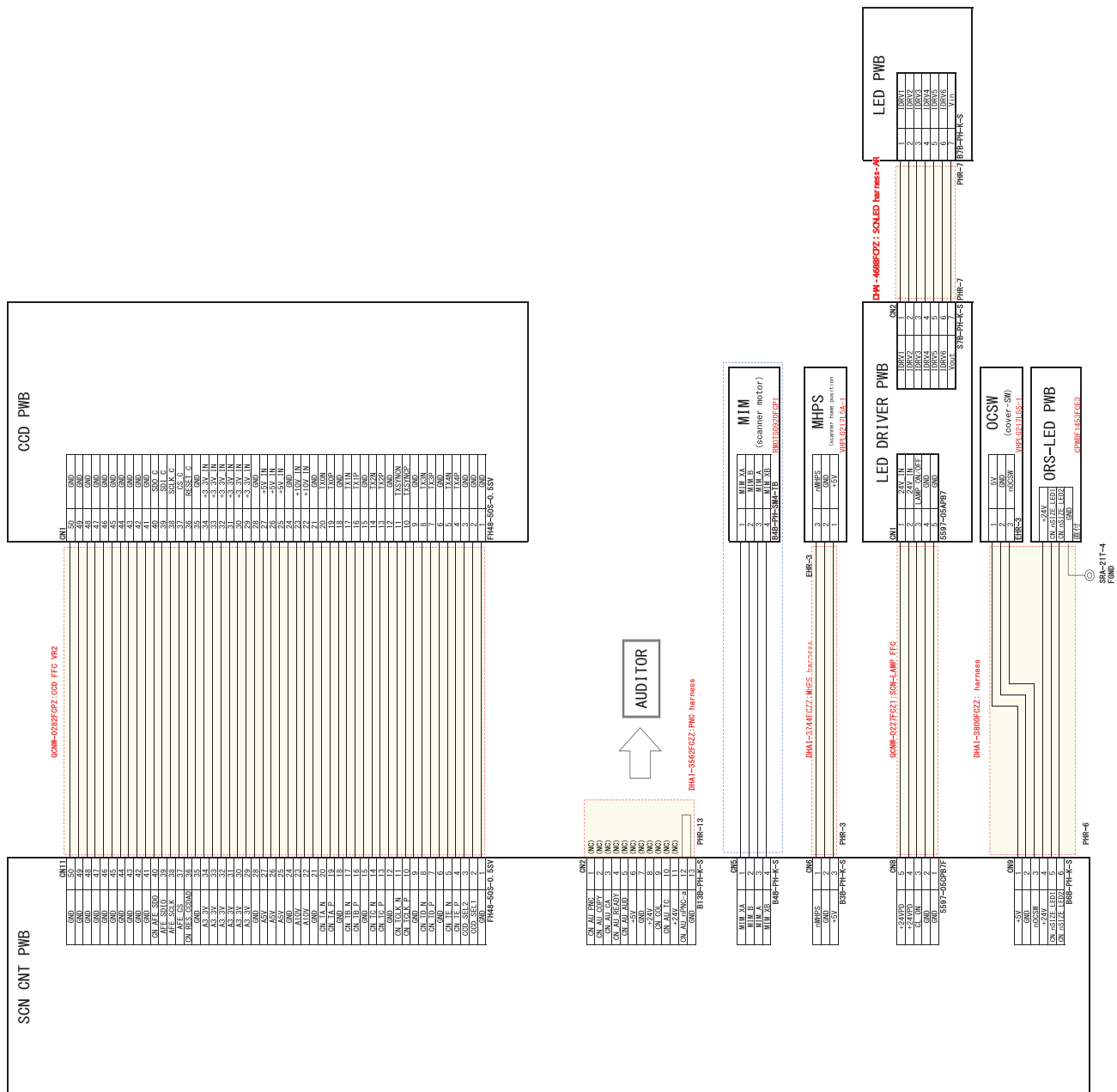


**M. 7.0 inch operation system (P11B)**

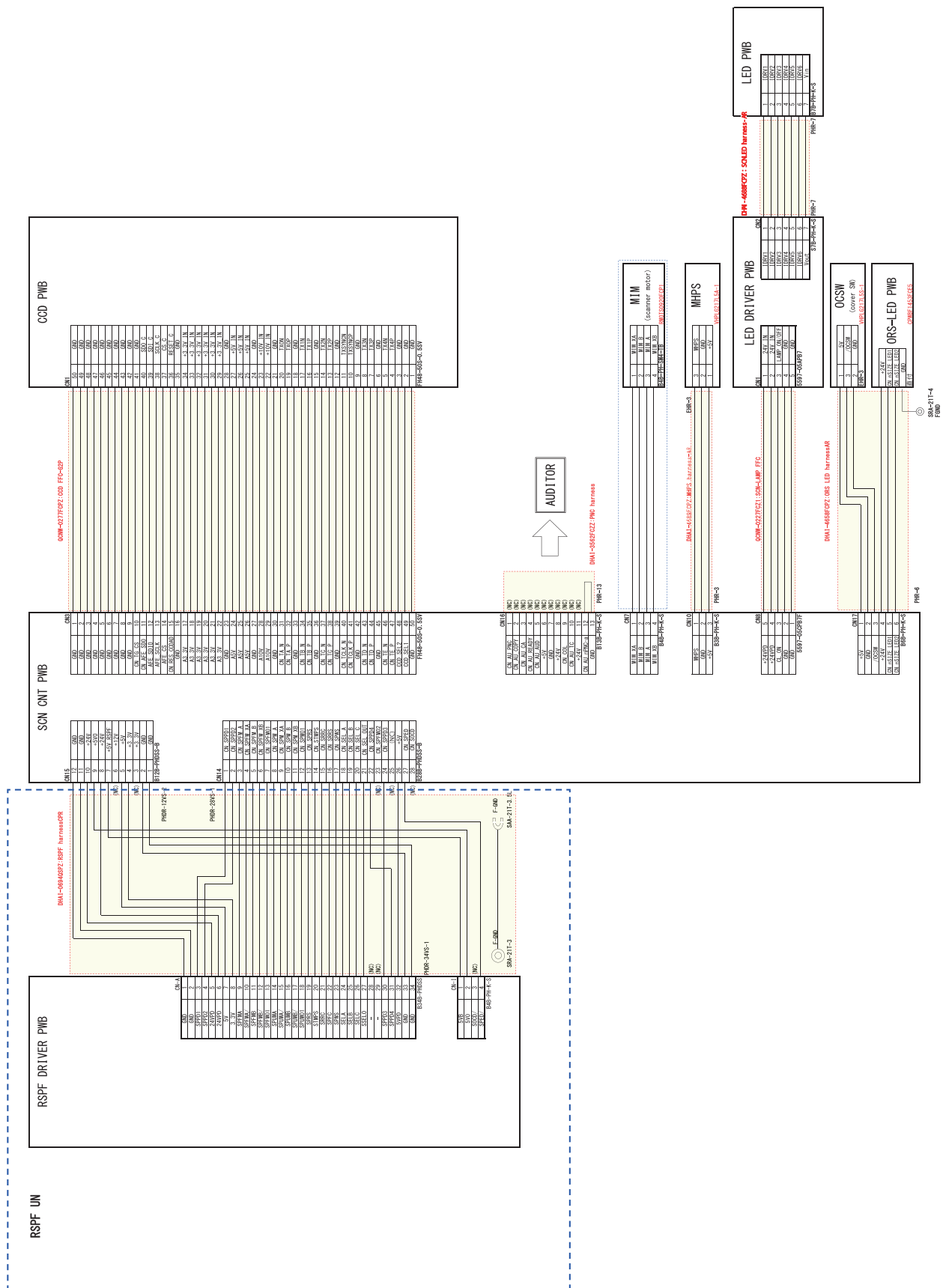




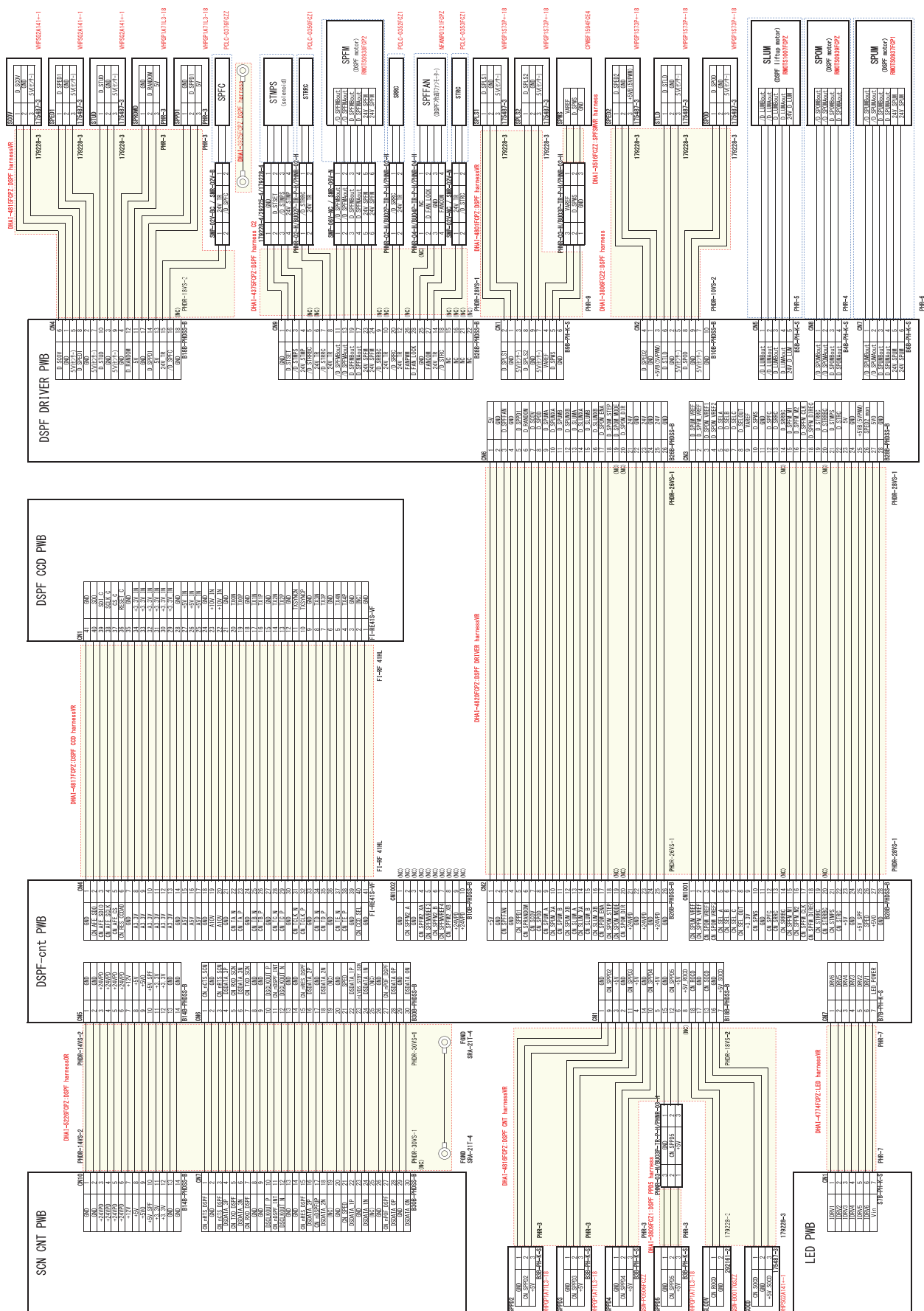
#### N. Scanner unit section (DSPF model) (P12A)



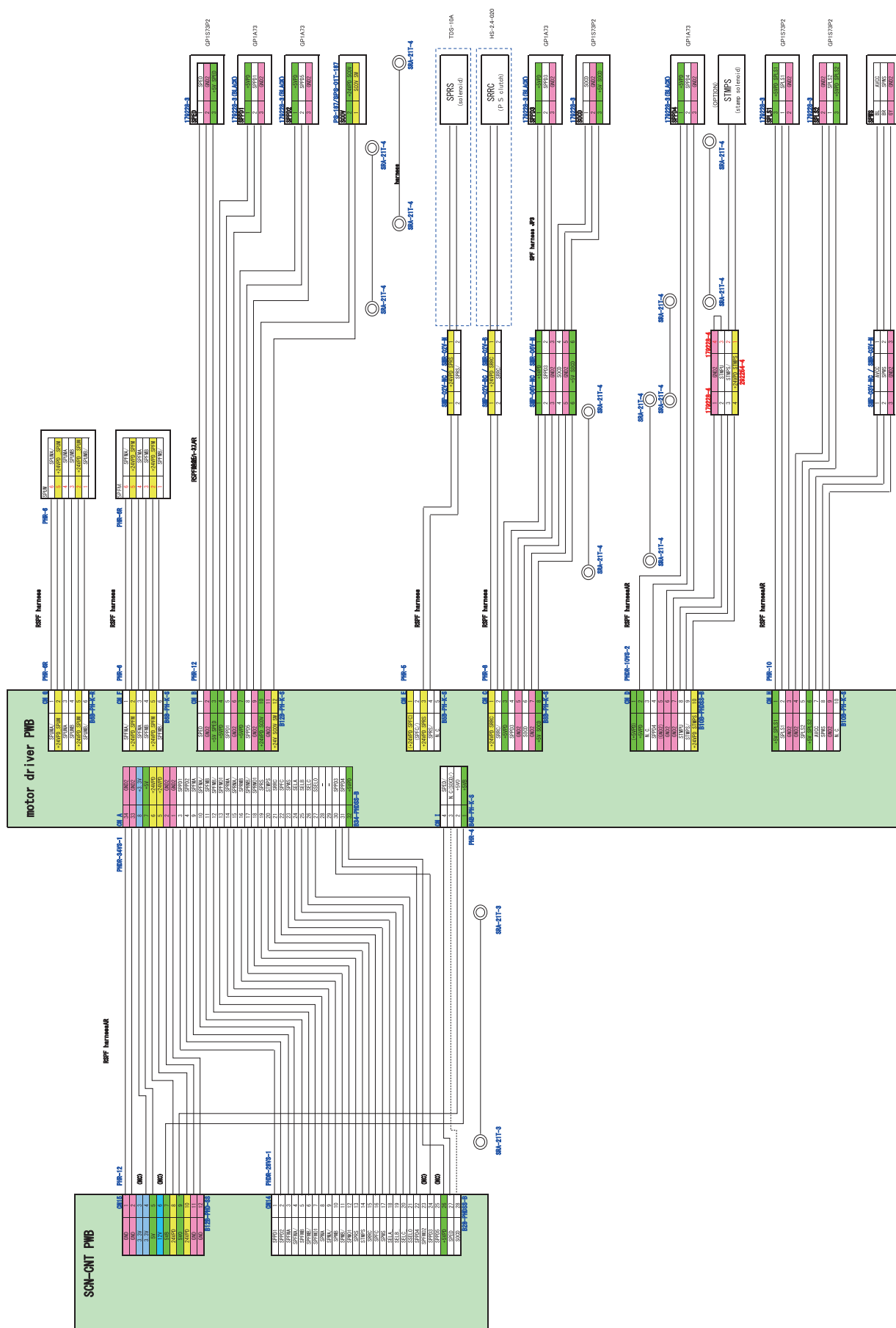
### O. Scanner unit section (RSPF model) (P12B)



### P. DSPF unit section (P13)



### Q. RSPF unit section (P14)



### 3. Signal list

| Signal name | Name [Type]                                                            | Function/Operation                                                              | Connector level    |                | Connector No. | Pin No.       | PWB name | NOTE                            |
|-------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------|----------------|---------------|---------------|----------|---------------------------------|
|             |                                                                        |                                                                                 | "L"                | "H"            |               |               |          |                                 |
| ADUGS       | ADU gate solenoid [Electromagnetic solenoid]                           | Controls the ADU gate.                                                          | ON                 | OFF            | CN6           | 18            | PCU      |                                 |
| ADUM        | ADU motor [Stepping motor]                                             | Drives the ADU section.                                                         | –                  | –              | CN14          | B5,B6 ,B7,B 8 | PCU      | Drives with the 4-phase signal. |
| APPD1       | ADU transport path detection 1 [Transmission type]                     | Detects paper pass in the ADU upper stream section.                             | Pass               | –              | CN6           | 14            | PCU      |                                 |
| APPD2       | ADU transport path detection 2 [Transmission type]                     | Detects paper pass in the ADU medium stream section.                            | Pass               | –              | CN6           | 11            | PCU      |                                 |
| CCFT        | LCD backlight [CCFT cool cathode ray tube]                             | LCD backlight                                                                   | ON                 | OFF            | CN13          | 21            | SCN      |                                 |
| CL_ON       | Scanner lamp                                                           | Radiates lights to the document for the CCD to scan the document images.        | ON                 | OFF            | CN8           | 3             | SCN      |                                 |
| CLUD1       | Tray 1 paper upper limit detection [Transmission type]                 | Detects the tray 1 upper limit.                                                 | Upper limit        | –              | CN9           | A4            | PCU      |                                 |
| CLUD2       | Tray 2 paper upper limit detection [Transmission type]                 | Detects the tray 2 upper limit.                                                 | Upper limit        | –              | CN5           | 11            | PCU      |                                 |
| CLUM1       | Paper tray lift-up motor (Paper feed tray 1) [DC brush motor]          | Drives the paper tray lift plate.                                               | Stop               | Drive          | CN9           | B2            | PCU      |                                 |
| CLUM2       | Paper tray lift-up motor (Paper feed tray 2) [DC brush motor]          | Drives the paper tray lift plate.                                               | Stop               | Drive          | CN5           | 8             | PCU      |                                 |
| CPED1       | Tray 1 paper empty detection [Transmission type]                       | Detects paper empty in the tray 1.                                              | YES                | NO             | CN9           | A7            | PCU      |                                 |
| CPED2       | Tray 2 paper empty detection [Transmission type]                       | Detects paper empty in the tray 2.                                              | YES                | NO             | CN5           | 13            | PCU      |                                 |
| CPFC1       | Tray vertical transport clutch [Electromagnetic clutch]                | Controls ON/OFF of the paper transport roller in the paper feed tray section.   | ON                 | OFF            | CN12          | 4             | PCU      |                                 |
| CPFC2       | Tray vertical transport clutch 2 [Electromagnetic clutch]              | Controls ON/OFF of the paper transport roller 2 in the paper feed tray section. | ON                 | OFF            | CN5           | 2             | PCU      |                                 |
| CPFD1       | Tray 1 transport detection (Paper entry detection) [Transmission type] | Detects paper pass in the tray 1.                                               | Pass               | –              | CN9           | A10           | PCU      |                                 |
| CPFD2       | Tray 2 transport detection (Paper entry detection) [Transmission type] | Detects paper pass in the tray 2.                                               | Pass               | –              | CN5           | 15            | PCU      |                                 |
| CPFM_CK     | Paper feed motor drive frequency [Brush-less motor]                    | Changes the paper feed section speed.                                           | –                  | –              | CN12          | 9             | PCU      | Pulse input                     |
| CPFM_D      | Paper feed motor start/stop [Brush-less motor]                         | Drives the paper feed section.                                                  | Drive              | Stop           | CN12          | 8             | PCU      |                                 |
| CPFM_LD     | Paper feed motor lock detection                                        | Detects the paper feed motor lock.                                              | –                  | Lock detection | CN12          | 7             | PCU      |                                 |
| CPUC1       | Paper feed clutch (Paper feed tray 1) [Electromagnetic clutch]         | Controls ON/OFF of the roller in the paper feed tray section.                   | ON                 | OFF            | CN12          | 2             | PCU      |                                 |
| CPUC2       | Paper feed clutch (Paper feed tray 2) [Electromagnetic clutch]         | Controls ON/OFF of the roller in the paper feed tray section.                   | ON                 | OFF            | CN5           | 1             | PCU      |                                 |
| CSPD1       | Tray 1 remaining paper quantity detection                              | Detects the remaining paper quantity in the tray 1.                             | Remaining quantity | –              | CN7           | 2             | PCU      | Detects during lifting up.      |
| CSPD2       | Tray 2 remaining paper quantity detection                              | Detects the remaining paper quantity in the tray 2.                             | Remaining quantity | –              | CN5           | 20            | PCU      | Detects during lifting up.      |
| CSS11       | Tray 1 paper size detection 1                                          | Tray 1 paper size detection 1                                                   | YES                | NO             | CN9           | B4            | PCU      |                                 |
| CSS12       | Tray 1 paper size detection 2                                          | Tray 1 paper size detection 2                                                   | YES                | NO             | CN9           | B5            | PCU      |                                 |
| CSS13       | Tray 1 paper size detection 3                                          | Tray 1 paper size detection 3                                                   | YES                | NO             | CN9           | B7            | PCU      |                                 |
| CSS14       | Tray 1 paper size detection 4                                          | Tray 1 paper size detection 4                                                   | YES                | NO             | CN9           | B7            | PCU      |                                 |
| CSS21       | Tray 2 paper size detection 1                                          | Tray 2 paper size detection 1                                                   | YES                | NO             | CN5           | 12            | PCU      |                                 |
| CSS22       | Tray 2 paper size detection 2                                          | Tray 2 paper size detection 2                                                   | YES                | NO             | CN5           | 14            | PCU      |                                 |
| CSS23       | Tray 2 paper size detection 3                                          | Tray 2 paper size detection 3                                                   | YES                | NO             | CN5           | 16            | PCU      |                                 |
| CSS24       | Tray 2 paper size detection 4                                          | Tray 2 paper size detection 4                                                   | YES                | NO             | CN5           | 18            | PCU      |                                 |
| DL          | Discharge lamp                                                         | Discharge on the drum surface                                                   | OFF                | ON             | CN11          | B4            | PCU      |                                 |
| DM_CK       | Drum motor drive frequency [Brush-less motor]                          | Changes the drum section speed.                                                 | –                  | –              | CN15          | B10           | PCU      | Pulse input                     |
| DM_D        | Drum motor start/stop [Brush-less motor]                               | Drives the drum section.                                                        | Drive              | Stop           | CN15          | B9            | PCU      |                                 |
| DM_LD       | Drum motor lock detection                                              | Detects the drum motor lock.                                                    | –                  | Lock detection | CN15          | B7            | PCU      |                                 |
| DSW_ADU     | ADU transport open/close detection [Transmission type]                 | Detects open/close of the ADU cover.                                            | Open               | Close          | CN6           | 12            | RD I/F   |                                 |
| DSW_C       | Tray 1 transport cover open/close detection                            | Detects open/close of the tray 1 transport cover.                               | Open               | Close          | CN9           | A13           | PCU      |                                 |

| Signal name | Name [Type]                                                          | Function/Operation                                                                  | Connector level |                   | Connector No. | Pin No.      | PWB name | NOTE                            |
|-------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------|-------------------|---------------|--------------|----------|---------------------------------|
|             |                                                                      |                                                                                     | "L"             | "H"               |               |              |          |                                 |
| DSW_F       | Front door open/close switch [Micro switch]                          | Detects open/close of the front door, and fusing, motor, LSU laser power line.      | Open            | Close             | CN13          | 1            | PCU      |                                 |
| DSW_R       | Right door open/close switch [Micro switch]                          | Detects open/close of the right door unit, and fusing, motor, LSU laser power line. | Open            | Close             | CN13          | 4            | PCU      |                                 |
| DVCH1       | Developing check 1                                                   | Detects the destination of the developing unit 1.                                   | Detection       | –                 | CN15          | A8           | PCU      |                                 |
| DVCH2       | Developing check 2                                                   | Detects the destination of the developing unit 2.                                   | Detection       | –                 | CN15          | A7           | PCU      |                                 |
| DVCH3       | Developing check 3                                                   | Detects the destination of the developing unit 3.                                   | Detection       | –                 | CN15          | A6           | PCU      |                                 |
| FPFD        | Fusing front paper pass detector                                     | Detects paper pass in front of fusing section                                       | Pass            | -                 | CN16          | A5           | PCU      |                                 |
| FRS         | Lower separation pawl solenoid                                       | Controls separation pawl ON/OFF                                                     | ON              | OFF               | CN16          | A10          | PCU      |                                 |
| FUM_CHK     | Fusing motor drive frequency [Brush-less motor]                      | Changes the fusing section speed.                                                   | –               | –                 | CN11          | B10          | PCU      | Pulse input                     |
| FUM_D       | Fusing motor start/stop [Brush-less motor]                           | Drives the fusing section.                                                          | Drive           | Stop              | CN11          | B9           | PCU      |                                 |
| FUM_LD      | Fusing motor lock detection                                          | Detects the fusing motor lock.                                                      | –               | Lock detection    | CN11          | B8           | PCU      |                                 |
| HL_PR       | Heater lamp control relay                                            | Turns ON/OFF the heater lamp control relay.                                         | OFF             | ON                | CN17          | B10          | PCU      |                                 |
| HLout_UM    | Heater lamp main                                                     | Turns ON/OFF the heater lamp main.                                                  | OFF             | ON                | CN17          | B11          | PCU      |                                 |
| HLout_US    | Heater lamp sub                                                      | Turns ON/OFF the heater lamp sub.                                                   | OFF             | ON                | CN17          | B13          | PCU      |                                 |
| HLout_UW    | Heater lamp warm-up                                                  | Turns ON/OFF the warm-up operation of the heater lamp.                              | OFF             | ON                | CN17          | B12          | PCU      |                                 |
| HPOS        | Shifter home position detection                                      | Detects the shifter home position.                                                  | –               | Home position     | CN15          | 5            | PCU      |                                 |
| HUD_DV      | Developing section humidity detection                                | Detects the developing section humidity.                                            | –               | –                 | CN15          | A2           | PCU      | Analog detection                |
| LSUFM_LD    | LSU cooling fan lock detection                                       | Detects cooling fan lock                                                            | –               | Lock detection    | CN17          | A10          | PCU      |                                 |
| LSUCFM_V    | LSU cooling fan motor                                                | Cools the LSU.                                                                      | Stop            | Drive             | CN17          | A8           | PCU      |                                 |
| MHPS        | Scanner home position sensor [Transmission type]                     | Detects the scanner home position.                                                  | –               | Home position     | CN6           | 1            | SCN      |                                 |
| MIM_*       | Scanner motor [Stepping motor]                                       | Scanner (reading) section                                                           | –               | –                 | CN5           | 1,2,3,4      | SCN      |                                 |
| MPED        | Manual feed paper empty detection [Transmission type]                | Detects paper empty in the manual paper feed tray.                                  | YES             | NO                | CN6           | 1            | PCU      |                                 |
| MPFS        | Paper pickup solenoid (Manual paper feed) [Electromagnetic solenoid] | Controls ON/OFF of the paper pickup roller.                                         | Pickup          | –                 | CN6           | 3            | PCU      |                                 |
| MPLD        | Manual feed paper length detector                                    | Detects the paper length in the manual paper feed tray.                             | Detection       | –                 | CN6           | 10           | PCU      |                                 |
| MPWS        | Manual paper feed tray paper width detector [Volume resistance]      | Detects the paper width in the manual paper feed tray.                              | –               | –                 | CN6           | 8            | PCU      | Analog detection                |
| MTOP1       | Manual paper feed tray pull-out position detection 1                 | Detects the pull-out position of the manual paper feed tray. (Retraction position)  | –               | Storing position  | CN3           | 25           | RD I/F   | Manual paper feed unit          |
| MTOP2       | Manual paper feed tray pull-out position detection 2                 | Detects the pull-out position of the manual paper feed tray. (Pull-out position)    | –               | Pull-out position | CN3           | 22           | RD I/F   | Manual paper feed unit          |
| OCSW        | Original cover SW [Transmission type]                                | Detects open/close of the document cover (document size detection trigger).         | Close           | Open              | CN9           | 3            | SCN      |                                 |
| OSM         | Shift motor [Stepping motor]                                         | Offsets the paper.                                                                  | –               | –                 | CN10          | A7,A8,A9,A10 | PCU      | Drives with the 4-phase signal. |
| OZFM_CNT    | Ozone fan motor speed control                                        | Adjusts the rotating speed of the ozone fan motor.                                  | –               | –                 | CN10          | B13          | PCU      | Pulse (Duty) drive              |
| OZFM_LD     | Ozone fan motor lock detection                                       | Detects the ozone fan motor lock.                                                   | –               | Lock detection    | CN10          | B15          | PCU      |                                 |
| OZFM_V      | Ozone fan motor drive                                                | Discharges the ozone.                                                               | Stop            | Drive             | CN10          | B12          | PCU      |                                 |
| PCS         | Process control sensor light reception [Reflection type]             | Detects the toner patch density.                                                    | –               | –                 | CN6           | 7            | PCU      | Analog detection                |
| PCS-LED     | Process control sensor light emitting [Reflection type]              | Adjusts the light emitting amount of the process control sensor.                    | –               | –                 | CN6           | 5            | PCU      | Analog detection                |

| Signal name | Name [Type]                                         | Function/Operation                                                | Connector level |                | Connector No. | Pin No.          | PWB name | NOTE                                     |
|-------------|-----------------------------------------------------|-------------------------------------------------------------------|-----------------|----------------|---------------|------------------|----------|------------------------------------------|
|             |                                                     |                                                                   | "L"             | "H"            |               |                  |          |                                          |
| PFM         | PS front transport motor [Stepping motor]           | Transports and drives the registration front roller drive system. | –               | –              | CN14          | A1,A2 ,A3,A 4    | PCU      | Drives with the 4-phase signal.          |
| POD1        | Fusing rear detection [Transmission type]           | Detects the paper exit from fusing.                               | –               | Pass           | CN11          | A11              | PCU      |                                          |
| POD2        | Paper exit detection [Transmission type]            | Detects the discharged paper.                                     | Pass            | –              | CN11          | A2               | PCU      |                                          |
| POD3        | Right tray paper exit detection                     | Detects paper exit to the right tray.                             | Pass            | –              | CN6           | 16               | PCU      |                                          |
| POFM1_LD    | POFM 1 lock detection                               | Detects the POFM 1 lock.                                          | –               | Lock detection | CN10          | B11              | PCU      |                                          |
| POFM1_V     | Paper exit cooling fan motor 1                      | Cools the fusing unit.                                            | Stop            | Drive          | CN10          | B8               | PCU      |                                          |
| POFM2_LD    | POFM 2 lock detection                               | Detects the POFM 2 lock.                                          | –               | Lock detection | CN10          | B7               | PCU      |                                          |
| POFM2_V     | Paper exit cooling fan motor 2                      | Cools the fusing unit.                                            | Stop            | Drive          | CN10          | B4               | PCU      |                                          |
| POFM3_LD    | POFM 3 lock detection                               | Detects the POFM 3 lock.                                          | –               | Lock detection | CN10          | A15              | PCU      |                                          |
| POFM3_V     | Paper exit cooling fan motor 3                      | Cools the paper exit unit.                                        | Stop            | Drive          | CN10          | A12              | PCU      |                                          |
| POM         | Paper exit drive motor [Stepping motor]             | Drives the paper exit roller.                                     | –               | –              | CN14          | B1,B2 ,B3,B 4    | PCU      | Drives with the 4-phase signal.          |
| PPD1        | Registration front detection [Transmission type]    | Detects paper in front of the registration roller.                | Pass            | –              | CN9           | B9               | PCU      |                                          |
| PPD2        | Registration detection [Reflection type]            | Detects paper at the rear of the registration roller.             | Pass            | –              | CN9           | B12              | PCU      |                                          |
| PROFM1_LD   | Lock detection                                      | Detects the cooling fan lock                                      | -               | Lock detection | CN17          | A12              | PCU      |                                          |
| PROFM1_V    | Fan motor                                           | Cools the process section                                         | Stop            | Drive          | CN17          | A11              | PCU      |                                          |
| PSFM1_LD    | Power cooling fan motor 1 lock detection            | Detects the power cooling fan motor 1 lock.                       | –               | Lock detection | CN18          | 2                | PCU      |                                          |
| PSFM1_V     | Power cooling fan motor 1                           | Cools the power unit.                                             | Stop            | Drive          | CN18          | 1                | PCU      |                                          |
| PSFM2_LD    | Power cooling fan motor 2 lock detection            | Detects the power cooling fan motor 2 lock.                       | –               | Lock detection | CN17          | A7               | PCU      |                                          |
| PSFM2_V     | Power cooling fan motor 2                           | Cools the power unit.                                             | Stop            | Drive          | CN17          | A5               | PCU      |                                          |
| PSPS        | Separation solenoid [Electromagnetic solenoid]      | Controls the separation solenoid.                                 | ON              | OFF            | CN11          | B7               | PCU      |                                          |
| PWM_CPUFAM  | Controller cooling fan PWM control                  | Controller cooling fan.                                           | –               | –              | CN13          | 3                | Mother   | Pulse (Duty) drive<br>* Control is MFPC. |
| RRM         | Registration motor transport motor [Stepping motor] | Transports and drives the registration roller drive system.       | –               | –              | CN14          | A5,A6 ,A7,A 8    | PCU      | Drives with the 4-phase signal.          |
| RRMCNT      | Registration motor current select                   | Selects the registration motor current.                           | Large current   | Small current  | CN17          | 17               | PCU      |                                          |
| SCOV        | Upper cover open/close sensor                       | Detects the upper cover open/close.                               | –               | Open           | CN8           | 20               | DSPFcnt  |                                          |
| SOCD        | Cover open/close sensor                             | Detects the cover open/close.                                     | Close           | –              | CN9           | 10               | DSPFcnt  |                                          |
| SPED        | Document empty sensor                               | Detects the document empty.                                       | Detection       | –              | CN9           | 14               | DSPFcnt  |                                          |
| SPFM*       | Transport motor                                     | Drives the transport motor.                                       | –               | –              | CN8           | 6,7,8, 9,10, 11  | DSPFcnt  |                                          |
| SPLS1       | Document size sensor 1                              | Detects the document size.                                        | Detection       | –              | CN7           | 2                | DSPFcnt  |                                          |
| SPLS2       | Document size sensor 2                              | Detects the document size.                                        | Detection       | –              | CN7           | 5                | DSPFcnt  |                                          |
| SPM*        | Paper feed motor                                    | Drives the paper feed motor.                                      | –               | –              | CN8           | 12,13, 14,15, 16 | DSPFcnt  |                                          |
| SPOD        | Paper exit sensor                                   | Detects paper pass.                                               | Detection       | –              | CN2           | 8                | DSPFcnt  |                                          |
| SPPD1       | No. 1 paper feed sensor                             | Detects paper pass.                                               | Detection       | –              | CN9           | 3                | DSPFcnt  |                                          |
| SPPD2       | No. 2 paper feed (PS front) sensor                  | Detects paper pass.                                               | Detection       | –              | CN9           | 4                | DSPFcnt  |                                          |
| SPPD3       | No. 1 (front surface) scanning front sensor         | Detects paper pass.                                               | Detection       | –              | CN9           | 9                | DSPFcnt  |                                          |
| SPPD5       | No. 2 (back surface) scanning front sensor          | Detects paper pass.                                               | Detection       | –              | CN2           | 4                | DSPFcnt  |                                          |
| SPWS        | Document width sensor                               | Detects the document width.                                       | –               | –              | CN7           | 8                | DSPFcnt  | Analog detection                         |
| SRRC        | PS clutch                                           | Controls the PS clutch.                                           | OFF             | ON             | CN8           | 18               | DSPFcnt  |                                          |
| STMPS       | Stamp solenoid                                      | Controls the finish stamp.                                        | –               | Stamping       | CN8           | 17               | DSPFcnt  |                                          |
| TCS         | Toner density sensor [Magnetic sensor]              | Detects the toner density.                                        | –               | –              | CN15          | A10              | PCU      | Analog detection                         |
| TDSC        | Toner supply clutch [Electromagnetic clutch]        | Controls toner supply.                                            | ON              | OFF            | CN15          | B6               | PCU      |                                          |



| Signal name | Name [Type]                                            | Function/Operation                                     | Connector level |     | Connector No. | Pin No.       | PWB name | NOTE                            |
|-------------|--------------------------------------------------------|--------------------------------------------------------|-----------------|-----|---------------|---------------|----------|---------------------------------|
|             |                                                        |                                                        | "L"             | "H" |               |               |          |                                 |
| TFD2        | Paper exit full detection [Transmission type]          | Detects the face-down paper exit tray full.            | Full            | –   | CN11          | A5            | PCU      |                                 |
| TFD3        | Right tray paper exit full detection                   | Detects the paper exit full in the right tray.         | Full            | –   | CN6           | 3             | PCU      |                                 |
| TH_DV       | Developing section temperature detection               | Detects the temperature in the developing section.     | –               | –   | CN15          | A4            | PCU      | Analog detection                |
| TH_LM       | Low thermistor                                         | Detects the temperature                                | -               | -   | CN16          | A7            | PCU      | Analog detection                |
| TH_MY       | Main thermistor                                        | Detects the temperature.                               | –               | –   | CN16          | B6            | PCU      | Analog detection                |
| TH_US       | Sub thermistor                                         | Detects the temperature.                               | –               | –   | CN16          | B4            | PCU      | Analog detection                |
| TNBOX       | Waste toner box remaining quantity detection           | Detects the remaining quantity in the waste toner box. | –               | –   | CN7           | 6             | PCU      |                                 |
| TNFD        | Waste toner box remaining quantity detection           | Detects the remaining quantity in the waste toner box. | –               | –   | CN7           | 9             | PCU      |                                 |
| TSGOUT      | Toner density sensor control voltage [Magnetic sensor] | Controls the toner density.                            | –               | –   | CN15          | A12           | PCU      | Analog detection                |
| WEB-END     | Web end detection                                      | Detects the web end.                                   | End             | –   | CN16          | A2            | PCU      |                                 |
| WEBM        | Web motor (Synchronous motor)                          | Drives the fusing web cleaning paper.                  | –               | –   | CN10          | A1,A2 ,A5,A 6 | PCU      | Drives with the 4-phase signal. |
| WH_CNT      | Dehumidifying heater control                           | Turns ON/OFF the dehumidifying heater.                 | ON              | OFF | CN21          | 3             | PCU      |                                 |

## [13] TOOL LIST

### 1. Exclusive-use tools list

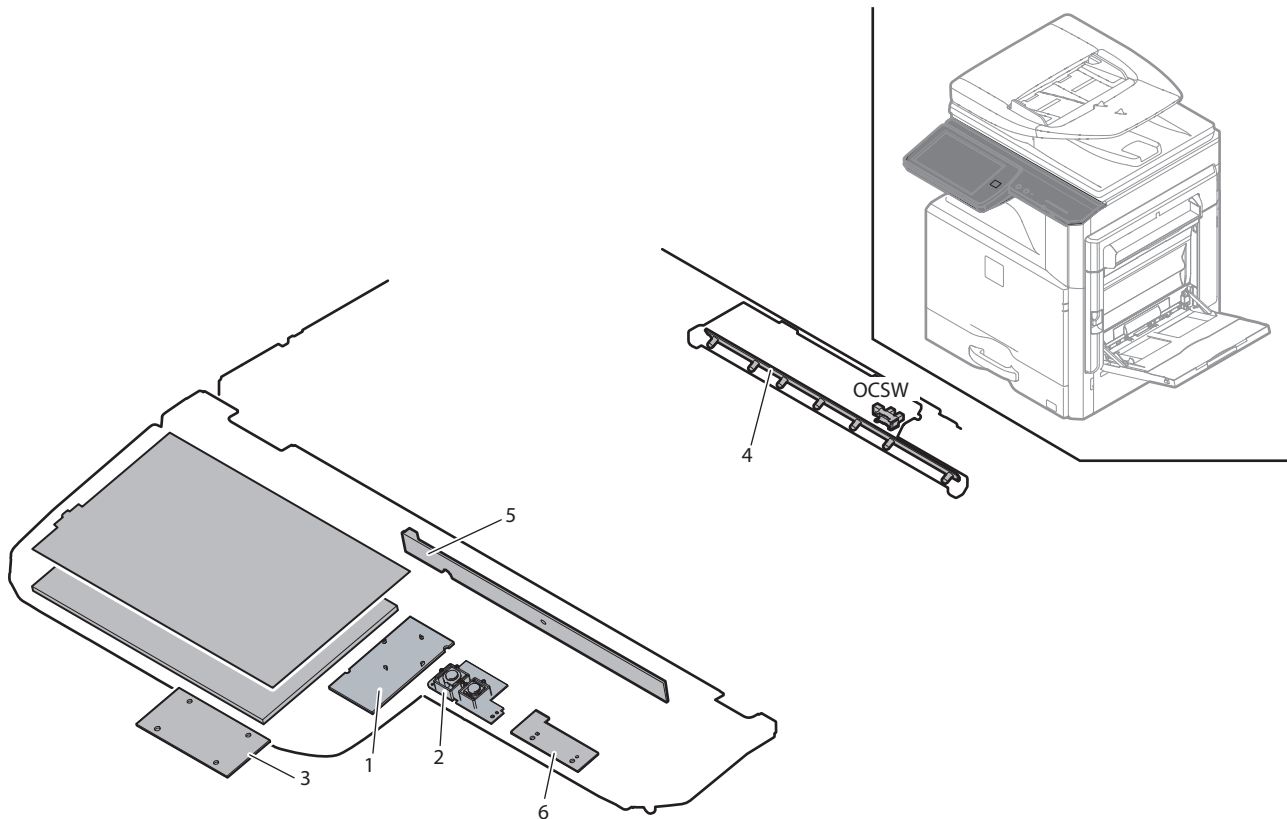
For repair or adjustments of this machine, the following tools are required.

| Name                           | Parts code                     | Purpose                                                                              |
|--------------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| DSPF shading adjustment sheet  | UKOG-0330FCZZ                  | DSPF CIS unit shading adjustment                                                     |
| Gray scale chart               | UKOG-0162FCZZ                  | Copy density and gradation check                                                     |
| Color test chart (AB series)   | UKOG-0326FCZZ                  | Copy density and gradation check / Void area and image loss check / Resolution check |
| Color test chart (Inch series) | UKOG-0326FC11                  |                                                                                      |
| SIT chart                      | UKOG-0280FCZZ or UKOG-0280FCZ1 | CCD, DSPF CCD color balance and gamma adjustment                                     |
| Stearic acid                   | UKOG-0309FCZZ                  | Apply to the side seal on the OPC drum cleaner section.                              |

## [B] OPERATION PANEL

### 1. Electrical and mechanical relation diagram

#### A. 10.1 inch operation panel



| Signal | Name              | Function/Operation                    |
|--------|-------------------|---------------------------------------|
| OCSW   | Original cover SW | Document size detection timing switch |

| No. | Name                                        | Function/Operation                                                                     |
|-----|---------------------------------------------|----------------------------------------------------------------------------------------|
| 1   | HW-KEY PWB                                  | Outputs the key operation signal.                                                      |
| 2   | PW-KEY PWB                                  | Turns ON/OFF the power on the secondary side.                                          |
| 3   | LVDS PWB                                    | Converts the display data signal to the LCD display signal / Controls the touch panel. |
| 4   | Document size detection light emitting PWB  | Drives the LED for the document size detection.                                        |
| 5   | Document size detection light receiving PWB | Outputs the document size detection signal.                                            |
| 6   | USB I/F PWB                                 | USB interface.                                                                         |

### 2. Operational descriptions

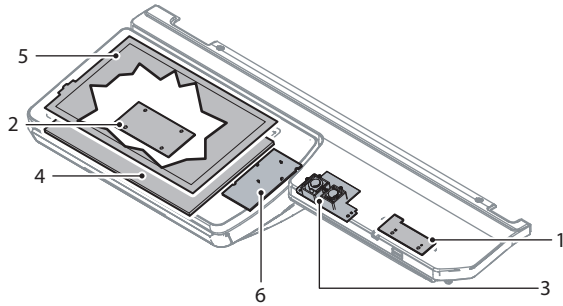
#### A. Outline

##### (1) General

The operation panel unit is composed of the LCD unit, the LVDS PWB, the USB I/F PWB, and the KEY PWB. It displays the machine operation. It is provided with the USB I/F which is used for the firmware update, USB print, and scan to USB. In addition, the USB I/F line is provided inside the operation panel to connect with the keyboard and the IC card reader. A document size is detected by the document size detection PWB (light emitting) and the document size detection PWB (light receiving). The detection timing of document size is determined according to the document size detection trigger sensor signal.

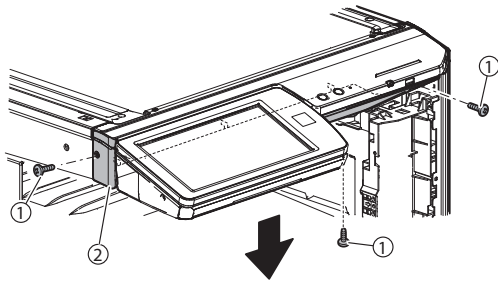
### 3. Disassembly and assembly

#### A. 10.1 inch operation panel unit

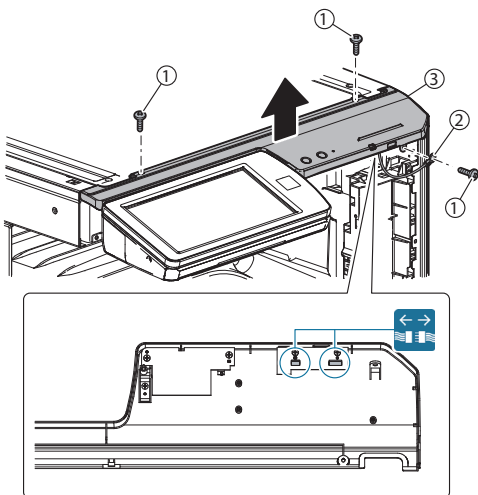


| Parts |              |
|-------|--------------|
| 1     | USB I/F PWB  |
| 2     | LVDS PWB     |
| 3     | KEY PWB      |
| 4     | LCD PWB      |
| 5     | TOUCH PANEL  |
| 6     | HOME KEY PWB |

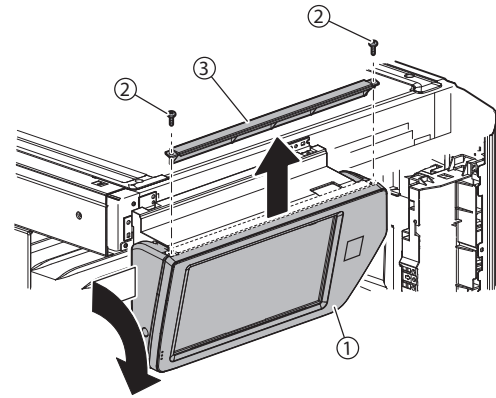
- 1) Remove the operation panel cover.



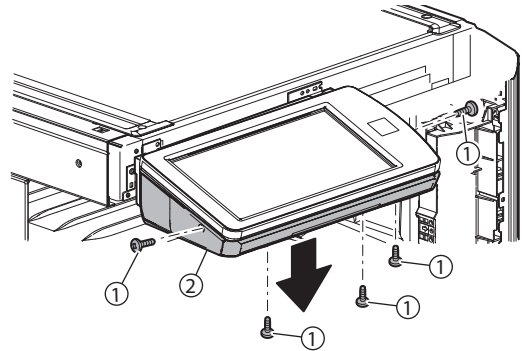
- 2) Remove the operation panel upper cover.



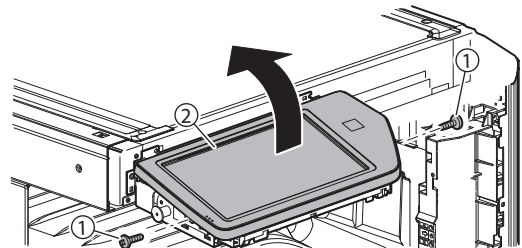
- 3) Slide the operation panel unit to the left and put it down. Remove the operation panel cover.



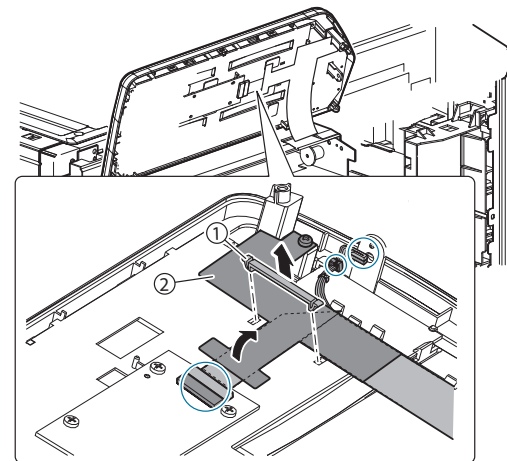
- 4) Remove the operation panel lower cover.



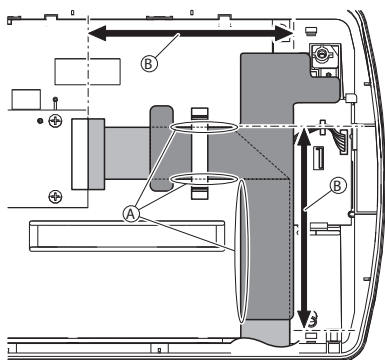
- 5) Turn over the operation panel unit.



- 6) Remove the clamp. Peel off the mylar and disconnect the connector.

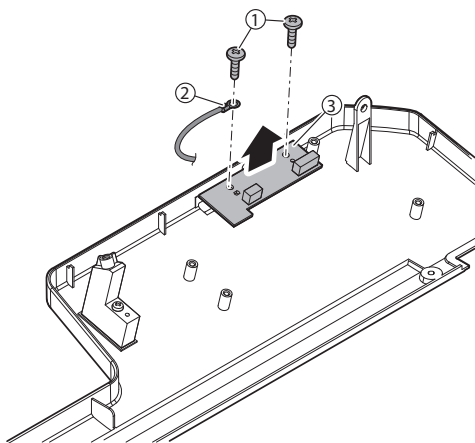


Fit the flat cable edges with sections A of the Mylar, and remove slack in sections B of the flat cables.



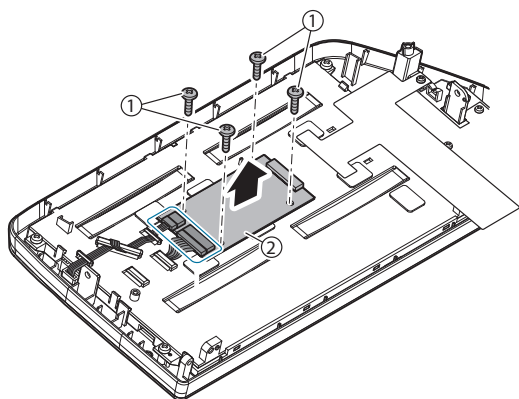
### (1) USB I/F PWB

1) Remove the USB I/F PWB.



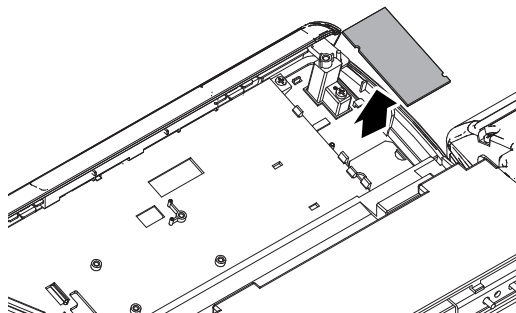
### (2) LVDS PWB

1) Disconnect the connector, and remove the LVDS PWB.

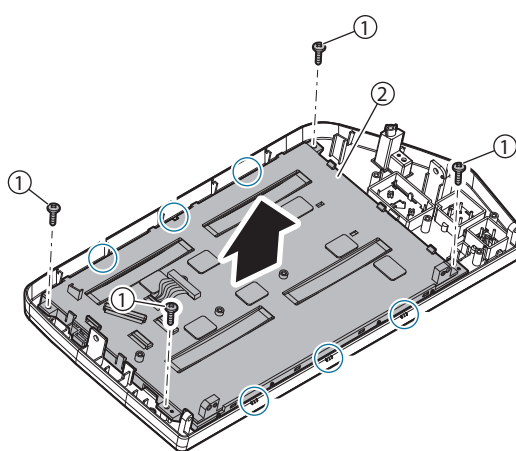


### (3) HOME KEY PWB, LCD, Touch panel

1) Disconnect the connector and remove the HOME KEY PWB.

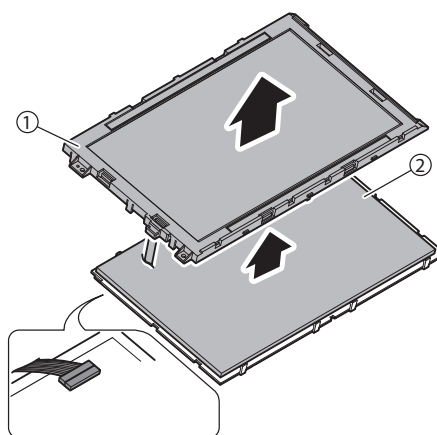


2) Remove the LCD holder.



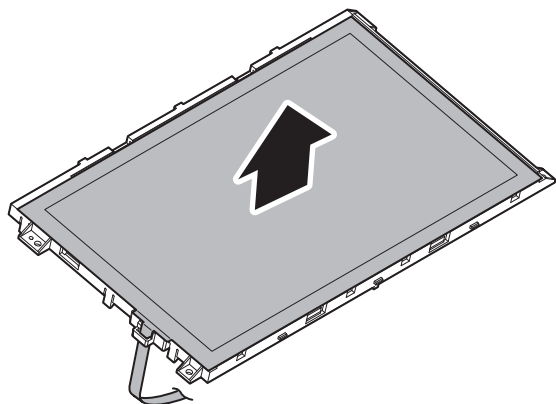
3) Remove the holder, and remove the LCD.

NOTE: Use enough care not to put finger prints on the LCD surface.



4) Remove the touch panel.

**NOTE:** Use enough care not to put finger prints on the touch panel surface.

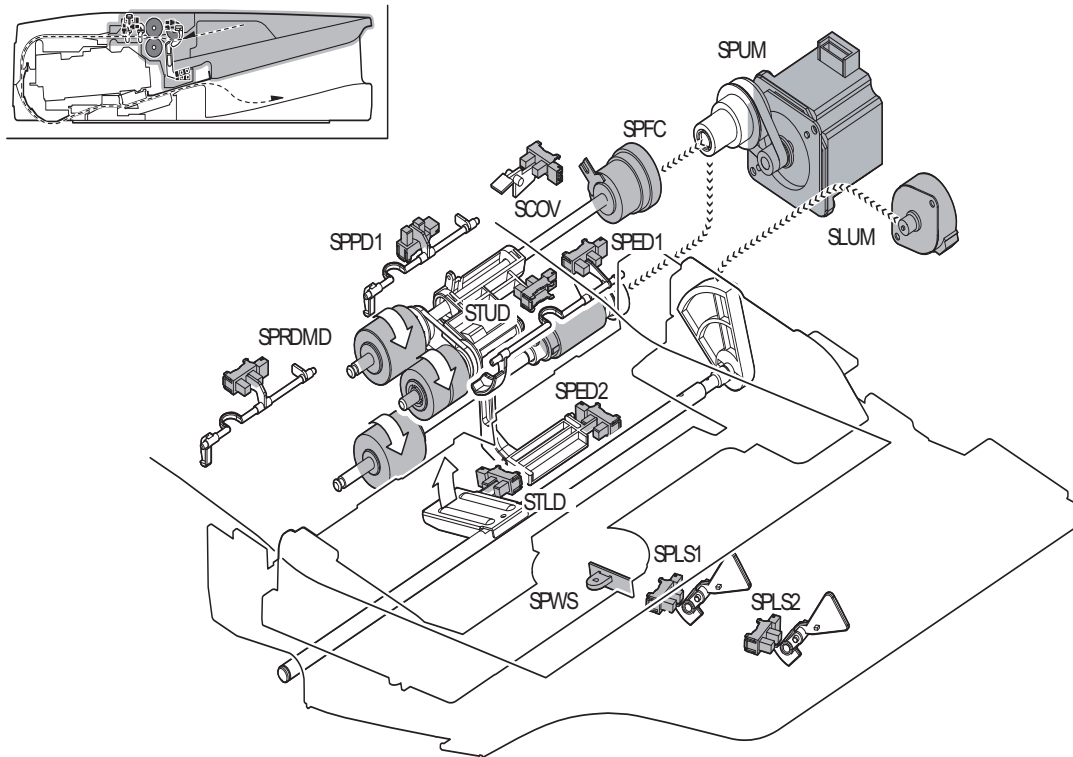


## [C] DSPF/RSPF SECTION

### 1. Electrical and mechanical relation diagram

#### A. DSPF

##### (1) Paper feed section

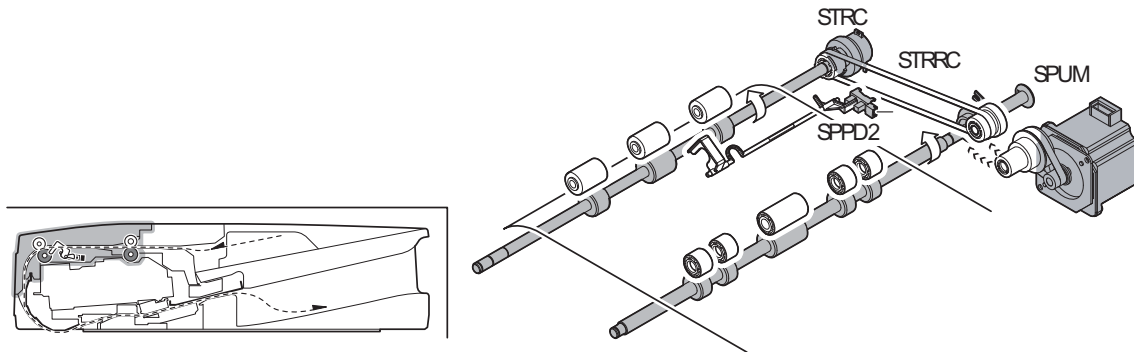


| No. | Name              | Function/Operation                                         |
|-----|-------------------|------------------------------------------------------------|
| 1   | Pick-up roller    | Picks up a document and feeds it to the paper feed roller. |
| 2   | Paper feed roller | Performs the paper feed operation of documents.            |
| 3   | Separation roller | Separate a document to prevent against double-feed.        |

| Signal name | Name                                        | Function/Operation                                                    |
|-------------|---------------------------------------------|-----------------------------------------------------------------------|
| SCOV        | DSPF upper door open/close sensor           | Detects open/close of the upper door.                                 |
| SLUM        | DSPF lift up motor                          | Lifts up or moves down the document feed tray                         |
| SPED1       | DSPF document upper limit sensor            | Detects the upper limit of the DSPF document.                         |
| SPED2       | DSPF document empty sensor                  | Detects document empty in the document feed tray                      |
| SPFC        | DSPF document feed clutch                   | Controls ON/OFF of the rollers in the document feed section           |
| SPLS1       | DSPF document length detection short sensor | Detects the document length of the document feed tray upper           |
| SPLS2       | DSPF document length detection long sensor  | Detects the document length of the document feed tray upper           |
| SPPD1       | DSPF document pass sensor 1                 | Detects pass of the document                                          |
| SPRDMD      | DSPF document random sensor                 | Detects the document size in random document feed                     |
| SPUM        | DSPF document feed motor                    | Drives the rollers and transport rollers in the document feed section |
| SPWS        | DSPF document width sensor                  | Detects the document width of the document feed tray upper            |
| STLD        | DSPF document feed tray lower limit sensor  | Detects the lower limit of the document feed tray                     |
| STUD        | DSPF document feed tray upper limit sensor  | Detects the upper limit of the document feed tray                     |



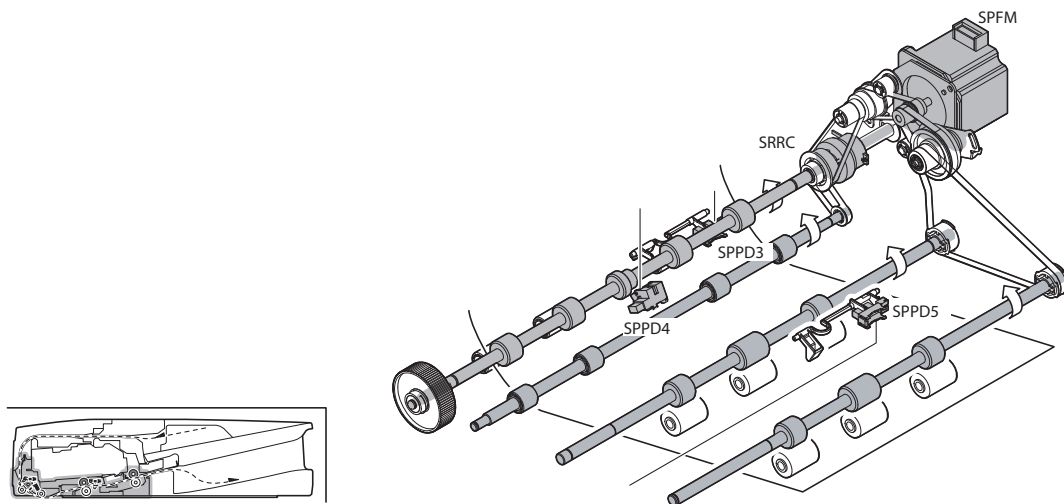
## (2) Upper transport section



| No. | Name                             | Function/Operation                                          |
|-----|----------------------------------|-------------------------------------------------------------|
| 1   | No.1 registration roller (Drive) | Performs resist of document transport.                      |
| 2   | Transport roller 1 (Drive)       | Transports paper from resist roller to No. 2 resist roller. |

| Signal name | Name                                 | Function/Operation                                                                       |
|-------------|--------------------------------------|------------------------------------------------------------------------------------------|
| SPPD2       | DFPS document pass sensor 2          | Detects pass of the document                                                             |
| SPUM        | DSPF document feed motor             | Drives the rollers, transport rollers and transport rollers in the document feed section |
| STRC        | DSPF transport roller clutch         | Controls ON/OFF of the transport roller 1                                                |
| STRRC       | DSPF No.1 registration roller clutch | Controls ON/OFF of No. 1 registration roller                                             |

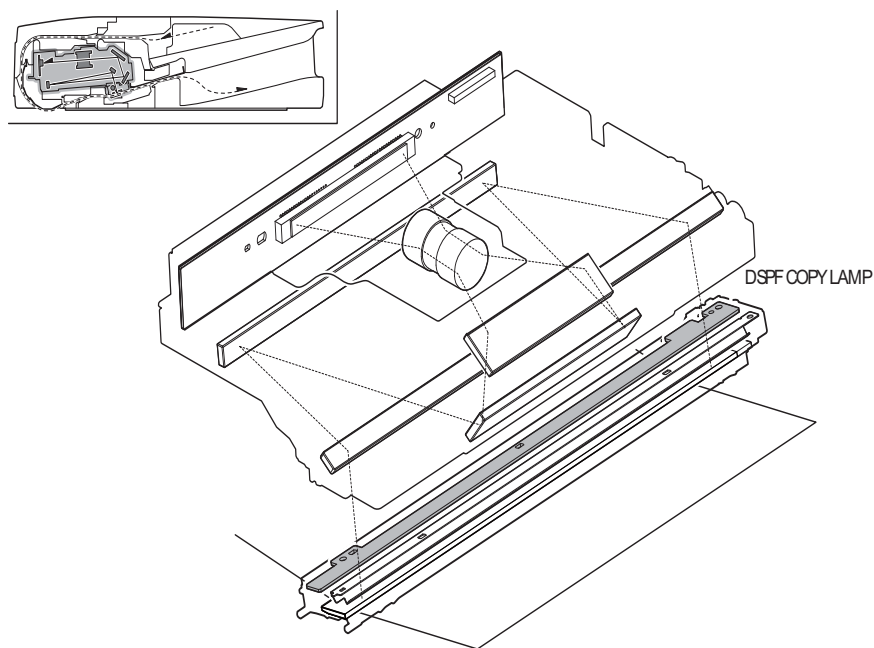
## (3) Lower transport section



| No. | Name                              | Function/Operation                                                                   |
|-----|-----------------------------------|--------------------------------------------------------------------------------------|
| 1   | No. 2 registration roller (Drive) | Make synchronization between the lead edge of a document and the scan start position |
| 2   | Platen roller                     | A pressure is applied to document to prevent fluctuations of document                |
| 3   | Transport roller 2 (Drive)        | Transports document from the platen roller to the transport roller 3                 |
| 4   | Transport roller 3 (Drive)        | Transports document from the transport roller 2 to the document exit roller          |

| Signal name | Name                                  | Function/Operation                            |
|-------------|---------------------------------------|-----------------------------------------------|
| SPFM        | DSPF transport motor                  | Drives the transport roller.                  |
| SPPD3       | DSPF document pass sensor 3           | Detects pass of the paper.                    |
| SPPD4       | DSPF document pass sensor 4           | Detects pass of the paper.                    |
| SPPD5       | DSPF document pass sensor 5           | Detects pass of the paper.                    |
| SRRRC       | DSPF No. 2 registration roller clutch | Controls ON/OFF of No. 2 registration roller. |

(4) Optical section

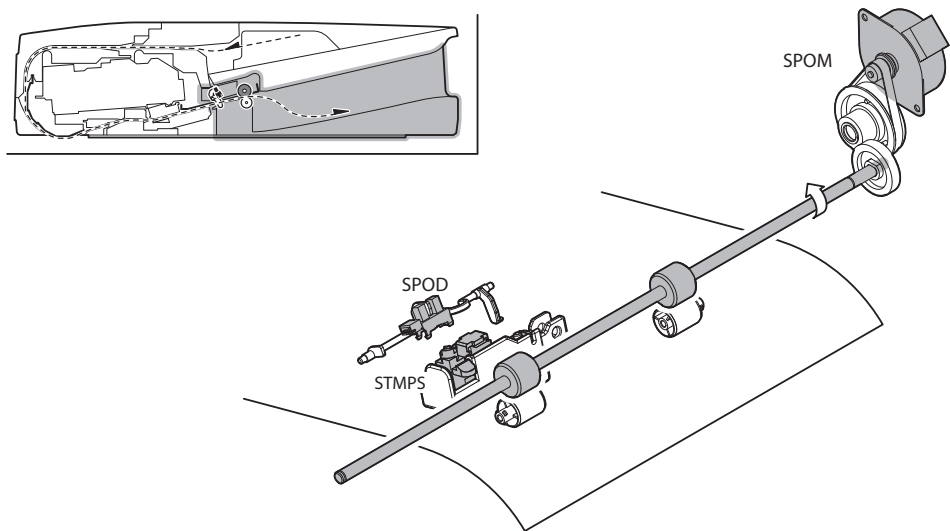


| Signal name    | Name           | Function/Operation                                                       |
|----------------|----------------|--------------------------------------------------------------------------|
| DSPF COPY LAMP | DSPF copy lamp | Radiates light onto a document to allow the CCD to scan document images. |

| No. | Name         | Function/Operation                                                                  |
|-----|--------------|-------------------------------------------------------------------------------------|
| 1   | Reflector    | Converges lights from the copy lamp.                                                |
| 2   | Mirror       | Sends the document image to the lens.                                               |
| 3   | Lens         | Reduces the document image (light) and reflects it onto the CCD.                    |
| 4   | DSPF CCD PWB | Scans the document image (optical signals) and converts it into electrical signals. |

(5) Paper exit section



| Signal name | Name                      | Function/Operation                     |
|-------------|---------------------------|----------------------------------------|
| SPOD        | DSPF document exit sensor | Detects document exit of the document. |
| SPOM        | DSPF document exit motor  | Drives the document exit roller.       |
| STMPs       | Stamp solenoid            | Drives the stamp solenoid.             |

| No. | Name                         | Function/ Operation  |
|-----|------------------------------|----------------------|
| 1   | Document exit roller (Drive) | Discharges document. |

## 2. Operational descriptions

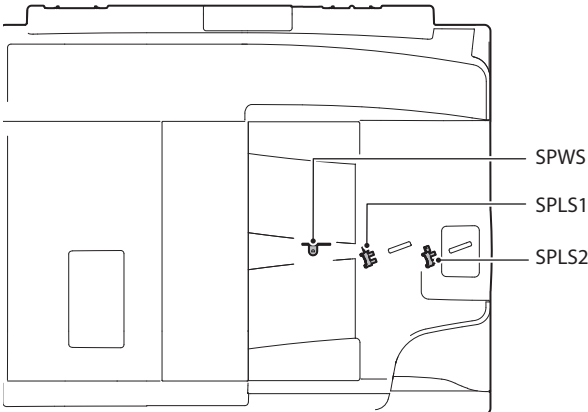
### A. Document size detection

Size detection on the document tray

The document width is detected by the document width sensor (SPWS), and the document length is detected by the document length sensors (SPLS1, SPLS2). The document size is judged from the document width and the document length as shown in the table below.

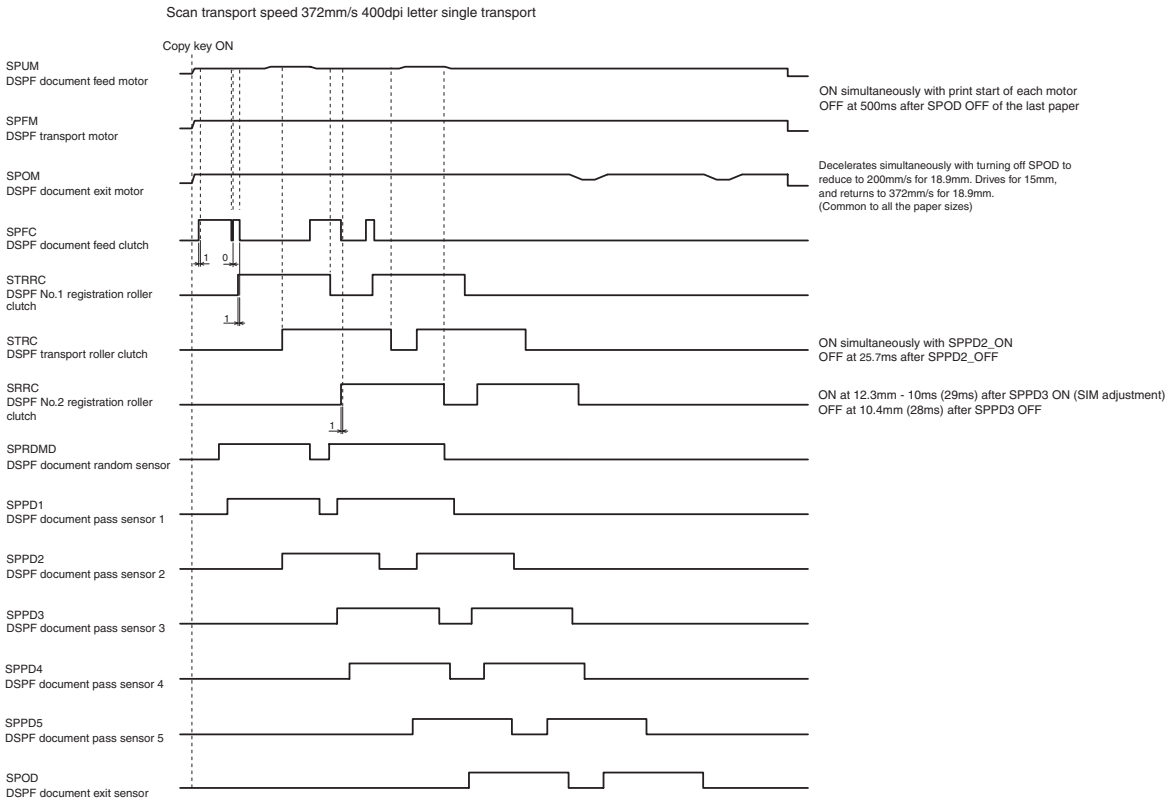
When, however, mixed sizes of documents are loaded on the tray, the maximum size is detected.

|             | Document size | Document length sensor |       |
|-------------|---------------|------------------------|-------|
|             |               | SPLS1                  | SPLS2 |
| AB series   | A5            | OFF                    | OFF   |
|             | B5            | OFF                    | OFF   |
|             | 11" x 8.5"    | OFF                    | OFF   |
|             | A4            | OFF                    | OFF   |
|             | B5R           | ON                     | OFF   |
|             | A4R           | ON                     | OFF   |
|             | 8.5" x 13"    | ON                     | ON    |
|             | B4            | ON                     | ON    |
|             | A3            | ON                     | ON    |
|             | 11" x 17"     | ON                     | ON    |
| Inch series | 8.5" x 5.5"   | OFF                    | OFF   |
|             | 11" x 8.5"    | OFF                    | OFF   |
|             | A4            | OFF                    | OFF   |
|             | 11" x 8.5"R   | ON                     | OFF   |
|             | 8.5" x 13"    | ON                     | ON    |
|             | 8.5" x 14"    | ON                     | ON    |
|             | A3            | ON                     | ON    |
|             | 11" x 17"     | ON                     | ON    |



B. Timing chart

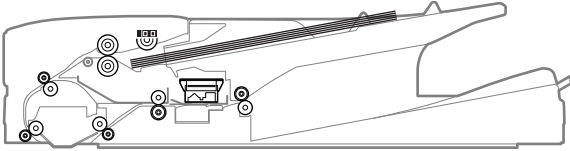
To increase the document replacement speed, pre-feed of the second and the later documents is performed for documents of A4/Letter or smaller sizes. Therefore, a clutch is provided for each transport roller to perform individual control.



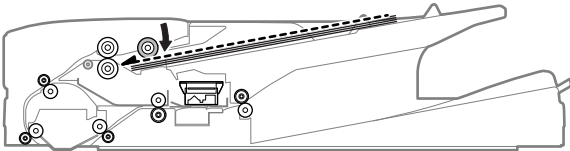
## C. Paper feed and transport operations (DSPF)

### (1) Single face scanning

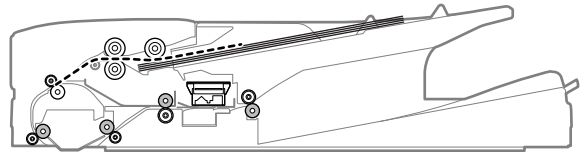
- 1) Document set (Document empty sensor ON)



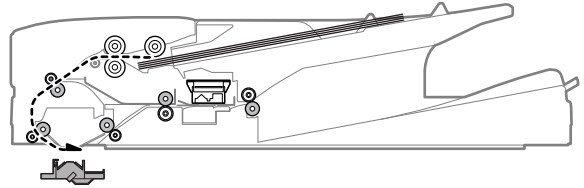
- 2) Paper feed start (1st sheet)  
The pick-up roller descends. (The paper feed motor is booted.)  
(The transport motor is booted simultaneously.)



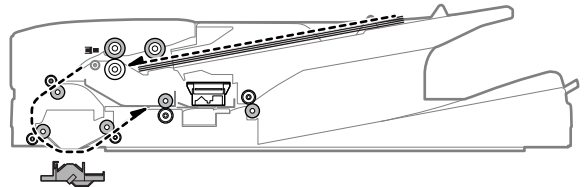
- 3) Resist operation (1st sheet)  
(Resist clutch ON)  
(When a certain time passes after turning ON the resist clutch, the paper feed motor is turned OFF.)



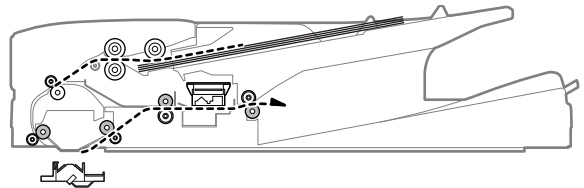
- 4) Scanning start (1st sheet)



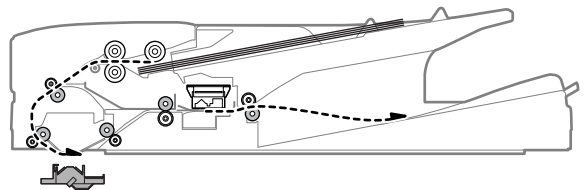
- 5) Paper feed start (2nd sheet)  
(When the SPPD1 detects the rear edge of the previous document, the paper feed motor is booted.)



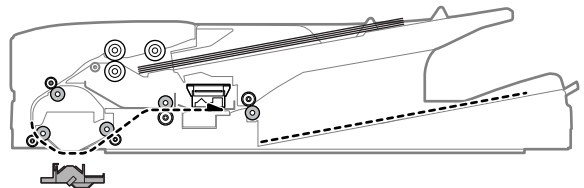
- 6) Scanning complete (1st sheet)/Resist operation (2nd sheet)  
(When a certain time passes after turning ON the resist clutch, the paper feed motor is turned OFF.)



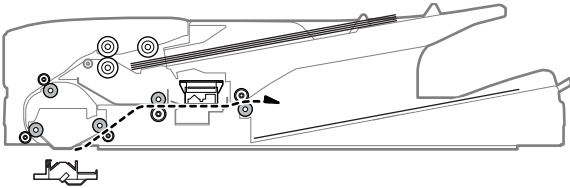
- 7) Scanning start (2nd sheet)



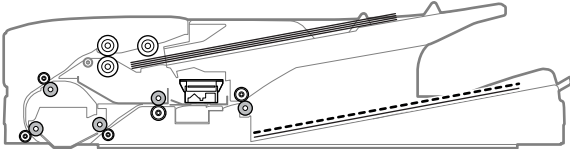
- 8) Paper exit complete (1st sheet)



9) Scanning complete (2nd sheet)

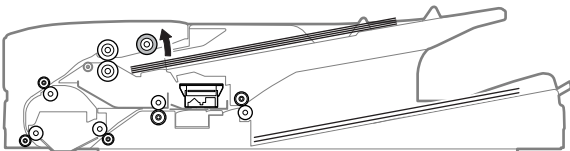


10) Paper exit complete (2nd sheet)



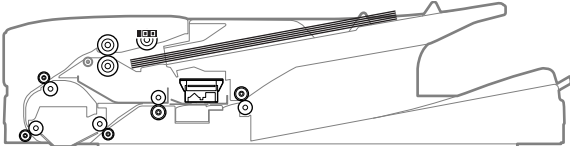
11) Pick-up roller lifting up

(After completion of a job, the paper feed motor is rotated reversely at a low speed for a certain time to lift the pickup roller.)

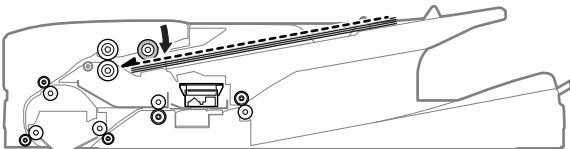


## (2) Duplex scanning

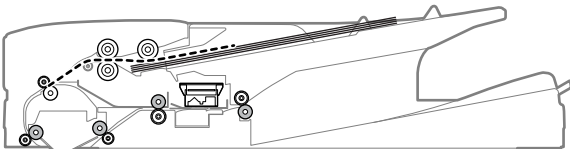
1) Document set (Document empty sensor ON)



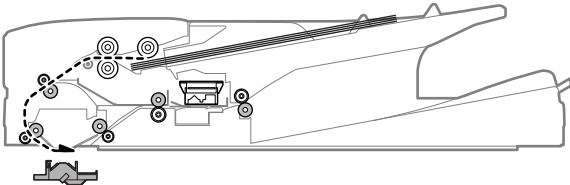
2) Paper feed start (1st sheet)  
Pick-up roller descending



3) Resist operation (1st sheet, front surface)

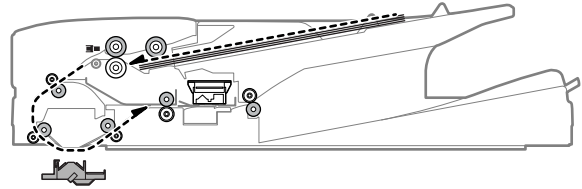


4) Scanning start (1st sheet, front surface)

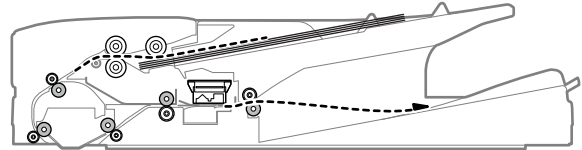


5) Preliminary paper feed start (2nd sheet)

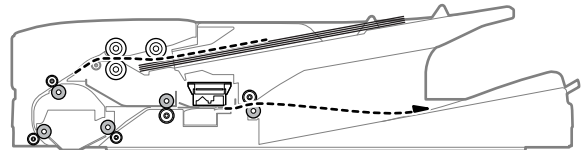
(When the SPPD1 detects the rear edge of the previous document, the paper feed motor is booted.)



6) Scanning start (1st sheet, back surface)/Preliminary paper feed complete (2nd sheet)



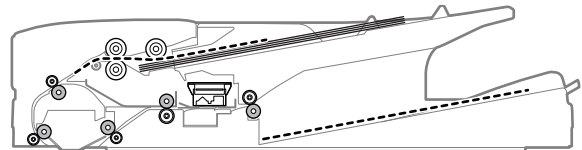
7) Scanning complete (1st sheet, back surface)



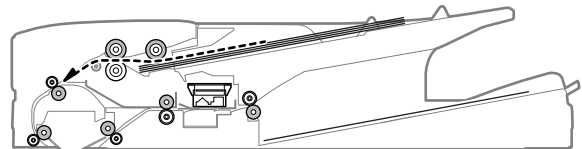
The paper feed transport operation is the same as single-surface scanning. Since, however, the next page surface must be scanned after scanning the back surface with the CIS, the next page is stopped temporarily at the resist roller section until scanning of the back surface and the process on the MFP side are completed.

Therefore, the paper interval becomes longer in duplex scanning.

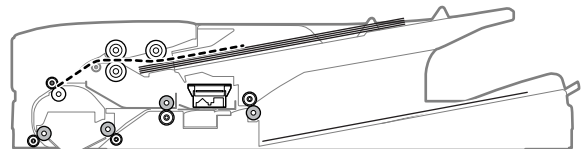
8) Paper exit complete (1st sheet)



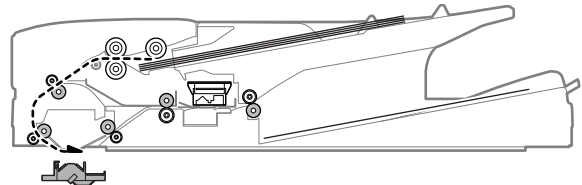
9) Paper feed start (2nd sheet)



10) Resist operation (2nd sheet, front surface)



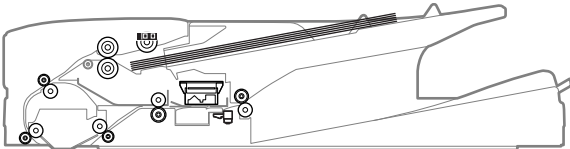
11) Scanning start (2nd sheet, front surface)



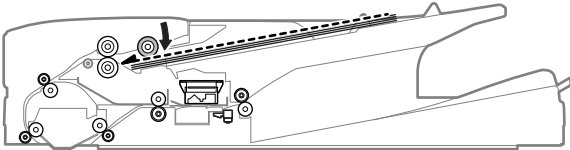
The same operations are performed hereinafter.

### (3) Stamp operation

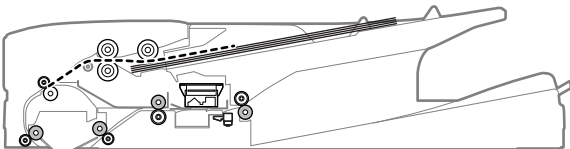
- 1) Document set (Document empty sensor ON)



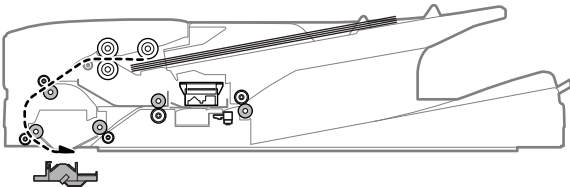
- 2) Paper feed start (1st sheet)  
Pick-up roller descending (The paper feed motor is booted.)  
(The transport motor is booted simultaneously.)



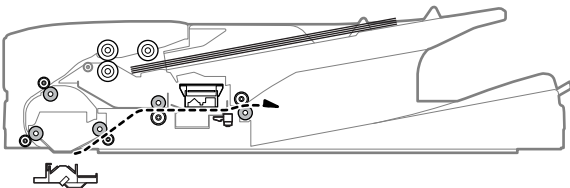
- 3) Resist operation (1st sheet)  
(Resist clutch ON)  
(When a certain time passes after turning ON the resist clutch, the paper feed motor is turned OFF.)



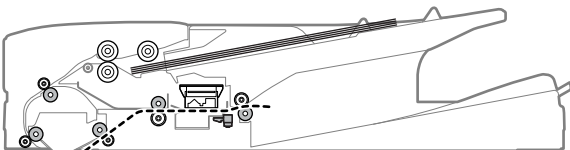
- 4) Scanning start (1st sheet)



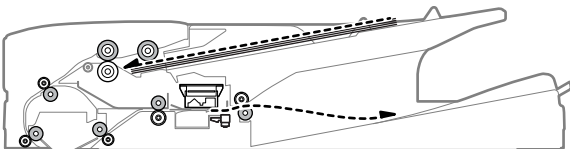
- 5) Scanning complete (1st sheet)



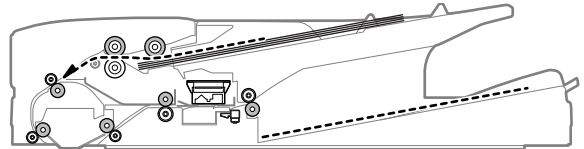
- 6) Stop at the stamp position/Stamp operation (1st sheet)  
(Stamp solenoid ON)



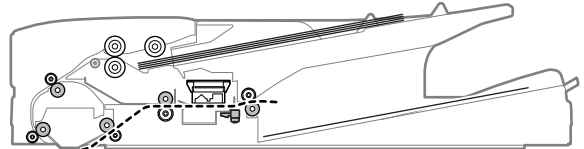
- 7) Paper exit start (1st sheet)/Preliminary paper feed start (2nd sheet)



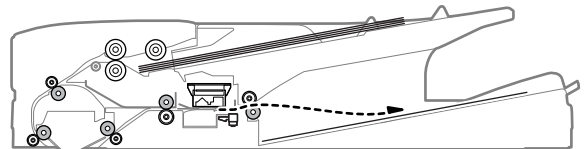
- 8) Paper exit complete (1st sheet)



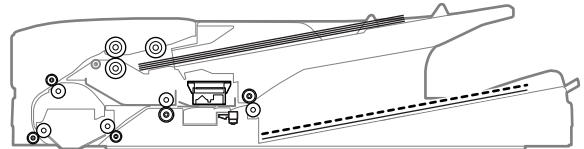
- 9) Stop at the stamp position/Stamp operation (2nd sheet)  
(Stamp solenoid ON)



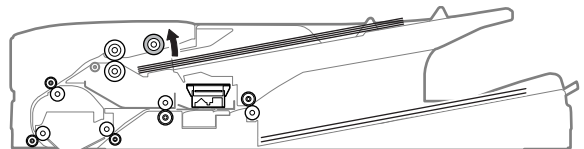
- 10) Paper exit start (2nd sheet)



- 11) Paper exit complete (2nd sheet)



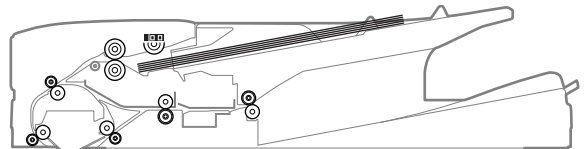
- 12) Pick-up roller lifting up  
(After completion of a job, the paper feed motor is rotated reversely at a low speed for a certain time to lift the pickup roller.)



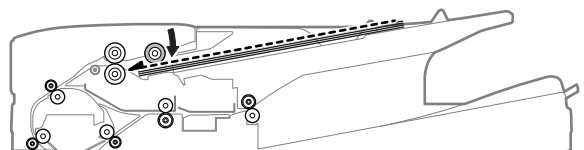
### D. Paper feed and transport operations (RSPF)

#### (1) Single face scanning

- 1) Document set (Document empty sensor ON)

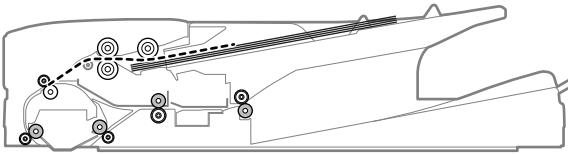


- 2) Paper feed start (1st sheet)  
The pick-up roller descends. (The paper feed motor is booted.)  
(The transport motor is booted simultaneously.)

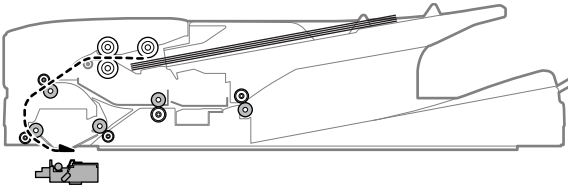




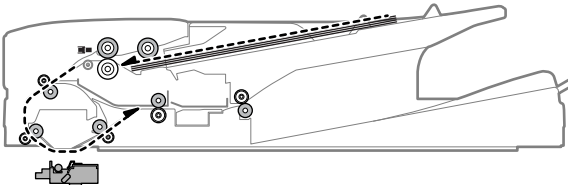
- 3) Resist operation (1st sheet)  
(Resist clutch ON)  
(When a certain time passes after turning ON the resist clutch, the paper feed motor is turned OFF.)



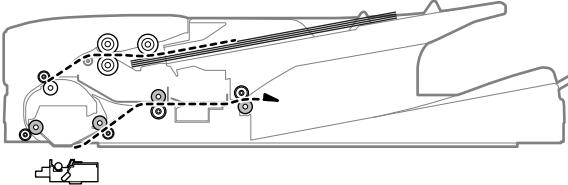
- 4) Scanning start (1st sheet)



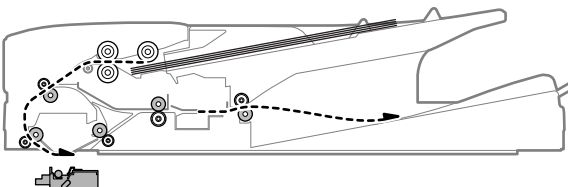
- 5) Paper feed start (2nd sheet)  
(When the SPPD1 detects the rear edge of the previous document, the paper feed motor is booted.)



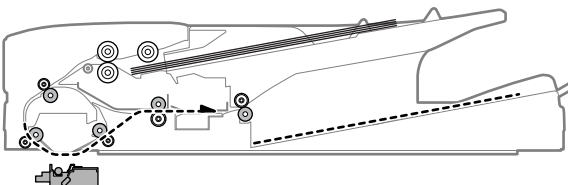
- 6) Scanning complete (1st sheet)/Resist operation (2nd sheet)  
(When a certain time passes after turning ON the resist clutch, the paper feed motor is turned OFF.)



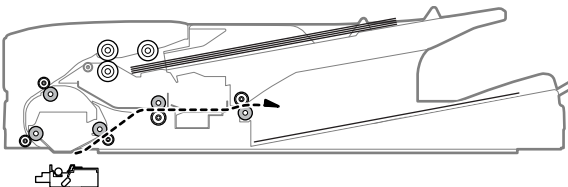
- 7) Scanning start (2nd sheet)



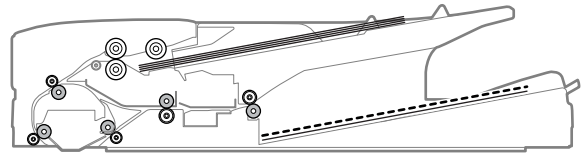
- 8) Paper exit complete (1st sheet)



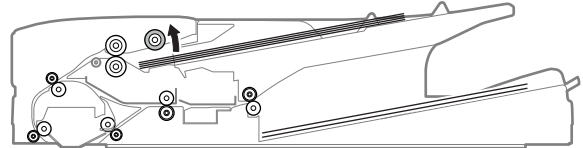
- 9) Scanning complete (2nd sheet)



- 10) Paper exit complete (2nd sheet)

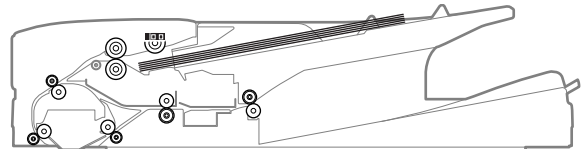


- 11) Pick-up roller lifting up  
(After completion of a job, the paper feed motor is rotated reversely at a low speed for a certain time to lift the pickup roller.)

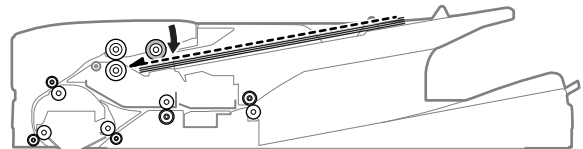


## (2) Duplex scanning

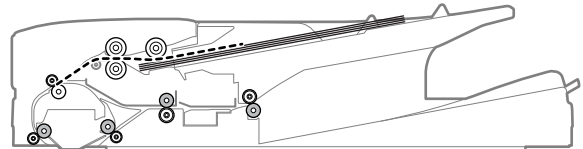
- 1) Document set (Document empty sensor ON)



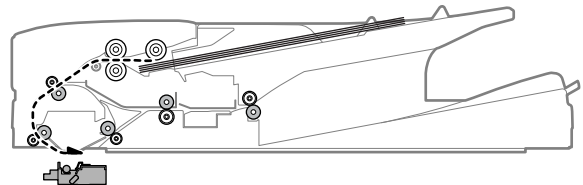
- 2) Paper feed start (1st sheet)  
Pick-up roller descending



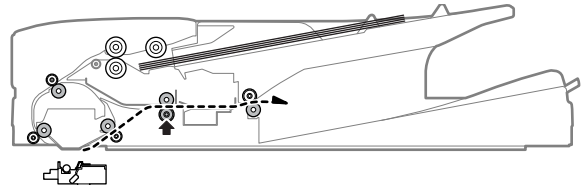
- 3) Resist operation (1st sheet, front surface)



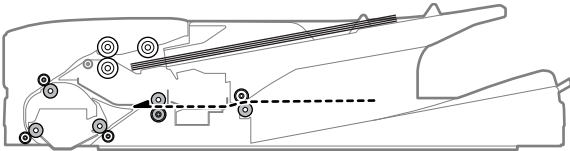
- 4) Scanning start (1st sheet, front surface)



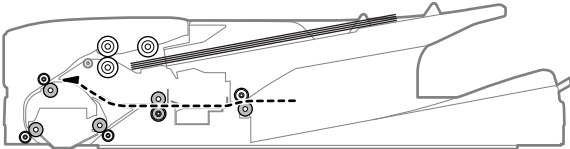
- 5) After completion of scanning, the reverse follower roller is pressed. (Solenoid ON)



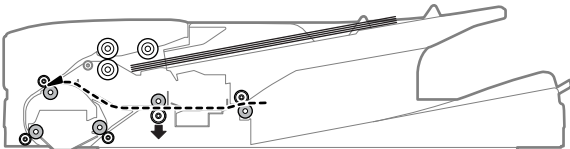
6) After stopping the operation, reversing is started.



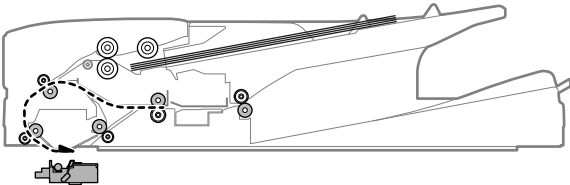
7) After reversing, resist operation is executed.



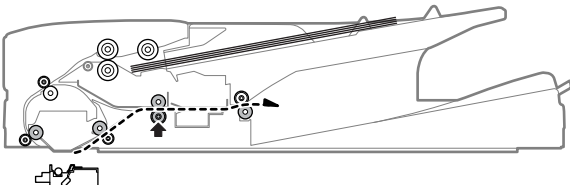
8) After turning ON the PS clutch, the reverse follower roller pressure is released.



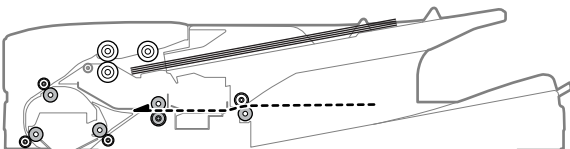
9) Scanning start (First sheet, back surface)



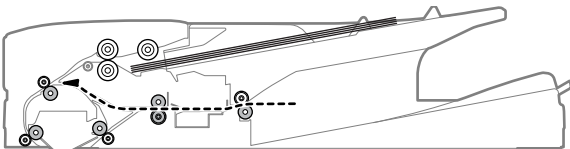
10) After completion of scanning, the reverse follower roller is pressed.



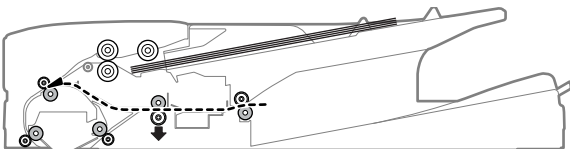
11) After stopping the operation, reversing is started.



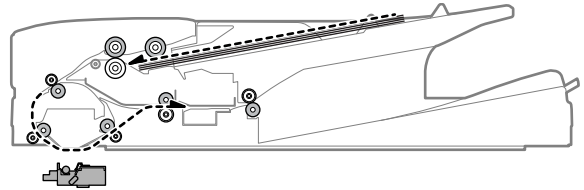
12) After reversing, resist operation is executed.



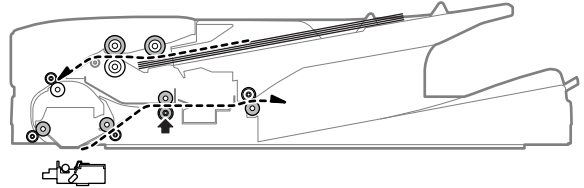
13) After turning ON the PS clutch, the reverse follower roller pressure is released.



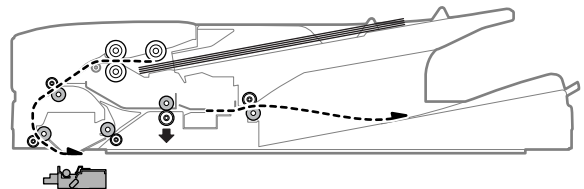
14) Scanning start (Second sheet)



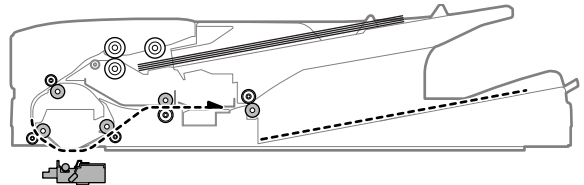
15) After passing the scanning section, the reverse follower roller is pressed.



16) The reverse follower roller pressure is released.

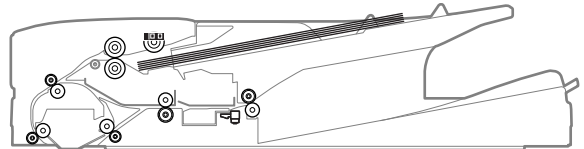


17) Discharge (First sheet)



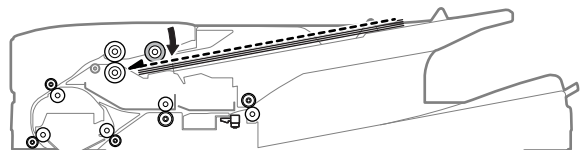
### (3) Stamp operation

1) Document set (Document empty sensor ON)



2) Paper feed start (1st sheet)

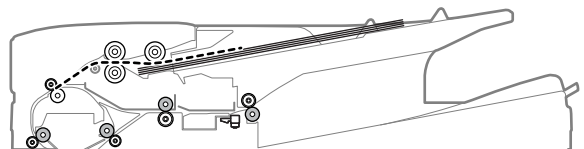
Pick-up roller descending (The paper feed motor is booted.)  
(The transport motor is booted simultaneously.)



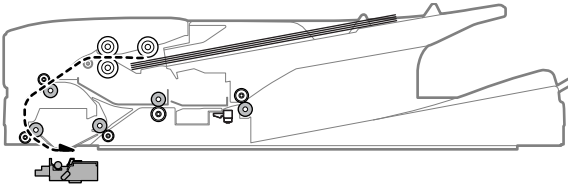
3) Resist operation (1st sheet)

(Resist clutch ON)

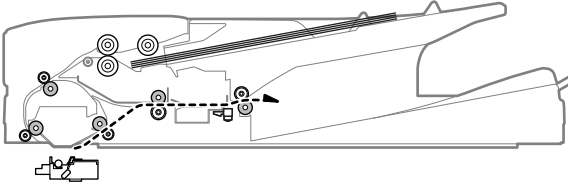
(When a certain time passes after turning ON the resist clutch, the paper feed motor is turned OFF.)



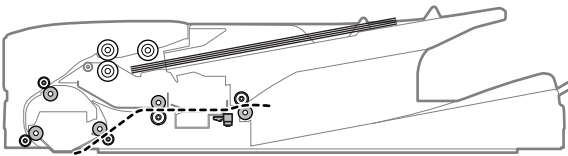
4) Scanning start (1st sheet)



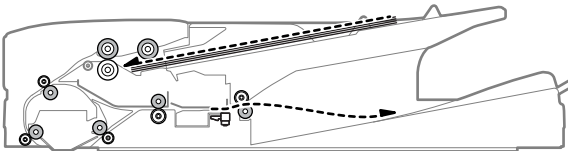
5) Scanning complete (1st sheet)



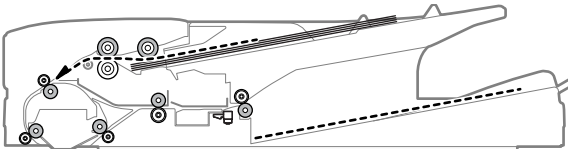
6) Stop at the stamp position/Stamp operation (1st sheet)  
(Stamp solenoid ON)



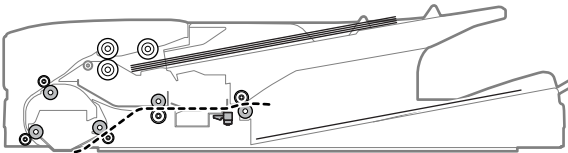
7) Paper exit start (1st sheet)/Preliminary paper feed start (2nd sheet)



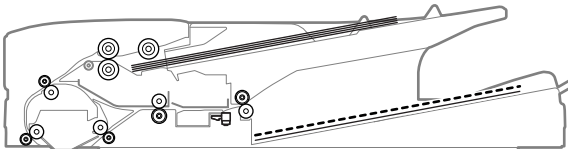
8) Paper exit complete (1st sheet)



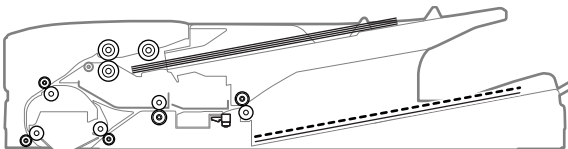
9) Stop at the stamp position/Stamp operation (2nd sheet)  
(Stamp solenoid ON)



10) Paper exit start (2nd sheet)

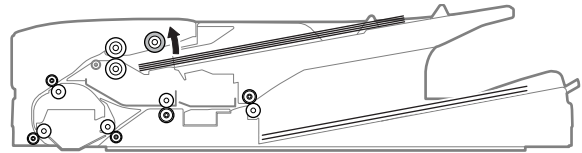


11) Paper exit complete (2nd sheet)



12) Pick-up roller lifting up

(After completion of a job, the paper feed motor is rotated reversely at a low speed for a certain time to lift the pickup roller.)



## E. Document feed, transport, scan, paper exit, and operating speed

The document fed by the pickup 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.

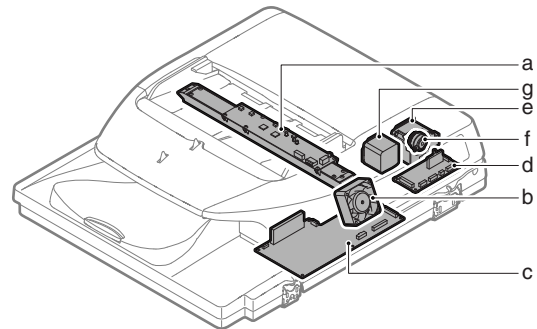
The document is transported to the scan section. After being scanned, the document discharged to the document exit tray by the paper exit roller.

The document transport speed depends on the resolution as shown below.

| Resolution | Document transport speed |      |
|------------|--------------------------|------|
|            | DSPF                     | RSPF |
| 300dpi     | 346mm/sec.               | —    |
| 400dpi     | 259mm/sec.               |      |
| 600dpi     | 173mm/sec.               |      |

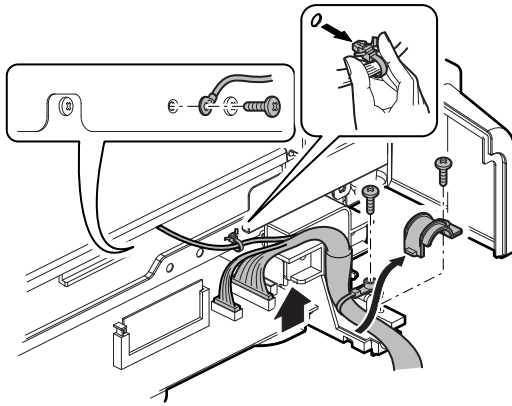
## 3. Disassembly and assembly

### A. DSPF unit

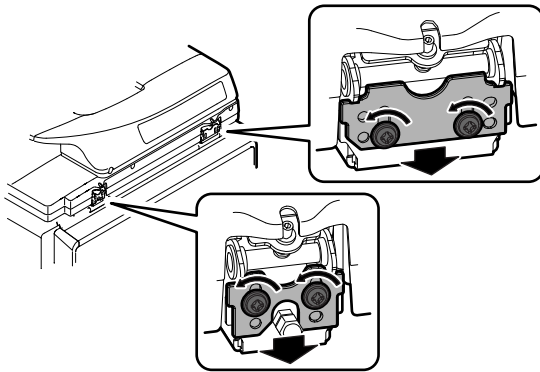


| Parts |                   |
|-------|-------------------|
| a     | DSPF CIS unit     |
| b     | Cooling fan motor |
| c     | DSPF control PWB  |
| d     | DSPF driver PWB   |
| e     | Transport motor   |
| f     | PS clutch         |
| g     | Paper feed motor  |

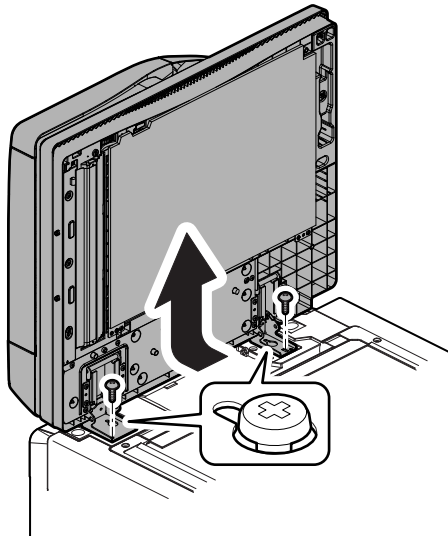
- 1) Remove the upper cabinet rear cover.
- 2) Disconnect the connector. Remove the screw, and remove the earth wire. Remove the snap band. Remove the screw, and remove the harness cover and the locking band.



- 3) Loosen the screw, and lower the angle adjustment plate.

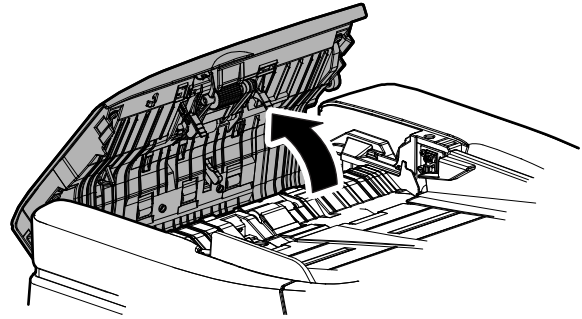


- 4) Open the DSPF unit until it is upright. Remove the screw, and slide the DSPF unit to the rear side. Fit the step screw with the key hole of the hinge and remove the DSPF unit.

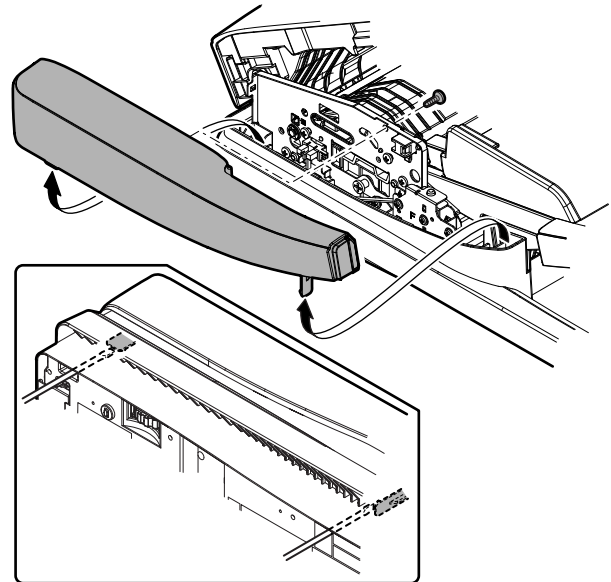


## (1) DSPF CIS unit

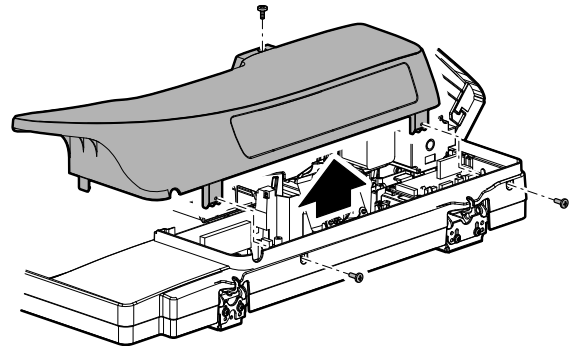
- 1) Open the paper feed unit.



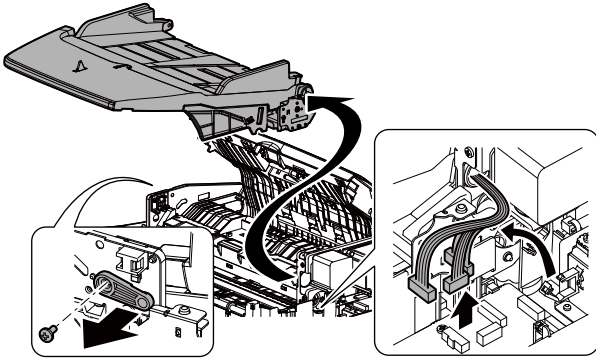
- 2) Remove the screw. Disengage the pawls (2 positions) of the front cabinet by inserting a minus screwdriver under the base tray, and remove the front cabinet.



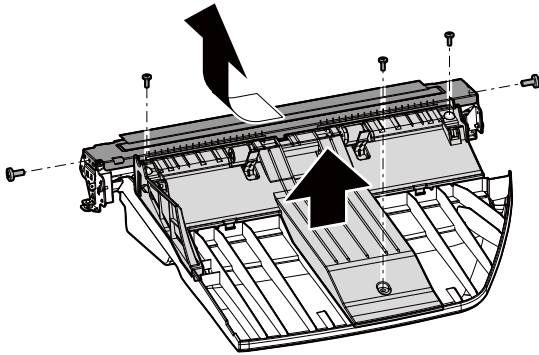
- 3) Remove the screw, and remove the rear cabinet.



- 4) Remove the harness from the wire saddle, and disconnect the connector. Remove the screw, and remove the holder. Remove the document tray.



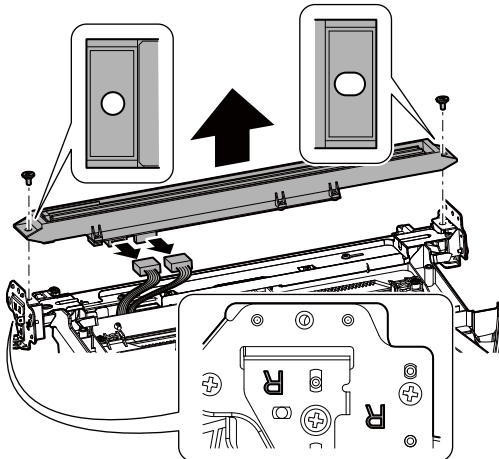
- 5) Remove the screw, and remove the document tray lower and the paper guide.



- 6) Remove the step screw. Remove the DSPF CIS unit. Disconnect the connector.

NOTE: Never touch the light source and the lens of the DSPF CIS unit.

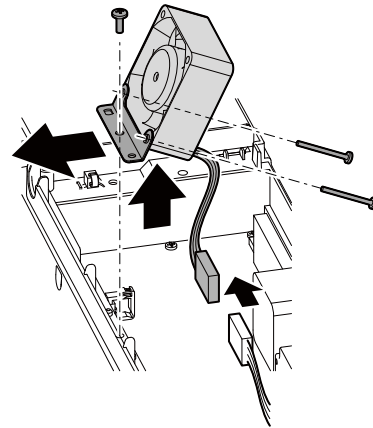
NOTE: Install so that the round hole of the DSPF CIS unit is on the rear side of the mark, and tighten the screws in the sequence of the round hole and then the long hole.



## (2) Cooling fan motor

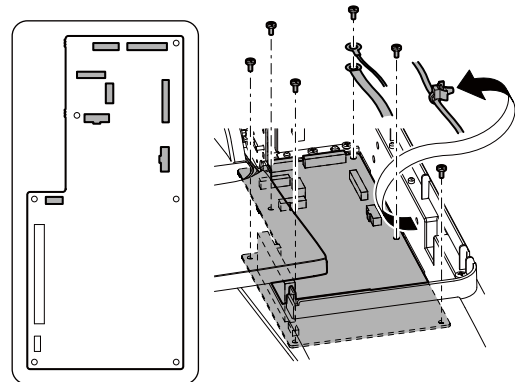
- 1) Remove the rear cabinet of the DSPF unit.
- 2) Disconnect the connector. Remove the screw, and remove the cooling fan motor. Remove the screw, and remove the mounting plate from the cooling fan motor.

NOTE: Be careful of the extending position of the harness. Be careful of the installing direction of the fan.



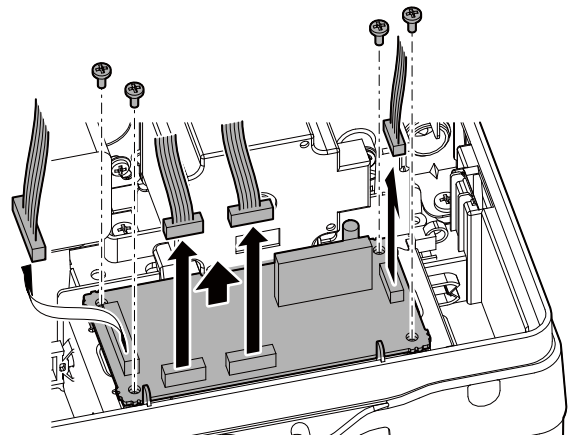
## (3) DSPF control PWB

- 1) Remove the rear cabinet of the DSPF unit.
- 2) Remove the cooling fan motor.
- 3) Remove the screw, and remove the earth wire. Remove the snap band. Disconnect the connector, remove the screw, and remove the DSPF control PWB.



## (4) DSPF driver PWB

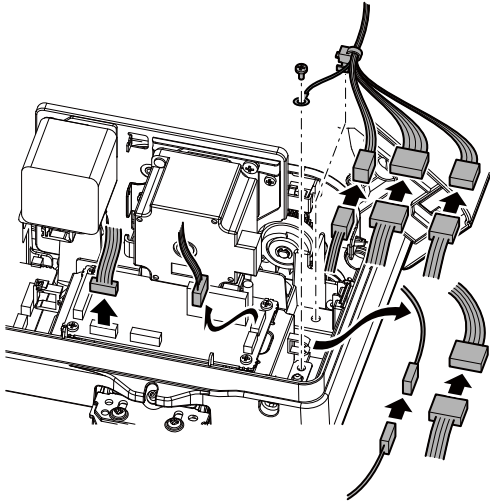
- 1) Remove the rear cabinet of the DSPF unit.
- 2) Disconnect the connector and remove the screw. Remove the DSPF driver PWB.



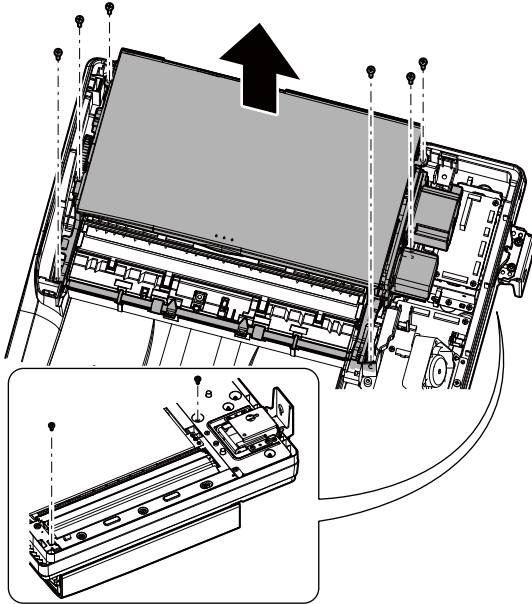


### (5) Transport motor

- 1) Remove the document tray.
- 2) Disconnect the connector, and remove the harness from the wire saddle. Remove the snap band. Remove the screw, and remove the earth wire.



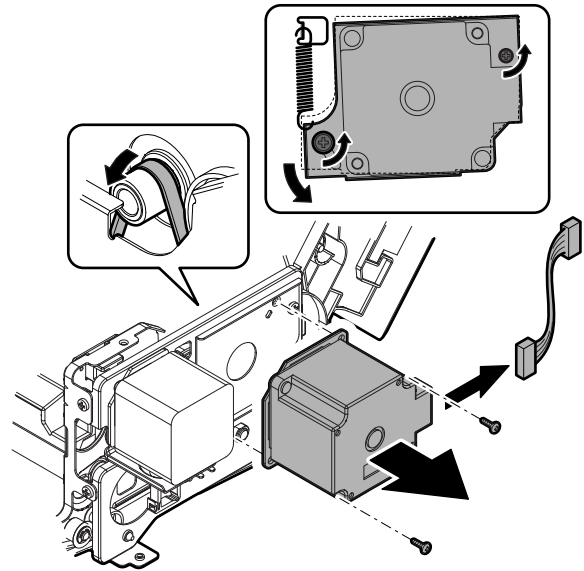
- 3) Remove the screw, and remove the transport unit.



- 4) Loosen the screw, and loosen the belt tension to remove the belt. Remove the screw, and remove the transport motor. Remove the harness from the transport motor.

NOTE: When ordering the DSPF motor as a service part, the harness is provided with the motor. Do not use this newly-provided harness, but use the one which was originally attached to the machine.

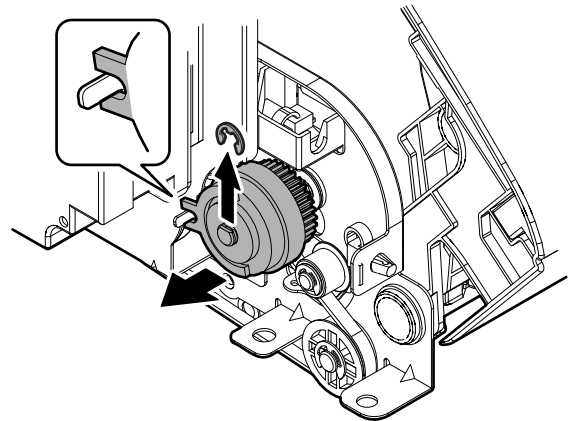
When replacement of the harness attached to the machine is required, refer to the Parts Guide and order one.



### (6) PS clutch

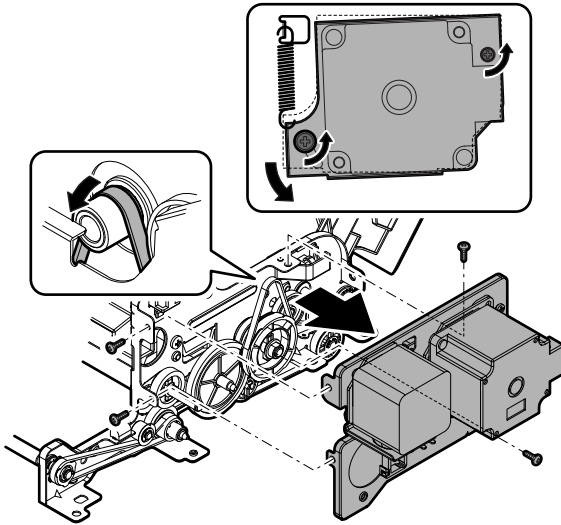
- 1) Remove the document tray.
- 2) Remove the transport unit.
- 3) Remove the E-ring, and remove the PS clutch.

NOTE: When installing, attach the rotation-stopper of the clutch to the frame.



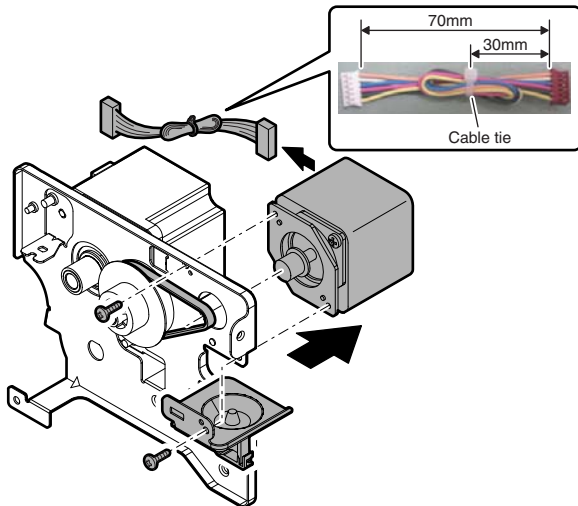
## (7) Paper feed motor

- 1) Remove the document tray.
- 2) Remove the transport unit.
- 3) Remove the PS clutch.
- 4) Loosen the belt tensioning screw to allow belt removal. Remove the screw, and remove the drive frame.



- 5) Remove the belt from the paper feed motor. Remove the screw, and remove the shield plate and the paper feed motor. Remove the harness from the paper feed motor.

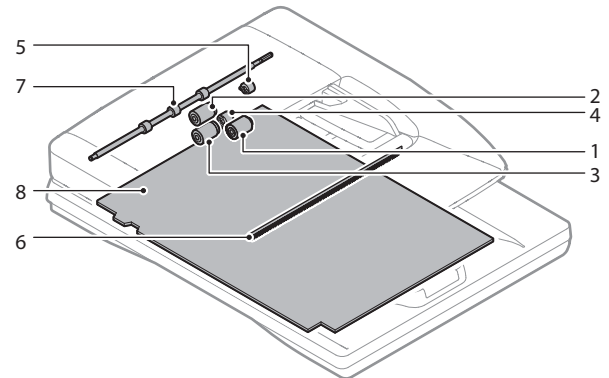
NOTE: Do not use the attached harness. Use the original harness. If the motor harness needs replacement, order the harness shown in the parts guide.



## B. RSPF section

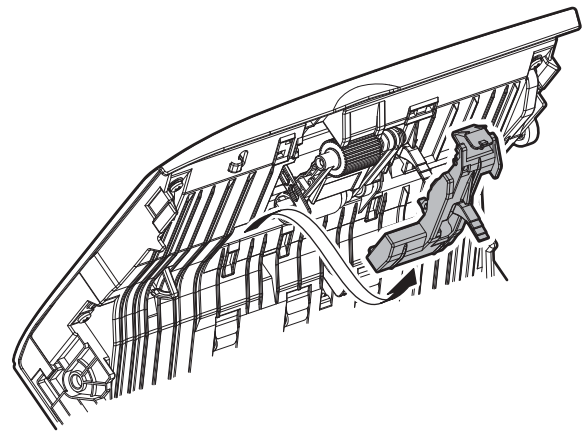
### (1) RSPF unit

| No. | Name                   |
|-----|------------------------|
| 1   | Document pickup roller |
| 2   | Paper feed roller      |
| 3   | Separation roller      |
| 4   | Torque limiter SPF     |
| 5   | Take-up torque limiter |
| 6   | Discharge brush        |
| 7   | Registration roller    |
| 8   | OC mat                 |

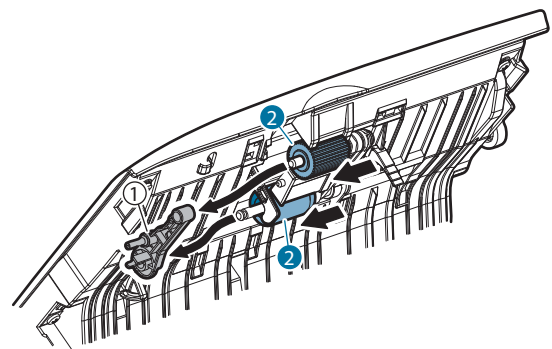


#### a. Document pickup roller, Paper feed roller

- 1) Open the paper feed unit, and remove the cover.



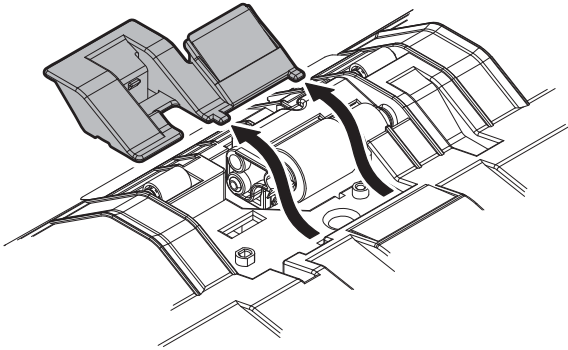
- 2) Remove the holder, and remove the document pickup roller, and the paper feed roller.



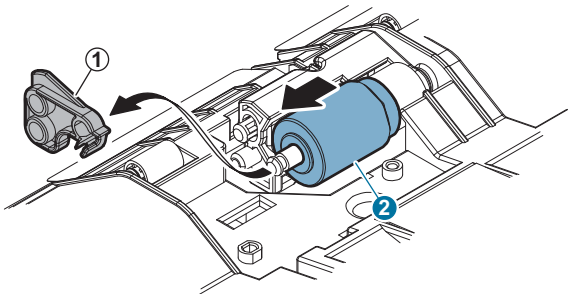


### b. Separation roller, Torque limiter SPF

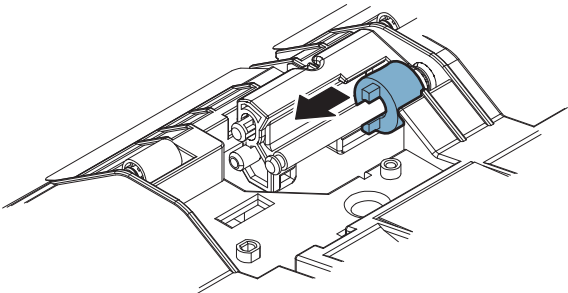
- 1) Open the paper feed unit, and remove the cover.



- 2) Remove the holder, and remove the separation roller.

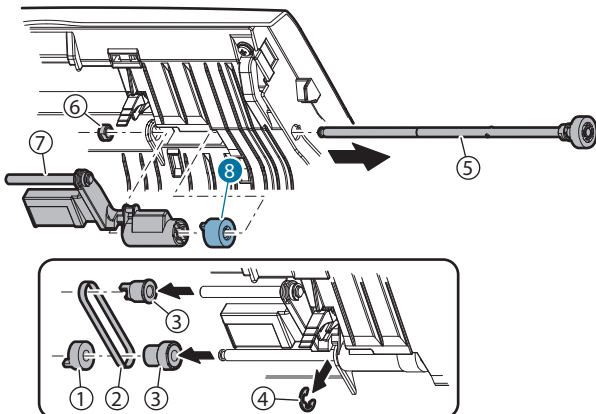


- 3) Remove the torque limiter SPF.



### c. Take-up torque limiter

- 1) Remove the one-way coupling, the belt, and the pulley. Remove the E-ring. Pull out the shaft, and remove the bearing, the holder, and the take-up torque limiter.

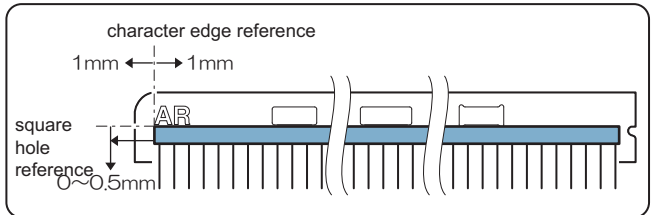
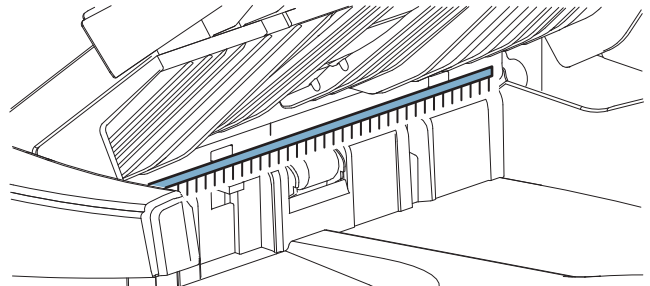


### d. Discharge brush

- 1) Open the document tray, and remove the discharge brush.

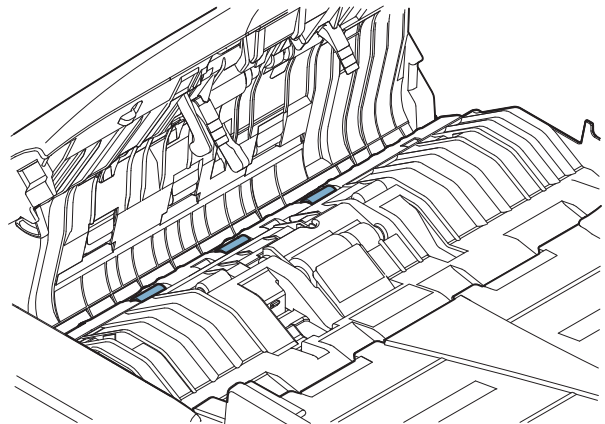
**Important**

When replacing the discharge brush, attach a new brush to the reference.



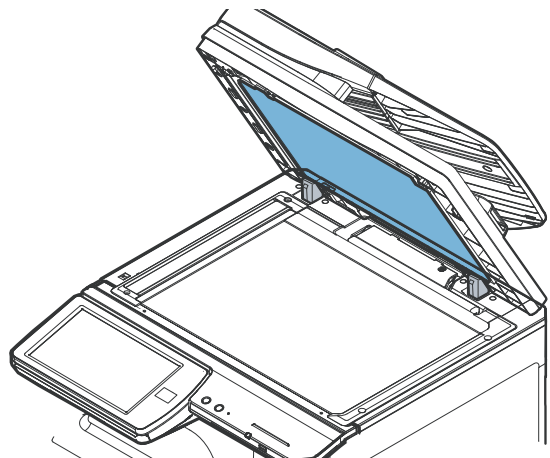
### e. Registration roller

- 1) Open the paper feed unit, and clean the registration roller.



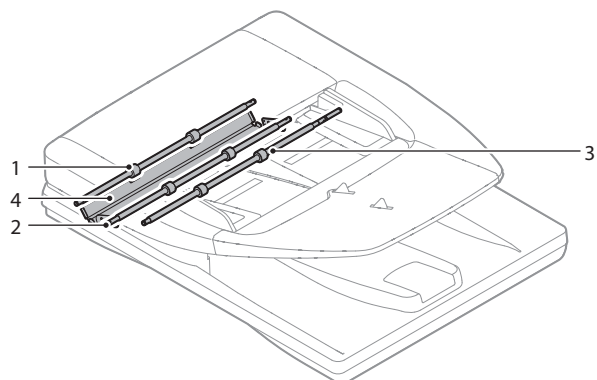
### f. OC mat

- 1) Open the RSPF unit, and clean the OC mat.



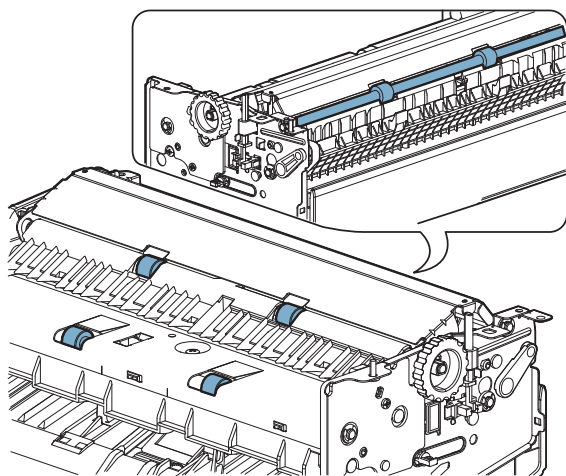
## (2) RSPF transport unit

| No. | Name               |
|-----|--------------------|
| 1   | Transport roller 2 |
| 2   | Transport roller 3 |
| 3   | Paper exit roller  |
| 4   | Scan plate         |



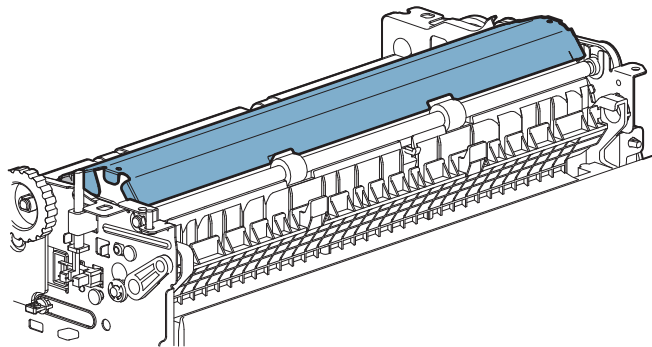
### a. Transport roller 2, Transport roller 3, Paper exit roller

- 1) Clean the transport roller 2, the transport roller 3, and the paper exit roller



### b. Scan plate

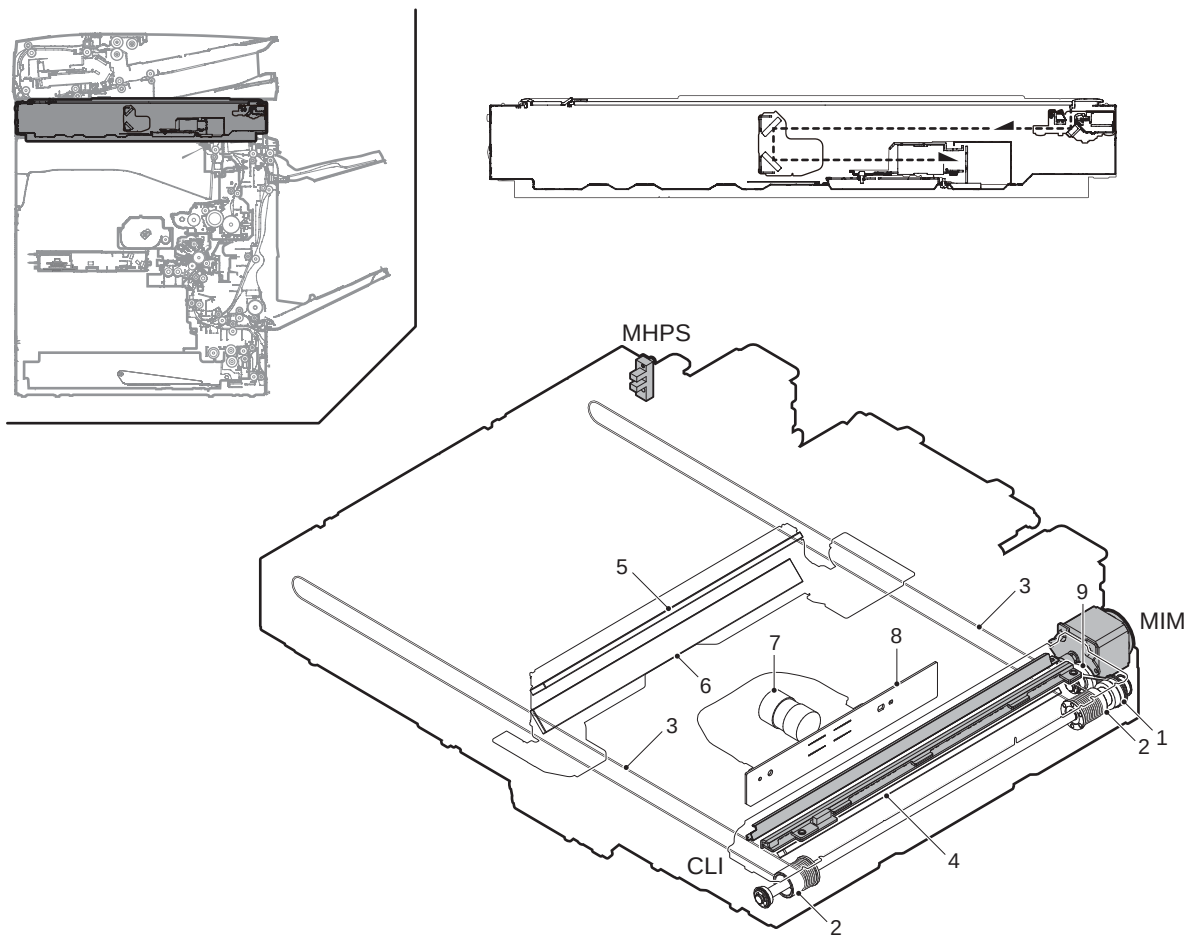
- 1) Clean the scan plate.



[D] SCANNER SECTION

1. Electrical and mechanical relation diagram

A. Electrical and mechanism relation diagram



| Signal name | Name                         | Function/Operation                                 |
|-------------|------------------------------|----------------------------------------------------|
| CLI         | LED lamp unit                | Illuminates the document                           |
| MHPS        | Scanner home position sensor | Detects the scanner home position.                 |
| MIM         | Scan motor                   | Drives the scanner unit. (scan, return operations) |

| No. | Name               | Function/Operation                                                                 |
|-----|--------------------|------------------------------------------------------------------------------------|
| 1   | Pulley belt        | Transmits the scanner motor power to the pulley                                    |
| 2   | Pulley             | Drives the scanner drive wire                                                      |
| 3   | Scanner drive wire | Transmits the scanner motor drive to the copy lamp unit and the mirror base unit   |
| 4   | No.1 mirror        | Reflects the document image into the No.2 mirror                                   |
| 5   | No.2 mirror        | Reflects the document image into the No.3 mirror                                   |
| 6   | No.3 mirror        | Reflects the document image into the lens                                          |
| 7   | Lens               | Shrinking the image (light) of the document and project it on CCD                  |
| 8   | CCD PWB            | Reads the document image (optical signal) and converts it into the electric signal |
| 9   | Idle gear          | Transmits the scanner motor drive power to the belt                                |

## B. Operational descriptions

### (1) Outline

This section performs the following functions.

- 1) Light is radiated to the document by the LED lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).
- 2) The image signals (analog) are converted into 10bit digital signals by the A/D converter.
- 3) The image signals (digital) are sent to the image process section (scanner control PWB).

### (2) Detail description

#### a. Optical section drive

The optical section drive power is transmitted from the scanner motor (MIM) to the drive pulley and the wire through the belt, to drive the copy lamp unit and the mirror base which are attached by the drive wires.

The scanner motor (MIM) is controlled by the drive signal sent from the scanner control PWB.

#### b. LED lamp drive

The LED lamp (CLI) is driven by the LED lamp drive voltage generated in the LED drive PWB according to the control signal sent from the scanner control PWB.

#### c. Image scan/color separation

Light is radiated to the document by the LED lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).

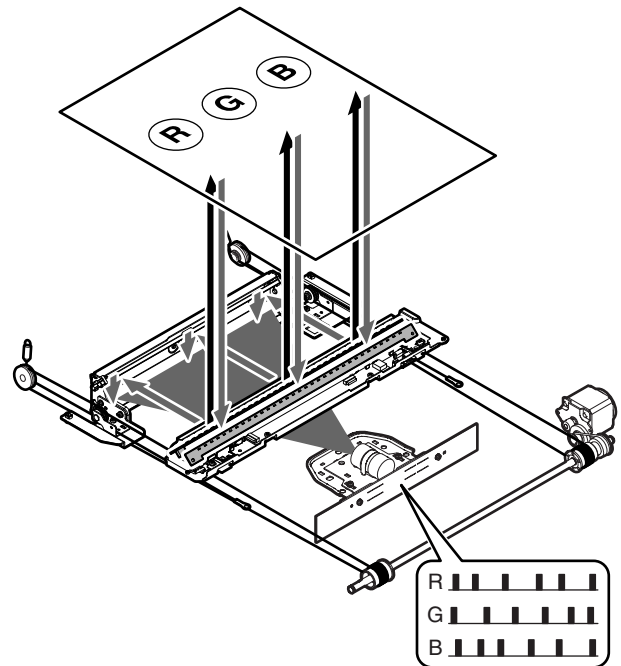
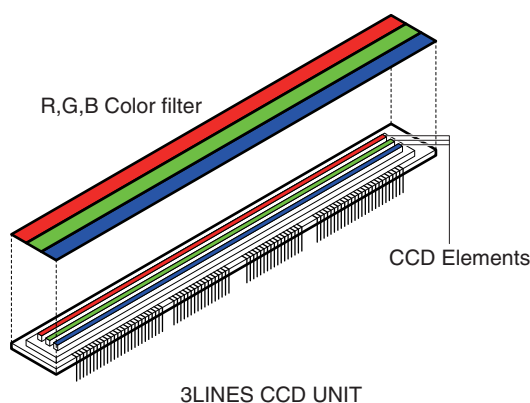
The color components of document images are extracted to R, G, and B separately by the three kinds of CCD elements (R,G,B).

The red CCD extracts the red component of document images, the green CCD green the components, and the blue CCD the blue components. This operation is called the color separation.

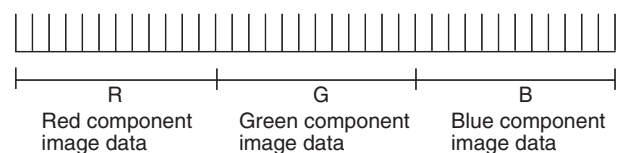
The CCD unit looks like one unit, but it includes three kinds of CCD elements, R, G, and B.

The document scan in the main scanning direction is performed by the CCD element. The document scan in the sub scanning direction is performed by shifting the scanner unit with the scanner motor. Document images are optically reduced by the lens and reflected to the CCD.

The scan resolution is 600 dpi.

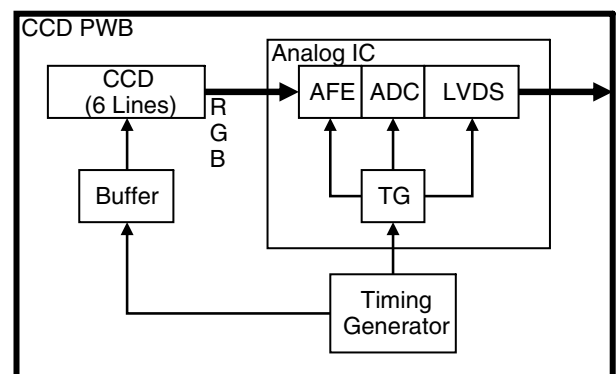


(Image data for 1 line)



#### d. Image signal A/D conversion

- 1) The image signal (analog) for each of R, G, and B is converted into 10bit digital signal by the A/D converter. Each color pixel has 10bit information.
- 2) The 10bit digital image signals of R, G, B are sent to the image process section.



#### e. Zooming operation

Zooming in the sub scanning direction is performed by changing the scanning speed in the sub scanning direction.

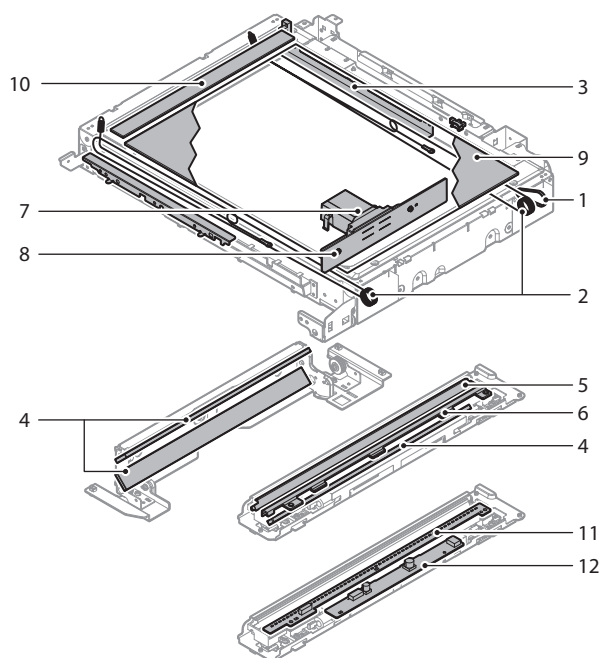
Zooming in the main scanning direction is not performed optically, but performed with the image process technology (by the software).

## 2. Disassembly and assembly

### A. Scanner unit

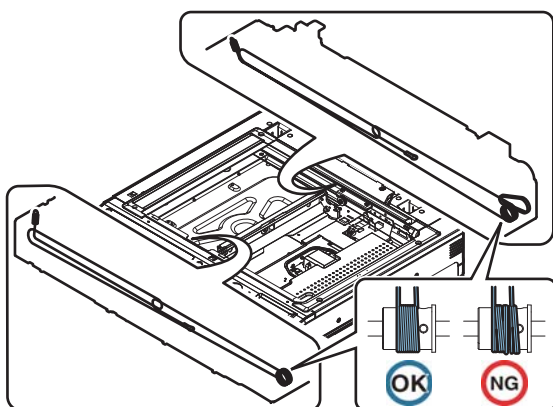
#### (1) Scanner unit

| No. | Name           |
|-----|----------------|
| 1   | Drive belt     |
| 2   | Drive wire     |
| 3   | Rails          |
| 4   | Mirror         |
| 5   | Reflector      |
| 6   | Scanner lamp   |
| 7   | Lens           |
| 8   | CCD            |
| 9   | Table glass    |
| 10  | SPF glass      |
| 11  | LED PWB        |
| 12  | LED driver PWB |



#### a. Drive belt, Drive wire

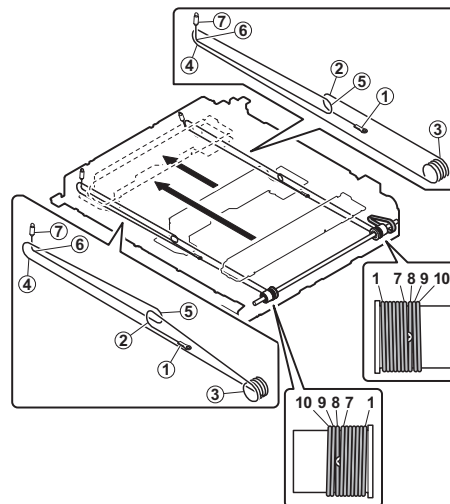
- 1) Remove the table glass.
- 2) Check the tension of the drive belt and the drive wire. Check to confirm that the drive wire in the winding pulley is wound with-out clearance.



**Important**

Wind the drive wire in the sequence of 1 to 7 as shown in the figure below and fix it.

When winding the drive wire around the pulley, shift the mirror unit to the vicinity of the home position, and wind 7 turns as shown in the figure, and fix the 8th turn with a screw. Then wind two turns furthermore around the pulley.

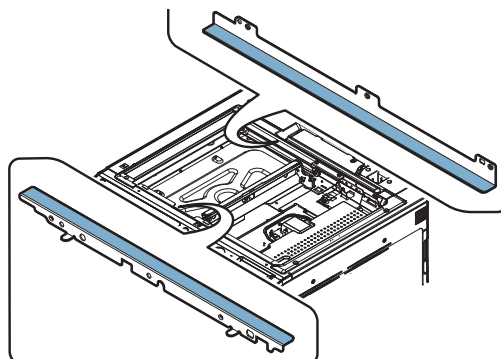


#### b. Rails

- 1) Remove the table glass.
- 2) Grease each rail.

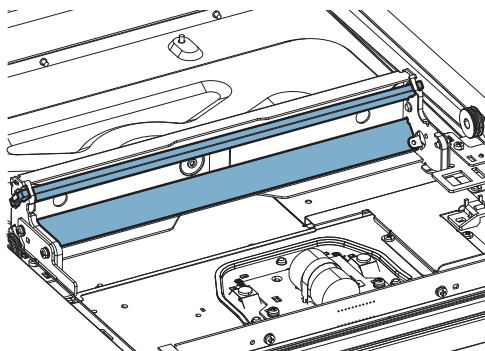
**Important**

Be careful not to allow grease to come in contact with drive wires. If grease contacts drive wires, clean wires thoroughly.



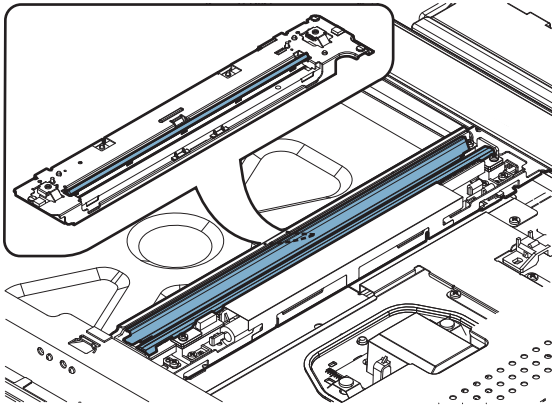
#### c. Mirror, Reflector, Scanner lamp

- 1) Remove the table glass.
- 2) Clean the No. 2 mirror, and the No. 3 mirror.



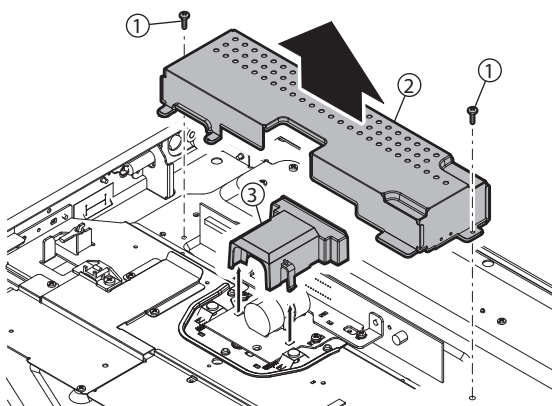


- 3) Clean the reflector, the scanner lamp, and the No. 2 mirror.

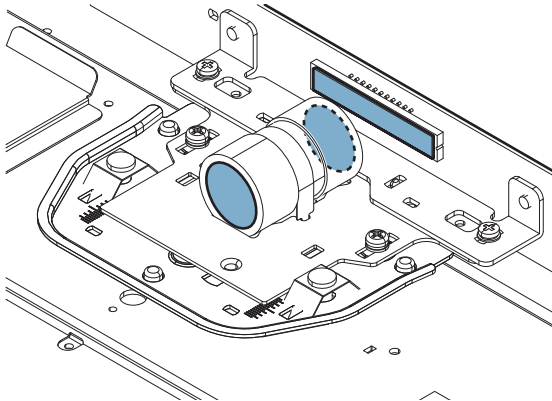


#### d. Lens, CCD

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

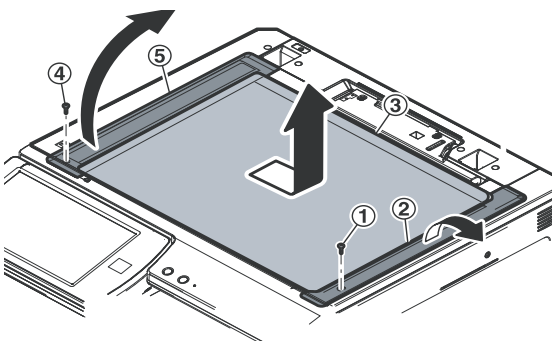


- 3) Clean the lens, and the CCD.

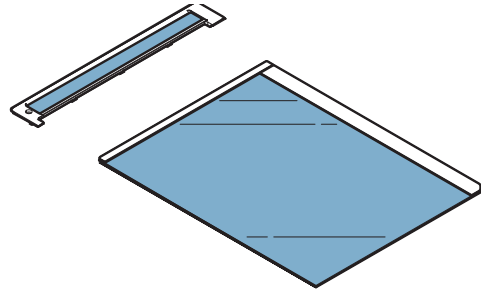


#### e. Table glass, SPF glass

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

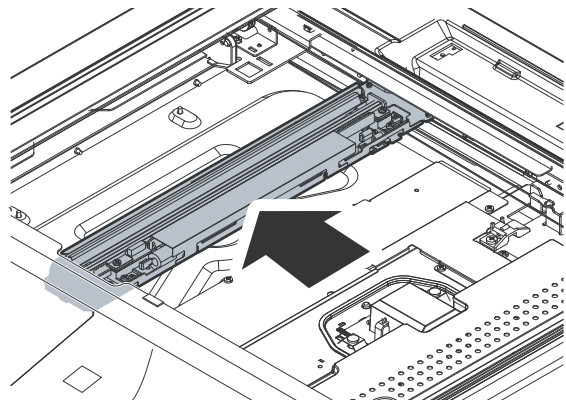


- 2) Clean the both surfaces of the table glass, and the SPF glass.



#### f. LED PWB, LED driver PWB

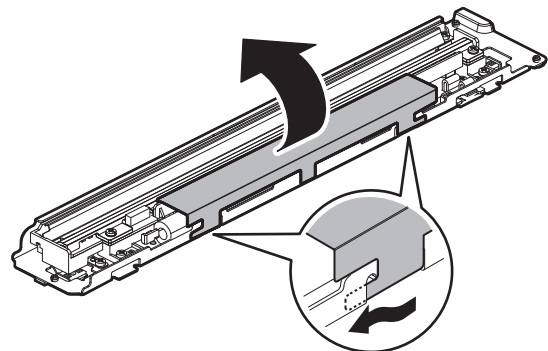
- 1) Remove the table glass.
- 2) Shift the lamp unit to the notch section of the scanner base plate.



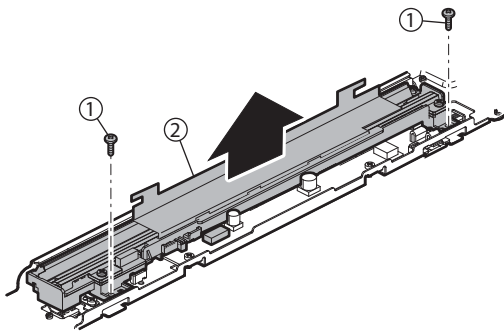
- 3) Turn over the sheet.

**Important**

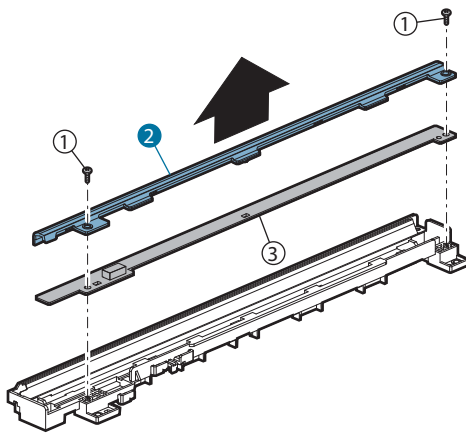
When attaching the sheet to the original position, insert the L-shape sections into the inside of the metal plate and attach the center portion to the metal plate with double-stick tape.



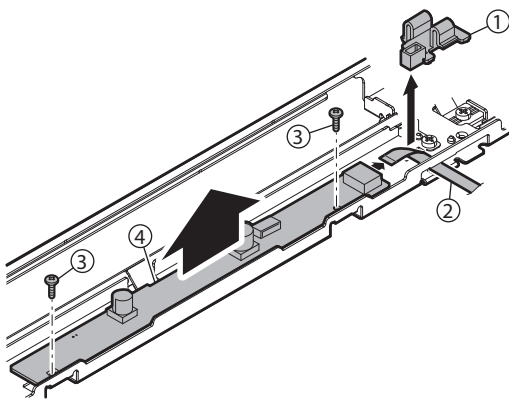
- 4) Remove the lamp guide. Disconnect the connector from the LED driver PWB.



- 5) Remove the scanner lamp, and the LED PWB. Disconnect the connector from the LED PWB.



- 6) Remove the harness holder, and remove the flat cable from the LED driver PWB. Remove the LED driver PWB.

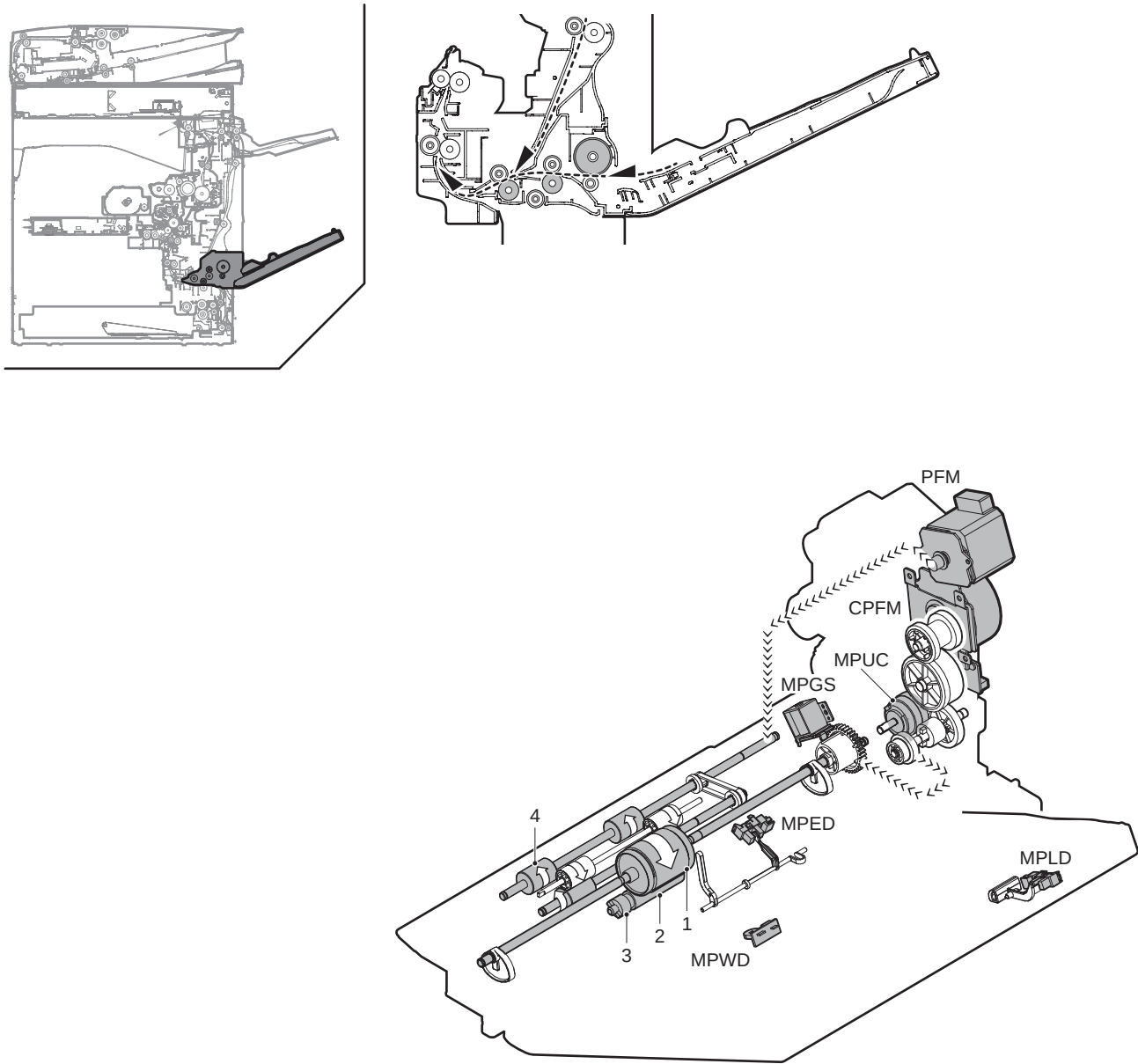




[E] PAPER FEED SECTION

1. Electrical and mechanical relation diagram

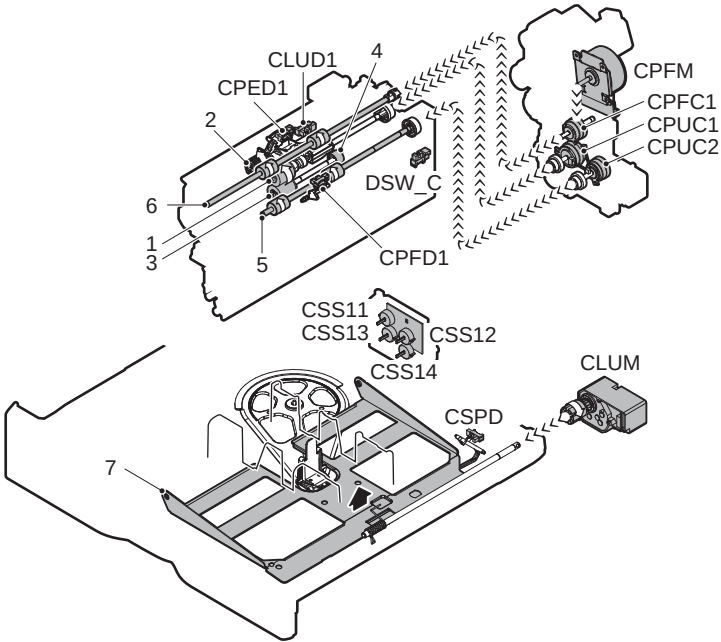
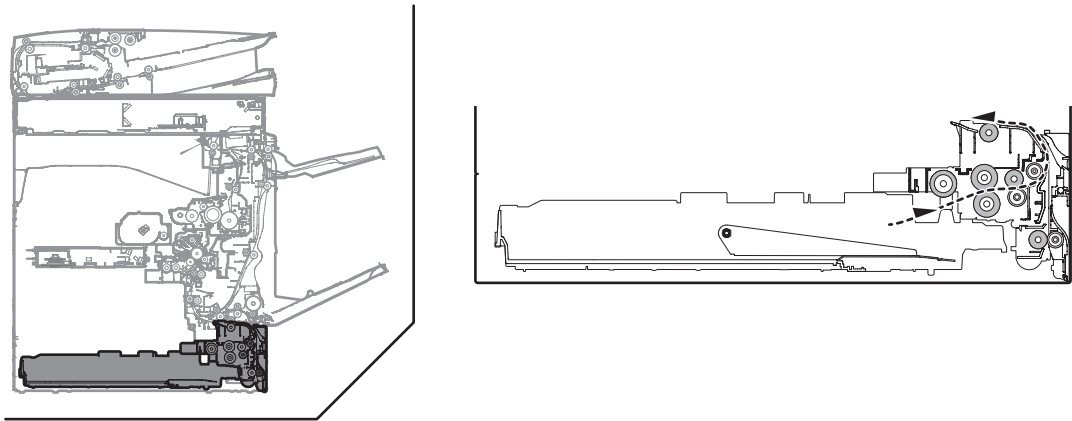
A. Manual paper feed section



| Signal name | Name                                        | Function/Operation                                                                                                                                                     |
|-------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPFM        | Paper feed motor                            | Drives the paper feed section.                                                                                                                                         |
| MPED        | Manual feed paper empty detection           | Detects the manual feed paper empty.                                                                                                                                   |
| MPGS        | Manual paper feed gate solenoid             | Controls the manual paper feed gate Open/Close.                                                                                                                        |
| MPLD        | Manual feed paper length detector           | Detects the manual paper feed tray paper length.                                                                                                                       |
| MPUC        | Manual paper feed clutch                    | Controls the manual paper feed section paper feed roller ON/OFF.                                                                                                       |
| MPWD        | Manual paper feed tray paper width detector | Detects the manual paper feed tray paper width.                                                                                                                        |
| PFM         | Transport motor                             | Transports paper from the paper feed section to the transport motor drive system.<br>Transports paper from the right door section to the transport motor drive system. |

| No. | Name                                       | Function/Operation                                                                                                                                         |
|-----|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Paper feed roller (Manual paper feed tray) | Feeds paper to the paper transport section.                                                                                                                |
| 2   | Separation roller (Manual paper feed tray) | Separates paper to prevent Double Feed.                                                                                                                    |
| 3   | Torque limiter                             | A certain level of resistance force is supplied to the rotation of the separation roller to prevent double feed.                                           |
| 4   | Transport roller 12 (Drive)                | Transports paper from the transport roller 11 to the transport roller 8. / Transports the paper from the manual paper feed tray to the transport roller 8. |

B. Tray paper feed section



| Signal name | Name                                               | Function/Operation                                                                                                                  |
|-------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| CLUD1       | Tray 1 upper limit detection (Lift HP detection)   | Detects the tray 1 upper limit.                                                                                                     |
| CLUM        | Paper tray lift-up motor (Paper feed tray 1)       | Drives the lift plate of the paper feed tray.                                                                                       |
| CPED        | Tray 1 paper empty detection                       | Detects the tray 1 paper empty.                                                                                                     |
| CPFC1       | Tray vertical transport clutch                     | Controls ON/OFF of the paper transport roller in the paper feed tray section.                                                       |
| CPFD1       | Tray 1 transport detection (Paper entry detection) | Detects tray 1 paper pass.                                                                                                          |
| CPFM        | Paper feed motor                                   | Drives the paper feed section.                                                                                                      |
| CPUC1       | Paper feed clutch (Paper feed tray 1)              | Controls ON/OFF of the roller in the paper feed tray 1 section.                                                                     |
| CPUC2       | Paper feed clutch (Paper feed tray 2)              | Controls ON/OFF of the roller in the paper feed tray 2 section.                                                                     |
| CSPD        | Tray 1 paper remaining quantity detection          | Detects the tray 1 paper remaining quantity.                                                                                        |
| CSS11       | Tray 1 rear edge detection 1                       | Insertion of the tray is detected by detecting either of tray 1 rear edge detection 1 - 4.<br>The paper size of tray 1 is detected. |
| CSS12       | Tray 1 rear edge detection 2                       |                                                                                                                                     |
| CSS13       | Tray 1 rear edge detection 3                       |                                                                                                                                     |
| CSS14       | Tray 1 rear edge detection 4                       |                                                                                                                                     |
| DSW_C       | Tray 1 and 2 transport cover open/close detection  | Detects the tray 1 and 2 transport cover open/close.                                                                                |

| No. | Name                                        | Function/Operation                                                                                               |
|-----|---------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1   | Paper feed roller (No. 1 paper feed tray)   | Feeds paper to the paper transport section.                                                                      |
| 2   | Paper pickup roller (No. 1 paper feed tray) | Sends paper to the paper feed roller.                                                                            |
| 3   | Separation roller (No. 1 paper feed tray)   | Separates paper to prevent Double Feed.                                                                          |
| 4   | Torque limiter                              | A certain level of resistance force is supplied to the rotation of the separation roller to prevent double feed. |
| 5   | Transport roller 5 (Drive)                  | Transports paper from the paper feed tray 1 to the transport roller 7.                                           |
| 6   | Transport roller 7 (Drive)                  | Transports paper from the paper feed tray 1, 2, 3, and 4 to the transport roller 8.                              |
| 7   | Rotating plate                              | Lifts up the paper, and always keeps constant the paper feed position.                                           |

## 2. Operational descriptions

### A. Bypass

The paper tray moves up and paper feed roller press the paper surface, separating the paper on the top of the paper bundle and sending it to the paper feed roller section.

The paper feed roller feeds paper to the transport section to prevent against double feed with the separation roller. The manual paper feed clutch controls ON/OFF of the pickup roller and the paper feed roller. Paper is sent to the resist roller by the manual transport roller.

### B. Tray paper feed

#### (1) Paper feed front operation

- \* Set paper and insert the paper feed tray, and the pickup roller falls to turn ON the paper feed tray sensor.
- \* The lift-up motor drives the rotating plate to move it up.
- \* The paper upper limit sensor turns ON, and the rotation plate stops at the specified position.

#### (2) Paper feed operation

- \* When copy/print operation is started, the motor and the clutch are turned ON to rotate the pickup roller in the paper pickup timing, feeding paper.
- \* At the same time, the paper feed roller rotates to transport paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.

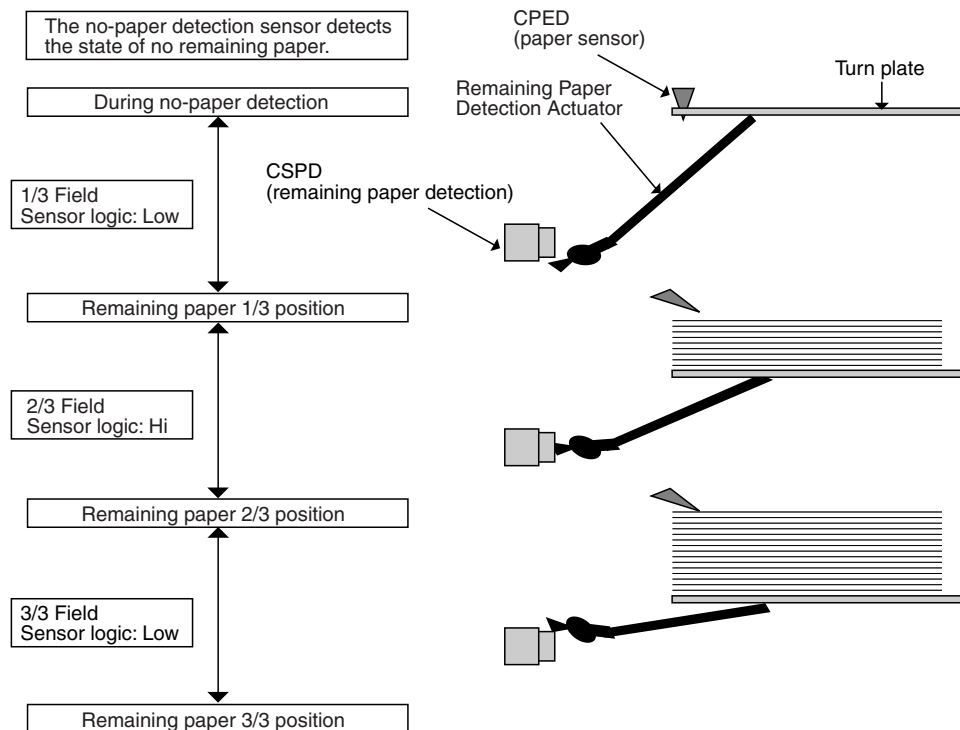
#### (3) Paper remaining detection

- \* The notifying levels of paper remaining quantity are 4 steps in total; 3 steps of paper remaining quantity and 1 step of paper empty. The result is displayed.

#### (4) Paper remaining quantity detection method

- \* The paper remaining quantity is judged from the number of rotations of the remaining quantity sensor from starting the lift-up operation of the paper feed tray to turning ON the upper limit sensor.

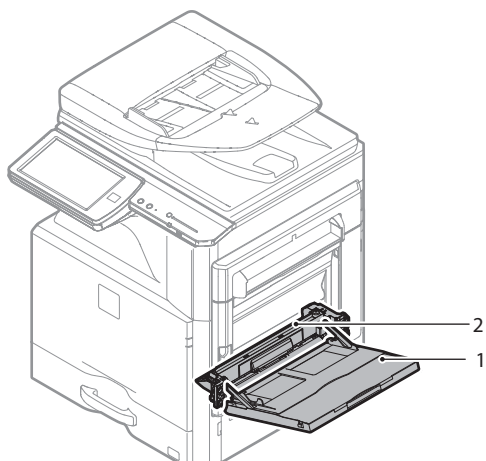
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



### 3. Disassembly and assembly

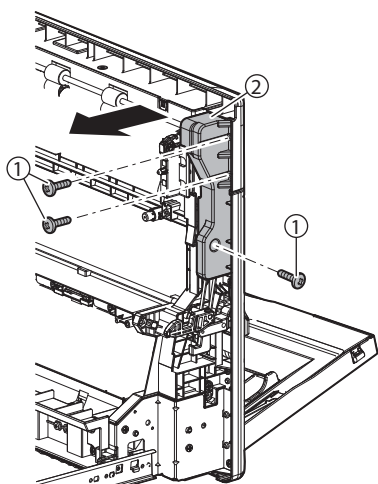
#### A. Manual paper feed unit

| No. | Name                   |
|-----|------------------------|
| 1   | Manual paper feed tray |
| 2   | Manual paper feed unit |

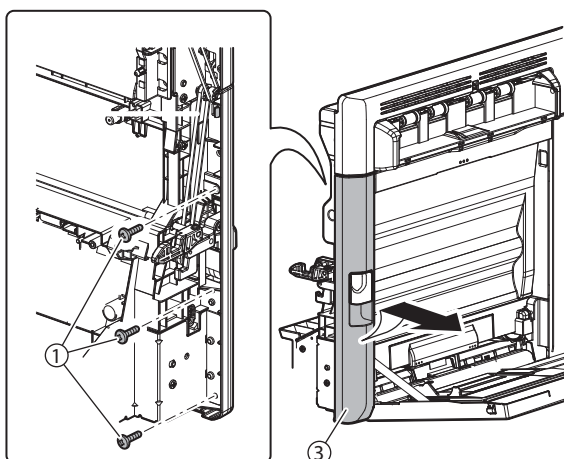


##### (1) Manual paper feed tray

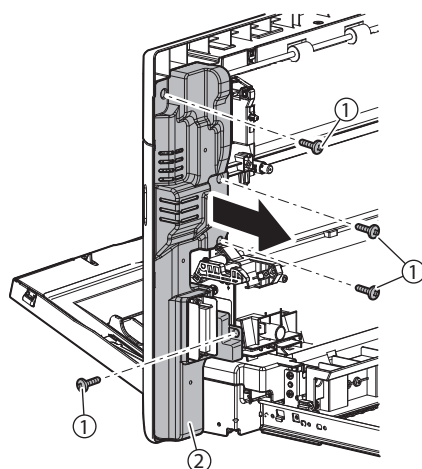
1) Open the right door, and remove the cover.



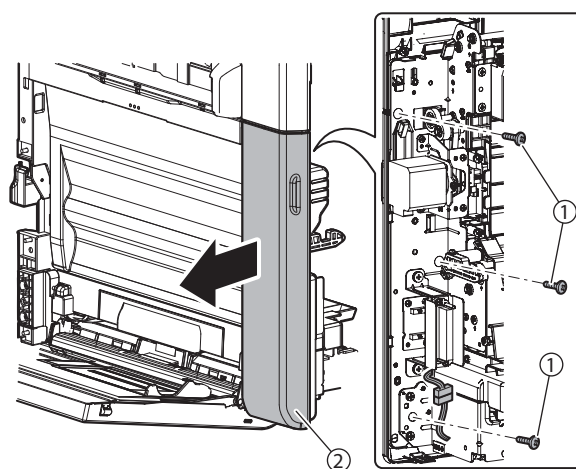
2) Remove the cover.



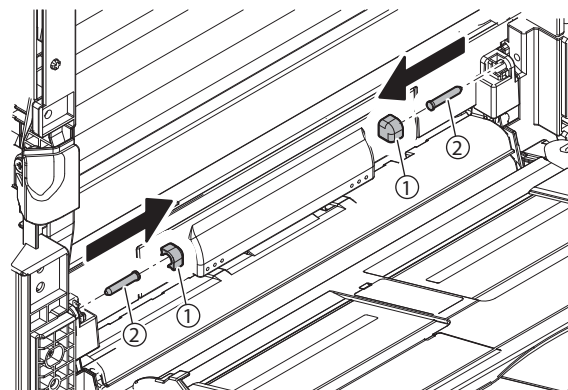
3) Remove the cover.



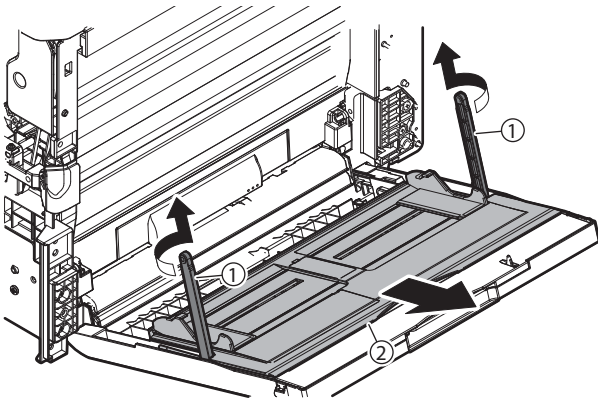
4) Remove the cover.



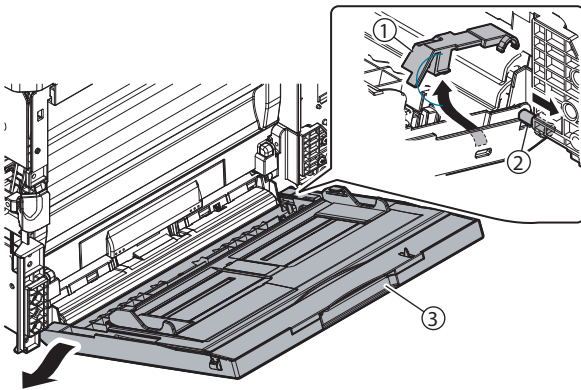
5) Remove the shaft.



6) Slide the tray and remove the arm.

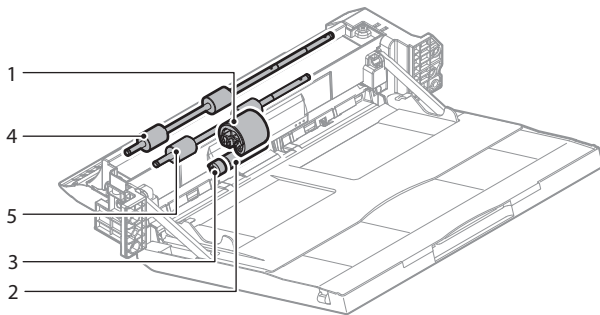


7) Remove the cover, and remove the manual paper feed tray.



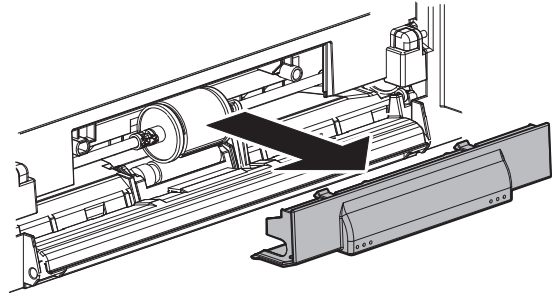
## (2) Manual paper feed unit

| No. | Name                                |
|-----|-------------------------------------|
| 1   | Paper feed roller                   |
| 2   | Separation roller                   |
| 3   | Torque limiter                      |
| 4   | Transport roller 9                  |
| 5   | Transport roller 10 (36cpm machine) |

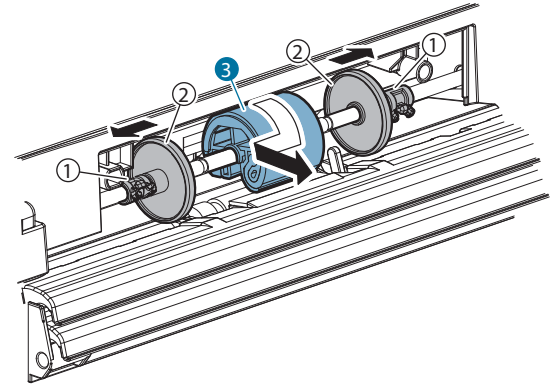


### a. Paper feed roller, Separation roller, Torque limiter

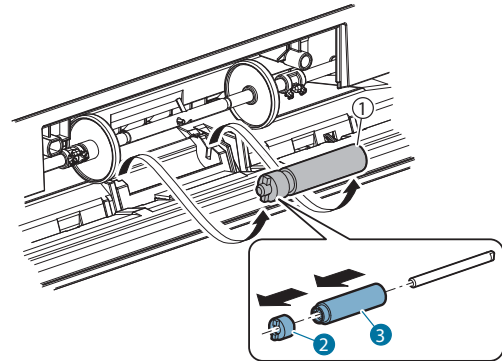
1) Remove the cover.



2) Slide the stopper and the collar, and remove the paper feed roller.

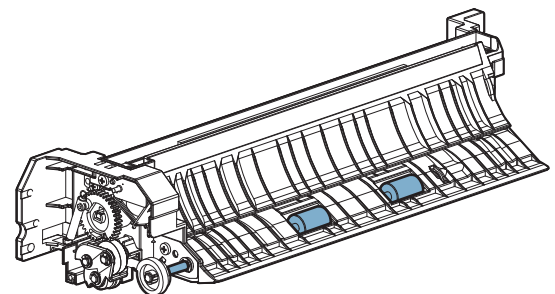


3) Remove the separation roller, and the torque limiter.



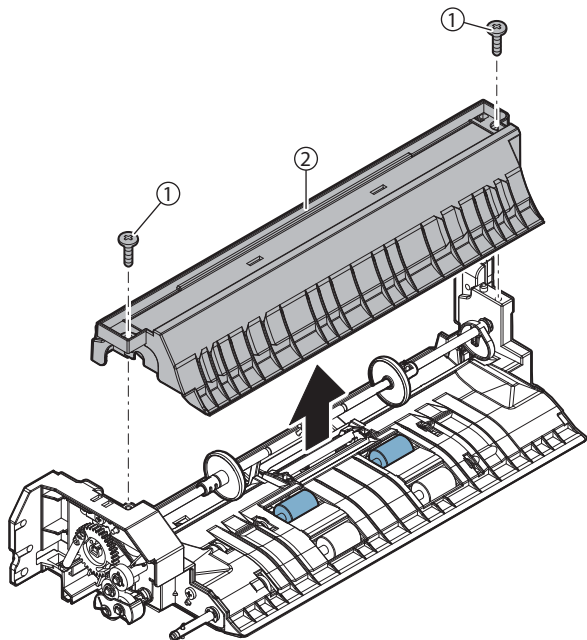
### b. Transport roller 9

1) Clean the transport roller 9.



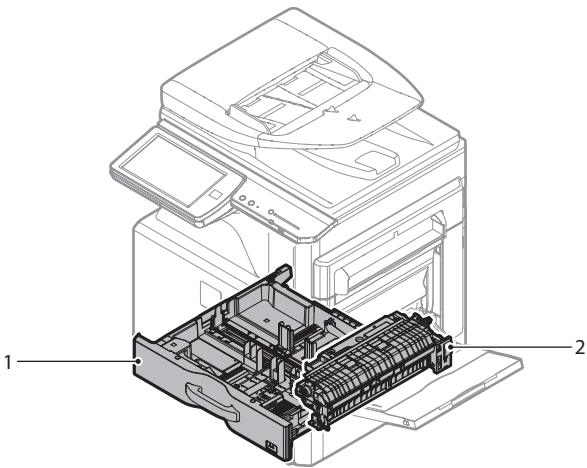
**c. Transport roller 10**

- 1) Remove the paper guide, and clean the transport roller 10.



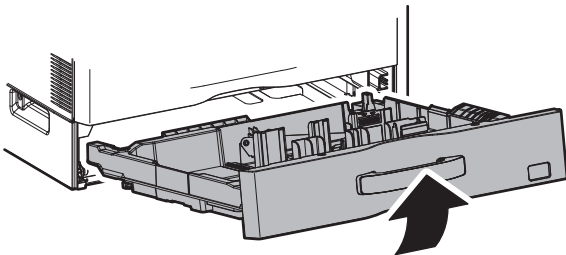
**B. Tray paper feed section**

| No. | Name                 |
|-----|----------------------|
| 1   | Paper feed tray      |
| 2   | Tray paper feed unit |



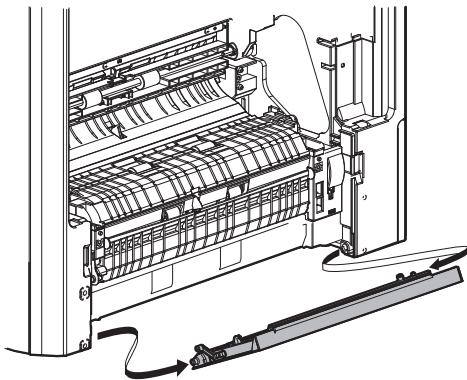
**(1) Paper feed tray**

- 1) Pull out the paper feed tray, and lift and remove it.



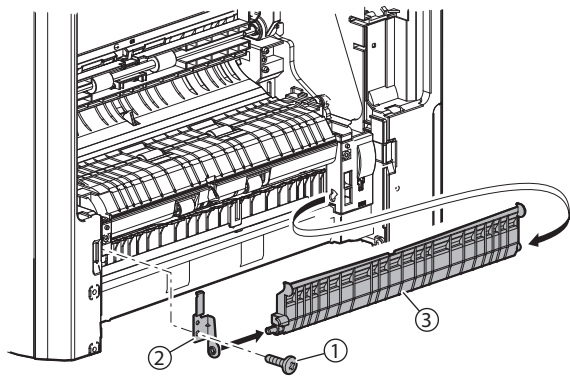
**(2) Tray paper feed unit**

- 1) Remove the paper feed tray.  
2) Remove the right door lower.

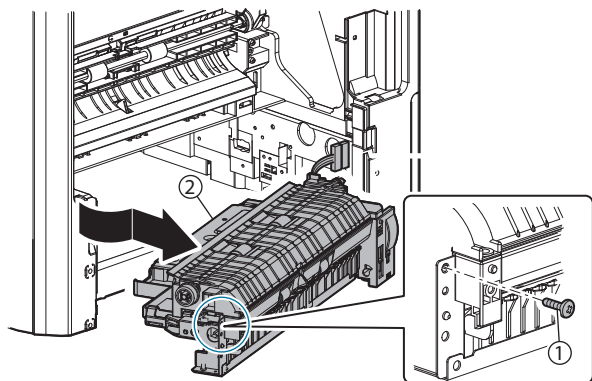




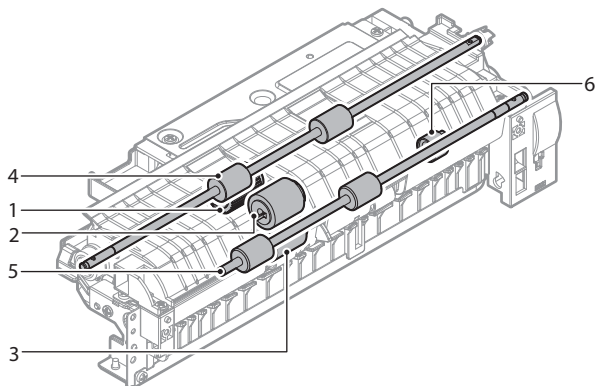
3) Remove the paper guide.



4) Remove the tray paper feed unit.

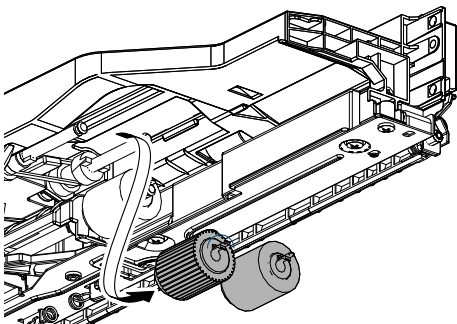


| No. | Name                |
|-----|---------------------|
| 1   | Paper pickup roller |
| 2   | Paper feed roller   |
| 3   | Separation roller   |
| 4   | Transport roller 4  |
| 5   | Transport roller 2  |
| 6   | Torque limiter      |

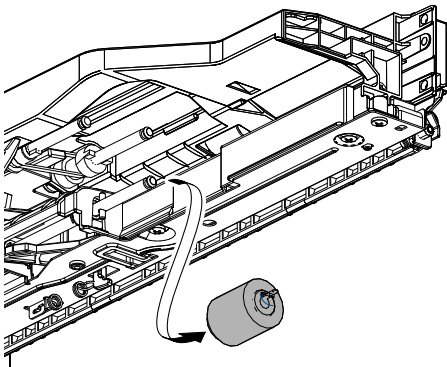


**a. Paper pickup roller, Paper feed roller, Separation roller**

1) Remove the paper pickup roller, and the paper feed roller.

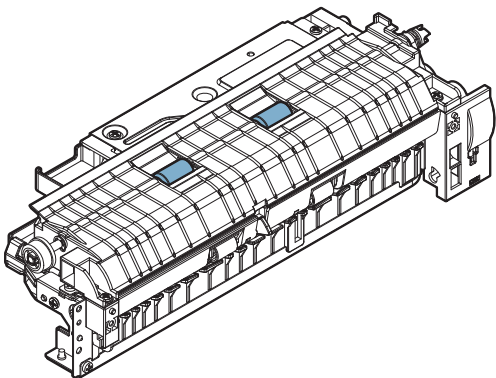


2) Remove the separation roller.



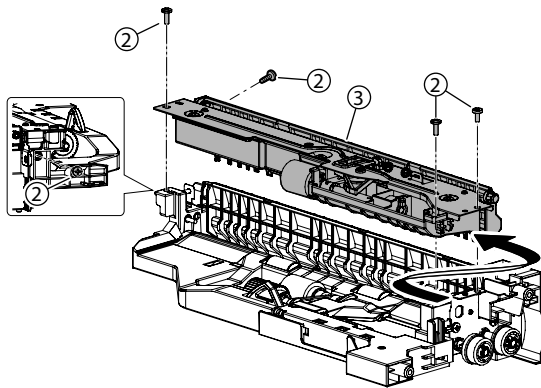
**b. Transport roller 4**

1) Clean the transport roller 4.

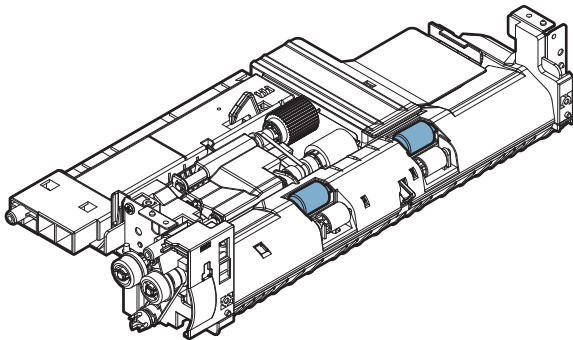


**c. Transport roller 2**

1) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.

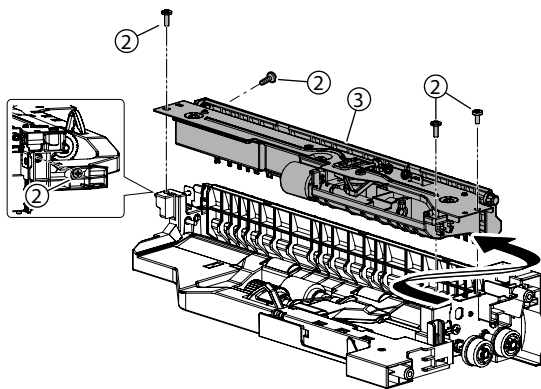


- 2) Clean the transport roller 2.

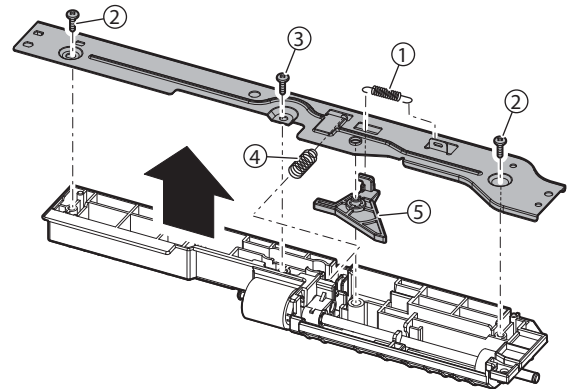


#### d. Torque limiter

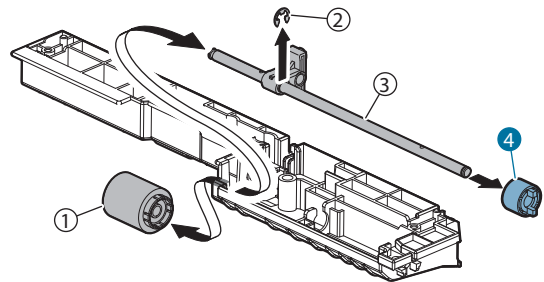
- 1) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.



- 2) Remove the spring, and remove the reinforcement plate. Remove the spring, and the separation pressure release plate.

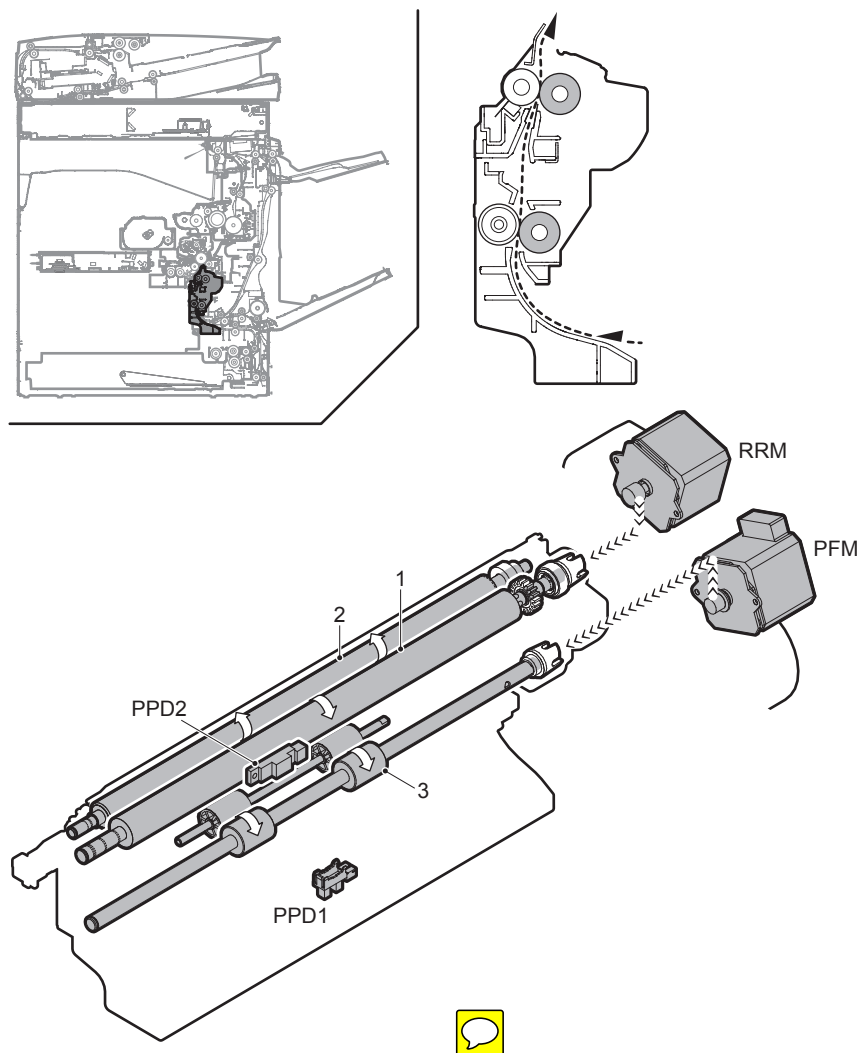


- 3) Remove the separation roller. Remove the E-ring, and the shaft, and remove the torque limiter.



# **[F] PAPER TRANSPORT SECTION**

## **1. Electrical and mechanical relation diagram**



| Signal name | Name                 | Function/Operation                                                                                                                     |
|-------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| PFM         | Transport motor      | Drives transport between the resist roller and the paper feed section, transport between the resist roller and the right door section. |
| PPD1        | Resist pre-detection | Detects the paper in front of resist roller.                                                                                           |
| PPD1        | Resist detection     | Detects the paper in rear of resist roller.                                                                                            |
| RRM         | Resist motor         | Drives the resist roller and controls ON/OFF.                                                                                          |

| No. | Name                       | Function/Operation                                                                                                                   |
|-----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Resist roller (Drive)      | Transports paper to the transfer section. Controls the paper transport timing to adjust relative relations between images and paper. |
| 2   | Resist roller (Idle)       | Applies a pressure to paper and the resist roller to give the transport power of the transport roller to the paper.                  |
| 3   | Transport roller 8 (Drive) | Transports the paper to resist roller.                                                                                               |

## 2. Operational descriptions

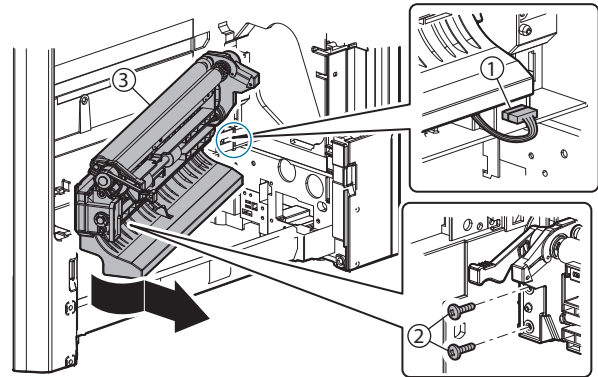
Transport paper from each paper feed section to the resist roller with two or more transport rollers. The paper transport clutch controls ON/OFF of each transport roller. The resist roller controls the relative positions of the transported paper and transfer images.

The resist roller controls the relative positions of the transported paper and transfer images. The resist roller is driven by the resist motor. The relative positions of the paper and the transfer images are determined by the ON timing of the transport motor.

## 3. Disassembly and assembly

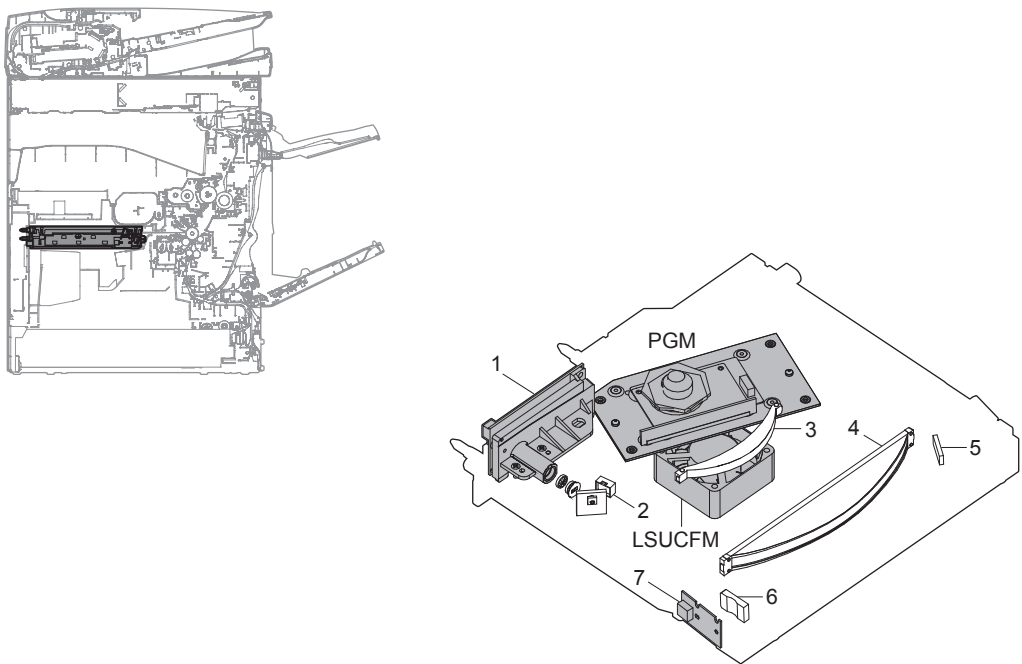
### A. Resist roller unit

- 1) Remove the waste toner box 
- 2) Remove the paper dust cleaner unit.
- 3) Remove the paper feed tray.
- 4) Remove the tray paper feed unit.
- 5) Remove the PS unit.



[G] LSU SECTION

1. Electrical and mechanical relation diagram



| Signal name | Name                  | Function/Operation                                   |
|-------------|-----------------------|------------------------------------------------------|
| LSUCFM      | LSU cooling fan motor | Cools the section LSU.                               |
| PGM         | Polygon motor         | Reflects the laser beams at constant-speed rotating. |

| No. | Name                     | Function/Operation                                                                                                                   |
|-----|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1   | LD PWB                   | Controls flashing of laser beams and the output values.                                                                              |
| 2   | Cylindrical lens         | Converges laser beams to focus.                                                                                                      |
| 3   | fθ lens 1                | Laser beams are refracted so that the laser scanning speed at the both ends of the OPC drum is the same as that at the center.       |
| 4   | fθ lens 2                |                                                                                                                                      |
| 5   | Reflection mirror for BD | Laser beams for BD are reflected to the BD PWB.                                                                                      |
| 6   | Collective lens for BD   | Converges laser beams to the BD PWB.                                                                                                 |
| 7   | BD PWB                   | Detects the timing for starting laser scanning.                                                                                      |
| 8   | LSU PWB                  | Laser beams are controlled and the polygon motor control signal is generated according to the PCU PWB control signal and image data. |

2. Operational descriptions

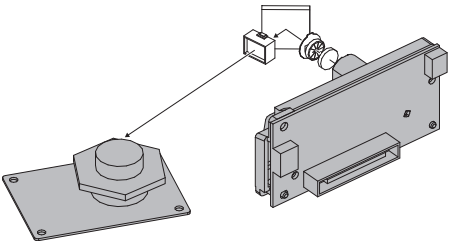
A. Outline

Image data sent from the image process circuit are converted into laser beams which are radiated to the surface of the OPC drum.

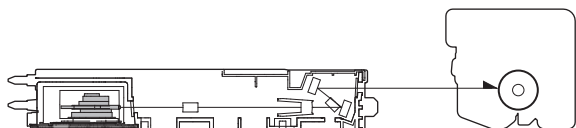
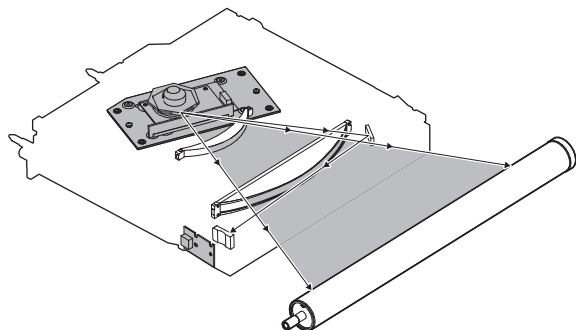
In this model, the 2-laser system is employed which radiates two laser beams. The LSU unit is composed of the primary system from the laser to the polygon mirror and the scanning system of the optical elements including the polygon mirror.

B. Composition

(Primary system)



(Scanning system)



(On the polygon motor)

| Model        | Number of mirror surface | Rotating speed | Bearing |
|--------------|--------------------------|----------------|---------|
| 56 CPM model | 6 surfaces               | 30118rpm       | OIL     |
| 46 CPM model | 6 surfaces               | 26575rpm       | OIL     |
| 36 CPM model | 6 surfaces               | 41339rpm       | OIL     |

## C. Outline of LSU specifications

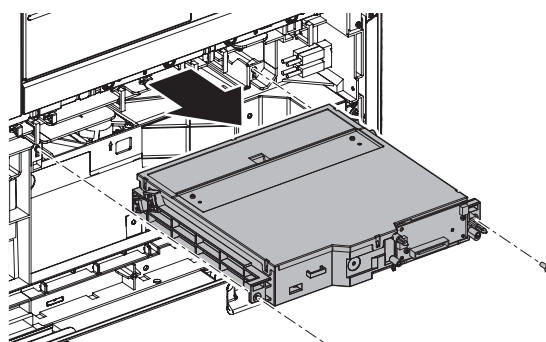
|                      |                                                       |
|----------------------|-------------------------------------------------------|
| Process speed        | 46/56 CPM model: 225mm/sec<br>36 CPM model: 175mm/sec |
| Resolution           | 1200dpi                                               |
| Laser beam           | Twin beam                                             |
| Laser power          | Max. 0.12mW                                           |
| Beam diameter        | Main scan = 50 to 80μm, Sub scan = 60 to 90μm         |
| Effective scan width | 310mm                                                 |
| LD wavelength        | 780 to 800nm                                          |

## 3. Disassembly and assembly

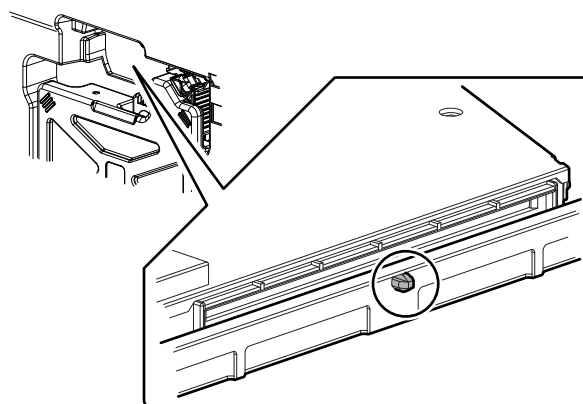
NOTE: Do not disassemble the LSU unit.

### A. LSU removal

- 1) Turn OFF the main power, and disconnect the power plug from the power outlet.
- 2) Remove the left cabinet rear lower and the left cabinet. [Refer to "[A] EXTERIOR."]
- 3) Disconnect the LSU connectors, and remove the securing screws to remove the LSU.

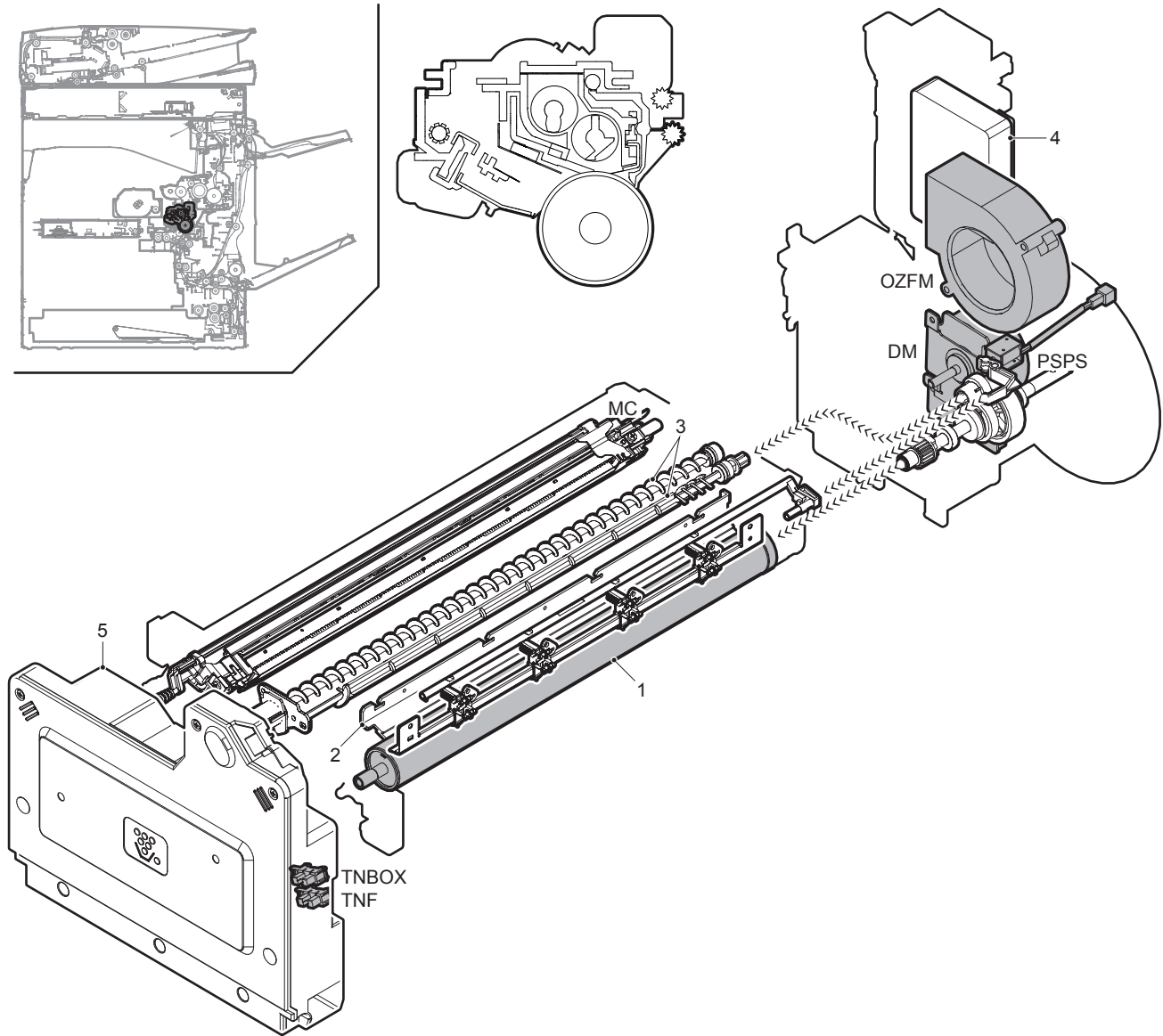


NOTE: Tip the LSU slightly to insert the alignment boss into the LSU alignment hole. To check for proper alignment, remove the toner cartridge to check.



# [H] PHOTO-CONDUCTOR SECTION

## 1. Electrical and mechanical relation diagram



| Signal name | Name                                         | Function/Operation                                                                                      |
|-------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------|
| DM          | Drum motor                                   | Drives the OPC drum and the developing unit.                                                            |
| MC          | Main charger                                 | Charges the OPC drum surface.                                                                           |
| OZFM        | Ozone fan                                    | Discharges ozone generated in the machine.                                                              |
| PSPS        | Separation solenoid                          | Separates paper from the OPC drum.                                                                      |
| TNBOX       | Waste toner box remaining quantity detection | Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full. |
| TNF         | Waste toner box remaining quantity detection | Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full. |

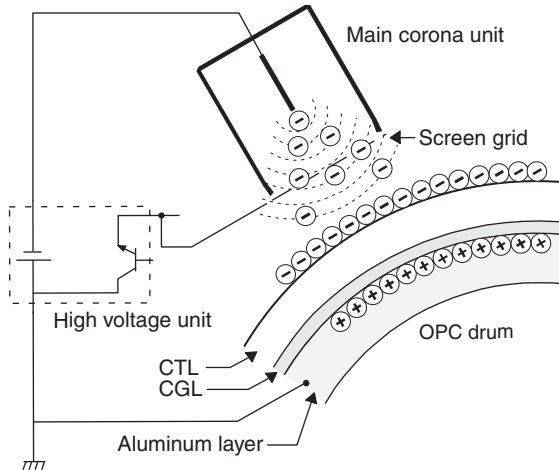
| No. | Name                        | Function/Operation                                          |
|-----|-----------------------------|-------------------------------------------------------------|
| 1   | OPC drum                    | Latent electrostatic images are formed.                     |
| 2   | Cleaning blade              | Cleans and remove residual toner from the OPC drum surface. |
| 3   | Waste toner transport screw | Transports waste toner to the toner collection box.         |
| 4   | Ozone filter                | Removes ozone.                                              |
| 5   | Waste toner collection box  | Collects waste toner.                                       |



## 2. Operational descriptions

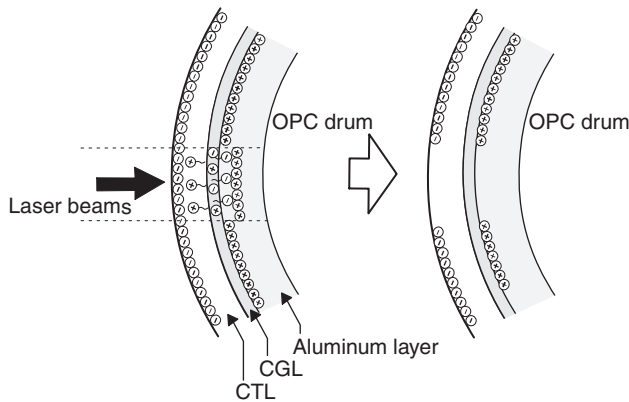
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.

- 1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

- 2) Laser lights are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.



When laser lights are radiated to the OPC drum CGL, negative and positive charges are generated.

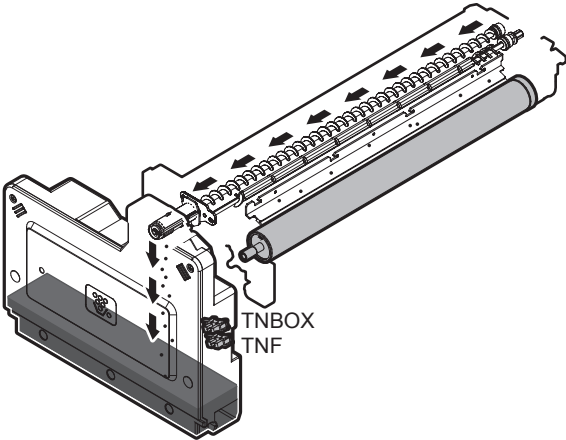
Positive charges generated on the CGL are attracted by the negative charges on the OPC drum surface. On the other hand, negative charges are attracted by the positive charges in the aluminum layer of the OPC drum.

Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where laser lights are not radiated. As a result, latent electrostatic images are formed on the OPC drum surface.

- 3) After transfer operation, remaining toner is removed by the cleaning blade.

Toner removed from the OPC drum surface is transported to the waste toner section by the waste toner transport screw.



Waste toner detection is performed by two sensors (TNBOX, TNF).

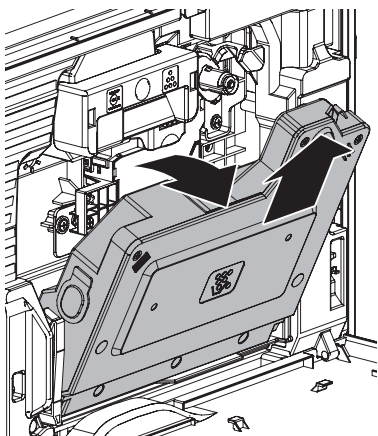
The following four statuses of the waste toner box are detected by the two sensors as shown below.

| Pattern | Output level |     | Sensor status |             | Status                              |
|---------|--------------|-----|---------------|-------------|-------------------------------------|
|         | TNBOX        | TNF | TNBOX         | TNF         |                                     |
| 1       | L            | H   | Transmitted   | Interrupted | Waste toner box not provided        |
| 2       | L            | L   | Transmitted   | Transmitted | Waste toner box provided + Not full |
| 3       | H            | L   | Interrupted   | Transmitted | Waste toner box provided + Near end |
| 4       | H            | H   | Interrupted   | Interrupted | Waste toner box provided + Full     |

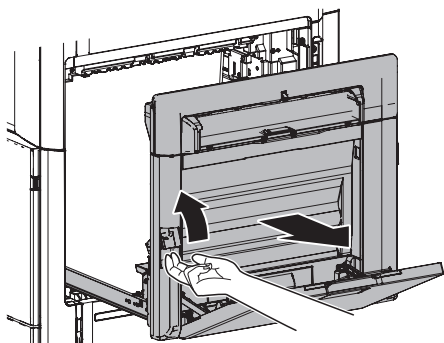
### 3. Disassembly and assembly

#### A. Photo-conductor unit

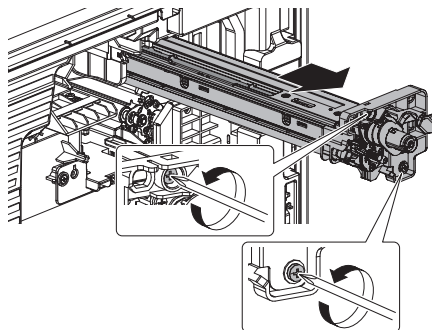
- 1) Open the front cover.
- 2) Tilt the waste toner box forward to remove it.



- 3) Remove the toner cartridge.
- 4) Remove the developing unit.
- 5) Pull the lock lever, and open the right door.

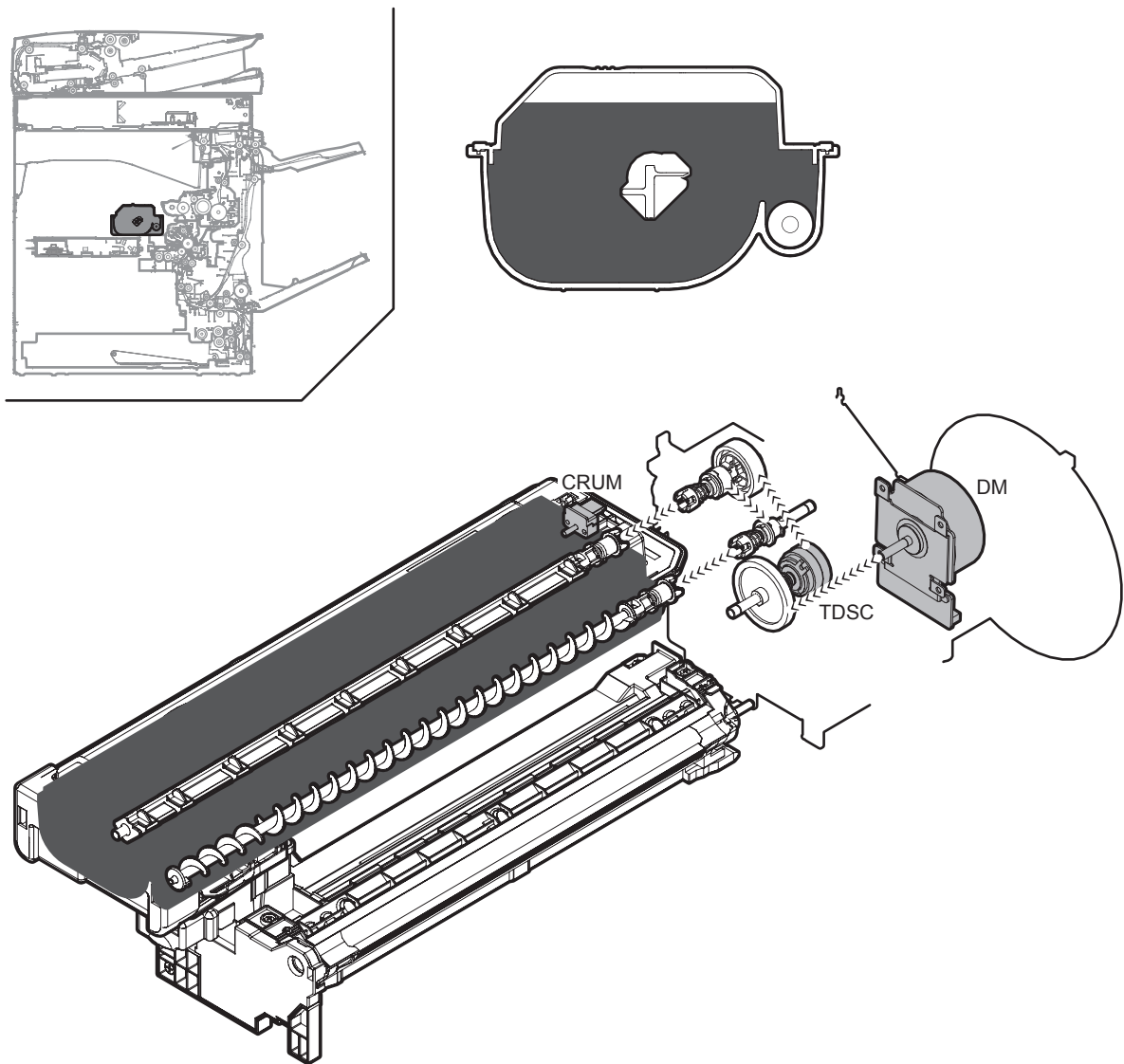


- 6) Remove the blue screw. Pull the photo-conductor unit, and hold the handle to remove the unit.



[i] TONER SUPPLY SECTION

1. Electrical and mechanical relation diagram



| Signal name | Name                | Function/Operation                                 |
|-------------|---------------------|----------------------------------------------------|
| CRUM        | Crum PWB            | Stores various information of the toner cartridge. |
| DM          | Drum motor          | Drives the OPC drum and the developing unit.       |
| TDSC        | Toner supply clutch | Controls ON/OFF of toner supply.                   |

## 2. Operational descriptions

The toner transport screw in the toner cartridge is driven by the drum motor to supply toner to the developing unit.

The toner transport screw in the toner cartridge is turned ON/OFF by the toner supply clutch TDSC.

The toner density in the developing unit is detected by the toner density sensor. When the density falls below the specified level, the drum motor and the toner supply clutch TDSC are turned ON to supply toner in the toner cartridge to the developing unit.

When the toner density reaches the specified level, TDSC turns OFF to stop supply of toner to the developing unit.

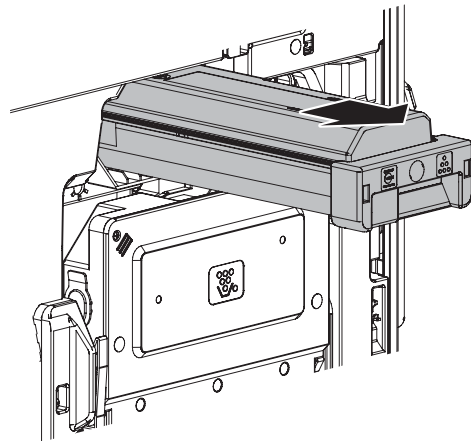
With the above process, the toner density in the developing unit is maintained at a fixed level.

## 3. Disassembly and assembly

### A. Toner cartridge

- 1) Open the front cover.
- 2) Pull and remove the toner cartridge slowly and horizontally.

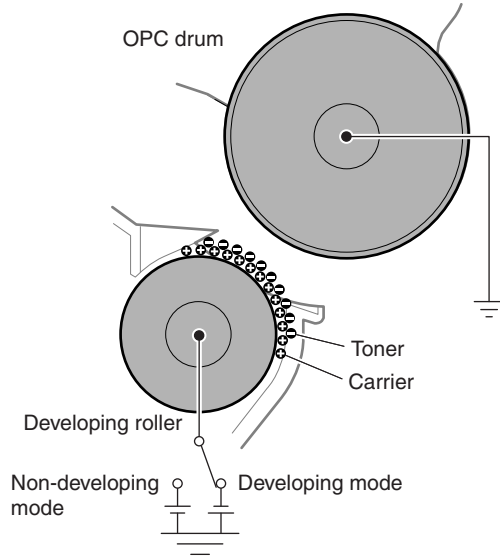
NOTE: When installing, hold the toner cartridge horizontally and inset it slowly.





## 2. Operational descriptions

This converts the electrostatic latent images on the OPC drum generated by the laser (writing) unit into visible images with toner.



Toner and carrier in the developing unit are stirred and transported by the mixing roller.

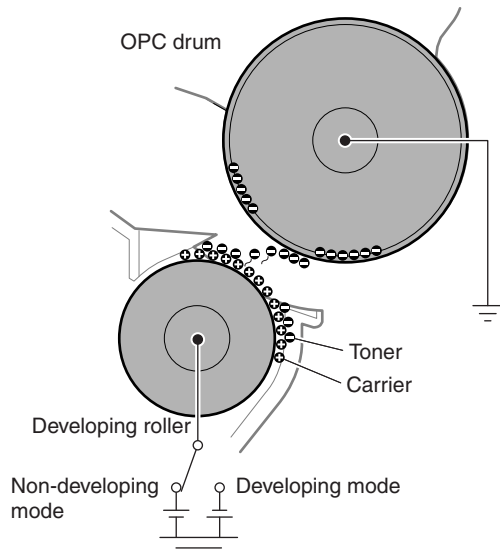
By mixing and transporting, toner and carrier are negatively charged due to mechanical friction.

The developing bias voltage (negative) is applied to the developing roller.

Negatively charged toner is attracted to the exposed section on the OPC drum where the negative potential falls due to the developing bias (negative).

If the OPC drum is not exposed, the negative potential is higher than the developing bias voltage, and toner is not attracted.

When rotation of the OPC drum is started and stopped, some area on the OPC drum is not charged negatively. To prevent toner from attaching to that area, a positive voltage is applied to the drum.



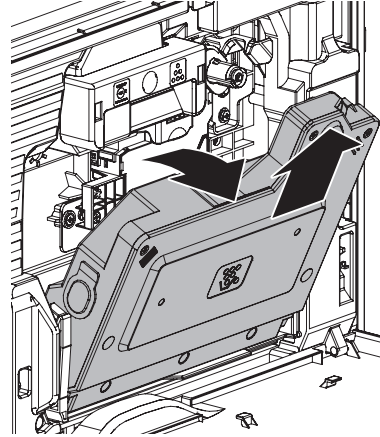
## 3. Disassembly and assembly

### A. Developing unit

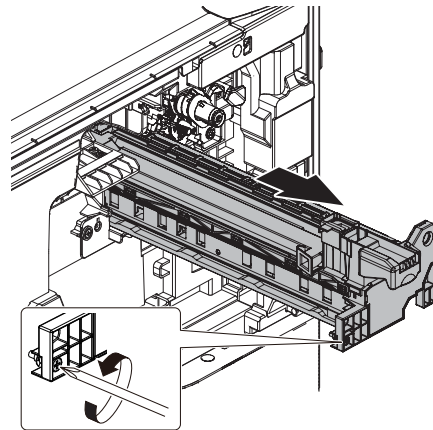
NOTE: Be careful not to attach fingerprints or oily dirt on the DV roller surface.

NOTE: Be careful not to hold the case adjacent to the developing roller strongly.

- 1) Open the front cover.
- 2) Tilt the waste toner box forward to remove it.

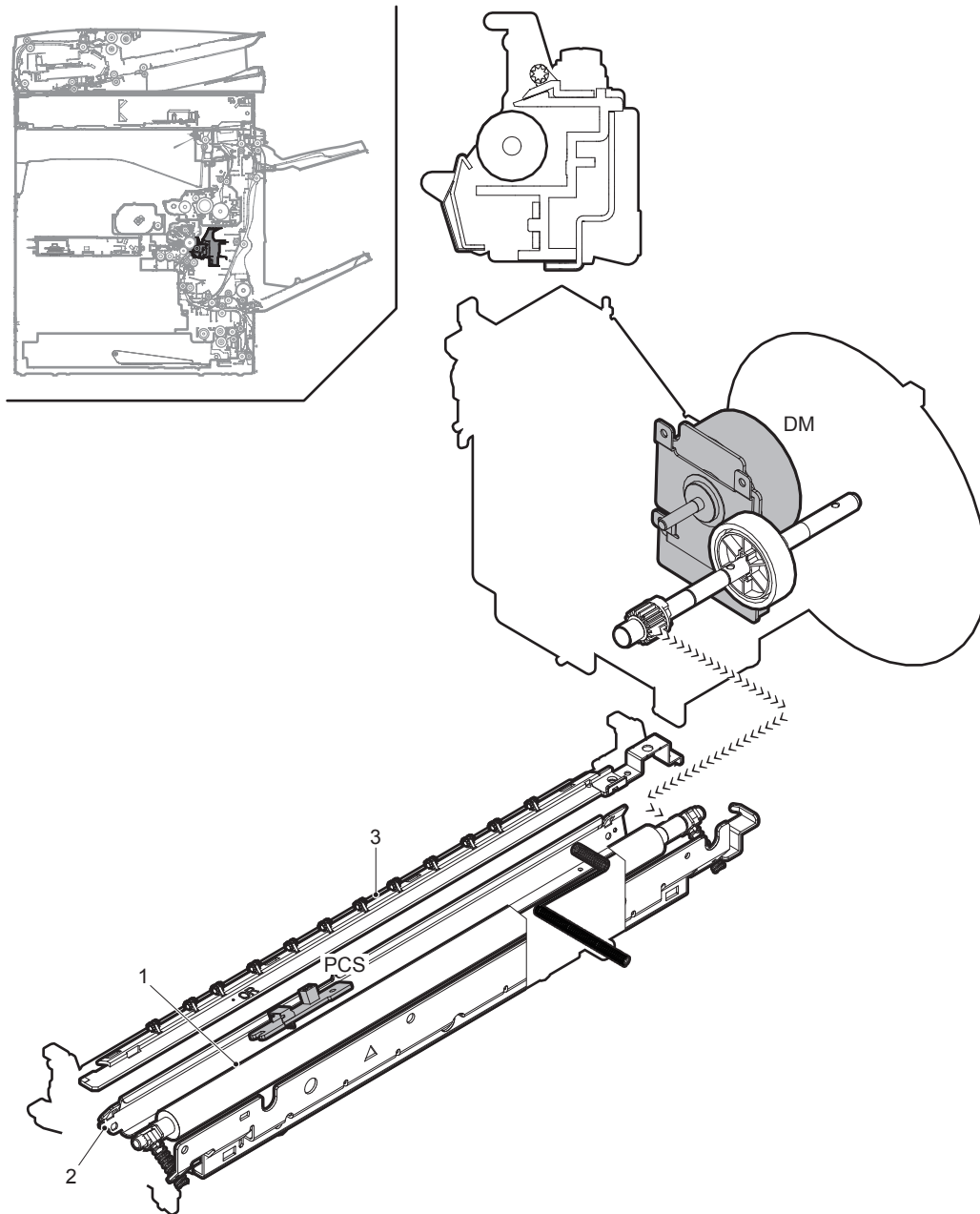


- 3) Remove the blue screw, and pull the developing unit to remove.



## [K] TRANSFER SECTION

### 1. Electrical and mechanical relation diagram



| Signal name | Name                 | Function/Operation                                                  |
|-------------|----------------------|---------------------------------------------------------------------|
| DM          | Drum motor           | Drives the OPC drum, the developing unit, and the transfer unit.    |
| PCS         | Image density sensor | Detects the toner patch density on the OPC drum in process control. |

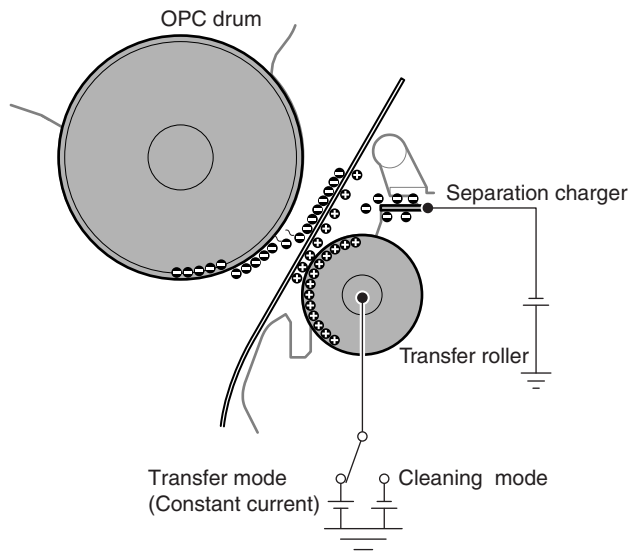
| No. | Name                  | Function/Operation                                                                                                                     |
|-----|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Transfer roller       | Transfers toner images from the OPC drum to paper.                                                                                     |
| 2   | Paper guide electrode | Connected to the ground through a high resistor to maintain the paper guide at a proper potential, stabilizing the transfer operation. |
| 3   | Separation charger    | Applies a high negative voltage to the paper which was charged positively in the transfer process in order to discharge it.            |



## 2. Operational descriptions

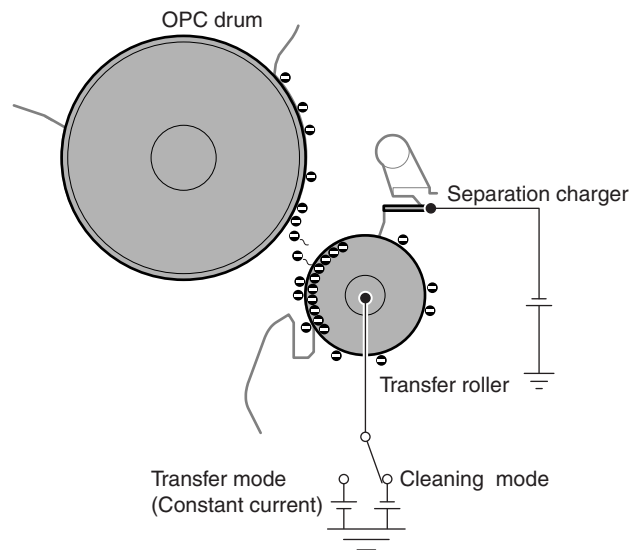
### A. Transfer operation

A positive high voltage is applied to the transfer roller to transfer the toner images from the OPC drum to paper.



### B. Cleaning operation

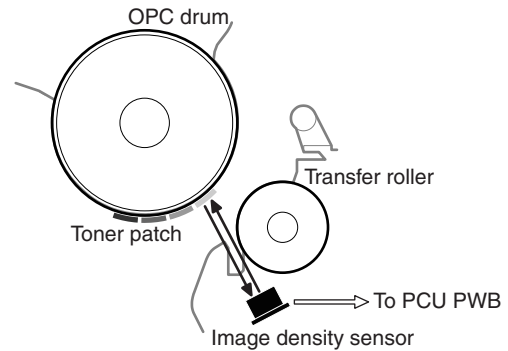
In the cleaning process, the polarity of the voltage applied to the transfer roller is made negative, and unnecessary toner on the transfer roller is sent to the OPC drum, cleaned with the cleaning blade, and transported to the waste toner section.



### C. Toner patch density detection in the process control

In the process control, the toner patch density on the OPC drum is detected with the image density sensor.

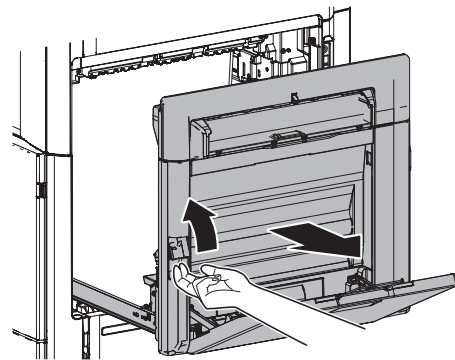
In addition, the sensitivity of the image density sensor is automatically performed by using reflection on the OPC drum surface.



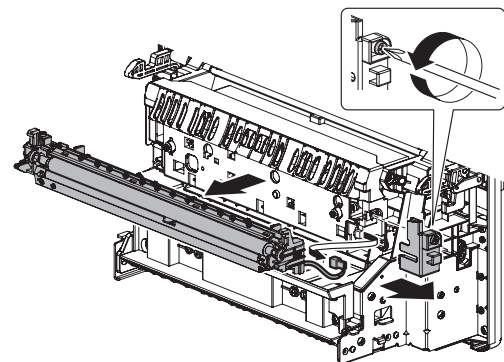
## 3. Disassembly and assembly

### A. Transfer unit

- 1) Pull the lock lever, and open the right door.



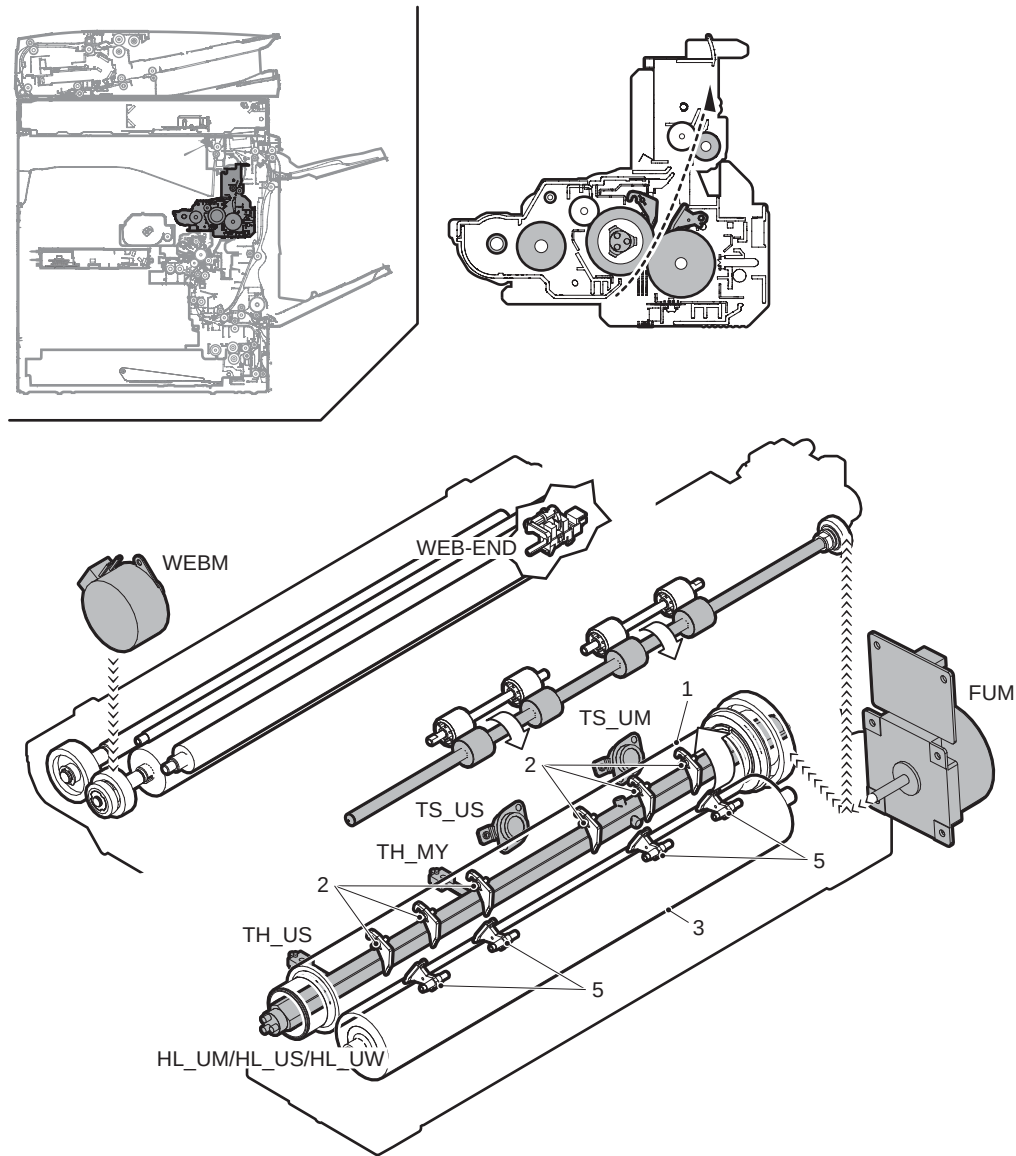
- 2) Remove the blue screw, and remove the cover. Disconnect the connector, and remove the transfer unit.



## [L] FUSING SECTION

### 1. Electrical and mechanical relation diagram

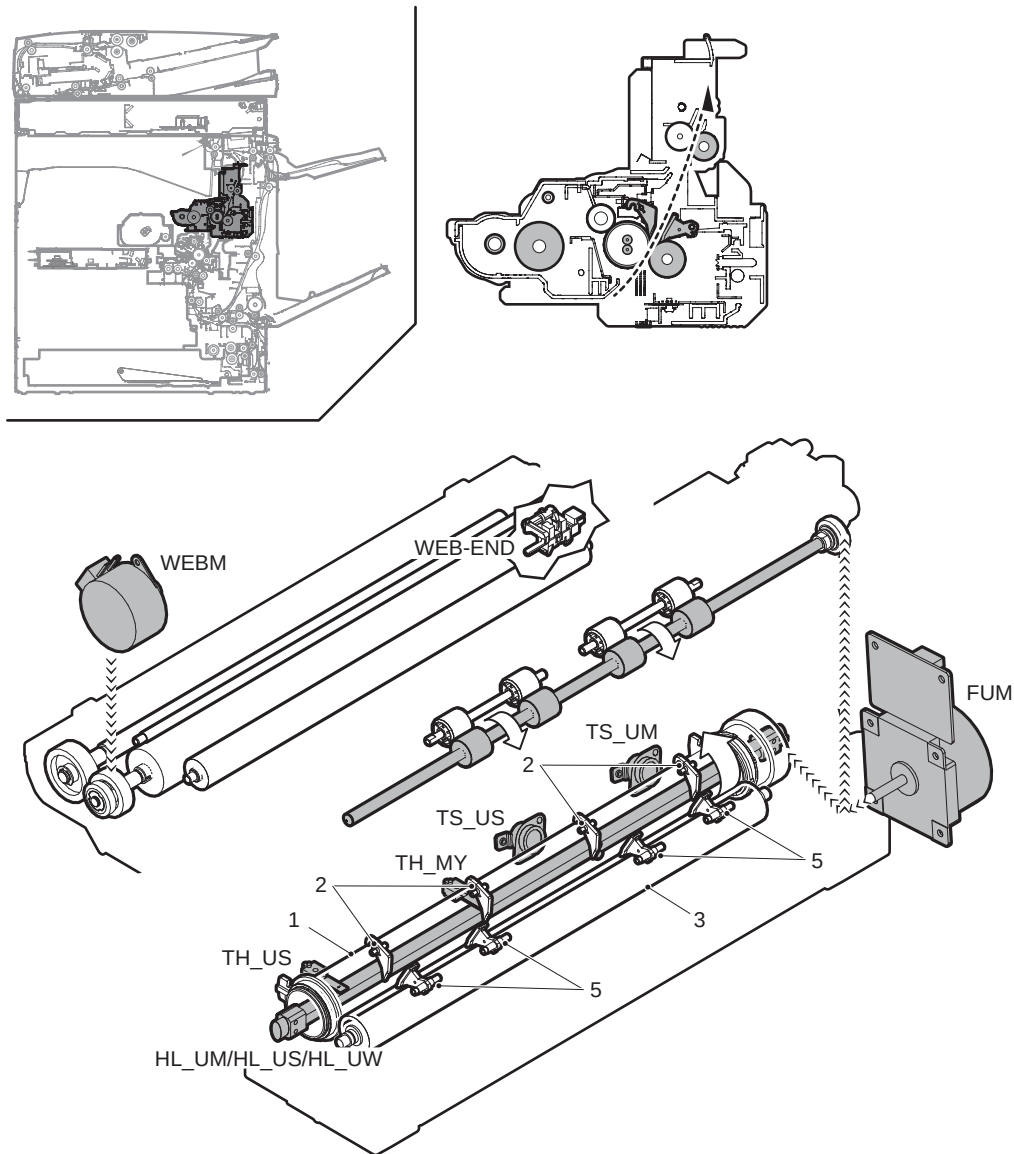
#### A. 46/56 cpm machine



| Signal name | Name [Type]         | Function/Operation                                                                                |
|-------------|---------------------|---------------------------------------------------------------------------------------------------|
| FUM         | Fusing motor        | Drives the fusing section.                                                                        |
| HL_UM       | Heater lamp main    | Turns ON/OFF the heater lamp main.                                                                |
| HL_US       | Heater lamp sub     | Turns ON/OFF the heater lamp sub.                                                                 |
| HL_UW       | Heater lamp warm-up | Turns ON/OFF the warm-up operation of the heater lamp.                                            |
| TH_MY       | Main thermistor     | Detects the temperature.                                                                          |
| TH_US       | Sub thermistor      | Detects the temperature.                                                                          |
| TS_UM       | Thermostat UM       | shuts down the heater lamp (HL_UM) circuit when the fusing section is overheated (center section) |
| TS_US       | Thermostat US       | shuts down the heater lamp (HL_US) circuit when the fusing section is overheated (edge section)   |
| WEB-END     | Web end detection   | Detects the web end.                                                                              |
| WEBM        | Web motor           | Drives the fusing web cleaning paper.                                                             |

| No. | Name                     | Function/Operation                                                                                |
|-----|--------------------------|---------------------------------------------------------------------------------------------------|
| 1   | Fusing roller (Heating)  | Applies heat and pressure to toner on paper to fuse it on paper.                                  |
| 2   | Upper separation pawl    | Mechanically separates paper which was not naturally separated from the fusing roller (heating).  |
| 3   | Fusing roller (Pressing) | Presses toner on paper to fuse.                                                                   |
| 4   | Web roller               | Cleans the fusing roller (heating).                                                               |
| 5   | Lower separation pawl    | Mechanically separates paper which was not naturally separated from the fusing roller (pressing). |

## B. 36cpm machine



| Signal name | Name [Type]         | Function/Operation                                                                                |
|-------------|---------------------|---------------------------------------------------------------------------------------------------|
| FUM         | Fusing motor        | Drives the fusing section.                                                                        |
| HL_UM       | Heater lamp main    | Turns ON/OFF the heater lamp main.                                                                |
| HL_US       | Heater lamp sub     | Turns ON/OFF the heater lamp sub.                                                                 |
| HL_UW       | Heater lamp warm-up | Turns ON/OFF the warm-up operation of the heater lamp.                                            |
| TH_MY       | Main thermistor     | Detects the temperature.                                                                          |
| TH_US       | Sub thermistor      | Detects the temperature.                                                                          |
| TS_UM       | Thermostat UM       | shuts down the heater lamp (HL_UM) circuit when the fusing section is overheated (center section) |
| TS_US       | Thermostat US       | shuts down the heater lamp (HL_US) circuit when the fusing section is overheated (edge section)   |
| WEB-END     | Web end detection   | Detects the web end.                                                                              |
| WEBM        | Web motor           | Drives the fusing web cleaning paper.                                                             |

| No. | Name                     | Function/Operation                                                                                |
|-----|--------------------------|---------------------------------------------------------------------------------------------------|
| 1   | Fusing roller (Heating)  | Applies heat and pressure to toner on paper to fuse it on paper.                                  |
| 2   | Upper separation pawl    | Mechanically separates paper which was not naturally separated from the fusing roller (heating).  |
| 3   | Fusing roller (Pressing) | Presses toner on paper to fuse.                                                                   |
| 4   | Web roller               | Cleans the fusing roller (heating).                                                               |
| 5   | Lower separation pawl    | Mechanically separates paper which was not naturally separated from the fusing roller (pressing). |

## 2. Operational descriptions

### A. Fusing unit drive

For driving the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear.

Driving by the drive motor (DC Brush-less motor) is performed according to the control signal sent from the PCU.



### B. Heater lamp drive

The surface temperature of the heat roller detected by the thermistor is sent to the PCU. When the temperature is lower than the specified level, the heater lamp ON signal is sent from the PCU to the heater lamp drive circuit on the HL PWB.

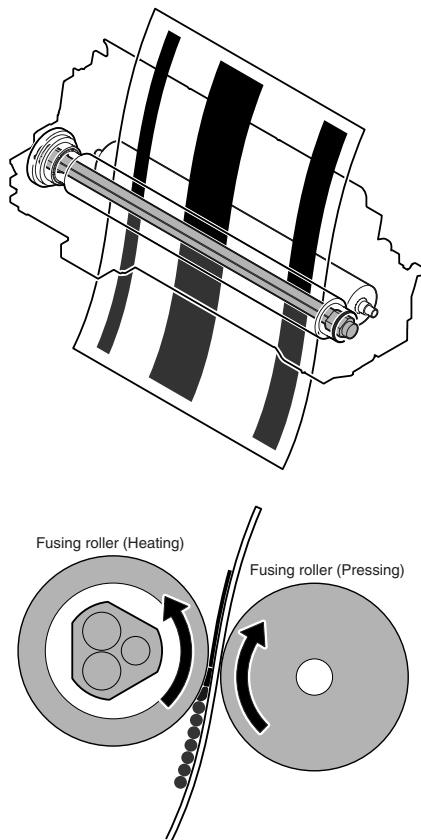
The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, the power supply (AC line) to the heater lamp is cut off.

### C. Fusing operation

Toner on paper is heated and pressed to be fused by the heat roller.



The fusing heat roller (heating) is provided with three heater lamps, which heat the fusing roller to fuse toner onto paper.

The fusing rollers (pressing) are made of silicon rubber because of the following reasons and purpose.

- 1) Paper is separated upward. (Since the fusing roller (heating) is of higher hardness, the fusing roller (pressing) is deformed to separate paper upward.)
- 2) The nip quantity is increased to increase heat capacity for paper.
- 3) By pressing paper with the flexible roller, toner is fused without deformation.

### D. Fusing temperature control

The temperature sensor is provided at the center of the fusing roller (heating).

The roller temperature is detected by the thermistor sensor, and the heater lamp is controlled so that the temperature is maintained at the specified level.

### E. Roller cleaning

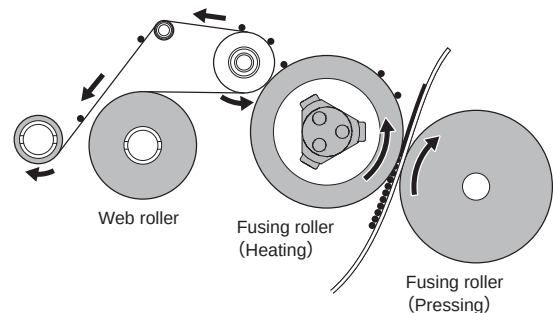
The upper fusing roller is cleaned by the web. The lower fusing roller is cleaned by the cleaning roller.

- 1) Remaining toner on the upper fusing roller is cleaned by the web with silicon included.

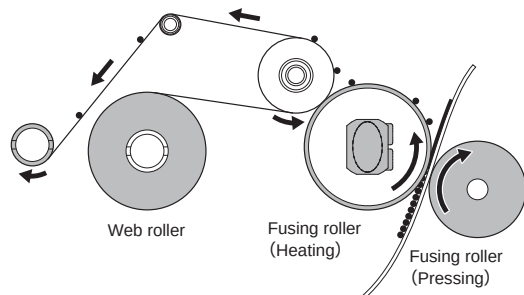
The web unit is provided in the upper section of the upper fusing roller, and is composed of the feeding section of the web sheet, the winding section, and the backup roller which pressed the web sheet onto the upper fusing roller.

- 2) Remaining toner on the lower fusing roller is attached to the cleaning roller by the differences in the temperature, etc. between the lower fusing roller and the cleaning roller.

46/56 cpm machine.



36 cpm machine.



## F. Web end detection

The judgment of web end is made by the fusing web print counter or the web life end detection, whichever is earlier.

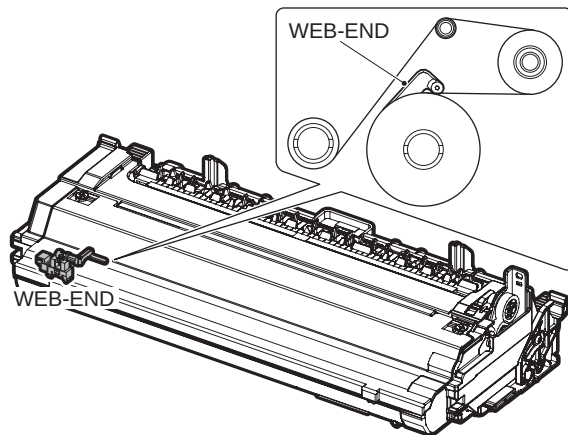
The web life end detection is made when the WEB-END sensor terminal is conducted by making contact with the roller shaft on the web supply side.

When the web life end is detected, the warning display is made, but the machine still continues the operation.

Warning display content: Maintenance required. Code: FK3

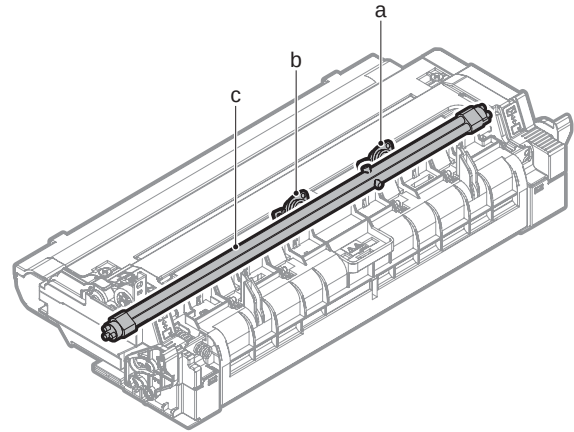
When the web is replaced with a new one and the web counter is cleared, the warning display disappears.

The new web is not automatically detected.



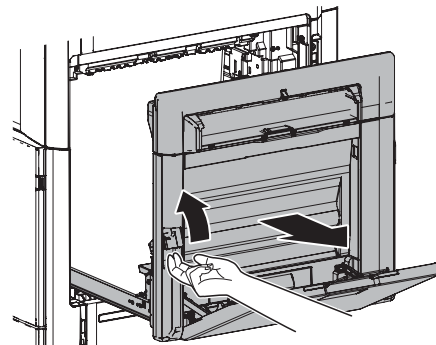
## 3. Disassembly and assembly

### A. Fusing unit

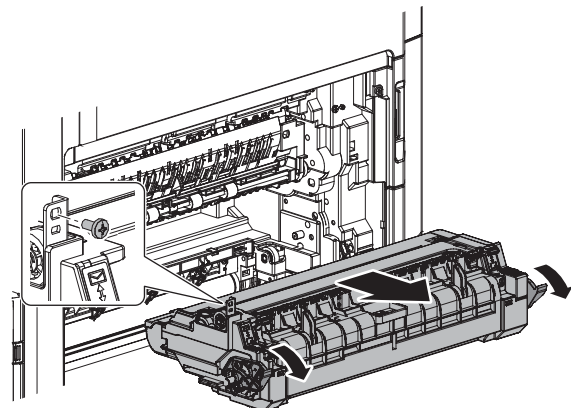


| Parts |                   |
|-------|-------------------|
| a     | Thermostat (main) |
| b     | Thermostat (sub)  |
| c     | Heater lamp       |

- 1) Pull the lock lever, and open the right door.



- 2) Remove the blue screw. Pull the lock lever and remove the fusing unit.



### (1) Thermostat (main/sub)

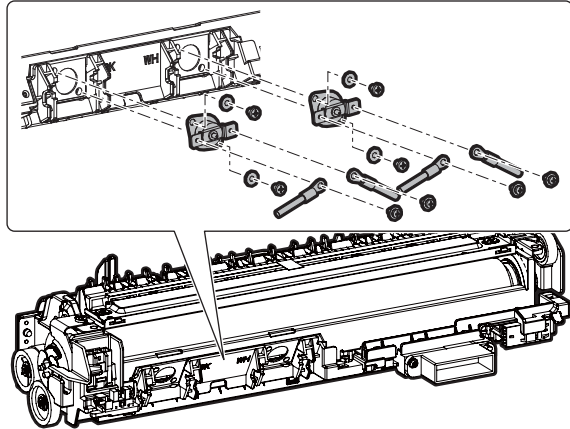
- 1) Remove the fusing unit.
- 2) Remove the screw, and remove the cover. Remove the screw, and remove the terminal. Remove the screw and the washer, and remove the thermostat.

NOTE: When fixing the thermostat and the harness, tighten the screws at the following torque:

1.0 - 1.2 N·m

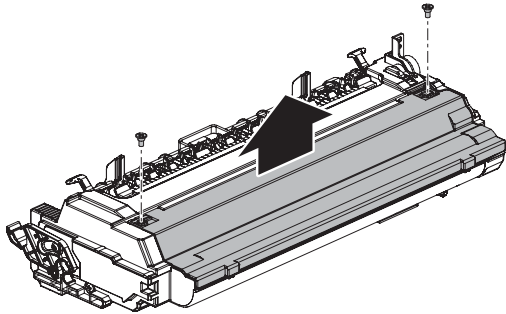
10 - 12 kgf·cm

0.7 - 0.9 lbft

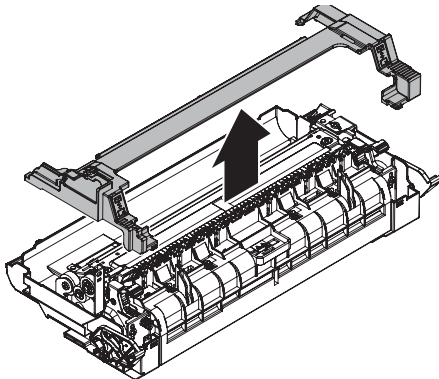


### (2) Heater lamp

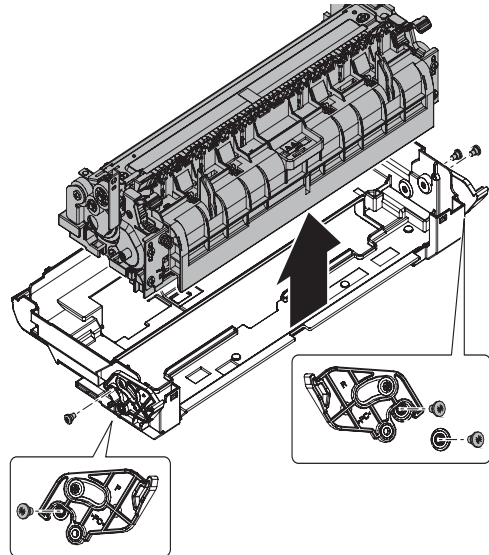
- 1) Remove the fusing unit.
- 2) Remove the screw, and remove the web unit.



- 3) Remove the cover.



- 4) Remove the screw, and remove the cover.



- 5) Disconnect the connector. Remove the blue screw, and remove the fixing plate. Remove the heater lamp.

