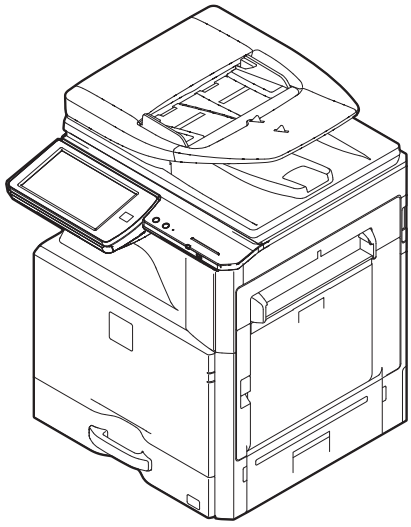
# SHARP SERVICE MANUAL

CODE: 00ZMX3640/S2E



## DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM

## MODEL MX-2640N/2640NR 1
## MX-3140N/3140NR /3140N A
## MX-3640N/3640NR

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

SHARP CORPORATION

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The contents are subject to change without notice.

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# Symbols in this manual

The lists of symbols used in this manual are shown below.
The meaning of each symbol described in the table must be understood for proper servicing.

## 1. Symbols used for notes and cautions

| Symbol | Meaning | |
|---|---|---|
| | CAUTION | Indicates a general caution item. |
| | HIGH TEMP | Be careful of a high temperature in the fusing section. |
| | HIGH VOLTAGE | Be careful of an electric shock where a high voltage is applied such as the high voltage PWB, the main charger, and the process section. |
| | DANGER | Indicates danger. |
| | HANDLE WITH CARE | Indicates a part which requires special care for handling such as the HDD, and the LSU. |
| | INHIBIT | Indicates inhibit. |
| | NO ELECTROSTATIC CHARGE | Be careful to keep away from static electricity. (PWB's and electric parts) |
| | NO DUST, FINGER PRINT, DIRT, SCRATCH | Be careful not to touch directly, such as the optical section, the photoconductor, and the DV roller.<br>Also be careful not to scratch. |
| | NO SCRATCH | |
| | NO LIGHT | Be careful not to expose to light, such as the photoconductor, and the test chart. |
| | NO SOLVENT | Be careful not to use a solvent in cleaning, etc. |
| | NO DISASSEMLE | Do not disassemble.<br>Not serviceable.<br>Example CCD unit. |

| Symbol | Meaning | |
|---|---|---|
| | OK/GOOD | Indicates a correct procedure or result in an adjustment, etc. |
| | NO GOOD | Indicates a wrong procedure or result in an adjustment, etc. |
| | NOTE | Indicates a note. |
| | IMPORTANT | Indicates an important item. |
| | REFER | Indicates a reference page, etc. |
| | NEW | Indicates a new technology, a new method, or a new item. |
| | EXAMPLE | Indicates a description using an example. |

## 2. Symbols used in the work contents

| Symbol | Meaning (Work content) | |
|---|---|---|
| | Adhesion | Indicates that a seal, etc. is attached. |
| | Adjustment | Indicates an adjustment. |
| | Measure a dimension or a size. | Indicates that a dimension or a length is measured. |
| | Apply grease | Indicates that grease is to be applied. |
| | Apply conductive grease | Indicates conductive grease is applied |
| | Cleaning (Dry) | Indicates clean with a dry cloth. |
| | Cleaning (Wet) | Indicates clean with a cloth dampened with water. |
| | Cleaning (Alcohol) | Indicates clean with alcohol. |
| | Cleaning (Blower) | Indicates cleaning is done with a blower/ brush. |

| Symbol | Meaning (Work content) | |
|---|---|---|
| | Cleaning (Vacuum) | Indicates that cleaning is performed with a vacuum cleaner. |
| | Cleaning (Brush) | Indicates that cleaning is performed with a brush. |
| | Oil | Indicates that oil is applied to lubricate. |
| | Apply powder. | Indicates that setting power is applied to the photoconductor drum, the transfer belt, etc. |
| | Replace | Indicates that a part is replaced. |
| | Check | Indicates that a check (replacement, adjustment, cleaning) is performed. |
| | Cut | Indicates that cutting is performed. |
| | Loosen | Indicates that a screw is loosened. |
| | Connect | Indicates that a connector is connected. |
| | Disconnect | Indicates that a connector is disconnected. |
| | Remove a harness. | Indicates that a harness is unsecured. |
| | Attach a harness. | Indicates that a harness is secured. |
| | Remove a clamp. | |
| | Attach a clamp. | |
| | Release a hook. | Indicates that a hook is released. |
| | Fix a hook. | Indicates that a hook is fixed. |
| | Disengage the pawl. | |

| Symbol | Meaning (Work content) | |
|---|---|---|
| | Engage the pawl. | |
| | Screw lock | Indicates that a screw is secured with adhesive. |
| | Unlock | |
| | Turn OFF the power. | |
| | Disconnect the power plug. | |

## 3. Symbols used for kinds of parts

| Symbol | Meaning (Kinds of parts) | |
|---|---|---|
| | Maintenance part | Indicates a part which is replaced in a maintenance procedure. |
| CP | Consumable part | Indicates a consumable part such as a photoconductor, developer, a transfer belt, etc. |
| WP | Waste part | Indicates a waste part which is consumed but excluded from the above consumable parts. (A roller, a seal, etc.) |
| UN | Unit part | Indicates a part which is designated as a unit. |
| | Included part | Indicates a part which is included in the package |

## 4. Symbols used for additional descriptions

| Symbol | Meaning | |
|---|---|---|
| TOP VIEW | View from the top | Indicates from which angle the drawing is viewed. |
| BOTTOM VIEW | View from the bottom | |
| FRONT VIEW | View from the front | |
| REAR VIEW | View from the back | |

# NOTE FOR SERVICING

## 1. Precautions for servicing

- When servicing, disconnect the power plug, the printer cable, the network cable, and the telephone line from the machine, except when performing the communication test, etc.

  It may cause an injury or an electric shock.
- There is a high temperature area inside the machine. Use extreme care when servicing.

  It may cause a burn.
- There is a high voltage section inside the machine which may cause an electric shock. Be careful when servicing.
- Do not disassemble the laser unit. Do not insert a reflective material such as a screwdriver in the laser beam path.

  It may damage eyes by reflection of laser beams.
- When servicing with the machine operating, be careful not to squeeze you hands by the chain, the belt, the gear, and other driving sections.
- Do not leave the machine with the cabinet disassembled.

  Do not allow any person other than a serviceman to touch inside the machine. It may cause an electric shock, a burn, or an injury.
- When servicing, do not breathe toner, developer, and ink excessively. Do not get them in the eyes.

  If toner, developer, or ink enters your eyes, wash it away with water immediately, and consult a doctor if necessary.
- The machine has got sharp edges inside. Be careful not to damage fingers when servicing.
- Do not throw toner or a toner cartridge in a fire. Otherwise, toner may ignite and burn you.
- When replacing a lithium battery on a PWB, only use the specified replacement battery.

  If a battery of different specification is used, it may cause a machine malfunction or breakdown.
- When carrying a unit with PWB or electronic parts installed to it, be sure to put it in an anti-static-electricity bag.

  It may otherwise cause a machine breakdown or malfunction.

CAUTION
DOUBLE POLE/NEUTRAL FUSING

(200V series only)

## 2. Warning for servicing

- Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.

  Avoid complex wiring, which may lead to a fire or an electric shock.

  It may cause a fire or an electric shock.
- If there is any abnormality such as a smoke or an abnormal smell, interrupt the job and disconnect the power plug.

  It may cause a fire or an electric shock.
- Be sure to connect the grounding wire. If an electric leakage occurs without grounding, a fire or an electric shock may result.

  To protect the machine and the power unit from lightening, grounding must be made.
- When connecting the grounding wire, never connect it to the following points.
  - Gas tube
  - Lightning conductor
  - A water pipe or a water faucet, which is not recognized as a grounding object by the authorities.
  - Grounding wire for telephone line

  It may cause an explosion, a fire or an electric shock.
- Do not damage, break, or stress the power cord.

  Do not put heavy objects on the power cable. Do not stress, forcibly bend, or pull the power cord.

  It may cause a fire or an electric shock.
- Keep the power cable away from a heat source.

  Do not insert the power plug with dust on it into a power outlet.

  It may cause a fire or an electric shock.
- Do not place liquids or foreign metallic objects inside the machine.

  It may cause a fire or an electric shock.
- Do not touch the power cord, insert the phone jack, operate the machine, or perform service on the machine with wet or oily hands.

  It may cause an electric shock.

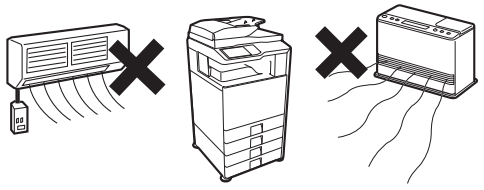
## 3. Note for installing site

Do not install the machine at the following sites.

- **Place of high temperature, high humidity, low temperature, low humidity, place under an extreme change in temperature and humidity.**

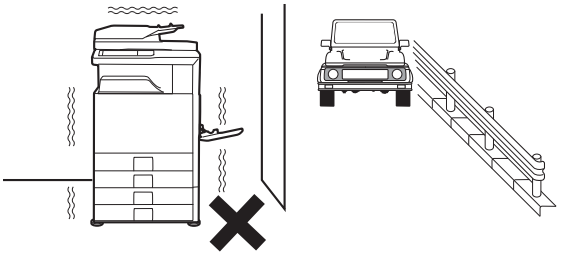
  Paper may get damp and form condensation inside the machine, causing paper jam or copy dirt.

  For operating and storing conditions, refer to the specifications described later.



- **Place of extreme vibrations**

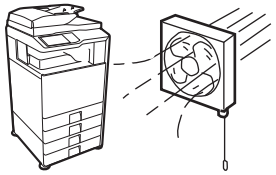
  It may cause a breakdown.



- **Poorly ventilated place**

  An electrostatic type copier will produce ozone.

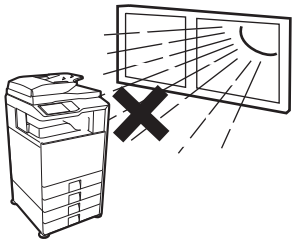
  The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce an ozone smell. Install the machine in a well ventilated place.



- **Place of direct sunlight.**

  Plastic parts and ink may be defor med, discolored, or may undergo qualitative change.

  It may cause a breakdown or output quality problems.



- **Place which is full of organic gases such as ammonium**

  The organic photo-conductor (OPC) drum used in the machine may undergo qualitative change du e to or ganic gases such as ammonium.

  Installation of this mach ine near a diazo-type copier and blue print machine may result in poor quality output.

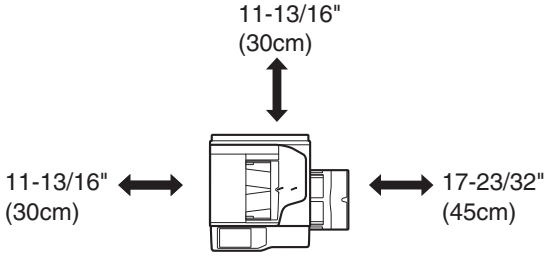
- **Place of much dust**

  When dust or cont aminants enters the machine, it may ca use a breakdown or poor quality output.

- **Place near a wall**

  The machine will require ventilation.

  If ventilation is not proper, poor output or mach ine failure may result.




- **Unstable or irregular surface**

  If the machine is dropped or tips over, it may cause injury or machine malfunction.

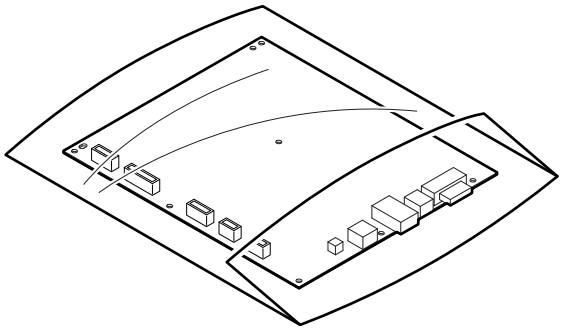
  Use an optional desk or an exclusive-use desk.

  When using the optional desk, be sure to fix the adjuster and lock the casters.

## 4. Note for handling PWB and electronic parts

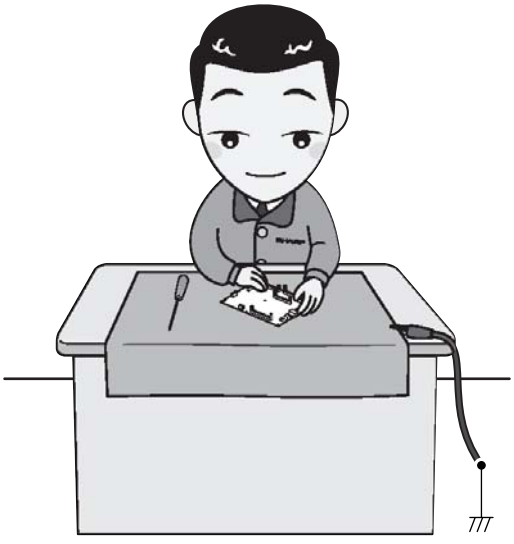
When handling the PWB and the electronic p arts, be sur e to observe the following precautions in order to prevent against damage by static electricity.

- When in transit or storing, put the parts in an anti-static bag or an anti-static case and do not touch them with bare hands.



- When and after removing the parts from an anti-static bag (case), use an earth band as shown below:
  - Put an earth band to your arm, and connect it to the machine.

- When repairing or r eplacing an electr onic part, perform the procedure on an anti-static mat.



## 5. Note for repairing/replacing the LSU

When repairing or replacing, be sure to observe the following items.

* When repairing or replacing the LSU, be sure to disconnect the power plug from the power outlet.
* When repairing or replacing the LSU, follow the procedures described in this Service Manual.
* When checking the operations after repairing the LSU, keep all the parts including the cover installed and perform the operation check.
* Do not modify the LSU.
* When visually checking the inside of the machine for the operation check, be careful not to allow laser beams to enter the eyes.

If the above precaution is neglected or the LSU is modified, ones safety may be at risk.

## 6. Note for handling the drum unit, the transfer unit, the developing unit

When handling the OPC drum unit, the transfer unit, and the developing unit, strictly observe the following items.

If these items are neglected, a trouble may be generated in the copy and print image quality.

**Drum unit**

* Avoid working at a place with strong lights.
* Do not expose the OPC drum to lights including interior lights for a long time.
* When the OPC drum is removed from the machine, cover it with light blocking material. (When using paper, use about 10 sheets of paper to cover it.)
* Be careful not to attach fingerprints, oil, grease, or other foreign material on the OPC drum surface.

**Transfer unit**

* Be careful not to leave fingerprints, oil, grease, or other foreign material on the transfer roller, primary transfer belt, and the secondary transfer belt.

**Developing unit**

* Be careful not to leave fingerprints, oil, grease, or other foreign material on the developing unit.

## 7. Screw tightening torque

The screws used in this machine are largely classified into three types.

These types are classified according to the shape of the screw grooves and use positions.

The table below shows the types of the screws and the tightening torques depending on the use position.

When tightening the screws for repair or maintenance, refer to the table.

However, for the other conditions of tightening screws than specified on this table, or under special circumstances, the details are described on the separate page. Refer to the descriptions on such an exception.

Important

Especially for the screw fixing positions where there is an electrode or a current flows, use enough care to tighten securely to avoid loosening.

**Screw kinds and tightening torques**

Normal screws, set screws (including step screws)

| Screw diameter | Material to be fixed | Tightening torque (N·m) | Tightening torque (kgf·cm) | Tightening torque (lbft) |
|---|---|---|---|---|
| M2.6 | Steel plate | 0.8 - 1.0 | 8 - 10 | 0.6 - 0.7 |
| M3 | Steel plate | 1.0 - 1.2 | 10 - 12 | 0.7 - 0.9 |
| M4 | Steel plate | 1.6 - 1.8 | 16 - 18 | 1.2 - 1.3 |

Tapping screws (for iron)

| Screw diameter | Material to be fixed | Tightening torque (N·m) | Tightening torque (kgf·cm) | Tightening torque (lbft) |
|---|---|---|---|---|
| M3 | Steel plate (Plate thickness 0.8mm or above) | 1.0 - 1.2 | 10 - 12 | 0.7 - 0.9 |
| M4 | Steel plate (Plate thickness 0.8mm or above) | 1.6 - 1.8 | 16 - 18 | 1.2 - 1.3 |
| M3 | Steel plate (Plate thickness less than 0.8mm) | 0.6 - 0.8 | 6 - 8 | 0.4 - 0.6 |
| M4 | Steel plate (Plate thickness less than 0.8mm) | 1.2 - 1.4 | 12 - 14 | 0.9 - 1.0 |

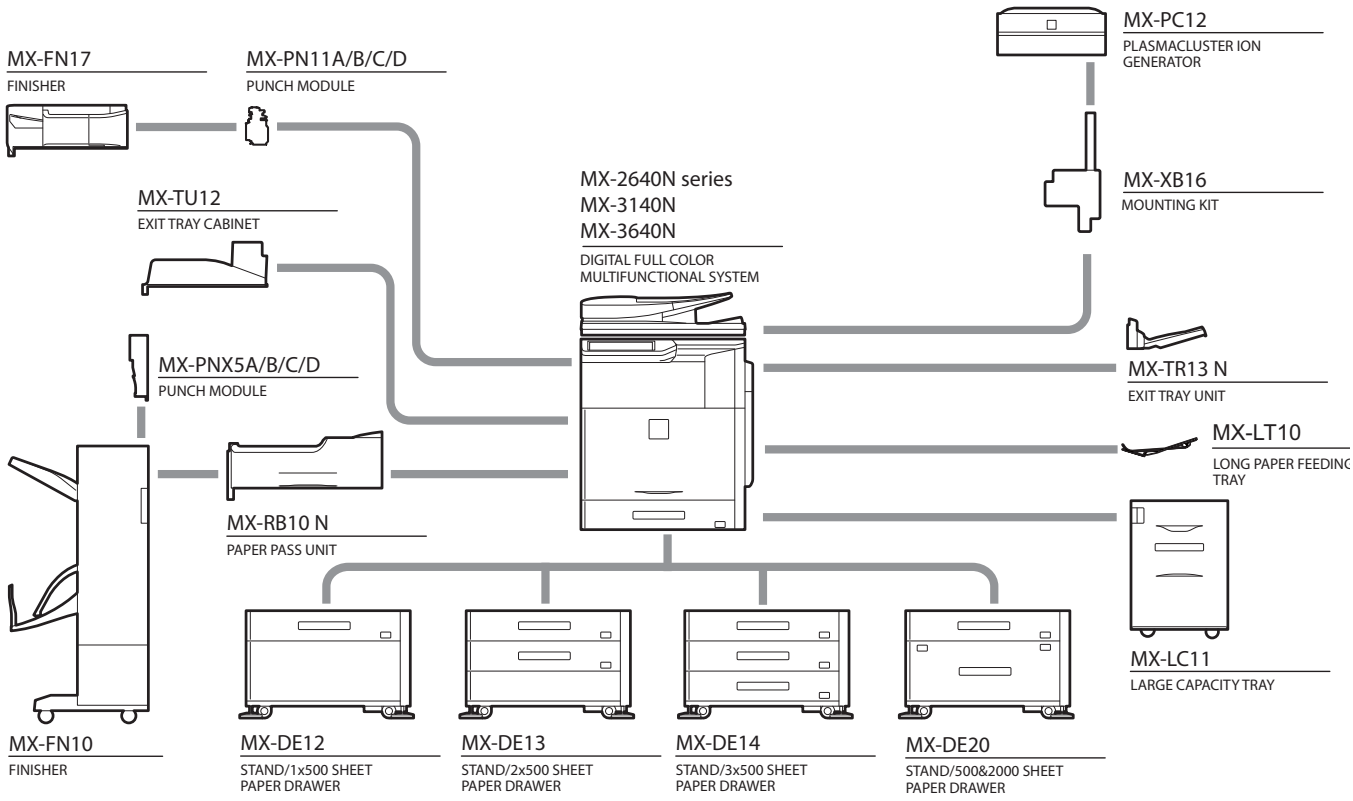
Tapping screw (for plastic)

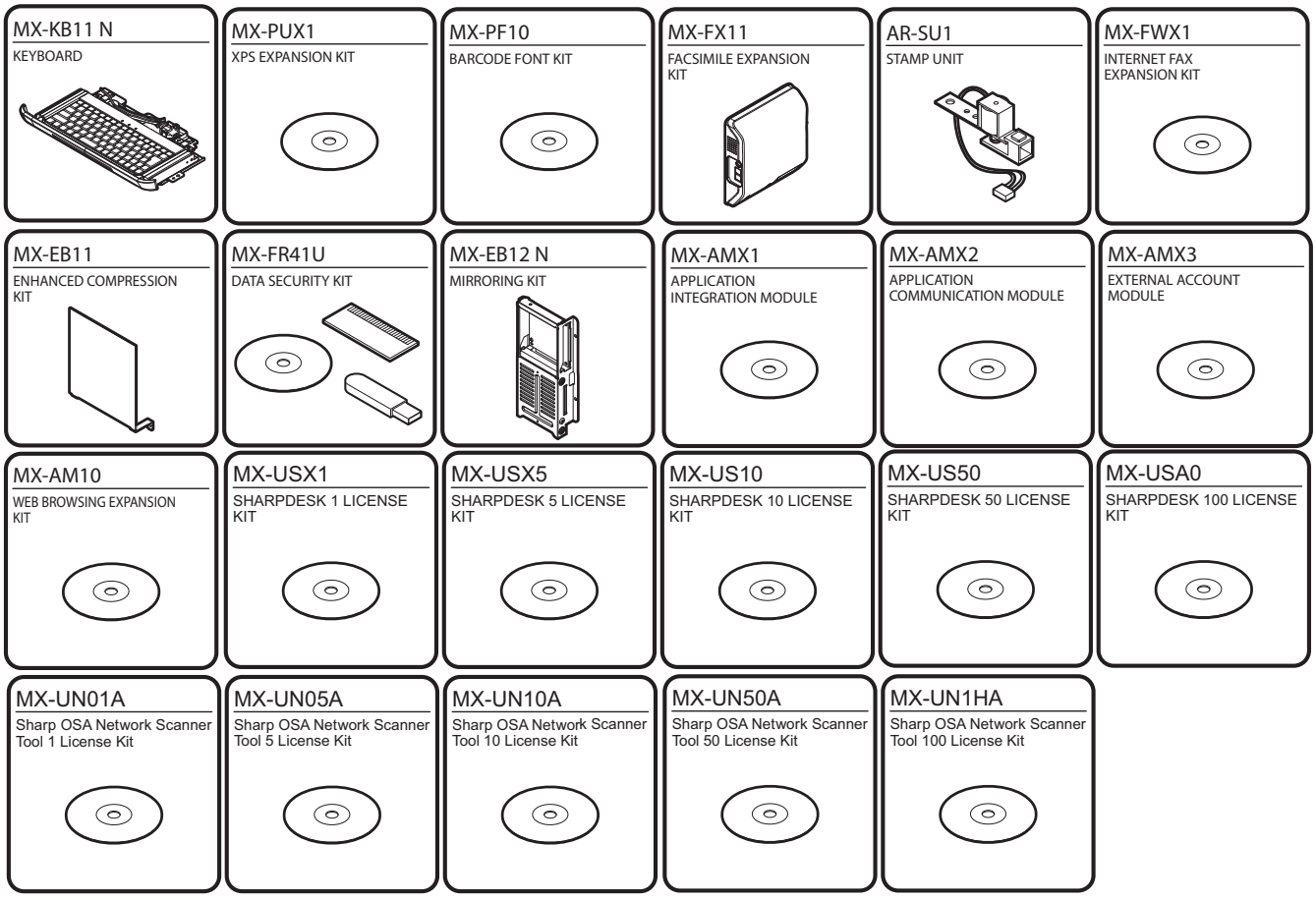
| Screw diameter | Material to be fixed | Tightening torque (N·m) | Tightening torque (kgf·cm) | Tightening torque (lbft) |
|---|---|---|---|---|
| M3 | Plastic resin | 0.6 - 0.8 | 6 - 8 | 0.4 - 0.6 |
| M4 | Plastic resin | 1.0 - 1.2 | 10 - 12 | 0.7 - 0.9 |

| Name in the manual | Model name |
|---|---|
| 26cpm machine | MX-2640N/2640NR |
| 31cpm machine | MX-3140N/3140NR/3140N A |
| 36cpm machine | MX-3640N/3640NR |

# [1] PRODUCT OUTLINE

## 1. System diagram



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## 2. Option list

| | Model name | Description | MX-2640N<br>MX-3140N | MX-3640N | MX-3140N A | MX-2640NR<br>MX-3140NR<br>MX-3640NR | Remarks |
|---|---|---|---|---|---|---|---|
| Document Feed System | --- | REVERSING SINGLE PASS FEEDER | STD | STD | STD | STD | |
| Paper Feed System | MX-DE12 | STAND/1x500 SHEET PAPER DRAWER | OPT | OPT | OPT | OPT | |
| | MX-DE13 | STAND/2x500 SHEET PAPER DRAWER | OPT | OPT | OPT | OPT | |
| | MX-DE14 | STAND/3x500 SHEET PAPER DRAWER | OPT | OPT | OPT | OPT | |
| | MX-DE20 | STAND/500&2000 SHEET PAPER DRAWER | OPT | OPT | OPT | OPT | |
| | MX-LC11 | LARGE CAPACITY TRAY | OPT | OPT | OPT | OPT | |
| | MX-LT10 | LONG PAPER FEEDING TRAY | OPT | OPT | OPT | OPT | |
| Paper Exit System | MX-TR13 N | EXIT TRAY UNIT | OPT | OPT | OPT | OPT | |
| | MX-TU12 | EXIT TRAY CABINET | STD/OPT | STD/OPT | OPT | OPT | *1 |
| | MX-FN17 | FINISHER | OPT | OPT | OPT | OPT | |
| | MX-PN11A | PUNCH MODULE | OPT | OPT | — | OPT | |
| | MX-PN11B | | OPT | OPT | OPT | OPT | |
| | MX-PN11C | | OPT | OPT | — | OPT | |
| | MX-PN11D | | OPT | OPT | — | OPT | |
| | MX-FN10 | SADDLE STITCH FINISHER | OPT | OPT | OPT | OPT | |
| | MX-RB10 N | PAPER PASS UNIT | OPT | OPT | OPT | OPT | |
| | MX-PNX5A | PUNCH MODULE | OPT | OPT | — | OPT | |
| | MX-PNX5B | | OPT | OPT | OPT | OPT | |
| | MX-PNX5C | | OPT | OPT | — | OPT | |
| | MX-PNX5D | | OPT | OPT | — | OPT | |
| Printer Expansion | --- | PRINTER EXPANSION KIT | STD | STD | STD | STD | |
| | --- | PS3 EXPANSION KIT | STD | STD | STD | STD | |
| | MX-PUX1 | XPS EXPANSION KIT | OPT | OPT | OPT | OPT | |
| | MX-PF10 | BARCODE FONT KIT | OPT | OPT | OPT | OPT | |
| Image Send Expansion | MX-FX11 | FACSIMILE EXPANSION KIT | OPT | OPT | — | OPT | *2 |
| | AR-SU1 | STAMP UNIT | OPT | OPT | OPT | OPT | |
| | MX-FWX1 | INTERNET FAX EXPANSION KIT | OPT | OPT | OPT | OPT | |
| | MX-EB11 | ENHANCED COMPRESSION KIT | OPT | OPT | OPT | OPT | |
| Authentication / Security | MX-FR41U | DATA SECURITY KIT | OPT | OPT | OPT | — | |
| | MX-EB12 N | MIRRORING KIT | OPT | OPT | OPT | OPT | |
| Application / Solution | MX-USX1 | SHARPDESK 1 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-USX5 | SHARPDESK 5 LICENSE kit | OPT | OPT | OPT | OPT | |
| | MX-US10 | SHARPDESK 10 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-US50 | SHARPDESK 50 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-USA0 | SHARPDESK 100 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-AMX1 | APPLICATION INTEGRATION MODULE | OPT | OPT | OPT | OPT | |
| | MX-UN01A | SHARP OSA NETWORK SCANNER TOOL 1 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-UN05A | SHARP OSA NETWORK SCANNER TOOL 5 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-UN10A | SHARP OSA NETWORK SCANNER TOOL 10 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-UN50A | SHARP OSA NETWORK SCANNER TOOL 50 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-UN1HA | SHARP OSA NETWORK SCANNER TOOL 100 LICENSE KIT | OPT | OPT | OPT | OPT | |
| | MX-AMX2 | APPLICATION COMMUNICATION MODULE | STD/OPT | STD/OPT | STD | STD | *1 |
| | MX-AMX3 | EXTERNAL ACCOUNT MODULE | STD/OPT | STD/OPT | STD | STD | *1 |
| | MX-AM10 | WEB BROWSING EXPANSION KIT | OPT | STD/OPT | — | — | *1 |
| Other | MX-KB11 N | KEYBOARD | STD/OPT | STD/OPT | OPT | OPT | *1 |
| | MX-PC12 | PLASMACLUSTER ION GENERATOR | OPT | OPT | — | — | *2 |
| | MX-XB16 | PLASMACLUSTER ION GENERATOR MOUNTING KIT | OPT | OPT | — | — | *2 |

*1 : Option for some destinations

*2 : No support for some destinations

# [2] SPECIFICATIONS

## 1. Basic specifications

### (1) Engine Specification

| | |
|---|---|
| Photo-conductor kind | OPC (Diameter: Black: ϕ30mm Color (Y/M/C): ϕ30mm x3 lines) |
| Copying method | Electronic photo (Laser) |
| Developing system | Dry, 2-component magnetic brush development |
| Charging system | Charged saw-tooth method |
| Transfer system | Intermediate/secondary transfer belt |
| Separation system | Natural separation method<br>* Sub separation claw is equipped. |
| Cleaning system | Counter blade |
| Fusing system | Belt method |
| Waste toner disposal | No toner recycling system / Waste toner bottle system |
| Toner supply during operation | N/A |
| Outer Color | Pastel white, natural wave design |

### (2) Engine speed (ppm)

**Tray 1 - 4**

| Paper size | 26cpm machine | | 31cpm machine | | 36cpm machine | |
|---|---|---|---|---|---|---|
| | Monochrome | Color | Monochrome | Color | Monochrome | Color |
| A3, 11" x 17", 8K | 14 | 14 | 15 | 15 | 17 | 17 |
| B4, 8.5" x 14", 8.5" x 13",<br>8.5" x 13.4", 8.5" x 13.5" | 16 | 16 | 17 | 17 | 20 | 20 |
| A4, B5, 8.5" x 11", 16K | 26 | 26 | 31 | 31 | 36 | 36 |
| A4R, 16KR, 8.5" x 11"R, B5R, 7.25" x10.5"R | 19 | 19 | 20 | 20 | 23 | 23 |
| A5R, 5.5" x 8.5"R | 19 | 19 | 20 | 20 | 27 | 27 |
| Extra | 13 | 13 | 14 | 14 | 16 | 16 |
| Heavy paper (A3, 11" x 17", 8K) | 7 | 7 | 7 | 7 | 8 | 8 |
| Heavy paper<br>(B4, 8.5" x 14", 8.5" x 13",<br>8.5" x 13.4", 8.5" x 13.5") | 7 | 7 | 7 | 7 | 8 | 8 |
| Heavy paper (A4, B5, 8.5" x 11", 16K) | 12 | 12 | 12 | 12 | 14 | 14 |
| Heavy paper<br>(A4R, B5R, 8.5" x 11"R,<br>7.25" x 10.5"R, 16KR) | 9 | 9 | 9 | 9 | 11 | 11 |
| Heavy paper (A5R, 5.5" x 8.5"R) | 12 | 12 | 12 | 12 | 14 | 14 |
| Heavy paper (Extra) | 7 | 7 | 7 | 7 | 8 | 8 |

**Manual paper feed**

| Paper size | 26cpm machine | | 31cpm machine | | 36cpm machine | |
|---|---|---|---|---|---|---|
| | Monochrome | Color | Monochrome | Color | Monochrome | Color |
| A3, 11" x 17", 8K | 14 | 14 | 15 | 14 | 17 | 17 |
| B4, 8.5" x 14", 8.5" x 13",<br>8.5" x 13.4", 8.5" x 13.5" | 16 | 16 | 17 | 16 | 20 | 20 |
| A4, 8.5" x 11", 16K | 26 | 23 | 26 | 23 | 31 | 31 |
| B5 | 26 | 26 | 26 | 26 | 31 | 31 |
| A4R, 16KR, 8.5" x 11"R | 19 | 19 | 20 | 19 | 23 | 23 |
| B5R, 7.25" x 10.5"R | 19 | 19 | 20 | 20 | 23 | 23 |
| A5R, 5.5" x 8.5"R | 19 | 19 | 20 | 20 | 27 | 27 |
| A3W, 12" x 18" *2 | 13 | 13 | 14 | 13 | 16 | 16 |
| OHP (A4, 8.5" x 11") | 12 | 11 | 12 | 11 | 14 | 14 |
| OHP (A4R, 8.5" x 11"R) | 9 | 9 | 9 | 9 | 11 | 11 |
| Extra | 13 | 13 | 14 | 13 | 16 | 16 |
| Envelope (Monarch, Com-10, DL, C5,<br>Chokei-3, Chokei-4,<br>Youkei-2, Youkei-4,<br>Kakugata-2, Kakugata-3) | 8 | 7 | 8 | 7 | 10 | 10 |
| Heavy paper (A3, 11 x 17, 8K) | 7 | 6 | 7 | 6 | 8 | 8 |
| Heavy paper<br>(B4, 8.5" x 14", 8.5" x 13",<br>8.5" x 13.4", 8.5" x 13.5") | 7 | 6 | 7 | 6 | 8 | 8 |
| Heavy paper (A4, 8.5" x 11", 16K, B5) | 12 | 11 | 12 | 11 | 14 | 14 |

| Paper size | 26cpm machine | | 31cpm machine | | 36cpm machine | |
|---|---|---|---|---|---|---|
| | Monochrome | Color | Monochrome | Color | Monochrome | Color |
| Heavy paper (A4R, 16KR, 8.5" x 11"R, B5R, 7.25" x 10.5"R) | 9 | 9 | 9 | 9 | 11 | 11 |
| Heavy paper (A5R, 5.5" x 8.5"R) | 12 | 11 | 12 | 11 | 14 | 14 |
| Heavy paper (A3W, 12" x 18") | 7 | 6 | 7 | 6 | 8 | 8 |
| Heavy paper (Extra) | 7 | 6 | 7 | 6 | 8 | 8 |
| Heavy paper (Post Card HIGH) *1 | 12 | 12 | 12 | 12 | 14 | 14 |
| Heavy paper (Post Card LOW) *1 | 7 | 7 | 7 | 7 | 8 | 8 |

*1: Switched by the service simulation setting. Postcard is set Low before shipment.

### (3) Printable area

| | | | |
|---|---|---|---|
| A3 Wide *1 | 297 x 420mm | 12" x 18" *1 | 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 |
| Custom | Min: 96mm x 141mm Max: 297mm x 432mm | | |

*1: The printable area for A3W/12" x 18" must be as large as the A3/11" x 17" page full bleed (299 x 450mm).

| | |
|---|---|
| Void area<br>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±2mm or less |

### (4)Engine resolution

| | | |
|---|---|---|
| Resolution*1 | Copy | Writing<br>600 x 600dpi<br>9,600 (equivalent) x 600dpi |
| | Print | Writing<br>600 x 600dpi<br>9,600 (equivalent) x 600dpi<br>1,200 x 1,200dpi |
| Gradation *2<br>(256 levels) | Copy | Writing<br>600 x 600dpi x 4bit<br>9,600 (equivalent) x 600dpi |
| | Print | Writing<br>PCL:<br>600 x 600dpi x 1bit<br>600 x 600dpi x 4bit<br>9,600 (equivalent) x 600dpi<br>1,200 x 1,200dpi x 1bit<br>PS:<br>600 x 600dpi x 1bit<br>600 x 600dpi x 4bit<br>9,600 (equivalent) x 600dpi<br>1,200 x 1,200dpi x 1bit |

*1: Resolustion: 600dpi (default)

*2: The Dither and Error Diffusion methods using 8 bit input will be performed.

### (5)Scanner section

### a.Resolution/Gradation

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

### b.Document table

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

### (6)Document feeder

| Type | RSPF (Reversing single pass feeder) | |
|---|---|---|
| Scan speed | Monochrome (A4/8.5" x 11") | Color (A4/8.5" x 11") |
| Copy | Single:<br>50-sheet/min.<br>(600 x 400dpi, 4bit)<br>36-sheet/min.<br>(600 x 600dpi, 4bit)<br>Double:<br>20-page/min.<br>(600 x 400dpi, 4bit)<br>17-page/min.<br>(600 x 600dpi, 4bit) | Single:<br>36-sheet/min.<br>(600 x 600dpi, 4bit)<br>Double:<br>17-page/min.<br>(600 x 600dpi, 4bit) |
| FAX | Single: 50-sheet/min.<br>(200 x 200dpi, 1bit)<br>Double: 20-page/min.<br>(200 x 200dpi, 1bit) | NA |
| Internet FAX | Single: 50-sheet/min.<br>(200 x 200dpi, 1bit)<br>Double: 20-page/min.<br>(200 x 200dpi, 1bit) | NA |
| Scanner | Single: 50-sheet/min.<br>(200 x 200dpi, 1bit)<br>Double: 20-page/min.<br>(200 x 200dpi, 1bit) | Single: 50-sheet/min.<br>(200 x 200dpi, 8bit)<br>Double: 20-page/min. (200 x 200dpi, 8bit) |
| Original setup direction | Upward standard (1 to N feeding standard) | |
| Original standard position | Center standard (Rear one-side standard for random feeding) | |
| Original transport method | Sheet-through method | |

| | | |
|---|---|---|
| Original size | Standard size<br>Inch-1: 11" x 17", 8.5" x 14", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4<br>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<br>Inch-3: 11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4<br>AB-1: 11" x 17", 8.5" x 14", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5<br>AB-2: 11" x 17", 8.5" x 13", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5<br>AB-3: 11" x 17", 8.5" x 13", 8.5" x 11", A3, B4, A4, A4R, A5, 8K, 16K, 16KR<br>AB-4: 11" x 17", 8.5" x 13.4", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5<br>AB-5: 11" x 17", 8.5" x 13.5", 8.5" x 11", A3, B4, A4, A4R, B5, B5R, A5 | |
| | Long paper | 1000 mm(monochrome binary only) |
| Mix paper feed (Same series, same width paper) | Enabled | |
| Random feeding (feeding of different types / different widths) | Enabled<br>Only the following combinations of 2 size types are allowed:<br>A3 and B4; B4 and A4R; A4 and B5; B5 and A5; and 11-inch and 8.5-inch. AMS available. 2-sided scanning is disabled during random feeding. | |
| Original copy weight | Single:<br>Thin paper: 9 - 13 lb bond (35 - 49 g/m$^2$)<br>Plain paper: 13 - 32 lb bond (50 - 128 g/m$^2$)<br>* Thin paper mode (39 pages/minute (A4, 8.5" x 11", 600 x 400dpi) / 26 pages/ minute (A4, 8.5" x 11", 600 x 600dpi) is set up for the thin paper.<br>Duplex: 13 - 28 lb bond (50 - 105 g/m$^2$) | |
| Max. loading capacity of documents | Max. 100 sheets (21lbs Bond, 80g/m$^2$), or Max. height: 1/2 inch, 13mm 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 | Auto detection | |
| Paper feeding direction | Right hand feeding | |
| Finish stamp | Option | |

## (7) Paper feed section

### a.Basic specifications

| | | |
|---|---|---|
| Type | Standard | 1-stage paper feed tray + multi manual paper feed tray |
| | Full option | 4-stage paper feed tray + multi manual paper feed tray |
| Dehumidifying heater | | Service parts (Supported by kit) |

| Tray | Tray 1 | Manual paper feed tray |
|---|---|---|
| Paper capacity Plain paper (80g/m$^2$) | 500 sheets | 100 sheets |
| Paper size | Refer to the separate table of feedable paper type. | |
| Paper size detection | No (Guide adjustment and size input) | Yes |
| Paper type settings | Yes | |
| Changing of paper size | Switched by users | |
| Universal handle | Yes (With the handle lock mechanism) | - |

| Tray | Tray 1 | Manual paper feed tray |
|---|---|---|
| Default Paper Size Setting | A4 (8.5" x 11") | - |
| Paper remaining quantity detection | Paper empty and 3 steps (100%, 67%, 33%, and paper empty) | Only detection of paper empty |
| Paper size display window | Yes | - |

### b. Extra paper capacity

| Paper type | Paper feed tray | Manual feed tray |
|---|---|---|
| Postcard | NA | 20 sheets |
| Envelope | NA | 20 sheets |
| OHP | NA | 20 sheets |
| Heavy paper | 200 sheets | 40 sheets |
| Tab paper | NA | 20 sheets |
| Glossy paper | NA | 1 sheet |
| Others | NA | 1 sheet |

**c. Size of paper which can be fed**

| Paper feed section | | | Main unit tray | Optional Drawer | | | | | | Manual paper feed tray |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Tray 1 | Tray 2 | Tray 3 | Tray 4 | Tandem (Left) | Tandem (Right) | LCC | |
| Paper size | 12" x 18" (A3W) | | - | - | - | - | - | - | - | Yes |
| | 11" x 17" | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 8.5" x 14" (216 x 356) | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 8.5" x 13.5" (216 x 343) | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 8.5" x 13.4" (216 x 340) | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 8.5" x 13" (216 x 330) | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 8.5" x 11" | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | 8.5" x 11"R | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 7.25" x 10.5"R | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 5.5" x 8.5"R | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | A3 | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | B4 | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | A4 | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | A4R | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | B5 | | Yes | Yes | Yes | Yes | Yes | - | Yes | Yes |
| | B5R | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | A5R | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 8K | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 16K | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | 16KR | | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | JPC *1 | | - | - | - | - | - | - | - | Yes |
| | Envelope | | - | - | - | - | - | - | - | Yes |
| | Custom | | Yes | Yes | - | - | - | - | - | Yes |
| | Long paper<br>Width: 90-279mm<br>Length: 433-1200mm | | - | - | - | - | - | - | - | Yes |
| Paper type | Thin paper | 13-16lb bond (55-59g/m$^2$) | No | No | No | No | No | No | No | Yes |
| | Plain paper | 16-28lb bond (60-105g/m$^2$) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | | Recycled paper | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | | Color paper | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | | Letter head | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | | Pre printed | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | | Pre Punched | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | Heavy paper | 28lb bond-80lb cover 106-220g/m$^2$ | Yes | Yes | Yes | Yes | - | - | - | Yes |
| | | 80lb Cover-140lb Index 221-256g/m$^2$ | - | - | - | - | - | - | - | Yes |
| | | 140lb Index-110lb Cover 257-300g/m$^2$ | - | - | - | - | - | - | - | Yes |
| | Envelope | 75-90g/m$^2$ | - | - | - | - | - | - | - | Yes |
| | OHP Transparency | | - | - | - | - | - | - | - | Yes |
| | Label | | - | - | - | - | - | - | - | Yes |
| | Tab paper | | - | - | - | - | - | - | - | Yes |
| | Grossy paper | | - | - | - | - | - | - | - | Yes |
| | User settings 1 - 7 | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

## (8) Paper exit section

**a. Exit Capacity**

| Exit location | Center | Right side (option) |
|---|---|---|
| Exit Capacity | 400 sheets (A4/8.5" x 11": 80g/m$^3$) | 100 sheets (A4/8.5" x 11": 80g/m$^3$) |

**b. Size of paper which can be discharged**

| Paper exit section | | | Duplex | Main unit center tray | | Right exit tray |
|---|---|---|---|---|---|---|
| | | | | Exit tray | Off set | |
| Paper size | 12" x 18" (A3W) | | - | Yes | - | Yes |
| | 11" x 17" | | Yes | Yes | Yes | Yes |
| | 8.5" x 14" (216 x 356) | | Yes | Yes | Yes | Yes |
| | 8.5" x 13.5" (216 x 343) | | Yes | Yes | Yes | Yes |
| | 8.5" x 13.4" (216 x 340) | | Yes | Yes | Yes | Yes |
| | 8.5" x 13" (216 x 330) | | Yes | Yes | Yes | Yes |
| | 8.5" x 11" | | Yes | Yes | Yes | Yes |
| | 8.5" x 11"R | | Yes | Yes | Yes | Yes |
| | 7.25" x 10.5"R | | - | Yes | Yes | Yes |
| | 5.5" x 8.5"R | | Yes | Yes | Yes | Yes |
| | A3 | | Yes | Yes | Yes | Yes |
| | B4 | | Yes | Yes | Yes | Yes |
| | A4 | | Yes | Yes | Yes | Yes |
| | A4R | | Yes | Yes | Yes | Yes |
| | B5 | | Yes | Yes | Yes | Yes |
| | B5R | | Yes | Yes | Yes | Yes |
| | A5R | | Yes | Yes | Yes | Yes |
| | 8K | | Yes | Yes | Yes | Yes |
| | 16K | | Yes | Yes | Yes | Yes |
| | 16KR | | Yes | Yes | Yes | Yes |
| | JPC | | - | Yes | Yes | Yes |
| | Envelope | | - | Yes | - | - |
| | Long paper<br>Width: 90-279mm<br>Length: 433-1200mm | | - | Yes | - | - |
| Paper type | Thin paper | 13-16lb bond (55-59g/m$^2$) | - | Yes | Yes | Yes |
| | Plain paper | 16-28lb bond (60-105g/m$^2$) | Yes | Yes | Yes | Yes |
| | | Recycled paper | Yes | Yes | Yes | Yes |
| | | Color paper | Yes | Yes | Yes | Yes |
| | | Letter head | Yes | Yes | Yes | Yes |
| | | Pre printed | Yes | Yes | Yes | Yes |
| | | Pre Punched | Yes | Yes | Yes | Yes |
| | Heavy paper | 28lb bond - 80lb Cover (106-220g/m$^2$) | Yes | Yes | Yes | Yes |
| | | 80lb Cover-140lb Index 221-256g/m$^2$ | - | Yes | Yes | Yes |
| | | 140lb Index-110lb Cover 257-300g/m$^2$ | - | Yes | Yes | - |
| | Envelope | 75-90g/m$^2$ | - | Yes | - | - |
| | OHP Transparency | | - | Yes | - | Yes |
| | Label | | - | Yes | - | Yes |
| | Tab paper | | - | Yes | - | - |
| | Grossy paper | | - | Yes | Yes | - |
| | User settings 1 - 7 | | Yes | Yes | Yes | Yes |

### (9)Operation panel

| | |
|---|---|
| Size | 10.1 inch |
| Type | Dot matrix LCD, touch panel |
| Display dot number | 1024x600 dot (WSVGA) |
| LCD back-light | LED lamp back-light system |

### (10)Controller board

| | | |
|---|---|---|
| CPU | | ARM11: 600MHz<br>ARM9: 400MHz/during 1W energy save mode: 75MHz |
| SoC | | Intel Atom D525 1.8GHz |
| Interface | | |
| Ethernet | | 1port |
| | Interface | 10Base-T, 100Base-TX, 1000Base-T |
| | Support Protocol | TCP/IP (IPv4, IPv6), IPX/SPX, EtherTalk |
| USB 2.0 (high speed) (host) | | 2port<br>(Simultaneous use of the front/rear ports is enable.) |
| USB 2.0 (high speed) (device) | | 1port |
| USB-HUB (host) | | Internal: 4port<br>• For Front USB Port<br>• For Wifi<br>• For IC Card Reader<br>• For Key Board |
| Serial I/F | | 1port |
| Memory | | See the section "Memory/Hard disk". |
| Memory slot | | Main unit: On Board |

### (11) Memory/Hard disk

| SD card | Compact Flash | For Image process | For Printing | | HDD* |
|---|---|---|---|---|---|
| | | On Board | On Board | SLOT | |
| 4GB | 8GB | 1GB (STD) | 2GB (STD) | 1GB (STD) | 320GB (STD) |

*: HDD capacity depends on procurement and sourcing status.

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

### (12) Warm-up time

| | Main power SW |
|---|---|
| Warm-up time*1 | 18sec. or less |
| Pre heat | Yes |
| Jam recovery time*2 | 37sec. or less |

*1: Result may change depending on conditions.

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

### (13) Wireless LAN specification

| Type | Built-in type |
|---|---|
| Compliance standards | Wireless LAN Standard Protocol IEEE802.11n/g/b |
| Transmission method | OFDM (IEEE 802.11n/g), DS-SS (IEEE 802.11b) |
| Transmission frequency range | IEEE802.11n/g/b:2.4GHz 11b(1 - 14ch) / 11g/n(1 - 13ch) |
| (center frequency | |
| Security | WEP, WPA-PSK, WPA-EAP*1, WPA2-PSK, WPA2-EAP*1 |
| Number of max concurrent connection | 5 |

*1: Cannot be used in Access Point mode.

## B. Copy functions

### (1) First copy time

| Engine | 26cpm machine | | 31cpm machine | | 36cpm machine | |
|---|---|---|---|---|---|---|
| | Monochrome | Color | Monochrome | Color | Monochrome | Color |
| Platen | 5.9 sec. | 8.1 sec. | 5.8 sec. | 7.9 sec. | 5.2 sec. | 6.8 sec. |
| RSPF | 9.1 sec. | 11.6 sec. | 9.1 sec. | 11.6 sec. | 8.1 sec. | 10.6 sec. |

### (2) Job Speed

| Engine | 26cpm machine | | 31cpm machine | | 36cpm machine | |
|---|---|---|---|---|---|---|
| | Monochrome | Color | Monochrome | Color | Monochrome | Color |
| S to S | 26cpm (100%) | 26cpm (100%) | 31cpm (100%) | 31cpm (100%) | 36cpm (100%) | 36cpm (100%) |

## C. Printer function

### (1) Printer driver supported OS

| OS | | Custom PCL6 | Custom PS | PPD | PC-FAX |
|---|---|---|---|---|---|
| Windows | XP | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | XP (x 64) | CD-ROM | CD-ROM | CD-ROM | CD-ROM |

| OS | | Custom PCL6 | Custom PS | PPD | PC-FAX |
|---|---|---|---|---|---|
| Windows | Server 2003 | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Server 2003 (x 64) | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Vista | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Vista (x 64) | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Server 2008 | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Server 2008 (x 64) | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Server 2012x64 | Web | No | Web | Web |
| | Windows 7 | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Windows 7 (x 64) | CD-ROM | CD-ROM | CD-ROM | CD-ROM |
| | Windows 8 | Web | No | Web | Web |
| | Windows 8 (x 64) | Web | No | Web | Web |
| Mac | X 10.4 | No | No | CD-ROM | No |
| | X 10.5 | No | No | CD-ROM | Web |
| | X 10.6 | No | No | CD-ROM | Web |
| | X 10.7 | No | No | CD-ROM | Web |
| | X 10.8 | No | No | No | No |

### (2)PDL emulation/Font

| PDL (Command) | | Installed font | Option font |
|---|---|---|---|
| PCL6 compatibility | STD | European outline font = 80 styles<br>Line printer font (BMP) = 1 style | Barcode font = 28 styles |
| Postscript3 | STD | European outline font = 136 styles | - |

## D. FAX function

### (1) Transmission method

| | |
|---|---|
| Transmission time | Less than 3 sec (Super G3)<br>Less than 7 sec (G3 ECM) |
| Compression/ expansion system | MH, MR, MMR, JBIG<br>(Fixed to ECM for MMR or JBIG.) |
| Modem speed | 33.6kbps → 2.4kbps automatic fallback |
| Resolution | 8 x 3.85 line/mm, 8 x 7.7 line/mm,<br>8.15.4 line/mm, 16 x 15.4 line/mm (Standard memory is used for transmit/receive.) |
| Intercommunication | G3/Super G3: Standard (V.34, V.17, V.33, V.29, V.27ter) |
| Communication line | General telephone line (PSTN), ISDN (When TA is installed.) Private Branch Exchange (PBX) |
| ECM | Yes |

### (2) Number of Support Line

| | |
|---|---|
| Standard | 1 line |
| Expansion | Not provided |

### (3) Transmission Mode

| | |
|---|---|
| RSPF/OC transmission switching | Yes (Switching during the reading is not feasible) |

### (4) Image Quality/Image Process

| | |
|---|---|
| Half tone reproduction | Equivalent to 256 levels (Valid only when monochrome document is scanned.) |
| Exposure adjustment | Auto / Manual (5 steps) |
| FAX quality selection | Standard (8 x 3.85 lines/mm (203.2 x 97.8dpi))<br>Fine (8 x 7.7 lines/mm (203.2 x 195.6dpi))<br>Super Fine (8 x 15.4 lines/mm (203.2 x 391dpi))<br>Ultra Fine (16 x 15.4 lines/mm (406.4 x 391dpi))<br>Half-tone (Combination with normal character is invalid.) |

### (5) Record Size

| | |
|---|---|
| Max. record width | 293mm |
| Record size | (AB series)<br>A3, B4, A4, A4R, B5, B5R, A5R<br>(Inch series)<br>11 x 17, 8.5 x 13, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5R |

* If the document length exceeds A3 size, it is divided and printed.
* For printing the list, A5R and 8.5 x 5.5R cannot be used.

### (6) Dial

| | |
|---|---|
| Manual dialing | To be entered by 10-key, # key, * key |
| Re-dialing | The previous 8 items (max.) can be saved, and one of them can be selected.<br>One-touch call is available. |
| One-touch dialing | 2000 items including the group dialing items |
| Group dialing | 2000 items including the one-touch dialing items |
| Program dialing | Max. 48 items |
| Chain dialing | Max. 64 digits including one-touch dialing, 10-key dialing, and pause. |
| Dial search | Alphabet order search, User index groups |
| Quick search | Yes |
| LDAP search | Yes |
| Sub address | Yes |
| Password | Yes |
| Memory box registration | Yes |

* LDAP: Lightweight Directory Access protocol

### (7) Memory for Transmit/Receive

| | |
|---|---|
| FAX transmission data | HDD |
| FAX reception data | SD card |

### (8) Function

| | | |
|---|---|---|
| Transmit function | Calling function | Yes<br>Requires the frequency setting for each destination. |
| | PBX function | Germany, France only |
| | Memory transmit | Yes (Definable destinations : 94 destinations) |
| | On-hook | Yes |
| | Quick online transmit | Yes |
| | Direct transmit | Yes |
| | Manual transmit | Yes |
| | Auto re-call mode | Yes |
| | Time indication function | Yes |
| | Sequential broadcasting function | Yes |
| | F code interface broadcasting indication function | Yes<br>Only one interface station can be specified. |
| | F code interface broadcasting function | Yes |
| | F code confidential send function | Yes |
| | Polling | Yes<br>Even with another company machine |
| | Sequential polling function | Yes<br>Even with another company machine |
| | F-code polling | Yes |
| | Bulletin board | Yes |
| | F code bulletin board function | Yes |
| | Auto reduction transmit | Yes<br>A3 → B4, A3 → A4, B4 → A4 |
| | Rotation transmit | Yes<br>Counterclockwise rotation of 90 degrees |
| | Duplex transmit | Yes |
| | Document transmit from OC function | Yes |
| Transmit function | Long length original transmit | Only when RSPF is used.<br>Transmission is enable up to 1000mm. |
| | Mixed documents function | Only when RSPF is used. |
| | Zoom transmit | Yes |
| | 2 in 1 transmit | Yes |
| | Card shot transmit | Only when transmitting from OC |
| | Thin paper scan function | Available except for duplex scan |
| | Edge erase transmit function | Yes<br>Only for the fixed sizes |
| | Job build | Yes |
| | Page division transmit | Yes |
| | Cover | No |
| | Index | No |
| | Transmit message adding function | No |
| Receive function | Auto receive | Yes |
| | Manual receive | Yes |
| | DRD call function | Distinctive Ring Detection<br>North America: Standard, Pattern 1 – 5<br>Australia/New Zealand/Hong Kong: ON/OFF (TEL/FAX) |
| | Memory receive | Yes |
| | Transfer function | Yes<br>Number of registration: 1 item |
| | Specified receive function | Yes (Number of registration)<br>Rejection numbers: Max.50 items |
| | Receive data print condition function | Yes |
| Receive function | Receive data staple setting/ Copy number setting | Yes |
| | Rotation receive | Yes<br>Output by clockwise rotation of 90 degrees |
| | Divided receive | Yes<br>Divided print is not made in duplex mode. |
| | Duplex receive | Yes |
| | F-code confidential receive | Yes |
| Special function | Print hold | Yes |
| | Document Admin | Yes |
| | Inbound Routing | Yes |
| | Sender registration function | Yes |
| | Sender print function | Yes |
| | On-hook dialing function | Yes |
| | Retransmit function | Yes |
| | Pause function | Yes<br>Pause time is 1 – 15 sec. |
| | Sound volume setting function | Yes |
| | Tone pulse select function | Tone, Pulse, Auto<br>(North America/Taiwan)<br>* For the other destinations, set with the soft switch. |
| | External phone connection | Yes |
| | Memory remaining capacity check function | Yes<br>Only the integral part is displayed. |
| | Back up | Yes |
| | Registered data read/write function | Yes |
| | Report/List | Yes |
| | Destination check function | Yes |
| | Broadcasting destination display function | Yes |
| | Transmit job change function | Yes |
| | Save-energy function | Yes |
| | Line monitor display function | Yes |
| Special function | FAST | Yes<br>Facsimile Automated Service Technology |
| | Time adjust function | Yes<br>Summer time ON/OFF |
| | PC-FAX | Yes |
| | Color mode | No |
| | Sender registration function | Yes<br>Number of registration: 1 for standard sender name and address. And 18 sender names can be registered. |
| | Default destination setting | No |
| | Unauthorized scan prevention function | Yes |
| | Filing-each-page function | No |
| | Re-operation function | Yes |

| | | |
|---|---|---|
| Special function | User account function | Yes<br>Max. 200 items additionally to the default |
| | Counter function | Yes |

## E. Image send function

### (1)Mode

| Mode | Scanner | Internet Fax/Direct SMTP |
|---|---|---|
| suport mode | E-mail/FTP server/SMB Desktop | |

### (2) Support System

| Mode | Scanner | Internet Fax/Direct SMTP |
|---|---|---|
| Compression server protocol | SMTP/SMTP-SSL<br>FTP(TCP/IP)/FTPS<br>SMB*1<br>HTTP/HTTPS | POP3 server<br>SMTP server<br>ESMTP server |

*1 Network environment for SMB

### (3) Supported image

| Mode | Scanner | Internet Fax/Direct SMTP |
|---|---|---|
| Format / method | Mono 2gradation : TIFF/PDF/Encrypted PDF/PDF/A/XPS<br>Color/Grayscale : Color TIFF/JPEG/PDF Encrypted PDF/PDF/A/XPS | Monochrome : TIFF-FX (TIFF-F/TIFF-S)<br>Color/Grayscale : N/A |
| Compression method | Mono 2gradation : Non-compression G3 MH / G4 MMR<br>Color/Grayscale : JPEG (high/middle/low) | Monochrome : G3 MH / G4 MMR<br>Color/Grayscale : N/A |

### (4) Specification of Addresses

| Mode | Scanner | Internet Fax/Direct SMTP |
|---|---|---|
| Max. number of registrations | Total 2000 keys<br>FTP/Desktop/SMB address shall be the same as those for other modes. Maximum 2000 addresses shall be able tobe registered | |
| Number of addresses can be registered in one Group key | Max. 500 addresses | |
| Number of addresses can be registered by inputting directly in Group keys | 6000 addresses (included in the 2000 keys) | |
| Import/export of the address book | Yes | Yes |
| Disable registering destination from operation panel | Yes | Yes |
| Disable registering destination on Web page | Yes | Yes |
| Disable regisstration using network scanner tool | Yes | N/A |
| Disable [RESEND] on Image send mode | Yes | Yes |
| Disable selection from address book | Yes | Yes |
| Disable direct entry | Yes | Yes |

### (5) Function

| Function | Scanner | Internet Fax/Direct SMTP |
|---|---|---|
| Job Build | YES | YES |
| Slow scan mode | YES | YES |
| Mixed size original | YES | YES |
| Original count | YES | YES |
| Edge erase | Yes (Edge/Side) | Yes (Edge/Side) |
| Dual page scan | YES | YES |
| Card shot | Yes (Ration: 63-400%) | Yes (Ration: 63-400%) |
| Time specified send | Yes | Yes |
| Blank page skip | Yes | N/A |
| Filling | Yes | Yes |
| Quick file | Yes | Yes |
| Multi shot | N/A | Yes |
| Preview | Yes | Yes |

## F. Power consumption

The full configuration can be operated with the rated power source.

| | | |
|---|---|---|
| Maximum rated power Consumption*1 | 100 V | 200 V |
| | 1.44 kW | 1.84 kW |
| Energy consumption rate | Not applicable | |
| Network/Fax waiting power consumption | 1 W<br>Condition:<br>• No USB port<br>• The network protocol is TCP/IP only.<br>• The Ethernet connection partner supports 10M/100MBASE or 10M/100M/1000MBASE and auto negotiation setting.<br>* Exclude the case of use Fax and Network at once)<br>* Norht America<br>Default : Wake up mode | – |
| Moving time to pre-heat mode | 1 minutes (default) | |
| Recovery time from pre-heat mode | 10 sec. | |
| Moving time to sleep mode | 1 minutes (default)<br>* Printer mode: 10sec.(default) | |
| Recovery time from sleep mode | 18 sec. | |

*1: Power switch ON, dehumidity heater OFF

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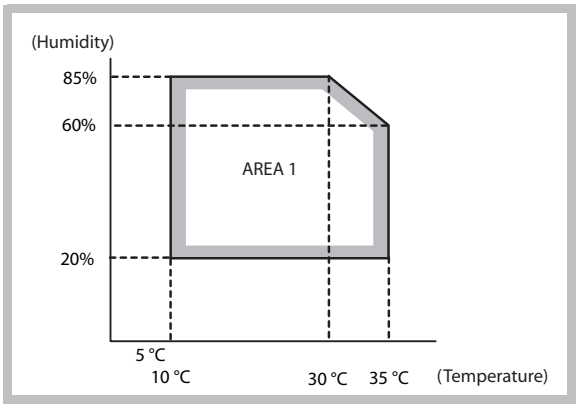
## G. Dimensions and Weight

| | |
|---|---|
| Outer dimension | W608 x D680 x H834mm<br>23 15/16 x 26 25/32 x 32 61/64 inch |
| Footprint | W608xD680mm<br>23 15/16 x 26 25/32 inch |
| Dimension occupied by the machine | W928xD680mm with manual tray extended<br>36 17/32 x26 25/32 inch<br>W988xD680mm with right tray extended<br>38 57/64 x 26 25/32 inch |
| Weight<br>Main Unit (including photoreceptor / not including consumables) | 76kg<br>167.5 lbs |

## H. Ambient conditions

1



# [3] CONSUMABLE PARTS

## 1. Supply system table

### (1) North America, Middle America, South America

| Item | Content | Life | Model name | Quantity in collective package | Remarks |
|---|---|---|---|---|---|
| Toner cartridge (Black) | Toner cartridge (Black toner) x 1 | 24K | MX-36NT-BA | 10 | * Life: A4/Letter size at area coverage 5% (Reference: 20K for A4/ Letter 6%) |
| Toner cartridge (Cyan) | Toner cartridge (Cyan toner) x 1 | 15K | MX-36NT-CA | 10 | * Life: A4/Letter size at area coverage 5% |
| Toner cartridge (Magenta) | Toner cartridge (Magenta toner) x 1 | 15K | MX-36NT-MA | 10 | |
| Toner cartridge (Yellow) | Toner cartridge (Yellow toner) x 1 | 15K | MX-36NT-YA | 10 | |
| Developer (Black) | Developer (Black developer) x 1 | 840K rotaion | MX-36NV-BA | 10 | Developer/Drum unit Standard Printable number BK:26cpm120K / 31cpm 135K/ 36cpm150 CL:26/31/36cpm 120K Maximum Printable number BK:26cpm 140K / 31cpm 155K/170K CL:26/31/36cpm 140K |
| Developer (Cyan/Magenta/ Yellow: 3 colors/set) | Developer (Cyan/Magenta/Yellow: 3 colors/set) (Developer (each colors)) x 1 | 840K rotaion | MX-36NV-SA | 10 | |
| Drum | OPC drum x 1 | 840K rotaion | MX-36NR-SA | 10 | |
| Drum unit | OPC drum unit (Process unit + OPC drum) x 1<br>Color identification seal (B/C/M/Y) x 1 each x 1<br>Charger cleaner x 1 | 840K rotaion | MX-36NU-SB | 10 | |

### (2) Europe, Australia, New Zealand, Korea

| Item | Content | Life | Model name | Quantity in collective package | Remarks |
|---|---|---|---|---|---|
| Toner cartridge (Black) | Toner cartridge (Black toner) x 1 | 24K | MX-36GT-BA | 10 | * Life: A4/Letter size at area coverage 5% (Reference: 20K for A4/ Letter 6%) |
| Toner cartridge (Cyan) | Toner cartridge (Cyan toner) x 1 | 15K | MX-36GT-CA | 10 | * Life: A4/Letter size at area coverage 5% |
| Toner cartridge (Magenta) | Toner cartridge (Magenta toner) x 1 | 15K | MX-36GT-MA | 10 | |
| Toner cartridge (Yellow) | Toner cartridge (Yellow toner) x 1 | 15K | MX-36GT-YA | 10 | |
| Developer (Black) | Developer (Black developer) x 1 | 840K rotaion | MX-36GV-BA | 10 | Developer/Drum unit Standard Printable number BK:26cpm120K / 31cpm 135K/ 36cpm150 CL:26/31/36cpm 120K Maximum Printable number BK:26cpm 140K / 31cpm 155K/170K CL:26/31/36cpm 140K |
| Developer (Cyan/Magenta/ Yellow: 3 colors/set) | Developer (Cyan/Magenta/Yellow: 3 colors/set) (Developer (each colors)) x 1 | 840K rotaion | MX-36GV-SA | 10 | |
| Drum | OPC drum x 1 | 840K rotaion | MX-36GR-SA | 10 | |
| Drum unit | OPC drum unit (Process unit + OPC drum) x 1<br>Color identification seal (B/C/M/Y) x 1 each x 1<br>Charger cleaner x 1 | 840K rotaion | MX-36GU-SA | 10 | |

### (3) Asia, Hong Kong

| Item | Content | Life | Model name | Quantity in collective package | Remarks |
|---|---|---|---|---|---|
| Toner cartridge (Black) | Toner cartridge (Black toner) x 1 | 24K | MX-36AT-BA | 10 | * Life: A4/Letter size at area coverage 5% (Reference: 20K for A4/ Letter 6%) |
| Toner cartridge (Cyan) | Toner cartridge (Cyan toner) x 1 | 15K | MX-36AT-CA | 10 | * Life: A4/Letter size at area coverage 5% |
| Toner cartridge (Magenta) | Toner cartridge (Magenta toner) x 1 | 15K | MX-36AT-MA | 10 | |
| Toner cartridge (Yellow) | Toner cartridge (Yellow toner) x 1 | 15K | MX-36AT-YA | 10 | |
| Developer (Black) | Developer (Black developer) x 1 | 840K rotaion | MX-36AV-BA | 10 | Developer/Drum unit<br>Standard Printable number<br>BK:26cpm120K / 31cpm 135K/<br>36cpm150<br>CL:26/31/36cpm 120K<br>Maximum Printable number<br>BK:26cpm 140K / 31cpm 155K/170K<br>CL:26/31/36cpm 140K |
| Developer (Cyan/Magenta/ Yellow: 3 colors/set) | Developer (Cyan/Magenta/Yellow: 3 colors/set) (Developer (each colors)) x 1 | 840K rotaion | MX-36AV-SA | 10 | |
| Drum | OPC drum x 1 | 840K rotaion | MX-36AR-SA | 10 | |
| Drum unit | OPC drum unit (Process unit + OPC drum) x 1<br>Color identification seal (B/C/M/Y) x 1 each x 1<br>Charger cleaner x 1 | 840K rotaion | MX-36AU-SA | 10 | |

### (4) Middle East, Taiwan, Africa, Israel, Phillipines

| Item | Content | Life | Model name | Quantity in collective package | Remarks |
|---|---|---|---|---|---|
| Toner cartridge (Black) | Toner cartridge (Black toner) x 1 | 24K | MX-36FT-BA | 10 | * Life: A4/Letter size at area coverage 5% (Reference: 20K for A4/ Letter 6%) |
| Toner cartridge (Cyan) | Toner cartridge (Cyan toner) x 1 | 15K | MX-36FT-CA | 10 | * Life: A4/Letter size at area coverage 5% |
| Toner cartridge (Magenta) | Toner cartridge (Magenta toner) x 1 | 15K | MX-36FT-MA | 10 | |
| Toner cartridge (Yellow) | Toner cartridge (Yellow toner) x 1 | 15K | MX-36FT-YA | 10 | |
| Developer (Black) | Developer (Black developer) x 1 | 840K rotaion | MX-36FV-BA | 10 | Developer/Drum unit<br>Standard Printable number<br>BK:26cpm120K / 31cpm 135K/<br>36cpm150<br>CL:26/31/36cpm 120K<br>Maximum Printable number<br>BK:26cpm 140K / 31cpm 155K/170K<br>CL:26/31/36cpm 140K |
| Developer (Cyan/Magenta/ Yellow: 3 colors/set) | Developer (Cyan/Magenta/Yellow: 3 colors/set) (Developer (each colors)) x 1 | 840K rotaion | MX-36FV-SA | 10 | |
| Drum | OPC drum x 1 | 840K rotaion | MX-36FR-SA | 10 | |
| Drum unit | OPC drum unit (Process unit + OPC drum) x 1<br>Color identification seal (B/C/M/Y) x 1 each x 1<br>Charger cleaner x 1 | 840K rotaion | MX-36FU-SA | 10 | |

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## 2. Maintenance parts list

### (1) North America, Middle America, South America

1

| Item | Model name | Content | | Life | | Quantity in collective package | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | 26/31cpm | 36cpm | | |
| Fusing belt kit | MX-361FB | Fusing belt<br>Fuser belt guide collar | x 1<br>x 2 | 200K | 240K | 10 | |
| Pressure roller kit | MX-230LH | Fusing roller<br>Pressure roller | x 1<br>x 1 | 200K | 240K | 10 | |
| Web cleaning kit | MX-360WB | Web roller<br>Web guide shaft<br>Web pressure roller<br>Web pressure roller bearing | x 1<br>x 2<br>x 1<br>x 2 | 200K | 200K | 10 | |
| Primary transfer belt kit | MX-230B1 | Primary transfer belt AR | x 1 | 200K | 240K | 10 | |
| Primary transfer blade kit | MX-230TL | Primary transfer blade AR | x 1 | 200K | 240K | 10 | |
| PTC kit | MX-230CU | PTC unit | x 1 | 200K | 200K | 10 | |
| Secondary transfer belt kit | MX-230B2 | Secondary transfer belt D3 | x 1 | 300K | 360K | 10 | |
| Filter kit | MX-361FL | Ozone filter | x 1 | 300K | 360K | 10 | |
| Toner collection container | MX-230HB | Toner collection container (with LSU cleaner x 2) | x 1 | 50K | 50K | 10 | 5% coverage for each color; 25% color ratio |
| Main charger kit | MX-230MK | Main charger unit<br>Cleaning gum AS AR<br>Cleaning blade AR | x 1<br>x 1<br>x 1 | Drum<br>840K<br>Rotation | Drum<br>840K<br>Rotation | 10 | Maximum Printable Number<br>26cpm : 140K (BK) / 140K (CL)<br>31cpm : 155K (BK) / 140K (CL)<br>36cpm : 170K (BK) / 140K (CL) |
| Staple cartridge | AR-SC3 | Staple cartridge | x 3 | 2000 times x 3 | 2000 times x 3 | 40 | For MX-FN10(Saddle stitch) |
| Staple cartridge | MX-SCX1 | Staple cartridge | x 3 | 5000 times x 3 | 5000 times x 3 | 20 | For MX-FN10/FN17 |
| Finish stamp cartridge | AR-SV1 | Finish stamp cartridge | x 2 | - | - | 20 | |
| Primary transfer belt unit | MX-230U1 | Primary transfer belt unit | x 1 | - | - | 1 | For servicing rotation |
| Secondary transfer belt unit | MX-230U2 | Secondary transfer belt unit | x 1 | - | - | 1 | For servicing rotation |
| Fusing unit | MX-361FU1 | Fusing unit (Heater lamp 120V) | x 1 | - | - | 1 | For servicing rotation |
| Fusing unit | MX-361FU | Fusing unit (Heater lamp 230V) | x 1 | - | - | 1 | For servicing rotation |

Note

When shipping, the parts are packed in the unit of 10 sets. In the market, however, they are treated in the unit of 1 set.
Model name: Composed of the parts of 1 set

### (2) Europe, Eastern Europe, Australia, New Zealand, Korea, Taiwan

1

| Item | Model name | Content | | Life | | Quantity in collective package | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | 26/31cpm | 36cpm | | |
| Fusing belt kit | MX-361FB | Fusing belt<br>Fuser belt guide collar | x 1<br>x 2 | 200K | 240K | 10 | |
| Pressure roller kit | MX-230LH | Fusing roller<br>Pressure roller | x 1<br>x 1 | 200K | 240K | 10 | |
| Web cleaning kit | MX-360WB | Web roller<br>Web guide shaft<br>Web pressure roller<br>Web pressure roller bearing | x 1<br>x 2<br>x 1<br>x 2 | 200K | 200K | 10 | |
| Primary transfer belt kit | MX-230B1 | Primary transfer belt AR | x 1 | 200K | 240K | 10 | |
| Primary transfer blade kit | MX-230TL | Primary transfer blade AR | x 1 | 200K | 240K | 10 | |
| PTC kit | MX-230CU | PTC unit | x 1 | 200K | 200K | 10 | |
| Secondary transfer belt kit | MX-230B2 | Secondary transfer belt D3 | x 1 | 300K | 360K | 10 | |
| Filter kit | MX-361FL | Ozone filter | x 1 | 300K | 360K | 10 | |
| Toner collection container | MX-230HB | Toner collection container (with LSU cleaner x 2) | x 1 | 50K | 50K | 10 | 5% coverage for each color; 25% color ratio |
| Main charger kit | MX-230MK | Main charger unit<br>Cleaning gum AS AR<br>Cleaning blade AR | x 1<br>x 1<br>x 1 | Drum<br>840K<br>Rotation | Drum<br>840K<br>Rotation | 10 | Maximum Printable Number<br>26cpm : 140K (BK) / 140K (CL)<br>31cpm : 155K (BK) / 140K (CL)<br>36cpm : 170K (BK) / 140K (CL) |
| Staple cartridge | AR-SC3 | Staple cartridge | x 3 | 2000 times x 3 | 2000 times x 3 | 40 | For MX-FN10(Saddle stitch) |
| Staple cartridge | MX-SCX1 | Staple cartridge | x 3 | 5000 times x 3 | 5000 times x 3 | 20 | For MX-FN10/FN17 |
| Finish stamp cartridge | AR-SV1 | Finish stamp cartridge | x 2 | - | - | 20 | |
| Primary transfer belt unit | MX-230U1 | Primary transfer belt unit | x 1 | - | - | 1 | For servicing rotation |
| Secondary transfer belt unit | MX-230U2 | Secondary transfer belt unit | x 1 | - | - | 1 | For servicing rotation |
| Fusing unit | MX-361FU2 | Fusing unit (Heater lamp 110V) | x 1 | - | - | 1 | For servicing rotation |
| Fusing unit | MX-361FU | Fusing unit (Heater lamp 230V) | x 1 | - | - | 1 | For servicing rotation |

Note

When shipping, the parts are packed in the unit of 10 sets. In the market, however, they are treated in the unit of 1 set.
Model name: Composed of the parts of 1 set

### (3) Asia, Middle East

| Item | Model name | Content | Life | | Quantity in collective package | Remarks |
|---|---|---|---|---|---|---|
| | | | 26/31cpm | 36cpm | | |
| Fusing belt kit | MX-361FB | Fusing belt x 1<br>Fuser belt guide collar x 2 | 200K | 240K | 10 | |
| Pressure roller kit | MX-230LH | Fusing roller x 1<br>Pressure roller x 1 | 200K | 240K | 10 | |
| Web cleaning kit | MX-360WB | Web roller x 1<br>Web guide shaft x 2<br>Web pressure roller x 1<br>Web pressure roller bearing x 2 | 200K | 200K | 10 | |
| Primary transfer belt kit | MX-230B1 | Primary transfer belt AR x 1 | 200K | 240K | 10 | |
| Primary transfer blade kit | MX-230TL | Primary transfer blade AR x 1 | 200K | 240K | 10 | |
| PTC kit | MX-230CU | PTC unit x 1 | 200K | 200K | 10 | |
| Secondary transfer belt kit | MX-230B2 | Secondary transfer belt D3 x 1 | 300K | 360K | 10 | |
| Filter kit | MX-361FL | Ozone filter x 1 | 300K | 360K | 10 | |
| Toner collection container | MX-230HB | Toner collection container (with LSU cleaner x 2) x 1 | 50K | 50K | 10 | 5% coverage for each color; 25% color ratio |
| Main charger kit | MX-230MK | Main charger unit x 1<br>Cleaning gum AS AR x 1<br>Cleaning blade AR x 1 | Drum 840K Rotation | Drum 840K Rotation | 10 | Maximum Printable Number<br>26cpm : 140K (BK) / 140K (CL)<br>31cpm : 155K (BK) / 140K (CL)<br>36cpm : 170K (BK) / 140K (CL) |
| Staple cartridge | AR-SC3 | Staple cartridge x 3 | 2000 times x 3 | 2000 times x 3 | 40 | For MX-FN10(Saddle stich) |
| Staple cartridge | MX-SCX1 | Staple cartridge x 3 | 5000 times x 3 | 5000 times x 3 | 20 | For MX-FN10/FN17 |
| Finish stamp cartridge | AR-SV1 | Finish stamp cartridge x 2 | — | — | 20 | |
| Primary transfer belt unit | MX-230U1 | Primary transfer belt unit x 1 | — | — | 1 | For servicing rotation |
| Secondary transfer belt unit | MX-230U2 | Secondary transfer belt unit x 1 | — | — | 1 | For servicing rotation |
| Fusing unit | MX-361FU | Fusing unit (Heater lamp 230V) x 1 | — | — | 1 | For servicing rotation |

**Note**

When shipping, the parts are packed in the unit of 10 sets. In the market, however, they are treated in the unit of 1 set.

Model name: Composed of the parts of 1 set.

### (4) Hong Kong

| Item | Model name | Content | Life | | Quantity in collective package | Remarks |
|---|---|---|---|---|---|---|
| | | | 26/31cpm | 36cpm | | |
| Fusing belt kit | MX-361FB | Fusing belt x 1<br>Fuser belt guide collar x 2 | 200K | 240K | 10 | |
| Pressure roller kit | MX-230LH | Fusing roller x 1<br>Pressure roller x 1 | 200K | 240K | 10 | |
| Web cleaning kit | MX-360WB | Web roller x 1<br>Web guide shaft x 2<br>Web pressure roller x 1<br>Web pressure roller bearing x 2 | 200K | 200K | 10 | |
| Primary transfer belt kit | MX-230B1 | Primary transfer belt AR x 1 | 200K | 240K | 10 | |
| Primary transfer blade kit | MX-230TL | Primary transfer blade AR x 1 | 200K | 240K | 10 | |
| PTC kit | MX-230CU | PTC unit x 1 | 200K | 200K | 10 | |
| Secondary transfer belt kit | MX-230B2 | Secondary transfer belt D3 x 1 | 300K | 360K | 10 | |
| Filter kit | MX-361FL | Ozone filter x 1 | 300K | 360K | 10 | |
| Toner collection container | MX-230HB | Toner collection container (with LSU cleaner x 2) x 1 | 50K | 50K | 10 | 5% coverage for each color; 25% color ratio |
| Main charger kit | MX-230MK | Main charger unit x 1<br>Cleaning gum AS AR x 1<br>Cleaning blade AR x 1 | Drum 840K Rotation | Drum 840K Rotation | 10 | Maximum Printable Number<br>26cpm : 140K (BK) / 140K (CL)<br>31cpm : 155K (BK) / 140K (CL)<br>36cpm : 170K (BK) / 140K (CL) |
| Staple cartridge | AR-SC3 | Staple cartridge x 3 | 2000 times x 3 | 2000 times x 3 | 40 | For MX-FN10(Saddle stich) |
| Staple cartridge | MX-SCX1 | Staple cartridge x 3 | 5000 times x 3 | 5000 times x 3 | 20 | For MX-FN10/FN17 |
| Finish stamp cartridge | AR-SV1 | Finish stamp cartridge x 2 | — | — | 20 | |
| Primary transfer belt unit | MX-230U1 | Primary transfer belt unit x 1 | — | — | 1 | For servicing rotation |
| Secondary transfer belt unit | MX-230U2 | Secondary transfer belt unit x 1 | — | — | 1 | For servicing rotation |
| Fusing unit | MX-361FU | Fusing unit (Heater lamp 230V) x 1 | — | — | 1 | For servicing rotation |

**Note**

When shipping, the parts are packed in the unit of 10 sets. In the market, however, they are treated in the unit of 1 set.

Model name: Composed of the parts of 1 set

## 3. Definition of developer/drum life end

When the developer/drum counter reaches the maximum printable count.

When the developer/drum rpm reaches the specified count.

When either of the above reach the specified count, it is judged as life end.

In an actual case, the ratio of monochrome output and color output may differ greatly.

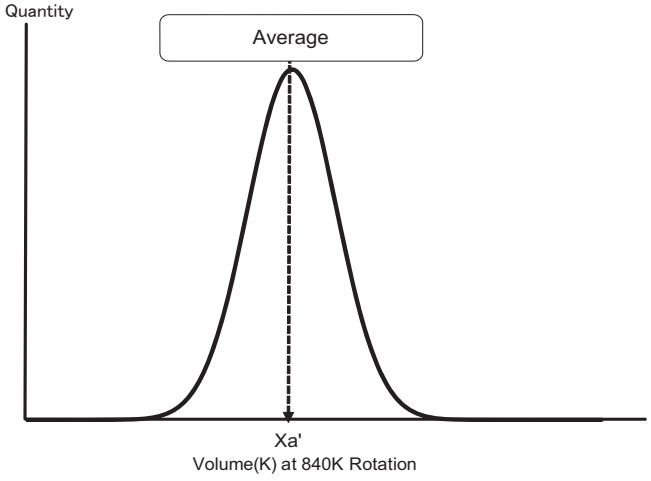
When data of mixed documents (monochrome and color) are output, monochrome document data may be output in the color mode in order to prevent against fall in the job efficiency. (ACS auto color selection).

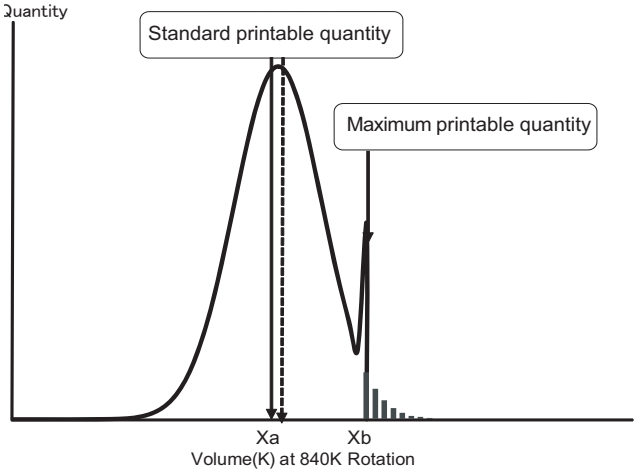
In addition, when correction or warm-up operation is performed as well as output operation, the developer and the drum rotates.

Therefore, the developer/drum consuming level cannot be determined only by the copy/print quantity. When, therefore, the rpm reaches the specified amount, it is judged as life end.

To check the developer/drum life, use SIM22-13.

However, when the copy/print quantity is large and the developer/drum counter reaches the maximum printable quantity even if the rpm does not reach the specified amount, it is judged as life end.
The table which shows the relation between the stanrdard printable quantity and the maximun printable quantity in the specified rpm amount is as follows.




### B. Developer

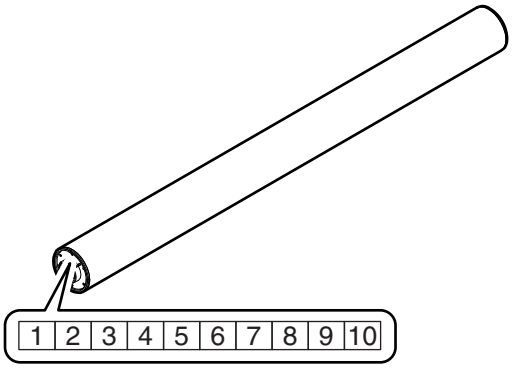
* Standard printable quantity means the printing quantity under the specified developer/drum count by using the specified test data with the color ratio of 30% under the following intermitment sheet.

26cpm : 3 sheets
31/36cpm : 4 sheets

| | Developer/drum counter | | | | Developer/drum rotation | |
|---|---|---|---|---|---|---|
| | Standard printable quantity | | Maximum printable quantity | | Monochrome | Color |
| | Monochrome | Color | Monochrome | Color | 840K Rotation | 840K Rotation |
| 26cpm | 120K | 120K | 140K | 140K | | |
| 31cpm | 135K | 120K | 155K | 140K | | |
| 36cpm | 150K | 120K | 170K | 140K | | |

## 4. Production number identification

### A. OPC drum




The lot number is comprised of 10 digits. Each digit indicates the content as follows.

The number is printed on the flange on the front side.

1: Number
For this model, this digit is 2.

2: Alphabet
Indicates the model conformity code.

3: Number
Indicates the end digit of the production year.

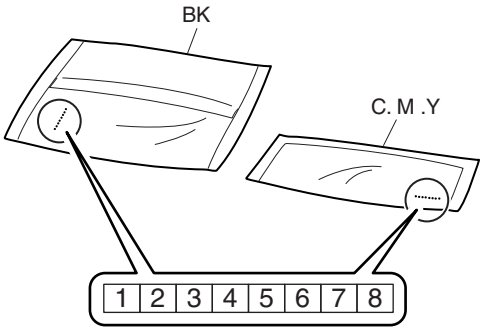
4: Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.

5/6: Number
Indicates the day of the production date.
X stands for October, Y November, and Z December.

7: Number
Indicates the day of the month of packing.
X stands for October, Y November, and Z December.

8/9: Number
Indicates the day of the packing date.

10: Alphabet
Indicates the production factory.



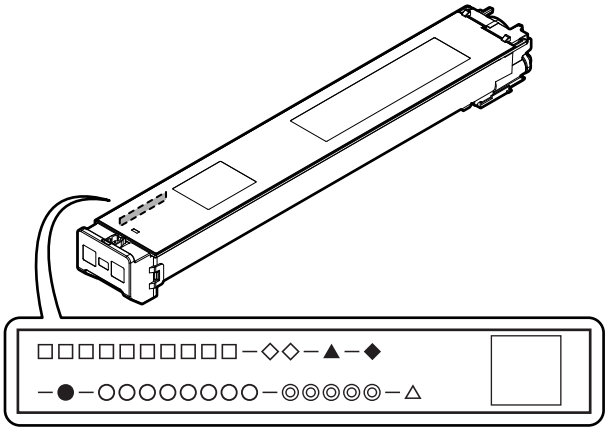

The lot number is 8 digits in length. Each digit indicates the content as follows.

The number is printed on the right under side of the back surface of the developer bag.

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

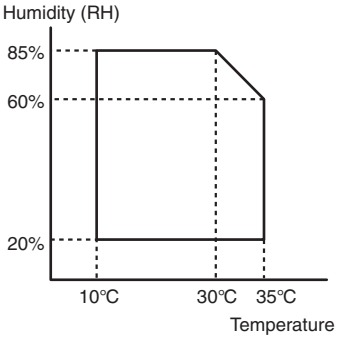
### C. Toner cartridge

The label indicating the management number is attached to the side of the toner cartridge.




□: Unit code/Model name
◇: Color code (Black: BK /Cyan: CY /Magenta: MA /Yellow: YE)
▲: Destination
◆: Skating
●: Production place
○: Production date (YYYYMMDD)
◎: Serial number
△: Version number

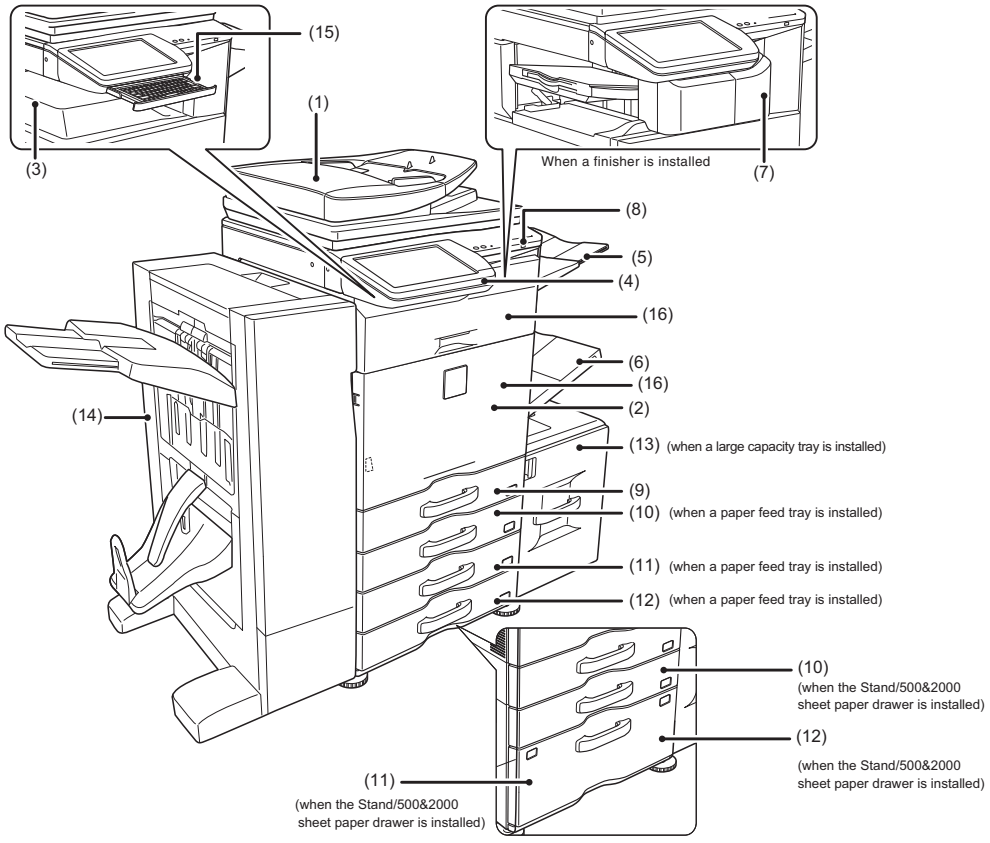
## 5. Environmental conditions




| | | |
|---|---|---|
| Standard environmental conditions | Temperature | 20 – 25 °C |
| | Humidity | 65 ± 5 %RH |
| Usage environmental conditions | Temperature | 10 – 35 °C |
| | Humidity | 20 – 85 %RH |
| Storage period | Toner/Developer: 24 months from the manufactured month (Production lot) under unsealed state<br>Drum: 36 months from the manufactured month under unsealed state | |

# [4] EXTERNAL VIEW AND INTERNAL STRUCTURE

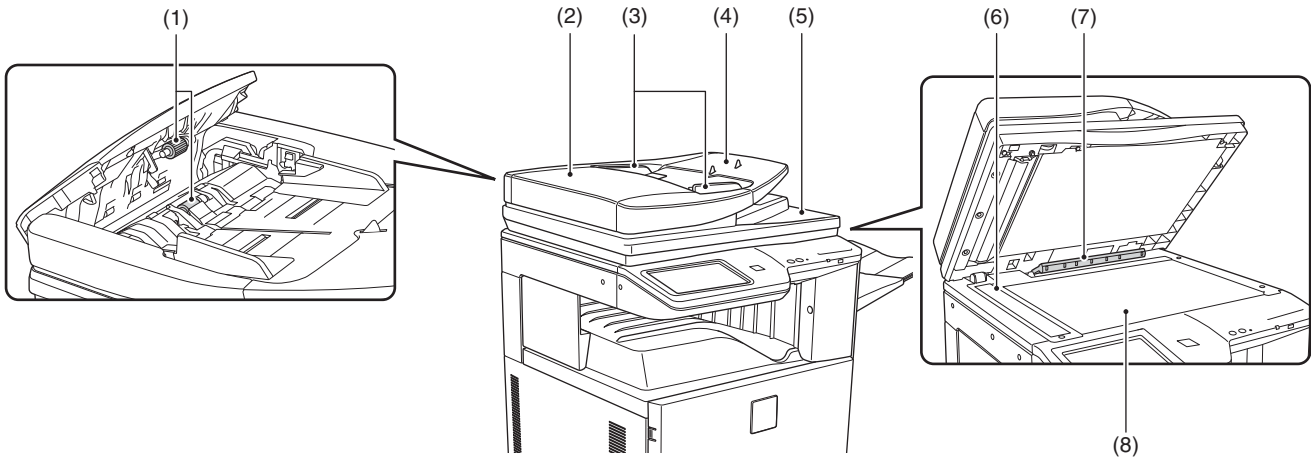
## 1. External view




| No. | Name | Function/Operation |
|---|---|---|
| 1 | Reversing single pass feeder | This automatically feeds and scans multiple originals.<br>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 | Output tray (center tray) | Output is delivered to this tray. |
| 4 | Operation panel | This is used to select functions and enter the number of copies. |
| 5 | Exit tray unit (right exit tray)* | When installed, output can be delivered to this tray. |
| 6 | Bypass tray | Use this tray to feed paper manually.<br>When loading a large sheet of paper, be sure to pull out the bypass tray extension. |
| 7 | Finisher* | This can be used to staple output. A punch module can also be installed to punch holes in output. |
| 8 | USB connector (A type) | Supports USB 2.0 (Hi-Speed).<br>This is used to connect a USB device such as USB memory to the machine.<br>For the USB cable, use a shielded cable. |
| 9 | Tray 1 | This holds paper. |
| 10 | Tray 2 (when a paper feed tray is installed or when the Stand/500&2000 sheet paper drawer is installed)* | This holds paper. |
| 11 | Tray 3 (when a paper feed tray is installed or when the Stand/500&2000 sheet paper drawer is installed)* | This holds paper. |
| 12 | Tray 4 (when a paper feed tray is installed or when the Stand/500&2000 sheet paper drawer is installed)* | This holds paper. |
| 13 | Tray 5 (when a large capacity tray is installed)* | This holds paper. |
| 14 | 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.<br>A punch module can also be installed to punch holes in output. |
| 15 | Keyboard* | This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel. |
| 16 | Paper pass unit* | Transports paper to the finisher. |

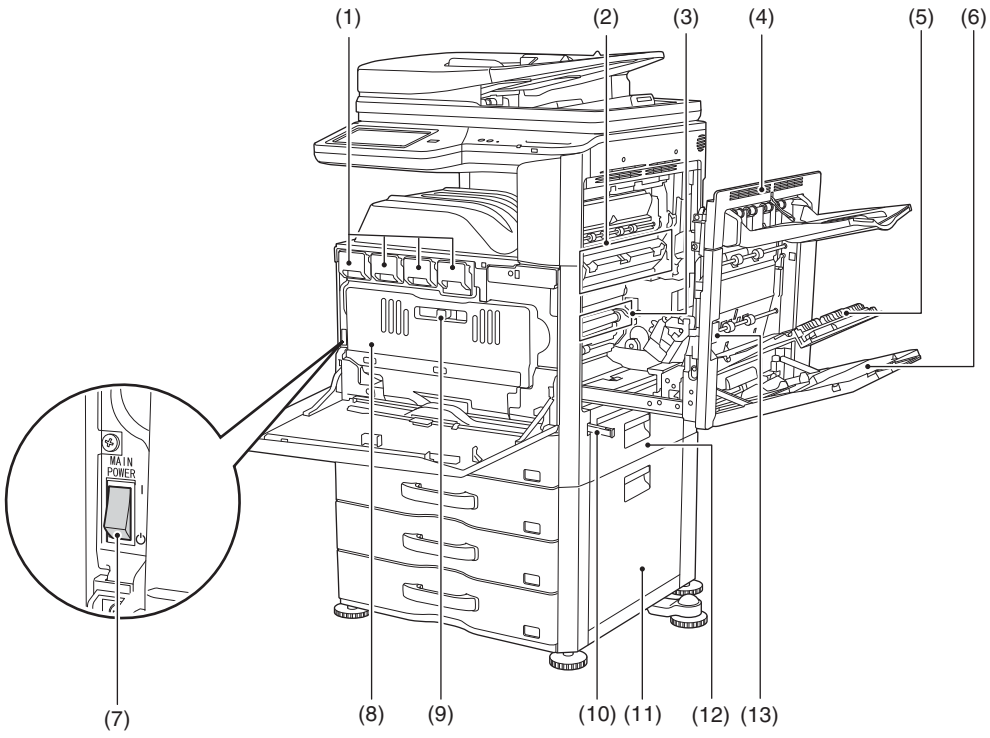
* Peripheral device.

## A. Automatic document feeder and document glass



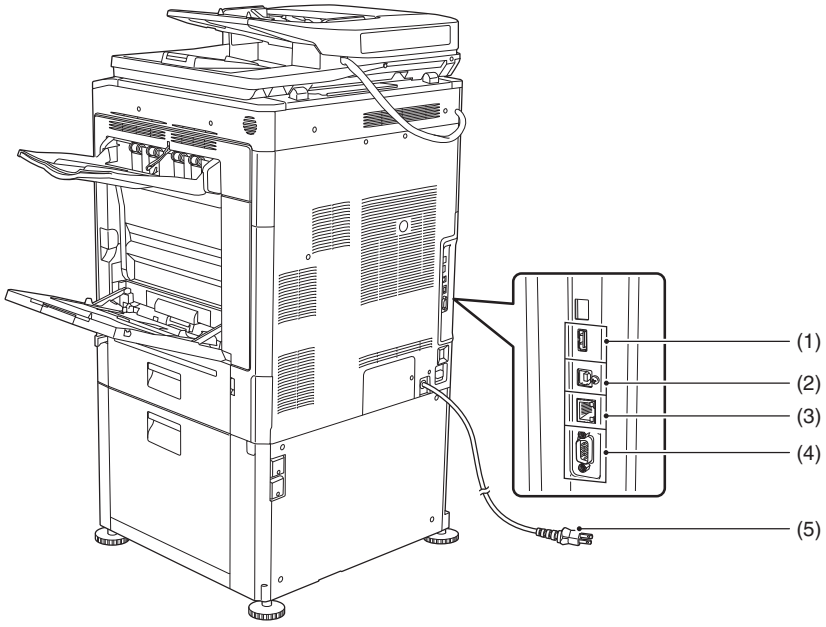

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Paper feed roller | This roller rotates to automatically feed the original. |
| 2 | Document feeding area cover | Open this cover to remove an original misfeed or clean the paper feed roller. |
| 3 | Original guides | These help ensure that the original is scanned correctly.<br>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. |

## 2. Internal structure

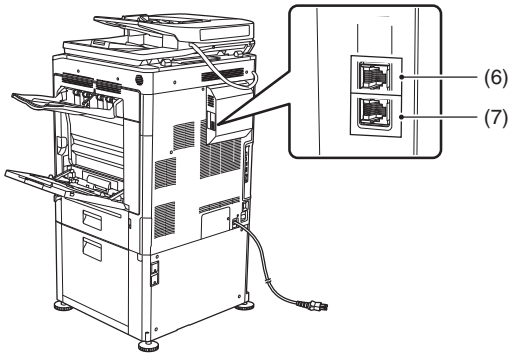



| No. | Name | Function/Operation | Note |
|---|---|---|---|
| 1 | Toner cartridges | These contain toner for printing.<br>When the toner runs out in a cartridge, the cartridge of the color that ran out must be replaced. | |
| 2 | Fusing unit | Heat is applied here to fuse the transferred image onto the paper. | Important<br>The fusing unit is hot. Take care not to burn yourself when removing a paper misfeed. |
| 3 | Transfer belt | During full color printing, the toner images of each of the four colors on each of the photoconductive drums are combined together on the transfer belt.<br>During black and white printing, only the black toner image is transferred onto the transfer belt. | Do not touch or damage the transfer belt. This may cause a defective image. |
| 4 | Right side cover | Open this cover to remove a misfeed. | |
| 5 | Paper reversing section cover | This is used when 2-sided printing is performed. Open this cover to remove a paper misfeed. | |
| 6 | Bypass tray | Use this tray to feed paper manually.<br>When loading a large sheet of paper, be sure to pull out the bypass tray extension. | |
| 7 | Main power switch | This is used to power on the machine.<br>When using the fax or Internet fax functions, keep this switch in the "on" position. | |
| 8 | Waste toner box | This collects excess toner that remains after printing. | |
| 9 | Waste toner box release lever | Move this lever when you need to release the waste toner box lock to replace the waste toner box or clean the laser unit. | |
| 10 | Handle | Pull this out and grasp it when moving the machine. | |
| 11 | Right cover of paper drawer (when a paper drawer is installed) | Open this to remove a paper misfeed in tray 2, tray 3 or tray 4. | |
| 12 | Paper tray right side cover | Open this to remove a paper misfeed in tray 1. | |
| 13 | Right side cover release lever | To remove a paper misfeed, pull and hold this lever up to open the right side cover. | |

## 3. I/F connectors

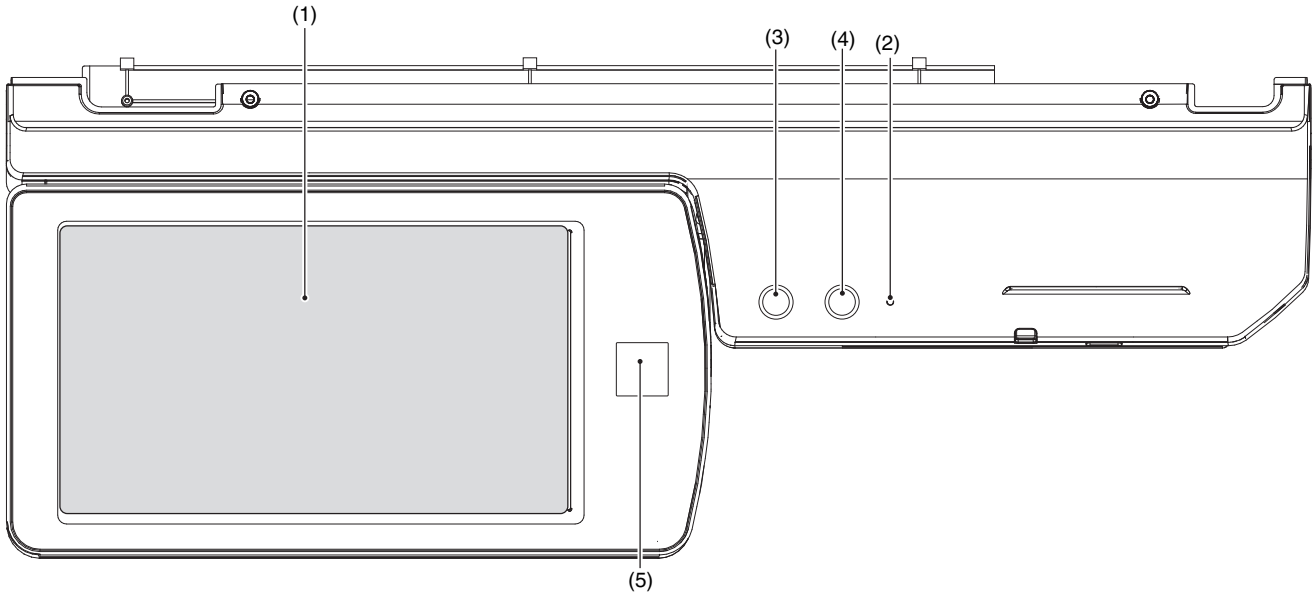



**When the fax expansion kit is installed**



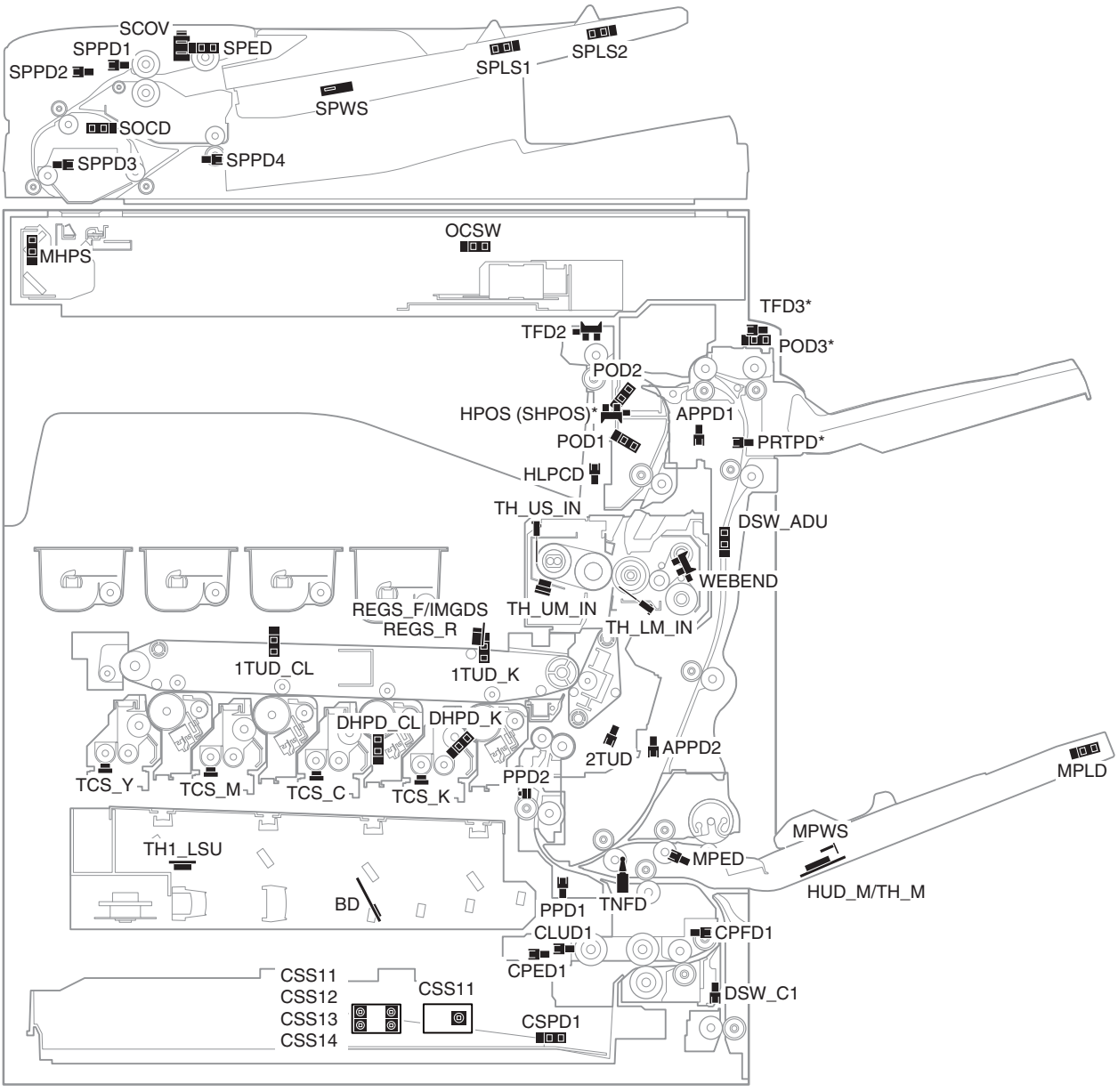

| No. | Name | Function/Operation |
|---|---|---|
| 1 | USB connector (A type) | Supports USB 2.0 (Hi-Speed).<br>This is used to connect a USB device such as USB memory to the machine. |
| 2 | USB connector (B type) | Supports USB 2.0 (Hi-Speed).<br>A computer can be connected to this connector to use the machine as a printer.<br>For the USB cable, use a shielded cable. |
| 3 | LAN connector | Connect the LAN cable to this connector when the machine is used on a network.<br>For the LAN cable, use a shielded type cable. |
| 4 | Service-only connector | Important<br>This connector is for use only by service technicians.<br>Connecting a cable to this connector may cause the machine to malfunction.<br>Important note for service technicians:<br>The cable connected to the service connector must be less than 3 m (118") 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. |

## 4. Operation panel




| No. | Name | Function/Operation |
|---|---|---|
| 1 | Touch panel | Messages and keys appear in the touch panel display.<br>Touch the displayed keys to perform a variety of operations.<br>When a key is touched, a beep sounds and the selected item is highlighted. This provides confirmation as you perform an operation. |
| 2 | Main power indicator | This lights up when the machine's main power switch is in the "on" position. |
| 3 | [POWER] key (⏻) | Use this key to turn the machine power on and off. |
| 4 | [POWER SAVE] key (⏻) / indicator | Use this key to put the machine into auto power shut-off mode to save energy.<br>The [POWER SAVE] key (⏻) blinks when the machine is in auto power shut-off mode. |
| 5 | [Home Screen] button | Touch this key to display the home screen.<br>Frequently used settings can be registered in the home screen to enable quick and easy operation of the machine. |

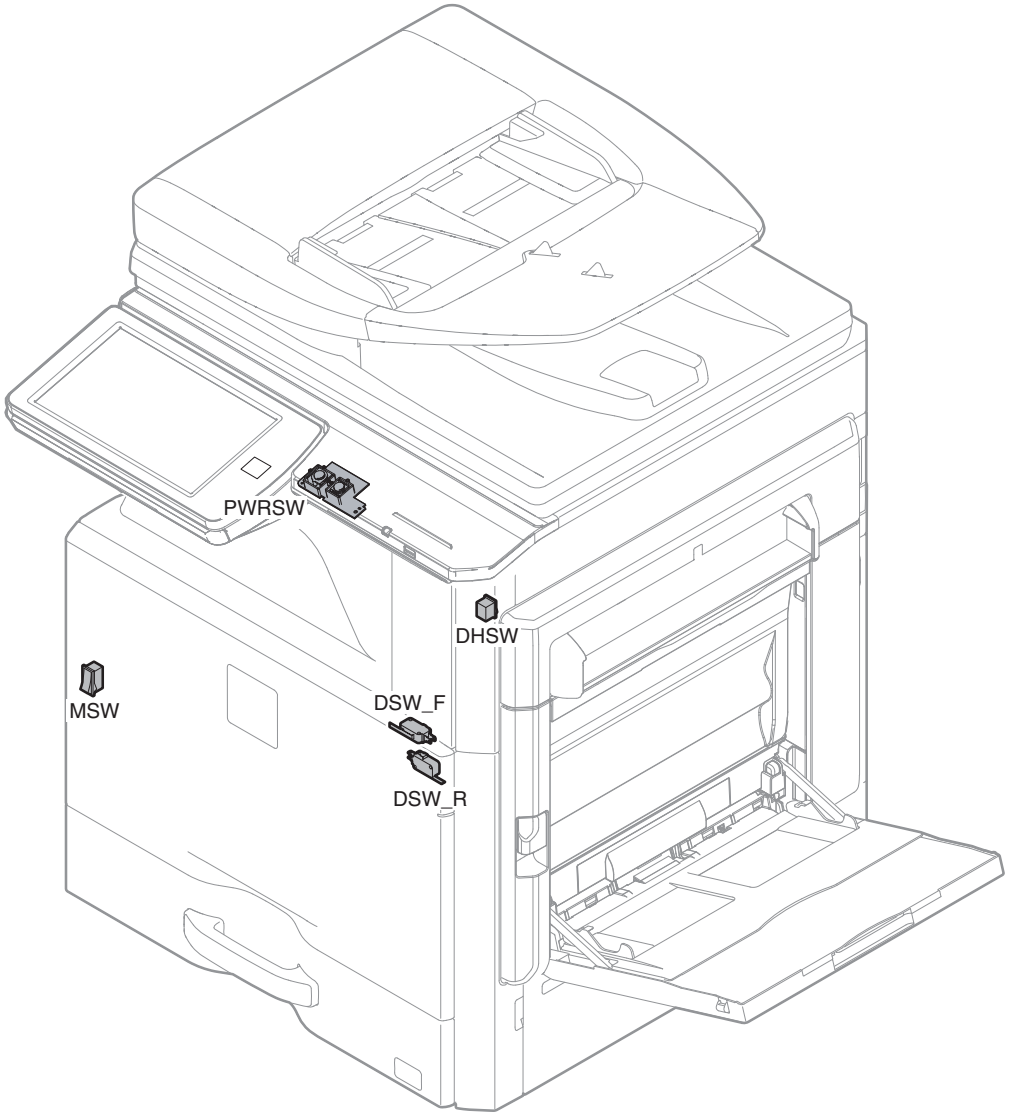
## 5. Sensors and detectors




| Signal name | Name | Type | Function/Operation | Note |
|---|---|---|---|---|
| 1TUD_CL | Transfer mode detector (CL) | Transmission type | Detects separation of the transfer belt and the transfer mode. (Detection is made by combination of 1TUD_CL/1TUD_K signals.) | |
| 1TUD_K | Transfer mode detector (BK) | Transmission type | Detects separation of the transfer belt and the transfer mode. (Detection is made by combination of 1TUD_CL/1TUD_K signals.) | |
| 2TUD | Secondary transfer position detector | Transmission type | Detects the position (separation) of the secondary transfer unit. | |
| APPD1 | ADU paper transport detector 1 | Transmission type | Detects paper entry and paper pass in the ADU. | |
| APPD2 | ADU paper transport detector 2 | Transmission type | Detects paper pass in the ADU transport roller 8. | |
| BD | Laser beam detector | Pin diode | Detects laser beams (monitor.) | |
| CLUD1 | Paper feed tray upper limit sensor (Paper feed tray 1) | Transmission type | Detects the upper limit of the paper lift up. (Paper feed tray 1) | |
| CPED1 | Paper empty sensor (Paper feed tray 1) | Transmission type | Detects paper empty. (Paper feed tray 1) | |
| CPFD1 | Paper transport detector (Paper feed tray 1) | Transmission type | Detects paper pass in the paper transport section of the paper feed tray 1. | |
| CSPD1 | Paper remaining quantity sensor (Paper feed tray 1) | Transmission type | Detects the paper remaining quantity. (Paper feed tray 1) | |
| CSS11 | Paper feed tray size detector (Paper feed tray 1) | Tact switch | Detects closing of the paper feed tray. (Paper feed tray 1) | |

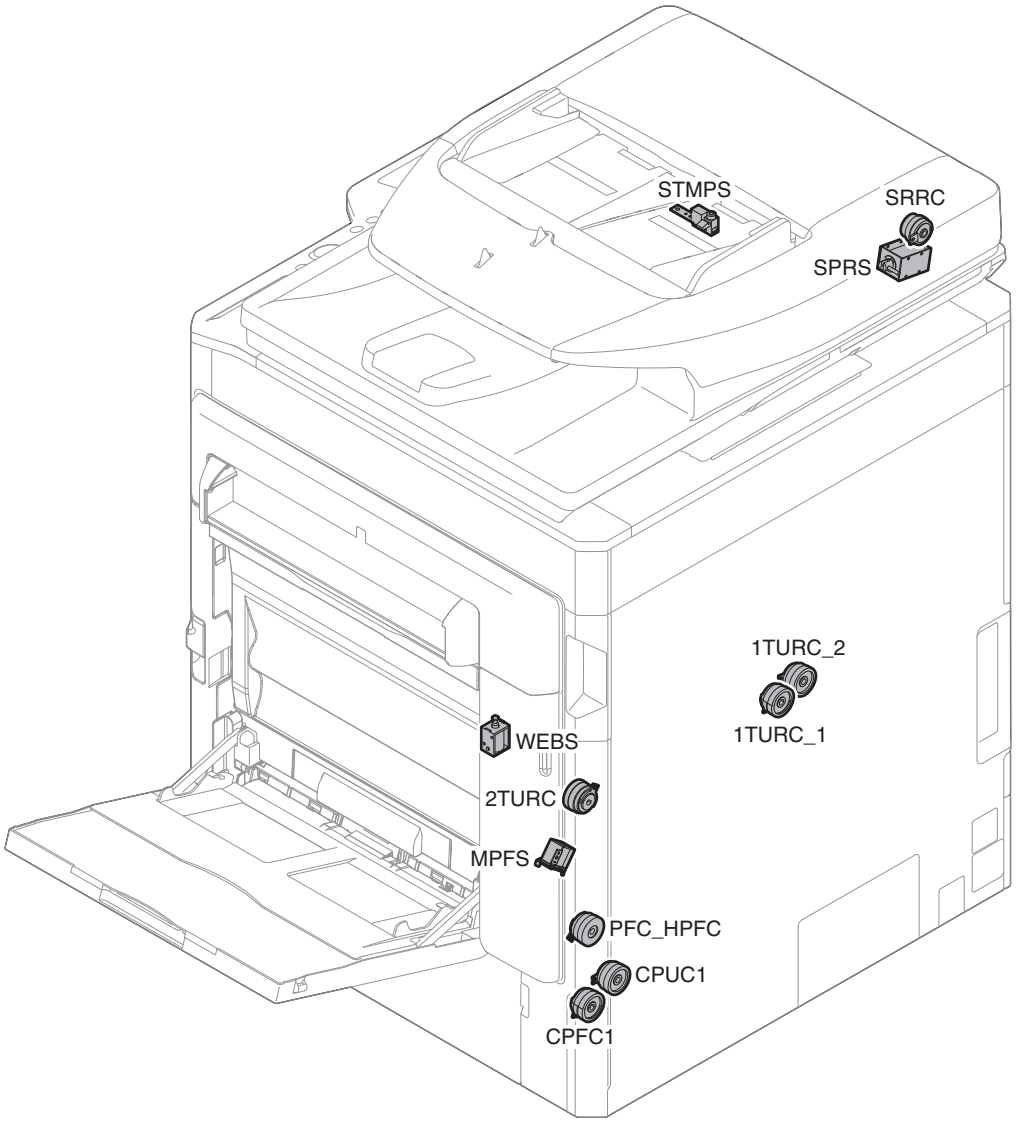
| Signal name | Name | Type | Function/Operation | Note |
|---|---|---|---|---|
| CSS11 - 14 | Paper feed tray size detector (Paper feed tray 1) | Tact switch | Detects the paper size.<br>Detects closing of the paper feed tray. (Paper feed tray 1) | 36cpm machine only |
| DHPD_CL | OPC drum rotation sensor (CL) | Transmission type | Detects rotation and the phase of the OPC drum (CL). | |
| DHPD_K | OPC drum rotation sensor (BK) | Transmission type | Detects rotation and the phase of the OPC drum (BK). | |
| DSW_ADU | ADU paper guide open/close detector | Transmission type | Detects open/close of the ADU paper guide. | |
| DSW_C1 | Transport cover open/close detector (Paper feed tray 1) | Transmission type | Detects open/close of the transport section cover. (Paper feed tray 1) | |
| HLPCD | Fusing pressure detector | Transmission type | Detects the fusing pressure state. | |
| HPOS (SHPOS) | Shifter home positions sensor | Transmission type | Detects the shifter home position. | |
| HUD_M/TH_M | Temperature/humidity sensor | Thermistor | Detects the temperature and the humidity. (For the process control) | Analog detection |
| MHPS | Scanner home position sensor | Transmission type | Detects the scanner home position. | |
| MPED | Paper empty sensor (Manual paper feed tray) | Transmission type | Detects presence of paper. (Manual paper feed tray) | |
| MPLD | Paper length detector (Manual paper feed tray) | Transmission type | Detects the paper length. (Manual paper feed tray) | |
| MPWS | Paper width detector (Manual paper feed tray) | Volume-type resistor | Detects the paper width. (Manual paper feed tray) | |
| OCSW | Paper size detection trigger sensor | Transmission type | Detects generation of the paper size detection trigger signal. | |
| POD1 | Paper exit detector 1 | Transmission type | Detects paper transport from the fusing section. | |
| POD2 | Paper exit detector 2 | Transmission type | Detects paper transport to the face-down paper exit tray. | |
| POD3 | Paper exit detector 3 | Transmission type | Detects paper transport to the right paper exit tray. | |
| PPD1 | Paper transport detector 1 | Transmission type | Detects paper pass in front of the transport roller 5. | |
| PPD2 | Paper transport detector 2 | Reflection type | Detects paper pass in the transport roller 5 in front of the registration roller. | |
| PRTPD | Paper exit tray paper detector (Right paper exit tray) | Transmission type | Detects paper empty in the paper exit tray (Right paper exit tray). | |
| REGS_F/IMGDS | Registration sensor F (Image density sensor) | Reflection type | Detects color shift. (F side) / Detects the toner patch density. | |
| REGS_R | Registration sensor R (Image density sensor) | Reflection type | Detects the toner patch density. | |
| SCOV | RSPF cover open/close detector | Micro switch | Detects open/close of the RSPF cover. | |
| SOCD | RSPF open/close sensor | Transmission type | Detects open/close of the RSPF unit. | |
| SPED | Document sensor | Transmission type | Detects document empty in the RSPF paper feed tray. | |
| SPLS1 | Paper size detector 1 | Transmission type | Detects the document length in the RSPF paper feed tray. | |
| SPLS2 | Paper size detector 2 | Transmission type | Detects the document length in the RSPF paper feed tray. | |
| SPPD1 | Document transport sensor 1 | Transmission type | Detects paper feed and the document size in random paper feed. | |
| SPPD2 | Document transport sensor 2 | Transmission type | Detects paper pass. | |
| SPPD3 | Document transport sensor 3 | Transmission type | Detects paper pass. | |
| SPPD4 | Document transport sensor 4 | Transmission type | Detects paper exit and switchback. | |
| SPWS | Document size detector | Volume-type resistor | Detects the document width. | |
| TCS_C | Toner sensor (C) | Magnetic sensor | Detects toner supply from the toner cartridge.<br>Detects the toner density (C). | Analog detection |
| TCS_K | Toner sensor (K) | Magnetic sensor | Detects toner supply from the toner cartridge.<br>Detects the toner density (K). | Analog detection |
| TCS_M | Toner sensor (M) | Magnetic sensor | Detects toner supply from the toner cartridge.<br>Detects the toner density (M). | Analog detection |
| TCS_Y | Toner sensor (Y) | Magnetic sensor | Detects toner supply from the toner cartridge.<br>Detects the toner density (Y). | Analog detection |
| TFD2 | Paper exit tray full detector (Center paper exit tray) | Transmission type | Detects paper full in the center paper exit tray. | |
| TFD3 | Paper exit tray full detector (Right paper exit tray) | Transmission type | Detects paper full in the right paper exit tray. | |
| TH_LM_IN | Fusing temperature sensor | Thermistor | Detects the surface temperature of the fusing roller (B). | Analog detection |
| TH_UM_IN | Fusing temperature sensor (Main) | Non-contact thermistor | Detects the surface temperature at the center of the fusing belt (roller). | Analog detection |
| TH_US_IN | Fusing temperature sensor (Sub) | Thermistor | Detects the suffered temperature at the edge section of the fusing belt (roller). | Analog detection |
| TH1_LSU | LSU temperature sensor | Thermistor | Detects the temperature in the LSU. (For correction of the LSU distortion) | Analog detection |
| TNFD | Waste toner full detector | Mechanical switch | Detects full of waste toner. | |
| WEBEND | Web end detector | Transmission type | Detects web end of the fusing unit. | |

## 6. Switches



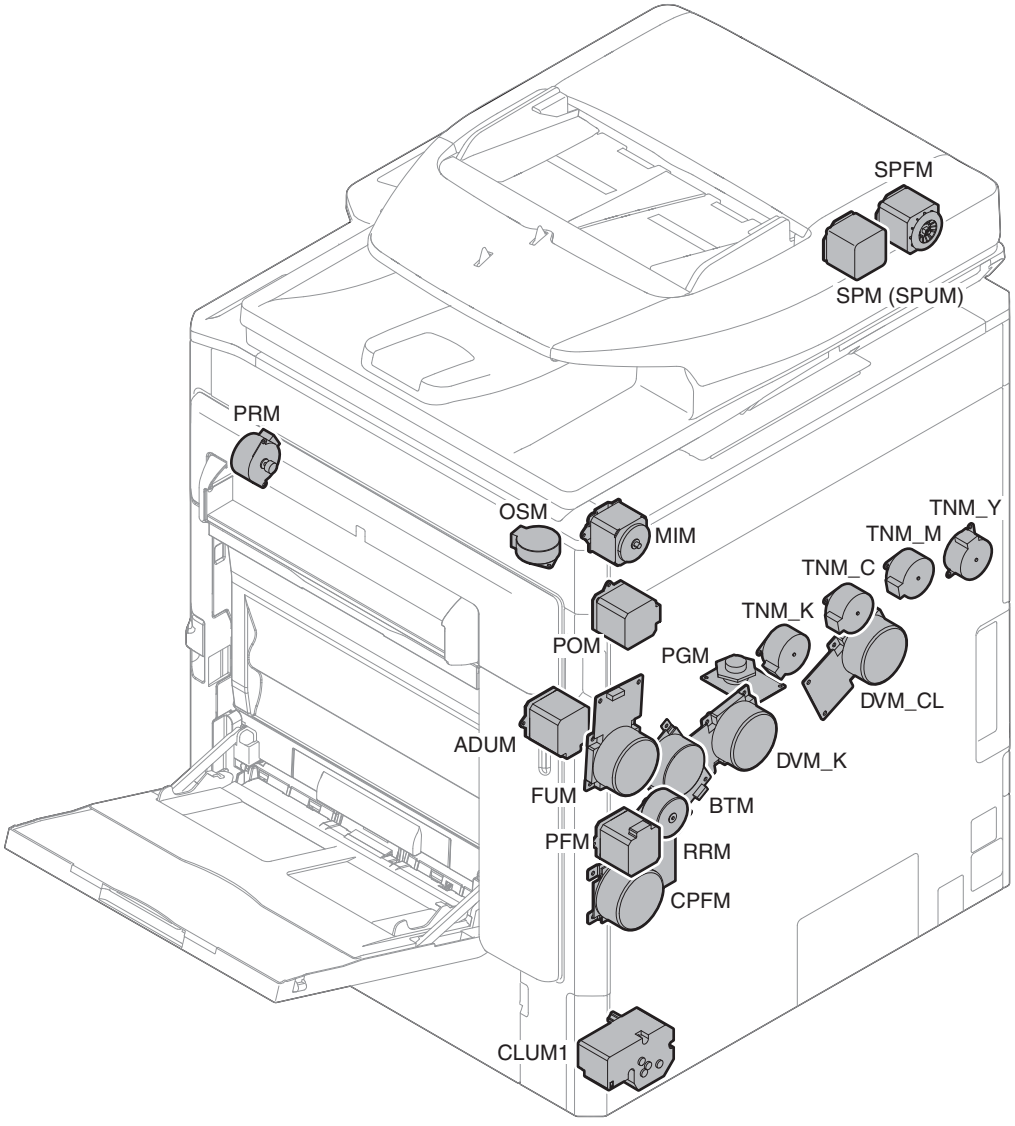

| Signal name | Name | Type | Function/Operation |
|---|---|---|---|
| DHSW | Dehumidifier heater switch | Seesaw switch | Turns ON/OFF the power line of the dehumidifier heater. |
| DSW_F | Front door open/close switch | Micro switch | Detects open/close of the front door. Detects ON/OFF of the power line of the fusing unit, the motors, and the LSU laser. |
| DSW_R | Right transport unit (right door) open/close switch | Micro switch | Detects open/close of the right paper transport section (right door). Detects ON/OFF of the power line of the fusing unit, the motors, and the LSU laser. |
| MSW | Main power switch | Seesaw switch | Turns ON/OFF the main power. |
| PWRSW | Operation panel power switch | Push switch | Turns ON/OFF the power on the secondary side. |

## 7. Clutches and solenoids



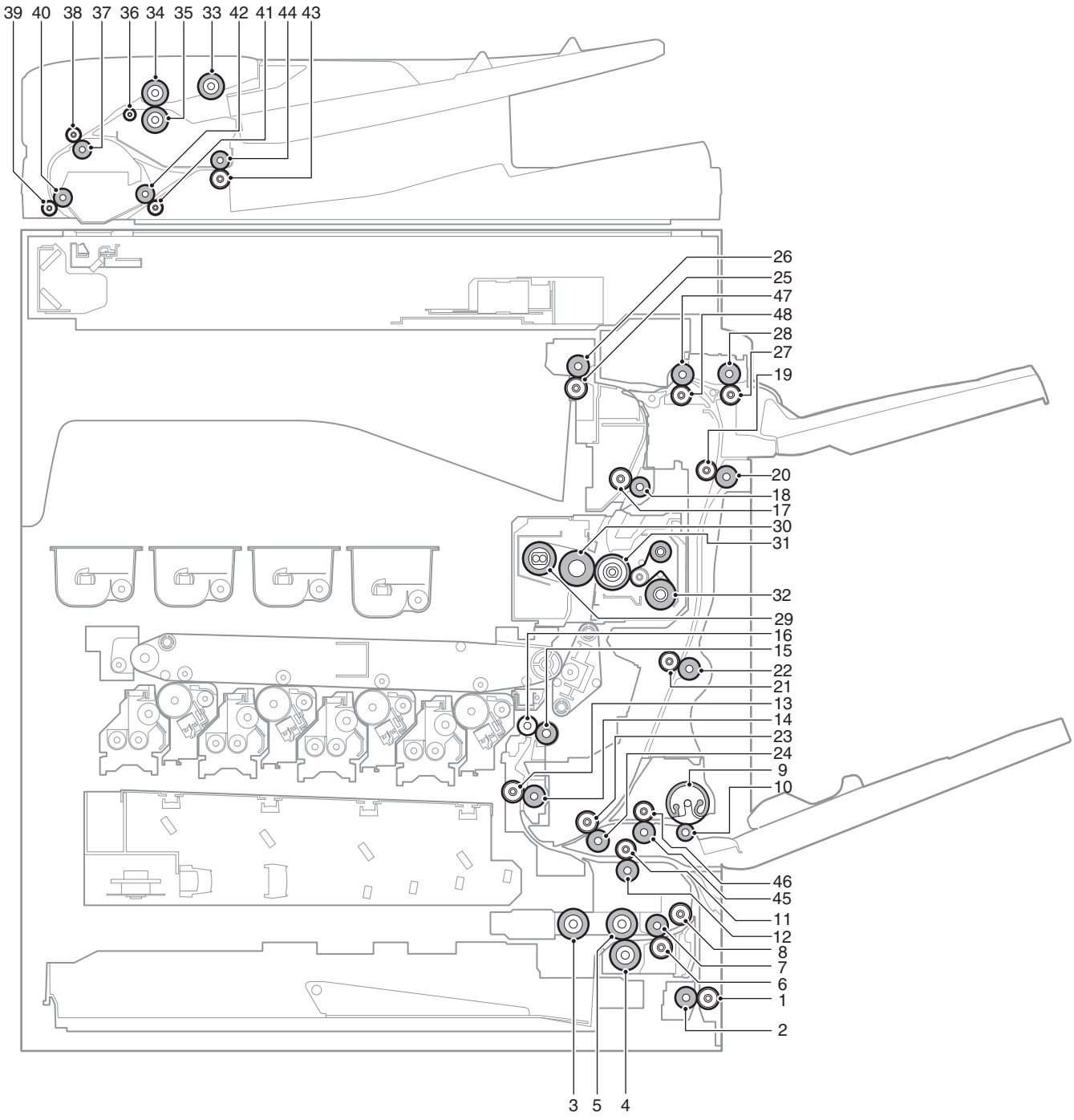

| Signal name | Name | Type | Function/Operation |
|---|---|---|---|
| 1TURC_1 | Primary transfer separation clutch 1 | Magnetic clutch | Controls separation of the primary transfer unit. |
| 1TURC_2 | Primary transfer separation clutch 2 | Magnetic clutch | Controls separation of the primary transfer unit. |
| 2TURC | Secondary transfer separation clutch | Magnetic clutch | Controls separation of the secondary transfer unit. |
| CPFC1 | Tray vertical transport clutch 1 | Magnetic clutch | Controls the transport roller of the paper feed tray 1 section. |
| CPUC1 | Paper feed clutch (Paper feed tray 1) | Magnetic clutch | Controls ON/OFF of the paper feed roller in the paper feed tray 1 section. (Paper feed tray 1) |
| MPFS | Paper feed solenoid (Manual paper feed) | Magnetic solenoid | Controls the paper feed roller. (Manual paper feed) |
| PFC_HPFC | Transport roller clutch | Magnetic clutch | Controls the transport roller 4. |
| SPRS | Paper exit roller pressure control solenoid (RSPF) | Magnetic solenoid | Controls ON/OFF of the transport power of the paper exit roller. (Releases the paper exit roller pressure when reversing paper.) |
| SRRC | Registration roller clutch (RSPF) | Magnetic clutch | Controls the registration roller. (Controls the timing of document transport.) |
| STMPS | Stamp solenoid | Magnetic solenoid | Drives the finish stamp. |
| WEBS | Web drive solenoid | Magnetic solenoid | Drives the web. |

## 8. Motors




| Signal name | Name | Type | Function/Operation |
|---|---|---|---|
| ADUM | ADU motor | Stepping motor | Drives the ADU and the transport roller in the right paper exit section. |
| BTM | Transfer belt drive motor | DC brushless motor | Drives the transfer belt. (For 36 cpm machine) |
| CLUM1 | Paper tray lift motor (Paper feed tray 1) | DC brush motor | Lifts the lift plate of the paper feed tray. (Paper feed tray 1) |
| CPFM | Paper feed motor | DC brushless motor | Drives the paper feed section. |
| DVM_CL | Developing motor (CL) | DC brushless motor | Drives the developing/OPC drum section (CL). |
| DVM_K | Developing motor (K) | DC brushless motor | Drives the developing/black OPC drum (BK)/transfer section. |
| FUM | Fusing motor | DC brushless motor | Drives the fusing section. |
| MIM | Scan motor | Stepping motor | Drives the scanner unit. (scan, return operations) |
| OSM* | Offset motor | Stepping motor | Offsets (shifts) paper. |
| PFM | Transport motor | Stepping motor | Drives the transport rollers 5 and 9. |
| PGM | Polygon motor | DC brushless motor | Scans laser beams. |
| POM | Paper exit motor | Stepping motor | Drives the roller in the paper exit section. |
| PRM | Fusing pressure control motor | Stepping motor | Controls ON/OFF of the fusing roller pressure. |
| RRM | Registration motor | Stepping motor | Drives the registration roller.<br>(Controls the timing of the transfer image for the paper.) |
| SPFM | RSPF transport motor | Stepping motor | Transports a document. |
| SPM/SPUM | RSPF paper feed motor | Stepping motor | Feeds a document. |
| TNM_C | Toner motor (C) | Stepping motor | Supplies toner from the toner cartridge (C) to the developing unit. |
| TNM_K | Toner motor (K) | Stepping motor | Supplies toner from the toner cartridge (K) to the developing unit. |
| TNM_M | Toner motor (M) | Stepping motor | Supplies toner from the toner cartridge (M) to the developing unit. |
| TNM_Y | Toner motor (Y) | Stepping motor | Supplies toner from the toner cartridge (Y) to the developing unit. |

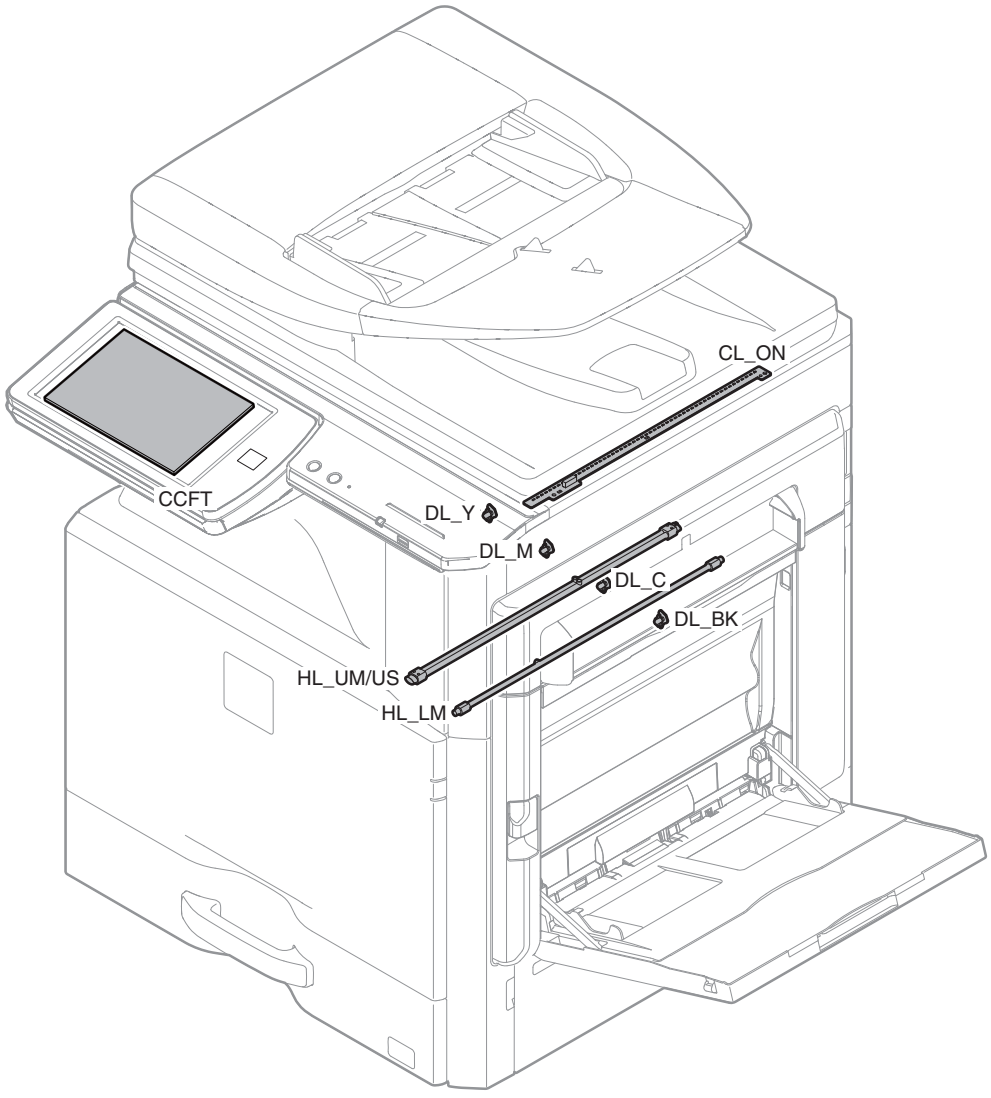
## 9. Rollers




| No. | Name | Function/Operation |
|---|---|---|
| 1 | Transport roller 1 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 2 | Transport roller 1 (Drive) | Transports paper fed from the paper feed desk tray to the transport roller 4. |
| 3 | Paper pickup roller (No. 1 paper feed tray) | Feeds paper to the paper feed roller. |
| 4 | Separation roller (No. 1 paper feed tray) | Separates paper to prevent double-feeding. |
| 5 | Paper feed roller (No. 1 paper feed tray) | Feeds paper to the paper transport section. |
| 6 | Transport roller 2 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 7 | Transport roller 2 (Drive) | Transports paper fed from the paper feed tray 1 to the transport roller 3. |
| 8 | Transport roller 3 | Transports paper from the transport roller 2 to the transport roller 4. |
| 9 | Paper feed roller (Manual paper feed tray) | Feeds paper to the paper transport section. |
| 10 | Separation roller (Manual paper feed tray) | Separates paper to prevent double-feeding. |
| 11 | Transport roller 4 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |

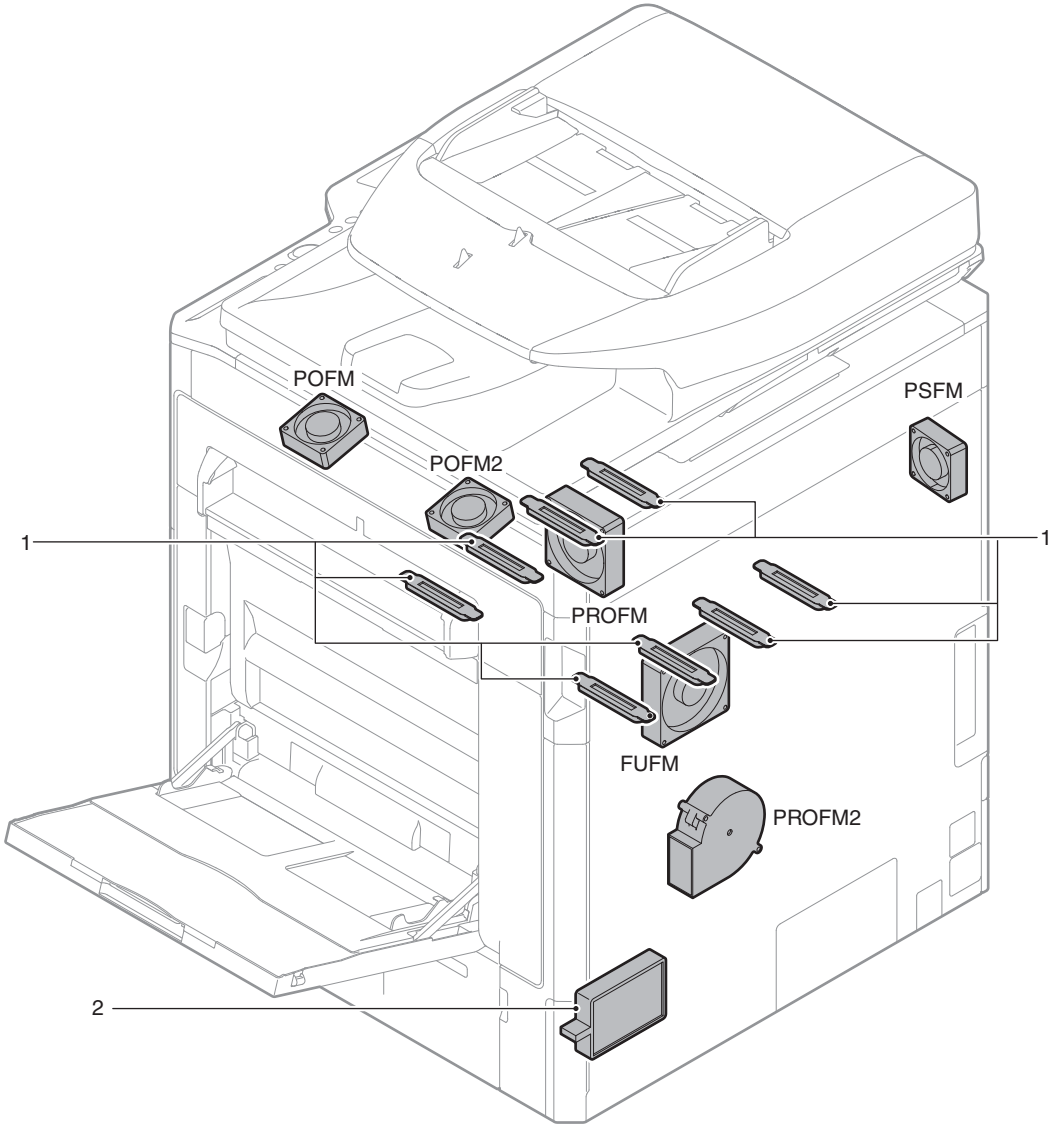
| No. | Name | Function/Operation |
|---|---|---|
| 12 | Transport roller 4 (Drive) | Transports paper from the transport rollers 1 and 3 to the transport roller 5. |
| 13 | Transport roller 5 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 14 | 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 the relation between images and paper. |
| 15 | Registration roller (Drive) | Transports paper to the transfer section. / Controls the transport timing of paper and adjusts relative relations between the image and paper. |
| 16 | Registration roller (Idle) | Apply a pressure to paper and the registration roller to provide the transport power of the transport roller to paper. |
| 17 | Transport roller 6 (Drive) | Transports paper transported from the fusing section to the paper exit section and the switchback section. |
| 18 | Transport roller 6 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 19 | Transport roller 7 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 20 | Transport roller 7 (Drive) | Transports paper transported from the switchback section to the transport roller 8. |
| 21 | Transport roller 8 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 22 | Transport roller 8 (Drive) | Transports paper transported from the transport roller 7 to the transport roller 9. |
| 23 | Transport roller 9 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 24 | Transport roller 9 (Drive) | Transports paper transported from the transport roller 8 to the transport roller 5. |
| 25 | Paper exit roller 1 (Idle) | Apply a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper. |
| 26 | Paper exit roller 1 (Drive) | Transports paper to the left paper exit section. |
| 27 | 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. |
| 28 | Paper exit roller 2 (Drive) | Discharges paper to the right paper exit tray. |
| 29 | Fusing roller (F1) | Heats the fusing belt. |
| 30 | Fusing roller (F2) | The cushion layer of the roller forms a wide nip between the fusing belt and fusing roller (B). |
| 31 | Fusing roller (B) | Heats the back surface of paper to fuse toner on the paper. |
| 32 | Fusing web roller | Cleans the fusing roller (B) and the fusing belt. |
| 33 | Document pickup roller (RSPF) | Feeds a document to the paper feed roller. |
| 34 | Paper feed roller (RSPF) | Feeds a document to the transport section. Makes a buckle on paper between the registration roller and this roller to correct the start position of document skew and document image scan. |
| 35 | Separation roller (RSPF) | Separates a document to prevent double-feeding. |
| 36 | Transport auxiliary roller (RSPF) | Reduces friction between a document and the paper guide to transport the document smoothly to the registration roller. |
| 37 | Registration roller (Drive) (RSPF) | Transports a document to the transport roller 2. / Controls the transport timing of the document and adjusts the document scanning timing. |
| 38 | Registration roller (Idle) RSPF) | Apply a pressure to a document and the registration roller to provide the transport power of the transport roller to the document. |
| 39 | Transport roller 2 (Idle) (RSPF) | Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document. |
| 40 | Transport roller 2 (Drive) (RSPF) | Transports a document transported from the registration roller to the document scanning section. |
| 41 | Transport roller 3 (Idle) (RSPF) | Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document. |
| 42 | Transport roller 3 (Drive) (RSPF) | Transports a document transported from the document scanning section to the paper exit roller. |
| 43 | Paper exit roller (Idle) (RSPF) | Apply a pressure to a document and the paper exit roller to provide the transport power of the paper exit roller to the document. |
| 44 | Paper exit roller (Drive) (RSPF) | Discharges a document. Switchbacks the document and transports it to the registration roller when scanning the back surface. |
| 45 | Transport roller 10 (Drive) | Transports paper from manual paper feed section to the transport roller 9. |
| 46 | Transport roller 10 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 47 | Paper exit roller 3 (Drive) | Transports paper to paper exit roller 2 or transport roller 7. |
| 48 | Paper exit roller 3 (Idle) | Apply a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper. |

## 10. Lamps




| Signal name | Name | Type | Function/Operation |
|---|---|---|---|
| CCFT | LCD backlight | LED | LCD backlight |
| CL_ON | Scanner lamp | LED | Radiates light onto a document for the CCD to scan the document image. |
| DL_BK | Discharge lamp (K) | LED | Discharges electric charges on the OPC drum (K). |
| DL_C | Discharge lamp (C) | LED | Discharges electric charges on the OPC drum (C). |
| DL_M | Discharge lamp (M) | LED | Discharges electric charges on the OPC drum (M). |
| DL_Y | Discharge lamp (Y) | LED | Discharges electric charges on the OPC drum (Y). |
| HL_LM | Heater lamp (HL_LM) | Halogen lamp | Heats the fusing roller (B). |
| HL_UM/US | Heater lamp (HL_UM/US) | Halogen lamp | Heats the fusing roller (F1) and the fusing belt. |

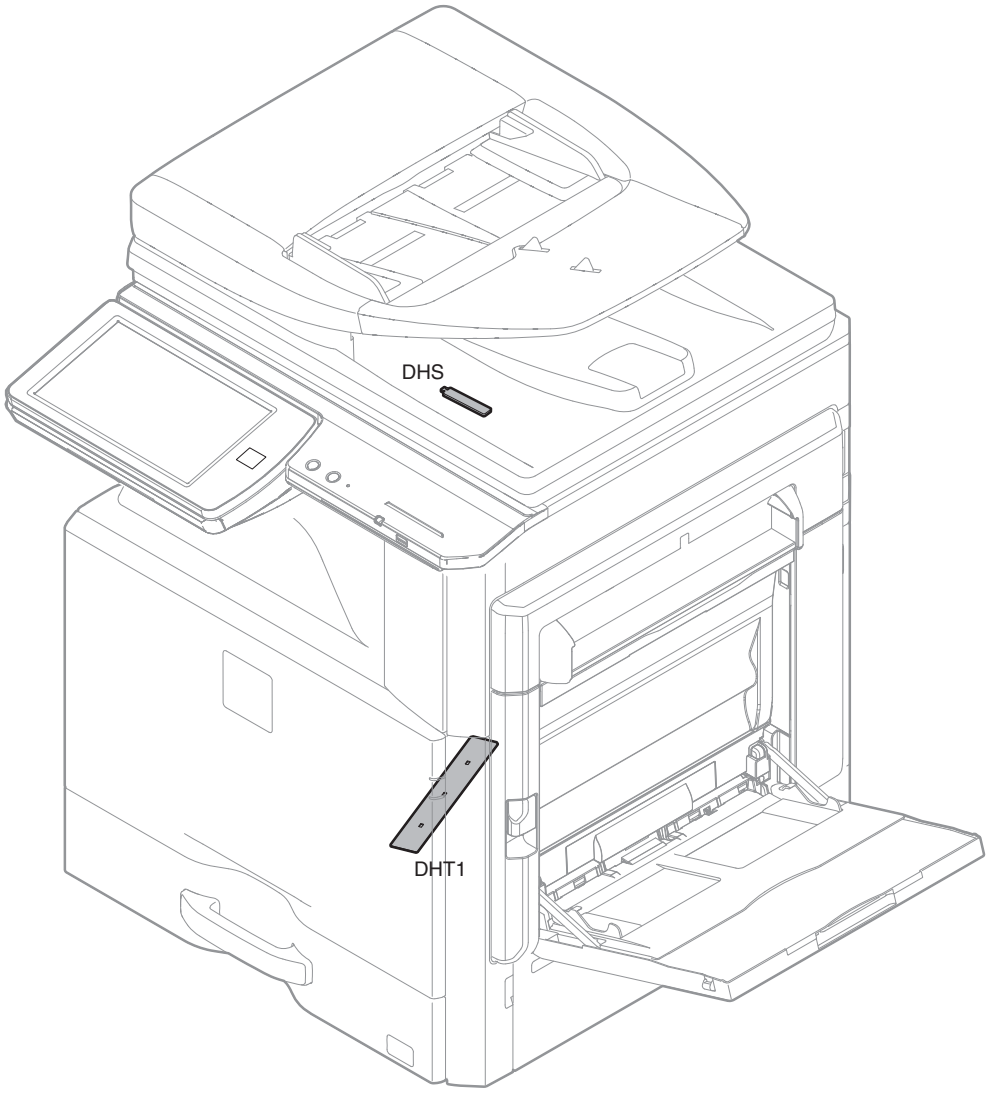
## 11. Fans and filter




| Signal name | Name | Function/Operation |
|---|---|---|
| FUFM | Fusing cooling fan | Cools the fusing section and the paper exit section. |
| POFM | Paper exit cooling fan | Cools the fusing section and the paper exit section. |
| POFM2 | Paper exit cooling fan | Cools the fusing section and the paper exit section. |
| PROFM | Process fan motor 1 | Discharges air and cools the process section. |
| PROFM2 | Process fan motor 2 | Discharges air and cools the process section. |
| PSFM | Power cooling fan motor | Cools the power unit. |
| LSUFM | LSU cooling fan | Cools the LSU. |

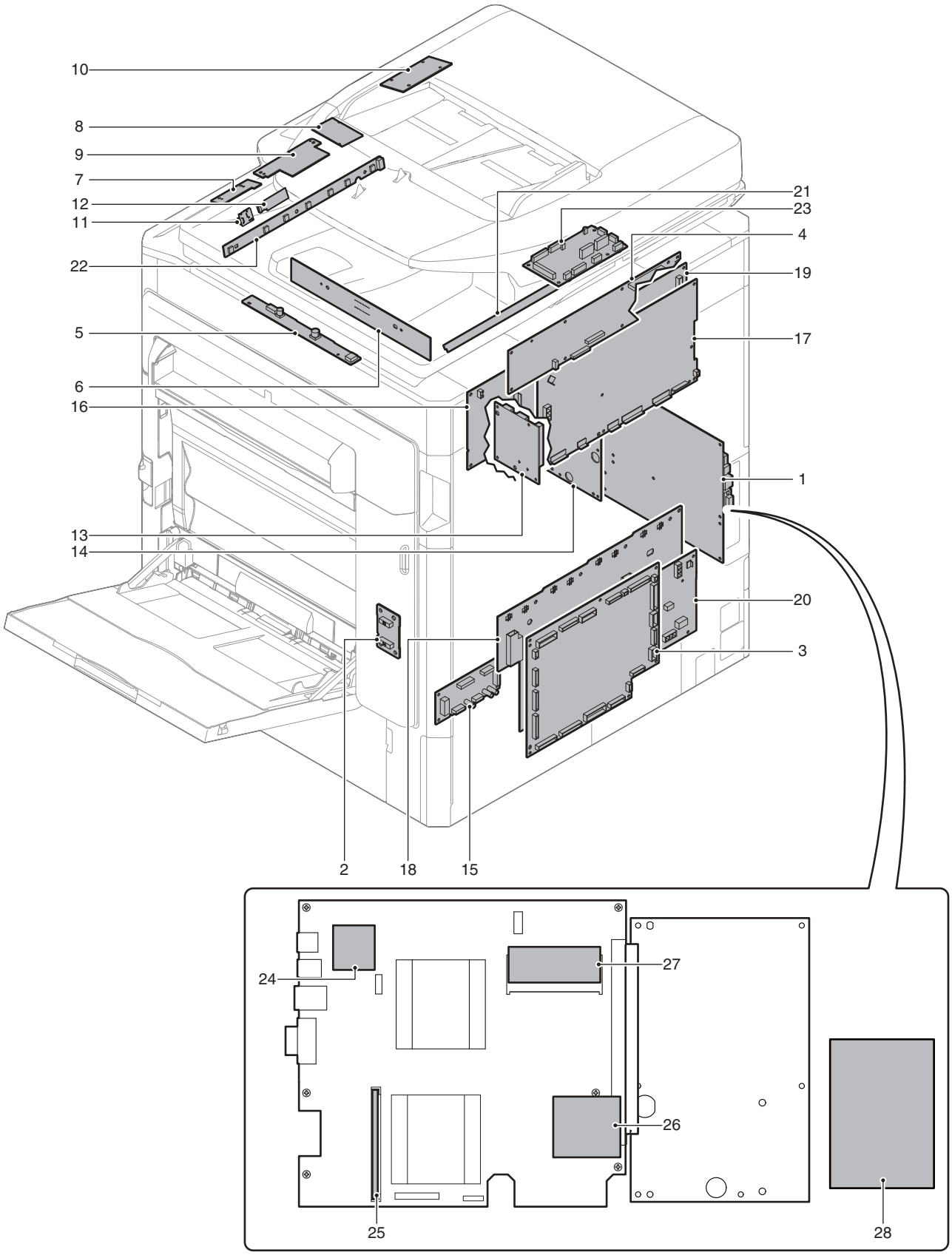
| No. | Name | Function/Operation |
|---|---|---|
| 1 | Toner filter | Prevents toner splash. |
| 2 | Ozone filter | Absorbs ozone generated in the image process section. |

## 12. Heater



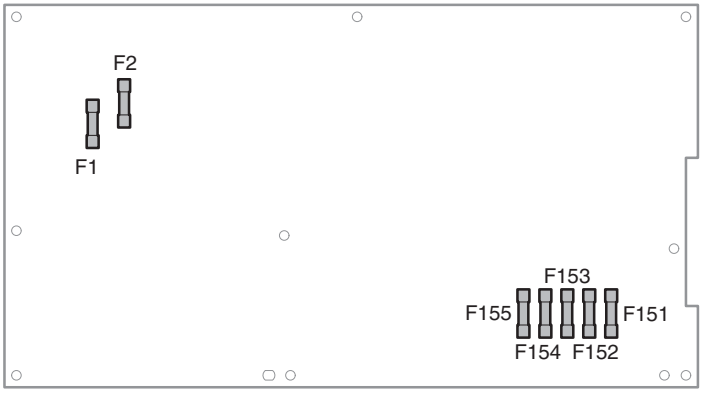

| Signal name | Name | Function/Operation |
|---|---|---|
| DHS | Scanner dehumidifying heater | Dehumidifies the scanner section to prevent it from dew condensation. |
| DHT1 | Paper dehumidifying heater (Paper feed tray 1) | Dehumidifies the paper feed tray section to prevent paper from absorbing humidity which causes degraded image quality and paper jams. |

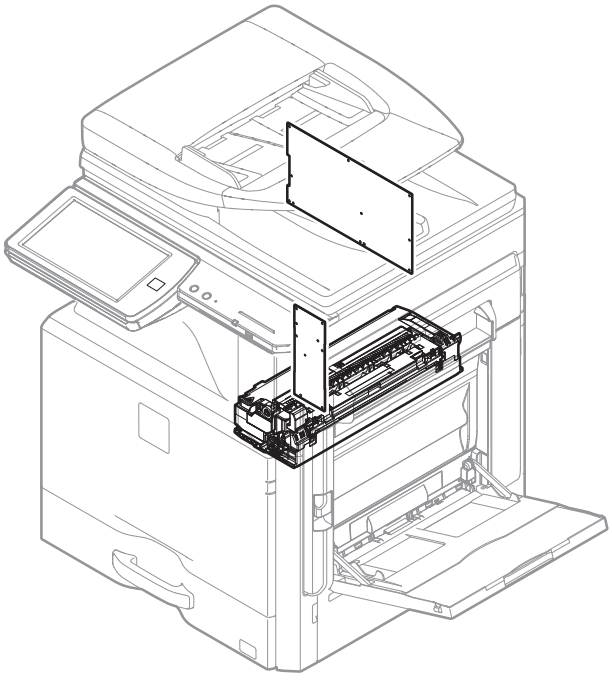
## 13. PWB/Memory device

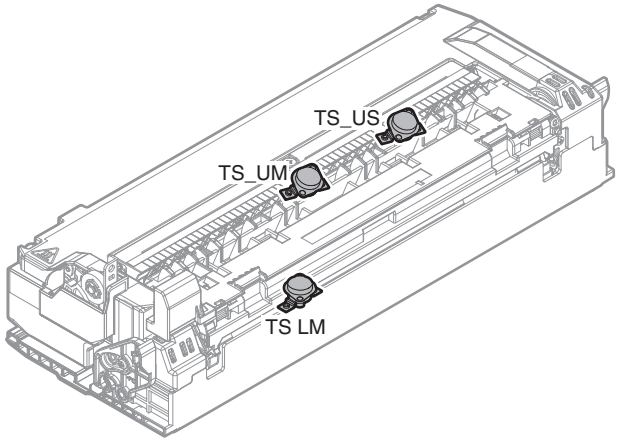


| No. | Name | Function/Operation |
|---|---|---|
| 1 | MFP control PWB | Controls image data (compression, decompression, and filing), and controls the whole machine. Converts print data (PCL/PS) into image data. |
| 2 | Right door PWB | Interfaces the right door unit signal. |
| 3 | PCU PWB | Controls the engine section. |
| 4 | SCU PWB | Controls the scanner and the operation section. |
| 5 | Scanner lamp drive PWB | Drives the scanner lamp |
| 6 | CCD PWB | Scans document images and performs A/D conversion of the scanning signal. |
| 7 | USB I/F PWB | USB I/F |
| 8 | HW-KEY PWB | Outputs the key operation signal. |
| 9 | PW-KEY PWB | Turns ON/OFF the power on the secondary side. |
| 10 | LVDS PWB | Converts the display data signal to the LCD display signal. Controls the touch panel. |
| 11 | USB CONV PWB | Converts to the USB connection. . |
| 12 | Wireless LAN PWB | Connects the network with the wireless LAN. |
| 13 | LD PWB | Drives the laser diode and controls the power. |
| 14 | LSU mother PWB | Controls the LSU. Generates the video data. Interfaces the MFP PWB, the scanner control PWB, the operation PWB, the PCU PWB, and the FAX unit. |
| 15 | Driver PWB | Drives the motor. |
| 16 | HL control PWB | Drives the heater lamp. |
| 17 | DC POWER PWB | Generates the DC voltage. |
| 18 | High voltage PWB (MC/DV PWB) | Generates the main charger voltage and the DV bias voltage. |
| 19 | High voltage PWB (TC PWB) | Generates the transfer voltage. |
| 20 | AC POWER PWB | Generates the AC voltage. |
| 21 | Document size detection PWB (Light emitting) | Drives the LED for the document size detection. |
| 22 | Document size detection PWB (Light receiving) | Outputs the document size detection signal. |
| 23 | RSPF driver PWB | Drives the motor, the solenoid, and the clutch in the RSPF section. |
| 24 | SD card memory | Stores the MFP PWB program data, the FAX image data, and the font data. |
| 25 | DIMM memory | Memory for the printer |
| 26 | Compact Flash memory | Stores the printer program data. |
| 27 | CF Card | Stores the DSK program data. |
| 28 | HDD | Stores the MFP PWB program data, the filing data, the e-manual data, the watermark data, the log data, and the authentication data. Also used as a work memory. |

## 14. Fuses and Thermostats






| Signal name | Name | Type | Section |
|---|---|---|---|
| F1 | Fuse | 8.0A(215) AC 250V | AC Power PWB |
| F2 | Fuse | 3.15A(215) AC 250V | AC Power PWB |
| F151 | Fuse | 6.3A(218) AC 250V | AC Power PWB |
| F152 | Fuse | 6.3A(218) AC 250V | AC Power PWB |
| F153 | Fuse | 6.3A(218) AC 250V | AC Power PWB |
| F154 | Fuse | 4.0A(218) AC 250V | AC Power PWB |
| F155 | Fuse | 6.3A(218) AC 250V | AC Power PWB |

| Signal name | Name | Type | Function/Operation |
|---|---|---|---|
| TS LM | Thermostat LM | Mechanical thermostat | Shuts down the heater lamp (HL_LM) circuit when the fusing section is overheated. |
| TS UM | Thermostat UM | Mechanical thermostat | Shuts down the heater lamp (HL_UM) circuit when the fusing section is overheated. (Center section) |
| TS US | Thermostat US | Mechanical thermostat | Shuts down the heater lamp (HL_US) circuit when the fusing section is overheated. (Edge section) |

# [5] ADJUSTMENTS AND SETTINGS

## 1. General

Each adjustment item in the adjustment item list is associated with a specific Job number. Perform the adjustment procedur es 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 gr eatest Job numbe r 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 |
| ADJ 3 | Image density sensor adjustment | 3A | Image density sensor adjustment | | | 44-2 |
| ADJ 4 | Image lead edge position, image loss, void area, image off-center, image magnification ratio adjustment (Automatic adjustment) | 4A | Print image main scanning direction automatic magnification ratio adjustment (Print engine) | | | 50-28 |
| | | 4B | Print image off-center automatic adjustment (Print engine) (Each paper feed tray) | | | 50-28 |
| | | 4C | Copy mode image lead edge position, image loss, void area, image off-center, sub scanning direction image magnification ratio automatic adjustment (Scanner) (Document table mode) | | | 50-28 |
| | | 4D | Copy mode image lead edge position, image loss, void area, image off-center, sub scanning direction image magnification ratio automatic adjustment (Scanner) (RSPF mode) | | | 50-28 |
| ADJ 5 | Print engine image distortion adjustment / OPC drum phase adjustment / Color registration adjustment (Print engine section) | 5A | Print engine image distortion adjustment (Manual adjustment) / OPC drum phase adjustment (Automatic adjustment) / Color registration adjustment (Automatic adjustment) | | | 50-22 |
| | | 5B | Print engine image skew (LSU skew) adjustment (Manual adjustment) (No need to adjust normally) | | | 50-20 (64-1) |
| | | 5C | Color registration offset adjustment (No need to adjust normally) | | | 50-20 |
| ADJ 6 | Scan image distortion adjustment (Document table mode) | 6A | Scanner (reading) unit parallelism adjustment | | | |
| | | 6B | Scan image (sub scanning direction) distortion adjustment | | | |
| | | 6C | Scan image (main scanning direction) distortion adjustment | | | |
| ADJ 7 | Scanner image skew adjustment (RSPF mode) | | | | | 64-2 |
| ADJ 8 | Scan image focus adjustment | | | | | 48-1 |
| ADJ 9 | Print lead edge image position adjustment (Printer mode) | | | | | 50-5 |
| ADJ 10/ SET1 | Color balance and density adjustment | | Note before execution of the image quality adjustment | | | |
| | | | Copy image quality check | | | |
| | | | Printer image quality check | | | |
| | | 10A | Scanner calibration (CCD calibration) | | | 63-3 (63-5) |
| | | SET 1 | Color balance adjustment target setup | 1A | Copy color balance adjustment target setup | 63-7/8/11 |
| | | | | 1B | Printer color balance adjustment target setup | 67-26/27/28 |
| | | 10B | Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment) | | | 46-74 |
| | | 10C | Copy image quality adjustment (Basic adjustment) | 10C (1) | Copy color balance and density adjustment (Automatic adjustment) | 46-24 |
| | | | | 10C (2) | Copy color balance and density adjustment (Manual adjustment) | 46-21 |
| | | 10D | Copy / Image send / FAX image quality adjustment (Individual adjustment) | 10D (1) | Color copy density adjustment (for each color copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally) | 46-1 |
| | | | | 10D (2) | Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally) | 46-2 |
| | | | | 10D (3) | Color copy color balance, gamma adjustment (for each color copy mode) (No need to adjust normally) | 46-10 |
| | | | | 10D (4) | Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally) | 46-16 |
| | | | | 10D (5) | Automatic monochrome (Copy/Scan/FAX) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set) | 46-19 |

| Job No. | Adjustment item list | | | | | Simulation |
|---|---|---|---|---|---|---|
| ADJ 10/ SET1 | Color balance and density adjustment | 10D | Copy / Image send / FAX image quality adjustment (Individual adjustment) | 10D (6) | Document low density image density reproduction adjustment in the automatic monochrome (Copy/ Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section) | 46-32 |
| | | | | 10D (7) | Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally) | 46-63 |
| | | | | 10D (8) | Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally) | 46-27 |
| | | | | 10D (9) | Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally) | 46-37 |
| | | | | 10D (10) | Color copy mode dark area gradation (black component quantity) adjustment (No need to adjust normally) | 46-38 |
| | | | | 10D (11) | Color (Copy/Scan) mode sharpness adjustment (No need to adjust normally) | 46-60 |
| | | | | 10D (12) | Copy high density image density reproduction setting (Normally unnecessary to the setting change) | 46-23 |
| | | | | 10D (13) | Copy color balance adjustment (Single color copy mode) (No need to adjust normally) | 46-25 |
| | | | | 10D (14) | RSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally | 46-9 |
| | | | | 10D (15) | Automatic color balance adjustment by the user (Copy color balance automatic adjustment ENABLE setting and adjustment) | 26-53 |
| | | | | 10D (16) | Copy gamma, color balance adjustment for each dither (Automatic adjustment) | 46-54 |
| | | | | 10D (17) | Dropout color adjustment (Normally not required) | 46-55 |
| | | | | 10D (18) | Watermark adjustment (Normally not required) | 46-66 |
| | | 10E | Printer image quality adjustment (Basic adjustment) | 10E (1) | Printer color balance adjustment (Automatic adjustment) | 67-24 |
| | | | | 10E (2) | Printer color balance adjustment (Manual adjustment) | 67-25 |
| | | 10F | Printer image quality adjustment (Individual adjustment) | 10F (1) | Printer density adjustment (Low density section density adjustment) (No need to adjust normally) | 67-36 |
| | | | | 10F (2) | Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally) | 67-34 |
| | | | | 10F (3) | Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally) | 67-54 |
| | | | | 10F (4) | Automatic color balance adjustment by the user (Printer color balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change) | 26-53 |
| ADJ 11 | Paper size sensor adjustment | 11A | Manual paper feed tray paper size (width) sensor adjustment | | | 40-2 |
| | | 11B | RSPF paper feed tray document size (width) sensor adjustment | | | 53-6 |
| ADJ 12 | Document size detection adjustment | 12A | Document size sensor detection point adjustment | | | 41-1 |
| | | 12B | Adjust the sensitivity of the original size sensor | | | 41-2 |
| ADJ 13 | Touch panel coordinate setting | | | | | 65-1 |
| ADJ 14 | Fusing paper guide position adjustment | | | | | |
| ADJ 15 | Print image position, image magnification ratio, void area, off-center adjustment (Print engine) (Manual adjustment) | 15A | Print image magnification ratio adjustment (main scanning direction) (Print engine) (Manual adjustment) | | | 50-10 |
| | | 15B | Print image print area adjustment (Print engine) (Manual adjustment) | | | 50-10/50/1 |
| | | 15C | Print image off-center adjustment (Print engine) (Manual adjustment) | | | 50-10 |
| ADJ 16 | Scan image magnification ratio adjustment (Manual adjustment) | 16A | Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (Document table mode) | | | 48-1 |
| | | 16B | Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (Document table mode) | | | 48-1/48-5 |
| | | 16C | Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (RSPF mode) | | | 48-1 |
| | | 16D | Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (RSPF mode) | | | 48-1 |
| ADJ 17 | Scan image off-center adjustment (Manual adjustment) | 17A | Scan image off-center adjustment (Manual adjustment) (Document table mode) | | | 50-12 |
| | | 17B | Scan image off-center adjustment (Manual adjustment) (RSPF mode) | | | 50-12/50-6 |

| Job No. | Adjustment item list | | | Simulation |
|---|---|---|---|---|
| ADJ 18 | Copy image position, image loss adjustment (Manual adjustment) | 18A | Copy image position, image loss, void area adjustment (Manual adjustment) (Document table mode) | 50-1 |
| | | 18B | Image scanning position adjustment (Manual adjustment) (RSPF mode) | 53-8 |
| | | 18C | Copy image position, image loss, void area adjustment (Manual adjustment) (RSPF mode) | 50-6 |
| ADJ 19 | Finisher and punch unit adjustments (alignment, punch hole position, staple position) | | | 3-10 |

# 3. Details of adjustment

## ADJ 1 Adjust the developing unit

### 1-A Adjust the developing doctor gap

This adjustment must be performed in the following cases:

* 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.

Important

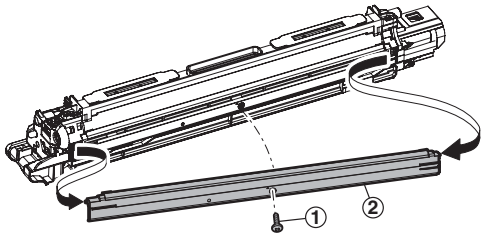
Be careful not to attach a fingerprint, oil, grease, or a foreign material on the DV roller during the procedure. Also be careful not to scratch the DV roller surface.

If a fingerprint, oil, grease, or a foreign material is erroneously attached to the DV roller during the procedure, remove all developer from the developing unit and clean the roller with alcohol.

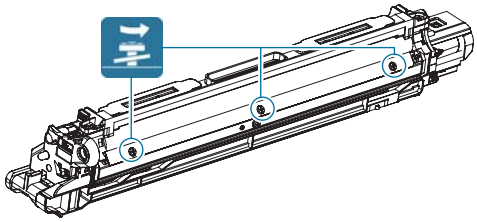
Important

Do not exert force when holding the DV Unit.

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




2) Loosen the developing doctor fixing screw.

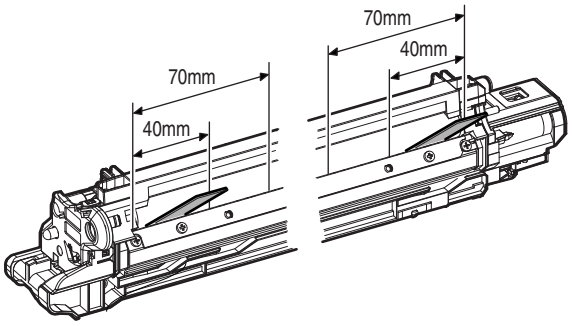


3) Insert a thickness gauge of 0.65mm in between 40mm - 70mm from the edge of the developing doctor.

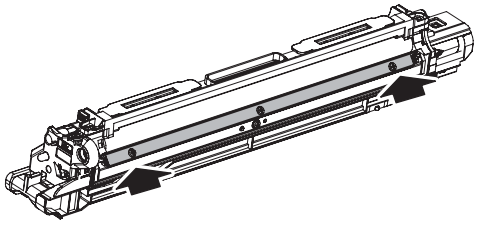
Important

**Note for use of a thickness gauge**

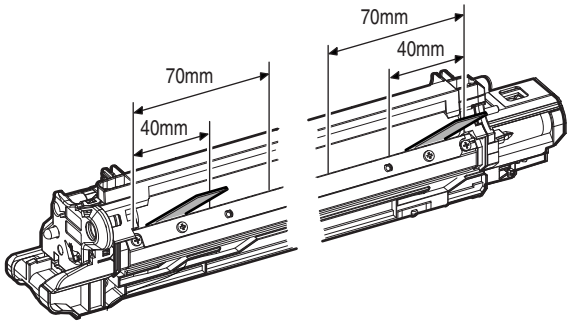
- Do not insert the gauge diagonally.
- The gauge must pass freely.
- The advisable point of measurement is the MIN point of the DV roller oscillation.




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 40mm - 70mm from the both sides of the developing doctor are in the range of 0.65 ± 0.05mm.




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

This adjustment must be performed in the following cases:

* 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.

Important

Be careful not to leave a fingerprint, oil, grease, or a foreign material on the DV roller during the procedure. Also be careful not to scratch the DV roller surface.

If a fingerprint, oil, grease, or a foreign material is erroneously attached to the DV roller during the procedure, remove all developer from the developing unit and clean the roller with alcohol.

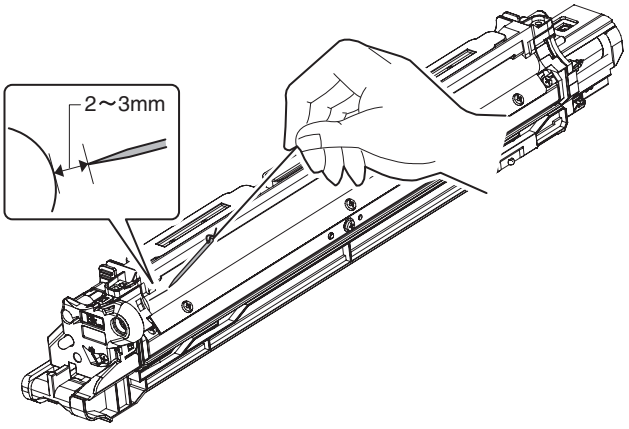
Important

Do not exert force when holding the DV Unit.

1) Remove the developing doctor cover, and place the developing unit on a flat surface.
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 edge. (Never touch the needle tip to the developing roller.)

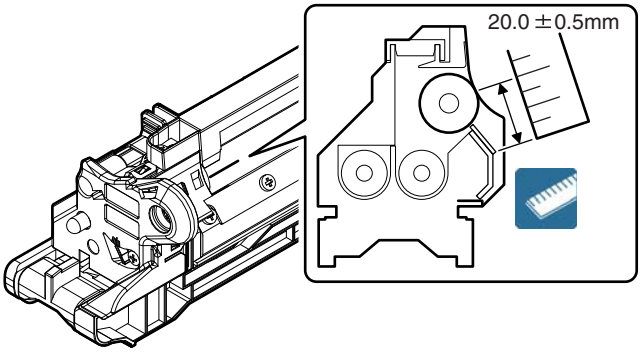
Important

Marking must be made at the edge section (non-image area) of the DV roller.

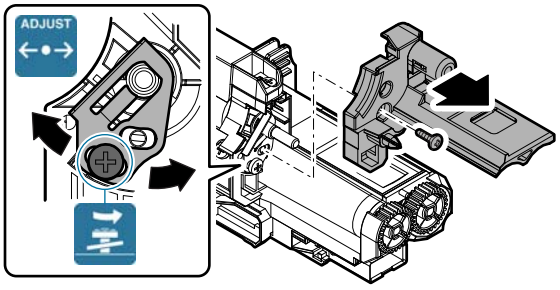



5) Measure the distance between the marking position and the DV doctor edge A position, and confirm that the distance is 20.0 ± 0.5mm.

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




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




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

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

## 1-C Toner density control reference value setting

This adjustment must be performed in the following cases:

* When developer is replaced.

Important

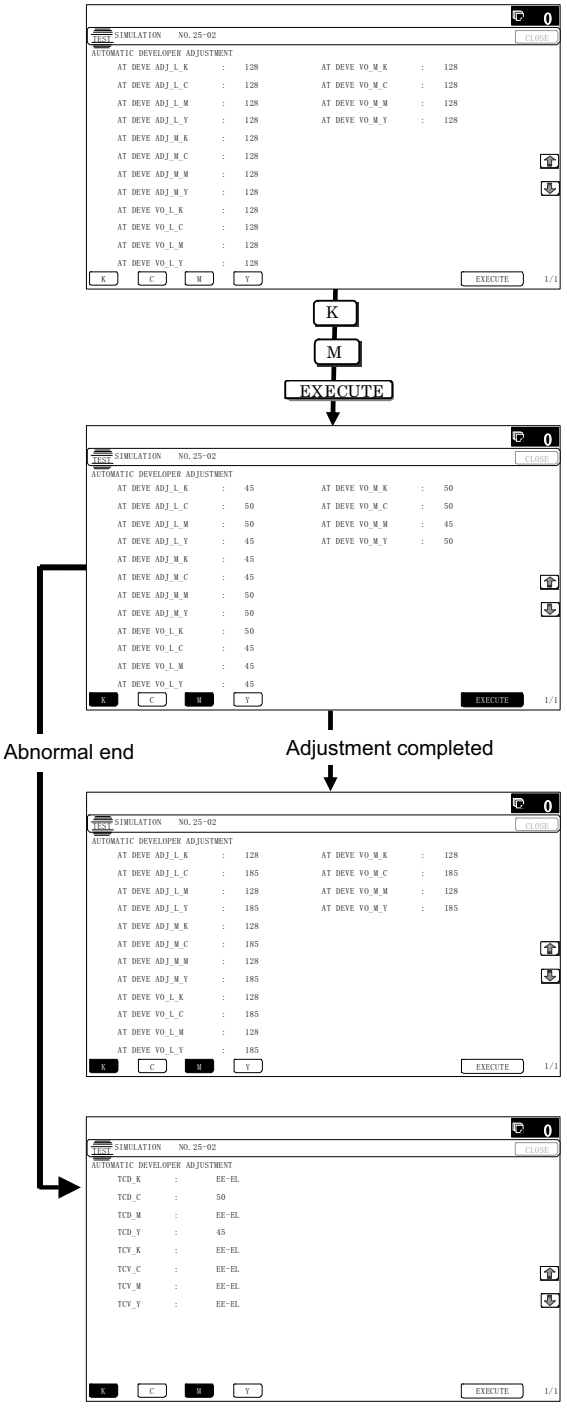
Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.

Important

Perform the toner density reference control level adjustment with the toner cartridges removed.

If adjustment is performed with toner cartridges installed, the EE-EL trouble code or an over-toned condition may occur.

1) With the front cabinet open, enter SIM25-2.



2) Close the front cabinet.
3) Select a developing unit to be adjusted.
4) When [EXECUTE] key is pressed, it is highlighted. The DV roller rotates, and the toner density sensor detects toner density, and the output value is displayed.

   The above operation is executed for 1.5 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.

   The above operation is executed each of the lower speed mode and the middle speed mode, and the reference toner density control value is set for each of them.

**Important**

If the operation is interrupted within 1.5 minutes, the adjustment result is not reflected.

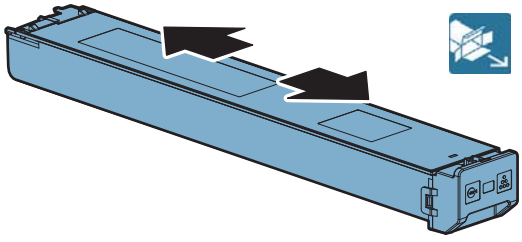
When [EXECUTE] key is pressed during the operation, the operation is stopped and [EXECUTE] key returns to the normal display.

If [EE-EU], [EE-EL], or [EE-EC] is displayed, setting of the reference toner density control value is not completed normally.

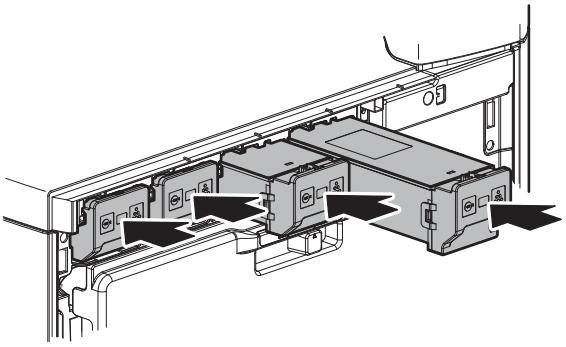
Troubleshoot the cause, remove the cause, and perform setting again.

| Error display | Error name | Detail of error |
|---|---|---|
| EE-EL | EL abnormality | Sensor output level less than 1.0V, or control voltage over 8.0V. |
| EE-EU | EU abnormality | Sensor output level over 2.3V, or control voltage less than 2.0V. |
| EE-EC | EC abnormality | Sensor output level: other than 1.65 ± 0.13V |

5) Cancel SIM 25-2.
6) Confirm that "Install the toner cartridge" is displayed, and install the toner cartridge by the following procedures.
7) Shake the toner cartridge horizontally several times.



8) Open the front cabinet, and insert each toner cartridge.



**Important**

Be sure to install the color cartridges to their proper positions. Avoid installation to a different color position.

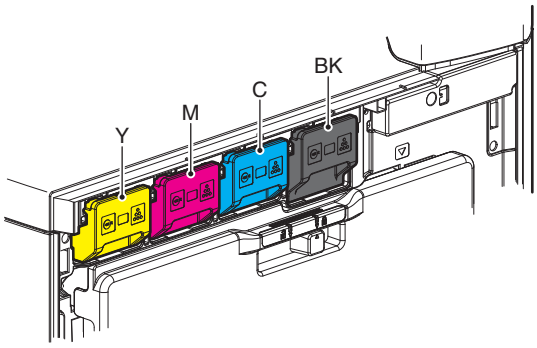
**Important**

Do not forcibly insert the toner cartridge.
Push it in until the cartridge is securely locked in place.

**Important**

Developing units removed, be sure to remove the toner cartridges as well to prevent toner clogging.

**Color toner cartridge positions**




9) Close the front cabinet.
10) Confirm that "Toner replenishment in progress" is displayed, and wait until the display disappears. (It takes 30 sec - 6 min.)

**Note**

This procedure is for checking the toner supply operation from the toner cartridge to the DV unit. The operation time differs depending on the toner quantity in the toner cartridge, uneven distribution of toner, and the internal state of the toner cartridge.

**Important**

Do not perform operations which interrupt the above operation, such as opening the front cover, entering the SIM mode, and turning OFF/ON the power. If this precaution is ignored, Trouble codes F2-40 - 43 or F2-64 - 67 or a over-toned condition may occur.

**Important**

When replacing developer, always replace all the three colors of Yellow, Magenta, and Cyan.

If only one color is replaced, color balance may be adversely affected. Black developer can be replaced individually.

**Important**

When developer is replaced, be sure to perform the color balance adjustment.

**Important**

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

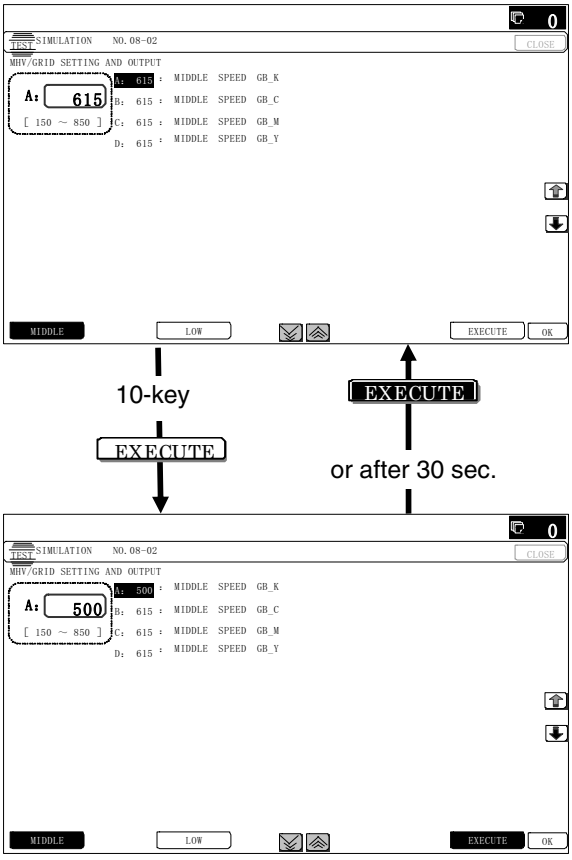
# ADJ 2 Adjusting high voltage values

## 2-A Adjust the main charger grid voltage

This adjustment must be performed in the following cases:

* When the MC/DV high voltage power 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 (Mode) | | | Content | | Adjustment range | Actual voltage | |
|---|---|---|---|---|---|---|---|
| | | | | | | 26cpm/31 cpm machine | 36cpm machine |
| MIDDLE | A | MIDDLE SPEED GB_K | Main charger grid voltage (Middle speed mode) | K | 150 - 850 | –620V±5V | –625V±5V |
| | B | MIDDLE SPEED GB_C | Main charger grid voltage (Middle speed mode) | C | 150 - 850 | –620V±5V | –625V±5V |
| | C | MIDDLE SPEED GB_M | Main charger grid voltage (Middle speed mode) | M | 150 - 850 | –620V±5V | –625V±5V |
| | D | MIDDLE SPEED GB_Y | Main charger grid voltage (Middle speed mode) | Y | 150 - 850 | –620V±5V | –625V±5V |
| LOW | A | LOW SPEED GB_K | Main charger grid voltage (Low speed mode) | K | 150 - 850 | –610V±5V | –610V±5V |
| | B | LOW SPEED GB_C | Main charger grid voltage (Low speed mode) | C | 150 - 850 | –590V±5V | –590V±5V |
| | C | LOW SPEED GB_M | Main charger grid voltage (Low speed mode) | M | 150 - 850 | –590V±5V | –590V±5V |
| | D | LOW SPEED GB_Y | Main charger grid voltage (Low speed mode) | Y | 150 - 850 | –590V±5V | –590V±5V |

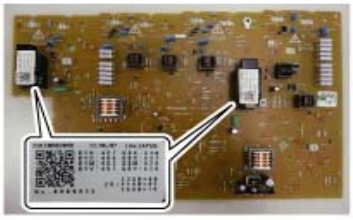
3) Enter the adjustment value (specified value) in the middle speed mode, and press [OK] key.

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

GBK:XXX GBC:XXX GBM:XXX GBY:XXX

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

26cpm/31cpm machine: +5
36cpm machine: +10



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

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

**Important**

Note that the adjustment value may differ depending on the MC/DV high voltage power PWB.

Since the adjustment value label is attached on the MC/DV high voltage PWB, the PWB must be r emoved 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**

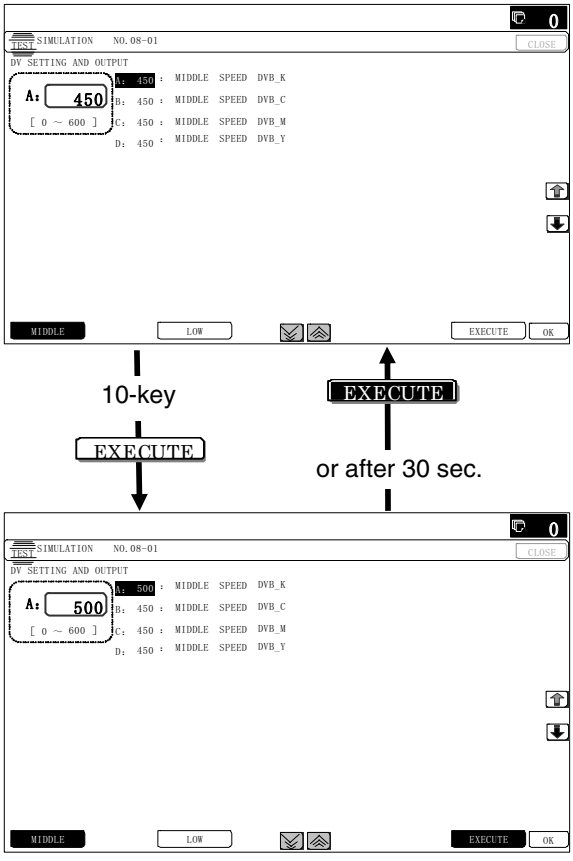
Since the high voltage output cannot be checked with a digital multimeter in this model, a judgment of the output must be made by checking the print image quality.

## 2-B Adjust the developing bias voltage

This adjustment must be performed in the following cases:

* When the MC/DV high voltage power 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.

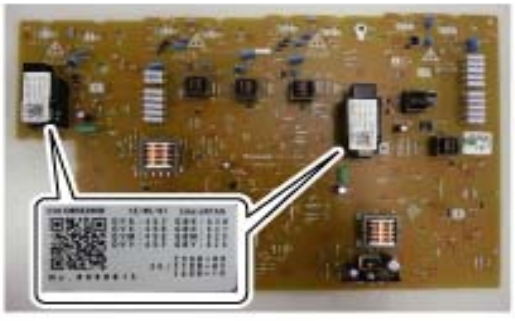



2) Select an output mode and an item to be adjusted.

| Item/Display (Mode) | | | Content | | Adjustment range | Actual voltage |
|---|---|---|---|---|---|---|
| MIDDLE | A | MIDDLE SPEED DVB_K | Developing bias voltage (Middle speed mode) | K | 0 - 600 | –450V ±5V |
| | B | MIDDLE SPEED DVB_C | Developing bias voltage (Middle speed mode) | C | 0 - 600 | –450V ±5V |
| | C | MIDDLE SPEED DVB_M | Developing bias voltage (Middle speed mode) | M | 0 - 600 | –450V ±5V |
| | D | MIDDLE SPEED DVB_Y | Developing bias voltage (Middle speed mode) | Y | 0 - 600 | –450V ±5V |
| LOW | A | LOW SPEED DVB_K | Developing bias voltage (Low speed mode) | K | 0 - 600 | –450V ±5V |
| | B | LOW SPEED DVB_C | Developing bias voltage (Low speed mode) | C | 0 - 600 | –430V ±5V |
| | C | LOW SPEED DVB_M | Developing bias voltage (Low speed mode) | M | 0 - 600 | –430V ±5V |
| | D | LOW SPEED DVB_Y | Developing bias voltage (Low speed mode) | Y | 0 - 600 | –430V ±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 MC/DV high voltage power PWB.



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

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

Important

Note that the adjustment value may differ depending on the MC/DV high voltage power PWB.

Since the adjustment value label is attached on the MC/DV 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

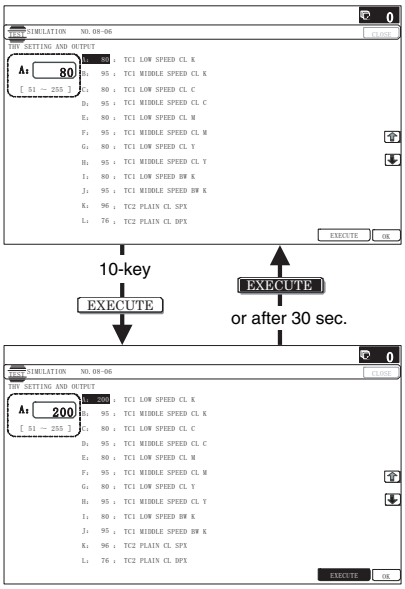
Since the high voltage output cannot be checked with a digital multimeter in this model, a judgment of the output must be made by checking the print image quality.

## 2-C Transfer current and voltage adjustment

This adjustment must be performed in the following cases:

* When the TC 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 an item to be adjusted.

| Item/Display | | Content | | | | Setting range | Default value | Actual output value |
|---|---|---|---|---|---|---|---|---|
| A | TC1 LOW SPEED CL K | Primary transfer bias adjustment value | Color | K | Low speed | 51 - 255 | 80 | 6μA |
| B | TC1 MIDDLE SPEED CL K | | | | Middle speed | 51 - 255 | 109 | 10μA |
| C | TC1 LOW SPEED CL C | | | C | Low speed | 51 - 255 | 80 | 6μA |
| D | TC1 MIDDLE SPEED CL C | | | | Middle speed | 51 - 255 | 109 | 10μA |
| E | TC1 LOW SPEED CL M | | | M | Low speed | 51 - 255 | 80 | 6μA |
| F | TC1 MIDDLE SPEED CL M | | | | Middle speed | 51 - 255 | 109 | 10μA |
| G | TC1 LOW SPEED CL Y | | | Y | Low speed | 51 - 255 | 80 | 6μA |
| H | TC1 MIDDLE SPEED CL Y | | | | Middle speed | 51 - 255 | 109 | 10μA |
| I | TC1 LOW SPEED BW K | | Black/White | K | Low speed | 51 - 255 | 80 | 6μA |
| J | TC1 MIDDLE SPEED BW K | | | | Middle speed | 51 - 255 | 109 | 10μA |
| K | TC2 PLAIN CL SPX | Secondary transfer bias adjustment value | Color | Standard paper | Front surface | 51 - 255 | 103 | –40μA |
| L | TC2 PLAIN CL DPX | | | | Back surface | 51 - 255 | 90 | –30μA |
| M | TC2 PLAIN BW SPX | | Black/White | | Front surface | 51 - 255 | 103 | –40μA |
| N | TC2 PLAIN BW DPX | | | | Back surface | 51 - 255 | 90 | –30μA |
| O | TC2 HEAVY1 CL SPX | | Color | Heavy paper 1 | Front surface | 51 - 255 | 83 | –25μA |
| P | TC2 HEAVY1 CL DPX | | | | Back surface | 51 - 255 | 76 | –20μA |
| Q | TC2 HEAVY1 BW SPX | | Black/White | | Front surface | 51 - 255 | 69 | –15μA |
| R | TC2 HEAVY1 BW DPX | | | | Back surface | 51 - 255 | 69 | –15μA |
| S | TC2 HEAVY2 CL | | Color | Heavy paper 2 | | 51 - 255 | 83 | –25μA |
| T | TC2 HEAVY2 BW | | Black/White | | | 51 - 255 | 69 | –15μA |
| U | TC2 OHP CL | | Color | OHP | | 51 - 255 | 69 | –15μA |
| V | TC2 OHP BW | | Black/White | | | 51 - 255 | 69 | –15μA |
| W | TC2 ENVELOPE CL | | Color | Envelope | | 51 - 255 | 69 | –15μA |
| X | TC2 ENVELOPE BW | | Black/White | | | 51 - 255 | 69 | –15μA |
| Y | TC2 THIN CL | | Color | Thin paper | | 51 - 255 | 103 | –40μA |
| Z | TC2 THIN BW | | Black/White | | | 51 - 255 | 103 | –40μA |
| AA | TC2 GLOSSY CL | | Color | Gloss paper | | 51 - 255 | 83 | –25μA |
| AB | TC2 GLOSSY BW | | Black/White | | | 51 - 255 | 69 | –15μA |
| AC | TC2 CLEANING | Secondary transfer cleaning bias adjustment value | Cleaning process (negative pole) | | | 51 - 255 | 59 | –8μA |
| AD | TC2 CLEAN LOW SPD | | Low speed print mode | | | 0 - 255 | 26 | 0V |
| AE | TC2 CLEAN MIDDLE SPD | | Middle speed print mode | | | 0 - 255 | 26 | 0V |
| AF | TC2 CLEAN CLEANING | | Cleaning bias (positive pole) | | | 0 - 255 | 102 | 500V |
| AG | PTC LOW SPEED CL | PTC current adjustment value | Color | Low speed | | 51 - 255 | 73 | –200μA |
| AH | PTC MIDDLE SPEED CL | | | Middle speed | | 51 - 255 | 73 | –200μA |
| AI | PTC LOW SPEED BW | | Black/White | Low speed | | 51 - 255 | 73 | –200μA |
| AJ | PTC MIDDLE SPEED BW | | | Middle speed | | 51 - 255 | 73 | –200μA |
| AK | CASE VOLT LOW CL | PTC voltage adjustment value | Color | Low speed | | 0 - 255 | 0 | 0V |
| AL | CASE VOLT MID CL | | | Middle speed | | 0 - 255 | 0 | 0V |
| AM | CASE VOLT LOW BW | | Black/White | Low speed | | 0 - 255 | 0 | 0V |
| AN | CASE VOLT MID BW | | | Middle speed | | 0 - 255 | 0 | 0V |

3) Enter the adjustment value (specified value), and press [OK] key.

When [EXECUTE] key is pressed, the voltage entered in the procedure 3) is outputted for 30sec and the set value is saved.
When [EXECUTE] key is pressed again, the output is stopped.
By setting the default value (specified value), the specified output is provided.

# ADJ 3 Image density sensor adjustment

Before executing this adjustment, check to confirm the following items.

* Check to confirm that the color image density sensor (image registration sensor F) and the black image density sensor (image registration sensor R) are clean.
* Check to confirm that the image density sensor calibration plate is clean.
* Check to confirm that the transfer belt is clean and free from scratches.

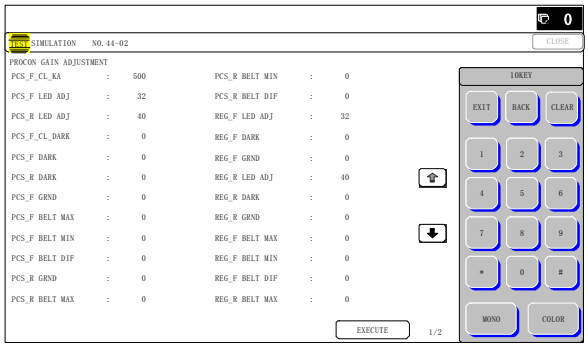
## 3-A Image density sensor adjustment

The transfer belt surface are used to make the sensitivity adjustment of the color image density sensor (image registration sensor F) and the black image density sensor (image registration sensor R).

This adjustment executes automatically at the outset of registration adjustment operation and process control operation as well as SIM44-2.

Normally, therefore, it is not required to perform this adjustment. It is performed only when the sensor is replaced or when the adjustment result is checked.

1) Enter SIM44-2 mode.




2) Press [EXECUTE] key.

The sensitivity adjustments of the color image density sensor (image registration sensor F) and the black image density sensor (image registration sensor R) are automatically performed.

After completion of the adjustment, the adjustment result is displayed and [EXECUTE] key returns to the normal display.

If the adjustment is not completed normally, "ERROR" is displayed.

| Mode | Error display | Error content | |
|---|---|---|---|
| Adjustment value for process control operation mode | BK_SEN_ ADJ_ERR | Black image density sensor adjustment abnormality | PCS_K LED ADJ error (The target value is not obtained after retried three times.) |
| | CL_SEN_ ADJ_ERR | Color image density sensor adjustment abnormality | PCS_CL LED ADJ error (The target value is not obtained after retried three times.) |
| | BELT_READ_ ERR | Transfer belt surface reading abnormality | PCS_K GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.) |
| Adjustment value for image registration operation mode | REG_SEN_ F_ADJ_ERR | Registration sensor F adjustment abnormality | REG_F LED ADJ error (The target value is not obtained after retried three times.) |
| | REG_SEN_ R_ADJ_ERR | Registration sensor R adjustment abnormality | REG_R LED ADJ error (The target value is not obtained after retried three times.) |
| | REG_BELT_ F_READ_ ERR | F side transfer belt surface reading abnormality | REG_F GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.) |
| | REG_BELT_ R_READ_ ERR | R side transfer belt surface reading abnormality | REG_R GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.) |

When an error occurs, check the following sections for any abnormality.

- Color image density sensor (image registration sensor F)
- Black image density sensor (image registration sensor R)
- PCU PWB
- Transfer belt (dirt, scratch)
- Transfer belt cleaner

If any abnormality is found, repair and adjust again.

If an error occurs, the adjustment result is not revised.

# ADJ 4 Image lead edge position, image loss, void area, image off-center, image magnification ratio adjustment (Automatic adjustment)

The following adjustment items can be executed automatically with SIM50-28.

* ADJ 15

  Print image position, image magnification ratio, void area, off-center adjustment (Print engine) (Manual adjustment)

* ADJ 16

  Scan image magnification ratio adjustment (Manual adjustment)

* ADJ 17

  Scan image off-center adjustment (Manual adjustment)

* ADJ 18

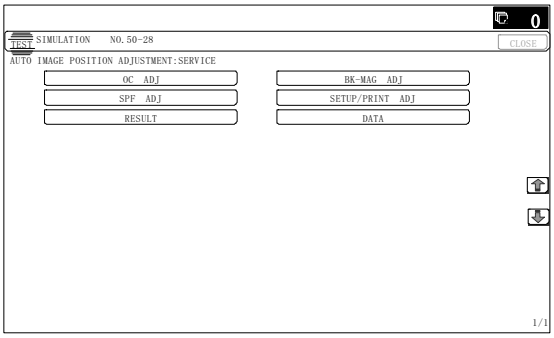
  Copy image position, image loss adjustment (Manual adjustment)

(Menu in SIM50-28 mode)

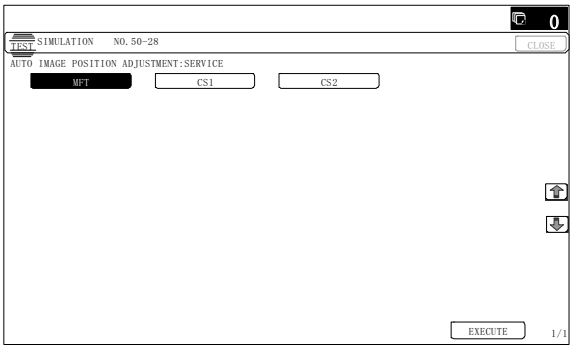
| Display/Item | Content |
|---|---|
| OC ADJ | Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode) |
| BK-MAG ADJ | Main scanning direction image magnification ratio adjustment |
| SPF ADJ | Image loss off-center sub scanning direction image magnification ratio adjustment (RSPF 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 |

## 4-A Print image main scanning direction automatic magnification ratio adjustment (Print engine)

1) Enter the SIM50-28 mode.



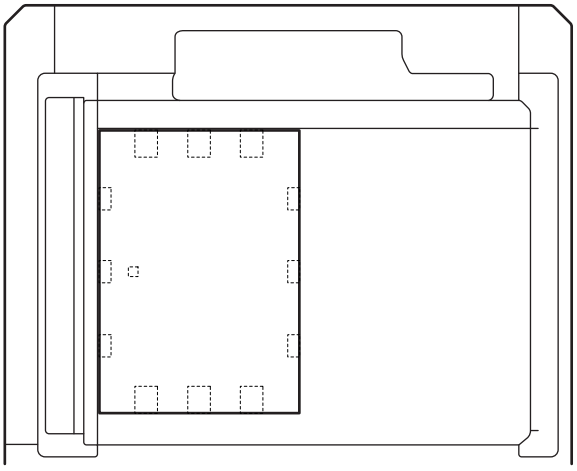

2) Select [BK-MAG ADJ] with the key.
3) Select the paper feed tray with paper in it with the key. (Any paper size will do.)



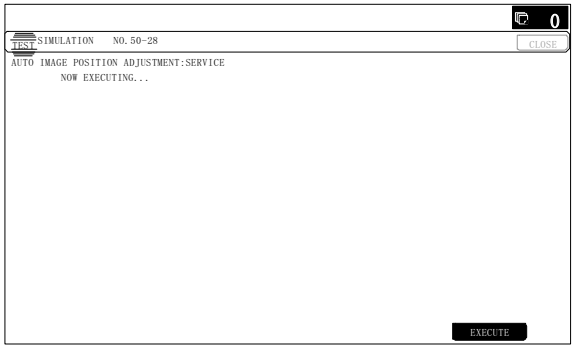

4) Press [EXECUTE] key.
The adjustment pattern is printed out.
5) Set the adjustment pattern on the document table.

Important

Fit the adjustment pattern correctly with the document guide.
In this case, put 5 sheets of white paper on the printed adjustment pattern.



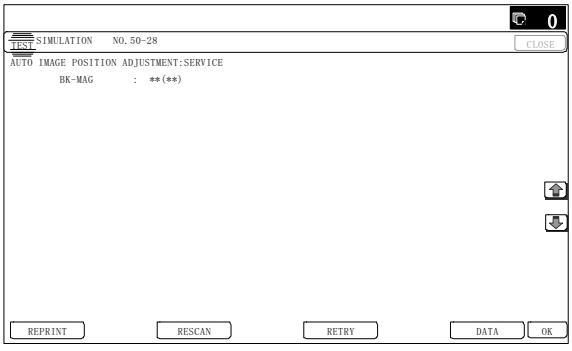
6) Press [EXECUTE] key.




The following item is automatically adjustment.

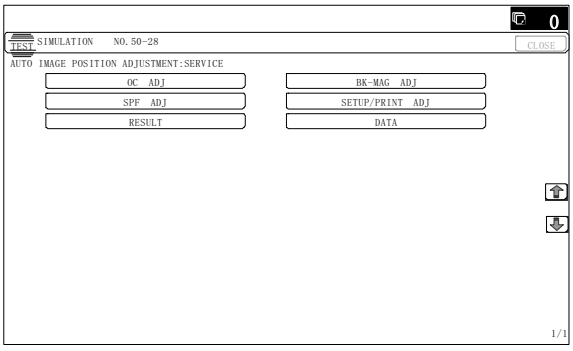
* Print image main scanning di rection image magnification ratio.

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

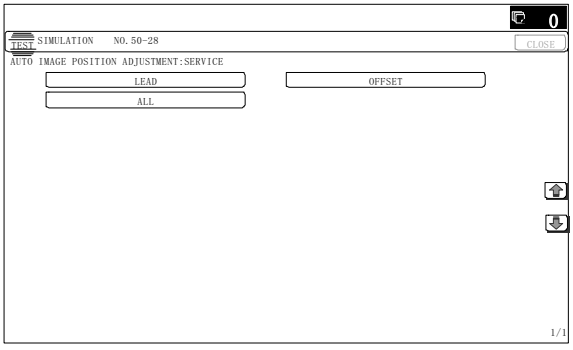


## 4-B Print image off-center automatic adjustment (Print engine) (Each paper feed tray)

1) Enter the SIM50-28 mode.




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



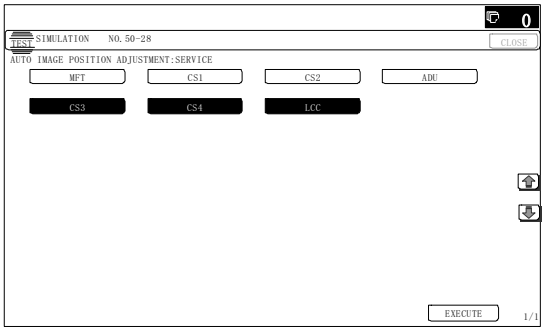

**Note**

By pressing [LEAD] or [OFFSET] key, 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.

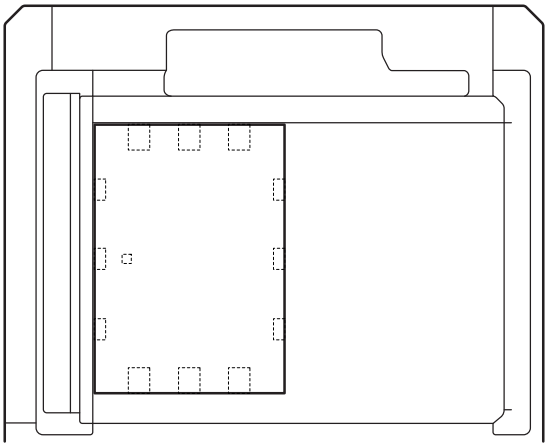



5) Press [EXECUTE] key.
The adjustment pattern is printed out.

6) Set the adjustment pattern on the document table.

**Important**

Fit the adjustment pattern correctly with the document guide.
In this case, put 5 sheets of white paper on the printed adjustment pattern.

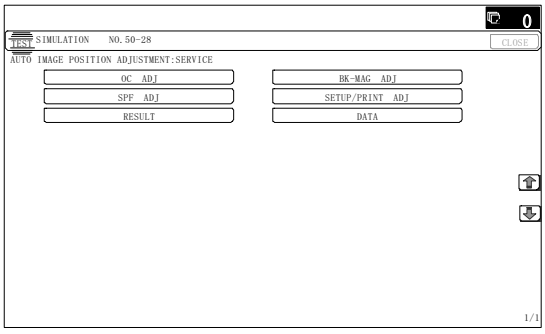


7) Press [EXECUTE] key.
The following item is automatically adjustment.
   * Print image lead edge image position adjustment
   * Print image off-center adjustment
8) Press [OK] key.
The adjustment result becomes valid.

Perform procedures 4) to 7) for each paper feed tray.

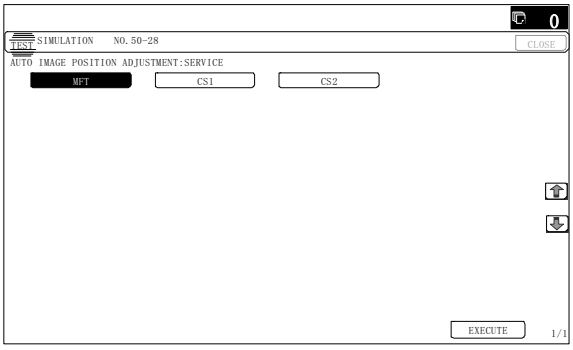
## 4-C Copy mode image lead edge position, image loss, void area, image off-center, sub scanning direction image magnification ratio automatic adjustment (Scanner) (Document table mode)

1) Enter the SIM50-28 mode.




2) Select [OC ADJ] with the key.

3) Select the paper feed tray with paper in it with the key. (Any paper size will do.)

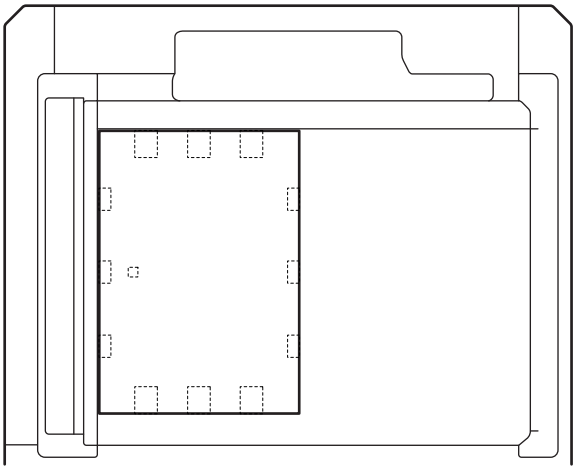



4) Press [EXECUTE] key.
The adjustment pattern is printed out.

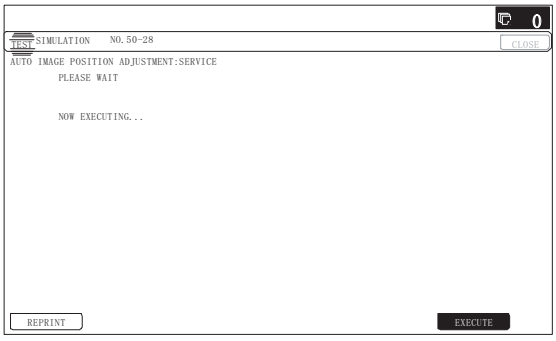
5) Set the adjustment pattern on the document table.

Important

Fit the adjustment pattern correctly with the document guide.
In this case, put 5 sheets of white paper on the printed adjustment pattern.



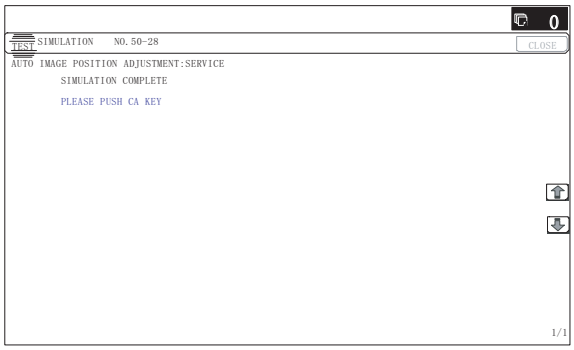
6) Press [EXECUTE] key.




The following item is automatically adjustment.

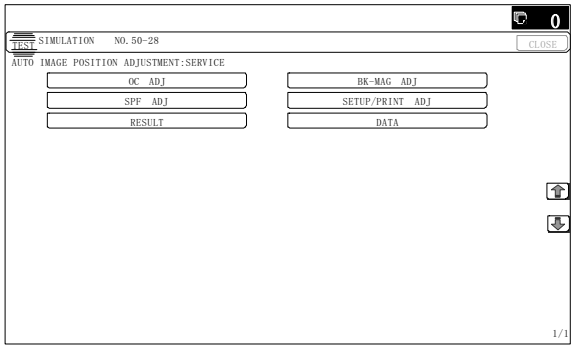
* Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

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

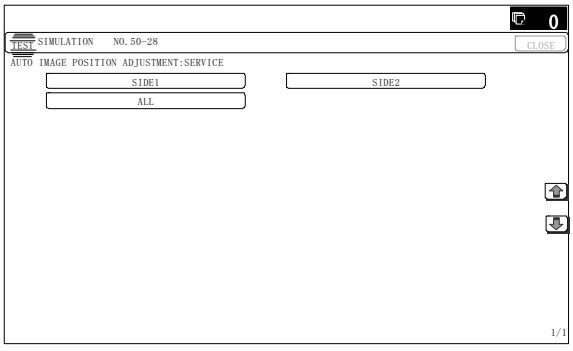



## 4-D Copy mode image lead edge position, image loss, void area, image off-center, sub scanning direction image magnification ratio automatic adjustment (Scanner) (RSPF mode)

1) Enter the SIM50-28 mode.




2) Press the [SPF ADJ] key.



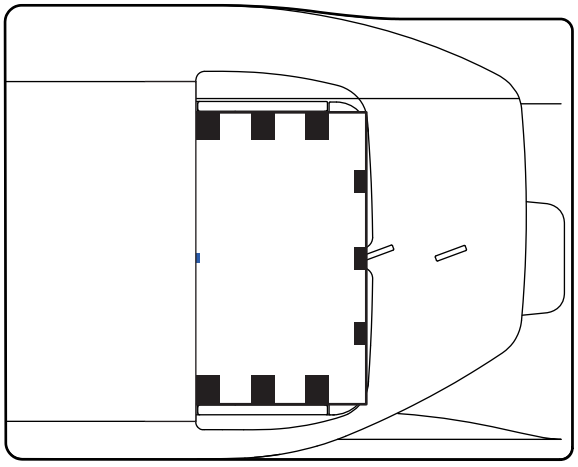

3) Proceed to one of the three screens for selecting the cassette used to print RSPF adjustment patterns by selecting the corresponding button:
SIDE1: RSPF adjustment for the front side
SIDE2: RSPF adjustment for the back side
ALL: RSPF adjustment for both the front and back sides

4) Select one of the cassettes that can be used to print RSPF adjustment patterns. (Multiple selection is not allowed.)

5) Press the [EXECUTE] key, and the machine starts self-print of RSPF adjustment patterns.

* The screen shows a message indicating that the machine is self-printing RSPF adjustment patterns.
When self-print finishes, the next screen appears where you can start RSPF adjustments.

6) RSPF adjustment patterns are loaded into the RSPF.
(Set so that the pattern surface faces up.)



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

7) Press the [EXECUTE] key, and the machine starts reading RSPF adjustment patterns (for the front side).

* The screen shows a message indicating that the machine is reading and calculating RSPF adjustment patterns (for the front side).

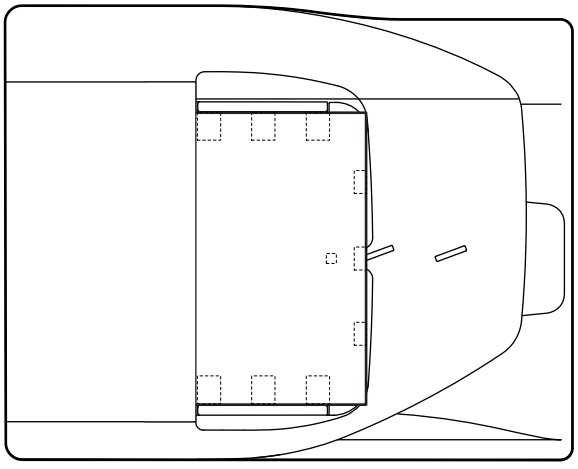
The machine starts calculating the adjustment amount (for the front side) after it has read the patterns for the front side.

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 RSPF adjustment patterns (for the back side).

**Adjustment Item List**

- RSPF original leading edge adjustment (front side)
- RSPF original off-center adjustment (front side)
- RSPF original sub-scan magnification adjustment (front side)

8) RSPF adjustment patterns are loaded into the RSPF.
(Set so that the pattern surface faces down.)



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

9) Press the [EXECUTE] key, and the machine starts loading RSPF adjustment patterns (for the back side).

* The screen shows a message indicating that the machine is reading RSPF 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>**

- RSPF original leading edge adjustment (back side)
- RSPF original off-center adjustment (back side)
- RSPF original sub-scan magnification 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] key, you can return to the cassette selection screen and have the machine self-print RSPF adjustment patterns (for the front and back sides) again.
* To have the machine start re-reading the RSPF adjustment patterns (front and back sides), press the [RESCAN] key.
* To return to the top menu without saving the adjustment values into EEPROM and RAM, press the [RETRY] key.
* To display the data used for adjustment, press the [DATA] key.

11) To save the adjustment values into EEPROM and RAM and return to the top menu, press the [OK] key.

* To return to the result screen, press the [BACK] key.

## ADJ 5 Print engine image distortion adjustment / OPC drum phase adjustment / Color registration adjustment (Print engine section)

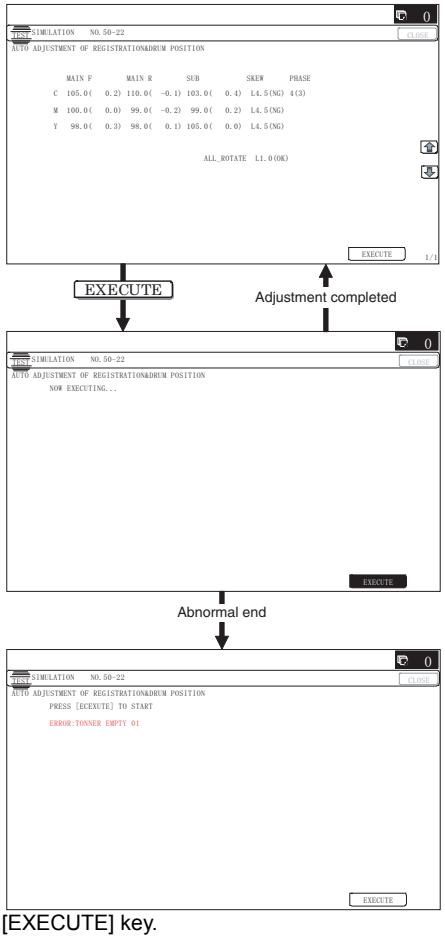
This adjustment must be performed in the following cases:

* When the color shift occurs.
* When the LSU is replaced.
* When the LSU is removed from the main unit.
* When the unit is installed or when the installing place is changed.
* When maintenance work is performed. (Replacement of the OPC drum, the OPC cartridge, the transfer unit, the transfer belt, etc.)
* When [ADJ 4A] / [ADJ 16A] Print engine image magnification ratio adjustment (BK) (main scanning direction) is performed.
* U2 trouble has occurred.
* When the PCU PWB is replaced.
* When EEPROM on the PCU PWB is replaced.
* When the color phase is not proper even after execution of the color balance adjustment.
* When the OPC drum drive section is disassembled.
* When the primary transfer unit is replaced. (when it is removed from the machine)
* When the developing unit or the OPC drum unit is removed from the machine.

## 5-A Print engine image distortion adjustment (Manual adjustment) / OPC drum phase adjustment (Automatic adjustment) / Color registration adjustment (Automatic adjustment)

This adjustment performs the print engine image distor tion adjustment, the OPC drum phase adjustment, and the color registration adjustment simultaneously.

1) Enter SIM50-22 mode.




2) Press [EXECUTE] key.

   [EXECUTE] key is highlighted and the image registration automatic adjustment is started. (It takes about 15 sec to complete the adjustment.)

3) When the adjustment is completed, [EXECUTE] key returns to the normal display, and the value of the adjustment r esult is displayed.

   The current skew level for ea ch color is d isplayed on the SKEW display section.

| Display/ Item | Content | | Display | Default | NOTE |
|---|---|---|---|---|---|
| MAIN F | C | Registration adjustment value main scanning direction (Cyan laser writing position F side) | 1.0 - 199.0 | 100 | |
| | M | Registration adjustment value main scanning direction (Magenta laser writing position F side) | 1.0 - 199.0 | 100 | |
| | Y | Registration adjustment value main scanning direction (Yellow laser writing position F side) | 1.0 - 199.0 | 100 | |
| MAIN R | C | Registration adjustment value main scanning direction (Cyan laser writing position R side) | 1.0 - 199.0 | 100 | |
| | M | Registration adjustment value main scanning direction (Magenta laser writing position R side) | 1.0 - 199.0 | 100 | |
| | Y | Registration adjustment value main scanning direction (Yellow laser writing position R side) | 1.0 - 199.0 | 100 | |
| SUB | C | Registration adjustment value sub scanning direction (Cyan drum → Black drum) | 1.0 - 199.0 | 100 | |
| | M | Registration adjustment value sub scanning direction (Magenta drum → Black drum) | 1.0 - 199.0 | 100 | |
| | Y | Registration adjustment value sub scanning direction (Yellow drum → Black drum) | 1.0 - 199.0 | 100 | |
| SKEW | C | Print skew amount calculation result (Cyan) | -99.9 - 99.9 | 0 | If the value is positive (+), "L" is displayed at the head of the value. If negative (–), "R" is displayed. If the value is in the range of –2.1 - +2.1, "(OK)" is displayed at the bottom of the value. In the other cases, "(NG)" is displayed. |
| | M | Print skew amount calculation result (Magenta) | -99.9 - 99.9 | 0 | |
| | Y | Print skew amount calculation result (Yellow) | -99.9 - 99.9 | 0 | |
| ALL_ ROTATE | Print skew amount calculation result (Overall) | | -99.9 - 99.9 | 0 | If the value is positive (+), "L" is displayed at the head of the value. If negative (–), "R" is displayed. If the value is in the range of –1.6 - +1.6, "(OK)" is displayed at the bottom of the value. In the other cases, "(NG)" is displayed. |
| PHASE | OPC drum phase adjustment value | | 1 - 8 | 1 | |

4) Write down the displayed skew level.

**Meaning of the skew level va lue and the adjustment procedure**

* If "OK" is displayed for all items of SKEW ALL_ROTATE, C, M, and Y, there is no need to perform the adjustment.
* When "R" is displayed at the head of the value, turn the LSU skew adjustment screw clockwise.
* When "L" is displayed at the head of the value, turn the LSU skew adjustment screw counterclockwise.
* The turning amount of the adjustment screw corresponds to each adjustment value. "ALL_ROTATE" indicates the number of rotations, and C, M, and Y indicate numbers of clicks.

  The display value is rounded at the decimal point.
* "ALL_ROTATES" shows the number of rotations of adjustments for all the adjustment screws. "C, M, an d Y (SKEW)" shows t he number of adjustment click steps for each adjustment screw of C, M, and Y.

Contents in ( )

MIAN, SUB: Difference from the previous adjustment value of image registration.

Example:

If 105 for this time and 103 for the previous time, it is displayed as 105.0 (+2.0).

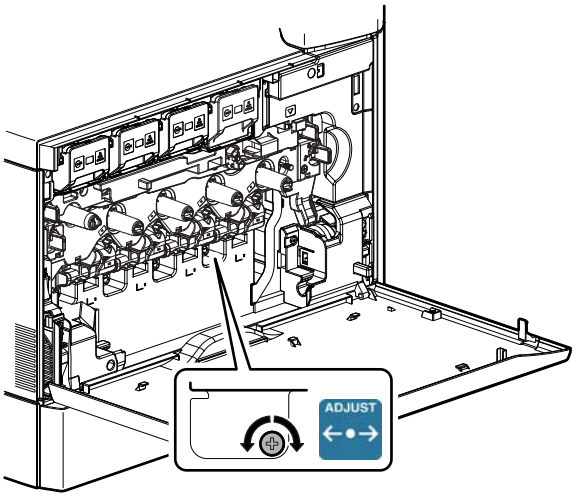
SKEW, ALL_ROTATE: Judgment of the LSU skew adjustment result. OK or NG.

PHASE: OPC drum pha se adjustment val ue of the previous time

5) If the display o f ALL_ROTATE is NG, turn all the LSU skew adjustment screws to adjust, and perform the procedures 2) to 4).

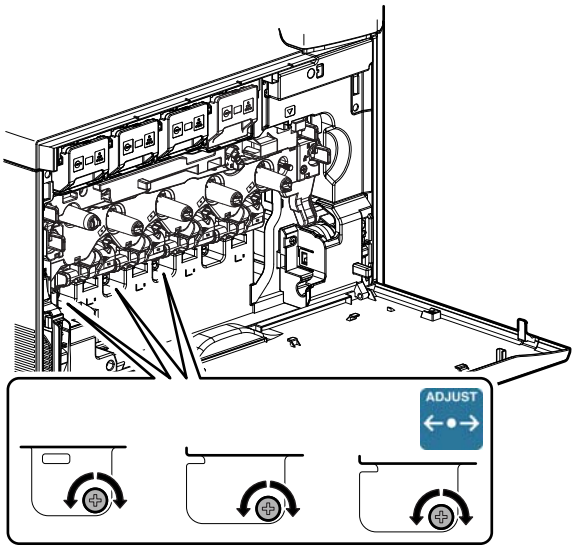
Repeat the procedures 2) to 5) until the display of ALL_ROTATE becomes OK. If the display of ALL_ROTATE is OK, go to the procedure 6).

For the adjustment, remo ve the front cove r and the waste toner box, and turn the skew adjustment screw.




6) Repeat the procedures 2) to 4) again, and check to confirm that C, M, and Y (SKEW) are OK.

If any of them is NG , turn the LSU ske w adjustment screw of the corresponding color to adjust.




**Important**

When the adjustment is made by turning the LSU skew adjustment screw of K, the states of C, M and Y (SKEW) are changed. Execute SIM50-22 to check to confirm that C, M, and Y (SKEW) are OK.

When an abnormality occurs, "ERROR" is displayed.

In this case, check each drive section and the process section.

The adjustment result can be checked by the following manual adjustment mode.

* ADJ 5B

  Image skew adjustment (Manual adjustment) (SIM50-20)
* ADJ 5C

  Color registration offset adjustment (SIM50-20)

**Note**

When the color registration is greatly shifted due to replacement of the LSU, etc, if SIM50-22 is used to per form the color registration automatic adjustment, an error may occur.

In this case, the adjustment may be prope rly executed by setting the adjustment items A - I of SIM50-20 to "10 0" and executing the automatic adjustment again.

If color shift in an actual print image differs in the center, the front side, and the r ear side, the color shift offset adjustment can improve it. (Refer to ADJ 5C.)

Normally there is a difference in color shift in several dots. Perform the adjustment only when the adjustment is required.

## 5-B Print engine image skew (LSU skew) adjustment (Manual adjustment) (No need to adjust normally)

If a more accurate adjustment than the automatic adjustment ADJ 5A is required, use this method of adjustment.

This adjustment is made by changing the parallelism of the LSU unit scan laser beams for the OPC drum.

1) Enter the SIM 50-20 or 64-01 mode.
2) Select the paper feed tray with A3 (11" x 17") paper in it, and press [EXECUTE] key.
3) The image skew (image registration) adjustment p attern is printed.
4) Check the printed black image for any skew.

   Use the four cross points printed in black to measur e the squareness.

There are following two methods of checking the black image for any skew (right angle).

**Method 1**

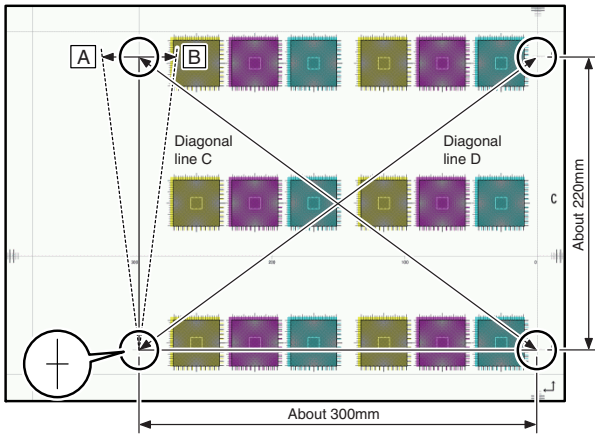
Measure the distances between opposing corners of the rectangle print pattern, and compare the two distances to check the squareness.

**Method 2**

Check the squareness of the vertical and horizontal sides of the rectangle print pattern by using A3 or 1 1" x 17" paper sides.

Important

In the case of Method 2, the right angle of paper to be used may not be exact. Be sure to check the right angle of paper to be used in advance.




**Method 1**

Measure the length of the diagonal lines of the rectangle print pattern.

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

Check to insure that the difference between C and D is in the following range.

C - D = 0.8mm

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

**Method 2**

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

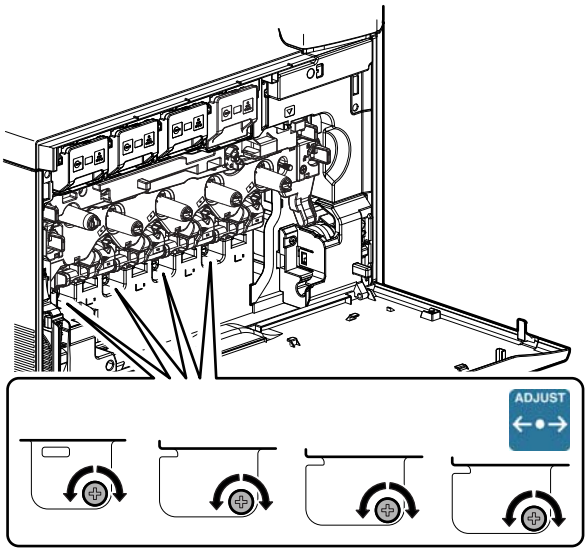
Measure the slant (skew) of the vertical side for the horizontal side of paper as shown in the figure.

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

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

5) Open the front cover, remove the waste toner box, and turn the four LSU image skew adjustment screws in the same direction by the same amount.

For the adjustment, remove the front cover and the waste toner box, and turn the skew adjustment screw.




**(Skew adjustment screw rotation direction)**

When C is greater than D in the method 1 or there is some skew in the direction A in the method 2, turn the screw clockwise.

When C is smaller than D in the method 1 or there is some skew in the direction B in the method 2, turn the screw counterclockwise.

**(Reference of the rotation amount of the skew adjustment screw)**

In case of the method 1, 0.8mm/about 1.5 rotations

In case of the method 2, 0.5mm/about 1.5 rotations

Repeat the procedures 2) to 6).

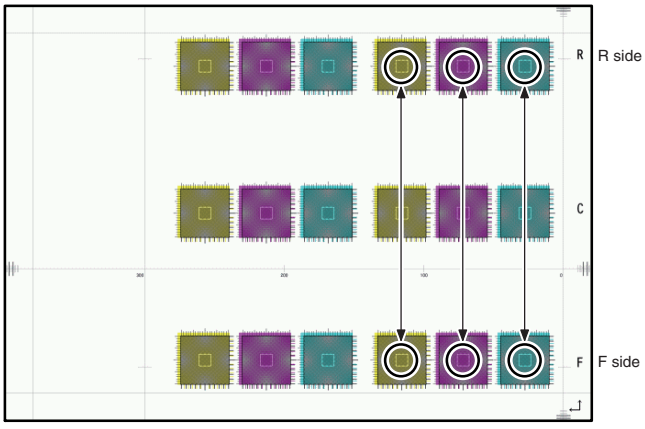
After completion of the black image skew adjustment, go to the procedure 7).

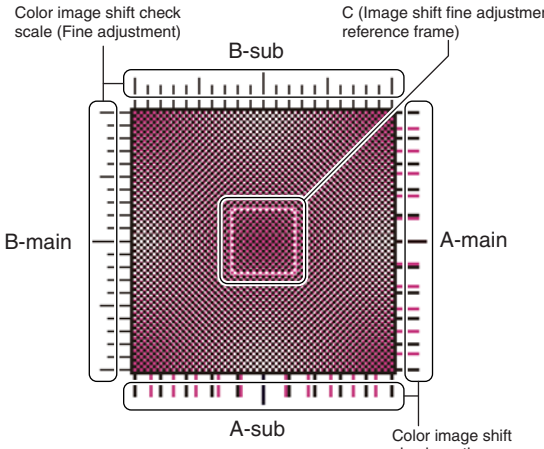
6) Perform the same procedures as 1) and 2).

7) Check the printed color image for any skew.

If the difference between the shift amounts on the F and R sides is within ± 1 scale of the fine adjustment check scale, there is no need to perform the adjustment.

Measure the skew amount from the print patterns on the front and rear sides of each color.






A-main: Main scan rough adjustment pattern
A-sub: Sub scan rough adjustment pattern
B-main: Main scan fine adjustment scale
B-sub: Sub scan fine adjustment scale
C: Main scan sub scan fine adjustment pattern

In each Y/M/C color print pattern printed separately in the F side and in the R side, note the same print color pattern and check to confirm that the F side and the R side are in the same condition.

**Rough adjustment pattern check:**

Check the sub scan rough adjustment color image shift check section on the R side and the F side of each color, use the center position of the black scale as the reference, and check the balance in shifts of the color image line positions in the positive and the negative directions. The balance in the R side must be the same as that in the F side.

**Fine adjustment pattern check:**

Check the square frames on the R side and the F side of each color. (Normally five sections of high density can be seen.) Check the sub scanning direction position of the center area of high density (one of the above five sections). These must be on the same position on the R side and the F side.

In this case, use the sub scan direction color image shift check scale (fine adjustment) as the reference.

Visually check the color density and make the darkest section as the center, and use it as the read value of the shift amount.

Check that the difference in the center position of the dark density section is within ±1 step.

The positional relations of the front and the rear frame of the print color patterns of a same color are compared. There is no need that all the colors are in the same state. Compare only the positional relations of color patterns of a same color.

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

8) Turn the LSU skew adjustment screw of the adjustment target color to adjust.

**(Skew adjustment screw rotation direction)**

When the F side is skewed to the right side for R side: Turn the screw clockwise.

When the F side is skewed to the left side for the R side: Turn the screw counterclockwise.

**(Reference of the rotation amount of the skew adjustment screw)**

Skew of difference by one step between F and R sides (Difference by one scale of the fine adjustment check scale) / Turn for about 2 clicks.

Repeat the procedures 7) to 8) until a satisfactory result is obtained.

## 5-C Color registration offset adjustment (No need to adjust normally)

This adjustment is used to set the offset value for the automatic color registration adjustment (ADJ 5A).

If there is any difference in color phase at the center and the four corners of an actual print image, this adjustment may improve it. Especially when there is any color shift at the center area, this adjustment may improve it effectively.

This adjustment cannot eliminate color shifts in all the areas, but average the overall color shifts.

After the automatic adjustment, use this color registration offset adjustment to correct color shift partially, performing the adjustment efficiently.

**Note**

Before execution of this adjustment, check to confirm that the following adjustment has been properly made.

* ADJ 5A or ADJ 5B image skew adjustment (LSU unit)

**[Kinds of adjustment values]**

There are following two kinds of registration adjustment values.

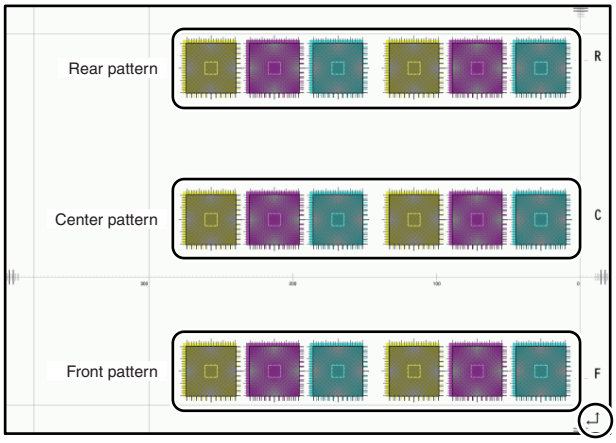
- Base registration adjustment value: XXX(FRONT)/XXX(REAR)

  They are manual adjustment values and automatic adjustment values, and reflected when the automatic registration adjustment is executed. It varies for every operation of the automatic registration adjustment.
- Offset adjustment values: OFFSETXXF/OFFSETXXR

  They are the offset adjustment values added to the above base registration adjustment values, and are not changed unless SIM50-20 is executed to change.

1) Enter SIM50-20 mode.
2) Select the paper feed tray with A3 (11" x 17") paper in it.
3) Press [EXECUTE] key.

   The color image registration check pattern is printed.




Reference arrow mark

4) Check the color image registration.

   There are 6 color image registration patterns in total; two on each of the F side, the R side, and the center. Check all the patterns to confirm that they are within the specified range. Also check to confirm that there is not much shift in each color image registration check pattern.

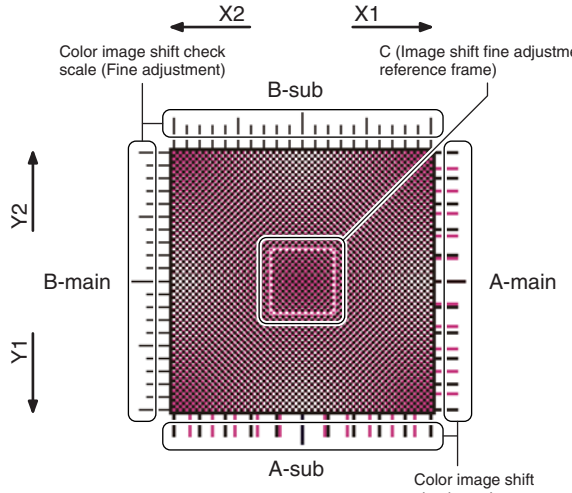
**Note**

There are two kinds of adjustment: one in the main scanning direction and the other in the sub scanning direction. The vertical direction in the above figure is that in the main scanning direction, and the horizontal direction is that in the sub scanning direction.

There are also two kinds of adjustments: the rough adjustment and the fine adjustment. Perform the rough adjustment then perform the fine adjustment deliberately.

For the main scan direction image registration, the of fset on the F side, the R side, and at the center is independently adjusted.

If there is a difference in the sub scanning direction image registration between the F and R sides, perform the skew adjustment (ADJ 5A).




A-main: Main scan rough adjustment pattern
A-sub: Sub scan rough adjustment pattern
B-main: Main scan fine adjustment scale
B-sub: Sub scan fine adjustment scale
C: Main scan sub scan fine adjustment pattern

Check the print p atterns of the rough adjustment and the fine adjustment of 18 check patterns.

**How to check th e rough adjustment pattern and input of the adjustment value:**

Visually check the color image registration check section, use the center position of the bla ck scale as the r eference, and check the shift balance in th e positive and negative directions at the color image line position.

Use the center position of the bl ack scale as the r eference, and check that the co lor image line is symmetrical in the po sitive side and the negative side.

If shift is in the arrow mark X1 and Y1, increase the adjustment value. If shift is in the arrow mark X2 and Y2, decrease the adjustment value.

The reference arrow on the check pattern faces the positive direction.

**(Reference adjustment value)**

1 scale/10 (When the set value is changed by 10, shift is made by 1 scale.)

**How to check the fine adjustment pattern and input of the adjustment value:**

Check to confirm that the darkest spot (one of 5 spots seen normally) is within the center area of the image registration adjustment reference frame in the square frame.

At that time, use the color image r egistration check scale ( fine adjustment) as the reference.

Visually check and consider the darkest section of color density as the center, and measure the shift from it.

Check to confirm that the center of the dark density section is within ± 1 step.

(If the fine adjustment pr int pattern is in the range of 0 ± 1 for the fine adjustment reference pattern scale, there is no need to adjust.)

If shift is in the arrow mark X1 and Y1, increase the adjustment value. If shift is in the arrow mark X2 and Y2, decrease the adjustment value.

**(Reference adjustment value)**

1 scale/1 (When th e set value is changed by 1, shift is made by 1 scale.)

If there is a considerable difference in color shift in the square and at the center area, perform the adjustment.

Select an adjustment item (OFF SET X F / OFF SET X R / OFF SET X S), and change the adjustment value to adjust.

OFF SET X F: F side main scanning direction registration offset set value (The color shif t on the F side and at t he center area is changed.)

OFF SET X D: R side main scanning direction registration offset set value (The color shift on the R side and at the center ar ea is changed.)

OFF SET X S: Sub scannin g direction registration offset set value (Color is shifted to the sub scanning direction overall.)

Important

When the adjustment value of OFF SET X F and OFF SET X R are changed, the color at the center area will be affected. Consider this when executing the adjustment.

**(Adjustment conditions and method)**

To adjust evenly overall, adjust so that the color shifts on the F side, the R aide and at the center are of the same level.

To adjust with the center area most focused, adjust so that the color shift at the center becomes smaller than that on the F side and the R side.

When the of fset adjustment value is 0, if the color registration adjustment (automatic adjustment) is performed, the color shift on the F side and that on the R side are automatically adjusted to be smaller than that on the center area.

| Display/Item | | Content | Adjustment value range | Default value |
|---|---|---|---|---|
| A | CYAN (FRONT) | Image registration adjustment value (Main scanning direction) (Cyan) (F side) | 1 - 199 | 100 |
| B | CYAN (REAR) | Image registration adjustment value (Main scanning direction) (Cyan) (R side) | 1 - 199 | 100 |
| C | MAGENTA (FRONT) | Image registration adjustment value (Main scanning direction) (Magenta) (F side) | 1 - 199 | 100 |
| D | MAGENTA (REAR) | Image registration adjustment value (Main scanning direction) (Magenta) (R side) | 1 - 199 | 100 |
| E | YELLOW (FRONT) | Image registration adjustment value (Main scanning direction) (Yellow) (F side) | 1 - 199 | 100 |
| F | YELLOW (REAR) | Image registration adjustment value (Main scanning direction) (Yellow) (R side) | 1 - 199 | 100 |
| G | CYAN (SUB) | Image registration adjustment value (Sub scanning direction) (Cyan) | 1 - 199 | 100 |
| H | MAGENTA (SUB) | Image registration adjustment value (Sub scanning direction) (Magenta) | 1 - 199 | 100 |
| I | YELLOW (SUB) | Image registration adjustment value (Sub scanning direction) (Yellow) | 1 - 199 | 100 |
| J | OFFSET CF | Image registration offset adjustment value (Main scanning direction) (Cyan) (F side) | 1 - 199 | 100 |
| K | OFFSET CR | Image registration offset adjustment value (Main scanning direction) (Cyan) (R side) | 1 - 199 | 100 |
| L | OFFSET MF | Image registration offset adjustment value (Main scanning direction) (Magenta) (F side) | 1 - 199 | 100 |

| Display/Item | | Content | Adjustment value range | Default value |
|---|---|---|---|---|
| M | OFFSET MR | Image registration offset adjustment value (Main scanning direction) (Magenta) (R side) | 1 - 199 | 100 |
| N | OFFSET YF | Image registration offset adjustment value (Main scanning direction) (Yellow) (F side) | 1 - 199 | 100 |
| O | OFFSET YR | Image registration offset adjustment value (Main scanning direction) (Yellow) (R side) | 1 - 199 | 100 |
| P | OFFSET CS | Image registration offset adjustment value (Sub scanning direction) (Cyan) | 1 - 199 | 100 |
| Q | OFFSET MS | Image registration offset adjustment value (Sub scanning direction) (Magenta) | 1 - 199 | 100 |
| R | OFFSET YS | Image registration offset adjustment value (Sub scanning direction) (Yellow) | 1 - 199 | 100 |

# ADJ 6 Scan image distortion adjustment (Document table mode)

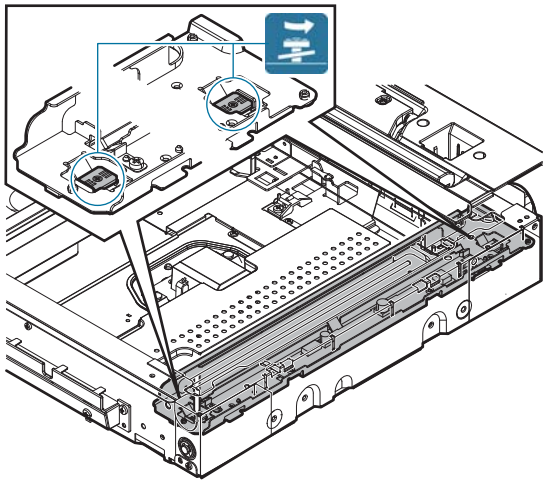
This adjustment must be performed in the following cases:

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

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

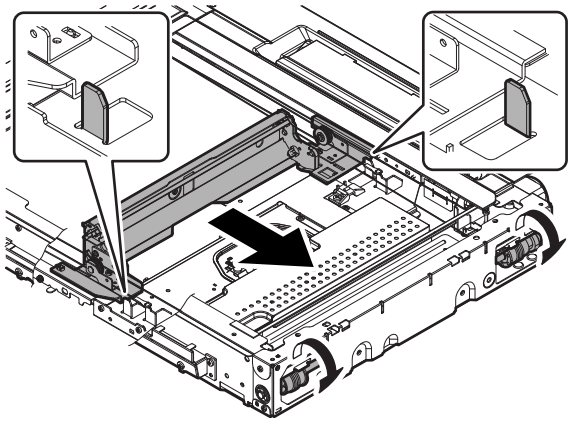
Before execution of this adjustment, remove the document table glass.

1) Remove the 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.



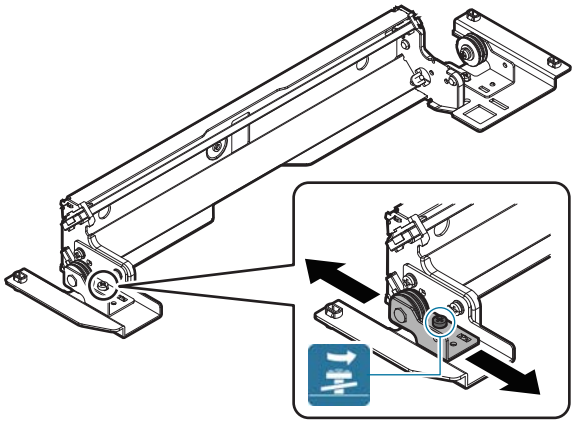
2) Turn the scanner drive pulley manually and shift the scanner unit B to bring it into contact with the stopper.

   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.



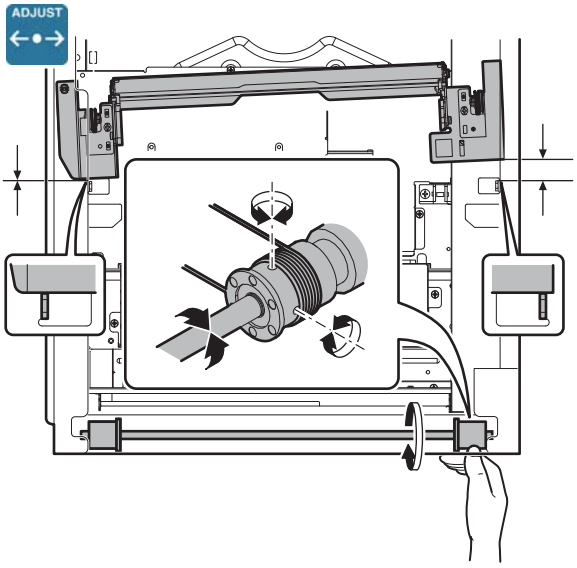
4) Adjust the position of the pulley angle on the front frame side of the scanner unit B so that it is in contact with two stoppers on the front and the rear frames simultaneously.

5) Fix the pulley angle on the front frame side of the scanner unit B.

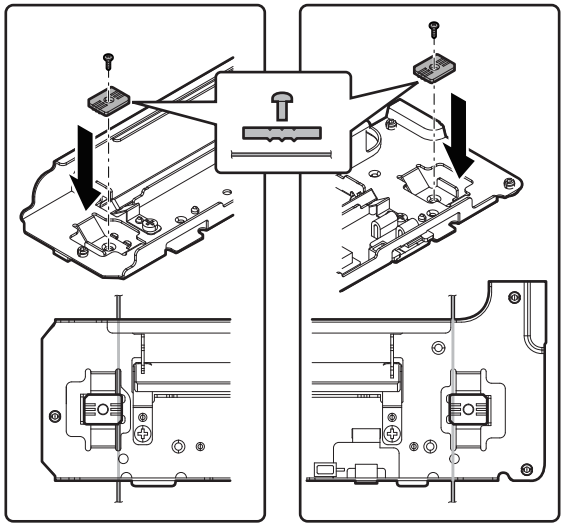
If a satisfactory result is not obtained from the above procedures, perform the following procedures.

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.

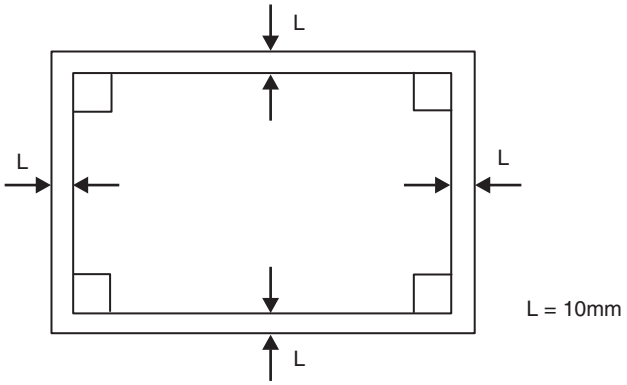



6) With the scanner unit B in contact with both stoppers, fit the edge of the scanner unit A with the right edge of the frame, and fix the scanner unit A with the fixing screw.

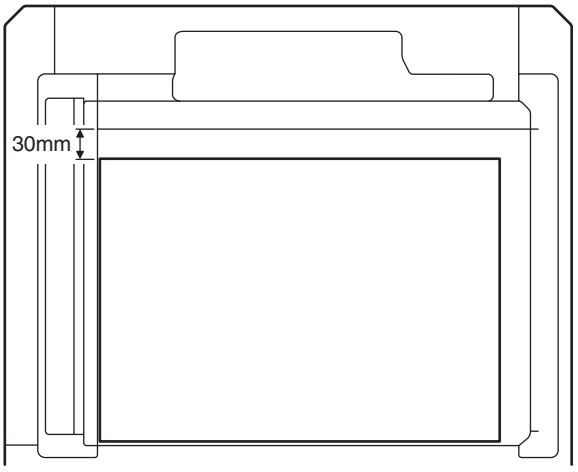


## 6-B Scan image (sub scanning direction) distortion adjustment

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

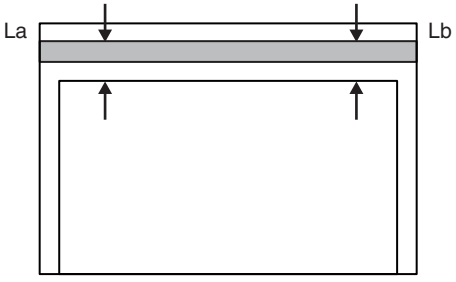



2) Set the test chart prepared in the procedure 1) on the document table. (Shift the test chart edge 30mm from the reference position as shown below .) With the document cover open, make a copy on A3 (11" x 17") paper.



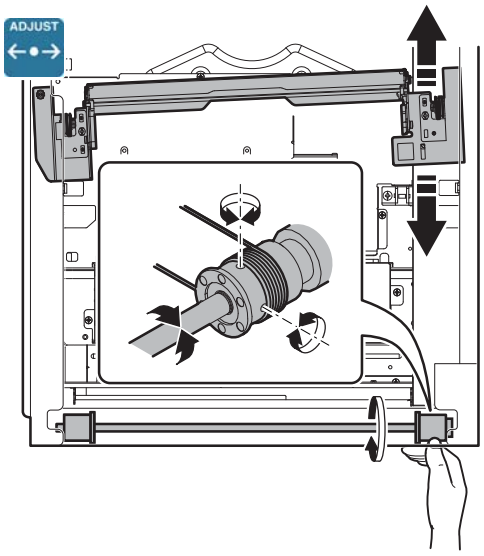

3) Check for distortion in the sub scanning direction.

If La = Lb, 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.)



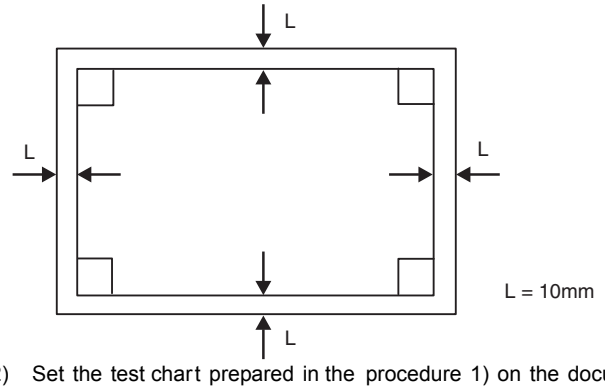

5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to change the parallelism of the scanner unit A and B. (Change the relative position of the scanner unit drive pulley and the drive shaft.)

6) Tighten the scanner unit drive pulley fixing screw.

Repeat the procedures 2) - 6) until the condition of the procedure 3) is satisfied.

## 6-C Scan image (main scanning direction) distortion adjustment

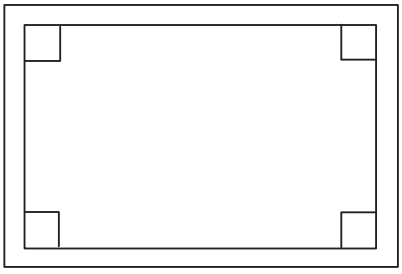
1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)




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

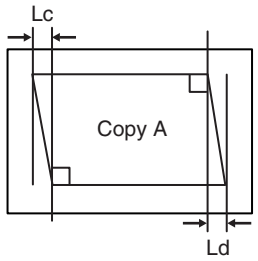
3) Check for distortion in the main scanning direction.

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.)



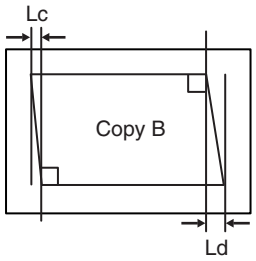
If there is any distortion in the main scanning direction, perform the following procedure.

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




There is no difference between the distortion on the right and that on the left.

Lc = Ld




There is some difference between the distortion on the right and that on the left.

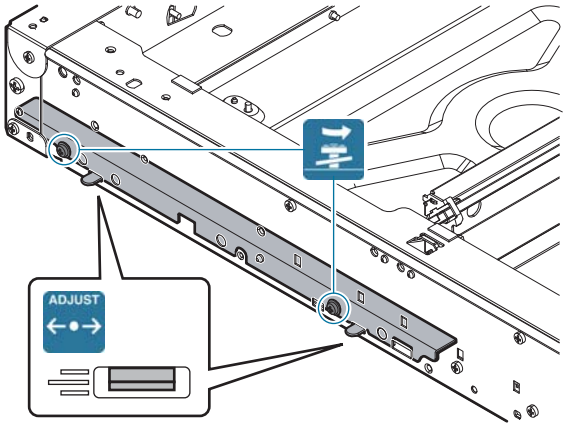
Lc ≠ Ld

If Lc = Ld, 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.

## ADJ 7 Scanner image skew adjustment (RSPF mode)

This adjustment must be performed in the following cases:

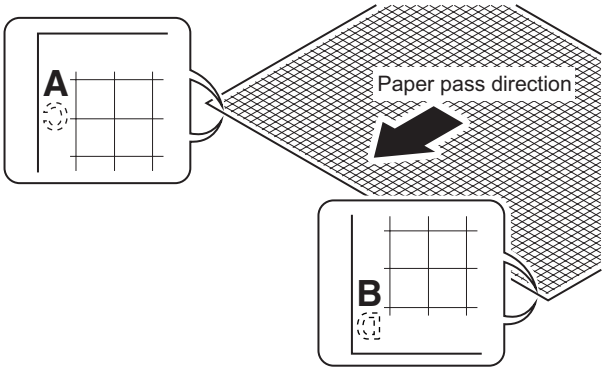
* The RSPF section has been disassembled.
* When replacing the RSPF unit.
* The RSPF unit generates skewed scanned images.

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 and B to the leading and trailing edges of the paper surface lead edge section.

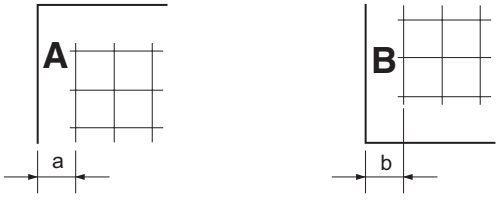



2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in RSPF duplex mode, and then check the image for skews (Set in the RSPF feed tray so that the mark on the adjustment chart is at the edge).

   • Check with one of the following methods.

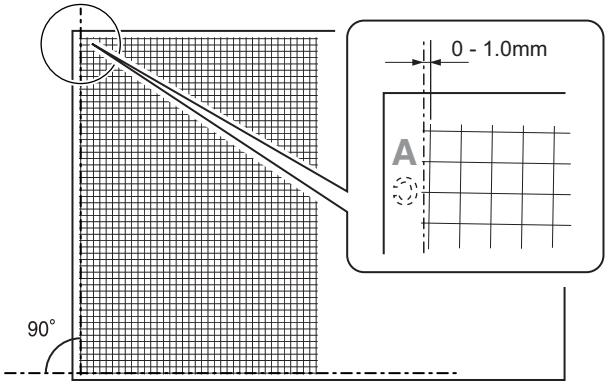
   **Check Method 1**

   (Front side)
   Make sure that the output satisfies the condition: |a-b| ± 1 mm



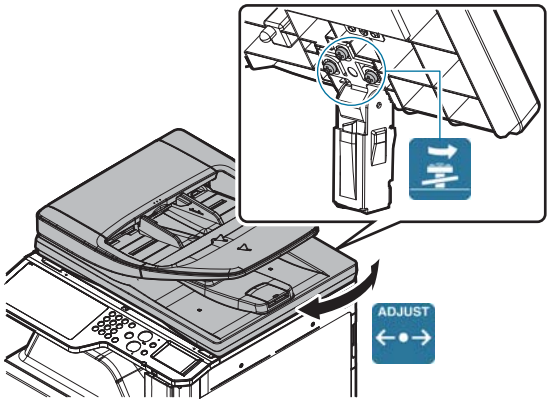

   **Check Method 2**

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




   If the copy image is not in the above state, perform the procedure 3).

3) Open the RSPF unit, and loosen the fixing screw of the hinge.



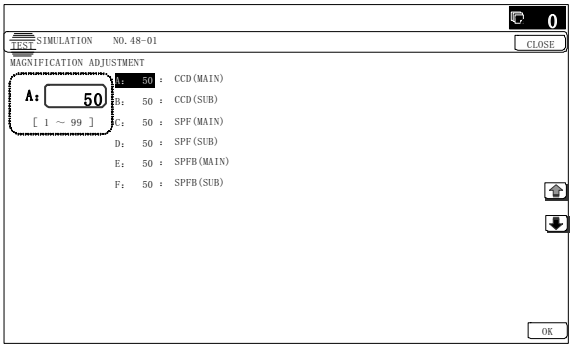

4) Slide the RSPF unit in the arrow direction to make the skew adjustment.
5) Make a copy again and measure (a) and (b) on the copied test chart. Repeat procedures 2) to 5) until the condition ((a) - (b) = ± 1mm or less) is satisfied.

## ADJ 8 Scan image focus adjustment

This adjustment must be performed in the following cases:

* 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.

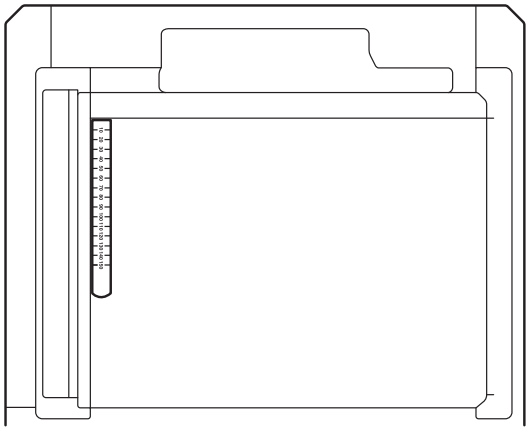
1) Enter the SIM 48-1 mode.




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.

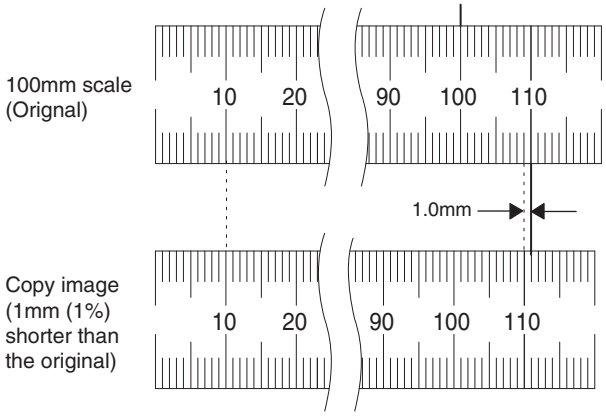
3) Place a scale on the original table as illustrated below.



4) Make a normal copy on A4 paper.
Go to the copy mode, and make a copy.

5) Compare the copied image of the scale an d 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 dir ection 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 dir ection copy magnification ratio correction ratio = (100 - 99) / 100 x 100 = 1

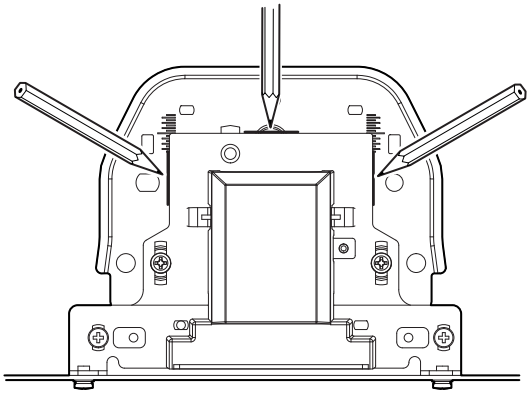



If the copy magnification ratio is not satisfactory, perform the following procedures.

7) Remove the document table glass.

8) Remove the dark box cover.

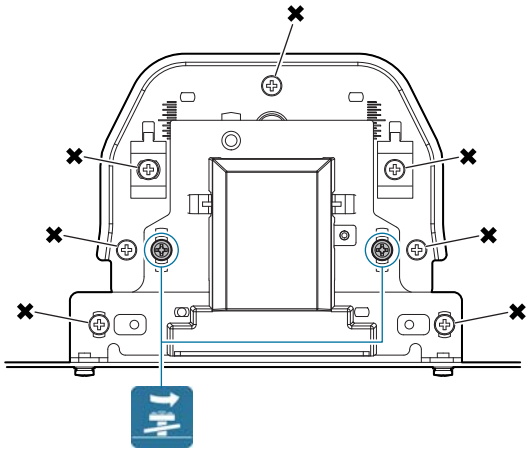
9) To prevent against shift of the CCD unit optical axis, mark the CCD unit base as shown below.



Note

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

10) Loosen the CCD unit fixing screws.

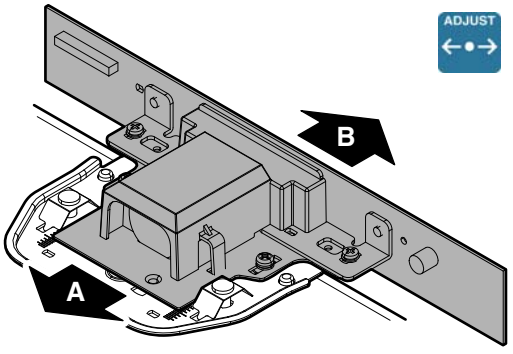


Important

Never loosen the screws marked with X.

If any one of these screws is loo sened, the position and the angle of the CCD unit base may be changed to ca use 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 co py 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 t hat 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 ran ge of 100 ± 1%, repeat the procedures of 9) - 11) until the condition is satisfied.

Important

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 9 Print lead edge image position adjustment (Printer mode)

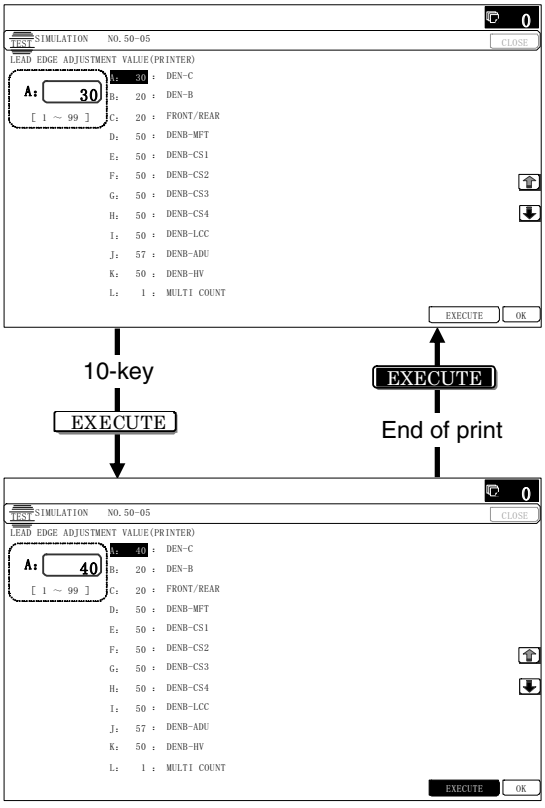
This adjustment must be performed in the following cases:

* 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 gre ater than the st andard value (3mm) in the printer mode.

1) Enter the SIM 50-5 mode.

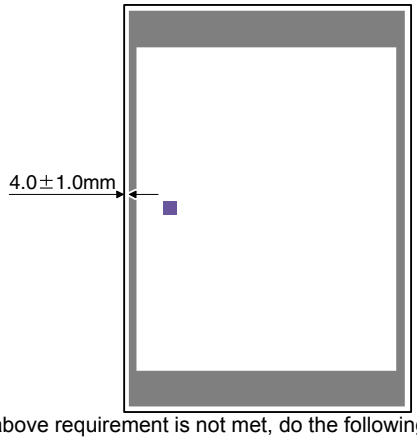



2) Select the set it em L with the scr oll key, and enter the value corresponding to the paper feed tray with A4 (11" x 8.5") paper in it.

| Display/Item | | Content | Setting range | Default |
|---|---|---|---|---|
| A | DEN-C | Printer lead edge image position adjustment | 1 - 99 | 30 |
| B | DEN-B | Rear edge void area adjustment | 1 - 99 | 30 |
| C | FRONT/REAR | FRONT/REAR void area adjustment | 1 - 99 | 20 |
| 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 correction value | 1 - 99 | 50 |
| L | MULTI COUNT | Number of print | 1 - 999 | 1 |
| M | PAPER | MFT | Tray selection | Manual paper feed | 1 - 5 | 1 | 2 (CS1) |
| | | CS1 | | Tray 1 | | 2 | |
| | | CS2 | | Tray 2 | | 3 | |
| | | CS3 | | Tray 3 | | 4 | |
| | | CS4 | | Tray 4 | | 5 | |
| N | DUPLEX | YES | Duplex print selection | Yes | 0 - 1 | 0 | 1 (NO) |
| | | NO | | No | | 1 | |

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 edg e, and check to confirm that it is in the standard adjustment value range.
Standard adjustment value: 4.0 ± 1.0mm




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

5) Select the adjustment t arget of the p aper 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 a djustment pattern is printed.
When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increa sed. When the adjustment value is decreased, the distance is decreased.
When the set value is cha nged by 1, the dist ance is changed by about 0.1mm.

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

# ADJ 10 Color balance/density adjustment

**(1) Note before execution of the color balance/density adjustment**

* Requisite conditions be fore execution of the color balance/density adjustment
Before execution of the colo r balance/density adjustment, ch eck to insure that the adjustments which affect the color balance/density have been completed properly.
The importance levels of them are shown below.

**(Since the following items affect the co lor balance/density directly, they must be adjusted or set bef ore execution of the image quality adjustments.)**

1) The following adjustment items must be adjusted properly.

| Job No | Adjustment item | Simulation |
|---|---|---|
| ADJ 5 | Print engine image distortion adjustment / OPC drum phase adjustment / Color registration adjustment (Print engine section) | 50-22/20 |

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

1) The following items must be adjusted properly.

| Job No | Adjustment item | | | Simulation |
|---|---|---|---|---|
| ADJ 1 | Adjust the developing unit | ADJ 1A | Adjust the developing doctor gap | |
| | | ADJ 1B | Adjust the developing roller main pole position | |
| | | ADJ 1C | Toner density control reference value setting | 25-2 |
| 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 8 | Scan image focus adjustment | | | 48-1 |

**Note for the color balance/density check and adjustments**

- For the color balance adjustments, be sure to use the paper specified for color (recommended paper).

  Note that, if another kind of paper is used for the color balance adjustment, proper image qualities (color balance, density) may not be obtained.
- When setting the adjustment pattern on the document table in the automatic color balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible.

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

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

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

There are following four, major cases.

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

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

Important

Before checking the copy color balance and density, be sure to execute the following jobs.

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

**Method 1**

Make a copy of the gray test chart (UKOG-0162FCZZ) and a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11), and check that they are proper.

**a. Note for execution of the color balance and density check in the color copy mode**

To check the copy color balance and density, use the gray test chart (UKOG-0162FCZZ) and the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11). Set the copy density level to "3" in the Text/Printed Photo mode (Manual), and make a copy.

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

In addition, be sure to use the specified paper for color.

**b. Note for checking the monochrome copy mode density**

To check the density, use the gray test chart (UKOG-0162FCZZ). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

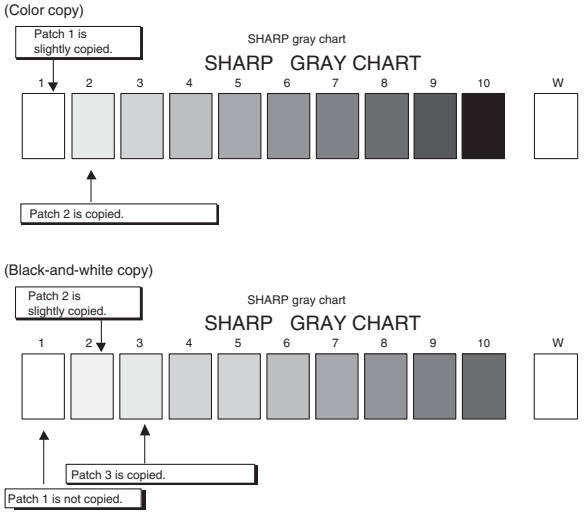
In addition, all the color balance adjustments in the user adjustment mode must be set to the default (center).

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

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

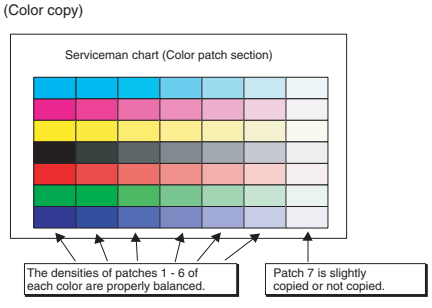
Important

For the color (gray) balance, use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) to check.



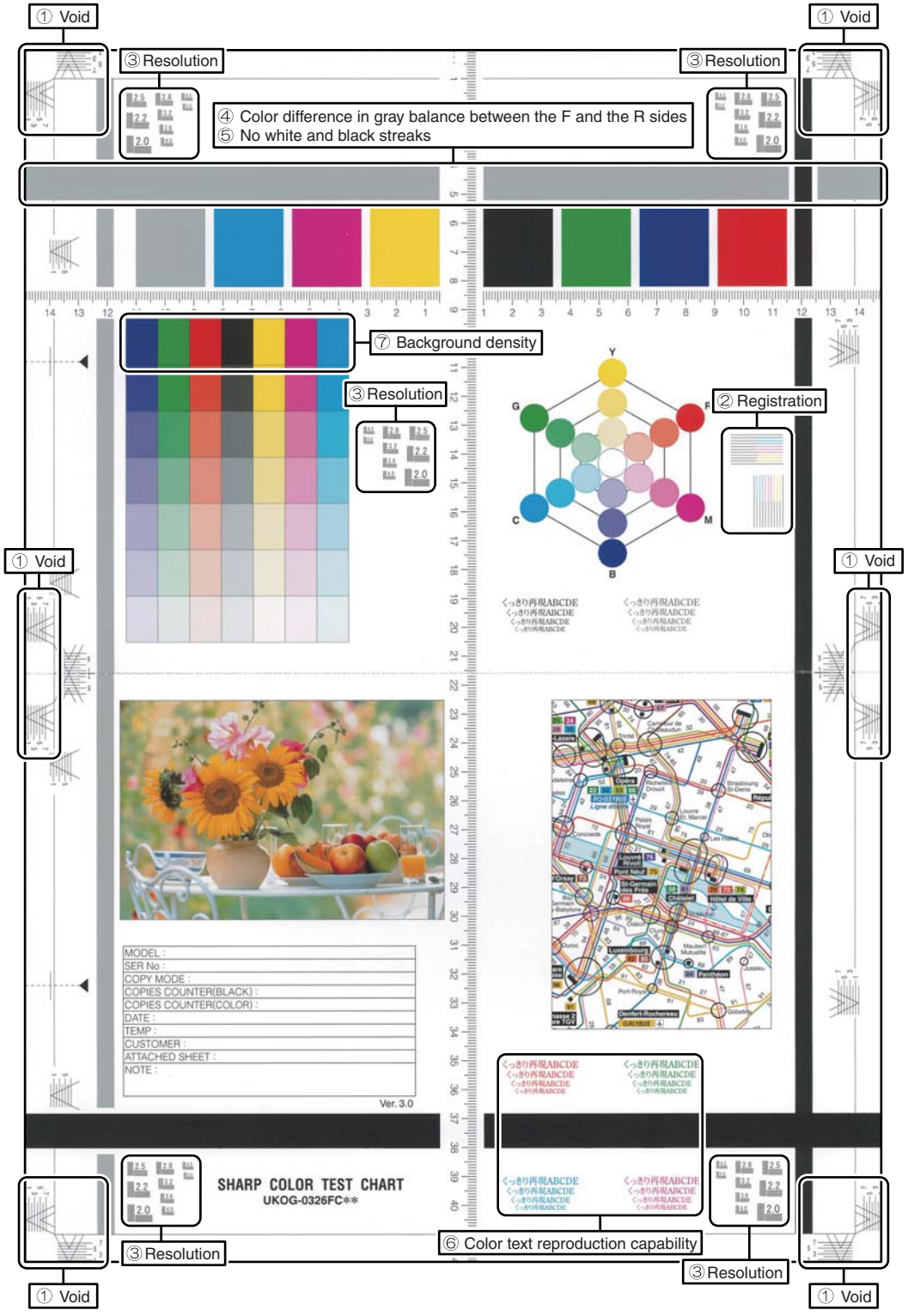

**Check with the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11)**

In the copy color balance check with the servicing color test chart, check to insure the following conditions.



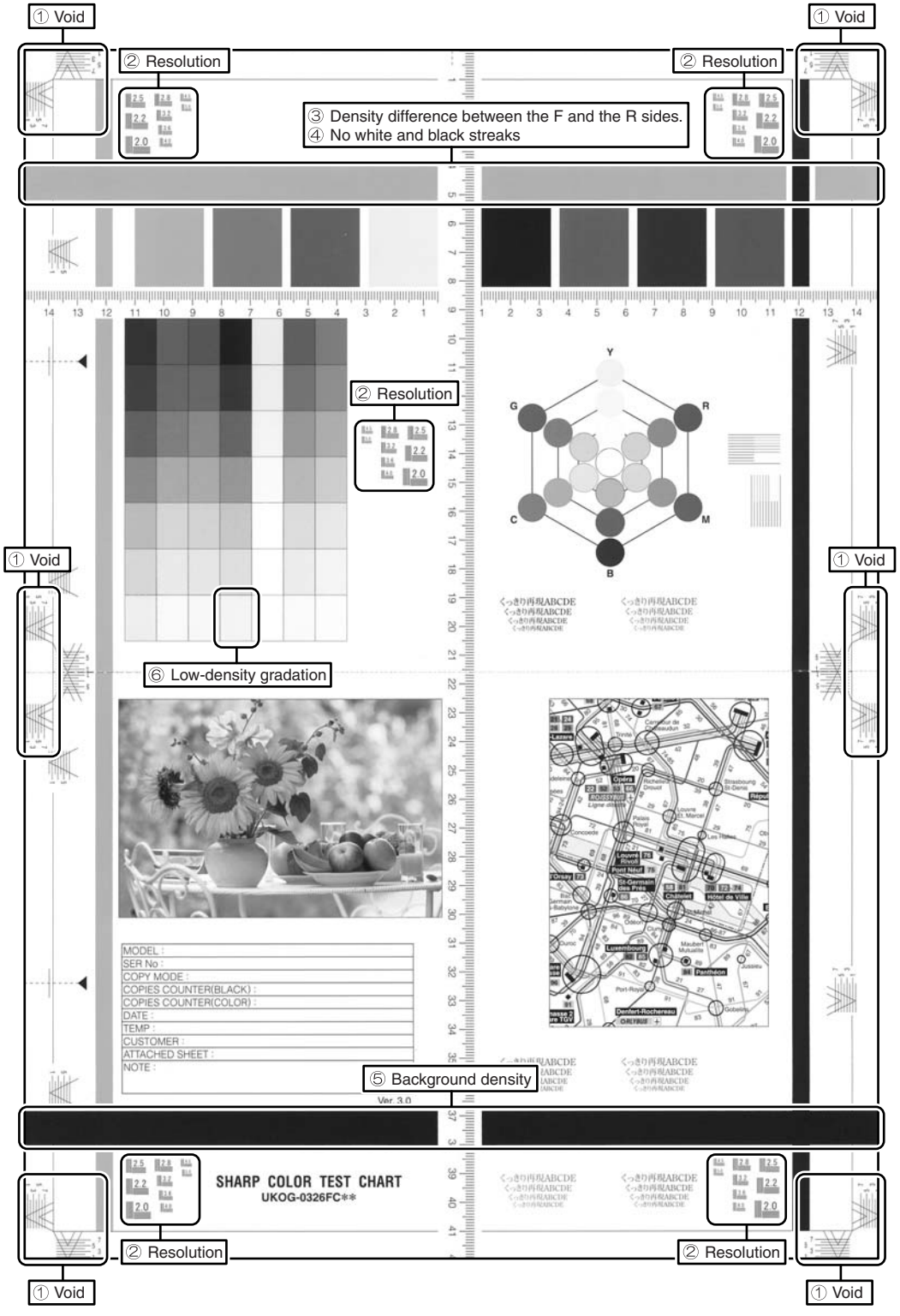
**a. Color copy check items (Check to confirm the following:)**

1) There are 12 void areas.
2) Registrations (one point for the main scanning, and one point for the sub scanning) are not shifted.
3) The resolution of 5.0 (5 points) can be seen.
4) The color difference in gray balance between the F and the R sides is not so great.
5) There are no white and black streaks.
6) Color texts are clearly reproduced.
7) The background density is not so light.



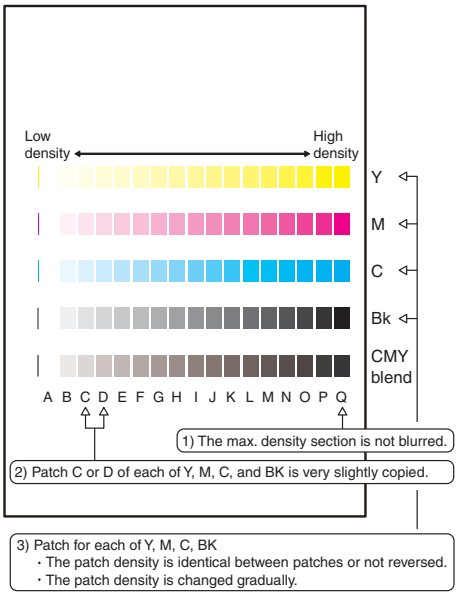
**b. Monochrome copy check items (Check to confirm the following:)**

1) There are 12 void areas.
2) The resolution of 4.0 (5 points) can be seen.
3) The density difference between the F and the R sides is not so great.
4) There are no white and black streaks.
5) The background density is not so light.
6) The black low-density gradation is copied slightly.



**(Method 2)**

Use SIM46-21 to print the colo r balance adjustment sheet, and check each process (CMY) black patch color balance and the black patch in order to confirm that the co lor balance adjustment is proper or not more precisely.




If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. If the color balance of the adjustment pattern printed in this mode is slightly sh ifted to Magenta, it is converted into the natural gray color balance by the color table in an actual cop y mode. (When the color balance target is DEF 1.)

**(4) Printer color balance/density check**

Important

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

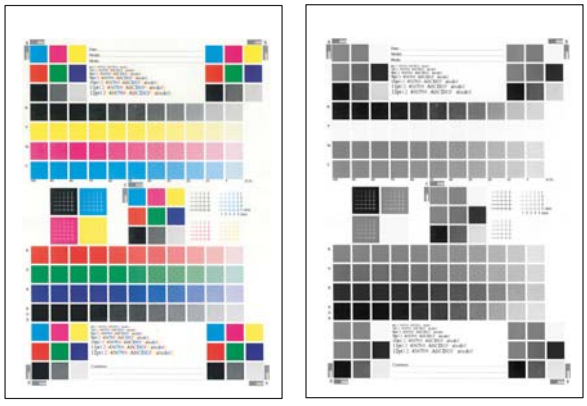
* Execute the high density imag e correction (Process corr ection) forcibly. (SIM 44-6)
* The half-tone image correction is forcibly executed. (SIM 44-26)

**(Method 1)**

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

Important

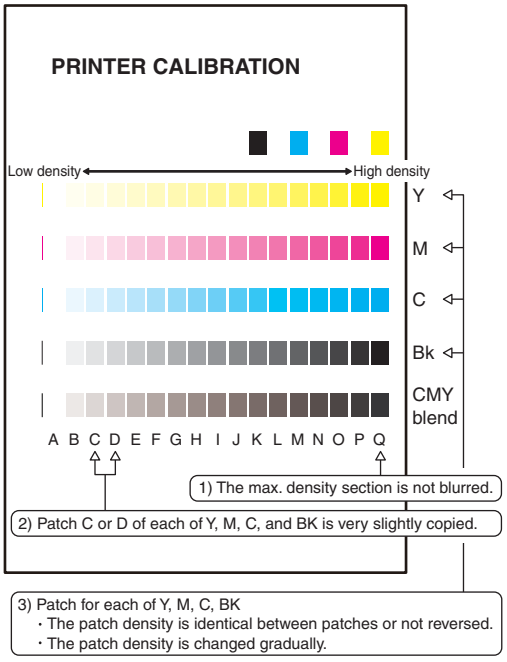
Set each set value to the default and press [EXECUTE] key . The print test pattern is printed.



The print density must be changed gradually from the lighter level to the dar ker level. T he density changing direction must not be reversed. The density level of each co lor must be almost at the same level.

**(Method 2)**

Use SIM 67-25 to p rint the color b alance adjustment she et and compare each process (CMY) black patch color balance and the black patch to check the color balance.




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

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. In an actual print mode, it is converted into the natural gray color balance by the co lor table. (When the co lor balance target is DEF 1.)

## 10-A Scanner calibration (CCD calibration)

This adjustment must be performed in the following cases:

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

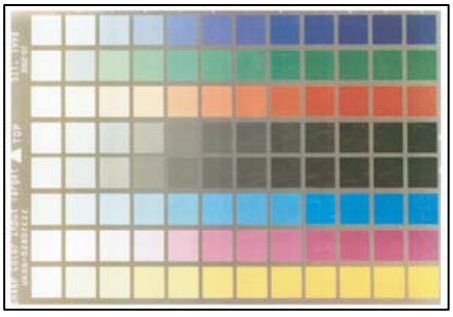
**(1) Note before adjustment**

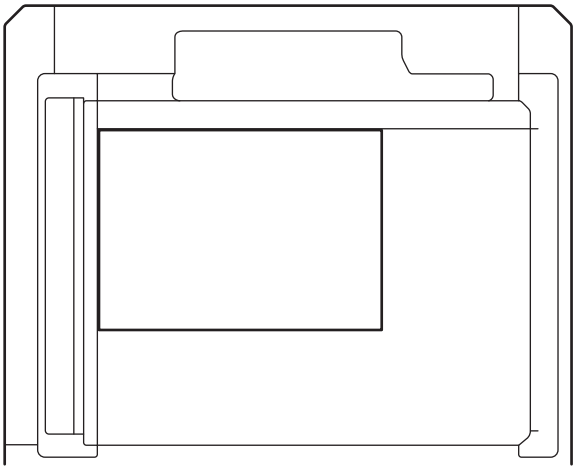
- Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.
  (If there is some dust and dirt, wipe and clean with alcohol.)
- Check to confirm that the patches in BK1 and BK2 ar rays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.
  If they are dirty, clean them.
  If they are scratched or streaked, replace with new one.

**(2) Adjustment procedures**

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.

**Important**

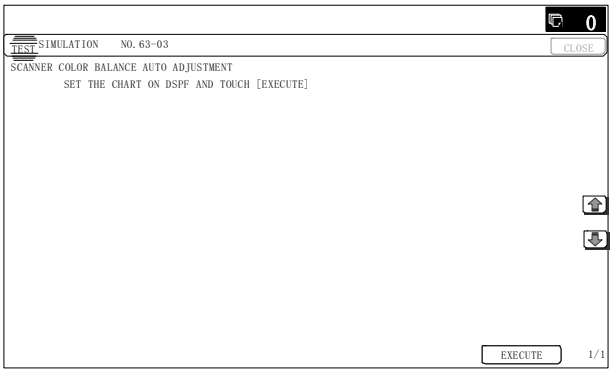
Check to insure that the SIT chart (U KOG-0280FCZZ or UKOG-0280FCZ1) is in close contact with the document table.

**Note**

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

2) Enter the SIM 63-3 mode and press [EXECUTE] key.

The automatic operation is started. During the adjustment, [EXECUTE] is highlighted. After completion of the adjustment, [EXECUTE] returns to the normal display.




**Note**

Since the SIT chart (UKOG-0280FCZZ or UKOG-0280FC Z1) is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag (such as a dar k file) and store in a dark place of low temperature and low humidity.

**SET 1 Color balance adjustment target setup**

**a. General**

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

There are following three kinds of the target.

- Factory color balance (gamma) target
- Service color balance (gamma) target
- User color balance (gamma) target

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

This setting is required in the following cases.

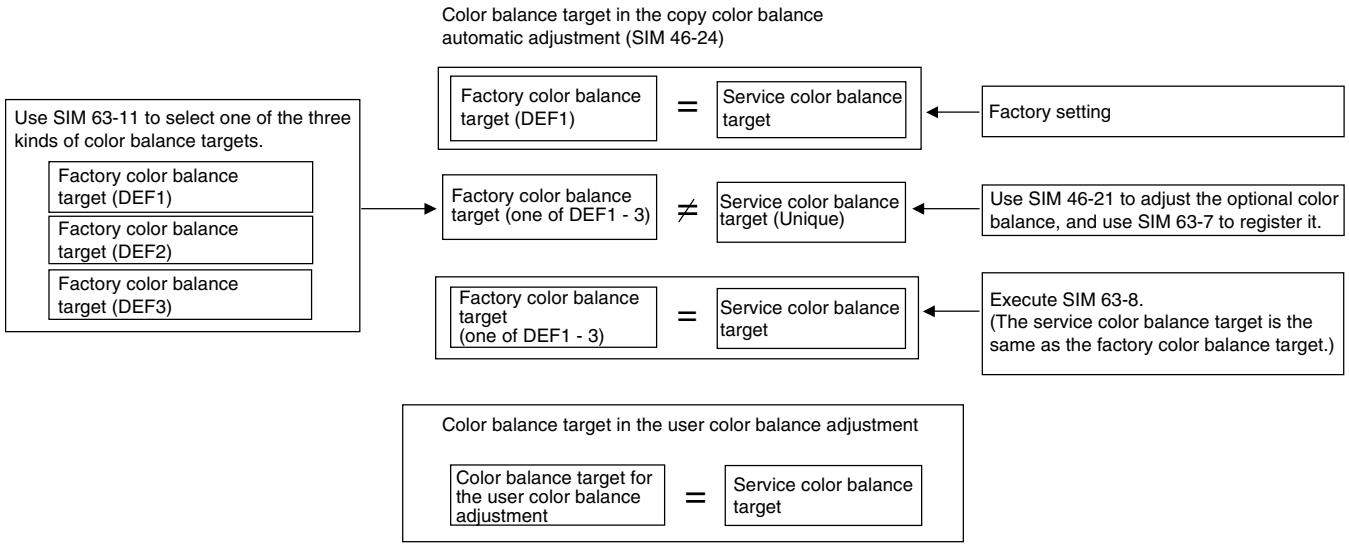
* When the color balance and density adjustments are executed manually (SIM46-21) (SIM67-25)
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* The scanner control PWB has been replaced.
* The EEPROM on the scanner control PWB has been replaced.
* When the user requests for customizing the color balance.
* When the se rvice color balance target gamma is judged as improper.

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

- Each color balance target for the copy color balance adjustment

| Type | | Descriptions |
|---|---|---|
| A | Factory color balance (gamma) target | There are three kinds of the color balance target, and each of them is specified according to the machine design. Use SIM 63-11 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which emphasizes color reproduction. |
| B | Service color balance (gamma) target | This target is used when the user requests to customize the color balance to user's desired level. In advance, the user's unique color balance must be registered as the service color balance target. The above registration (setting) is made by the serviceman with SIM 46-21 to adjust the color balance and with SIM 63-7 to register it.<br>This color balance target is used when the user executes the color balance adjustment. When, therefore, the service color balance target is changed, the color balance target of the user's color balance adjustment is also changed.<br>When, however, SIM 63-8 is executed, the color balance is set to the factory color balance target set with SIM 63-11. The default setting (factory setting) of the color balance is same as the factory color balance target. (Emphasized on color reproduction (DEF1))<br>If the user does not request for customizing the color balance, be sure to use SIM 63-8 to set the color balance to the factory color balance target. |
| C | User color balance (gamma) target | Same color balance as the service color balance (gamma) target When the service color balance target is changed, this color balance target is also changed accordingly. |

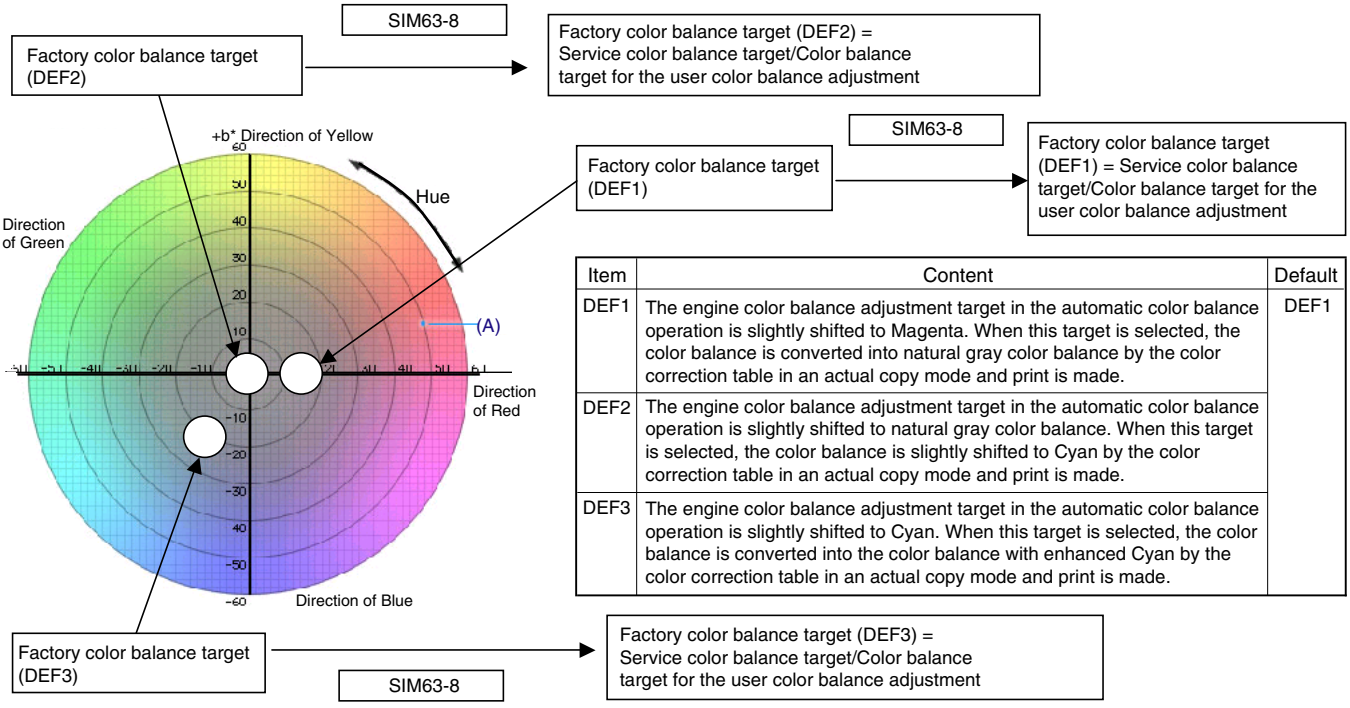
- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the copy color balance adjustment (Automatic adjustment) (SIM 46-74/46-24)




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

  By use of SIM 63-11, one of the following color balances can be set as the factory color balance target.

  Each of the three color balances cannot be changed. (Fixed)




| Item | Content | Default |
|---|---|---|
| DEF1 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color correction table in an actual copy mode and print is made. | DEF1 |
| DEF2 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color correction table in an actual copy mode and print is made. | |
| DEF3 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color correction table in an actual copy mode and print is made. | |

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

  For the service color balance target, an optional color balance can be adjusted with SIM 46-21 and registered with SIM 63-7. When, however, SIM 63-8 is executed, the color balance is set to the same balance as the factory color balance target set with SIM 63-11.

- Color balance target in the user color balance adjustment

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

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

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

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

After completion of the customized color balance adjustment (Manual) with SIM 46-21 according to the user's request, use SIM 63-7 to register the service color balance target data by using adjustment pattern that was printed in this mode.

Important

In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-21.

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

It is recommended to keep the printed adjustment pattern created with SIM 46-21. This adjustment pattern can be used to register the same color balance target to another machine.

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

The service color balance target data is registered immediately after the color balance adjustment (Manual) with SIM 46-21.

If a considerable time has passed after completion of the color balance adjustment (Manual) with SIM 46-21, the color balance of the adjustment pattern at the time of adjustment differs from the color balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The accuracy of the service color balance target data can be judges as follows.

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

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

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

The color balance adjustment pattern used in registration was made and printed by the color balance adjustment (Manual) with SIM 46-21. This procedure may have been executed erroneously

**a. Setting procedure**

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

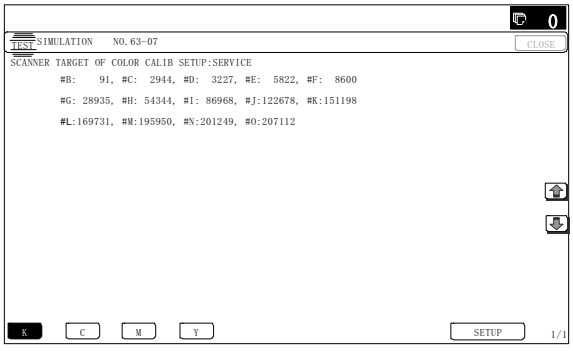
1) Use SIM 46-21 (Copy color balance adjustment (manual adjustment) mode) to print two sheets of the color patch image (adjustment pattern).

Important

In this case, be sure to use A4 or 11" x 8.5" paper for printing the adjustment pattern by SIM 46-21.

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

2) Enter the SIM 63-7 mode.




3) Press [SETUP] key.

4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the copy color balance adjustment (Manual adjustment) (SIM 46-21) (ADJ 10C (2)) on the document table.

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

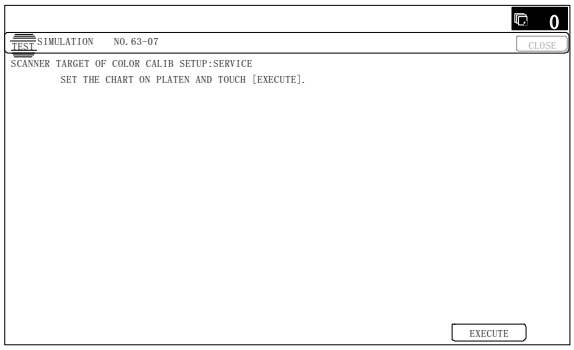
(When the color patch image (adjustment pattern) is printed by SIM 64-7, set the item B (PROC ADJ) to "0 (YES)" and press [EXECUTE] key to print.)

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

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

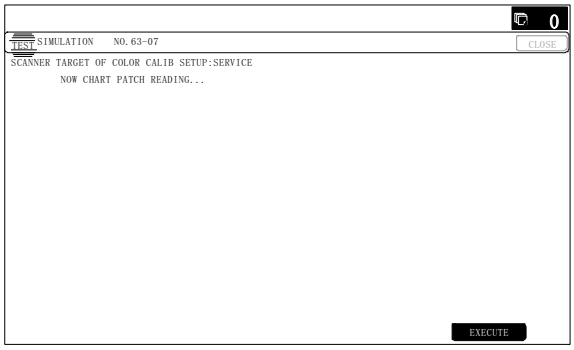
If the color balance could not be adjusted satisfactorily with SIM 46-21 (Color balance adjustment (Manual)), do not execute SIM 63-7 to register the service color balance target data.

5) Press [EXECUTE] key.




The color patch image (adjustment pattern) is read.

6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.




The color balance (gamma) target set level of each color (KCMY) can be checked with K/C/M/Y keys.

Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.

In case of an abnormality, repair the problem and try again.

7) Press [OK] key.

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

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

Important

This procedure must not be executed when the copy color balance was adjusted with SIM 46-21 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 63-7.

When the factory color balance target is changed with SIM 63-11, be sure to execute this procedure.

1) Enter the SIM 63-8 mode.

2) Press [EXECUTE] key.
3) Press [YES] key.

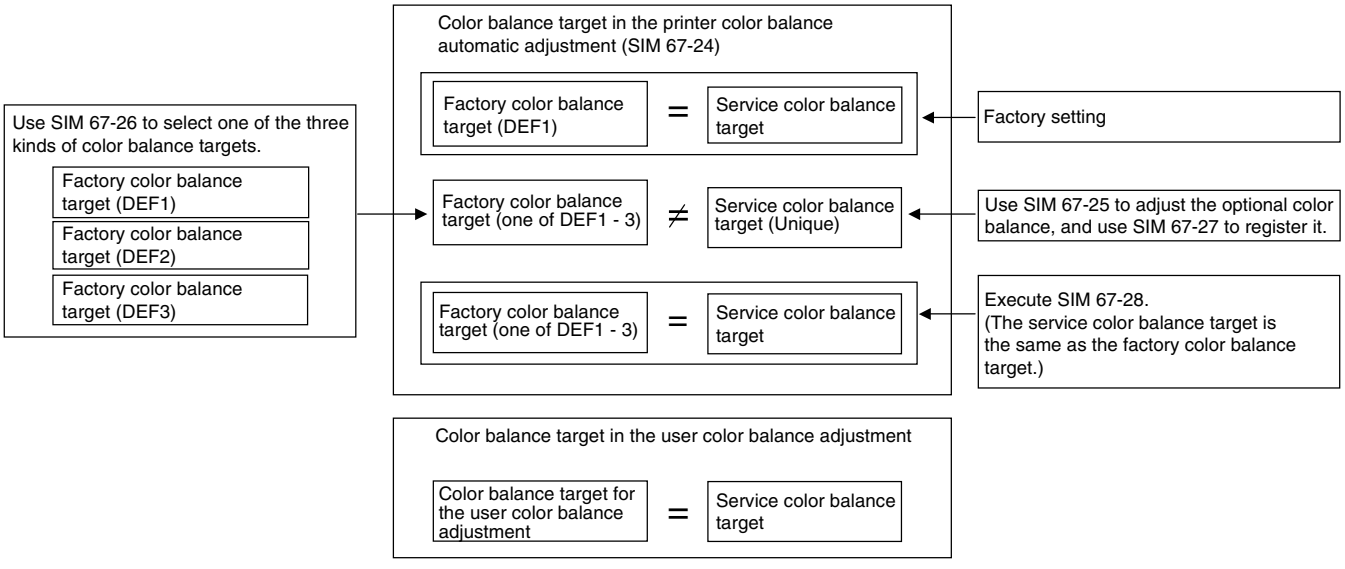
The service color balance target and the color balance target for the user color balance adjustment are set to the same color balance as the factory color balance target.

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

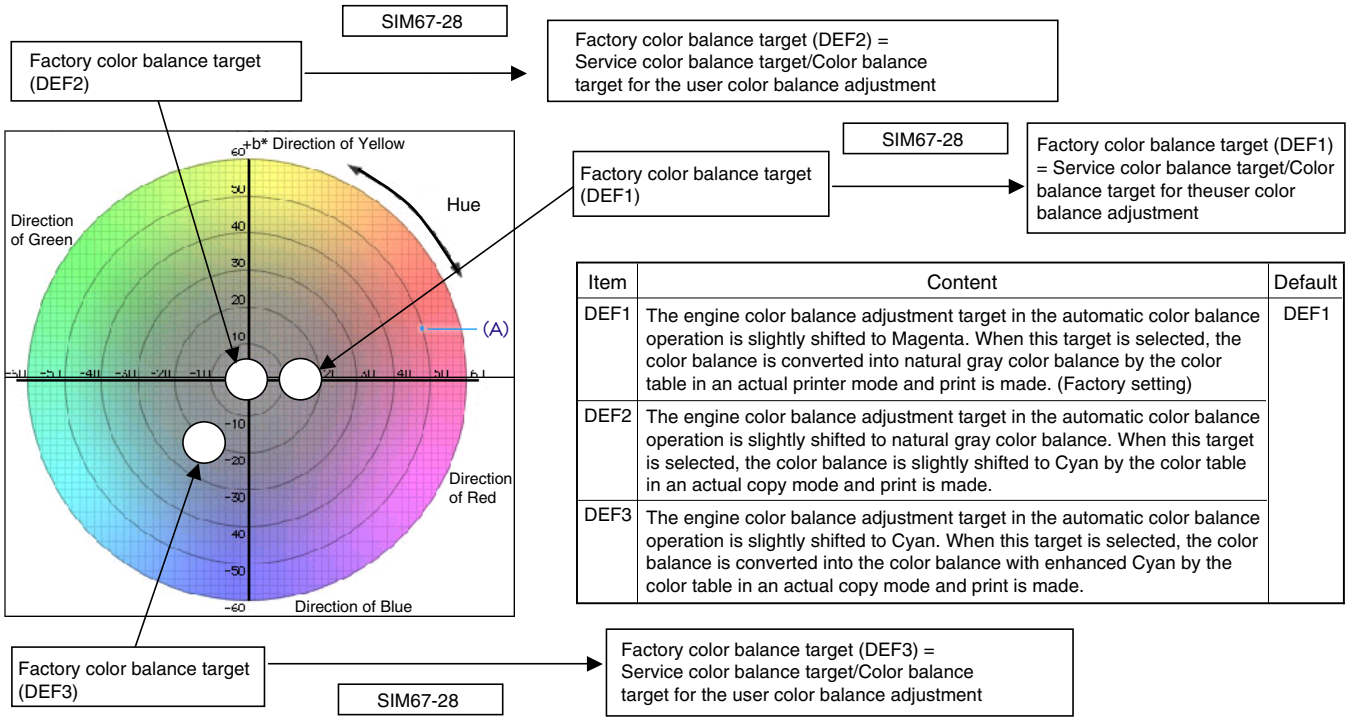
• Color balance target for the printer color balance adjustment

| Type | | Descriptions |
|---|---|---|
| A | Factory color balance (gamma) target | There are three kinds of the color balance targets, and each of them is specified according to the machine design. Use SIM 67-26 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which emphasizes color reproduction. |
| B | Service color balance (gamma) target | This target is used when the user requests to customize the color balance to user's desired level. In advance, the user's unique color balance must be registered as the service color balance target. The above registration (setting) is made by the serviceman with SIM 67-25 to adjust the color balance and with SIM 67-27 to register it.<br>This color balance target is used when the user executes the color balance adjustment. When, therefore, the service color balance target is changed, the color balance target of the user's color balance adjustment is also changed. When, however, SIM 67-28 is executed, the color balance is set to the factory color balance target set with SIM 67-26. The default setting (factory setting) of the color balance is same as the factory color balance target. (Emphasized on color reproduction (DEF1))<br>If the user does not request for customizing the color balance, be sure to use SIM 67-28 to set the color balance to the factory color balance target. |
| C | User color balance (gamma) target | Same color balance as the service color balance (gamma) target When the service color balance target is changed, this color balance target is also changed accordingly. |

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



- Factory target in the printer color balance adjustment (Automatic adjustment) (SIM 46-74/67-24)
  By use of SIM 67-26, one of the following color balances can be set as the factory color balance target.
  Each of the three color balances cannot be changed. (Fixed)




| Item | Content | Default |
|---|---|---|
| DEF1 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual printer mode and print is made. (Factory setting) | DEF1 |
| DEF2 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made. | |
| DEF3 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made. | |

- Service color balance target in the printer color balance adjustment (Automatic adjustment) (SIM 46-74/67-24).
  For the service color balance target, an optional color balance can be adjusted with SIM 67-25 and registered with SIM 67-27. When, however, SIM 67-28 is executed, the color balance is set to the same balance as the factory color balance target set with SIM 67-26.
- Color balance target in the user color balance adjustment
  This color balance is same as the service color balance target in the printer color balance adjustment (Automatic adjustment) (SIM 46-74/67-24). When, therefore, the service color balance target is changed, this target is also changed accordingly.

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

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

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

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

Important

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

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

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

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

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

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

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

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

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

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

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

**a. Setting procedure**

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

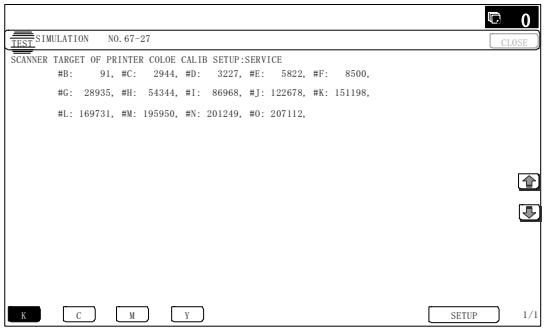
1) Use SIM 67-25 (Printer color balance adjustment (manual adjustment) mode) to print two sheets of the color patch image (adjustment pattern).

   Important

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

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

2) Enter the SIM 67-27 mode.




3) Press [SETUP] key.

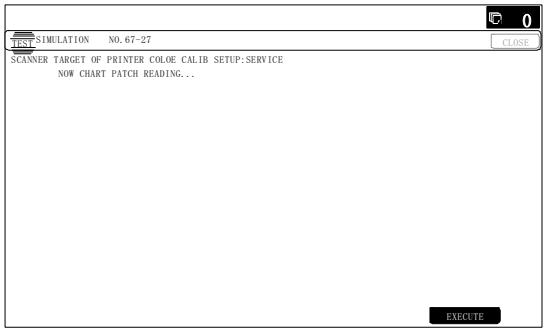
4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the printer color balance adjustment (Manual adjustment) (SIM 67-25) (ADJ 10E (2)) on the document table.

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

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

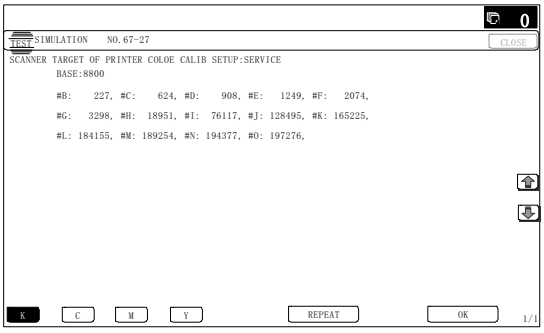
This procedure must not be executed when the copy color balance (manual) was adjusted with SIM 67-25 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 67-27.

5) Press [EXECUTE] key.




The color patch image (adjustment pattern) is read.

6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.




The color balance (gamma) target set level of each color (K, C, M and Y) can be checked with K/C/M/Y keys.

Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.

In case of an abnormality, repair the problem and try again.

7) Press [OK] key.

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

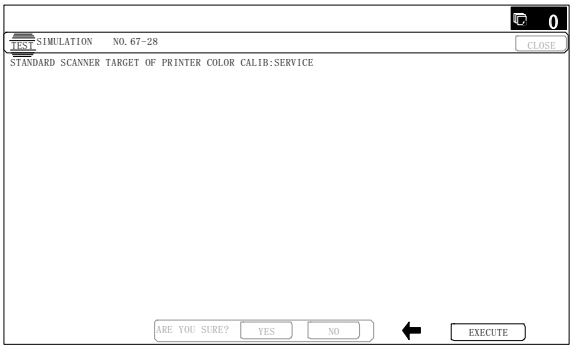
**(Procedures to set the service color balance target and the color balance target for the user color balance adjustment to the same color balance as the factory color balance target)**

Important

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

When the factory color balance target is changed with SIM 67-26, be sure to execute this procedure.

1) Enter the SIM 67-28 mode.




2) Press [EXECUTE] key.

3) Press [YES] key.

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

## 10-B Copy/Printer color balance and density adjustment (Automatic adjustment) (Basic adjustment)

This adjustment must be performed in the following cases:

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

**a. General**

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

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

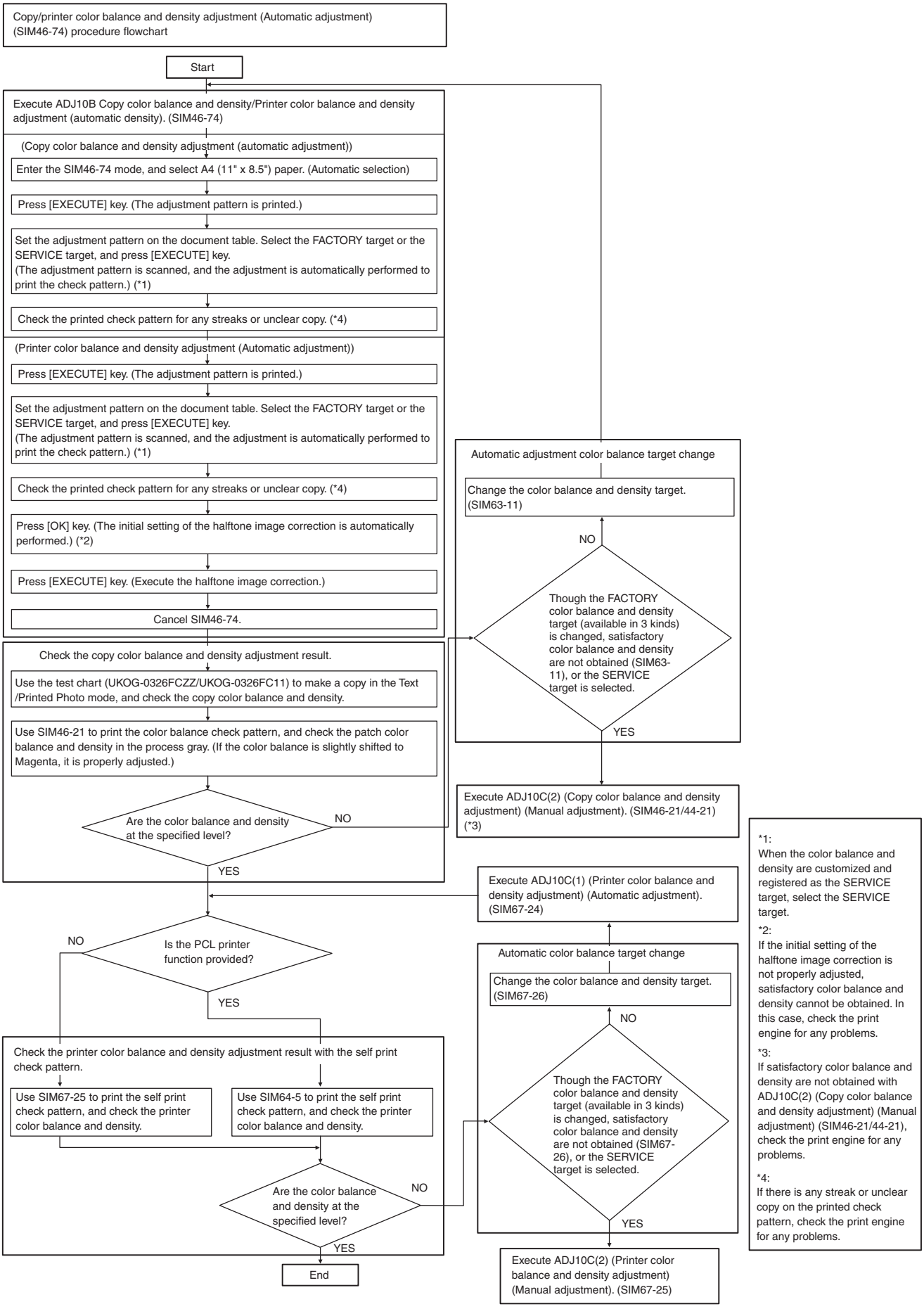
This mode is also advisable to effectively perform both of the automatic copy color balance and density adjustment (SIM46-24) and the automatic printer color balance and density adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer color balance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

The color balance adjustment (automatic adjustment) is used to adjust the copy density of each of Cyan, Magenta, Yellow, and Black automatically.

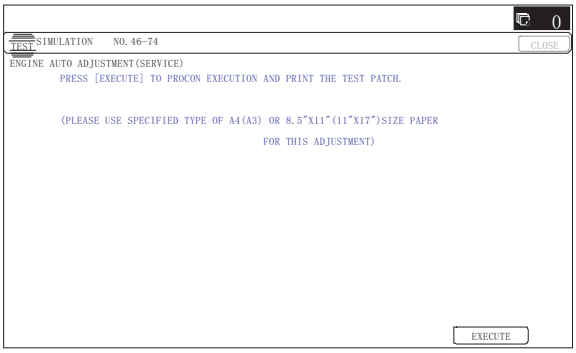
When this adjustment is executed, the color balance adjustments of all the copy/printer modes are revised.

**b. Adjustment procedures**

(Auto color balance adjustment by the serviceman)

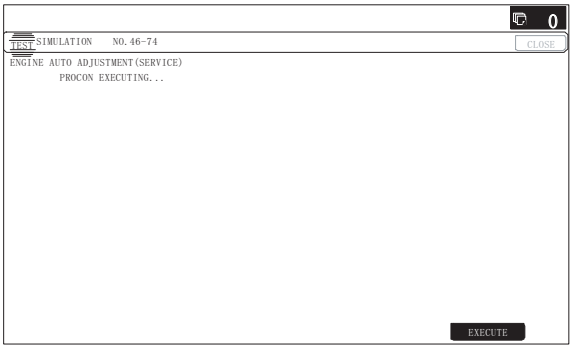


1) Enter the SIM46-74 mode.



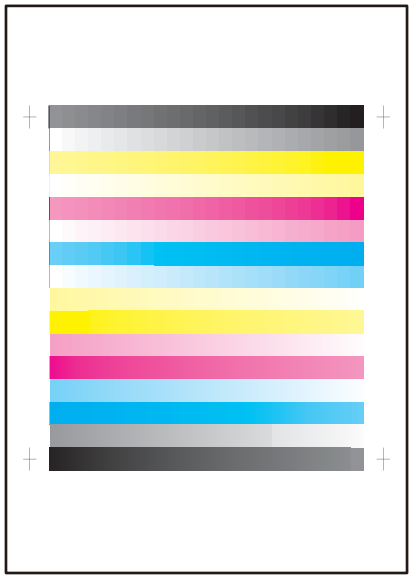

2) Press [EXECUTE] key.

The high density process control is performed, and the copy color patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



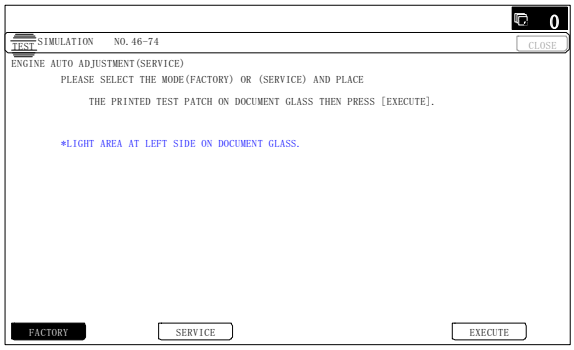

3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.

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



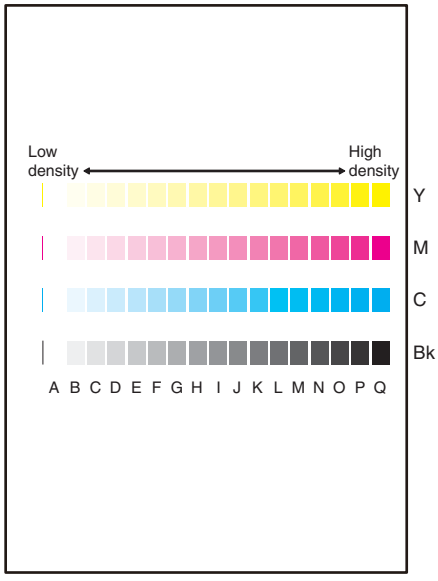
4) Select [FACTORY] target, and press [EXECUTE] key.

When the color balance is customized by the manual color balance adjustment (SIM 46-21) according to the user's request, and the color balance is registered with SIM63-7 as the service target, if the color balance is required to be adjusted, select the [SERVICE] target.



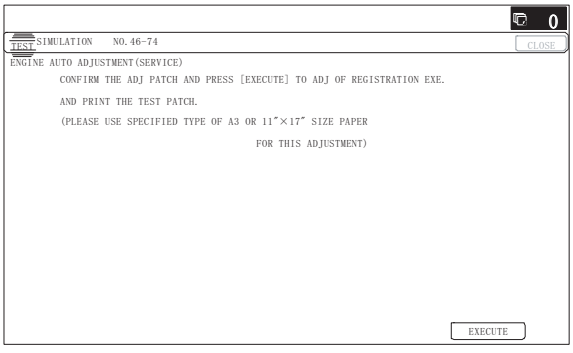

The copy color balance adjustment is automatically executed and prints the color balance check patch image.

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



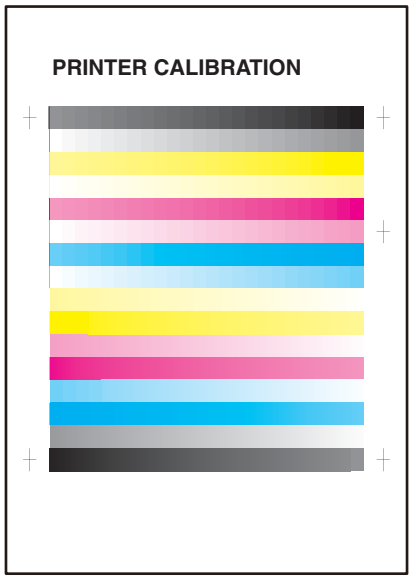

5) Press [EXECUTE] key.

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



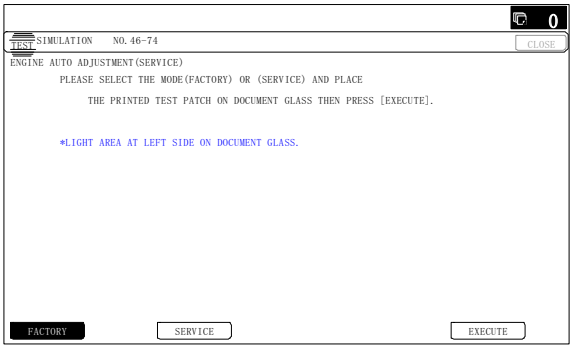
6) Set the color patch image (adjustment pattern) printed in the procedure 5) on the document table.

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



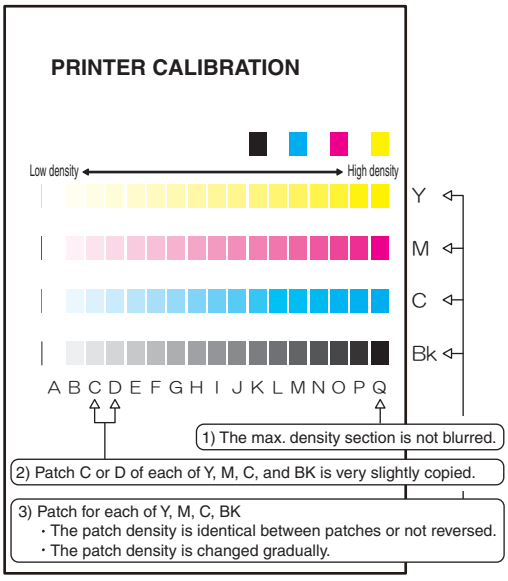

7) Select [FACTORY] target, and press [EXECUTE] key.

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



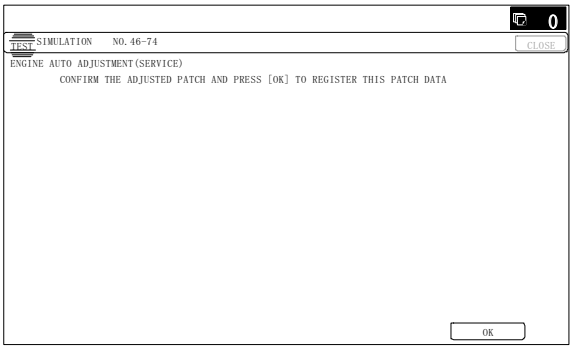

The printer color balance adjustment (step 1) is automatically performed and the color balance check patch image is printed out.

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




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

The initial setting of the half tone image correction is performed.

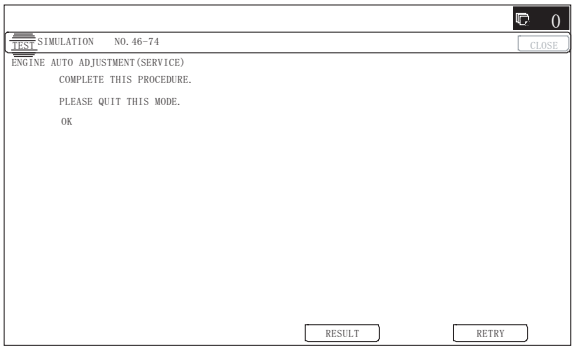



9) Wait until [EXECUTE] key is displayed. When it is displayed, press it.

The halftone image correction is performed.

10) When "COMPLETED THIS PROCEDURE" is displayed, the adjustment operation is completed.

Cancel SIM46-74.




Important

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

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

11) Check the copy color balance and density.

(Refer to the item of the copy color balance and density check.)

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 63-11 and repeat the procedures from 1).

If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 10C (2)).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 10C (2)).

12) Check the printer color balance and density.

(Refer to the item of the printer color balance and density check.)

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 7), change the factory color balance target with SIM 67-26 and repeat the procedures from 1).

If a satisfactory result on the color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 10E (2)).

Also when the service target is selected in procedure 7) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 10E (2)).

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

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

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

This adjustment must be performed in the following cases:

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

## 10-C (1) Copy color balance and density adjustment (Automatic adjustment)

**a. General**

The color balance adjustment (automatic adjustment) is used to adjust the copy density of each of Cyan, Magenta, Yellow, and Black automatically.

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

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

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

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

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

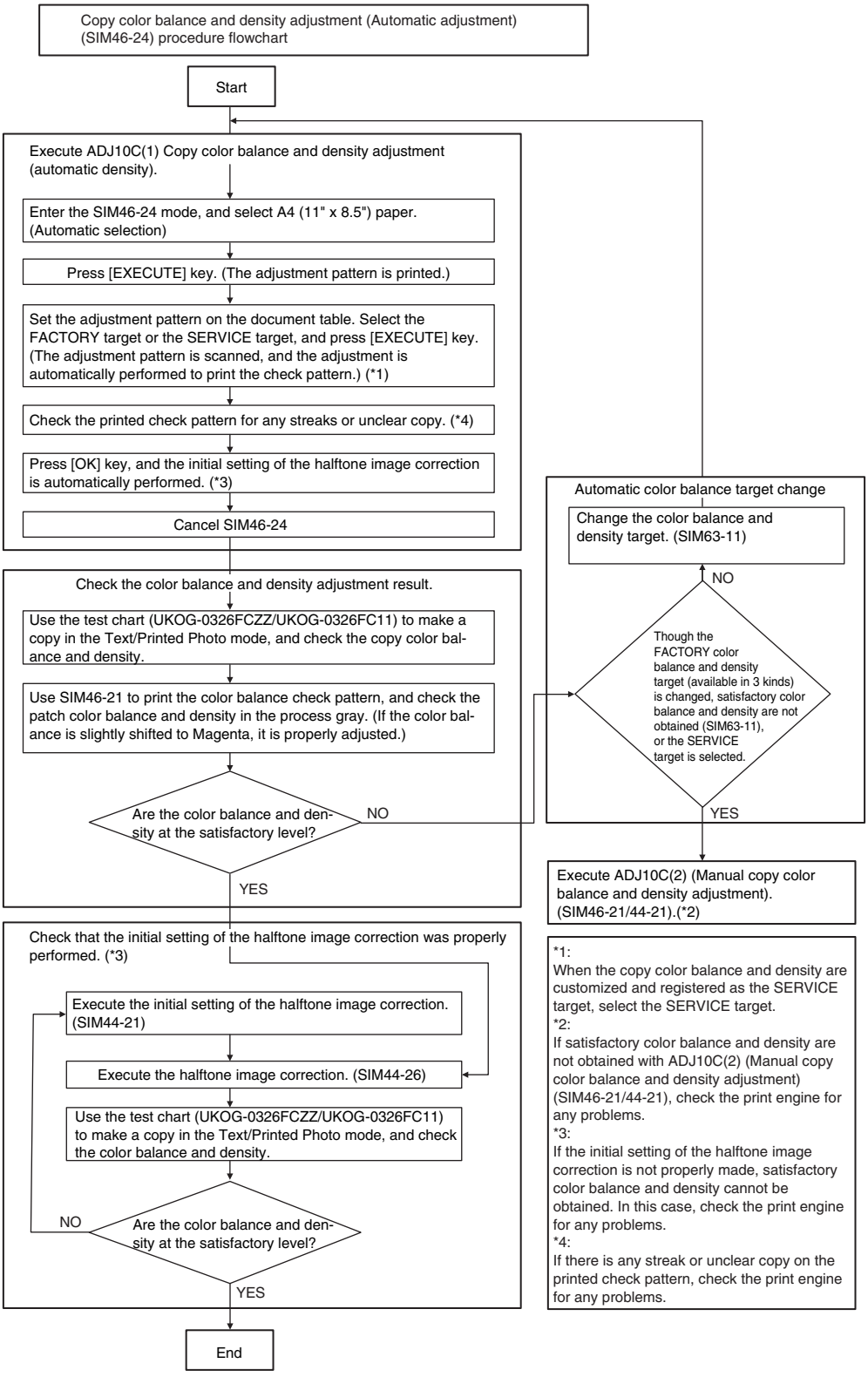
When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

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

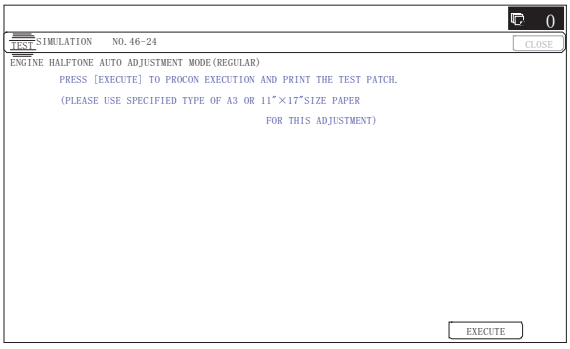
To perform the adjustment, the above difference must be fully understood.

**b. Adjustment procedure**

(Auto color balance adjustment by the serviceman)



1) Enter the SIM 46-24 mode.

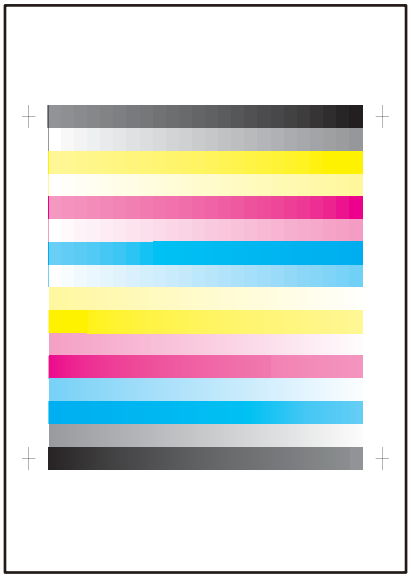



2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

   The color patch image (adjustment pattern) is printed out.

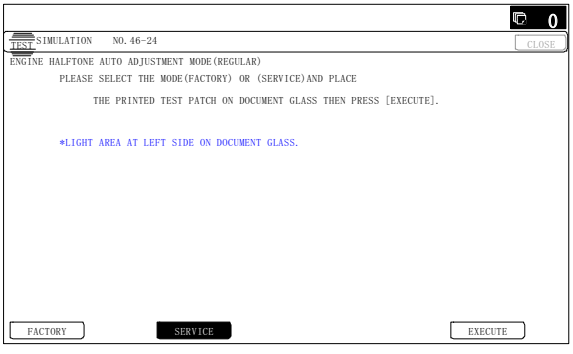
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.

   Place the printed color patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern) paper.



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

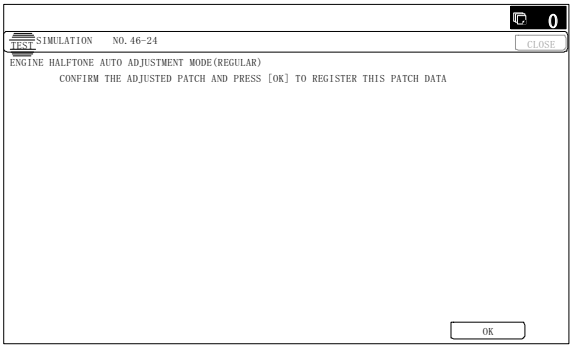
   When the color balance is customized with the manual color balance adjustment (SIM 46-21) according to the user's request and the color balance is registered as the service target with SIM 63-7, if the color balance is adjusted to that color balance, select the service target.




The copy color balance adjustment is automatically executed to print the color balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.

5) Press [OK] key on the operation panel.

   According to data of this adjustment, the initial setting of the halftone image correction is performed.

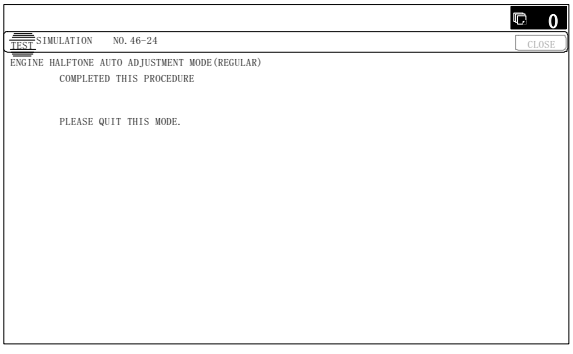



**Note**

After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON." is displayed. This operation takes several minutes.

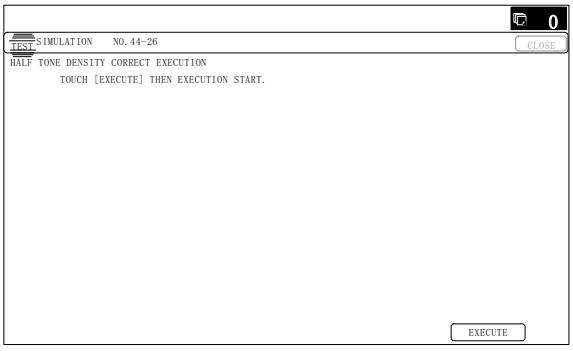
After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.

Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.



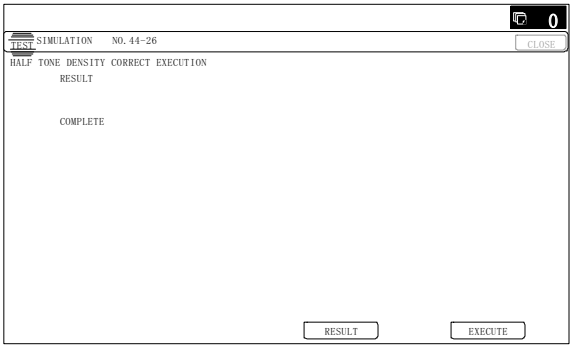
6) Check the color balance and density.
(Refer to the item of the copy color balance and density check.)

7) Use SIM44-26 to execute the halftone image correction. (Forcible execution)
Enter the SIM44-26 mode and press [EXECUTE] key.
[EXECUTE] key is highlighted and the operation is started.

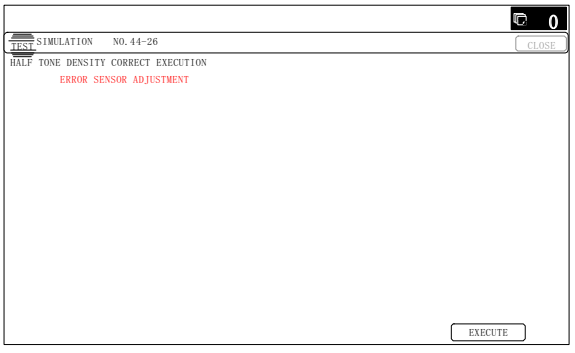



It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))




(Abnormal end (Auto transition))




After completion of the operation, the simulation is canceled.

8) Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Photo mode (Manual) to check the copy color balance and density. (Refer to the item of the copy color balance and density check.)
If the copy color balance and density are not satisfactory, perform the following procedures.

9) Execute the initial setting of the halftone image correction. (SIM 44-21)

10) Execute the half tone image correction. ( Forcible execution) (SIM44-26)

11) Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance and density check.)

Though the above procedures 9) - 11) are performed, the copy color balance and density are not in the specified range, there may be another cause.

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

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 63-11 and repeat the procedures from 1).

If a satisfactory result on the color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 46-21) (ADJ 10C (2)).

Also when the service target is selected in procedure 7) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 10C(2)).

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

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

## 10-C (2) Copy color balance and density adjustment (Manual adjustment)

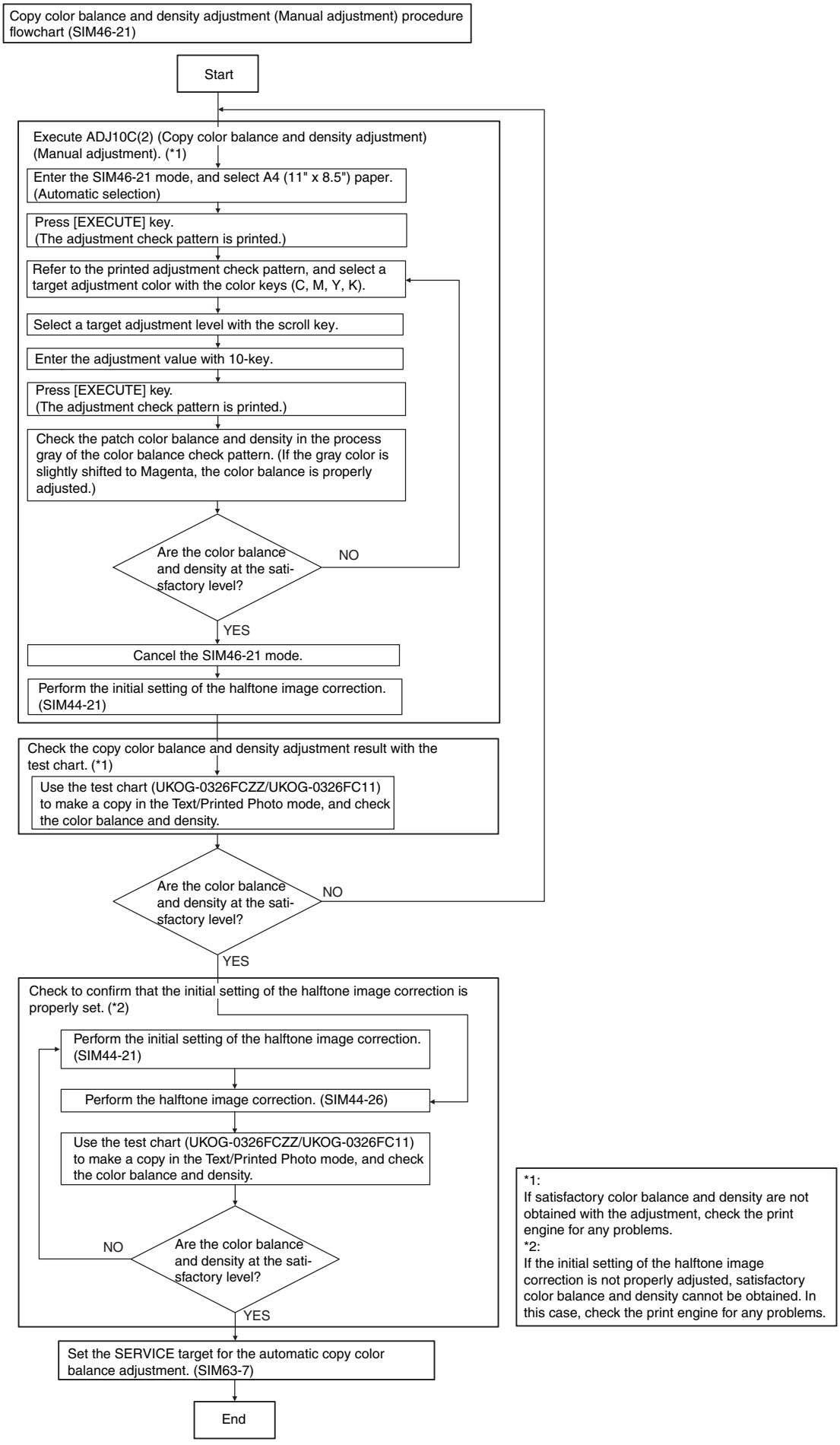
### a. General

The color balance adjustment (Manual adjustment) is used to adjust the copy density of CMYK. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing (customizing) the color balance.

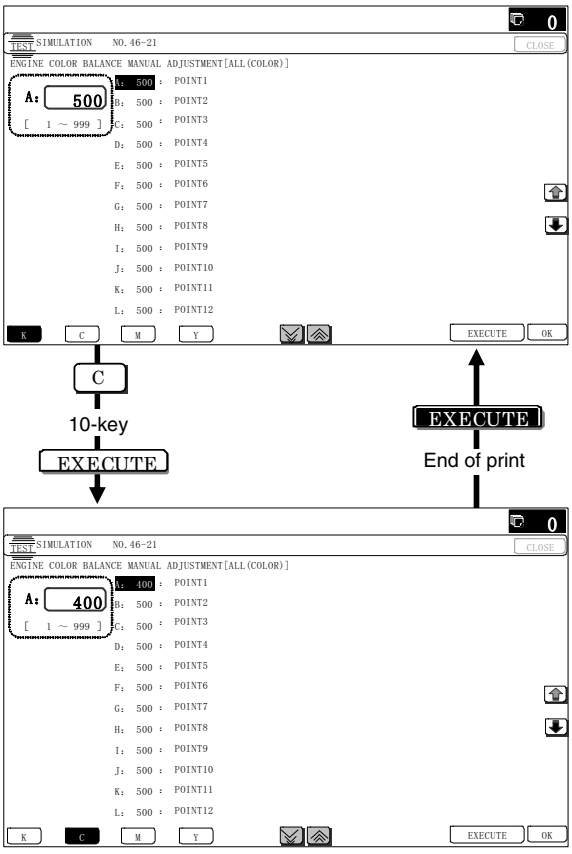
This manual adjustment is executed only for the color patch which could not adjusted properly in the automatic adjustment.

If the color balance is improper, execute the automatic color balance adjustment in advance, and execute this adjustment for better efficiency.

**b. Adjustment procedure**



1) Enter the SIM46-21 mode.

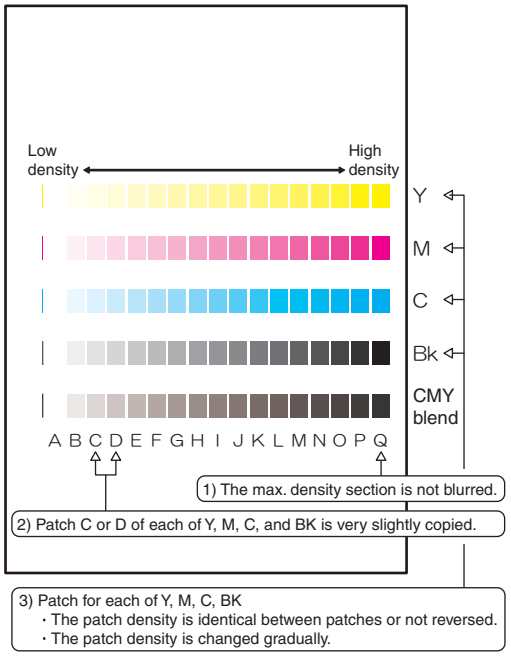



2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

   The color balance adjustment pattern is printed.

3) Check that the following specification is satisfied or the color balance is satisfactory.

   If not, execute the following procedures.




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

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

When, however, the color balance is adjusted according to a request from the user, there is no need to set to the standard color balance stated above.

If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. If the color balance of the adjustment pattern printed in this mode is slightly shifted to Magenta, it is converted into the natural gray color balance by the color correction table in an actual copy mode. (When the color balance target is DEF 1.)

4) Select the color to be adjusted with the color select key, and 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 46-24 is used to adjust the automatic color balance and density, all the set values of this simulation are set to 500.

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

   Repeat procedures of 2) - 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.

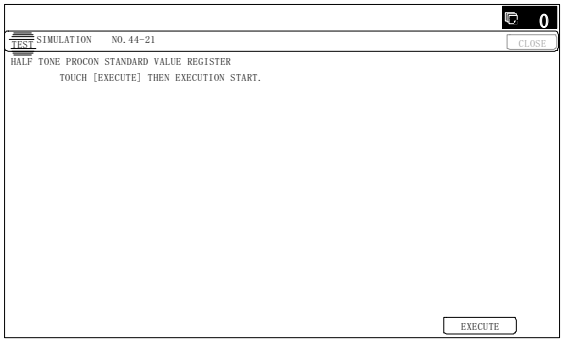
   Then, adjust each patch density individually. This is an efficient way of adjustment.

   Referring to the black/gray patches, adjust so that each process (CMY) black/gray patch color balance of A - Q (MAX) approaches the black/gray patch level as far as possible.

6) Make a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) and a user's document according to necessity in the normal copy mode, the text/Printed Photo mode (Manual) to check the adjustment result.

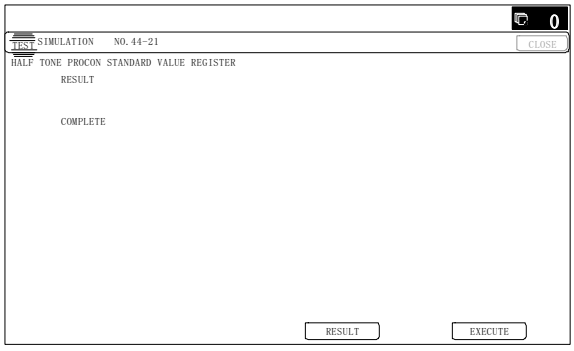
   (Refer to the item of the copy color balance/density check.)

7) Execute SIM 44-21. (Execute the initial setting of the halftone image correction.)

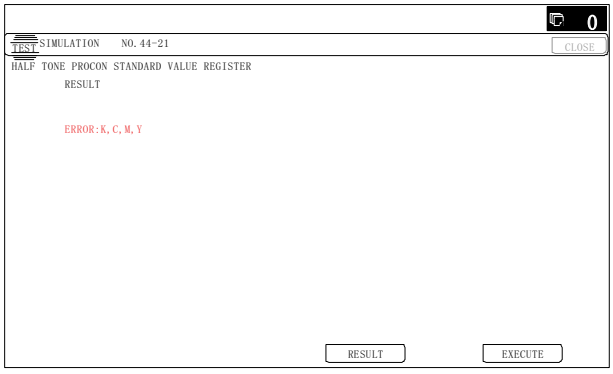



It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))




(Abnormal end (Auto transition))




After completion of the operation, the simulation is canceled.

**Note**

This procedure is to save the copy color balance adjustment data as the reference data for the halftone correction.

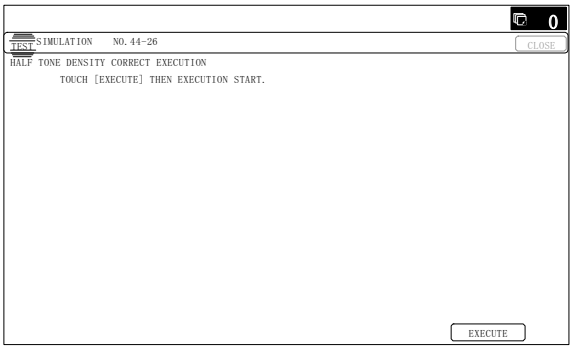
Immediately after execution of ADJ 10C (2) (Color balance adjustment, Manual) with SIM 46-21, be sure to execute this procedure.

When ADJ 10C (1) (Color balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.

8) Use SIM 44-26 to execute the halftone image correction. (Forcible execution)

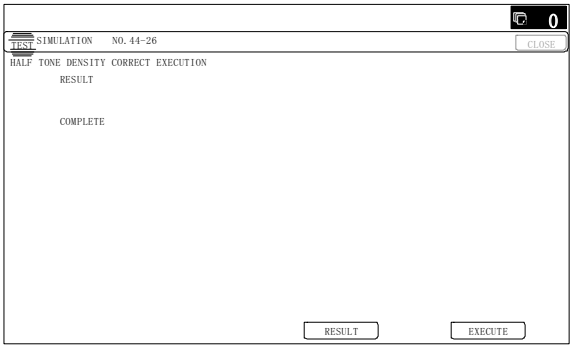
Enter the SIM 44-26 mode and press [EXECUTE] key.

[EXECUTE] key is highlighted and the operation is started.

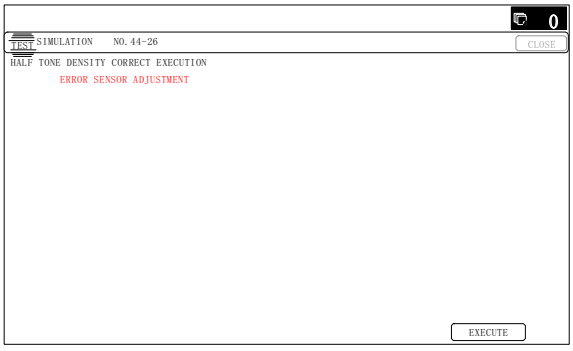



It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))




(Abnormal end (Auto transition))




After completion of the operation, the simulation is canceled.

9) Make a copy of the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) and a user's document according to necessity in the Text/Printed Photo mode (Manual) and check the adjustment result again. (Refer to the item of the copy color balance/density check.)

If the copy color balance and density are not adjusted to the specified level, there may be another cause.

Troubleshoot the cause, and repair or perform proper treatments, and try all the procedures of the print image adjustment from the beginning.

**Note**

If the color balance is customized, use SIM 63-7 to register the color balance as the service target.

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

If the customized color balance is registered as the service target, the automatic color balance adjustment can be made in the next color balance adjustment.

## 10-D Copy / Image send / FAX image quality adjustment (Individual adjustment)

**a. General**

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 10B and ADJ 10C or there is a request from the user. Normally there is no need to execute this adjustment.

In this adjustment, the adjustment result may be applied to the image send mode and the FAX mode as well as the copy mode.

This must be well understood for execution of the adjustment.

| | | Copy MODE | | | | IMAGE SEND(SCAN) MODE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Color mode | | Monochrome mode | | Color mode | | Monochrome mode | | | |
| | | Auto | Manual | Auto | Manual | Auto | Manual | Auto | Manual | FAX | Printer |
| 46-01 | Color copy density adjustment (for each color copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally) | ○ | ○ | - | - | - | - | - | - | - | - |
| 46-02 | Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally) | - | - | ○ | ○ | - | - | - | - | - | - |
| 46-04 | Color image send mode image density adjustment (for each mode) (No need to adjust normally) | - | - | - | - | ○ | ○ | - | - | - | - |
| 46-05 | Monochrome image send mode image density adjustment (for each mode) (No need to adjust normally) | - | - | - | - | - | - | ○ | ○ | - | - |
| 46-08 | Image send mode RGB color balance adjustment (separately for the low-density area and the high-density area) (No need to adjust normally) | - | - | - | - | ○ | ○ | - | - | - | - |
| 46-09 | RSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - |
| 46-10 | Color copy color balance, gamma adjustment (for each color copy mode) (No need to adjust normally) | ○ | ○ | - | - | - | - | - | - | - | - |
| 46-16 | Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally) | - | - | ○ | ○ | - | - | - | - | - | - |
| 46-19 | Automatic monochrome (Copy/Scan/FAX) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set) | - | - | ○ | - | - | - | ○ | - | ○ | - |
| 46-21 | Copy color balance and density adjustment (Manual adjustment) | ○ | ○ | ○ | ○ | - | - | - | - | - | - |
| 46-23 | Copy high density image density reproduction setting (Normally unnecessary to the setting change) | ○ | ○ | ○ | ○ | - | - | - | - | - | - |
| 46-24 | Copy color balance and density adjustment (Automatic adjustment) | ○ | ○ | ○ | ○ | - | - | - | - | - | - |
| 46-25 | Copy color balance adjustment (Single color copy mode) (No need to adjust normally) | - | ○ | - | - | - | - | - | - | - | - |
| 46-26 | Single color copy mode color balance default setting | - | ○ | - | - | - | - | - | - | - | - |
| 46-27 | Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally) | ○ | ○ | - | - | - | - | - | - | - | - |
| 46-30 | Copy mode sub scanning direction resolution setting | ○ | ○ | - | - | - | - | - | - | - | - |
| 46-32 | Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section) | - | - | ○ | - | - | - | ○ | - | ○ | - |
| 46-36 | 2-color (red, black) copy mode fine color adjustment (No need to adjust normally) | - | ○ | - | - | - | - | - | - | - | - |
| 46-37 | Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally) | - | - | ○ | ○ | - | - | ○ | ○ | ○ | ○ (*3) |
| 46-38 | Color copy mode dark area gradation (black component quantity) adjustment (No need to adjust normally) | ○ | ○ | - | - | - | - | - | - | - | - |
| 46-39 | FAX send image sharpness adjustment | - | - | - | - | - | - | - | - | ○ | - |
| 46-40 | FAX send image density adjustment (Collective adjustment of all the modes) | - | - | - | - | - | - | - | - | ○ | - |

| | | Copy MODE | | | | IMAGE SEND(SCAN) MODE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Color mode | | Monochrome mode | | Color mode | | Monochrome mode | | | |
| | | Auto | Manual | Auto | Manual | Auto | Manual | Auto | Manual | FAX | Printer |
| 46-41 | FAX send image density adjustment (Normal text mode) | - | - | - | - | - | - | - | - | ○ | - |
| 46-42 | FAX send image density adjustment (Fine text mode) | - | - | - | - | - | - | - | - | ○ | - |
| 46-43 | FAX send image density adjustment (Super fine mode) | - | - | - | - | - | - | - | - | ○ | - |
| 46-44 | FAX send image density adjustment (Ultra fine mode) | - | - | - | - | - | - | - | - | ○ | - |
| 46-45 | FAX send image density adjustment (600dpi mode) | - | - | - | - | - | - | - | - | ○ | - |
| 46-46 | FAX send image density adjustment (RGB_RIP) | - | - | - | - | - | - | - | - | ○ (*2) | - |
| 46-47 | Copy image, image send image, FAX send image (JPEG) compression ratio setting (Normally unnecessary to the setting change) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ (*3) | ○ (*3) |
| 46-51 | Gamma manual adjustment for the copy mode heavy paper and the image process mode (dither) (No need to adjust normally) | ○ | ○ | ○ | ○ | - | - | - | - | - | - |
| 46-52 | Gamma default setting for the copy mode heavy paper and the image process mode (dither) | ○ | ○ | ○ | ○ | - | - | - | - | - | ○ (*4) |
| 46-54 | Copy gamma, color balance adjustment for each dither (Automatic adjustment) (No need to adjust normally) | ○ | ○ | ○ | ○ | - | - | - | - | - | ○ (*4) |
| 46-55 | Dropout color setting | - | - | - | - | - | - | - | ○ | - | - |
| 46-58 | Pseudo resolution UP function setting | ○ | ○ | ○ | ○ | - | - | - | - | - | - |
| 46-59 | Pseudo resolution UP function adjustment | ○ | ○ | ○ | ○ | - | - | - | - | - | ○ |
| 46-60 | Color (Copy/Scan) mode sharpness adjustment (No need to adjust normally) | ○ | ○ (1 copy) | - | - | ○ | - | - | - | - | ○ |
| 46-61 | Area separation recognition level adjustment (No need to adjust normally) | ○ | ○ (*1) | ○ | ○ (*1) | ○ | ○ (*1) | ○ | ○ (*1) | - | - |
| 46-62 | ACS, area separation, background image process, automatic exposure mode operation conditions setting (Normally unnecessary to the setting change) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | - |
| 46-63 | Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | - | - |
| 46-65 | Color correction table setting | ○ | ○ | - | - | - | - | - | - | - | ○ |
| 46-66 | Watermark adjustment | ○ | ○ | ○ | ○ | - | - | - | - | - | - |
| 46-74 | Printer/Copy color balance and density adjustment (Automatic adjustment) (Basic adjustment) | ○ | ○ | ○ | ○ | - | - | - | - | - | ○ |
| 46-90 | High-compression PDF image process operation setting (Normally unnecessary to the setting change) | - | - | - | - | ○ | ○ | - | - | - | - |
| 46-91 | Black text emphasis fine adjustment | - | - | - | - | ○ | ○ | - | - | - | - |

*1: Text Printed Photo / Copy document, Text Printed Photo only

*2: Printer RGB save → FAX resend only

*3: Printer RGB save only

*4: Only the watermark is related.

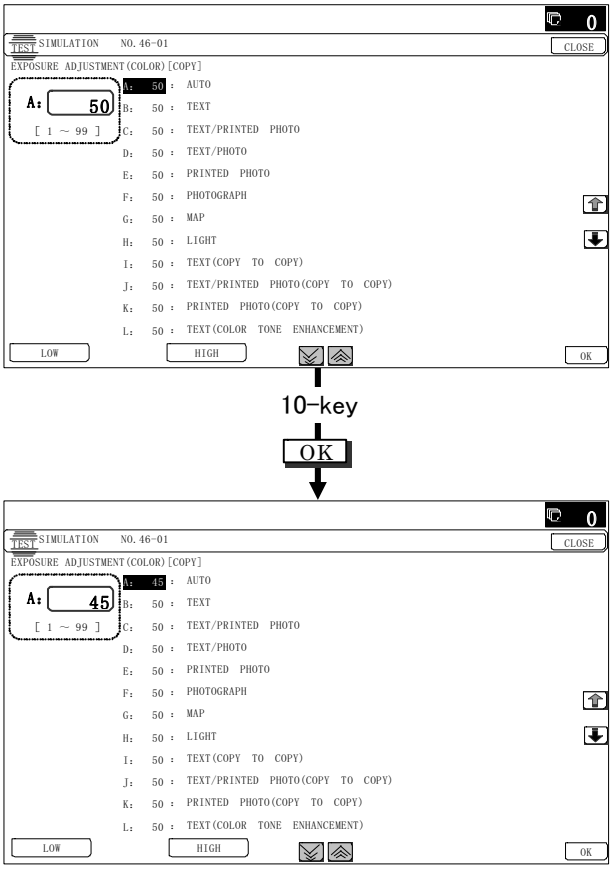
## 10-D (1) Color copy density adjustment (for each color copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)

The density is adjusted in each copy mode individually.

This adjustment must be performed in the following cases:

* When there is necessity to change the copy density of the low density and high density part at each copy density individually.
* When there is necessity to change the density gradient of the copy by each the copy mode individually.
* When there is necessity to change all copy density by each the copy mode individually.
* When there is request from the user.

1) Enter the SIM 46-1 mode.




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

| Display/Item | | Content | | Setting range | Default |
|---|---|---|---|---|---|
| A | AUTO | Auto | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| B | TEXT | Text | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| C | TEXT/PRINTED PHOTO | Text/Printed Photo | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| D | TEXT/PHOTO | Text/Photograph | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| E | PRINTED PHOTO | Printed Photo | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| F | PHOTOGRAPH | Photograph | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| G | MAP | Map | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| H | LIGHT | Light document | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| I | TEXT (COPY TO COPY) | Text (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| J | TEXT/PRINTED PHOTO (COPY TO COPY) | Text/Printed Photo (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| K | PRINTED PHOTO (COPY TO COPY) | Printed Photo (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| L | TEXT (COLOR TONE ENHANCEMENT) | Text (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| M | TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT) | Text/Printed Photo (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| N | TEXT/PHOTO (COLOR TONE ENHANCEMENT) | Text/Photograph (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| O | PRINTED PHOTO (COLOR TONE ENHANCEMENT) | Printed Photo (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| P | PHOTOGRAPH (COLOR TONE ENHANCEMENT) | Photograph (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| Q | MAP (COLOR TONE ENHANCEMENT) | Map (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| R | SINGLE COLOR | Single color | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| S | SINGLE COLOR (COPY TO COPY) | Single color (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| T | TWO COLOR | Two-color (Red/Black) copy | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| U | TWO COLOR (COPY TO COPY) | Two-color (Red/Black) copy (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |

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

When adjusting the copy density on the low density part, select "LOW" mode and change the adjustment value. When adjusting the copy density on the high density part, select "HIGH" mode and change the adjustment value.

When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.

4) Make a copy and check the adjustment result.

Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

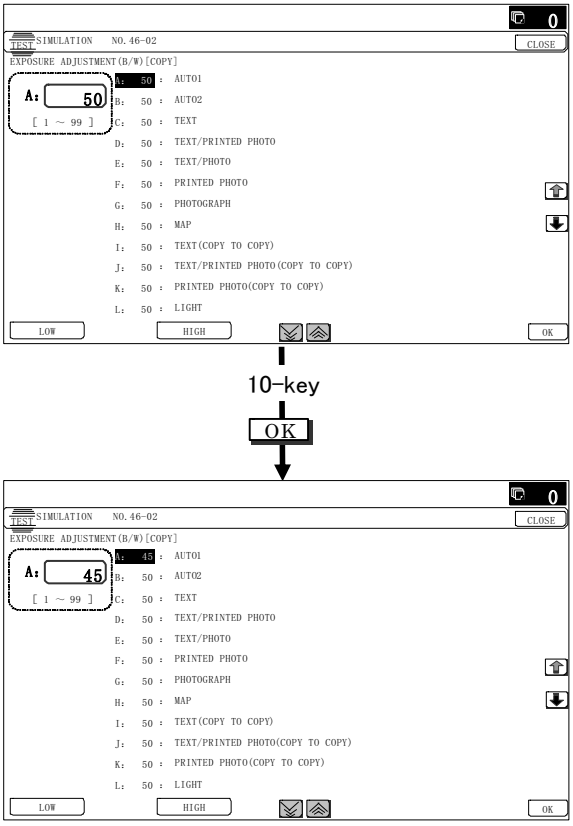
## 10-D (2) Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)

The density is adjusted in each copy mode individually.

This adjustment must be performed in the following cases:

* When there is necessity to change the copy density of the low density and high density part at each copy density individually.
* When there is necessity to change the density gradient of the copy by each the copy mode individually.
* When there is necessity to change all copy density by each the copy mode individually.
* When there is request from the user.

1) Enter the SIM 46-2 mode.




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

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

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

When adjusting the copy density on the low density part, select "LOW" mode and change the adjustment value. When adjusting the copy density on the high density part, select "HIGH" mode and change the adjustment value.

When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.

4) Make a copy and check the adjustment result.

Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

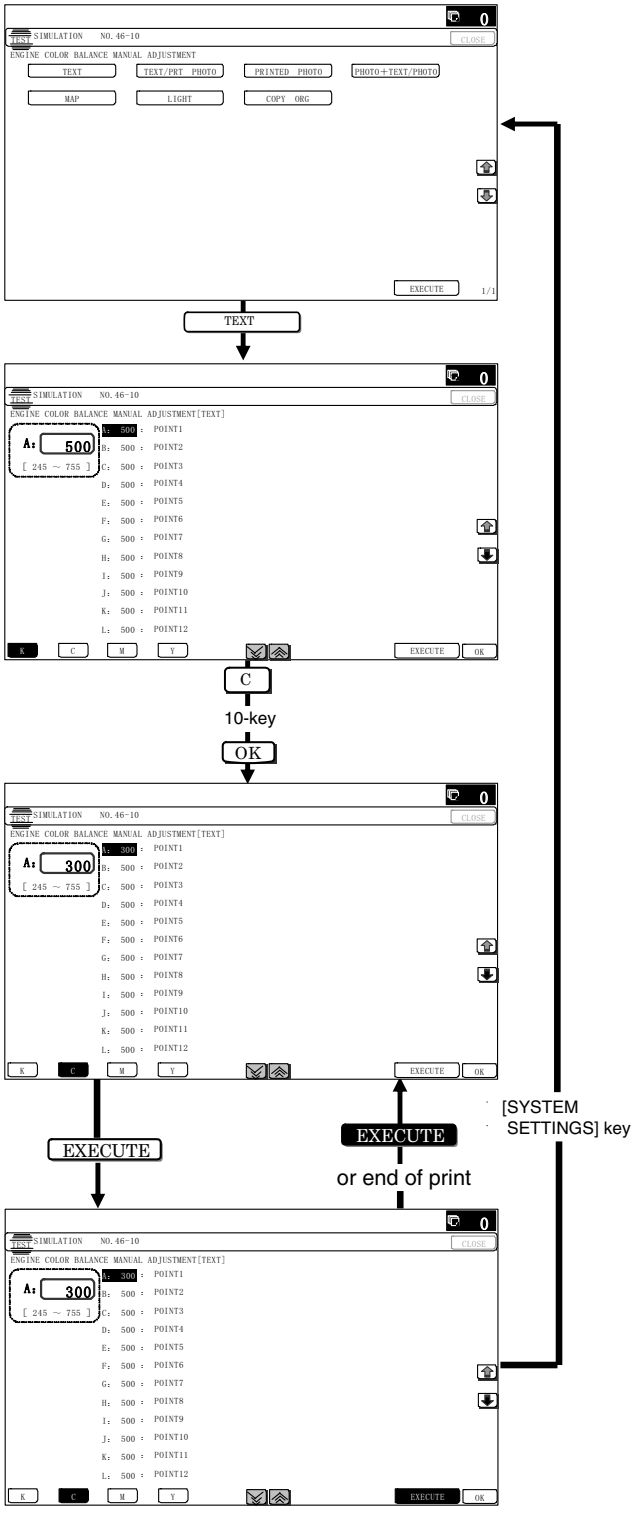
## 10-D (3) Color copy color balance, gamma adjustment (for each color copy mode) (No need to adjust normally)

This adjustment is used to execute the color balance adjustment for each density level in each color copy mode.

This adjustment must be performed in the following cases:

* When there is necessity to change the color balance and gamma by each the copy mode individually.
* When there is request from the user.

1) Enter the SIM 46-10 mode.




2) Select the copy mode to be adjusted with the mode key.
3) Select a color to change the adjustment value with the color key.
4) Select the density level (point) to be adjusted with the scroll key.

| Item/Display | | Density level (Point) | Adjustment value range | Default |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 1 - 999 | 500 |
| B | POINT2 | Point 2 | 1 - 999 | 500 |
| C | POINT3 | Point 3 | 1 - 999 | 500 |
| D | POINT4 | Point 4 | 1 - 999 | 500 |
| E | POINT5 | Point 5 | 1 - 999 | 500 |
| F | POINT6 | Point 6 | 1 - 999 | 500 |
| G | POINT7 | Point 7 | 1 - 999 | 500 |
| H | POINT8 | Point 8 | 1 - 999 | 500 |
| I | POINT9 | Point 9 | 1 - 999 | 500 |
| J | POINT10 | Point 10 | 1 - 999 | 500 |
| K | POINT11 | Point 11 | 1 - 999 | 500 |
| L | POINT12 | Point 12 | 1 - 999 | 500 |
| M | POINT13 | Point 13 | 1 - 999 | 500 |
| N | POINT14 | Point 14 | 1 - 999 | 500 |
| O | POINT15 | Point 15 | 1 - 999 | 500 |
| P | POINT16 | Point 16 | 1 - 999 | 500 |
| Q | POINT17 | Point 17 | 1 - 999 | 500 |

5) 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 color densities selected with the color keys are collectively adjusted.

   That is, all the density levels (points) from the low density point to the high density point can be adjusted collectively.

   When [EXECUTE] key is pressed, the adjustment pattern is printed out.

   This adjustment pattern can be used to check the color balance and the density for each density level (point).

6) Make a copy and check the adjustment result.

   Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

   Repeat switching the adjustment simulation mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

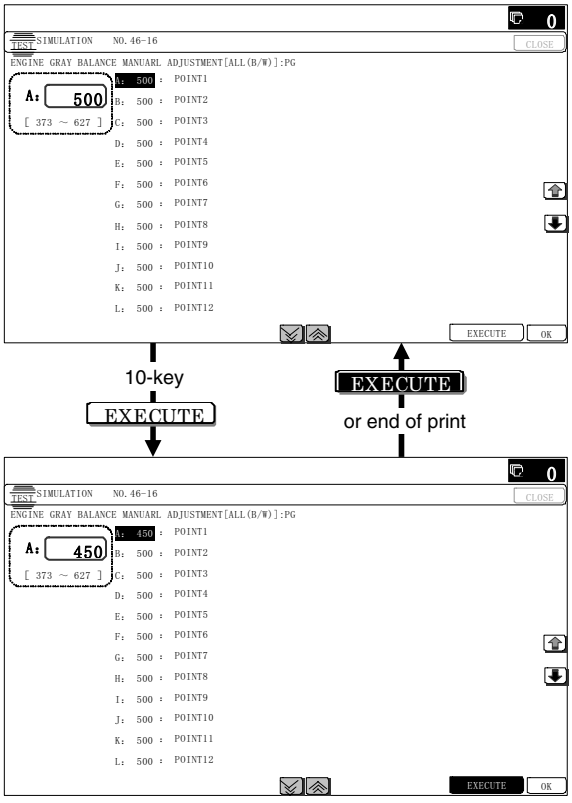
## 10-D (4) Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)

This adjustment is used to execute the density adjustment for each density level in each monochrome copy mode.

This adjustment must be performed in the following cases:

* When it is required to change the gamma in each copy mode.
* When there is request from the user.

1) Enter the SIM 46-16 mode.




2) Select the density level (point) to be adjusted with the scroll key.

| Item/Display | | Density level (Point) | Adjustment value range | Default |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 1 - 999 | 500 |
| B | POINT2 | Point 2 | 1 - 999 | 500 |
| C | POINT3 | Point 3 | 1 - 999 | 500 |
| D | POINT4 | Point 4 | 1 - 999 | 500 |
| E | POINT5 | Point 5 | 1 - 999 | 500 |
| F | POINT6 | Point 6 | 1 - 999 | 500 |
| G | POINT7 | Point 7 | 1 - 999 | 500 |
| H | POINT8 | Point 8 | 1 - 999 | 500 |
| I | POINT9 | Point 9 | 1 - 999 | 500 |
| J | POINT10 | Point 10 | 1 - 999 | 500 |
| K | POINT11 | Point 11 | 1 - 999 | 500 |
| L | POINT12 | Point 12 | 1 - 999 | 500 |
| M | POINT13 | Point 13 | 1 - 999 | 500 |
| N | POINT14 | Point 14 | 1 - 999 | 500 |
| O | POINT15 | Point 15 | 1 - 999 | 500 |
| P | POINT16 | Point 16 | 1 - 999 | 500 |
| Q | POINT17 | Point 17 | 1 - 999 | 500 |

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

When the a djustment value is incr eased, the density is increased. When the adjustment value is decrea sed, the density is decreased.

When the arrow key is pressed, the densit ies 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 i s pressed, the adjustment pattern is printed out.

The density at each density leve l (point) can be checked by referring to this printed adjustment pattern. However, it is more practical to make a copy and check it.

This adjustment pattern can be used to check the color balance and the density for each density level (point).

4) Make a copy and check the adjustment result.

Switch the adjustment simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

Repeat switching the adjustment simulatio n mode and the normal copy mode and changing the adjustment value and checking the copy until a satisfactory result is obtained.

## 10-D (5) Automatic monochrome (Copy/Scan/FAX) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)

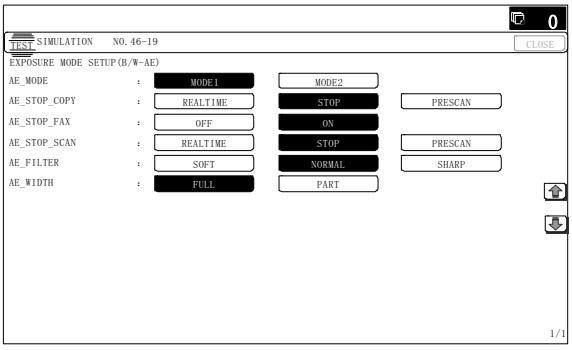
Use for setting the condition of read operation (Exposure) for document density in monochrome auto copy mode.

When a copy with correct density is not obtained by type of document, change the setting.

This setting is required in the following cases.

* When a proper density copy is not obtained in the monochrome automatic copy mode.
* When a document with images near its lead edge is copied.
* When a document with colored background is copied.

1) Enter the SIM 46-19 mode.




2) Set REALTIME, STOP or PRE-SCAN to adjustment item AE STOP COPY. For contents of each setting item, refer to below. Change the setting valu e of "AE WIDTH" item to "FULL" or "PART", in some cases.

| Display/Item | Content | Set value | Default |
|---|---|---|---|
| AE_MODE | Auto exposure mode | MODE1, MODE2 | MODE1 |
| AE_STOP_COPY | Auto B/W exposure Stop (for copy) | REALTIME/ STOP/PRESCAN | STOP |
| AE_STOP_FAX | Auto B/W exposure Stop (for FAX) | ON/OFF | ON |
| AE_STOP_SCAN | Auto B/W exposure Stop (for scanner) | REALTIME/ STOP/PRESCAN | STOP |
| AE_FILTER | Auto exposure filter setting | SOFT | NORMAL |
| | | NORMAL | |
| | | SHARP | |
| AE_WIDTH | AE exposure width | FULL | FULL |
| | | PART | |

**Note**

MODE1: 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 accord ing to the density of that part. (The output image density is constant at whole area.)

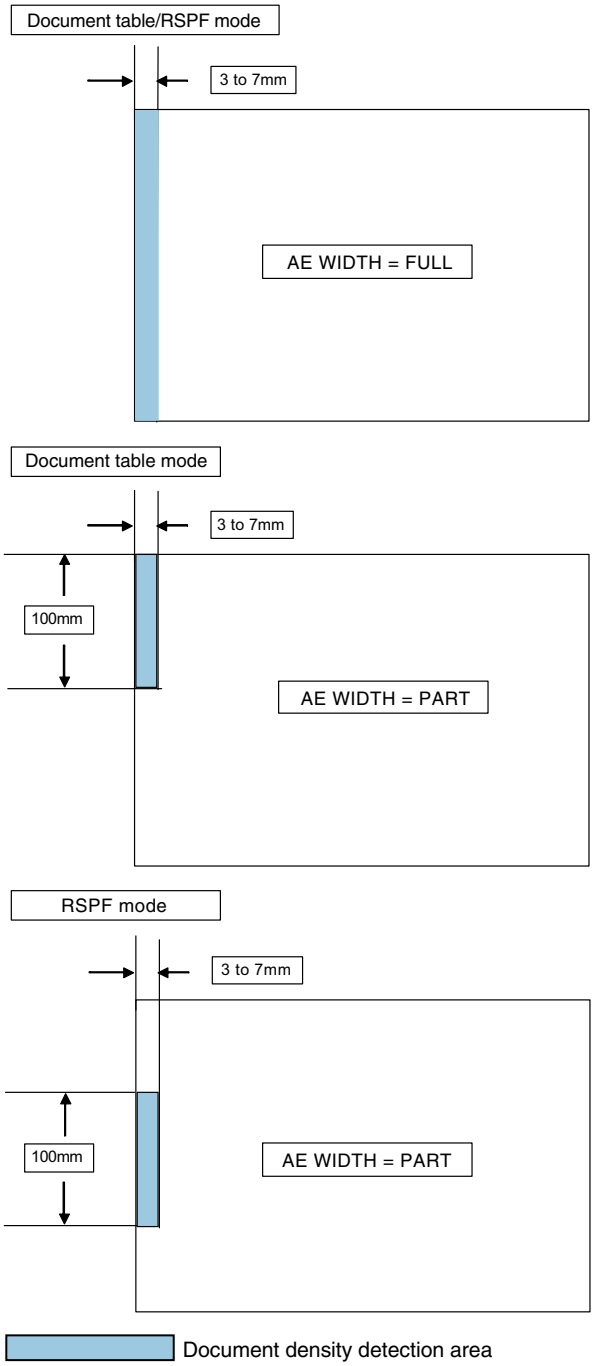
REALTIME:
Reads the density of wid th of the document one by one, decides the output image density accord ing to the density of each part of the document. (The output image density may be not const ant at whole area.)

PRESCAN:
Once the densities on the document surface are scanned, the output image density is deter mined according to th e average of the scanned densities. (T he output image den sity is even for all the surface.)

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

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

**Operation in monochrome auto copy mode:**
When the density of the document of the read area is light, output image density is increased by control. When the density of the document of the read area is dark, output image density is decreased by control.



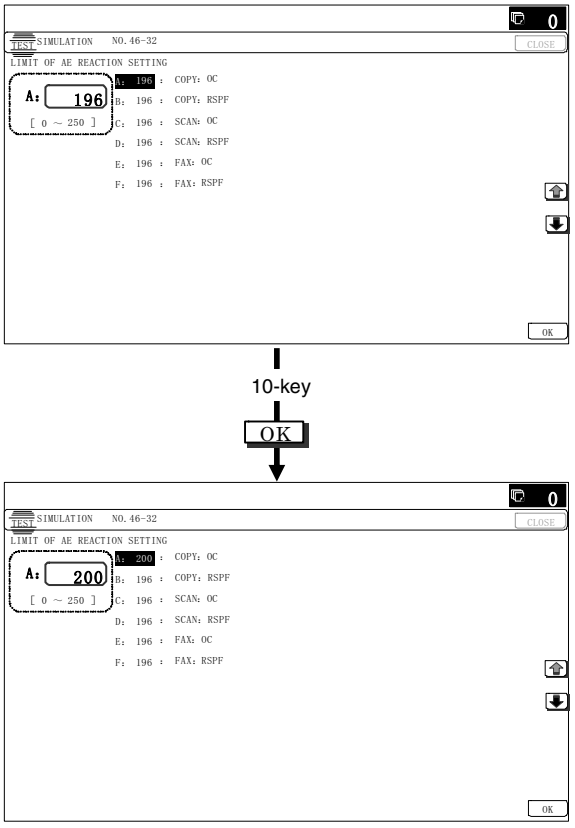

## 10-D (6) Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section)

Use for the reproducibility adjustment of document backgr ound density in monochrome auto copy mode.

This adjustment is required in the following cases.

* When there is a desire no t to reproduce the background of the document. When there is a desire to repr oduce the low density image of the document.
* When there is request from the user.

1) Enter the SIM 46-32 mode.




2) Select the adjustment mode with the scroll key.
3) Enter the adjustment value with 10-key and press [OK] key.
   When the adjustment value is increased, r eproducibility 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.

| Display/Item | | Content | Set value | Default |
|---|---|---|---|---|
| A | COPY : OC | Copy mode (for OC) | 1 - 250 | 196 |
| B | COPY : RSPF | Copy mode (for RSPF) | 1 - 250 | 196 |
| C | SCAN : OC | Scanner mode (for OC) | 1 - 250 | 196 |
| D | SCAN : RSPF | Scanner mode (for RSPF) | 1 - 250 | 196 |
| E | FAX : OC | FAX mode (for OC) | 1 - 250 | 196 |
| F | FAX : RSPF | FAX mode (for RSPF) | 1 - 250 | 196 |

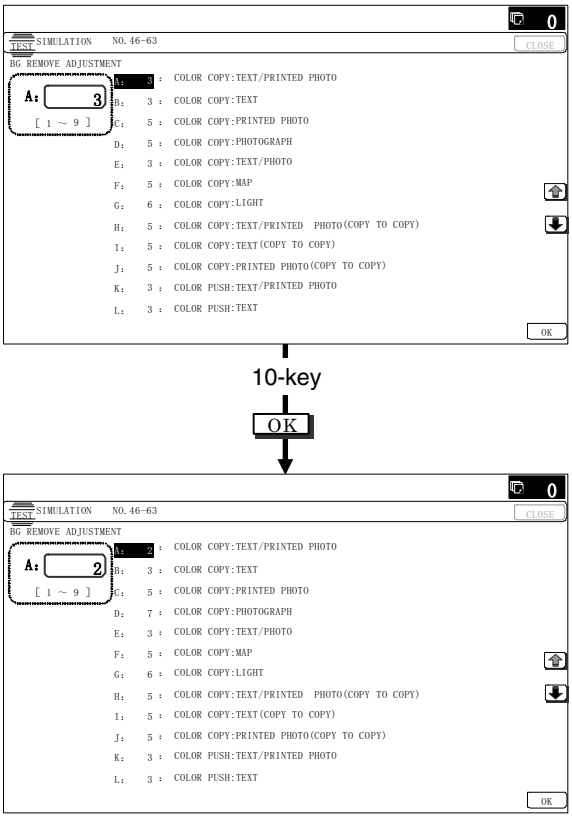
## 10-D (7) Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)

This adjustment is used to adjust the image density in the low density area in the copy/scanner mode.

This adjustment is required in the following cases.

* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
* When there is request from the user.

1) Enter the SIM 46-63 mode.




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

| Display/Item | | Content | Set value | Default |
|---|---|---|---|---|
| A | COLOR COPY : TEXT/PRINTED PHOTO | Text print (color copy) | 1 - 9 | 3 |
| B | COLOR COPY : TEXT | Text (color copy) | 1 - 9 | 3 |
| C | COLOR COPY : PRINTED PHOTO | Printed photo (color copy) | 1 - 9 | 5 |
| D | COLOR COPY : PHOTOGRAPH | Photograph (color copy) | 1 - 9 | 5 |
| E | COLOR COPY : TEXT/PHOTO | Text/Photograph (color copy) | 1 - 9 | 3 |
| F | COLOR COPY : MAP | Map (color copy) | 1 - 9 | 5 |
| G | COLOR COPY : LIGHT | Light document (color copy) | 1 - 9 | 6 |
| H | COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY) | Copy document, Text print (color copy) | 1 - 9 | 5 |
| I | COLOR COPY : TEXT (COPY TO COPY) | Copy document, Text (color copy) | 1 - 9 | 5 |
| J | COLOR COPY : PRINTED PHOTO (COPY TO COPY) | Copy document, Printed photo (color copy) | 1 - 9 | 5 |
| K | COLOR PUSH:TEXT/ PRINTED PHOTO | Text print (color PUSH) | 1 - 9 | 3 |
| L | COLOR PUSH:TEXT | Text (color PUSH) | 1 - 9 | 3 |
| M | COLOR PUSH: PRINTED PHOTO | Printed photo (color PUSH) | 1 - 9 | 5 |
| N | COLOR PUSH: PHOTOGRAPH | Photograph (color PUSH) | 1 - 9 | 5 |
| O | COLOR PUSH: TEXT/PHOTO | Text/Photograph (color PUSH) | 1 - 9 | 3 |
| P | COLOR PUSH: MAP | Map (color PUSH) | 1 - 9 | 5 |

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

When the adjustment value is increased, r eproducibility 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.

## 10-D (8) Color copy, text, line image reproduction adjustment (edge gamma, density adjustment) (Text, Map mode) (No need to adjust normally)

**Adjustment 1**

By changing Text/Printed Photo, Text/Photograph, automatic copy mode Text, line image edge se ction gamma and the density, the reproducibility of text and line profile can be varied optionally.

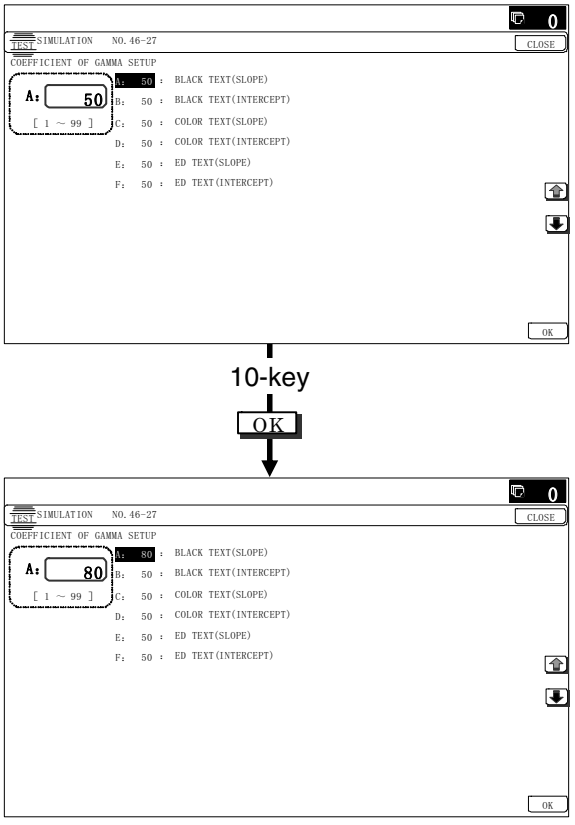
With this adjustment, the density and the thickness of fine text and lines can be varied.

Check the result of this adjustment by text/printed photo copy mode (manual).

This adjustment is required in the following cases.

* When the rep roducibility of text and line copy image is to be changed.
* When there is request from the user.

1) Enter the SIM 46-27 mode.



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

| | Display/Item (Copy mode) | Content | Adjustment range | Default |
|---|---|---|---|---|
| A | BLACK TEXT (SLOPE) | Black character edge gamma skew adjustment | 1 - 99 | 50 |
| B | BLACK TEXT (INTERCEPT) | Black character edge density adjustment | 1 - 99 | 50 |
| C | COLOR TEXT (SLOPE)*1 | Color character edge gamma skew adjustment | 1 - 99 | 50 |
| D | COLOR TEXT (INTERCEPT) | Color character edge density adjustment | 1 - 99 | 50 |
| E | ED TEXT (SLOPE) | Text/Map mode gamma adjustment (Text/Map mode) | 1 - 99 | 50 |
| F | ED TEXT (INTERCEPT) | Text/Map mode density adjustment (Text/Map mode) | 1 - 99 | 50 |

3) Enter the adjustment value with 10-key.

When the adjustment values of item A and C are changed, the gamma at the line edge section is changed.

When the adjustment value is increased, the image contrast of character edge and line edge is increased. When the adjustment value is decreased, the image contrast of character and line edge is decreased.

When the adjustment value of the adjustment item B and D are increased, the image density at the line edge section is increased, and vice versa.

4) Press [OK] key.

5) Make a copy in mono chrome text/printed photo copy mode (manual), check the copy.

When checking, use a copy of the document with a thin character and line image.

If a satisfactory result is not obtained, return to the SIM 46-27 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

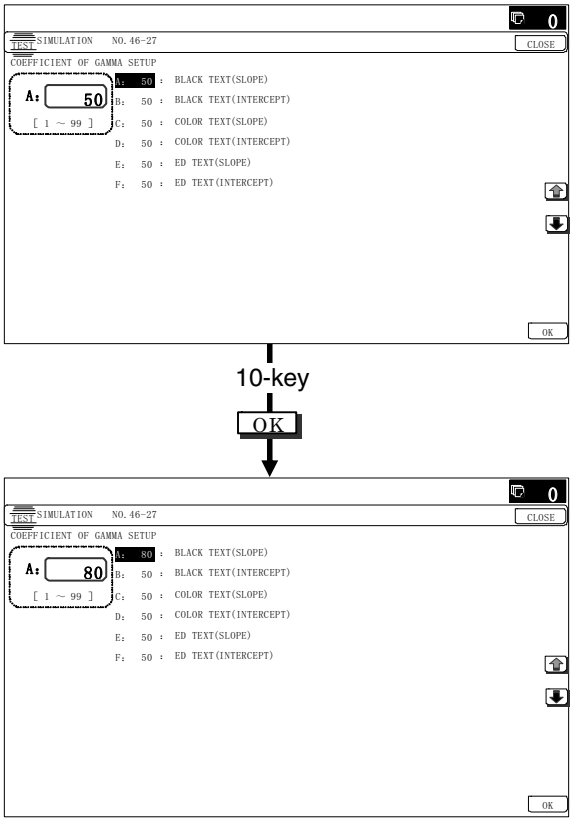
**Adjustment 2**

This adjustment is used to change the gamma and the density in the Text/Map copy mode.

This adjustment is required in the following cases.

* To change the contrast and the density of the Text/Map copy mode images.
* When there is request from the user.

1) Enter the SIM 46-27 mode.




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

| | Display/Item (Copy mode) | Content | Adjustment range | Default |
|---|---|---|---|---|
| A | BLACK TEXT (SLOPE) | Black character edge gamma skew adjustment | 1 - 99 | 50 |
| B | BLACK TEXT (INTERCEPT) | Black character edge density adjustment | 1 - 99 | 50 |
| C | COLOR TEXT (SLOPE)*1 | Color character edge gamma skew adjustment | 1 - 99 | 50 |
| D | COLOR TEXT (INTERCEPT) | Color character edge density adjustment | 1 - 99 | 50 |
| E | ED TEXT (SLOPE) | Text/Map mode gamma adjustment (Text/Map mode) | 1 - 99 | 50 |
| F | ED TEXT (INTERCEPT) | Text/Map mode density adjustment (Text/Map mode) | 1 - 99 | 50 |

3) Enter the adjustment value with 10-key.

When the adjustment value of the adjustment item E is changed, the gamma (contrast) is changed.

When the adjustment value is incr eased, the contrast is increased, and vice versa.

When the adjustment value of the adjustment item F is increased, the image density is increased, and vice versa.

4) Press [OK] key.

5) Make a copy in the Text/Map copy mode (manual), and check the output print.

If a satisfactory result is not obtained, use SIM46-27 to change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

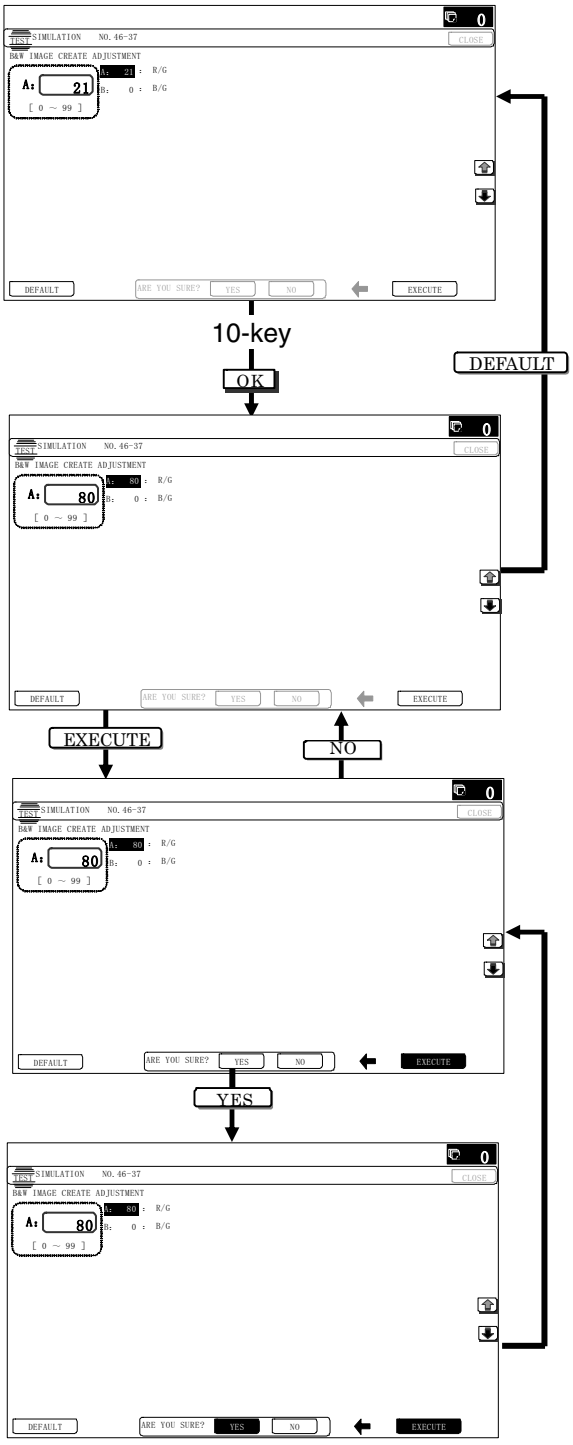
## 10-D (9) Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally)

Use to adjust the reproducibility for the red image and the yellow image when printing color document that included the red/yellow image in monochrome copy mode.

This adjustment is required in the following cases.

* When there is desire to change reproducibility of yellow/red image in case of making a color copy of the color document in monochrome copy mode.
* When there is request from the user.

1) Enter the SIM 46-37 mode.




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

| Display/Item (Copy mode) | | Content | Adjustment range | Default |
|---|---|---|---|---|
| A | R/G | Gray making setting (R/G) | 0 - 99 | 21 |
| B | B/G | Gray making setting (B/G) | 0 - 99 | 0 |

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 red image is increased. When the adjustment value is decreased, copy density of red image is decreased.

4) Press [OK] key.

5) Make a copy in monochrome text/printed photo copy mode (manual), check the copy.

If a satisfactory result is not obtained, return to the SIM 46-37 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

## 10-D (10) Color copy mode dark area gradation (black component quantity) adjustment (No need to adjust normally)

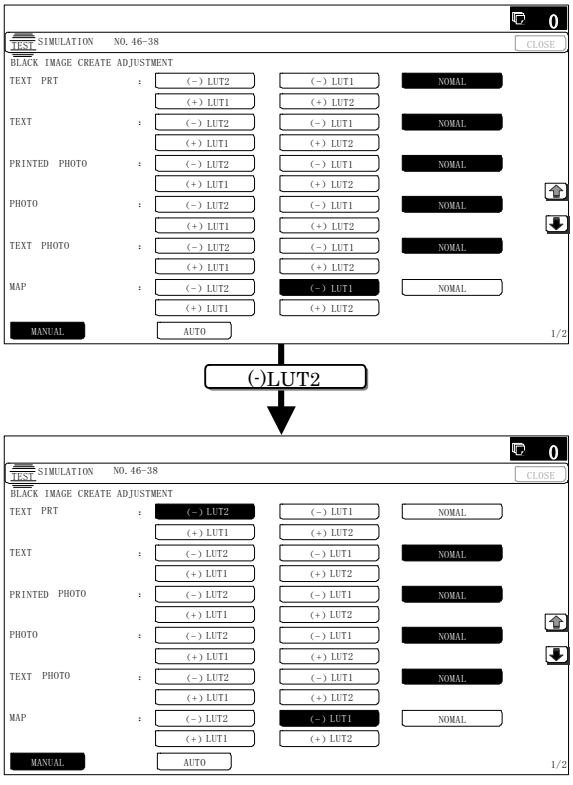
Use to adjust the black ingredient amount in the color copy mode. (except character and line image)

As a result of this adjustment, the gradation of the shade part changes.

This adjustment is required in the following cases.

* When reproduction as solid of black image is required.
* To make the black background and the dark area darker
* When change of gradation of the shade part is required.
* When there is request from the user.

1) Enter the SIM 46-38 mode.



2) Select the AUTO MODE or the MANUAL MODE with the mode key.
3) Select the mode to be adjusted with the scroll key.

| Display/Item (Copy mode) | | Select button | Content | Default |
|---|---|---|---|---|
| MANUAL | TEXT PRT | (-) LUT2 | Text print (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | TEXT | (-) LUT2 | Text (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | PRINTED PHOTO | (-) LUT2 | Printed photo (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | PHOTO | (-) LUT2 | Photograph (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | TEXT PHOTO | (-) LUT2 | Text/ Photograph (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | MAP | (-) LUT2 | Map (Manual) | (+) LUT1 |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | CP ORG/ TEXT PRT | (-) LUT2 | Copy document/ Text printed (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | COPY ORG/ TEXT | (-) LUT2 | Copy document/ Text (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | COPY ORG/ PHOTO | (-) LUT2 | Copy document/ Printed photo (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | LIGHT ORIGINAL | (-) LUT2 | Light document (Manual) | (+) LUT1 |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |

| Display/Item (Copy mode) | | Select button | Content | Default |
|---|---|---|---|---|
| AUTO | AUTO0 | (-) LUT2 | Auto mode judgment 0 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO1 | (-) LUT2 | Auto mode judgment 1 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO2 | (-) LUT2 | Auto mode judgment 2 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO3 | (-) LUT2 | Auto mode judgment 3 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO4 | (-) LUT2 | Auto mode judgment 4 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO5 | (-) LUT2 | Auto mode judgment 5 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO6 | (-) LUT2 | Auto mode judgment 6 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |

4) Press the black ingredient amount select button.
   When reproduction as solid of black image is required:
   Selects + button
   When there is desire to darken copy of black image:
   Selects + button
   When a dark color image is reproduced in the black:
   Selects - button
5) Make a copy in color copy mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-38 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

## 10-D (11) Color (Copy/Scan) mode sharpness adjustment (No need to adjust normally)

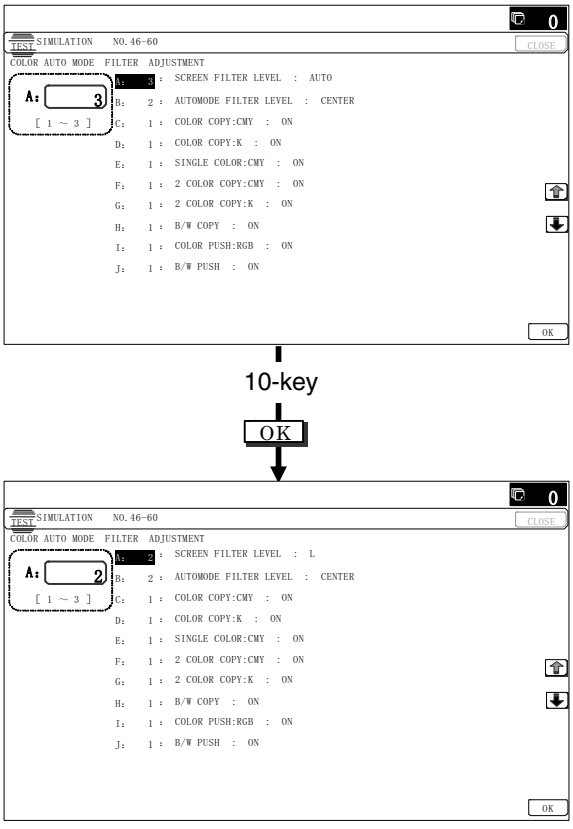
Use for sharpness adjustment of the high density image in color copy mode.

This adjustment changes smoothness (asperity) in the image shade part.

This adjustment is required in the following cases.

* When changing the sharpness of copy image in copy mode. (obtain crispy image) (decreases moire)
* When there is desire to improving smoothness in the image shade part (for decrease of asperity)
* To make the black background and the dark area darker.
* To reproduce the gradation change in the dark area.
* When there is request from the user.

1) Enter the SIM 46-60 mode.




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

| Display/Item | | | Content | | Setting range | Default | NOTE |
|---|---|---|---|---|---|---|---|
| A | SCREEN FILTER LEVEL | H | Sharpness (filter) adjustment of dot pattern image in auto copy mode | Strong emphasis | 1 | 3 (Auto) | Apply to auto copy mode only |
| | | L | | Soft emphasis | 2 | | |
| | | AUTO | | Auto | 3 | | |
| B | AUTOMODE FILTER LEVEL | SOFT | Sharpness (filter) adjustment for the auto copy mode | SOFT | 1 | 2 (CENTER) | |
| | | CENTER | | CENTER | 2 | | |
| | | HIGH | | HIGH | 3 | | |
| C | COLOR COPY: CMY | OFF | Soft filter applying setting to C, M, Y image in color copy mode | OFF | 0 | 1 (ON) | Available for the high density image except text and line image<br><br>When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases) |
| | | ON | | ON | 1 | | |
| D | COLOR COPY:K | OFF | Soft filter applying setting to K image in color copy mode | OFF | 0 | 1 (ON) | |
| | | ON | | ON | 1 | | |
| E | SINGLE COLOD: CMY | OFF | Soft filter applying setting to C, M, Y image in single color copy mode | OFF | 0 | 1 (ON) | |
| | | ON | | ON | 1 | | |
| F | 2 COLOR COPY: CMY | OFF | Soft filter applying setting to C, M, Y image in 2-color copy mode | OFF | 0 | 1 (ON) | |
| | | ON | | ON | 1 | | |
| G | 2 COLOR COPY: K | OFF | Soft filter applying setting to K image in color copy mode | OFF | 0 | 1 (ON) | |
| | | ON | | ON | 1 | | |
| H | B/W COPY | OFF | Soft filter applying setting in monochrome copy mode | OFF | 0 | 1 (ON) | |
| | | ON | | ON | 1 | | |
| I | COLOR PUSH: RGB | OFF | Soft filter applying setting to image in push scan color mode | OFF | 0 | 1 (ON) | |
| | | ON | | ON | 1 | | |
| J | B/W PUSH | OFF | Soft filter applying setting to image in push scan monochrome mode | OFF | 0 | 1(ON) | |
| | | ON | | ON | 1 | | |

3) Input numeric value corresponding to sharpness level (filter process mode).

When selecting AUTO, filter is selected according to dot pattern state automatically and adjusts sharpness.

• Adjustment item A:

Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.

- Adjustment item B:

  Select HIGH to obtain clear images. Select SOFT to reduce moire.

- Adjustment item C - J:

  When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases)

4) Press [OK] key.
5) Make a copy and check the copy image.

If a satisfactory result is not obtained, return to the SIM 46-60 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

## 10-D (12)
## Copy high density image density reproduction setting (Normally unnecessary to the setting change)

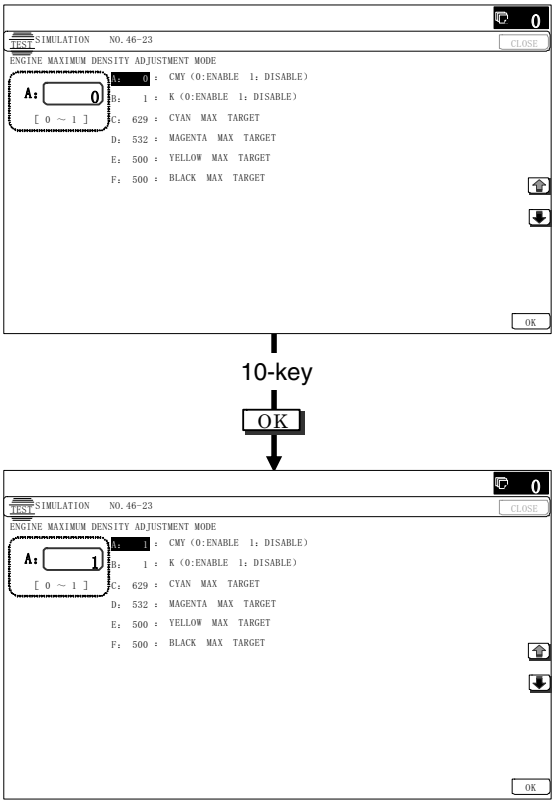
If a tone gap occurs on part of high density in copy mode, or if there is necessity to increase the density of the p art of high density, change the setting.

This setting is normally not r equired. When, howe ver, there are case of following, change the setting.

* When a tone gap occurs on part of high density.
* When there is a necessity to incr ease the density of the part of high density.
* When there is request from the user.

**a. Adjustment procedure**

1) Enter the SIM 46-23 mode.




2) Select the item A, B with the scroll key.

| Display/Item | | Content | | Setting range | Default |
|---|---|---|---|---|---|
| A | CMY (0:ENABLE 1:DISABLE) | 0 | CMY engine maximum density correction mode Enable | 0 - 1 | 0 |
| | | 1 | CMY engine maximum density correction mode Disable | | |
| B | K (0: ENABLE 1: DISABLE) | 0 | K engine maximum density correction mode Enable | 0 - 1 | 1 |
| | | 1 | K engine maximum density correction mode DIsable | | |
| C | CYAN MAX TARGET | Scanner target value for CYAN maximum density correction | | 0 - 999 | 500 |
| D | MAGENTA MAX TARGET | Scanner target value for MAGENTA maximum density correction | | 0 - 999 | 500 |
| E | YELLOW MAX TARGET | Scanner target value for YELLOW maximum density correction | | 0 - 999 | 500 |
| F | BLACK MAX TARGET | Scanner target value for BLACK maximum density correction | | 0 - 999 | 500 |

* If a tone gap occurs on part of high density, set 0 to item A and B
  The density of high density p art decreases. Howe ver, the tone gap is better.
* In case of more increase of the density on high density part, set 1 to item A and B.
  The tone gap may occur in high density part.

Important

Do not change the setting values of item C, D, E and F. If these values are changed, density of the high density part is changed.

If these values are changed, be sure to execute the copy color balance density adjustment. (Auto adjustment)

## 10-D (13) Copy color balance adjustment (Single color copy mode) (No need to adjust normally)

This adjustment is used to set the color balance and the density in the single color copy mode to the user's request.

The adjustment is made by changing Y, M, C components of each color.

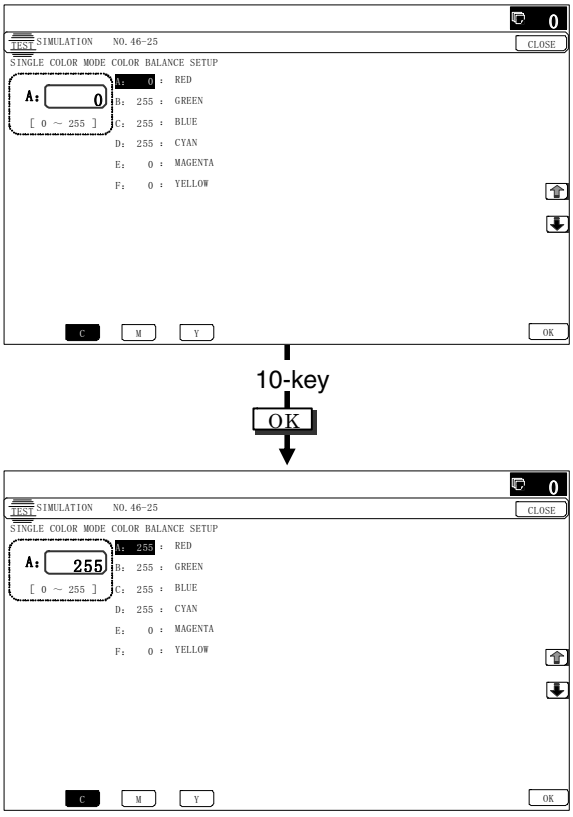
This adjustment is not required normally, but executed when there is a request from the user.

When the default adjustment value is changed, this adjustment is required in the following cases.

* When it is required to change the color balance in the single color copy mode.
* When there is request from the user.

**a. Adjustment procedure**

1) Enter the SIM 46-25 mode.




2) Select the color to be adjusted with the scroll key.
3) Select the color (YMC) to be adjusted with the color key.
4) Enter the adjustment value with 10-key.

| Display/Item | | Adjustment range | Default | | |
|---|---|---|---|---|---|
| | | | C | M | Y |
| A | RED | 0 - 255 | 0 | 255 | 200 |
| B | GREEN | 0 - 255 | 255 | 0 | 255 |
| C | BLUE | 0 - 255 | 255 | 200 | 0 |
| D | YELLOW | 0 - 255 | 0 | 0 | 255 |
| E | MAGENTA | 0 - 255 | 0 | 255 | 0 |
| F | CYAN | 0 - 255 | 255 | 0 | 0 |

5) Press [OK] key.
6) Make a copy in the single color copy mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-25 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

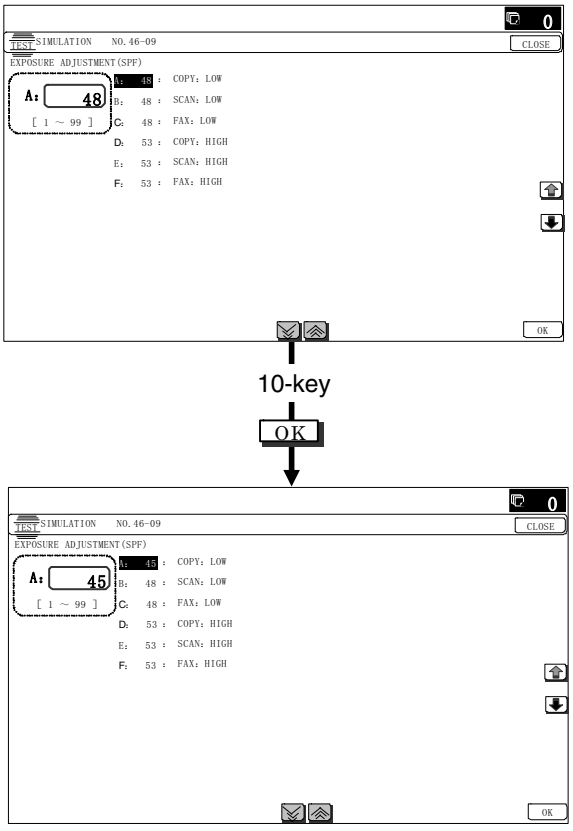
## 10-D (14) RSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally)

This setting is normally not required, however, in the following cases, make changes to the setting:

* When copy in RSPF mode differs from copy in document table mode.
* When copy density in RSPF mode is low or too high.
* When the RSPF unit is replaced.
* When the RSPF unit is disassembled.
* The CCD unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

**a. Adjustment procedure**

1) Enter the SIM 46-9 mode.




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

When adjusting density on low density part, select "A (COPY LOW)". When adjusting density on high density part, select "D (COPY HIGH)".

| Item/Display | | Content | Setting range | Default |
|---|---|---|---|---|
| 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 | PSPF 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 (Low density side) | 1 - 99 | 53 |
| F | FAX : HIGH | RSPF FAX mode exposure adjustment (High density side) | 1 - 99 | 53 |

3) Enter the adjustment value with 10-key.

In case of increase of image density, input large numeric value. Or in case of diluting the image density, input small numeric value.

4) Press [OK] key.

5) Make a copy in the RSPF mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-9 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

## 10-D (15) Automatic color balance adjustment by the user (Copy color balance automatic adjustment ENABLE setting and adjustment)

### a. General

In the user program mode, the user can execute the auto color calibration (auto adjustment of the copy color balance and density).

This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

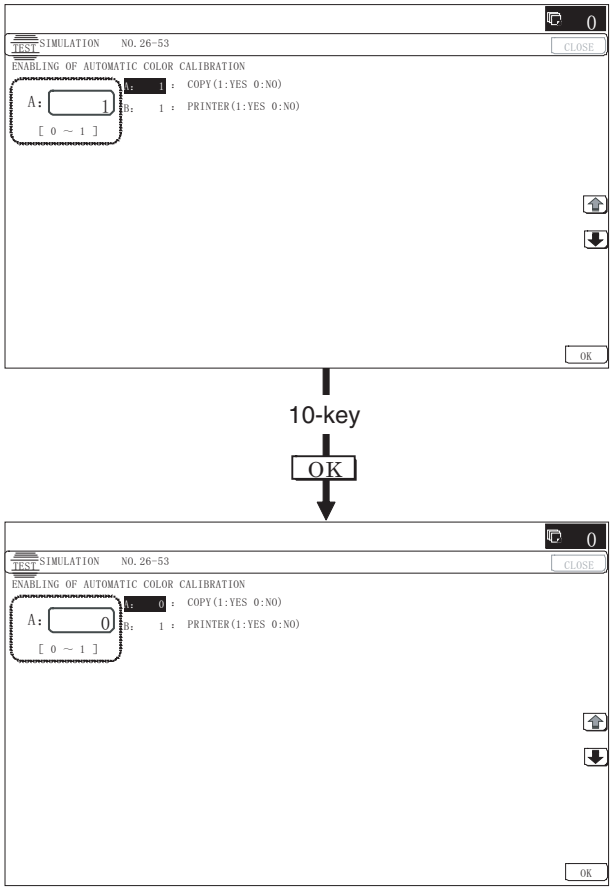
Important

This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy color balance and density and the user's operational ability are judged adequate enough to execute the adjustment.

When set to enable, operation procedures must be fully explained to the user.

### b. Setting procedure

1) Enter the SIM 26-53 mode.




2) Select ENABLE or DISABLE with 10-key.

When disabling, set to "0" (NO). When enabling, set to "1" (Yes).

3) Press [OK] key.

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

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

Important

This adjustment is based on the service target color balance set with SIM 63-7 and SIM 63-8. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.

2) Enter the copy setting mode.

3) Press the auto color calibration key.

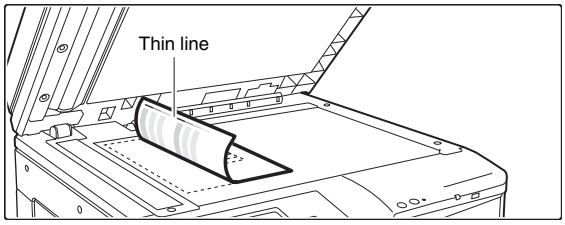
4) Press [EXECUTE] key.

The color patch image (adjustment pattern) is printed out.

5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table.

Set the patch image so that the thin line is on the left side as shown in the figure.

At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).




6) Press [EXECUTE] key, and the copy color balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

To execute the printer color balance adjustment successively, perform the procedures same as the above.

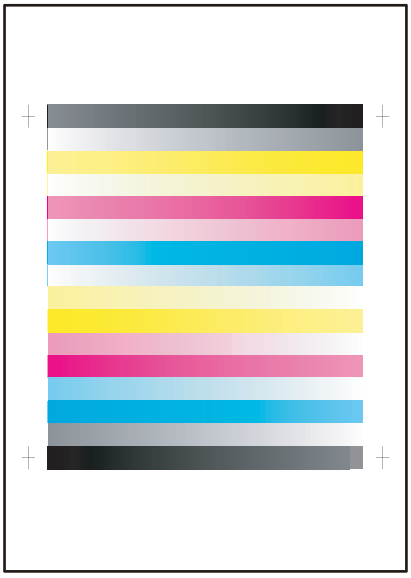
## 10-D (16) Copy gamma, color balance adjustment for each dither (Automatic adjustment)

**a. General**

This simulation is used to improve the image quality in a certain mode. (Refer to the list in procedure 6.)

**b. Adjustment procedures**

1) Enter the SIM46-54 mode.
2) Press [EXECUTE] key.
   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
   The color patch image (adjustment pattern) is printed.
3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).

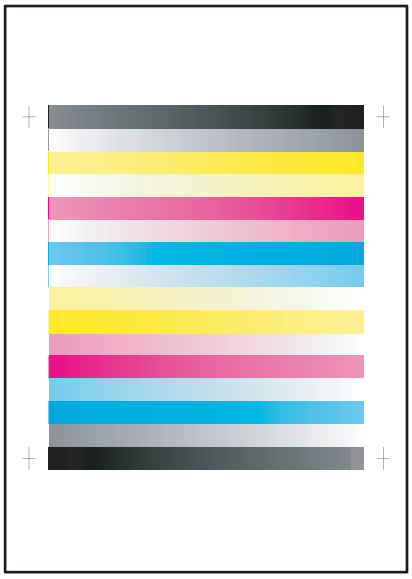


4) Press [EXECUTE] key.
   The color balance and the density are automatically adjusted.
   The adjustment pattern is printed out. Check it for any abnormality.
5) Press [OK] key.
   The list of the adjustment items (for each dither) is displayed.
6) Select an adjustment item (for each dither).

| Select item (Mode/ Image) | Content |
|---|---|
| Heavy Paper*1 | Adjustment item to improve the color balance in the heavy paper mode |
| Black Edge | Adjustment item (K) to improve the reproduction of lines, text density, and thickness |
| Color Edge | Adjustment item (Color) to improve the reproduction of lines, text density, and thickness |
| B/W | Adjustment item to improve the density and gradation in the monochrome text mode and the map mode. |
| Color Ed | Adjustment item to improve the color balance in the text mode and the map mode. |
| B/W 600dpi | Adjustment item to improve the density and gradation in the monochrome printed photo mode and the photography mode. |

*1: When performing adjustments in the heavy paper mode, load paper in the manual paper feed tray.

7) Press [EXECUTE] key.
   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
   The patch image (adjustment pattern) is printed out.
   In the monochrome mode, only the monochrome pattern is printed.
8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



9) Press [EXECUTE] key.
   The color balance and the density are automatically adjusted, and the machine goes to the state of procedure 6).
   To complete the adjustment and enable the adjustment result, press [OK] key.
10) Make a copy, and check the copy image quality.
    (Refer to the item of the printer color balance and density check.)

**Note**

Use SIM46-52 to reset the adjustment values to the default values.

## 10-E Printer image quality adjustment (Basic adjustment)

**Requisite condition before execution of the printer color balance/density adjustment**

Before execution of the printer color balance/density adjustment, the copy color balance/density adjustment must have been completed properly.

**This adjustment is required in the following cases.**

* Basically same as when the copy color balance/density adjustment is required.
* After the copy color balance/density adjustment.

## 10-E (1) Printer color balance adjustment (Automatic adjustment)

**a. General**

The color balance adjustment (auto adjustment) is used to adjust the print density of each color (Cyan, Magenta, Yellow, Black) automatically with SIM 67-24 or the user program.

When this adjustment is executed, the color balance adjustments of all the print modes are revised.

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

1) Auto color balance adjustment by the serviceman (SIM 67-24 is used.)
2) Auto color balance adjustment by the user (The user program mode is used.) (The color balance target is the service target.)

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

   If the print color balance is lost for some reasons, the user can use this color balance adjustment to recover the balance.

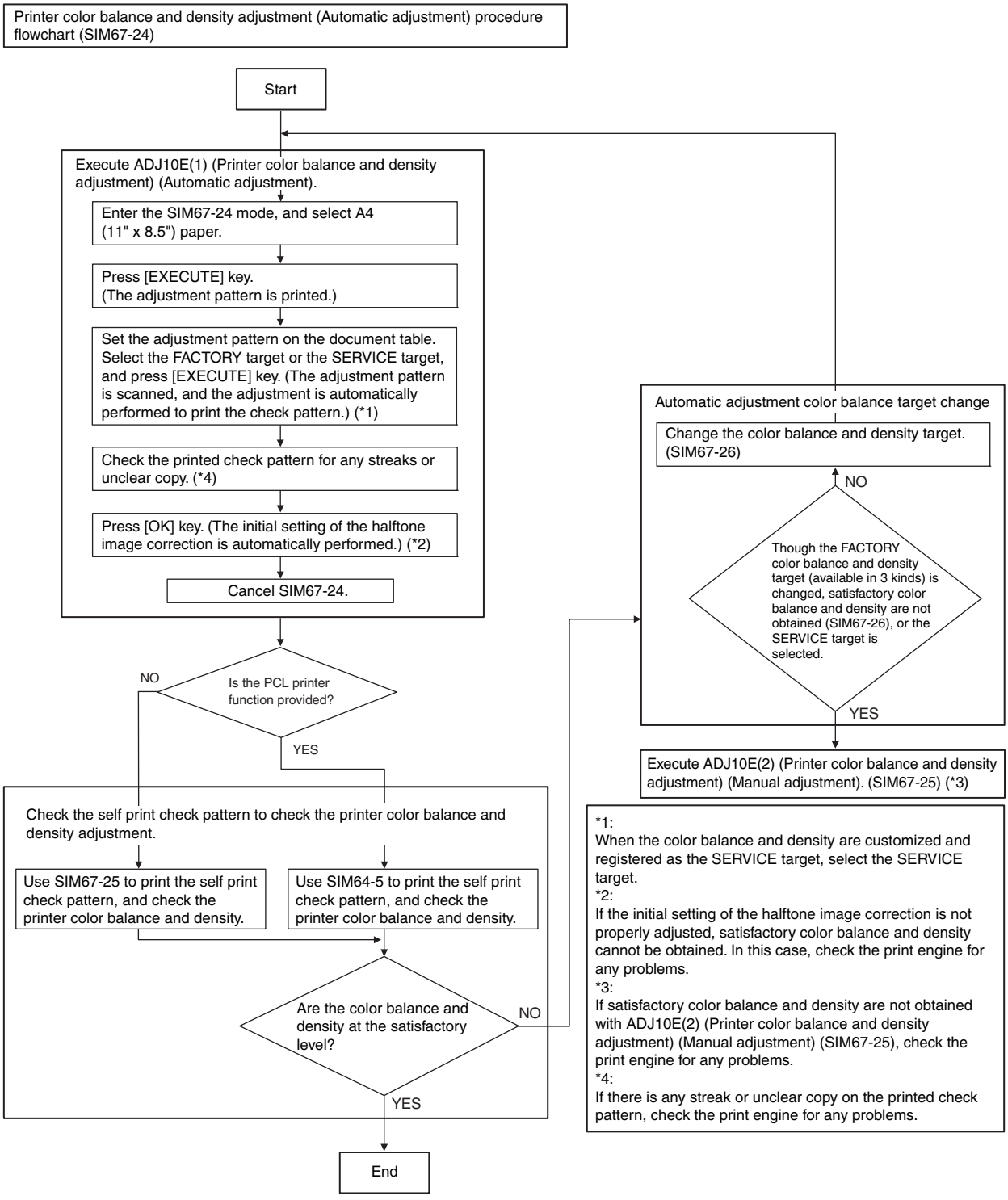
   When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

   On the other hand, the auto color balance adjustment by the serviceman functions to recover the normal color balance though the machine condition is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal color balance.

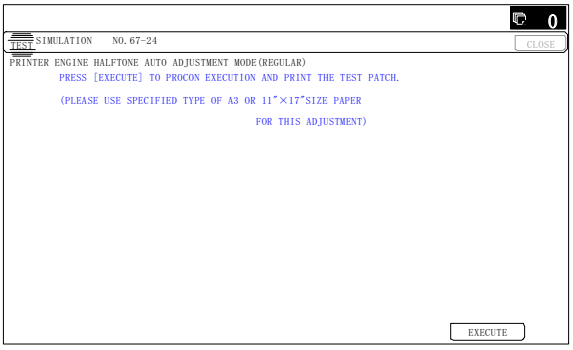
   To perform the adjustment, the above difference must be fully understood.

**b. Adjustment procedure**

(Auto color balance adjustment by the serviceman)



1) Enter the SIM 67-24 mode.

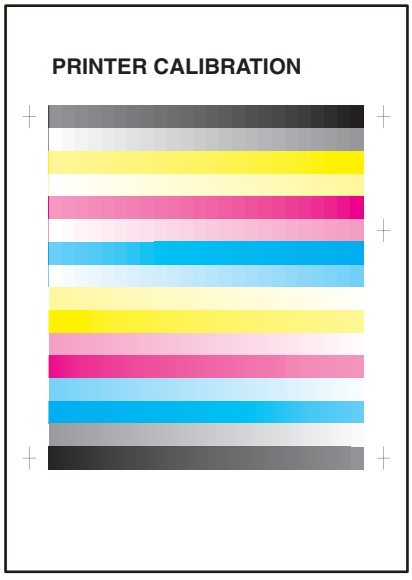



2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

   The color patch image (adjustment pattern) is printed out.

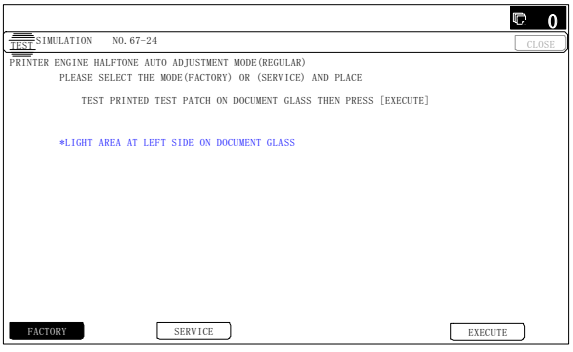
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.

   Place the printed color patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern) paper.

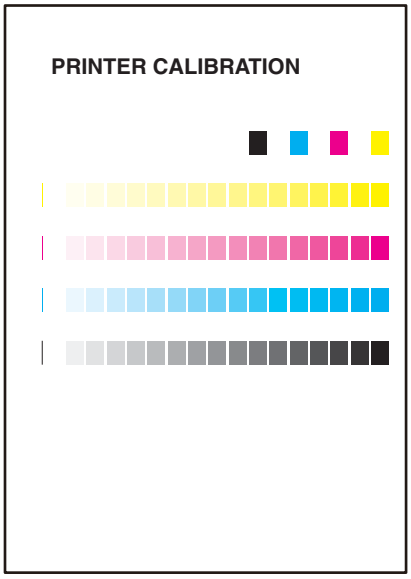



4) Select [FACTORY] key, and press [EXECUTE] key.

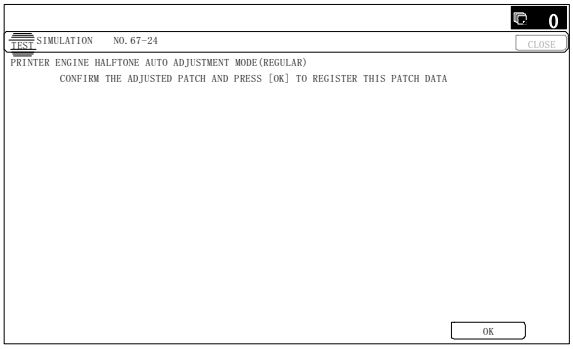
   When the color balance is customized with the manual color balance adjustment ( SIM 67-25) according to the user's request and the color balance is registered as the service target with SIM 67-27, if the color balance is adjusted to that color balance, select the service target.




The copy color balance adjustment is automatically executed and prints the color balance check patch image. Wait until the operation panel shown in the procedure 5) is displayed.




5) Press [OK] key on the operation panel.

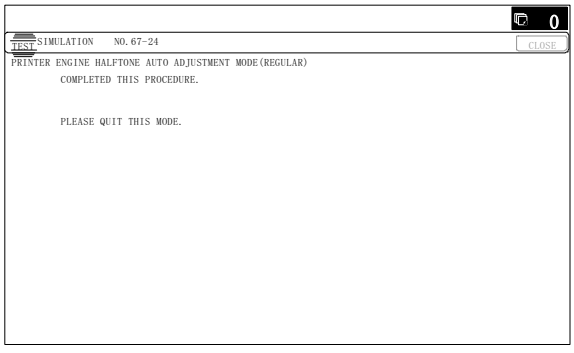



**Note**

After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE" is displayed. This operation takes several minutes.

After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.

Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.




After completion of the operation, the simulation is canceled.

6) Check the color balance and density.

(Refer to the item of the printer color balance and density check.)

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 67-26 and repeat the procedures from 1).

If a satisfactory result on the color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 10E (2)).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 10E (2)).

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

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

## 10-E (2) Printer color balance adjustment (Manual adjustment)

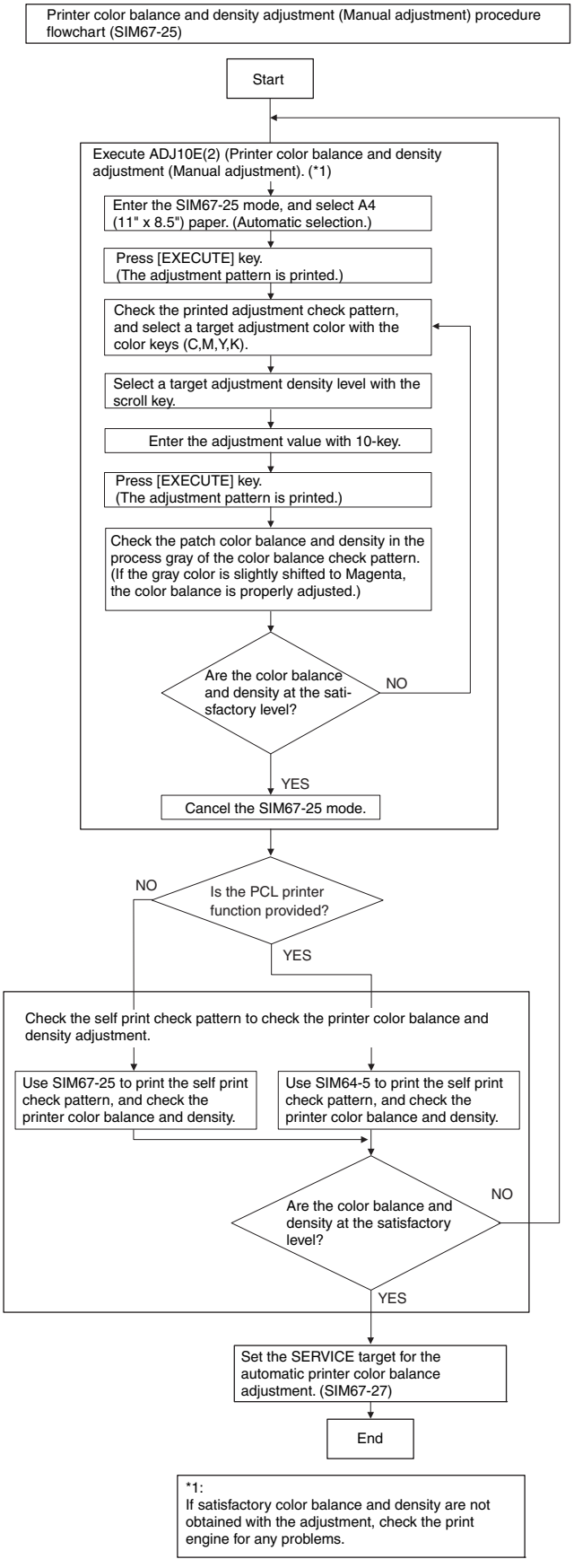
**a. General**

The color balance adjustment (Manual adjustment) is used to adjust the printer density of C, M, Y and K. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing (customizing) the color balance.

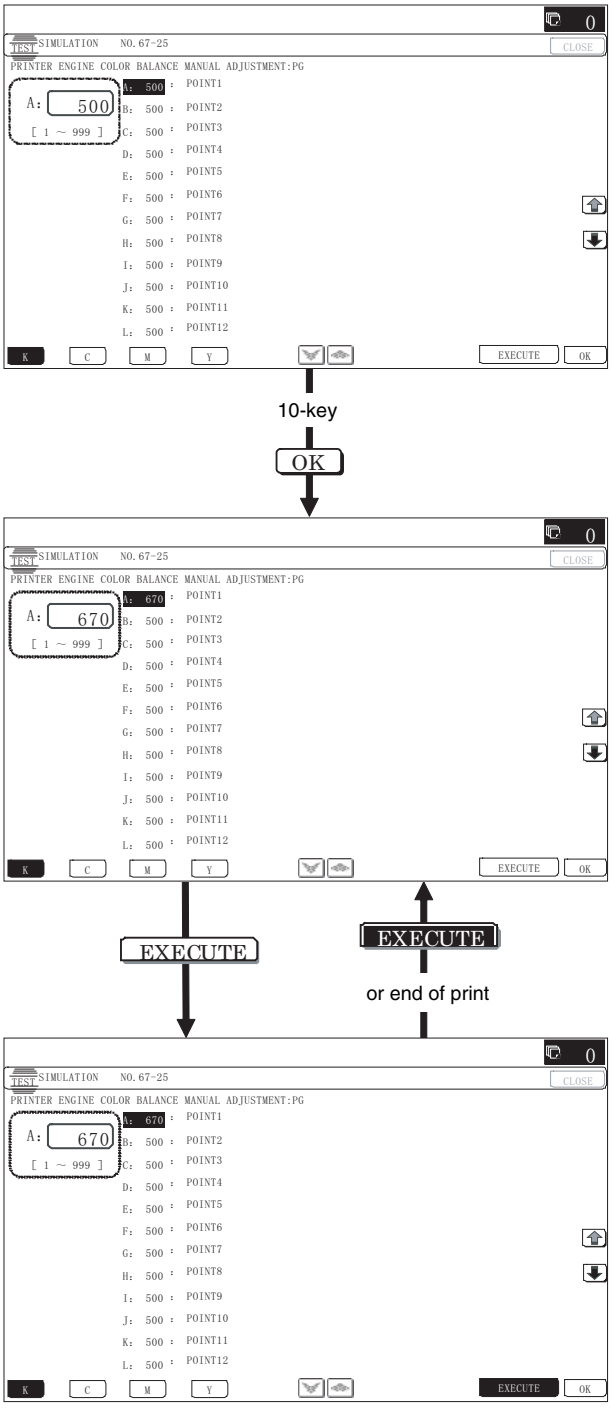
In this manual adjustment, adjust only the color patch which could not adjusted properly in the automatic adjustment.

If the color balance is improper, execute the automatic color balance adjustment in advance, and execute this adjustment for better efficiency.

**b. Adjustment procedure**



1) Enter the SIM 67-25 mode.

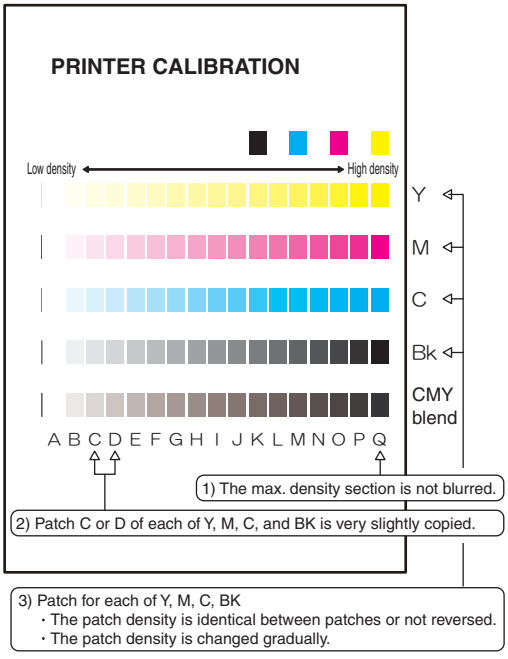



2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

The color balance adjustment pattern is printed.

3) Check that the following specification is satisfied or the color balance is satisfactory.

If not, execute the following procedures.




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

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

When, however, the color balance is adjusted according to a request from the user, there is no need to set to the standard color balance stated above.

If the color balance of each patch of the process black (CMY mixed color) is slightly shifted to Magenta, it means that the adjustment is proper. In an actual print mode, it is converted into the natural gray color balance by the color table. (When the color balance target is DEF 1.)

4) Select the color to be adjusted with the color select key, and 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 color balance and density, all the set values of this simulation are set to 500.

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

Repeat procedures of 2) - 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.

Referring to the black/gray patches, adjust so that each process (CMY) black/gray patch color balance of A - Q (MAX) approaches the black/gray patch level as far as possible.

6) Check the color balance and density.

(Refer to the item of the printer color balance and density check.)

**Note**

If the color balance is customized, use SIM 67-27 to register the color balance as the service target.

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

If the customized color balance is registered as the service target, the automatic color balance adjustment can be made in the next color balance adjustment.

## 10-F Printer image quality adjustment (Individual adjustment)

**a. General**

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 10E (1) and ADJ 10E (2) or there is a request from the user. Normally there is no need to execute this adjustment.

This must be well understood for execution of the adjustment.

## 10-F (1) Printer density adjustment (Low density section density adjustment) (No need to adjust normally)

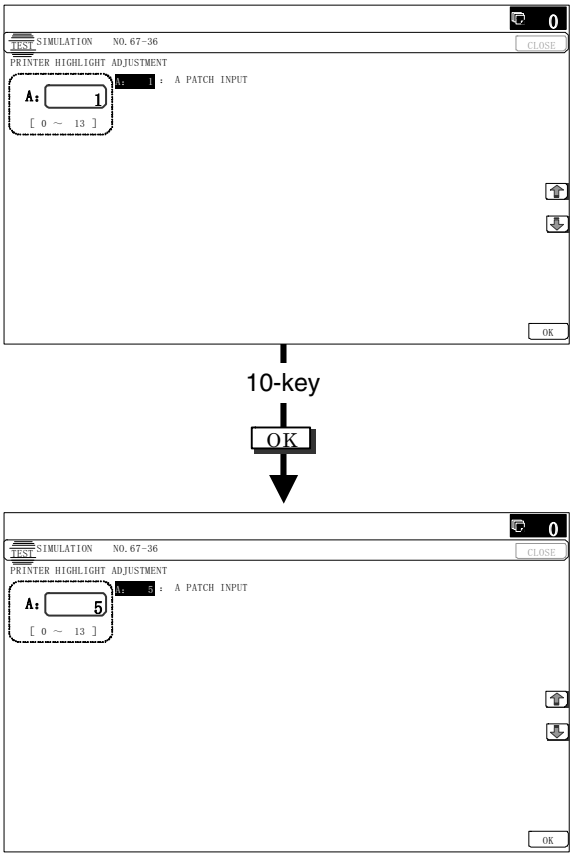
This adjustment is used to adjust the image density in the low density area in the printer mode.

Adjust to reproduction setting of the low density image.

This adjustment is required in the following cases.

* When it is required not to reproduce images in the low density section, or to reproduce low-density images.
* When there is request from the user.

1) Enter the SIM 67-36 mode.




2) Enter the adjustment value and press the [OK] key.

In case of increase of the image density on low density part, increase the adjustment value. For diluting the image density on low density part, decrease the adjustment value.

## 10-F (2) Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)

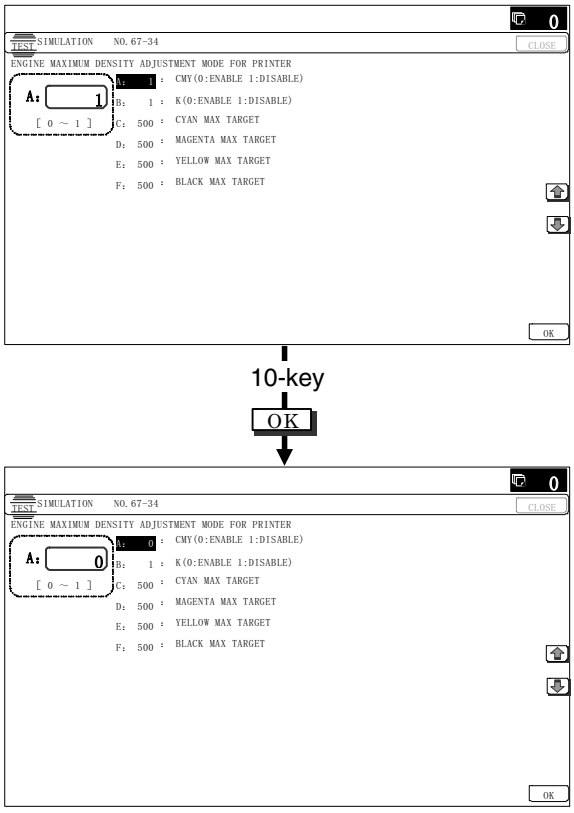
When a tone gap is generated in the high density section in the printer mode, the setting is changed to lower the density in the high density section.

This setting is normally not required, however, in the following cases, a change of setting must be made.

* When a tone gap occurs on part of high density.
* To lower the density in the high density section.

**a. Adjustment procedure**

1) Enter the SIM 67-34 mode.




2) Select the item A, B with the scroll key.

| Display/Item | | Content | | Setting range | Default |
|---|---|---|---|---|---|
| A | CMY (0: ENABLE 1:DISABLE) | 0 | CMY engine maximum density correction mode Enable | 0 - 1 | 0 |
| | | 1 | CMY engine maximum density correction mode Disable | | |
| B | K (0:ENABLE 1: DISABLE) | 0 | K engine maximum density correction mode Enable | 0 - 1 | 1 |
| | | 1 | K engine maximum density correction mode Disable | | |
| C | CYAN MAX TARGET | Scanner target value for CYAN maximum density correction | | 0 - 999 | 500 |

| Display/Item | | Content | Setting range | Default |
|---|---|---|---|---|
| D | MAGENTA MAX TARGET | Scanner target value for MAGENTA maximum density correction | 0 - 999 | 500 |
| E | YELLOW MAX TARGET | Scanner target value for YELLOW maximum density correction | 0 - 999 | 500 |
| F | BLACK MAX TARGET | Scanner target value for BLACK maximum density correction | 0 - 999 | 500 |

* If a tone gap occurs on part of high density, set 0 to item A and B
  The density of high density part decreases. However, the tone gap is better.
* In case of more increase of the density on high density part, set 1 to item A and B.
  The tone gap may occur in high density part.

Important

If the setting values of item C, D, E and F are changed, density of the high density part is changed.

When these values are changed, be sure to perform the printer color balance and density adjustment. (Automatic adjustment)

## 10-F (3) Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)

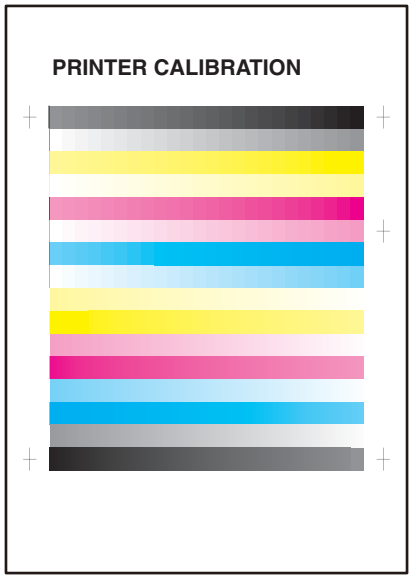
**a. General**

This adjustment is used to adjust the color balance and the density in the monochrome mode, the heavy paper mode, and the gloss paper mode.

This simulation is used to improve image quality in these modes and images.

**b. Adjustment procedures**

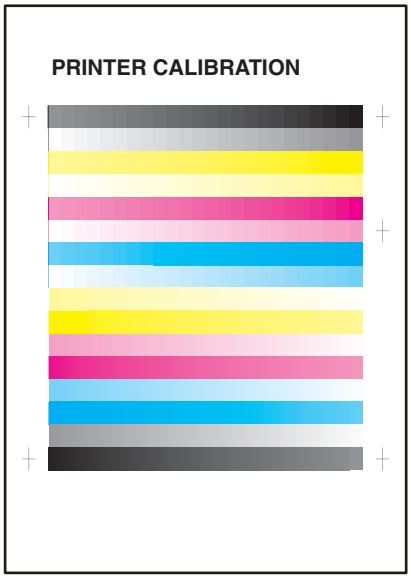
1) Enter the SIM67-54 mode.
2) Press [EXECUTE] key.
   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
   The color patch image (adjustment pattern) is printed out.
3) Set the color patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).




4) Press [EXECUTE] key.
   The color balance adjustment is automatically performed.
   The adjustment pattern is printed out. Check it for any abnormality.
5) Press [OK] key.
   The list of the adjustment items (for each dither) is displayed.
6) Select an adjustment item (for each dither).

| Select item (Mode/Image) | Content |
|---|---|
| Heavy Paper | Adjustment item to improve the color balance in the heavy paper mode |
| B/W | Adjustment item to improve the density and gradation in the monochrome mode |
| Gloss Paper | Adjustment item to improve the color balance in the gloss paper mode |
| 1200dpi 1bit | Adjustment item to improve the color balance in 1200dpi mode |

7) Press [EXECUTE] key.
   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.
   The color patch image (adjustment pattern) is printed out.
8) Set the color patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).




9) Press [EXECUTE] key.
   The color balance adjustment is automatically performed, and the machine goes to the state of procedure 6).
10) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.
    To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.
    After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.
11) Make a print, and check the print image quality.
    (Refer to the item of the printer color balance and density check.)

Note

Use SIM67-52 to reset the adjustment values to the default values.

## 10-F (4) Automatic color balance adjustment by the user (Printer color balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change)

**a. General**

In the user program mode, the user can execute the auto color calibration (auto adjustment of the printer color balance and density).

This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

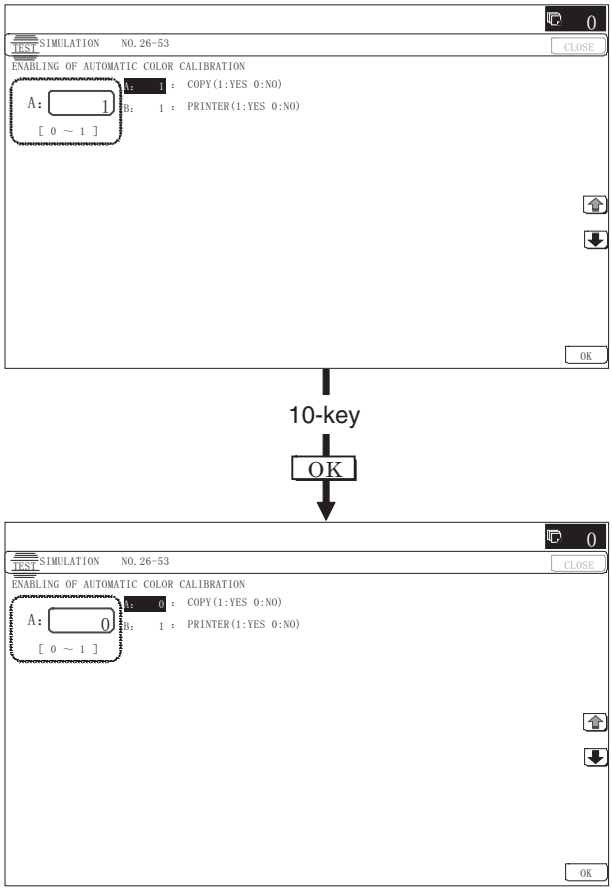
Important

This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy color balance and density and the user's operational ability are judged enough to execute the adjustment.

When set to enable, operation procedures must be fully explained to the user.

**b. Setting procedure**

1) Enter the SIM 26-53 mode.




2) Select ENABLE or DISABLE with 10-key.

When disabling, set to "0" (NO). When enabling, set to "1" (Yes).

3) Press [OK] key.

When set to DISABLE, the menu of the user auto color calibration (automatic adjustment of printer color balance and density) is not displayed in the user program mode.

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

Important

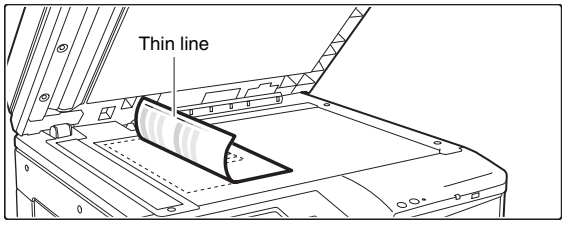
This adjustment is based on the service target color balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.
2) Enter the printer setting mode.
3) Press the auto color calibration key.
4) Press [EXECUTE] key.

   The color patch image (adjustment pattern) is printed out.
5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table.

   Set the patch image so that the thin line is on the left side as shown in the figure.

   At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).




6) Press [EXECUTE] key, and the printer color balance adjustment is executed automatically.

   To execute the copy color balance adjustment successively, perform the procedures same as the above.

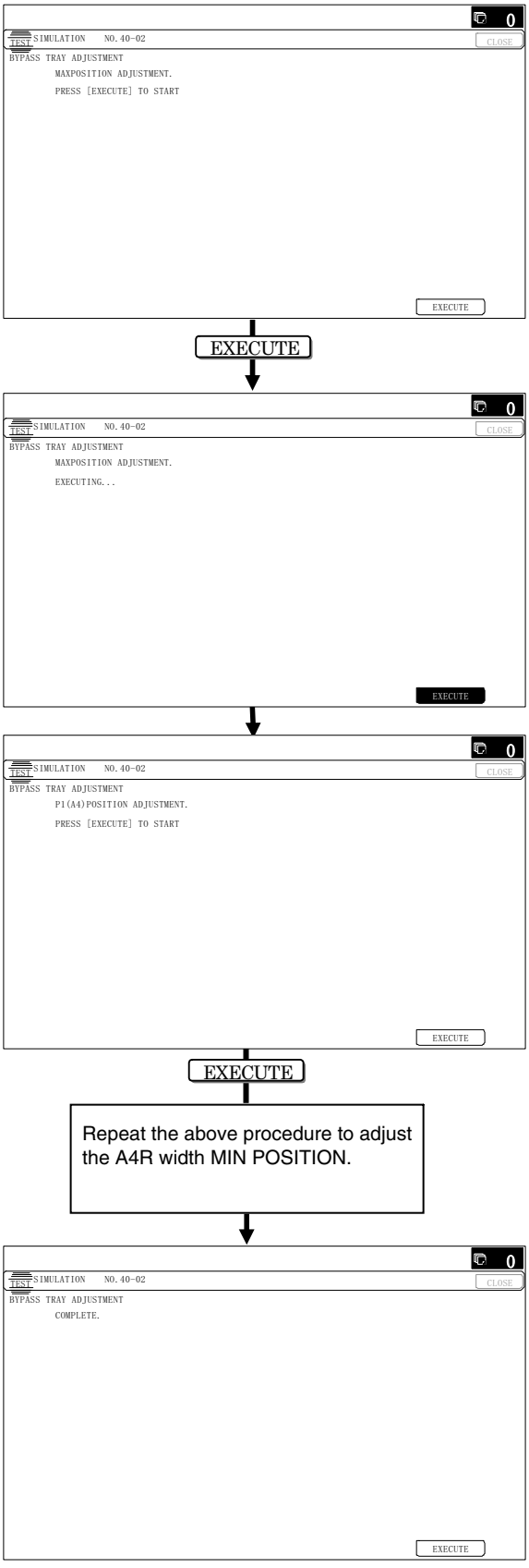
# ADJ 11 Paper size sensor adjustment

## 11-A Manual paper feed tray paper size (width) sensor adjustment

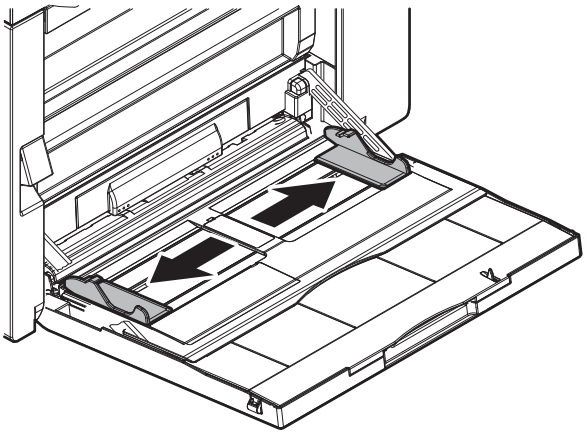
This adjustment must be performed in the following cases:

* 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.



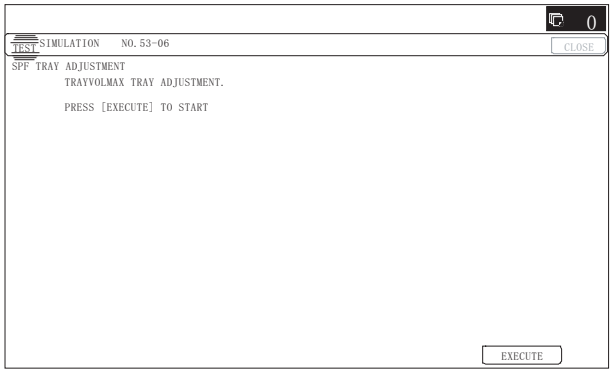
3) Press [EXECUTE] key.
   [EXECUTE] key is high lighted. Then it returns to the normal display.
   The maximum width position d etection level of th e manual paper feed guide is recognized.
4) Set the manual paper feed guide to the A4 size.
5) Press [EXECUTE] key.
   [EXECUTE] key is high lighted. Then 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 high lighted. 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 high lighted. 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 nor mally, "ERROR" is displayed.
   When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

## 11-B RSPF paper feed tray document size (width) sensor adjustment

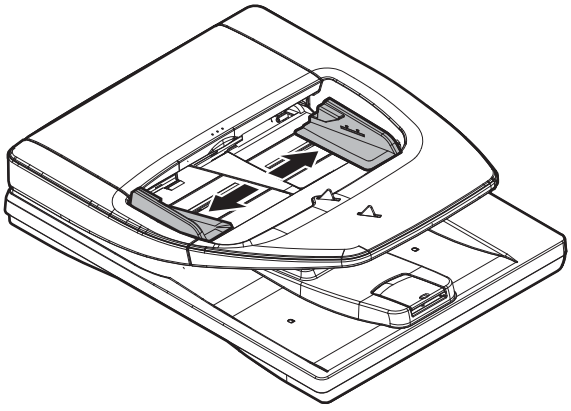
This adjustment must be performed in the following cases:

* The RSPF paper feed tray section has been disassembled.
* The RSPF 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 RSPF paper feed guide to the maximum width position.



3) Press [EXECUTE] key.
   The maximum width detection level is recognized.
4) Open the RSPF paper feed guide to the width for the A4R size.
5) Press [EXECUTE] key.
   The A4R width detection level is recognized.
6) Open the RSPF paper feed guide to the width for the A5R size.
7) Press [EXECUTE] key.
   The A5R width detection level is recognized.
8) Open the RSPF 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.

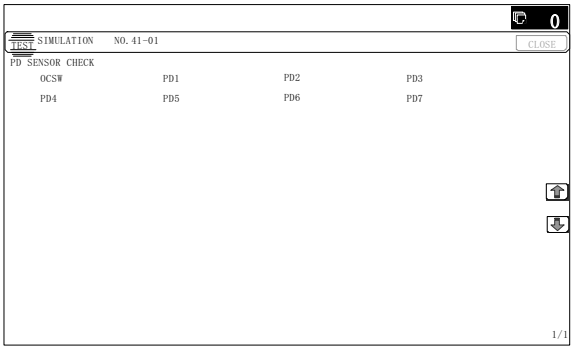
# ADJ 12 Document size detection adjustment

This adjustment must be performed in the following cases:

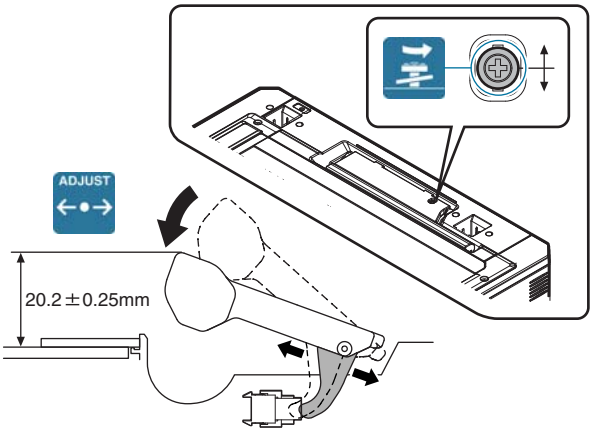
* When the original size sensor section has been disassembled.
* When the original size sensor section has been replaced.
* When U2 trouble has occurred.
* When the scanner control PWB is replaced.
* When the EEPROM on the scanner control PWB is replaced.

## 12-A Document size sensor detection point adjustment

1) Enter the SIM 41-1 mode.

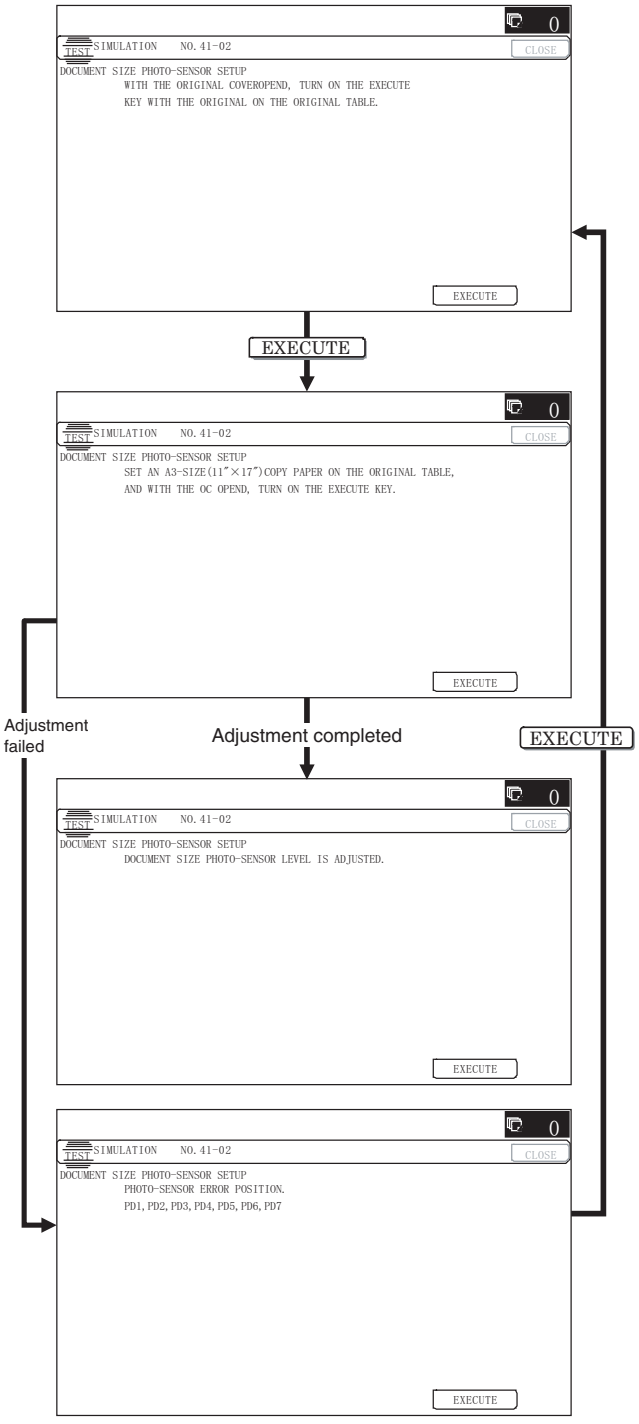



Loosen the original cover switch actuator adjustment screw and slide the actuator position so that the display OCSW is returned to the normal display when the height of the arm unit top from the table glass is 20.2 ± 0.25mm by slowly tilting the document detection arm unit in the arrow direction and adjust. (If the ON timing of the original cover switch is shifted, the document detection function may malfunction.)



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

1) Enter the SIM41-2 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 SIZE PHOTO SENSOR LEVEL IS ADJUESTED" is displayed.

## ADJ 13 Touch panel coordinate setting

This adjustment must be performed in the following cases:

* 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.

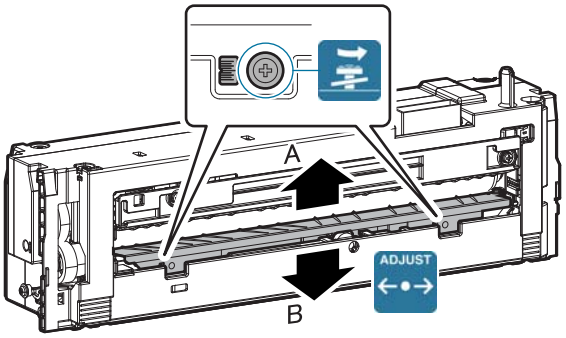
   * When pressing the touch panel, never use a sharp tip (such as a needle or a pin).

## ADJ 14 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 on the two positions 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 at two scales in direction B from the marking scale center. However, the position may be varied depending on the situation.

* When a wrinkle is made on paper, change the position in the error direction A.
* When an image deflection or unclear image is generated in the lead edge area of paper, change the position in the arrow direction B.

# ADJ 15 Print image position, image magnification ratio, void area, off-center adjustment (Print engine) (Manual adjustment)

**Note**

Normally if the adjustment is executed by ADJ 4 (automatic adjustment), there is no need to execute this adjustment.

Only when the manual adjustment is required, execute this adjustment.

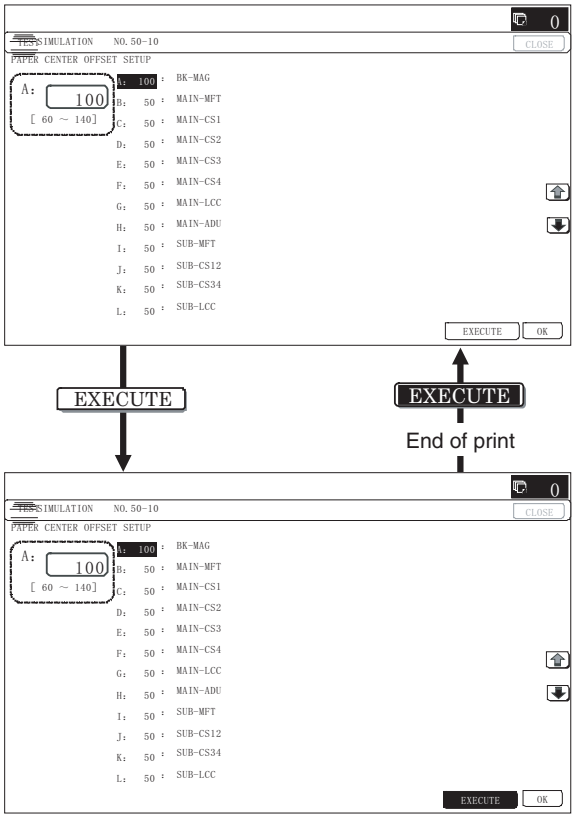
In other words, this manual adjustment is executed when a satisfactory result is not obtained from the automatic adjustment (ADJ 4).

## 15-A Print image magnification ratio adjustment (main scanning direction) (Print engine) (Manual adjustment)

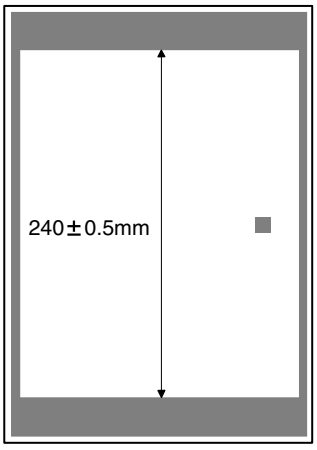
This adjustment must be performed in the following cases:

* 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 halftone is 240 ± 0.5mm.




   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.

## 15-B Print image print area adjustment (Print engine) (Manual adjustment)

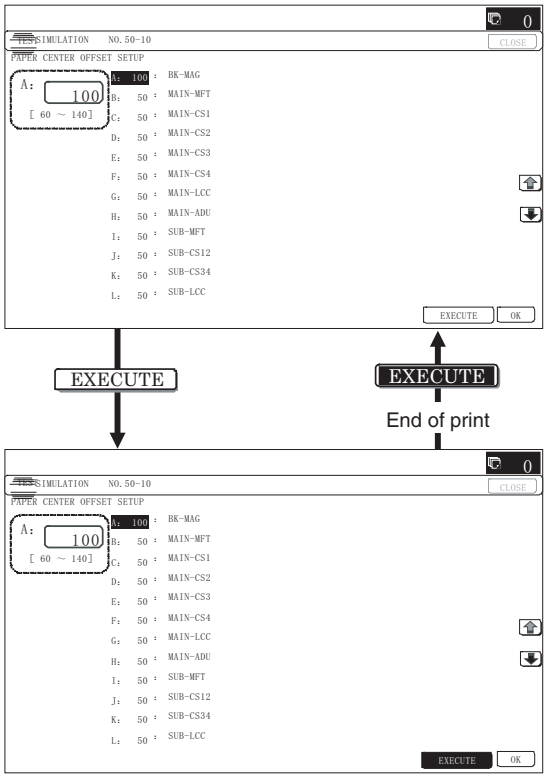
This adjustment must be performed in the following cases:

* 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 mode paper transport 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, be sure to execute the print image magnification ratio adjustment (ADJ 15A) (main scanning direction) (print engine) (manual adjustment).

1) Enter the SIM 50-10 mode.



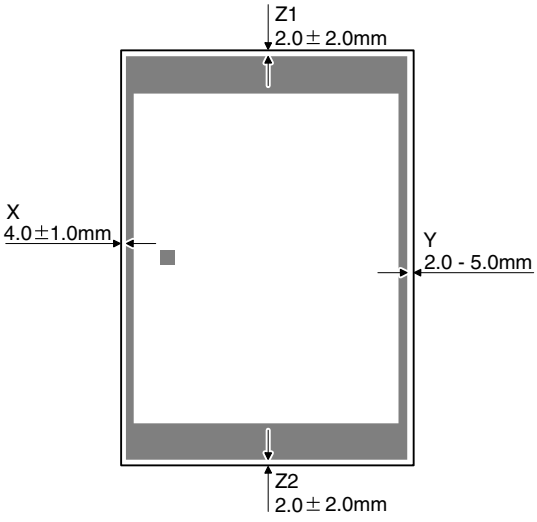

2) Set A4 (11 x 8.5") paper to all the paper feed trays. Select an adjustment item of the target paper feed tray among items B - N and enter the adjustment value. Then select item "O" to select the paper feed tray which is to be used for executing test printing.

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 | 4.0 ± 1.0mm |
| Y | Rear edge void area | 2.0 - 5.0mm |
| Z1/Z2 | FRONT/REAR void area | 2.0 ± 2.0mm |

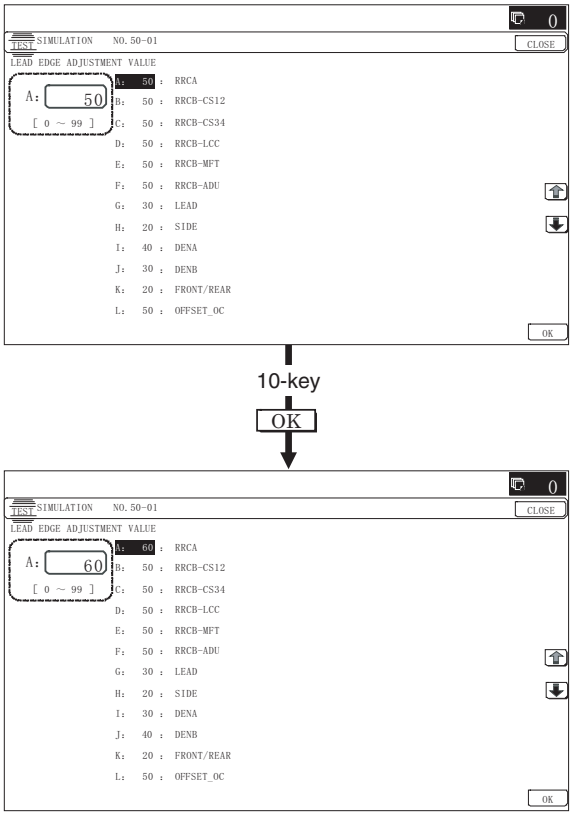



If the above condition is not satisfied, or if it is set to a desired condition, execute the simulation 50-1.

**Note**

Feed paper from all the paper feed trays to confirm.

5) Enter the SIM 50-1 mode.




6) Select an adjustment item (DENA, DENB, FRONT/REAR) with the scroll key, enter the adjustment value, and press [OK] key.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| Void area adjustment | DENA | Lead edge void area adjustment | 1 - 99 | 40 |
| | DENB | Rear edge void area adjustment | 1 - 99 | 30 |
| | FRONT/ REAR | FRONT/REAR void area adjustment | 1 - 99 | 20 |
| Sub scanning direction print area correction value | DENB-MFT | Manual feed correction value | 1 - 99 | 50 |
| | DENB-CS1 | Tray 1 correction value | 1 - 99 | 50 |
| | DENB-CS2 | Tray 2 correction value | 1 - 99 | 50 |
| | DENB-CS3 | Tray 3 correction value | 1 - 99 | 50 |
| | DENB-CS4 | Tray 4 correction value | 1 - 99 | 50 |
| | DENB-LCC | LCC correction value | 1 - 99 | 50 |
| | DENB-ADU | ADU correction value | 1 - 99 | 50 |
| | 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 (DENB-XXX) in SIM50-1 and adjust.

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

That is, adjustment value of item (DENB-XXX) fine adjusts to adjustment item (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 item (RRCB-XXX) in SIM 50-1.

Repeat the above procedures until a satisfactory result is obtained.

## 15-C Print image off-center adjustment (Print engine) (Manual adjustment)

This adjustment must be performed in the following cases:

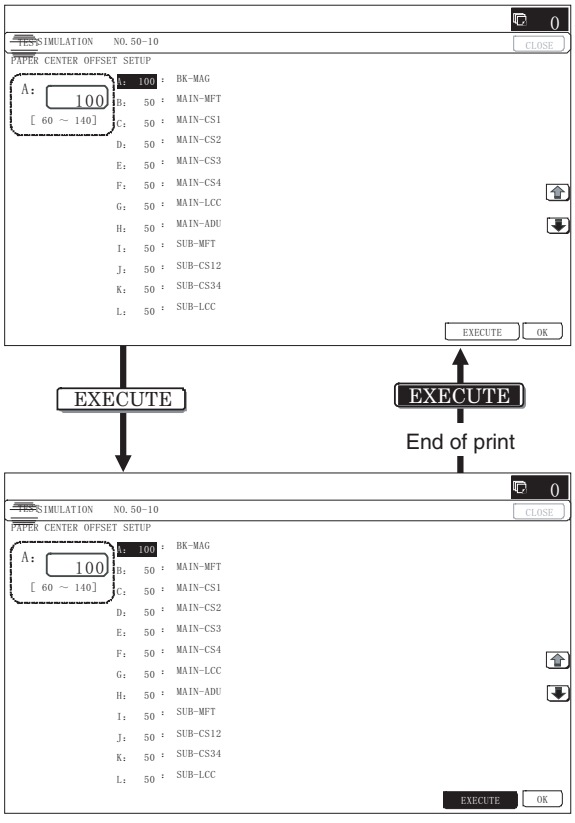
* When the LSU is replaced or removed.
* When a paper tray is replaced.
* When the paper tray section is disassembled.
* When ADJ 3A Print engine image magnification ratio adjustment (Main scanning direction) is performed.
* When the manual feed tray is replaced.
* When the manual feed tray is disassembled.
* When the duplex mode paper transport 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.

* The print image magnification ration adjustment (ADJ 15A) (main scanning direction) (Print engine) (Manual adjustment) has been properly adjusted.

1) Enter SIM 50-10 mode.




2) Select the target paper feed tray (MAIN-XX) with the scroll key.

| Display/Item | Content | Setting range |
|---|---|---|
| NO | Not select | 1 |

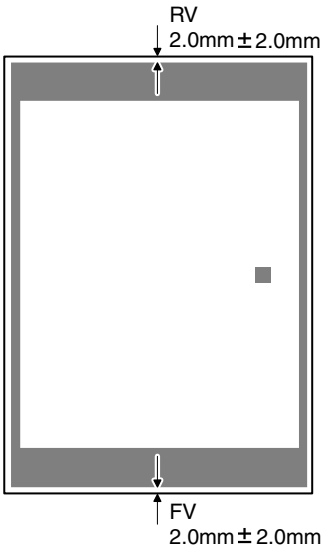
3) Set A4 (11" x 8.5") paper in the paper feed tray selected in procedure 2).

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

$RV + FV \leq 4.0mm$

$RV = 2.0 \pm 2.0mm$

$FV = 2.0 \pm 2.0mm$

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.

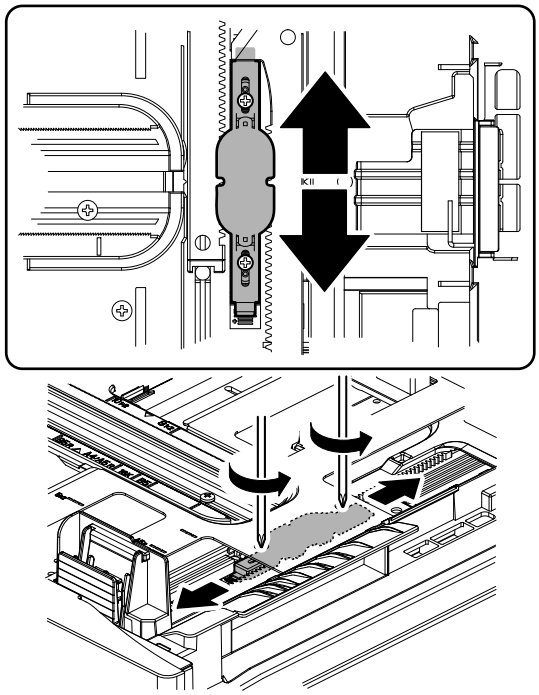
When the adjustment value is increased, the adjustment pattern is shifted to the front frame side. When it is decreased, the adjustment pattern is shifted to the rear frame side.

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).



**Note**

Normally if the adjustment is executed by ADJ 4 (automatic adjustment), there is no need to execute this adjustment.

Only when the manual adjustment is required, execute this adjustment.

In other words, this manual adjustment is executed when a satisfactory result is not obtained from the automatic adjustment (ADJ 4).

## ADJ 16 Scan image magnification ratio adjustment (Manual adjustment)

**Note**

Normally if the adjustment is executed by ADJ 4 (automatic adjustment), there is no need to execute this adjustment.

Only when the manual adjustment is required, execute this adjustment.

In other words, this manual adjustment is executed when a satisfactory result is not obtained from the automatic adjustment (ADJ 4).

### 16-A Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (Document table mode)

**Important**

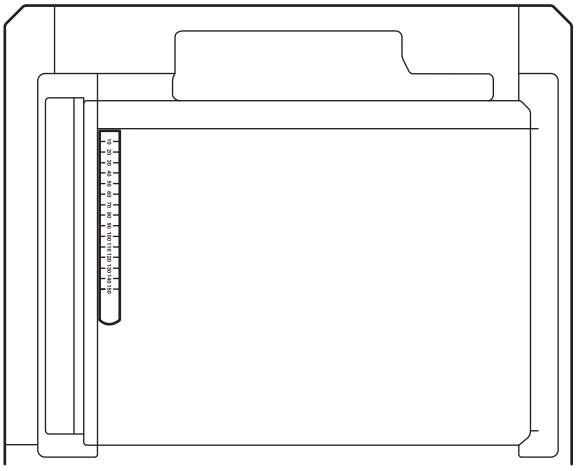
If the default adjustment value of the scan image magnification ration adjustment (main scanning direction) of SIM 48-1, copy image quality may be degraded. Therefore, this adjustment must be executed only when there is a special necessity.

This adjustment must be performed in the following cases:

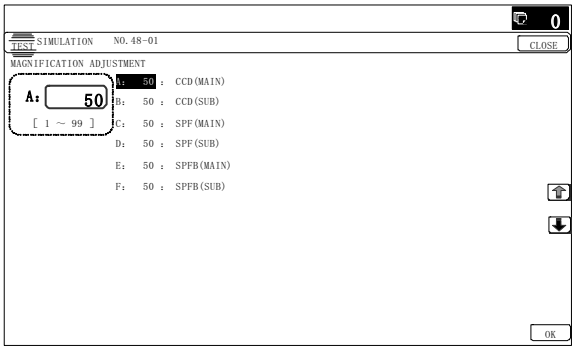
* When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.
* When the scanner motor is replaced.
* U2 trouble has occurred.
* When the scanner control PWB is replaced.
* When the EEPROM of the scanner control PWB is replaced.

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

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%.

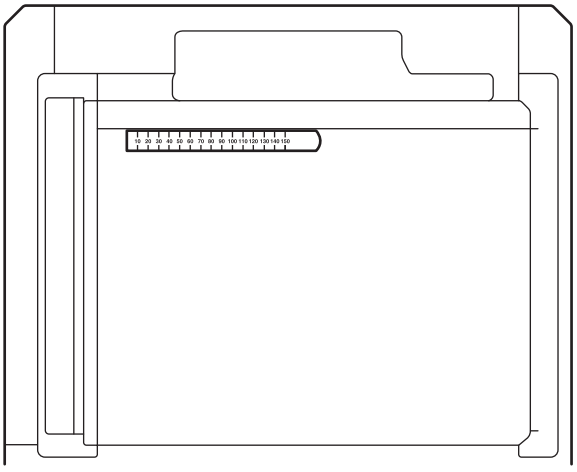
   Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 ± 1.0%).

## 16-B Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (Document table mode)

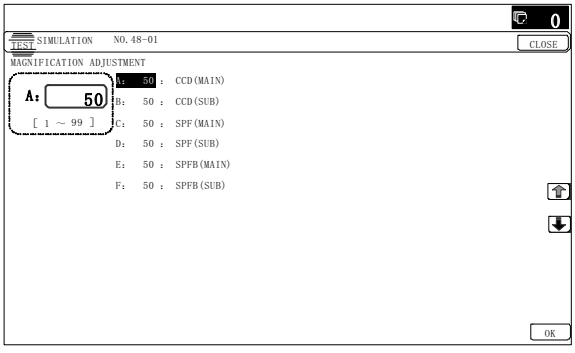
This adjustment must be performed in the following cases:

* When the copy magnification ratio in the copy image sub scanning direction is not properly adjusted.
* When the scanner motor is replaced.
* U2 trouble has occurred.
* When the scanner control PWB is replaced.
* When the EEPROM of the scanner control PWB is replaced.

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

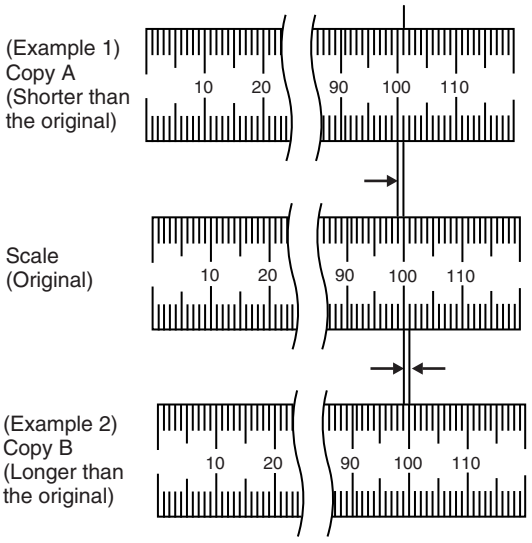


2) Enter the SIM 48-1 mode.




3) Make a normal copy and obtain the copy magnification ratio.
Go to the copy mode, and make a copy.

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




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%).

## 16-C Scan image magnification ratio adjustment (main scanning direction) (Manual adjustment) (RSPF mode)

This adjustment must be performed in the following cases:

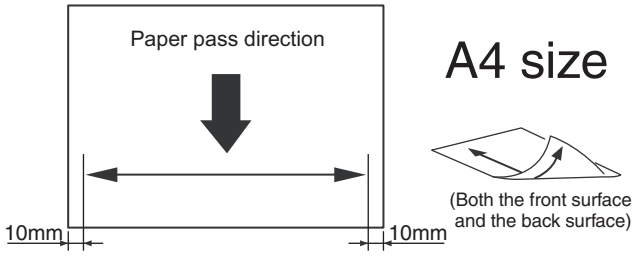
* When the scan control PWB is replaced.
* When the EEPROM on the scan control PWB is replaced.
* When U2 trouble occurs.
* When the copy magnification ratio of the RSPF mode copy image in the main scanning direction is not proper.
* When the RSPF is disassembled.

**a. Adjustment procedures**

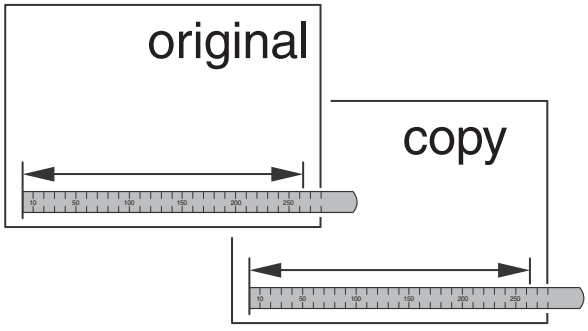
1) Place the duplex adjustment chart shown below on the document tray of the RSPF.

   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:

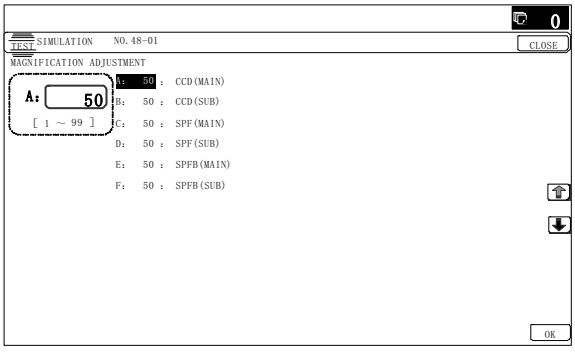
   Image magnification ratio = Original size / Original size x 100 (%)

   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.




**RSPF**

| 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) | RSPF document front surface magnification ratio adjustment (Main scan) | 1 - 99 | 50 |
| D | SPF(SUB) | RSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |
| E | SPFB(MAIN) | RSPF document back surface magnification ratio adjustment (Main scan) | 1 - 99 | 50 |
| F | SPFB(SUB) | RSPF document back surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |

6) 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)

7) 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%.

8) Make a normal copy and obtain the copy magnification ratio.

Repeat the procedures of 1) - 8) until a satisfactory result is obtained.

## 16-D Scan image magnification ratio adjustment (sub scanning direction) (Manual adjustment) (RSPF mode)

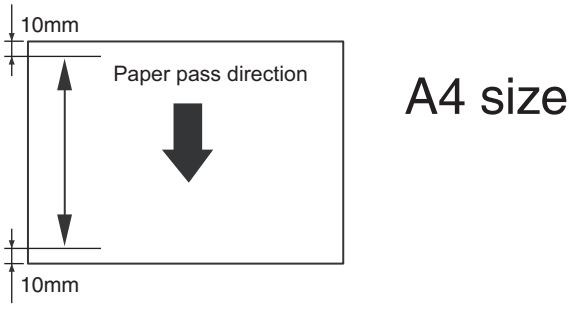
This adjustment must be performed in the following cases:

* 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 of the RSPF mode copy image in the sub scanning direction is not proper.
* When the RSPF is disassembled.

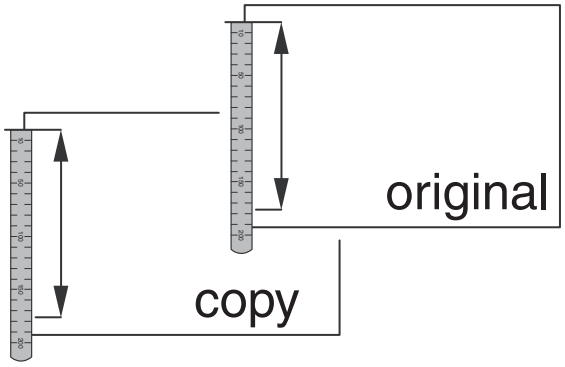
1) Place the duplex adjustment chart shown below on the document tray of the RSPF.

   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 co py paper and the original images.



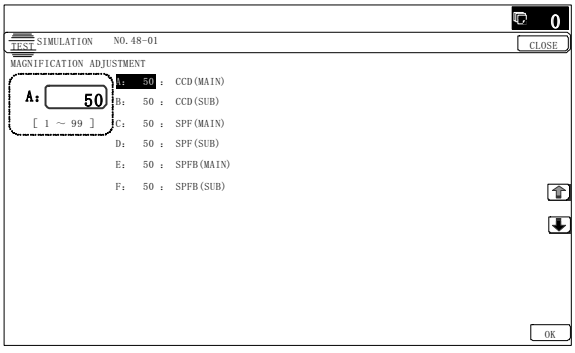

4) Obtain the image magnification ratio according to the following formula:

   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) | RSPF document front surface magnification ratio adjustment (Main scan) | 1 - 99 | 50 |
| D | SPF(SUB) | RSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |
| E | SPFB(MAIN) | RSPF document back surface magnification ratio adjustment (Main scan) | 1 - 99 | 50 |
| F | SPFB(SUB) | RSPF document back surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |

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 0.1%.
8) Make a normal copy and obtain the copy magnification ratio.

Repeat the procedures of 1) - 8) until a satisfactor y result is obtained.

# ADJ 17 Scan image off-center adjustment (Manual adjustment)

**Note**

Normally if the adjustment is executed by ADJ 4 (automatic adjustment), there is no need to execute this adjustment.

Only when the manual adjustment is required, execute this adjustment.

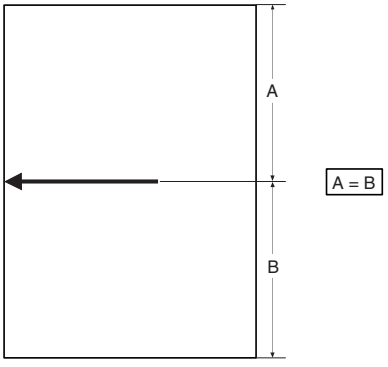
In other words, this manual ad justment is executed when a satisfactory result is not obtained from the automatic adjustment (ADJ 4).

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

This adjustment must be performed in the following cases:

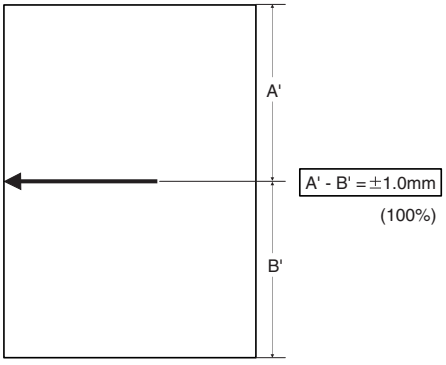
* When the scanner (reading) section is disassembled.
* When the scanner (reading) unit is replaced.
* When a U2 trouble occurs.
* When the scanner control PWB is replaced.
* When the EEPROM on the scanner control PWB is replaced.

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



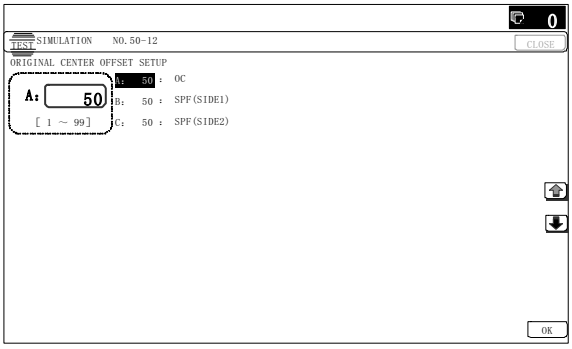

2) Check the copy image center position.

   If A - B = ± 1.0mm, the adjustment is not required.




   If the above condition is not satisfied, p erform the following procedures.

3) Enter the SIM 50-12 mode.




4) Select the adjustment mode OC 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) Go to the copy mode, and make a copy.

Repeat the procedures of 1) - 6) until the above condition is satisfied.

## 17-B Scan image off-center adjustment (Manual adjustment) (RSPF mode)

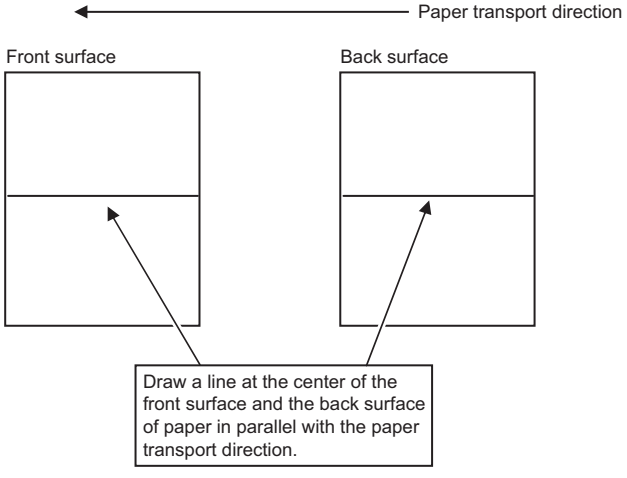
This adjustment must be performed in the following cases:

* 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 RSPF section is disassembled.
* When the RSPF unit is replaced.

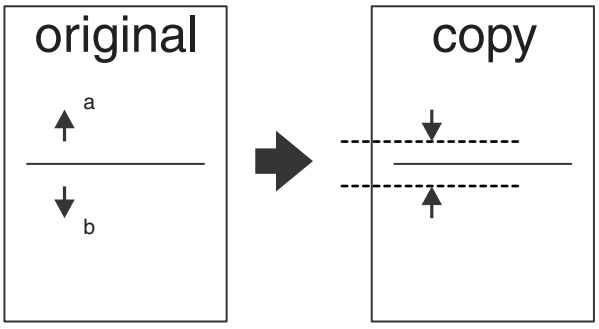
Important

To execute this adjustment, it is required that the ADJ 17A Scan image off-center adjustment (Document t able mode) must have been properly adjusted.

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.



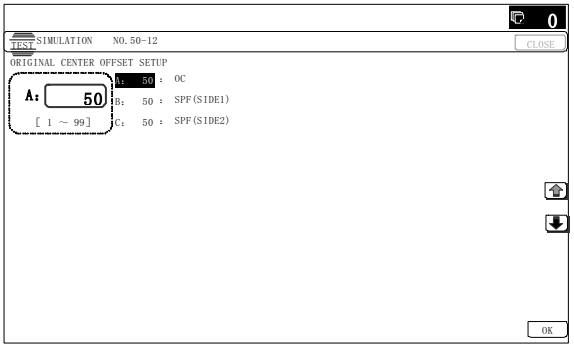

2) Set the adjustment chart to the RSPF.
3) Make a duplex copy in the normal magnification ratio from the manual paper feed tray, and check the image position on the front surface and the back surface of the copy paper.



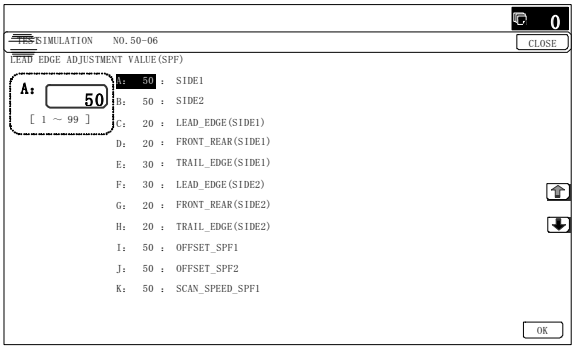

If the difference is within the range of 0 ± 2.7mmm there is no need to perform the adjustment.
If the adjustment is required, perform the following procedures.

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

(SIM50-12)




(SIM50-6)




**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**

| 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 (CCD) | 1 - 99 | 50 |
| C | Image loss amount setting SIDE1 | 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 | 40 |
| F | Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2) | Back surface lead edge image loss amount setting | 0 - 99 | 20 |
| 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 | 40 |
| I | OFFSET_SPF1 | | RSPF front surface document off-center adjustment | 1 - 99 | 50 |
| J | OFFSET_SPF2 | | RSPF back surface document off-center adjustment | 1 - 99 | 50 |
| K | SCAN_SPEED_SPF1 | | RSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |
| L | SCAN_SPEED_SPF2 | | RSPF document back 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 SPF 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.

# ADJ 18 Copy image position and image loss adjustment (Manual adjustment)

**Note**

Normally if the adjustment is executed by ADJ 4 (automatic adjustment), there is no need to execute this adjustment.

Only when the manual adjustment is required, execute this adjustment.

In other words, this manual adjustment is executed when a satisfactory result is not obtained from the automatic adjustment (ADJ 4).

## 18-A Copy image position, image loss, and void area adjustment (Manual adjustment) (Document table mode)

This adjustment must be performed in the following cases:

* When the scanner (reading) section is disassembled.
* When the scanner (reading) unit is replaced.
* When the LSU is replaced or removed.
* 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.
* The scanner control PWB has been replaced.
* The EEPROM on the scanner control PWB has been replaced.

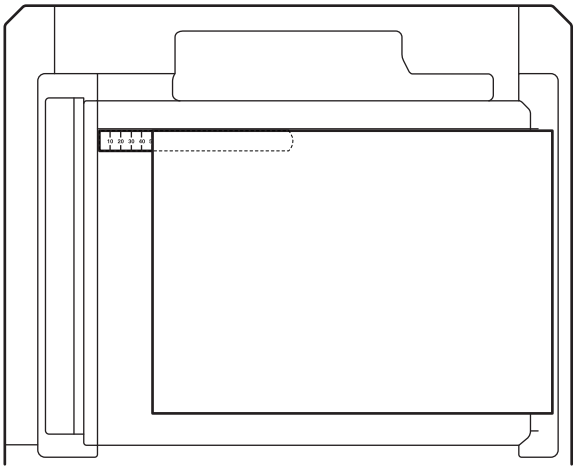
**Note**

Before executing this adjustment, be sure to confirm that the ADJ 4/ADJ 5 Print engine image skew, image position, image magnification ratio, void area adjustments has been completed normally.

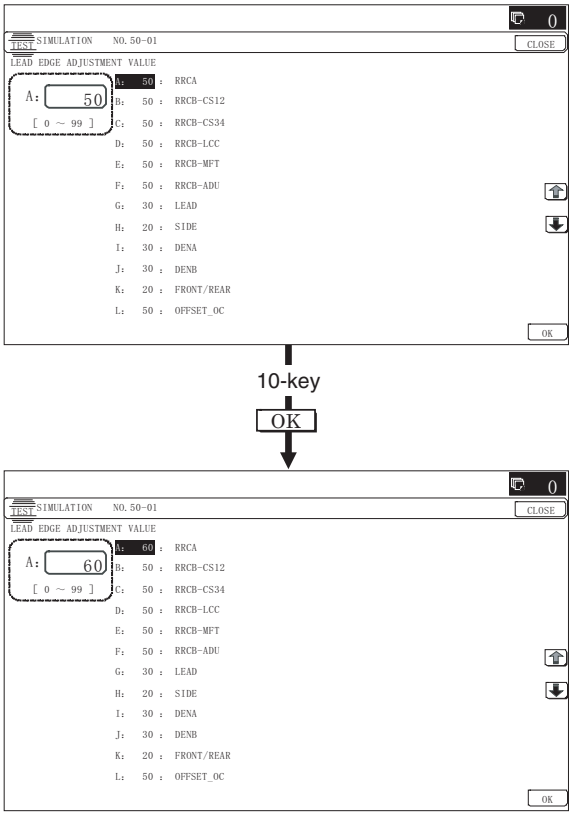
1) Place a scale on the document table as shown in the figure below.

Place a scale so that it is in parallel with the scanning direction and that its lead edge is in contact with the document guide plate.

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



2) Enter the SIM 50-1 mode.




3) Set RRCA, LEAD, and SIDE to the default values.

| 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 | Registration motor ON timing adjustment | 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 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 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 | 55 |
| U | | DENB-HV | Heavy paper correction value | | 1 - 99 | 50 |

4) Perform the image lead edge reference position adjustment.

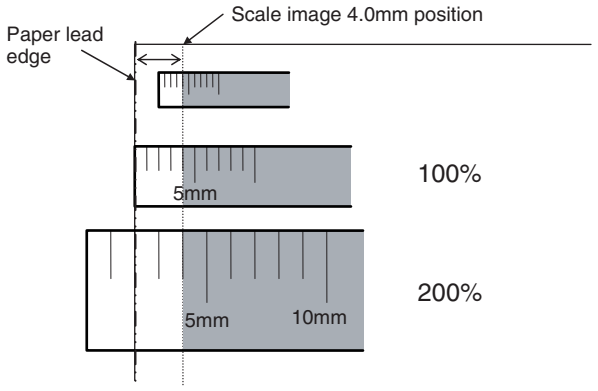
Shift to the copy mode, and make a copy at each of 100% and 200% in the document table mode.

When the adjustment value of RRCA is proper, the lead edge image from 4.0mm is not copied in either of 100% and 200% copy scale.

If not, change and adjust the RRCA value.

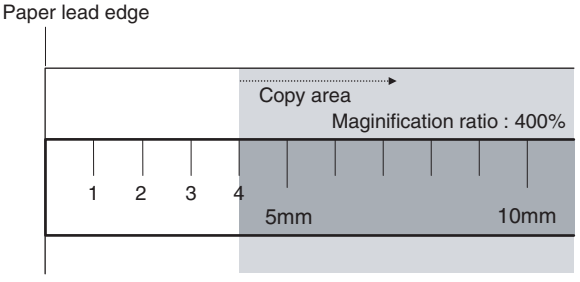
(Adjust so that the lead edge image from 4.0mm is not copied in either of different copy magnification ratios.)

Repeat the above procedures until a satisfactory result is obtained.




5) Image loss adjustment

When the adjustment item of the image loss below is set to the default value, it is adjusted to the standard state. If it is not in the below standard state, or when it is set to a desired value, change these adjustment items.




Void area: 4.0mm, Image loss: 4.0mm

| Item/ Display | Content | | Adjustment range | Default value | Standard adjustment value |
|---|---|---|---|---|---|
| LEAD | Image loss adjustment | Lead edge image loss adjustment | 0 - 99 | 40 | 4.0 ± 1.0mm |
| SIDE | | Side image loss adjustment | 0 - 99 | 20 | 2.0 ± 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.

## 18-B Image scanning position adjustment (Manual adjustment) (RSPF mode)

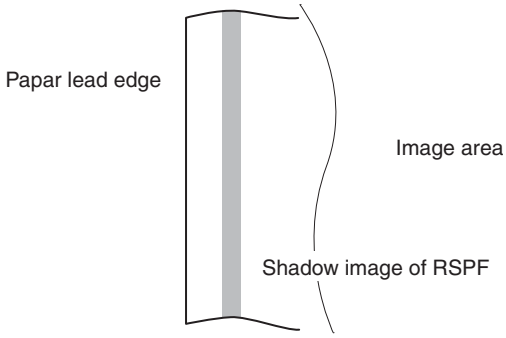
This adjustment must be performed in the following cases:

* 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 RSPF section is disassembled.
* When the RSPF unit is replaced.

This simulation is to adjust the scanning position when scanning in the RSPF mode.

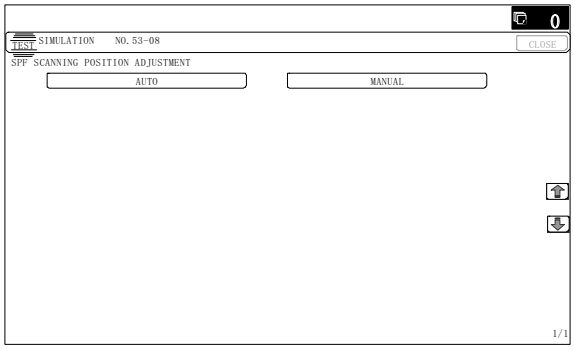
If this adjustment is made improperly, the scanner stop position is shifted from the specified position and a shade of the document table may be reflected on the lead edge section of the scan image in the RSPF mode.

1) Make a copy in the R SPF mode, and check for any shade on the lead edge section of the copy image.




If there is any shade of the d ocument 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 valu e is increased, the distance from the home position to the RSPF scanning position is increased. When the set value is changed by 1, the scanning position is changed by 0.1mm.

Perform the pr ocedures of 1) - 3) until a sa tisfactory result is obtained.

Important

After execution of this adjustment, be sur e to execute ADJ 18C Copy image position, imag e loss, void ar ea adjustment (Ma nual adjustment) (RSPF mode).

## 18-C Copy image position, image loss, void area adjustment (Manual adjustment) (RSPF 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 RSPF section is disassembled.
* When the RSPF unit is replaced.

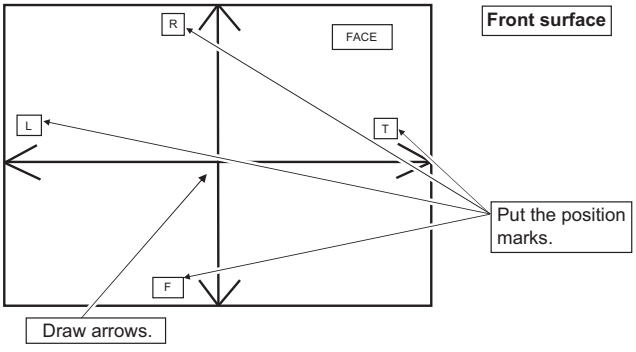
**a. Adjustment procedures**

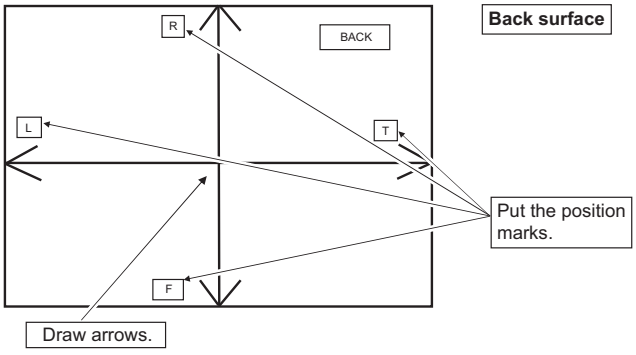
1) Prepare the adjustment chart.

The adjustment chart can be made by the following procedures.

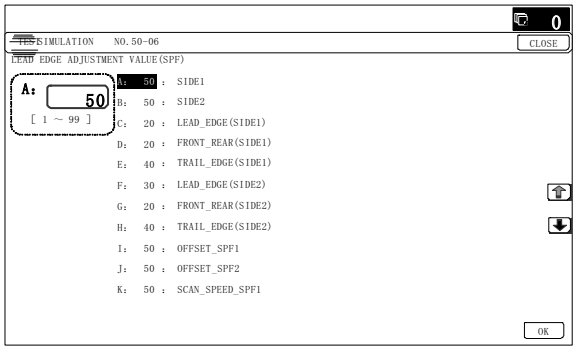
Use A4 (11" x 8.5") paper and draw arrow marks vertically and horizontally on the front and the back surfaces.

At the same time, put mar ks 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.



| 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 (CCD) | 1 - 99 | 50 |
| C | Image loss amount setting SIDE1 | 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 | 40 |
| F | Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2) | Back surface lead edge image loss amount setting | 0 - 99 | 20 |
| 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 | 40 |
| I | OFFSET_SPF1 | | RSPF front surface document off-center adjustment | 1 - 99 | 50 |
| J | OFFSET_SPF2 | | RSPF back surface document off-center adjustment | 1 - 99 | 50 |
| K | SCAN_SPEED_SPF1 | | RSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |
| L | SCAN_SPEED_SPF2 | | RSPF document back 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 RSPF rear edge image loss setting is provided for countermeasures against the case when shades are produced.

**(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)

   TRAIL EDGE (SIDE 1):

   40 Lead edge image loss set value (Front surface)

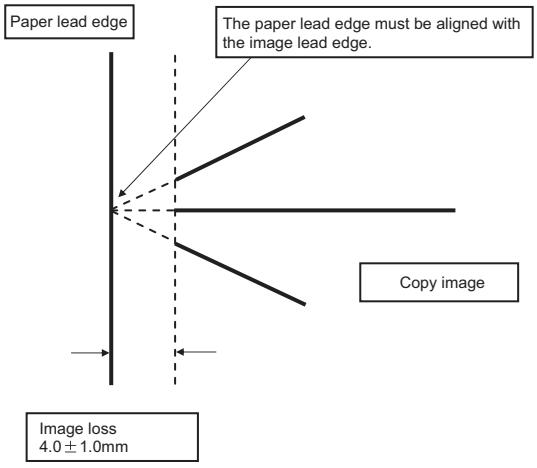
   TRAIL EDGE (SIDE 2):

   40 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 RSPF mode. Check to confirm that the lead edge image loss is within 4.0 ± 1.0mm 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

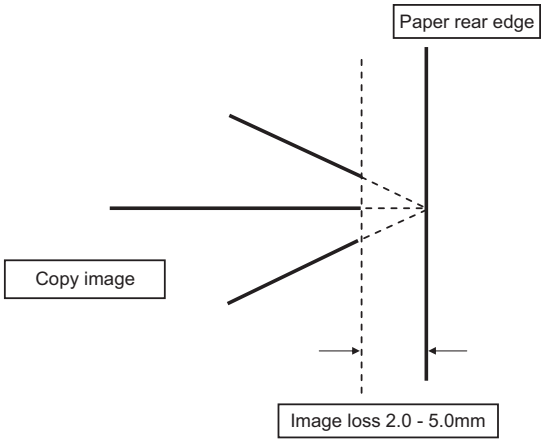
   (When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.)

   (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 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)

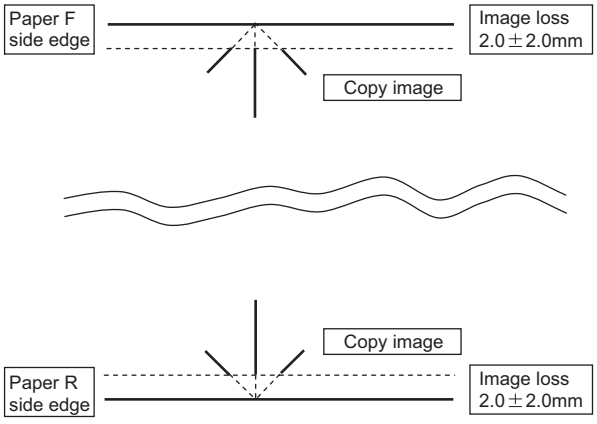
(When the adjustment value is increased, the rear edge image loss is increased.)

(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 RSPF mode. Check to confirm that the image losses on the front frame side and the rear frame side are 2.0 ± 2.0mm 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 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)

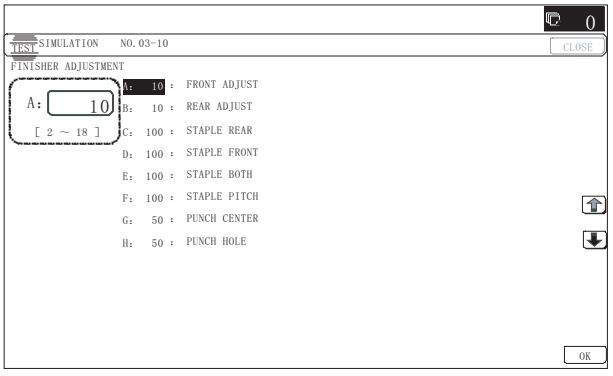
Perform the procedures of 1) - 2) until a satisfactory result is obtained.

# ADJ 19 Finisher and punch unit adjustments (alignment, punch hole position, staple position)

This adjustment must be performed in the following cases:

* When the finisher is disassembled.
* When the finisher control PWB is replaced.
* When the punch unit is disassembled.
* When the punch control PWB is replaced.
* When the alignment is improper.
* When the punch hole position is shifted.
* When the staple position is shifted.

1) Enter the SIM 3-10 mode.



2) Select an adjustment target item with the scroll key.

| Item/Display | | Content | Setting range | Default value | Purpose (Case where the adjustment is required) | Change when the adjustment value is increased or decreased | | Change when the adjustment value is changed by 1 |
|---|---|---|---|---|---|---|---|---|
| A | FRONT ADJUST | Alignment position adjustment (F side alignment plate stop position) (Paper alignment adjustment) | 2 - 18 | 10 | This adjustment is used to adjust the paper alignment width when the paper alignment is improper. Alignment is determined by the combination of the both adjustment values of FRONT ADJUST and REAR ADJUST. | F side paper alignment stop position (F/R direction) | When the adjustment value is increased, the alignment plate stop position is shifted to the R side. When the adjustment value is decreased, the alignment plate stop position is shifted to the F side. | 0.3665mm |
| B | REAR ADJUST | Alignment position adjustment (R side alignment plate stop position) (Paper alignment adjustment) | 2 - 18 | 10 | When changing the adjustment values of FRONT ADJUST and REAR ADJUST from the default values, be sure to change them by the same variation. | R side paper alignment stop position (F/R direction) | When the adjustment value is increased, the alignment plate stop position is shifted to the F side. When the adjustment value is decreased, the alignment plate stop position is shifted to the R side. | 0.3665mm |
| C | STAPLE REAR | Stapling position adjustment (one position at the rear) | 68 - 132 | 100 | When the staple position on the R side is shifted, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple position is shifted to the rear side. When the adjustment value is decreased, the staple position is shifted to the front side. | 0.155mm |
| D | STAPLE FRONT | Stapling position adjustment (one position in front) | 68 - 132 | 100 | When the staple position on the F side is shifted, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple position is shifted to the rear side. When the adjustment value is decreased, the staple position is shifted to the front side. | 0.155mm |
| E | STAPLE BOTH | Stapling position adjustment (center position of two positions binding) | 68 - 132 | 100 | When the staple off-center is shifted, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple position is shifted to the rear side. When the adjustment value is decreased, the staple position is shifted to the front side. | 0.155mm |
| F | STAPLE PITCH | Stapling position adjustment (staple pitch of two positions binding) | 68 - 132 | 100 | When it is required to change the staple interval, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple interval is increased. When the adjustment value is decreased, the staple interval is decreased. | 0.155mm |
| G | PUNCH CENTER | Punch center positioning sensor | 37 - 63 | 50 | When the punch off-center is shifted, perform the adjustment. | Punch position (F/R direction) | When the adjustment value is decreased, the punch position is shifted to the front side. When the adjustment value is increased, the punch position is shifted to the rear side. | 0.1441mm |
| H | PUNCH HOLE | Punch hole adjustment (paper transport direction) | 42 - 58 | 50 | When the punch hole position is shifted in the transport direction, perform the adjustment. | Punch position (Paper transport direction) | When the adjustment value is increased, the punch position is shifted to the paper lead edge side. When the adjustment value is decreased, the punch position is shifted to the paper rear edge side. | 0.2584mm |

# [6] SIMULATION

## 1. General and purpose

The simulation mode has the following functions, to display the machine operating status, identify the trouble position and causes in an earlier stage, and to efficiently setup and adjust the machine for improved serviceability.

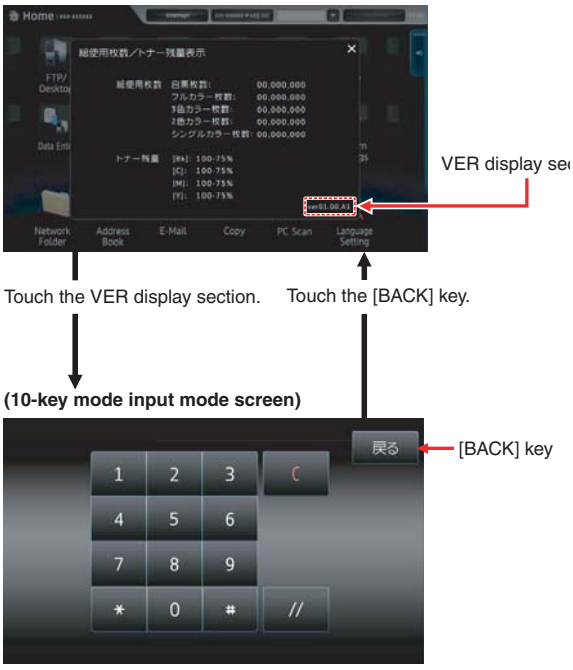
1) Various adjustments
2) Setting of the specifications and functions
3) Canceling troubles
4) Operation check
5) Counters check, setting, clear
6) Machine operating conditions (operation hysteresis), data check, clear.
7) Various (adjustments, setting, operation, counters, etc.) data transport.

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

## 2. Starting the simulation

**Entering the simulation mode**

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




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.

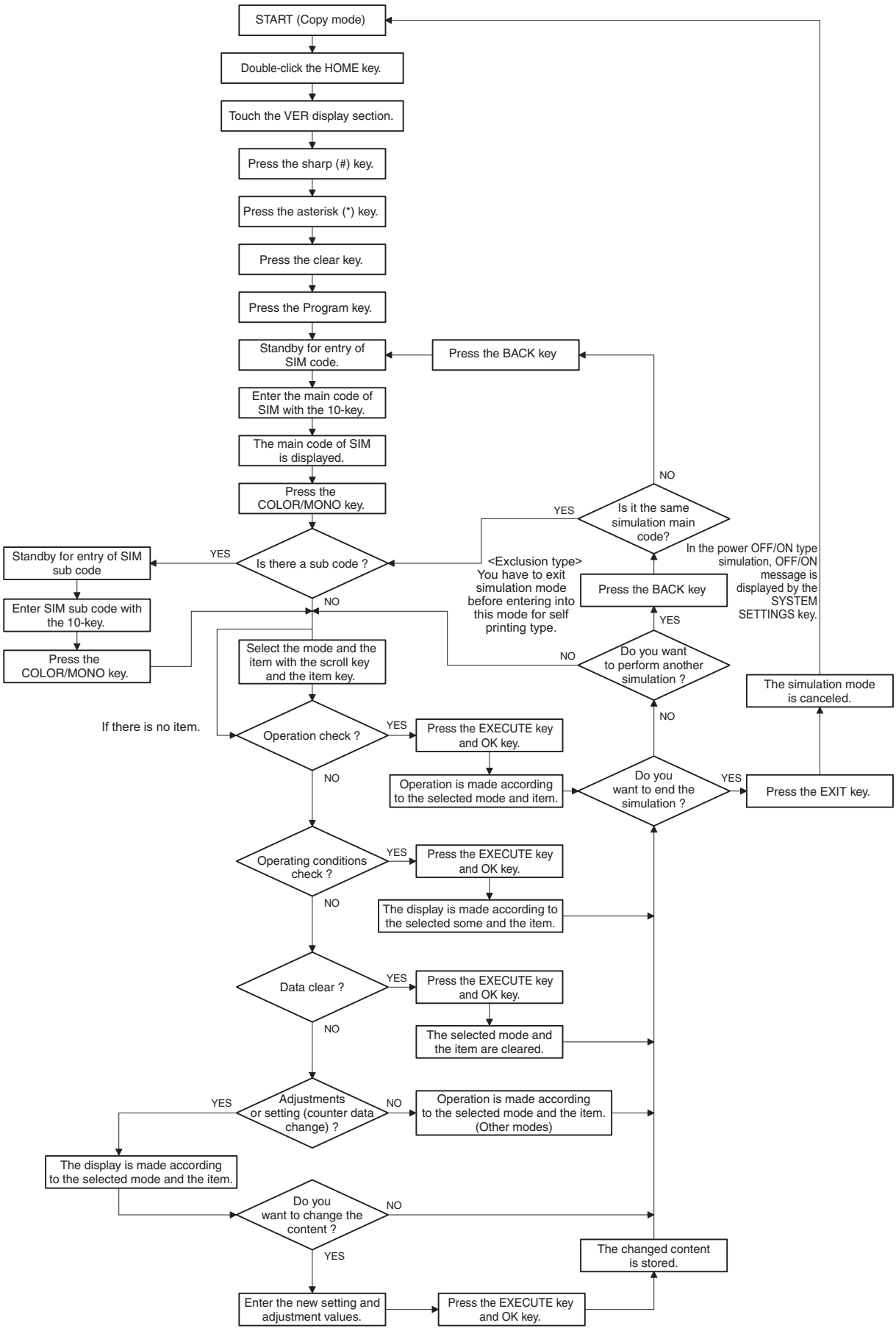
**Canceling the simulation mode to return to the normal mode**

1) Press [EXIT] key.

Important

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.


START (Copy mode)
Double-click the HOME key.
Touch the VER display section.
Press the sharp (#) key.
Press the asterisk (*) key.
Press the clear key.
Press the Program key.
Standby for entry of SIM code.
Press the BACK key
Enter the main code of SIM with the 10-key.
The main code of SIM is displayed.
Press the COLOR/MONO key.
NO
Is it the same simulation main code?
YES
In the power OFF/ON type simulation, OFF/ON message is displayed by the SYSTEM SETTINGS key.
<Exclusion type>
You have to exit simulation mode before entering into this mode for self printing type.
Press the BACK key
YES
Is there a sub code ?
YES
Standby for entry of SIM sub code
Enter SIM sub code with the 10-key.
Press the COLOR/MONO key.
NO
Do you want to perform another simulation ?
NO
YES
The simulation mode is canceled.
Select the mode and the item with the scroll key and the item key.
If there is no item.
Operation check ?
YES
Press the EXECUTE key and OK key.
NO
Operation is made according to the selected mode and item.
Do you want to end the simulation ?
YES
Press the EXIT key.
Operating conditions check ?
YES
Press the EXECUTE key and OK key.
NO
The display is made according to the selected some and the item.
Data clear ?
YES
Press the EXECUTE key and OK key.
NO
The selected mode and the item are cleared.
Adjustments or setting (counter data change) ?
YES
NO
Operation is made according to the selected mode and the item. (Other modes)
The display is made according to the selected mode and the item.
Do you want to change the content ?
NO
YES
The changed content is stored.
Enter the new setting and adjustment values.
Press the EXECUTE key and OK key.

## 3. List of simulation codes

| Main | Sub | Functions | Section |
|---|---|---|---|
| 1 | 1 | Used to check the operation of the scanner (reading) unit and the control circuit. | Scanner (reading) |
| | 2 | Used to check the sensors in the scanner (reading) section and the related circuits. | Scanner (reading) |
| | 5 | Used to check the operation of the scanner (reading) unit and the control circuit. | Scanner (reading) |
| 2 | 1 | Used to check the operations of the automatic document feeder and the control circuit. | RSPF |
| | 2 | Used to check the operations of the sensors and the detectors in the automatic document feeder section and the control circuits. | RSPF |
| | 3 | Used to check the operations of the loads in the automatic document feeder and the control circuit. | RSPF |
| 3 | 2 | Used to check the operations of the sensors and the detectors in the finisher and the control circuit. | Finisher |
| | 3 | Used to check the operation of the load in the finisher and the control circuit. | Finisher |
| | 10 | Used to adjust the finisher. | Finisher |
| 4 | 2 | Used to check the operations of the sensors and detectors in the desk, and the control circuit of those. | Desk |
| | 3 | Used to check the operations of the loads in the desk, and the control circuit of those. | Desk |
| | 5 | Used to check the operations of the paper feed desk paper transport clutch (DTRC). | Desk |
| 5 | 1 | Used to check the operation of the display, LCD in the operation panel, and control circuit. | Operation panel |
| | 2 | Used to check the operation of the heater lamp and the control circuit. | Fusing |
| | 3 | Used to check the operation of the scanner lamp and the control circuit. | Scanner (reading) |
| | 4 | Used to check the operation of the discharge lamp and the control circuit. | Process |
| 6 | 1 | Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits. | Paper transport/Paper exit section |
| | 2 | Used to check the operations of each fan motor and its control circuit. | Others |
| | 3 | Used to check the operations of the transport unit and the control circuit. | Process (Transport) |
| | 6 | Used to perform fusing pressure release and applying, and to check the operations of the control circuits. | Fusing |
| | 90 | Used to reset the machine to the factory setting. (The scanner is set to the lock enable position) | Scanner |
| 7 | 1 | Used to set the operating conditions of aging. | Others |
| | 6 | Used to set the operating intermittent aging cycle. | |
| | 8 | Used to display the warm-up time. | |
| | 9 | Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color). | |
| | 12 | The document reading number of sheets setting (for aging operation) | RSPF |
| 8 | 1 | Used to check and adjust the operations of the developing voltage in each print mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously. | Process (Developing) |
| | 2 | Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously. | Process (Charging) |
| | 6 | Used to check and adjust the operation of the transport voltage and the control circuit. | Process (Transport) |
| 9 | 2 | Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit. | Duplex |
| | 3 | Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit. | Duplex |
| 10 | 1 | Used to check the operations of the toner supply mechanism (toner motor) and the related circuit. | Process (Developing) |
| 13 | - | Used to cancel the self-diag "U1" trouble. | |
| 14 | - | Used to cancel the self-diag H3, H4, H5 troubles. | |
| 15 | - | Used to cancel the self-diag "U6" trouble. | |
| 16 | - | Used to cancel the self-diag "U2" trouble. | MFP PWB / PCU PWB / SCU PWB |
| 21 | 1 | Used to set the maintenance cycle. | |
| 22 | 1 | Used to check the print count value in each section and each operation mode.<br>(Used to check the maintenance timing.) | |
| | 2 | Used to check the total number of misfeed and troubles.<br>(When the number of total jam is considerably great, it is judged as necessary for repair.) | |
| | 3 | Used to check misfeed positions and the misfeed count of each position.<br>* Presumption of the faulty point by this data is possible. | |
| | 4 | Used to check the trouble (self diag) history. | |
| | 5 | Used to check the ROM version of each unit (section). | Firmware |
| | 6 | Used to output the setting/adjustment data (simulation, FAX soft switch, counter), the firmware version, and the counter list. | |
| | 8 | Used to check the number of operations (counter value) of the finisher, the RSPF, and the scan (reading) unit. | |
| | 9 | Used to check the number of use (print quantity) of each paper feed section. | Paper feed, ADU |
| | 10 | Used to check the system configuration (option, internal hardware). | |
| | 11 | Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed) | FAX |
| | 12 | Used to check the RSPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.) | RSPF |
| | 13 | Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge) and the fusing unit | Process |
| | 14 | Used to display the use status of the toner cartridge. | Process |
| | 18 | Used to display the user data delete history. | |
| | 19 | Used to check the values of the counters related to the scan - image send. | |
| | 40 | Used to display the error code list and the contents. | |
| | 42 | Used to check the JAM/trouble data. | |

| Main | Sub | Functions | Section |
|---|---|---|---|
| 22 | 43 | JAM data details display | |
| | 60 | Used to check utility counter mode history data display. | |
| | 90 | Used to output the various set data lists. | |
| 23 | 2 | Used to output the trouble history list of paper jam and misfeed.<br>(If the number of troubles of misfeed is considerably great, the judgment is made that repair is required.) | |
| | 80 | Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section. | Paper feed, Paper transport |
| 24 | 1 | Used to clear the jam counter, and the trouble counter.<br>(After completion of maintenance, clear the counters.) | |
| | 2 | Used to clear the number of use (the number of prints) of each paper feed section. | |
| | 3 | Used to clear the finisher, RSPF, and the scan (reading) unit counter. | |
| | 4 | Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit.<br>(After completion of maintenance, clear the counters.) | |
| | 5 | Used to clear the developer counter. (After replacement of developer, clear the counter.) | |
| | 6 | Used to clear the copy counter. | |
| | 9 | Used clear the printer mode print counter and the self print mode print counter. | |
| | 10 | Used to clear the FAX counter. (Only when FAX is installed) | |
| | 12 | Used to clear the document filing counter. | |
| | 15 | Used to clear the counters related to the scan mode and the image send. | |
| | 35 | Used to clear the toner cartridge use status data. | |
| | 60 | Used to clear utility counter mode history data. | |
| 25 | 1 | Used to check the operations of the developing section. | Process (Developing section) |
| | 2 | Used to make the initial setting of toner density when replacing developer. (Automatic adjustment) | Image process (Photoconductor/ Developing/Transfer/Cleaning) |
| | 4 | Used to display the operation data of the toner supply quantity. (Not used in the market.) | Process |
| | 5 | Used to display the toner density correction data. (Not used in the market.) | Process |
| 26 | 1 | Used to set Yes/No of installation of the right paper exit tray. | Paper exit |
| | 2 | Used to set the paper size of the large capacity tray (LCC)<br>(When the paper size is changed, this simulation must be executed to change the paper size in software.<br>) | Paper exit |
| | 3 | Used to set the specifications of the auditor.<br>(Setting must be made according to the auditor use conditions.) | Auditor |
| | 5 | Used to set the count mode of the total counter and the maintenance counter. (A3/11x17 size) | |
| | 6 | Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination. | |
| | 7 | Used to set the machine ID. | |
| | 8 | Counter mode setting (Long scale) | |
| | 10 | Used to set the trial mode of the network scanner. | |
| | 18 | Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.) | |
| | 30 | Used to set the operation mode corresponding to the CE mark (Europe safety standards).<br>(For slow start to drive the fusing heater lamp) | |
| | 32 | Used to set the specifications of the fusing cleaning operation. | Fusing |
| | 35 | Used to set the display mode of SIM 22-4 trouble history when a same trouble occurred repeatedly.<br>There are two display modes: display as one trouble and display as several series of troubles. | |
| | 38 | Used to set Continue/Stop of print when the maintenance life is reached. | |
| | 41 | Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode. | |
| | 49 | Used to set the print speed of postcards mode. | |
| | 50 | Used to set functions. | |
| | 51 | Used to set the specifications of the serial port operation. (For PCI) | |
| | 52 | Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not. | |
| | 53 | User auto color calibration (color balance adjustment) Inhibit/Allow setting. | |
| | 60 | Used to set utility counter mode. | |
| | 65 | Used to set the finisher alarm mode. | |
| | 69 | Used to set the operating conditions for toner near end. | |
| | 71 | Used to set the trial mode of the web browsing function. | |
| | 73 | Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment | |
| | 74 | Used to set the OSA trial mode. | |
| | 78 | Used to set the password of the remote operation panel. | |
| | 79 | Used to set YES/NO of the pop-up display of user data delete result. | |
| 27 | 1 | Used to set non-detection of communication error (U7-00) with RIC. (FSS function) | |
| | 2 | Used to set the sender's registration number and the HOST server telephone number. (FSS function) | |
| | 4 | Used to set the initial call and toner order auto send. (FSS function) | |
| | 5 | Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function) | Communication (RIC/MODEM) |
| | 6 | Used to set of the manual service call. (FSS function) | |
| | 7 | Used to set of the enable, alert callout. (FSS function) | |
| | 9 | Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function) | |
| | 10 | Used to clear the trouble prediction history information. (FSS function) | |

| Main | Sub | Functions | Section |
|---|---|---|---|
| 27 | 11 | Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function) | |
| | 12 | Used to check the high density, halftone process control and the automatic registration adjustment error history. (FSS Function) | |
| | 13 | Used to check the history of paper transport time between sensors. (FSS function) | |
| | 14 | Used to set the FSS function connection test mode. | |
| | 15 | Used to display the FSS connection status. | |
| | 16 | Used to set the FSS alert send. | |
| | 17 | Used to set the FSS paper order alert. | |
| | 18 | Used to clear the FSS paper feed retry counter. | |
| 30 | 1 | Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits. | |
| | 2 | Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits. | |
| 40 | 2 | Manual paper feed tray paper width sensor adjustment. | Paper feed |
| | 7 | Used to set the adjustment value of the manual paper feed tray paper width sensor. | Paper feed |
| 41 | 1 | Used to check the operations of the document size sensor and the control circuit. | |
| | 2 | Used to adjust the document size sensor detection level. | |
| | 3 | Used to check the operations of the document size sensor and the control circuit. | |
| 43 | 1 | Used to set the fusing temperature in each mode. | |
| | 2 | Used to set the fusing operation and preheating. | |
| | 20 | Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) in each paper mode. | |
| | 21 | Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-2) in each paper mode. | |
| | 24 | Used to set the temperature adjustment value. | |
| | 31 | Used to check the operation of the fusing web cleaning. | Fusing |
| | 32 | Used to set various items related to the forcible operation of web cleaning when job end. | Fusing |
| | 34 | Used to check the fusing lower web cleaning motor operation. | Fusing |
| | 35 | Fusing nip operation check | Fusing |
| 44 | 1 | Used to set each correction operation function in the image forming (process) section. | Image process (Photoconductor/ Developing/Transfer/Cleaning) |
| | 2 | Used to adjust the sensitivity of the image density sensor (registration sensor). | Process |
| | 4 | Used to set the conditions of the high density process control operation. | Process |
| | 6 | Used to execute the high density process control forcibly. | Process |
| | 9 | Used to display the result data of the high density process control operation. | Image process (Photoconductor/ Developing/Transfer/Cleaning) |
| | 12 | Used to display the operation data of the high density process control and the image density sensor (registration sensor). | Image process (Photoconductor/ Developing) |
| | 14 | Used to display the output level of the temperature and humidity sensor. | Process (OPC drum, development)/ Fusing/LSU |
| | 15 | Used to set the OPC drum idle rotation. | Process |
| | 17 | Process refresh execution | Process |
| | 21 | Used to set the halftone process control target. | Process |
| | 22 | Used to display the toner patch density level in the halftone process control operation. | Process |
| | 24 | Used to display the correction target and the correction level in the halftone process control operation. | Process |
| | 25 | Used to set the calculating conditions of the correction value for the halftone process control. | Process |
| | 26 | Used to execute the halftone process control compulsory. | Process |
| | 27 | Used to clear the correction data of the halftone process control. | Process |
| | 28 | Used to set the process control execution conditions. | Process |
| | 29 | Used to set the operating conditions of the process control during a job. | Process |
| | 31 | Used to adjust the OPC drum phase. (Manual adjustment) | Process |
| | 37 | Used to set the development bias correction level in the continuous printing operation. | |
| | 43 | Used to display the identification information of the developing unit. | Developing system |
| | 62 | Used to set the process control execution conditions. | Process |
| 46 | 1 | Used to adjust the copy density in the copy mode. | |
| | 2 | Used to adjust the copy density in the copy mode. | |
| | 4 | Used to adjust the density in the image send mode. | |
| | 5 | Used to adjust the density in the image send mode. | |
| | 8 | Used to adjust the image send mode color balance RGB. | |
| | 9 | Used to adjust the scan image density. | |
| | 10 | Used to adjust the copy color balance and the gamma (for each color copy mode). | |
| | 16 | Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode). | |
| | 19 | Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents. | |
| | 21 | Copy color balance adjustment (Manual adjustment) | |
| | 23 | Used to set the density correction of copy high density section (High density tone gap supported). | |
| | 24 | Copy color balance adjustment (Auto adjustment) | |
| | 25 | Used to adjust the copy color balance. (Single color copy mode) | |
| | 26 | Used to reset the single color mode color balance set value to the default. | |
| | 27 | Used to adjust the gamma/density of copy images, texts, and line image edges. | |
| | 30 | Used to adjust the resolution in the sub scanning direction in the copy mode. | |

| Main | Sub | Functions | Section |
|---|---|---|---|
| 46 | 32 | Used to adjust the document background density reproducibility in the monochrome auto copy mode. | |
| | 36 | Used to adjust the colors in the 2-color copy mode. | |
| | 37 | Used to adjust the reproduction capability of monochrome mode color. | |
| | 38 | Used to adjust the black component amount in the color copy mode. | |
| | 39 | Used to adjust the sharpness of FAX send images. | |
| | 40 | Used to adjust the FAX send image density. (Collective adjustment of all the modes) | |
| | 41 | Used to adjust the FAX send image density. (Normal) | |
| | 42 | Used to adjust the FAX send image density. (Fine) | |
| | 43 | Used to adjust the FAX send image density. (Super Fine) | |
| | 44 | Used to adjust the FAX send image density. (Ultra fine) | |
| | 45 | Used to adjust the FAX send image density. (600dpi). | |
| | 46 | Used to adjust the FAX send image density. (RGB RIP) | |
| | 47 | Used to set the compression rate of copy and scan images (JPEG). | |
| | 51 | Used to adjust the gamma for the copy mode heavy paper mode and the image process mode. | |
| | 52 | Used to set the gamma default for the copy mode heavy paper and the image process mode.<br>(After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.) | |
| | 54 | Used to perform the engine halftone automatic density adjustment (dither). | |
| | 55 | Used to adjust the drop out color in the image send mode (monochrome manual text mode). | |
| | 58 | Used to set the copy mode pseudo resolution. (Smoothing process) | |
| | 59 | Used to perform the copy mode pseudo resolution image process adjustment. | |
| | 60 | Used to adjust the sharpness in the color auto copy mode. | |
| | 61 | Used to adjust the area separation recognition level. | |
| | 62 | Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode. | |
| | 63 | Used to adjust the density in the copy low density section. | |
| | 65 | Used to set the color correction table. | |
| | 66 | Used to adjust the reproduction capability of watermarks in the copy/printer mode. | |
| | 74 | Copy color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment) | |
| | 90 | Used to set the process operation of high-compression PDF images. | |
| | 91 | Used to adjust the reproduction capability of black text. | |
| 48 | 1 | Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction). | |
| | 5 | Used to correction the scan image magnification ratio (in the sub scanning direction). | Scanner section |
| | 6 | Used to adjust the rotation speed of each motor. | |
| 49 | 1 | Used to perform the firmware update. | |
| | 3 | Used to update the operation manual in the HDD. | |
| | 5 | Used to perform the watermark update. | |
| | 10 | Used to perform the ACU firmware update. | |
| 50 | 1 | Copy image position, image loss adjustment | |
| | 5 | Used to adjust the print lead edge image position. (PRINTER MODE) | |
| | 6 | Used to adjust the copy image position and the image loss. (RSPF mode) | RSPF |
| | 10 | Used to adjust the black print image magnification ratio and the off-center position.<br>(The adjustment is made separately for each paper feed section.) | |
| | 12 | Used to perform the scan image off-center position adjustment.<br>(The adjustment is made separately for each scan mode.) | |
| | 20 | Image registration adjustment (Main scanning direction) | |
| | 22 | Used to adjust the image registration. (Main scan direction, sub scan direction)<br>(Auto adjustment)/OPC drum phase adjustment (Auto adjustment) | |
| | 24 | Used to display the detail data of SIM 44-2, 50-20 and 22. | |
| | 27 | Used to perform the image loss adjustment of scanned images in the FAX or image send mode. | |
| | 28 | Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio. | |
| 51 | 1 | Used to adjust the ON/OFF timing of the secondary transport voltage. | |
| | 2 | Used to adjust the contact pressure (deflection amount) on paper by the main unit and the RSPF resist roller. (This adjustment is performed when there is a considerable variation in the print image position on the paper or when paper jams frequently occur.) | |
| 53 | 6 | Used to adjust the detection level of the RSPF document width. | |
| | 7 | Used to adjust the RSPF document size width sensor. | |
| | 8 | Used to adjust the document lead edge reference and the RSPF mode document scan position. | |
| | 9 | RSPF dirt detection setting | |
| | 10 | RSPF dirt detection execution | |
| 55 | 1 | Used to set the specifications of the engine control operations. (SOFT SW) | |
| | 2 | Used to set the specifications of the scanner control operation. (SOFT SW) | |
| | 3 | Used to set the specifications of the controller operation. (SOFT SW) | |
| | 10 | Used to set the special stamp text. (Taiwan only) | |
| 56 | 1 | Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.) | |
| | 2 | Used to backup the data in the EEPROM. SD Card, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.) | |
| | 3 | Used to backup the document filing data to the USB memory. | |
| | 4 | Used to backup the JOB log data to the USB memory. | |
| | 5 | Used to import the SIM22-6 data to a USB memory in the TEXT format. | |
| | 6 | Used to import the SIM23-2 data into a USB memory in the TEXT format. | |
| | 7 | Used to import SYSLOG data into a USB memory | |

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| Main | Sub | Functions | Section |
|---|---|---|---|
| 60 | 1 | Used to check the memory operations (read/write) of the MFP PWB. | |
| 61 | 1 | Used to check the LSU polygon motor rotation and laser detection. | LSU |
| | 3 | Used to set the laser power | |
| | 4 | Used to print the print image skew adjustment pattern. (LSU unit) | |
| 1 | 11 | Used to correct the laser power automatically | |
| | 12 | Laser power manual correction LSU | |
| | 13 | Used to clear the laser power correction value | |
| 62 | 1 | Used to format the hard disk/SD Card. (HDD: Excluding the Operation manual and the watermark data) (SD Card: User data) | |
| | 2 | Used to check read/write of the hard disk (partial). | |
| | 3 | Used to check read/write of the hard disk (all areas). | |
| | 6 | Used to perform the self diagnostics of the hard disk. | |
| | 7 | Used to print the hard disk self diagnostics error log. | |
| | 8 | Used to format the hard disk/SD Card. (HDD: Excluding the Operation Manual, the watermark data, and the system area) (SD Card: User data) | |
| | 10 | Used to clear the job completion list data. | |
| | 11 | Used to delete the document filing data. | |
| | 12 | Used to set Enable/Disable of auto format in a hard disk trouble. | |
| | 13 | Used to format the hard disk. (Operation Manual, watermark data only) | |
| | 14 | Used to delete the document filing management data. | HDD |
| | 20 | Used to check the operation of the mirroring hard disk. | Mirroring hard disk |
| 63 | 1 | Used to display the shading correction result. | Scanner |
| | 2 | Used to perform shading. | |
| | 3 | Used to perform scanner (CCD) color balance and gamma auto adjustment. | Scanner |
| | 4 | Used to display the SIT chart patch density. | |
| | 5 | Used to perform the scanner (CCD) color balance and gamma default setting. | |
| | 6 | Used to display the scan level and the density level of the copy color balance adjustment patch. | |
| | 7 | Used to register the service target of the copy mode auto color balance adjustment. | |
| | 8 | Used to set the default of the service target of the copy mode auto color balance adjustment. | |
| | 11 | Used to set the target color balance of the copy mode auto color balance adjustment. | |
| 64 | 1 | Test print. (Self print) (Color mode) | |
| | 2 | Test print. (Self print) (Monochrome mode) | |
| | 4 | Printer test print. (Self print) | |
| | 5 | Printer test print. (Self print) (PCL) | |
| | 6 | Printer test print. (Self print) (PS) | |
| | 7 | Used to print the adjustment pattern of the test print .(Self print).<br>(The adjustment pattern of SIM46-21 is printed.) | |
| 65 | 1 | Used to adjust the touch panel (LCD display section) detection coordinates. | Operation panel section |
| | 2 | Used to display the touch panel (LCD display section) detection coordinates. | |
| | 5 | Used to check the operation panel key input. | |
| 66 | 1 | Used to display the FAX-related soft SW (2 - 150) on the LCD to allow changing the soft SW while checking with the LCD. | FAX |
| | 2 | Used to enter a country code and set the default value for the country code. | FAX |
| | 3 | Used to check read/write of the EEPROM and the SDRAM on the MODEM controller and display the result. | FAX |
| | 4 | Used to send the selected signals to the line and the main unit speaker. (Send level: max.) | FAX |
| | 5 | Used to send the selected signal to the line and the main unit speaker. (Send level: Soft SW setting)<br>(For the kinds of send signals, refer to SIM66-04.) | FAX |
| | 6 | Used to print the confidential registration check table (BOX NO., BOX name, passcode. (If there is no confidential registration, no print is made.) | FAX |
| | 7 | Used to output all image data saved in the image memory. (Confidential data are also outputted.) | FAX |
| | 8 | Used to send the selected sound messages to the line and the speaker. (Send level: Max.) | FAX |
| | 9 | Used to send the selected sound message to the line and the speaker. (Send level: Soft SW setting)<br>* For details of sound messages, refer to the sound message table of SIM66-08. | FAX |
| | 10 | Used to clear the FAX and image send image data. (The confidential data are also cleared.) | FAX |
| | 11 | Used to send the selected signal at 300bps to the line and the speaker. (Send level: Max.) | FAX |
| | 12 | Used to send the selected signal at 300bps to the line and the speaker. (Send level: Soft SW setting)<br>* For the kings of send signals at 300bps, refer to SIM66-11, 300bps send signal table. | FAX |
| | 13 | Used to register dial numbers for SIM66-14/15/16, Dial test. (Up to 20 digits can be registered.) | FAX |
| | 14 | Used to execute the dial pulse (10PPS) send test and to adjust the make time. | FAX |
| | 15 | Used to execute the dial pulse (20PPS) send test and to adjust the make time. | FAX |
| | 16 | Used to execute the DTFM signal send test and to adjust the send level. | FAX |
| | 17 | Used to send the DTMF signal to the line and the speaker. (Send level: Max.) | FAX |

| Main | Sub | Functions | Section |
|---|---|---|---|
| 66 | 18 | Used to send the DTMF signal to the line and the speaker. (Send level: Soft SW setting) | FAX |
| | 21 | Used to print the selected items (system error, protocol monitor). | FAX |
| | 22 | Used to set the handset sound volume. (This simulation can be executed even though the handset setting is set to NO. When, however, the handset is not installed, the sound volume cannot be checked.) (Japan model only) | FAX |
| | 24 | Used to clear the FAST save data. | FAX |
| | 29 | Used to initialize the telephone book data (the one-touch registration table, the FTP/Desktop expansion table, the group expansion table, the program registration table, the interface memory box table, the meta data, InboundRouting, and the DocumentAdmin table). | FAX |
| | 30 | Used to display the TEL/LIU status change, The display is highlighted by status change. | FAX |
| | 31 | Used to set ON/OFF the port for output to TEL/LIU. | FAX |
| | 32 | Used to check the fixed data received from the line and to display the result. | FAX |
| | 33 | Used to execute detection of various signals with the line connected and to display the detection result. When a signal is detected, the display is highlighted. | FAX |
| | 34 | Used to execute the send test and display the time required for sending image data in the test. Used to execute send test and display. (Unit: ms) | FAX |
| | 36 | Used to check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually. | FAX |
| | 39 | Used to check and change the destination setting saved in EEPROM of the FAX BOX. | FAX |
| | 42 | Used to rewrite the program to power control installed in the FAX BOX. | FAX |
| | 43 | Used to write the adjustment value into the power control installed in the FAX BOX. | FAX |
| | 61 | Used to display the FAX-related soft SW (151 - 250) on the LCD to allow changing the soft SW while checking with the LCD. | FAX |
| | 62 | Used to import the FAX receive data into a USB memory in PDF file type. | FAX |
| 67 | 17 | Printer reset | Printer |
| | 24 | Printer color balance adjustment (Auto adjustment) | Printer |
| | 25 | Printer color balance adjustment (Manual adjustment) | Printer |
| | 26 | Used to set the target color balance of the printer mode auto color balance adjustment. | Printer |
| | 27 | Used to set the service target of the printer mode auto color balance adjustment. | Printer |
| | 28 | Used to set the default of the service target of the printer mode auto color balance adjustment. | Printer |
| | 31 | Used to clear the printer calibration value. | Printer |
| | 33 | Used to change the gamma of the printer screen. | Printer |
| | 34 | Used to set the density correction in the printer high density section. (Support for the high density section tone gap) | Printer |
| | 36 | Used to adjust the density in the low density section. | Printer |
| | 41 | Used to set the threshold value for the printing judgement in the black color of the black and white printing or the selected color. | Printer |
| | 42 | Used to change the gradation by increasing or decreasing the amount of the black color in the black and white printing or the selected color. | Printer |
| | 43 | Used to adjust the color balance of the black and white printing finely. | Printer |
| | 45 | Used to adjust the printer image filter and trapping. | Printer |
| | 52 | Used to set the default of the gamma of the printer screen. | Printer |
| | 54 | Printer color balance adjustment (Automatic adjustment for each dither. ) | Printer |

## 4. Details of simulation

### 1

#### 1-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operation of the scanner (reading) unit and the control circuit. |
| **Section** | Scanner (reading) |

**Operation/Procedure**

1) Select the operation 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 (346.0mm/s) | 300DPI (346.0mm/s) |
| | 400DPI | 400DPI (259.5mm/s) | |
| | 600DPI | 600DPI (173.0mm/s) | |
| | 1200DPI | 1200DPI (86.5mm/s) | |

#### 1-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the sensors in the scanner (reading) section and the related circuits. |
| **Section** | Scanner (reading) |

**Operation/Procedure**

The operating status of the sensor is displayed.

When "MHPS" is highlighted, the scanner unit is in the home position.

#### 1-5

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operation of the scanner (reading) unit and the control circuit. |
| **Section** | 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 (346.0mm/s) | 300DPI (346.0mm/s) |
| | 400DPI | 400DPI (259.5mm/s) | |
| | 600DPI | 600DPI (173.0mm/s) | |
| | 1200DPI | 1200DPI (86.5mm/s) | |

### 2

#### 2-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the automatic document feeder and the control circuit. |
| **Section** | RSPF |

**Operation/Procedure**

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

**[RSPF]**

| Item/Display | | Operation mode | Default value |
|---|---|---|---|
| (SINGLE) | 300DPI | 300DPI (259.5mm/s) | 300DPI (259.5mm/s) |
| | 400DPI | 400DPI (259.5mm/s) | |
| | 600DPI | 600DPI (173.0 mm/s) | |
| (DOUBLE) | 300DPI | 300DPI (259.5mm/s) | 300DPI (259.5mm/s) |
| | 400DPI | 400DPI (259.5mm/s) | |
| | 600DPI | 600DPI (173.0 mm/s) | |

#### 2-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the sensors and the detectors in the automatic document feeder section and the control circuits. |
| **Section** | RSPF |

**Operation/Procedure**

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

| Display | Content |
|---|---|
| SPED | Document sensor |
| SPPD1 | Document transport sensor 1 |
| SPLS1 | Paper size detector 1 |
| SPLS2 | Paper size detector 2 |
| SOCD | RSPF open/close sensor |
| SPPD2 | Document transport sensor 2 |
| SPPD3 | Document transport sensor 3 |
| SPPD4 | Document transport sensor 4 |
| SCOV | RSPF cover open/close detector |
| SSET | SPF installation detection |
| STMPU | SPF stamp UN installation detection |
| SWD_LEN | SPF document guide plate position (Unit: 0.1mm) |
| SWD_AD | SPF document detection volume output AD value |

Important

SWD_LEN and SWD_AD are not ON/OFF display.

2-3

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the loads in the automatic document feeder and the control circuit. |
| **Section** | RSPF |

**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.

| Display | Content |
|---|---|
| SPUM_F | RSPF paper feed motor (normal rotation) |
| SPUM_R | RSPF paper feed motor (reverse rotation) |
| SPFM_F | RSPF transport motor (normal rotation) |
| SPFM_R | RSPF transport motor (reverse rotation) |
| SPRS | Paper exit roller pressure control solenoid (RSPF) |
| SRRC | Registration roller clutch (RSPF) |
| STMPS | Stamp solenoid |

# 3

3-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the sensors and the detectors in the finisher and the control circuit. |
| **Section** | 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 (MX-FN17)**

| Display | Content |
|---|---|
| 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 |
| FPCHPS | Punch home position sensor |
| FPD | Punch unit detection (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 |
| FPLD1 | Paper height detector 1 |
| FPLD2 | Paper height detector 2 |
| FPMRS | Punch motor rotation sensor |
| FPMS | Punch mode sensor |
| FPPD1 | Paper entry detector |
| FPTS | Punch timing sensor |
| FSED | Staple empty detector |
| FSHPS | Staple HP sensor |
| FSLD | Staple lead edge detector |
| FSSHPS | Stapler shift home position sensor |
| FSSS | Staple safety sensor |
| FSSW | Safety switch |
| FSTPD | Staple tray paper detector |
| FTPS | Tray position sensor |

**Saddle stitch finisher (MX-FN10)**

| | |
|---|---|
| FATPD | Paper alignment tray paper detector |
| FCD | Connection detector |
| FCD1 | Cover detector 1 |
| FCD2 | Cover detector 2 |
| FDRHS | Delivery roller home position sensor |
| FDTPD | Delivery tray paper detector |
| FFL | Fan lock signal |
| FGHPS | Gripper home position sensor |
| FPAPHS_F | Paper alignment plate home position sensor F |
| FPAPHS_R | Paper alignment plate home position sensor R |
| FPCHPS | Punch home position sensor |
| FPD | Punch unit detection (connector) |
| FPDD | Delivery detector |
| 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 |
| FPHHS | Paper hold home position sensor |
| FPHPS | Punch unit home position sensor |
| FPLD | Paper surface detector |
| FPMRS | Punch motor rotation sensor |
| FPMS | Punch mode sensor |
| FPPD1 | Paper transport detector 1 |
| FPPD2 | Paper transport detector 2 |
| FPPD3 | Paper transport detector 3 |
| FPTS | Punch timing sensor |
| FSAPHS | Saddle alignment plate home position sensor |
| FSATPD | Saddle paper alignment tray paper detector |
| FSED | Staple empty detector |
| FSHS | Staple home position sensor |
| FSLS | Staple lead edge sensor |
| FSMRS | Saddle motor rotation sensor |
| FSPGHS | Saddle paper guide home position sensor |
| FSPHS | Saddle plate home position sensor |
| FSRHS | Saddle roller home position sensor |
| FSSCS | Saddle staple cover sensor |
| FSSES | Saddle staple sensor |
| FSSHPS | Stapler shift home position sensor |
| FSSHS | Saddle staple home position sensor |
| FSSSHS | Saddle stapler shift home position sensor |
| FSSSW1 | Staple safety switch |
| FSSSW2 | Stapler safety switch 2 |
| FSSW1 | Safety switch 1 |
| FSTPD | Saddle exit tray paper detector |
| FTLLD | Tray lower limit detector |
| FTLMRS | Tray lift motor rotation sensor |
| FTPS | Tray position sensor |
| FTULD | Tray upper limit detector |
| PDOS | Paper pass cover Open/Close sensor |
| PDPPD1 | Paper pass paper transport detector 1 |
| PDPPD2 | Paper pass paper transport detector 2 |

3-3

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

**Operation/Procedure**

1) Select the 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 (MX-FN17)**

| Display | Content |
|---|---|
| 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 |
| FPM | Punch motor |
| FPS | Paddle solenoid |
| FPSM | Punch shift motor |
| FPTM | Paper transport motor |
| FSM | Staple motor |
| FSSM | Stapler shift motor |
| FTLM | Tray lift motor |

**Saddle stitch finisher (MX-FN10)**

| Display | Content |
|---|---|
| FDRLM | Paper exit roller lift motor |
| FGM | Gripper motor |
| FPAM_F | Paper alignment motor F |
| FPAM_R | Paper alignment motor R |
| FPHS1 | Paper holding solenoid 1 |
| FPHS2 | Paper holding solenoid 2 |
| FPM | Punch motor |
| FPSM | Punch shift motor |
| FPTM1 | Paper transport motor 1 |
| FPTM2 | Paper transport motor 2 |
| FSDM | Saddle motor |
| FSDSM | Saddle staple motor |
| FSM | Staple motor |
| FSPAM | Saddle paper alignment motor |
| FSPM | Saddle positioning motor |
| FSPTM | Saddle paper transport motor |
| FSSM | Stapler shift motor |
| FTLM | Tray lift motor |
| PDCF | Paper pass cooling fan |
| PDPGS | Paper pass paper gate solenoid |
| PDPTM | Paper pass paper transport motor |

3-10

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the finisher. |
| **Section** | Finisher |

**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.)

**Inner finisher (MX-FN17)**

| Item/Display | | Content | Setting range | Default value | Purpose (Case where the adjustment is required) | Change when the adjustment value is increased or decreased | | Change when the adjustment value is changed by 1 |
|---|---|---|---|---|---|---|---|---|
| A | FRONT ADJUST | Alignment position adjustment (F side alignment plate stop position) (Paper alignment adjustment) | 2 - 18 | 10 | This adjustment is used to adjust the paper alignment width when the paper alignment is improper. Alignment is determined by the combination of the both adjustment values of FRONT ADJUST and REAR ADJUST. | F side paper alignment stop position (F/R direction) | When the adjustment value is increased, the alignment plate stop position is shifted to the R side. When the adjustment value is decreased, the alignment plate stop position is shifted to the F side. | 0.3665mm |
| B | REAR ADJUST | Alignment position adjustment (R side alignment plate stop position) (Paper alignment adjustment) | 2 - 18 | 10 | When changing the adjustment values of FRONT ADJUST and REAR ADJUST from the default values, be sure to change them by the same variation. | R side paper alignment stop position (F/R direction) | When the adjustment value is increased, the alignment plate stop position is shifted to the F side. When the adjustment value is decreased, the alignment plate stop position is shifted to the R side. | 0.3665mm |
| C | STAPLE REAR | Stapling position adjustment (one position at the rear) | 68 - 132 | 100 | When the staple position on the R side is shifted, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple position is shifted to the rear side. When the adjustment value is decreased, the staple position is shifted to the front side. | 0.155mm |
| D | STAPLE FRONT | Stapling position adjustment (one position in front) | 68 - 132 | 100 | When the staple position on the F side is shifted, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple position is shifted to the rear side. When the adjustment value is decreased, the staple position is shifted to the front side. | 0.155mm |
| E | STAPLE BOTH | Stapling position adjustment (center position of two positions binding) | 68 - 132 | 100 | When the staple off-center is shifted, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple position is shifted to the rear side. When the adjustment value is decreased, the staple position is shifted to the front side. | 0.155mm |

| Item/Display | | Content | Setting range | Default value | Purpose (Case where the adjustment is required) | Change when the adjustment value is increased or decreased | | Change when the adjustment value is changed by 1 |
|---|---|---|---|---|---|---|---|---|
| F | STAPLE PITCH | Stapling position adjustment (staple pitch of two positions binding) | 68 - 132 | 100 | When it is required to change the staple interval, perform the adjustment. | Staple position (Stapler stop position) (F/R direction) | When the adjustment value is increased, the staple interval is increased.<br>When the adjustment value is decreased, the staple interval is decreased. | 0.155mm |
| G | PUNCH CENTER | Punch center positioning sensor | 37 - 63 | 50 | When the punch off-center is shifted, perform the adjustment. | Punch position (F/R direction) | When the adjustment value is decreased, the punch position is shifted to the front side.<br>When the adjustment value is increased, the punch position is shifted to the rear side. | 0.1441mm |
| H | PUNCH HOLE | Punch hole adjustment (paper transport direction) | 42 - 58 | 50 | When the punch hole position is shifted in the transport direction, perform the adjustment. | Punch position (Paper transport direction) | When the adjustment value is increased, the punch position is shifted to the paper lead edge side.<br>When the adjustment value is decreased, the punch position is shifted to the paper rear edge side. | 0.2584mm |

**Saddle stitch finisher (MX-FN10)**

| Item/Display | | Content | Setting range | Default value | Purpose (Case where the adjustment is required) | Change when the adjustment value is increased or decreased | | Change when the adjustment value is changed by 1 |
|---|---|---|---|---|---|---|---|---|
| A | SADDLE POSITION | Saddle stitch position adjustment | 25 - 75 | 50 | The adjustment is executed when the saddle staple position is shifted. | Saddle paper lead edge striking plate stop position (Up-down direction) | When the adjustment value is increased, the stapling position is shifted to the lead edge of transported paper.<br>When the adjustment value is decreased, the stapling position is shifted to the rear edge of transported paper. | 0.2mm |
| B | FOLDING POSITION | Saddle folding position adjustment | 25 - 75 | 50 | The adjustment is executed when the saddle folding position is shifted. | Saddle paper lead edge striking plate stop position (Up-down direction) | When the adjustment value is increased, the folding position is shifted to the lead edge of transported paper.<br>When the adjustment value is decreased, the folding position is shifted to the rear edge of transported paper. | 0.2mm |
| C | FRONT ADJUST | Alignment position adjustment (front) | 35 - 65 | 50 | When the paper alignment capability in the stacker section is improper, the paper alignment width is adjusted. | F side paper alignment plate stop position (F/R direction) | When the adjustment value is increased, the alignment position is shifted to the center.<br>When the adjustment value is decreased, the alignment position is shifted to the outside. | 0.2mm |
| D | REAR ADJUST | Alignment position adjustment (Rear) | 35 - 65 | 50 | | R side paper alignment plate stop position (F/R direction) | When the adjustment value is increased, the alignment position is shifted to the center.<br>When the adjustment value is decreased, the alignment position is shifted to the outside. | 0.2mm |
| E | STAPLE REAR | Stapling position adjustment (Rear, one position) | 25 - 75 | 50 | When the stapling position on the R side is shifted, the adjustment is executed. | Stapling position (stapler stop position) (F/R direction) | When the adjustment value is increased, the distance between the stapling position and the paper edge becomes longer.<br>When the adjustment value is decreased, the distance between the stapling position and the paper edge becomes shorter. | 0.2mm |

| Item/Display | | Content | Setting range | Default value | Purpose (Case where the adjustment is required) | Change when the adjustment value is increased or decreased | | Change when the adjustment value is changed by 1 |
|---|---|---|---|---|---|---|---|---|
| F | STAPLE REAR R | Stapling position adjustment (Rear, one position /R series) | 45 - 75 | 50 | When the stapling position on the R side is shifted with R series paper, the adjustment is executed. | Stapling position (stapler stop position) (F/R direction) | When the adjustment value is increased, the distance between the stapling position and the paper edge becomes longer.<br>When the adjustment value is decreased, the distance between the stapling position and the paper edge becomes shorter. | 0.2mm |
| G | STAPLE FRONT | Stapling position adjustment (one position in front) | 25 - 75 | 50 | When the stapling position on the F side is shifted, the adjustment is executed. | Stapling position (stapler stop position) (F/R direction) | When the adjustment value is decreased, the distance between the stapling position and the paper edge becomes shorter.<br>When the adjustment value is increased, the distance between the stapling position and the paper edge becomes longer. | 0.2mm |
| H | STAPLE FRONT R | Stapling position adjustment (Front, one position / R series) | 25 - 55 | 50 | When the stapling position on the F side is shifted with R series paper, the adjustment is executed. | Stapling position (stapler stop position) (F/R direction) | When the adjustment value is decreased, the distance between the stapling position and the paper edge becomes shorter.<br>When the adjustment value is increased, the distance between the stapling position and the paper edge becomes longer. | 0.2mm |
| I | STAPLE BOTH | Stapling position adjustment (Two positions, center) | 45 - 55 | 50 | When the staple off-center is shifted, the adjustment is executed. | Stapling position (stapler stop position) (F/R direction) | When the adjustment value is increased, the stapling position is shifted to the front.<br>When the adjustment value is decreased, the stapling position is shifted to the rear. | 0.2mm |
| J | STAPLE PITCH | Stapling position adjustment (Two positions, pitch) | 35 - 62 | 50 | When the stapling interval is to be changed, the adjustment is executed. | Stapling position (stapler stop position) (F/R direction) | When the adjustment value is increased, the pitch of two points is widened.<br>When the adjustment value is decreased, the pitch of two points is narrowed. | 0.2mm |
| K | PUNCH CENTER | Punch center adjustment | 35 - 65 | 50 | When the punch off-center is shifted, the adjustment is executed. | Punching position (F/R direction) | When the adjustment value is increased, the hole position is shifted to the front.<br>When the adjustment value is decreased, the hole position is shifted to the rear. | 0.2mm |
| L | PUNCH HOLE | Punch hole position adjustment | 30 - 60 | 50 | When the punch hole position is shifted in the transport direction, the adjustment is executed. | Punch position (paper transport direction) | When the adjustment value is increased, the punch hole position is shifted to the rear edge of paper.<br>When the adjustment value is decreased, the punch hole position is shifted to the lead edge of paper. | 0.2mm |
| M | SADDLE_ ADJUST_POS | Saddle alignment position adjustment | 35 - 65 | 50 | When the paper alignment capability in the saddle section is improper, the paper alignment width is adjusted. | Saddle paper alignment plate stop position (F/R direction) | When the adjustment value is increased, the alignment plate position is shifted to the center.<br>When the adjustment value is decreased, the alignment plate position is shifted to the outside. | 0.2mm |
| N | GRIPPER_ POS | Gripper exit position adjustment | 35 - 65 | 50 | When the gripper discharge position is shifted, the adjustment is executed. (When a JAM or trouble occurs, the adjustment is executed.) | Gripper discharge position (Gripper stop position) (F/R direction) | When the adjustment value is increased, the gripper discharge position is shifted to the front.<br>When the adjustment value is decreased, the gripper discharge position is shifted to the rear. | 0.2mm |

# 4

## 4-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the sensors and detectors in the desk/large capacity tray (LCC), and the control circuit of those. |
| **Section** | Desk/Large capacity tray (LCC) |

**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**

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

**Tandem LCC (MX-DE20)**

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

**A4LCC (MX-LC11)**

| Display | Content |
|---|---|
| LPFD | LCC transport detector |
| LUD | LCC tray upper limit detector |
| LDD | LCC tray lower limit detector |
| LPED | LCC tray paper empty detector |
| LCLD | LCC tray open/close detector |
| LDSW | LCC upper open/close detection switch |
| LRE | LCC lift motor encoder |
| L24VM | LCC24V power monitor |
| LLSW | LCC upper limit switch |
| LCCD | LCC main unit connection detection |

## 4-3

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the loads in the desk/large capacity tray (LCC), and the control circuit of those. |
| | Section. |
| **Section** | Desk/Large capacity tray (LCC) |

**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**

| Display | Content |
|---|---|
| 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 (MX-DE20)**

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

**A4LCC (MX-LC11)**

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

## 4-5

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the paper feed desk paper transport clutch (DTRC) and the LCC paper transport clutch (LTRC). |
| **Section** | Desk/Large capacity tray (LCC) |

**Operation/Procedure**

**Check the ON operation**

Press the button of the code name for checking the ON operation.

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

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

**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

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operation of the heater lamp and the control circuit. |
| **Section** | Fusing |

**Operation/Procedure**

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected heater lamp operates ON/OFF.
   When [EXECUTE] key is pressed, the operation is terminated.

Heater lamp operation check method:
Remove the front cabinet upper and the paper exit tray, and the lighting status of each heater lamp can be checked through the clearance between the fusing pressure release drive gear and the frame fusing section.

| | |
|---|---|
| HL_LM | Heater lamp (B) (Back surface) |
| HL_UM | Main heater lamp (F) (Front surface) |
| HL_US | Sub heater lamp (F) (Front surface) |

## 5-3

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operation of the scanner lamp and the control circuit. |
| **Section** | 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.

## 5-4

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operation of the discharge lamp and the control circuit. |
| **Section** | Process |

**Operation/Procedure**

1) Select a target of the operation check with the touch panel key. When [ALL] key is pressed, all the items are selected.
2) Press [EXECUTE] key.
   The selected discharge lamp is lighted for 30 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

| | |
|---|---|
| DL_K | Discharge lamp K |
| DL_C | Discharge lamp C |
| DL_M | Discharge lamp M |
| DL_Y | Discharge lamp Y |

# 6

## 6-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits. |
| **Section** | Paper transport/Paper exit section |

**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 | ADUC1 | ADU transport clutch 1 |
| | PFM | Transport motor |
| | RRM | Registration motor |
| | POMF (*1) | Paper exit motor (normal rotation) |
| | POMR (*1) | Paper exit motor (reverse rotation) |
| | FUM | Fusing motor |
| | CPFM | Paper feed motor |
| | OSM | Offset motor |
| | CPFC1 | Tray vertical transport clutch 1 |
| | CPFC2 | Tray vertical transport clutch 2 |
| | TRC_DSK | Desk clutch |
| | TRC_LCC (*2) | LCC clutch |
| | TRC_FIN | Finisher clutch |
| | HPFC | Transport roller clutch |
| | PFC | Vertical transport clutch |
| | RRC | Registration roller clutch |
| Paper feed | CLUM1 | Paper tray lift motor (Paper feed tray 1) |
| | CPUC1 | Paper feed clutch (Paper feed tray 1) |
| | CLUM2 | Paper tray lift motor (Paper feed tray 2) |
| | CPUC2 | Paper feed clutch (Paper feed tray 2) |
| | MPFS | Paper feed solenoid (Manual paper feed) |

*1: If "Normal rotation" and "Reverse rotation" of a same load are displayed as different items, when the both are selected at the same time, "Normal rotation" is performed. In addition, a change in the rotating direction is accepted only when the operation is stopped.

*2: Displayed but not installed in some models.

## 6-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of each fan motor and its control circuit. |
| **Section** | Others |

**Operation/Procedure**

1) Select the 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.

| Display | Content |
|---|---|
| PROFM2 | Process fan 2 |
| POFM | Paper exit cooling fan (Drives POFM1 and POFM2 at the same time.) |
| FUFM | Fusing cooling fan |
| PROFM1 | Process fan 1 |
| PSFM | Power cooling fan |
| LSUFM | LSU cooling fan motor |

## 6-3

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the transport unit and the control circuit. |
| **Section** | Process (Transport) |

**Operation/Procedure**

1) Select the operation mode with the mode select button.

| Mode select button | Content |
|---|---|
| TC1 | Primary transfer (normal rotation) |
| TC1_R | Primary transfer (reverse rotation) |
| TC2 | Secondary transfer |

2) When [EXECUTE] key is pressed, the operation of the mode selected in 1) is performed.

| Mode select button | Mode display | Content | NOTE |
|---|---|---|---|
| TC1 | BLACK | Monochrome mode position | Black mode position → Color mode position → Black mode position → Drum separation position → (Black mode position) (Repeated in this sequence.) |
| | COLOR | Color mode position | |
| | FREE | Non-transport position | |
| TC1_R | BLACK | Monochrome mode position | Black mode position → Drum separation position → Color mode position → (Black mode position) (Repeated in this sequence.) |
| | FREE | Non-transport position | |
| | COLOR | Color mode position | |
| TC2 | PRINT | Print position | Print position - Transfer position - Non-transfer position (Repeated in this sequence) |
| | FREE | Non-transport position | |

## 6-6

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to perform fusing pressure release and applying, and to check the operations of the control circuits. |
| **Section** | Fusing |

**Operation/Procedure**

1) Press [FUSER] key to highlight it.
2) Press [EXECUTE] key, and fusing pressure applying and fusing pressure release are repeated.

During this period, the status of the fusing roller pressure is displayed.

| | | |
|---|---|---|
| PRINT | Fusing pressure applying | Fusing pressure applying → Fusing pressure release → (Fusing pressure applying) The operation is repeated. |
| FREE | Fusing pressure release | |

## 6-90

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to reset the machine to the factory setting. (The scanner is set to the lock enable position) |
| **Section** | Scanner |

**Operation/Procedure**

1) Press [EXECUTE] key.
   The scanner is shifted to the lock enable position and stopped.

# 7

## 7-1

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the operating conditions of aging. |
| **Section** | Others |

**Operation/Procedure**

1) Select an item 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 hereafter unless the power is turned off or the setting is changed.

| | |
|---|---|
| AGING | Aging operation setup |
| INTERVAL | Intermittent operation setting |
| MISFEED DISABLE | JAM detection ignoring setting |
| FUSING DISABLE | Fusing unit ignoring setting |
| WARMUP DISABLE | Warming up ignoring setting |
| DV CHECK DISABLE | Developing unit ignoring setting |
| SHADING DISABLE | Shading correction operation omitting setting |
| CCD GAIN FREE | CCD gain adjustment omitting setting |

## 7-6

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the operating intermittent aging cycle. |
| **Section** | |

**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 hereafter unless the power is turned off or the setting is changed.

## 7-8

| | |
|---|---|
| **Purpose** | Operation display |
| **Function (Purpose)** | Used to display the warm-up time. |
| **Section** | |

**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.

## 7-9

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color). |
| **Section** | |

**Operation/Procedure**

1) Select the copy color with the touch panel key.
   (Two or more colors can be selected.)
   The key of the selected color is highlighted.
2) Press [EXECUTE] key.
   Copying is performed with the selected color.

When [CLOSE] key is pressed, the display goes into the copy operation menu in the simulation mode.

| | |
|---|---|
| K | Setup/cancel of black |
| C | Setup/cancel of cyan |
| M | Setup/cancel of magenta |
| Y | Setup/cancel of yellow |

## 7-12

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | The document reading number of sheets setting (for aging operation) |
| **Section** | RSPF |

**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 hereafter unless the power is turned off or the setting is changed.

# 8

8-1

| | |
|---|---|
| **Purpose** | Operation test/check/adjustment |
| **Function (Purpose)** | Used to check and adjust the operations of the developing voltage in each print mode and the control circuit.<br>* When the middle speed is adjusted, the low speed are also adjusted simultaneously. |
| **Section** | Process (Developing) |

**Operation/Procedure**

1) Select a speed with [MIDDLE] and [LOW] keys on the touch panel.
2) Select a target item to be adjusted with scroll keys.
3) Enter the setting value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [EXECUTE] key.

   The set value is saved and the voltage entered with step 3) is output for 30 sec.

   When [EXECUTE] key is pressed, the output is terminated.

| Item/Display (Mode) | | | Content | | Adjustment range | Actual voltage |
|---|---|---|---|---|---|---|
| MIDDLE | A | MIDDLE SPEED DVB_K | Developing bias voltage (Middle speed mode) | K | 0 - 600 | –450V ±5V |
| | B | MIDDLE SPEED DVB_C | Developing bias voltage (Middle speed mode) | C | 0 - 600 | –450V ±5V |
| | C | MIDDLE SPEED DVB_M | Developing bias voltage (Middle speed mode) | M | 0 - 600 | –450V ±5V |
| | D | MIDDLE SPEED DVB_Y | Developing bias voltage (Middle speed mode) | Y | 0 - 600 | –450V ±5V |
| LOW | A | LOW SPEED DVB_K | Developing bias voltage (Low speed mode) | K | 0 - 600 | –450V ±5V |
| | B | LOW SPEED DVB_C | Developing bias voltage (Low speed mode) | C | 0 - 600 | –430V ±5V |
| | C | LOW SPEED DVB_M | Developing bias voltage (Low speed mode) | M | 0 - 600 | –430V ±5V |
| | D | LOW SPEED DVB_Y | Developing bias voltage (Low speed mode) | Y | 0 - 600 | –430V ±5V |

8-2

| | |
|---|---|
| **Purpose** | Operation test/check/adjustment |
| **Function (Purpose)** | Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.<br>* When the middle speed is adjusted, the low speed are also adjusted simultaneously. |
| **Section** | Process (Charging) |

**Operation/Procedure**

1) Select a speed with [MIDDLE] and [LOW] keys on the touch panel.
2) Select a target item to be adjusted with scroll keys.
3) Enter the adjustment value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [EXECUTE] key.
   The set value is saved and the voltage entered with step 3) is output for 30 sec.
   When [EXECUTE] key is pressed, the output is terminated.

| Item/Display (Mode) | | | Content | | Adjustment range | Actual voltage 26cpm/31cpm machine | Actual voltage 36cpm machine |
|---|---|---|---|---|---|---|---|
| MIDDLE | A | MIDDLE SPEED GB_K | Main charger grid voltage (Middle speed mode) | K | 150 - 850 | –620V±5V | –625V±5V |
| | B | MIDDLE SPEED GB_C | Main charger grid voltage (Middle speed mode) | C | 150 - 850 | –620V±5V | –625V±5V |
| | C | MIDDLE SPEED GB_M | Main charger grid voltage (Middle speed mode) | M | 150 - 850 | –620V±5V | –625V±5V |
| | D | MIDDLE SPEED GB_Y | Main charger grid voltage (Middle speed mode) | Y | 150 - 850 | –620V±5V | –625V±5V |
| LOW | A | LOW SPEED GB_K | Main charger grid voltage (Low speed mode) | K | 150 - 850 | –610V±5V | –610V±5V |
| | B | LOW SPEED GB_C | Main charger grid voltage (Low speed mode) | C | 150 - 850 | –590V±5V | –590V±5V |
| | C | LOW SPEED GB_M | Main charger grid voltage (Low speed mode) | M | 150 - 850 | –590V±5V | –590V±5V |
| | D | LOW SPEED GB_Y | Main charger grid voltage (Low speed mode) | Y | 150 - 850 | –590V±5V | –590V±5V |

8-6

| | |
|---|---|
| **Purpose** | Operation test/check/adjustment |
| **Function (Purpose)** | Used to check and adjust the operation of the transport voltage and the control circuit. |
| **Section** | Process (Transport) |

**Operation/Procedure**

1) Select a target item to be adjusted with scroll keys.
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, the output is terminated.

| Item / Display | | Content | | | | Setting range | Default value 26cpm 31cpm machine | Default value 36cpm machine |
|---|---|---|---|---|---|---|---|---|
| A | TC1 LOW SPEED CL K | Primary transfer bias adjustment value | Color | K | Low speed | 51 to 255 | 80 | 80 |
| B | TC1 MIDDLE SPEED CL K | | | | Middle speed | 51 to 255 | 109 | 117 |
| C | TC1 LOW SPEED CL C | | | C | Low speed | 51 to 255 | 80 | 80 |
| D | TC1 MIDDLE SPEED CL C | | | | Middle speed | 51 to 255 | 109 | 117 |
| E | TC1 LOW SPEED CL M | | | M | Low speed | 51 to 255 | 80 | 80 |
| F | TC1 MIDDLE SPEED CL M | | | | Middle speed | 51 to 255 | 109 | 117 |
| G | TC1 LOW SPEED CL Y | | | Y | Low speed | 51 to 255 | 80 | 80 |
| H | TC1 MIDDLE SPEED CL Y | | | | Middle speed | 51 to 255 | 109 | 117 |
| I | TC1 LOW SPEED BW K | | Monochrome | K | Low speed | 51 to 255 | 80 | 80 |
| J | TC1 MIDDLE SPEED BW K | | | | Middle speed | 51 to 255 | 109 | 117 |
| K | TC2 PLAIN CL SPX | Secondary transfer bias adjustment value | Color | Standard paper | Front surface | 51 to 255 | 103 | 110 |
| L | TC2 PLAIN CL DPX | | | | Back surface | 51 to 255 | 90 | 96 |
| M | TC2 PLAIN BW SPX | | Monochrome | | Front surface | 51 to 255 | 103 | 110 |
| N | TC2 PLAIN BW DPX | | | | Back surface | 51 to 255 | 90 | 96 |
| O | TC2 HEAVY CL SPX | | Color | Heavy paper | Front surface | 51 to 255 | 83 | 83 |
| P | TC2 HEAVY CL DPX | | | | Back surface | 51 to 255 | 76 | 76 |
| Q | TC2 HEAVY BW SPX | | Monochrome | | Front surface | 51 to 255 | 69 | 69 |
| R | TC2 HEAVY BW DPX | | | | Back surface | 51 to 255 | 69 | 69 |
| S | TC2 HEAVY2 CL | | Color | Heavy paper 2 | | 51 to 255 | 83 | 83 |
| T | TC2 HEAVY2 BW | | Monochrome | | | 51 to 255 | 69 | 69 |
| U | TC2 HEAVY3 CL | | Color | Heavy paper 3 | | 51 to 255 | 83 | 80 |
| V | TC2 HEAVY3 BW | | Monochrome | | | 51 to 255 | 69 | 69 |
| W | TC2 OHP CL | | Color | OHP | | 51 to 255 | 69 | 69 |
| X | TC2 OHP BW | | Monochrome | | | 51 to 255 | 69 | 69 |
| Y | TC2 ENVELOPE CL | | Color | Envelope | | 51 to 255 | 69 | 69 |
| Z | TC2 ENVELOPE BW | | Monochrome | | | 51 to 255 | 69 | 69 |

| Item / Display | | Content | | | | Setting range | Default value | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | 26cpm 31cpm machine | 36cpm machine |
| AA | TC2 THIN CL | Secondary transfer bias adjustment value | Color | Thin paper | | 51 to 255 | 103 | 110 |
| AB | TC2 THIN BW | | Monochrome | | | 51 to 255 | 103 | 110 |
| AC | TC2 GLOSSY CL | | Color | Gross paper | | 51 to 255 | 83 | 83 |
| AD | TC2 GLOSSY BW | | Monochrome | | | 51 to 255 | 69 | 69 |
| AE | TC2 CLEANING | Secondary transfer cleaning bias adjustment value | Cleaning process (negative pole) | | | 51 to 255 | 59 | 59 |
| AF | TC2 CLEAN LOW SPD | | Low speed print mode | | | 0 to 255 | 26 | 26 |
| AG | TC2 CLEAN MIDDLE SPD | | Middle speed print mode | | | 0 to 255 | 26 | 26 |
| AH | TC2 CLEAN CLEANING | | Cleaning bias (positive pole) | | | 0 to 255 | 102 | 102 |
| AI | PTC LOW SPEED CL | PTC current adjustment value | | Color | Low speed | 51 to 255 | 73 | 73 |
| AJ | PTC MIDDLE SPEED CL | | | | Middle speed | 51 to 255 | 73 | 73 |
| AK | PTC LOW SPEED BW | | | Monochrome | Low speed | 51 to 255 | 73 | 73 |
| AL | PTC MIDDLE SPEED BW | | | | Middle speed | 51 to 255 | 73 | 73 |
| AM | CASE VOLT LOW CL | PTC voltage adjustment value | | Color | Low speed | 0 to 255 | 0 | 0 |
| AN | CASE VOLT MID CL | | | | Middle speed | 0 to 255 | 0 | 0 |
| AO | CASE VOLT LOW BW | | | Monochrome | Low speed | 0 to 255 | 0 | 0 |
| AP | CASE VOLT MID BW | | | | Middle speed | 0 to 255 | 0 | 0 |

# 9

## 9-2

**Purpose**: Operation test/check

**Function (Purpose)**: Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.

**Section**: Duplex

**Operation/Procedure**

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

| | |
|---|---|
| APPD1 | ADU paper transport detector 1 |
| APPD2 | ADU paper transport detector 2 |
| DSW_ADU | ADU paper guide open/close detector |

## 9-3

**Purpose**: Operation test/check

**Function (Purpose)**: Used to check the operations of the load in the paper reverse section (duplex section) and its control circuit.

**Section**: 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, the operation is terminated.

| Display | Content |
|---|---|
| ADUC1 | ADU transport clutch 1 (*) |
| ADUM | ADU motor |
| ADUGS | ADU gate solenoid |

*: Not used, but the button is displayed.

# 10

## 10-1

**Purpose**: Operation test/check

**Function (Purpose)**: Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.

**Section**: Process (Developing)

**Operation/Procedure**

1) Select a target of the operation check with the touch panel key. When [ALL] key is pressed, all the items are selected.
2) Press [EXECUTE] key.
   The selected load operation is performed for 10 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

Important

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 overtoner.

If this simulation is erroneously executed with the toner cartridges installed, overtoner state may be deleted by making a few black background copy in the single color copy mode of the target color.

| | |
|---|---|
| TNM_K | Toner motor K |
| TNM_C | Toner motor C |
| TNM_M | Toner motor M |
| TNM_Y | Toner motor Y |

## 13

13--

| | |
|---|---|
| **Purpose** | Cancel (Trouble etc.) |
| **Function (Purpose)** | Used to cancel the self-diag "U1" trouble. |
| **Section** | |

**Operation/Procedure**

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

## 14

14--

| | |
|---|---|
| **Purpose** | Cancel (Trouble etc.) |
| **Function (Purpose)** | Used to cancel the self-diag H3, H4, H5 troubles. |
| **Section** | |

**Operation/Procedure**

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

## 15

15--

| | |
|---|---|
| **Purpose** | Clear/Cancel (Trouble etc.) |
| **Function (Purpose)** | Used to cancel the self-diag "U6" trouble. |
| **Section** | LCC |

**Operation/Procedure**

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

## 16

16--

| | |
|---|---|
| **Purpose** | Clear/Cancel (Trouble etc.) |
| **Function (Purpose)** | Used to cancel the self-diag "U2" trouble. |
| **Section** | MFP PWB / PCU PWB / SCU PWB |

**Operation/Procedure**

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

## 21

21-1

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the maintenance cycle. |
| **Section** | |

**Operation/Procedure**

* Do not change the default setting value of the maintenance counter on SIM21-1. The replacement timing of the fusing cleaning roller, the filter and PS paper dust removal cleaner may not clarify.

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 | Setting range | Default value |
|---|---|---|---|---|
| A | MAINTE-NANCE COUNTER (TOTAL) | Mainte-nance counter (Total) | 0: Default<br>1 – 300: 1K – 300K<br>999: Free | 200K |
| B | MAINTE-NANCE COUNTER (COLOR) | Mainte-nance counter (Color) | 0: Default<br>1 – 300: 1K – 300K<br>999: Free | 200K |

## 22

22-1

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data output/Check |
| **Function (Purpose)** | Used to check the print count value in each section and each operation mode.<br>(Used to check the maintenance timing.) |
| **Section** | |

**Operation/Procedure**

Change the display page with scroll key on the touch panel.

| Item | Display | Content | |
|---|---|---|---|
| Total output quantity | TOTAL OUT (BW) | Total output quantity of black and white | All prints including jams |
| | TOTAL OUT (COL) | Total output quantity of color | All prints including jams |
| Total use quantity | TOTAL (BW) | Total use quantity of black and white | Effective paper (including self print, excluding jams) |
| | TOTAL (COL) | Total use quantity of full color | Effective paper (including self print, excluding jams) |
| | TOTAL (2COL) | Total use quantity of 2-color | Effective paper (including self print, excluding jams) |
| | TOTAL (3COL) | Total use quantity of 3-color | Effective paper (including self print, excluding jams) |
| | TOTAL (SGL_COL) | Total use quantity of single color | Effective paper (including self print, excluding jams) |
| Copy | COPY (BW) | Black and white copy counter | Billing target (excluding self print) |
| | COPY (COL) | Full color copy counter | Billing target (excluding self print) |
| | COPY (2COL) | 2-color copy counter | Billing target (excluding self print) |
| | COPY (SGL_COL) | Single color copy counter | Billing target (excluding self print) |

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| Item | Display | Content | |
|---|---|---|---|
| Print | PRINT (BW) | Black and white print counter | Billing target (excluding self print) |
| | PRINT (COL) | Full color print counter | Billing target (excluding self print) |
| | PRINT (2COL) | 2-color print counter | Billing target (excluding self print) |
| | PRINT (3COL) | 3-color print counter | Billing target (excluding self print) |
| | PRINT (SGL_COL) | Single color print counter | Billing target (excluding self print) |
| Document filing | DOC FIL (BW) | Black and white document filing print counter | |
| | DOC FIL (COL) | Color document filing print counter | |
| | DOC FIL (2COL) | 2-color document filing print counter | |
| | DOC FIL(SGL COL) | Single color document filing print counter | |
| Other | OTHER (BW) | Black and white other counter | Self print quantity |
| | OTHER (COL) | Color other counter | Self print quantity |
| PCI | PCI OPE-TIME | PCI counter | PCI accumulated operation time (H) |

22-2

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to check the total number of misfeed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)

**Section**

**Operation/Procedure**

The paper jam, trouble counter value is displayed.

| | |
|---|---|
| MACHINE JAM | Machine JAM counter |
| RSPF JAM | RSPF JAM counter |
| TROUBLE | Trouble counter |

22-3

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to check misfeed positions and the misfeed count of each position.
* Presumption of the faulty point by this data is possible.

**Section**

**Operation/Procedure**

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

22-4

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to check the trouble (self diag) history.

**Section**

**Operation/Procedure**

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

22-5

**Purpose** Others

**Function (Purpose)** Used to check the ROM version of each unit (section).

**Section** Firmware

**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.

| | |
|---|---|
| S/N | Serial No. (The codes for November and December are "X" and "Y" respectively.) |
| ICUM(MAIN) | ICUM(MAIN section) |
| ICUM(SUB) | ICUM(SUB section) |
| ICUM(BIOS) | ICUM(BIOS section) |
| ICU (MAIN) | ICU (Main section) |
| ICU (BOOT) | ICU (Boot section) |
| ICU (SUB) | ICU (Sub section) (ARM9) |
| LANGUAGE | Language support data version |
| UICONTENTS | Contents data for display |
| PCL (PROFILE) | PCL (Color profile) |
| PCU | PCU |
| SCU | SCU |
| FAX1 (MAIN) | FAX 1-Line (Main section) |
| FAX2 (MAIN) | FAX 2-Line (Main section) |
| FAX3 (MAIN) | FAX 3-Line (Main section) |
| DESK | Desk unit |
| LCC | LCC |
| FINISHER | Finisher |
| 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) | Enhanced compression kit (Main section) |
| ACRE (DATA) | Enhanced compression kit (Data section) |
| PCI | PCI |
| EOSA | Embedded OSA |

22-6

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to output the setting/adjustment data (simulation, FAX soft switch, counter), the firmware version, and the counter list.

**Section**

**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 list mode | Print content |
|---|---|---|---|
| A | DATA PATTERN | 1 | Firmware version, counter data, etc. |
| | | 2 | SIM50-24 data |
| | | 3 | Data related to the process control |

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

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22-8

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the number of operations (counter value) of the finisher, the RSPF, and the scan (reading) unit. |
| **Section** | |

**Operation/Procedure**

The counter values of the finisher, the RSPF, and the scanner related counters are displayed.

| | |
|---|---|
| SPF | Document feed quantity (The number of sheets of discharged documents) |
| SCAN | Number of times of scan |
| STAPLER | Staple counter |
| PUNCHER | Puncher counter |
| STAMP | Stamp counter |
| COVER | Document cover open/close counter |
| HP_ON | Number of scanner HP detection |
| OC LAMP TIME | Total lighting time of the scanner lamp (* hour * minutes) |
| SADDLE STAPLER | Saddle staple counter |
| SADDLE V FOLD | Saddle finisher V fold counter |

22-9

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the number of use (print quantity) of each paper feed section. |
| **Section** | Paper feed, ADU |

**Operation/Procedure**

The counter values related to paper feed are displayed.

| | |
|---|---|
| TRAY1 | Paper feed counter (Paper feed tray 1) |
| TRAY2 | Paper feed counter (Paper feed tray 2) |
| TRAY3 | Paper feed counter (Paper feed tray 3) |
| TRAY4 | Paper feed counter (Paper feed tray 4) |
| 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) |
| 1 LCC | LCC paper feed counter |
| ADU | ADU paper transport counter (Paper reverse section) |

22-10

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the system configuration (option, internal hardware). |
| **Section** | |

**Operation/Procedure**

The system configuration is displayed.

(The model names of the installed devices and options are displayed.)

| | | |
|---|---|---|
| MACHINE | MX-2640N | Main unit |
| | MX-3140N | |
| | MX-3640N | |
| 1 | MX-3140N A | |
| | MX-2640NR | |
| | MX-3140NR | |
| | MX-3640NR | |
| SPF | STANDARD | Reversing single pass feeder |
| 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 |
| | MX-LC11 | Large capacity tray |
| PUNCHER | MX-PN11A | Punch unit |
| | MX-PN11B | |
| | MX-PN11C | |
| | MX-PN11D | |
| | MX-PNX5A | |
| | MX-PNX5B | |
| | MX-PNX5C | |
| | MX-PNX5D | |
| FINISHER | MX-FN17 | Inner finisher |
| | MX-FN10 | Saddle stitch finisher (1K) |
| FAX1 | MX-FX11 | Facsimile expansion kit |
| PRINTER | STANDARD | Printer expansion kit (PCL) |
| PS | STANDARD | PS expansion kit |
| XPS | MX-PUX1 | XPS expansion kit |
| SECURITY | MX-FR41U | Data security kit (commercial 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 | Application communication module |
| EAM(*) | MX-AMX3 | External account module |
| PCI | CONNECT | PCI generating unit |
| CF | *****GB | Compact flash capacity |

(*) Displayed only in the OSA models.

22-11

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed) |
| **Section** | FAX |

**Operation/Procedure**

The values of the FAX send counter and the FAX receive counter are displayed.

| | |
|---|---|
| FAX 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 |

22-12

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the RSPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.) |
| **Section** | RSPF |

**Operation/Procedure**

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

22-13

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge) and the fusing unit |
| **Section** | Process |

**Operation/Procedure**

The number of prints and the number of rotations in the process section are displayed.

| Item/Display | Content | Print counter | RPM | Number of use days | Life meter | Number of remaining days |
|---|---|---|---|---|---|---|
| MAINTENANCE ALL | Maintenance counter (Total) (Counter) | Max. 8 | Not displayed | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| MAINTENANCE COL | Maintenance counter (Color) | Max. 8 | Not displayed | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| FUSING BELT | Fusing belt | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| FUSING ROLLER | Fusing roller | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| PRESSURE ROLLER | Fusing pressure roller | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| FUSING LOAD | Fusing pressure release roller | Not displayed | Max. 8 | Not displayed | Not displayed | Not displayed |
| SEPARATE PAWL | Fusing separation pawl | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| SEPARATE PLATE | Fusing separation plate | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| FUSING WEB UNIT | Fusing web unit | Max. 8 | Not displayed | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| FUSING WEB SEND | Fusing web cleaning send counter | 0 - 65535 | Not displayed | Not displayed | Not displayed | Not displayed |
| TC1 BELT | Primary transfer belt | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| TRANSFER BLADE | Transfer cleaning blade | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| PTC | PTC | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| TC2 BELT | Secondary transfer belt | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| PS PAPER | Paper dust cleaner | Max. 8 | Not displayed | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| OZONE FILTER | Ozone filter | Max. 8 | Not displayed | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DEVE CTRG (K) | DV unit (K) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DEVE CTRG (C) | DV unit (C) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DEVE CTRG (M) | DV unit (M) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DEVE CTRG (Y) | DV unit (Y) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM CTRG (K) | OPC drum unit (K) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM CTRG (C) | OPC drum unit (C) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM CTRG (M) | OPC drum unit (M) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM CTRG (Y) | OPC drum unit (Y) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| MAIN CHARGER (K) | Main charger (K) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| MAIN CHARGER (C) | Main charger (C) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| MAIN CHARGER (M) | Main charger (M) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| MAIN CHARGER (Y) | Main charger (Y) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM BLADE (K) | OPC drum cleaning blade K | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM BLADE (C) | OPC drum cleaning blade C | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM BLADE (M) | OPC drum cleaning blade M | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| DRUM BLADE (Y) | OPC drum cleaning blade Y | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | 0 - 365 |
| TONER CTRG (K) | Toner cartridge (K) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | Not displayed |
| TONER CTRG (C) | Toner cartridge (C) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | Not displayed |
| TONER CTRG (M) | Toner cartridge (M) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | Not displayed |
| TONER CTRG (Y) | Toner cartridge (Y) | Max. 8 | Max. 8 | 0 - 999 | 0 - 100 (%) | Not displayed |

22-14

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to display the use status of the toner cartridge. |
| **Section** | Process |

**Operation/Procedure**

The status of the toner cartridge is displayed.

| Display item | Content | Accumulated No. of installed cartridges (Unit) | Accumulated No. of near near end (Unit) | Accumulated No. of end (Unit) | Remaining quantity (Unit: %) |
|---|---|---|---|---|---|
| | | INSTALL | NN END | END | RESIDUAL |
| TONER (K) | Toner cartridge use counter (K) | 0 - 255 | 0 - 255 | 0 - 255 | 0-25% |
| TONER (C) | Toner cartridge use counter (C) | | | | 25-50% |
| TONER (M) | Toner cartridge use counter (M) | | | | 50-75% |
| TONER (Y) | Toner cartridge use counter (Y) | | | | 75-100% |

22-18

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to display the user data delete history. |
| **Section** | |

**Operation/Procedure**

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

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

22-19

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the values of the counters related to the scan - image send. |
| **Section** | |

**Operation/Procedure**

Used to display the counter value related to the network scanner

Change the display with scroll key.

| Item/Display | | Content |
|---|---|---|
| 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) |
| | NET SCN ORG_2CL | Network scanner document read quantity counter (2-Color scan job) |
| | NET SCN ORG_SGL | Network scanner document read quantity counter (Single-color scan job) |
| Internet FAX | 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 |
| E-Mail | MAIL COUNTER | Number of times of E-MAIL send |
| FTP | FTP COUNTER | Number of FTP send |
| Other | 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) |
| | SCAN TO HDD_2CL | SCAN TO HDD record quantity (2-COLOR) |
| | SCAN TO HDD_SGL | SCAN TO HDD record quantity (SINGLE color) |

22-40

| | |
|---|---|
| **Purpose** | Error contents display |
| **Function (Purpose)** | Used to display the error code list and the contents. |
| **Section** | |

**Operation/Procedure**

1) Select the main error code.

The sub error code and the contents are displayed.

22-42

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to check the JAM/trouble data |
| **Section** | |

**Operation/Procedure**

1) Select the item to be checked with the touch panel key.
2) Printable with [COLOR] and [MONO] keys.

| Display data | Counter | | Content | | | | Max. number of histories | Remarks |
|---|---|---|---|---|---|---|---|---|
| | Display | Content | JAM CODE/ TROUBLE CODE | DATE/TIME | TOTAL COUNT(BW) | TOTAL COUNT(CL) | | |
| PAPER JAM | PAPER JAM COUNT | Number of machine JAM troubles | Generated JAM code (Machine) | Generated date/time (YY/MM/DD HH:MM:SS) | Total output quantity of black and white | Total output quantity of color | 50 | The head is the latest, and the bottom is the oldest. The max. number of histories is 50. |
| SPF JAM | SPF JAM COUNT | Number of SPF JAM troubles | Generated JAM code (SPF) | | | | 50 | When 50 is exceeded, the oldest one is not displayed sequentially. |
| TROUBLE | TROUBLE COUNT | Number of troubles | Generated trouble code | | | | 30 | The head is the latest, and the bottom is the oldest. The max. number of histories is 30. |
| | | | | | | | | When 30 is exceeded, the oldest one is not displayed sequentially. |

22-43

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | JAM data details display |
| **Section** | |

**Operation/Procedure**

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

   When [COUNTER] key is pressed, the JAM counter, the paper feed counter, and the paper feed retry counter are displayed.

   When [HISTORY1] key is pressed, the JAM history is displayed.

   When [HISTORY2] key is pressed, the temperature and humidity data are displayed.
2) Printable with [COLOR] and [MONO] keys.

**Display data and contents (COUNTER)**

| Item | Content |
|---|---|
| PAPER JAM COUNT | Number of machine JAM troubles |
| PAPER FEED COUNTER | Paper feed counter (Similar with SIM22-09 display content) |
| PAPER FEED RETRY COUNTER | Paper feed retry counter (Similar with SIM27-18 display content) |

**Display data and contents (HISTORY1)**

| Item | Content | Description |
|---|---|---|
| NO | No | History number |
| JAM CODE | JAM Code | Jam code main |
| DATE/TIME | Date/Time | Occurrence date |
| TOTAL_BW | Total Count (BW) | Total counter (B/W) |
| TOTAL_CL | Total Count (CL) | Total counter (color) |
| P_S (*1) | Paper Size | Paper size |
| P_T (*1) | Paper Type | Paper type |
| JOB (*1) | Job Mode | Job mode |
| JN | Job No | First after JOB start or not |
| OF | Offset | Paper exit: Offset |
| EP | Exit Position | Paper exit: Exit position |
| PC | Punch | Paper exit: Punch |
| SP | Staple | Paper exit: Staple |

*1: Refer to the detail display content of HISTORY1.

**Display data and contents (HISTORY2)**

| Item | Content |
|---|---|
| NO. | History number |
| DATE/TIME | Occurrence date |
| TH_M | External air temperature sensor temperature/AD value |
| HUD_M | External air humidity sensor humidity/AD value |
| TH1_LSU | LSU thermistor 1 temperature/AD value |
| TH2_LSU | LSU thermistor 2 temperature/AD value |
| TH_UM | Fusing upper main thermistor (differential) temperature/AD value |
| TH_UM_CS | Fusing upper main thermistor (compensation) temperature/AD value |
| TUMD | Fusing upper main thermistor (detection) AD value |
| TH_US1 | Fusing upper sub thermistor (differential) temperature/AD value |
| TH_US1_CS | Fusing upper sub thermistor (compensation) temperature/AD value |
| TU1D | Fusing upper sub thermistor (detection) AD value |
| TH_LM1 | Fusing lower main thermistor (differential) temperature/AD value |
| TH_LM1_CS | Fusing lower main thermistor (compensation) temperature/AD value |
| TL1D | Fusing lower main thermistor (detection) AD value |
| TH_US2 | Fusing upper sub thermistor 2 temperature/AD value |
| TH_LM2 | Fusing lower main thermistor 2 temperature/AD value |

**Detail display content of HISTORY1**

| Display | Content | |
|---|---|---|
| NON | Inch series fixed form | No paper size |
| WLG | | Double Legal |
| WLR | | Double Legal-R |
| LD | | Ledger |
| LDR | | Ledger-R (Double Letter) |
| LG | | Legal |
| LGR | | Legal-R |
| FC | | Foolscap |
| FCR | | Foolscap-R |
| LT | | Letter |
| LTR | | Letter-R |
| IV | | Invoice (Mini) |
| IVR | | Invoice-R (Mini) |
| EC | | Executive |
| ECR | | Executive-R |
| A3W | | A3W (12x18 in) |
| AWR | | A3W (12x18 in)-R |
| 12 | | 22x17 |
| 13 | | 22x17R |
| 14 | | 22x34 |
| 15 | | 22x34R |
| 16 | | 34x44 |
| 17 | | 34x44R |
| 18 | | 44x68 |
| 19 | | 44x68R |
| 01A | | 9x12 |
| 01B | | 9x12R |
| 01C | | 13x19 |
| 01D | | 13x19R |
| MLG | | Mexican-Legal |
| MLR | | Mexican-Legal-R |
| ALG | | Asian-Legal |
| ALR | | Asian -Legal-R |
| EXT | Other | Extra (Special) |
| A1 | AB series fixed form | A1 |
| A1R | | A1R |
| A2 | | A2 |
| A2R | | A2R |
| A3 | | A3 |
| A3R | | A3R |
| A4 | | A4 |
| A4R | | A4R |
| A5 | | A5 |
| A5R | | A5R |
| A6 | | A6 |
| A6R | | A6R |
| B3 | | B3 |
| B3R | | B3R |
| B4 | | B4 |
| B4R | | B4R |
| B5 | | B5 |
| B5R | | B5R |
| B6 | | B6 |
| B6R | | B6R |
| 54 | | A0x2 |
| 55 | | A0x2 R |
| A0 | | A0 |
| A0R | | A0R |
| B0 | | B0 |
| B0R | | B0R |
| B1 | | B1 |
| B1R | | B1R |
| B2R | | B2 |
| B2R | | B2R |
| K8 | | K8 |
| K8R | | K8R |
| K16 | | K16 |
| 16R | | K16R |
| K32 | | K32 |
| 32R | | K32R |

| Display | Content | |
|---|---|---|
| 66 | AB series fixed form | SRA3 |
| 67 | | SRA3R |
| 68 | | SRA4 |
| 69 | | SRA4R |
| 06A | | 318 x 469 mm |
| 06B | | 469 x 318 mm |
| 06C | | 234 x 318 mm |
| 06D | | 318 x 234 mm |
| 06E | | 312 x 440 mm |
| 06F | | 440 x 312 mm |
| 70 | | 220 x 312 mm |
| 71 | | 312 x 220 mm |
| 82 | Domestic special (Envelope) | DBL Postcard |
| 83 | | DBL Postcard-R |
| 84 | | Postcard |
| 85 | | Postcard-R |
| 87 | | 119 x 277 mm |
| 89 | | 120 x 235 mm |
| 08B | | 90 x 205 mm |
| 08D | | 90 x 185 mm |
| 08F | | 240 x 332 mm |
| 91 | | 216 x 277 mm |
| 93 | | 197 x 267 mm |
| 95 | | 190 x 240 mm |
| 97 | | 162 x 229 mm |
| 99 | | 142 x 205 mm |
| 09B | | 119 x 197 mm |
| 09D | | 120 x 176 mm |
| 09F | | 114 x 162 mm |
| 0A1 | | 98 x 148 mm |
| 0A3 | | 105 x 235 mm |
| 0A5 | | 95 x 217 mm |
| 0A7 | | 98 x 190 mm |
| 0A9 | | 92 x 165 mm |
| 0AA | | AB series E-version |
| 0AB | | AB series L-version |
| 0AC | | AB series panorama size |
| 0AD | | AB series name card size |
| 0AE | | AB series identification photo |
| 0AF | | AB series name card small |
| 0B0 | Other | A3 width |
| 0B1 | | B4 width |
| 0B2 | | A4 width |
| 0B3 | | A3 width (Long size) |
| 0B4 | | B4 width (Long size) |
| 0B5 | | A4 width (Long size) |
| 0BC | | Custom (Large size) |
| 0BD | | Custom (Small size) |
| 0BF | | Custom |
| 0C2 | Oversea special (Envelope) | Monarch |
| 0C3 | | Monarch-R |
| 0C4 | | DL |
| 0C5 | | DL-R |
| 0C6 | | C4 |
| 0C7 | | C4-R |
| 0C8 | | C5 |
| 0C9 | | C5-R |
| 0CA | | C6 |
| 0CB | | C6-R |
| 0CC | | C65 |
| 0CD | | C65-R |
| 0CE | | ISOB5 |
| 0CF | | ISOB5-R |
| 0D0 | | Size6-1/2 |
| 0D1 | | Size6-1/2-R |
| 0D2 | | Size9 |
| 0D3 | | Size9-R |
| 0D8 | | Com-10 |
| 0D9 | | Com-10-R |
| 0DA | | Inch series E-version |
| 0DB | | Inch series L-version |

| Display | Content | |
|---|---|---|
| 0DC | Oversea special (Envelope) | Inch series panorama size |
| 0DD | | Inch series name card large |
| 0DE | | Inch series identification photo |
| 0DF | | Inch series name card small |
| 0EC | Other | Extra (Special large size) |
| 0ED | | Extra (Special small size) |
| 0EF | | Extra (Special/Not fixed) |
| 0F0 | | Long size |
| 0FF | | JAM (Used for canceling temporary charging in a coin vendor.) |

**Display content detail: Paper type (P_T)**

| Display | Content |
|---|---|
| UST | User type |
| LHP | Letter head paper |
| PNP | Perforated sheet |
| RCL | Recycled paper |
| COL | Color paper |
| PLN | Standard paper |
| PRP | Pre printed |
| OHP | OHP Transparency |
| HV | Heavy paper |
| LBL | Label sheet |
| ENV | Envelope |
| HG | Postcard |
| TAB | Tab sheet |
| THN | Thin paper |
| US1 | User type 1 |
| US2 | User type 2 |
| US3 | User type 3 |
| US4 | User type 4 |
| US5 | User type 5 |
| US6 | User type 6 |
| US7 | User type 7 |
| HV2 | Heavy paper 2 |
| PL2 | Plain paper 2 (not used) |
| HV3 | Heavy paper 3 |
| HV4 | Heavy paper 4 |
| GLS | Glossy paper |

**Display content detail: Job mode (JOB)**

| Display | Content |
|---|---|
| SHD | Shading. |
| PCL | Process control |
| SIM | Test mode (Sim) |
| ICP | Interruption copy |
| CP | Copy |
| FXS | FAX send scan |
| AXS | AXIS |
| FXP | FAX reception print |
| PR | Printer |
| FXC | FAX communication report print |
| 00A | Zaurus print |
| SLF | Self/Test print |
| 00C | Document counter |
| RMT | Remote maintenance |
| 00E | SIM 52-01 |
| 00F | Tandem (Cordless handset) |
| CFP | Confidential print |
| NET | Network scanner |
| PRF | Proof print |

22-60

| | |
|---|---|
| **Purpose** | Setting/Operation data check |
| **Function (Purpose)** | Used to check the utility counter value. |
| **Section** | |

**Operation/Procedure**

1) Used to display the utility counter value
   Change the display with [NEXT] key

| | |
|---|---|
| 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 (Japan) |
| | PS EXTENDED FONT LIST |
| | NIC PAGE |
| Address registration list (*) | INDIVIDUAL LIST |
| | GROUP LIST |
| | PROGRAM LIST (Output Disable) |
| | 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 rejection number table | ANTI JUNK FAX NUMBER LIST |
| Receive rejection/ allow address domain table | ANTI JUNK MAIL/DOMAIN NAME LIST |
| To E-mail 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.

22-90

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to output the various set data lists. |
| **Section** | |

**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 (Japan) |
| | PS EXTENDED FONT LIST |
| | NIC PAGE |
| Address registration list (*) | INDIVIDUAL LIST |
| | GROUP LIST |
| | PROGRAM LIST (Output Disable) |
| | MEMORY BOX LIST |
| | ALL SENDING ADDRESS LIST |
| Document filing list (*) | DOCUMENT FILING FOLDER LIST |

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| | |
|---|---|
| To E-mail 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

23-2

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to output the trouble history list of paper jam and misfeed. (If the number of troubles of misfeed is considerably great, the judgment is made that repair is required.)

**Section**

**Operation/Procedure**

Press [EXECUTE] key to execute print.

The trouble history of paper jams and misfeed is printed.

23-80

**Purpose** Operation test/check

**Function (Purpose)** Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.

**Section** Paper feed, Paper transport

**Operation/Procedure**

When [EXECUTE] key is pressed, the timing list of paper feed and paper transport is outputted.

Used to print the operations timing list of the sensors and detectors in the paper feed and transport section.

The timing list of paper feed and paper transport operations of the latest job (copy or print) on the final paper is printed.

Since the paper feed and paper transport routes differ depending on the used paper feed tray and the print operation mode, the sensor and the detectors and the operation timing also differ.

1

| Item | Content |
|---|---|
| JAM CODE | JAM code |
| DATA/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 |
| SECTION | Measurement section of paper feed time |
| STANDARD | Theoretical paper feed time |
| JAM-1 | Measurement time of the first paper before JAM occurs |
| JAM | Measurement time of JAM paper |
| POS/STATUS | MIOP (sensor / load) data when JAM occurs |
| INF1 (ILLEGAL) | Illegal detection information |
| INF2(SENSOR) | Sensor information |

# 24

24-1

**Purpose** Data clear

**Function (Purpose)** Used to clear the jam counter, and the trouble counter. (After completion of maintenance, clear the counters.)

**Section**

**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 | RSPF JAM counter |
| TROUBLE | Trouble counter |

24-2

**Purpose** Data clear

**Function (Purpose)** Used to clear the number of use (the number of prints) of each paper feed section.

**Section**

**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) |
| ADU | ADU paper feed counter |
| LCC | LCC paper feed counter (LCC) |

24-3

**Purpose** Data clear

**Function (Purpose)** Used to clear the finisher, RSPF, and the scan (reading) unit counter.

**Section**

**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 | RSPF document feed counter (No. of discharged sheets) |
| 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 | Document cover open/close counter |
| HP_ON | Number of scanner HP detection |
| OC LAMP TIME | Total lighting time of the scanner lamp |

24-4

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.) |
| **Section** | |

**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) (Counter) |
| | | Maintenance counter (Total) (Number of use days) |
| | MAINTENANCE COL | Maintenance counter (Color) (Counter) |
| | | Maintenance counter (Color) (Number of use days) |
| Fusing | FUSING BELT | Fusing belt (Counter) |
| | | Fusing belt (Number of use days) |
| | | Fusing belt (Accumulated number of rotations) |
| | FUSING ROLLER | Fusing roller (Counter) |
| | | Fusing roller (Number of use days) |
| | | Fusing roller (Accumulated number of rotations) |
| | PRESS ROLLER | Pressure roller (Counter) |
| | | Pressure roller (Number of use days) |
| | | Pressure roller (Accumulated number of rotations) |
| | FUSING LOAD | Fusing Pressure release roller (Accumulated number of rotations) |
| Separation | SEPARATE PAWL | Separation pawl (Counter) |
| | | Separation pawl (Number of use days) |
| | | Separation pawl (Accumulated number of rotations) |
| | SEPARATE PLATE | Separation plate (Counter) |
| | | Separation plate (Number of use days) |
| | | Separation plate (Accumulated number of rotations) |
| Separation | FUSING WEB | Fusing web unit print counter |
| | | Use day of fusing web unit |
| | | Fusing web cleaning send counter |
| Transfer | TC1 BELT | Primary transfer belt (Counter) |
| | | Primary transfer belt (Number of use days) |
| | | Primary transfer belt (Accumulated number of rotations) |
| | TRANS BLADE | Transfer blade (Counter) |
| | | Transfer blade (Number of use days) |
| | | Transfer blade (Accumulated number of rotations) |
| | TC2 BELT | Secondary transfer belt (Counter) |
| | | Secondary transfer belt (Number of use days) |
| | | Secondary transfer belt (Accumulated number of rotations) |
| | PTC | PTC counter (Counter) |
| | | PTC counter (Number of use days) |
| | | PTC counter (Accumulated number of rotations) |
| Drum | DRUM CTRG K | Drum cartridge (K) (Counter) |
| | | Drum cartridge (K) (Number of use days) |
| | | Drum cartridge (K) (Accumulated number of rotations) |
| | DRUM CTRG C | Drum cartridge (C) (Counter) |
| | | Drum cartridge (C) (Number of use days) |
| | | Drum cartridge (C) (Accumulated number of rotations) |
| | DRUM CTRG M | Drum cartridge (M) (Counter) |
| | | Drum cartridge (M) (Number of use days) |
| | | Drum cartridge (M) (Accumulated number of rotations) |
| | DRUM CTRG Y | Drum cartridge (Y) (Counter) |
| | | Drum cartridge (Y) (Number of use days) |
| | | Drum cartridge (Y) (Accumulated number of rotations) |
| Main charger | MAIN CHARGER K | Main charger (K) (Counter) |
| | | Main charger (K) (Number of use days) |
| | | Main charger (K) (Accumulated number of rotations) |
| | MAIN CHARGER C | Main charger (C) (Counter) |
| | | Main charger (C) (Number of use days) |
| | | Main charger (C) (Accumulated number of rotations) |
| | MAIN CHARGER M | Main charger (M) (Counter) |
| | | Main charger (M) (Number of use days) |
| | | Main charger (M) (Accumulated number of rotations) |
| | MAIN CHARGER Y | Main charger (Y) (Counter) |
| | | Main charger (Y) (Number of use days) |
| | | Main charger (Y) (Accumulated number of rotations) |
| Drum blade | DRUM BLADE K | Drum blade K (Counter) |
| | | Drum blade K (Number of use days) |
| | | Drum blade K (Accumulated number of rotations) |
| | DRUM BLADE C | Drum blade C (Counter) |
| | | Drum blade C (Number of use days) |
| | | Drum blade C (Accumulated number of rotations) |
| | DRUM BLADE M | Drum blade M (Counter) |
| | | Drum blade M (Number of use days) |
| | | Drum blade M (Accumulated number of rotations) |
| | DRUM BLADE Y | Drum blade Y (Counter) |
| | | Drum blade Y (Number of use days) |
| | | Drum blade Y (Accumulated number of rotations) |
| Other | PS PAPER | PS paper dust cleaner (Counter) |
| | | PS paper dust cleaner (Number of use days) |
| | OZONE FILTER | Ozone filter (Counter) |
| | | Ozone filter (Number of use days) |

* The winding counter for the fusing web cleaning is cleared by being synchronized with the fusing web cleaning feed counter.

## 24-5

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the developer counter. (After replacement of developer, clear the counter.) |
| **Section** | |

**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.

| | |
|---|---|
| K | Developer cartridge print counter (K) |
| | Accumulated number of rotations of the developer cartridge (cm) (K) |
| | Number of day that used developer (Day) K |
| C | Developer cartridge print counter (C) |
| | Accumulated number of rotations of the developer cartridge (cm) (C) |
| | Number of day that used developer (Day) C |
| M | Developer cartridge print counter (M) |
| | Accumulated number of rotations of the developer cartridge (cm) (M) |
| | Number of day that used developer (Day) M |
| Y | Developer cartridge print counter (Y) |
| | Accumulated number of rotations of the developer cartridge (cm) (Y) |
| | Number of day that used developer (Day) Y |

## 24-6

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the copy counter. |
| **Section** | |

**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 (B/W) |
| COPY COL | Copy counter (COLOR) |
| SINGLE COLOR | Single color |
| 2COLOR | 2-color |

## 24-9

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used clear the printer mode print counter and the self print mode print counter. |
| **Section** | |

**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 (B/W) |
| PRINT COL | Print counter (COLOR) |
| PRINT (2COL) | Print counter (2-colors) |
| PRINT (3COL) | Print counter (3-colors) |
| PRINT (SGL_COL) | Print counter (Single color) |
| OTHER BW | Other counter (B/W) |
| OTHER COL | Other counter (COLOR) |

## 24-10

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the FAX counter. (Only when FAX is installed) |
| **Section** | |

**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 |
| FAX SEND | FAX send counter |
| FAX RECEIVED | FAX receive counter |
| SEND IMAGES | FAX send quantity counter |
| SEND TIME | FAX send time |
| RECEIVED TIME | FAX receive time |

## 24-12

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the document filing counter. |
| **Section** | |

**Operation/Procedure**

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

| Display | Content |
|---|---|
| DOC FIL (BW) | Black and white document filing print counter |
| DOC FIL (COL) | Color document filing print counter |
| DOC FIL (2COL) | 2-color document filing print counter |
| DOC FIL (SGL_COL) | Single-color document filing print counter |

24-15

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the counters related to the scan mode and the image send. |
| **Section** | |

**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.

| Division | Item/Display | Content |
|---|---|---|
| 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) |
| | NET SCN ORG_2CL | Network scanner document read quantity counter (2-color scan job) |
| | NET SCN ORG_SGL | Network scanner document read quantity counter (single color scan job) |
| Internet Fax | 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 |
| E-mail | MAIL COUNTER | Number of times of E-MAIL send |
| FTP | FTP COUNTER | Number of FTP send |
| Other | 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) |
| | SCAN TO HDD_2CL | SCAN TO HDD record quantity (2-COLOR) |
| | SCAN TO HDD_SGL | SCAN TO HDD record quantity (SINGLE color) |

24-35

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the toner cartridge use status data. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

The toner cartridge use status data (SIM22-14) are cleared.

24-60

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the utility counter. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

The utility counter is cleared.

# 25

25-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the developing section. |
| **Section** | Process (Developing section) |

**Operation/Procedure**

1) Select the process speed with [MIDDLE], [LOW] keys.
2) 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 (K) |
| TCS_C | Toner sensor output value (C) |
| TCS_M | Toner sensor output value (M) |
| TCS_Y | Toner sensor output value (Y) |
| TSG_K | Toner density sensor control voltage level (K) |
| TSG_C | Toner density sensor control voltage level (C) |
| TSG_M | Toner density sensor control voltage level (M) |
| TSG_Y | Toner density sensor control voltage level (Y) |

| | |
|---|---|
| LOW | Process speed: Low speed |
| MIDDLE | Process speed: Medium speed |

Important

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 overtoner and a trouble.

25-2

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to make the initial setting of toner density when replacing developer. (Automatic adjustment) |
| **Section** | Image process (Photoconductor/Developing/Transfer/Cleaning) |

**Operation/Procedure**

1) Select a color to be adjusted with the touch panel.
2) Press [EXECUTE] key.

The developing motor rotates for 1 min 30 sec, 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.

Important

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 except when new developer is supplied. If it is executed in other cases, undertoner or overtone may occur, causing a trouble.

| Division | Item/Display | Display range | Default value |
|---|---|---|---|
| Toner density control adjustment value in the low speed process mode | AT DEVE ADJ_L_K | 1 - 255 | 128 |
| | AT DEVE ADJ_L_C | 1 - 255 | 128 |
| | AT DEVE ADJ_L_M | 1 - 255 | 128 |
| | AT DEVE ADJ_L_Y | 1 - 255 | 128 |
| Toner density control adjustment value in the medium speed process mode | AT DEVE ADJ_M_K | 1 - 255 | 128 |
| | AT DEVE ADJ_M_C | 1 - 255 | 128 |
| | AT DEVE ADJ_M_M | 1 - 255 | 128 |
| | AT DEVE ADJ_M_Y | 1 - 255 | 128 |
| Toner density sensor control voltage level in the low speed process mode | AT DEVE VO_L_K | 1 - 255 | 128 |
| | AT DEVE VO_L_C | 1 - 255 | 128 |
| | AT DEVE VO_L_M | 1 - 255 | 128 |
| | AT DEVE VO_L_Y | 1 - 255 | 128 |
| Toner density sensor control voltage level in the medium speed process mode | AT DEVE VO_M_K | 1 - 255 | 128 |
| | AT DEVE VO_M_C | 1 - 255 | 128 |
| | AT DEVE VO_M_M | 1 - 255 | 128 |
| | AT DEVE VO_M_Y | 1 - 255 | 128 |

**Display during execution of the simulation**

| Item/Display | Content |
|---|---|
| TCS_K | Toner sensor output value (K) |
| TCS_C | Toner sensor output value (C) |
| TCS_M | Toner sensor output value (M) |
| TCS_Y | Toner sensor output value (Y) |
| TSG_K | Toner density sensor control voltage level (K) |
| TSG_C | Toner density sensor control voltage level (C) |
| TSG_M | Toner density sensor control voltage level (M) |
| TSG_Y | Toner density sensor control voltage level (Y) |

**Error content**

| Display | Error name | Error content |
|---|---|---|
| EE-EL | EL abnormality | The sensor output level is less than 77, or the control voltage exceeds 207. |
| EE-EU | EU abnormality | The sensor output level exceeds 177, or the control voltage is less than 52. |
| EE-EC | EC abnormality | The sensor output level is outside of 128±3. |

25-4

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to display the operation data of the toner supply quantity. (Not used in the market.)

**Section** Process

**Operation/Procedure**

The operation data of the toner supply quantity are displayed.

| Item/Display | Content | Display range |
|---|---|---|
| YLD_CNT_FB | Toner supply FB rate by the yield count | 50 - 200 |
| DELTA_DVB | Delta DVB (Process control DVB - Target DVB) | -500 - 500 |
| IDL_DVB | Target DBV | 100 - 600 |
| PROCON_DVB | Process control DVB | 100 - 600 |
| DV_LIFE | Developer life area | 1 - 8 |
| COVERAGE_AREA | Average print rate area | 1 - 10 |
| ENV_AREA | Environment area | 1 - 8 |
| MULTI_TIME | Toner supply drive time area (Specified by the DV motor rotation time) | 1 - 8 |
| PRO_FB_CNT | No. of remaining times of toner supply for the process control result | 0 - 65535 |
| PRO_FB_INT | Interval of toner supply for the process control result | 0 - 65535 |
| PRO_FB_RATIO | Correction rate of one-time toner supply for the process control result | -10 -10 |
| RECV_MODE_CNT(+) | No. of times of recovery mode (+) (No. of times of compulsory toner supply) | 0 - 65535 |
| RECV_MODE_CNT(-) | No. of times of recovery mode (-) (No. of times of compulsory printing of one-color background image) | 0 - 65535 |

25-5

**Purpose** Adjustment/Setting/Operation data check

**Function (Purpose)** Used to display the toner density correction data. (Not used in the market.)

**Section** Process

**Operation/Procedure**

The toner density correction data are displayed.

| Item/Display | Content | Display range |
|---|---|---|
| TCS OUTPUT | Toner sensor output value | 0 - 255 |
| DELTA_TSG | Toner density sensor control voltage level correction value | -255 - 255 |
| TSG_REF | Toner density sensor control voltage level reference value | 0 - 255 |
| TN_FALL_CNT_JOB | Toner fall amount during a job (latest average value) | 0 - 255 |
| TN_FALL_JUDGE_CNT | Toner fall judgment threshold value during a job | 0 - 255 |
| TN_FALL_MODE_CNT | No. of times of job interruption toner supply operation mode | 0 - 255 |
| TN_FALL_CNT_INT | Latest average value of toner fall amount in job interruption toner supply operation | 0 - 255 |
| TN_FALL_CNT_NEW | Latest average value of toner fall amount when installing a new toner cartridge | 0 - 255 |
| TCS_ERR_MODE_CNT(+) | No. of times of TCS abnormality detection mode (+) (Undertoner) | 0 - 65535 |
| TCS_ERR_MODE_CNT(-) | No. of times of TCS abnormality detection mode (-) (Overtoner) | 0 - 65535 |

# 26

26-1

**Purpose** Setting

**Function (Purpose)** Used to set Yes/No of installation of the right paper exit tray.

**Section** Paper exit

**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 right paper exit tray unit.

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

26-2

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the paper size of the large capacity tray (LCC). (When the paper size is changed, this simulation must be executed to change the paper size in software.) |
| **Section** | Paper feed |

**Operation/Procedure**

Select a paper size and a weight system to be changed.

| Item | Setting value | Content |
|---|---|---|
| Tray3 (Tandem) | 0 | 8.5x11 |
| | 1 | A4 |
| | 2 | B5 |
| LCC | 0 | 8.5x11 |
| | 1 | A4 |
| | 2 | B5 |
| G/LBS Set | 0 | Gram |
| | 1 | LBS |

| Destination | Setting Value | | |
|---|---|---|---|
| | Tray3 (TANDEM) | LCC | G/LBS SET |
| U.S.A | 8.5x11 | 8.5x11 | LBS |
| CANADA | 8.5x11 | 8.5x11 | LBS |
| INCH | 8.5x11 | 8.5x11 | LBS |
| JAPAN | B5 | A4 | GRAM |
| AB_B | A4 | A4 | GRAM |
| EUROPE | A4 | A4 | GRAM |
| U.K | A4 | A4 | GRAM |
| AUS | A4 | A4 | GRAM |
| AB_A | A4 | A4 | GRAM |
| CHINA | A4 | A4 | GRAM |

26-3

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the specifications of the auditor. (Setting must be made according to the auditor use conditions.) |
| **Section** | Auditor |

**Operation/Procedure**

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 |
| OUTSIDE AUDITOR | NONE | No external connection vendor is used. | NONE |
| | P VENDOR1 | Coin vendor mode (Only the copy mode can be controlled.) | |
| | P VENDOR3 | Vendor mode in which signals for the intercard connected to the PCU are used for communication in parallel I/F. | |
| | P OTHER | Mode for an external auditor connected to the SCU. | |
| | VENDOR-EX (*1) | Vendor I/F for EQUITRAC | |
| | VENDOR-EX (MULTI) (*1) | VENDOR-EX + Multi job cueing Enable mode | |
| | 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. 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.) 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 | Mode in which the detection timing of the paper lead edge by the sensor after the paper passes the fusing section is used as the money charging timing. | EXIT_ OUT |
| | FUSER_OUT | Mode in which the detection timing of the paper rear edge by the sensor after the paper passes the fusing section is used as the money charging timing. | |
| | EXIT_OUT | Mode in which the detection timing of the paper rear edge by the paper exit sensor of the right paper exit tray or of the after process unit is used as the money charging timing. | |

(*1) Displayed only when EQUITRAC.

(*2) Details of the vendor mode

**Details of the vendor mode**

| | Completion of the specified quantity. (Money remaining) | Insufficient money during copy job | | Completion of the specified quantity. (No money remaining) |
|---|---|---|---|---|
| | | BW/Color (no money remaining) | Color (Money remaining) | |
| | Condition 1 | Condition 2 | Condition 3 | Condition 4 |
| MODE1 | Operation 1 | Operation 2 | Operation 2 | Operation 1 |
| MODE2 | Operation 1 | Operation 1 | Operation 2 | Operation 1 |
| MODE3 | Operation 1 | Operation 3 | Operation 2 | Operation 3 |

Operation 1:
Standby during 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.

26-5

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the count mode of the total counter and the maintenance counter. (A3/11x17 size) |
| **Section** | |

**Operation/Procedure**

1) Select an item to be set with scroll keys.
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 (B/W) | 1 (Japan) 2 (Except Japan) |
| B | TOTAL (COL) | Total counter (Color) | |
| C | MAINTE (B/W) | Maintenance counter (B/W) | 2 |
| D | MAINTE (COL) | Maintenance counter (Color) | |
| E | DEV (B/W) | Developer counter (B/W) | |
| F | DEV (COL) | Developer counter (Color) | |

26-6

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination. |
| **Section** | |

**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 |

26-7

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the machine ID. |
| **Section** | |

**Operation/Procedure**

1) Enter the machine ID with the 10-key.
   Max. 30 digits of numerals and alphabetical characters can be inputted.
   To select a desired character, press the 10-key repeatedly.
   Refer to the following list and enter characters.
   Touch the "CONFIRM" section every time a character is inputted.
   To modify an inputted character, delete it with "CLEAR" key and enter the correct character.
2) Press [SET] key to set the contents entered in procedure 1).

**Note**

The machine ID can be set also by the Web Page service mode function.

Conventionally, the machine ID has been set by the Web Page function. In this mode, this function is made available in the simulation mode.

| 10-key | Number of times of key input | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | 1 | - | - | - | - | - | - | - | - | - |
| 2 | A | B | C | a | b | c | 2 | - | - | - |
| 3 | D | E | F | d | e | f | 3 | - | - | - |
| 4 | G | H | I | g | h | i | 4 | - | - | - |
| 5 | J | K | L | j | k | l | 5 | - | - | - |
| 6 | M | N | O | m | n | o | 6 | - | - | - |
| 7 | P | Q | R | S | p | q | r | s | 7 | - |
| 8 | T | U | V | t | u | v | 8 | - | - | - |
| 9 | W | X | Y | Z | w | x | y | z | 9 | - |
| 0 | 0 | - | - | - | - | - | - | - | - | - |

26-8

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Counter mode setting (Long scale) |
| **Section** | |

**Operation/Procedure**

1) Select a setting item with the scroll key.
2) Enter the set value with 10-key.
   1 = 1 count up, 2 = 2 count up
3) Press [OK] key.

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

1 : '14/Jun

26-10

**Purpose** Setting

**Function (Purpose)** Used to set the trial mode of the network scanner.

**Section**

**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) |

26-18

**Purpose** Setting

**Function (Purpose)** Used to set Disable/Enable of the toner save mode operation.
(For the Japan and the UK versions.)

**Section**

**Operation/Procedure**

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

1

| 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 |
|---|---|---|
| JAPAN | 1 (Not Displayed) | 0 (Displayed) |
| U.K. | 1 (Not Displayed) | 0 (Displayed) |
| Other Destination | 0 (Displayed) | 0 (Displayed) |

26-30

**Purpose** Setting

**Function (Purpose)** Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)

**Section**

**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

**Purpose** Setting

**Function (Purpose)** Used to set the specifications of the fusing cleaning operation.

**Section** Fusing

**Operation/Procedure**

1) Enter the set value with 10-key.
   Enable/Disable of the user fusing cleaning function is set.
2) Press [OK] key.

| Item/Display | | Content | Setting range | | Default value |
|---|---|---|---|---|---|
| A | CLEANING PRINT SET | User fusing cleaning function is Enable. | 0 | YES | 0(YES) |
| | | User fusing cleaning function is Disable. | 1 | NO | |

26-35

**Purpose** Setting

**Function (Purpose)** Used to set the display mode of SIM 22-4 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

**Purpose** Setting

**Function (Purpose)** Used to set Continue/Stop of print when the maintenance life is reached.

**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: CONTINUE 1: STOP) | 0 | Setting of Print Continue/ Stop when the maintenance life is over (Print Continue) | 0 |
| | | 1 | Setting of Print Continue/ Stop 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) | 1 |
| | | 1 | Continue/Stop setting of print when the fusing web is end (Print Stop) | |

1 : '14/Jun

26-41

**Purpose** Setting

**Function (Purpose)** Used to 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

**Purpose** Setting

**Function (Purpose)** Used to set the print speed of postcards mode.

**Section**

**Operation/Procedure**

Select the copy speed mode with the touch panel. (Default: LOW)

| Item/Setting value | Content | Default value |
|---|---|---|
| LOW | Postcard copy speed LOW | LOW |
| HIGH | Postcard copy speed HIGH | |

26-50

**Purpose** Setting

**Function (Purpose)** Used to set functions.

**Section**

**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 | COLOR MODE | 2-color/Single color copy mode Enable/Disable setting | | Refer to *1/*2 |
| C | FINISHER FUNCTION | 0 | Finisher special paper The number of paper exit is limited. | 0 Refer to *3 |
| | | 1 | Finisher special paper The number of paper exit is not limited. | |
| D | COLOR MODE (PRINTER) | 0 | All colors and monochrome counters are displayed. | Refer to *1 |
| | | 1 | All are displayed except for the 3-color print counter. | |
| | | 2 | Monochrome and full color print counters are displayed. | |
| E | FEED TRAY COLOR | 0 | Paper feed tray color display ON during paper feed | 0 |
| | | 1 | Paper feed tray color display OFF during paper feed | |
| F | LONG SIZE PRINT | 0 | Long size print enable | 0 |
| | | 1 | Long size print disable | |
| G | WIRELESS SET | 0 | Disables wireless LAN setting. | *2 1 |
| | | 1 | Enables wireless LAN setting. | |

(*1) Default values for each destination of item A/B/D

(*2) Corresponding area of Wireless LAN; 1 (Yes) 1
Not corresponding area of Wireless LAN; 0 (No)

| Destination | Item A | Item B | Item D |
|---|---|---|---|
| U S A | 1 | 0 | 2 |
| CANADA | 1 | 0 | 2 |
| INCH | 1 | 0 | 2 |
| JAPAN | 1 | 7 | 2 |
| AB_B | 1 | 0 | 2 |
| EUROPE | 1 | 0 | 2 |
| U K | 0 | 0 | 2 |
| AUS | 1 | 0 | 2 |
| AB_A | 1 | 0 | 2 |
| CHINA | 1 | 0 | 2 |

(*2) Item B: COLOR MODE set value (OFF: Displayed/ON: Not displayed)

| Set value | Mode | | 2-Color/Single Counter |
|---|---|---|---|
| | Single | 2-color | |
| 0 | OFF | OFF | OFF |
| 1 | OFF | ON | OFF |
| 2 | ON | OFF | OFF |
| 3 | ON | ON | OFF |
| 4 | OFF | OFF | ON |
| 5 | OFF | ON | ON |
| 6 | ON | OFF | ON |
| 7 | ON | ON | ON |

(*3)

| | Target paper | Target paper setting | |
|---|---|---|---|
| | | 0 | 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 10 or less sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection. | If it is set to "1," the operation is stopped when the paper exit tray is full or when 250 sheets (35.5mm thick) are discharged. |
| | 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 100 or less sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection. | |

| | Target paper | Target paper setting | |
|---|---|---|---|
| | | 0 | 1 |
| 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 30 or less sheets of a kind are sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection. | If it is set to "1," the operation is stopped when the paper exit tray is full or when 500 sheets (67mm thick) are discharged. |
| Saddle Stitch Finisher | 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 100 or less sheets of a kind are continuously discharged, the operation is stopped by the paper exit tray full detection. | If it is set to "1," the operation is stopped when the paper exit tray is full or when 500 sheets (67mm thick) are discharged. |

26-51

**Purpose** Setting

**Function (Purpose)** Used to set the specifications of the serial port operation. (For PCI)

**Section**

**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 | Setting range | Default value |
|---|---|---|---|---|
| A | PCI SETTING | Serial port PCI mode OFF (→For connecting the serial port vendor) | 0 | 0 (Serial port PCI mode OFF) |
| | | Serial port PCI mode ON (JOB status LED: MODE1) | | |
| | | Serial port PCI mode ON (JOB status LED: MODE2) | | |

MODE1: Red LED is light/blink/OFF, MODE2: Red LED always OFF

Important

When "PCI SETTING" is changed from "0" to "1" or "2," if SIM26-03 "OUTSIDE AUDITOR" is set to "S_VENDOR," "OUTSIDE AUDITOR" is changed to "NONE."

26-52

**Purpose** Setting

**Function (Purpose)** Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.

**Section**

**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

**Purpose** Setting

**Function (Purpose)** User auto color calibration (color balance adjustment) Inhibit/Allow setting.

**Section**

**Operation/Procedure**

1) Enter the set value with 10-key.

| Item/Display | | Content | | Setting range | Default value |
|---|---|---|---|---|---|
| A | COPY (1:YES 0:NO) | Copy mode | Allow | 1 | 1 |
| | | | Inhibit | 0 | |
| B | PRINTER (1:YES 0:NO) | Printer mode | Allow | 1 | 1 |
| | | | Inhibit | 0 | |

2) Press [OK] key.
   The set value in step 1) is saved.

26-60

**Purpose** Setting

**Function (Purpose)** Used to set the utility counter mode.

**Section**

**Operation/Procedure**

1) Select an item to be set.
2) Press [EXECUTE] key.
3) Press [YES key.

| Item | Display | Content |
|---|---|---|
| Utility Counter Mode | MODE1 | Usual counter mode |
| | MODE2 | Toner save counter mode |
| | MODE3 | Coverage coounter mode |

26-65

**Purpose** Setting

**Function (Purpose)** Used to set the finisher alarm mode.

**Section**

**Operation/Procedure**

Use the touch key to set.

| Item | Set value | Content | Setting range | Default value | NOTE |
|---|---|---|---|---|---|
| LIMIT SHEETS | 30 | Number of stapling sheets:Max. 30 | 30 or 50 | 50 | A4, A4R, B5, 8.5"x 11", 8.5"x 11"R, 16K, 16KR For saddle stitch finisher |
| | 50 | Number of stapling sheets:Max. 50 | | | |

| Item | Set value | Content | Setting range | Default value | NOTE |
|---|---|---|---|---|---|
| LIMIT COPIES | ON | Number of stapling sets: Max. 50 sets | ON or OFF | ON | |
| | OFF | Number of stapling sets. Not Limited | | | |
| LIMIT SHEETS (L) | 25 | Number of stapling sheets. Max. 25 | 25 or 30 | 25 | A3, B4, 11" x 17", 8.5" x 14", 8.5" x 13.5", 8.5" x 13.4", 8.5" x 13", 8K For saddle stitch finisher |
| | 30 | Number of stapling sheets.Max. 30 | | | |
| Saddle Copies | ON | Number of sets loaded in the saddle staples. Limited. | On or OFF | ON | For saddle stitch finisher |
| | OFF | Number of sets loaded in the saddle staples. Not Limited. | | | |

26-69

**Purpose** Setting

**Function (Purpose)** Used to set the operating conditions for toner near end.

**Section**

**Operation/Procedure**

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

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| A | TONER PREPARATION (0:YES 1:NO) | | 0 | The toner preparation message is displayed. | 0 - 1 | List of Default values and set values for each destination |
| | | | 1 | The toner preparation message is not displayed. | | |
| B | REMAINING TONER LEVEL | 5% | 0 | Toner preparation at remaining toner level of 5% | 0 - 9 | |
| | | 10% | 1 | Toner preparation at remaining toner level of 10% | | |
| | | 15% | 2 | Toner preparation at remaining toner level of 15% | | |
| | | 20% | 3 | Toner preparation at remaining toner level of 20% | | |
| | | 25% | 4 | Toner preparation at remaining toner level of 25% | | |
| | | 30% | 5 | Toner preparation at remaining toner level of 30% | | |
| | | 35% | 6 | Toner preparation at remaining toner level of 35% | | |
| | | 40% | 7 | Toner preparation at remaining toner level of 40% | | |
| | | 45% | 8 | Toner preparation at remaining toner level of 45% | | |
| | | 50% | 9 | Toner preparation at remaining toner level of 50% | | |
| C | TONER NEAR END (0:YES 1:NO) | | 0 | The toner near end message is displayed. | 0 - 1 | |
| | | | 1 | The toner near end message is not displayed. | | |
| D | TONER END | | 1 | Operation setup 1 | 1 - 3 | |
| | | | 2 | Operation setup 2 | | |
| | | | 3 | Operation setup 3 | | |
| E | TONER END COUNT | | Setting of the number of copy/ print/FAX outputs Enable after TONER NEAR END. | | 1 - 3 | 1 |
| F | TONER E-MAIL ALERT | | 0 | Low status send of E-mail alert (When the toner preparation message is displayed) (in near near toner end) | 0 - 1 | 1 |
| | | | 1 | Low status send of E-mail alert (near toner end) | | |

**Item E (TONER END COUNT) setting value and printable quantity**

| Setting value | Printable quantity at A4/5% equivalent conversion |
|---|---|
| 1 | 0 |
| 2 | 25 |
| 3 | 50 |

**<List of Default values and set values for each destination>**

| Destination | Setting value | | | |
|---|---|---|---|---|
| | Toner preparation message | Toner preparation time | Toner near end message | Enable/ Disable of print job continuation at toner end |
| U.S.A | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |

| Destination | Setting value | | | |
|---|---|---|---|---|
| | Toner preparation message | Toner preparation time | Toner near end message | Enable/ Disable of print job continuation at toner end |
| CANADA | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| INCH | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| JAPAN | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 1 (Not Displayed) | 2 (Print operation stopped) |
| AB_B | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| EUROPE | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| U.K. | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| AUS. | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| AB_A | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 2 (Print operation stopped) |
| CHINA | 0 (Displayed) | 4 (Displayed when the toner remaining quantity is 25%.) | 0 (Displayed) | 1 (Print operation continued) |

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display.

B: The toner remaining quantity at which the toner preparation message is displayed.

C: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

D: Machine operation at toner end

E: Number of allowable copy/print/FAX when the toner near end message is displayed. (Range: 0 - 50 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 5%. (The number of outputs allowed differs depending on the paper size and the print ratio.)

Important

When item A is set to "0" and item E is properly set, printing can be made after toner near end. However, improper phenomena such as insufficient density, thin spots, or improper color balance may result depending on the using conditions. When item E is set to "1" printing is disabled after toner near end. In 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)** Used to 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: YES 1: NO) | 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 keys.
2) Enter the set value with 10-key.
3) Press [OK] key.

   When the adjustment value is increased, the image loss (shade delete quantity) is increased.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | DELETING SHADOW ADJ (M) | Rear frame side image loss quantity (shade delete quantity) adjustment | 0 - 50 | 0 (Adjustment amount: 0.1mm/step) |
| B | DELETING SHADOW ADJ (S) | Lead edge image loss quantity (shade delete quantity) adjustment | 0 - 50 | 0 (Adjustment amount: 0.1mm/step) |

## 26-74

**Purpose** Setting

**Function (Purpose)** Used to 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 (0: YES 1: NO) | 0 | Used to set the OSA trial mode. | 0 - 1 | 1 |
| | | 1 | OSA trial mode is canceled. | | |

26-78

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the password of the remote operation panel. |
| **Section** | |

**Operation/Procedure**

1) Enter a password with 10-key. (5 - 8 digits)
   The entered password is displayed on the column of "NEW".
   In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
2) Press [SET] key.

26-79

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set YES/NO of the pop-up display of user data delete result. |
| **Section** | |

**Operation/Procedure**

1) Enter the set value with 10-key.
   The value for the display operation specification after completion of user data delete is set.
2) Press [OK] key.

| Item/Display | | Content | Setting range | | Default value |
|---|---|---|---|---|---|
| A | DISP SET | User data delete result pop-up display ON | YES | 1 | 0 (NO) |
| | | User data delete result pop-up display OFF | NO | 0 | |

# 27

27-1

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set non-detection of communication error (U7-00) with RIC. (FSS function) |
| **Section** | |

**Operation/Procedure**

1) Enter the set value with 10-key.

| | |
|---|---|
| 0 | Not detection |
| 1 | Detection |

2) Press [OK] key.
   The set value in step 1) is saved.

27-2

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the sender's registration number and the HOST server telephone number. (FSS function) |
| **Section** | |

**Operation/Procedure**

1) Select an item to be set with touch panel.
   [USER FAX NO] [SERVA TEL NO]
2) Enter the set value with 10-key.
3) 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

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the initial call and toner order auto send. (FSS function) |
| **Section** | |

**Operation/Procedure**

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

| Item/Display | | | Content | | Setting range | | Default value | Remarks |
|---|---|---|---|---|---|---|---|---|
| A | FSS MODE | NEB1 | Set the FSS MODE | Exclusive for send in NE-B mode | 0 - 3 | 0 | 1 | |
| | | NEB2 | | Send/Receive in NE-B mode | | 1 | | |
| | | NFB1 | | Exclusive for send in NE-F mode | | 2 | | For convenience stores |
| | | NFB2 | | Send/Receive in NE-F mode | | 3 | | For convenience stores |
| B | RETRY_BUSY | | Resend number setting when busy | | 0 - 15 | | 2 | 0: No retry |
| C | TIMER(MINUTE)_BUSY | | Resend timer setting (minute) when busy | | 1 - 15 | | 3 | |
| D | RETRY_ERROR | | Resend number setting when error | | 0 - 15 | | 1 | 0: No retry |
| E | TIMER(MINUTE)_ERROR | | Resend timer setting (minute) when error | | 1 - 15 | | 1 | |
| F | FAX RETRY | | Resend number setting when FAX initial connection | | 0 - 15 | | 2 | Unit: Number of times |
| G | TONER ORDER TIMING(K) | EMPTY | Toner order auto send timing setting (K) | Empty | 0 - 11 | 0 | 6 | |
| | | NEAR_END | | Near end | | 1 | | |
| | | 0.05 | | 0.05 | | 2 | | |
| | | 0.1 | | 0.1 | | 3 | | |
| | | 0.15 | | 0.15 | | 4 | | |
| | | 0.2 | | 0.2 | | 5 | | |
| | | 0.25 | | 0.25 | | 6 | | |
| | | 0.3 | | 0.3 | | 7 | | |
| | | 0.35 | | 0.35 | | 8 | | |
| | | 0.4 | | 0.4 | | 9 | | |
| | | 0.45 | | 0.45 | | 10 | | |
| | | 0.5 | | 0.5 | | 11 | | |
| H | TONER ORDER TIMING(C) | EMPTY | Toner order auto send timing setting (C) | Empty | 0 - 11 | 0 | 6 | |
| | | NEAR_END | | Near end | | 1 | | |
| | | 0.05 | | 0.05 | | 2 | | |
| | | 0.1 | | 0.1 | | 3 | | |
| | | 0.15 | | 0.15 | | 4 | | |
| | | 0.2 | | 0.2 | | 5 | | |
| | | 0.25 | | 0.25 | | 6 | | |
| | | 0.3 | | 0.3 | | 7 | | |
| | | 0.35 | | 0.35 | | 8 | | |
| | | 0.4 | | 0.4 | | 9 | | |
| | | 0.45 | | 0.45 | | 10 | | |
| | | 0.5 | | 0.5 | | 11 | | |
| I | TONER ORDER TIMING(M) | EMPTY | Toner order auto send timing setting (M) | Empty | 0 - 11 | 0 | 6 | |
| | | NEAR_END | | Near end | | 1 | | |
| | | 0.05 | | 0.05 | | 2 | | |
| | | 0.1 | | 0.1 | | 3 | | |
| | | 0.15 | | 0.15 | | 4 | | |
| | | 0.2 | | 0.2 | | 5 | | |
| | | 0.25 | | 0.25 | | 6 | | |
| | | 0.3 | | 0.3 | | 7 | | |
| | | 0.35 | | 0.35 | | 8 | | |
| | | 0.4 | | 0.4 | | 9 | | |
| | | 0.45 | | 0.45 | | 10 | | |
| | | 0.5 | | 0.5 | | 11 | | |
| J | TONER ORDER TIMING(Y) | EMPTY | Toner order auto send timing setting (Y) | Empty | 0 - 11 | 0 | 6 | |
| | | NEAR_END | | Near end | | 1 | | |
| | | 0.05 | | 0.05 | | 2 | | |
| | | 0.1 | | 0.1 | | 3 | | |
| | | 0.15 | | 0.15 | | 4 | | |
| | | 0.2 | | 0.2 | | 5 | | |
| | | 0.25 | | 0.25 | | 6 | | |
| | | 0.3 | | 0.3 | | 7 | | |
| | | 0.35 | | 0.35 | | 8 | | |
| | | 0.4 | | 0.4 | | 9 | | |
| | | 0.45 | | 0.45 | | 10 | | |
| | | 0.5 | | 0.5 | | 11 | | |
| K | TEMP HISTORY CYCLE | | Frequency of acquiring the temperature and humidity history | | 1 - 1440 | | 60 | Unit: min. |
| L | LOG OUTPUT CAPACITY(PCU) | | Log output capacity | | 0 - 50 | | 30 | Unit: [KB] |

27-5

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function) |
| **Section** | Communication (RIC/MODEM) |

**Operation/Procedure**

1) 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.
2) Press [SET] key.

27-6

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set of the manual service call. (FSS function) |
| **Section** | |

**Operation/Procedure**

1) Enter the set value with 10-key.

| | |
|---|---|
| 0 | Allow (Default) |
| 1 | Inhibit |

2) Press [OK] key.
   The set value in step 1) is saved.

27-7

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set of the enable, alert callout. (FSS function) |
| **Section** | |

**Operation/Procedure**

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

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | FUNCTION (0:YES 1:NO) | FSS function enable | 0 | 1 (NO) |
| | | FSS function disable | 1 | |
| B | ALERT (0:YES 1:NO) | Alert call enable (*1) | 0 | 0 (YES) |
| | | Alert call disable | 1 | |
| C | CONNECTION (0: FAX 1: No Use 2: HTTP) | FAX connection enable | 0 | 0 (FAX) |
| | | Not used. | 1 | |
| | | HTTP connection enable | 2 | |

*1 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 | |

27-9

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function) |
| **Section** | |

**Operation/Procedure**

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

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | FEED TIME1 | Threshold value of paper transport time between sensors (Machine) | 0 - 100 | 50(%) |
| B | FEED TIME2 | Threshold value of paper transport time between sensors (SPF) | 0 - 100 | 50(%) |
| C | GAIN ADJUSTMENT RETRY | Threshold value of the gain adjustment retry number | 0 - 20 | 11 (TIMES) |
| D | JAM ALERT | Continuous JAM alert judgment threshold value (Alert judgment threshold value for continuous JAM's) (Setting of the number of JAM's continuously made at which it is judged as an alert.) | 1 - 100 | 10 (TIMES) |

* 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.

27-10

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the trouble prediction history information. (FSS function) |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   The history information of trouble prediction is cleared.

| | |
|---|---|
| Target history | Serial communication retry history |
| | High density process control error history |
| | Halftone process control error history |
| | Automatic registration adjustment error history |
| | Scanner gain adjustment retry history |
| | Paper transport time between sensors |

27-11

| | |
|---|---|
| **Purpose** | Others |
| **Function (Purpose)** | Used to 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 | Year/month/day hour: min.: sec. | 8 digits | Serial communication retry number history display |
| LSU2 | Year/month/day hour: min.: sec. | 8 digits | |
| DESK1 | Year/month/day hour: min.: sec. | 8 digits | |
| DESK2 | Year/month/day hour: min.: sec. | 8 digits | |
| FINISHER1 | Year/month/day hour: min.: sec. | 8 digits | |
| FINISHER2 | Year/month/day hour: min.: sec. | 8 digits | |
| SCAN GAIN ADJ1 | Year/month/day hour: min.: sec. | 8 digits | Scanner gain adjustment retry history |
| SCAN GAIN ADJ2 | Year/month/day hour: min.: sec. | 8 digits | |
| SCAN GAIN ADJ3 | Year/month/day hour: min.: sec. | 8 digits | |
| SCAN GAIN ADJ4 | Year/month/day hour: min.: sec. | 8 digits | |
| SCAN GAIN ADJ5 | Year/month/day hour: min.: sec. | 8 digits | Scanner gain adjustment retry history |

27-12

| | |
|---|---|
| **Purpose** | Others |
| **Function (Purpose)** | Used to check the high density, halftone process control and the automatic registration adjustment error history. (FSS Function) |
| **Section** | |

**Operation/Procedure**

The high density, halftone process control and the automatic registration adjustment error history is displayed.

| | |
|---|---|
| HV_ERR1 | High density process control error history 1 |
| HV_ERR2 | High density process control error history 2 |
| HV_ERR3 | High density process control error history 3 |
| HV_ERR4 | High density process control error history 4 |
| HV_ERR5 | High density process control error history 5 |
| H_TONE ERR1 | Halftone process control error history 1 |
| H_TONE ERR2 | Halftone process control error history 2 |
| H_TONE ERR3 | Halftone process control error history 3 |
| H_TONE ERR4 | Halftone process control error history 4 |
| H_TONE ERR5 | Halftone process control error history 5 |
| AUTO REG ADJ1 | Automatic registration adjustment error history 1 |
| AUTO REG ADJ2 | Automatic registration adjustment error history 2 |
| AUTO REG ADJ3 | Automatic registration adjustment error history 3 |
| AUTO REG ADJ4 | Automatic registration adjustment error history 4 |
| AUTO REG ADJ5 | Automatic registration adjustment error history 5 |

27-13

| | |
|---|---|
| **Purpose** | Others |
| **Function (Purpose)** | Used to 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 | History of paper transport time between sensors 1 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME2 | History of paper transport time between sensors 2 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME3 | History of paper transport time between sensors 3 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME4 | History of paper transport time between sensors 4 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME5 | History of paper transport time between sensors 5 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME6 | History of paper transport time between sensors 6 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME7 | History of paper transport time between sensors 7 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME8 | History of paper transport time between sensors 8 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME9 | History of paper transport time between sensors 9 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME10 | History of paper transport time between sensors 10 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |

| | Item/Display | Content | Occurrence date | Code between sensors | Passing time | Reference passing time |
|---|---|---|---|---|---|---|
| RSPF | FEED TIME1 (SPF) | History of paper transport time between SPF sensors 1 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME2 (SPF) | History of paper transport time between SPF sensors 2 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME3 (SPF) | History of paper transport time between SPF sensors 3 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME4 (SPF) | History of paper transport time between SPF sensors 4 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME5 (SPF) | History of paper transport time between SPF sensors 5 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME6 (SPF) | History of paper transport time between SPF sensors 6 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME7 (SPF) | History of paper transport time between SPF sensors 7 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME8 (SPF) | History of paper transport time between SPF sensors 8 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME9 (SPF) | History of paper transport time between SPF sensors 9 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |
| | FEED TIME10 (SPF) | History of paper transport time between SPF sensors 10 | Year/month/day hour: min.: sec. | 5 digits | 5 digits (ms) | 5 digits (ms) |

27-14

**Purpose** Setting

**Function (Purpose)** Used to set the FSS function connection test mode.

**Section**

**Operation/Procedure**

1) Enter the set value with 10-key.

| | |
|---|---|
| 0 | Disable (Default) |
| 1 | Enable |

2) Press [OK] key.
The set value in step 1) is saved.

27-15

**Purpose** Operation test/check

**Function (Purpose)** Used to display the FSS connection status.

**Section**

**Operation/Procedure**

The FSS operating status is displayed.

| Item/Display | Content | Setting range | | Default value |
|---|---|---|---|---|
| FSS CONNECTION | Used to display the FSS connection status. | 0 | Not operated | 0 |
| | | 1 | Operated | |

27-16

**Purpose** Setting

**Function (Purpose)** Used to set the FSS alert send.

**Section**

**Operation/Procedure**

1) Enter the set value with 10-key.
The value for the FSS alert operation specification is set.

2) Press [OK] key.

| Item/Display | | Content | | Setting range | Default value |
|---|---|---|---|---|---|
| A | MAINTENANCE ALERT (0:YES 1:NO) | Maintenance alert send Enable setting | Alert send Enable | 0 | 0 |
| | | | Alert send Disable | 1 | |
| B | TONER ORDER ALERT (0:YES 1:NO) | Toner order alert send Enable setting | Alert send Enable | 0 | 0 |
| | | | Alert send Disable | 1 | |
| C | TONER CTRG ALERT (0:YES 1:NO) | Toner cartridge replacement alert send Enable setting | Alert send Enable | 0 | 0 |
| | | | Alert send Disable | 1 | |
| D | JAM ALERT (0:YES 1:NO) | Continuous JAM alert send Enable setting | Alert send Enable | 0 | 0 |
| | | | Alert send Disable | 1 | |
| E | TROUBLE ALERT (0:YES 1:NO) | Trouble alert send Enable setting | Alert send Enable | 0 | 0 |
| | | | Alert send Disable | 1 | |
| F | PAPER ORDER ALERT (0:YES 1:NO) | Paper order alert send Enable setting | Alert send Enable | 0 | 0 |
| | | | Alert send Disable | 1 | |

27-17

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the FSS paper order alert. |
| **Section** | |

**Operation/Procedure**

1) Select an item to be set.
2) Enter the set value with 10-key.
   The value for the FSS paper order alert operation specification is set.
3) 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] (A3) | 500 - 5000 | 1250 | Unit: No. of sheets for a box |
| A4 | Paper order number setting [Number of sheets] (A4) | 500 - 5000 | 2500 | Unit: No. of sheets for a box |
| B4 | Paper order number setting [Number of sheets] (B4) | 500 - 5000 | 2500 | Unit: No. of sheets for a box |
| B5 | Paper order number setting [Number of sheets] (B5) | 500 - 5000 | 2500 | Unit: No. of sheets for a box |
| A3: FIRST | Paper order alert number setting (A3) (Number of used sheets) | 500 - 10000 | 1000 | Unit: No. of alert sheets for the first time |
| A4: FIRST | Paper order alert number setting (A4) (Number of used sheets) | 500 - 10000 | 1000 | Unit: No. of alert sheets for the first time |
| B4: FIRST | Paper order alert number setting (B4) (Number of used sheets) | 500 - 10000 | 1000 | Unit: No. of alert sheets for the first time |
| B5: FIRST | Paper order alert number setting (B5) (Number of used sheets) | 500 - 10000 | 1000 | Unit: No. of alert sheets for the first time |

27-18

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the FSS paper feed retry counter. |
| **Section** | |

**Operation/Procedure**

1) Select an item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

| Item/Display | Content |
|---|---|
| TRAY1 | Tray 1 paper feed retry counter |
| TRAY2 | Tray 2 paper feed retry counter |
| TRAY3 | Tray 3 paper feed retry counter |
| TRAY4 | Tray 4 paper feed retry counter |
| MFT | Manual paper feed retry counter |

# 30

30-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits. |
| **Section** | |

**Operation/Procedure**

The operating conditions of the sensors and 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 positions sensor |
| DSW_R | ADU open/close detector |
| DSW_C | Transport cover open/close detector (Paper feed tray 1) |
| DSW_F | Front cover open/close detector |
| DHPD_CL | OPC drum rotation sensor (CL) |
| DHPD_K | OPC drum rotation sensor (BK) |
| TNFD | Waste toner full detector |
| HLPCD | Fusing roller pressure detector |
| DSW_C2 | Transport cover open/close detector (Paper feed tray 2) |
| PRTPD | Paper exit tray paper detector (Right paper exit tray) |
| 1TUD_CL | Transfer mode detector (CL) |
| 1TUD_K | Transfer mode detector (BK) |
| 2TUD | Secondary transfer position detector |
| WEBEND | Web end detector (36cpm machine) |

30-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits. |
| **Section** | |

**Operation/Procedure**

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

| | |
|---|---|
| CPFD1 | Paper transport detector (Paper feed tray 1) |
| CLUD1 | Paper feed tray upper limit sensor (Paper feed tray 1) |
| CPED1 | Paper empty sensor (Paper feed tray 1) |
| CSPD1 | Paper remaining quantity sensor (Paper feed tray 1) |
| CSS11 | Paper feed tray size detector (Paper feed tray 1)(*1) |
| CSS12 | |
| CSS13 | |
| CSS14 | |
| CPFD2 | Paper transport detector (Paper feed tray 2) |
| CLUD2 | Paper feed tray upper limit sensor (Paper feed tray 2) |
| CPED2 | Paper empty sensor (Paper feed tray 2) |
| CSPD2 | Paper remaining quantity sensor (Paper feed tray 2) |
| CSS21 | Paper feed tray paper size detector (Paper feed tray 2) |
| CSS22 | |
| CSS23 | |
| CSS24 | |
| CSS1 | Paper feed tray 1 detector |
| CSS2 | Paper feed tray 2 detector (*1) |

| | |
|---|---|
| CSS2SET | Desk installation detection |
| MPLD | Paper length detector (Manual paper feed tray) |
| MPED | Paper empty sensor (Manual paper feed tray) |

*1: Displayed, but not installed in some models.

# 40

## 40-2

**Purpose** Adjustment/Setup

**Function (Purpose)** Manual paper feed tray paper width sensor adjustment.

**Section** Paper feed

**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.

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

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the adjustment value of the manual paper feed tray paper width sensor.

**Section** Paper feed

**Operation/Procedure**

1) Select a target item to be adjusted with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

| Item/Display | | Content | 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

**Purpose** Operation test/check

**Function (Purpose)** Used to check the operations of the document size sensor and the control circuit.

**Section**

**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

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the document size sensor detection level.

**Section**

**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

**Purpose** Operation test/check

**Function (Purpose)** Used to check the operations of the document size sensor and the control circuit.

**Section**

**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 | Document detection 1 | 0 - 255 |
| PD2 | Document detection 2 | 0 - 255 |
| PD3 | Document detection 3 | 0 - 255 |
| PD4 | Document detection 4 | 0 - 255 |
| PD5 | Document detection 5 | 0 - 255 |
| PD6 | Document detection 6 | 0 - 255 |
| PD7 | Document detection 7 | 0 - 255 |

# 43

43-1

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the fusing temperature in each mode. |
| **Section** | |

**Operation/Procedure**

1) Select the SW-A or the SW-B. .
2) Select an item to be set with scroll keys.
3) Select an item to be set with displayed value.
   The set value in step 3) is saved.

| Display | Content | Setting range | Default value |
|---|---|---|---|
| PLAIN PAP&WUP&RDY GR | Used to change the fusing temperature setting of plain paper, WUP, and Ready series | -10 | 0 |
| | | -5 | |
| | | 0 | |
| | | +5 | |
| | | +10 | |
| HEAVY PAPER GR | Used to change the fusing temperature setting of heavy paper series | -10 | 0 |
| | | -5 | |
| | | 0 | |
| | | +5 | |
| | | +10 | |
| THIN PAPER GR | Used to change the fusing temperature setting of thin paper series | -10 | 0 |
| | | -5 | |
| | | 0 | |
| | | +5 | |
| | | +10 | |
| RECYCLED PAPER GR | Used to change the fusing temperature setting of recycled paper series | -10 | 0 |
| | | -5 | |
| | | 0 | |
| | | +5 | |
| | | +10 | |
| GLOSS PAPER GR | Used to change the fusing temperature setting of gloss paper series | -10 | 0 |
| | | -5 | |
| | | 0 | |
| | | +5 | |
| | | +10 | |
| ENV PAPER GR | Used to change the fusing temperature setting of envelope series | -10 | 0 |
| | | -5 | |
| | | 0 | |
| | | +5 | |
| | | +10 | |
| PAP CURL IMPROVEMENT | Used to change the fusing temperature setting of paper curl improvement | 0 | 0 |
| | | 1 | |
| | | 2 | |
| | | 3 | |
| | | 4 | |

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

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the fusing temperature and pre-heating. |
| **Section** | |

**Operation/Procedure**

1) Select the SW-A or SW-B.
2) Select an item to be set with scroll keys.
3) Enter the set value with 10-key.
4) Press [OK] key.
   The set value in step 3) is saved.

**26cpm/31cpm**

| Item / Display | | Content | Setting range | Default value (SW-A) | | | Default value (SW-B) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Group A | Group B | Group C | Group A | Group B | Group C |
| A | WARMUP FUMON HL_US T | Fusing motor previous rotation start TH_US set value | 30 - 200 | 50 | 50 | 50 | 50 | 50 | 50 |
| B | WARMUP FUMOFF | Fusing motor previous rotation complete time | 0 - 255 | 20 | 20 | 20 | 20 | 20 | 20 |
| C | WARMUP END TIME | Warm-up complete time | 1 - 255 | 14 | 14 | 14 | 14 | 14 | 14 |
| D | HI_WU_FM_ON_TMP | FM preliminary rotation start TH_UM when warming up at alpha degree C or above | 30 - 200 | 50 | 50 | 50 | 50 | 50 | 50 |
| E | HI_WU_END_TIME | Warm-up completion time when warm-up at alpha degree C or above | 0 - 255 | 14 | 14 | 14 | 14 | 14 | 14 |
| F | LO_WARMUP_TIME | Setting value applying time in warm-up of 120 degree C or above (Time from Ready completion) | 0 - 255 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | HI_WARMUP_TIME | Setting value applying time in warm-up of 120 degree C or above (Time from Ready completion) | 0 - 255 | 0 | 0 | 0 | 0 | 0 | 0 |
| H | HI_WARMUP_BORDER | Threshold value alpha to apply the setting value in warm-up of alpha degree C or above | 1 - 119 | 70 | 70 | 70 | 70 | 70 | 70 |
| I | JOBEND_FUMON_TIME | After-rotation time after completion of a job | 0 - 255 | 5 | 5 | 5 | 5 | 5 | 5 |
| J | HL_UM E-STAR | TH_UM set value when preheating | 30 - 200 | 120 | 115 | 120 | 120 | 115 | 120 |
| K | HL_LM E-STAR | TH_LM set value when preheating | 30 - 200 | 100 | 105 | 105 | 100 | 105 | 105 |
| L | HL_US E-STAR | TH_US set value when preheating | 30 - 200 | 130 | 130 | 130 | 130 | 130 | 130 |
| M | HL_UM PRE-JOB | Resetting from preheating TH_UM set value | 30 - 200 | 120 | 130 | 135 | 155 | 155 | 160 |

**36cpm**

| Item / Display | | Content | Setting range | Default value (SW-A) | | | Default value (SW-B) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Group A | Group B | Group C | Group A | Group B | Group C |
| A | WARMUP FUMON HL_US T | Fusing motor previous rotation start TH_US set value | 30 - 200 | 50 | 50 | 50 | 50 | 50 | 50 |
| B | WARMUP FUMOFF | Fusing motor previous rotation complete time | 0 - 255 | 20 | 20 | 20 | 20 | 20 | 20 |
| C | WARMUP END TIME | Warm-up complete time | 1 - 255 | 14 | 14 | 14 | 14 | 14 | 14 |
| D | HI_WU_FM_ON_TMP | FM preliminary rotation start TH_UM when warming up at alpha degree C or above | 30 - 200 | 50 | 50 | 50 | 50 | 50 | 50 |
| E | HI_WU_END_TIME | Warm-up completion time when warm-up at alpha degree C or above | 0 - 255 | 14 | 14 | 14 | 14 | 14 | 14 |
| F | LO_WARMUP_TIME | Setting value applying time in warm-up of 120 degree C or above (Time from Ready completion) | 0 - 255 | 10 | 10 | 10 | 10 | 10 | 10 |
| G | HI_WARMUP_TIME | Setting value applying time in warm-up of 120 degree C or above (Time from Ready completion) | 0 - 255 | 10 | 10 | 10 | 10 | 10 | 10 |

| Item / Display | | Content | Setting range | Default value (SW-A) | | | Default value (SW-B) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Group A | Group B | Group C | Group A | Group B | Group C |
| H | HI_WARMUP_BORDER | Threshold value alpha to apply the setting value in warm-up of alpha degree C or above | 1 - 119 | 70 | 70 | 70 | 70 | 70 | 70 |
| I | JOBEND_FUMON_TIME | After-rotation time after completion of a job | 0 - 255 | 5 | 5 | 5 | 5 | 5 | 5 |
| J | HL_UM E-STAR | TH_UM set value when preheating | 30 - 200 | 120 | 130 | 135 | 120 | 130 | 135 |
| K | HL_LM E-STAR | TH_LM set value when preheating | 30 - 200 | 100 | 105 | 105 | 100 | 105 | 105 |
| L | HL_US E-STAR | TH_US set value when preheating | 30 - 200 | 145 | 150 | 155 | 145 | 150 | 155 |
| M | HL_UM PRE-JOB | Resetting from preheating TH_UM set value | 30 - 200 | 120 | 145 | 150 | 160 | 165 | 175 |

**Code descriptions**

| | | | |
|---|---|---|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_LM | Fusing thermistor main (Back surface of paper) | HL_LM | Heater lamp main (Heat roller for front surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper) | HL_US | Heater lamp sub (Heat roller for front surface of paper) |

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.

**List of destination groups**

| Group | Destination | | | | | |
|---|---|---|---|---|---|---|
| Group A | JAPAN | – | – | – | – | – |
| Group B | U. S. A | CANADA | INCH | – | – | – |
| Group C | EUROPE | U. K | AUS. | AB_A | AB_B | CHINA |

43-20

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) in each paper mode.

**Section**

**Operation/Procedure**

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

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

| Correction value | -49 | -25 | -5 | 0 | 5 | 25 | 49 |
|---|---|---|---|---|---|---|---|
| Input value | 1 | 25 | 45 | 50 | 55 | 75 | 99 |

| Item / Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | WARMUP FUMON HL_US T LL | Correction value for fusing motor pre-rotation start TH_US set value under LL environment | 1 - 99 | 40 |
| B | WARMUP FUMOFF LL | Fusing motor prior rotation completion time under LL environment | 1 - 99 | 50 |
| C | WARMUP END TIME LL | Correction value for warm-up completion time under LL environment | 1 - 99 | 80 |
| D | HI_WU_FM_ON_TMP_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_END_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_WARMUP_TIME_LL | Correction value of the setting value applying time in warm-up of 120degree C or below under LL environment (Time from Ready completion) | 1 - 99 | 50 |
| G | HI_WARMUP_TIME_LL | Correction value of the setting value applying time in warm-up of 120degree C or above under LL environment (Time from Ready completion) | 1 - 99 | 50 |
| H | HI_WARMUP_BORDER_LL | Correction value of the 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_FUMON_TIME LL | Correction value for the after rotation time when completing a job under LL environment | 1 - 99 | 50 |

| Item / Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| J | HL_UM E-STAR LL | Correction value for preheating TH_UM set value under LL environment | 1 - 99 | 55 |
| K | HL_LM E-STAR LL | Correction value for preheating TH_LM set value under LL environment | 1 - 99 | 55 |
| L | HL_US E-STAR LL | Correction value for preheating TH_US set value under LL environment | 1 - 99 | 55 |
| M | HL_UM PRE-JOB LL | Correction value for the set value of TH_UM when restoring from preheating under LL environment | 1 - 99 | 55 |

* Item WARMUP END TIME LL: 1 Count = 1s Change
  Correction value for the other items: 1 count for 1°C change

**Code descriptions**

| | | | |
|---|---|---|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_LM | Fusing thermistor main (Back surface of paper) | HL_LM | Heater lamp main (Heat roller for back surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper) | HL_US | Heater lamp sub (Heat roller for front surface of paper) |

43-21

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-2) in each paper mode.

**Section**

**Operation/Procedure**

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

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

| Correction value | -49 | -25 | -5 | 0 | 5 | 25 | 49 |
|---|---|---|---|---|---|---|---|
| Input value | 1 | 25 | 45 | 50 | 55 | 75 | 99 |

| Item / Display | | Content | Setting range | Default value | | | |
|---|---|---|---|---|---|---|---|
| | | | | 26cpm/31cpm machine | | | 36cpm machine |
| | | | | Group A | Group B | Group C | |
| A | WARMUP FUMON HL_US T HH | Fusing motor previous rotation start TH_UM set value | 1 - 99 | 50 | 50 | 50 | 50 |
| B | WARMUP FUMOFF HH | Fusing motor previous rotation completion time | 1 - 99 | 50 | 50 | 50 | 50 |
| C | WARMUP END TIME HH | Warm-up completion time | 1 - 99 | 50 | 50 | 50 | 50 |
| D | HI_WU_FM_ON_TMP HH | FM preliminary rotation start TH_UM when warming up at alpha degree C or above | 1 - 99 | 50 | 50 | 50 | 50 |
| E | HI_WU_END_TIME HH | Warm-up completion time when warm-up at alpha degree C or above | 1 - 99 | 50 | 50 | 50 | 50 |
| F | LO_WARMUP_TIME_HH | Correction value for AF - AH application time (Time from Ready complete) | 1 - 99 | 50 | 50 | 50 | 50 |
| G | HI_WARMUP_TIME HH | Correction value for AJ - AL application time (Time from Ready complete) | 1 - 99 | 50 | 50 | 50 | 50 |
| H | HI_WARMUP_BORDER_HH | Threshold value alpha to which AN - AP is applied | 1 - 99 | 50 | 50 | 50 | 50 |
| I | JOBEND_FUMON_TIME HH | After-rotation time after completion of a job | 1 - 99 | 50 | 50 | 50 | 50 |
| J | HL_UM E-STAR HH | TH_UM set value when preheating | 1 - 99 | 40 | 45 | 50 | 45 |
| K | HL_LM E-STAR HH | TH_LM set value when preheating | 1 - 99 | 40 | 45 | 50 | 45 |
| L | HL_US E-STAR HH | TH_US set value when preheating | 1 - 99 | 40 | 45 | 50 | 45 |
| M | HL_UM PRE-JOB HH | Resetting from preheating TH_UM set value | 1 - 99 | 40 | 45 | 50 | 45 |

* Item WARMUP END TIME HH: 1 Count = 1s Change
  Correction value for the other items: 1 count for 1°C change

**Code descriptions**

| | | | |
|---|---|---|---|
| TH_UM | Fusing thermistor main (Front surface of paper) | HL_UM | Heater lamp main (Heat roller for front surface of paper) |
| TH_LM | Fusing thermistor main (Back surface of paper) | HL_LM | Heater lamp main (Heat roller for back surface of paper) |
| TH_US | Fusing thermistor sub (Front surface of paper) | HL_US | Heater lamp sub (Heat roller for front surface of paper) |

**List of destination groups**

| Group | Destination | | | | | |
|---|---|---|---|---|---|---|
| Group A | JAPAN | - | - | - | - | - |
| Group B | U.S.A | CANADA | INCH | - | - | - |
| Group C | AB_B | EUROPE | U.K. | AUS. | AB_A | CHINA |

43-24

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the temperature adjustment value. |
| **Section** | |

**Operation/Procedure**

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

Correction value: -49 - +49, Input value: Actually inputted value (1 - 99)

| Correction value | -49 | -25 | -5 | 0 | 5 | 25 | 49 |
|---|---|---|---|---|---|---|---|
| Input value | 1 | 25 | 45 | 50 | 55 | 75 | 99 |

| Item / Display | | Content | Setting Value | Default value |
|---|---|---|---|---|
| A | COOL_DOWN _HEAVY | Cool down time (Heavy paper) | 1-60 | 5 |
| B | COOL_DOWN_OHP | Cool down time (OHP) | 1-60 | 10 |
| C | COOL_DOWN_ENVELOPE | Cool down time (Envelope) | 1-60 | 15 |
| D | FUS_MOTOR | Fusing web motor operating interval | 3-20 | 10 |

* Each cool down time: 1 count = 1sec change

43-31

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to check the operation of the fusing web cleaning. |
| **Section** | Fusing |

**Operation/Procedure**

1) Press [EXECUTE] key.
   Cleaning the fusing web is performed.
2) When cleaning the fusing web 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 be occur.

| Fusing web unit installation detection state | Operation | Remarks |
|---|---|---|
| Fusing web unit not installed | Does not operate | * During this operation, the fusing web cleaning feed counter is counted up. |
| Fusing web unit installed | Operates for the specified time. | |

43-32

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set various items related to the forcible operation of web cleaning when job end. |
| **Section** | Fusing |

**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 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.

| Item/Display | | Item | | Setting range | | Default value |
|---|---|---|---|---|---|---|
| A | JOB END COMP ACT CHECK | Fusing web motor forcible operation condition when job end | Enable | 0 - 1 | 0 | 1 |
| | | | Disable | | 1 | |
| B | JOB END COMP ACT INTERVAL | Interval of the print quantity of compulsory action of the fusing web motor at job end | | 1 - 200 | | 100 |
| C | JOB END COMP ACT CNT | Number of forcible operations of the fusing web motor when job end | | 1 - 5 | | 1 |

43-34

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to check the fusing lower web cleaning motor operation. |
| **Section** | Fusing |

**Operation/Procedure**

1) Press [EXECUTE] key.
   The fusing lower web cleaning motor is driven.
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 be occur.

| Fusing web unit installation detection state | Operation | Remarks |
|---|---|---|
| Fusing lower web unit not installed | Does not operate | * During this operation, the fusing web cleaning feed counter is counted up. |
| Fusing lower web unit installed | Driven by a certain pulse numbers | |

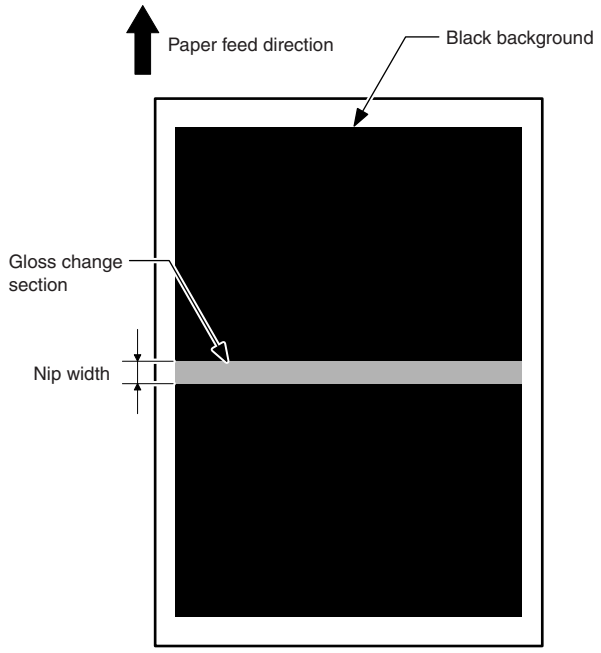
43-35

| | |
|---|---|
| **Purpose** | Adjustment and setting |
| **Function (Purpose)** | Fusing nip operation check |
| **Section** | 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. (The cassette is specified.)
3) Press [EXECUTE] key.
4) [EXECUTE] key is highlighted and printing is started.
   When printing is executed, a jam is always generated. (As shown in the photo below.)
5) Leave the jam paper for about 30sec, then remove the jam paper.
6) 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.
   * If the difference between F and R is considerably great, the fusing pressure may be insufficient.

| Item/Display item | | | Content | Setting range | | Default value |
|---|---|---|---|---|---|---|
| A | PAPER | MFT | Cassette selection | 1 - 5 | 1 | 2 (CS1) |
| | | CS1 | | | 2 | |
| | | CS2 | | | 3 | |
| | | CS3 | | | 4 | |
| | | CS4 | | | 5 | |




# 44

44-1

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set each correction operation function in the image forming (process) section. |
| **Section** | Image process (Photoconductor/Developing/Transfer/Cleaning) |

**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.)

Important

Set the items to the default values unless a change is specially required.

| Item/ Display | Content | Setting range | Default value | NOTE |
|---|---|---|---|---|
| HV | Normal operation high density process control Enable/Disable setting | Normal (Disable: 1: NO) Reverse (Enable: 0: YES) | Enable | |
| HT | Normal operation halftone process control Enable/Disable setting | | Enable | |
| TC | Transfer output correction Enable/ Disable setting | | Enable | |
| MD VG | Membrane decrease grid voltage correction Enable/Disable setting | | Enable | |
| MD LD | Membrane laser power voltage correction Enable/Disable setting | | Disable | |
| MD EV | Membrane decrease environment grid voltage correction Enable/Disable setting | | Enable | |
| MD DL | Membrane decrease discharge light quantity correction Enable/ Disable setting | | Enable | |

| Item/ Display | Content | Setting range | Default value | NOTE |
|---|---|---|---|---|
| MD DL EV | Membrane decrease environment discharge light quantity correction Enable/Disable setting | Normal (Disable: 1: NO) Reverse (Enable: 0: YES) | Disable | |
| TN_PIX_ SUP | Setting of Enable/ Disable of toner supply control for the yield count | | Enable | |
| TN_FB | Setting of Enable/ Disable of the toner density correction for the process control result | | Enable | |
| TN_INT | Setting of Enable/ Disable of toner compulsory supply correction for the development traveling distance | | Enable | |
| TN_RECV | Setting of Enable/ Disable of the toner density recovery operation | | Enable | |
| TN_ADJ | Setting of Enable/ Disable of the toner sensor control voltage adjustment in the process control | | Enable | |
| TN_EMP | Setting of Enable/ Disable of the toner falling distance detection control | Normal (Disable: 1: NO) Reverse (Enable: 0: YES) | Enable | |
| TN_EMP_ INT | Setting of Enable/ Disable of the toner falling distance detection control of job interruption | | Enable | |
| TN_EMP_ NEW | Setting of Enable/ Disable of the new toner cartridge falling distance detection control | | Enable | |
| TN_PIX_ TBL | Setting of Enable/ Disable of execution of revision of the yield count conversion table for the toner supply control in the halftone process control | | Enable | |
| AR_AUTO | Auto registration adjustment Enable/ Disable setting | | Enable | |
| AR_ERROR | Auto registration adjustment execution error check Enable/ Disable setting | | Enable | |
| DM_PHASE | Drum phase fitting Enable/Disable setting | | Enable | |
| PRT_HT | Halftone process control printer correction feedback Enable/Disable setting | | Enable | |
| PTC_ENV | PTC environment correction Enable/ Disable setting | | Enable | Enable: Correction ON |

44-2

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the sensitivity of the image density sensor (registration sensor).

**Section** 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.

| Classification | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| PROCON | A | PCS_F_CL_KA | Color image sensor light emitting quantity adjustment value | 1 - 255 | 500 |
| | B | PCS_F LED ADJ | Image sensor light emitting quantity adjustment value F | 1 - 255 | 32 |
| | C | PCS_R LED ADJ | Image sensor light emitting quantity adjustment value R | 0 - 255 | 40 |
| | D | PCS_F_CL_DARK | Dark voltage of color image sensor | 0 - 255 | 0 |
| | E | PCS_F DARK | Dark voltage of image sensor F | 0 - 255 | 0 |
| | F | PCS_R DARK | Dark voltage of image sensor R | 0 - 255 | 0 |
| | G | PCS_F GRND | Transfer belt substrate detection level when the item B adjustment is completed | 0 - 255 | 0 |
| | H | PCS_F BELT MAX | Transfer belt substrate input max. value F | 0 - 255 | 0 |
| | I | PCS_F BELT MIN | Transfer belt substrate input min. value F | 1 - 255 | 0 |
| | J | PCS_F BELT DIF | Transfer belt substrate input difference F (Item H - Item I) | 0 - 255 | 0 |
| | K | PCS_R GRND | Transfer belt substrate detection level when the item C adjustment is completed | 0 - 255 | 0 |
| | L | PCS_R BELT MAX | Transfer belt substrate input max. value R | 1 - 255 | 0 |
| | M | PCS_R BELT MIN | Transfer belt substrate input min. value R | 0 - 255 | 0 |
| | N | PCS_R BELT DIF | Transfer belt substrate input difference R (Item L - Item M) | 0 - 256 | 0 |

| Classification | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| REGIST | O | REG_F LED ADJ | Registration sensor light emitting quantity adjustment value F | 0 - 255 | 32 |
| | P | REG_F DARK | Registration sensor dark voltage F | 0 - 255 | 0 |
| | Q | REG_F GRND | Transfer belt substrate detection level when the item B adjustment is completed | 0 - 255 | 0 |
| | R | REG_R LED ADJ | Registration sensor light emitting quantity adjustment value R | 0 - 255 | 40 |
| | S | REG_R DARK | Registration sensor dark voltage R | 0 - 255 | 0 |
| | T | REG_R GRND | Transfer belt substrate detection level when the item R adjustment is completed | 0 - 255 | 0 |
| | U | REG_F BELT MAX | Transfer belt substrate detection level max. value (F side) | 0 - 255 | 0 |
| | V | REG_F BELT MIN | Transfer belt substrate detection level min. value (F side) | 0 - 255 | 0 |
| | W | REG_F BELT DIF | Transfer belt substrate detection level difference (Item U - Item V) | 0 - 255 | 0 |
| | X | REG_R BELT MAX | Transfer belt substrate detection level max. value (R side) | 0 - 255 | 0 |
| | Y | REG_R BELT MIN | Transfer belt substrate detection level min. value (R side) | 0 - 255 | 0 |
| | Z | REG_R BELT DIF | Transfer belt substrate detection level difference (Item X - Item Y) | 0 - 255 | 0 |
| | AA | REG_F PATCH (K) | Toner patch detection level R (K) in the registration adjustment | 0 - 255 | 0 |
| | AB | REG_F PATCH (C) | Toner patch detection level R (C) in the registration adjustment | 0 - 255 | 0 |
| | AC | REG_F PATCH (M) | Toner patch detection level R (M) in the registration adjustment | 0 - 255 | 0 |
| | AD | REG_F PATCH (Y) | Toner patch detection level R (Y) in the registration adjustment | 0 - 255 | 0 |
| | AE | REG_R PATCH (K) | Toner patch detection level R (K) in the registration adjustment | 0 - 255 | 0 |
| | AF | REG_R PATCH (C) | Toner patch detection level R (C) in the registration adjustment | 0 - 255 | 0 |
| | AG | REG_R PATCH (M) | Toner patch detection level R (M) in the registration adjustment | 0 - 255 | 0 |
| | AH | REG_R PATCH (Y) | Toner patch detection level R (Y) in theregistration adjustment | 0 - 255 | 0 |

| Error name | Error content |
|---|---|
| F sensor adjustment abnormality | PCS_F LED ADJ error<br>The target is not reached by 4 times of adjustments. |
| R sensor adjustment abnormality | PCS_R LED ADJ error<br>The target is not reached by 4 times of adjustments. |
| Color sensor adjustment abnormality | PCS_F_CL_KA ADJ error<br>The target is not reached |
| Substrate scan abnormality F | PCS_F GRND error<br>The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 2 turn |
| Substrate scan abnormality R | PCS_R GRND error<br>The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 2 turn |
| Registration sensor F adjustment abnormality | REG_F LED ADJ error<br>The target is not reached by 4 times of adjustments |
| Registration sensor R adjustment abnormality | REG_R LED ADJ error<br>The target is not reached by 4 times of adjustments |
| Registration substrate F scan abnormality | REG_F GRND error<br>The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 2 turn |
| Registration substrate R scan abnormality | REG_R GRND error<br>The difference between the max. value and the min. value of the substrate detection level is greater than the specified value when the transfer belt rotates 2 turn |

## 44-4

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the conditions of the high density process control operation. |
| **Section** | 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.

Important

Set the items to the default values unless a change is specially required.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | PCS_CL TARGET | Color image sensor adjustment target value | 1 - 255 | 204 |
| B | PCS_K TARGET | Black image sensor adjustment target value | 1 - 255 | 204 |
| C | LED_CL OUTPUT | Color image sensor light emitting start level | 1 - 255 | 21 |
| D | LED_K OUTPUT | Black image sensor light emitting start level | 1 - 255 | 21 |
| E | PCS ADJSTMENT LIMIT | Color image sensor adjustment error allowance level | 1 - 255 | 4 |
| F | BELT GROUND DIF | Transfer belt one-turn substrate detection level difference allowance level | 1 - 255 | 1 |
| G | BIAS_CL STANDARD DIF | Developing bias (for color) reference correction voltage | 0 - 255 | 60 |
| H | BIAS_BK STANDARD DIF | Developing bias (for black) reference correction voltage | 0 - 255 | 0 |
| I | BIAS PATCH INTERVAL | Toner patch making developing bias interval | 1 - 255 | 60 |
| J | Y_PAT TARGET ID | Process control target density level (yellow) | 1 - 255 | 40 |
| K | M_PAT TARGET ID | Process control target density level (magenta) | 1 - 255 | 45 |
| L | C_PAT TARGET ID | Process control target density level (cyan) | 1 - 255 | 45 |
| M | K_PAT TARGET ID | Process control target density level (black) | 1 - 255 | 45 |
| N | HV BK_GROUND LIMIT | Black image sensor adjustment error allowance level | 1 - 255 | 60 |

## 44-6

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to execute the high density process control forcibly. |
| **Section** | 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 |
|---|---|
| CL_SEN_ADJ_ERR | Color image sensor adjustment abnormality |
| BK_SEN_ADJ_ERR | Black image sensor adjustment abnormality |
| K_HV_ERR | K high density process control abnormality |
| C_HV_ERR | C high density process control abnormality |
| M_HV_ERR | M high density process control abnormality |
| Y_HV _ERR | Y high density process control abnormality |
| TIMEOUT_ERR | Time out |

44-9

| | |
|---|---|
| **Purpose** | Operation data display |
| **Function (Purpose)** | Used to display the result data of the high density process control operation. |
| **Section** | Image process (Photoconductor/Developing/Transfer/Cleaning) |

**Operation/Procedure**

Select a target display mode with [CPY/PRN], [OTHER] keys.

| Mode | Item/Display (*: Correction value) | | Content | Display range | Default value |
|---|---|---|---|---|---|
| CPY/PRN | P (PROCON) | BLACK : GB ***/*** DV ***/*** | High density process control mode<br>GB/DV data (KCMY)<br>(Output voltage level/base voltage level) | GB: 150 - 850<br>DV: 0 - 600 | GB: 630<br>DV: 430 |
| | | CYAN : GB ***/*** DV ***/*** | | | |
| | | MAGENTA : GB ***/*** DV ***/*** | | | |
| | | YELLOW : GB ***/*** DV ***/*** | | | |
| | N(M)<br>(NORMAL<br>(MIDDLE)) | BLACK : GB ***/*** DV ***/*** | Medium speed print mode<br>GB/DV data (KCMY)<br>(Actual output voltage level/base voltage level) | GB: 150 - 850<br>DV: 0 - 600 | GB: 630<br>DV: 430 |
| | | CYAN : GB ***/*** DV ***/*** | | | |
| | | MAGENTA : GB ***/*** DV ***/*** | | | |
| | | YELLOW : GB ***/*** DV ***/*** | | | |
| | N(L)<br>(NORMAL<br>(LOW)) | BLACK : GB ***/*** DV ***/*** | Low speed print mode<br>GB/DV data (KCMY)<br>(Actual output voltage level/base voltage level) | GB: 150 - 850<br>DV: 0 - 600 | GB: 600<br>DV: 400 |
| | | CYAN : GB ***/*** DV ***/*** | | | |
| | | MAGENTA : GB ***/*** DV ***/*** | | | |
| | | YELLOW : GB ***/*** DV ***/*** | | | |
| OTHER | TN/TC | TN HUD AREA | Toner density correction humidity area | 1 - 8 | 4 |
| | | TN HUD DATA | Toner density correction humidity AD value | 0 - 1023 | 0 |
| | | TC TMP AREA | Transfer correction temperature area | 1 - 9 | 4 |
| | | TC TMP DATA | Transfer correction temperature AD value | 0 - 1023 | 0 |
| | | TC HUD AREA | Transfer correction humidity area | 1 - 9 | 4 |
| | | TC HUD DATA | Transfer correction humidity AD value | 0 - 1023 | 0 |
| | | MD HUD AREA | Membrane decrease correction humidity area | 1 - 8 | 4 |
| | | MD HUD DATA | Membrane decrease correction humidity AD value | 0 - 1023 | 0 |
| | DRUM | MD K STEP | Drum membrane decrease correction STEP level (KCMY) | 0 - 4 | 0 |
| | | MD C STEP | | | |
| | | MD M STEP | | | |
| | | MD Y STEP | | | |
| | | MD K DRUM COUNTER | Membrane decrease drum traveling distance area (KCMY) | 0 - 20 | 0 |
| | | MD C DRUM COUNTER | | | |
| | | MD M DRUM COUNTER | | | |
| | | MD Y DRUM COUNTER | | | |
| OTHER | LIFE | MD K REVISE(LIFE) : L *** M *** | MC grid correction voltage level (for the drum membrane decrease) (KCMY) | 0 - 255 | 0 |
| | | MD C REVISE(LIFE) : L *** M *** | | | |
| | | MD M REVISE(LIFE) : L *** M *** | | | |
| | | MD Y REVISE(LIFE) : L *** M *** | | | |
| | EV | MD K REVISE(EV) : L *** M *** | MC grid voltage correction level (for the environment) (KCMY) | 0 - 255 | 0 |
| | | MD C REVISE(EV) : L *** M *** | | | |
| | | MD M REVISE(EV) : L *** M *** | | | |
| | | MD Y REVISE(EV) : L *** M *** | | | |
| | ALL | MD K REVISE(ALL) : L *** M *** | MC grid voltage correction level (for the drum membrane decrease) (KCMY) | 0 - 255 | 0 |
| | | MD C REVISE(ALL) : L *** M *** | | | |
| | | MD M REVISE(ALL) : L *** M *** | | | |
| | | MD Y REVISE(ALL) : L *** M *** | | | |
| | LD | MD K REVISE(LD) : L *** M *** | Laser power correction level (for the drum membrane decrease) (KCMY) | 0 - 255 | 0 |
| | | MD C REVISE(LD) : L *** M *** | | | |
| | | MD M REVISE(LD) : L *** M *** | | | |
| | | MD Y REVISE(LD) : L *** M *** | | | |
| | DL | MD K REVISE COL (DL): L *** M *** | Discharge lamp correction level (%) (for the drum membrane decrease) | 0 - 100 | 70 |
| | | MD C REVISE COL (DL): L *** M *** | | | |
| | | MD M REVISE COL (DL): L *** M *** | | | |
| | | MD Y REVISE COL (DL): L *** M *** | | | |
| | DL EV | MD K REVISE COL (DL EV): L *** M *** | Discharge lamp correction level (%) (for the environment) | -100 - 100 | 0 |
| | | MD C REVISE COL (DL EV): L *** M *** | | | |
| | | MD M REVISE COL (DL EV): L *** M *** | | | |
| | | MD Y REVISE COL (DL EV): L *** M *** | | | |
| | CRUM | DESTINATION | CRUM destination (Main unit data) | - | - |
| | | MODEL TYPE | Machine model type | 0 - 1 | 0 |
| | | CRUM DEST_K | CRUM destination (CRUM data) | - | - |
| | | CRUM DEST_C | | | |
| | | CRUM DEST_M | | | |
| | | CRUM DEST_Y | | | |
| | CNT | PROCON COUNT HV | High density process control number of executions | 0 - 99999999 | 0 |
| | | PROCON COUNT HT | Halftone process control number of executions | 0 - 99999999 | 0 |

44-12

| | |
|---|---|
| **Purpose** | Operation data display |
| **Function (Purpose)** | Used to display the operation data of the high density process control and the image density sensor (registration sensor). |
| **Section** | Image process (Photoconductor/Developing) |

**Operation/Procedure**

Select a display mode with [TARGET] [PATCH] keys.

| Mode | Item/Display | Content | Display range | Default value |
|---|---|---|---|---|
| TARGET | 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 |
| | TARGET (C/M/Y) | High density process control target density level (C/M/Y) | 0.00 - 255.00 | 0 |
| | PCS_F_ DARK | F sensor dark potential | 0 - 255 | 0 |
| | PCS_R_ DARK | R sensor dark potential | 0 - 255 | 0 |
| PATCH | n-1 | High density process control nth time toner patch density level 1 (n=1-5) | 0 - 255 | 0 |
| | n-2 | Toner patch data nth time patch 2 (n=1-5) | 0 - 255 | 0 |
| | n-3 | Toner patch data nth time patch 3 (n=1-5) | 0 - 255 | 0 |
| | n-4 | Toner patch data nth time patch 4 (n=1-5) • BK only | 0 - 255 | 0 |
| | n-5 | Toner patch data nth time patch 5 (n=1-5) • BK only | 0 - 255 | 0 |
| PATCH | n-1 | Toner patch data nth time patch 1 (n=6-10) | 0 - 255 | 0 |
| | n-2 | Toner patch data nth time patch 2 (n=6-10) | 0 - 255 | 0 |
| | n-3 | Toner patch data nth time patch 3 (n=6-10) | 0 - 255 | 0 |
| | n-4 | Toner patch data nth time patch 4 (n=6-10) • BK only | 0 - 255 | 0 |
| | n-5 | Toner patch data nth time patch 5 (n=6-10) • BK only | 0 - 255 | 0 |

44-14

| | |
|---|---|
| **Purpose** | Operation data display |
| **Function (Purpose)** | Used to display the output level of the temperature and humidity sensor. |
| **Section** | Process (OPC drum, development)/Fusing/LSU |

**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 main thermistor differential input level (°C) / (AD value) | Temperature: 0 - 255°C (±1°C) AD value: 0-1023 |
| TH_UM_AD1 | Fusing thermistor detection level for compensation (°C) / (AD value) | Temperature: 0.0-255.0°C (±0.2°C) AD value: 0-1023 |
| TH_UM_AD2 | Fusing thermistor detection level (AD value) | AD value: 0-1023 |
| TH_LM | Fusing thermistor A/D value (temperature °C) (Fusing roller B edge) | Temperature: 0 - 255°C (±1°C) AD value: 0-1023 |
| TH_US | Fusing sub thermistor A/D value (temperature °C) (Fusing belt) | Temperature: 0 - 255°C (±1°C) AD value: 0-1023 |
| TEMPRATURE | Process control thermistor detection level | Temperature: -40.0 - 60.0°C (±0.1°C) AD value: 0-1023 |
| HUMIDITY | Process control humidity sensor detection level | Humidity: 5.0-90.0% (±0.1%), AD value: 0-1023 |
| TH1_LSU | LSU thermistor detection level (A/D value) (°C) | Temperature: 5.0-60.0°C (±0.1°C) AD value: 0-255 |

44-15

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the OPC drum idle rotation. |
| **Section** | Process |

**Operation/Procedure**

1) Select an item to be set with the scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key.

The initial value must be set unless any special change is required.

| Item/ Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | TIME | Idle rotation interval (time interval between the previous OPC drum idle rotation and the next one) setting (h) | 0 - 255 | 6 |
| B | AREA1 | Environmental area difference judgment threshold value setting (difference between the previous OPC drum idle rotation and the current one) | 0 - 5 | 2 |
| C | AREA2 | Environmental area conditions (AND condition of the previous OPC drum idle rotation and the current one) | 1 - 15 | 1 |
| D | CYCLE | Previous rotation time setting (sec) in the process control when recovered from power ON, preheating/sleep mode. | 0 - 255 | 0 |

The execution YES/NO of the OPC drum idle rotation is determined by the AND condition of TIME, AREA1, and AREA 2. To execute the OPC drum idle rotation, set item B (AREA 1) to "0," and item C (AREA2) to "15." However, idle rotation is performed in a certain interval while in shut off. This must be fully explained to the user.

44-17

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Process refresh execution |
| **Section** | Process |

**Operation/Procedure**

1) Select a refresh item with the touch panel key.
2) Press [EXECUTE] key.
3) The refresh operation is executed.

NOTE: Do not execute this simulation unless specially required.

**Display items and descriptions of contents**

| Display | Content |
|---|---|
| BLADE REFRESH | Blade development refresh |
| DRUM REFRESH | Drum refresh |
| DEVE REFRESH | Development refresh<br>* DEVE REFLESH execution consume W-Letter A3 100% worth of toner. |

**Display of results and descriptions of items**

| Display | Content |
|---|---|
| COMPLETE | Normal completion |
| ERROR | Abnormal end |
| INTERRUPTION | Forcible interruption |

44-21

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the halftone process control target. |
| **Section** | Process |

**Operation/Procedure**

Press [EXECUTE] key.

The halftone process control target is set and the operation data are displayed.

| Display | Content |
|---|---|
| COMPLETE | Normal complete |
| ERROR COLOR SENSOR ADJUSTMENT | Color image density sensor sensitivity adjustment error |
| ERROR BLACK SENSOR ADJUSTMENT | Black image density sensor sensitivity adjustment error |
| [YMCK] | High density process control error [YMCK] |
| OTHER | Other errors |

44-22

| | |
|---|---|
| **Purpose** | Operation data display |
| **Function (Purpose)** | Used to display the toner patch density level in the halftone process control operation. |
| **Section** | Process |

**Operation/Procedure**

1) Select the display mode with [1ST STEP],[2ND STEP] key.
   The toner patch density level made in the halftone process control operation is displayed.

| Item/Display | Content |
|---|---|
| ID_n | Patch data display<br>(PTK: n = 1 - 24, PTC/PTM/PTY: n = 1 - 16) |
| BASE1 | Belt substrate data (START) |
| BASE5 | Belt substrate data (LAST) |

44-24

| | |
|---|---|
| **Purpose** | Operation data display |
| **Function (Purpose)** | Used to display the correction target and the correction level in the halftone process control operation. |
| **Section** | Process |

**Operation/Procedure**

1) Select the display category with [NEXT] key.
2) Select a target adjustment color with [K] [C] [M] [Y] key.

| Category | Item/Display | Content |
|---|---|---|
| Coefficient | [EX-LOW] | Coefficient of the approximation formula of the minimum density |
| | [LOW] | Coefficient of the approximation formula of the low density |
| | [CONNECT] | Coefficient of the approximation formula of when connecting the low density and the medium density |
| | [MID] | Coefficient of the approximation formula of the medium density |
| | [HIGH] | Coefficient of the approximation formula of the high density |
| | [CONNECT POINT] | Each density section connection output ratio |
| Reference value | [SENSOR_TARGET] | Halftone process control reference value |
| Correction value | [S_VALUE] | Halftone process control correction value |
| For printer | [PRINTER_S_VALUE] | Printer halftone process control correction value |
| | [PRINTER_BASE_DITHER_VALUE] | Printer halftone process control reference dither value |
| | [PRINTER_AUTO_HT_VALUE] | Printer auto density adjustment correction value |
| Previous correction value | [BEFORE S_VALUE] | Previous halftone process control value |

44-25

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the calculating conditions of the correction value for the halftone process control. |
| **Section** | Process |

**Operation/Procedure**

1) Select a target adjustment color with [K] [C] [M] [Y] key.
2) Select a target adjustment density level with scroll key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key.

Important

Set the items to the default values unless a change is specially required.

| Item/Display | | Content | Setting range | Default value | |
|---|---|---|---|---|---|
| | | | | K | CMY |
| A | LOW FIELD LOWER LIMIT | Low density approximate expression data lower limit value | 0 - 255 | 98 | 98 |
| B | LOW FIELD UPPER LIMIT | Low density approximate expression data upper limit value | 0 - 255 | 60 | 60 |
| C | MID FIELD LOWER LIMIT | Medium density approximate expression data lower limit value | 0 - 255 | 90 | 90 |
| D | MID FIELD UPPER LIMIT | Medium density approximate expression data upper limit value | 0 - 255 | 6 | 2 |
| E | HIGHLIGHT POINT | Reference point of the highlight correction amount | 1 - 8 | 7 | 7 |
| F | HIGHTLIGHT VALUE LIMIT | Highlight correction amount limit value | 0 - 128 | 20 | 20 |
| G | MAX VALUE LIMIT | Maximum density value correction limit value | 0 - 128 | 20 | 20 |

44-26

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to execute the halftone process control compulsory. |
| **Section** | Process |

**Operation/Procedure**

Press [EXECUTE] key.

The halftone process control is performed and the operation data are displayed.

| | |
|---|---|
| COMPLETE | Normal complete |
| ERROR COLOR SENSOR ADJUSTMENT | Color image density sensor sensitivity adjustment error |
| ERROR BLACK SENSOR ADJUSTMENT | Black image density sensor sensitivity adjustment error |
| [YMCK] | High density process control error [YMCK] error |
| OTHER | Other errors |

44-27

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the correction data of the halftone process control. |
| **Section** | Process |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   The correction data of the halftone process control are cleared.

44-28

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the process control execution conditions. |
| **Section** | Process |

**Operation/Procedure**

1) Select a target item of setting with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Important

Set the items to the default values unless a change is specially required.

| Mode | Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|---|
| Process control Enable/Disable setting | A | INITIAL | YES | When warm-up after clearing the counter of the OPC drum and the developer unit | Enable | 0 - 1 | 0 | 0 |
| | | | NO | | Disable | | 1 | |
| | B | SW ON | | When supplying the power (when canceling power shut-off) | Color process control Enable | 0 - 3 | 0 | 3 |
| | | | | | Process control Disable | | 1 | |
| | | | | | BK process control Enable | | 2 | |
| | | | | | Pixel count judgment | | 3 | |
| | C | TIME | | After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME) | Color process control Enable | 0 - 3 | 0 | 3 |
| | | | | | Process control Disable | | 1 | |
| | | | | | BK process control Enable | | 2 | |
| | | | | | Pixel count judgment | | 3 | |
| | D | HUM_LIMIT | | HUM judgment is made when turning ON the power and after passing INTERVAL TIME. | Color process control Enable | 0 - 2 | 0 | 0 |
| | | | | | Process control Disable | | 1 | |
| | | | | | BK process control Enable | | 2 | |
| | E | HUM | | The temperature and humidity inside the machine are monitored only during a job at the interval set by the item of HUM HOUR. When the changes in the temperature and the humidity are greater than the specified level (the set value of item HUM DIF) in comparison with the previous process control. | Color process control Enable | 0 - 2 | 0 | 0 |
| | | | | | Process control Disable | | 1 | |
| | | | | | BK process control Enable | | 2 | |
| | F | REV1 | YES | When the accumulated traveling distance of K or M OPC drum unit reaches the specified level after turning ON the power. | Enable | 0 - 1 | 0 | 0 |
| | | | NO | | Inhibit | | 1 | |
| | G | REV2_BK | YES | When the accumulated traveling distance of K OPC drum unit reaches the specified level from execution of the previous density correction. | Enable | 0 - 1 | 0 | 0 |
| | | | NO | | Inhibit | | 1 | |
| | H | REV2_CL | YES | When the accumulated traveling distance of M OPC drum unit reaches the specified level from execution of the previous density correction. | Enable | 0 - 1 | 0 | 0 |
| | | | NO | | Inhibit | | 1 | |
| | I | REFRESH MODE | YES | Select of YES/NO of the manual process control key with key operation | Key operation display | 0 - 1 | 0 | 1 |
| | | | NO | | Key operation NO display | | 1 | |
| Setting of the execution conditions of the process control | J | DAY | | When there is no color job from when the previous color process control was performed to when the number of days set by this item setting, perform the process control when executing the next warming up. | 0: Disable of the specified days judgment | 0 - 999 | 0 | 1 |
| | | | | | 1 - 999: 1 - 999 days passing | | 999 | |
| | K | HI-COV | | Setting of the execution conditions of the process control for the print ratio | The process control is performed by considering the average print ratio of every 10 pages as the judgment criteria. | 0 - 2 | 0 | 0 |
| | | | | | Print ratio judgment inhibit (The process control for the target of print ratio is not performed.) | | 1 | |
| | | | | | The process control is performed by considering the average print ratio of 30 pages as the judgment criteria in a continuous print job of 30 or more pages. | | 2 | |

| Mode | Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|---|
| Setting of the execution conditions of the process control | L | LO-COV | | Setting of the execution judgment of the process control in continuous printing of low print ratio images | Enable | 0 - 1 | 0 | 0 |
| | | | | | Inhibit | | 1 | |
| | M | TonerCA-END | | Setting of the process control interval reduction when the toner cartridge remaining quantity is 25% or less (If this is set to Enable, item M RATIO is changed.) | Enable | 0 - 1 | 0 | 1 |
| | | | | | Inhibit | | 1 | |
| | N | AVERAGE-PAGE | | Setting of the number of pages of item HI-COV set value 2 | 1: 10 pages - 5: 50 pages<br>1 step corresponds to 10 pages. | 1 - 5 | 1 | 3 |
| | | | | | | | 5 | |
| | O | LIMIT 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<br>1 step corresponds to 10 pages. | 1 -10 | 1 | 10 |
| | | | | A number of reservation jobs are connected. When the number of jobs exceeds the specified number of pages (the set value of this setting), the process control is performed. / The process control is performed by AND conditions of item REV condition and the specified number of pages (the set value of this setting). | | | 10 | |
| | P | PIX_RATIO_BK | | Magnification ratio setting (%) of the BK toner count specified value<br>The set value of 100 corresponds to K print of A4 at the print ratio of 5%. | | 1 - 999 | | 10 |
| | Q | PIX_RATIO_CL | | Magnification ratio setting (%) of the color (CMY) toner count specified value<br>The set value of 100 corresponds to K print of A4 at the print ratio of 5%. | | 1 - 999 | | 10 |
| | R | INTERVAL TIME | | Setting of the leaving time when turning ON the power (including the sleep recovery time) (h: hour) | | 1 - 255 | | 3 |
| | S | HUM HOUR | | Interval setting of the temperature and humidity monitoring time of "HUM" (unit: 10 minutes) | | 1 - 24 | | 2 |
| | T | HUM_DIF | | The specified value of the area difference in humidity between the level at execution of the previous control and the current humidity (Applied to item HUM) | | 1 - 9 | | 2 |
| | U | BK_RATIO | | Magnification ratio setting (%) of the specified value of the BK OPC drum traveling distance of "REV2_BK" | | 1 - 999 (Entry of 20 corresponds to 100,000mm.) | | 15 |
| | V | M_RATIO | | Magnification ratio setting (%) of the M OPC drum traveling distance of "REV2_CL" | | 1 - 999 (Entry of 20 corresponds to 100,000mm.) | | 15 |
| | W | COLOR BORDER | | Judgment criteria whether the BK high density process control is individually performed or not (Setting of the ratio of the M OPC drum rotation distance for the K OPC drum rotation distance (%)) | 0: The BK process control is executed regardless of the M OPC drum traveling distance. | 0 - 999 | | 20 |
| | | | | | 1 - 999: 1 - 999(%) | | | |
| | X | BK ONLY | | Setting of the frequency of execution of the 4-color high density process control when only monochrome output is continued (The result of this setting is applied only when the M OPC drum rotation distance is smaller than the set value of COLOR BORDER.) | Frequency of once for 5 times | 0 - 6 | 0 | 5 |
| | | | | | Frequency of once for 1 - 5 times | | 1 - 5 | |
| | | | | | The 4-color high density process control is always performed. | | 6 | |
| | Y | HT_DIF | | HT process control execution judgment developing bias variation value | | 1 - 255 | | 40 |
| Setting of the execution condition of the registration adjustment | Z | RG_ON_SYNC | CL | Setting of execution of the registration adjustment when executing the process control when turning ON the power | | When the color process control is executed. | 0 | 0 |
| | | | ALL | | | Executed regardless of the process control. | 1 | |
| | | | CL/BK | | | When the color process control and the K process control are executed. | 2 | |
| | AA | RG_TEMP_TIMER | | Time interval from registration adjustment after turning ON the power to the next execution. | | 0 - 240 (MINUTE) | | 0 |
| | AB | RG_PERM_TIMER | | Setting of inhibit time of execution of the registration adjustment | | 0 - 15 (HOUR) | | 1 |
| | AC | RG_HOUR_TIMER | | Setting of the interval time of execution of the registration adjustment | | 0 - 15 (Above)+(HOUR) | | 5 |
| | AD | RG_BW_SYNC | | Setting of Enable/Disable of the registration adjustment after a monochrome job | Enable | 0 - 1 | 0 | 1 |
| | | | | | Inhibit | | 1 | |

| Mode | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| Setting of the secondary transfer cleaning conditions | AE | 2TRAN_CLEAN_TIME1 | Secondary transfer cleaning process time judgment threshold value 1 (The total number of sheets for cleaning execution conditions) (Cleaning time: Short) | 5 - 999 | 200 |
| | AF | 2TRAN_CLEAN_TIME2 | Secondary transfer cleaning process time judgment threshold value 2 (The total number of sheets for cleaning execution conditions) (Cleaning time: Medium) | 5 - 999 | 300 |
| | AG | 2TRAN_CLEAN_TIME3 | Secondary transfer cleaning process time judgment threshold value 3 (The total number of sheets for cleaning execution conditions) (Cleaning time: Long) | 5 - 999 | 500 |

When REFRESH MODE setting is enabled (0), the menu of the user process control execution button is displayed on the user system setting menu.

When the color balance or the density change is not within the allowable range, the user can perform the process control manually and forcibly. However, toner is consumed grater than as usual. This point must be explained to the user clearly.

44-29

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the operating conditions of the process control during a job. |
| **Section** | Process |

**Operation/Procedure**

1) Select a target item of setting with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.

| Item/Display | | Content | Setting range | | | Default value |
|---|---|---|---|---|---|---|
| A | COPY | During copy job | 0 - 2 | 0: No execution<br>1: HV only<br>2: HV → HT | | 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 | Halftone process control copier - printer conversion table select | 0 - 1 | 0:CALCULATED<br>1:DEFAULT | 0: Color balance calculation value (Revised every time when SIM46-74 is executed.)<br>1: Default (Fixed value) | 0 |

HV: High density process control

HT: Halftone process control

44-31

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the OPC drum phase. (Manual adjustment) |
| **Section** | Process |

**Operation/Procedure**

Important

For the OPC drum phase adjustment, do not use this simulation, but use SIM50-22 (auto adjustment).

1) Select item A with scroll key.
2) Enter the value corresponding to the adjustment pattern with 10-key.
3) Press [EXECUTE] key. (The adjustment pattern is printed out.)
4) Select an adjustment pattern whose deflection is within two scale lines on the adjustment pattern of C,M, Y colors.
5) Select item B with scroll key.
6) Enter the adjustment pattern sheet number selected in procedure 4).
7) Press [EXECUTE] key.
8) The adjusted adjustment pattern is printed.

44-37

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the development bias correction level in the continuous printing operation. |
| **Section** | |

**Operation/Procedure**

1) Select a set target color with the touch panel.
2) Select a target item with scroll keys.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

**Note**

When the print density is varied in the continuous printing operation, this simulation is used.

| Button | Item | Display | Content | Setting range | Default value |
|---|---|---|---|---|---|
| K | A | DV_ADJ_CL_K_L_DATA_1 | DV bias correction data 1 in color printing (low speed) | 0 - 5 | 0 |
| | B | DV_ADJ_CL_K_L_DATA_2 | DV bias correction data 2 in color printing (low speed) | 0 - 5 | 0 |
| | C | DV_ADJ_CL_K_L_DATA_3 | DV bias correction data 3 in color printing (low speed) | 0 - 5 | 0 |
| | D | DV_ADJ_CL_K_M_DATA_1 | DV bias correction data 1 in color printing (middle speed) | 0 - 5 | 0 |
| | E | DV_ADJ_CL_K_M_DATA_2 | DV bias correction data 2 in color printing (middle speed) | 0 - 5 | 0 |
| | F | DV_ADJ_CL_K_M_DATA_3 | DV bias correction data 3 in color printing (middle speed) | 0 - 5 | 0 |
| | G | DV_ADJ_BK_H_DATA_1 | DV bias correction data 1 in monochrome printing (high speed) | 0 - 5 | 0 |
| | H | DV_ADJ_BK_H_DATA_2 | DV bias correction data 2 in monochrome printing (high speed) | 0 - 5 | 0 |
| | I | DV_ADJ_BK_H_DATA_3 | DV bias correction data 3 in monochrome printing (high speed) | 0 - 5 | 0 |
| | J | DV_ADJ_START_CL_K_L_1 | DV bias correction starting position data 1 in color printing (low speed) | 1 - 12 | 4 |
| | K | DV_ADJ_START_CL_K_L_2 | DV bias correction starting position data 2 in color printing (low speed) | 1 - 12 | 3 |
| | L | DV_ADJ_START_CL_K_L_3 | DV bias correction starting position data 3 in color printing (low speed) | 1 - 12 | 1 |
| | M | DV_ADJ_START_CL_K_L_4 | DV bias correction starting position data 4 in color printing (low speed) | 1 - 12 | 1 |
| | N | DV_ADJ_START_CL_K_M_1 | DV bias correction starting position data 1 in color printing (middle speed) | 1 - 12 | 4 |
| | O | DV_ADJ_START_CL_K_M_2 | DV bias correction starting position data 2 in color printing (middle speed) | 1 - 12 | 3 |
| | P | DV_ADJ_START_CL_K_M_3 | DV bias correction starting position data 3 in color printing (middle speed) | 1 - 12 | 1 |
| | Q | DV_ADJ_START_CL_K_M_4 | DV bias correction starting position data 4 in color printing (middle speed) | 1 - 12 | 1 |
| | R | DV_ADJ_START_BK_H_1 | DV bias correction starting position data 1 in monochrome printing (high speed) | 1 - 12 | 4 |
| | S | DV_ADJ_START_BK_H_2 | DV bias correction starting position data 2 in monochrome printing (high speed) | 1 - 12 | 3 |
| | T | DV_ADJ_START_BK_H_3 | DV bias correction starting position data 3 in monochrome printing (high speed) | 1 - 12 | 1 |
| | U | DV_ADJ_START_BK_H_4 | DV bias correction starting position data 4 in monochrome printing (high speed) | 1 - 12 | 1 |
| C | A | DV_ADJ_CL_C_L_DATA_1 | DV bias correction data 1 in color printing (low speed) | 0 - 5 | 0 |
| | B | DV_ADJ_CL_C_L_DATA_2 | DV bias correction data 2 in color printing (low speed) | 0 - 5 | 0 |
| | C | DV_ADJ_CL_C_L_DATA_3 | DV bias correction data 3 in color printing (low speed) | 0 - 5 | 0 |
| | D | DV_ADJ_CL_C_M_DATA_1 | DV bias correction data 1 in color printing (middle speed) | 0 - 5 | 0 |
| | E | DV_ADJ_CL_C_M_DATA_2 | DV bias correction data 2 in color printing (middle speed) | 0 - 5 | 0 |
| | F | DV_ADJ_CL_C_M_DATA_3 | DV bias correction data 3 in color printing (middle speed) | 0 - 5 | 0 |
| | G | DV_ADJ_START_CL_C_L_1 | DV bias correction starting position data 1 in color printing (low speed) | 1 - 12 | 4 |
| | H | DV_ADJ_START_CL_C_L_2 | DV bias correction starting position data 2 in color printing (low speed) | 1 - 12 | 3 |
| | I | DV_ADJ_START_CL_C_L_3 | DV bias correction starting position data 3 in color printing (low speed) | 1 - 12 | 1 |
| | J | DV_ADJ_START_CL_C_L_4 | DV bias correction starting position data 4 in color printing (low speed) | 1 - 12 | 1 |
| | K | DV_ADJ_START_CL_C_M_1 | DV bias correction starting position data 1 in color printing (middle speed) | 1 - 12 | 4 |
| | L | DV_ADJ_START_CL_C_M_2 | DV bias correction starting position data 2 in color printing (middle speed) | 1 - 12 | 3 |
| | M | DV_ADJ_START_CL_C_M_3 | DV bias correction starting position data 3 in color printing (middle speed) | 1 - 12 | 1 |
| | N | DV_ADJ_START_CL_C_M_4 | DV bias correction starting position data 4 in color printing (middle speed) | 1 - 12 | 1 |

| Button | Item | Display | Content | Setting range | Default value |
|---|---|---|---|---|---|
| M | A | DV_ADJ_CL_M_L_DATA_1 | DV bias correction data 1 in color printing (low speed) | 0 - 5 | 0 |
| | B | DV_ADJ_CL_M_L_DATA_2 | DV bias correction data 2 in color printing (low speed) | 0 - 5 | 0 |
| | C | DV_ADJ_CL_M_L_DATA_3 | DV bias correction data 3 in color printing (low speed) | 0 - 5 | 0 |
| | D | DV_ADJ_CL_M_M_DATA_1 | DV bias correction data 1 in color printing (middle speed) | 0 - 5 | 0 |
| | E | DV_ADJ_CL_M_M_DATA_2 | DV bias correction data 2 in color printing (middle speed) | 0 - 5 | 0 |
| | F | DV_ADJ_CL_M_M_DATA_3 | DV bias correction data 3 in color printing (middle speed) | 0 - 5 | 0 |
| | G | DV_ADJ_START_CL_M_L_1 | DV bias correction starting position data 1 in color printing (low speed) | 1 - 12 | 4 |
| | H | DV_ADJ_START_CL_M_L_2 | DV bias correction starting position data 2 in color printing (low speed) | 1 - 12 | 3 |
| | I | DV_ADJ_START_CL_M_L_3 | DV bias correction starting position data 3 in color printing (low speed) | 1 - 12 | 1 |
| | J | DV_ADJ_START_CL_M_L_4 | DV bias correction starting position data 4 in color printing (low speed) | 1 - 12 | 1 |
| | K | DV_ADJ_START_CL_M_M_1 | DV bias correction starting position data 1 in color printing (middle speed) | 1 - 12 | 4 |
| | L | DV_ADJ_START_CL_M_M_2 | DV bias correction starting position data 2 in color printing (middle speed) | 1 - 12 | 3 |
| | M | DV_ADJ_START_CL_M_M_3 | DV bias correction starting position data 3 in color printing (middle speed) | 1 - 12 | 1 |
| | N | DV_ADJ_START_CL_M_M_4 | DV bias correction starting position data 4 in color printing (middle speed) | 1 - 12 | 1 |
| Y | A | DV_ADJ_CL_Y_L_DATA_1 | DV bias correction data 1 in color printing (low speed) | 0 - 5 | 0 |
| | B | DV_ADJ_CL_Y_L_DATA_2 | DV bias correction data 2 in color printing (low speed) | 0 - 5 | 0 |
| | C | DV_ADJ_CL_Y_L_DATA_3 | DV bias correction data 3 in color printing (low speed) | 0 - 5 | 0 |
| | D | DV_ADJ_CL_Y_M_DATA_1 | DV bias correction data 1 in color printing (middle speed) | 0 - 5 | 0 |
| | E | DV_ADJ_CL_Y_M_DATA_2 | DV bias correction data 2 in color printing (middle speed) | 0 - 5 | 0 |
| | F | DV_ADJ_CL_Y_M_DATA_3 | DV bias correction data 3 in color printing (middle speed) | 0 - 5 | 0 |
| | G | DV_ADJ_START_CL_Y_L_1 | DV bias correction starting position data 1 in color printing (low speed) | 1 - 12 | 4 |
| | H | DV_ADJ_START_CL_Y_L_2 | DV bias correction starting position data 2 in color printing (low speed) | 1 - 12 | 3 |
| | I | DV_ADJ_START_CL_Y_L_3 | DV bias correction starting position data 3 in color printing (low speed) | 1 - 12 | 1 |
| | J | DV_ADJ_START_CL_Y_L_4 | DV bias correction starting position data 4 in color printing (low speed) | 1 - 12 | 1 |
| | K | DV_ADJ_START_CL_Y_M_1 | DV bias correction starting position data 1 in color printing (middle speed) | 1 - 12 | 4 |
| | L | DV_ADJ_START_CL_Y_M_2 | DV bias correction starting position data 2 in color printing (middle speed) | 1 - 12 | 3 |
| | M | DV_ADJ_START_CL_Y_M_3 | DV bias correction starting position data 3 in color printing (middle speed) | 1 - 12 | 1 |
| | N | DV_ADJ_START_CL_Y_M_4 | DV bias correction starting position data 4 in color printing (middle speed) | 1 - 12 | 1 |

44-43

**Purpose** Data display

**Function (Purpose)** Used to display the identification information of the developing unit.

**Section** Developing system

**Operation/Procedure**

The identification number and the identification signal level of the developing unit are displayed.

| Item/Display | | Content | Display range | NOTE |
|---|---|---|---|---|
| A | DVCH KIND K | K developing unit identification number | 1 - 9 | The model identification number of the developing unit which is backed up in the EEPROM of the machine. |
| B | DVCH KIND C | C developing unit identification number | 1 - 9 | |
| C | DVCH KIND M | M developing unit identification number | 1 - 9 | |
| D | DVCH KIND Y | Y developing unit identification number | 1 - 9 | |
| E | DV_TYP_SEL_K | K developing unit identification detection | 0 - 1 | 0 = High (Open)<br>1 = Low (GND) |
| F | DV_TYP_SEL_C | C developing unit identification detection | 0 - 1 | |
| G | DV_TYP_SEL_M | M developing unit identification detection | 0 - 1 | |
| H | DV_TYP_SEL_Y | Y developing unit identification detection | 0 - 1 | |
| I | DVCH_AD_K | K developing unit identification AD value | 0 - 255 | AD value of the developing unit identification voltage |
| J | DVCH_AD_C | C developing unit identification AD value | 0 - 255 | |
| K | DVCH_AD_M | M developing unit identification AD value | 0 - 255 | |
| L | DVCH_AD_Y | Y developing unit identification AD value | 0 - 255 | |

* The developing unit is identified by the combination of items E, F, G, H and items I, J, K, and L.

44-62

| | |
|---|---|
| **Purpose** | Setup/Adjustment |
| **Function (Purpose)** | Used to set the process control execution conditions. |
| **Section** | 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.

1) 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 | CL ID DOWN | The densities of C, M, and Y decrease. (The C/M/Y high density process control target values decrease.) |
| | CL ID UP | The densities of C, M, and Y increase. (The C/M/Y high density process control target values increase.) |
| | BK ID DOWN | The density of K decreases. (The high density process control target value decreases.) |
| | BK ID UP | The density of K increases. (The high density process control target value increases.) |
| | ALL ID DOWN | The densities of C, M, Y and K decrease. (The C/M/Y/K high density process control target values decrease.) |
| | ALL ID UP | The densities of C, M, Y and K increase. (The C/M/Y/K high density process control target values increase.) |
| | NORMAL | The standard density of C, M, Y and K. (The C/M/Y/K high density process control target values are the standard values.) |
| PROCON MODE | HIGH QUALITY1 | The execution frequency of the process control is high. (It is set when the color image quality is given priority.) |
| | HIGH QUALITY2 | The execution frequency of the process control is highest. (It is set when the color image quality is given priority.) |
| | PRINT PERFORMANCE | The execution frequency of the process control is low. (It is set when the job speed is given priority.) |
| | BW MODE | The process control is executed in the normal frequency. (It is set when there are little color jobs and many monochrome jobs.) |
| | NORMAL | The process control is executed in the normal frequency. |

(When PROCON TARGET is selected.)

2A) Select the density level.

(When PROCON MODE is selected.)

2B) Select the execution frequency of the process control.

3) Press [EXECUTE] key.

4) Press [YES] key.

**Note**

This simulation may not function with some firmware versions.

In such a case, the firmware must be upgraded to the latest version.

# 46

46-1

| | |
|---|---|
| **Purpose** | Adjustment (Color copy mode) |
| **Function (Purpose)** | Used to adjust the copy density in the copy mode. |
| **Section** | |

**Operation/Procedure**

1) Select an adjustment target item with scroll key on the touch panel.

2) Enter the set value with 10-key.

   * When the △ ▽ 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 | AUTO | Auto | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| B | TEXT | Text | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| C | TEXT/PRINTED PHOTO | Text/Printed Photo | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| D | TEXT/PHOTO | Text/Photograph | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| E | PRINTED PHOTO | Printed Photo | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| F | PHOTOGRAPH | Photograph | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| G | MAP | Map | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| H | LIGHT | Light document | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| I | TEXT(COPY TO COPY) | Text (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| J | TEXT/PRINTED PHOTO (COPY TO COPY) | Text/Printed Photo (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| K | PRINTED PHOTO (COPY TO COPY) | Printed Photo (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| L | TEXT (COLOR TONE ENHANCEMENT) | Text (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| M | TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT) | Text/Printed Photo (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| N | TEXT/PHOTO (COLOR TONE ENHANCEMENT) | Text/Photograph (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| O | PRINTED PHOTO (COLOR TONE ENHANCEMENT) | Printed Photo (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| P | PHOTOGRAPH (COLOR TONE ENHANCEMENT) | Photograph (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| Q | MAP (COLOR TONE ENHANCEMENT) | Map (Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| R | LIGHT(COLOR TONE ENHANCEMENT) | LIGHT DOCUMENT(Color tone enhancement) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |

| Item/Display | | Content | | Setting range | Default value |
|---|---|---|---|---|---|
| S | SINGLE COLOR | Single color | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| T | SINGLE COLOR (COPY TO COPY) | Single color (Copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| U | TWO COLOR | 2-color (red/ black) copy | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |
| V | TWO COLOR (COPY TO COPY) | 2-color (red/ black) copy (copy document) | LOW | 1 - 99 | 50 |
| | | | HIGH | 1 - 99 | 50 |

46-2

**Purpose** Adjustment (Monochrome copy mode)

**Function (Purpose)** Used to adjust the copy density in the copy mode.

**Section**

**Operation/Procedure**

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

To adjust the copy density in the low density area, select the "LOW" mode and change the adjustment value. To adjust the copy density in the high density area, select the "HIGH" mode and change the adjustment value.

When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.

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

46-4

**Purpose** Adjustment (Color scanner mode)

**Function (Purpose)** Used to adjust the density in the image send mode.

**Section**

**Operation/Procedure**

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

| Mode | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| LOW | A | AUTO | Auto | 1 - 99 | 50 |
| | B | TEXT | Text | 1 - 99 | 50 |
| | C | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99 | 50 |
| | D | TEXT/PHOTO | Text/Photograph | 1 - 99 | 50 |
| | E | PRINTED PHOTO | Printed Photo | 1 - 99 | 50 |
| | F | PHOTOGRAPH | Photograph | 1 - 99 | 50 |
| | G | MAP | Map | 1 - 99 | 50 |
| | H | RIP | – | 1 - 99 | 50 |
| HIGH | A | AUTO | Auto | 1 - 99 | 50 |
| | B | TEXT | Text | 1 - 99 | 50 |
| | C | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99 | 50 |
| | D | TEXT/PHOTO | Text/Photograph | 1 - 99 | 50 |
| | E | PRINTED PHOTO | Printed Photo | 1 - 99 | 50 |
| | F | PHOTOGRAPH | Photograph | 1 - 99 | 50 |
| | G | MAP | Map | 1 - 99 | 50 |
| | H | RIP | – | 1 - 99 | 50 |

46-5

**Purpose** Adjustment (Monochrome scanner mode)

**Function (Purpose)** Used to adjust the density in the image send mode.

**Section**

**Operation/Procedure**

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

| Mode | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| LOW | A | AUTO | Auto | 1 - 99 | 50 |
| | B | TEXT | Text | 1 - 99 | 50 |
| | C | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99 | 50 |
| | D | TEXT/PHOTO | Text/Photograph | 1 - 99 | 50 |
| | E | PRINTED PHOTO | Printed Photo | 1 - 99 | 50 |
| | F | PHOTOGRAPH | Photograph | 1 - 99 | 50 |
| | G | MAP | Map | 1 - 99 | 50 |
| | H | RIP | – | 1 - 99 | 50 |

| Mode | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| HIGH | A | AUTO | Auto | 1 - 99 | 50 |
| | B | TEXT | Text | 1 - 99 | 50 |
| | C | TEXT/PRINTED PHOTO | Text/Printed Photo | 1 - 99 | 50 |
| | D | TEXT/PHOTO | Text/Photograph | 1 - 99 | 50 |
| | E | PRINTED PHOTO | Printed Photo | 1 - 99 | 50 |
| | F | PHOTOGRAPH | Photograph | 1 - 99 | 50 |
| | G | MAP | Map | 1 - 99 | 50 |
| | H | RIP | – | 1 - 99 | 50 |

46-8

**Purpose** Adjustment (Color scanner mode)

**Function (Purpose)** Used to adjust the image send mode color balance RGB.

**Section**

**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 on the touch panel.
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 |

46-9

**Purpose** Adjustment (RSPF mode)

**Function (Purpose)** Used to adjust the scan image density.

**Section**

**Operation/Procedure**

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
   * When the △ ▽ 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.)

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.

**[RSPF]**

| 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 (Low density side) | 1 - 99 | 53 |
| F | FAX : HIGH | RSPF FAX mode exposure adjustment (high density) | 1 - 99 | 53 |

46-10

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the copy color balance and the gamma (for each color copy mode).

**Section**

**Operation/Procedure**

1) Select an adjustment target mode with the touch panel key.
2) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
3) Select an adjustment target item with scroll key on the touch panel.
4) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
5) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa.

| | |
|---|---|
| TEXT | Text |
| TEXT/PRT PHOTO | Text/Printed Photo |
| PRINTED PHOTO | Printed Photo |
| PHOTO + TEXT/PHOTO | Photograph + Text/Printed Photo |
| MAP | Map |
| LIGHT | Light document |
| COPY ORG | Copy document |

| Item/Display | | Density level (Point) | Setting range | Default value |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 1 - 999 | 500 |
| B | POINT2 | Point 2 | 1 - 999 | 500 |
| C | POINT3 | Point 3 | 1 - 999 | 500 |
| D | POINT4 | Point 4 | 1 - 999 | 500 |
| E | POINT5 | Point 5 | 1 - 999 | 500 |
| F | POINT6 | Point 6 | 1 - 999 | 500 |
| G | POINT7 | Point 7 | 1 - 999 | 500 |
| H | POINT8 | Point 8 | 1 - 999 | 500 |
| I | POINT9 | Point 9 | 1 - 999 | 500 |
| J | POINT10 | Point 10 | 1 - 999 | 500 |
| K | POINT11 | Point 11 | 1 - 999 | 500 |
| L | POINT12 | Point 12 | 1 - 999 | 500 |
| M | POINT13 | Point 13 | 1 - 999 | 500 |
| N | POINT14 | Point 14 | 1 - 999 | 500 |
| O | POINT15 | Point 15 | 1 - 999 | 500 |
| P | POINT16 | Point 16 | 1 - 999 | 500 |
| Q | POINT17 | Point 17 | 1 - 999 | 500 |

46-16

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode).

**Section**

**Operation/Procedure**

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
   * When the △ ▽ 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.

| Item/Display | | Density level (Point) | Setting range | Default value |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 1 - 999 | 500 |
| B | POINT2 | Point 2 | 1 - 999 | 500 |
| C | POINT3 | Point 3 | 1 - 999 | 500 |
| D | POINT4 | Point 4 | 1 - 999 | 500 |
| E | POINT5 | Point 5 | 1 - 999 | 500 |
| F | POINT6 | Point 6 | 1 - 999 | 500 |
| G | POINT7 | Point 7 | 1 - 999 | 500 |
| H | POINT8 | Point 8 | 1 - 999 | 500 |
| I | POINT9 | Point 9 | 1 - 999 | 500 |
| J | POINT10 | Point 10 | 1 - 999 | 500 |
| K | POINT11 | Point 11 | 1 - 999 | 500 |
| L | POINT12 | Point 12 | 1 - 999 | 500 |
| M | POINT13 | Point 13 | 1 - 999 | 500 |
| N | POINT14 | Point 14 | 1 - 999 | 500 |
| O | POINT15 | Point 15 | 1 - 999 | 500 |
| P | POINT16 | Point 16 | 1 - 999 | 500 |
| Q | POINT17 | Point 17 | 1 - 999 | 500 |

46-19

**Purpose** Setting

**Function (Purpose)** Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents.

**Section**

**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, MODE2 | MODE1 |
| AE_STOP_COPY | Auto B/W exposure Stop (for copy) | REALTIME/ STOP/ PRESCAN | STOP |
| AE_STOP_FAX | Auto B/W exposure Stop (for FAX) | ON/OFF | ON |
| AE_STOP_SCAN | Auto B/W exposure Stop (for scanner) | REALTIME/ STOP/ PRESCAN | STOP |
| AE_FILTER | Auto exposure filter setting | SOFT | NORMAL |
| | | NORMAL | |
| | | SHARP | |
| AE_WIDTH | AE exposure width | FULL/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 scanned density. (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.) |
| PRESCAN | The densities of the all surface of document are scanned sequentially, and the output image density is determined according to the average of the scanned densities. (The output image density is even for all the surface.) |
| AE WIDTH FULL | 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. |

46-21

**Purpose** Adjustment

**Function (Purpose)** Copy color balance adjustment (Manual adjustment)

**Section**

**Operation/Procedure**

1) Select an adjustment target color with [K][C][M][Y] 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 △ ▽ 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.

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

| Item/Display | | Density level (Point) | Setting range | Default value |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 1 - 999 | 500 |
| B | POINT2 | Point 2 | 1 - 999 | 500 |
| C | POINT3 | Point 3 | 1 - 999 | 500 |
| D | POINT4 | Point 4 | 1 - 999 | 500 |
| E | POINT5 | Point 5 | 1 - 999 | 500 |
| F | POINT6 | Point 6 | 1 - 999 | 500 |
| G | POINT7 | Point 7 | 1 - 999 | 500 |
| H | POINT8 | Point 8 | 1 - 999 | 500 |
| I | POINT9 | Point 9 | 1 - 999 | 500 |
| J | POINT10 | Point 10 | 1 - 999 | 500 |
| K | POINT11 | Point 11 | 1 - 999 | 500 |
| L | POINT12 | Point 12 | 1 - 999 | 500 |
| M | POINT13 | Point 13 | 1 - 999 | 500 |
| N | POINT14 | Point 14 | 1 - 999 | 500 |
| O | POINT15 | Point 15 | 1 - 999 | 500 |
| P | POINT16 | Point 16 | 1 - 999 | 500 |
| Q | POINT17 | Point 17 | 1 - 999 | 500 |

46-23

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to 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 | CMY (0: ENABLE 1: DISABLE) | 0 | CMY engine highest density correction mode: Enable | 0 - 1 | 0 |
| | | 1 | CMY engine highest density correction mode: Disable | | |
| B | K (0: ENABLE 1: DISABLE) | 0 | K engine highest density correction mode: Enable | 0 - 1 | 1 |
| | | 1 | K engine highest density correction mode: Disable | | |

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| C | CYAN MAX TARGET | Scanner target value for CYAN maximum density correction | 0 - 999 | 500 |
| D | MAGENTA MAX TARGET | Scanner target value for MAGENTA maximum density correction | 0 - 999 | 500 |
| E | YELLOW MAX TARGET | Scanner target value for YELLOW maximum density correction | 0 - 999 | 500 |
| F | BLACK MAX TARGET | Scanner target value for BLACK maximum density correction | 0 - 999 | 500 |

* When tone gap is generated in the high density area, set items A and B 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 items A and B to "1".

  The tone gap may occur in high density part.

Important

Do not change the values of items C, D, E, and F. If these values are changed, the density in the high density area is changed.

46-24

**Purpose** Adjustment

**Function (Purpose)** Copy color balance adjustment (Auto adjustment)

**Section**

**Operation/Procedure**

1) Press [EXECUTE] key.

   The color patch image (adjustment pattern) is printed out.

2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.

3) Press [EXECUTE] key.

   The copy color balance automatic adjustment is performed, then the adjustment result pattern is printed.

4) Press [OK] key.

   The halftone correction target registration is processed.

46-25

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the copy color balance. (Single color copy mode)

**Section**

**Operation/Procedure**

1) Select an adjustment target color with [C][M][Y] 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.
4) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density of the target color is increased, and vice versa.

| Item/Display | | Setting range | Default value | | |
|---|---|---|---|---|---|
| | | | C | M | Y |
| A | RED | 0 - 255 | 0 | 255 | 200 |
| B | GREEN | 0 - 255 | 255 | 0 | 255 |
| C | BLUE | 0 - 255 | 255 | 150 | 0 |
| D | CYAN | 0 - 255 | 255 | 0 | 0 |
| E | MAGENTA | 0 - 255 | 0 | 255 | 0 |
| F | YELLOW | 0 - 255 | 0 | 0 | 255 |
| G | ORANGE | 0 - 255 | 0 | 150 | 255 |
| H | NAVY | 0 - 255 | 255 | 200 | 0 |
| I | LIGHT GREEN | 0 - 255 | 150 | 0 | 150 |
| J | LIGHT BLUE | 0 - 255 | 150 | 20 | 0 |
| K | AQUA MARINE | 0 - 255 | 170 | 0 | 50 |
| L | PURPLE | 0 - 255 | 128 | 255 | 0 |
| M | PINK | 0 - 255 | 0 | 150 | 20 |
| N | YELLOW GREEN | 0 - 255 | 128 | 0 | 255 |
| O | BEIGE | 0 - 255 | 0 | 50 | 170 |

46-26

**Purpose** Adjustment

**Function (Purpose)** Used to reset the single color mode color balance set value to the default.

**Section**

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

   The color balance value of the single color mode is reset to the default value.

46-27

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the gamma/density of copy images, texts, and line image edges.

**Section**

**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 (Copy mode) | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | BLACK TEXT (SLOPE) | Black character edge gamma skew adjustment | 1 - 99 | 50 |
| B | BLACK TEXT (INTERCEPT) | Black character edge density adjustment | 1 - 99 | 50 |
| C | COLOR TEXT (SLOPE) | Color character edge gamma skew adjustment | 1 - 99 | 50 |
| D | COLOR TEXT (INTERCEPT) | Color character edge density adjustment | 1 - 99 | 50 |
| E | ED TEXT (SLOPE) | Text/Map mode gamma adjustment (Text/Map mode) | 1 - 99 | 50 |
| F | ED TEXT (INTERCEPT) | Text/Map mode density adjustment (Text/Map mode) | 1 - 99 | 50 |

When the adjustment values of items A, C, and E are changed, the gamma of text and line edge image density section is changed.

When the adjustment value is increased, the image contrast of character edge and line edge is increased. When the adjustment value is decreased, the image contrast of character and line edge is decreased.

When the adjustment values of items B, D, and F are increased, the image density of text and line edge section is decreased, and vice versa.

46-30

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the resolution in the sub scanning direction in the copy mode.

**Section**

**Operation/Procedure**

1) Refer to the following table, and enter the set value corresponding to the resolution mode with 10-key.
2) Press [OK] key. (The set value is saved.)

| Item/Display | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|
| A | SCAN RESOLUTION SW | Scan resolution selection (COPY: COLOR) | Mode1 | 0 - 1 | 0 | 0 |
| | | | Mode2 | | 1 | |

| Mode | Scan mode | Resolution in the sub scanning direction (DPI) | | |
|---|---|---|---|---|
| | | 25-99% [Magnification ratio] | 100-200% [Magnification ratio] | 201-400% [Magnification ratio] |
| Mode1 | OC | 600 | 600 | 600 |
| | RSPF | 600 | 600 | - |
| Mode2 | OC | 400 | 600 | 600 |
| | RSPF | 400 | 600 | - |

46-32

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the document background density reproducibility in the monochrome auto copy mode.

**Section**

**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.)

When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

| Item / Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | COPY:OC | Copy mode (for OC) | 1 - 250 | 196 |
| B | COPY:RSPF | Copy mode (for RSPF) | 1 - 250 | 196 |
| C | SCAN:OC | Scanner mode (for OC) | 1 - 250 | 196 |
| D | SCAN:RSPF | Scanner mode (for RSPF) | 1 - 250 | 196 |
| E | FAX:OC | FAX mode (for OC) | 1 - 250 | 196 |
| F | FAX:RSPF | FAX mode (for RSPF) | 1 - 250 | 196 |

46-36

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the colors in the 2-color copy mode.

**Section**

**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.)

By changing the density level of each color, the color adjustment in the 2-color copy mode can be performed.

| Item/Display | | | Content | Setting range | Default value | | | Default value |
|---|---|---|---|---|---|---|---|---|
| | | | | | C | M | Y | |
| OUTCOLOR (Output color coefficient) | A | RED | R output color | 0 - 255 | 0 | 255 | 200 | - |
| | B | GREEN | G output color | 0 - 255 | 255 | 0 | 255 | - |
| | C | BLUE | B output color | 0 - 255 | 255 | 150 | 0 | - |
| | D | CYAN | C output color | 0 - 255 | 255 | 0 | 0 | - |
| | E | MAGENTA | M output color | 0 - 255 | 0 | 255 | 0 | - |
| | F | YELLOW | Y output color | 0 - 255 | 0 | 0 | 255 | - |
| | G | ORANGE | O output color | 0 - 255 | 0 | 150 | 255 | - |
| | H | NAVY | N output color | 0 - 255 | 255 | 200 | 0 | - |
| | I | LIGHT GREEN | LG output color | 0 - 255 | 150 | 0 | 150 | - |
| | J | LIGHT BLUE | LB output color | 0 - 255 | 150 | 20 | 0 | - |
| | K | AQUA MARINE | AM output color | 0 - 255 | 170 | 0 | 50 | - |
| | L | PURPLE | PU output color | 0 - 255 | 128 | 255 | 0 | - |
| | M | PINK | P output color | 0 - 255 | 0 | 150 | 20 | - |
| | N | YELLOW GREEN | YG output color | 0 - 255 | 128 | 0 | 255 | - |
| | O | BEIGE | BE output color | 0 - 255 | 0 | 50 | 170 | - |
| CHROMA (Chroma adjustment) | A | RED / BLACK | Red extraction mode (The red recognition area is adjusted.) | 0 - 6 | - | - | - | 3 |
| | B | KS:CHROMATIC | Chromatic color extraction mode (The chromatic color recognition area is adjusted.) | 0 - 6 | - | - | - | 3 |

46-37

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the reproduction capability of monochrome mode color. |
| **Section** | |

**Operation/Procedure**

1) Select a target item with scroll keys on the touch panel.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key.
4) Press [YES] key.

This is to adjust the reproduction capability of red and yellow images when copying color documents with red and yellow images in the monochrome mode.

Applied to the copy mode only.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | R-Ratio | Gray making setting (R) | 0 - 1000 | 63 |
| B | G-Ratio | Gray making setting (G) | 0 - 1000 | 877 |
| C | R-Ratio RIP | Print gray making setting (R) | 0 - 1000 | 299 |
| D | G-Ratio RIP | Print gray making setting (G) | 0 - 1000 | 587 |

| | |
|---|---|
| B-Ratio | Gray making setting (B)<br>(1000-R-Ratio - G-Ratio) |
| B-Ratio RIP | Print gray making setting (B)<br>(1000-R-Ratio RIP - G-Ratio RIP) |

* 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 value of the adjustment item A is increased, the copy density of red images is decreased. When the adjustment value is decreased, the density is increased.

When the adjustment value of the adjustment item B is increased, the copy density of yellow images is increased. When the adjustment value is decreased, the density in also decreased.

46-38

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the black component amount in the color copy mode. |
| **Section** | |

**Operation/Procedure**

1) Select the AUTO MODE or the MANUAL MODE with the mode key.
2) Select the mode to be adjusted with the scroll key.
3) Press the black component amount select key.

This adjusts black ingredient amount in the color copy mode. (except character and line image)

As a result of this adjustment, the gradation of the shade part changes.

| Item/Display (Copy mode) | | Select button | Content | Default value |
|---|---|---|---|---|
| MANUAL | TEXT PRT | (-) LUT2 | Text print (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | TEXT | (-) LUT2 | Text (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | PRINTED PHOTO | (-) LUT2 | Printed photo (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | PHOTO | (-) LUT2 | Photograph/Text photograph (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | TEXT PHOTO | (-) LUT2 | Text/Photograph (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | MAP | (-) LUT2 | Map (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | CP ORG/ TEXT PRT | (-) LUT2 | Copy document/ Text printed (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| MANUAL | COPY ORG/ TEXT | (-) LUT2 | Copy document/ Text (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | COPY ORG/ PHOTO | (-) LUT2 | Copy document/ Printed photo (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | LIGHT ORIGINAL | (-) LUT2 | Light document (Manual) | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |

| Item/Display (Copy mode) | | Select button | Content | Default value |
|---|---|---|---|---|
| AUTO | AUTO0 | (-) LUT2 | Auto mode judgment 0 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO1 | (-) LUT2 | Auto mode judgment 1 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO2 | (-) LUT2 | Auto mode judgment 2 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO3 | (-) LUT2 | Auto mode judgment 3 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO4 | (-) LUT2 | Auto mode judgment 4 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO5 | (-) LUT2 | Auto mode judgment 5 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |
| | AUTO6 | (-) LUT2 | Auto mode judgment 6 | NORMAL |
| | | (-) LUT1 | | |
| | | NOMAL | | |
| | | (+) LUT1 | | |
| | | (+) LUT2 | | |

46-39

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the sharpness of FAX send images.

**Section**

**Operation/Procedure**

1) Select a target item with scroll keys on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | 200 x 100 [DPI] OFF | 200 x 100 [DPI] halftone OFF | 0 - 2 | 1 |
| B | 200 x 200 [DPI] OFF | 200 x 200 [DPI] halftone OFF | 0 - 2 | 1 |
| C | 200 x 200 [DPI] ON | 200 x 200 [DPI] halftone ON | 0 - 2 | 1 |
| D | 200 x 400 [DPI] OFF | 200 x 400 [DPI] halftone OFF | 0 - 2 | 1 |
| E | 200 x 400 [DPI] ON | 200 x 400 [DPI] halftone ON | 0 - 2 | 1 |
| F | 400 x 400 [DPI] OFF | 400 x 400[DPI] halftone OFF | 0 - 2 | 1 |
| G | 400 x 400 [DPI] ON | 400 x 400[DPI] halftone ON | 0 - 2 | 1 |
| H | 600 x 600 [DPI] OFF | 600 x 600[DPI] halftone OFF | 0 - 2 | 1 |
| I | 600 x 600 [DPI] ON | 600 x 600[DPI] halftone ON | 0 - 2 | 1 |

46-40

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (Collective adjustment of all the modes)

**Section**

**Operation/Procedure**

1) Set the document on the document 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

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (Normal)

**Section**

**Operation/Procedure**

1) Set the document on the document 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 | AUTO | Print mode | Auto | 1 - 6 | 1 | 1 (AUTO) |
| | | EXP1 | | Exposure 1 | | 2 | |
| | | EXP2 | | Exposure 2 | | 3 | |
| | | EXP3 | | Exposure 3 | | 4 | |
| | | EXP4 | | Exposure 4 | | 5 | |
| | | EXP5 | | Exposure 5 | | 6 | |

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

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (Fine)

**Section**

**Operation/Procedure**

1) Set the document on the document 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/ Halftone | 1 - 99 | 50 |
| H | EXPOSURE1 H_TONE | Fine/Exposure 1/ Halftone | 1 - 99 | 50 |
| I | EXPOSURE2 H_TONE | Fine/Exposure 2/ Halftone | 1 - 99 | 50 |
| J | EXPOSURE3 H_TONE | Fine/Exposure 3/ Halftone | 1 - 99 | 50 |
| K | EXPOSURE4 H_TONE | Fine/Exposure 4/ Halftone | 1 - 99 | 50 |
| L | EXPOSURE5 H_TONE | Fine/Exposure 5/ Halftone | 1 - 99 | 50 |

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| M | EXECUTE MODE | AUTO | Print mode | 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/ halftone | | 7 | |
| | | EXP1 H_TONE | | Fine/ Exposure 1/ Halftone | | 8 | |
| | | EXP2 H_TONE | | Fine/ Exposure 2/ Halftone | | 9 | |
| | | EXP3 H_TONE | | Fine/ Exposure 3/ Halftone | | 10 | |
| | | EXP4 H_ONE | | Fine/ Exposure 4/ Halftone | | 11 | |
| | | EXP5 H_TONE | | Fine/ Exposure 5/ Halftone | | 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.

46-43

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (Super Fine)

**Section**

**Operation/Procedure**

1) Set the document on the document 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/Halftone | 1 - 99 | 50 |
| H | EXPOSURE1 H_TONE | Super Fine/ Exposure 1/Halftone | 1 - 99 | 50 |
| I | EXPOSURE2 H_TONE | Super Fine/ Exposure 2/Halftone | 1 - 99 | 50 |
| J | EXPOSURE3 H_TONE | Super Fine/ Exposure 3/Halftone | 1 - 99 | 50 |
| K | EXPOSURE4 H_TONE | Super Fine/ Exposure 4/Halftone | 1 - 99 | 50 |

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| L | EXPOSURE5 H_TONE | | Super Fine/ Exposure 5/Halftone | | 1 - 99 | | 50 |
| M | EXECUTE MODE | AUTO | Print mode | 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_TONE | | Super Fine/ Auto/ Halftone | | 7 | |
| | | EXP1 H_TONE | | Super Fine/ Exposure 1/ Halftone | | 8 | |
| | | EXP2 H_TONE | | Super Fine/ Exposure 2/ Halftone | | 9 | |
| | | EXP3 H_TONE | | Super Fine/ Exposure 3/ Halftone | | 10 | |
| | | EXP4 H_TONE | | Super Fine/ Exposure 4/ Halftone | | 11 | |
| | | EXP5 H_TONE | | Super Fine/ Exposure 5/ Halftone | | 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.

46-44

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (Ultra fine)

**Section**

**Operation/Procedure**

1) Set the document on the document 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/ Halftone | 1 - 99 | 50 |
| H | EXPOSURE1 H_TONE | Ultra Fine/ Exposure 1/Halftone | 1 - 99 | 50 |
| I | EXPOSURE2 H_TONE | Ultra Fine/ Exposure 2/Halftone | 1 - 99 | 50 |
| J | EXPOSURE3 H_TONE | Ultra Fine/ Exposure 3/Halftone | 1 - 99 | 50 |
| K | EXPOSURE4 H_TONE | Ultra Fine/ Exposure 4/Halftone | 1 - 99 | 50 |
| L | EXPOSURE5 H_TONE | Ultra Fine/ Exposure 5/Halftone | 1 - 99 | 50 |

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| M | EXECUTE MODE | AUTO | Print mode | Ultra Fine/ Auto | 1 - 12 | 1 | 1 (AUTO) |
| | | EXP1 | | Ultra Fine/ Exposure 1 | | 2 | |
| | | EXP2 | | Ultra Fine/ Exposure 2 | | 3 | |
| | | EXP3 | | Ultra Fine/ Exposure 3 | | 4 | |
| | | EXP4 | | Ultra Fine/ Exposure 4 | | 5 | |
| | | EXP5 | | Ultra Fine/ Exposure 5 | | 6 | |
| | | AUTO H_TONE | | Ultra Fine/ Auto/ Halftone | | 7 | |
| | | EXP1 H_TONE | | Ultra Fine/ Exposure 1/ Halftone | | 8 | |
| | | EXP2 H_TONE | | Ultra Fine/ Exposure 2/ Halftone | | 9 | |
| | | EXP3 H_TONE | | Ultra Fine/ Exposure 3/ Halftone | | 10 | |
| | | EXP4 H_TONE | | Ultra Fine/ Exposure 4/ Halftone | | 11 | |
| | | EXP5 H_TONE | | Ultra Fine/ Exposure 5/ Halftone | | 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.

46-45

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (600dpi).

**Section**

**Operation/Procedure**

1) Set the document on the document 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/ Halftone 1 | 1 - 99 | 50 |
| H | EXPOSURE1 H_TONE | 600dpi/Exposure 1/ Halftone | 1 - 99 | 50 |
| I | EXPOSURE2 H_TONE | 600dpi/Exposure 2/ Halftone | 1 - 99 | 50 |
| J | EXPOSURE3 H_TONE | 600dpi/Exposure 3/ Halftone | 1 - 99 | 50 |
| K | EXPOSURE4 H_TONE | 600dpi/Exposure 4/ Halftone | 1 - 99 | 50 |
| L | EXPOSURE5 H_TONE | 600dpi/Exposure 5/ Halftone | 1 - 99 | 50 |

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| M | EXECUTE MODE | AUTO | Print mode | 600dpi/ Auto | 1 - 12 | 1 | 1 (AUTO) |
| | | EXP1 | | 600dpi/ Exposure 1 | | 2 | |
| | | EXP2 | | 600dpi/ Exposure 2 | | 3 | |
| | | EXP3 | | 600dpi/ Exposure 3 | | 4 | |
| | | EXP4 | | 600dpi/ Exposure 4 | | 5 | |
| | | EXP5 | | 600dpi/ Exposure 5 | | 6 | |
| | | AUTO H_TONE | | 600dpi/ Auto/ Halftone | | 7 | |
| | | EXP1 H_TONE | | 600dpi/ Exposure 1/Halftone | | 8 | |
| | | EXP2 H_TONE | | 600dpi/ Exposure 2/Halftone | | 9 | |
| | | EXP3 H_TONE | | 600dpi/ Exposure 3/Halftone | | 10 | |
| | | EXP4 H_TONE | | 600dpi/ Exposure 4/Halftone | | 11 | |
| | | EXP5 H_TONE | | 600dpi/ Exposure 5/Halftone | | 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.

46-46

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the FAX send image density. (RGB RIP)

**Section**

**Operation/Procedure**

1) Select a target mode for adjustment.
2) Set the document on the document table.
3) Enter the set value with 10-key.
4) Press [OK] key.

When the set value is increased, the density becomes higher. When the set value is decreased, the density becomes lower.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | STANDARD RIP | For Normal/ Halftone OFF mode | 1 - 99 | 50 |
| B | FINE RIP | For Fine/Halftone OFF mode | 1 - 99 | 50 |
| C | FINE RIP H_TONE | For Fine/Halftone ON mode | 1 - 99 | 50 |
| D | SUPER FINE RIP | For Super Fine/ Halftone OFF mode | 1 - 99 | 50 |
| E | SUPER FINE RIP H_TONE | For Super Fine/ Halftone ON mode | 1 - 99 | 50 |
| F | ULTRA FINE RIP | For Ultra fine/ Halftone OFF mode | 1 - 99 | 50 |
| G | ULTRA FINE RIP H_TONE | For Ultra fine/ Halftone ON mode | 1 - 99 | 50 |
| H | 600DPI RIP | For 600dpi/ Halftone OFF mode | 1 - 99 | 50 |
| I | 600DPI RIP H_TONE | For 600dpi/ Halftone ON mode | 1 - 99 | 50 |

46-47

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the compression rate of copy and scan images (JPEG).

**Section**

**Operation/Procedure**

1) Select a target item with scroll keys on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

| Operation mode | Item/Display | | | Content | Setting range | Default value |
|---|---|---|---|---|---|---|
| FILLING (COLOR) (COPY (COLOR mode)) | A | COPY (C) | LOW | Low compression (Color) | 0 | 0 (LOW) |
| | | | MIDDLE | Medium compression (Color) | 1 | |
| | | | HIGH | High compression (Color) | 2 | |
| FILLING (GRAY) (COPY (Monochrome halftone mode)) | B | COPY (G) | LOW | Low compression (Gray) | 0 | 0 (LOW) |
| | | | MIDDLE | Medium compression (Gray) | 1 | |
| | | | HIGH | High compression (Gray) | 2 | |
| PUSH SCAN (COLOR) (Scanner (Color mode)) | C | SCAN (C) | MIDDLE 1 | Medium compression mode 1 Low compression | 0 | 1 (MIDDLE 2) |
| | | | MIDDLE 2 | Medium compression mode 2 Medium compression | 1 | |
| | | | MIDDLE 3 | Medium compression mode 3 High compression | 2 | |

| Operation mode | Item/Display | | | Content | Setting range | Default value |
|---|---|---|---|---|---|---|
| PUSH SCAN (GRAY) (Scanner (Mono-chrome halftone mode)) | D | SCAN (G) | MIDDLE 1 | Medium compres-sion mode 1 Low compres-sion | 0 | 1 (MIDDLE 2) |
| | | | MIDDLE 2 | Medium compres-sion mode 2 Medium compres-sion | 1 | |
| | | | MIDDLE 3 | Medium compres-sion mode 3 High compres-sion | 2 | |

46-51

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the gamma for the copy mode heavy paper mode and the image process mode.

**Section**

**Operation/Procedure**

1) Select a target adjustment mode with the touch panel key [PAPER/DITHER].
2) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
3) Select a target adjustment density level with scroll key on the touch panel.
4) Enter the set value with 10-key.
5) Press [EXECUTE] key, or [OK] key.

   When [EXECUTE] key is pressed, the self print image is outputted.

When the image density is insufficient or a background copy is made in heavy paper copy, change this adjustment value to adjust the image density.

| Item/Display | Content | Color |
|---|---|---|
| HEAVY | Copier heavy paper gamma | KCMY |
| DITH1 | Black edge | K |
| DITH2 | Color edge | KCMY |
| DITH3 | Color error diffusion | KCMY |
| DITH4 | Monochrome error diffusion | K |
| DITH8 | Monochrome dither | K |

| Item/Display | | Density level (Point) | Setting range | Default value |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 1 - 999 | 500 |
| B | POINT2 | Point 2 | 1 - 999 | 500 |
| C | POINT3 | Point 3 | 1 - 999 | 500 |
| D | POINT4 | Point 4 | 1 - 999 | 500 |
| E | POINT5 | Point 5 | 1 - 999 | 500 |
| F | POINT6 | Point 6 | 1 - 999 | 500 |
| G | POINT7 | Point 7 | 1 - 999 | 500 |
| H | POINT8 | Point 8 | 1 - 999 | 500 |
| I | POINT9 | Point 9 | 1 - 999 | 500 |
| J | POINT10 | Point 10 | 1 - 999 | 500 |
| K | POINT11 | Point 11 | 1 - 999 | 500 |
| L | POINT12 | Point 12 | 1 - 999 | 500 |
| M | POINT13 | Point 13 | 1 - 999 | 500 |
| N | POINT14 | Point 14 | 1 - 999 | 500 |
| O | POINT15 | Point 15 | 1 - 999 | 500 |
| P | POINT16 | Point 16 | 1 - 999 | 500 |
| Q | POINT17 | Point 17 | 1 - 999 | 500 |

46-52

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51, the adjustment value is reset to the initial value.)

**Section**

**Operation/Procedure**

1) Select an item to be set to the default with the touch panel key.

   To reset the adjustment values of all the items, select [ALL].
2) Press [EXECUTE] key.
3) Press [YES] key.

46-54

**Purpose** Adjustment

**Function (Purpose)** Used to perform the engine halftone automatic density adjustment (dither).

**Section**

**Operation/Procedure**

1) Press [EXECUTE] key.

   The high density process control is started to make 48 patch self print. (A4 (11" x 8.5") or A3 (11" x 17") paper in the paper feed tray is used.)
2) Place the 48 patch self print on the document table, and press [EXECUTE] key.

   Scanning the 48 patch self print is started.

   After scanning the 48 patch self print, the 17 patch self print is automatically printed.
3) Press [OK] key.

   After completion of the correction amount registration, the screen shifts to the dither selection menu.
4) Select an item (dither) to be adjusted.

| | |
|---|---|
| HEAVYPAPER | Copier/gamma for heavy paper |
| BLACK EDGE | Black edge |
| COLOR EDGE | Color edge |
| COLOR ED | Color error diffusion |
| B/W ED | Monochrome error diffusion |
| B/W 600 | Monochrome dither 600dpi |

5) Press [EXECUTE] key.

   The 48 patch self print is printed.
6) Place the 48 patch self print on the document table, and press [EXECUTE] key.

   Scanning the 48 patch self print is started.

   After scanning the patch, the screen automatically shifts to the dither selection menu.
7) After completion of the adjustment of all the density adjustment items (dither), press [OK] key.

46-55

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the drop out color in the image send mode (monochrome manual text mode).

**Section**

**Operation/Procedure**

In the image send mode (monochrome manual text mode), the range where color images are reproduced as monochrome images is adjusted.

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

   When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | CHROMA | Dropout color range adjustment | 0 - 6 | 3 |

2) Scan the document in the image send mode (monochrome manual text mode), and check the adjustment result.

46-58

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the copy mode pseudo resolution. (Smoothing process)

**Section**

**Operation/Procedure**

1) Select an item (mode) to be set with the button and the scroll key.
2) Enter the set value with 10-key.
3) 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.

| Mode | Item/Display | | Content (copy mode) | Setting range | | Default value |
|---|---|---|---|---|---|---|
| COLOR | A | AUTO | Auto | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | B | TEXT | Text | OFF | 0 | 1 (ON) |
| | | | | ON | 1 | |
| | C | TEXT PRT | Text print | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | D | PRINTED PHOTO | Printed Photo | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | E | TEXT PHOTO | Text photograph | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | F | PHOTO | Photograph | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | G | MAP | Map | OFF | 0 | 1 (ON) |
| | | | | ON | 1 | |
| | H | LIGHT | Light document | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | I | CPY TO CPY/ TEXT | Text (copy document) | OFF | 0 | 1 (ON) |
| | | | | ON | 1 | |
| | J | CPY TO CPY/ TXT PRT | Text print (copy document) | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | K | CPY TO CPY/ PHOTO | Printed Photo (copy document) | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| MONO | A | AUTO | Auto | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | B | TEXT | Text | OFF | 0 | 1 (ON) |
| | | | | ON | 1 | |
| | C | TEXT PRT | Text print | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | D | PRINTED PHOTO | Printed Photo | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | E | TEXT PHOTO | Text photograph | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | F | PHOTO | Photograph | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | G | MAP | Map | OFF | 0 | 1 (ON) |
| | | | | ON | 1 | |
| | H | LIGHT | Light document | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | I | CPY TO CPY/ TEXT | Text (copy document) | OFF | 0 | 1 (ON) |
| | | | | ON | 1 | |
| | J | CPY TO CPY/ TXT PRT | Text print (copy document) | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |
| | K | CPY TO CPY/ PHOTO | Printed Photo (copy document) | OFF | 0 | 0 (OFF) |
| | | | | ON | 1 | |

46-59

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to perform the copy mode pseudo resolution image process adjustment. |
| **Section** | |

**Operation/Procedure**

1) Select the MAIN (main scanning direction) or the SUB (sub scanning direction) button.
2) 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.

| Scanning direction | Item (copy mode) | Adjustment button | Content | Default value | NOTE |
|---|---|---|---|---|---|
| MAIN | COLOR COPY K | (-)2 | Color copy For BLACK | 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 | | | |
| | COLOR COPY C | (-)2 | Color copy For CYAN | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR COPY M | (-)2 | Color copy For MAGENTA | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR COPY Y | (-)2 | Color copy For YELLOW | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | MONO COPY K | (-)2 | Monochrome copy For BLACK | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT K | (-)2 | Color print For BLACK | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT C | (-)2 | Color print For CYAN | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT M | (-)2 | Color print For MAGENTA | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT Y | (-)2 | Color print For YELLOW | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | MONO PRINT K | (-)2 | Monochrome print For BLACK | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |

| Scanning direction | Item (copy mode) | Adjustment button | Content | Default value | NOTE |
|---|---|---|---|---|---|
| SUB | COLOR COPY K | (-)2 | Color copy For BLACK | 0 | Sub 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 | | | |
| | COLOR COPY C | (-)2 | Color copy For CYAN | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR COPY M | (-)2 | Color copy For MAGENTA | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR COPY Y | (-)2 | Color copy For YELLOW | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | MONO COPY K | (-)2 | Monochrome copy For BLACK | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT K | (-)2 | Color print For BLACK | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT C | (-)2 | Color print For CYAN | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT M | (-)2 | Color print For MAGENTA | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | COLOR PRINT Y | (-)2 | Color print For YELLOW | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |
| | MONO PRINT K | (-)2 | Monochrome print For BLACK | 0 | |
| | | (-)1 | | | |
| | | 0 | | | |
| | | (+)1 | | | |
| | | (+)2 | | | |

46-60

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the sharpness in the color auto copy 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 | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| A | SCREEN FILTER LEVEL | H | Sharpness (filter) adjustment of dot pattern image in auto copy mode | Strong emphasis | 1 | 3 (Auto) |
| | | L | | Soft emphasis | 2 | |
| | | AUTO | | Auto | 3 | |
| B | CPY CL AUTO FILTER LEVEL | SOFT | Sharpness (filter) adjustment for the automatic copy mode (Text, Printed Photo / Printed Photo images) | SOFT | 1 | 2 (CENTER) |
| | | CENTER | | CENTER | 2 | |
| | | HIGH | | HIGH | 3 | |
| C | CPY PUSH AUTO FILTER LEVEL | SOFT | Sharpness (filter) adjustment for the automatic push scan mode (Text, Printed Photo / Printed Photo images) | SOFT | 1 | 2 (CENTER) |
| | | CENTER | | CENTER | 2 | |
| | | HIGH | | HIGH | 3 | |
| D | COLOR COPY : CMY | OFF | Soft filter applying setting to C, M, Y image in color copy mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| E | COLOR COPY : K | OFF | Soft filter applying setting to K image in color copy mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| F | SINGLE COLOR : CMY | OFF | Soft filter applying setting to C, M, Y image in sigle color copy mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| G | 2 COLOR COPY : CMY | OFF | Setting of YES/NO of applying the soft filter to C/M/Y images of the 2-color copy mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| H | 2 COLOR COPY : K | OFF | Setting of YES/NO of applying the soft filter to K images of the 2-color copy mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| I | B/W COPY | OFF | Soft filter applying setting in monochrome copy mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| J | COLOR PUSH : RGB | OFF | Soft filter applying setting to image in push scan color mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| K | B/W PUSH | OFF | Soft filter applying setting to image in push scan monochrome mode | OFF | 0 | 1 (ON) |
| | | ON | | ON | 1 | |
| L | COLOR PRINT: CMY | OFF | Setting of ON/OFF of soft filter application to color print C, M, Y images | OFF | 0 | 0 (OFF) |
| | | ON | | ON | 1 | |
| M | COLOR PRINT: K | OFF | Setting of ON/OFF of soft filter application to color print K images | OFF | 0 | 0 (OFF) |
| | | ON | | ON | 1 | |
| N | B/W PRINT | OFF | Setting of ON/OFF of soft filter application to monochrome print images | OFF | 0 | 0 (OFF) |
| | | ON | | ON | 1 | |

46-61

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the area separation recognition level. |
| **Section** | |

**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 |
| 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

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode. |
| **Section** | |

**Operation/Procedure**

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

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 | 1 |
| B | TEXT_IMAGE | Text/Image judgment priority level adjustment | 0 - 6 | 3 |
| C | TEXT_BLANK | Text/Blank judgment priority level adjustment | 0 - 6 | 4 |
| D | HT_LV | Dot area judgment threshold value adjustment | 0 - 6 | 1 |
| E | AE_AREA_LV | Color AE judgment target area adjustment | 0 - 6 | 3 |
| F | AE_LV_CC | AE background detection division result adjustment: For color copy | 0 - 8 | 4 |
| G | AE_LV_MC | AE background detection division result adjustment: For monochrome copy | 0 - 8 | 4 |
| H | AE_LV_CS | AE background detection division result adjustment: For color scan | 0 - 8 | 4 |
| I | AE_LV_MS | AE background detection division result adjustment: For monochrome scan | 0 - 8 | 4 |
| J | AE_JUDGE _LV_L_U | Color AE background density threshold value adjustment (lower limit) | 0 - 4 | 0 |

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| K | AE_JUDGE LV_L_O | | Color AE background density threshold value adjustment (upper limit) | | 0 - 10 | | 0 |
| L | AE_JUDGE_ LV_C | | Color AE background detection level adjustment (chroma) | | 0 - 10 | | 5 |
| M | AE _ONOFF _CC | ON<br>OFF | AE mode ON/ OFF switch: For color copy | ON<br>OFF | 0 - 1 | 0<br>1 | 0 (ON) |
| N | AE _ONOFF _MC | ON<br>OFF | AE mode ON/ OFF switch: For mono-chrome copy | ON<br>OFF | 0 - 1 | 0<br>1 | 0 (ON) |
| O | AE _ONOFF _CS | ON<br>OFF | AE mode ON/ OFF switch : For color scan | ON<br>OFF | 0 - 1 | 0<br>1 | 0 (ON) |
| P | AE _ONOFF _MS | ON<br>OFF | AE mode ON/ OFF switch : For mono-chrome copy | ON<br>OFF | 0 - 1 | 0<br>1 | 0 (ON) |
| Q | BLANK_JUDGE _LV_L | | Blank judgment level adjustment (value) | | 0 - 10 | | 0 |
| R | BLANK_JUDGE _LV_C | | Blank judgment level adjustment (chroma) | | 0 - 10 | | 0 |
| S | MODE0_UNDE R | | Mode 0 developing paper mode select | | 0 - 6 | | 0 |
| T | MODE1_UNDE R | | Mode 1 developing paper mode select | | 0 - 6 | | 0 |
| U | MODE5_UNDE R | | Mode 5 developing paper mode select | | 0 - 6 | | 0 |
| V | MODE6_UNDE R | | Mode 6 developing paper mode select | | 0 - 6 | | 0 |
| W | SW_CHANGE_ MODE0 | | Mode 0: Mode judgment select | | 0 - 6 | | 0 |
| X | SW_CHANGE_ MODE1 | | Mode 1: Mode judgment select | | 0 - 6 | | 1 |
| Y | SW_CHANGE_ MODE2 | | Mode 2: Mode judgment select | | 0 - 6 | | 2 |
| Z | SW_CHANGE_ MODE3 | | Mode 3: Mode judgment select | | 0 - 6 | | 3 |
| AA | SW_CHANGE_ MODE4 | | Mode 4: Mode judgment select | | 0 - 6 | | 4 |
| AB | SW_CHANGE_ MODE5 | | Mode 5: Mode judgment select | | 0 - 6 | | 5 |
| AC | SW_CHANGE_ MODE6 | | Mode 6: Mode judgment select | | 0 - 6 | | 6 |

46-63

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the density in the copy low density section.

**Section**

**Operation/Procedure**

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

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 COPY : TEXT/PRINTED PHOTO | Text print (color copy) | 1 - 9 | 3 |
| B | COLOR COPY : TEXT | Text (color copy) | 1 - 9 | 3 |
| C | COLOR COPY : PRINTED PHOTO | Printed photo (color copy) | 1 - 9 | 5 |
| D | COLOR COPY : PHOTOGRAPH | Photograph (color copy) | 1 - 9 | 5 |
| E | COLOR COPY : TEXT/PHOTO | Text/Photograph (color copy) | 1 - 9 | 3 |
| F | COLOR COPY : MAP | Map (color copy) | 1 - 9 | 5 |
| G | COLOR COPY : LIGHT | Light document (color density) | 1 - 9 | 6 |
| H | COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY) | Copy document, Character print (color copy) | 1 - 9 | 5 |
| I | COLOR COPY : TEXT (COPY TO COPY) | Copy document, Character (color copy) | 1 - 9 | 5 |
| J | COLOR COPY : PRINTED PHOTO (COPY TO COPY) | Copy document, Printed photo (color copy) | 1 - 9 | 5 |
| K | COLOR PUSH : TEXT/PRINTED PHOTO | Text print (color PUSH) | 1 - 9 | 3 |
| L | COLOR PUSH : TEXT | Text (color PUSH) | 1 - 9 | 3 |
| M | COLOR PUSH : PRINTED PHOTO | Printed photo (color PUSH) | 1 - 9 | 5 |
| N | COLOR PUSH : PHOTOGRAPH | Photograph (color PUSH) | 1 - 9 | 5 |
| O | COLOR PUSH : TEXT/PHOTO | Text/Photograph (color PUSH) | 1 - 9 | 3 |
| P | COLOR PUSH : MAP | Map (color PUSH) | 1 - 9 | 5 |

46-65

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the color correction table.

**Section**

**Operation/Procedure**

1) Select an adjustment mode.
2) Select an item (mode) to be set with the scroll key.
3) Enter the adjustment value using the 10-key.
4) Press [OK] key.

When the setting is changed, the color tone is changed. This function is used to make copies of different color tone for each copy mode.

The initial value must be set unless any special change is required.

| Mode | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| COPY | A | [MANUAL] TEXT PRT | Text print | 0 - 8 | 0 |
| | B | [MANUAL] TEXT | Text | 0 - 8 | 0 |
| | C | [MANUAL] PRINTED PHOTO | Printed Photo | 0 - 8 | 0 |
| | D | [MANUAL] PHOTO | Photograph | 0 - 8 | 1 |
| | E | [MANUAL] TEXT PHOTO | Text photograph | 0 - 8 | 1 |
| | F | [MANUAL] MAP | Map | 0 - 8 | 0 |
| | G | [MANUAL] LIGHT | Pencil | 0 - 8 | 0 |
| | H | [MANUAL] CPT TO CPT/TXT PRT | Copy document/ Text print | 0 - 8 | 0 |
| | I | [MANUAL] CPT TO CPT/TEXT | Copy document/ Text | 0 - 8 | 0 |
| | J | [MANUAL] CPY TO CPY/PHOTO | Copy document/ Printed Photo | 0 - 8 | 0 |
| | K | AUTO0 | Automatic mode judgment 0 | 0 - 8 | 2 |

| Mode | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| COPY | L | AUTO1 | Automatic mode judgment 1 | 0 - 8 | 2 |
| | M | AUTO2 | Automatic mode judgment 2 | 0 - 8 | 3 |
| | N | AUTO3 | Automatic mode judgment 3 | 0 - 8 | 3 |
| | O | AUTO4 | Automatic mode judgment 4 | 0 - 8 | 2 |
| | P | AUTO5 | Automatic mode judgment 5 | 0 - 8 | 2 |
| | Q | AUTO6 | Automatic mode judgment 6 | 0 - 8 | 2 |
| PREVIEW (Preview screen) | A | [MANUAL] TEXT PRT | Text print | 0 - 4 | 0 |
| | B | [MANUAL] TEXT | Text | 0 - 4 | 0 |
| | C | [MANUAL] PRINTED PHOTO | Printed Photo | 0 - 4 | 0 |
| | D | [MANUAL] PHOTO | Photograph | 0 - 4 | 1 |
| | E | [MANUAL] TEXT PHOTO | Text photograph | 0 - 4 | 1 |
| | F | [MANUAL] MAP | Map | 0 - 4 | 0 |
| | G | [MANUAL] LIGHT | Pencil | 0 - 4 | 0 |
| | H | [MANUAL] CPT TO CPT/TXT PRT | Copy document/ Text print | 0 - 4 | 0 |
| | I | [MANUAL] CPT TO CPT/TEXT | Copy document/ Text | 0 - 4 | 0 |
| | J | [MANUAL] CPY TO CPY/PHOTO | Copy document/ Printed Photo | 0 - 4 | 0 |
| | K | AUTO0 | Automatic mode judgment 0 | 0 - 4 | 2 |
| | L | AUTO1 | Automatic mode judgment 1 | 0 - 4 | 2 |
| | M | AUTO2 | Automatic mode judgment 2 | 0 - 4 | 3 |
| | N | AUTO3 | Automatic mode judgment 3 | 0 - 4 | 3 |
| | O | AUTO4 | Automatic mode judgment 4 | 0 - 4 | 2 |
| | P | AUTO5 | Automatic mode judgment 5 | 0 - 4 | 2 |
| | Q | AUTO6 | Automatic mode judgment 6 | 0 - 4 | 2 |

46-66

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the reproduction capability of watermarks in the copy/printer mode. |
| **Section** | |

**Operation/Procedure**

This is to adjust the reproduction capability of watermarks in the copy/printer mode.

1) Select the adjustment mode.
2) Select an adjustment item according to the necessity.
3) Enter the adjustment value with 10-key and press [OK] key.
4) Make a copy, and check the adjustment result.

| Category | Item/Display | | Content | Setting range | Default value | NOTE |
|---|---|---|---|---|---|---|
| PATTERN | A | WOVEN DEN BK LOW | Watermark density level (Black LOW) | 0 - 255 | 15 | The adjustment value is changed to increase or decrease the density of the watermark of background documents (primary output). To increase the watermark density, increase the adjustment value. To decrease the watermark density, decrease the adjustment value. NOTE: When the adjustment value is increased, the watermark area which is originally not reproduced becomes difficult to disappear. When the adjustment value is decreased, the watermark area which is originally reproduced becomes easy to disappear. |
| | B | WOVEN DEN BK MIDDLE | Watermark density level (Black MIDDLE) | 0 - 255 | 19 | |
| | C | WOVEN DEN BK HIGH | Watermark density level (Black HIGH) | 0 - 255 | 23 | |
| | D | WOVEN DEN C LOW | Watermark density level (Cyan LOW) | 0 - 255 | 19 | |
| | E | WOVEN DEN C MIDDLE | Watermark density level (Cyan MIDDLE) | 0 - 255 | 23 | |
| | F | WOVEN DEN C HIGH | Watermark density level (Cyan HIGH) | 0 - 255 | 27 | |
| | G | WOVEN DEN M LOW | Watermark density level (Magenta LOW) | 0 - 255 | 15 | |
| | H | WOVEN DEN M MIDDLE | Watermark density level (Magenta MIDDLE) | 0 - 255 | 18 | |
| | I | WOVEN DEN M HIGH | Watermark density level (Magenta HIGH) | 0 - 255 | 21 | |
| | J | CONTRAST | Contrast adjustment | 0 - 255 | 2 | This is used to adjust the variation in the watermark density when the adjustment value of the watermark print/ contrast adjustment in the system setting is changed by 1. When this value is increased, the variation is also increased. When the value is decreased, the variation is also decreased. When the adjustment value is 0, the result of the contrast adjustment is not reflected. (* The adjustment value must be set to 1 or greater.) |
| | K | HT TYPE (POSI) | For halftone index watermark type positive | 42 - 43 | 42 | To reproduce the containing characters of watermark copy (secondary output) more clearly, set to 43. In that case, however, the containing characters of the watermark document (primary output) can be easily reproduced. |
| | L | HT TYPE (NEGA) | For halftone index watermark type negative | 42 - 43 | 42 | |

| Category | Item/Display | | Content | | Setting range | | Default value | NOTE |
|---|---|---|---|---|---|---|---|---|
| COPY MODE | A | TEXT/PRINTED PHOTO | Text/Printed Photo mode select Enable/Disable | OFF | 0 - 1 | 0 | 1 | Normally set to the default. No need to change in the market. |
| | | | | ON | | 1 | | |
| | B | TEXT | Text mode select Enable/ Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | C | PRINTED PHOTO | Printed Photo mode select Enable/Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | D | PHOTOGRAPH | Photograph mode select Enable/Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | E | TEXT/PHOTO | Text/Photograph mode select Enable/Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | F | MAP | Map mode select Enable/ Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | G | LIGHT | Light density document mode select Enable/ Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | H | TEXT/PRINTED PHOTO (CPY TO CPY) | Copy document: Enable/ Disable of selection of the text print mode | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | I | TEXT (CPY TO CPY) | Copy document: Enable/ Disable of selection of the text mode | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | J | PRINTED PHOTO (CPY TO CPY) | Copy document: Enable/ Disable of selection of the printed photo mode | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | K | AUTO | Automatic mode select Enable/Disable | OFF | 0 - 1 | 0 | 1 | |
| | | | | ON | | 1 | | |
| | L | DEFAULT MODE | When the default exposure mode background is ON, the exposure mode to be set is specified. | TEXT/ PRINTED PHOTO | 0 - 5 | 0 | 0 | |
| | | | | TEXT | | 1 | | |
| | | | | PRINTED PHOTO | | 2 | | |
| | | | | PHOTOGRAPH | | 3 | | |
| | | | | TEXT/PHOTO | | 4 | | |
| | | | | MAP | | 5 | | |
| POSITION | A | LINE SPACE 1 | Line space in the watermark print box (24P - 36P) | | 0 - 200 | | 50 | |
| | B | LINE SPACE 2 | Line space in the watermark print box (37P - 48P) | | 0 - 200 | | 60 | |
| | C | LINE SPACE 3 | Line space in the watermark print box (49P - 64P) | | 0 - 200 | | 70 | |
| | D | LINE SPACE 4 | Line space in the watermark print box (65P - 80P) | | 0 - 200 | | 80 | |
| | E | BLANK H/B 1 | Upper margin/Lower margin in the watermark print box (24P - 36P) | | 0 - 200 | | 25 | |
| | F | BLANK H/B 2 | Upper margin/Lower margin in the watermark print box (37P - 48P) | | 0 - 200 | | 30 | |
| | G | BLANK H/B 3 | Upper margin/Lower margin in the watermark print box (49P - 64P) | | 0 - 200 | | 35 | |
| | H | BLANK H/B 4 | Upper margin/Lower margin in the watermark print box (65P - 80P) | | 0 - 200 | | 40 | |
| | I | BLANK L/R 1 | Left margin/Right margin in the watermark print box (24P - 36P) | | 0 - 200 | | 60 | |
| | J | BLANK L/R 2 | Left margin/Right margin in the watermark print box (37P - 48P) | | 0 - 200 | | 90 | |
| | K | BLANK L/R 3 | Left margin/Right margin in the watermark print box (49P - 64P) | | 0 - 200 | | 120 | |
| | L | BLANK L/R 4 | Left margin/Right margin in the watermark print box (65P - 80P) | | 0 - 200 | | 150 | |

46-74

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Copy color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment) |
| **Section** | |

**Operation/Procedure**

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy color balance adjustment (Automatic adjustment) and the printer color 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 color balance adjustment pattern is printed.
2) Place the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key, and the copy color balance adjustment is performed and the adjustment result pattern is printed.
4) Press [EXECUTE] key, and the printer color balance adjustment pattern is printed.
5) Place the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
6) Press [EXECUTE] key, and the printer color balance adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
7) Press [OK] key, and the halftone correction target is registered.
8) When [EXECUTE] key is displayed, press it.

When "COMPLETED THIS PROCEDURE" is displayed, the adjustment is completed.

Important

The adjustment result becomes effective only when the adjustment procedure for both copy and print mode have completed successfully. For example, when the copy color balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.

46-90

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to set the process operation of high-compression PDF images. |
| **Section** | |

**Operation/Procedure**

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

| Mode | Item / Display | | Content | Setting value | Default value |
|---|---|---|---|---|---|
| TEXT | A | GLYPH SENSITIVITY | Text handling selection | 0 - 2 | 0 |
| | B | BG SW FOR FINDLINES | Line handling selection | 0 - 1 | 0 |
| | C | HOR FINDLINES SW | Line detection SW(H) | 0 - 2 | 0 |
| | D | VERT FINDLINES SW | Line detection SW (V) | 0 - 2 | 0 |
| | E | FGCOLOR INDEXING SEL | Text color number adjustment SW | 0 - 3 | 0 |
| | F | FGCOLOR INDEXING ADJ | Text color adjustment | 0 - 4 | 2 |
| COLOR | A | LUMINANCE ADJUSTMENT | Luminance adjustment | 0 - 4 | 2 |
| | B | CHROMA INTENT | Chroma selection | 0 - 2 | 1 |
| | C | NEUTRAL ADJUSTMENT | Neutral adjustment | 0 - 2 | 0 |
| | D | R-RATIO ADJUSTMENT | Gray scale adjustment ® | 0 - 1000 | 299 |
| | E | G-RATIO ADJUSTMENT | Gray scale adjustment (G) | 0 - 1000 | 587 |
| BG LAYER | A | BG LAYER INTENT 1 | Speed priority setting | 0 - 2 | 1 |
| | B | BG LAYER INTENT 2 | Image quality priority setting | 0 - 2 | 1 |

46-91

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the reproduction capability of black text. |
| **Section** | |

**Operation/Procedure**

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

When COLOR key or MONO key is pressed, the adjustment value is set and a copy is made simultaneously.

| Item | Display | | Content | Description | Setting range | Default value |
|---|---|---|---|---|---|---|
| A | SEGMENT PARAM | COMMON<br>SPECIAL | Area separation setting select | 0: Other than image send mode black text emphasis (simple, high compression)<br>1: Image send mode black text emphasis (simple, high compression) | 0 - 1 | 0 |
| B | BG: JPEG QUALITY LV [COL: COMPACT] | | JPEG recompression level adjustment [Color: High compression mode] | The JPEG compression ratio of the background layer is selected.<br>0: Low<br>1: Middle<br>2: High | 0 - 2 | 1 |
| C | BG: JPEG QUALITY LV [COL: ULTRA FINE] | | JPEG recompression level adjustment [Color: Ultra fine mode] | | 0 - 2 | 1 |
| D | BG: JPEG QUALITY LV [GRY: COMPACT] | | JPEG recompression level adjustment [Gray: High compression mode] | | 0 - 2 | 1 |
| E | BG: JPEG QUALITY LV [GRY: ULTRA FINE] | | JPEG recompression level adjustment [Gray: Ultra fine mode] | | 0 - 2 | 1 |
| F | FG: TARGET AREA | TYPE0<br>TYPE1<br>TYPE2 | 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 [Color] | The black text density in the front ground layer is changed.<br>0: Dark - 5: Default - 10: Light | 0 - 10 | 5 |
| H | FG: TEXT DENSITY [GRY] | | Front ground black text density adjustment [Gray] | | 0 - 10 | 5 |
| I | ULTRA FINE MODE | OFF | High compression/Ultra Fine mode select | 0: High compression mode<br>1: Ultra fine mode | 0 - 1 | 0 |

NOTE: This must be set to the default unless any change is specially required.
When the adjustment value is changed greatly from the initial value, an image quality trouble may occur.

# 48

48-1

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction). |
| **Section** | |

**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, D, or F corresponds to a change of about 0.1% in the copy magnification ratio.

**[RSPF]**

| 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) | RSPF document front surface magnification ratio adjustment (Main scan) | 1 - 99 | 50 |
| D | SPF (SUB) | RSPF document front surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |
| E | SPFB (MAIN) | RSPF document back surface magnification ratio adjustment (Main scan) | 1 - 99 | 50 |
| F | SPFB (SUB) | RSPF document back surface magnification ratio adjustment (Sub scan) | 1 - 99 | 50 |

1 : '14/Jun

48-5

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to correction the scan image magnification ratio (in the sub scanning direction). |
| **Section** | Scanner section |

**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 | 50 |
| B | MR(MID) | Scanner motor (Reference speed) | 1 - 99 | 50 |
| C | MR(LO) | Scanner motor (Low speed) | 1 - 99 | 50 |
| D | SPF(HI) | Document feed (SPF) motor (High speed) | 1 - 99 | 50 |
| E | SPF(MID) | Document feed (SPF) motor (Reference speed) | 1 - 99 | 50 |

48-6

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the rotation speed of each motor. |
| **Section** | |

**Operation/Procedure**

1) Select an adjustment target mode with [COLOR] [MONO] [HEAVY] keys on the touch panel.
2) Select a target adjustment item with scroll key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key.
   The set value is saved.

When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

| Mode Select | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| COLOR | A | RRM | Registration motor correction value | 1 - 99 | 51 |
| MONO | | | | | |
| HEAVY | | | | | |
| COLOR | B | BTM | Belt motor correction value | 1 - 99 | 47 |
| MONO | | | | | |
| HEAVY | | | | | |
| COLOR | C | DVM_K | Developing K motor correction value | 1 - 99 | 45 |
| MONO | | | | | |
| HEAVY | | | | | |
| 1 COLOR** | D | FSM | Fusing motor correction value | 1 - 99 | 26/ 31cpm 41 36cpm 40 |
| HEAVY | | | | | 41 |
| COLOR | E | DVM_CL | Developing CL motor correction value | 1 - 99 | 45 |
| HEAVY | | | | | |

| Mode Select | Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|---|
| COLOR* | F | PFM | Paper transport motor correction value | 1 - 99 | 48 |
| COLOR* | G | POM | Paper exit motor correction value | 1 - 99 | 50 |
| HEAVY | H | FUSER SETTING | Fusing speed select timing | 1 - 99 | 60 |
| HEAVY | I | RRM START | Registration motor speed increasing start timing | 0 - 255 | 109 |
| HEAVY | J | RRM END | Registration motor speed increasing end timing | 0 - 255 | 210 |

* Common items for color, monochrome, and heavy paper

** Common items for color and monochrome

The greater the correction value is, the higher the speed is, and vice versa. Change by +/-1 corresponds to 0.1%.

# 49

49-1

| | |
|---|---|
| **Purpose** | |
| **Function (Purpose)** | Used to perform the firmware update. |
| **Section** | |

**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 | Error display in case or abnormality |
|---|---|---|
| ICUM(MAIN) | ICUM main section | ICUMM |
| ICUM(SUB) | ICUM sub section | ICUMS |
| ICUM(OS) | ICUM OS | ICUMO |
| ICUM(CN) | ICUM CN | ICUMC |
| ICUM(BOOT) | ICUM boot section | ICUMT |
| ICUM(BIOS) | ICUM BIOS | ICUMB |
| ICU (MAIN) | ICU main section | ICUM |
| ICU(BOOTM) | ICU boot section main | ICUB |
| ICU(SUB) | ICU sub section(ARM9) | ICUS |
| LANGUAGE | Language support data program | LANG |
| SLIST | SLIST data for L-LCD | SLIST |
| EOSA | embedded OSA | EOSA |
| PCL(PROFILE) | PCL color profile | PCLP |
| PCU(BOOT) | PCU boot section | PCUB |
| PCU(MAIN) | PCU main section | PCUM |
| DESK(BOOT) | Desk unit boot section | DESKB |
| DESK(MAIN) | Desk unit main section | DESKM |
| A4LCC(BOOT) | LCC boot | LCC4B |
| A4LCC(MAIN) | LCC main | LCC4M |
| FIN(BOOT) | Inner finisher boot section | FINB |
| FIN(MAIN) | Inner finisher main section | FINM |
| 1KFIN(BOOT) | Saddle stitch finisher boot | FIN1B |
| 1KFIN(MAIN) | Saddle stitch finisher main | FIN1M |
| 1KPUNCH(BOOT) | Saddle punch unit boot | 1PUNB |

| Item/Display | Content | Error display in case or abnormality |
|---|---|---|
| 1KPUNCH(MAIN) | Saddle punch unit main | 1PUNM |
| SCU(BOOT) | SCU boot section | SCUB |
| SCU(MAIN) | SCU main section | SCUM |
| FAX(BOOT) | FAX1 boot section | FAXB |
| FAX(MAIN) | FAX1 main section | FAXM |
| FAXOPT1(BOOT) | FAX2 boot section | FX01B |
| FAXOPT1(MAIN) | FAX2 main section | FX01M |
| FAXOPT2(BOOT) | FAX3 boot section | FX02B |
| FAXOPT2(MAIN) | FAX3 main section | FX02M |
| ACRE(BOOT) | Enhanced compression kit boot section | ACREB |
| ACRE(MAIN) | Enhanced compression kit main section | ACREM |
| ACRE_DATA | Enhanced compression kit table | ACRED |

49-3

**Purpose**

**Function (Purpose)** Used to update the operation manual in the HDD.

**Section**

**Operation/Procedure**

1) Insert the USB memory into the main unit.
   * When the USB is not inserted, "INSERT A STORANGE 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

**Purpose**

**Function (Purpose)** Used to perform the watermark update.

**Section**

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select the button of the folder to perform the watermark update.
3) The current version and the update version are displayed.
4) Press [EXECUTE] key.
5) Press [YES] key.
   The selected watermark is updated.

49-10

**Purpose**

**Function (Purpose)** Used to perform the ACU firmware update.

**Section**

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

# 50

50-1

**Purpose** Adjustment

**Function (Purpose)** Copy image position, image loss adjustment

**Section**

**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 | Registration motor ON timing adjustment | 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 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 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 |

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (01.mm/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 (registration 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)

50-5

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the print lead edge image position. (PRINTER MODE) |
| **Section** | |

**Operation/Procedure**

1) Select a target adjustment item (DEN-C) 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: 4.0±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 distanced 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. (PRINTER MODE) | | 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. |
| B | DEN-B | | Rear edge void area adjustment | | 1 - 99 | | 30 | Void amount generated at the paper rear edge. 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 | Fine adjustment value of each paper feed source for the adjustment value of DEN-B |
| 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 aria adjustment correction value | | 1 - 99 | | 50 | |
| J | DENB-ADU | | ADU rear edge void aria adjustment correction value | | 1 - 99 | | 55 | |
| K | DENB-HV | | Heavy paper correction value | | 1 - 99 | | 50 | |
| L | MULTI COUNT | | Number of print | | 1 - 999 | | 1 | Adjustment pattern print conditions setting |
| M | 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 | | |
| N | DUPLEX | YES | Duplex print selection | Yes | 0 - 1 | 0 | 1 (NO) | |
| | | NO | | No | | 1 | | |

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 from the paper lead edge to the image lead edge is decreased.

When the set value is changed by 1, the distance is changed by about 0.1mm.

50-6

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the copy image position and the image loss. (RSPF mode) |
| **Section** | RSPF |

**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.)

**[RSPF]**

| 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 (CCD) | 1 - 99 | 50 |
| C | Image loss amount setting SIDE1 | LEAD_EDGE (SIDE1) | Front surface lead edge image loss amount setting | 0 - 99 | 20 |
| D | Image loss amount setting SIDE1 | 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 | 40 |
| F | Image loss amount setting SIDE2 | LEAD_EDGE (SIDE2) | Back surface lead edge image loss amount setting | 0 - 99 | 20 |
| 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 | 40 |
| I | OFSET_SPF1 | | SPF front surface document off-center adjustment | 1 - 99 | 50 |
| J | OFSET_SPF2 | | SPF back surface document off-center adjustment | 1 - 99 | 50 |
| K | SCAN_SPEED_SPF1 | | RSPF document front surface magnification ratio (Sub scan) | 1 - 99 | 50 |
| L | SCAN_SPEED_SPF2 | | RSPF document back surface magnification ratio (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 E - H: When a shadow image appears on the rear edge, increase the adjustment value to delete the shadow.

All adjustment items: 1 step = 0.1mm change

50-10

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the black print image magnification ratio and the off-center position. (The adjustment is made separately for each paper feed section.) |
| **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 [EXECUTE] key. (The set value is saved.)

| Item/Display | | | Content | | Setting range | | Default value | NOTE |
|---|---|---|---|---|---|---|---|---|
| A | BK-MAG | | Main scan print magnification ratio BK | | 60 - 140 | | 110 | Adjustment Item List |
| B | MAIN-MFT | | Print off center adjustment value (Manual paper feed) | | 1 - 99 | | 50 | |
| C | MAIN-CS1 | | Print off center adjustment value (Tray 1) | | 1 - 99 | | 52 | |
| D | MAIN-CS2 | | Print off center adjustment value (Tray 2) | | 1 - 99 | | 52 | |
| E | MAIN-CS3 | | Print off center adjustment value (Tray 3) | | 1 - 99 | | 52 | |
| F | MAIN-CS4 | | Print off center adjustment value (Tray 4) | | 1 - 99 | | 52 | |
| G | MAIN-LCC | | Print off center adjustment value (Large capacity tray) | | 1 - 99 | | 52 | |
| H | MAIN-ADU | | Print off center adjustment value (Duplex)<br>Important<br>If the adjustment items A - G are not properly adjusted, this adjustment cannot be executed properly. | | 1 - 99 | | 42 | Adjustment Item List |
| I | SUB-MFT | | Registration motor ON timing adjustment | Manual paper feed | 1 - 99 | | 60 | |
| J | SUB-CS1 | | | Standard cassette | 1 - 99 | | 60 | |
| K | SUB-DSK | | | DESK | 1 - 99 | | 60 | |
| L | SUB-LCC | | | LCC | 1 - 99 | | 60 | |
| M | SUB-ADU | | | ADU | 1 - 99 | | 60 | |
| N | MULTI COUNT | | Number of print | | 1 - 999 | | 1 | Adjustment pattern print conditions setting |
| 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 | | |

Item A: 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 image magnification ratio is decreased.

Item B - H: When the adjustment value is increased, it is shifted to the front frame side. When the adjustment value is decreased, it is shifted to the rear frame side.

All adjustment items: 1 step = 0.1mm change

50-12

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan 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.)

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 |

50-20

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Image registration adjustment (Main scanning direction) |
| **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 [EXECUTE] key. (The set value is saved.)

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| A | CYAN(FRONT) | | Registration adjustment value main scanning direction CYAN F side | | 1 - 199 | | 100 |
| B | CYAN(REAR) | | Registration adjustment value main scanning direction CYAN R side | | 1 - 199 | | 100 |
| C | MAGENTA(FRONT) | | Registration adjustment value main scanning direction MAGENTA F side | | 1 - 199 | | 100 |
| D | MAGENTA(REAR) | | Registration adjustment value main scanning direction MAGENTA R side | | 1 - 199 | | 100 |
| E | YELLOW(FRONT) | | Registration adjustment value main scanning direction YELLOW F side | | 1 - 199 | | 100 |
| F | YELLOW(REAR) | | Registration adjustment value main scanning direction YELLOW R side | | 1 - 199 | | 100 |
| G | CYAN(SUB) | | Registration adjustment value sub scanning direction CYAN (Black drum reference) | | 1 - 199 | | 100 |
| H | MAGENTA(SUB) | | Registration adjustment value sub scanning direction MAGENTA (Black drum reference) | | 1 - 199 | | 100 |
| I | YELLOW(SUB) | | Registration adjustment value sub scanning direction YELLOW (Black drum reference) | | 1 - 199 | | 100 |
| J | OFFSET_C_F | | Registration adjustment value main scanning direction offset value CYAN (FRONT) | | 1 - 99 | | 50 |
| K | OFFSET_C_R | | Registration adjustment value main scanning direction offset value CYAN (REAR) | | 1 - 99 | | 50 |
| L | OFFSET_M_F | | Registration adjustment value main scanning direction offset value MAGENTA (FRONT) | | 1 - 99 | | 50 |
| M | OFFSET_M_R | | Registration adjustment value main scanning direction offset value MAGENTA (REAR) | | 1 - 99 | | 50 |
| N | OFFSET_Y_F | | Registration adjustment value main scanning direction offset value YELLOW (FRONT) | | 1 - 99 | | 50 |
| O | OFFSET_Y_R | | Registration adjustment value main scanning direction offset value YELLOW (REAR) | | 1 - 99 | | 50 |
| P | OFFSET_C_S | | Registration adjustment value sub scanning direction offset value CYAN | | 1 - 99 | | 50 |
| Q | OFFSET_M_S | | Registration adjustment value sub scanning direction offset value MAGENTA | | 1 - 99 | | 47 |
| R | OFFSET_Y_S | | Registration adjustment value sub scanning direction offset value YELLOW | | 1 - 99 | | 48 |
| S | MULTICOUNT | | Number of print | | 1 - 999 | | 1 |
| T | 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 | |
| U | DUPLEX | YES | Duplex print selection | Yes | 0 - 1 | 0 | 1 (NO) |
| | | NO | | No | | 1 | |

50-22

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the image registration. (Main scan direction, sub scan direction) (Auto adjustment)/OPC drum phase adjustment (Auto adjustment) |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
   The adjustment is automatically performed, and the adjustment data are displayed.

**Note**

The contents of the following list are mainly used by the technical division, and are not necessary for the market.

| Item/Display | | | Content | Setting range (unit) | Color/ History | Default value | NOTE |
|---|---|---|---|---|---|---|---|
| MAIN F | - | REG_M_F (VALUE) | Registration adjustment correction amount main scanning direction F | 1.0 - 199.0 (±0.1) | CMY/- | 100 | |
| | ( ) | REG_M_F (DIF) | Registration value correction amount from the previous one, main scanning F | -199.0 - 199.0 (±0.1) | CMY/- | 0 | |
| MAIN R | - | REG_M_R (VALUE) | Registration adjustment correction value, main scanning direction R | 1.0 - 199.0 (±0.1) | CMY/- | 100 | |
| | ( ) | REG_M_R (DIF) | Registration value correction amount from the previous one, main scanning R | -199.0 - 199.0 (±0.1) | CMY/- | 0 | |
| SUB | - | REG_SUB (VALUE) | Registration adjustment correction value, sub scanning direction | 1.0 - 199.0 (±0.1) | CMY/- | 100 | |
| | ( ) | REG_SUB (DIF) | Registration value correction amount from the previous one, sub scanning | -199.0 - 199.0 (±0.1) | CMY/- | 0 | |
| SKEW | CMY | SKEW_CLC | SKEW adjustment rotating direction and the number of clicks (CMY) | L99.9 - R99.9 (±0.1) | KCMY/- | 0 | If the value is plus, L is displayed to left side of numerical value. If the value is minus, R is displayed to left side of numerical value. When the value is -2.1 - +2.1, "(OK)" is place at the back of the value. For the other cases, "(NG)" is displayed. *1 |
| | ALL_ ROTATE | | SKEW adjustment rotating direction and the number of clicks (K) | | | | If the value is plus, L is displayed to left side of numerical value. If the value is minus, R is displayed to left side of numerical value. When the value is -1.6 - +1.6, "(OK)" is place at the back of the value. For the other cases, "(NG)" is displayed. *2 |
| PHASE | | PHASE_ADJ | Phase adjustment value (1: Value of this time, 2: Value of the previous time) Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8) | 1 - 8 (±1) | -/2 | 1 | - |

*1: The color image skew adjustment is performed according to this display value.
When "R" is displayed in front of the value, turn and click the skew adjustment screw (LSU) clockwise by the value.
When "L" is displayed in front of the value, turn and click the skew adjustment screw (LSU) counterclockwise by the value.
*2: The color image skew adjustment is performed according to this display value.
When "R" is displayed at the head of the value, turn the skew adjustment screw (LSU) clockwise by the number of the value.
When "L" is displayed at the head of the value, turn the skew adjustment screw (LSU) counterclockwise by the number of the value.

At that time, the values under the decimal point are rounded.

**Error displays in case of abnormal end**

| | Error code | Error display | Error content | Description |
|---|---|---|---|---|
| Forcible end error | - | SUSPENDED | Door open end | Door open during operation |
| | - | SUSPENDED | CA end | CA button pressed during operation |
| | - | - | OFF end | Unconfirmed operation during operation (Power OFF) |

| | Error code | Error display | Error content | Description |
|---|---|---|---|---|
| Basic error | 1 | TONNER EMPTY | Toner Empty | BK or ALL Color toner EMPTY detection |
| | 2 | BEFOR BEHAVIOR | Other condition | Other condition |
| | 4 | SENSOR CALIBLATION F | Calibration error F | The target is not reached by 3 times of retry of F or R |
| | 5 | SENSOR CALIBLATION R | Calibration error R | |
| | 6 | SENSOR CALIBLATION FR | Calibration error FR | |
| | 7 | TIME OVER | Time error | No data are obtained for 90sec from data acquisition |
| | 8 | PROCESS CONTROL | Process control error | Process control error detection |
| Sub scanning adjustment error | 10 - 47 | SUB XXX XXXX XXX | | |
| Main scanning adjustment error | 50 - 88 | MAIN XXX XXXX XXX | | |
| Others | 99 | OTHER 99 | Other errors | Other errors |

50-24

**Purpose** (This simulation is normally not used in the market.)

**Function (Purpose)** Used to display the detail data of SIM 44-2, 50-20 and 22.

**Section**

**Operation/Procedure**

**Note**

This simulation is mainly used by the technical division, and is not necessary for the market.

50-27

**Purpose** Adjustment

**Function (Purpose)** Used to 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.)

**[RSPF]**

| Item/Display | | | | Content | Setting range | Default value |
|---|---|---|---|---|---|---|
| FAX send | A | Image loss amount setting OC | 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 | Image loss amount setting SPF SIDE1 | 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 | Image loss amount setting SPF SIDE2 | LEAD_EDGE (SPF_SIDE2) | Back surface lead edge image loss amount setting | 0 - 100 | 20 (2mm) |
| | 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 | 30 (3mm) |

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

A-I: When the adjustment value is increased, the image loss is increased.

1step = 0.1mm

50-28

**Purpose** Adjustment

**Function (Purpose)** Used to 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.

* ADJ16 Print image position, image magnification ratio, void area, off-center adjustments (Manual adjustments)
* ADJ 17 Scan image magnification ratio adjustment (Manual adjustment)
* ADJ 18 Scan image off-center adjustment (Manual adjustment)
* ADJ 19 Used to adjust the copy image position and the image loss (Manual adjustments)

1) Select an adjustment item with the menu button.
2) Press [EXECUTE] key, and the adjustment pattern is printed.
3) Set the adjustment pattern on the document table.
4) Press [EXECUTE] key, and the adjustment pattern is scanned.
5) Press [OK] key.

| Item/Display | | Content | | Section |
|---|---|---|---|---|
| OC ADJ | MFT<br>CS1<br>CS2<br>ADU<br>CS3<br>CS4<br>LCC | Document lead edge<br>Document off-center<br>Sub scanning magnification ratio | Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode) | Scanner |

| Item/Display | | | | Content | | Section |
|---|---|---|---|---|---|---|
| SPF ADJ (RSPF) | ALL | SIDE1 (Front surface) | MFT | Document lead edge<br>Document off-center<br>Sub scanning magnification ratio<br>Document lead edge<br>Document off-center<br>Sub scanning magnification ratio | Image loss off-center sub scanning direction image magnification ratio adjustment (RSPF mode) | Scanner |
| | | SIDE2 (Back surface) | CS1<br>CS2<br>ADU<br>CS3<br>CS4<br>LCC | | | |

| Item/Display | | | | Content | | Section |
|---|---|---|---|---|---|---|
| SETUP/ PRINT ADJ | ALL | LEAD | MFT<br>CS1<br>CS2 | Print off center<br>Print lead edge | Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment | Engine |
| | | OFFSET | ADU<br>CS3<br>CS4<br>LCC | | | |

| Item/Display | | Content | | Section |
|---|---|---|---|---|
| BK-MAG ADJ | MFT<br>CS1<br>CS2<br>ADU<br>CS3<br>CS4<br>LCC | BK main scanning magnification ratio | Main scanning direction image magnification ratio adjustment | Engine |

| | |
|---|---|
| RESULT | Adjustment result display |
| DATA | Adjustment operation data display |

# 51

51-1

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the ON/OFF timing of the secondary transport voltage.

**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.)

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 | TC2 ON TIMING | Secondary transfer voltage ON timing setting | 50 |
| B | TC2 OFF TIMING | Secondary transfer voltage OFF timing setting | 60 |

1 : '14/Jun

51-2

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the contact pressure (deflection amount) on paper by the main unit and the RSPF registration roller. (This adjustment is performed when there is a considerable variation in the print image position on the paper or when paper jams frequently occur.) |
| **Section** | |

**Operation/Procedure**

1) (When RSPF model)
   Select a target adjustment mode with [SIDE1] or [SIDE2] or [ENGINE] keys.
2) Select a target item to be adjusted with scroll keys.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

**[RSPF]**

| Mode | Display/Ite | | Content | | Setting range | 26cpm/ 31cpm | 36cpm |
|---|---|---|---|---|---|---|---|
| SIDE1 | A | NORMAL_PLAIN_HIGH | RSPF front surface document deflection amount adjustment value (Normal/Plain paper/HIGH) | - | 1 - 99 | 50 | 50 |
| | B | NORMAL_PLAIN_LOW | RSPF front surface document deflection amount adjustment value (Normal/Plain paper/LOW) | - | 1 - 99 | 50 | 50 |
| | C | NORMAL_THIN _HIGH | RSPF front surface document deflection amount adjustment value (Normal/Thin paper/HIGH) | - | 1 - 99 | 50 | 50 |
| | D | NORMAL_THIN _LOW | RSPF front surface document deflection amount adjustment value (Normal/Thin paper/LOW) | - | 1 - 99 | 50 | 50 |
| | E | RANDOM_PLAIN_HIGH | RSPF front surface document deflection amount adjustment value (Random/Plain paper/HIGH) | - | 1 - 99 | 50 | 50 |
| | F | RANDOM_PLAIN _LOW | RSPF front surface document deflection amount adjustment value (Random/Plain paper/LOW) | - | 1 - 99 | 50 | 50 |
| | G | RANDOM_THIN_HIGH | RSPF front surface document deflection amount adjustment value (Random/Thin paper/HIGH) | - | 1 - 99 | 50 | 50 |
| | H | RANDOM_THIN_LOW | RSPF front surface document deflection amount adjustment value (Random/Thin paper/LOW) | - | 1 - 99 | 50 | 50 |
| SIDE2 | A | NORMAL_PLAIN_ HIGH_1 | RSPF back surface document deflection amount adjustment value 1 (Normal/Plain paper/HIGH) | - | 1 - 99 | 50 | 50 |
| | B | NORMAL_PLAIN_ LOW_1 | RSPF back surface document deflection amount adjustment value 1 (Normal/Plain paper/LOW) | - | 1 - 99 | 50 | 50 |
| 1 ENGINE | A | TRAY1(S) | Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Small size) | LT size (216mm) or less | 1 - 99 | 20 | 20 |
| | B | TRAY1(L) | Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Large size) | LT size (216mm) or above | 1 - 99 | 20 | 20 |
| | C | TRAY1 HEAVY PAPER (S) | Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Small size) | LT size (216mm) or less | 1 - 99 | 10 | 2 |
| | D | TRAY1 HEAVY PAPER (L) | Main unit cassette 1 (Upper stage)/deflection adjustment value (Heavy paper/Large size) | LT size (216mm) or above | 1 - 99 | 10 | 2 |
| | E | TRAY2(S) | Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Small size) | LT size (216mm) or less | 1 - 99 | 20 | 20 |
| | F | TRAY2(L) | Main unit cassette 2 (Lower stage)/deflection adjustment value (Plain paper/Large size) | LT size (216mm) or above | 1 - 99 | 20 | 20 |
| | G | TRAY2 HEAVY PAPER (S) | Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Small size) | LT size (216mm) or less | 1 - 99 | 10 | 2 |
| | H | TRAY2 HEAVY PAPER (L) | Main unit cassette 2 (Upper stage)/deflection adjustment value (Heavy paper/Large size) | LT size (216mm) or above | 1 - 99 | 10 | 2 |
| | I | MANUAL PLAIN PAPER (S) | Manual feed tray/deflection adjustment value (Plain paper/Small size) | LT size (216mm) or less | 1 - 99 | 20 | 20 |
| | J | MANUAL PLAIN PAPER (L) | Manual feed tray/deflection adjustment value (Plain paper/Large size) | LT size (216mm) or above | 1 - 99 | 20 | 20 |
| | K | MANUAL HEAVY PAPER (S) | Manual feed tray/deflection adjustment value (Heavy paper/Small size) | LT size (216mm) or less | 1 - 99 | 10 | 2 |

1 : '14/Jun

| Mode | Display/Ite | | Content | | Setting range | 26cpm/ 31cpm | 36cpm |
|---|---|---|---|---|---|---|---|
| ENGINE | L | MANUAL HEAVY PAPER (L) | Manual feed tray/deflection adjustment value (Heavy paper/Large size) | LT size (216mm) or above | 1 - 99 | 10 | 2 |
| | M | MANUAL HEAVY B PAPER(S) | Manual feed tray/deflection adjustment value (Heavy paperB/Small size) | LT size (216mm) or less | 1 - 99 | 10 | 2 |
| | N | MANUAL HEAVY B PAPER (L) | Manual feed tray/deflection adjustment value (Heavy paperN/Large size) | LT size (216mm) or above | 1 - 99 | 10 | 2 |
| 1 | O | MANUAL OHP | Manual feed tray/deflection adjustment value (OHP) | - | 1 - 99 | 10 | 2 |
| | P | MANUAL ENV | Manual feed tray/deflection adjustment value (Envelop) | - | 1 - 99 | 10 | 2 |
| | Q | ADU PLAIN PAPER (S) | ADU/deflection adjustment value (Plain paper/Small size) | LT size (216mm) or less | 1 - 99 | 20 | 20 |
| | R | ADU HEAVY PAPER (L) | ADU/deflection adjustment value (Heavy paper/Large size) | LT size (216mm) or above | 1 - 99 | 20 | 20 |
| | S | ADU HEAVY A PAPER (S) | ADU/deflection adjustment value (Heavy paper A/Small size) | LT size (216mm) or less | 1 - 99 | 10 | 2 |
| | T | ADU HEAVY A PAPER (L) | ADU/deflection adjustment value (Heavy paper A/Large size) | LT size (216mm) or above | 1 - 99 | 10 | 2 |
| | U | DESK (S) | DESK/deflection adjustment value (Plain paper/Small size) | LT size (216mm) or less | 1 - 99 | 20 | 20 |
| | V | DESK (L) | DESK/deflection adjustment value (Plain paper/Large size) | LT size (216mm) or above | 1 - 99 | 20 | 20 |
| | W | DESK HEAVY PAPER (S) | DESK/deflection adjustment value (Heavy paper/Small size) | LT size (216mm) or less | 1 - 99 | 10 | 2 |
| | X | DESK HEAVY PAPER (L) | DESK/deflection adjustment value (Heavy paper/Large size) | LT size (216mm) or above | 1 - 99 | 10 | 2 |
| | Y | A4LCC | A4LCC/deflection adjustment value | - | 1 - 99 | 20 | 20 |

**Note on "Large size" and "Small size"**

Small size: The paper length in the transport direction is shorter than the LT size (216mm).

Large size: The paper length in the transport direction is longer than the LT size (216mm).

**Adjustment value**

When the adjustment value is increased, the warp amount is increased. When the adjustment value is decreased, the warp amount is decreased.

(When the adjustment value is changed by 1, the stop timing is changed by 0.1mm.)

# 53

53-6

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the detection level of the RSPF document width.

**Section**

**Operation/Procedure**

1) Open the RSPF paper feed guide to the maximum width.
2) Press [EXECUTE] key.
   The maximum width detection level is recognized.
3) Open the RSPF paper feed guide to the A4R width.
4) Press [EXECUTE] key.
   The A4R width detection level is recognized.
5) Open the RSPF paper feed guide to the A5R width.
6) Press [EXECUTE] key.
   The A5R width detection level is recognized.
7) Open the RSPF paper feed guide to the minimum width.
8) Press [EXECUTE] key.
   The minimum width detection level is recognized.

When the above operation is nor 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

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the RSPF document size width sensor.

**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.)

**[RSPF]**

| Item/Display | | | Setting range | Default value |
|---|---|---|---|---|
| A | AD_MAX | Max. width position | 0 - 1023 | 84 |
| B | AD_P1 | A4R width position | 0 - 1023 | 509 |
| C | AD_P2 | A5R width position | 0 - 1023 | 808 |
| D | AD_MIN | Min. width position | 0 - 1023 | 961 |

53-8

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to adjust the document lead edge reference and the RSPF mode document scan position. |
| **Section** | |

**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 (0.1mm unit) | - |
| RRCA | Document lead edge reference position | 0 - 99 | 50 |

<MANUAL: RSPF 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 | RSPF mode document scan position adjustment (Scanner stop position adjustment) | 1 - 99 | 5 |

- When the adjustment value is increased, the scanner stop position in the RSPF mode is shifted to the right.
- When the adjustment value is changed by 1, the position is shifted by 0.1mm.

53-9

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to set dirt detection for RSPF scanning position. |
| **Section** | |

**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_SET_START | OFF | RSPF front surface optimum scan position detection setting (When starting) | OFF | 0 to 1 | 0 | 1 (ON) |
| | | ON | | ON | | 1 | |
| B | SIDEA_SCAN_POSITION_SET_JOB | OFF | RSPF front surface optimum scan position detection setting (After a job) | OFF | 0 to 1 | 0 | 1 (ON) |
| | | ON | | ON | | 1 | |
| C | SIDEA_SCAN_POSITION_LV | WEAK | RSPF front surface optimum scan position detection level setting | Low | 0 to 2 | 0 | 1 (MIDDLE) |
| | | MIDDLE | | Medium | | 1 | |
| | | STRONG | | High | | 2 | |
| D | OC_DIRT_LV | WEAK | OC dirt level setting | Low | 0 to 2 | 0 | 1 (MIDDLE) |
| | | MIDDLE | | Medium | | 1 | |
| | | STRONG | | High | | 2 | |
| E | SIDEA_DIRT_ALARM_LV | WEAK | RSPF front surface dirt alarm level setting | Low | 0 to 2 | 0 | 1 (MIDDLE) |
| | | MIDDLE | | Medium | | 1 | |
| | | STRONG | | High | | 2 | |
| F | SIDEA_DIRT_SHADING_SET | OFF | RSPF front surface streak delete shading setting | OFF | 0 to 1 | 0 | 1 (ON) |
| | | ON | | ON | | 1 | |
| G | SCAN_POSITION_PRIORITY_SET | MVIEW | SPF front surface MVIEW/SCU priority setting (Optimum scan position) | MVIEW | 0 - 1 | 0 | 0 (MVIEW) |
| | | SCU | | SCU | | 1 | |
| H | DIRT_ALARM_PRIORITY_SET | MVIEW | RSPF MVIEW/SCU prioity. | MVIEW | 0 - 1 | 0 | 0 (MVIEW) |
| | | SCU | | SCU | | 1 | |

53-10

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | RSPF dirt detection execution. |
| **Section** | |

**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

55-1

| | |
|---|---|
| **Purpose** | (Do not use this function unless specially required.) |
| **Function (Purpose)** | Used to set the specifications of the engine control operations. (SOFT SW) |
| **Section** | |

**Operation/Procedure**

55-2

| | |
|---|---|
| **Purpose** | (Do not use this function unless specially required.) |
| **Function (Purpose)** | Used to set the specifications of the scanner control operation. (SOFT SW) |
| **Section** | |

**Operation/Procedure**

55-3

| | |
|---|---|
| **Purpose** | (Do not use this function unless specially required.) |
| **Function (Purpose)** | Used to set the specifications of the controller operation. (SOFT SW) |
| **Section** | |

**Operation/Procedure**

55-10

| | |
|---|---|
| **Purpose** | Adjustment/Setting |
| **Function (Purpose)** | Used to set the special stamp text. (Taiwan only) |
| **Section** | |

**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 [Alphabet: 41H("A) - 5AH("Z")] | |
| E | 5TH DIGIT | | Fifth digit | | 48 - 57 [Numeral: 30H("0") - 39H("9")] | |
| F | 6TH DIGIT | | Sixth digit (right edge) | | | |
| G | COLOR | K | Color specification input | | 0 | 0 |
| | | C | | | 1 | |
| | | M | | | 2 | |
| | | Y | | | 3 | |
| | | R | | | 4 | |
| | | G | | | 5 | |
| | | B | | | 6 | |
| H | 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

| | |
|---|---|
| **Purpose** | Backup |
| **Function (Purpose)** | Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.) |
| **Section** | |

**Operation/Procedure**

1) Select a target content of data transfer.
2) Press [EXECUTE] key and press [YES] key.

   Data transfer of the item selected in procedure 1) is executed.

   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

| | |
|---|---|
| EEPROM → HDD | Transfer from EEPROM to HDD |
| HDD → EEPROM | Transfer from HDD to EEPROM |

56-2

| | |
|---|---|
| **Purpose** | Data backup |
| **Function (Purpose)** | Used to backup the data in the EEPROM. SD Card, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.) |
| **Section** | |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select a target transfer item with the touch panel.
   <IMPORT>
   From USB MEMORY DEVICE To EEPROM, SD Card HDD
   <EXPORT>
   From EEPROM, SD Card, HDD To USB MEMORY
3) Press [EXECUTE] key, and press [YES] key.
   Data transfer selected in the procedure 2) is performed
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

(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 Card HDD
   <EXPORT>
   From EEPROM, SD Card, 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 |
|---|---|---|
| Japanese FEP | User dictionary | |
| Job end list | Job end list display data (The image send series include the preserved job list.) | |
| Log | Job log | Read from WEB is enable. |
| New N/A | • Print history information<br>• JAM history information<br>• Trouble history information<br>• Same position continuous jam count value<br>• Charging information<br>• Life information | |
| Operation manual | E-manual | |

56-3

| | |
|---|---|
| **Purpose** | Data backup |
| **Function (Purpose)** | Used to backup the document filing data to the USB memory. |
| **Section** | |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select a target transfer item with the touch panel.
   <IMPORT>
   From USB MEMORY DEVICE to EEPROM, SD Card, HDD
   <EXPORT>
   From EEPROM, SD Card, HDD to USB MEMORY DEVICE
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.

56-4

| | |
|---|---|
| **Purpose** | Data backup |
| **Function (Purpose)** | Used to backup the JOB log data to the USB memory. |
| **Section** | |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Press [JOB LOG EXPORT] key.
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.

56-5

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to import the SIM22-6 data to a USB memory in the TEXT format. |
| **Section** | |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select a kind of data to be imported.
3) Press [EXECUTE] key, and press [YES] key.
   Procedure 2) The selected data are imported.
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

56-6

| | |
|---|---|
| **Purpose** | Operation data check |
| **Function (Purpose)** | Used to import the SIM23-2 data to a USB memory in the TEXT format. |
| **Section** | |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select a kind of data to be imported.
3) Press [EXECUTE] key, and press [YES] key.

56-7

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to import the syslog data to a USB memory. |
| **Section** | |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select SYSLOG EXPORT to be imported.
3) Press [EXECUTE] key, and press [YES] key.

# 60

60-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the memory operations (read/write) of the MFP PWB. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
   Start the test.

| Result display | Description |
|---|---|
| OK | Success |
| NG | Fail |
| NONE | DIMM trouble |
| INVALID | Execution disable |

# 61

61-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the LSU polygon motor rotation and laser detection. |
| **Section** | LSU |

**Operation/Procedure**

1) 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) |
| LSU TESTRESULT NG: CL | Laser light emitting abnormality (C,M,Y) |

61-3

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the laser power |
| **Section** | |

**Operation/Procedure**

1) Select a target mode for adjustment with [COPY], [PR600/FAX] on the touch panel.
2) Select an adjustment target item with scroll key on the touch panel.
3) Enter the adjustment value using the 10-key.
4) 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.

| Mode | Item / Display | | Content | Setting range | Default value | | Destination linkage |
|---|---|---|---|---|---|---|---|
| | | | | | 26/31cpm machine | 36cpm machine | |
| COPY | A | LASER POWER MIDDLE(K1) | Laser power setting middle speed/K1 | 0 - 255 | 128 | 151 | x |
| | B | LASER POWER MIDDLE(K2) | Laser power setting middle speed/K2 | 0 - 255 | 128 | 151 | x |
| | C | LASER POWER MIDDLE(C1) | Laser power setting middle speed/C1 | 0 - 255 | 128 | 151 | x |
| | D | LASER POWER MIDDLE(C2) | Laser power setting middle speed/C2 | 0 - 255 | 128 | 151 | x |
| | E | LASER POWER MIDDLE(M1) | Laser power setting middle speed/M1 | 0 - 255 | 128 | 151 | x |
| | F | LASER POWER MIDDLE(M2) | Laser power setting middle speed/M2 | 0 - 255 | 128 | 151 | x |
| | G | LASER POWER MIDDLE(Y1) | Laser power setting middle speed/Y1 | 0 - 255 | 128 | 151 | x |
| | H | LASER POWER MIDDLE(Y2) | Laser power setting middle speed/Y2 | 0 - 255 | 128 | 151 | x |
| | I | LASER POWER LOW(K1) | Laser power setting low speed/K1 | 0 - 255 | 128 | 151 | x |
| | J | LASER POWER LOW(K2) | Laser power setting low speed/K2 | 0 - 255 | 128 | 151 | x |
| | K | LASER POWER LOW(C1) | Laser power setting low speed/C1 | 0 - 255 | 128 | 151 | x |
| | L | LASER POWER LOW(C2) | Laser power setting low speed/C2 | 0 - 255 | 128 | 151 | x |
| | M | LASER POWER LOW(M1) | Laser power setting low speed/M1 | 0 - 255 | 128 | 151 | x |
| | N | LASER POWER LOW(M2) | Laser power setting low speed/M2 | 0 - 255 | 128 | 151 | x |
| | O | LASER POWER LOW(Y1) | Laser power setting low speed/Y1 | 0 - 255 | 128 | 151 | x |
| | P | LASER POWER LOW(Y2) | Laser power setting low speed/Y2 | 0 - 255 | 128 | 151 | x |
| | Q | LASER POWER MIDDLE(BW1) | Laser power setting middle speed/BW1 | 0 - 255 | 128 | 151 | x |
| | R | LASER POWER MIDDLE(BW2) | Laser power setting middle speed/BW2 | 0 - 255 | 128 | 151 | x |
| | S | LASER POWER LOW(BW1) | Laser power setting low speed/BW1 | 0 - 255 | 128 | 151 | x |
| | T | LASER POWER LOW(BW2) | Laser power setting low speed/BW2 | 0 - 255 | 128 | 151 | x |
| | U | LASER DUTY MIDDLE(K) | Laser power setting middle speed/K | 0 - 255 | 0 | 0 | O |
| | V | LASER DUTY MIDDLE(C) | Laser duty select middle speed/C | 0 - 255 | 0 | 0 | O |
| | W | LASER DUTY MIDDLE(M) | Laser duty select middle speed/M | 0 - 255 | 0 | 0 | O |
| | X | LASER DUTY MIDDLE(Y) | Laser duty select middle speed/Y | 0 - 255 | 0 | 0 | O |
| | Y | LASER DUTY LOW(K) | Laser duty select low speed/K | 0 - 255 | 0 | 0 | O |
| | Z | LASER DUTY LOW(C) | Laser duty select low speed/C | 0 - 255 | 0 | 0 | O |
| | AA | LASER DUTY LOW(M) | Laser duty select low speed/M | 0 - 255 | 0 | 0 | O |
| | AB | LASER DUTY LOW(Y) | Laser duty select low speed/Y | 0 - 255 | 0 | 0 | O |
| | AC | LASER DUTY MIDDLE(BW) | Laser duty select middle speed/BW | 0 - 255 | 0 | 0 | O |
| | AD | LASER DUTY LOW(BW) | Laser duty select low speed/BW | 0 - 255 | 0 | 0 | O |
| PR600/FAX | A | LASER POWER MIDDLE(K1) | Laser power setting middle speed/K1 | 0 - 255 | 128 | 151 | x |
| | B | LASER POWER MIDDLE(K2) | Laser power setting middle speed/K2 | 0 - 255 | 128 | 151 | x |
| | C | LASER POWER MIDDLE(C1) | Laser power setting middle speed/C1 | 0 - 255 | 128 | 151 | x |
| | D | LASER POWER MIDDLE(C2) | Laser power setting middle speed/C2 | 0 - 255 | 128 | 151 | x |
| | E | LASER POWER MIDDLE(M1) | Laser power setting middle speed/M1 | 0 - 255 | 128 | 151 | x |
| | F | LASER POWER MIDDLE(M2) | Laser power setting middle speed/M2 | 0 - 255 | 128 | 151 | x |
| | G | LASER POWER MIDDLE(Y1) | Laser power setting middle speed/Y1 | 0 - 255 | 128 | 151 | x |
| | H | LASER POWER MIDDLE(Y2) | Laser power setting middle speed/Y2 | 0 - 255 | 128 | 151 | x |
| | I | LASER POWER LOW(K1) | Laser power setting low speed/K1 | 0 - 255 | 128 | 151 | x |
| | J | LASER POWER LOW(K2) | Laser power setting low speed/K2 | 0 - 255 | 128 | 151 | x |
| | K | LASER POWER LOW(C1) | Laser power setting low speed/C1 | 0 - 255 | 128 | 151 | x |
| | L | LASER POWER LOW(C2) | Laser power setting low speed/C2 | 0 - 255 | 128 | 151 | x |
| | M | LASER POWER LOW(M1) | Laser power setting low speed/M1 | 0 - 255 | 128 | 151 | x |
| | N | LASER POWER LOW(M2) | Laser power setting low speed/M2 | 0 - 255 | 128 | 151 | x |
| | O | LASER POWER LOW(Y1) | Laser power setting low speed/Y1 | 0 - 255 | 128 | 151 | x |
| | P | LASER POWER LOW(Y2) | Laser power setting low speed/Y2 | 0 - 255 | 128 | 151 | x |
| | Q | LASER POWER MIDDLE(BW1) | Laser power setting middle speed/BW1 | 0 - 255 | 128 | 151 | x |
| | R | LASER POWER MIDDLE(BW2) | Laser power setting middle speed/BW2 | 0 - 255 | 128 | 151 | x |
| | S | LASER POWER LOW(BW1) | Laser power setting low speed/BW1 | 0 - 255 | 128 | 151 | x |
| | T | LASER POWER LOW(BW2) | Laser power setting low speed/BW2 | 0 - 255 | 128 | 151 | x |

| Mode | Item / Display | | Content | Setting range | Default value | | Destination linkage |
|---|---|---|---|---|---|---|---|
| | | | | | 26/31cpm machine | 36cpm machine | |
| PR600/ FAX | U | LASER DUTY MIDDLE(K) | Laser duty select middle speed/K | 0 - 255 | 0 | 0 | O |
| | V | LASER DUTY MIDDLE(C) | Laser duty select middle speed/C | 0 - 255 | 0 | 0 | O |
| | W | LASER DUTY MIDDLE(M) | Laser duty select middle speed/M | 0 - 255 | 0 | 0 | O |
| | X | LASER DUTY MIDDLE(Y) | Laser duty select middle speed/Y | 0 - 255 | 0 | 0 | O |
| | Y | LASER DUTY LOW(K) | Laser duty select low speed/K | 0 - 255 | 0 | 0 | O |
| | Z | LASER DUTY LOW(C) | Laser duty select low speed/C | 0 - 255 | 0 | 0 | O |
| | AA | LASER DUTY LOW(M) | Laser duty select low speed/M | 0 - 255 | 0 | 0 | O |
| | AB | LASER DUTY LOW(Y) | Laser duty select low speed/Y | 0 - 255 | 0 | 0 | O |
| | AC | LASER DUTY MIDDLE(BW) | Laser duty select middle speed/BW | 0 - 255 | 0 | 0 | O |
| | AD | LASER DUTY LOW(BW) | Laser duty select low speed/BW | 0 - 255 | 0 | 0 | O |
| | AE | LASER DUTY MIDDLE(K 1BIT) | Laser duty select middle speed/K | 0 - 255 | 0 | 0 | O |
| | AF | LASER DUTY MIDDLE(C 1BIT) | Laser duty select middle speed/C | 0 - 255 | 0 | 0 | O |
| | AG | LASER DUTY MIDDLE(M 1BIT) | Laser duty select middle speed/M | 0 - 255 | 0 | 0 | O |
| | AH | LASER DUTY MIDDLE(Y 1BIT) | Laser duty select middle speed/Y | 0 - 255 | 0 | 0 | O |
| | AI | LASER DUTY LOW(K 1BIT) | Laser duty select low speed/K | 0 - 255 | 0 | 0 | O |
| | AJ | LASER DUTY LOW(C 1BIT) | Laser duty select low speed/C | 0 - 255 | 0 | 0 | O |
| | AK | LASER DUTY LOW(M 1BIT) | Laser duty select low speed/M | 0 - 255 | 0 | 0 | O |
| | AL | LASER DUTY LOW(Y 1BIT) | Laser duty select low speed/Y | 0 - 255 | 0 | 0 | O |
| | AM | LASER DUTY MIDDLE(BW 1BIT) | Laser duty select middle speed/BW | 0 - 255 | 0 | 0 | O |
| | AN | LASER DUTY LOW(BW 1BIT) | Laser duty select low speed/BW | 0 - 255 | 0 | 0 | O |
| PR1200 | A | LASER POWER MIDDLE(K1) | Laser power setting middle speed/K1 | 0 - 255 | 128 | 151 | x |
| | B | LASER POWER MIDDLE(K2) | Laser power setting middle speed/K2 | 0 - 255 | 128 | 151 | x |
| | C | LASER POWER MIDDLE(C1) | Laser power setting middle speed/C1 | 0 - 255 | 128 | 151 | x |
| | D | LASER POWER MIDDLE(C2 | Laser power setting middle speed/C2 | 0 - 255 | 128 | 151 | x |
| | E | LASER POWER MIDDLE(M1) | Laser power setting middle speed/M1 | 0 - 255 | 128 | 151 | x |
| | F | LASER POWER MIDDLE(M2) | Laser power setting middle speed/M2 | 0 - 255 | 128 | 151 | x |
| | G | LASER POWER MIDDLE(Y1) | Laser power setting middle speed/Y1 | 0 - 255 | 128 | 151 | x |
| | H | LASER POWER MIDDLE(Y2) | Laser power setting middle speed/Y2 | 0 - 255 | 128 | 151 | x |
| | I | LASER POWER LOW(K1) | Laser power setting low speed/K1 | 0 - 255 | 128 | 151 | x |
| | J | LASER POWER LOW(K2) | Laser power setting low speed/K2 | 0 - 255 | 128 | 151 | x |
| | K | LASER POWER LOW(C1) | Laser power setting low speed/C1 | 0 - 255 | 128 | 151 | x |
| | L | LASER POWER LOW(C2) | Laser power setting low speed/C2 | 0 - 255 | 128 | 151 | x |
| | M | LASER POWER LOW(M1) | Laser power setting low speed/M1 | 0 - 255 | 128 | 151 | x |
| | N | LASER POWER LOW(M2) | Laser power setting low speed/M2 | 0 - 255 | 128 | 151 | x |
| | O | LASER POWER LOW(Y1) | Laser power setting low speed/Y1 | 0 - 255 | 128 | 151 | x |
| | P | LASER POWER LOW(Y2) | Laser power setting low speed/Y2 | 0 - 255 | 128 | 151 | x |
| | Q | LASER POWER MIDDLE(BW1) | Laser power setting middle speed/BW1 | 0 - 255 | 128 | 151 | x |
| | R | LASER POWER MIDDLE(BW2) | Laser power setting middlespeed/BW2 | 0 - 255 | 128 | 151 | x |
| | S | LASER POWER LOWÅi(BW1) | Laser power setting low speed/BW1 | 0 - 255 | 128 | 151 | x |
| | T | LASER POWER LOW(BW2) | Laser power setting low speed/BW2 | 0 - 255 | 128 | 151 | x |
| | U | LASER DUTY MIDDLE(K) | Laser duty select middle speed/K | 0 - 255 | 0 | 0 | x |
| | V | LASER DUTY MIDDLE(C) | Laser duty select middle speed/C | 0 - 255 | 0 | 0 | x |
| | W | LASER DUTY MIDDLE(M) | Laser duty select middle speed/M | 0 - 255 | 0 | 0 | x |
| | X | LASER DUTY MIDDLE(Y) | Laser duty select middle speed/Y | 0 - 255 | 0 | 0 | x |
| | Y | LASER DUTY LOW(K) | Laser duty select low speed/K | 0 - 255 | 0 | 0 | x |
| | Z | LASER DUTY LOW(C) | Laser duty select low speed/C | 0 - 255 | 0 | 0 | x |
| | AA | LASER DUTY LOW(M) | Laser duty select low speed/M | 0 - 255 | 0 | 0 | x |
| | AB | LASER DUTY LOW(Y) | Laser duty select low speed/Y | 0 - 255 | 0 | 0 | x |
| | AC | LASER DUTY MIDDLE(BW) | Laser duty select middle speed/BW | 0 - 255 | 0 | 0 | x |
| | AD | LASER DUTY LOW(BW) | Laser duty select low speed/BW | 0 - 255 | 0 | 0 | x |

61-4

**Purpose** Adjustment

**Function (Purpose)** Used to print the print image skew adjustment pattern. (LSU unit)

**Section**

**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 |

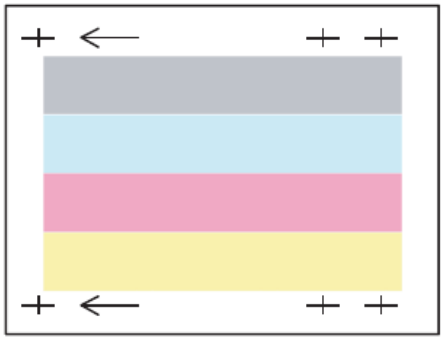
| Item/Display | | | Content | | | Default value |
|---|---|---|---|---|---|---|
| B | PAPER | MFT | Tray selection | 1 | Manual paper feed | 2 (Paper feed tray 1) |
| | | CS1 | | 2 | Paper feed tray 1 | |
| | | CS2 | | 3 | Paper feed tray 2 | |
| | | CS3 | | 4 | Paper feed tray 3 | |
| | | CS4 | | 5 | Paper feed tray 4 | |
| | | LCC | | 6 | LCC | |

61-11

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to correct the laser power automatically. |
| **Section** | |

**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.

61-12

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Laser power manual correction |
| **Section** | 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.

61-13

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to clear the laser power correction value. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

| Reference value reset item |
|---|
| Laser power automatic correction amount (K) 32 data (point) |
| Laser power automatic correction amount (C) 32 data (point) |
| Laser power automatic correction amount (M) 32 data (point) |
| Laser power automatic correction amount (Y) 32 data (point) |
| Laser power manual correction amount (K) 32 data (point) |
| Laser power manual correction amount (C) 32 data (point) |
| Laser power manual correction amount (M) 32 data (point) |
| Laser power manual correction amount (Y) 32 data (point) |

# 62

62-1

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to format the hard disk/SD Card. (HDD: Excluding the Operation manual and the watermark data) (SD Card: User data) |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

   Used to execute the HDD/SD Card format.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check read/write of the hard disk (partial). |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

62-3

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check read/write of the hard disk (all areas). |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

   Read/write operations are performed.

62-6

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to perform the self diagnostics of the hard disk. |
| **Section** | |

**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 cheek 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 (RESULT:0)" is displayed.
Abnormal end → "NG (RESULT: Other than 0)" is displayed.

* If the simulation cannot be executed or terminated abnormally for some reason, "ERROR" is displayed on the corresponding section.

62-7

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to print the hard disk self diagnostics error log. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.

ERROR LOG SECTOR of the SMART function is executed, and the result is printed.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-8

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to format the hard disk/SD Card. (HDD: Excluding the Operation Manual, the watermark data, and the system area) (SD Card: User data) |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.

* When the HDD formatting (except for the system area) is not completed normally, "HDD FORMAT (EXCEPT SYSTEM AREA) NG" is displayed.

62-10

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the job completion list data. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to delete the job log data.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-11

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to delete the document filing data. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to delete the document filing data.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-12

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set Enable/Disable of auto format in a hard disk trouble. |
| **Section** | |

**Operation/Procedure**

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) |

62-13

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to format the hard disk. (Operation Manual, watermark data only) |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   The operation manual data are deleted.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-14

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to delete the document filing management data. |
| **Section** | HDD |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   The document filing management data are cleared.
   At the same time, the job log data are also cleared.

This simulation is executed in the following trouble cases.

* The document filing function does not work normally.
* The job log is not recorded normally.

**Note**

This simulation may not function with some firmware versions.

In such a case, the firmware must be upgraded to the latest version.

62-20

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Used to check the operation of the mirroring hard disk. |
| **Section** | Mirroring hard disk |

**Operation/Procedure**

Enter the simulation mode, and the operation status of the HDD is displayed.

The status display is renewed in every second.

| Display | Content description |
|---|---|
| OK | Normal operation |
| NONE | Not connected |
| REBUILDING | Data rebuilding |
| ERROR | Error occurrence |
| TROUBLE | Trouble |

# 63

63-1

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to display the shading correction result. |
| **Section** | Scanner |

**Operation/Procedure**

1) Select a target color to display with [R] [G] [B] on the touch panel.

**[RSPF]**

| Display item | Description | Remarks |
|---|---|---|
| ANALOG GAIN ODD | Analog gain adjustment value (odd number) | |
| ANALOG GAIN EVEN | Analog gain adjustment value (even number) | |
| DIGITAL GAIN ODD | Digital gain adjustment value (odd number) | |
| DIGITAL GAIN EVEN | Digital gain adjustment value (even number) | |
| SMP AVE ODD | Reference plate sampling average value (ODD) | |
| SMP AVE EVEN | Reference plate sampling average value (EVEN) | |
| TARGET | Target value | |
| BLACK LEVEL | Black output level | |
| ERROR CODE | Error code (0, 1 - 14) | 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: Reserve |
| | | 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. |
| | | 13: Register check error (White booting/Before gain) |
| | | 14: Register check error (Before light quantity correction) |
| RSPF BACK WHITE LEVEL 1ST | First scan RSPF back surface white reference level | |
| RSPF BACK WHITE LEVEL 2ND | Second scan RSPF back surface white reference level | |

63-2

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to perform shading. |
| **Section** | |

**Operation/Procedure**

1) (When RSPF model)
   Press [EXECUTE] key.
   Used to perform shading.

When the operation is completed, [EXECUTE] key returns to the normal display.

63-3

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to perform scanner (CCD) color balance and gamma auto adjustment. |
| **Section** | 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.
2) Press [EXECUTE] key.
   The scanner (CCD) color balance automatic adjustment is performed.

When the operation is completed, [EXECUTE] key returns to the normal display.

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

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to display the SIT chart patch density. |
| **Section** | |

**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.
2) Press [EXECUTE] key.
   The patch of the SIT chart is scanned.
   When the operation is completed, [EXECUTE] key returns to the normal display.
3) 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 |
| SIT CHECK | SIT chart scan data/Check result |

Select an target display color with [R] [G] [B] keys.

63-5

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to perform the scanner (CCD) color balance and gamma default setting. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key, and press [YES] key
2) The scanner (CCD) color balance and gamma are set to the default.

63-6

| | |
|---|---|
| **Purpose** | Adjustment/Setting/Operation data check |
| **Function (Purpose)** | Used to display the scan level and the density level of the copy color balance adjustment patch. |
| **Section** | |

**Operation/Procedure**

1) Set the color balance adjustment pattern sheet printed with SIM46-21 on the document table.
2) Press [EXECUTE] key.
   The patch image of the adjustment pattern sheet is scanned.
   Select a target color with [C] [M] [Y] [K] key.

63-7

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to register the service target of the copy mode auto color balance adjustment. |
| **Section** | |

**Operation/Procedure**

1) Press [SETUP] key on the touch panel.
2) Set the color balance adjustment pattern sheet printed with SIM46-21 on the document table.
3) Press [EXECUTE] key.
   The patch image of the adjustment pattern sheet is scanned.
4) Press [OK] key.
   The service target of the copy mode automatic color balance adjustment is registered according to the patch image of the scanned adjustment pattern sheet.
   The registered color balance and the density are displayed.
   Select a target color with [C] [M] [Y] [K] key.

Important

This simulation is executed only when the copy color balance is manually adjusted.

| | |
|---|---|
| B | Point B target value |
| C | Point C target value |
| D | Point D target value |
| E | Point E target value |
| F | Point F target value |
| G | Point G target value |
| H | Point H target value |
| I | Point I target value |
| J | Point J target value |
| K | Point K target value |
| L | Point L target value |
| M | Point M target value |
| N | Point N target value |
| O | Point O target value |
| BASE | Background sampling value |

63-8

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the default of the service target of the copy mode auto color balance adjustment. |
| **Section** | |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   The service target of the copy mode automatic color balance adjustment is set to the default.
   The service color balance target and the color balance target for the user color balance adjustment are set to the same color balance as the factory color balance target.

63-11

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the target color balance of the copy mode auto color balance adjustment. |
| **Section** | |

**Operation/Procedure**

1) Select the target color balance with the touch panel.

| Item/Display | | Content | Default value |
|---|---|---|---|
| Target color balance | DEF1 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual copy mode and print is made. | DEF 1 |
| | DEF2 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made. | |
| | DEF3 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made. | |

# 64

64-1

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Test print. (Self print) (Color mode) |
| **Section** | |

**Operation/Procedure**

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a target print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

| | Item/Display | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| A | PRINT PATTERN (1, 2, 9 - 11, 17 - 19, 21, 22, 29) | | Specification of the print pattern (* For details, refer to the description below.) | | 1 - 58 (Printable only 1, 2, 9 - 11, 17 - 19, 21, 22, 29) | | 1 |
| B | DOT1 (DOT1>=2 IF A: 2,11) | | Setting of print dot number (M parameter) (Self print pattern: m by n) | | 1-255 (Pattern 2, 11: 2-255 except above: 1-255) | | 1 |
| C | DOT2 (DOT2>=2 IF A: 2,11) | | Setting of blank dot number (N parameter) (Self print pattern: m by n) | | 0-255 (Pattern2, 11: 2-255 except above: 0-255) | | 254 |
| D | DENSITY (FIXED "255" IF A: 9) | | Used to specify the print gradation. | | 1-255 (Pattern 9: 255 Fixed except above:1-255) | | 255 |
| E | MULTI COUNT | | Number of print | | 1 - 999 | | 1 |
| F | EXPOSURE (2 - 8 IF A: 17 - 19) | THROUGH | Exposure mode specification | No process (through) | 1-8 (Pattern 17-19: 2-8 except above:1-8) | 1 | 8 (STANDARD DITHER) |
| | | CHAR/PIC | | Text/Printed Photo | | 2 | |
| | | CHAR/PRPIC | | Text/ Photograph | | 3 | |
| | | CHAR | | Text | | 4 | |
| | | PRINT PIC | | Printed Photo | | 5 | |
| | | PRINT PAPER | | Photograph | | 6 | |
| | | MAP | | Map | | 7 | |
| | | STANDARD DITHER | | Dither without correction | | 8 | |
| G | 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 | |
| H | DUPLEX | YES | Duplex print selection | Yes | 0 - 1 | 0 | 1 (NO) |
| | | NO | | No | | 1 | |
| I | PAPER TYPE | PLAIN | Paper type | Standard paper | 1 - 6 | 1 | 1 (PLAIN) |
| | | HEAVY | | Heavy paper | | 2 | |
| | | OHP | | OHP | | 3 | |
| | | ENVELOPE | | Envelope | | 4 | |
| | | HEAVY2 | | Heavy paper 2 | | 5 | |
| | | GLOSSY | | Glossy paper | | 6 | |
| | | HEAVY3 | | Heavy paper 3 | | 7 | |

**Print pattern of Item A**

| Pattern No. | Content | Pattern generating section | NOTE |
|---|---|---|---|
| 1 | Grid pattern | LSU-ASIC | • When the print width is 100 or more and all colors are selected, print is made in the three colors (CMY).<br>• Print is started at 4mm from the paper lead edge.<br>• Writing regardless of pound. The first one is fixed to LD1. |
| 2 | Dot print | | - |
| 9 | Each color 10% area (A4/ A4R) density print | | • Each interval is 41.86mm (989dot).<br>• If m is not in the range of 1 - 13%, it is rounded.<br>• K print is started at 17mm from the paper lead edge. |
| 10 | 8-color belt print | | |
| 11 | 4-color dot print (sub scan) | | • For every 1/4 of the sub scanning direction paper size, print is made for each color.<br>• When N=0, print of all the background is made in 4 colors. |
| 17 | All background (halftone) | Halftone (IMG-ASIC rear process) | • When all colors are selected, print is made in CMY. |
| 18 | 256 gradations pattern (Other dither) | | • When all colors are selected, print is made in CMY.<br>• 16 gradations are printed in the main scanning direction, and feedback is made, and the next 16 gradations are printed. (16 x 16 patch print)<br>• Print is started at 5mm from the paper lead edge.<br>• Print is made from 255 gradations, and 0-254 gradations are printed. |
| 19 | 256 gradations pattern (For text dither) | | • Print is made from 255 gradations, and 0-254 gradations are printed. |
| 21 | 4-point dot print (main scan) | LSU-ASIC | • For every 1/4 of the main scanning direction paper size, print is made for each color.<br>• When N=0, print of all the background is made in 4 colors. |
| 22 | Slant line | LSU-ASIC | |
| 29 | Dot print 1200dpi | LSU-ASIC | • M=1(Fixed), N=1or3 |

64-2

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Test print. (Self print) (Monochrome mode) |
| **Section** | |

**Operation/Procedure**

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

| | Item/Display | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| A | PRINT PATTERN (1, 2, 9 - 11, 17 - 19, 21, 22, 29) | | Print pattern specification (* For details, refer to the description below.) | | 1 - 58 (Printable only 1, 2, 9 - 11, 17 - 19, 21, 22, 29) | | 1 |
| B | DOT1 (DOT1>=2 IF A: 2,11) | | Setting of print dot number (M parameter) (Self print pattern: m by n) | | 1-255 (Pattern 2, 11: 2-255 except above: 1-255) | | 1 |
| C | DOT2 (DOT2>=2 IF A: 2,11) | | Setting of blank dot number (N parameter) (Self print pattern: m by n) | | 0-255 (Pattern2, 11: 2-255 except above: 0-255) | | 254 |
| D | DENSITY (FIXED "255" IF A: 9) | | Used to specify the print gradation. | | 1-255 (Pattern 9: 255 Fixed except above:1-255) | | 255 |
| E | MULTI COUNT | | Number of print | | 1 - 999 | | 1 |
| F | EXPOSURE (2 - 8 IF A: 17 - 19) | THROUGH | Exposure mode specification | No process (through) | 1-8 (Pattern 17-19: 2-8 except above: 1-8) | 1 | 8 (STANDARD DITHER) |
| | | CHAR/PIC | | Text/Printed Photo | | 2 | |
| | | CHAR/PRPIC | | Text/ Photograph | | 3 | |
| | | CHAR | | Text | | 4 | |
| | | PRINT PIC | | Printed Photo | | 5 | |
| | | PRINT PAPER | | Photograph | | 6 | |
| | | MAP | | Map | | 7 | |
| | | STANDARD DITHER | | Dither without correction | | 8 | |
| G | 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 | |
| H | DUPLEX | YES | Duplex print selection | Yes | 0 - 1 | 0 | 1 (NO) |
| | | NO | | No | | 1 | |

| Item/Display | | | Content | | Setting range | | Default value |
|---|---|---|---|---|---|---|---|
| I | PAPER TYPE | PLAIN | Paper type | Standard paper | 1 - 6 | 1 | 1 (PLAIN) |
| | | HEAVY | | Heavy paper | | 2 | |
| | | OHP | | OHP | | 3 | |
| | | ENVELOPE | | Envelope | | 4 | |
| | | HEAVY2 | | Heavy paper 2 | | 5 | |
| | | GLOSSY | | Glossy paper | | 6 | |
| | | HEAVY3 | | Heavy paper 3 | | 7 | |

**Print pattern of Item A**

| Pattern No. | Content | Pattern generating section | NOTE |
|---|---|---|---|
| 1 | Grid pattern | LSU-ASIC | • When the print width is 100 or more and all colors are selected, print is made in the three colors (CMY).<br>• Print is started at 4mm from the paper lead edge.<br>• Writing regardless of pound. The first one is fixed to LD1. |
| 2 | Dot print | | – |
| 9 | Each color 10% area (A4/ A4R) density print | | • Each interval is 41.86mm (989dot).<br>• If m is not in the range of 1 - 13%, it is rounded.<br>• K print is started at 17mm from the paper lead edge. |
| 10 | 8-color belt print | | |
| 11 | 4-color dot print (sub scan) | | • For every 1/4 of the sub scanning direction paper size, print is made for each color.<br>• When N=0, print of all the background is made in 4 colors. |
| 17 | All background (halftone) | Halftone (IMG-ASIC rear process) | – |
| 18 | 256 gradations pattern (Other dither) | | – |
| 19 | 256 gradations pattern (For text dither) | | – |
| 21 | 4-point dot print (main scan) | LSU-ASIC | • For every 1/4 of the main scanning direction paper size, print is made for each color.<br>• When N=0, print of all the background is made in 4 colors. |
| 22 | Slant line | LSU-ASIC | |
| 29 | Dot print 1200dpi | LSU-ASIC | • M=1(Fixed), N=1or3 |

64-4

**Purpose** Operation test/check

**Function (Purpose)** Printer test print. (Self print)

**Section**

**Operation/Procedure**

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a target print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
3) The test print (self print) is performed.

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| A | PRINT PATTERN | | Specification of the print pattern (* For details, refer to the description below.) | | 1 - 6 | 6 |
| B | DENSITY | | Used to specify the print gradation. | | 1 - 255 | 128 |
| C | MULTI COUNT | | Number of print | | 1 - 999 | 1 |
| D | PAPER | MFT | Paper feed tray selection | Manual paper feed | 1 | 3 (CS2) |
| | | CS1 | | Tray 1 | 2 | |
| | | CS2 | | Tray 2 | 3 | |
| | | CS3 | | Tray 3 | 4 | |
| | | CS4 | | Tray 4 | 5 | |
| | | LCC | | LCC | 6 | |
| E | HALFTONE | LOW | Halftone | Low line number | 0 | 0 (LOW) |
| | | HIGH | | High line number | 1 | |
| | | GLOSSY | | Glossy paper | 2 | |
| F | QUALITY | STANDARD | Image quality setting | Standard | 0 | 1 (HIGHQUALITY) |
| | | HIGHQUALITY | | High quality | 1 | |
| | | FINE | | Fine (26cpm/36cpm/31cpm(A) machine) | 2 | |
| G | DITHER | STRAIGHT | Specification of dither correction | Straight | 0 | 1 (CALIB) |
| | | CALIB | | Calibration | 1 | |

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| H | PAPER TYPE | PLAIN | Paper type | Standard paper | 0 | 0 |
| | | HEAVY | | Heavy paper | 1 | |
| | | HEAVY2 | | Heavy paper 2 | 2 | |
| | | GLOSSY | | Glossy paper | 3 | |
| | | HEAVY3 | | Heavy paper 3 | 4 | |

**Print pattern of Item A**

| Pattern No. | Content |
|---|---|
| 1 | 256 gradations pattern (COLOR) |
| 2 | 256 gradations pattern (B/W) |
| 3 | 256 gradations pattern (COLOR) (Y-M-C-K continuous) |
| 4 | Halftone pattern (COLOR) |
| 5 | Halftone pattern (B/W) |
| 6 | Background dot print |

64-5

| | |
|---|---|
| **Purpose** | Operation test/check |
| **Function (Purpose)** | Printer test print. (Self print) (PCL) |
| **Section** | |

**Operation/Procedure**

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a target print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| A | PRINT PATTERN | | Print pattern specification | | 1 - 5 | 3 |
| B | DENSITY | | Print gradation specification | | 1 - 255 | 255 |
| C | MULTI COUNT | | Number of print | | 1 - 999 | 1 |
| D | PAPER | MFT | Paper feed tray selection | Manual paper feed | 1 | 2 (CS1) |
| | | CS1 | | Tray 1 | 2 | |
| | | CS2 | | Tray 2 | 3 | |
| | | CS3 | | Tray 3 | 4 | |
| | | CS4 | | Tray 4 | 5 | |
| | | LCC | | LCC | 6 | |
| E | HALFTONE | LOW(IMAGE) | Halftone | For Photo | 0 | 3 (AUTO) |
| | | HIGH(TEXT) | | For text | 1 | |
| | | GLOSSY | | For glossy paper | 2 | |
| | | AUTO | | Auto (for photo/text) | 3 | |
| F | QUALITY | STANDARD | Image quality setting | Standard (600dpi, 1bit) | 0 | 1 (HIGHQUALITY) |
| | | HIGHQUALITY | | High quality (600dpi, 4bit) | 1 | |
| | | FINE | | Fine (1200dpi, 1bit) (26cpm/36cpm/31cpm(A) machine) | 2 | |
| G | DITHER | STRAIGHT | Specification of dither correction | 0: Straight | 0 | 1 |
| | | CALIB | | 1: Calibration | 1 | |
| H | PAPER TYPE | PLAIN | Paper type | Standard paper | 0 | 0 (PLAIN) |
| | | HEAVY | | Heavy paper | 1 | |
| | | HEAVY2 | | Heavy paper 2 | 2 | |
| | | GLOSSY | | Glossy paper | 3 | |
| | | HEAVY3 | | Heavy paper 3 | 4 | |
| I | INTENT | PERCEPTUAL | Rendering indent | Perceptual | 0 | 0 (PERCEPTUAL) |
| | | COLORIMETRIC | | Color metric | 1 | |
| | | SATURATION | | Saturation | 2 | |
| J | OUTPUT PROFILE | SHARP | Output profile | Standard | 0 | 0 (SHARP) |
| | | STANDARD | | Photo image | 1 | |
| | | GRAPHICS | | Graphics | 2 | |
| K | RGB SOURCE PROFILE | SRGB | RGB source profile | SRGB | 0 | 0 (SRGB) |
| | | GAMMA1.6 | | Gamma 1.6 | 1 | |
| | | GAMMA1.8 | | Gamma 1.8 | 2 | |
| | | GAMMA2.0 | | Gamma 2.0 | 3 | |
| | | GAMMA2.6 | | Gamma 2.6 | 4 | |
| | | GAMMA3.0 | | Gamma 3.0 | 5 | |
| | | TONER SAVE | | For TONER SAVE | 6 | |
| L | GRAY COMPENSATION | K | Gray print method | Print method K | 0 | 0 (K) |
| | | KCMY | | KCMY | 1 | |

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| M | PURE BLACK PRINT | ON | Black monochrome print | set. | 0 | 0 (ON) |
| | | OFF | | not set. | 1 | |
| N | TONER SAVE MODE | OFF | Monochrome toner save | not set. | 0 | 0 (OFF) |
| | | ON | | set. | 1 | |

**Print pattern of Item A**

| Pattern No. | Content |
|---|---|
| 1 | COLOR |
| 2 | B/W |
| 3 | Continuous COLOR,B/W |
| 4 | Service chart (COLOR) |
| 5 | Service chart (B/W) |

64-6

**Purpose** Operation test/check

**Function (Purpose)** Printer test print. (Self print) (PS)

**Section**

**Operation/Procedure**

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
   Select a print color with [K] [C] [M] [Y] key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| A | PRINT PATTERN | | Print pattern specification | | 1 - 2 | 1 |
| B | DENSITY | | Print gradation specification | | 1 - 255 | 255 |
| C | MULTI COUNT | | Number of print | | 1 - 999 | 1 |
| D | PAPER | MFT | Paper feed tray selection | Manual paper feed | 1 | 2 (CS1) |
| | | CS1 | | Tray 1 | 2 | |
| | | CS2 | | Tray 2 | 3 | |
| | | CS3 | | Tray 3 | 4 | |
| | | CS4 | | Tray 4 | 5 | |
| | | LCC | | LCC | 6 | |
| E | HALFTONE | LOW(IMAGE) | Halftone | For Photo | 0 | 3 (AUTO) |
| | | HIGH(TEXT) | | For text | 1 | |
| | | GLOSSY | | For glossy paper | 2 | |
| | | AUTO | | Auto (for photo/text) | 3 | |
| F | QUALITY | STANDARD | Image quality setting | Standard (600dpi, 1bit) | 0 | 1 (HIGHQUALITY) |
| | | HIGHQUALITY | | High quality (600dpi, 4bit) | 1 | |
| | | FINE | | Fine (1200dpi, 1bit) (26cpm/36cpm/31cpm(A) machine) | 2 | |
| G | DITHER | STRAIGHT | Specification of dither correction | 0: Straight | 0 | 1 (CALIB) |
| | | CALIB | | 1: Calibration | 1 | |
| H | PAPER TYPE | PLAIN | Paper type | Standard paper | 0 | 0 (PLAIN) |
| | | HEAVY | | Heavy paper | 1 | |
| | | HEAVY2 | | Heavy paper 2 | 2 | |
| | | GLOSSY | | Glossy paper | 3 | |
| | | HEAVY3 | | Heavy paper 3 | 4 | |
| I | INTENT | PERCEPTUAL | Rendering indent | Perceptual | 0 | 0 (PERCEPTUAL) |
| | | COLORIMETRIC | | Color metric | 1 | |
| | | SATURATION | | Saturation | 2 | |
| J | OUTPUT PROFILE | SHARP | Output profile | Standard | 0 | 0 (SHARP) |
| | | STANDARD | | Photo image | 1 | |
| | | GRAPHICS | | Graphics | 2 | |
| K | RGB SOURCE PROFILE | SRGB | RGB source profile | SRGB | 0 | 0 (SRGB) |
| | | GAMMA1.6 | | Gamma 1.6 | 1 | |
| | | GAMMA1.8 | | Gamma 1.8 | 2 | |
| | | GAMMA2.0 | | Gamma 2.0 | 3 | |
| | | GAMMA2.6 | | Gamma 2.6 | 4 | |
| | | GAMMA3.0 | | Gamma 3.0 | 5 | |
| | | TONER SAVE | | For TONER SAVE | 6 | |

| Item/Display | | | Content | | Setting range | Default value |
|---|---|---|---|---|---|---|
| L | GRAY COMPENSATION | K | Gray print method | Print method K only | 0 | 0 (K) |
| | | KCMY | | KCMY | 1 | |
| M | PURE BLACK PRINT | ON | Black monochrome print | set. | 0 | 0 (ON) |
| | | OFF | | not set. | 1 | |
| N | TONER SAVE MODE | OFF | Monochrome toner save | not set. | 0 | 0 (OFF) |
| | | ON | | set. | 1 | |
| O | CMY SIMULATION | OFF | CMYK simulation | OFF | 0 | 0 (OFF) |
| | | SWOP | | SWOP | 1 | |
| | | EURO | | EURO | 2 | |
| | | JAPAN COLOR | | JAPAN COLOR | 3 | |
| | | TONER SAVE | | For TONER SAVE | 4 | |

**Print pattern of Item A**

| Pattern No. | Content |
|---|---|
| 1 | COLOR |
| 2 | B/W |

64-7

**Purpose** Operation test/check

**Function (Purpose)** Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-21 is printed.)

**Section**

**Operation/Procedure**

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
2) Press [EXECUTE] key.
   The adjustment pattern of SIM46-21 is printed.

| Item/Display | | | Content | | Setting range | Default value | Writing |
|---|---|---|---|---|---|---|---|
| A | COPIES | | Number of print | | 1 - 999 | 1 | No |
| B | PROC ADJ | YES | 0 | The halftone process control correction value is reflected. | 0 - 1 | 1 | Yes |
| | | NO | 1 | The halftone process control correction value is not reflected. | | | |

# 65

65-1

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the touch panel (LCD display section) detection coordinates.

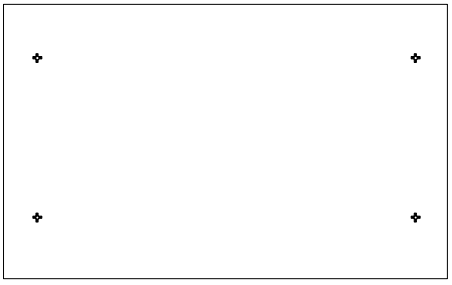
**Section** Operation panel section

**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.



65-2

**Purpose** Operation check/test

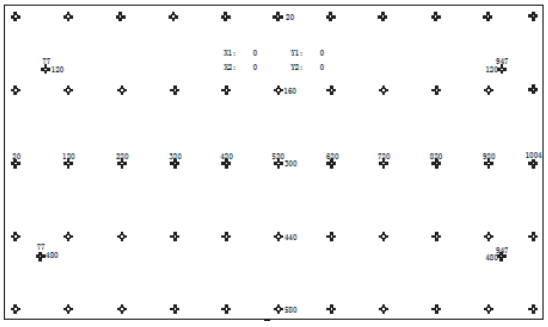
**Function (Purpose)** Used to display the touch panel (LCD display section) detection coordinates.

**Section**

**Operation/Procedure**

Touch the touch panel.

The coordinates X (horizontal direction) and Y (vertical direction) of the touched position is displayed in real time.



65-5

| | |
|---|---|
| **Purpose** | Operation check/test |
| **Function (Purpose)** | Used to check the operation panel key input. |
| **Section** | |

**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.

**<Check target key>**

| 10 Inch LCD model |
|---|
| HOME |

# 66

66-1

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to display the FAX-related soft SW (2 - 150) on the LCD to allow changing the soft SW while checking with the LCD. |
| **Section** | FAX |

**Operation/Procedure**

1) Enter the [SW NO] with 10-key.
   * When [C] key is pressed, the entered value of [SW NO] is cleared.
2) Press [DATA] button.
   The soft SW data entered in procedure 1) is displayed.
   * When [SW NO] button is pressed, the display returns to the initial screen.
3) Enter the number corresponding to the bit to be changed with 10-key.
   * [1] → [0]
     [0] → [1]
4) When [EXECUTE] button is pressed, it is highlighted and the setting is saved.
   After saving the setting, [EXECUTE] button returns to the normal display.

66-2

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to enter a country code and set the default value for the country code. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-02, the following screen is displayed.
   * When [DEST CODE] button is pressed, the display is shifted to the country code list screen.
   * The currently set country code is displayed in the column of "PRESENT:".
2) Enter the country code (8 digits) with 10-key([0]/[1]). The entered country code is displayed in the column of "NEW:" and [SET] key becomes active.
   * When [C] key is pressed, the column of “NEW:” is cleared.
3) When [SET] button is pressed after entering the country code, [EXECUTE] button becomes active. The country code is displayed in the column of "PRESENT:", and the column of "NEW:" is cleared.
4) When [EXECUTE] button is pressed, it is highlighted and [YES] and [NO] buttons become active. The country name is displayed on the tile line.
5) When [YES] button is pressed, it is highlighted and the soft SW corresponding to the country code is initialized.
6) After completion of initialization of the soft SW, [EXECUTE], [YES], and [NO] buttons become inactive.

**Operation/Procedure (Shifting to the country page)**

* When [DEST CODE] button is pressed on the initial screen, the display is shifted to the country code list screen.
  Use scroll keys to select the country select page.

**<Country code list>**

| | |
|---|---|
| JAPAN | 00000000 |
| U.S.A. | 10110101 |
| AUSTRALIA | 00001001 |
| U.K. | 10110100 |
| FRANCE | 00111101 |
| GERMANY | 00000100 |
| SWEDEN | 10100101 |
| NEWZEALAND | 01111110 |
| CHINA | 00100110 |
| SINGAPORE | 10011100 |
| TW | 11111110 |
| MIDDLEANDNEAREAST | 11111101 |
| SLOVAKIA | 11111100 |
| OTHER3 | 11111011 |
| FINLAND | 00111100 |
| NORWAY | 10000010 |
| DENMARK | 00110001 |
| NETHERLANDS | 01111011 |
| ITALY | 01011001 |
| SWITZERLAND | 10100110 |
| AUSTRIA | 00001010 |
| INDONESIA | 01010100 |
| THAILAND | 10101001 |
| MALAYSIA | 01101100 |
| INDIA | 01010011 |
| PHILIPPINES | 10001001 |
| HONGKONG | 01010000 |
| RUSSIA | 10111000 |
| SOUTHAFRICA | 10011111 |
| SPAIN | 10100000 |
| PORTUGUESE | 10001011 |
| LUXEMBURG | 01101001 |
| BELGIUM | 00001111 |
| CZECH | 00101110 |
| HUNGARY | 01010001 |
| GREECE | 01000110 |
| POLAND | 10001010 |
| BRAZIL | 00010110 |

66-3

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to check read/write of the EEPROM and the SDRAM on the MODEM controller and display the result. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-03, the following screen is displayed.
   * Select the page of memory check item with the scroll key.
2) When the memory check item button is selected, the display is shifted to the memory check screen.
3) When [EXECUTE] button is pressed, it is highlighted and the memory check of the selected item is started.
4) After completion of memory check, [EXECUTE] button returns to the normal display and the result of memory check is displayed.

**Memory check status**

| | | |
|---|---|---|
| NO CHECK | No check | |
| CHECKING | During checking | |
| OK | Check complete OK | |
| NG A## | Check complete NG | Error occurring address or data line is displayed for each item. |

**Check item**

| | Check memory item | Remark |
|---|---|---|
| 1 | All Memory Device Check (once) | All the items are checked once. |
| 2 | MODEM EEPROM <1> (once) | Check only once in LINE1 |
| 3 | MODEM EEPROM <1> (repeat) | Repeat check in LINE1 |
| 4 | MODEM SDRAM <1> (once) | Check only once in LINE1 |
| 5 | MODEM SDRAM<1>(repeat) | Repeat check in LINE1 |

The number in < > indicates the line.

66-4

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the selected signals to the line and the main unit speaker. (Send level: max.) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-04, the screen on the right is displayed. (Default, left upper selected.)
   * Use scroll keys to switch the send mode select page.
2) When a button of a signal to be sent is selected, it is highlighted and the previously set button is shifted to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To end signal send:
   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

**<Signal send table>**

| | | | |
|---|---|---|---|
| NOSIGNAL | 33.6 V34 | 31.2 V34 | 28.8 V34 |
| 26.4 V34 | 24.0 V34 | 21.6 V34 | 19.2 V34 |
| 16.8 V34 | 14.4 V34 | 12.0 V34 | 9.6 V34 |
| 7.2 V34 | 4.8 V34 | 2.4 V34 | 14.4 V33 |
| 12.0 V33 | 14.4 V17 | 12.0 V17 | 9.6 V17 |
| 7.2 V17 | 9.6 V29 | 7.2 V29 | 4.8 V27t |
| 2.4 V27t | 0.3 FLG | CED 2100 | CNG 1100 |
| 0.3 V21 | ANSam | RINGER | No RBT |

| | | |
|---|---|---|
| DP MAKE | DP BRK | NO MSG |

66-5

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the selected signal to the line and the main unit speaker. (Send level: Soft SW setting) (For the kinds of send signals, refer to SIM66-04.) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-05, the following screen is displayed.
   * Use scroll keys to switch the send mode select page.
2) When a button of a signal to be sent is selected, it is highlighted and the previously set button is shifted to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To end signal send:
   * When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

66-6

| | |
|---|---|
| **Purpose** | Data output/Check |
| **Function (Purpose)** | Used to print the confidential registration check table (BOX NO., BOX name, passcode. (If there is no confidential registration, no print is made.) |
| **Section** | FAX |

**Operation/Procedure**

1) When [EXECUTE] button is pressed, it is highlighted and the confidential checkable is printed.
   * If there is no confidential registration, no print is made even though [EXECUTE] key is pressed.
2) After completion of printing, [EXECUTE] button returns to the normal display.

66-7

| | |
|---|---|
| **Purpose** | Data output/Check |
| **Function (Purpose)** | Used to output all image data saved in the image memory. (Confidential data are also outputted.) |
| **Section** | FAX |

**Operation/Procedure**

1) When [EXECUTE] button is pressed, it is highlighted and all image data saved in the image memory are outputted.
2) After completion of printing, [EXECUTE] button returns to the normal display.

66-8

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the selected sound messages to the line and the speaker. (Send level: Max.) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-08, the following screen is displayed.
2) When the sound message button to be sent is selected, it is highlighted and the previously set button returns to the normal display.

**<Sound message table>**

| | | | |
|---|---|---|---|
| NONE (Mute) | PAUSE (Pause melody) | MESSAGE1 (Message 1) | MESSAGE2 (Message 2) |
| MESSAGE3 (Message 3) | MESSAGE4 (Message 4) | MESSAGE5 (Massage 5) | MESSAGE6 (Message 6) |
| ALARM (Alarm) | RINGER (Ringing sound (Speaker)) | EXT.TEL.RINGER (External telephone call) | |

66-9

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the selected sound message to the line and the speaker. (Send level: Soft SW setting)<br>* For details of sound messages, refer to the sound message table of SIM66-08. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-09, the following screen is displayed.
2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
4) To end signal send:

   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

66-10

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the FAX and image send image data. (The confidential data are also cleared.) |
| **Section** | FAX |

**Operation/Procedure**

1) Press [EXECUTE] button.
2) Press [YES] button.
3) After completion of clearing, press [CA] key to reboot the machine.

66-11

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the selected signal at 300bps to the line and the speaker. (Send level: Max.) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-11, the following screen is displayed.
2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
4) To end signal send:

   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

**<300bps send signal table>**

| | | | |
|---|---|---|---|
| NO SIGNAL | 11111 | 11110 | 00000 |
| 010101 | 00001 | | |

66-12

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the selected signal at 300bps to the line and the speaker. (Send level: Soft SW setting)<br>* For the kings of send signals at 300bps, refer to SIM66-11, 300bps send signal table. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-12, the following screen is displayed.
2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
4) To end signal send:

   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

66-13

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to register dial numbers for SIM66-14/15/16, Dial test. (Up to 20 digits can be registered.) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-13, the following screen is displayed.
   * The number saved in the memory is displayed in the column of [PRESENT:]. (If there is no data, [-------] is displayed.)
2) Enter a number with 10-key.

   The entered number is displayed in the column of [NEW:].

   After entering 20 digits, 10-key is disabled (no response). Only [C] key is enabled. (10-key [0] to [9], [*], [#], [C] key (back by one digit))
3) When [SET] key is pressed after completion of entry, the entered number is displayed (registered) in the column of [PRESENT:]. The column of [NEW:] becomes blank.

66-14

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to execute the dial pulse (10PPS) send test and to adjust the make time. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-14, the following screen is displayed.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse is sent from the line in the set make time.
3) To end the dial test, press [EXECUTE] button again. The button returns to the normal display and the test is terminated.

66-15

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to execute the dial pulse (20PPS) send test and to adjust the make time. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-15, the following screen is displayed.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse is sent from the line in the set make time.
   * The dial pulse in this example is up to 20 digits registered with SIM66-13.
3) To end the dial test, press [EXECUTE] button again. The button returns to the normal display and the test is terminated.

66-16

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Used to execute the DTFM signal send test and to adjust the send level. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-16, the following screen is displayed.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse signal is sent from the line by the setting of high/low group of the signal send level.
3) To terminate the dial test, press [EXECUTE] button. The button returns to the normal display and the test is terminated.

66-17

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the DTMF signal to the line and the speaker. (Send level: Max.) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-17, the following screen is displayed.
2) When a button of a send signal is selected, it is highlighted and the previously set button returns to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To stop signal sending:
   When [EXECUTE] button is pressed, it returns to the normal display and signal sending is interrupted.

66-18

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to send the DTMF signal to the line and the speaker. (Send level: Soft SW setting) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-18, the following screen is displayed.
2) When a button of a send signal is selected, it is highlighted and the previously set button returns to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To stop signal sending:
   When [EXECUTE] button is pressed, it returns to the normal display and signal sending is interrupted.

66-21

| | |
|---|---|
| **Purpose** | Check |
| **Function (Purpose)** | Used to print the selected items (system error, protocol monitor). |
| **Section** | FAX |

**Operation/Procedure**

1) When an item button to be printed is selected, it is highlighted and the previously set button returns to the normal display.
2) Press [EXECUTE] button.
   [EXECUTE] button is highlighted and printing is started.
3) After completion of printing, [EXECUTE] button returns to the normal display.

**<FAX information print content table>**

| | |
|---|---|
| PROTOCOL LINE 1 | SYSTEM ERROR LINE 1 |

66-22

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set the handset sound volume. (This simulation can be executed even though the handset setting is set to NO. When, however, the handset is not installed, the sound volume cannot be checked.) (Japan model only) |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters the simulation, the number of the set sound volume is displayed. (In this example, MIDDLE is set as the default sound volume.)
2) Use 10-key to set the handset sound volume. (0: MIN 1:MIDDLE 2:MAX)
3) Press [EXECUTE] button to deliver the selected on-hold tone.
   * If, however, the handset is not installed, the sound volume cannot be checked. Execution is possible.
4) When [EXECUTE] button is pressed, it is highlighted and delivery of the on-hold tone is stopped.

66-24

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the FAST save data. |
| **Section** | FAX |

**Operation/Procedure**

1) Press [EXECUTE] button.
2) Press [YES] button.
   The FAST save data are cleared.
3) After completion of memory clear, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

66-29

| | |
|---|---|
| **Purpose** | Clear |
| **Function (Purpose)** | Used to initialize the telephone book data (the one-touch registration table, the FTP/Desktop expansion table, the group expansion table, the program registration table, the interface memory box table, the meta data, InboundRouting, and the DocumentAdmin table). |
| **Section** | FAX |

**Operation/Procedure**

1) Press [EXECUTE] button.
2) Press [YES] button.
   The telephone book data area cleared.
3) After completion of memory clear, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

66-30

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to display the TEL/LIU status change, The display is highlighted by status change. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-30, the following screen is displayed.
2) HS1, HS2, RHS, and EXHS are highlighted when the signal is detected, and displayed normally when the signal is not detected.

**<TEL/LIU status change item description>**

| | |
|---|---|
| HS1 | Polarity inversion signal |
| HS2 | Polarity inversion signal |
| RHS | Handset hook SW |
| EXHS | External telephone hook SW |

66-31

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to set ON/OFF the port for output to TEL/LIU. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-31, the following screen is displayed.
2) Change the port setting.
   When a port is set to ON, the port display is highlighted.
3) When [EXECUTE] button is pressed, the changed setting is reflected to the port which outputs to TEL/LIU.
4) To terminate the process, press [EXECUTE] button again. [EXECUTE] button returns to the normal display.

**<Port which outputs to TEL/LIU>**

| | | | |
|---|---|---|---|
| CION | MR | EC | S. |

66-32

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to check the fixed data received from the line and to display the result. |
| **Section** | FAX |

**Operation/Procedure**

1) Press [EXECUTE] button to check the fixed data received from the line. At that time, [EXECUTE] button is highlighted.
   * Fixed data check procedure
   - The data received from the line is checked of the following fixed data status for minutes, then if they are in accord with “OK” is displayed on LCD, if not “NG” is displayed.
   - The judgment is made in 2 minutes.
     Receive speed: 300BPS
     Receive data: 00H
     Judgment data: 100byte
2) After completion of check, [EXECUTE] button returns to the normal display. The result is displayed as "OK" or "NG."

66-33

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to execute detection of various signals with the line connected and to display the detection result. When a signal is detected, the display is highlighted. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-33, the following screen is displayed.
2) The signal to be checked can be selected from the two options: "FNET" and "BT/CNG/CED/DTMF."
3) When a signal is detected, "FNET" and "BUSY TONE CNG CED DTMF" are highlighted. When a signal is not detected, they are normally displayed.

**<Signal used for signal detection check>**

**(When "FNET" is selected)**

| |
|---|
| FNET |

**(When "BT/CNG/CED/DTMF" is selected)**

| | | | |
|---|---|---|---|
| BUSY TONE | CNG | CED | DTMF |

66-34

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to execute the send test and display the time required for sending image data in the test. Used to execute send test and display. (Unit: ms) |
| **Section** | FAX |

**Operation/Procedure**

1) FAX send is performed.
2) Enter the SIM 66-34 mode.
   The send time in procedure 1) is displayed.

66-36

| | |
|---|---|
| **Purpose** | Operation test/Check |
| **Function (Purpose)** | Used to check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-36, the following screen is displayed.
2) Operation check
   Select an item to be checked on the screen.

**<MFP controller I/F check item table>**

| | |
|---|---|
| MFP ← MDMC (DATA once)<br>Data line Once | MFP → MDMC (DATA once)<br>Data line Once |
| MFP ← MDMC (DATA repeat)<br>Data line Repeat | MFP → MDMC (DATA repeat)<br>Data line Repeat |
| MFP ← MDMC (CMD once)<br>Command line Once | MFP → MDMC (CMD once)<br>Command line Once |
| MFP ← MDMC (CMD repeat)<br>Command line Repeat | MFP → MDMC (CMD repeat)<br>Command line Repeat |

66-39

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to check and change the destination setting saved in EEPROM of the FAX BOX. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters the simulation, the currently set destination button is highlighted. (In the default state, JAPAN is set as the destination.)
2) Select a destination button to set the destination. (In this example, USA/CANADA is selected.) The selected button is highlighted and the previously selected button returns to the normal display.
   * When the destination button is changed, the new destination setting is saved to EEPROM of the FAX BOX.

**<Destination setting table>**

| | | | |
|---|---|---|---|
| JAPAN | U.S.A/CANADA | EUROPE | AUSTRALIA |
| CHINA | ASIA&OTHERS | | |

66-42

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to rewrite the program to power control installed in the FAX BOX. |
| **Section** | FAX |

**Operation/Procedure**

1) Press [EXECUTE] button.[EXECUTE] button is highlighted and YES] and [NO] buttons become active.
2) Press [YES] button.
   The power control program is rewritten.
3) When rewriting of the power control program is normally completed, "OK" is displayed and [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

66-43

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to write the adjustment value into the power control installed in the FAX BOX. |
| **Section** | FAX |

**Operation/Procedure**

1) When the machine enters Simulation 66-43, the following screen is displayed.
   * Use scroll keys to select the select item of the power control adjustment value.
2) When [EXECUTE] key is pressed, it is highlighted and writing to the power control is executed. When writing is normally completed, "OK" is displayed. When it is failed, "NG" is displayed.
3) After completion of writing, [EXECUTE] key returns to the normal display.

**<Set range and default value of each set value>**

| | Item | Set range | Default value |
|---|---|---|---|
| A | CI_LEVEL_JUDGE | 2 to 15 | 6 |
| B | CI_CYCLE_MIN | 1 to 254 | 10 |
| C | CI_CYCLE_MAX | 2 to 255 | 142 |
| D | CI_COUNT | 2 to 15 | 3 |
| E | RES_3.3V_LEVEL_JUDGE | 2 to 15 | 15 |
| F | EXHS_LEVEL_JUDGE | 2 to 225 | 240 |
| G | RHS_LEVEL_JUDGE | 2 to 15 | 2 |
| H | SON_TIMEOUT | 1 to 127 | 20 |

66-61

| | |
|---|---|
| **Purpose** | Setting |
| **Function (Purpose)** | Used to display the FAX-related soft SW (151 - 250) on the LCD to allow changing the soft SW while checking with the LCD. |
| **Section** | FAX |

**Operation/Procedure**

1) Enter the [SW NO] with 10-key.
2) Press [DATA] button.
   The soft SW data entered in procedure 1) is displayed.
3) Enter the number corresponding to the bit to be changed with 10-key.
   * [1] → [0]
     [0] → [1]
4) When [EXECUTE] button is pressed, it is highlighted and the setting is saved.

66-62

| | |
|---|---|
| **Purpose** | Backup |
| **Function (Purpose)** | Used to import the FAX receive data into a USB memory in PDF file type. |
| **Section** | FAX |

**Operation/Procedure**

1) Insert the USB memory into the main unit.
2) Select data to be imported.
3) Press [EXECUTE] key.

   Execute import of data selected in procedure 2).

   When the operation is completed normally, [COMPLETE] is displayed. In case of an abnormal end, [ERROR] is displayed.

| Error display | Content |
|---|---|
| ERROR: NO USB MEMORY DEVICE | No USB memory installed |
| ERROR: NO IMAGE DATA | No image data |
| ERROR | Other errors |

# 67

67-17

| | |
|---|---|
| **Purpose** | Reset |
| **Function (Purpose)** | Printer reset |
| **Section** | Printer |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.
   The set data related to the printer are initialized. (Including the NIC setting.)

When the operation is completed, [EXECUTE] key returns to the normal display.

67-24

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Printer color balance adjustment (Auto adjustment) |
| **Section** | Printer |

**Operation/Procedure**

1) Press [EXECUTE] key.

   The color patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key.

   The printer color balance auto adjustment is performed, and the adjustment result is printed.
4) Press [OK] key.

   The halftone correction target registration is processed.

67-25

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Printer color balance adjustment (Manual adjustment) |
| **Section** | Printer |

**Operation/Procedure**

1) Select an adjustment target color with [K][C][M][Y] keys on the touch panel.
2) Select a target adjustment density level with scroll key on the touch panel.
3) Enter the set value with 10-key.
   * When the △ ▽ 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.

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

| | Item/Display | Setting range | Default value |
|---|---|---|---|
| A | POINT1 | 1 - 999 | 500 |
| B | POINT2 | 1 - 999 | 500 |
| C | POINT3 | 1 - 999 | 500 |
| D | POINT4 | 1 - 999 | 500 |
| E | POINT5 | 1 - 999 | 500 |
| F | POINT6 | 1 - 999 | 500 |
| G | POINT7 | 1 - 999 | 500 |
| H | POINT8 | 1 - 999 | 500 |
| I | POINT9 | 1 - 999 | 500 |
| J | POINT10 | 1 - 999 | 500 |
| K | POINT11 | 1 - 999 | 500 |
| L | POINT12 | 1 - 999 | 500 |
| M | POINT13 | 1 - 999 | 500 |
| N | POINT14 | 1 - 999 | 500 |
| O | POINT15 | 1 - 999 | 500 |
| P | POINT16 | 1 - 999 | 500 |
| Q | POINT17 | 1 - 999 | 500 |

67-26

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the target color balance of the printer mode auto color balance adjustment. |
| **Section** | Printer |

**Operation/Procedure**

1) Select the target color balance with the touch panel.

| Item/Display | | Content | Default value |
|---|---|---|---|
| Target value table select | DEF1 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual printer mode and print is made. | DEF 1 |
| | DEF2 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made. | |
| | DEF3 | The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made. | |

67-27

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the service target of the printer mode auto color balance adjustment. |
| **Section** | Printer |

**Operation/Procedure**

1) Press [SETUP] key on the touch panel.
2) Place the printed color balance adjustment pattern sheet printed in SIM 67-25 on the document table.
3) Press [EXECUTE] key.

   The patch image of the adjustment pattern sheet is scanned.
4) Press [OK] key.

   The service target of the printer mode auto color balance adjustment is set according to the scanned adjustment pattern sheet patch images.

   The registered color balance and the density are displayed.

Select a target color with [C] [M] [Y] [K] key.

Important

This simulation is executed only when the printer color balance is manually adjusted.

| | |
|---|---|
| B | Point B target value |
| C | Point C target value |
| D | Point D target value |
| E | Point E target value |
| F | Point F target value |
| G | Point G target value |
| H | Point H target value |
| I | Point I target value |
| J | Point J target value |
| K | Point K target value |
| L | Point L target value |
| M | Point M target value |
| N | Point N target value |
| O | Point O target value |
| BASE | Background sampling value |

67-28

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the default of the service target of the printer mode auto color balance adjustment. |
| **Section** | Printer |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

   The service target of the printer mode auto color balance adjustment is set to the default.

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

67-31

| | |
|---|---|
| **Purpose** | Data clear |
| **Function (Purpose)** | Used to clear the printer calibration value. |
| **Section** | Printer |

**Operation/Procedure**

1) Press [EXECUTE] key.
2) Press [YES] key.

   The printer calibration data (Halftone correction data) are cleared.
   (The printer color balance correction is canceled.)

67-33

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to change the gamma of the printer screen. |
| **Section** | Printer |

**Operation/Procedure**

1) Select a target change color with [K] [C] [M] [Y] key on the touch panel.
2) Select a target screen with [SCREEN] key.
3) Select a target adjustment density level with scroll key.
4) Enter the set value with 10-key.
5) Press [OK] key. (The set value is saved.)

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | POINT1 | Point 1 | 0 - 255 | 128 |
| B | POINT2 | Point 2 | 0 - 255 | 128 |
| C | POINT3 | Point 3 | 0 - 255 | 128 |
| D | POINT4 | Point 4 | 0 - 255 | 128 |
| E | POINT5 | Point 5 | 0 - 255 | 128 |
| F | POINT6 | Point 6 | 0 - 255 | 128 |
| G | POINT7 | Point 7 | 0 - 255 | 128 |
| H | POINT8 | Point 8 | 0 - 255 | 128 |
| I | POINT9 | Point 9 | 0 - 255 | 128 |
| J | POINT10 | Point 10 | 0 - 255 | 128 |
| K | POINT11 | Point 11 | 0 - 255 | 128 |
| L | POINT12 | Point 12 | 0 - 255 | 128 |
| M | POINT13 | Point 13 | 0 - 255 | 128 |
| N | POINT14 | Point 14 | 0 - 255 | 128 |
| O | POINT15 | Point 15 | 0 - 255 | 128 |
| P | POINT16 | Point 16 | 0 - 255 | 128 |
| Q | POINT17 | Point 17 | 0 - 255 | 128 |

**PCL/PS printer**

| Display | Content |
|---|---|
| SCREEN1 | 600dpi 1bit Photo |
| SCREEN2 | 600dpi 1 bit Graphics |
| SCREEN3 | 600dpi 4 bit Photo |
| SCREEN4 | 600dpi 4 bit Graphics |
| SCREEN7 | B/W 600dpi 1 bit |
| SCREEN8 | B/W 600dpi 4 bit |
| SCREEN10 | Gloss 600dpi 4bit |
| HEAVY PAPER | Printer paper kind manual gamma correction (Heavy paper) |

67-34

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the density correction in the printer high density section. (Support for the high density section tone gap)

**Section** Printer

**Operation/Procedure**

1) Enter the set value with 10-key.

| | |
|---|---|
| 0 | Enable |
| 1 | Disable |

2) Press [OK] key. (The set value is saved.)

| Item/Display | | Content | | Setting range | Default value |
|---|---|---|---|---|---|
| A | CMY (0: ENABLE 1: DISABLE) | 0 | CMY engine highest density correction mode: Enable | 0 - 1 | 0 |
| | | 1 | CMY engine highest density correction mode: Disable | | |
| B | K (0: ENABLE 1: DISABLE) | 0 | K engine highest density correction mode: Enable | 0 - 1 | 1 |
| | | 1 | K engine highest density correction mode: Disable | | |
| C | CYAN MAX TARGET | Scanner target value for CYAN maximum density correction | | 0 - 999 | 500 |
| D | MAGENTA MAX TARGET | Scanner target value for MAGENTA maximum density correction | | 0 - 999 | 500 |
| E | YELLOW MAX TARGET | Scanner target value for YELLOW maximum density correction | | 0 - 999 | 500 |
| F | BLACK MAX TARGET | Scanner target value for BLACK maximum density correction | | 0 - 999 | 500 |

- When tone gap is generated in the high density section, set items A and B to "0."
  The density in the high density section is decreased, but tone gap is reduced.
- To increase the density in the high density section further, set items A and B to "1.
  The tone gap may occur in high density part.

Important

Do not change the values of items C, D, E, and F. If these values are changed, the density in the high density area is changed.

67-36

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to adjust the density in the low density section.

**Section** Printer

**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 |

67-41

**Purpose** Adjustment/Setup

**Function (Purpose)** Used to set the threshold for judging the selected color printing or the black color printing in the black and white mode.

**Section** Printer

**Operation/Procedure**

1) Select a set value with the scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key.

| Item/Display | | Content | Setting range | Default value |
|---|---|---|---|---|
| A | C1 | Mode1 : Threshold of Saturation | 0 - 255 | 5 |
| B | V1 | Mode1 : Threshold of Brightness | 0 - 255 | 0 |
| C | C2 | Mode2 : Threshold of Saturation | 0 - 255 | 5 |
| D | V2 | Mode2 : Threshold of Brightness | 0 - 255 | 0 |

67-42

**Purpose** Adjustment

**Function (Purpose)** Used to adjust the gradation by increasing / decreasing the selected color componet amount or the black color component amount in the black and white mode.

**Section** Printer

**Operation/Procedure**

1) Select Mode1 or Mode2.
2) Select an item to be set.

| Mode | Item/Display | | Content | Default value |
|---|---|---|---|---|
| MODE 1 | Black (Achromatic color) | F1 | Black : Light | F2 |
| | | F2 | Black : Normal | |
| | | F3 | Black : Dark | |
| | COLOR (Selected color) | G1 | Selected color : Light | G2 |
| | | G2 | Selected color : Normal | |
| | | G3 | Selected color : Dark | |
| MODE 2 | Black (Achromatic color) | F1 | Black : Light | F2 |
| | | F2 | Black : Normal | |
| | | F3 | Black : Dark | |
| | COLOR (Selected color) | G1 | Selected color : Light | G2 |
| | | G2 | Selected color : Normal | |
| | | G3 | Selected color : Dark | |

67-43

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | 2 Color mode balance adjustment |
| **Section** | Printer |

**Operation/Procedure**

1) Select an adjustment item with the scroll key.
2) Enter the set value with 10-keys.
3) Press [OK] key.

| Item/Display | | Content | Color | Setting range | Default value | | |
|---|---|---|---|---|---|---|---|
| | | | | | C | M | Y |
| A | RED | R output color | CMY | 0 - 255 | 0 | 235 | 224 |
| B | GREEN | G output color | CMY | 0 - 255 | 180 | 0 | 241 |
| C | BLUE | B output color | CMY | 0 - 255 | 235 | 159 | 0 |
| D | CYAN | C output color | CMY | 0 - 255 | 182 | 0 | 25 |
| E | MAGENTA | M output color | CMY | 0 - 255 | 0 | 271 | 0 |
| F | YELLOW | Y output color | CMY | 0 - 255 | 0 | 0 | 234 |

67-45

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to adjust the printer image filter and trapping. |
| **Section** | Printer |

**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 | NOTE |
|---|---|---|---|---|---|
| A | SHARPNESS: COLOR PRINT | Color print | 0 - 4 | 2 | The greater the set value is, the stronger the filer enhancement is. The smaller the set value is, the stronger the filter smoothness is. (0: Soft High, 1: Soft Low, 2: Center, 3: Sharp Low, 4: Sharp High) |
| B | SHARPNESS: B/W PRINT | Monochrome print | 0 - 4 | 2 | |
| C | TRAPPING: CMY (PCL & DIRECTPRINT) | CMY (PCL, Direct Print) | 0 - 5 | 3 | The greater the set value is, the stronger the trapping is. (0: OFF, (Low) 1 < 2 < 3 < 4 < 5) (The target is vector images. There is no effect for the raster images.) However, the sharpness also varies. |
| D | TRAPPING: K (PCL & DIRECTPRINT) | K (PCL, Direct Print) | 0 - 5 | 3 | |
| E | TRAPPING: CMY (PS) | CMY (PS) | 0 - 5 | 3 | |
| F | TRAPPING: K (PS) | K (PS) | 0 - 5 | 0 | |
| G | TRAPPING: CMY (XPS) | CMY (XPS) | 0 - 5 | 0 | |
| H | TRAPPING: K (XPS) | K (XPS) | 0 - 5 | 0 | |

67-52

| | |
|---|---|
| **Purpose** | Adjustment/Setup |
| **Function (Purpose)** | Used to set the default of the gamma of the printer screen. |
| **Section** | Printer |

**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.

**PCL/PS printer**

| Item/Display | | Content |
|---|---|---|
| Screen | HEAVYPAPER | Heavy paper screen |
| | | Printer heavy paper automatic density correction amount |
| | 1200DPI_1BIT | SCREEN5 (1200dpi 1bit Photo)<br>SCREEN6 (1200dpi 1bit Graphics) |
| | 600DPI_1BIT | SCREEN1 (600dpi 1bit Photo) |
| | | SCREEN2 (600dpi 1bit Graphics) |
| Screen | B/W | SCREEN7 (600dpi 1bit Graphics) |
| | | SCREEN8 (600dpi 4bit Graphics) |
| | | SCREEN9 (120dpi 1bit Graphics) |
| | | Printer B/W toner save automatic density correction amount |
| | GLOSSPAPER | SCREEN10 (Glossy paper screen) |
| | 4BIT_GRAPHICS | SCREEN4 (600dpi 4bit Graphics) |

67-54

| | |
|---|---|
| **Purpose** | Adjustment |
| **Function (Purpose)** | Printer color balance adjustment |
| **Section** | Printer |

**Operation/Procedure**

This simulation is used to adjust the color 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 color patch image (adjustment pattern) is printed out.

2) Set the color patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).

3) Press [EXECUTE] key.

   The color 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).

| Select item (Mode) | Content |
|---|---|
| Heavy Paper | Adjustment item to improve the color balance in the heavy paper mode |
| B/W | Adjustment item to improve the density and gradation in the monochrome mode |
| Glossy | Adjustment item to improve the color balance in glossy paper mode |
| 1200dpi 1bit | Adjustment item to improve the color balance in 1200dpi mode |
| 4BIT_GRAPHICS | Adjustment item to improve the color balance in 600dpi, 4bit Graphic mode. |

6) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

   The color patch image (adjustment pattern) is printed out.

7) Set the color patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).

8) Press [EXECUTE] key.

   The color balance adjustment is automatically performed, and the color 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.

# [7] TROUBLESHOOTING

## 1. Error code and troubleshooting

### A. General

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

### B. Function and purpose

1) Securing safety. (The machine is stopped on detection of a trouble.)
2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

### C. Self diag message kinds

The self diag messages are classified as shown in the table below.

| | | |
|---|---|---|
| Class 1 | User | Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.) |
| | Service | Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.) |
| | Others | - |
| Class 2 | Warning | Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.) |
| | Trouble | Warning of a machine trouble. The machine is stopped. |
| | Others | - |

### D. Self diag operation

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

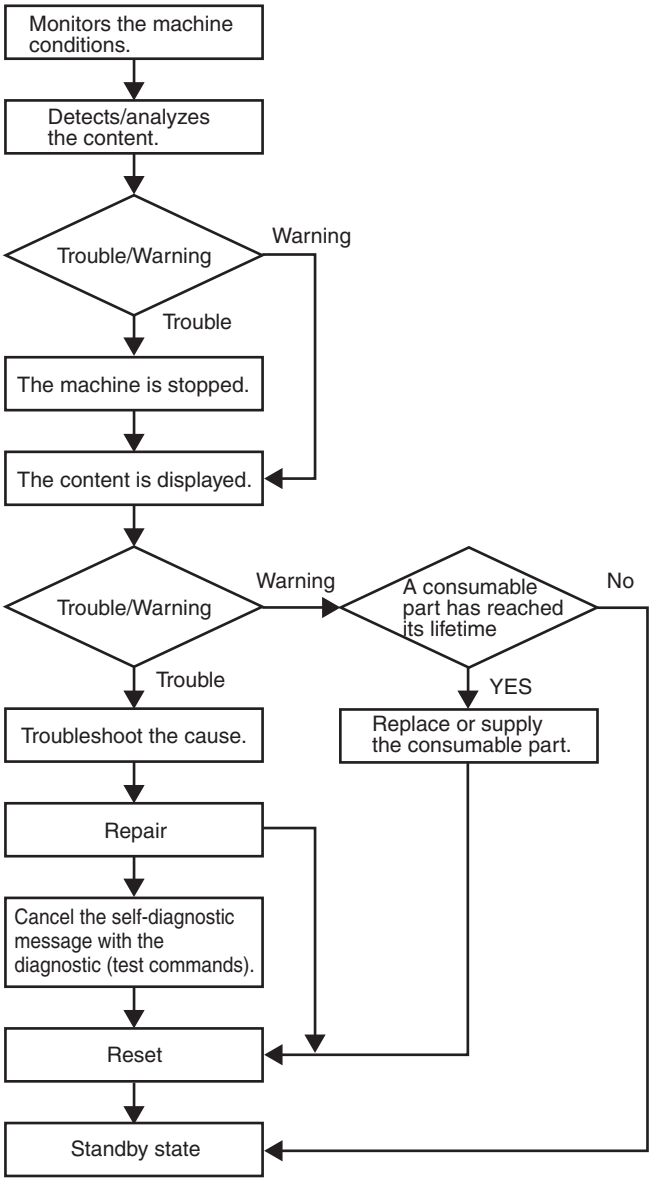
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD and lamp.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



## E. Breakdown sequence

### (1) Error code and operatable mode

| Trouble content | | Judg-ment block | Trouble code | Operatable mode | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Copy scan (including interrup-tion) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print | FAX Send | FAX print | FAST Notifi-cation to host |
| FAX board trouble | • FAX board breakdown | MFP | F6 (00, 01, 04, 21, 30, 97, 98) | ○ | ○ | ○ | ○ | ○ | ○ | – | – | – |
| HDD trouble | • SD card breakdown | | E7 (07) | × | × | × | × | × | × | × | × | × |
| | • HDD breakdown | | E7 (03, 05, A5) | × | × | × | × | × | × | × | × | × |
| | • HDD-ASIC breakdown | | E7 (04) | × | × | × | × | × | × | × | × | × |
| Scanner communication trouble | • SCU communication error | | A0 (02)<br>E7 (80) | × | × | × | × | ○ | ○ | × | ○ | ○ |
| Engine communication trouble | • PCU communication error | | A0 (01)<br>E7 (90) | × | × | × | × | × | × | × | × | ○ |
| Option communication trouble | • ACU communication trouble | | A0 (04) | × | × | × | × | × | × | × | × | ○ |
| Backup battery voltage fall trouble | • Backup battery voltage fall | | U1 (01) | × | × | × | × | × | × | × | × | ○ |
| Operation disable trouble 1 | • Controller fan trouble | | L4 (30) | × | × | × | × | × | × | × | × | × |
| Operation disable trouble 2 | • External serial I/F communication error (RIC) | | U7 (50, 51) | × | × | × | × | × | × | × | × | ○ |
| | • Memory error (included not installed the expansion RAM) | | U2 (00, 11, 40, 41, 42) | × | × | × | × | × | × | × | × | △15 |
| | • Connection trouble (Model data discrepancy) (MFPC detection) | | A0 (10, 11, 14 15, 16, 17, 20)<br>E7 (60, 61, 65, 89) | × | × | × | × | × | × | × | × | × |
| | • Serial number data error | | U2 (30) | × | × | × | × | × | × | × | × | × |
| | • HDD registration data check sum error | | U2 (50) | × | × | × | × | × | × | × | × | ○ |
| Operation disable trouble 3 | • Memory check error when booting | | E7 (96) | × | × | × | × | × | × | × | × | ○ |
| | • Image memory trouble, decode error | | E7 (01, 49, 91, 92, 93, 94) | × | × | × | × | × | × | × | × | ○ |
| | • Image memory trouble, decode error (Image high compression) | | E7(42,46,47,48) | × | △17 | × | × | × | ○ | ○ | ○ | ○ |
| Operation disable trouble 4 | • Personal counter connection trouble | | PC (00) | × | × | × | × | × | × | × | × | ○ |
| Power controller trouble | • Power controller error | | L8 (20) | × | × | × | × | × | × | × | × | ○ |
| Special function trouble | • Watermark data error | | U2 (60)<br>P1 (00, 01, 02) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| Trouble content | | Judg-ment block | Trouble code | Operatable mode | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Copy scan (including interrup-tion) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print | FAX Send | FAX print | FAST Notifi-cation to host |
| Laser trouble | • LSU breakdown | PCU | E7 (20, 24, 28, 29, A0)<br>L6 (10) | × | × | × | × | × | × | × | ×<br>*10 | ○ |
| Engine trouble 1 | • Connection trouble (Model data discrepancy) (PCU detection) | | A0 (21)<br>E7 (50, 55)<br>F1 (50) | × | × | × | × | × | × | × | × | × |
| Engine trouble 2 | • PCU troubles (motor, fusing, etc.) | | C1 (10, 14)<br>C4 (00)<br>F2 (22, 40, 64, 70, 74, 91)<br>H2 (00, 01, 02, 03)<br>H3 (00, 01, 02)<br>H4 (00, 01, 02)<br>H5 (01)<br>H7 (10, 11)<br>L4 (02, 03, 04, 05, 06, 07, 11, 12, 16, 31, 32, 34, 35, 43, 50, 51)<br>L8 (01, 02)<br>U2 (90, 91) | × | × | × | × | × | × | × | ×<br>*10 | ○ |
| Process system trouble | • LSU/Process system breakdown | | E7 (21, 22, 23, 25, 26, 27, A1, A2, A3)<br>F2 (23, 24, 25, 41, 42, 43, 65, 66, 67, 71, 72, 73, 75, 76, 77, 92, 93, 94) | ×<br>*19 | ×<br>*19 | ×<br>*19 | ×<br>*19 | ×<br>*19 | ×<br>*19 | ×<br>*19 | ×<br>*10<br>*19 | ○ |
| Paper feed tray 1 trouble | • Paper feed tray 1 breakdown | | F3 (12) | △3 | ○ | ○ | ○ | △3 | △3 | ○ | △3<br>*10 | ○ |
| Paper feed tray 2 trouble | • Paper feed tray 2 breakdown | | F3 (22) | △3 | ○ | ○ | ○ | △3 | △3 | ○ | △3<br>*10 | ○ |
| Paper feed tray 3 trouble | • Paper feed tray 3 breakdown | | U6 (01) | △3 | ○ | ○ | ○ | △3 | △3 | ○ | △3<br>*10 | ○ |
| Paper feed tray 4 trouble | • Paper feed tray 4 breakdown | | U6 (02) | △3 | ○ | ○ | ○ | △3 | △3 | ○ | △3<br>*10 | ○ |
| Paper feed tray 5 trouble | • Paper feed tray 5 breakdown | | U6 (03, 09, 20, 21, 22, 51, 52) | △3 | ○ | ○ | ○ | △3 | △3<br>*10 | ○ | △3 | ○ |
| Paper feed tray other troubles | • Paper feed tray other breakdown | | U6 (00, 10, 50, 52) | △11 | ○ | ○ | ○ | △11 | △11 | ○ | △11<br>*10 | ○ |
| Staple trouble | • Staple breakdown | | F1 (08, 10) | △4 | △4 | △4 | △4 | △4 | △4 | △4 | △4<br>*10 | ○ |
| Saddle stitch section trouble | • Saddle stitch section breakdown | | F1(31, 41, 43, 45, 47) | △4 | △4 | △4 | △4 | △4 | △4<br>*10 | △4 | △4 | ○ |
| Finisher trouble | • After-process breakdown | | F1 (00, 03, 11, 15, 19, 20, 21, 32, 33, 34, 36, 37, 38, 39) | △4 | △4 | △4 | △4 | △4 | △4 | △4 | △4<br>*10 | ○ |
| Other troubles | • Other troubles | | EE (EC, EL, EU) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Process control trouble | • Process control breakdown (PCU detection) | | F2 (39, 49, 50, 51, 58, 78) | ○<br>*12 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| Trouble content | | Judg-ment block | Trouble code | Operatable mode | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Copy scan (including interrup-tion) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print | FAX Send | FAX print | FAST Notifi-cation to host |
| Operation disable trouble | • Connection trouble (Model data discrepancy) (SCU detection) | SCU | A0 (22) | × | × | × | × | × | × | × | × | × |
| SCU CPT ASIC trouble | • SCU CPT ASIC error | | UC (02) | △9 | △9 | △9 | △9 | ○ | ○ | △9 | ○ | ○ |
| SCU ASIC trouble (SCU detection) | • SCU ASIC error (SCU detection) | | UC (20) | × | × | × | × | ○ | ○ | × | ○ | ○ |
| Scanner trouble 1 | • SCU EEPROM error | | U2 (80, 81) | × | × | × | × | ○ | ○ | × | ○ | ○ |
| Scanner trouble 2 | • Touch panel breakdown | | U9 (01) | × | × | × | × | ○ | ○ | × | ○ | ○ |
| | • Scanner section breakdown (mirror motor, lens, copy lamp) | | L1 (00)<br>L3 (00) | × | × | × | × | ○ | ○ | × | ○ | ○ |
| CCD trouble | • CCD breakdown (shading, etc.) | | E7 (10, 11, 14) | × | × | × | × | ○ | ○ | × | ○ | ○ |

**Error where only history data are saved**

| Trouble content | Judg-ment block | Trouble code | Operatable mode | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Copy scan (including interrup-tion) | Scan (Push) | Scan (Pull) | Scan-To HDD | Print | List print | FAX Send | FAX print | FAST Notifi-cation to host |
| Error history | PCU | F2 (45) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | MFP | E7(02), U2(05) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○: Operation enabled ×: Operation disabled

△1: The operation is enabled in a line other than the trouble line.

△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 black and white 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.

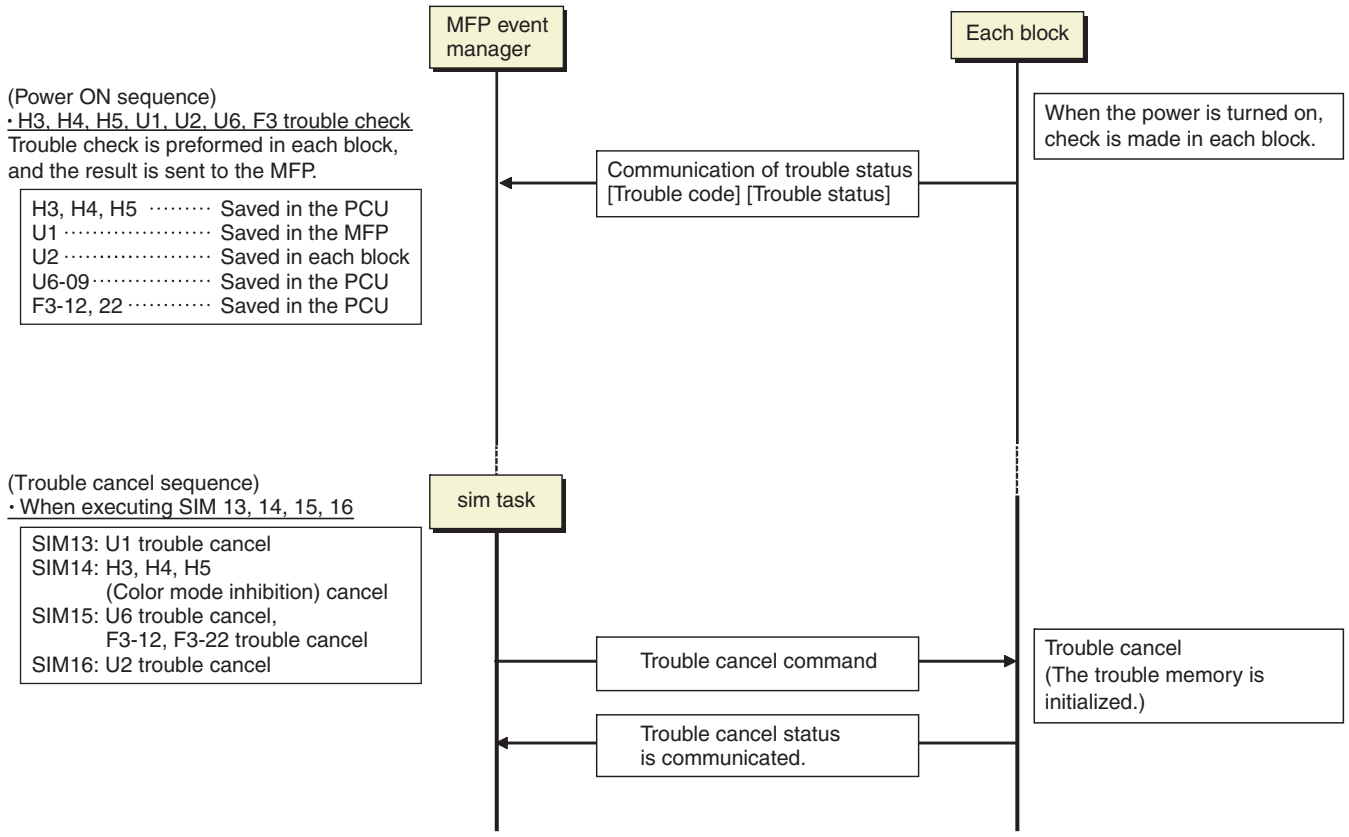
*12: A trouble message is displayed. (Example: Ready to copy. F2 trouble)

△15: FAST notification function (When in U2-22, trouble notification cannot be made. If there is no abnormality in the FAX software or the FAST data in U2-23, trouble notification can be made.)

△17: Job execution enable only in a format other high compression PDF.

*19: When the color mode is set to disable in the "Color mode disable setting" of the system setting, the operation is enabled in the black and white mode.

### (2) Trouble detection sequence and trouble cancel sequence when turning on the power




**The process has priority when the power is turned ON with the MFP.**

When booting, two or more troubles in the list below may be detected. In this case, the trouble code of higher priority is displayed.

| Process sequence | Error code | | Content |
|---|---|---|---|
| First (Low priority) ↑ ↓ Last (High priority) | U2 | 60 | Watermark check error |
| | | 50 | HDD user authentication data check sum error |
| | | 30 | MFPC PWB and PCU PWB manufacturing No. data inconsistency |
| | | 24 | User authentication counter check sum error |
| | | 10 | User authentication index check sum error |
| | A0 | 15 | Incompatible DSK BOOT and program firmware |
| | | 20 | Conflict firmware and EEPROM data version (MFP) |
| | U2 | 11 | MFPC PWB EEPROM counter check sum error |
| | | 00 | MFP EEPROM read/write error |
| | E7 | 48 | Scanner expansion PWB ASIC memory error |
| | | 42 | Image data trouble (Scanner expansion PWB (ACRE) ASIC) |
| | | 96 | MFPC PWB DRAM memory check error (MFPC PWB) |
| | | 95 | SoC DRAM memory check error (PRINTER section) |
| | U1 | 01 | Battery trouble |
| | E7 | 60 | Combination error between PWB and firmware (MFPC PWB detection) |
| | A0 | 04 | Scanner expansion PWB (ACU) ROM error |

1 : '14/Jun

## F. Error code list

| Trouble code | | Trouble content | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|---|---|---|---|---|---|---|---|---|
| Main code | Sub code | | | | | | | |
| A0 | 01 | PCU PWB ROM error | MFP | | | O | | |
| | 02 | SCU PWB ROM error | MFP | | | O | | |
| | 04 | Scanner expansion PWB (ACU) (ACRE) ROM error | MFP | | | O | | |
| | 10 | Color profile error | MFP | | | O | | |
| | 11 | Firmware version inconsistency (MFP - PCU) | MFP | | | O | | |
| | 14 | Inconsistency between the MFP and the CPU firmware version | MFP | | | O | | |
| | 15 | Incompatible DSK BOOT and program firmware | MFP | | | O | | |
| | 16 | Data error of the energy-saving NIC controller firmware in the SD card | MFP | | | O | | |
| | 17 | Inconsistency between the UI data and the CPU firmware version | MFP | | | O | | |
| | 20 | Conflict firmware and EEPROM data version (MFP) | MFP | | | O | | |
| | 21 | Conflict firmware and EEPROM data version (PCU) | PCU | | | O | | |
| | 22 | Conflict firmware and EEPROM data version (SCU) | SCU | | | O | | |
| C1 | 10 | Main charger trouble (Monochrome) | PCU | | | O | | |
| | 14 | Main charger trouble (Color) | PCU | | | O | | |
| C4 | 00 | PTC trouble (TC high voltage trouble) | PCU | | | O | | |
| E7 | 01 | MFP image data error | MFP | | | O | | |
| | 02 | HDD trouble when the mirroring kit is installed | MFP | | O | | | |
| 1 | 03 | HDD trouble / Mirroring kit error | MFP | | | O | | |
| | 04 | HDD-ASIC error | MFP | | | O | | |
| | 07 | SD card error | MFP | | | O | | |
| | 10 | Shading error (Black correction) | SCU | | | O | | |
| | 11 | Shading error (White correction) | SCU | | | O | | |
| | 14 | CCD-ASIC error | SCU | | | O | | |
| | 20 | LSU laser detection error (K) | PCU | | | O | | |
| | 21 | LSU laser detection error (C) | PCU | | | O | | |
| | 22 | LSU laser detection error (M) | PCU | | | O | | |
| | 23 | LSU laser detection error (Y) | PCU | | | O | | |
| | 24 | LSU LD driver trouble (K) | PCU | | | O | | |
| | 25 | LSU LD driver trouble (C) | PCU | | | O | | |
| | 26 | LSU LD driver trouble (M) | PCU | | | O | | |
| | 27 | LSU LD driver trouble (Y) | PCU | | | O | | |
| | 28 | LSU - PCU connection error | PCU | | | O | | |
| | 29 | LSU ASIC frequency error | PCU | | | O | | |
| | 42 | Image data trouble (Scanner expansion PWB (ACRE) ASIC) | MFP | | | O | | |
| | 46 | Image data decode error (Scanner expansion PWB (ACRE) ASIC) | MFP | | | O | | |
| | 47 | Inconsistency between the MFP and the ACRE firmware | MFP | | | O | | |
| | 48 | Scanner expansion PWB (ACRE) ASIC memory error | MFP | | | O | | |
| | 49 | Water Mark data error | MFP | | | O | | |
| | 50 | Combination error between PWB and firmware (PCU PWB detection) | PCU | | | O | | |
| | 55 | PCU PWB information sum error | PCU | | | O | | |
| | 60 | Combination error between PWB and firmware (MFPC PWB detection) | MFP | | | O | | |
| | 61 | Combination error between the MFPC PWB and the PCU PWB (MFPC PWB detection) | MFP | | | O | | |
| | 65 | MFP EEPROM sum check error | MFP | | | O | | |
| | 80 | MFP - SCU PWB communication error | MFP | | | O | | |
| | 89 | Communication error between MFPC PWB CPU and energy-saving NIC controller | MFP | | | O | | |
| | 90 | MFP - PCU PWB communication error | MFP | | | O | | |
| | 91 | FAX reception image data error | MFP | | | | O | |
| | 92 | Copy image data error | MFP | | | O | | |
| | 93 | Copy, image send, FAX, filing, print image data process error | MFP | | | O | | |
| | 94 | Image file data process error (when importing file data) | MFP | | | O | | |
| | 96 | MFPC PWB memory check error | MFP | | | O | | |
| | A0 | LSU EEPROM/LD driver read/write error (K) | PCU | | | O | | |
| E7 | A1 | LSU EEPROM/LD driver read/write error (C) | PCU | | | O | | |
| | A2 | LSU EEPROM/LD driver read/write error (M) | PCU | | | O | | |
| | A3 | LSU EEPROM/LD driver read/write error (Y) | PCU | | | O | | |
| | A5 | Installation error of HDD which was used in the mirroring kit | MFP | | O | | | |
| EE | EC | Automatic toner density adjustment error | PCU | | | O | | |
| | EL | Automatic toner density adjustment error (Over toner) | PCU | | | O | | |
| | EU | Automatic toner density adjustment error (Under toner) | PCU | | | O | | |

| Trouble code | | Trouble content | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|---|---|---|---|---|---|---|---|---|
| Main code | Sub code | | | | | | | |
| F1 | 00 | Finisher - PCU PWB communication error | PCU | | O | | | |
| | 03 | Finisher paper exit roller lifting operation trouble | PCU | | O | | | |
| | 08 | Stapler shift trouble | PCU | | O | | | |
| | 10 | Staple operation trouble | PCU | | O | | | |
| | 11 | Finisher grip motor trouble | PCU | | O | | | |
| | 15 | Finisher paper exit tray lift operation trouble | PCU | | O | | | |
| | 19 | Finisher alignment operation trouble F | PCU | | O | | | |
| | 20 | Finisher alignment operation trouble R | PCU | | O | | | |
| | 21 | Finisher fan trouble | PCU | | O | | | |
| | 31 | Finisher saddle motor trouble (Saddle stitch finisher) (FSFOM) | PCU | | O | | | |
| | 32 | Communication error between the finisher and the punch unit (Saddle stitch finisher) | PCU | | O | | | |
| | 33 | Punch unit shift operation trouble | PCU | | O | | | |
| | 34 | Punch operation trouble | PCU | | O | | | |
| | 36 | Punch paper edge detection error | PCU | | O | | | |
| | 37 | Finisher data backup RAM error | PCU | | O | | | |
| | 38 | Punch data backup RAM error | PCU | | O | | | |
| | 39 | Punch paper dust sensor error | PCU | | O | | | |
| | 41 | Saddle paper positioning operation trouble | PCU | | O | | | |
| | 43 | Saddle alignment operation trouble | PCU | | O | | | |
| | 45 | Saddle staple trouble | PCU | | O | | | |
| | 47 | Saddle paper transport motor trouble | PCU | | O | | | |
| | 50 | Main unit - Finisher combination error | PCU | | O | | | |
| F2 | 22 | Discharge lamp trouble (K) | PCU | | | | | O |
| | 23 | Discharge lamp trouble (C) | PCU | | | | | O |
| | 24 | Discharge lamp trouble (M) | PCU | | | | | O |
| | 25 | Discharge lamp trouble (Y) | PCU | | | | | O |
| | 39 | Process thermistor trouble | PCU | | | | | O |
| | 40 | Toner density sensor trouble (K) | PCU | | | | | O |
| | 41 | Toner density sensor trouble (C) | PCU | | | | | O |
| | 42 | Toner density sensor trouble (M) | PCU | | | | | O |
| | 43 | Toner density sensor trouble (Y) | PCU | | | | | O |
| | 45 | Color image density sensor trouble | PCU | | | | | O |
| | 49 | LSU thermistor trouble | PCU | | | | | O |
| | 50 | K drum phase sensor trouble | PCU | | | | | O |
| | 51 | CL drum phase sensor trouble | PCU | | | | | O |
| | 58 | Temperature/humidity sensor trouble (HUD_M/TH_M) | PCU | | | | | O |
| | 64 | Toner supply operation trouble (K) | PCU | | | | | O |
| | 65 | Toner supply operation trouble (C) | PCU | | | | | O |
| | 66 | Toner supply operation trouble (M) | PCU | | | | | O |
| | 67 | Toner supply operation trouble (Y) | PCU | | | | | O |
| | 70 | Improper toner cartridge detection (K) | PCU | | | | | O |
| | 71 | Improper toner cartridge detection (C) | PCU | | | | | O |
| | 72 | Improper toner cartridge detection (M) | PCU | | | | | O |
| | 73 | Improper toner cartridge detection (Y) | PCU | | | | | O |
| | 74 | Toner cartridge CRUM error (K) | PCU | | | | | O |
| | 75 | Toner cartridge CRUM error (C) | PCU | | | | | O |
| | 76 | Toner cartridge CRUM error (M) | PCU | | | | | O |
| | 77 | Toner cartridge CRUM error (Y) | PCU | | | | | O |
| | 78 | Registration image density sensor trouble (Transfer belt substrate reflection rate abnormality) | PCU | | | | | O |
| | 91 | High density process control high voltage error (K) | PCU | | | | | O |
| | 92 | High density process control high voltage error (C) | PCU | | | | | O |
| | 93 | High density process control high voltage error (M) | PCU | | | | | O |
| F2 | 94 | High density process control high voltage error (Y) | PCU | | | | | O |
| F3 | 12 | Paper feed tray 1 lift operation trouble | PCU | O | | | | |
| | 22 | Paper feed tray 2 lift operation trouble | PCU | O | | | | |

| Trouble code | | Trouble content | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|---|---|---|---|---|---|---|---|---|
| Main code | Sub code | | | | | | | |
| F6 | 00 | MFPC PWB - FAX communication trouble | MFP | | | | O | |
| | 01 | FAX control PWB EEPROM read/write error | FAX | | | | O | |
| | 04 | FAX MODEM operation trouble | FAX | | | | O | |
| | 21 | Improper combination of TEL/LIU PWB and FAX soft switch | MFP | | | | O | |
| | 30 | FAX 1-chip microprocessor access error (FAX detection) | MFP | | | | O | |
| | 97 | Incompatibility between FAX control PWB and the main machine | MFP | | | | O | |
| | 98 | Incompatibility between the FAX control PWB destination and the main machine destination | MFP | | | | O | |
| H2 | 00 | Thermistor open trouble (TH_UM_AD2) | PCU | O | | | | |
| | 01 | Thermistor open trouble (TH_LM) | PCU | O | | | | |
| | 02 | Thermistor open trouble (TH_US) | PCU | O | | | | |
| | 03 | Thermistor open trouble (TH_UM_AD1) | PCU | O | | | | |
| H3 | 00 | Fusing section high temperature trouble (TH_UM) | PCU | O | | | | |
| | 01 | Fusing section high temperature trouble (TH_LM) | PCU | O | | | | |
| | 02 | Fusing section high temperature trouble (TH_US) | PCU | O | | | | |
| H4 | 00 | Fusing section low temperature trouble (TH_UM_AD2) | PCU | O | | | | |
| | 01 | Fusing section low temperature trouble (TH_LM) | PCU | O | | | | |
| | 02 | Fusing section low temperature trouble (TH_US) | PCU | O | | | | |
| H5 | 01 | 5 times continuous POD1 not-reach jam | PCU | O | | | | |
| H7 | 10 | Recovery error from low fuser temp. (TH_UM_AD2) | PCU | O | | | | |
| | 11 | Recovery error from low fuser temp. (TH_LM) | PCU | O | | | | |
| L1 | 00 | Scanner feed trouble | SCU | O | | | | |
| L3 | 00 | Scanner return trouble | SCU | O | | | | |
| L4 | 02 | Paper feed motor trouble | PCU | | | O | | |
| | 03 | Fusing motor trouble | PCU | | | O | | |
| | 04 | Developing motor trouble (BLACK) | PCU | | | O | | |
| | 05 | Developing motor trouble (COLOR) | PCU | | | O | | |
| | 06 | Transfer unit lift trouble | PCU | | | O | | |
| | 07 | Transfer belt motor trouble | PCU | | | O | | |
| | 11 | Shift motor trouble | PCU | | | O | | |
| | 12 | Secondary transfer separation trouble | PCU | O | | | | |
| | 16 | Fusing pressure release trouble | PCU | | | O | | |
| | 30 | MFP fan motor trouble | MPF | | | O | | |
| | 31 | Paper exit cooling fan trouble | PCU | | | O | | |
| | 32 | Power source cooling fan trouble | PCU | | | O | | |
| | 35 | Fusing cooling fan trouble | PCU | | | O | | |
| | 43 | Paper exit cooling fan 2 trouble | PCU | | | O | | |
| | 50 | Process fan trouble | PCU | | | O | | |
| | 51 | Process fan 2 trouble | PCU | | | O | | |
| L6 | 10 | Polygon motor trouble | PCU | | | O | | |
| L8 | 01 | Full wave signal detection error | PCU | | | O | | |
| | 02 | Full wave signal error | PCU | | | O | | |
| | 20 | Communication error of MFPC PWB/LSU mother board | MFP | | | O | | |
| P1 | 00 | PCI communication error | MFP | | O | | | |
| | 01 | PCI fan error | MFP | | O | | | |
| | 02 | Plasma generating device error | MFP | | O | | | |
| PC | - | Personal counter not detected | MFP | O | | | | |
| U1 | 01 | Battery trouble | MFP | | | O | | |
| U2 | 00 | MFP EEPROM read/write error | MFP | | | O | | |
| | 05 | Erroneous detection of account management data / HDD internal authentication DB table error | MFP | | | O | | |
| | 11 | MFPC PWB EEPROM counter check sum error | MFP | | | O | | |
| | 30 | MFPC PWB and PCU PWB manufacturing No. data inconsistency | MFP | | | O | | |
| | 40 | SD card system storage data area error | MFP | | | O | | |
| | 41 | HDD system storage data area error | MFP | | | O | | |
| | 42 | Machine adjustment data (system storage data area) error | MFP | | | O | | |
| | 50 | HDD user authentication data check sum error | MFP | | | O | | |
| | 60 | Watermark check error | MFP | | | O | | |
| | 80 | SCU PWB EEPROM read/write error | SCU | | | O | | |
| | 81 | SCU PWB EEPROM check sum error | SCU | | | O | | |
| | 90 | PCU PWB EEPROM read/write error | PCU | | | O | | |
| | 91 | PCU PWB EEPROM check sum error | PCU | | | O | | |

| Trouble code | | Trouble content | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|---|---|---|---|---|---|---|---|---|
| Main code | Sub code | | | | | | | |
| U6 | 00 | PCU PWB - Paper feed desk (paper feed tray 3, 4) communication trouble | PCU | | | O | | |
| | 01 | Desk paper feed tray 1 lift trouble | PCU | | O | | | |
| | 02 | Desk paper feed tray 2 lift trouble | PCU | | O | | | |
| | 03 | Desk paper feed tray 3 lift trouble | PCU | | O | | | |
| | 09 | LCC lift motor trouble | PCU | | O | | | |
| | 10 | Desk paper feed unit paper transport motor trouble | PCU | | O | | | |
| | 20 | LCC control PWB - PCU PWB communication error | PCU | | O | | | |
| | 21 | LCC transport motor trouble | PCU | | O | | | |
| | 22 | LCC 24V power abnormality | PCU | | O | | | |
| | 50 | Desk - Main unit combination trouble | PCU | | O | | | |
| | 51 | LCC - Main unit combination trouble | PCU | | O | | | |
| | 52 | PCU PWB - Paper feed desk (paper feed tray 2) communication trouble | PCU | | | O | | |
| U7 | 50 | MFPC PWB - Vendor machine communication error | MFP | | | O | | |
| | 51 | Vendor machine error | MFP | | | O | | |
| U9 | 01 | Touch panel trouble | SCU | | | O | | |
| UC | 02 | CPT - ASIC error | SCU | | | O | | |
| | 20 | DOCC ASIC error | SCU | | | O | | |

## G. Details of error codes and countermeasures

### A0-01 PCU PWB ROM error

| | |
|---|---|
| Detail | MFP |
| Cause | The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc.<br>PCU PWB trouble. |
| Check & Remedy | Use SIM49-1 to perform the firmware version-up procedure again.<br>Replace the PCU PWB. |

### A0-02 SCU PWB ROM error

| | |
|---|---|
| Detail | MFP |
| Cause | The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc.<br>SCU PWB trouble. |
| Check & Remedy | Use SIM49-1 to perform the firmware version-up procedure again.<br>Replace the SCU PWB. |

### A0-04 Scanner expansion PWB (ACU) (ACRE) ROM error

| | |
|---|---|
| Trouble content | Scanner expansion PWB ROM error |
| Detail | MFP |
| Cause | Scanner expansion PWB (ACU) (ACRE) ROM data error.<br>An error occurs during firmware upgrading for some reasons. |
| Check & Remedy | Perform firmware upgrading again. |

### A0-10 Color profile error

| | |
|---|---|
| Trouble content | Color profile error |
| Detail | MFP |
| Cause | The content of the color profile is abnormal.<br>Combination error between the MFPC PWB firmware and the color profile |
| Check & Remedy | Upgrade the firmware collectively.<br>Replace the MFPC PWB. |

### A0-11 Firmware version inconsistency (MFP - PCU)

| | |
|---|---|
| Detail | MFP |
| Cause | Firmware combination error between the MFP and the PCU. |
| Check & Remedy | Install the firmware in the all-firmware version-up mode. |

### A0-14 Inconsistency between the MFP and the CPU firmware version

| | |
|---|---|
| Trouble content | Inconsistency between the MFP and the CPU firmware version |
| Detail | MFP |
| Cause | Combination error between the MFP and the CPU UI firmware version. |
| Check & Remedy | Install the firmware in the all-firmware version-up mode. |

### A0-15 Incompatible DSK BOOT and program firmware

| | |
|---|---|
| Detail | MFP |
| Cause | Installation of the normal firmware was performed with a security kit enable. |
| Check & Remedy | Stop installation of the normal firmware. |

### A0-16 Data error of the energy-saving NIC controller firmware in the SD card

| | |
|---|---|
| Trouble content | Data error of the energy-saving NIC controller firmware in the SD card. |
| Detail | MFP |
| Cause | SD card trouble.<br>MFPC PWB trouble. |
| Check & Remedy | Reinstall the firmware.<br>Replace the SD card.<br>Replace the MFPC PWB. |

### A0-17 Inconsistency between the UI data and the CPU firmware version

| | |
|---|---|
| Trouble content | Inconsistency between the UI data and the CPU firmware version |
| Detail | 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)

| | |
|---|---|
| Detail | 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)

| | |
|---|---|
| Detail | PCU |
| Cause | Inconsistency between the PCU firmware version and the EEPROM data version. |
| Check & Remedy | Check the combination of the firmware. |

### A0-22 Conflict firmware and EEPROM data version (SCU)

| | |
|---|---|
| Trouble content | |
| Detail | SCU |
| Cause | Inconsistency between the SCU firmware version and the EEPROM data version. |
| Check & Remedy | Check the combination of the firmware. |

## C1-10 Main charger trouble (Monochrome)

| Detail | PCU |
|---|---|
| Cause | The main charger unit (BK) is not installed properly.<br>There is an abnormality in the main charger unit (BK).<br>The developer unit (KCMY) is not installed properly.<br>There is an abnormality in the developer unit (KCMY).<br>Disconnection of the high voltage MC PWB connector.<br>Breakage of the high voltage harness.<br>High voltage MC PWB trouble.<br>PCU PWB trouble. |
| Check & Remedy | Check the output of the main charger with SIM8-2.<br>Check the output of the developing bias with SIM8-1.<br>Check disconnection of the main charger./Replace.<br>Check disconnection of the developer unit./Replace.<br>Check disconnection of the high voltage MC PWB connector./Replace.<br>Replace the high voltage MC PWB.<br>Replace the PCU PWB. |

## C1-14 Main charger trouble (Color)

| Detail | PCU |
|---|---|
| Cause | The main charger unit (CMY) is not installed properly.<br>There is an abnormality in the main charger unit (CMY).<br>Disconnection of the high voltage MC PWB connector.<br>Breakage of the high voltage harness.<br>High voltage MC 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 MC PWB connector./Replace.<br>Replace the high voltage MC PWB<br>Replace the PCU PWB. |

## C4-00 PTC trouble (TC high voltage trouble)

| Detail | PCU |
|---|---|
| Cause | The PTC unit is not installed properly./Trouble.<br>The primary transfer unit is not installed properly./Trouble.<br>The secondary transfer unit is not installed properly./Trouble.<br>High voltage TC PWB trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Replace the PTC unit.<br>Replace the primary transfer unit.<br>Replace the secondary transfer unit.<br>Check disconnection of the high voltage TC PWB connector./Replace.<br>Replace the high voltage TC PWB.<br>Replace the PCU PWB. |

## E7-01 MFP image data error

| Detail | MFP |
|---|---|
| Cause | Image data transfer error in the MFPC PWB.<br>MFPC PWB trouble. |
| Check & Remedy | Check connection of the connector and the harness of the MFPC PWB.<br>Check or replace the MFPC PWB. |

## E7-02 HDD trouble when the mirroring kit is installed

| Trouble content | HDD trouble |
|---|---|
| Detail | 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>Breakdown of the HDD of the machine<br>Defective connection between the HDD and the mirroring kit harness<br>MFP PWB trouble |
| Check & Remedy | Use SIM62-20 to check the troouble<br>Check installation of the mirroring kit (connector and harness) and replace if necessary<br>Replace the broken HDD<br>Replace the mirroring kit<br>Replace the MFP PWB |

## E7-03 HDD trouble / Mirroring kit error

| Detail | MFP |
|---|---|
| Cause | Connector, harness connection trouble in the MFPC PWB and HDD.<br>HDD (error file management area) data abnormality (FAT breakage).<br>MFPC PWB trouble. |
| | (When the mirroring kit is installed)<br>RAID PWB trouble.<br>A HDD which has been used for mirroring is installed.<br>Both HDD's go into trouble under the use environment of mirroring. |
| Check & Remedy | Check connection of the connector and the harness of the MFPC PWB and HDD.<br>Use SIM62-2, 3 to check read/write operations of the HDD.<br>Replace the HDD.<br>Check or replace the MFPC PWB. |
| | (When the mirroring kit is installed)<br>Check the RAID PWB, and replace if necessary.<br>Replace the HDD.<br>(For details, refer to the HDD and RAID PWB replacement procedures under mirroring environment.) |

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## E7-04 HDD-ASIC error

| Detail | MFP |
|---|---|
| Cause | HDD-ASIC trouble. (MFPC PWB trouble.)<br>An error occurs in the HDD-ASIC self test when booting. |
| Check & Remedy | Check or replace the MFPC PWB. |

## E7-07 SD card error

| Detail | MFP |
|---|---|
| Cause | SD card trouble or contact error<br>MFPC PWB trouble. |
| Check & Remedy | Replace the SD card.<br>Check the SD card socket.<br>Replace the MFPC PWB. |

## E7-10 Shading error (Black correction)

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | Abnormality in the CCD black scan level when the scanner lamp is turned OFF.<br>Improper installation of the harness to the CCD unit.<br>CCD unit abnormality.<br>SCU PWB abnormality. |
| Check & Remedy | Check connection of the harness to the CCD unit.<br>Check the CCD unit.<br>Check the SCU PWB. |

## E7-11 Shading error (White correction)

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | Abnormality in the CCD white reference plate scan level when the scanner lamp is turned ON.<br>Improper installation of the harness to the CCD unit.<br>Dirt on the mirror, lens, and the reference white plate.<br>Scanner lamp lighting trouble.<br>Scanner lamp drive PWB trouble<br>CCD unit abnormality.<br>SCU PWB abnormality. |
| Check & Remedy | Check connection of the harness to the CCD unit.<br>Check connection of the harness to the scanner lamp unit.<br>Check or replace the scanner lamp.<br>Check or replace the scanner lamp drive PWB.<br>Clean or replace the mirror, the lens, and the reference white board.<br>Check or replace the CCD unit.<br>Check or replace the SCU PWB. |

## E7-14 CCD-ASIC error

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | SCU PWB trouble.<br>CCD unit trouble.<br>Improper Installation of the harness to the CCD unit. |
| Check & Remedy | Check the SCU PWB.<br>Replace the SCU PWB.<br>Check the CCD unit.<br>Replace the CCD unit.<br>Check connection of the harness to the CCD unit. |

## E7-20 LSU laser detection error (K)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Laser optical axis misalignment<br>Reduced laser power, lighting error, laser diode trouble.<br>LSU harness, connector trouble<br>LSU trouble |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check or replace the LSU control PWB.<br>Check connection of the LSU harness.<br>Replace the LSU. |

## E7-21 LSU laser detection error (C)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Laser optical axis misalignment<br>Reduced laser power, lighting error, laser diode trouble.<br>LSU harness, connector trouble<br>LSU trouble |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check or replace the LSU control PWB.<br>Check connection of the LSU harness.<br>Replace the LSU. |

## E7-22 LSU laser detection error (M)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Laser optical axis misalignment<br>Reduced laser power, lighting error, laser diode trouble.<br>LSU harness, connector trouble<br>LSU trouble |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check or replace the LSU control PWB.<br>Check connection of the LSU harness.<br>Replace the LSU. |

## E7-23 LSU laser detection error (Y)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Laser optical axis misalignment<br>Reduced laser power, lighting error, laser diode trouble.<br>LSU harness, connector trouble<br>LSU trouble |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check or replace the LSU control PWB.<br>Check connection of the LSU harness.<br>Replace the LSU. |

## E7-24 LSU LD driver error (K)

| Trouble content | LSU LD driver error |
|---|---|
| Detail | PCU |
| Cause | When lighting the LSU LD, initialization of the LD driver is not performed normally.<br>Harness/connector trouble between the LD PWB and the LSU mother PWB.<br>LD PWB trouble.<br>LSU mother PWB trouble. |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check connection of the harness/connector between the LD PWB and the LSU mother PWB. |

## E7-25 LSU LD driver error (C)

| Trouble content | LSU LD driver error |
|---|---|
| Detail | PCU |
| Cause | When lighting the LSU LD, initialization of the LD driver is not performed normally.<br>Harness/connector trouble between the LD PWB and the LSU mother PWB.<br>LD PWB trouble.<br>LSU mother PWB trouble. |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check connection of the harness/connector between the LD PWB and the LSU mother PWB. |

## E7-26 LSU LD driver error (M)

| Trouble content | LSU LD driver error |
|---|---|
| Detail | PCU |
| Cause | When lighting the LSU LD, initialization of the LD driver is not performed normally.<br>Harness/connector trouble between the LD PWB and the LSU mother PWB.<br>LD PWB trouble.<br>LSU mother PWB trouble. |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check connection of the harness/connector between the LD PWB and the LSU mother PWB. |

## E7-27 LSU LD driver error (Y)

| Trouble content | LSU LD driver error |
|---|---|
| Detail | PCU |
| Cause | When lighting the LSU LD, initialization of the LD driver is not performed normally.<br>Harness/connector trouble between the LD PWB and the LSU mother PWB.<br>LD PWB trouble.<br>LSU mother PWB trouble. |
| Check & Remedy | Use SIM61-1 to check the operation of the LSU.<br>Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check connection of the harness/connector between the LD PWB and the LSU mother PWB. |

## E7-28 LSU - PCU connection error

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Communication error between the CPU in the PCU PWB and the LSU control ASIC.<br>Improper connection of the communication connector between the PCU PWB and the LSU control PWB (interface PWB).<br>Harness trouble between the PCU PWB and the LSU control PWB (interface PWB)<br>PCU PWB trouble.<br>LSU control PWB trouble.<br>LSU trouble.<br>LSU mother PWB trouble. |
| Check & Remedy | Check connection of the connector and the harness between the PCU PWB and the LSU control PWB (interface PWB).<br>Replace the LSU mother PWB.<br>Replace the PCU PWB.<br>Replace the LSU.<br>Replace the LSU control PWB. |

## E7-29 LSU ASIC frequency error

| Trouble content | |
|---|---|
| Detail | 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 Image data trouble (Scanner expansion PWB (ACRE) ASIC)

| Trouble content | Image data trouble |
|---|---|
| Detail | MFP |
| Cause | An image data error occurs.<br>An image data send error occurs.<br>Scanner expansion PWB (ACRE) connection trouble.<br>Scanner expansion PWB (ACRE) trouble.<br>MFPC PWB trouble. |
| Check & Remedy | Check connection of the scanner expansion PWB (ACRE).<br>Check the scanner expansion PWB (ACRE), and replace if necessary.<br>Check the MFPC PWB, and replace if necessary. |

## E7-46 Image data decode error (Scanner expansion PWB (ACRE) ASIC)

| Trouble content | Image data decode error |
|---|---|
| Detail | MFP |
| Cause | A decode error occurs while high compression PDF images are made. (garbled data)<br>Scanner expansion PWB (ACRE) connection trouble.<br>Scanner expansion PWB (ACRE) trouble.<br>MFPC PWB trouble. |
| Check & Remedy | Check connection of the scanner expansion PWB (ACRE).<br>Check the scanner expansion PWB (ACRE), and replace if necessary.<br>Check the MFPC PWB, and replace if necessary. |

## E7-47 Combination of firmware error between the MFP and the ACRE ASIC

| | |
|---|---|
| Trouble content | Combination of firmware error |
| Detail | MFP |
| Cause | Written ACRE board of the firmware that a model did not support MFP was connected. |
| Check & Remedy | Use SIM49-1 or SIM49-10 to execute firmware version-up |

## E7-48 Scanner expansion PWB (ACRE) ASIC memory error

| | |
|---|---|
| Trouble content | • DDR calibration error<br>• DIMM insertion trouble, etc. |
| Detail | MFP |
| Cause | Scanner expansion PWB (ACRE) DIMM trouble, memory slot trouble.<br>Scanner expansion PWB (ACRE) DIMM insertion trouble.<br>Scanner expansion PWB (ACRE) connection trouble.<br>Scanner expansion PWB (ACRE) trouble.<br>MFPC PWB trouble. |
| Check & Remedy | Check insertion of the scanner expansion PWB (ACRE) DIMM memory.<br>Check the scanner expansion PWB (ACRE) DIMM memory, and replace if necessary.<br>Check connection of the scanner expansion PWB (ACRE).<br>Check the scanner expansion PWB (ACRE), and replace if necessary.<br>Check the MFPC PWB, and replace if necessary. |

## E7-49 Water Mark data error

| | |
|---|---|
| Trouble content | |
| Detail | MFP |
| Cause | Watermark data trouble.<br>HDD trouble. |
| Check & Remedy | Use SIM49-5 to upload the watermark data.<br>Replace the HDD. |

## E7-50 Combination error between PWB and firmware (PCU PWB detection)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | A PWB/firmware/LSU which is not compatible with the machine specifications is detected.<br>PCU PWB trouble<br>LSU trouble |
| Check & Remedy | Check the kind and the version of the firmware.<br>Check or replace the LSU.<br>Check or replace the PCU PWB. |

## E7-55 PCU PWB information sum error

| | |
|---|---|
| Trouble content | PCU EEPROM PWB information sum error |
| Detail | PCU |
| Cause | PCU EEPROM sum check error.<br>PCU EEPROM trouble.<br>PCU EEPROM contact trouble. |
| Check & Remedy | Replace the PCU PWB.<br>Replace the PCU EEPROM. |

## E7-60 Combination error between PWB and firmware (MFPC PWB detection)

| | |
|---|---|
| Trouble content | |
| Detail | MFP |
| Cause | A PWB/firmware which is not compatible with the machine specifications is detected in the MFPC PWB.<br>MFPC PWB trouble. |
| Check & Remedy | Check the kind and the version of the firmware.<br>Check or replace the MFPC PWB. |

## E7-61 Combination error between the MFPC PWB and the PCU PWB (MFPC PWB detection)

| | |
|---|---|
| Trouble content | |
| Detail | MFP |
| Cause | Combination error between the MFPC PWB and the PCU PWB.<br>MFPC PWB trouble.<br>PCU PWB trouble. |
| Check & Remedy | Check the combination between the MFPC PWB and the PCU PWB.<br>Replace the MFPC PWB.<br>Replace the PCU PWB. |

## E7-65 MFP EEPROM sum check error

| | |
|---|---|
| Trouble content | |
| Detail | MFP |
| Cause | MFPC PWB EEPROM trouble.<br>MFPC PWB EEPROM contact trouble. |
| Check & Remedy | Replace the MFPC PWB.<br>Replace the MFPC PWB EEPROM. |

## E7-80 MFP - SCU PWB communication error

| | |
|---|---|
| Trouble content | |
| Detail | MFP |
| Cause | SCU PWB - MFPC PWB connection trouble.<br>SCU PWB trouble.<br>MFPC PWB trouble. |
| Check & Remedy | Check connection of the SCU PWB and the MFPC PWB.<br>Check the ground.<br>Replace the SCU PWB.<br>Replace the MFPC PWB. |

## E7-89 Communication error between MFPC PWB CPU and energy-saving NIC controller

| | |
|---|---|
| Trouble content | No response can be obtained from the energy-saving NIC controller. |
| Detail | MFP |
| Cause | MFPC PWB trouble. |
| Check & Remedy | Replace the MFPC PWB. |

## E7-90 MFP - PCU PWB communication error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | PCU PWB - MFPC PWB connection trouble.<br>PCU PWB trouble.<br>MFPC PWB trouble. |
| Check & Remedy | Check connection of the PCU PWB and the MFPC PWB.<br>Check the ground.<br>Replace the PCU PWB.<br>Replace the MFPC PWB. |

## E7-91 FAX reception image data error

| Trouble content | An error of FAX reception image data process occurs. |
|---|---|
| Detail | MFP |
| Cause | Image data process abnormality<br>HDD trouble<br>SD card trouble or contact error<br>Image compression data corruption<br>MFPC PWB trouble<br>FAX control PWB trouble |
| Check & Remedy | Use SIM60-01 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 MFPC PWB.<br>Replace the FAX control PWB. |

## E7-92 Copy image data error

| Trouble content | An error of copy image data process occurs.<br>(In Non ERDH) |
|---|---|
| Detail | MFP |
| Cause | Image data process abnormality<br>HDD trouble<br>Image compression data corruption<br>MFPC PWB trouble<br>DRAM memory trouble or contact error |
| Check & Remedy | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFPC PWB. |

## E7-93 Copy, image send, FAX, filing, print image data process error

| Trouble content | An image data process error occurs in the following operation mode:<br>• Copy (in ERDH)<br>• Copy composing system function (Water mark)<br>• When in image send<br>• When filing documents<br>• When displaying the preview<br>• When printing with the GDI/PCL printer<br>• Copy composing system function (Water mark) |
|---|---|
| Detail | MFP |
| Cause | Image data process abnormality<br>HDD trouble<br>Image compression data corruption<br>MFPC PWB trouble<br>DIMM memory trouble or contact error |
| Check & Remedy | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>Replace or check installation of the DIMM memory. |

## E7-94 Image file data process error (when importing file data)

| Trouble content | File image process error (backup restore error) when importing filing data |
|---|---|
| Detail | MFP |
| Cause | Image data process abnormality<br>HDD trouble<br>Image compression data corruption<br>MFPC PWB trouble<br>DIMM memory trouble or contact error |
| Check & Remedy | Use SIM60-01 to check the read/write operations of the memory.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>Replace or check installation of the DIMM memory. |

## E7-96 MFPC PWB memory check error

| Trouble content | MFPC PWB memory access trouble |
|---|---|
| Detail | MFP |
| Cause | Memory data curruption occure<br>Memory device trouble or contact error |
| Check & Remedy | Use SIM60-1 to check the read/write operations of the memory.<br>Replace MFP PWB |

## E7-A0 LSU LD PWB EEPROM read/write error (K)

| Trouble content | Write error in the EEPROM write sequence |
|---|---|
| Detail | PCU |
| Cause | LD PWB EEPROM trouble.<br>LSU mother PWB trouble.<br>Connector/harness trouble between the LD PWB and the LSU mother PWB.<br>Connector/harness trouble between the PCU PWB and the LSU mother PWB.<br>DC POWER PWB trouible. |
| Check & Remedy | Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the LD PWB and the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the PCU PWB and the LSU mother PWB, and replace if necessary.<br>Replace the LSU.<br>Measure the voltage between the C101 on the LSU-cnt PWB and the C80/C61 on the LD PWB and the check whether the voltage is 5V. If the voltage is not 5V, replace DC POWER PWB. |

## E7-A1 LSU LD PWB EEPROM read/write error (C)

| Trouble content | Write error in the EEPROM write sequence |
|---|---|
| Detail | PCU |
| Cause | LD PWB EEPROM trouble.<br>LSU mother PWB trouble.<br>Connector/harness trouble between the LD PWB and the LSU mother PWB.<br>Connector/harness trouble between the PCU PWB and the LSU mother PWB. |
| Check & Remedy | Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the LD PWB and the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the PCU PWB and the LSU mother PWB, and replace if necessary.<br>Replace the LSU. |

## E7-A2 LSU LD PWB EEPROM read/write error (M)

| | |
|---|---|
| Trouble content | Write error in the EEPROM write sequence |
| Detail | PCU |
| Cause | LD PWB EEPROM trouble.<br>LSU mother PWB trouble.<br>Connector/harness trouble between the LD PWB and the LSU mother PWB.<br>Connector/harness trouble between the PCU PWB and the LSU mother PWB. |
| Check & Remedy | Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the LD PWB and the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the PCU PWB and the LSU mother PWB, and replace if necessary.<br>Replace the LSU. |

## E7-A3 LSU LD PWB EEPROM read/write error (Y)

| | |
|---|---|
| Trouble content | Write error in the EEPROM write sequence |
| Detail | PCU |
| Cause | LD PWB EEPROM trouble.<br>LSU mother PWB trouble.<br>Connector/harness trouble between the LD PWB and the LSU mother PWB.<br>Connector/harness trouble between the PCU PWB and the LSU mother PWB. |
| Check & Remedy | Check the LSU, and replace if necessary.<br>Check the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the LD PWB and the LSU mother PWB, and replace if necessary.<br>Check the connector/harness between the PCU PWB and the LSU mother PWB, and replace if necessary.<br>Replace the LSU. |

## E7-A5 Installation error of HDD which was used in the mirroring kit

| | |
|---|---|
| Trouble content | When a HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit, its operation is restricted in order to prevent against malfunction. |
| Detail | MFP |
| Cause | A HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit. |
| Check & Remedy | Replace the HDD with one which has not been used in the mirroring kit. |

## E7-A6 Compact flash memory trouble

| | |
|---|---|
| Trouble content | A read/write access error in the compact flash memory occurs. |
| Detail | |
| Cause | Compact flash memory trouble.<br>MFPC PWB trouble.<br>File system control area data trouble. |
| Check & Remedy | Replace the compact flash memory.<br>Replace the MFPC PWB. |

## EE-EC Automatic toner density adjustment error

| | |
|---|---|
| Trouble content | The sampling level in the automatic toner density adjustment is outside of 128 ±10. |
| Detail | 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 76 or less or the control voltage is 208 or above. |
| Detail | PCU |
| Cause | Toner density sensor trouble.<br>Developing unit trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the toner density sensor.<br>Replace the developing unit.<br>Replace the PCU PWB. |

## EE-EU Automatic toner density adjustment error (Under toner)

| | |
|---|---|
| Trouble content | The sampling level in the automatic toner density adjustment is 178 or above or the control voltage is 51 or less. |
| Detail | 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. |

## F1-00 Finisher - PCU PWB communication error

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | Connection trouble of the connector and the harness between the finisher and the PCU PWB.<br>Finisher control PWB trouble.<br>PCU PWB trouble. |
| Check & Remedy | Check the connector and the harness between the finisher and the PCU PWB.<br>Replace the finisher control PWB.<br>Replace the PCU PWB. |

## F1-03 Finisher paper exit roller lifting operation trouble

| Trouble content | |
|---|---|
| Detail | 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>Use SIM3-2 to check the operation of the home position sensor.<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

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Stapler shift motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the stapler shift motor.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the stapler shift motor.<br>Check connection of the connector and the harness.<br>Replace the home position sensor.<br>Replace the finisher control PWB. |

## F1-10 Staple operation trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Staple motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the staple motor.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the staple motor.<br>Check connection of the connector and the harness.<br>Replace the home position sensor.<br>Replace the finisher control PWB. |

## F1-11 Finisher grip motor trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Paper exit operation trouble caused by the gripper.<br>Gripper motor lock or trouble.<br>Gripper home position sensor trouble.<br>Finisher control PWB trouble.<br>Connection trouble of the harness and the connector of the finisher control PWB and the gripper motor. |
| Check & Remedy | Use SIM3-3 to check the operation of the gripper motor.<br>Check the connection of the harness and the connector of the finisher control PWB and the gripper motor, and replace if necessary.<br>Check the gripper motor, and replace if necessary.<br>Check the gripper home position sensor, and replace if necessary.<br>Check the finisher control PWB, and replace if necessary. |

## F1-15 Finisher paper exit tray lift operation trouble

| Trouble content | Lift motor trouble. |
|---|---|
| Detail | PCU |
| Cause | Paper exit tray lift motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the paper exit tray lift motor.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the finisher control PWB.<br>Replace the paper exit tray lift motor.<br>Replace the home position sensor. |

## F1-19 Finisher alignment operation trouble F

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Finisher paper alignment motor lock.<br>Motor speed abnormality.<br>Over-current to the motor.<br>Finisher control PWB trouble.<br>Home position sensor trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the paper alignment motor F.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the finisher control PWB.<br>Replace the paper alignment motor F.<br>Replace the home position sensor. |

## F1-20 Finisher alignment operation trouble R

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Finisher paper alignment motor lock.<br>Motor speed abnormality.<br>Over-current to the motor.<br>Finisher control PWB trouble.<br>Home position sensor trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the paper alignment motor R.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the finisher control PWB.<br>Replace the paper alignment motor R.<br>Replace the home position sensor. |

## F1-21 Finisher fan trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Motor lock, motor harness short-circuit/open, finisher control PWB trouble, connection harness/connector trouble.<br>Fan motor lock, short-circuit, open circuit.<br>Finisher fan trouble.<br>Finisher control PWB trouble.<br>Connector/harness trouble |
| Check & Remedy | Use SIM3-3 to check the operation of the fan.<br>Check the finisher fan, and replace if necessary.<br>Check the finisher control PWB, and replace if necessary.<br>Check the connector/harness, and replace if necessary. |

## F1-31 Finisher saddle motor trouble (Saddle stitch finisher)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Saddle paper folding motor trouble.<br>Saddle paper folding mechanism trouble.<br>Finisher control PWB trouble.<br>Folding plate home position sensor trouble.<br>Saddle paper folding motor rotation sensor trouble.<br>Harness/connector connection trouble.<br>PCU PWB trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the saddle motor.<br>Check the saddle paper folding mechanism.<br>Check the finisher control PWB, and replace if necessary.<br>Check the folding plate home position sensor, and replace if necessary.<br>Check the saddle paper folding motor rotation sensor, and replace if necessary.<br>Check connection of the harness/connector, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

## F1-32 Communication error between the finisher and the punch unit (Saddle stitch finisher)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Connector/harness trouble between the finisher and the punch unit.<br>Finisher control PWB trouble.<br>PCU PWB trouble.<br>Malfunction due to noises. |
| Check & Remedy | Check the connector/harness between the finisher and the punch unit, and replace if necessary.<br>Check the finisher control PWB, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

## F1-33 Punch unit shift operation trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Punch shift motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble. |
| Check & Remedy | Use SIM3-3 to check the operation of the punch shifting.<br>Use SIM3-2 to check the operation of the home position sensor.<br>Replace the punch shift motor.<br>Replace the finisher control PWB.<br>Replace the home position sensor.<br>Check connection of the connectors and the harness. |

## F1-34 Punch operation trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Punch motor trouble.<br>Finisher control PWB trouble.<br>Home position sensor trouble.<br>Harness and connector connection trouble. |
| Check & Remedy | Use SIM3-2 to check the operation of the home position sensor.<br>Use SIM3-3 to check the operation of the punch.<br>Replace the punch motor.<br>Replace the finisher control PWB.<br>Replace the home position sensor.<br>Check connection of the connectors and the harness. |

## F1-36 Punch paper edge detection error

| Trouble content | |
|---|---|
| Detail | 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

| Trouble content | |
|---|---|
| Detail | 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

| Trouble content | |
|---|---|
| Detail | 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

| Trouble content | |
|---|---|
| Detail | 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

| | |
|---|---|
| Trouble content | Abnormality in the folding positioning guide motor in the saddle section. |
| Detail | 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. |

## F1-43 Saddle alignment operation trouble

| | |
|---|---|
| Trouble content | |
| Detail | 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

| | |
|---|---|
| Trouble content | Abnormality of the staple unit drive motor in the saddle section. |
| Detail | 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. |

## F1-47 Saddle paper transport motor trouble

| | |
|---|---|
| Trouble content | Abnormality in the drive roller oscillation motor in the finisher saddle transport section. |
| Detail | 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

| | |
|---|---|
| Trouble content | |
| Detail | 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. |

## F2-22 Discharge lamp trouble (K)

| | |
|---|---|
| Trouble content | The lamp is kept open for 1 sec from turning on the discharge lamp. |
| Detail | PCU |
| Cause | Contact trouble between the discharge lamp PWB (K) and the PCU PWB.<br>Discharge lamp PWB (K) trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the discharge lamp PWB (K).<br>Check the harness and the connector.<br>Replace the PCU PWB. |

## F2-23 Discharge lamp trouble (C)

| | |
|---|---|
| Trouble content | The lamp is kept open for 1 sec from turning on the discharge lamp. |
| Detail | PCU |
| Cause | Contact trouble between the discharge lamp PWB (C) and the PCU PWB.<br>Discharge lamp PWB (C) trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the discharge lamp PWB (C).<br>Check the harness and the connector.<br>Replace the PCU PWB. |

## F2-24 Discharge lamp trouble (M)

| | |
|---|---|
| Trouble content | The lamp is kept open for 1 sec from turning on the discharge lamp. |
| Detail | PCU |
| Cause | Contact trouble between the discharge lamp PWB (M) and the PCU PWB.<br>Discharge lamp PWB (M) trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the discharge lamp PWB (M).<br>Check the harness and the connector.<br>Replace the PCU PWB. |

## F2-25 Discharge lamp trouble (Y)

| | |
|---|---|
| Trouble content | The lamp is kept open for 1 sec from turning on the discharge lamp. |
| Detail | PCU |
| Cause | Contact trouble between the discharge lamp PWB (Y) and the PCU PWB.<br>Discharge lamp PWB (Y) trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the discharge lamp PWB (Y).<br>Check the harness and the connector.<br>Replace the PCU PWB. |

## F2-39 Process thermistor trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Process thermistor trouble.<br>Process thermistor harness connection trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the process thermistor.<br>Check connection of the process thermistor harness and the connector.<br>Replace the PCU PWB. |

## F2-40 Toner density sensor trouble (K)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner density sensor output abnormality.<br>Sensor connector and harness connection trouble.<br>Developing unit trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the toner density sensor.<br>Check connection of the sensor connector and the harness.<br>Replace the developing unit.<br>Replace the PCU PWB. |

## F2-41 Toner density sensor trouble (C)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner density sensor output abnormality.<br>Sensor connector and harness connection trouble.<br>Developing unit trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the toner density sensor.<br>Check connection of the sensor connector and the harness.<br>Replace the developing unit.<br>Replace the PCU PWB. |

## F2-42 Toner density sensor trouble (M)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner density sensor output abnormality.<br>Sensor connector and harness connection trouble.<br>Developing unit trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the toner density sensor.<br>Check connection of the sensor connector and the harness.<br>Replace the developing unit.<br>Replace the PCU PWB. |

## F2-43 Toner density sensor trouble (Y)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner density sensor output abnormality.<br>Sensor connector and harness connection trouble.<br>Developing unit trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the toner density sensor.<br>Check connection of the sensor connector and the harness.<br>Replace the developing unit.<br>Replace the PCU PWB. |

## F2-45 Color image density sensor trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Color image density sensor sensitivity adjustment trouble.<br>Color image density sensor trouble.<br>Sensor harness and connector connection trouble.<br>Image density sensor dirt.<br>Transfer unit lift operation trouble<br>PCU PWB trouble. |
| Check & Remedy | Replace the color image density sensor.<br>Check connection of the sensor harness and the connector.<br>Clean the image density sensor.<br>Repair the transfer unit lift mechanism.<br>Replace the PCU PWB.<br>Use SIM44-2 to perform the sensitivity adjustment of the process control sensor. |

## F2-49 LSU thermistor trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | The LSU temperature is outside of -28°C - 78°C.<br>LSU thermistor trouble.<br>LSU thermistor harness and connector connection trouble<br>PCU PWB trouble.<br>LSU control PWB trouble. |
| Check & Remedy | Replace the PCU PWB.<br>Replace the LSU control PWB.<br>Replace the LSU. |

## F2-50 K drum phase sensor trouble

| Trouble content | |
|---|---|
| Detail | 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 | Use SIM30-1 to check the operation of "DHPD_K".<br>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. |

## F2-51 CL drum phase sensor trouble

| Trouble content | |
|---|---|
| Detail | 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 | Use SIM30-1 to check the operation of "DHPD_CL".<br>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 Temperature/humidity sensor trouble (HUD_M/TH_M)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Temperature/humidity sensor trouble.<br>Process humidity sensor harness and connector connection trouble<br>PCU PWB trouble. |
| Check & Remedy | Replace the temperature/humidity sensor.<br>Check connection of the temperature/humidity sensor harness and the connector.<br>Replace the PCU PWB. |

## F2-64 Toner supply operation trouble (K)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner motor trouble.<br>Toner density sensor trouble.<br>Connector/harness trouble.<br>PCU PWB trouble.<br>Toner cartridge trouble.<br>Developing unit trouble.<br>Toner transport pipe section trouble |
| Check & Remedy | Replace the toner motor.<br>Replace the toner density sensor.<br>Connector and harness check.<br>Replace the PCU PWB.<br>Replace the toner cartridge.<br>Replace the developing unit.<br>Check the toner transport pipe section. |

## F2-65 Toner supply operation trouble (C)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner motor trouble.<br>Toner density sensor trouble.<br>Connector/harness trouble.<br>PCU PWB trouble.<br>Toner cartridge trouble.<br>Developing unit trouble.<br>Toner transport pipe section trouble |
| Check & Remedy | Replace the toner motor.<br>Replace the toner density sensor.<br>Connector and harness check.<br>Replace the PCU PWB.<br>Replace the toner cartridge.<br>Replace the developing unit.<br>Check the toner transport pipe section. |

## F2-66 Toner supply operation trouble (M)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner motor trouble.<br>Toner density sensor trouble.<br>Connector/harness trouble.<br>PCU PWB trouble.<br>Toner cartridge trouble.<br>Developing unit trouble.<br>Toner transport pipe section trouble |
| Check & Remedy | Replace the toner motor.<br>Replace the toner density sensor.<br>Connector and harness check.<br>Replace the PCU PWB.<br>Replace the toner cartridge.<br>Replace the developing unit.<br>Check the toner transport pipe section. |

## F2-67 Toner supply operation trouble (Y)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner motor trouble.<br>Toner density sensor trouble.<br>Connector/harness trouble.<br>PCU PWB trouble.<br>Toner cartridge trouble.<br>Developing unit trouble.<br>Toner transport pipe section trouble |
| Check & Remedy | Replace the toner motor.<br>Replace the toner density sensor.<br>Connector and harness check.<br>Replace the PCU PWB.<br>Replace the toner cartridge.<br>Replace the developing unit.<br>Check the toner transport pipe section. |

## F2-70 Improper toner cartridge detection (K)

| Trouble content | |
|---|---|
| Detail | 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. |

## F2-71 Improper toner cartridge detection (C)

| Trouble content | |
|---|---|
| Detail | 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. |

## F2-72 Improper toner cartridge detection (M)

| Trouble content | |
|---|---|
| Detail | 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. |

## F2-73 Improper toner cartridge detection (Y)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.)<br>Toner cartridge trouble.<br>PCU PWB trouble. |
| Check & Remedy | Replace the toner cartridge.<br>Replace the PCU PWB. |

## F2-74 Toner cartridge CRUM error (K)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner cartridge (CRUM) trouble.<br>PCU PWB trouble.<br>Connector and harness trouble between PCU PWB and toner cartridge |
| Check & Remedy | Replace the toner cartridge.<br>Replace the PCU PWB.<br>Check the connector and the harness between the PCU PWB and the toner cartridge. |

## F2-75 Toner cartridge CRUM error (C)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner cartridge (CRUM) trouble.<br>PCU PWB trouble.<br>Connector and harness trouble between PCU PWB and toner cartridge |
| Check & Remedy | Replace the toner cartridge.<br>Replace the PCU PWB.<br>Check the connector and the harness between the PCU PWB and the toner cartridge. |

## F2-76 Toner cartridge CRUM error (M)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner cartridge (CRUM) trouble.<br>PCU PWB trouble.<br>Connector and harness trouble between PCU PWB and toner cartridge |
| Check & Remedy | Replace the toner cartridge.<br>Replace the PCU PWB.<br>Check the connector and the harness between the PCU PWB and the toner cartridge. |

## F2-77 Toner cartridge CRUM error (Y)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Toner cartridge (CRUM) trouble.<br>PCU PWB trouble.<br>Connector and harness trouble between PCU PWB and toner cartridge |
| Check & Remedy | Replace the toner cartridge.<br>Replace the PCU PWB.<br>Check the connector and the harness between the PCU PWB and the toner cartridge. |

## F2-78 Registration image density sensor trouble (Transfer belt substrate reflection rate abnormality)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Image density (registration) sensor trouble (Sensor sensitivity adjustment trouble).<br>PCU PWB trouble.<br>Image density (resist) sensor connector and harness connection trouble<br>Image density (registration) sensor dirt.<br>Transfer belt dirt, scratch. |
| Check & Remedy | Replace the image density (registration) sensor.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness of the image density (resist) sensor.<br>Clean the image density (registration) sensor.<br>Clean or replace the transfer belt.<br>Use SIM44-2 to perform the sensibility adjustment of the process control sensor. |

## F2-91 High density process control high voltage error (K)

| Trouble content | For the production process (Not occur in the market.) |
|---|---|
| Detail | PCU |
| Cause | — |
| Check & Remedy | — |

## F2-92 High density process control high voltage error (C)

| Trouble content | For the production process (Not occur in the market.) |
|---|---|
| Detail | PCU |
| Cause | — |
| Check & Remedy | — |

## F2-93 High density process control high voltage error (M)

| Trouble content | For the production process (Not occur in the market.) |
|---|---|
| Detail | PCU |
| Cause | — |
| Check & Remedy | — |

## F2-94 High density process control high voltage error (Y)

| Trouble content | For the production process (Not occur in the market.) |
|---|---|
| Detail | PCU |
| Cause | — |
| Check & Remedy | — |

## F3-12 Paper feed tray 1 lift operation trouble

| | |
|---|---|
| Trouble content | CLUD1 does not turn ON within the specified time. |
| Detail | PCU |
| Cause | CLUD1 is not turned ON within the specified time.<br>CLUD1 sensor trouble.<br>Paper feed tray 1 lift unit trouble.<br>PCU PWB trouble.<br>Sensor harness and connector connection trouble |
| Check & Remedy | Check connection of the harness and the connector of CLUD1.<br>Replace the lift-up unit.<br>Replace the PCU PWB. |

## F3-22 Paper feed tray 2 lift operation trouble

| | |
|---|---|
| Trouble content | CLUD2 does not turn ON within the specified time. |
| Detail | PCU |
| Cause | CLUD2 does not turn ON within the specified time.<br>CLUD2 sensor trouble.<br>Paper feed tray 2 lift unit trouble.<br>PCU PWB trouble.<br>Sensor harness and connector connection trouble |
| Check & Remedy | Check the harness and the connector of CLUD2.<br>Replace the lift-up unit.<br>Replace the PCU PWB. |

## F6-00 MFPC PWB - FAX communication trouble

| | | |
|---|---|---|
| Trouble content | | MFP - FAX communication establishment error / Framing / Parity / Protocol error |
| Section | | MFP |
| Case 1 | Cause | FAX control PWB trouble. |
| | Check and Remedy | Replace the FAX control PWB. |
| Case 2 | Cause | FAX control PWB - MFPC PWB connector and harness trouble |
| | Check and Remedy | Check the connector and the harness between the FAX control PWB and the MFPC PWB. |
| Case 3 | Cause | FAX control PWB - Mother board connector and harness trouble |
| | Check and Remedy | Check the connector and the harness between the FAX control PWB and the mother board. |
| Case 4 | Cause | FAX control PWB ROM trouble / ROM pin breakage |
| | Check and Remedy | Check the ROM of the FAX control PWB. |

## F6-01 FAX control PWB EEPROM read/write error

| | | |
|---|---|---|
| Trouble content | | FAX control PWB EEPROM access error (Read and write) |
| Section | | FAX |
| Case 1 | Cause | FAX control PWB EEPROM trouble |
| | Check and 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 control PWB EEPROM access circuit trouble |
| | Check and Remedy | Replace the FAX control PWB. |

## F6-04 FAX MODEM operation trouble

| | | |
|---|---|---|
| Trouble content | | FAX control PWB MODEM chip operation trouble |
| Section | | FAX |
| Case 1 | Cause | FAX MODEM chip operation trouble. |
| | Check and remedy | Replace the FAX control PWB. |
| Case 2 | Cause | The FAX MODEM chip cannot be accessed. |
| | Check and Remedy | Replace the FAX control PWB. |

## F6-21 Improper combination of TEL/LIU PWB and FAX soft switch

| | | |
|---|---|---|
| Trouble content | | Incompatibility between the TEL/LIU PWB and the FAX control PWB information (soft switch) |
| Section | | MFP |
| Case 1 | Cause | The destination of the TEL/LIU PWB installed is improper. |
| | Check and Remedy | Check the destination of the TEL/LIU PWB. |
| Case 2 | Cause | TEL/LIU PWB trouble. |
| | Check and Remedy | Replace the TEL/LIU PWB. |

## F6-30 FAX 1-chip microprocessor access error (FAX detection)

| | | |
|---|---|---|
| Trouble content | | FAX 1-chip microprocessor access error (Read and write) |
| Section | | MFP |
| Case 1 | Cause | Program writing trouble to the 1-chip microprocessor, or no program data written. |
| | Check and Remedy | Use SIM66-42 to rewrite the 1-chip microprocessor program. |
| Case 2 | Cause | FAX 1-chip microprocessor circuit trouble. |
| | Check and Remedy | Replace the FAX control PWB. |

## F6-97 Incompatibility between FAX control PWB and the main machine

| | | |
|---|---|---|
| Trouble content | | Incompatibility between FAX control PWB and the main machine |
| Section | | MFP |
| Case 1 | Cause | The FAX control PWB installed is improper.<br>FAX control PWB trouble. |
| | Check and Remedy | Install a proper FAX control PWB.<br>Replace the FAX control PWB. |

## F6-98 Incompatibility between the FAX control PWB destination and the main machine destination

| | | |
|---|---|---|
| Trouble content | | Incompatibility between the FAX control PWB destination and the main machine destination |
| Section | | MFP |
| Case 1 | Cause | Incompatibility between the destination information written into the FAX control PWB EEPROM and that in the main machine (set with SIM26-6) |
| | Check and Remedy | 1) Check the destination of the FAX control PWB.<br>2) Check the destination of the machine. (SIM26-6) |

## H2-00 Thermistor open trouble (TH_UM_AD2)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>Fusing section connector connection trouble<br>Fusing unit not installed |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Check the connector in the fusing section. |

## H2-01 Thermistor open trouble (TH_LM)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>Fusing section connector connection trouble<br>Fusing unit not installed |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Check the connector in the fusing section. |

## H2-02 Thermistor open trouble (TH_US)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>Fusing section connector connection trouble<br>Fusing unit not installed |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Check the connector in the fusing section. |

## H2-03 Thermistor open trouble (TH_UM_AD1)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>Fusing section connector connection trouble<br>Fusing unit not installed |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Check the connector in the fusing section. |

## H3-00 Fusing section high temperature trouble (TH_UM)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | The fusing temperature exceeds the specified level.<br>Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>HL control PWB trouble |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Replace the HL control PWB. |

## H3-01 Fusing section high temperature trouble (TH_LM)

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | The fusing temperature exceeds the specified level.<br>Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>HL control PWB trouble |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Replace the HL control PWB. |

## H3-02 Fusing section high temperature trouble (TH_US)

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | The fusing temperature exceeds the specified level.<br>Thermistor trouble<br>PCU PWB trouble<br>Thermistor connector and harness connection trouble<br>HL control PWB trouble |
| Check & Remedy | Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Use SIM14 to cancel the trouble.<br>Replace the thermistor.<br>Replace the PCU PWB.<br>Check connection of the thermistor connector and the harness.<br>Replace the HL control PWB. |

## H4-00 Fusing section low temperature trouble (TH_UM_AD2)

| Trouble content | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. |
|---|---|
| Detail | PCU |
| Cause | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble. |
| Check & Remedy | Use SIM14 to cancel the trouble.<br>Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit. |

## H4-01 Fusing section low temperature trouble (TH_LM)

| Trouble content | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. |
|---|---|
| Detail | PCU |
| Cause | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble. |
| Check & Remedy | Use SIM14 to cancel the trouble.<br>Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit. |

## H4-02 Fusing section low temperature trouble (TH_US)

| Trouble content | The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. |
|---|---|
| Detail | PCU |
| Cause | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble. |
| Check & Remedy | Use SIM14 to cancel the trouble.<br>Use SIM44-14 to check the state of the thermistor.<br>Use SIM5-2 to check the flashing operation of the heater lamp.<br>Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit. |

## H5-01 5 times continuous POD1 not-reach jam

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | A fusing jam is not canceled completely. (A jam paper remains.)<br>POD1 sensor trouble<br>Fusing unit installation trouble<br>POD1 sensor connector and harness connection trouble<br>PCU PWB trouble<br>Fusing unit, drive section trouble |
| Check & Remedy | Replace the POD1 sensor.<br>Check installation of the fusing unit.<br>Replace the fusing unit.<br>Check or repair the fusing drive section.<br>Check connection of the POD1 sensor connector and the harness.<br>Replace the PCU PWB.<br>Use SIM14 to cancel the trouble. |

## H7-10 Recovery error from low fuser temp. (TH_UM_AD2)

| Trouble content | The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. |
|---|---|
| Detail | PCU |
| Cause | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble. |
| Check & Remedy | Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit.<br>Use SIM5-2 to check the flashing operation of the heater lamp. |

## H7-11 Recovery error from low fuser temp. (TH_LM)

| | |
|---|---|
| Trouble content | The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. |
| Detail | PCU |
| Cause | Thermistor trouble.<br>Heater lamp trouble.<br>PCU PWB trouble.<br>Thermostat trouble.<br>Connector, harness connection trouble.<br>HL control PWB trouble.<br>Power unit trouble. |
| Check & Remedy | Replace the thermistor.<br>Replace the heater lamp.<br>Replace the PCU PWB.<br>Replace the thermostat.<br>Check connection of the connector and the harness.<br>Replace the HL control PWB.<br>Replace the power unit.<br>Use SIM5-2 to check the flashing operation of the heater lamp. |

## L1-00 Scanner feed trouble

| | |
|---|---|
| Trouble content | Scanner feed is not completed within the specified time. |
| Detail | SCU |
| Cause | 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

| | |
|---|---|
| Trouble content | Scanner return is not completed within the specified time. |
| Detail | SCU |
| Cause | 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

| | |
|---|---|
| Trouble content | A lock signal is not detected within the specified time in ON operation of the paper feed motor after warming-up or canceling a jam. |
| Detail | PCU |
| Cause | Paper feed motor trouble<br>Paper feed motor 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 paper feed motor harness and the connector.<br>Replace the PCU PWB. |

## L4-03 Fusing motor trouble

| | |
|---|---|
| Trouble content | The motor lock signal is detected during rotation of the fusing motor. |
| Detail | PCU |
| Cause | Fusing motor trouble<br>Fusing motor harness and connector connection trouble<br>PCU PWB trouble |
| Check & Remedy | Use SIM6-1 to check the operation of the fusing motor.<br>Replace the Fusing motor.<br>Check connection of the fusing motor harness and the connection.<br>Replace the PCU PWB. |

## L4-04 Developing motor trouble (BLACK)

| | |
|---|---|
| Trouble content | The motor lock signal is detected during rotation of the developing motor. |
| Detail | PCU |
| Cause | Developing motor trouble<br>Developing motor harness and connector connection trouble<br>PCU PWB trouble<br>Developing unit trouble |
| Check & Remedy | Use SIM25-1 to check the operation of the developing motor.<br>Replace the developing motor.<br>Check connection of the developing motor harness and the connection.<br>Replace the PCU PWB.<br>Replace the developing motor.<br>Replace the developing unit. |

## L4-05 Developing motor trouble (COLOR)

| | |
|---|---|
| Trouble content | The motor lock signal is detected during rotation of the developing motor. |
| Detail | PCU |
| Cause | Developing motor trouble<br>Developing motor harness and connector connection trouble<br>PCU PWB trouble<br>Developing unit trouble |
| Check & Remedy | Use SIM25-1 to check the operation of the developing motor.<br>Replace the developing motor.<br>Check connection of the developing motor harness and the connection.<br>Replace the PCU PWB.<br>Replace the developing motor.<br>Replace the developing unit. |

## L4-06 Transfer unit lift trouble

| | |
|---|---|
| Trouble content | A change in the primary transfer position sensor cannot be detected within the specified time in lifting operation of the primary transfer unit. |
| Detail | PCU |
| Cause | Transfer unit position sensor trouble<br>Dirt on the transfer unit position sensor.<br>PCU PWB trouble<br>Connection trouble of the connector and the harness.<br>Transfer unit lift mechanism trouble<br>Primary transfer belt unit is not installed. |
| Check & Remedy | Use SIM6-3 to check the separating operation of the transfer unit.<br>Install the primary transfer belt unit.<br>Replace the transfer unit position sensor.<br>Clean the transfer unit position sensor.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness.<br>Repair the transfer unit lift mechanism. |

## L4-07 Transfer belt motor trouble

| | |
|---|---|
| Trouble content | |
| Detail | PCU |
| Cause | The motor lock signal is detected during rotation of the transfer belt motor.<br>Transfer belt motor trouble<br>Transfer belt motor harness and connector connection trouble<br>PCU PWB trouble |
| Check & Remedy | Use SIM25-1 to check the operation of the transfer belt motor.<br>Check the transfer belt motor, and replace if necessary.<br>Check connection of the harness and connectors of the transfer belt motor, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

## L4-11 Shift motor trouble

| | |
|---|---|
| Trouble content | No change in the shifter home position sensor signal is detected in the operation of the shifter initializing. |
| Detail | PCU |
| Cause | 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. |

## L4-12 Secondary transfer separation trouble

| | |
|---|---|
| Trouble content | A change in the separation sensor status cannot be detected within the specified time in separation operation of the secondary transfer. |
| Detail | PCU |
| Cause | Secondary transfer separation mechanism trouble.<br>Secondary transfer separation clutch trouble.<br>Secondary transfer separation sensor trouble.<br>Connection trouble of the connector and the harness.<br>PCU PWB trouble. |
| Check & Remedy | Check or repair the secondary transfer separation mechanism.<br>Replace the secondary transfer separation clutch.<br>Replace the secondary transfer separation sensor.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness. |

## L4-16 Fusing pressure release trouble

| | |
|---|---|
| Trouble content | A change in the fusing pressure release sensor signal cannot be detected within the specified time after outputting the fusing pressure release motor. |
| Detail | PCU |
| Cause | Fusing pressure release sensor trouble.<br>Fusing pressure release motor trouble.<br>Pressure release drive gear and pressure release idle gear trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Replace the fusing pressure release sensor.<br>Replace the fusing pressure release motor.<br>Replace the pressure release drive gear and the pressure release idle gear.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness. |

## L4-30 MPF FAN Motor trouble

| | |
|---|---|
| Trouble content | Fan operation signal is not detected. |
| Detail | MPF |
| Cause | Fan motor trouble<br>MFP PWB trouble harness and connector connection trouble<br>PCU PWB trouble |
| Check & Remedy | Use Sim6-2 to check the operation of the fan motor<br>Replace the fan motor<br>Replace the MFP PWB<br>Check connection of the connector and the harness<br>Replace the PCU PWB |

## L4-31 Paper exit cooling fan trouble

| | |
|---|---|
| Trouble content | The fan operation signal is not detected. |
| Detail | PCU |
| Cause | 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 trouble

| | |
|---|---|
| Trouble content | The fan operation signal is not detected. |
| Detail | PCU |
| Cause | Power cooling fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Use SIM6-2 to check that the fan is actually rotating.<br>Replace the power cooling fan.<br>Replace the PCU PWB.<br>Check connection of the connectors and the harness. |

## L4-35 Fusing cooling fan trouble

| | |
|---|---|
| Trouble content | The fan operation signal is not detected. |
| Detail | PCU |
| Cause | Fusing cooling fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Use SIM6-2 to check that the fan is actually rotating.<br>Replace the fusing cooling fan.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness. |

## L4-43 Paper exit cooling fan 2 trouble

| | |
|---|---|
| Trouble content | The fan operation signal is not detected. |
| Detail | PCU |
| Cause | Paper exit cooling fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Replace the fan.<br>Replace the PCU PWB.<br>Check the connector and the harness.<br>Use SIM6-2 to check that the fan is actually rotating. |

## L4-50 Process fan trouble

| | |
|---|---|
| Trouble content | The fan operation signal is not detected. |
| Detail | PCU |
| Cause | Process fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Check that the fan is rotating after turning ON the power.<br>Replace the process fan.<br>Replace the PCU PWB.<br>Check connection of the connector and the harness. |

## L4-51 Process fan 2 trouble

| | |
|---|---|
| Trouble content | The fan operation signal is not detected. |
| Detail | PCU |
| Cause | Fan trouble.<br>PCU PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Replace the fan.<br>Replace the PCU PWB.<br>Check the connector and the harness.<br>Check that the fan is rotating after turning ON the power. |

## L6-10 Polygon motor trouble

| | |
|---|---|
| Trouble content | The polygon motor does not reach the specified RPM within the specified time after starting rotation of the polygon motor. |
| Detail | PCU |
| Cause | Polygon motor trouble.<br>LSU mother PWB trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Use SIM61-1 to check the operation of the polygon motor.<br>Check connection of the connector and the harness.<br>Replace the LSU.<br>Replace the LSU mother PWB. |

## L8-01 Full wave signal detection error

| | |
|---|---|
| Trouble content | The full wave signal is not detected. |
| Detail | PCU |
| Cause | PCU PWB trouble.<br>Power unit trouble.<br>Connection trouble of the connector and the harness. |
| Check & Remedy | Replace the PCU PWB.<br>Replace the power unit.<br>Check connection of the connector and the harness. |

## L8-02 Full wave signal error

| | |
|---|---|
| Trouble content | The full wave signal is not detected. |
| Detail | PCU |
| Cause | An abnormality in the full wave signal frequency is detected<br>(The frequency is detected as 65Hz or above, or 45Hz or less) PCU PWB trouble.<br>Power unit trouble<br>Connection trouble of the connector and the harness<br>Power frequency wave form 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 wave form |

## L8-20 Communication error of MFPC PWB/ LSU mother board

| | |
|---|---|
| Trouble content | |
| Detail | MFP |
| Cause | LSU mother board PWB - MFPC PWB connection trouble.<br>MFPC PWB trouble.<br>LSU mother board trouble. |
| Check & Remedy | Check connection between the LSU mother board PWB and the MFPC PWB.<br>Check the ground of the main unit.<br>Replace the MFPC PWB.<br>Replace the LSU mother board. |

## P1-00 PCI communication error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | Communication error between the MFPC PWB and the PCI.<br>Connection failure of connectors and harness between the MFPC PWB and the PCI.<br>MFPC PWB trouble.<br>PCI control PWB trouble. |
| Check & Remedy | Check connection of the harness and connectors between the MFPC PWB and the PCI.<br>Check the MFPC PWB, and replace if necessary. (Refer to the necessary procedures after replacement of the MFPC PWB in the Service Manual, and perform the procedures.)<br>Check the PCI control PWB, and replace if necessary. |

## P1-01 PCI fan error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | The PCI fan operation signal is not detected.<br>PCI fan trouble.<br>PCI control PWB trouble. |
| Check & Remedy | Check connection of the connectors and harness between the PCI fan and the PCI control PWB.<br>Check the PCI control PWB, and replace if necessary.<br>Check the PCI fan, and replace if necessary. |

## P1-02 Plasma generating device error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | Connection failure of connectors and harness between the plasma generating device and the PCI control PWB.<br>Plasma generating device trouble.<br>PCI control PWB trouble. |
| Check & Remedy | Check connection of the connectors and harness between the plasma generating device and the PCI control PWB.<br>Replace the plasma generating device.<br>Check the PCI control PWB, and replace if necessary. |

## PC-- Personal counter not detected

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | The personal counter is not installed.<br>The personal counter is not detected.<br>SCU PWB trouble. |
| Check & Remedy | Check connection of the connectors and the harness.<br>Replace the SCU PWB. |

## U1-01 Battery trouble

| Trouble content | | RTC backup battery voltage fall |
|---|---|---|
| Detail | | MFP |
| Case 1 | Cause | 1) Battery life<br>2) Battery circuit abnormality |
| | Check and Remedy | Check to confirm that the battery voltage is about 2.5V or above.<br>Replace the battery. |

## U2-00 MFP EEPROM read/write error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | MFPC PWB EEPROM trouble<br>EEPROM socket contact trouble<br>MFPC PWB trouble<br>Strong external noises. |
| Check & Remedy | Replace the MFPC PWB EEPROM.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.)<br>Check the power environment. |

## U2-05 HDD/MFPC PWB SRAM contents inconsistency

| Trouble content | The HDD or the MFPC PWB installed is improper. (Erroneous detection of account management data) |
|---|---|
| Detail | MFP |
| Cause | The HDD was replaced.<br>The MFPC PWB was replaced.<br>HDD trouble<br>MFPC PWB trouble |
| Check & Remedy | (Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.)<br>Use SIM16 to cancel the error. |

## U2-11 MFPC PWB EEPROM counter check sum error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | MFPC PWB EEPROM trouble<br>EEPROM socket contact trouble<br>MFPC PWB trouble<br>Strong external noises. |
| Check & Remedy | Use SIM16 to cancel the error. (The previous writing data (about the latest 8 sheets) are written into the EEPROM.)<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.) |

## U2-30 MFPC PWB and PCU PWB manufacturing No. data inconsistency

| Trouble content | Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFPC PWB. |
|---|---|
| Detail | MFP |
| Cause | When replacing the PCU PWB or the MFPC PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB.<br>MFPC PWB trouble<br>PCU PWB trouble |
| Check & Remedy | Check that the EEPROM is properly set.<br>Check to confirm that the EEPROM which was mounted on the PWB before replacement is mounted on the new PWB.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the MFPC PWB in the Service Manual, and perform the works.)<br>Replace the PCU PWB. |

## U2-40 SD card system storage data area error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | A file error occurs in the SD card system storage data partition.<br>SD card trouble<br>MFPC PWB trouble |
| Check & Remedy | Turn OFF/ON the power, and the backup data in the HDD are written into the SD card and the machine is automatically booted.<br>Check the MFPC PWB, and replace if necessary.<br>Check the SD card, and replace if necessary. |

## U2-41 HDD system storage data area error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | A file error occurs in the HDD system saved data area, disabling backup of the saved file of the machine adjustment values in the SD card.<br>HDD trouble<br>MFPC PWB trouble |
| Check & Remedy | Check the HDD, and replace if necessary.<br>Check the MFPC PWB, and replace if necessary.<br>When replacing the HDD and the MFPC PWB, refer to the chapter of "Necessary works and procedures of HDD and MFPC PWB replacement." |

## U2-42 Machine adjustment data (system storage data area) error

| Trouble content | |
|---|---|
| Detail | 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 the HDD system saved data area are broken.<br>HDD trouble<br>MFPC PWB trouble<br>SD card trouble |
| Check & Remedy | Check the HDD, and replace if necessary.<br>Check the MFPC PWB, and replace if necessary.<br>Check the SD card, and replace if necessary.<br>When replacing the HDD, the MFPC PWB, and the SD card, refer to the chapter of "Necessary works and procedures of HDD, MFPC PWB, and SD card replacement."<br>Use SIM to adjust the machine again and set the adjustment values. |

## U2-50 HDD*1 user authentication data check sum error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | HDD trouble*1<br>MFPC PWB trouble<br>Strong external noises. |
| Check & Remedy | Check the data related to the check sum error (address book, image send system registration data (senders record, meta data)) and register again.<br>Use SIM16 to cancel the U2 trouble.<br>Replace the HDD*1.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.)*1 |

*1: SD card when no HDD is installed.

## U2-60 Watermark check error

| Trouble content | |
|---|---|
| Detail | MFP |
| Cause | Watermark data trouble<br>HDD trouble<br>MFPC PWB trouble |
| Check & Remedy | Use SIM16 to cancel the U2 trouble.<br>Use SIM49-5 to install the watermark data.<br>Replace the HDD.<br>Replace the MFPC PWB.<br>(Refer to the pages on the necessary works after replacing the HDD and the MFPC PWB in the Service Manual, and perform the works.) |

## U2-80 SCU PWB EEPROM read/write error

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | SCU PWB EEPROM trouble<br>SCU PWB trouble<br>SCU PWB EEPROM socket connection trouble |
| Check & Remedy | Replace the SCU PWB EEPROM.<br>Replace the SCU PWB.<br>Check connection of the SCU PWB EEPROM socket.<br>Check the SIM adjustment value of the following items, and adjust again if they are improper.<br>• Scanner-related adjustments<br>• Touch panel-related adjustments<br>Use SIM16 to cancel the trouble. |

## U2-81 SCU PWB EEPROM check sum error

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | SCU PWB EEPROM trouble.<br>Installation of non-initialized EEPROM.<br>SCU PWB trouble.<br>EEPROM socket contact trouble. |
| Check & Remedy | Replace the SCU PWB EEPROM.<br>Replace the SCU PWB.<br>Check contact of the EEPROM socket.<br>Use SIM16 to cancel the trouble. (The check sum error detection data are calculated again to reset the proper check sum data.) |

## U2-90 PCU PWB EEPROM read/write error

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | PCU PWB EEPROM trouble<br>PCU PWB trouble<br>EEPROM socket contact trouble |
| Check & Remedy | Replace the PCU PWB EEPROM.<br>Check the SIM adjustment values of the engine, and adjust again if they are improper.<br>Replace the PCU PWB.<br>Check contact of the EEPROM socket.<br>Use SIM16 to cancel the trouble. |

## U2-91 PCU PWB EEPROM check sum error

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | PCU PWB EEPROM trouble<br>PCU PWB trouble<br>EEPROM socket contact trouble |
| Check & Remedy | Replace the PCU PWB EEPROM.<br>Replace the PCU PWB.<br>Check contact of the EEPROM socket.<br>Use SIM16 to cancel the trouble. (The check sum error detection data are calculated again to reset the proper check sum data.) |

## U6-00 PCU PWB - Paper feed desk (paper feed tray 3, 4) communication trouble

| Trouble content | |
|---|---|
| Detail | PCU |
| Cause | Connection trouble of the connector and the harness.<br>Paper feed desk control PWB trouble<br>PCU PWB trouble |
| Check & Remedy | Check connection of the connector and the harness.<br>Replace the paper feed desk control PWB.<br>Replace the PCU PWB. |

## U6-01 Paper feed tray 2 lift trouble

| Trouble content | D1ULD does not turn ON within the specified time when lift-up operation. |
|---|---|
| Detail | PCU |
| Cause | CLUD2 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 CLUD2 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 Paper feed tray 3 lift trouble

| Trouble content | D2ULD does not turn ON within the specified time when lift-up operation. |
|---|---|
| Detail | PCU |
| Cause | D1ULD 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 D1ULD 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. |

## U6-03 Paper feed tray 4 lift trouble

| Trouble content | D2ULD does not turn ON within the specified time when lift-up operation. |
|---|---|
| Detail | PCU |
| Cause | D2ULD 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 D2ULD 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 motor trouble

| Trouble content | No variation in the motor rotation sensor signal (encoder sign) is detected within the specified time after booting or stopping the LCC lift motor. |
|---|---|
| Detail | PCU |
| Cause | LCC lift motor rotation sensor trouble<br>LCC control PWB trouble<br>LCC lift mechanism trouble<br>LCC lift motor trouble |
| Check & Remedy | Use SIM4-2 and 4-3 to check the operation of the LCC sensor and the lift motor.<br>Check the LCC lift motor rotation sensor, and replace if necessary.<br>Check the LCC control PWB, and replace if necessary.<br>Check the LCC lift mechanism, and repair if necessary.<br>Check the LCC lift motor, and replace if necessary.<br>Use SIM15 to cancel the trouble. |

## U6-10 Desk paper feed unit paper transport motor trouble

| Trouble content | |
|---|---|
| Detail | 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 LCC control PWB - PCU PWB communication error

| Trouble content | . |
|---|---|
| Detail | PCU |
| Cause | Communication error between the LCC control PWB and the PCU PWB.<br>Connection trouble of the harness and the connector between the machine and the LCC and those of the LCC control PWB.<br>LCC control PWB trouble<br>PCU PWB trouble<br>Malfunction due to noises. |
| Check & Remedy | Check to confirm the LCC model.<br>Check the connection of the harness and the connector between the machine and the LCC and those of the LCC control PWB, and replace if necessary.<br>Check the LCC control PWB, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

## U6-21 LCC transport motor trouble

| Trouble content | No variation in the motor rotation sensor signal (encoder sign) is detected within the specified time after booting or stopping the LCC transport motor. |
|---|---|
| Detail | PCU |
| Cause | LCC transport motor rotation sensor trouble<br>LCC control PWB trouble<br>LCC paper transport mechanism trouble<br>LCC paper transport motor trouble |
| Check & Remedy | Use SIM4-3 to check the operation of the LCC transport motor.<br>Check the LCC transport motor rotation sensor, and replace if necessary.<br>Check the LCC control PWB, and replace if necessary.<br>Check the LCC paper transport mechanism, and replace if necessary.<br>Check the LCC transport motor, and replace if necessary. |

## U6-22 LCC 24V power trouble

| Trouble content | The power voltage of DC24V is not supplied to the LCC unit. |
|---|---|
| Detail | PCU |
| Cause | Connection trouble of the harness and the connector between the machine and the LCC and those of the LCC control PWB.<br>LCC control PWB trouble<br>Machine power unit trouble |
| Check & Remedy | Check the connection of the harness and the connector between the machine and the LCC and those of the LCC control PWB, and replace if necessary.<br>Check the LCC control PWB, and replace if necessary.<br>Check the machine power unit, and replace if necessary. |

## U6-50 Desk - Main unit combination trouble

| Trouble content | |
|---|---|
| Detail | 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

| Trouble content | An LCC of a different model which is not supported by the machine is installed. (Improper combination of the machine and the LCC model code.) |
|---|---|
| Detail | PCU |
| Cause | LCC control PWB trouble<br>PCU PWB trouble |
| Check & Remedy | Check to confirm the LCC model.<br>Check the LCC control PWB, and replace if necessary.<br>Check the PCU PWB, and replace if necessary. |

## U6-52 PCU PWB - Paper feed desk (paper feed tray 2) communication trouble

| Trouble content | Paper feed tray 2 (desk unit) is not recognized. |
|---|---|
| Detail | PCU |
| Cause | Connection failure between the machine and 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 MFPC PWB - Vendor machine communication error

| Trouble content | Communication error between the MFP and the serial vendor. |
|---|---|
| Detail | MFP |
| Cause | Improper setting of the vendor machine specifications (SIM26-3).<br>Vendor machine trouble.<br>MFPC PWB trouble.<br>Connector, harness connection trouble.<br>Strong external noises. |
| Check & Remedy | Cancel the error by turning OFF/ON the power.<br>Check the connector and the harness in the communication line.<br>Change the specifications of the vendor machine (SIM26-3).<br>Replace the MFPC PWB. |

## U7-51 Vendor machine error

| Trouble content | |
|---|---|
| Detail | 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

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | SCU PWB trouble |
| Check & Remedy | Check connection signal between the SCU CPU and the touch panel controller. |

## UC-02 CPT - ASIC error

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | SCU PWB trouble. (CPT-ASIC trouble.) |
| Check & Remedy | Replace the SCU PWB. |

## UC-20 DOCC ASIC error

| Trouble content | |
|---|---|
| Detail | SCU |
| Cause | SCU PWB trouble. (DOCC-ASIC trouble.) |
| Check & Remedy | Replace the SCU PWB. |

### (1) Descriptions on E7-91 - 94 errors

Two-digit numbers with double parentheses are added to E7-91 - 94 error codes recorded in SIM22-6 indicate the detailed contents of the errors.

The number in each digit has its own meaning.

(Example) E7-91(**)

The upper digit of the added code indicates the job kind at the occurrence of the error.

| Error code | The upper digit of the added code | Image type | Job kind at the occurrence of the error | |
|---|---|---|---|---|
| E7-91 | 0* | Other | • FAX (Internet FAX) reception print (Other than long size images) | *1 |
| | 1* | JPEG | | *1 |
| | 2* | JBIG | | *1 |
| | 3* | Mxx1ch | | |
| | 4* | Mxx4ch | | |
| | 5* | Other | • FAX (Internet FAX) reception print (Long size images) | *1 |
| | 6* | JPEG | | *1 |
| | 7* | JBIG | | *1 |
| | 8* | Mxx1ch | | |
| | 9* | Mxx4ch | | |
| | A* - F* | Not Used | | *1 |
| E7-92 | 0* | Other | • OC copy (in Non ERDH) | *1 |
| | 1* | JPEG | | |
| | 2* | JBIG | | *1 |
| | 3* | Mxx1ch | | *1 |
| | 4* | Mxx4ch | | |
| | 5* - F* | Not Used | | *1 |
| E7-93 | 0* | Other | • Copy print (in ERDH)<br>• Copy composing system function (Custom Stamp, Water mark) | *1 |
| | 1* | JPEG | | |
| | 2* | JBIG | | |
| | 3* | Mxx1ch | | *1 |
| | 4* | Mxx4ch | | |
| | 5* | Other | • Image send<br>• Document filing<br>• Preview display | *1 |
| | 6* | JPEG | | |
| | 7* | JBIG | | |
| | 8* | Mxx1ch | | |
| | 9* | Mxx4ch | | |
| | A* | Other | • GDI/PCL printer print<br>• Copy composing system function (Custom Stamp, Water mark) | *1 |
| | B* | JPEG | | |
| | C* | JBIG | | |
| | D* | Mxx1ch | | *1 |
| | E* | Mxx4ch | | |
| | F* | Not Used | | *1 |
| E7-94 | 0* | Other | • Backup restore (Filing data import) | *1 |
| | 1* | JPEG | | |
| | 2* | JBIG | | *1 |
| | 3* | Mxx1ch | | *1 |
| | 4* | Mxx4ch | | *1 |
| | 5* - F* | Not Used | | *1 |

*1: Added code without generating

The lower digit of the added code indicates the kind and the content of the abnormality or the result of the automatic memory check executed when the abnormality is detected.

| | | | Lower digit of the added code → Kind/Content of the error | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | *1 | *9 | *A | *B | *C | *D | *E | *F |
| | | | Memory verify NG | — | Huffman code error | Restart marker error | Improper marker error | Head decoding error detection (ASIC detection) | Head decoding error detection (CPU detection) | Other abnormal termination |
| The upper digit of the added code ↓ Error detection circuit | 1*, 6*, B* | JPEG | ● | — | ○ | ○ | ○ | ○ | — | ○ |
| | 2*, 7*, C* | JBIG | ● | — | — | — | ○ | ○ | — | ○ |
| | 3*, 8*, D* | Mxx1ch | ● | — | — | — | — | — | — | ○ |
| | 4*, 9*, E* | Mxx4ch | ● | — | — | — | — | — | — | ○ |

●: Added code indicating that the memory and its peripheral must be focused for check in case of an error.

○: Added code indicating that doubtful sections are in a wider range such as the memory, PWB's, HDD, etc.

—: Added code without generating

### (2) Countermeasures in case of E7-91 - 94

**In case of E7-9x (11), E7-9x (21), E7-9x (31), E7-9x (41)**

| | |
|---|---|
| Cause | In case of E7-91 - 94, the DIMM memory (DRAM) is automatically read/written to perform a simplified check. If an abnormality is detected in that case, the added code becomes (*1).<br>Therefore, there is a strong possibility that an abnormality lies around the memory. |
| Check and remedy | • Check the installing state of the DIMM memory and the MFPC PWB to insure that there is no abnormality. (Disconnect and connect the DIMM memory and the MFPC PWB to check to insure that there is no error occurring again.)<br>• Use SIM60-01 (Memory read/write check) to check to insure that no error occurs.<br>• Replace the DIMM memory.<br>• Replace the MFPC PWB. |

**Note**

Since the automatic memory check executed when E7-91 - 94 occurs is a simplified check, it cannot detect an abnormality with absolute certainty.

If the added code is (*1), there may be a memory abnormality. Even if it is not (*1), however, it cannot be said that there is no abnormality around the memory.

**Other added codes**

| | |
|---|---|
| Cause | Mostly because the data inputted to the ASIC for decoding are broken for some reasons.<br>There is an abnormality in the process of read/write of the process data in the memory or the hard disk.<br>A great noise unexpectedly generated may be the cause.<br>For the cases of FAX or Internet FAX reception data, when broken data are saved, printing is performed every time when the machine is booted, generating an error repeatedly. (E7-91)<br>(To clear the received data, execute SIM66-10.) |
| Check and remedy | • Check the DIMM memory, the MFPC PWB, and the HDD to insure that there is no abnormality.<br>• When the job at occurrence of an error is FAX (E7-91), check the installing state of the FAX control PWB and the SC CARD PWB.<br>• Perform SIM60-01 (Memory read/write check) to insure that there is no NG.<br>• Perform SIM62-02 and SIM62-03 (HDD read/write check) to insure that there is no NG. (It is not required, however, when the job at occurrence of an error is FAX.)<br>• Check the installing state of the DIMM memory and the MFPC PWB to insure that there is no abnormality. (Disconnect and connect the DIMM memory and the MFPC PWB to check to insure that there is no error occurring again.)<br>• Replace the HDD.<br>• Replace the FAX control PWB.<br>• Replace the DIMM memory.<br>• Replace the MFPC PWB.<br>• Replace the SD card. |

**Note**

When there is an abnormality around the HDD, E7-03 may occur.

If error E7-91 - 94 as well as E7-03 occurs, there is a high possibility that the error can be removed by replacing the HDD and the MFPC PWB.

### (3) Countermeasures against the case where nothing is displayed when the machine is booted

**[Trouble content]**

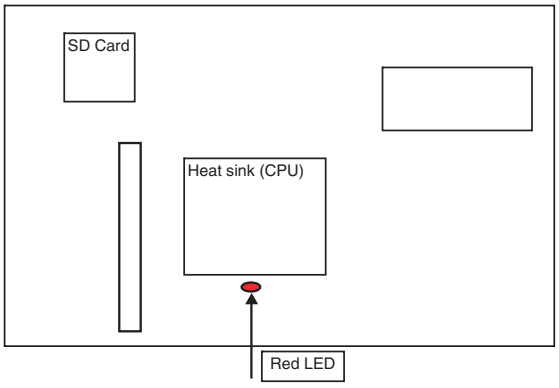
If nothing is displayed when the machine is booted, the error code cannot be checked and the cause is hard to identify.

One of the causes may be an abnormality in the boot program of the SD card. To check that, the following method is used.

**[Check method]**

Check to confirm that the LED (red) under the CPU heat sink on the MFPC PWB shown in the figure below is lighted when the power is supplied.

If the LED is lighted, it is judged as an abnormality of the SD card.




**[Countermeasures]**

1) Replace the SD card with a new one. (Be sure to use a service part.)
2) Upgrade the firmware to the latest version.
3) Use SIIM66-62 to backup the FAX reception data from the HDD to a USB memory device. (If there is no FAX reception data, this procedure is not required.) (The FAX reception data are backed up in the PDF format. Supply the date to the user.)
4) Use SIM66-10 to clear the FAX and image send memory. (Ensure consistency between the HDD data and the image related memory.)

### (4) Relation between the MFPC PWB LED status and errors

When the machine cannot be booted, check the LED status of the MFPC PWB to presume the error content and its cause.

**<Process content and LED display>**

| LED status (Lighting) | Process operation content | Cause for halt during operation |
|---|---|---|
| ○○○○ | CPU initial setting | Reus ASIC trouble |
| ○○○● | Memory adjustment | Memory and its peripheral circuit trouble |
| ○○●○ | Memory check | Memory and its peripheral circuit trouble |
| ○○●● | – | – |
| ○●○○ | Program memory development | Memory-related trouble |
| ○●○● | Interruption-related initialization | Reus ASIC trouble |
| ○●●○ | PCIe initialization | PCIe and its peripheral circuit trouble (SoC, etc.) |
| ○●●● | Basic device initialization | Reus ASIC trouble |
| ●○○○ | SD card initialization<br>SATA initialization | Reus ASIC trouble<br>SD card trouble<br>HDD trouble |
| ●○○● | OS initialization (1) | Reus ASIC trouble |
| ●○●○ | Timer enabling | Reus ASIC trouble |
| ●○●● | Serial driver enabling<br>I2C driver enabling | Reus ASIC trouble |
| ●●○○ | LCD initialization | Reus ASIC trouble |
| ●●●○ | Image process IP initialization | Reus ASIC trouble |
| ●●●○ | OS initialization (2) | Reus ASIC trouble |
| ●●●● | Main process | Reus ASIC trouble |

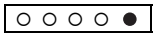
* ●: LED ON / ○: LED OFF

**<When an error occurs>**

| LED status (Flashing) | Error content | Cause |
|---|---|---|
| ○○○● | Nonsupport memory | Memory trouble |
| ○○●○ | Nonsupport memory (access speed) | Memory trouble |
| ○○●● | Nonsupport memory controller | Memory trouble |
| ○●○○ | DDR-PHY setting error | Reus ASIC trouble |
| ○●●○ | Interruption handler process error | Reus ASIC trouble |
| ●○○○ | Memory check error | Memory trouble |
| ●●●● | Memory combination error | Memory trouble |

* In case of an error, the LED's flash as shown in the above table.

* ●: LED ON / ○: LED OFF



LED No D25/D24/D23/D22
3 / 2 / 1 / 0

# 2. JAM and troubleshooting

## A. JAM code list

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| TRAY1 | Main cassette paper feed JAM (CPFD1 not-reached JAM) | CPUC1 ON | CPFD1 ON | 103.4 | 65.0 | 168.4 |
| CPFD1_N2 | CPFD1 not-reached JAM (Main cassette 2 feed paper) | CPFD2 ON | CPFD1 ON | 99.1 | 65.0 | 164.1 |
| CPFD1_N3 | CPFD1 not-reached JAM (Desk upper stage feed paper) | CPFD2 ON | CPFD1 ON | 107.0 | 65.0 | 172.0 |
| CPFD1_N4 | CPFD1 not-reached JAM (Desk lower stage feed paper) | CPFD2 ON | CPFD1 ON | 107.0 | 65.0 | 172.0 |
| TRAY2 | CPFD2 not-reached JAM (Main cassette 2 feed paper) | CPUC2 ON | CPFD2 ON | 103.4 | 65.0 | 168.4 |
| CPFD2_N3 | CPFD2 not-reached JAM (Desk upper stage feed paper) | Reception of the paper feed start command from DESK (At position 45mm from the final roller of the DESK.) | CPFD2 ON | 35.5 | 65.0 | 100.5 |
| CPFD2_N4 | CPFD2 not-reached JAM (Desk lower stage feed paper) | Reception of the paper feed start command from DESK (At position 45mm from the final roller of the DESK.) | CPFD2 ON | 35.5 | 65.0 | 100.5 |
| MFT | Manual feed tray paper feed JAM (PPD1 not-reached) | MPFS ON | PPD1 ON | 83.2 | 65.0 | 148.2 |
| PPD1_N1 | PPD1 not-reached JAM (Cassette 1 feed paper) | CPFD1 ON | PPD1 ON | 151.9 | 65.0 | 216.9 |
| PPD1_N2 | PPD1 not-reached JAM (Main cassette 2 feed paper) | CPFD1 ON | PPD1 ON | 149.6 | 65.0 | 214.6 |
| PPD1_N3 | PPD1 not-reached JAM (Desk upper stage feed paper) | CPFD1 ON | PPD1 ON | 149.6 | 65.0 | 214.6 |
| PPD1_N4 | PPD1 not-reached JAM (Desk lower stage feed paper) | CPFD1 ON | PPD1 ON | 149.6 | 65.0 | 214.6 |
| PPD1_NA | PPD1 not-reached JAM (ADU refeed paper) | APPD2 ON | PPD1 ON | 135.7 | 65.0 | 200.7 |
| PPD1_NL | PPD1 not-reached JAM (LCC feed paper) | Reception of the paper feed start command from LCC (Extension amount 19mm position) | PPD1 ON | 141.7 | 65.0 | 206.7 |
| PPD2_N1 | PPD2 not-reached JAM (Main cassette feed paper) | CPFD1 ON | PPD2 ON | 71.9 | 65.0 | 136.9 |
| PPD2_N2 | PPD2 not-reached JAM (Main cassette 2 feed paper) | CPFD1 ON | PPD2 ON | 71.9 | 65.0 | 136.9 |
| PPD2_N3 | PPD2 not-reached JAM (Desk upper stage feed paper) | CPFD1 ON | PPD2 ON | 71.9 | 65.0 | 136.9 |
| PPD2_N4 | PPD2 not-reached JAM (Desk lower stage feed paper) | CPFD1 ON | PPD2 ON | 71.9 | 65.0 | 136.9 |
| PPD2_NM | PPD2 not-reached JAM (Manual feed tray feed paper) | PPD1 ON | PPD2 ON | 70.4 | 65.0 | 135.4 |
| PPD2_NA | PPD2 not-reached JAM (ADU refeed paper) | PPD1 ON | PPD2 ON | 70.4 | 65.0 | 135.4 |
| PPD2_NL | PPD2 not-reached JAM (LCC feed paper) | PPD1 ON | PPD2 ON | 71.9 | 65.0 | 136.9 |
| POD1_N | POD1 not-reached JAM | RRM ON | POD1 ON | 242.4 | 50.0 | 292.4 |
| POD2_N | POD2 not-reached JAM | POD1 ON | POD2 ON | 92.2 | 65.0 | 157.2 |
| POD3_N | POD3 not-reached JAM | Reversing start | POD3 ON | 53.7 | 65.0 | 118.7 |
| APPD1_N | APPD1 not-reached JAM | Reversing start | APPD1 ON | 39.3 | 65.0 | 104.3 |
| APPD2_N | APPD2 not-reached JAM | APPD1 ON | APPD2 ON | 226.3 | 65.0 | 291.3 |
| CPFD1_S1 | CPFD1 remaining JAM (Main cassette paper) | CPUC1 OFF | CPFD1 OFF | 144.4 | 65.0 | 209.4 |
| CPFD1_S2 | CPFD1 remaining JAM (Main cassette 2 feed paper) | CPFD2 OFF | CPFD1 OFF | 96.8 | 65.0 | 161.8 |
| CPFD1_S3 | CPFD1 remaining JAM (Desk upper stage feed paper) | CPFD2 OFF | CPFD1 OFF | 107.0 | 65.0 | 172.0 |
| CPFD1_S4 | CPFD1 remaining JAM (Desk lower stage feed paper) | CPFD2 OFF | CPFD1 OFF | 107.0 | 65.0 | 172.0 |
| CPFD2_S2 | CPFD2 remaining JAM (Main cassette 2 feed paper) | CPUC2 OFF | CPFD2 OFF | 144.4 | 65.0 | 209.4 |
| CPFD2_S3 | CPFD2 remaining JAM (Desk upper stage feed paper) | Reception of the paper feed end command from DESK (The final roller position of DSEK) | CPFD2 OFF | 89.2 | 65.0 | 154.2 |

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| CPFD2_S4 | CPFD2 remaining JAM (Desk lower stage feed paper) | Reception of the paper feed end command from DESK (The final roller position of DSEK) | CPFD2 OFF | 89.2 | 65.0 | 154.2 |
| PPD1_S1 | PPD1 remaining JAM (Main cassette paper) | CPFD1 OFF | PPD1 OFF | 149.9 | 65.0 | 214.9 |
| PPD1_S2 | PPD1 remaining JAM (Main cassette 2 feed paper) | CPFD1 OFF | PPD1 OFF | 149.9 | 65.0 | 214.9 |
| PPD1_S3 | PPD1 remaining JAM (Desk upper stage feed paper) | CPFD1 OFF | PPD1 OFF | 149.9 | 65.0 | 214.9 |
| PPD1_S4 | PPD1 remaining JAM (Desk lower stage feed paper) | CPFD1 OFF | PPD1 OFF | 149.9 | 65.0 | 214.9 |
| PPD1_SM | PPD1 remaining JAM (Manual feed tray feed paper) | PPD1 ON | PPD1 OFF | Sub scan size –9 | 65.0 | Sub scan size –9 + 65 |
| PPD1_SA | PPD1 remaining JAM (ADU refeed paper) | APPD2 OFF | PPD1 OFF | 131.1 | 65.0 | 196.1 |
| PPD1_SL | PPD1 remaining JAM (LCC refeed paper) | Reception of the paper feed end command from LCC (LPFD OFF) | PPD1 OFF | 179.1 | 65.0 | 244.1 |
| PPD2_S1 | PPD2 remaining JAM (Main cassette feed paper) | PPD1 OFF | PPD2 OFF | 62.9 | 65.0 | 127.9 |
| PPD2_S2 | PPD2 remaining JAM (Main cassette 2 feed paper) | PPD1 OFF | PPD2 OFF | 62.9 | 65.0 | 127.9 |
| PPD2_S3 | PPD2 remaining JAM (Desk upper stage feed paper) | PPD1 OFF | PPD2 OFF | 62.9 | 65.0 | 127.9 |
| PPD2_S4 | PPD2 remaining JAM (Desk lower stage feed paper) | PPD1 OFF | PPD2 OFF | 62.9 | 65.0 | 127.9 |
| PPD2_SM | PPD2 remaining JAM (Manual feed tray feed paper) | PPD1 OFF | PPD2 OFF | 61.4 | 65.0 | 126.4 |
| PPD2_SA | PPD2 remaining JAM (ADU refeed paper) | PPD1 OFF | PPD2 OFF | 61.4 | 65.0 | 126.4 |
| PPD2_SL | PPD2 remaining JAM (LCC feed paper) | PPD1 OFF | PPD2 OFF | 62.9 | 65.0 | 127.9 |
| POD1_S | POD1 remaining JAM | PPD2 OFF | POD1 OFF | 297.6 | 65.0 | 362.6 |
| POD2_S | POD2 remaining JAM (When left paper exit) | POD1 OFF | POD2 OFF | 90.2 | 65.0 | 155.2 |
| | POD2 remaining JAM (When ADU reversing) | Reversing start | POD2 OFF after starting reversing | Sub scan size –60.6 | 65.0 | Sub scan size –60.6 + 65 |
| POD3_S | POD3 remaining JAM | POD2 OFF after starting reversing | POD3 OFF | 68.9 | 65.0 | 133.9 |
| APPD1_S | APPD1 remaining JAM | POD2 OFF after starting reversing | APPD1 OFF | 111.0 | 65.0 | 176.0 |
| APPD2_S | APPD2 remaining JAM | APPD1 OFF | APPD2 OFF | 228.8 | 65.0 | 293.8 |
| PPD2_PRI | PPD2 JAM (Image preparation wait time-out) | Transmission of the IMAGE_PREPARE command to ICU | Reception time-out of the END_IMAGE_PREPARE command from ICU (50 sec) | — | — | — |
| CPFD2_ DESK | CPFD2 JAM (Desk communication abnormality detection) | Transmission of the preliminary paper feed request command to DESK | Reception time-out of the preliminary paper feed start command from DESK (30 sec) | — | — | — |
| | | Reception of the preliminary paper feed start command from DESK | Reception time-out of the preliminary paper feed end command from DESK (30 sec) | — | — | — |
| | | Transmission of the paper feed request command to DESK | Reception time-out of the paper feed start command from DESK (30 sec) | — | — | — |
| | | Reception of the paper feed start command from DESK | Reception time-out of the paper feed end command from DESK (30 sec) | — | — | — |
| PPD1_LCC | PPD1 JAM (LCC communication abnormality detection) | Transmission of the preliminary paper feed request command to LCC | Reception time-out of the preliminary paper feed start command from LCC (30 sec) | — | — | — |
| | | Reception of the preliminary paper feed start command from LCC | Reception time-out of the preliminary paper feed end command from LCC (30 sec) | — | — | — |
| | | Transmission of the paper feed request command to LCC | Reception time-out of the paper feed start command from LCC (30 sec) | — | — | — |
| | | Reception of the paper feed start command from LCC | Reception time-out of the paper feed end command from LCC (30 sec) | — | — | — |

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| PPD2_FIN | PPD2 JAM (Finisher communication abnormality detection) | Transmission of the paper attribute data command to FINISHER | Reception time-out of the paper interval data command from FINISHER (30 sec) | — | — | — |

### (1) RSPF

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| SPPD1_N | SPPD1 not-reached JAM | Paper feed start (When the document width is more than B5 size.) | SPPD1 ON | 51.5 | 450.0 | 501.5 |
| SPPD2_N | SPPD2 not-reached JAM | Paper feed start (When the document width is less than B5 size.) | SPPD2 ON | 90.2 | 450.0 | 540.2 |
| | | SPPD1 ON (When the document width is more than B5 size.) | SPPD2 ON | 38.7 | 50.0 | 88.7 |
| SPPD3_N | SPPD3 not-reached JAM | Restart at the temporal stop position | SPPD3 ON | 23.7 | 50.0 | 73.7 |
| SPPD4_N | SPPD4 not-reached JAM | SPPD3 ON | SPPD4 ON | 149.1 | 50.0 | 199.1 |
| SPPD2_NR | SPPD2 reverse not-reached JAM | Reversing start | SPPD2 ON | 85.5 | 50.0 | 135.5 |
| SPPD1_S | SPPD1 remaining JAM | SPPD1 ON (When the document width is more than B5 size.) | SPPD1 OFF | Normal mode: 431.8mm Long size mode: 1000mm/ 800mm | 50.0 | Normal mode: 481.8mm Long size mode: 1050mm/ 850mm |
| SPPD2_S | SPPD2 remaining JAM | SPPD2 ON (When the document width is less than B5 size.) | SPPD2 OFF | Normal mode: 431.8mm Long size mode: 1000mm/ 800mm | 50.0 | Normal mode: 481.8mm Long size mode: 1050mm/ 850mm |
| | | SPPD1 OFF (When the document width is more than B5 size.) | SPPD2 OFF | 37.8 | 50.0 | 87.8 |
| SPPD3_S | SPPD3 remaining JAM | SPPD2 OFF | SPPD3 OFF | 68.8 | 50.0 | 118.8 |
| SPPD4_S | SPPD4 remaining JAM | SPPD3 OFF | SPPD4 OFF | 153.3 | 50.0 | 203.3 |
| SPPD2_SR | SPPD2 reverse remaining JAM | SPPD4 OFF | SPPD2 OFF | 100.9 | 50.0 | 150.9 |
| SPSD_SCN | Exposure start notification timer end | Arrival at temporal stop position | Exposure start command from ICU to SCU no reception time-out (120 sec) | — | — | — |
| P_SHORT | Short size JAM | SPPD3 ON | When the document length is less than 120.0mm. | — | — | — |
| SDFS_S | Paper JAM | Start of the light quantity correction between papers | When canceling of the light quantity correction between papers does not make it in time. | — | — | — |
| ICU_REQ | ICU factor stop JAM | — | Stop by a job stop request commend from ICU to SCU | — | — | — |
| STOP_JAM | Emergency stop JAM | — | Trouble mode transition request from ICU to SCU Emergency stop by a command | — | — | — |

### (2) Desk

| JAM code | JAM content | JAM detection method | |
|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition |
| TRAY3 | Casette 3 (Desk 1) paper feed JAM | D1PFC ON (Paper feed start) | D1PPD does not turn ON within the specified time. |
| DPFD1_N4 | DPFD1 not-reached JAM (Desk 2 feed paper) | D2PPD ON | D1PPD does not turn ON within the specified time. |
| DPFD1_S3 | DPFD1 remaining JAM (Desk 1 feed paper) | D1PPD ON | D1PPD does not turn OFF within the specified time. |
| DPFD1_S4 | DPFD1 remaining JAM (Desk 2 feed paper) | D2PPD OFF | D1PPD does not turn OFF within the specified time. |
| DPFD2_S4 | DPFD2 remaining JAM (Desk 2 feed paper) | D2PPD ON | D2PPD does not turn OFF within the specified time. |
| TRAY4 | Casette 4 (Desk 2) paper feed JAM | D2PFC ON (Paper feed start) | D2PPD does not turn ON within the specified time. |

### (3) LCC

| JAM code | JAM content | JAM detection method | |
|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition |
| LCC | Side LCC paper feed JAM (LPFD not-reached) | LPFC ON (paper feed start) | LPFD does not turn ON within the specified time. |
| LPFD_SL | LPFD remaining JAM (Side LCC feed paper) | LPFD ON | LPFD does not turn OFF within the specified time. |

### (4) Saddle finisher

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| PDPPD1_N | Interface inlet port not-reached JAM | Machine paper exit command reception | PDPPD1 does not turn ON within the specified time. | 79.6 [mm] | 238.8 [mm] | 318.4 [mm] |
| PDPPD1_S | Interface inlet port remaining JAM | PDPPD1 ON | PDPPD1 does not turn OFF within the specified time. | (Paper length + 11.3) [mm] | (Paper length + 11.3) [mm] | (Paper length + 11.3) x 2 [mm] |
| PDPPD2_N | Interface outlet port not-reached JAM | PDPPD1 ON | PDPPD2 does not turn ON within the specified time. | 318.7 [mm] | 318.7 [mm] | 637.4 [mm] |
| PDPPD2_S | Interface outlet port remaining JAM | PDPPD2 ON | PDPPD2 does not turn OFF within the specified time. | (Paper length + 11.3) [mm] | (Paper length + 11.3) [mm] | (Paper length + 11.3) x 2 [mm] |
| FPPD1_N | Finisher inlet port not-reached JAM | PDPPD2 ON | FPPD1 does not turn ON within the specified time. | 180.3 [mm] | 180.3 [mm] | 360.6 [mm] |
| FPPD1_S | Finisher inlet port remaining JAM | Paper reaches the finisher speed change position. | FPPD1 does not turn OFF within the specified time. | 108.4 [mm] | 216.8 [mm] | 325.2 [mm] |
| FPPD2_N | Saddle section not-reached JAM | The lead edge of paper reaches the position of 20mm past the saddle No. 1 transport roller. | FPPD2 does not turn ON within the specified time. | 110.4 [mm] | 110.4 [mm] | 220.8 [mm] |
| FPPD2_S | Saddle section remaining JAM | The rear edge of paper reaches the position of 20mm past the process roller. | FPPD2 does not turn OFF within the specified time. | 220.4 [mm] | 220.4 [mm] | 440.8 [mm] |
| FPDD_S | Bundle exit remaining JAM | Gripper discharging is started. | FATPD does not turn OFF within the specified time. | 437 [msec] | 437 [msec] | 874 [msec] |
| | | Gripper discharging is completed. | FPDD does not turn ON when gripper discharging is completed. | | | FPDD OFF |
| FSTPLJ | Staple JAM | Driving the staple motor is started. | FSHS ON is not detected within the specified time after detection of FSHS OFF during stapling operation, and FSHS ON is detected by reverse rotation of the staple motor after stapling operation is stopped. | 400 [msec] | 200 [msec] | 600 [msec] |
| | | Staple extending operation is started. | Staple extending cannot be executed by execution of staple feeding by the specified number of times (9 times) during staple extending operation. | | | 9 times |
| | | Driving the saddle staple motor is started. | FSSHS ON is not detected within the specified time after detection of FSSHS OFF during stapling operation, and FSSHS ON is detected by reverse rotation of the staple motor after stapling operation is stopped. | 480 [msec] | 240 [msec] | 720 [msec] |
| | | Saddle staple extending operation is started. | Staple extending cannot be executed by execution of staple feeding by the specified number of times (14 times) during staple extending operation. | | | 14 times |

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| FPNCHJ | Punch JAM | Punch motor stop | FPCHPS does not turn ON after punching operation. | | | FPCHPS OFF |
| FIN_TIME | Finisher paper early reaching JAM | Paper exit command of the preceding paper | The paper exit command of the next paper is received at the timing earlier than the specified paper interval. | Specified paper interval time | 150 [msec] | (Specified paper interval time) - 150) [msec] |
| FIN_PAOF | Paper attribute data reception overflow | Paper information data command is received. | Paper information data of more than allowable buffer (16 sheets) are received. | | | 16 sheets |
| FPATPD_S | Saddle transport remaining JAM | Transport operation is started after folding operation. | FSATPD does not turn OFF within the specified time. | (Paper length/ 2 – 26.2) [mm] | (Paper length/ 2 – 26.2) [mm] | (Paper length/ 2 – 26.2) x 2 [mm] |
| FPPD3_N | Saddle paper exit not-reached JAM | Thrusting operation is started. | FPPD3 does not turn ON within the specified time. | 66.9 [mm] | 66.9 [mm] | 133.8 [mm] |
| FPPD3_S | Saddle paper exit remaining JAM | Transport operation is started after folding operation. | FPPD3 does not turn OFF within the specified time. | (Paper length/ 2 – 26.2) [mm] | (Paper length/ 2 – 26.2) [mm] | (Paper length/ 2 – 26.2) x 2 [mm] |
| FSSMJ | Stapler shift motor JAM | Driving the stapler shift motor is started. | Change from FSSHPS ON to OFF is not detected within the specified time during the stapler shift operation. | 1434 [msec] | 1434 [msec] | 2868 [msec] |
| | | | Change from FSSHPS OFF to ON is not detected within the specified time during the stapler shift operation. | 2085 [msec] | 2085 [msec] | 4170 [msec] |
| | | | Change from FSSSHPS ON to OFF is not detected within the specified time during the stapler shift operation. | 401 [msec] | 401 [msec] | 802 [msec] |
| | | | Change from FSSSHPS OFF to ON is not detected within the specified time during the stapler shift operation. | 3179 [msec] | 3179 [msec] | 6358 [msec] |
| | | | Change from FSSSW2 ON to OFF is not detected within the specified time during the stapler shift operation. | 138 - 503 [msec] | 138 - 503 [msec] | 276 - 1006 [msec] |
| | | | Change from FSSSW2 OFF to ON is not detected within the specified time during the stapler shift operation. | 291 - 803 [msec] | 291 - 803 [msec] | 582 - 1606 [msec] |
| FDRLMJ | Paper exit roller lift motor JAM | Driving the finisher paper exit roller lift motor is started. | Change from FDRHS ON to OFF is not detected within the specified time during the paper exit roller lift operation. | 176 [msec] | 176 [msec] | 352 [msec] |
| | | | Change from FDRHS OFF to ON is not detected within the specified time during the paper exit roller lift operation. | 235 [msec] | 235 [msec] | 470 [msec] |
| FSDMJ | Saddle motor JAM | | JAM which is not detected yet | | | |
| FGMJ | Gripper motor JAM | Driving the gripper motor is started. | Change from FGHPS ON to OFF is not detected within the specified time during the gripper operation. | 187 [msec] | 187 [msec] | 374 [msec] |
| | | | Change from FGHPS OFF to ON is not detected within the specified time during the gripper operation. | 535 [msec] | 535 [msec] | 1070 [msec] |
| FSPTMJ | Saddle paper transport motor JAM | Driving the saddle paper transport motor is started. | Change from FSRHS ON to OFF is not detected within the specified time during the paper transport roller lift operation in the saddle section. | 37 [msec] | 37 [msec] | 74 [msec] |
| | | | Change from FSRHS OFF to ON is not detected within the specified time during the paper transport roller lift operation in the saddle section. | 24 [msec] | 24 [msec] | 48 [msec] |

### (5) Inner finisher

| JAM code | JAM content | JAM detection method | | Basic distance (A) [mm] | JAM margin distance (B) [mm] | JAM detection distance (A+B) [mm] |
|---|---|---|---|---|---|---|
| | | JAM detection start trigger | JAM judgment condition | | | |
| FPPD1_N | Finisher inlet port not-reached JAM | Machine paper exit command reception | FPPD1 does not turn ON within the specified time. | 134.602 [mm] | 400 [mm] | 534.602 [mm] |
| FPPD1_S | Finisher inlet port remaining JAM (When Long-size paper support OFF) | FPPD1 ON | FPPD1 does not turn OFF within the specified time. | 464.803 [mm] | 50 [mm] | 514.803 [mm] |
| | Finisher inlet port remaining JAM (When Long-size paper support ON) | FPPD1 ON | FPPD1 does not turn OFF within the specified time. | 1207.803 [mm] | 50 [mm] | 1257.803 [mm] |
| FPDD_S | Bundle exit remaining JAM | Driving the bundle exit roller is started. | FSTPD does not turn OFF within the specified time. | 133.1 [mm] | 13.66 [mm] | 146.76 [mm] |
| FIN_TIME | Finisher paper early reaching JAM | FPPD1 ON by the prior paper detection | FPPD1 of the next paper turns ON at the timing earlier than the specified paper interval. | Specified paper interval time | 30 [mm] | (Paper interval time) - (Paper transport time of 30 [mm]) [msec] |
| FSTPD_S | Finisher paper exit remaining JAM | Driving the paper exit roller in the straight mode is started. | FSTPD does not turn OFF within the specified time. | 96.76 [mm] | 50 [mm] | 146.76 [mm] |
| FSTPLJ | Staple JAM | FSHPS OFF after FSM ON | FSHPS does not turn ON within the specified time. | 350 [msec] | 250 [msec] | 600 [msec] |

# 3. Image send communication report code

## A. Outline and code system descriptions

After completion of communication, the communication report table, the communication management table, and the protocol are described on the communication report column.

The communication report code is composed as follows:

Communication report: XX (XXXX)

The upper 2 digits of the communication report code:
Communication report code of 00 – 99 (Refer to communication report main code.)

The lower 4 digits of the communication report code:
Used by the serviceman.

The upper 2 digits: Communication report sub code 1 (Refer to communication report sub code 1.)

The lower 2 digits: Communication report sub code 2 (Refer to communication report sub code 2.)

Important

The communication report sub code 1 and sub code 2 are in hexa-decimal notation. (The others are in decimal notation.)

Important

The communication report sub code 1 is not used in the these models.

## B. Details

### (1) Communication report main code

| Report code | Final receive signal (Send side) | Final receive signal (Receive side) |
|---|---|---|
| 0 | Abnormal signal | Abnormal signal |
| 1 | NSF, DIS | (SID), (SUB), NSS, DCS |
| 2 | CFR | (PWD), (SEP), NSC, DTC |
| 3 | FTT | EOP |
| 4 | MCF | EOM |
| 5 | PIP, PIN | MPS |
| 6 | RTN, RTP | PRI-Q |
| 7 | No signal, DCN | DCN |
| 8 | PPR | PPS-EOP |
| 9 | | PPS-EOM |
| 10 | | PPS-MPS, PPS-NULL |
| 11 | RNR | RR |
| 12 | CTR | CTC |
| 13 | ERR | EOR-Q |
| 14 | | PPS-PRI-Q |
| 16 | Abnormal signal | Abnormal signal |
| 17 | NSF, DIS | SID, SUB, NSS, DCS |
| 18 | CFR | PWD, SEP, NSC, DTC |
| 19 | FTT | PPS-EOP |
| 20 | MCF | PPS-EOM |
| 21 | PIP, PIN | PPS-MPS, PPS-NULL |
| 22 | RTN, RTP | PRI-Q |
| 23 | No signal, DCN | DCN |
| 24 | PPR | |
| 25 | RNR | RR |
| 26 | CTR | CTC |
| 27 | ERR | EOR-Q |
| 28 | | PPS-PRI-Q |
| 29 | V.8 Phase-1 | V.8 Phase-1 |
| 30 | V.8 Phase-2 | V.8 Phase-2 |
| 31 | V.8 Phase-3 | V.8 Phase-3 |

Important

For report codes 16 – 31, V.34 MODE COMMUNICATION.

| Report code (Communication result) | Display in the column of result | Content of communication interruption |
|---|---|---|
| 0 – 31 | Refer to “previous table”. | Depends on the point of communication interruption. For 16 or later, V.34 mode communication. |
| 33 | BUSY | The calling side cannot establish connection with the remote party. |
| 34 | CANCEL | A communication interruption command is made during sending/receiving. The interruption key is pressed for interruption of input. <Send/Receive/Polling/Bulletin board> |
| 35 | NG35 XXXX | Power is failed during sending/receiving. <Send/Receive/Polling/Bulletin board> |
| 36 | (No record paper) | |
| 37 | (Record paper jam) | |
| 38 | MEM. FULL | Memory over during reception. <Receive/Polling><br>Print is not made during reception in acting reception inhibit. <Receive/Polling> |
| 39 | (Number of paper unmatched) | |
| 40 | (Relay not received) | |
| 41 | LENGTH OVER | The send data length of one page exceeds the limit (2m) in sending. <Send/Bulletin board> |
| 42 | LENGTH OVER | The receive data length of one page exceeds the limit. <Receive/Polling> |
| 43 | (Communication) (OK) | Speaking before data transmission |
| 44 | ORIGINAL ERROR | A document jam occurs in direct sending. <Send> |
| 45 | (Picture quality error) | |
| 46 | NO RESPONSE | The FAX signal from the remote party is not detected within T1 time. <Send/Polling><br>(When in recall, however, the recall setting in case of a communication error is valid.) |
| 47 | TX DECODE ERROR | A decode error occurs in the FAX board. <Send/Bulletin board> |
| 48 | OK | Normal end of communication |
| | OK REPLY RECEIVE | OK in Internet FAX send with reception confirmation. |
| 49 | NO RX POLL | The called side does not have polling function in polling reception. <Polling><br>The called side has no data to send. <Polling> |
| 50 | RX POLL FAIL | In polling reception, DCN is received for DTC. <Polling><br>In polling sending, there is no send data. <Bulletin board> |

| Report code (Communication result) | Display in the column of result | Content of communication interruption |
|---|---|---|
| 51 | PASS # NG | In poling sending, the allow number is not matched. <Bulletin board><br>In polling sending, the system number is not matched. <Bulletin board> |
| 52 | (No confidential function in remote party) | In confidential sending, the remote party does not have confidential function. <Send><br>(Including other company's machines)<br>1) The NSF signal has not "Confidential function" bit.<br>2) The NSF is not a Sharp machine. |
| 53 | (Confidential not received) | 1) In confidential sending, DCN is received for NSS. <Send> |
| 54 | (Confidential BOX NO NG) | 1) In confidential reception, a confidential box number which is not registered is specified. |
| 55 | (No relay function in remote party) | In relay command sending, the remote machine has no relay function. <Send><br>(Including other company's machine)<br>1) The NSF signal has not "Confidential function" bit.<br>2) The NSF is not a Sharp machine. |
| 56 | NO REL RX | 1) In relay command sending, DCN is received for NSS. <Send><br>2) In relay command reception, a remote station number which is not registered is specified. <Receive><br>3) In F code relay broadcasting, an F code relay command is received.<Receive> |
| 57 | (Relay ID unmatched) | 1) In relay command reception, the relay ID does not match. <Receive> |
| 58 | REJECTED | In reception, data are sent from a remote machine of receive inhibit number. <Receive><br>(Not rejected in the bulletin board send or the F code bulletin board send.) |
| 59 | RX NO F-CODE POLL | In F code polling (calling), the remote machine has no DIS bit 47 (polling function). <Polling><br>In F code polling (calling), the called side has no send data. (DIS bit 9 is 0.)<Polling> |
| 60 | NO F-CODE POLL | In F code polling (calling), DCN is received for SEP. <Polling><br>In bulletin board, there is no send data for SEP. <Bulletin board> |
| 61 | RX POLL # NG | In bulletin board, the sub address (bulletin board number (SEP)) is not matched. <Bulletin board> |
| 62 | F POLL PASS # NG | In bulleting board, the pass code (PWD) is not matched. <Bulletin board> |
| 63 | NO F FUNC | In F code sending, the remote machine has no DIS bit 49 (sub address function). <Send><br>(Check that the remote machine conforms to F code.) |
| 64 | NO F-CODE | In F code sending : <Send><br>1) DCN is received for SUB. --- Check the box number.<br>2) DCN is received for SID. --- Check the box number and pass code.<br><br>In F code receiving : <Receive><br>"F code relay broadcasting" or "F code confidential reception" is "Inhibited with soft SW." |
| 67 | F PASS # NG | In F code receiving, the pass code (SID) is not matched. <Receive> |
| 68 | BOX NO. NG | In F code reception, a box number which is not registered is specified. (SUB is not matched.) <Receive> |
| 69 | MEMORY OVER | Memory over in quick online sending <Send> |
| 70 | (JOB MEMORY OVER) | In PC-FAX reservation, the number of remote parties is exceeded. <Send> |
| 71 | NG71 XXXX *1 | In PC-FAX reservation, data sent from PC includes some errors. <Send> |
| 72 | (NG72 XXXX) *1 | In department management setting on the machine side:<br>• In reservation from PC-FAX or PC-Internet FAX, a department number which is not registered on the machine side is specified. <Send><br>• In reservation from PC-FAX or PC-Internet FAX, the department number is not specified. <Send> |
| 73 | NG73 XXXX *1 | In reservation from PC-FAX or PC-Internet FAX, the use quantity limit is exceeded. <Send> |
| 74 | NG74 XXXX *1 | When reserving specified filing in document filing in PC-FAX or PC-Internet FAX;<br>• The pass-code for the folder is set on the machine side and the pass-code from PC-XXX does not match with it. <Send><br>• The pass-code for the folder is set on the machine side and no pass-code is specified by PC-XXX. <Send> |
| 75 | NG75 XXXX *1 | • Reservation cannot be made due to machine busy. (Reservation of PC-FAX cannot be accepted.)<br>• When "PC-FAX or PC-internet FAX send inhibit" is set on the machine side. |
| 76 | NG76 XXXX *1 | Reserved with receive confirmation request in PC-Internet FAX, but the Internet FAX sender is not registered on the machine side. <Send> |
| 77 | NG77 XXXX *1 | In reserving specified filing in PC-FAX or PC-Internet FAX, the machine has no filing function. |
| 78 | NG78 XXXX *1 | The filing function is inhibited on the machine side when filing specification is reserved by PC-FAX or PC-Internet FAX. |
| 79 | NG79 XXXX *1 | An authentication error occurs when PC-FAX or PC-Internet FAX is reserved. |
| 80 | NG80 XXXX *1 | NIC connect failure (network abnormality)<br>• Check for disconnection of cables.<br>• A network trouble (CE-XX) occurs.<br>• The port is set to DISABLE.<br>• Authentication of the POP server is failed when POP before SMTP is enabled.<br>• When an error other than the communication result code 93 or 94 in D-SMTP send (including error response of 5XX) |
| 81 | NG REPORT | In Internet FAX send, reply of receive confirmation of the remote machine is not normal. (Including PC-Internet FAX).<br>• Error of the disposition-modifier.<br>• The disposition modifier is not in an error, and the disposition type is other than displayed, dispatched, or processed. |
| 82 | NO REPORT | In Internet FAX send, time-out occurs in waiting for receive confirmation from the remote machine. (Including PC-Internet FAX).<br>• In a case where send confirmation wait time-out time is other than 0, when send confirmation reply from an Internet FAX destination is not received.<br>• Recalls of the set number of recalls are performed, but send confirmation reply from an internet FAX destination is not received. |
| 83 | NG LIMIT | In E-mail/FTP, Internet FAX send, the send data size exceeds the upper limit of send data. |

| Report code (Communication result) | Display in the column of result | Content of communication interruption |
|---|---|---|
| 84 | REJECTED | In e-mail receive, a sender is registered in receive reject address/domain. <Receive> |
| 85 | NG85 XXXX *1 | In e-mail receive, an error occurs in communication with POP3 server.<br>• Header acquisition error.<br>• Time-out during mail receive |
| 86 | RECEIVED | In e-mail receive, an unsupported attached file is received.<br>Only the TIFF-F type is supported for attached files.<br>• The TIFF-F type of the attached file cannot be recognized.<br>• There is no attached file. |
| 87 | NG87 XXXX *1 | In e-mail receive, an attached file cannot be stored in memory.<br>• Memory over |
| 88 | NG88 XXXX *1 | In SMTP e-mail receive, an attached file cannot be stored in memory.<br>• Cannot be stored in memory.<br>• The number of items of acting receive data is the maximum, and an additional data cannot be stored. |
| 89 | NG89 XXXX *1 | In SMTP e-mail receive, an error occurs in communication with the mail server.<br>• Time-out occurs during e-mail receive. |
| 90 | NG90 XXXX *1 | After reservation by re-operation of document filing, conversion for image send cannot be made. |
| 91 | NG91 XXXX *1 *2 | Data cannot be written to the memory device when Scan To USB is executed.<br>• The memory device is disconnected during writing to the memory device.<br>• An error occurs due to a memory device trouble. |
| 92 | NG92 XXXX *1 *2 | The USB device memory overflows during writing data into the memory device when "Scan to USB" is executed. |
| 93 | NG93 XXXX *1 | When error in D-SMTP send (with recall)<br>• An error response of 4XX occurs during communication with the SMTP server.<br>• Time out occurs after establishment of connection with the SMTP server. |
| 94 | NG94 XXXX *1 | When busy in D-SMTP send<br>Time out occurs during establishment of connection with the SMTP server. |
| 95 | NG95 XXXX *1 | When the path is too long in execution of Scan To USB. |
| 96 | NG96 XXXX *1 | When the normal process is not executed in the secure mail sending. |
| 98 | NG98 XXXX *1 | The copy inhibit pattern is detected when scanning a document. |
| 99 | NG99 XXXX *1 | A document which is inhibited to be copied such as a banknote is scanned. |

*1: For a job status result in "Display in the column of result," "NG △△ XXXX" is displayed. "△△" is the code number.
For a communication result, "Communication error △△ (XXXX)" is displayed.

*2: The error code of Scan To USB is specified only in the job log.

- When the communication result is OK, the communication sub code 1 and the communication sub code 2 are "0000."
- Errors in ( ) are not used.

### (2) Communication report sub code 1

The communication report sub code 1 (upper 2 digits) are always indicated as "00."

### (3) Communication report sub code 2

| Report code 2 | Content of communication interruption | Send/Receive |
|---|---|---|
| 00 | When the conditions after 01 do not apply. | Send/Receive |
| 01 | Send length over | Send |
| 02 | EOL time up | Receive |
| 03 | Carrier detection time up | Receive |
| 04 | Time up of the communication start command from the machine side | Receive |
| 05 | Time up in phase C (8 min) | Send |
| 06 | Memory image decode error | Receive |
| 07 | Memory image decode error | Send |
| 08 | Time up between frames in phase C (Report code is 0 or 16.) | Send/Receive |
| 09 | Not used | — |
| 10 | Not used | — |
| 11 | Polarity reversion detection | Receive |
| 12 | Invalid command reception | Receive |
| 13 | Time up (1-minute timer/6-second time) | Receive |
| 14 | PUT error | Receive |
| 15 | In V.34 mode, time up is generated when shifting from Primary to Control. | Receive |
| 16 | In V.34 mode, time up is generated when shifting from Control to Primary. | Receive |
| 17 | Command receive time-up from MFP controller | Receive |
| 18 | Not used | — |
| 19 | Not used | — |
| 20 | Polarity reversion detection | Send |
| 21 | Invalid command reception | Send |
| 22 | Fallback retry number over | Send |
| 23 | Command retry number resend over | Send |
| 24 | Time up (T5 timer) | Send |
| 25 | Time up (T5 timer) in V.34 mode | Send |
| 26 | In V.34 mode, time up is generated when shifting from Primary to Control. | Send |

| Report code 2 | Content of communication interruption | Send/Receive |
|---|---|---|
| 27 | In V.34 mode, time up is generated when shifting from Control to Primary. | Send |
| 28 | When sending the FSK signal, no response of send completion is sent back from the MODEM chip within a certain time. (V.34, other than V.34) | Send |
| 29 | Not used | — |
| 30 | A communication error is generated between MFP controller and Modem controller. (Report code is 0 or 16.) | — |
| 31 | DC current not detected (busy) | Send |
| 32 | Dial tone not detected (busy) | Send |
| 33 | Busy tone detection (busy) | Send |
| 34 | T0 time up (Remote machine not responding) | Send |
| 35 | T1 time up (Remote machine not responding) | Send |
| 36 | In dialing, polarity reversion detection (Remote machine not responding) | Send |
| 37 | Calling is not made (busy)<Collision detected (including CNG detection)> | Send |
| 38 | Not used | — |
| 60 | In resend of document filed data, an error occurs in decoding or coding. | Resend |
| 61 | In resend of document filed data, setting to inhibit resolution conversion is made. (The resolution after resend is set to be Enlarged.) | Resend |
| 62 | In resend of document filed data, rotation setting is made for data which cannot be rotated. | Resend |
| 63 | In resend of document filed data, data cannot be stored in HD after conversion of resolution for resend. | Resend |
| 64 | In resending data of document file, during conversion for resending, the number of IMS management pages exceeds the upper limit (999). (IT occurs in OSA Scan to FTP also, resulting in memory over.) | Resend<br>OSAScanToFTP |
| 70 | E-mail header acquisition error | E-mail receive |
| 71 | Time out occurs during e-mail receive. | E-mail receive |
| 72 | Receive reject occurs during e-mail receive. | E-mail receive |
| 73 | Network communication cannot be made due to port disable. | Network send |
| 74 | An authentication of the POP server is failed when POP before SMTP is enabled. | Network send |
| 75 | In the setting of SSL communication, when SSL communication is tried but the server side does not support SSL. | Network send |
| 76 | There is no image in network communication (transfer). | Network send |
| 80 | There is no attached file in received e-mail. | E-mail receive |
| 81 | The attached file of received e-mail is not of TIFF type which is supported. | E-mail receive |
| 82 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>ID error | E-mail receive |
| 83 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>Endian error | E-mail receive |
| 84 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>Version error | E-mail receive |
| 85 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>Tag data error | E-mail receive |
| 86 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>Tag parameter error | E-mail receive |
| 87 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>Header size error | E-mail receive |
| 88 | The TIFF type of the attached file in received e-mail cannot be recognized.<br>Data error | E-mail receive |
| 90 | In e-mail receive, an attached file cannot be stored in memory.<br>Memory over.<br>Cannot be stored in memory. | E-mail receive |
| 91 | In e-mail receive, an attached file cannot be stored in memory.<br>The file size is too great to be stored in memory. | E-mail receive |
| 92 | In SMTP e-mail receive, an attached file cannot be stored in memory.<br>Cannot be stored in memory. | E-mail receive |

When the sub code 2 is "08" or "30" and the communication report is "OK," the report code is "00" or "16."

## 4. Dial tone

When shipping from the factory, the dial tone detection when sending is set to Enable (changed from OFF to ON). When installing this machine, be sure to check and confirm that the dial tone is properly detected and the auto dial sending is enabled.

Check to confirm that the continuous buzzer sound is heard when the on-hook key is pressed. (Press the on-hook key again to cancel the buzzer sound.)

If facsimile communication cannot be executed normally through the IP telephone line, try the general telephone line.

# [8] 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 ROM's installed in the other PWB's including options. Some combinations of each ROM's 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**

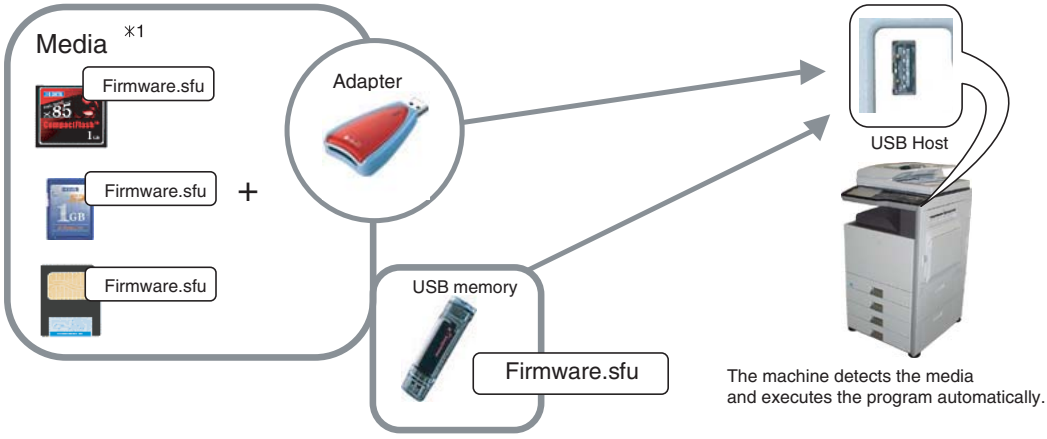
The firmware type can be displayed by SIM22-5.

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.



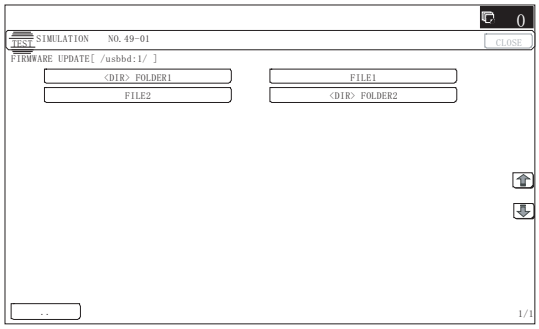

*1:

- Store the firmware data (xxx .sfu) to the media or USB memory beforehand.
- The media used for the update must have an enouch capacity for storing the firmware data.
- The USB memory equipped with the security (secure) function cannot be used.

Execution of the firmware by SIM49-01

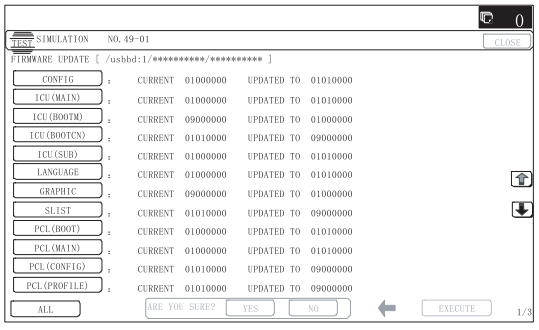
1) Insert the media or USB memory which stores the firmware into the main unit. (Be sure to use the USB I/F on the operation panel.)
2) Enter the SIM49-01.

   Press the key of the file to be updated. The screen transfers to the update screen.



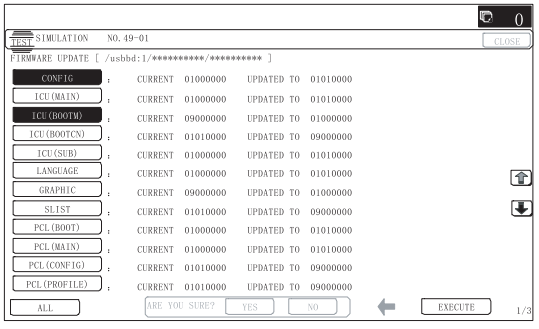

   * The number of key changes according to the number of the sfu file in the media or USB memory inserted.
   * If the media or USB memory was not inserted when entry to the SIM49-01 screen, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE [OK]" is displayed on the screen. Insert the media or USB memory and push the [OK] key to open the file. If the media have not been inserted and [OK] key is pushed, the next screen does not appear and the screen waits the entry. Conversely, if the media or USB memory is pulled out on the file list screen, the error is detected by the [FILE] key pressing, and the first screen appears.

3) Current version number and the version number to be updated will be shown for each firmware respectively.




4) Press [ALL] key.

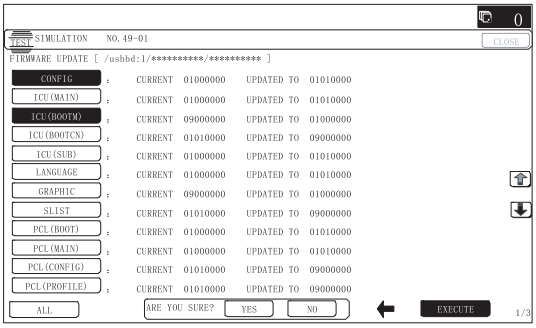
   All the firmware programs are selected.



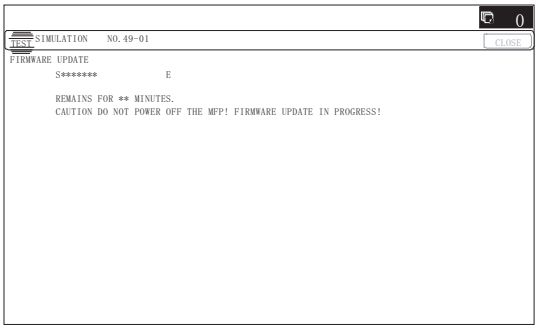

   * Normally select all the firmwares and execute updating.
   * In this case, firmwares which do not exist on the machine side are ignored.

     To update a certain firmware only, select the firmware with the firmware display key.
   * If firmware's key is not selected, [EXECUTE] key is gray out and cannot be pressed.

5) Press [EXECUTE] key. “ARE YOU SURE? [YES] [NO]” becomes clear. Press [YES] key to start the update of selected firemware.

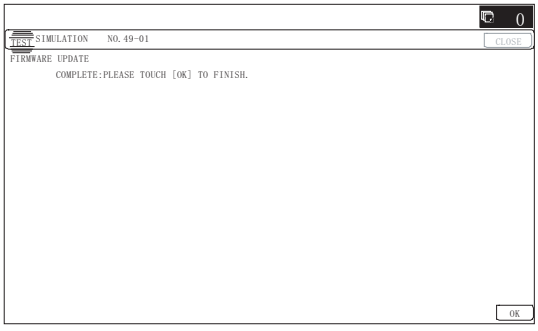



   The progress is displayed on right side of "FIRMWARE UPDATE" title by 20 steps.




   At this time, only the progress gauge is displayed on the screen, and the version and the firmware selection key are not displayed.

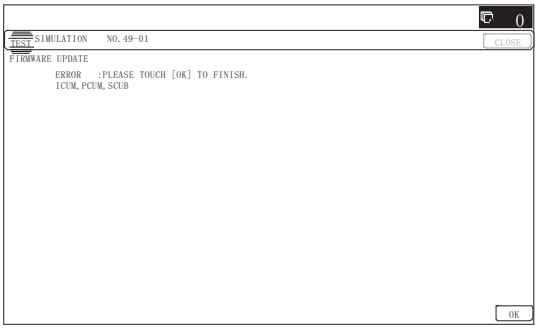
6) If the update is normal completion, following screen is displayed.




   Press [OK] key. (The machine is rebooted.)

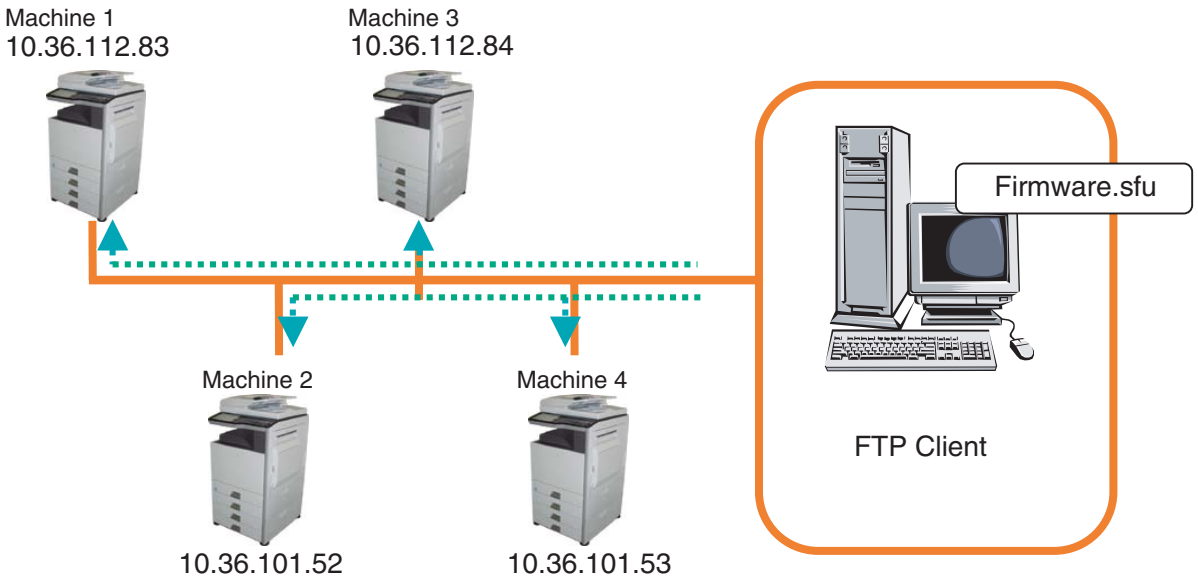
   Go to SIM22-05 and confirm the firmware has upgraded successfully.

7) If the update is not normal completion, following screen is displayed.



## B. Firmware update using FTP

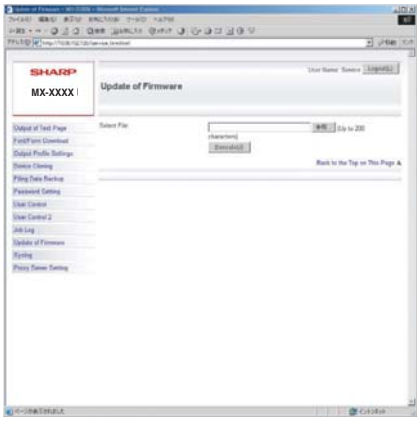
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.




## C. Firmware update using the Web page

An Web browser (service technician's Web page) is used to update the firmware.

1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
2) Click the "Update of Firmware" key in the Web page. Click the [Browse] key and select the firmware for the update.




3) After selecting the file, click the [Submit] key to send the firmware to the machine. Update processing begins. While processing takes place, "Firmware Update, now processing..." appears.

4) When the firmware update is finished, "Firmware Update completed. Please reboot the MFP." appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.

"Close the browser and open again to display latest information." will be displayed.

5) Check the firmware version of machine again.

## D. Firmware update using the CN update function (There are three methods.)

### (1) Outline

The update method using the DIP SW of the MFP PWB is called the CN update.

#### a. Function

There are the following three functions in the CN update mode.

- Firmware update function

  This function is used to update the firmware by transferring data from the PC which is connected to the MFP PWB, the SCU PWB, the PCU PWB, 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 and CompactFlash must be replaced with a new one having the normal boot program.

  If the boot animation is not displayed, there is an abnormality in the boot program.

  If the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program.

- Firmware version check function

  (The method to check the firmware version by using SIM22-5 is easier than this method. Therefore, it is not described in this manual.)

#### b. Purpose

This function is used in the following cases:

- When an error occurs during firmware update operation other than the CN update.
- When the power is shut down or an error occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.

If an error occurs in the boot program, this method cannot be used. In such a case, the SD card and CompactFlash must be replaced with a new one having the normal boot program.

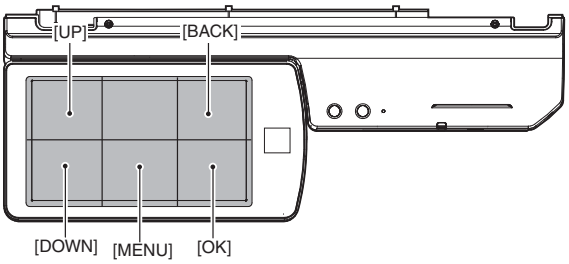
#### c. DIP-SW used in the CN update mode

To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

When terminating the CN update mode, reset UPDATE DIP-SW to OFF (normal mode).

#### d. Keys used in the CN update mode

The following two 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.

- The update target ROM is automatically selected.
- When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update.

If, however, an abnormality occurs in the boot program, this method cannot be used. On that case, the SD card and CompactFlash must be replaced with a new one having the normal boot program.

When the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program (SD card or CompactFlash).

#### a-1. Necessary items

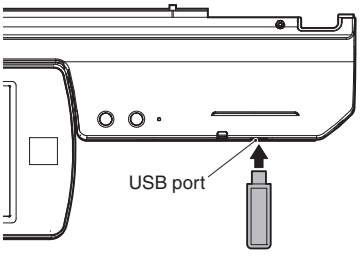
1) Insert the SD card and CompactFlash to the MFP PWB of the machine.
2) USB memory with the firmware file (SFU) saved in it.

NOTE: Save the firmware file in the main directory or in a one-level lower directory.

#### a-2. Procedures

1) Turn OFF the power, and remove the cabinet and the MFP PWB cover.
2) Turn ON the DIP SW of the MFP PWB UP DATE.
3) Install the USB memory into the USB port.

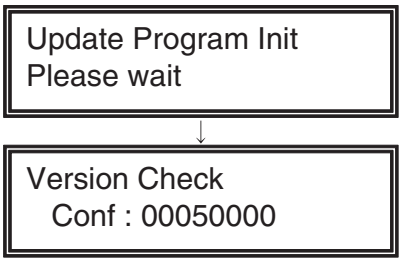
   **USB memory installing position**




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**

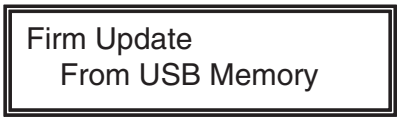



Display when booting is completed

6) Select the firmware update mode.

Select the update mode with [MENU] key and [BACK] key.

**Display of the firmware update mode**




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**

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**

Display of file reading

10) After completion of reading, the firmware update process is continued.

**Display of the firmware update process**

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**

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.

# [9] MAINTENANCE

## 1. Works necessary when executing the maintenance

### A. Counter check

Before execution of the maintenance, execute SIM22 to check the counter values of the following counters to confirm consuming states of each section.

1) Each consumable part counter
2) Each unit counter
3) Trouble counter, JAM counter

### B. Counter reset

When a part or consumable part is replaced with new one in the maintenance, execute SIM24 to reset the following counters.

1) Maintenance counter
2) Each consumable part counter
3) Each unit counter
4) Trouble counter, JAM counter

### C. Firmware version check and upgrading

Execute SIM22-5 to check the firmware version, and upgrade it as needed. (SIM49-1)

### D. Confirmation, adjustment

After completion of part replacement and cleaning, etc, execute the following procedures.

**Items necessary to execute**

| Item | | | | SIM to be used |
|---|---|---|---|---|
| ADJ 5 | Print engine image distortion adjustment / OPC drum phase adjustment / Color registration adjustment (Print engine section) | ADJ5A | Print engine image distortion adjustment (Manual adjustment) / OPC drum phase adjustment (Automatic adjustment) / Color registration adjustment (Automatic adjustment) | 50-22 |
| ADJ10/SET1 | Image quality adjustment | | Copy image quality adjustment | |
| | | | Printer image quality adjustment | |
| | | ADJ10B | Printer, copy color balance, density adjustments (Automatic adjustments) (Basic adjustments) | 46-74 |

**Items to execute as needed**

| Item | | | | SIM to be used |
|---|---|---|---|---|
| ADJ 2 | High voltage adjustment | ADJ2A | Main charger grid voltage adjustments | 8-2 |
| | | ADJ2B | Developing bias voltage adjustments | 8-1 |
| | | ADJ2C | Transfer current/voltage adjustment | 8-6 |
| ADJ4 | Image lead edge position, image loss, void area, image off-center, image magnification ratio adjustments (Automatic adjustments) | ADJ4A | Print image main scanning direction automatic magnification ratio adjustment (Print engine) | 50-28 |
| | | ADJ4B | Print image off-center automatic adjustment (Print engine) (Each paper feed tray) | 50-28 |
| | | ADJ4C | Copy mode image lead edge position, image loss, void area, image off-center, sub scanning direction image magnification ratio automatic adjustment (Scanner) (Document table mode) | 50-28 |
| | | ADJ4D | Copy mode image lead edge position, image loss, void area, image off-center, sub scanning direction image magnification ratio automatic adjustment (Scanner) (RSPF mode) | 50-28 |
| ADJ10/SET1 | Image quality adjustment | ADJ10A | Scanner calibration (CCD calibration) | 63-3 (63-5) |

## 2. Display of maintenance execution timing

The message of maintenance execution timing is displayed when each counter reaches the set value. The relations between the messages and the counters are shown below.

### A. Maintenance counter

| Display content | Display condition | | | Print JOB Enable/ Disable |
|---|---|---|---|---|
| | SIM26-38-A set value | Counter name | Counter value | |
| Maintenance required. Code: TA | 0 (Print continue) | Maintenance counter (Total) | When the SIM21-1 set value is reached. | Enable |
| | 1 (Print stop) | | When 90% of the SIM21-1 set value is reached. | |
| Maintenance required. Code: TA | 1 (Print stop) | | When the SIM21-1 set value is reached. | Disable |
| Maintenance required. Code: CA | 0 (Print continue) | Maintenance counter (Color) | When the SIM21-1 set value is reached. | Enable |
| | 1 (Print stop) | | When 90% of the SIM21-1 set value is reached. | |
| Maintenance required. Code: CA | 1 (Print stop) | | When the SIM21-1 set value is reached. | Disable |
| Maintenance required. Code: AA | 0 (Print continue) | Both of total and color | When the SIM21-1 set value is reached. | Enable |
| | 1 (Print stop) | | When 90% of the SIM21-1 set value is reached. | |
| Maintenance required. Code: AA | 1 (Print stop) | | When the SIM21-1 set value is reached. | Disable |

* After execution of maintenance, be sure to execute SIM24-4 to clear the maintenance counter (Total) and the maintenance counter (Color).

### B. Primary transfer unit

| Display content | Display condition | | | Print JOB Enable/ Disable |
|---|---|---|---|---|
| | SIM26-38-A set value | Counter name | Counter value | |
| Maintenance required.: TK1 | 0 (Print continue) | Primary transfer unit print counter | 26/31 cpm : When 200K is reached.<br>36 cpm : When 240K is reached. | Enable |
| | 1 (Print stop) | | | |

* After execution of the maintenance, execute SIM24-4 to clear the primary transfer unit print counter, the accumulated number of rotations counter, and the use day counter.

### C. Secondary transfer unit

| Display content | Display condition | | | Print JOB Enable/ Disable |
|---|---|---|---|---|
| | SIM26-38-A set value | Counter name | Counter value | |
| Maintenance required.: TK2 | 0 (Print continue) | Secondary transfer unit print counter | 26/31 cpm : When 300K is reached.<br>36 cpm : When 360K is reached. | Enable |
| | 1 (Print stop) | | | |

* After execution of the maintenance, execute SIM24-4 to clear the secondary transfer print counter, the accumulated number of rotations counter, and the use day counter.

### D. Fusing unit

| Display content | Display condition | | | | Print JOB Enable/ Disable |
|---|---|---|---|---|---|
| | SIM26-38-A set value | SIM26-38-B set value | Counter name | Counter value | |
| Maintenance required.: FK1 | 0 (Print continue) | - | Fusing belt print counter | 26/31 cpm : When 200K is reached.<br>36 cpm : When 240K is reached. | Enable |
| | 1 (Print stop) | - | | | |
| Maintenance required.: FK2 | 0 (Print continue) | - | Pressure roller print counter | 26/31 cpm : When 200K is reached.<br>36 cpm : When 240K is reached. | Enable |
| | 1 (Print stop) | - | | | |
| Maintenance required.: FK3 | - | 0 (Print continue) | Fusing web print counter | When 200K is reached. | Enable |
| | - | 1 (Print stop) | | | |
| Maintenance required.: FK3 (Pop-up) | - | 0 (Print continue) | Fusing web print counter | When Web end detection is ON. | Enable |
| | - | 1 (Print stop) | | | Disable |

* After execution of the maintenance, execute SIM24-4 to clear the fusing roller counter, the fusing belt counter, the fusing web print counter, the accumulated rotation number counter, and the use day counter.

## E. OPC drum

| Display content | Display condition | | | Print JOB Enable/Disable |
|---|---|---|---|---|
| | SIM26-38-A set value | Counter name | Counter value | |
| Maintenance required.: DK | 0 (Print continue)<br>1 (Print stop) | OPC drum print counter (K)<br>or<br>OPC drum accumulated rotation number counter (K) | When 840K rotation is reached<br>26cpm machine :<br>When 140K is reached.<br>31cpm machine :<br>When 155K is reached<br>36cpm machine<br>when 170K is reached. | Enable |
| Maintenance required.: D (C/M/Y) | 0 (Print continue)<br>1 (Print stop) | OPC drum print counter (C/M/Y)<br>or<br>OPC drum accumulated rotation number counter (C/M/Y) | When 840K rotation is reached<br>26/31/36cpm machine :<br>When 140K is reached. | |

* After execution of the maintenance, execute SIM24-4 to clear the OPC drum print counter, the accumulated number of rotations counter, and the use day counter.

## F. Developer

| Display content | Display condition | | | Print JOB Enable/Disable |
|---|---|---|---|---|
| | SIM26-38-A set value | Counter name | Counter value | |
| Maintenance required.: DK | 0 (Print continue)<br>1 (Print stop) | OPC drum print counter (K)<br>or<br>OPC drum accumulated rotation number counter (K) | When 840K rotation is reached<br>26cpm machine :<br>When 140K is reached.<br>31cpm machine :<br>When 155K is reached<br>36cpm machine<br>when 170K is reached. | Enable |
| Maintenance required.: D (C/M/Y) | 0 (Print continue)<br>1 (Print stop) | OPC drum print counter (C/M/Y)<br>or<br>OPC drum accumulated rotation number counter (C/M/Y) | When 840K rotation is reached<br>26/31/36cpm machine :<br>When 140K is reached. | |

* After execution of the maintenance, execute SIM24-4 to clear the developer print counter, the accumulated number of rotations counter, and the use day counter.

## G. Waste toner box

| Display content | Display condition | | Print JOB Enable/Disable |
|---|---|---|---|
| | Counter name | Counter value | |
| Check the waste toner box. | After detection of near end, pixel count 104K<br>(equivalent to color 1K, monochrome 4K print) | | Near end: Enable<br>End: Disable |

* When the waste toner box is replaced with an empty one, the message disappears.

## H. Toner

| Display content | Display condition | | | Print JOB Enable/Disable |
|---|---|---|---|---|
| | SIM26-38-A set value | Counter name | Counter value | |
| (K/C/M/Y) Prepare a toner (Near near end) | No relation | Toner motor rotation time | Specified time of rotations | Enable |
| (K/C/M/Y) Toner supply is low (Near end) | No relation | Toner supply amount is decreasing. | ATC sensor output variation | Enable |
| Replace the toner cartridge. (K) (End) | 0 (Print continue)<br>1 (Print stop) | The pixel count from near end reaches the specified value. | Specified pixel count | (Disable for a JOB which requires K toner) |
| Replace the toner cartridge. (C/M/Y) (End) | 0 (Print continue)<br>1 (Print stop) | The pixel count from near end reaches the specified value. | Specified pixel count | Enable for monochrome, Disable for color |

# 3. Maintenance list

**Main unit**

X: Check (Clean, replace, or adjust according to necessity.) O: Clean ▲: Replace △: Adjust ☆: Lubricate

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 840 K rotation | 840 K rotation | 840 K rotation | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Developing section | Developing unit (monochrome) | 1 | Developer | X | ▲ | ▲ | ▲ | maximum printed number 26cpm 140K 31cpm 155K 36cpm 170K |
| | | | 2 | DV seal/DV seal B | X | X | X | X | |
| | | | 3 | DV side seals F/R | X | X | X | X | |
| | | | 4 | Toner filter | X | X | X | X | |
| | | | 5 | Bias pin | X | X | X | X | |
| | | | 6 | Connector | X | X | X | X | |
| | | Developing unit (color) | 1 | Developer | X | ▲ | ▲ | ▲ | maximum printable number 140K |
| | | | 2 | DV seal/DV seal B | X | X | X | X | |
| | | | 3 | DV side seals F/R | X | X | X | X | |
| | | | 4 | Toner filter | X | X | X | X | |
| | | | 5 | Bias pin | X | X | X | X | |
| | | | 6 | Connector | X | X | X | X | |
| 2 | OPC drum section | OPC drum unit (monochrome) | 1 | Drum | X | ▲ | ▲ | ▲ | 840K rotation or maximum printed number 26cpm 140K 31cpm 155K 36cpm 170K |
| | | | 2 | MC unit | X | ▲ | ▲ | ▲ | |
| | | | 3 | Cleaning blade | X | ▲ | ▲ | ▲ | |
| | | | 4 | Toner reception blade | X | X | X | X | |
| | | | 5 | Side seals F/R | X | X | X | X | |
| | | | 6 | Charger cleaner | X | ▲ | ▲ | ▲ | |
| | | OPC drum unit (color) | 1 | Drum | X | ▲ | ▲ | ▲ | 840K rotation or maximum printable number 140K |
| | | | 2 | MC unit | X | ▲ | ▲ | ▲ | |
| | | | 3 | Cleaning blade | X | ▲ | ▲ | ▲ | |
| | | | 4 | Toner reception blade | X | X | X | X | |
| | | | 5 | Side seals F/R | X | X | X | X | |
| | | | 6 | Charger cleaner | X | ▲ | ▲ | ▲ | |

**26 cpm/31cpm machine**

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RSPF section | RSPF unit | 1 | Document pickup roller | O | O | - | O | O | O | - | O | O | Replace at 100K of the SPF paper feed counter or 1 year of use. When replacing the paper feed roller, apply grease to the paper feed shaft. GP-501MR |
| | | | 2 | Paper feed roller | O | O | - | O | O | O | - | O | O | |
| | | | 3 | Separation roller | O | O | - | O | O | O | - | O | O | |
| | | | 4 | Torque limiter SPF | X | X | - | X | X | X | - | X | X | Replace at 400K of the SPF paper feed counter or 2 years of use. |
| | | | 5 | Take-up torque limiter | X | X | - | X | X | X | - | X | X | |
| | | | 6 | Discharge brush | X | X | - | X | X | X | - | X | X | |
| | | | 7 | Registration roller | O | O | - | O | O | O | - | O | O | |
| | | | 8 | Transport roller 2 | O | O | - | O | O | O | - | O | O | |
| | | | 9 | Transport roller 3 | O | O | - | O | O | O | - | O | O | |
| | | | 10 | Paper exit roller | O | O | - | O | O | O | - | O | O | |
| | | | 11 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | | 12 | Scan plate | O | O | - | O | O | O | - | O | O | |
| | | | 13 | Gears | X | X | - | X | X | X | - | X | X | |
| | | | 14 | Belts | X | X | - | X | X | X | - | X | X | |
| | | | 15 | OC mat | O | O | - | O | O | O | - | O | O | |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Scanner section | Scanner unit | 1 | Drive belt | X | X | - | X | X | X | - | X | X | |
| | | | 2 | Drive wire | X | X | - | X | X | X | - | X | X | |
| | | | 3 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | | 4 | Rails | ☆ | ☆ | - | ☆ | ☆ | ☆ | - | ☆ | ☆ | |
| | | | 5 | Mirror | O | O | - | O | O | O | - | O | O | |
| | | | 6 | Reflector | O | O | - | O | O | O | - | O | O | |
| | | | 7 | Scanner lamp | O | O | - | O | O | O | - | O | O | |
| | | | 8 | Lens | O | O | - | O | O | O | - | O | O | |
| | | | 9 | CCD | O | O | - | O | O | O | - | O | O | |
| | | | 10 | Table glass | O | O | - | O | O | O | - | O | O | |
| | | | 11 | SPF glass | O | O | - | O | O | O | - | O | O | |
| 3 | Transfer section | Primary transfer unit | 1 | Separation pawl | - | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 2 | Primary transfer belt | - | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | When replacing, apply KYNAR powder. |
| | | | 3 | Secondary drive transmission gear | - | O | - | O | O | O | - | O | O | |
| | | | 4 | Primary transfer belt drive roller | - | O | - | O | O | O | - | O | O | |
| | | | 5 | Primary transfer belt follower roller | - | O | - | O | O | O | - | O | O | |
| | | | 6 | Primary transfer belt tension roller | - | O | - | O | O | O | - | O | O | |
| | | | 7 | Registration backup roller | - | O | - | O | O | O | - | O | O | |
| | | | 8 | Y auxiliary roller | - | O | - | O | O | O | - | O | O | |
| | | | 9 | PTC backup roller | - | O | - | O | O | O | - | O | O | |
| | | | 10 | Primary transfer roller | - | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 11 | Transfer cleaner seals F/R | - | X | - | X | X | X | - | X | X | |
| | | | 12 | Primary transfer belt cleaner blade | - | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | | | 13 | Primary transfer toner reception blade | - | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 14 | Primary transfer operation mode detector | - | O | - | O | O | O | - | O | O | |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Transfer section | Secondary transfer unit | 1 | Secondary transfer belt follower roller | - | - | O | - | O | - | O | - | O | |
| | | | 2 | Secondary transfer belt | - | - | ▲ | - | ▲ | - | ▲ | - | ▲ | Never use alcohol or solvents for cleaning. Replace at every 300K. |
| | | | 3 | Secondary transfer belt drive roller | - | - | O | - | O | - | O | - | O | |
| | | | 4 | Secondary transfer backup roller | - | - | O | - | O | - | O | - | O | |
| | | | 5 | Secondary transfer belt tension roller | - | - | O | - | O | - | O | - | O | |
| | | | 6 | Secondary transfer roller | - | - | X | - | X | - | X | - | X | Replace as needed. |
| | | | 7 | Secondary transfer drive gear | - | - | X | - | X | - | X | - | X | |
| | | | 8 | Separation cam | - | - | ☆ | - | ☆ | - | ☆ | - | ☆ | When replacing, apply HANARL FL-955R to the shaft section. |
| | | | 9 | Secondary transfer frame | - | - | ☆ | - | ☆ | - | ☆ | - | ☆ | |
| 4 | Other | Other | 1 | PTC unit | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Replace. Reciprocate the PTC cleaning rod back and forth 3 times. |
| | | | 2 | Image density sensor/ Registration sensor | X | O | - | O | O | O | - | O | O | Remove dirt from the light emitting/receiving sections (transparent plastic sections) of the sensor (gray plastic section) with dry waste cloth. *1 |
| 5 | LSU section | LSU | 1 | Dust-proof glass | O | O | - | O | O | O | - | O | O | Use the LSU cleaning rod. |
| | | Other | 2 | Cleaning base | X | Replace every time the waste toner box is replaced. | | | | | | | | Attached to the waste toner box. (2 pcs.) / Replace when the waste toner box is replaced, or at 100K, or 2 years of use. |
| 6 | Manual paper feed section | Manual paper feed unit | 1 | Paper feed roller | X | O | - | O | O | O | - | O | O | Replace at 100K of the manual paper feed counter or 1 year of use. |
| | | | 2 | Separation roller | X | O | - | O | O | O | - | O | O | |
| | | | 3 | Torque limiter | X | X | - | X | X | X | - | X | X | |
| | | | 4 | Transport roller 9 | X | O | - | O | O | O | - | O | O | |
| | | | 5 | Transport roller 10 | X | O | - | O | O | O | - | O | O | |
| | | | 6 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | | - | Paper guides | O | O | - | O | O | O | - | O | O | Clean with alcohol. |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Tray paper feed section | Tray paper feed unit | 1 | Paper pickup roller | X | O | - | O | O | O | - | O | O | Replace at 100K of the tray paper feed counter or 1 year of use. |
| | | | 2 | Paper feed roller | X | O | - | O | O | O | - | O | O | |
| | | | 3 | Separation roller | X | O | - | O | O | O | - | O | O | |
| | | | 4 | Transport roller 4 | X | O | - | O | O | O | - | O | O | |
| | | | 5 | Transport roller 2 | X | O | - | O | O | O | - | O | O | |
| | | | 6 | Torque limiter | X | X | - | X | X | X | - | X | X | |
| | | | 7 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | | - | Paper guides | O | O | - | O | O | O | - | O | O | Clean with alcohol. |
| 8 | Paper registration section (paper transport section)/ Paper exit section/ADU section | PS unit | 1 | Registration roller (idle) | X | O | - | O | O | O | - | O | O | |
| | | | 2 | Registration roller (drive) | X | O | - | O | O | O | - | O | O | |
| | | | 3 | Transport roller 5 | X | O | - | O | O | O | - | O | O | |
| | | | 4 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | Right door unit | 5 | Transport roller 7 | X | O | - | O | O | O | - | O | O | |
| | | | 6 | Transport roller 8 | X | O | - | O | O | O | - | O | O | |
| | | | 7 | Paper exit roller 3 | X | O | - | O | O | O | - | O | O | |
| | | | 8 | Paper exit roller 2 | X | O | - | O | O | O | - | O | O | |
| | | | 9 | Discharge brush | X | X | - | X | X | X | - | X | X | |
| | | | 10 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | Fusing rear unit | 11 | Transport roller 6 | X | O | - | O | O | O | - | O | O | |
| | | Paper exit unit | 12 | Paper exit roller 1 | X | O | - | O | O | O | - | O | O | |
| | | | 13 | Discharge brush | X | X | - | X | X | X | - | X | X | |
| | | | 14 | Sensors | - | X | - | X | X | X | - | X | X | |
| | | Other | 15 | Paper dust removing unit | O | O | - | O | O | O | - | O | O | |
| | | | - | Paper guides | O | O | - | O | O | O | - | O | O | Clean with alcohol. |
| 9 | Drive section | Main drive unit Belt drive unit | 1 | Gears (grease) | X | X | - | X | X | X | - | X | X | Apply to the specified position when checking. FLOIL G-313S |
| | | | 2 | Shafts (grease) | X | X | - | X | X | X | - | X | X | |
| | | | 3 | Shaft earth sections (conduction grease) | X | X | - | X | X | X | - | X | X | Apply to the specified position when checking. FLOIL GE-676 |
| | | | 4 | Belts | X | X | - | X | X | X | - | X | X | |
| | | | 5 | Sensors | X | X | - | X | X | X | - | X | X | |
| | | Transport drive unit | 6 | Belts | X | X | - | X | X | X | - | X | X | |
| | | | 7 | Connection arm | X | X | - | X | X | X | - | X | X | Apply to the specified position when checking. HANARL FL-955R |
| | | Fusing drive unit | 8 | Shafts (grease) | X | X | - | X | X | X | - | X | X | |
| | | Paper exit drive unit | 9 | Shafts (grease) | X | X | - | X | X | X | - | X | X | |
| | | | 10 | Belts | X | X | - | X | X | X | - | X | X | |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Fusing section | Fusing unit | 1 | Lower separation pawl | X | X | - | X | X | X | - | X | X | |
| | | | 2 | Lower separation pawl spring | X | X | - | X | X | X | - | X | X | |
| | | | 3 | Separation plate | X | X | - | X | X | X | - | X | X | |
| | | | 4 | Web guide shaft | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | | | 5 | Web pressure roller bearing | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | | | 6 | Web pressure roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | | | 7 | Web roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | | | 8 | Lower thermistor | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 9 | Pressure roller gear | X | X | - | X | X | X | - | X | X | |
| | | | 10 | Pressure roller bearing | X | X | - | X | X | X | - | X | X | |
| | | | 11 | Pressure roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Apply grease to the shaft section when replacing. (JEF552) / After completion of replacement, clean the new pressure roller surface with alcohol. / Integrated with the fusing roller as a maintenance kit. Replace at every 200K. |
| | | | 12 | Sub thermistor | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 13 | Fusing roller bearing | X | X | - | X | X | X | - | X | X | |
| | | | 14 | Heat-insulating bush | X | X | - | X | X | X | - | X | X | Replace as needed. / When replacing, apply grease to the inner ring section and the outer ring section. (JEF552) |
| | | | 15 | Heating roller bearing | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 16 | Fuser belt guide collar | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Integrated with the fusing belt as a maintenance kit. Replace at every 200K. |
| | | | 17 | Fusing roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Apply grease to the shaft section when replacing. (JEF552) / Integrated with the pressure roller as a maintenance kit. Replace at every 200K. |
| | | | 18 | Heating roller | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 19 | Fusing belt | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Integrated with the fuser belt guide collar as a maintenance kit. Replace at every 200K. |
| | | | 20 | Main thermistor | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 21 | Paper guides | O | O | - | O | O | O | - | O | O | |
| | | | 22 | Gears | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | | | 23 | Pressure spring | X | X | - | X | X | X | - | X | X | |
| | | | 24 | Washer | - | X | - | X | X | X | - | X | X | |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Other | | 1 | Ozone filter | - | - | ▲ | - | ▲ | - | ▲ | - | ▲ | |
| | | | 2 | Toner cartridge BK | User replacement for every toner empty. | | | | | | | | | |
| | | | 3 | Toner cartridge C | | | | | | | | | | |
| | | | 4 | Toner cartridge M | | | | | | | | | | |
| | | | 5 | Toner cartridge Y | | | | | | | | | | |
| | | | 6 | Waste toner box | Replaced by the user when full is detected. | | | | | | | | | Replacement reference: 50K |

**36cpm machine**

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RSPF section | RSPF unit | 1 | Document pickup roller | O | O | - | - | O | - | O | - | O | Replace at 100K of the SPF paper feed counter or 1 year of use. When replacing the paper feed roller, apply grease to the paper feed shaft. GP-501MR |
| | | | 2 | Paper feed roller | O | O | - | - | O | - | O | - | O | |
| | | | 3 | Separation roller | O | O | - | - | O | - | O | - | O | |
| | | | 4 | Torque limiter SPF | X | X | - | - | X | - | X | - | X | Replace at 400K of the SPF paper feed counter or 2 years of use. |
| | | | 5 | Take-up torque limiter | X | X | - | - | X | - | X | - | X | |
| | | | 6 | Discharge brush | X | X | - | - | X | - | X | - | X | |
| | | | 7 | Registration roller | O | O | - | - | O | - | O | - | O | |
| | | | 8 | Transport roller 2 | O | O | - | - | O | - | O | - | O | |
| | | | 9 | Transport roller 3 | O | O | - | - | O | - | O | - | O | |
| | | | 10 | Paper exit roller | O | O | - | - | O | - | O | - | O | |
| | | | 11 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | | 12 | Scan plate | O | O | - | - | O | - | O | - | O | |
| | | | 13 | Gears | X | X | - | - | X | - | X | - | X | |
| | | | 14 | Belts | X | X | - | - | X | - | X | - | X | |
| | | | 15 | OC mat | O | O | - | - | O | - | O | - | O | |
| 2 | Scanner section | Scanner unit | 1 | Drive belt | X | X | - | - | X | - | X | - | X | |
| | | | 2 | Drive wire | X | X | - | - | X | - | X | - | X | |
| | | | 3 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | | 4 | Rails | ☆ | ☆ | - | - | ☆ | - | ☆ | - | ☆ | |
| | | | 5 | Mirror | O | O | - | - | O | - | O | - | O | |
| | | | 6 | Reflector | O | O | - | - | O | - | O | - | O | |
| | | | 7 | Scanner lamp | O | O | - | - | O | - | O | - | O | |
| | | | 8 | Lens | O | O | - | - | O | - | O | - | O | |
| | | | 9 | CCD | O | O | - | - | O | - | O | - | O | |
| | | | 10 | Table glass | O | O | - | - | O | - | O | - | O | |
| | | | 11 | SPF glass | O | O | - | - | O | - | O | - | O | |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Transfer section | Primary transfer unit | 1 | Separation pawl | - | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 2 | Primary transfer belt | - | - | ▲ | - | - | ▲ | - | ▲ | - | When replacing, apply KYNAR powder. |
| | | | 3 | Secondary drive transmission gear | - | - | O | - | - | O | - | O | - | |
| | | | 4 | Primary transfer belt drive roller | - | - | O | - | - | O | - | O | - | |
| | | | 5 | Primary transfer belt follower roller | - | - | O | - | - | O | - | O | - | |
| | | | 6 | Primary transfer belt tension roller | - | - | O | - | - | O | - | O | - | |
| | | | 7 | Registration backup roller | - | - | O | - | - | O | - | O | - | |
| | | | 8 | Y auxiliary roller | - | - | O | - | - | O | - | O | - | |
| | | | 9 | PTC backup roller | - | - | O | - | - | O | - | O | - | |
| | | | 10 | Primary transfer roller | - | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 11 | Transfer cleaner seals F/R | - | - | X | - | - | X | - | X | - | |
| | | | 12 | Primary transfer belt cleaner blade | - | - | ▲ | - | - | ▲ | - | ▲ | - | |
| | | | 13 | Primary transfer toner reception blade | - | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 14 | Primary transfer operation mode detector | - | - | O | - | - | O | - | O | - | |

1 : '14/Apr

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Transfer section | Secondary transfer unit | 1 | Secondary transfer belt follower roller | - | - | - | O | - | - | - | O | - | |
| | | | 2 | Secondary transfer belt | - | - | - | ▲ | - | - | - | ▲ | - | Never use alcohol or solvents for cleaning. Replace at every 360K. |
| | | | 3 | Secondary transfer belt drive roller | - | - | - | O | - | - | - | O | - | |
| | | | 4 | Secondary transfer backup roller | - | - | - | O | - | - | - | O | - | |
| | | | 5 | Secondary transfer belt tension roller | - | - | - | O | - | - | - | O | - | |
| | | | 6 | Secondary transfer roller | - | - | - | X | - | - | - | X | - | Replace as needed. |
| | | | 7 | Secondary transfer drive gear | - | - | - | X | - | - | - | X | - | |
| | | | 8 | Separation cam | - | - | - | | - | - | - | | - | When replacing, apply HANARL FL-955R to the shaft section. |
| | | | 9 | Secondary transfer frame | - | - | - | | - | - | - | | - | |
| 4 | Other | Other | 1 | PTC unit | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | Replace. Reciprocate the PTC cleaning rod back and forth 3 times. |
| | | | 2 | Image density sensor/ Registration sensor/ Standard reflection plate | X | O | - | - | O | - | O | - | O | Remove dirt from the light emitting/receiving sections (transparent plastic sections) of the sensor and the standard reflection plate (gray plastic section) with dry waste cloth. *1 |
| 5 | LSU section | LSU | 1 | Dust-proof glass | O | O | - | - | O | - | O | - | O | Use the LSU cleaning rod. |
| | | Other | 2 | Cleaning base | X | Replace every time the waste toner box is replaced. | | | | | | | | Attached to the waste toner box. (2 pcs.) / Replace when the waste toner box is replaced, or at 100K, or 2 years of use. |
| 6 | Manual paper feed section | Manual paper feed unit | 1 | Paper feed roller | X | O | - | - | O | - | O | - | O | Replace at 100K of the manual paper feed counter or 1 year of use. |
| | | | 2 | Separation roller | X | O | - | - | O | - | O | - | O | |
| | | | 3 | Torque limiter | X | X | - | - | X | - | X | - | X | |
| | | | 4 | Transport roller 9 | X | O | - | - | O | - | O | - | O | |
| | | | 5 | Transport roller 10 | X | O | - | - | O | - | O | - | O | |
| | | | 6 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | | - | Paper guides | O | O | - | - | O | - | O | - | O | Clean with alcohol. |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Tray paper feed section | Tray paper feed unit | 1 | Paper pickup roller | X | O | - | - | O | - | O | - | O | Replace at 100K of the tray paper feed counter or 1 year of use. |
| | | | 2 | Paper feed roller | X | O | - | - | O | - | O | - | O | |
| | | | 3 | Separation roller | X | O | - | - | O | - | O | - | O | |
| | | | 4 | Transport roller 4 | X | O | - | - | O | - | O | - | O | |
| | | | 5 | Transport roller 2 | X | O | - | - | O | - | O | - | O | |
| | | | 6 | Torque limiter | X | X | - | - | X | - | X | - | X | |
| | | | 7 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | | - | Paper guides | O | O | - | - | O | - | O | - | O | Clean with alcohol. |
| 8 | Paper registration section (paper transport section)/ Paper exit section/ADU section | PS unit | 1 | Registration roller (idle) | X | O | - | - | O | - | O | - | O | |
| | | | 2 | Registration roller (drive) | X | O | - | - | O | - | O | - | O | |
| | | | 3 | Transport roller 5 | X | O | - | - | O | - | O | - | O | |
| | | | 4 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | Right door unit | 5 | Transport roller 7 | X | O | - | - | O | - | O | - | O | |
| | | | 6 | Transport roller 8 | X | O | - | - | O | - | O | - | O | |
| | | | 7 | Paper exit roller 3 | X | O | - | - | O | - | O | - | O | |
| | | | 8 | Paper exit roller 2 | X | O | - | - | O | - | O | - | O | |
| | | | 9 | Discharge brush | X | X | - | - | X | - | X | - | X | |
| | | | 10 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | Fusing rear unit | 11 | Transport roller 6 | X | O | - | - | O | - | O | - | O | |
| | | Paper exit unit | 12 | Paper exit roller 1 | X | O | - | - | O | - | O | - | O | |
| | | | 13 | Discharge brush | X | X | - | - | X | - | X | - | X | |
| | | | 14 | Sensors | - | X | - | - | X | - | X | - | X | |
| | | Other | 15 | Paper dust removing unit | O | O | - | - | O | - | O | - | O | |
| | | | - | Paper guides | O | O | - | - | O | - | O | - | O | Clean with alcohol. |
| 9 | Drive section | Main drive unit Belt drive unit | 1 | Gears (grease) | X | X | - | - | X | - | X | - | X | Apply to the specified position when checking. FLOIL G-313S |
| | | | 2 | Shafts (grease) | X | X | - | - | X | - | X | - | X | |
| | | | 3 | Shaft earth sections (conduction grease) | X | X | - | - | X | - | X | - | X | Apply to the specified position when checking. FLOIL GE-676 |
| | | | 4 | Belts | X | X | - | - | X | - | X | - | X | |
| | | | 5 | Sensors | X | X | - | - | X | - | X | - | X | |
| | | Transport drive unit | 6 | Belts | X | X | - | - | X | - | X | - | X | |
| | | | 7 | Connection arm | X | X | - | - | X | - | X | - | X | Apply to the specified position when checking. HANARL FL-955R |
| | | Fusing drive unit | 8 | Shafts (grease) | X | X | - | - | X | - | X | - | X | |
| | | Paper exit drive unit | 9 | Shafts (grease) | X | X | - | - | X | - | X | - | X | |
| | | | 10 | Belts | X | X | - | - | X | - | X | - | X | |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Fusing section | Fusing unit | 1 | Lower separation pawl | X | - | X | - | - | X | - | X | - | |
| | | | 2 | Lower separation pawl spring | X | - | X | - | - | X | - | X | - | |
| | | | 3 | Separation plate | X | - | X | - | - | X | - | X | - | |
| | | | 4 | Web guide shaft | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | | | 5 | Web pressure roller bearing | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | | | 6 | Web pressure roller | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | | | 7 | Web roller | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | | | 8 | Lower thermistor | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 9 | Pressure roller gear | X | - | X | - | - | X | - | X | - | |
| | | | 10 | Pressure roller bearing | X | - | X | - | - | X | - | X | - | |
| | | | 11 | Pressure roller | X | - | ▲ | - | - | ▲ | - | ▲ | - | Apply grease to the shaft section when replacing. (JEF552) / After completion of replacement, clean the new pressure roller surface with alcohol. / Integrated with the fusing roller as a maintenance kit. Replace at every 240K. |
| | | | 12 | Sub thermistor | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 13 | Fusing roller bearing | X | - | X | - | - | X | - | X | - | |
| | | | 14 | Heat-insulating bush | X | - | X | - | - | X | - | X | - | Replace as needed. / When replacing, apply grease to the inner ring section and the outer ring section. (JEF552) |
| | | | 15 | Heating roller bearing | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 16 | Fuser belt guide collar | X | - | ▲ | - | - | ▲ | - | ▲ | - | Integrated with the fusing belt as a maintenance kit. Replace at every 240K. |
| | | | 17 | Fusing roller | X | - | ▲ | - | - | ▲ | - | ▲ | - | Apply grease to the shaft section when replacing. (JEF552) / Integrated with the pressure roller as a maintenance kit. Replace at every 240K. |
| | | | 18 | Heating roller | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 19 | Fusing belt | X | - | ▲ | - | - | ▲ | - | ▲ | - | Integrated with the fuser belt guide collar as a maintenance kit. / When replacing, clean the fusing belt surface with alcohol. Replace at every 240K. |
| | | | 20 | Main thermistor | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | | | 21 | Paper guides | O | - | O | - | - | O | - | O | - | |
| | | | 22 | Gears | X | - | X | - | - | X | - | X | - | Replace as needed. |

| Section/ Unit work sequence | Section name | Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Fusing section | Fusing unit | 23 | Pressure spring | X | - | X | - | - | X | - | X | - | |
| | | | 24 | Washer | - | - | X | - | - | X | - | X | - | |
| 11 | Other | | 1 | Ozone filter | - | - | - | ▲ | - | - | - | ▲ | - | |
| | | | 2 | Toner cartridge BK | User replacement for every toner empty. | | | | | | | | | |
| | | | 3 | Toner cartridge C | | | | | | | | | | |
| | | | 4 | Toner cartridge M | | | | | | | | | | |
| | | | 5 | Toner cartridge Y | | | | | | | | | | |
| | | | 6 | Waste toner box | Replaced by the user when full is detected. | | | | | | | | | Replacement reference: 50K |

* 1: *1 Note for cleaning the image registration/density sensor.

When in maintenance or in case a service call, refer to "Criteria for necessity of cleaning" below to judge the necessity of cleaning the image registration/density sensor. If it is judged that cleaning is necessary, then perform cleaning.

**Criteria for necessity of cleaning**

- The SIM44-2 item D/E/F value is increased by aging or dirt of the image density sensor.
- When the image density is decreased, execute SIM44-2. and execute SIM46-74 Copy color balance adjustment.

Note

**Greasing**

Greasing is not always required for every maintenance. In the following cases, check and grease.

- When there are some noises.
- When a lot of jams occur frequently. (Check the jam history.)

For the part code of grease to be used, refer to "[15] TOOL LIST."

Note

**Cleaning of sensors and detectors in the paper feed/transport system**

Cleaning of sensors and detectors in the paper feed/transport system is not always required for every maintenance. In the following cases, check and clean.

- When a trouble or a jam occurs due to a sensor or a detector. (Check the jam history.)

Note

**Torque limiter check and replacement**

Torque limiter check and replacement is not always required for every maintenance. In the following cases, check and replace.

- When there are some noises.
- When a lot of jams occur frequently. (Check the jam history.)

Note

**Alcohol for cleaning**

Be sure to use ethanol for cleaning.

Note

**Cleaning of the primary transfer mode detector (CL/BK)**

- When replacing the OPC drum, remove the primary transfer unit and the developing unit, and clean them.
- Blow air to the light emitting section and light receiving section to remove the attached toner.
- Blow air also when the sensor is wiped and cleaned with waste cloth.

**Option**

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

| Option name | Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|---|
| Stand/ 500 sheet paper drawer | 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | | 2 | Paper feed roller | × | ○ | |
| | | | 3 | Separation roller | × | ○ | |
| | | | 4 | Transport roller 1 | × | ○ | |
| | | | 5 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | | 6 | Sensors | × | × | |
| | | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| | 2 | 1CS drive unit | 7 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | | 8 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| Stand/ 2x500 sheet paper drawer | 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | | 2 | Paper feed roller | × | ○ | |
| | | | 3 | Separation roller | × | ○ | |
| | | | 4 | Transport roller 1 | × | ○ | |
| | | | 5 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | | 6 | Sensors | × | × | |
| | | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| | 2 | Tray 3 paper feed unit | 7 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | | 8 | Paper feed roller | × | ○ | |
| | | | 9 | Separation roller | × | ○ | |
| | | | 10 | Vertical transport roller 1 | × | ○ | |
| | | | 11 | Transport roller 3 | × | ○ | |
| | | | 12 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | | 13 | Sensors | × | × | |
| | | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| | 3 | 1CS drive unit | 14 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | | 15 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| | 4 | 2CS drive unit | 16 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | | 17 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |

| Option name | Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|---|
| Stand/ 3x500 sheet paper drawer | 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | | 2 | Paper feed roller | × | ○ | |
| | | | 3 | Separation roller | × | ○ | |
| | | | 4 | Transport roller 1 | × | ○ | |
| | | | 5 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | | 6 | Sensors | × | × | |
| | | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| | 2 | Tray 3 paper feed unit | 7 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | | 8 | Paper feed roller | × | ○ | |
| | | | 9 | Separation roller | × | ○ | |
| | | | 10 | Vertical transport roller 1 | × | ○ | |
| | | | 11 | Transport roller 3 | × | ○ | |
| | | | 12 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | | 13 | Sensors | × | × | |
| | | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| | 3 | Tray 4 paper feed unit | 14 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | | 15 | Paper feed roller | × | ○ | |
| | | | 16 | Separation roller | × | ○ | |
| | | | 17 | Vertical transport roller 2 | × | ○ | |
| | | | 18 | Transport roller 5 | × | ○ | |
| | | | 19 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | | 20 | Sensors | × | × | |
| | | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| | 4 | 1CS drive unit | 21 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | | 22 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| | 5 | 2CS drive unit | 23 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | | 24 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| | 6 | 3CS drive unit | 25 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| Stand/ 500&2000 sheet paper drawer | 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | | 2 | Paper feed roller | × | ○ | |
| | | | 3 | Separation roller | × | ○ | |
| | | | 4 | Transport roller 1 | × | ○ | |
| | | | 5 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 100K. |
| | | | 6 | Each sensor | × | × | |
| | | | --- | Each paper guide | ○ | ○ | Clean with alcohol. |
| | 2 | 1CS drive unit | 7 | Each gear (grease) | × | × | When checking, apply to the specified positions. HANARL FL-955R |
| | | | 8 | Each shaft (grease) | × | × | When checking, apply to the specified positions. FLOIL G-313S |
| | 3 | Tray 3 paper feed unit | 9 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | | 10 | Paper feed roller | × | ○ | |
| | | | 11 | Separation roller | × | ○ | |
| | | | 12 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 100K. |
| | | | --- | Each sensor | × | × | |
| | | | --- | Each paper guide | ○ | ○ | Clean with alcohol. |

| Option name | Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|---|
| Stand/ 500&2000 sheet paper drawer | 4 | Tray 4 paper feed unit | 13 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | | 14 | Paper feed roller | × | ○ | |
| | | | 15 | Separation roller | × | ○ | |
| | | | 16 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 100K. |
| | | | --- | Each sensor | × | × | |
| | | | --- | Each paper guide | ○ | ○ | Clean with alcohol. |
| | 5 | Level transport unit | 17 | Level transport roller R | × | ○ | |
| | | | 18 | Level transport roller L | × | ○ | |
| | 6 | Desk transport unit | 19 | Transport roller 2 | × | ○ | |
| | | | 20 | Transport roller 3 | × | ○ | |
| Large capacity tray | 1 | Paper feed unit | 1 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | | 2 | Paper feed roller | × | ○ | |
| | | | 3 | Separation roller | × | ○ | |
| | | | 4 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 800K. |
| | | | 5 | Transport roller | × | ○ | |
| | | | 6 | Each gear (grease) | × | × | When checking, apply to the specified positions. HANARL FL-955R |
| | | | 7 | Each sensor | × | × | |
| | | | – | Each paper guide | ○ | ○ | Clean with alcohol. |
| | 2 | Drive unit | 8 | Each gear (grease) | × | × | When checking, apply to the specified positions. MOLYKOTE X5-6020 MOLYKOTE BR-2 Plus |
| | | | 9 | Each belt | × | × | |
| | | | 10 | Each sensor | × | × | |
| | 3 | Other | 11 | Each gear (grease) | × | × | When checking, apply to the specified positions. MOLYKOTE X5-6020 |
| | | | 12 | Each sensor | × | × | |

| Option name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|
| Finisher | 1 | Staple cartridge | × | × | Replacement is made by the user at every 5,000 pcs. |
| | 2 | Staple unit | × | × | Replacement reference: Replace the unit at every 200K staple. |
| | 3 | Paddle | × | ○ | |
| | 4 | Inlet port paper transport roller | × | ○ | |
| | 5 | Inlet port paper transport roller B | × | ○ | |
| | 6 | Discharge brush | × | × | |
| | 7 | Paper exit roller B | × | ○ | |
| | 8 | Paper exit roller | × | ○ | |
| | 9 | Bundle exit paper transport roller | × | ○ | |
| | 10 | Bundle exit paper exit transport roller B | × | ○ | |
| | 11 | Scraping roller | × | ○ | Replacement reference: Replace at every 1000K of the finisher paper exit count value. |
| | 12 | Sensors | × | × | |
| | – | Paper guides | × | ○ | Clean with alcohol. |
| Punch unit | 1 | Punch unit | × | × | Replacement reference: Replace the unit at every 1000K. |
| | 2 | Sensors | × | × | |
| Paper pass unit | 1 | Inlet port roller | ○ | ○ | |
| | 2 | Inlet port rear roller | ○ | ○ | |
| | 3 | Paper exit front roller | ○ | ○ | |
| | 4 | Paper exit roller | ○ | ○ | |
| | 5 | Sensors | × | × | |
| | – | Paper guides | × | ○ | Clean with alcohol. |

| Option name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|
| Saddle stitch finisher | 1 | Transport rollers | ○ | ○ | |
| | 2 | Knurling belt | × | ○ | |
| | 3 | Discharge brush | × | × | |
| | 4 | Sensors | × | × | |
| | 5 | Staple unit | × | × | Replacement reference: Replace the unit at every 200K staple. |
| | 6 | Staple unit (for saddle) | × | × | Replacement reference: Replace the unit at every 100K staple. |
| | 7 | Staple unit | × | × | Replacement reference: Replacement is made by the user at every 5,000 pcs. |
| | 8 | Staple unit (for saddle) | × | × | Replacement reference: Replacement is made by the user at every 2,000 pcs. |
| | – | Gears | × | × | |
| | – | Belts | × | × | |
| | – | Paper guides | × | ○ | Clean with alcohol. |
| Punch unit | 1 | Punch unit | × | × | Replacement reference: Replace the unit at every 1000K. |
| | 2 | Sensors | × | × | |

**Note**

**Greasing**

Greasing is not always required for every maintenance. In the following cases, check and grease.

- When there are some noises.
- When a lot of jams occur frequently. (Check the jam history.)

For the part code of grease to be used, refer to "[15] TOOL LIST."

**Note**

**Cleaning of sensors and detectors in the paper feed/transport system**

Cleaning of sensors and detectors in the paper feed/transport system is not always required for every maintenance. In the following cases, check and clean.

- When a trouble or a jam occurs due to a sensor or a detector. (Check the jam history.)

**Note**

**Torque limiter check and replacement**

Torque limiter check and replacement is not always required for every maintenance. In the following cases, check and replace.

- When there are some noises.
- When a lot of jams occur frequently. (Check the jam history.)

**Note**

**Alcohol for cleaning**

Be sure to use ethanol for cleaning.

## A. RSPF section

×/ : Check (Clean, replace, or adjust according to necessity.)  ○/ : Clean

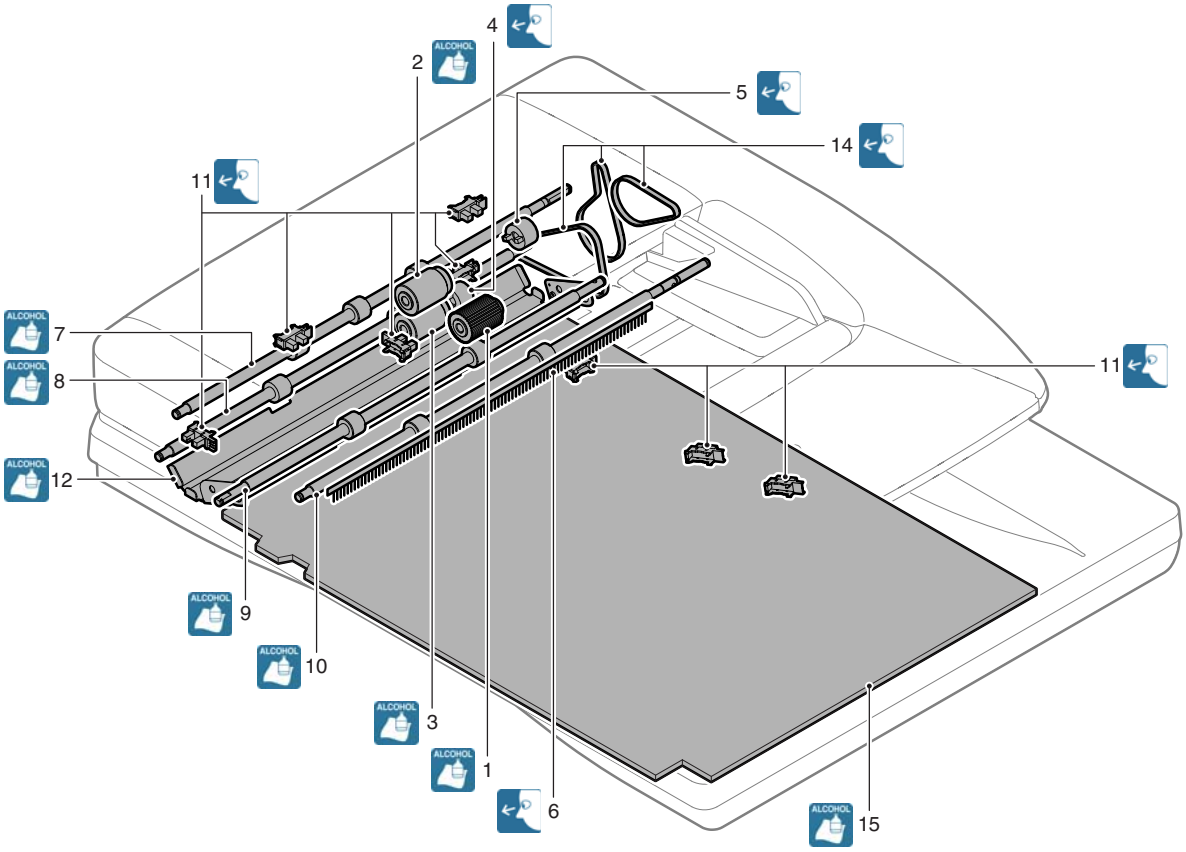
▲/ : Replace  △/ : Adjust  ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RSPF unit | 1 | Document pickup roller | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Replace at 100K of the SPF paper feed counter or 1 year of use.<br>When replacing the paper feed roller, apply grease to the paper feed shaft.<br>GP-501MR |
| | 2 | Paper feed roller | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 3 | Separation roller | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 4 | Torque limiter SPF | × | × | – | × | × | × | – | × | × | Replace at 400K of the SPF paper feed counter or 2 years of use. |
| | 5 | Take-up torque limiter | × | × | – | × | × | × | – | × | × | |
| | 6 | Discharge brush | × | × | – | × | × | × | – | × | × | |
| | 7 | Registration roller | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 8 | Transport roller 2 | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 9 | Transport roller 3 | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 10 | Paper exit roller | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 11 | Sensors | × | × | – | × | × | × | – | × | × | |
| | 12 | Scan plate | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 13 | Gears | × | × | – | × | × | × | – | × | × | |
| | 14 | Belts | × | × | – | × | × | × | – | × | × | |
| | 15 | OC mat | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |

**36cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RSPF unit | 1 | Document pickup roller | ○ | ○ | – | – | ○ | – | ○ | – | ○ | Replace at 100K of the SPF paper feed counter or 1 year of use.<br>When replacing the paper feed roller, apply grease to the paper feed shaft.<br>GP-501MR |
| | 2 | Paper feed roller | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 3 | Separation roller | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 4 | Torque limiter SPF | × | × | – | – | × | – | × | – | × | Replace at 400K of the SPF paper feed counter or 2 years of use. |
| | 5 | Take-up torque limiter | × | × | – | – | × | – | × | – | × | |
| | 6 | Discharge brush | × | × | – | – | × | – | × | – | × | |
| | 7 | Registration roller | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 8 | Transport roller 2 | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 9 | Transport roller 3 | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 10 | Paper exit roller | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 11 | Sensors | × | × | – | – | × | – | × | – | × | |
| | 12 | Scan plate | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 13 | Gears | × | × | – | – | × | – | × | – | × | |
| | 14 | Belts | × | × | – | – | × | – | × | – | × | |
| | 15 | OC mat | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |


4
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11
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12
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1
6
15

## B. Scanner section

×/ : Check (Clean, replace, or adjust according to necessity.)  ○/ : Clean

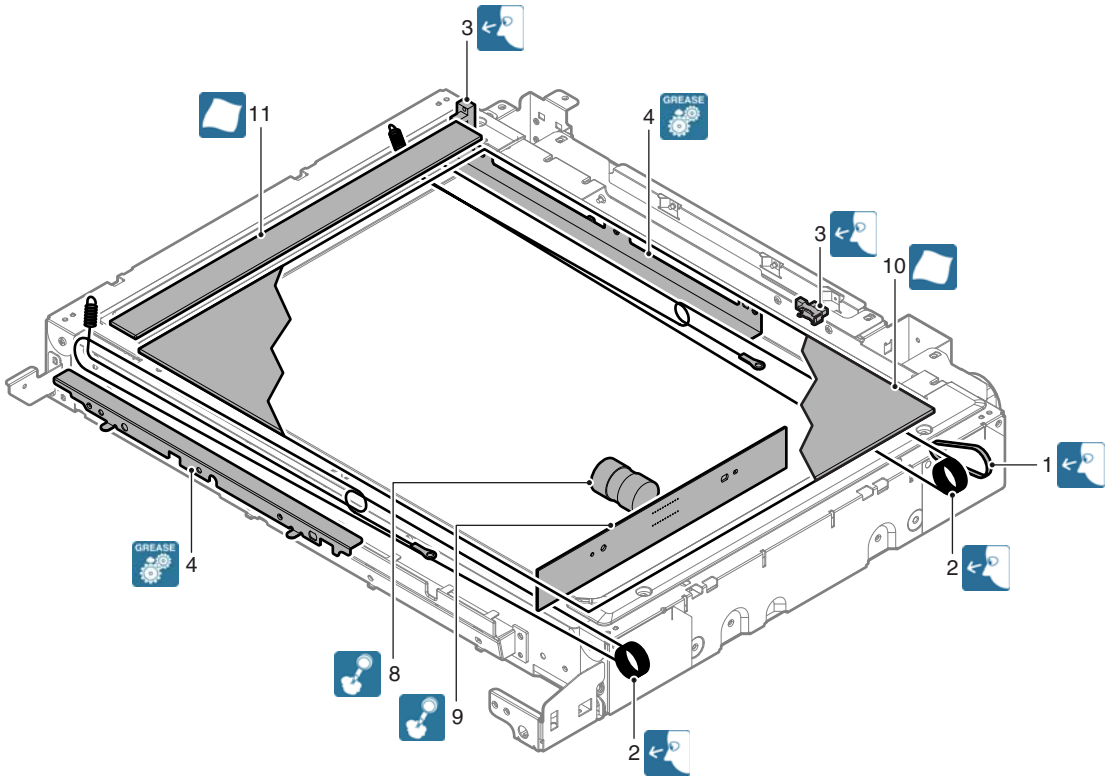
▲/ : Replace  △/ : Adjust  ☆/ : Lubricate

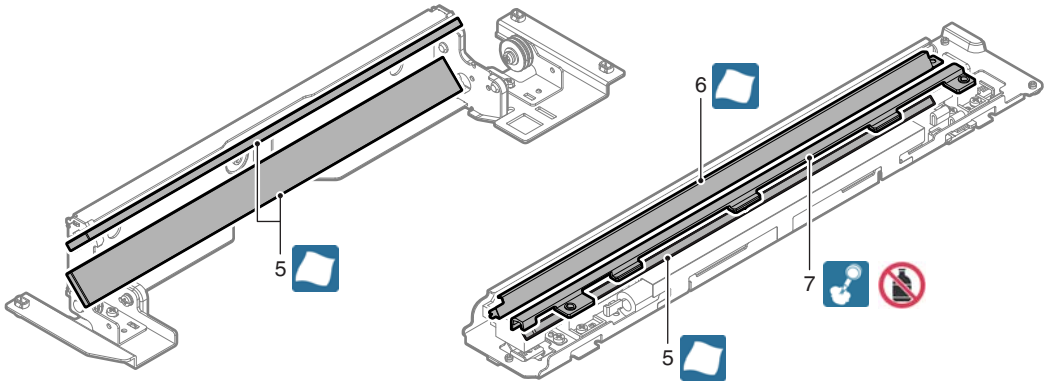
**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scanner unit | 1 | Drive belt | × | × | – | × | × | × | – | × | × | |
| | 2 | Drive wire | × | × | – | × | × | × | – | × | × | |
| | 3 | Sensors | × | × | – | × | × | × | – | × | × | |
| | 4 | Rails | ☆ | ☆ | – | ☆ | ☆ | ☆ | – | ☆ | ☆ | |
| | 5 | Mirror | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 6 | Reflector | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 7 | Scanner lamp | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 8 | Lens | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 9 | CCD | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 10 | Table glass | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 11 | SPF glass | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scanner unit | 1 | Drive belt | × | × | – | – | × | – | × | – | × | |
| | 2 | Drive wire | × | × | – | – | × | – | × | – | × | |
| | 3 | Sensors | × | × | – | – | × | – | × | – | × | |
| | 4 | Rails | ☆ | ☆ | – | – | ☆ | – | ☆ | – | ☆ | |
| | 5 | Mirror | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 6 | Reflector | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 7 | Scanner lamp | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 8 | Lens | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 9 | CCD | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 10 | Table glass | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 11 | SPF glass | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |


3
11
4
GREASE
3
10
1
4
GREASE
2
8
9
2

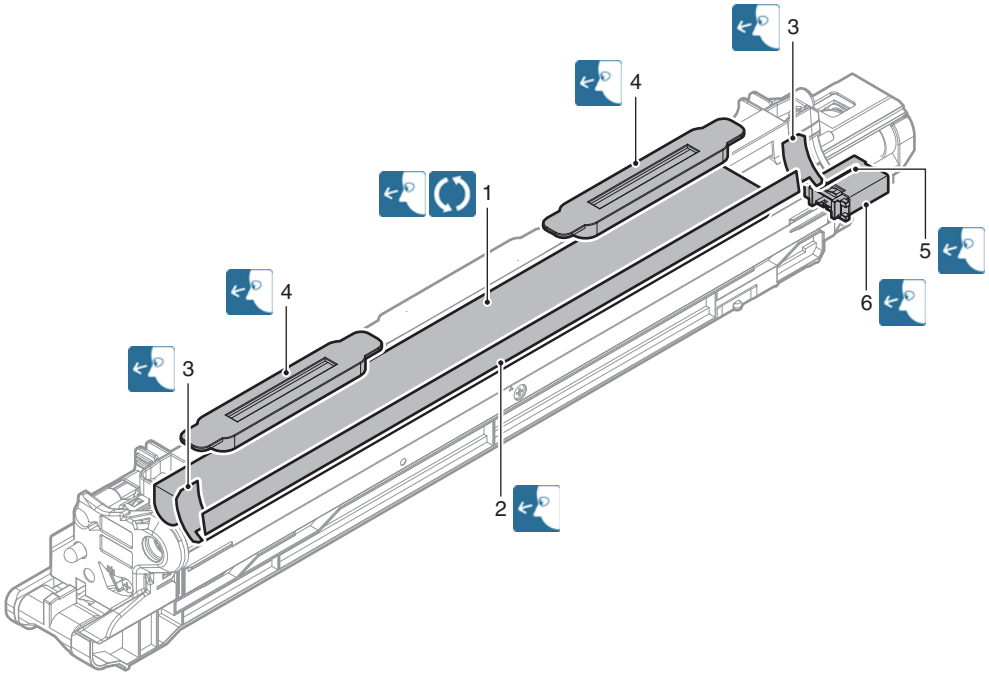

5
6
7
5

## C. Developing section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Unit name | Parts work sequence | Part name | When calling | 840 K rotation | 840 K rotation | 840 K rotation | Remark |
|---|---|---|---|---|---|---|---|
| Developing unit (monochrome) | 1 | Developer | × | ▲ | ▲ | ▲ | maximum printed number<br>26cpm 140K<br>31cpm 155K<br>36cpm 170K |
| | 2 | DV seal/DV seal B | × | × | × | × | |
| | 3 | DV side seals F/R | × | × | × | × | |
| | 4 | Toner filter | × | × | × | × | |
| | 5 | Bias pin | × | × | × | × | |
| | 6 | Connector | × | × | × | × | |
| Developing unit (color) | 1 | Developer | × | ▲ | ▲ | ▲ | maximum printable number 140K |
| | 2 | DV seal/DV seal B | × | × | × | × | |
| | 3 | DV side seals F/R | × | × | × | × | |
| | 4 | Toner filter | × | × | × | × | |
| | 5 | Bias pin | × | × | × | × | |
| | 6 | Connector | × | × | × | × | |

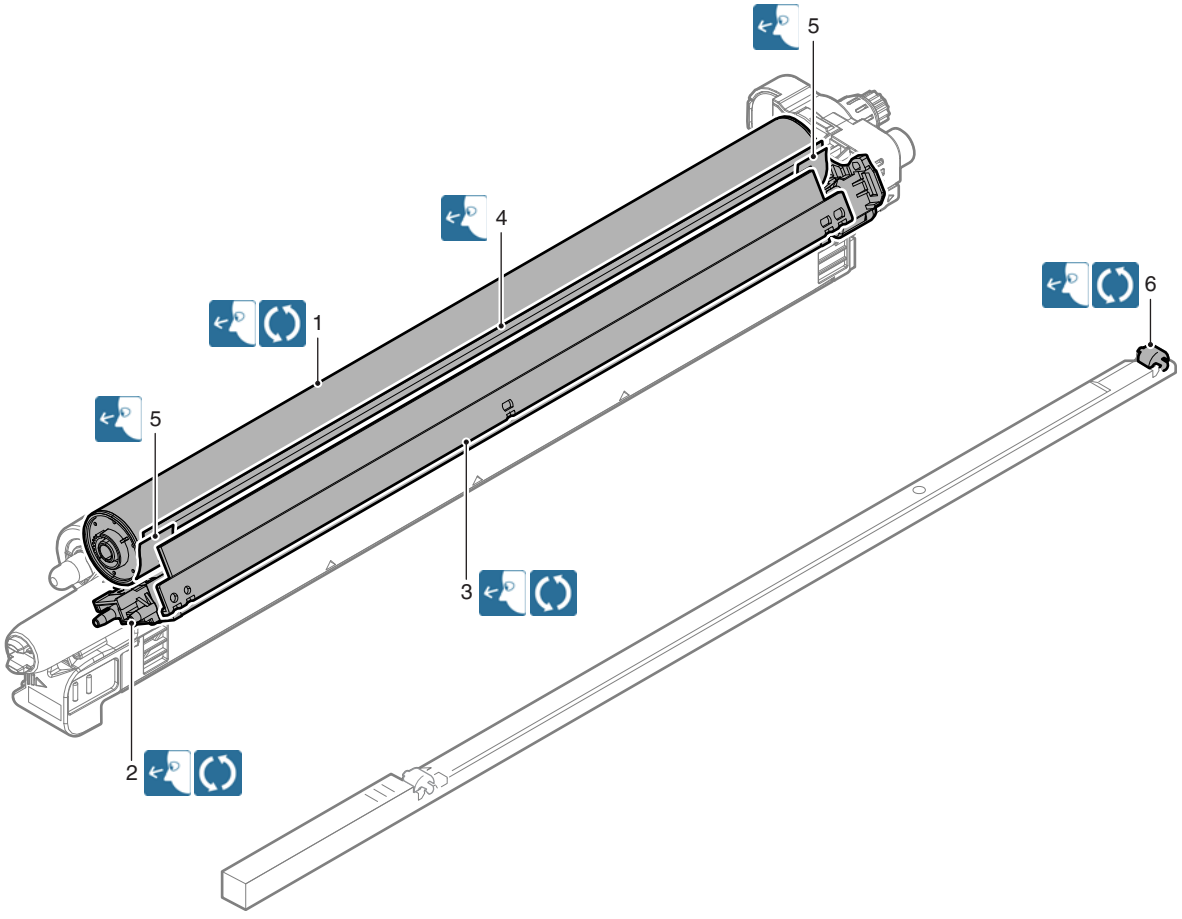


## D. OPC drum section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Unit name | Parts work sequence | Part name | When calling | 840 K rotation | 840 K rotation | 840 K rotation | Remark |
|---|---|---|---|---|---|---|---|
| OPC drum unit (monochrome) | 1 | Drum | × | ▲ | ▲ | ▲ | 840K rotation or<br><br>maximum printed number<br>26cpm 140K<br>31cpm 155K<br>36cpm 170K |
| | 2 | MC unit | × | ▲ | ▲ | ▲ | |
| | 3 | Cleaning blade | × | ▲ | ▲ | ▲ | |
| | 4 | Toner reception blade | × | × | × | × | |
| | 5 | Side seals F/R | × | × | × | × | |
| | 6 | Charger cleaner | × | ▲ | ▲ | ▲ | |
| OPC drum unit (color) | 1 | Drum | × | ▲ | ▲ | ▲ | 840K rotation or maximum printable number 140K |
| | 2 | MC unit | × | ▲ | ▲ | ▲ | |
| | 3 | Cleaning blade | × | ▲ | ▲ | ▲ | |
| | 4 | Toner reception blade | × | × | × | × | |
| | 5 | Side seals F/R | × | × | × | × | |
| | 6 | Charger cleaner | × | ▲ | ▲ | ▲ | |



## E. Transfer section

### (1) Primary transfer unit

×/ : Check (Clean, replace, or adjust according to necessity.)  ○/ : Clean

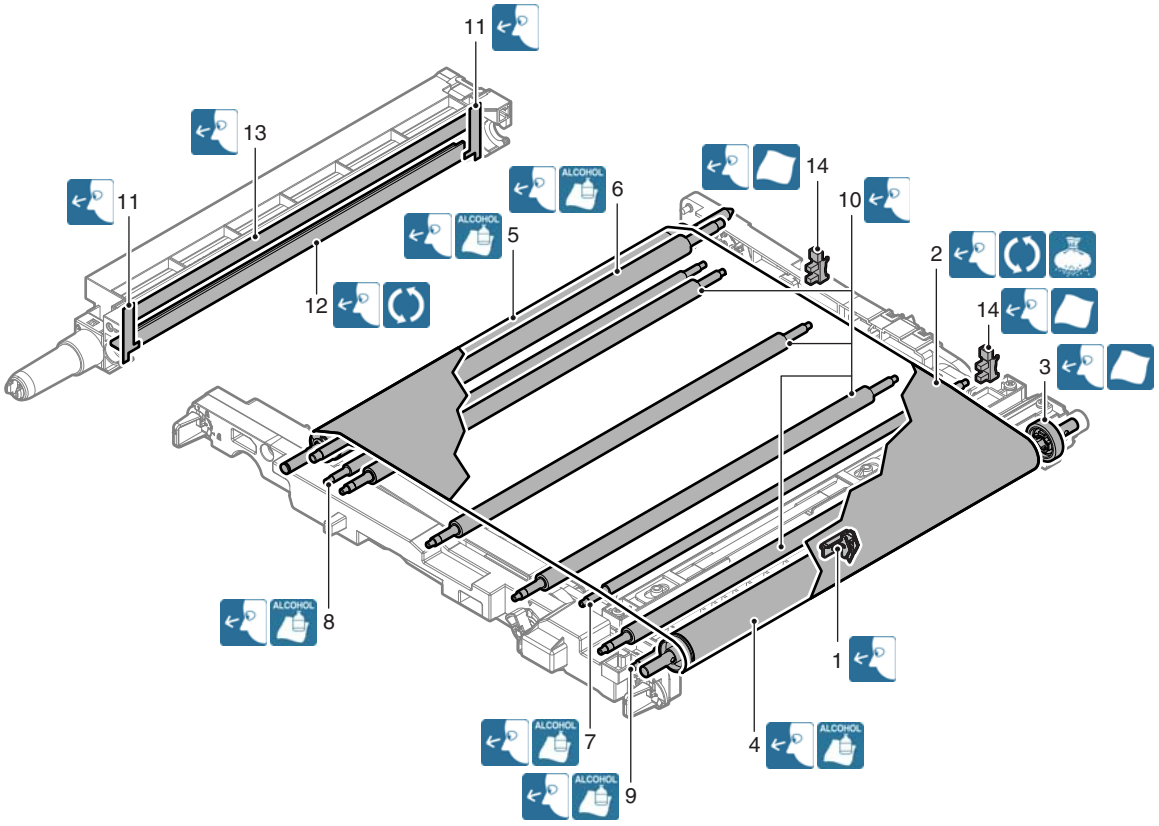
▲/ : Replace  △/ : Adjust  ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary transfer unit | 1 | Separation pawl | × | × | – | × | × | × | – | × | × | Replace as needed. |
| | 2 | Primary transfer belt | × | ▲ | – | ▲ | ▲ | ▲ | – | ▲ | ▲ | When replacing, apply KYNAR powder. |
| | 3 | Secondary drive transmission gear | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 4 | Primary transfer belt drive roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 5 | Primary transfer belt follower roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 6 | Primary transfer belt tension roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 7 | Registration backup roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 8 | Y auxiliary roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 9 | PTC backup roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 10 | Primary transfer roller | × | × | – | × | × | × | – | × | × | Replace as needed. |
| | 11 | Transfer cleaner seals F/R | × | × | – | × | × | × | – | × | × | |
| | 12 | Primary transfer belt cleaner blade | × | ▲ | – | ▲ | ▲ | ▲ | – | ▲ | ▲ | |
| | 13 | Primary transfer toner reception blade | × | × | – | × | × | × | – | × | × | Replace as needed. |
| | 14 | Primary transfer operation mode detector | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary transfer unit | 1 | Separation pawl | – | – | × | – | – | × | – | × | – | Replace as needed. |
| | 2 | Primary transfer belt | – | – | ▲ | – | – | ▲ | – | ▲ | – | When replacing, apply KYNAR powder. |
| | 3 | Secondary drive transmission gear | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 4 | Primary transfer belt drive roller | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 5 | Primary transfer belt follower roller | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 6 | Primary transfer belt tension roller | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 7 | Registration backup roller | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 8 | Y auxiliary roller | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 9 | PTC backup roller | – | – | ○ | – | – | ○ | – | ○ | – | |
| | 10 | Primary transfer roller | – | – | × | – | – | × | – | × | – | Replace as needed. |
| | 11 | Transfer cleaner seals F/R | – | – | × | – | – | × | – | × | – | |
| | 12 | Primary transfer belt cleaner blade | – | – | ▲ | – | – | ▲ | – | ▲ | – | |
| | 13 | Primary transfer toner reception blade | – | – | × | – | – | × | – | × | – | Replace as needed. |
| | 14 | Primary transfer operation mode detector | – | – | ○ | – | – | ○ | – | ○ | – | |


11
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9

## (2) Secondary transfer unit

×/ : Check (Clean, replace, or adjust according to necessity.)  ○/ : Clean

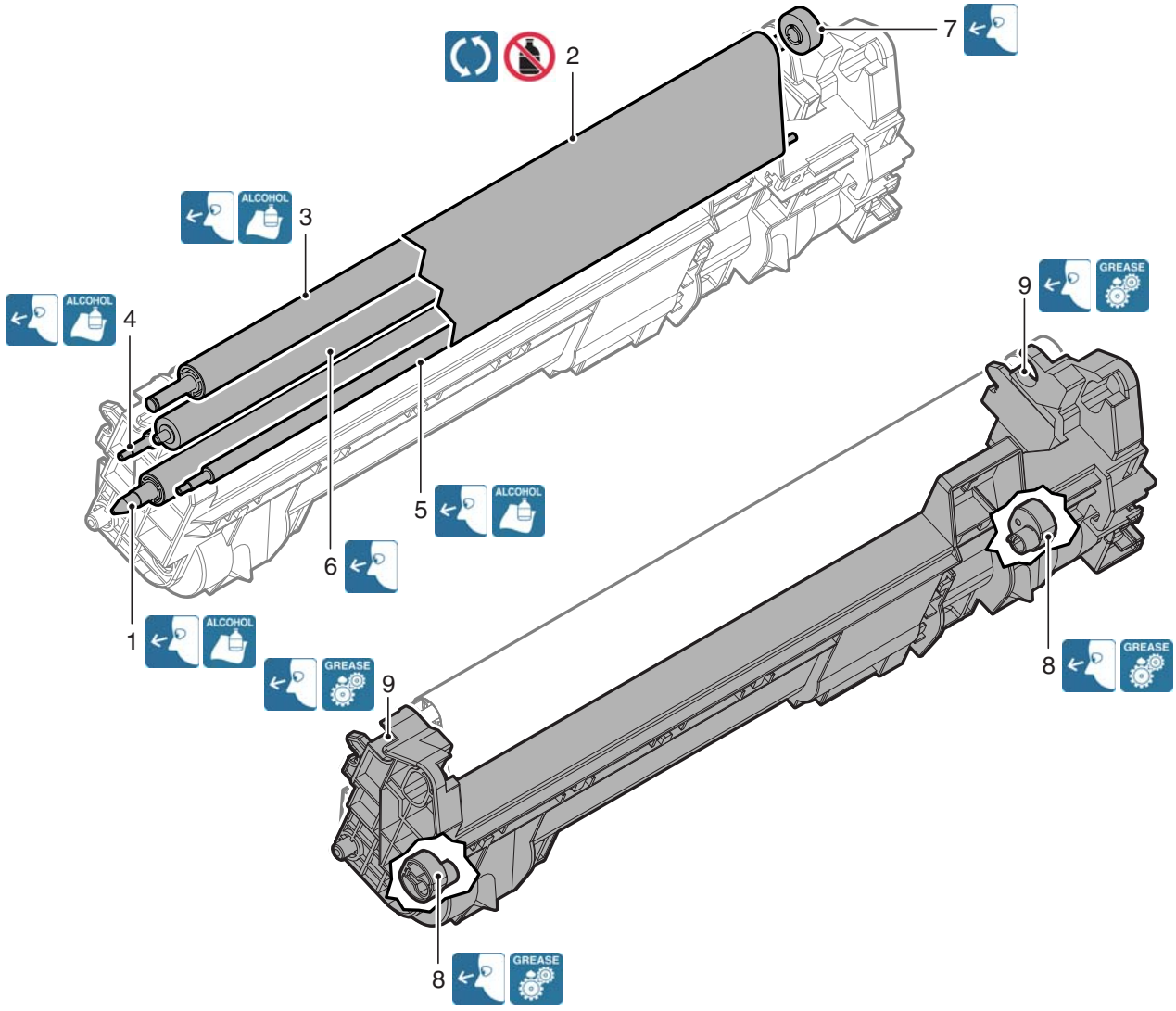
▲/ : Replace  △/ : Adjust  ☆/ : Lubricate

### 26 cpm/31 cpm machine

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Secondary transfer unit | 1 | Secondary transfer belt follower roller | × | – | ○ | – | ○ | – | ○ | – | ○ | |
| | 2 | Secondary transfer belt | × | – | ▲ | – | ▲ | – | ▲ | – | ▲ | Never use alcohol or solvents for cleaning. Replace at every 300K. |
| | 3 | Secondary transfer belt drive roller | × | – | ○ | – | ○ | – | ○ | – | ○ | |
| | 4 | Secondary transfer backup roller | × | – | ○ | – | ○ | – | ○ | – | ○ | |
| | 5 | Secondary transfer belt tension roller | × | – | ○ | – | ○ | – | ○ | – | ○ | |
| | 6 | Secondary transfer roller | × | – | × | – | × | – | × | – | × | Replace as needed. |
| | 7 | Secondary transfer drive gear | × | – | × | – | × | – | × | – | × | |
| | 8 | Separation cam | × | – | ☆ | – | ☆ | – | ☆ | – | ☆ | When replacing, apply HANARL FL-955R to the shaft section. |
| | 9 | Secondary transfer frame | × | – | ☆ | – | ☆ | – | ☆ | – | ☆ | |

### 36 cpm machine

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Secondary transfer unit | 1 | Secondary transfer belt follower roller | – | – | – | ○ | – | – | – | ○ | – | |
| | 2 | Secondary transfer belt | – | – | – | ▲ | – | – | – | ▲ | – | Never use alcohol or solvents for cleaning. Replace at every 360K. |
| | 3 | Secondary transfer belt drive roller | – | – | – | ○ | – | – | – | ○ | – | |
| | 4 | Secondary transfer backup roller | – | – | – | ○ | – | – | – | ○ | – | |
| | 5 | Secondary transfer belt tension roller | – | – | – | ○ | – | – | – | ○ | – | |
| | 6 | Secondary transfer roller | – | – | – | × | – | – | – | × | – | Replace as needed. |
| | 7 | Secondary transfer drive gear | – | – | – | × | – | – | – | × | – | |
| | 8 | Separation cam | – | – | – | ☆ | – | – | – | ☆ | – | When replacing, apply HANARL FL-955R to the shaft section. |
| | 9 | Secondary transfer frame | – | – | – | ☆ | – | – | – | ☆ | – | |


2
7
ALCOHOL
3
ALCOHOL
4
GREASE
9
5
ALCOHOL
6
1
ALCOHOL
GREASE
9
8
GREASE
8
GREASE

### (3) Other

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other | 1 | PTC unit | × | ▲ | – | ▲ | ▲ | ▲ | – | ▲ | ▲ | Replace. Reciprocate the PTC cleaning rod back and forth 3 times. |
| | 2 | Image density sensor/ Registration sensor/ Standard reflection plate | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Remove dirt from the light emitting/ receiving sections (transparent plastic sections) of the sensor and the standard reflection plate (gray plastic section) with dry waste cloth. *1 |

**36 cpm machine**

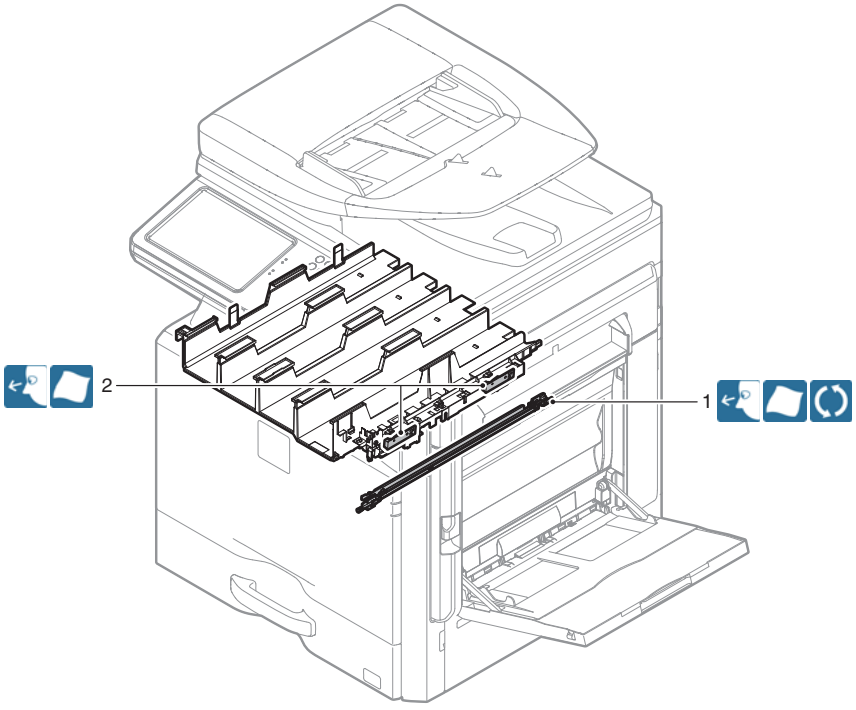
| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other | 1 | PTC unit | × | ▲ | – | – | ▲ | – | ▲ | – | ▲ | Replace. Reciprocate the PTC cleaning rod back and forth 3 times. |
| | 2 | Image density sensor/ Registration sensor/ Standard reflection plate | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Remove dirt from the light emitting/ receiving sections (transparent plastic sections) of the sensor and the standard reflection plate (gray plastic section) with dry waste cloth. *1 |

*1 : Note for cleaning the image registration/density sensor.

When in maintenance or in case a service call, refer to "Criteria for necessity of cleaning" below to judge the necessity of cleaning the image registration/density sensor. If it is judged that cleaning is necessary, then perform cleaning

**Criteria for necessity of cleaning**

- The SIM44-2 item D/E/F value is increased by aging or dirt of the image density sensor.
- When the image density is decreased, execute SIM44-2 and execute SIM46-74 Copy color balance adjustment.



## F. LSU section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

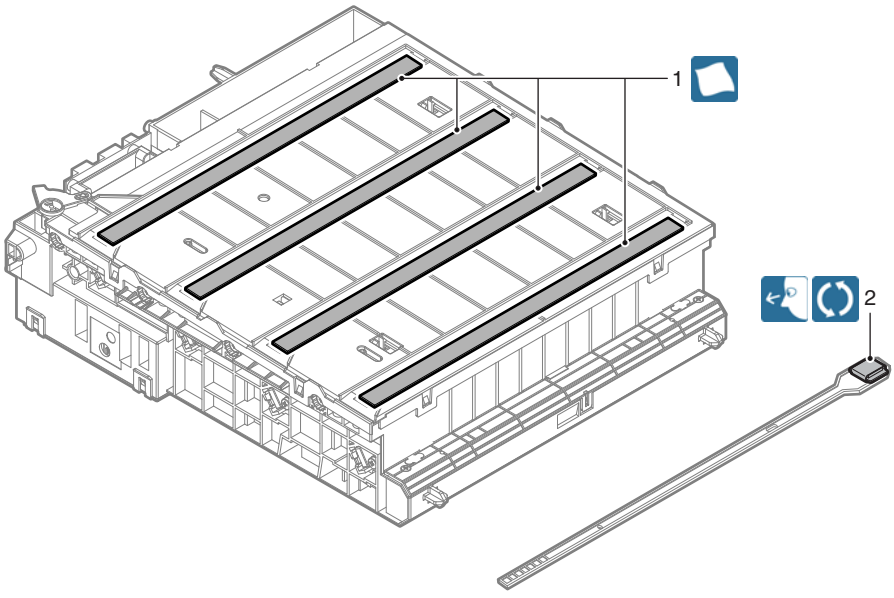
▲/ : Replace △/ : Adjust ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LSU | 1 | Dust-proof glass | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Use the LSU cleaning rod. |
| Other | 2 | Cleaning base | × | Replace every time the waste toner box is replaced. | | | | | | | | Attached to the waste toner box. (2 pcs.) / Replace when the waste toner box is replaced, or at 100K, or 2 years of use. |

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LSU | 1 | Dust-proof glass | ○ | ○ | – | – | ○ | – | ○ | – | ○ | Use the LSU cleaning rod. |
| Other | 2 | Cleaning base | × | Replace every time the waste toner box is replaced. | | | | | | | | Attached to the waste toner box. (2 pcs.) / Replace when the waste toner box is replaced, or at 100K, or 2 years of use. |



## G. Manual paper feed section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

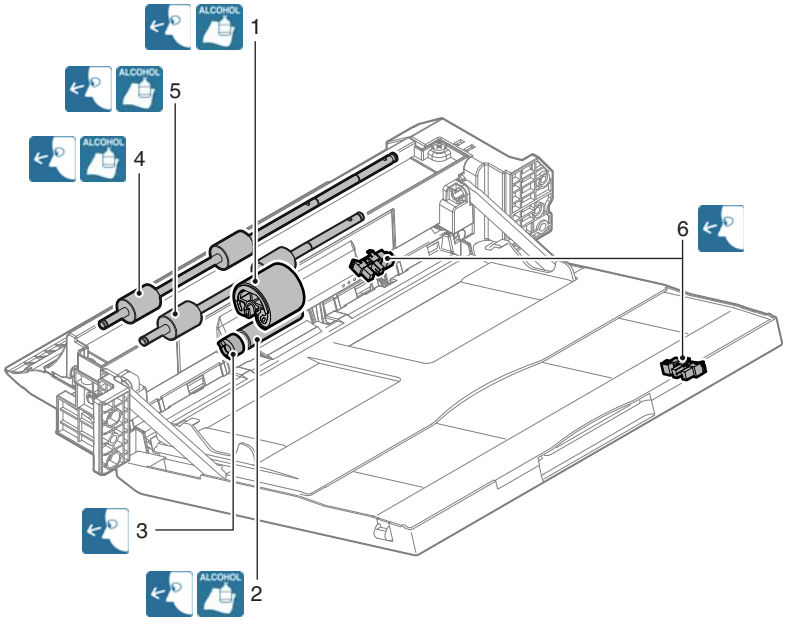
▲/ : Replace △/ : Adjust ☆/ : Lubricate

### 26 cpm/31 cpm machine

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Manual paper feed unit | 1 | Paper feed roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Replace at 100K of the manual paper feed counter or 1 year of use. |
| | 2 | Separation roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 3 | Torque limiter | × | × | – | × | × | × | – | × | × | |
| | 4 | Transport roller 9 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 5 | Transport roller 10 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 6 | Sensors | × | × | – | × | × | × | – | × | × | |
| | – | Paper guides | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Clean with alcohol. |

### 36 cpm machine

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Manual paper feed unit | 1 | Paper feed roller | × | ○ | – | – | ○ | – | ○ | – | ○ | Replace at 100K of the manual paper feed counter or 1 year of use. |
| | 2 | Separation roller | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 3 | Torque limiter | × | × | – | – | × | – | × | – | × | |
| | 4 | Transport roller 9 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 5 | Transport roller 10 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 6 | Sensors | × | × | – | – | × | – | × | – | × | |
| | – | Paper guides | ○ | ○ | – | – | ○ | – | ○ | – | ○ | Clean with alcohol. |



## H. Tray paper feed section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

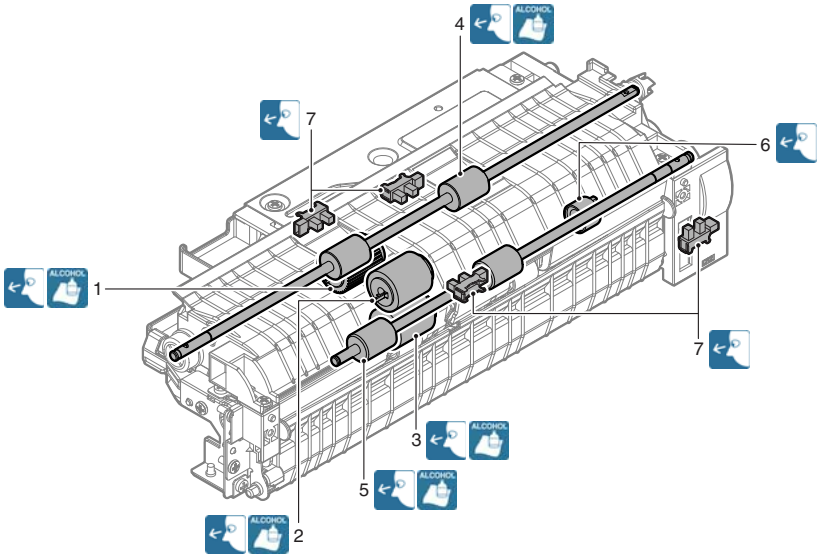
▲/ : Replace △/ : Adjust ☆/ : Lubricate

### 26 cpm/31 cpm machine

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tray paper feed unit | 1 | Paper pickup roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Replace at 100K of the tray paper feed counter or 1 year of use. |
| | 2 | Paper feed roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 3 | Separation roller | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 4 | Transport roller 4 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 5 | Transport roller 2 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 6 | Torque limiter | × | × | – | × | × | × | – | × | × | |
| | 7 | Sensors | × | × | – | × | × | × | – | × | × | |
| | – | Paper guides | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Clean with alcohol. |

### 36 cpm machine

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tray paper feed unit | 1 | Paper pickup roller | × | ○ | – | – | ○ | – | ○ | – | ○ | Replace at 100K of the tray paper feed counter or 1 year of use. |
| | 2 | Paper feed roller | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 3 | Separation roller | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 4 | Transport roller 4 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 5 | Transport roller 2 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 6 | Torque limiter | × | × | – | – | × | – | × | – | × | |
| | 7 | Sensors | × | × | – | – | × | – | × | – | × | |
| | – | Paper guides | ○ | ○ | – | – | ○ | – | ○ | – | ○ | Clean with alcohol. |



## I. Paper registration section (paper transport section)/Paper exit section/ADU section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

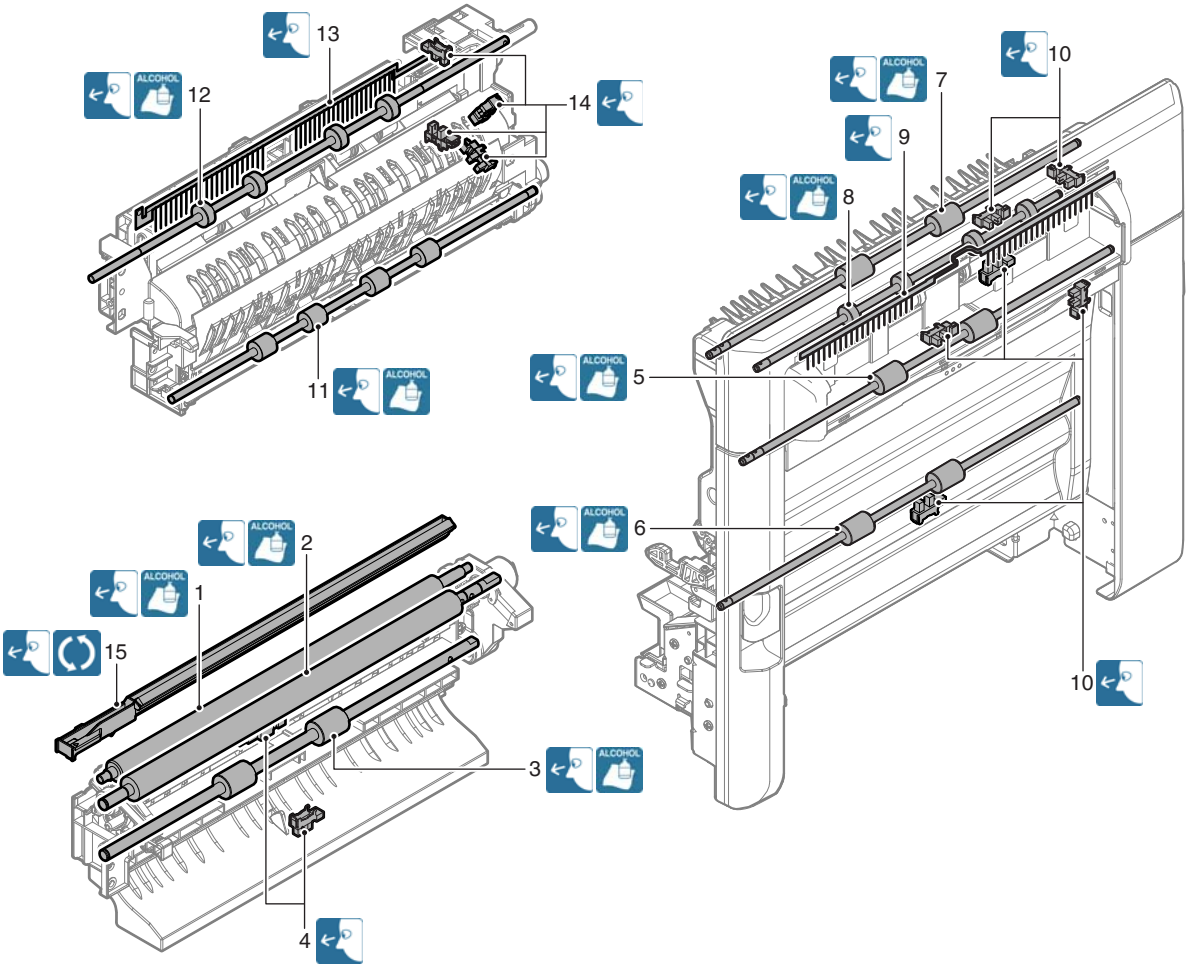
▲/ : Replace △/ : Adjust ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PS unit | 1 | Registration roller (idle) | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 2 | Registration roller (drive) | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 3 | Transport roller 5 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 4 | Sensors | × | × | – | × | × | × | – | × | × | |
| Right door unit | 5 | Transport roller 7 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 6 | Transport roller 8 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 7 | Paper exit roller 3 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 8 | Paper exit roller 2 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 9 | Discharge brush | × | × | – | × | × | × | – | × | × | |
| | 10 | Sensors | × | × | – | × | × | × | – | × | × | |
| Fusing rear unit | 11 | Transport roller 6 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| Paper exit unit | 12 | Paper exit roller 1 | × | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | 13 | Discharge brush | × | × | – | × | × | × | – | × | × | |
| | 14 | Sensors | × | × | – | × | × | × | – | × | × | |
| Other | 15 | Paper dust removing unit | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| | – | Paper guides | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | Clean with alcohol. |

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PS unit | 1 | Registration roller (idle) | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 2 | Registration roller (drive) | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 3 | Transport roller 5 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 4 | Sensors | × | × | – | – | × | – | × | – | × | |
| Right door unit | 5 | Transport roller 7 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 6 | Transport roller 8 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 7 | Paper exit roller 3 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 8 | Paper exit roller 2 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 9 | Discharge brush | × | × | – | – | × | – | × | – | × | |
| | 10 | Sensors | × | × | – | – | × | – | × | – | × | |
| Fusing rear unit | 11 | Transport roller 6 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| Paper exit unit | 12 | Paper exit roller 1 | × | ○ | – | – | ○ | – | ○ | – | ○ | |
| | 13 | Discharge brush | × | × | – | – | × | – | × | – | × | |
| | 14 | Sensors | – | × | – | – | × | – | × | – | × | |
| Other | 15 | Paper dust removing unit | ○ | ○ | – | – | ○ | – | ○ | – | ○ | |
| | – | Paper guides | ○ | ○ | – | – | ○ | – | ○ | – | ○ | Clean with alcohol. |


13
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## J. Drive section

×/ : Check (Clean, replace, or adjust according to necessity.)  ○/ : Clean

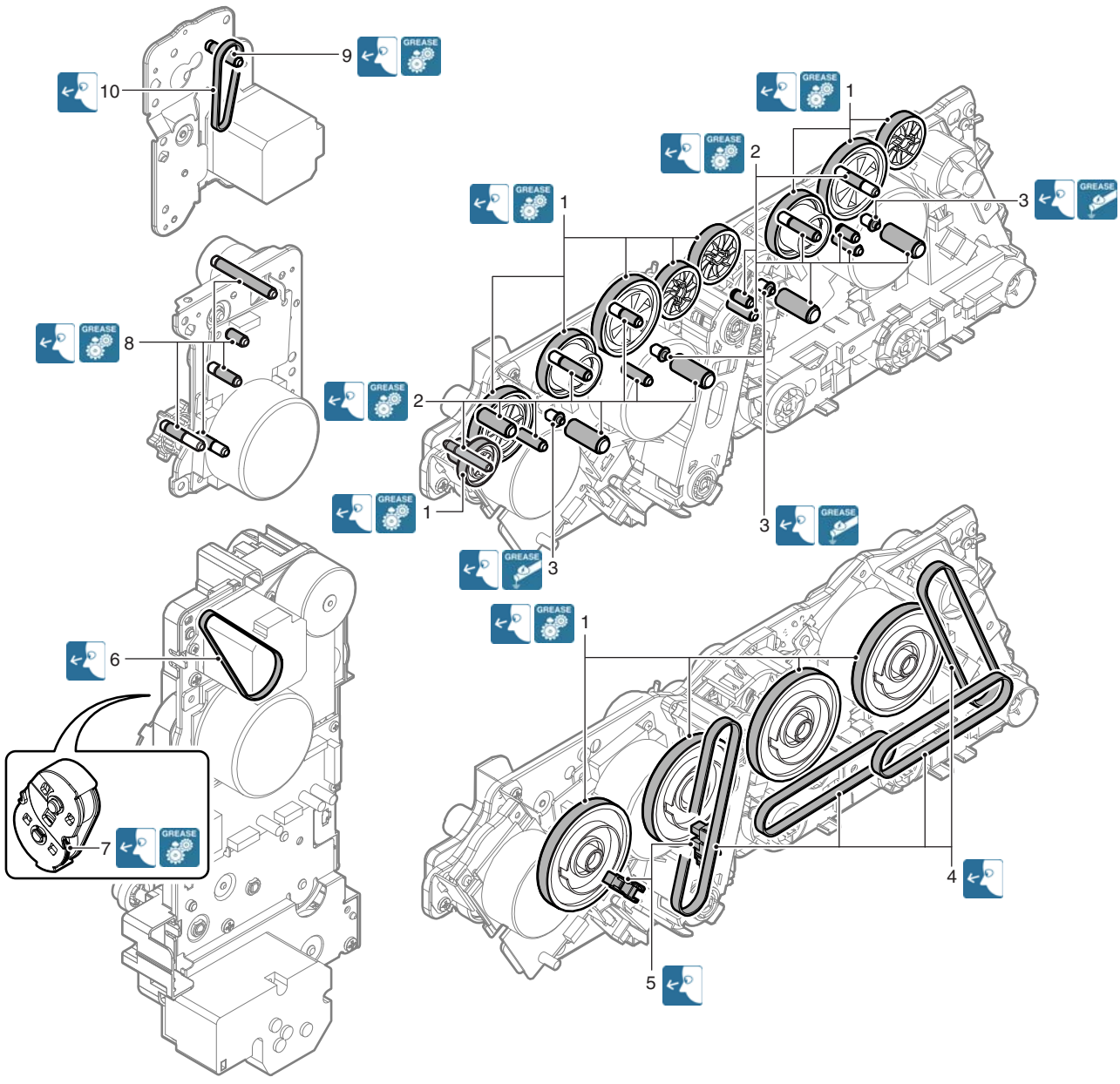
▲/ : Replace  △/ : Adjust  ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Main drive unit<br>Belt drive unit | 1 | Gears (grease) | × | × | – | × | × | × | – | × | × | Apply to the specified position when checking.<br>FLOIL G-313S |
| | 2 | Shafts (grease) | × | × | – | × | × | × | – | × | × | |
| | 3 | Shaft earth sections (conduction grease) | × | × | – | × | × | × | – | × | × | Apply to the specified position when checking.<br>FLOIL GE-676 |
| | 4 | Belts | × | × | – | × | × | × | – | × | × | |
| | 5 | Sensors | × | × | – | × | × | × | – | × | × | |
| Transport drive unit | 6 | Belts | × | × | – | × | × | × | – | × | × | |
| | 7 | Connection arm | × | × | – | × | × | × | – | × | × | Apply to the specified position when checking.<br>HANARL FL-955R |
| Fusing drive unit | 8 | Shafts (grease) | × | × | – | × | × | × | – | × | × | |
| Paper exit drive unit | 9 | Shafts (grease) | × | × | – | × | × | × | – | × | × | |
| | 10 | Belts | × | × | – | × | × | × | – | × | × | |

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Main drive unit<br>Belt drive unit | 1 | Gears (grease) | × | × | – | – | × | – | × | – | × | Apply to the specified position when checking.<br>FLOIL G-313S |
| | 2 | Shafts (grease) | × | × | – | – | × | – | × | – | × | |
| | 3 | Shaft earth sections (conduction grease) | × | × | – | – | × | – | × | – | × | Apply to the specified position when checking.<br>FLOIL GE-676 |
| | 4 | Belts | × | × | – | – | × | – | × | – | × | |
| | 5 | Sensors | × | × | – | – | × | – | × | – | × | |
| Transport drive unit | 6 | Belts | × | × | – | – | × | – | × | – | × | |
| | 7 | Connection arm | × | × | – | – | × | – | × | – | × | Apply to the specified position when checking.<br>HANARL FL-955R |
| Fusing drive unit | 8 | Shafts (grease) | × | × | – | – | × | – | × | – | × | |
| Paper exit drive unit | 9 | Shafts (grease) | × | × | – | – | × | – | × | – | × | |
| | 10 | Belts | × | × | – | – | × | – | × | – | × | |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1 : '14/Apr

## K. Fusing section

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

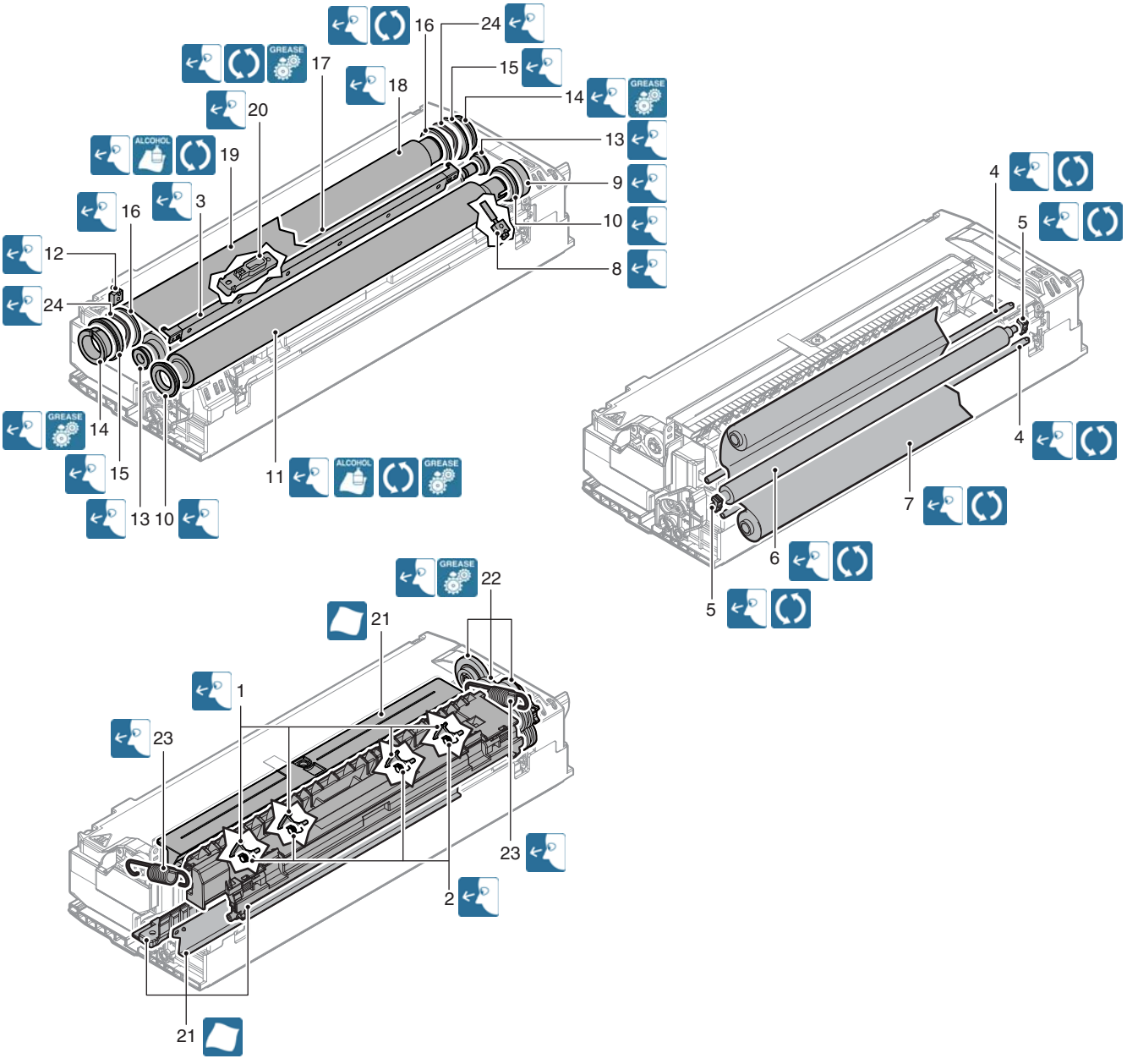
**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fusing unit | 1 | Lower separation pawl | X | X | - | X | X | X | - | X | X | |
| | 2 | Lower separation pawl spring | X | X | - | X | X | X | - | X | X | |
| | 3 | Separation plate | X | X | - | X | X | X | - | X | X | |
| | 4 | Web guide shaft | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | 5 | Web pressure roller bearing | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | 6 | Web pressure roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | 7 | Web roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | |
| | 8 | Lower thermistor | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | 9 | Pressure roller gear | X | X | - | X | X | X | - | X | X | |
| | 10 | Pressure roller bearing | X | X | - | X | X | X | - | X | X | |
| | 11 | Pressure roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Apply grease to the shaft section when replacing. (JEF552) / After completion of replacement, clean the new pressure roller surface with alcohol. / Integrated with the fusing roller as a maintenance kit. Replace at every 200K. |
| | 12 | Sub thermistor | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | 13 | Fusing roller bearing | X | X | - | X | X | X | - | X | X | |
| | 14 | Heat-insulating bush | X | X | - | X | X | X | - | X | X | Replace as needed. / When replacing, apply grease to the inner ring section and the outer ring section. (JEF552) |
| | 15 | Heating roller bearing | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | 16 | Fuser belt guide collar | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Integrated with the fusing belt as a maintenance kit. Replace at every 200K. |
| | 17 | Fusing roller | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Apply grease to the shaft section when replacing. (JEF552) / Integrated with the pressure roller as a maintenance kit. Replace at every 200K. |
| | 18 | Heating roller | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | 19 | Fusing belt | X | ▲ | - | ▲ | ▲ | ▲ | - | ▲ | ▲ | Integrated with the fuser belt guide collar as a maintenance kit. Replace at every 200K. |
| | 20 | Main thermistor | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | 21 | Paper guides | O | O | - | O | O | O | - | O | O | |
| | 22 | Gears | X | X | - | X | X | X | - | X | X | Replace as needed. |
| | 23 | Pressure spring | X | X | - | X | X | X | - | X | X | |
| 1 | 24 | Washer | X | X | - | X | X | X | - | X | X | |

▲1 : '14/Jun

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fusing unit | 1 | Lower separation pawl | X | - | X | - | - | X | - | X | - | |
| | 2 | Lower separation pawl spring | X | - | X | - | - | X | - | X | - | |
| | 3 | Separation plate | X | - | X | - | - | X | - | X | - | |
| | 4 | Web guide shaft | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | 5 | Web pressure roller bearing | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | 6 | Web pressure roller | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | 7 | Web roller | X | ▲ | - | - | ▲ | - | ▲ | - | ▲ | |
| | 8 | Lower thermistor | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | 9 | Pressure roller gear | X | - | X | - | - | X | - | X | - | |
| | 10 | Pressure roller bearing | X | - | X | - | - | X | - | X | - | |
| | 11 | Pressure roller | X | - | ▲ | - | - | ▲ | - | ▲ | - | Apply grease to the shaft section when replacing. (JEF552) / After completion of replacement, clean the new pressure roller surface with alcohol. / Integrated with the fusing roller as a maintenance kit. Replace at every 240K. |
| | 12 | Sub thermistor | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | 13 | Fusing roller bearing | X | - | X | - | - | X | - | X | - | |
| | 14 | Heat-insulating bush | X | - | X | - | - | X | - | X | - | Replace as needed. / When replacing, apply grease to the inner ring section and the outer ring section. (JEF552) |
| | 15 | Heating roller bearing | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | 16 | Fuser belt guide collar | X | - | ▲ | - | - | ▲ | - | ▲ | - | Integrated with the fusing belt as a maintenance kit. Replace at every 240K. |
| | 17 | Fusing roller | X | - | ▲ | - | - | ▲ | - | ▲ | - | Apply grease to the shaft section when replacing. (JEF552) / Integrated with the pressure roller as a maintenance kit. Replace at every 240K. |
| | 18 | Heating roller | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | 19 | Fusing belt | X | - | ▲ | - | - | ▲ | - | ▲ | - | Integrated with the fuser belt guide collar as a maintenance kit. / When replacing, clean the fusing belt surface with alcohol. Replace at every 240K. |
| | 20 | Main thermistor | X | - | X | - | - | X | - | X | - | Replace as needed. |
| | 21 | Paper guides | O | - | O | - | - | O | - | O | - | |
| | 22 | Gears | X | - | X | - | - | X | - | X | - | Replace as needed. |
| ▲1 | 23 | Pressure spring | X | - | X | - | - | X | - | X | - | |
| | 24 | Washer | X | - | X | - | - | X | - | X | - | |


GREASE
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## L. Other

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

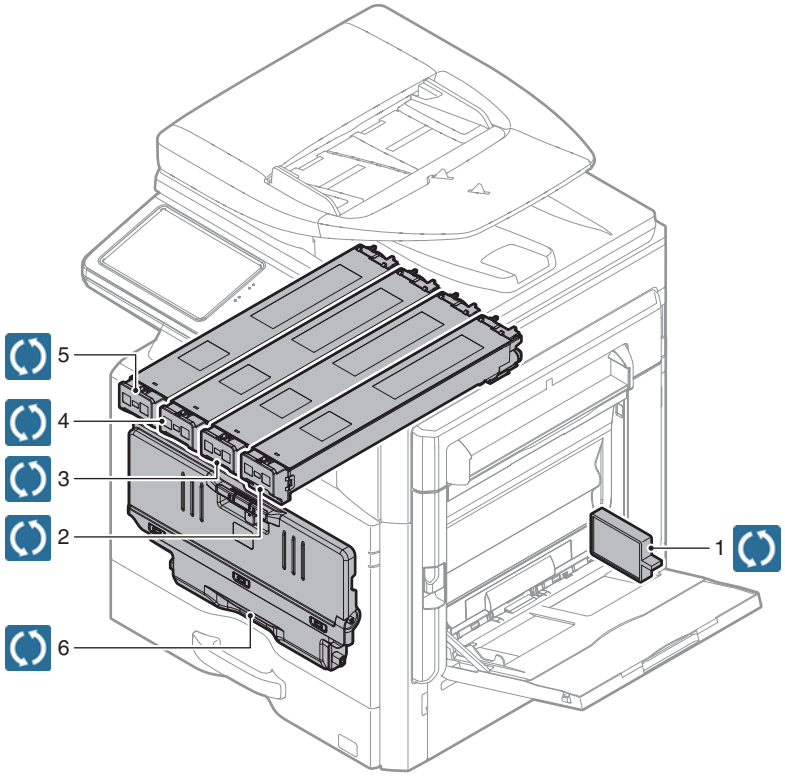
▲/ : Replace △/ : Adjust ☆/ : Lubricate

**26 cpm/31 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 300 K | 400 K | 600 K | 800 K | 900 K | 1000 K | 1200 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | Ozone filter | – | – | ▲ | – | ▲ | – | ▲ | – | ▲ | |
| | 2 | Toner cartridge BK | User replacement for every toner empty. | | | | | | | | | |
| | 3 | Toner cartridge C | | | | | | | | | | |
| | 4 | Toner cartridge M | | | | | | | | | | |
| | 5 | Toner cartridge Y | | | | | | | | | | |
| | 6 | Waste toner box | Replaced by the user when full is detected. | | | | | | | | | Replacement reference: 50K |

**36 cpm machine**

| Unit name | Parts work sequence | Part name | When calling | 200 K | 240 K | 360 K | 400 K | 480 K | 600 K | 720 K | 800 K | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | Ozone filter | – | – | – | ▲ | – | – | – | ▲ | – | |
| | 2 | Toner cartridge BK | User replacement for every toner empty. | | | | | | | | | |
| | 3 | Toner cartridge C | | | | | | | | | | |
| | 4 | Toner cartridge M | | | | | | | | | | |
| | 5 | Toner cartridge Y | | | | | | | | | | |
| | 6 | Waste toner box | Replaced by the user when full is detected. | | | | | | | | | Replacement reference: 50K |



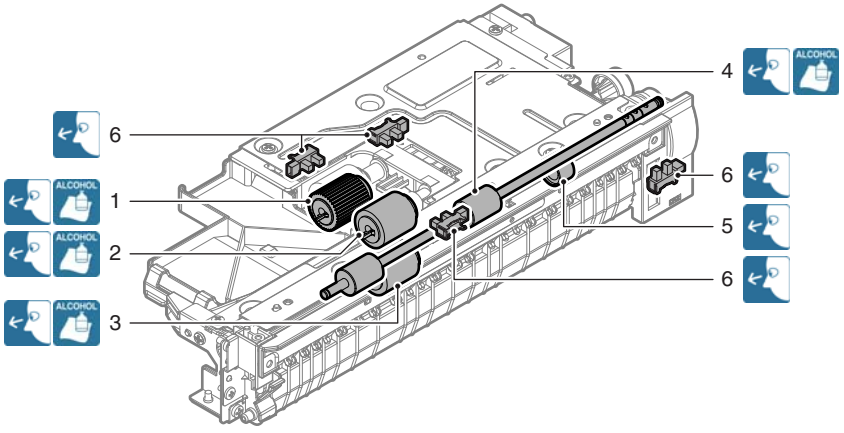
## M. Option

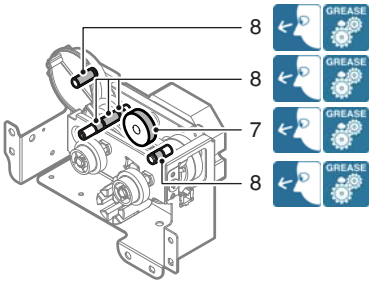
### (1) Stand/500 sheet paper drawer

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|
| 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | 2 | Paper feed roller | × | ○ | |
| | | 3 | Separation roller | × | ○ | |
| | | 4 | Transport roller 1 | × | ○ | |
| | | 5 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | 6 | Sensors | × | × | |
| | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| 2 | 1CS drive unit | 7 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | 8 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |



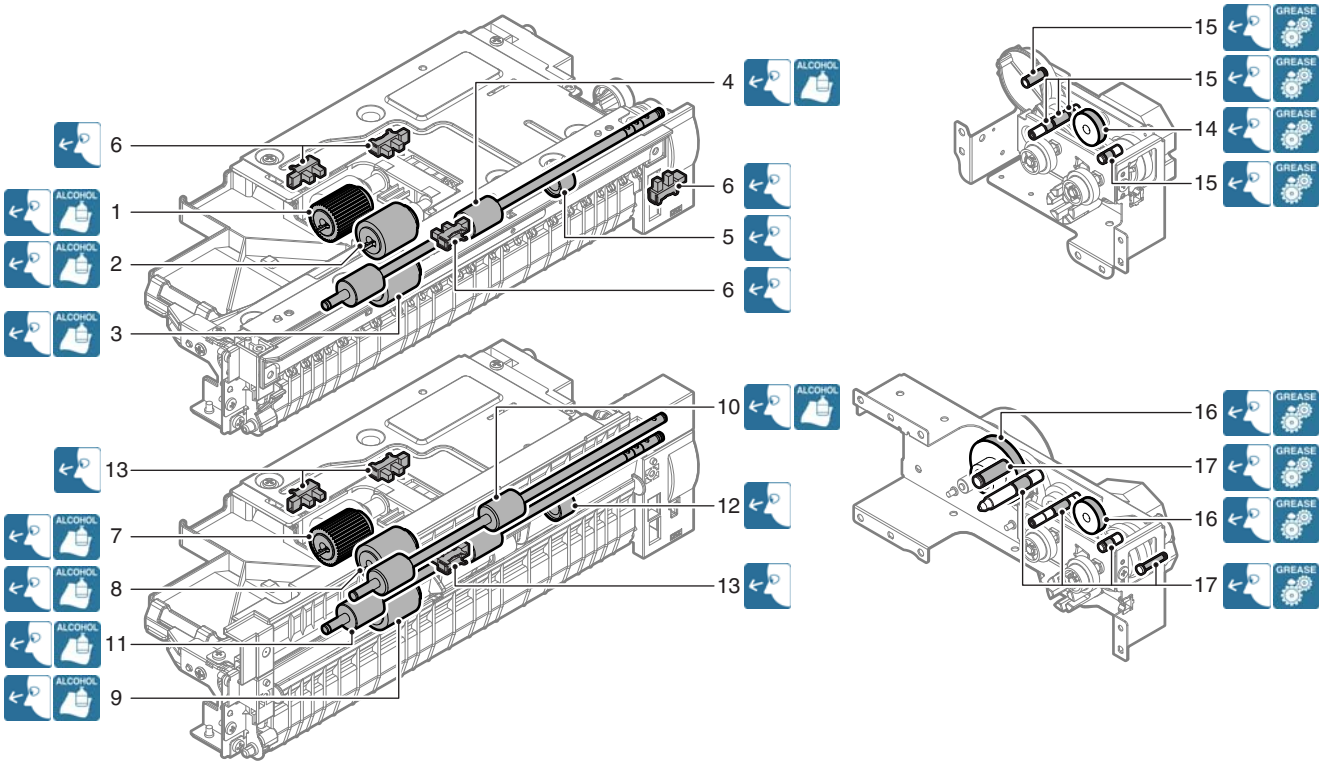



## (2) Stand/2x500 sheet paper drawer

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|
| 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | 2 | Paper feed roller | × | ○ | |
| | | 3 | Separation roller | × | ○ | |
| | | 4 | Transport roller 1 | × | ○ | |
| | | 5 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | 6 | Sensors | × | × | |
| | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| 2 | Tray 3 paper feed unit | 7 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | 8 | Paper feed roller | × | ○ | |
| | | 9 | Separation roller | × | ○ | |
| | | 10 | Vertical transport roller 1 | × | ○ | |
| | | 11 | Transport roller 3 | × | ○ | |
| | | 12 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | 13 | Sensors | × | × | |
| | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| 3 | 1CS drive unit | 14 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | 15 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| 4 | 2CS drive unit | 16 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | 17 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |

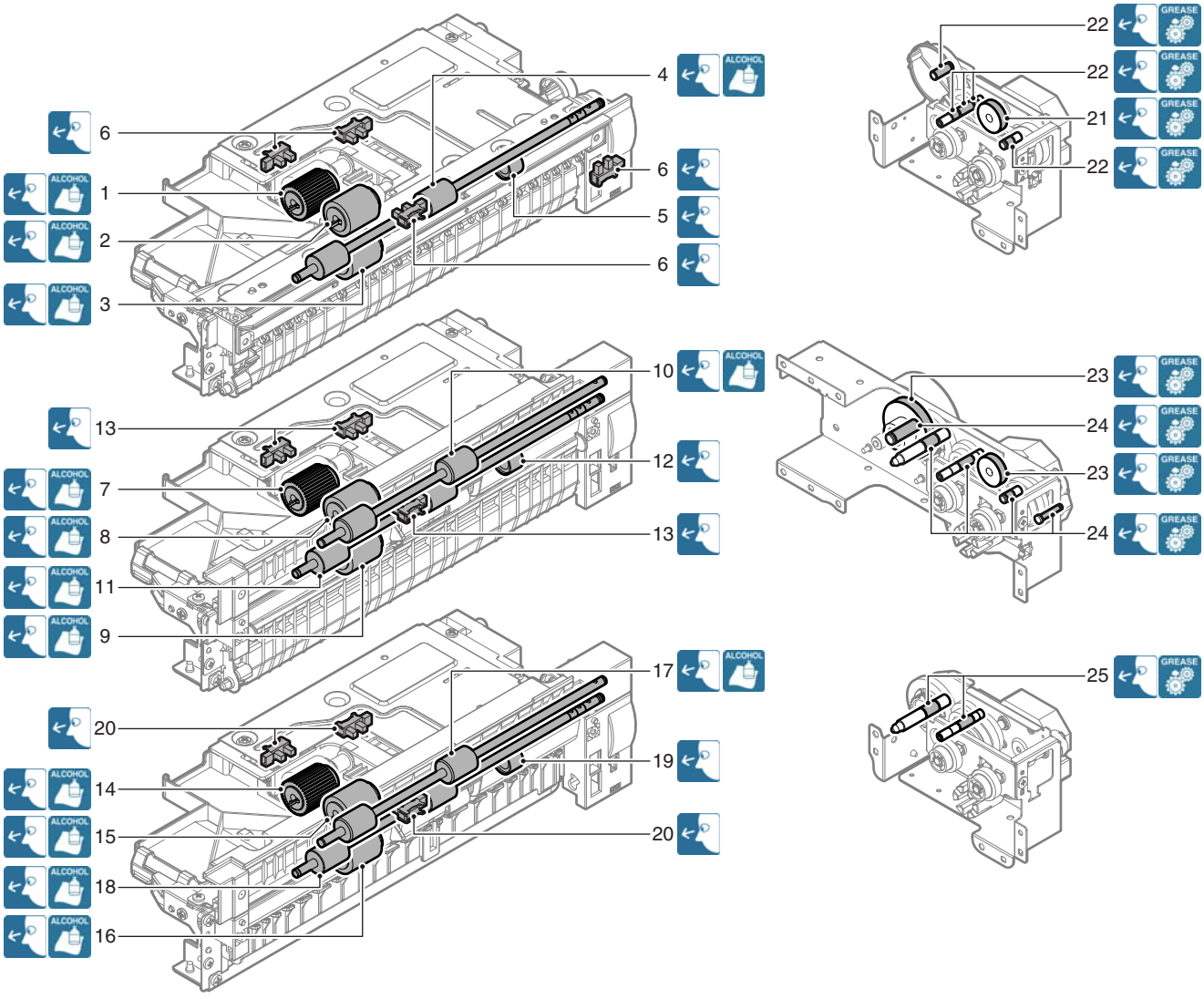


### (3) Stand/3x500 sheet paper drawer

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|
| 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | 2 | Paper feed roller | × | ○ | |
| | | 3 | Separation roller | × | ○ | |
| | | 4 | Transport roller 1 | × | ○ | |
| | | 5 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | 6 | Sensors | × | × | |
| | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| 2 | Tray 3 paper feed unit | 7 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | 8 | Paper feed roller | × | ○ | |
| | | 9 | Separation roller | × | ○ | |
| | | 10 | Vertical transport roller 1 | × | ○ | |
| | | 11 | Transport roller 3 | × | ○ | |
| | | 12 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | 13 | Sensors | × | × | |
| | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| 3 | Tray 4 paper feed unit | 14 | Paper pickup roller | × | ○ | Replace at 100K of each tray paper feed counter or 1 year of use. |
| | | 15 | Paper feed roller | × | ○ | |
| | | 16 | Separation roller | × | ○ | |
| | | 17 | Vertical transport roller 2 | × | ○ | |
| | | 18 | Transport roller 5 | × | ○ | |
| | | 19 | Torque limiter | × | × | Replace at 100K of each tray paper feed counter. |
| | | 20 | Sensors | × | × | |
| | | – | Paper guides | ○ | ○ | Clean with alcohol. |
| 4 | 1CS drive unit | 21 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | 22 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| 5 | 2CS drive unit | 23 | Gears (grease) | × | × | Apply to the specified position when checking. HANARL FL-955R |
| | | 24 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |
| 6 | 3CS drive unit | 25 | Shafts (grease) | × | × | Apply to the specified position when checking. FLOIL G-313S |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### (4) Stand/500&2000 sheet paper drawer

×/ : Check (clean, replace or adjust as required) ○/ : Clean

▲/ :Replace △/ : Adjust ☆/ : Lubricate

| Unit work sequence | Unit name | Parts work sequence | Part name | When calling | When machine cycle | Remarks |
|---|---|---|---|---|---|---|
| 1 | Tray 2 paper feed unit | 1 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | 2 | Paper feed roller | × | ○ | |
| | | 3 | Separation roller | × | ○ | |
| | | 4 | Transport roller 1 | × | ○ | |
| | | 5 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 100K. |
| | | 6 | Each sensor | × | × | |
| | | --- | Each paper guide | ○ | ○ | Clean with alcohol. |
| 2 | 1CS drive unit | 7 | Each gear (grease) | × | × | When checking, apply to the specified positions. HANARL FL-955R |
| | | 8 | Each shaft (grease) | × | × | When checking, apply to the specified positions. FLOIL G-313S |
| 3 | Tray 3 paper feed unit | 9 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | 10 | Paper feed roller | × | ○ | |
| | | 11 | Separation roller | × | ○ | |
| | | 12 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 100K. |
| | | --- | Each sensor | × | × | |
| | | --- | Each paper guide | ○ | ○ | Clean with alcohol. |
| 4 | Tray 4 paper feed unit | 13 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | 14 | Paper feed roller | × | ○ | |
| | | 15 | Separation roller | × | ○ | |
| | | 16 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 100K. |
| | | --- | Each sensor | × | × | |
| | | --- | Each paper guide | ○ | ○ | Clean with alcohol. |
| 5 | Level transport unit | 17 | Level transport roller R | × | ○ | |
| | | 18 | Level transport roller L | × | ○ | |
| 6 | Desk transport unit | 19 | Transport roller 2 | × | ○ | |
| | | 20 | Transport roller 3 | × | ○ | |

**Note**

**On greasing**

Greasing is not always necessary for every maintenance. In the following cases, check and grease.

- There are some noises.
- Many jams occur frequently. (Check the jam history.)

For the part code of grease to be used, refer to [15] “Tool List” in service manual (00ZMX3640/S1E).

**Note**

**Cleaning of the paper feed and paper transport system sensors and detectors**

Cleaning of the paper feed and paper transport system sensors and detectors is not always necessary for every maintenance. In the following case, check and clean.

- A trouble or jam is generated because of the sensors or detectors. (Check the jam history.)

**Note**

**Torque limiter check and replacement**

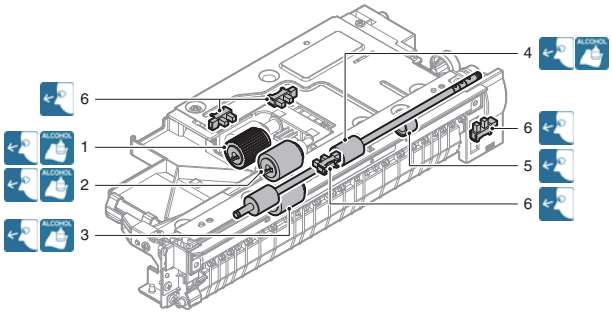
Torque limiter check or replacement is not always necessary for every maintenance. In the following cases, check and replace.

- There are some noises.
- Many jams occur frequently. (Check the jam history.)

**Note**

**Alcohol used for cleaning**

Be sure to use ethanol for cleaning.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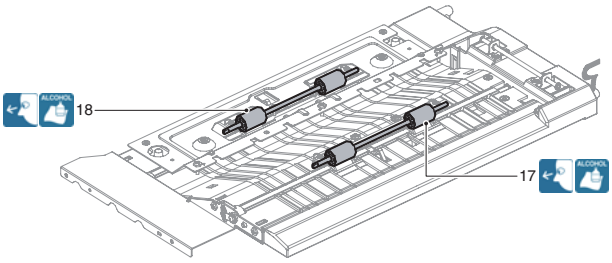
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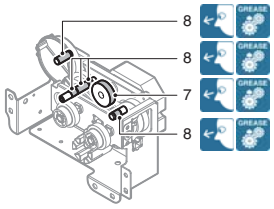
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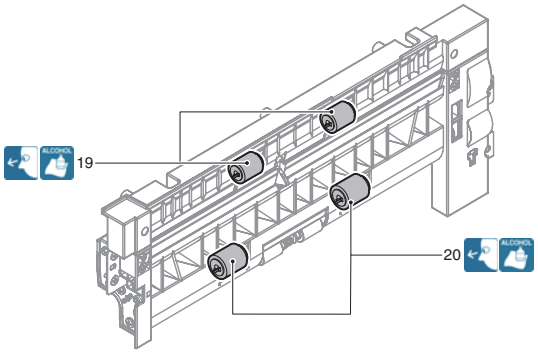
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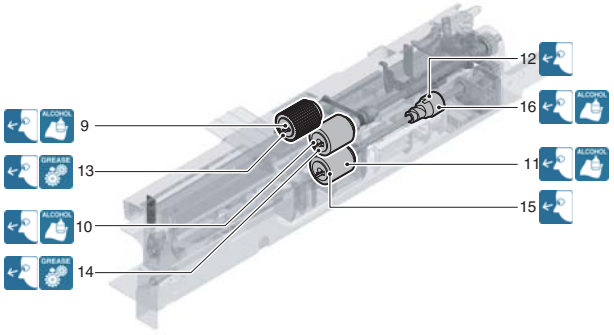
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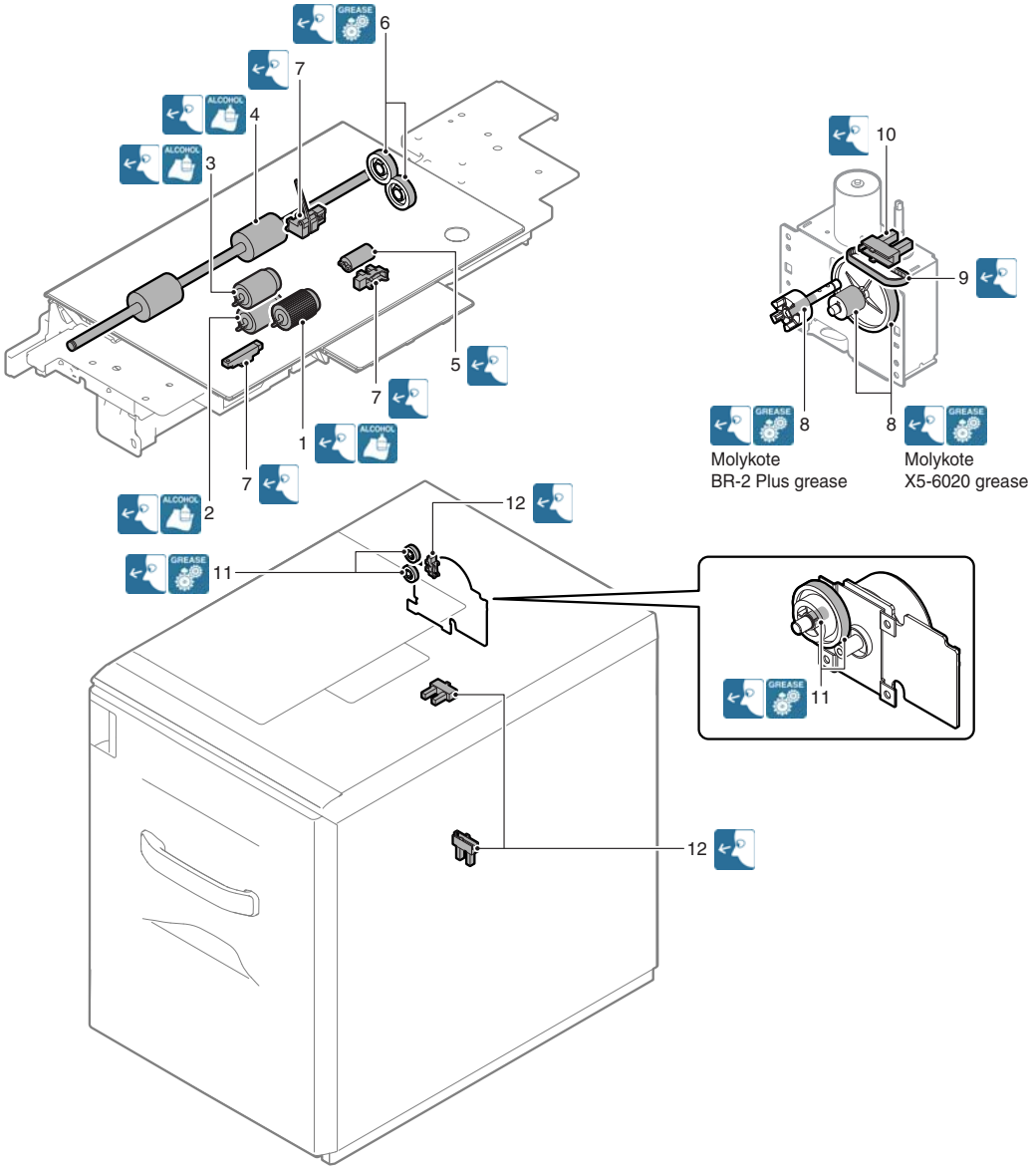
### (5) Large capacity tray

×/ : Check (clean, replace or adjust as required) ○/ : Clean

▲/ :Replace △/ : Adjust ☆/ : Lubricate

| Unit work sequence | Unit name | Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|---|---|
| 1 | Paper feed unit | 1 | Paper pickup roller | × | ○ | As a rough guide, these rollers should be replaced when each tray paper feed counter reaches a value of 100K or when one year has elapsed since the start of use. |
| | | 2 | Paper feed roller | × | ○ | |
| | | 3 | Separation roller | × | ○ | |
| | | 4 | Torque limiter | × | × | As a rough guide, the torque limiter should be replaced when each tray paper feed counter reaches a value of 800K. |
| | | 5 | Transport roller | × | ○ | |
| | | 6 | Each gear (grease) | × | × | When checking, apply to the specified positions.<br>HANARL FL-955R |
| | | 7 | Each sensor | × | × | |
| | | – | Each paper guide | ○ | ○ | Clean with alcohol. |
| 2 | Drive unit | 8 | Each gear (grease) | × | × | When checking, apply to the specified positions.<br>MOLYKOTE X5-6020<br>MOLYKOTE BR-2 Plus |
| | | 9 | Each belt | × | × | |
| | | 10 | Each sensor | × | × | |
| 3 | Other | 11 | Each gear (grease) | × | × | When checking, apply to the specified positions.<br>MOLYKOTE X5-6020 |
| | | 12 | Each sensor | × | × | |

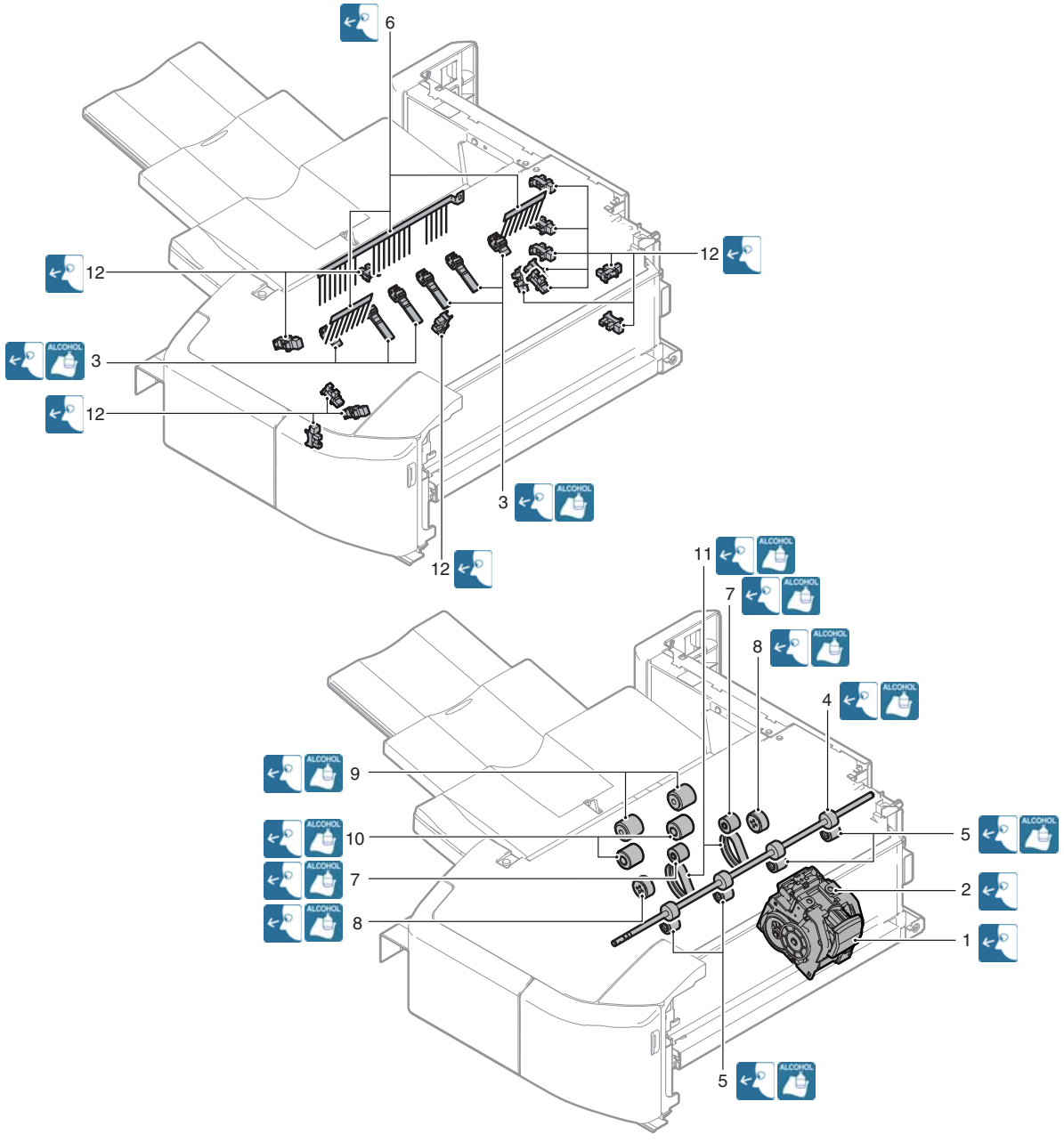


## (6) Finisher

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|
| 1 | Staple cartridge | × | × | Replacement is made by the user at every 5,000 pcs. |
| 2 | Staple unit | × | × | Replacement reference: Replace the unit at every 200K staple. |
| 3 | Paddle | × | ○ | |
| 4 | Inlet port paper transport roller | × | ○ | |
| 5 | Inlet port paper transport roller B | × | ○ | |
| 6 | Discharge brush | × | × | |
| 7 | Paper exit roller B | × | ○ | |
| 8 | Paper exit roller | × | ○ | |
| 9 | Bundle exit paper transport roller | × | ○ | |
| 10 | Bundle exit paper exit transport roller B | × | ○ | |
| 11 | Scraping roller | × | ○ | Replacement reference: Replace at every 1000K of the finisher paper exit count value. |
| 12 | Sensors | × | × | |
| – | Paper guides | × | ○ | Clean with alcohol. |

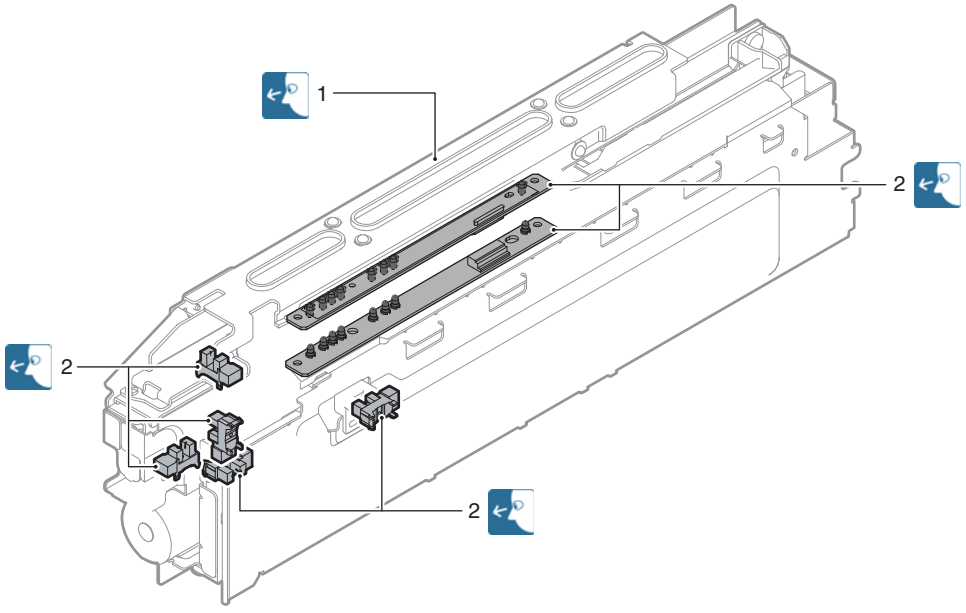


### (7) Punch unit

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|
| 1 | Punch unit | × | × | Replacement reference: Replace the unit at every 1000K. |
| 2 | Sensors | × | × | |

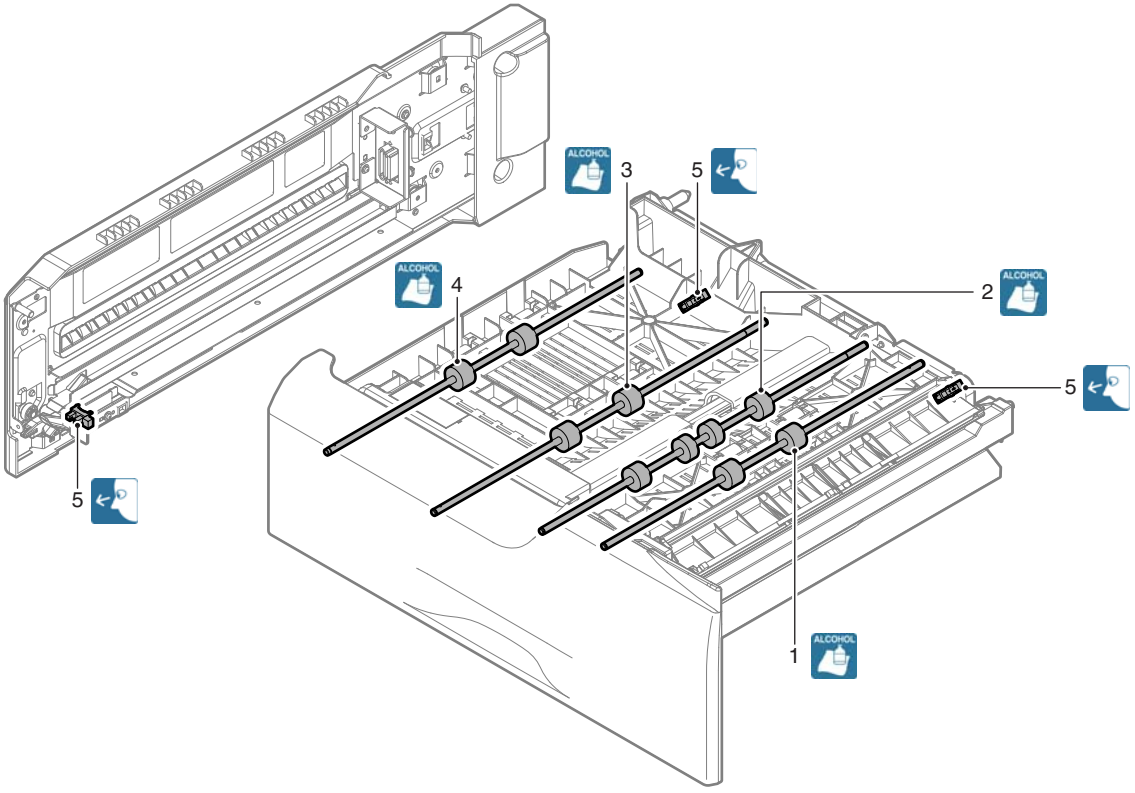


## (8) Paper pass unit

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|
| 1 | Inlet port roller | ○ | ○ | |
| 2 | Inlet port rear roller | ○ | ○ | |
| 3 | Paper exit front roller | ○ | ○ | |
| 4 | Paper exit roller | ○ | ○ | |
| 5 | Sensors | × | × | |
| – | Paper guides | × | ○ | Clean with alcohol. |

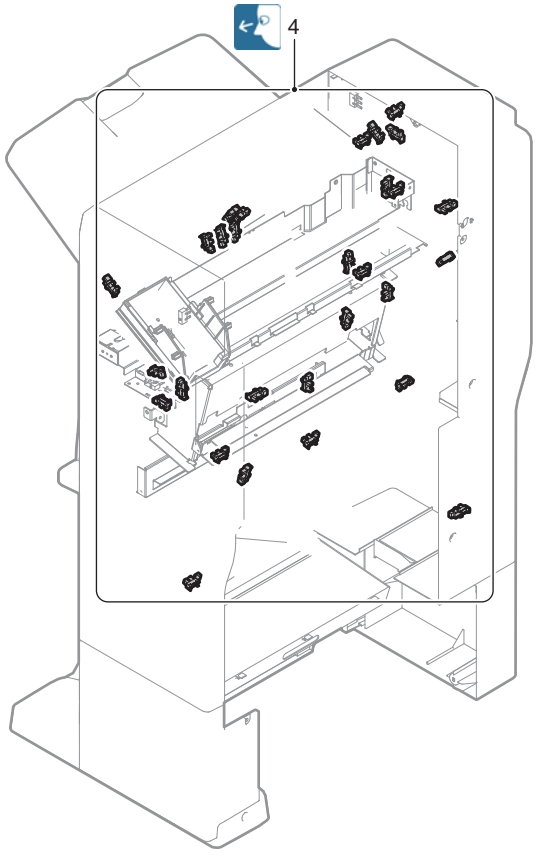


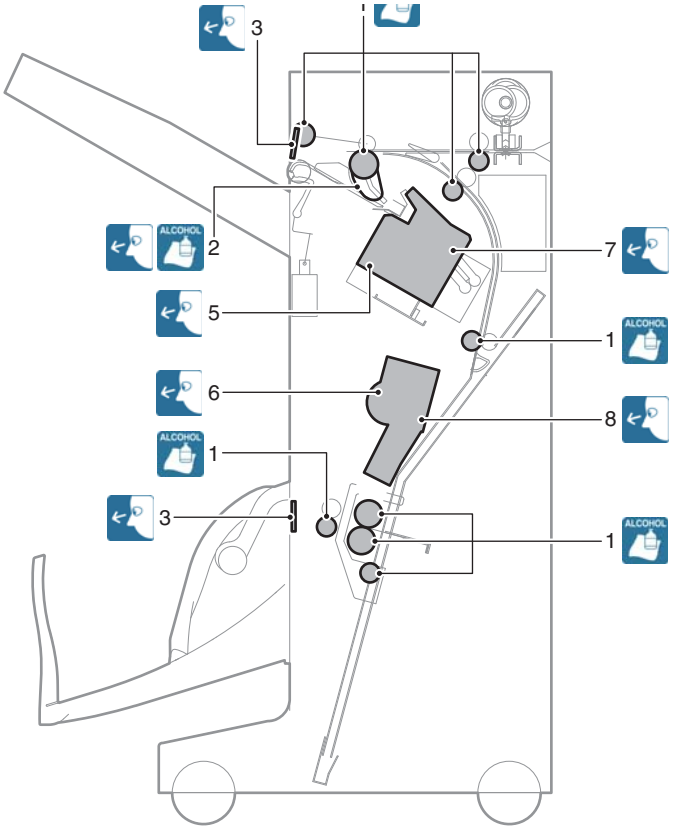
## (9) Saddle stitch finisher

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|
| 1 | Transport rollers | ○ | ○ | |
| 2 | Knurling belt | × | ○ | |
| 3 | Discharge brush | × | × | |
| 4 | Sensors | × | × | |
| 5 | Staple unit | × | × | Replacement reference: Replace the unit at every 200K staple. |
| 6 | Staple unit (for saddle) | × | × | Replacement reference: Replace the unit at every 100K staple. |
| 7 | Staple unit | × | × | Replacement reference: Replacement is made by the user at every 5,000 pcs. |
| 8 | Staple unit (for saddle) | × | × | Replacement reference: Replacement is made by the user at every 2,000 pcs. |
| – | Gears | × | × | |
| – | Belts | × | × | |
| – | Paper guides | × | ○ | Clean with alcohol. |



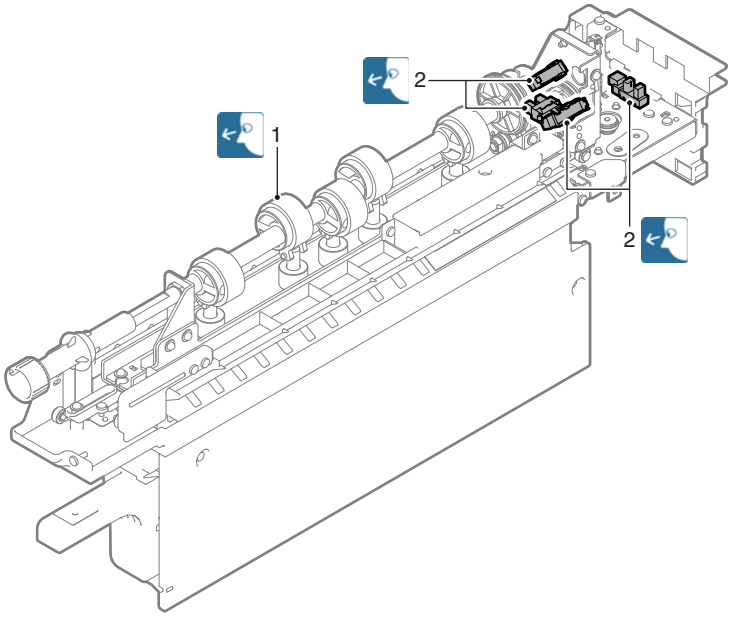



### (10) Punch unit

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|
| 1 | Punch unit | × | × | Replacement reference: Replace the unit at every 1000K. |
| 2 | Sensors | × | × | |

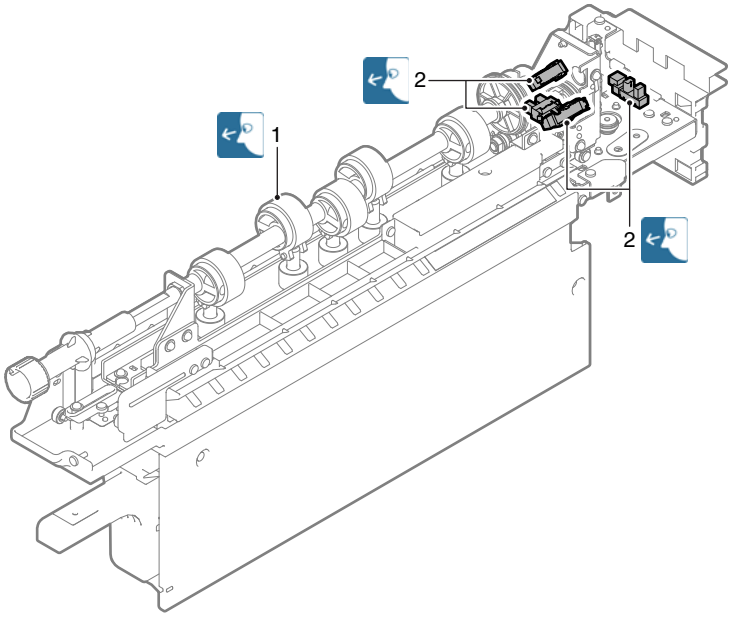


### (10) Punch unit

×/ : Check (Clean, replace, or adjust according to necessity.) ○/ : Clean

▲/ : Replace △/ : Adjust ☆/ : Lubricate

| Parts work sequence | Part name | When calling | At the machine cycle | Remark |
|---|---|---|---|---|
| 1 | Punch unit | × | × | Replacement reference: Replace the unit at every 1000K. |
| 2 | Sensors | × | × | |

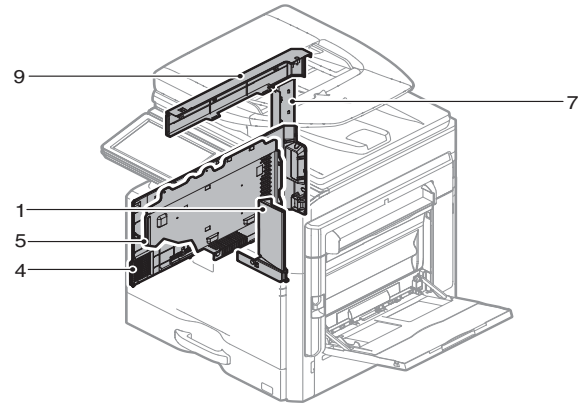


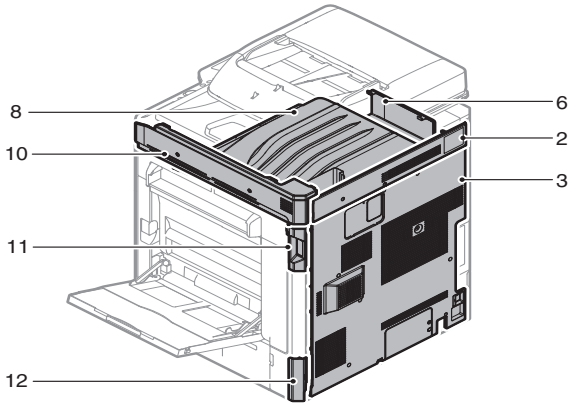
# [10] DISASSEMBLY AND ASSEMBLY

## 1. Disassembly of Units

### A. External view

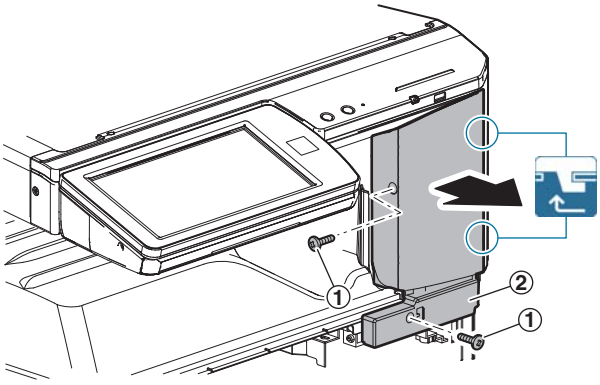
| No. | Name |
|---|---|
| 1 | Front cabinet upper |
| 2 | Rear upper cabinet |
| 3 | Rear cabinet |
| 4 | Left cabinet |
| 5 | Shield plate |
| 6 | Paper exit cover |
| 7 | Left cabinet upper |
| 8 | Paper exit tray |
| 9 | Upper cabinet left |
| 10 | Upper cabinet right |
| 11 | ROM cover |
| 12 | Ozone filter cover |



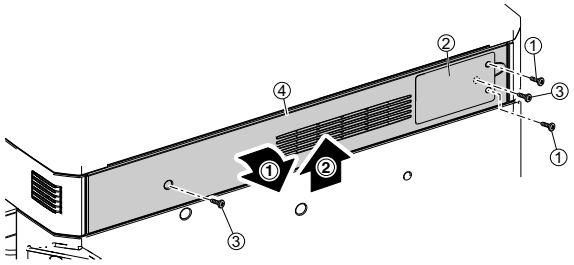

#### (1) Front cabinet upper

1) Remove the front cabinet upper.



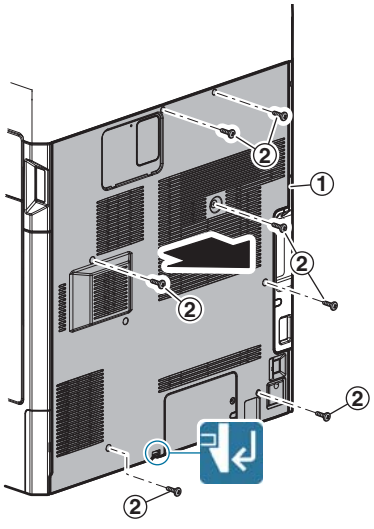

#### (2) Rear upper cabinet

1) Remove the rear upper cabinet.



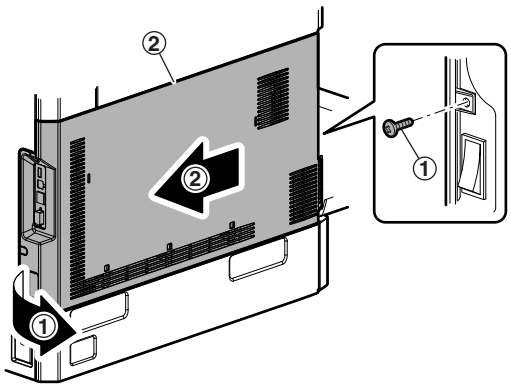

#### (3) Rear cabinet

1) Remove the rear cabinet.

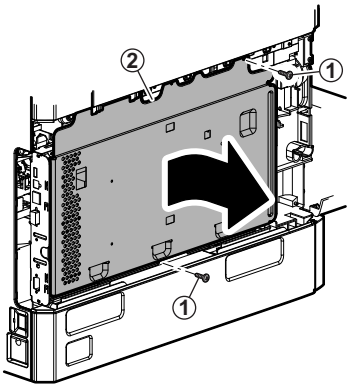


### (4) Rear cabinet, Shield plate

1) Remove the left cabinet.

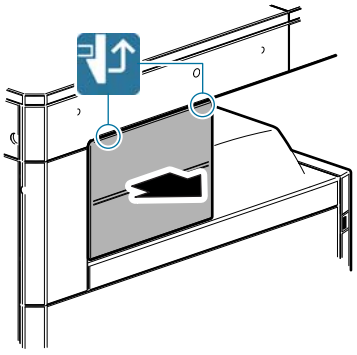


2) Remove the shield plate.

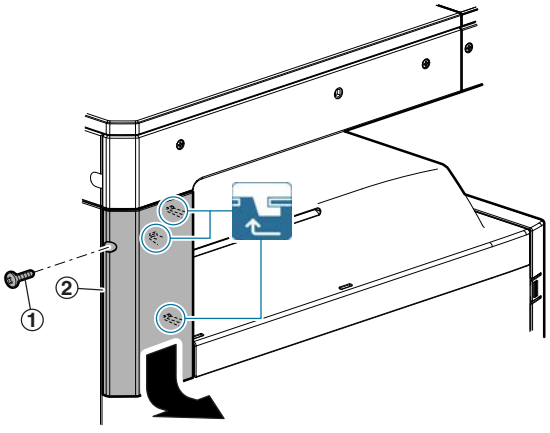


### (5) Paper exit cover, Left cabinet upper, Paper exit tray

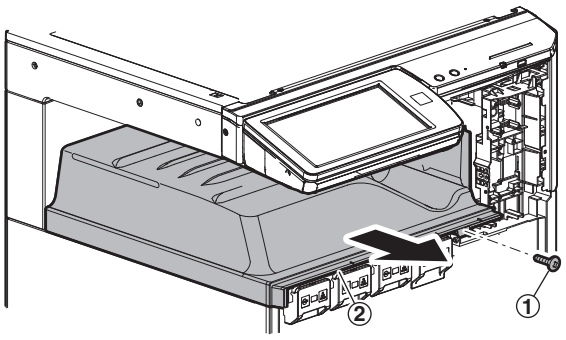
1) Remove the front cabinet upper.
2) Remove the paper exit cover.



3) Remove the left cabinet upper.

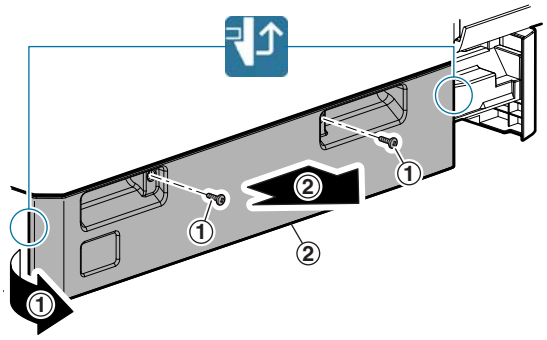


4) Remove the paper exit tray.



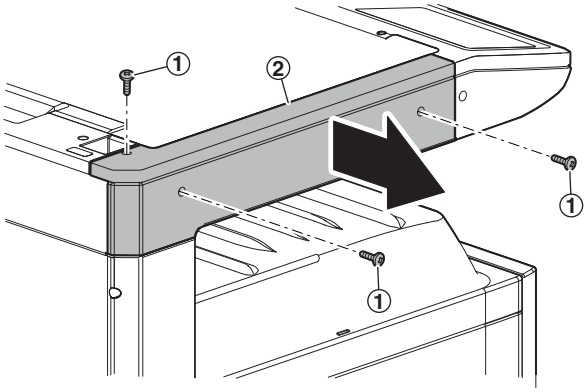
### (6) Left cabinet lower

1) Remove the left cabinet lower.

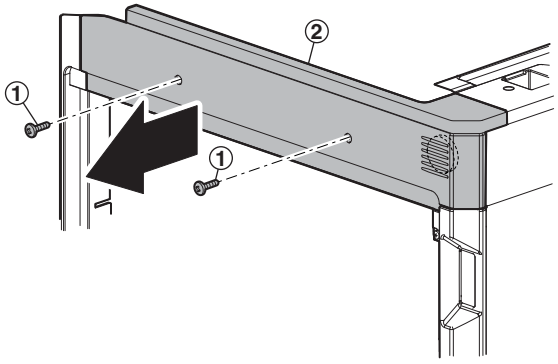


### (7) Upper cabinet left, Upper cabinet right

1) Remove the rear cabinet upper.
2) Remove the RSPF unit.
3) Remove the table glass and the SPF glass.
4) Remove the paper exit cover.
5) Remove the upper cabinet left.

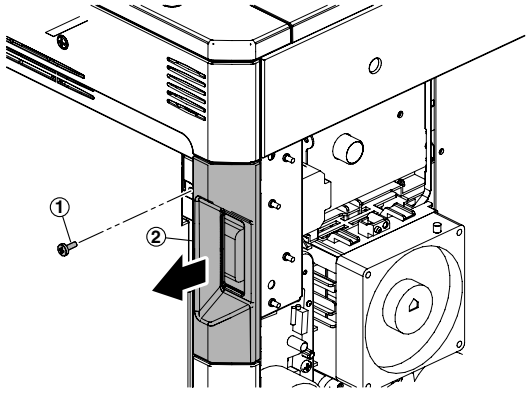


6) Remove the upper cabinet right.



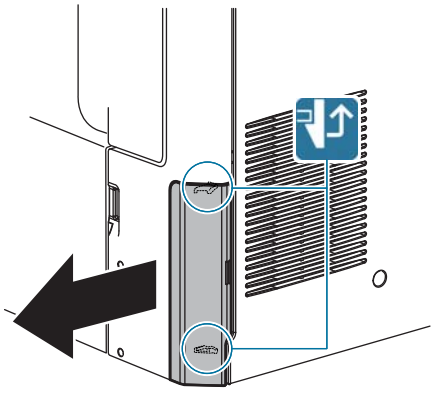
### (8) ROM cover

1) Remove the rear cabinet.
2) Open the right door, and remove the ROM cover.



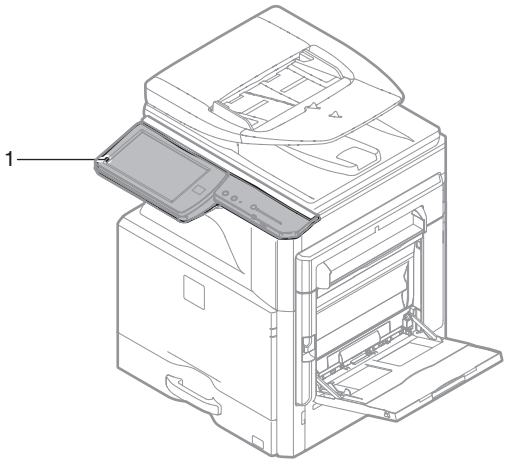

### (9) Ozone filter cover

1) Remove the ozone filter cover.



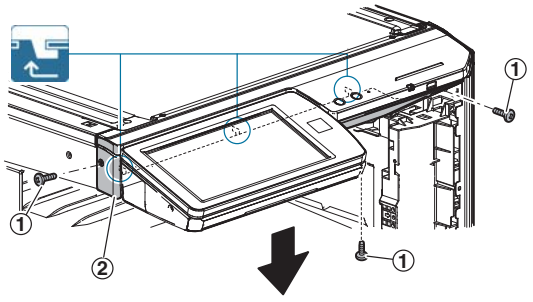
## B. Operation panel section

| No. | Name |
|---|---|
| 1 | Operation panel unit) |

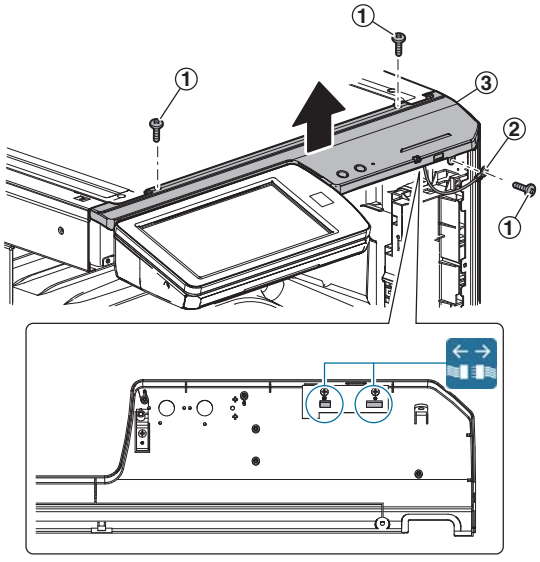



### (1) Operation panel unit

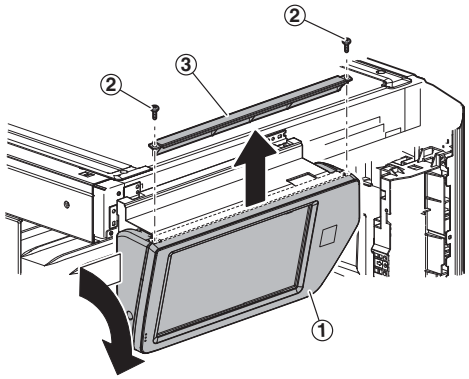
1) Remove the operation panel cover.



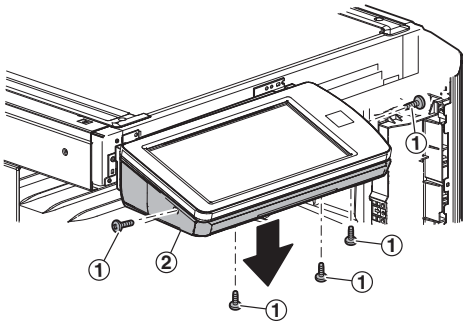

2) Remove the operation panel upper cover.



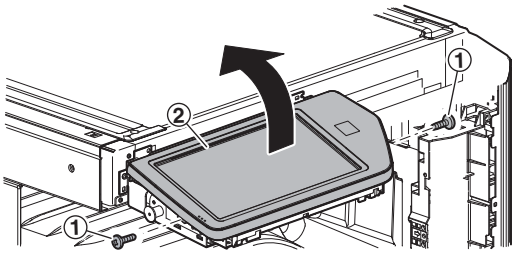
3) Slide the operation panel unit to the left, and put it down. Remove the operation panel cover.




4) Remove the operation panel lower cover.

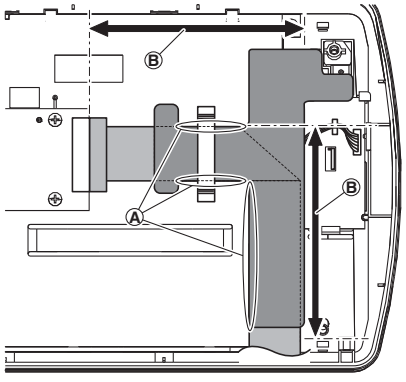



5) Turn over the operation panel unit.

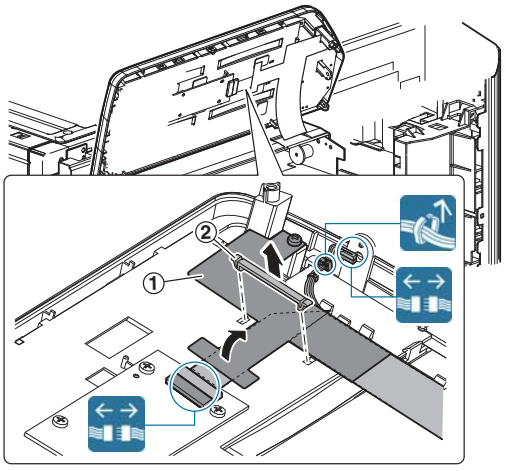



Important

Fit the flat cable edges with section s A of the Mylar, and remove slack in sections B of the flat cables.

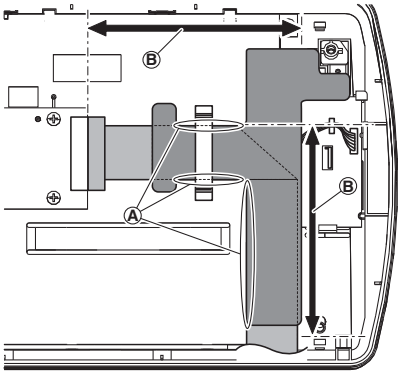



6) Remove the clamp. Peel off the mylar and disconnect the connector.



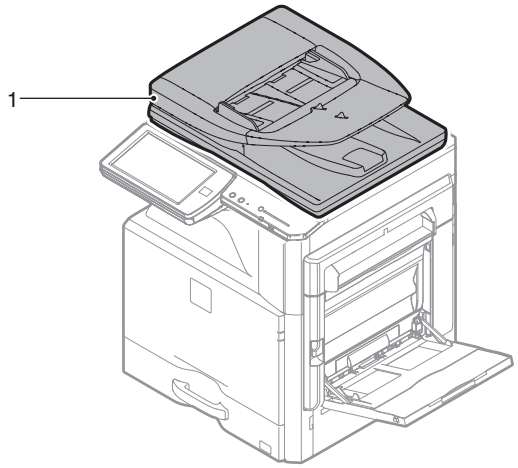

Important

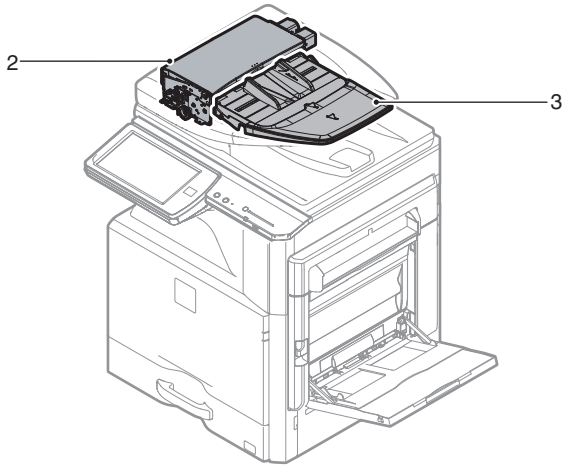
Fit the flat cable edges w ith sections A o f the Mylar, and remove slack in sections B of the flat cables.



## C. RSPF section

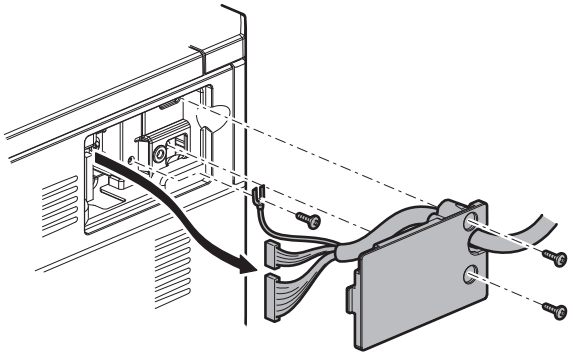
| No. | Name |
|---|---|
| 1 | RSPF unit |
| 2 | RSPF paper feed tray unit |
| 3 | RSPF transport unit |



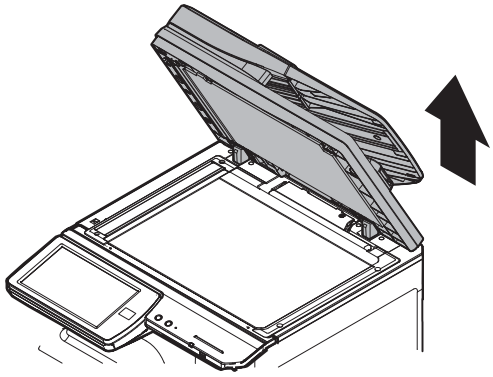




### (1) RSPF unit

1) Remove the two screws and remove the rear cabinet.
2) Loosen the screw fixing the earth cable and remove the earth cable. Then, disconnect the connector.

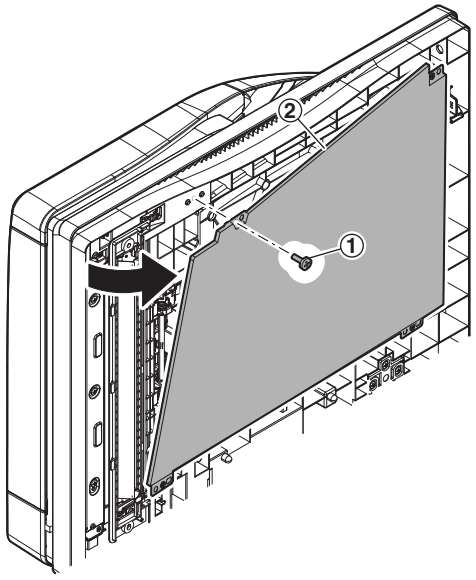


3) Remove the RSPF unit from the machine.

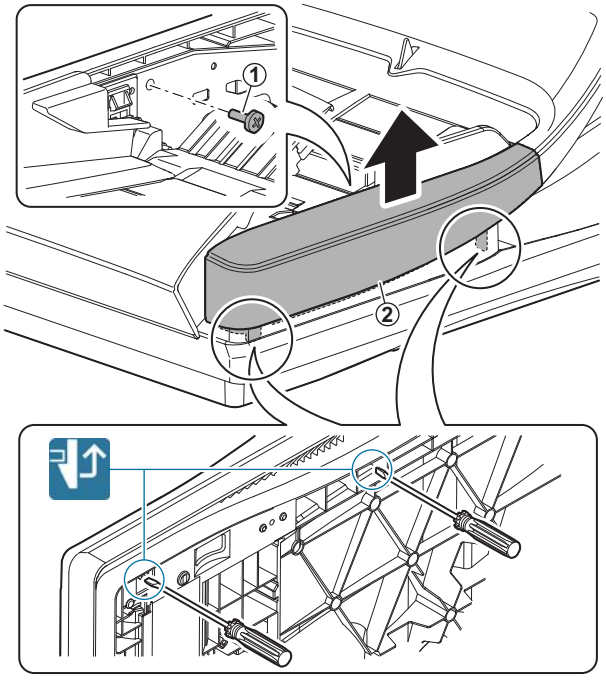


### (2) RSPF paper feed tray unit

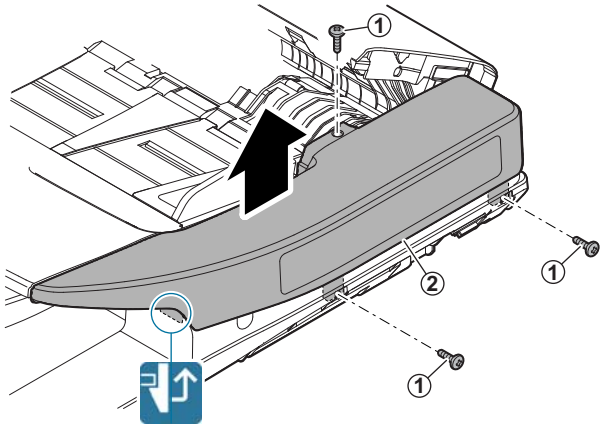
1) Turn over the left upper corner of the OC mat.



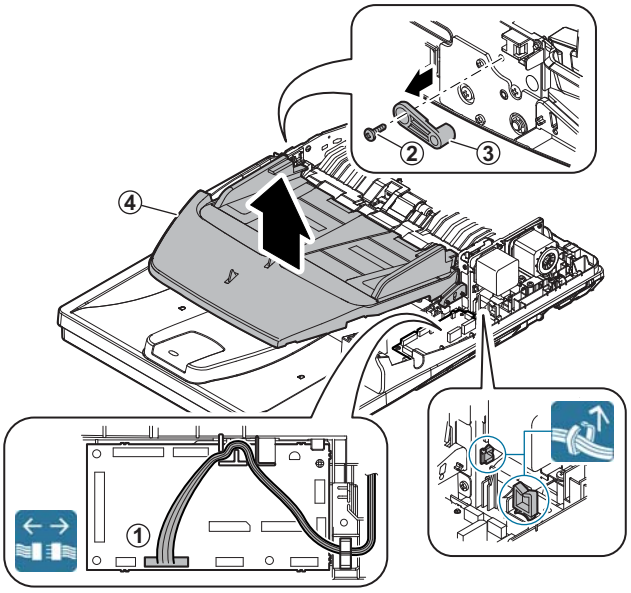

2) Remove the front cabinet.



3) Remove the rear cabinet.

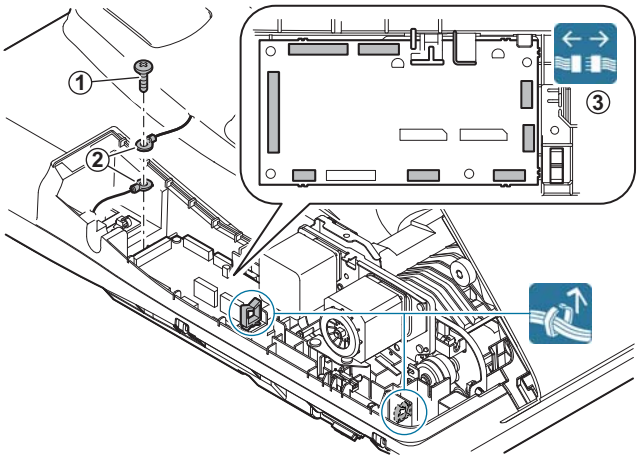


4) Disconnect the connector from the RSPF driver PWB. Remove the holder, and remove the RSPF paper feed tray unit.

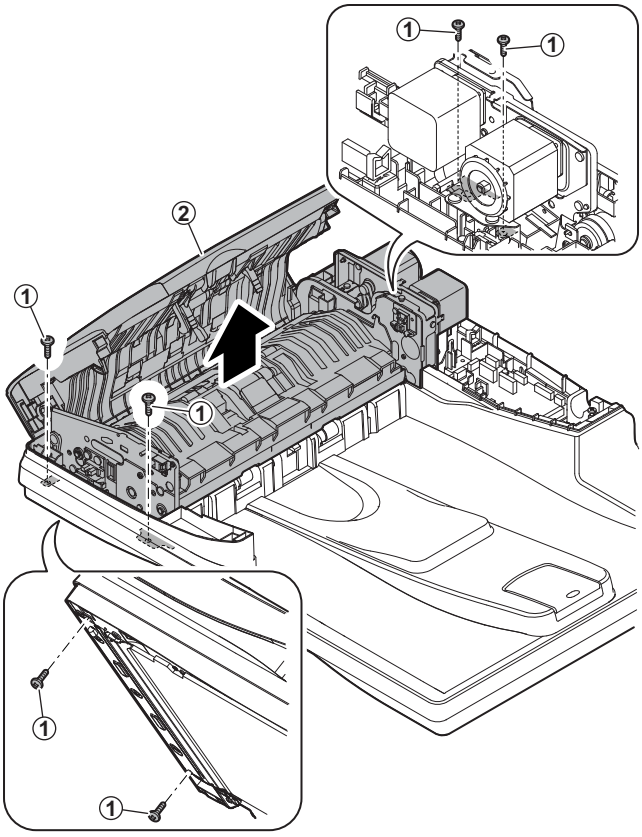


### (3) RSPF transport unit

1) Remove the paper feed tray unit.
2) Remove the earth wire. Disconnect the connector from the RSPF driver PWB.

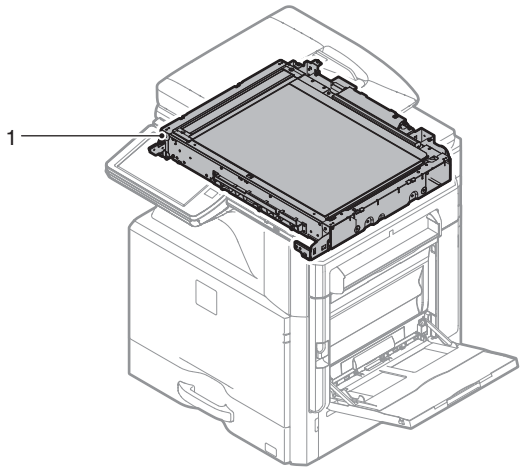


3) Remove the RSPF transport unit.



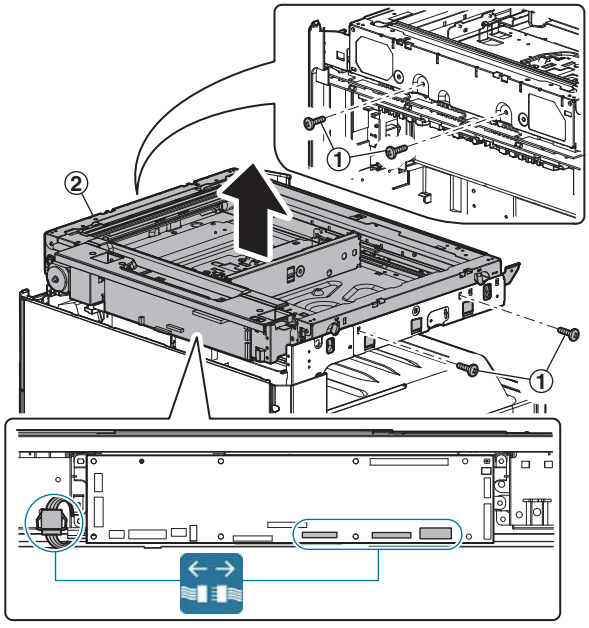
## D. Scanner section

| No. | Name |
|---|---|
| 1 | Scanner unit |



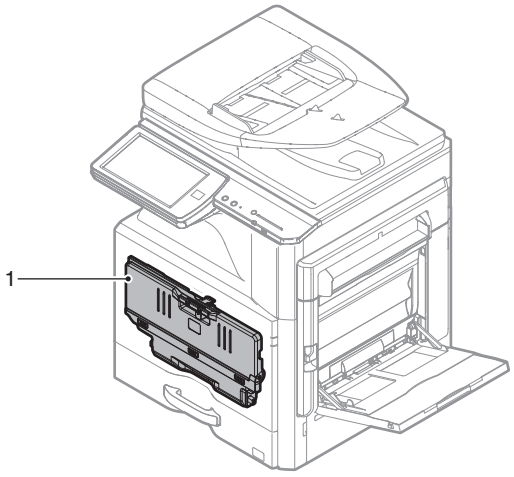

### (1) Scanner unit

1) Remove the RSPF unit.
2) Remove the operation panel unit.
3) Remove the table glass and the SPF glass.
4) Remove the upper cabinet left, and the upper cabinet right.
5) Remove the scanner unit.



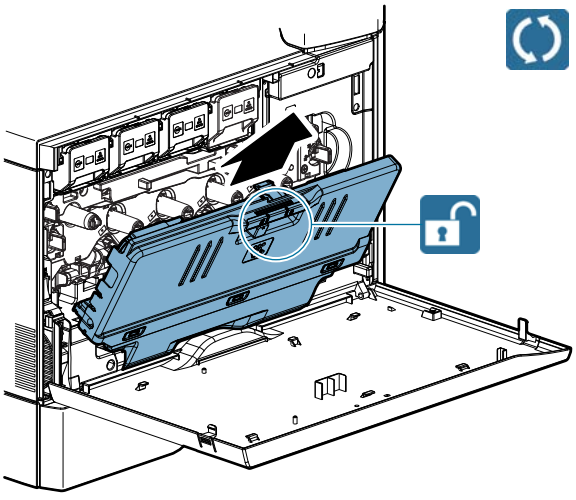

## E. Waste toner collection section

| No. | Name |
|---|---|
| 1 | Waste toner box |



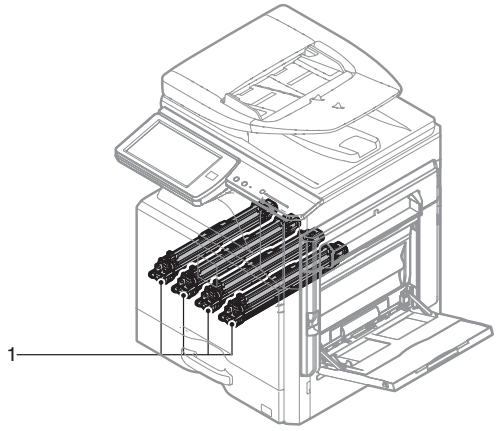

### (1) Waste toner box

1) Open the front cabinet. Slide the lock to release it, and remove the waste toner box.



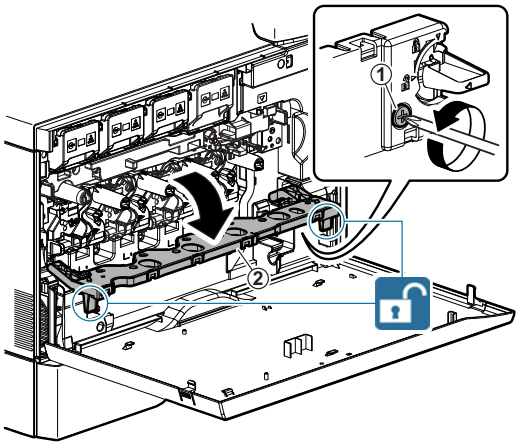
## F. Developing section

| No. | Name |
|---|---|
| 1 | Developing unit |




### (1) Developing unit

1) Remove the waste toner box.
2) Turn the lock to release, and open the drum positioning cover.

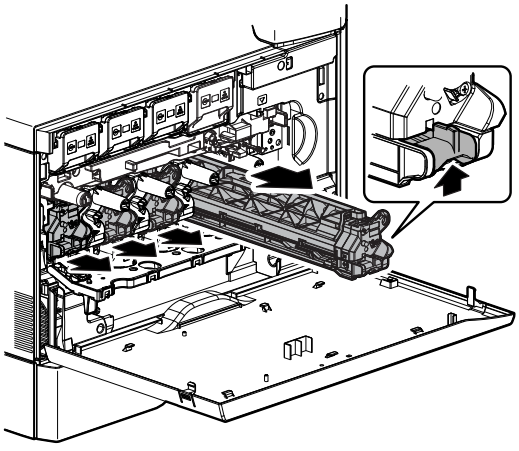



3) While pressing the lever, pull out the developing unit to remove.

Important

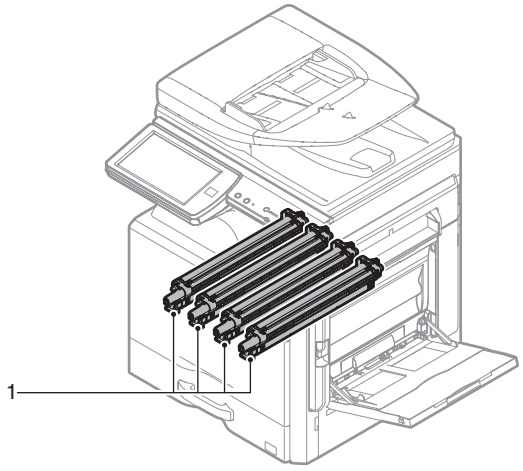
When pulling out and pushing in the developing unit, put your hand beneath the unit and slide it horizontally along the guide.

At the time, be careful not to touch the developing roller surface.



## G. OPC drum section

| No. | Name |
|---|---|
| 1 | OPC drum unit |



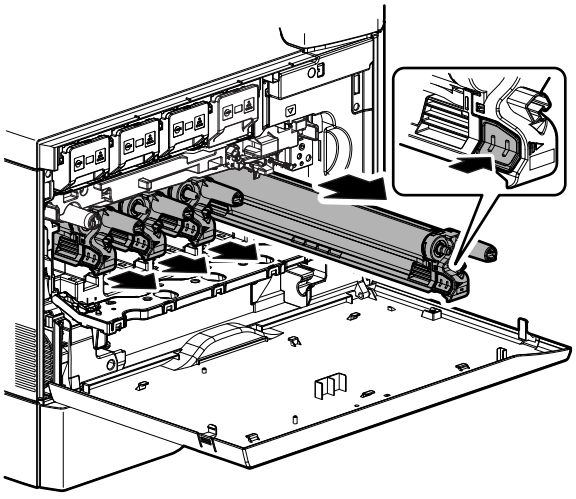

### (1) OPC drum unit

1) Remove the waste toner box.
2) Remove the developing unit.
3) While pressing the lever, pull out the OPC drum to remove.

Important

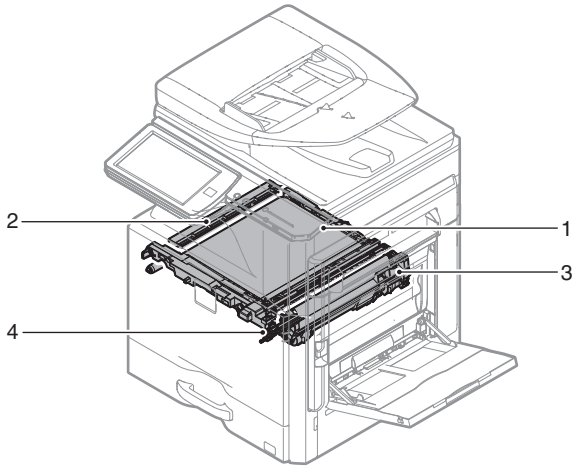
When pulling out and pushing in the OP C drum unit, put you r hand beneath the unit and slide it hor izontally along the guide on the right side.

At the time, be careful not to touch the OPC drum surface.



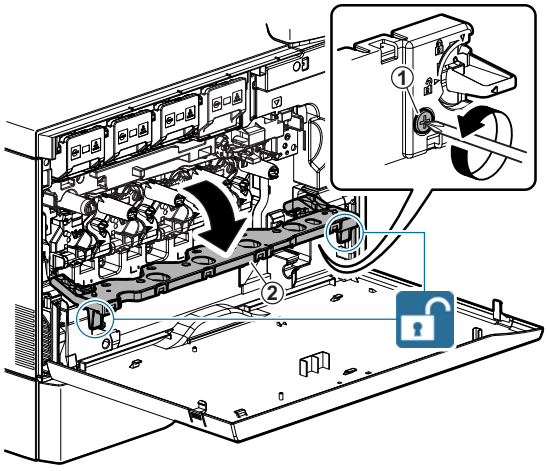
## H. Transfer section

| No. | Name |
|---|---|
| 1 | Primary transfer unit |
| 2 | Primary transfer cleaner unit |
| 3 | Secondary transfer unit |
| 4 | PTC unit |



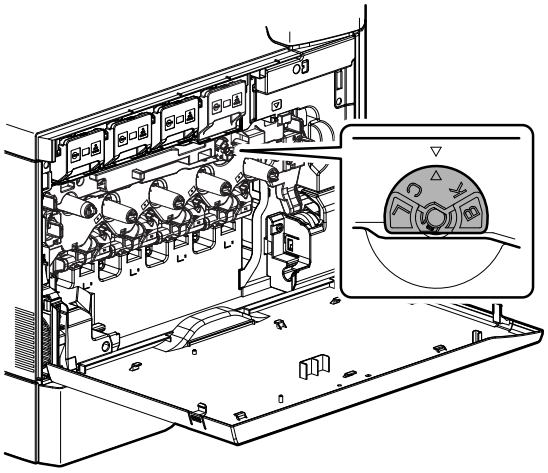

### (1) Primary transfer unit

1) Remove the waste toner box.
2) Turn the lock to release, and open the drum positioning cover.




Important

Before opening the drum positioning cover, check to confirm that the transfer cam knob is at the free position.



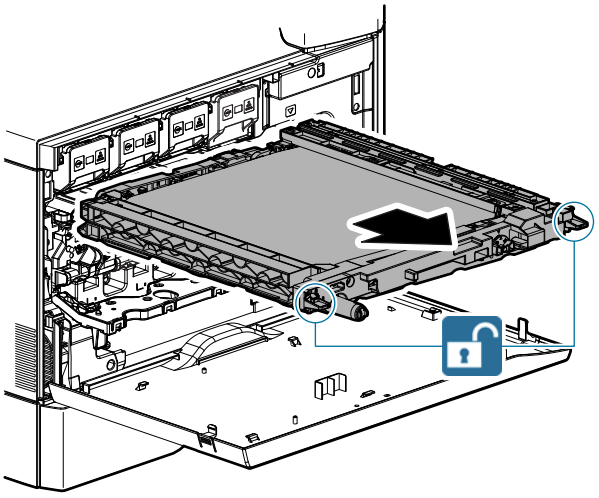
3) Open the right door. Turn the lock to release, and pull out the primary transfer unit to remove.

Important

When removing the primary transfer unit, be sure to open the right door in advance.

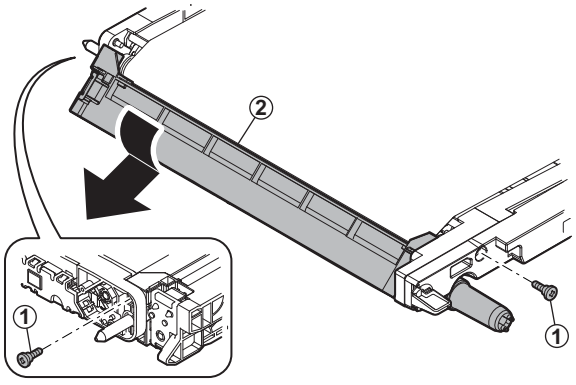
Important

Be careful not to put foreign materials on the primary transfer belt.



### (2) Primary transfer cleaner unit

1) Remove the primary transfer unit.
2) Rotate the primary transfer cleaner unit 45 degrees downward to remove.



### (3) Secondary transfer unit

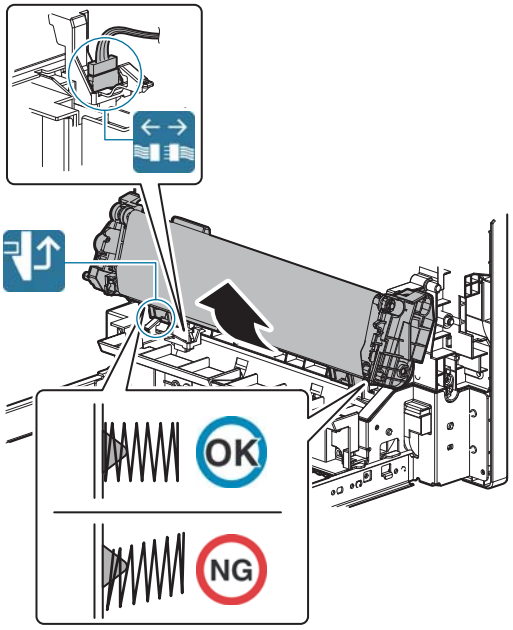
1) Rotate the secondar y transfer unit a half turn upward to remove. Disconnect the connector from the right door unit.

Important

Be careful not to put foreign materials on the secondary transfer belt.

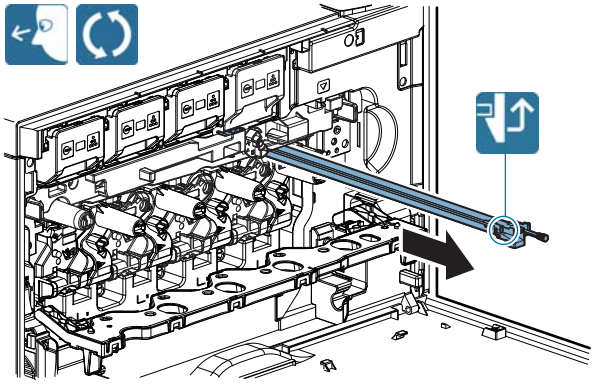
Important

When installing the secondary tr ansfer unit, check to confirm that the frame projections are securely in the pressure springs on the front and the rear side.



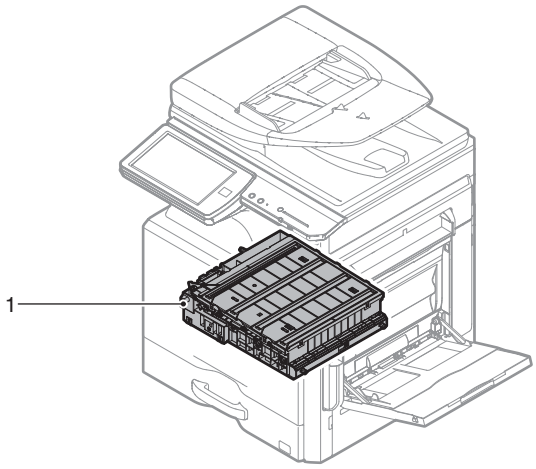

### (4) PTC unit

1) Remove the waste toner box.
2) Remove the PTC unit.



## I. LSU section

| No. | Name |
|---|---|
| 1 | LSU |

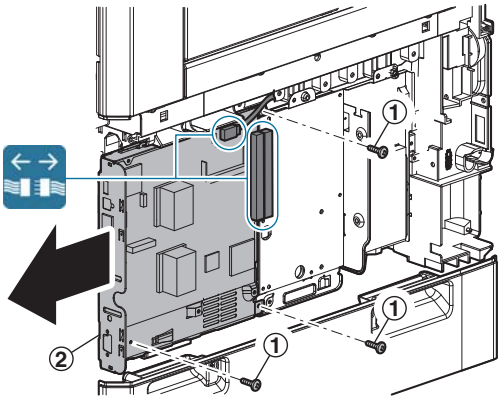



### (1) LSU

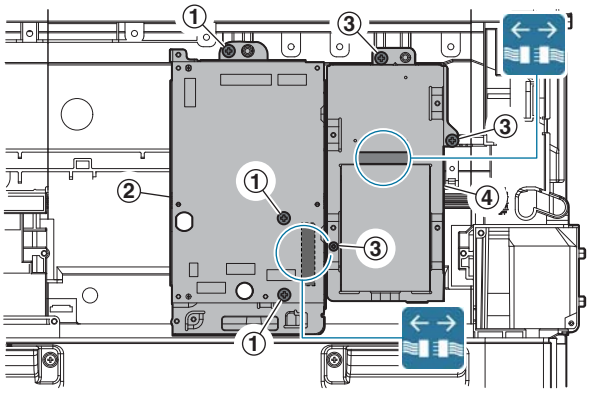
1) Remove the left cabinet, and the shield plate.
2) Remove the MFP control PWB unit.

Important

Since the MFP cont rol PWB and the LSU mother PWB are connected together (board to board), use care when removing and attaching them.




3) Remove the LSU mother PWB unit, and the HDD unit.



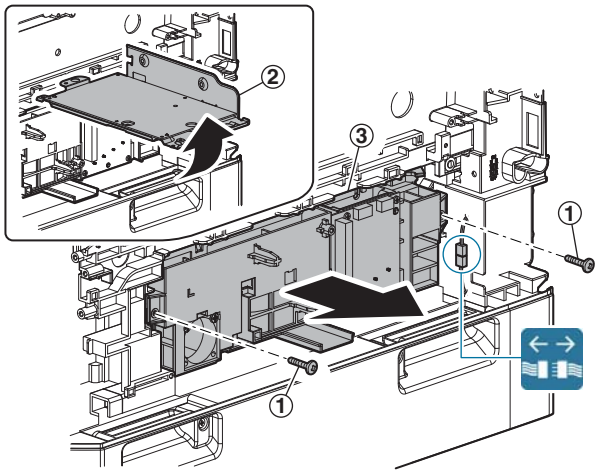
4) Remove the waste toner box.
5) Lift the LSU mother PWB unit, and remove the LSU.

Important

Do not touch the LSU PWB and the upper cover glass section.

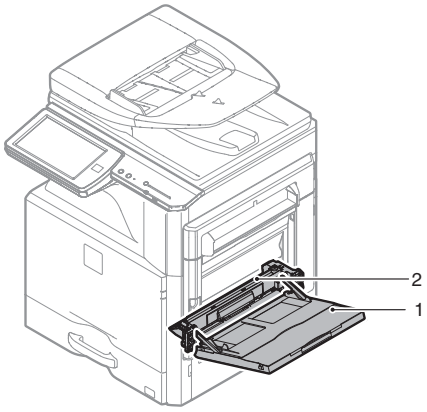
Important

Put the LSU on a flat surface. (Do not turn it over.)



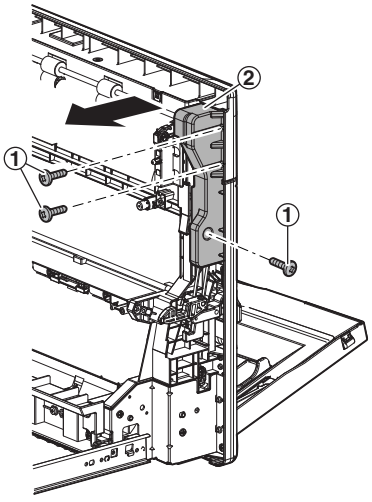

## J. Manual paper feed section

| No. | Name |
|---|---|
| 1 | Manual paper feed tray |
| 2 | Manual paper feed unit |

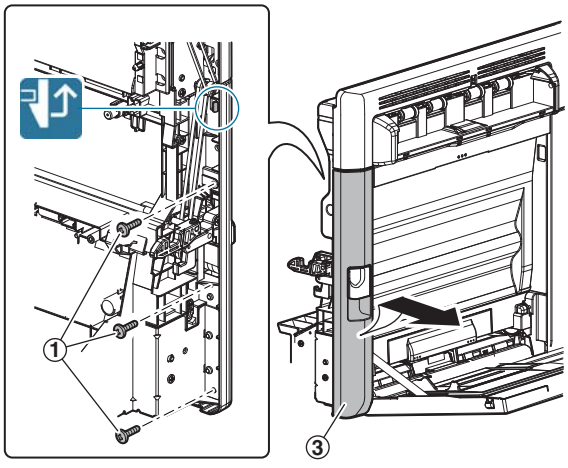



### (1) Manual paper feed tray

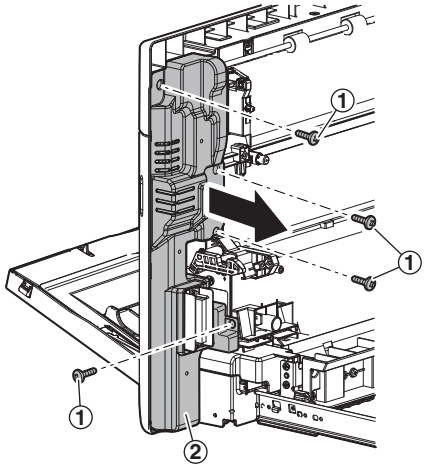
1) Open the right door, and remove the cover.



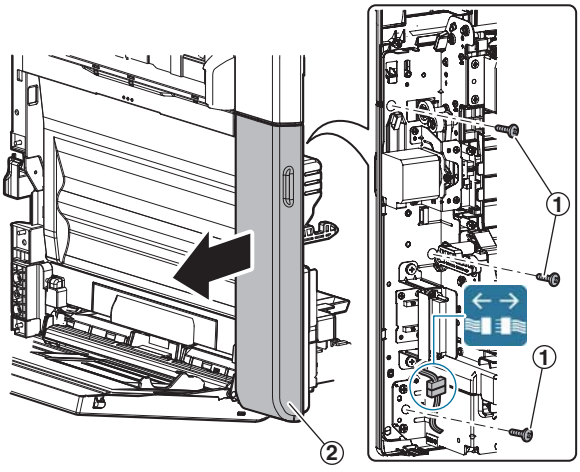

2) Remove the cover.



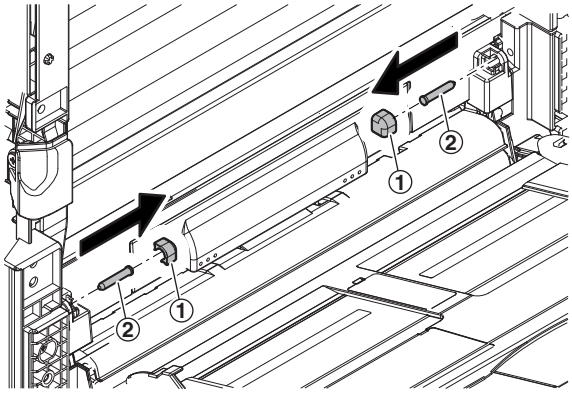
3) Remove the cover.



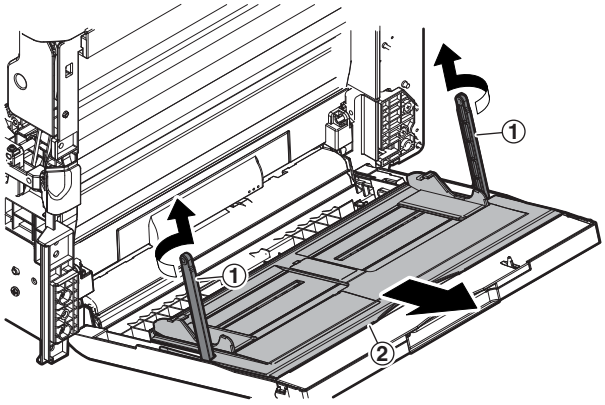
4) Remove the cover.



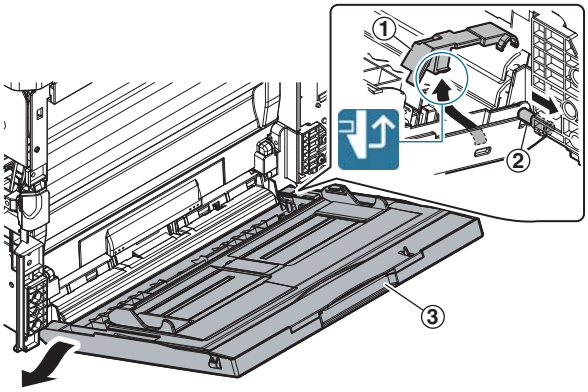
5) Remove the shaft.



6) Slide the tray and remove the arm.

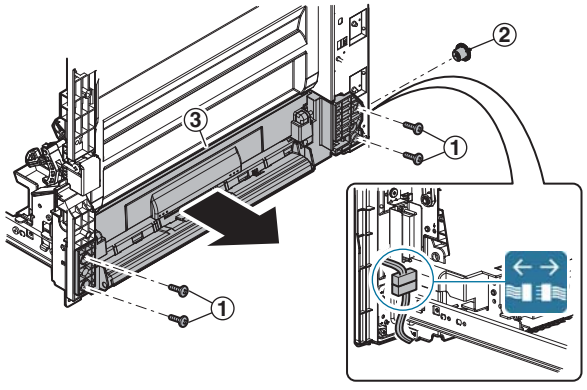


7) Remove the cover, and remove the manual paper feed tray.



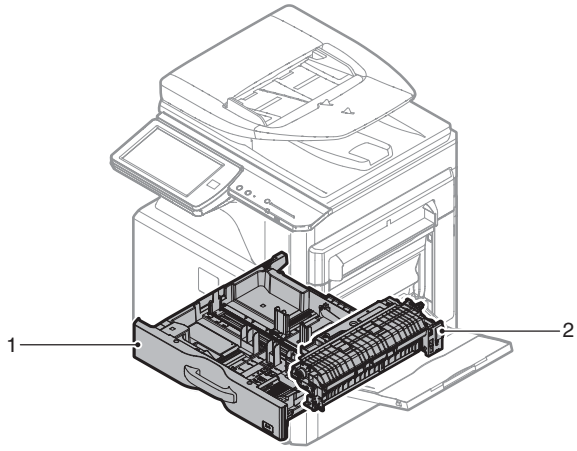
### (2) Manual paper feed unit

1) Remove the manual paper feed tray.
2) Remove the manual paper feed unit.



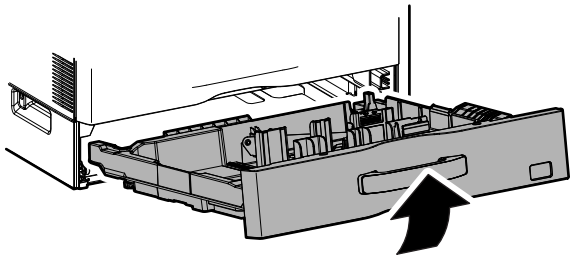
## K. Tray paper feed section

| No. | Name |
|---|---|
| 1 | Paper feed tray |
| 2 | Tray paper feed unit |



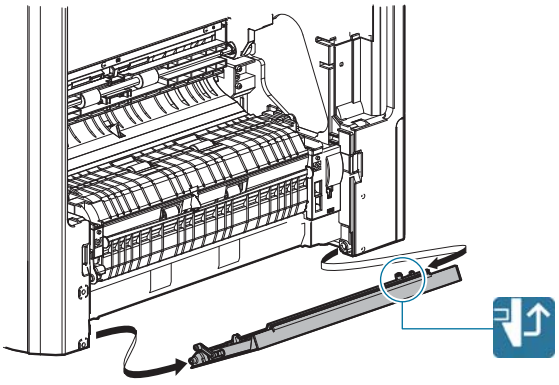

### (1) Paper feed tray

1) Pull out the paper feed tray, and lift and remove it.

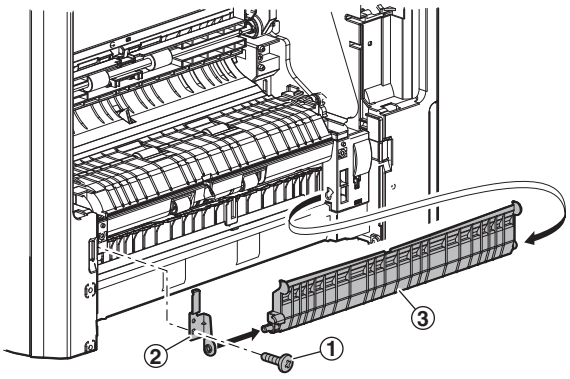


### (2) Tray paper feed unit

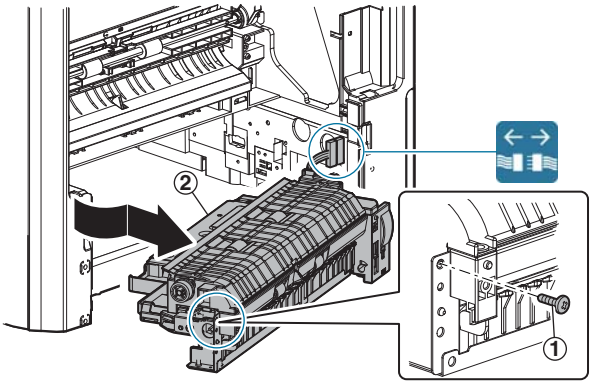
1) Remove the paper feed tray.
2) Remove the right door lower.



3) Remove the paper guide.

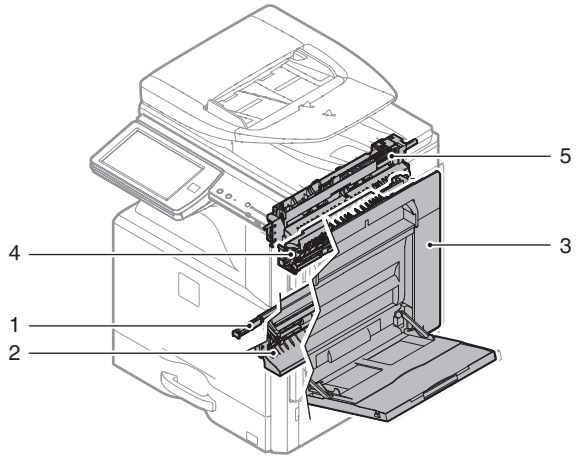



4) Remove the tray paper feed unit.



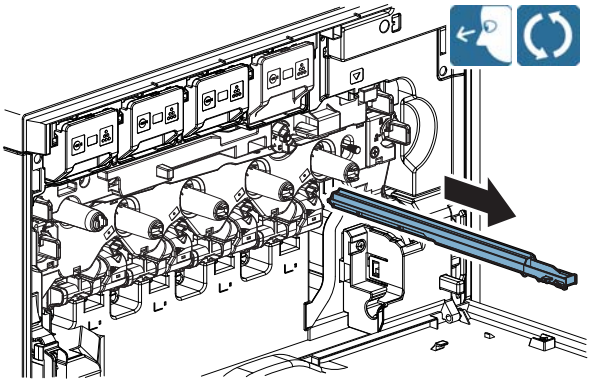
## L. Paper transport/Paper exit/ADU section

| No. | Name |
|---|---|
| 1 | Paper dust removing unit |
| 2 | PS unit |
| 3 | Right door unit |
| 4 | Fusing rear unit |
| 5 | Paper exit unit |



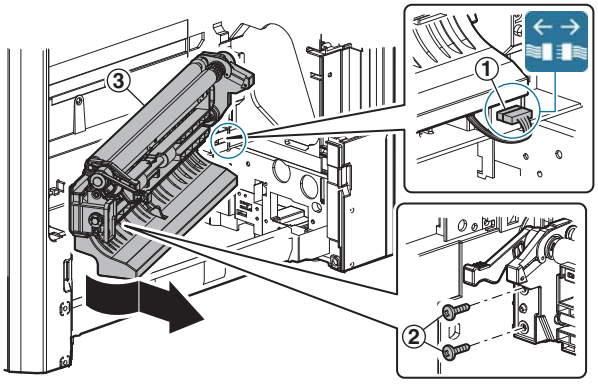

### (1) Paper dust removing unit

1) Remove the waste toner box.
2) Remove the paper dust cleaner unit.



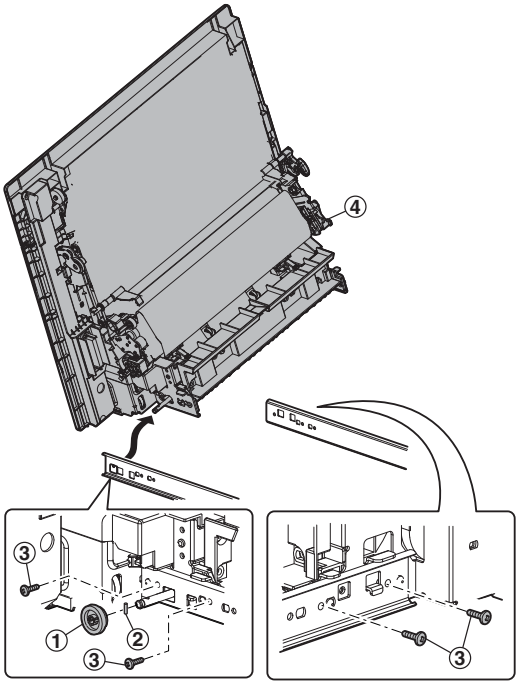
### (2) PS unit

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.



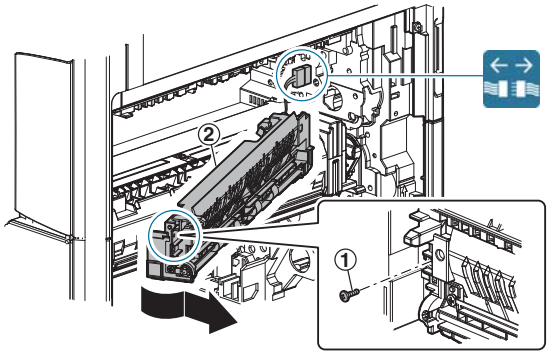

### (3) Right door unit

1) Open the right door. Remove the gear, and remove the right door.



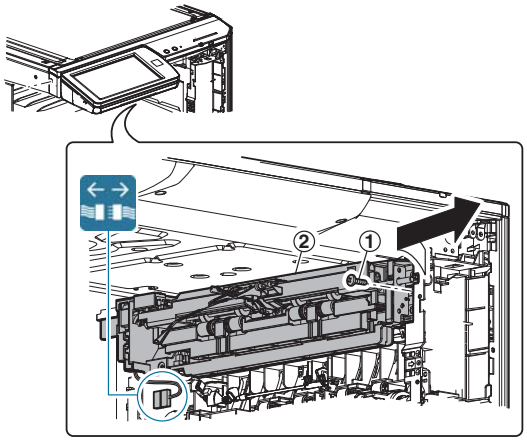

### (4) Fusing rear unit

1) Remove the fusing unit.
2) Remove the fusing rear unit.




### (5) Paper exit unit

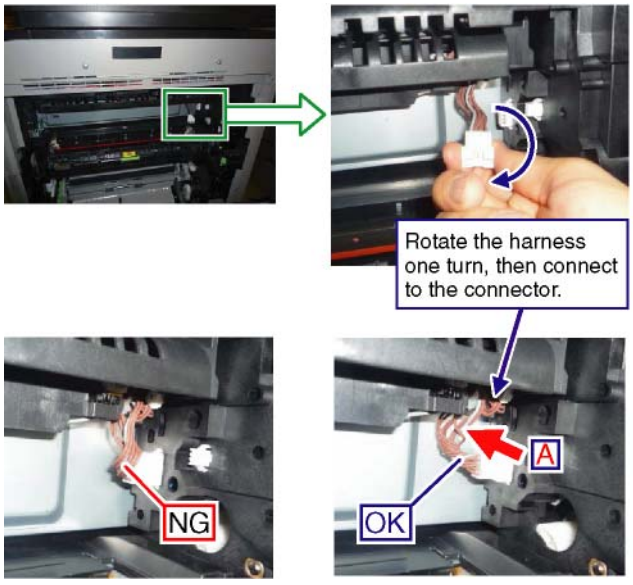
1) Remove the front cabinet upper.
2) Remove the paper exit tray.
3) Remove the paper exit unit.



Important

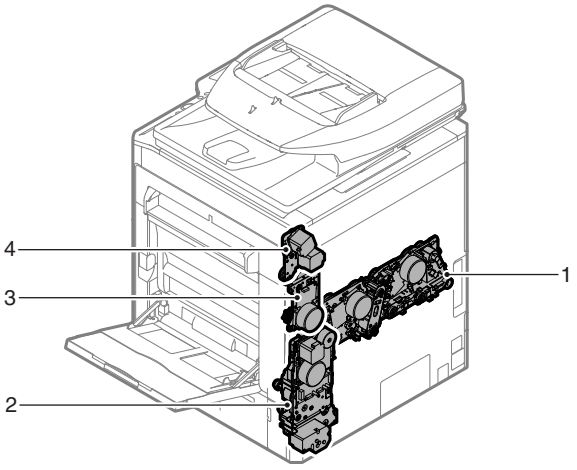
When connecting the paper exit unit connector, rotate the harness one turn clockwise as shown in the figure below so that the harness faces toward the arrow A, and connect the connector.

This procedure is necessary for preventing the paper exit sensor from disconnecting by contact with the harness.



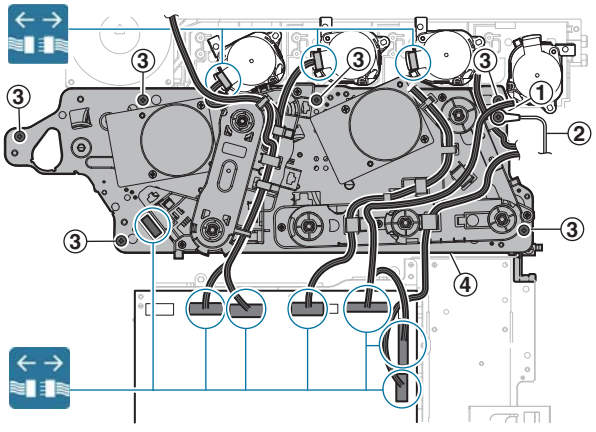

## M. Drive section

| No. | Name |
|---|---|
| 1 | Main drive unit |
| 2 | Transport drive unit |
| 3 | Fusing drive unit |
| 4 | Paper exit drive unit |




### (1) Main drive unit

1) Remove the waste toner box.
2) Remove the developing unit.
3) Remove the OPC drum unit.
4) Remove the primary transfer unit.
5) Remove the rear cabinet.
6) Remove the main drive unit.




Important

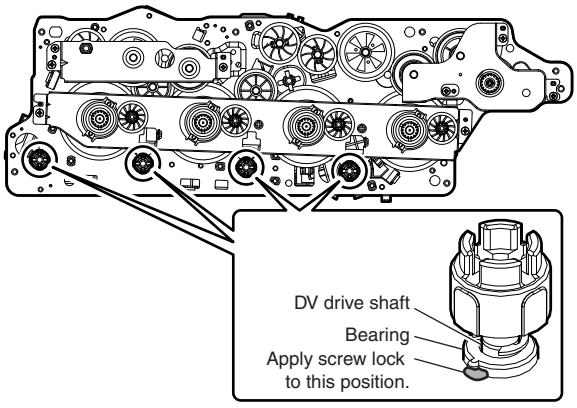
When the drive section is disa ssembled, apply scr ew lock to the following sections:

**Front side**

Apply screw lock (0.1g: about two rice grains) between the bearing and the drive frame. (4 positions)

Important

Be careful not to apply screw lock between the bearing and each DV drive shaft.

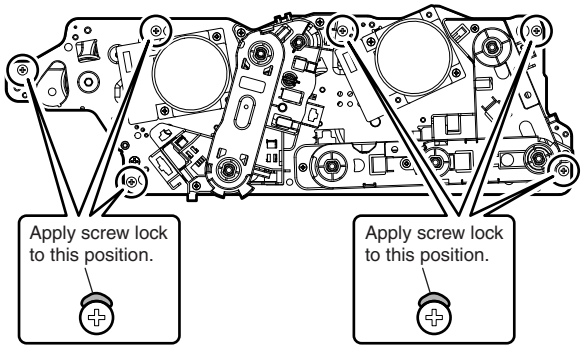



**Rear side**

Apply screw lock (0.04g: about one rice grain). (6 positions)

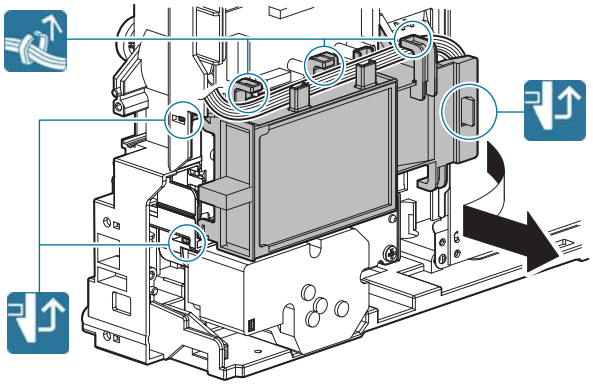
Important

Be careful not to apply screw lock to the head of the screw.

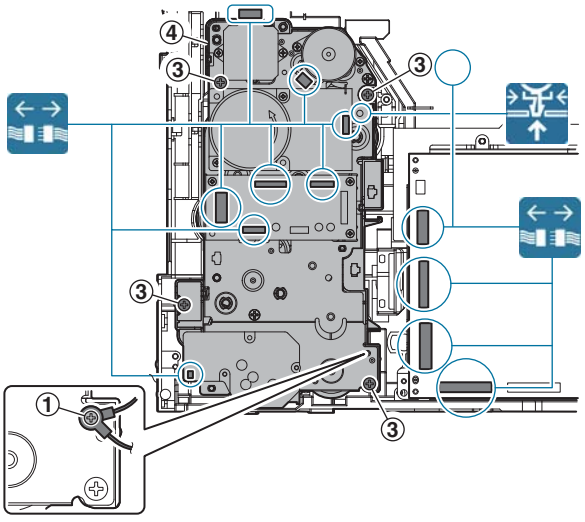



## (2) Transport drive unit

1) Remove the rear cabinet.
2) Open the right door.
3) Remove the ozone filter cover.
4) Remove the duct.



5) Remove the transport drive unit.




Important

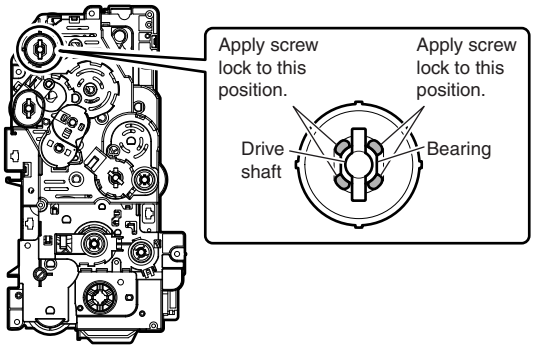
When the drive section is disassembled, apply screw lock to the following sections:

**Front side**

Apply screw lock (0.1g: about two rice grains) between the bearing and the transport drive frame. (4 positions)

Important

Be careful not to apply screw lock between the bearing and the drive shaft.

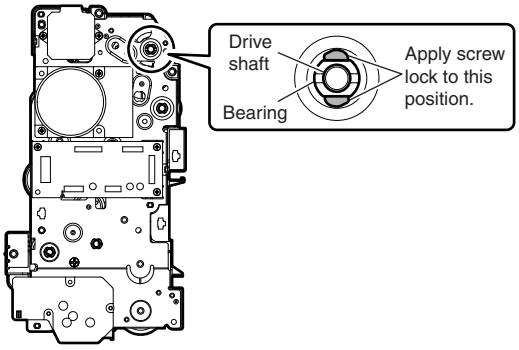


**Rear side**

Apply screw lock (0.1g: about two r ice grains) between the bearing and the transport drive frame. (2 positions)

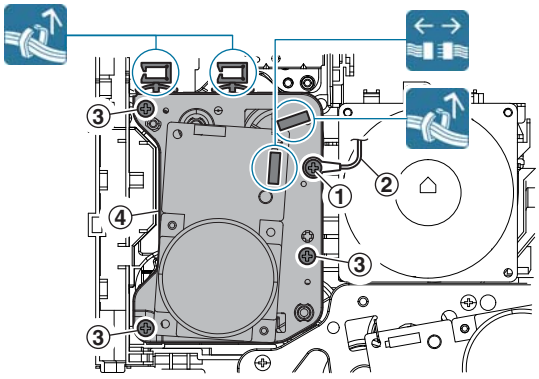
Important

Be careful not to apply screw lock between the bearing and the drive shaft.



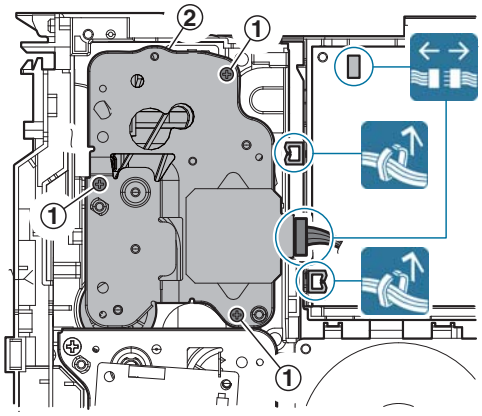

### (3) Fusing drive unit

1) Remove the rear cabinet upper.
2) Remove the rear cabinet.
3) Remove the ROM cover.
4) Remove the FAX unit.
5) Remove the fusing drive unit.



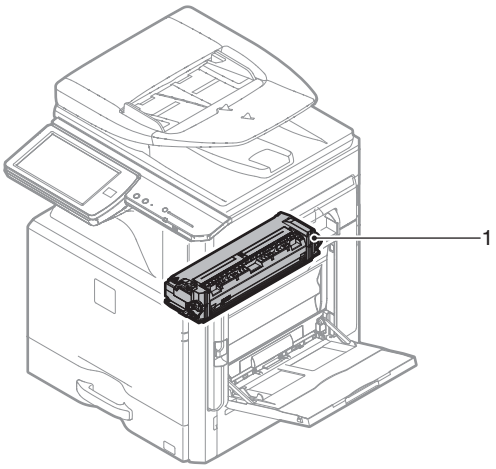
### (4) Paper exit drive unit

1) Remove the rear cabinet upper.
2) Remove the rear cabinet.
3) Remove the ROM cover.
4) Remove the FAX unit.
5) Remove the paper exit drive unit.



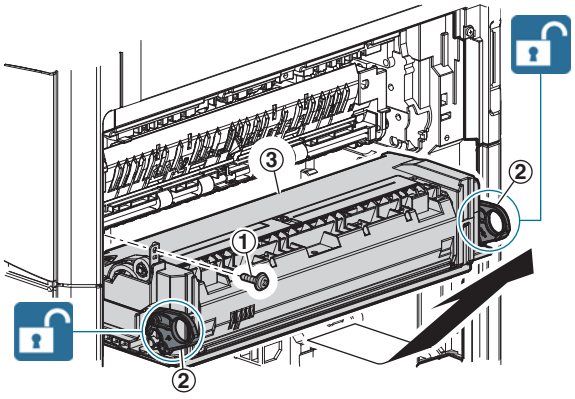
## N. Fusing section

| No. | Name |
|---|---|
| 1 | Fusing unit |




### (1) Fusing unit

1) Open the right door. Release lock, and remove the fusing unit.

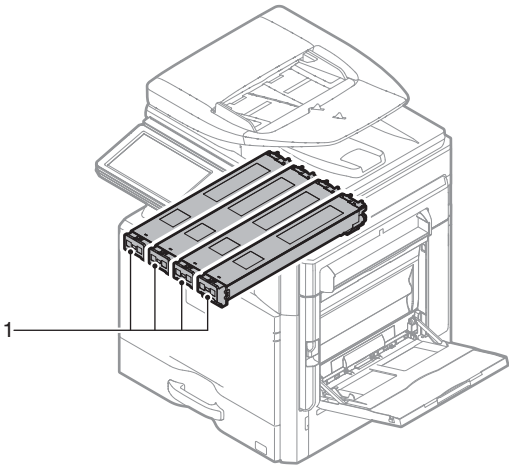


Important

When carrying the fusing unit, be sure to hold the both levers on the F and R sides of the fusing unit. If only one lever is held to carry the unit, it may be broken.

## O. Toner supply section

| No. | Name |
|---|---|
| 1 | Toner cartridge |




### (1) Toner cartridge

1) Open the front cabinet, and remove the toner cartridge.

Important

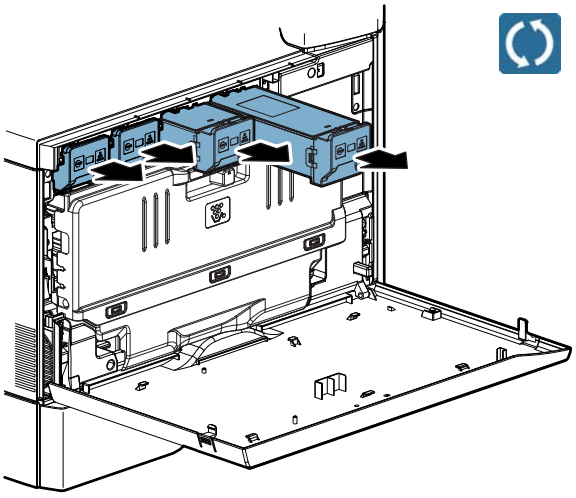
Do not install a toner cartridge of a different color. Be sure to install a toner cartridge of the same color.

Important

When installing, do not insert with great force.
When inserting, put your hand on it to the end until it locks securely.

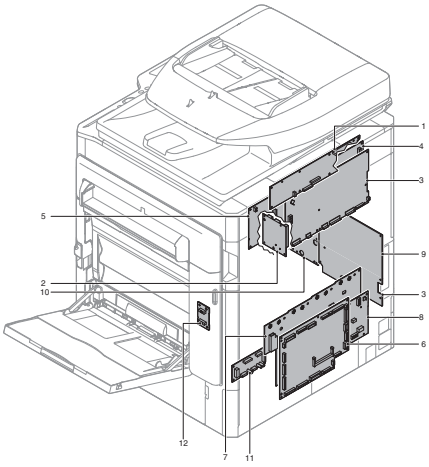
Important

When the machine is moved with the developing unit removed, be sure to remove the toner cartridge. (If not, toner may clog.)



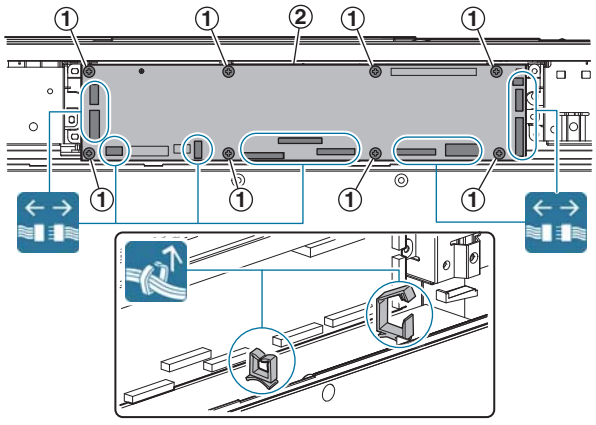
## P. PWB section

| No. | Name |
|---|---|
| 1 | SCU PWB |
| 2 | LD PWB |
| 3 | DC POWER PWB |
| 4 | High voltage PWB (TC PWB) |
| 5 | HL control PWB |
| 6 | PCU PWB |
| 7 | High voltage PWB (MC/DV PWB) |
| 8 | AC POWER PWB |
| 9 | MFP control PWB |
| 10 | LSU mother PWB |
| 11 | Driver PWB |
| 12 | Right door PWB |



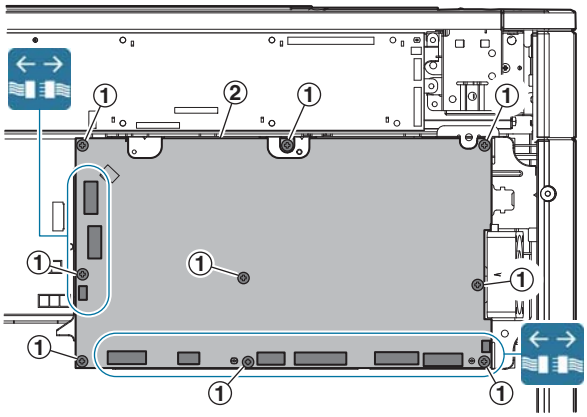
### (1) SCU PWB

1) Remove the rear cabinet upper.
2) Remove the SCU PWB.



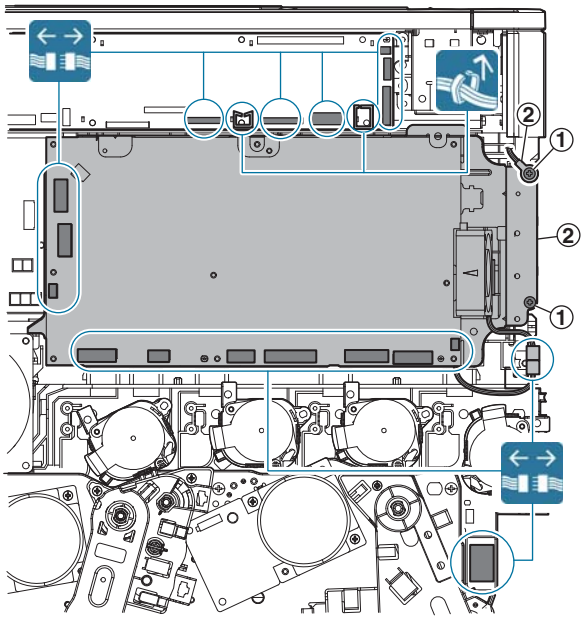
### (2) DC POWER PWB

1) Remove the rear cabinet upper.
2) Remove the rear cabinet.
3) Remove the DC POWER PWB.

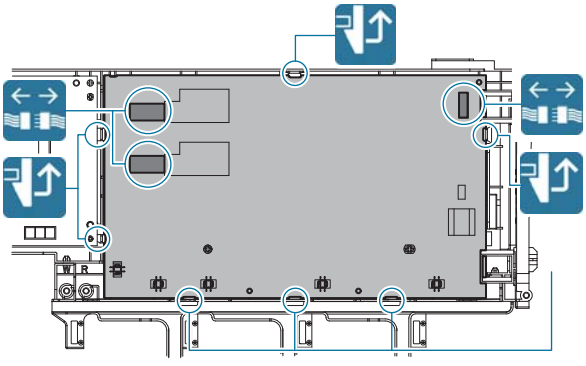


### (3) High voltage PWB (TC PWB)

1) Remove the rear cabinet upper.
2) Remove the rear cabinet.
3) Remove the left cabinet upper.
4) Remove the DC POWER PWB unit.

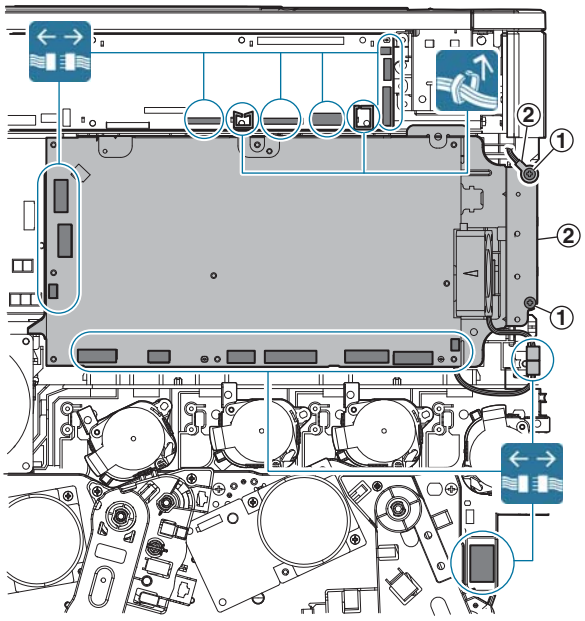


5) Remove the high voltage PWB (TC PWB).

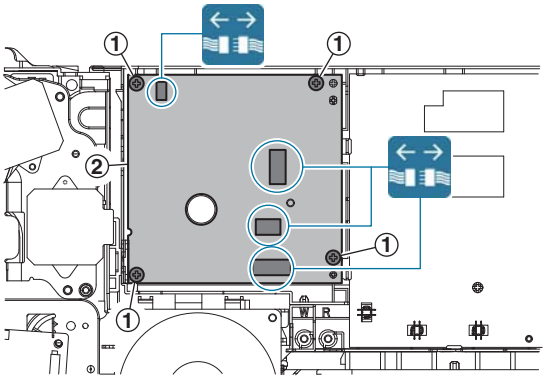


### (4) HL control PWB

1) Remove the rear cabinet upper.
2) Remove the rear cabinet.
3) Remove the ROM cover.
4) Remove the DC POWER PWB unit.

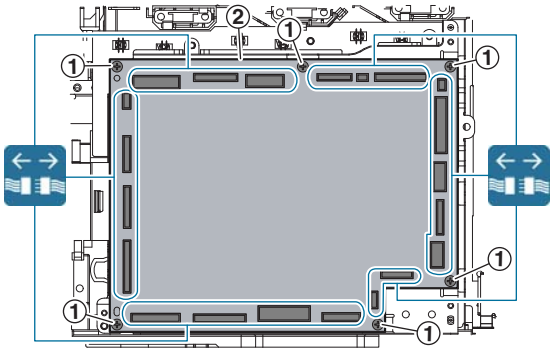


5) Remove the HL control PWB.

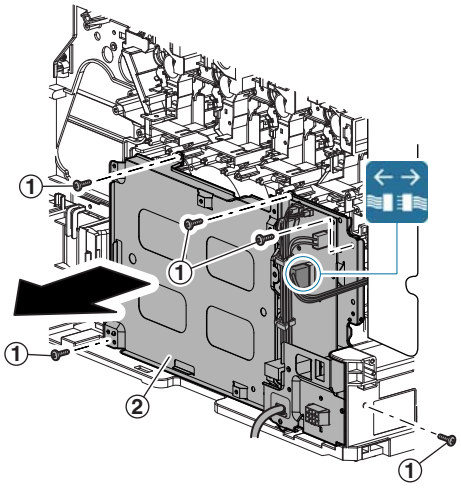


### (5) PCU PWB, High voltage PWB (MC/DV PWB)

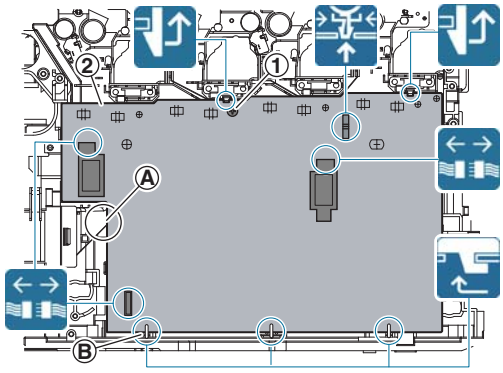
1) Remove the rear cabinet.
2) Remove the PCU PWB.



3) Remove the left cabinet lower.
4) Remove the PCU PWB mounting plate.



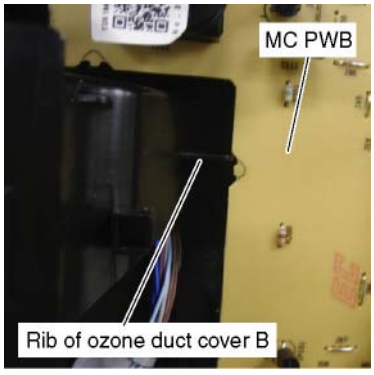
5) Remove the high voltage PWB (MC/DV PWB).



Important

Section A

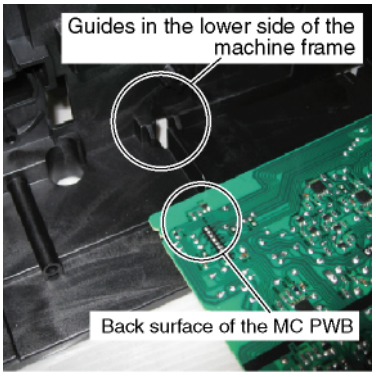
Install so that the left edge of the MC PWB is fitted with the rib of ozone duct cover B.




Important

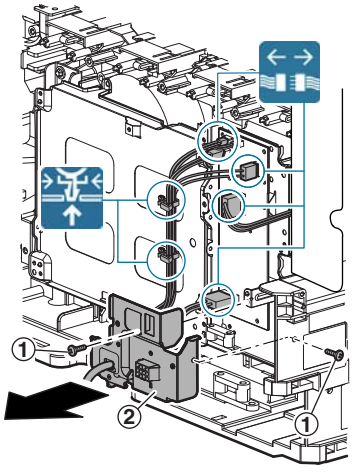
Section B

Be careful not to bring the back surface of the PWB into contact with the left guide which is one of the three guides in the lower side of the machine frame.

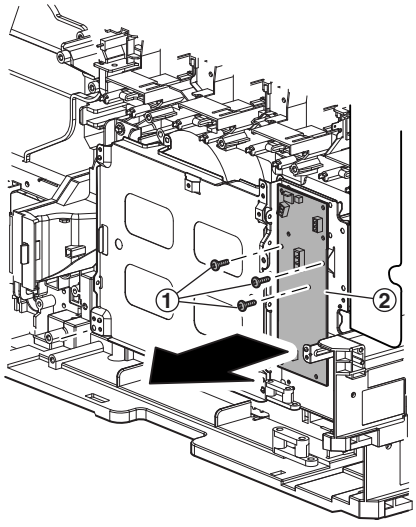



### (6) AC POWER PWB

1) Remove the rear cabinet.
2) Remove the left cabinet lower.
3) Remove the AC connector plate.



4) Remove the AC POWER PWB.

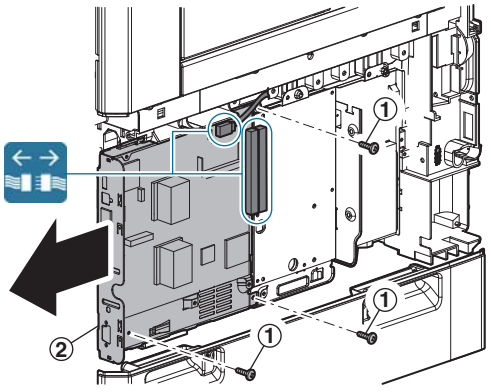


### (7) MFP control PWB

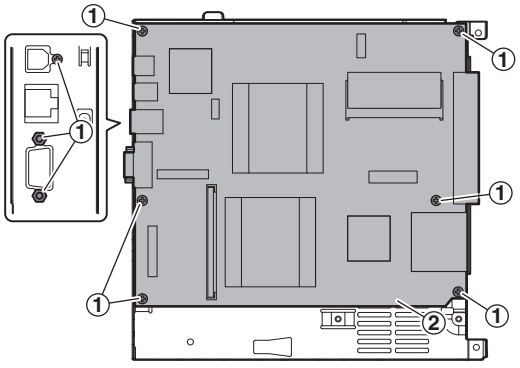
1) Remove the left cabinet, and the shield plate.
2) Remove the MFP control PWB unit.

Important

Since the MFP control PWB and the LSU mother PWB are connected together (board to board), use enough care when removing and attaching them.



3) Remove the MFP control PWB.

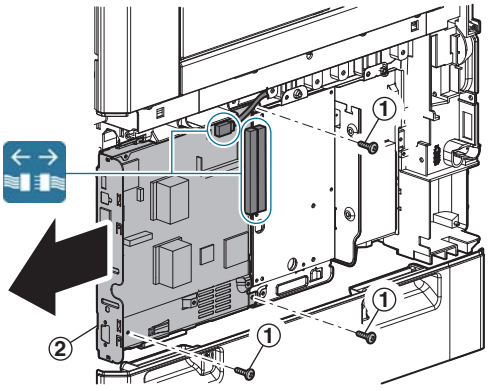


### (8) LSU mother PWB

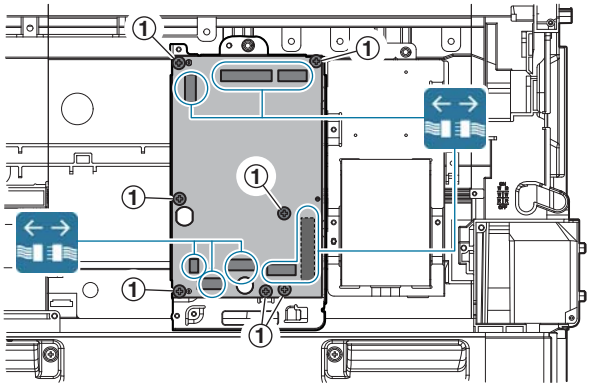
1) Remove the left cabinet, and the shield plate.
2) Remove the MFP control PWB unit.

Important

Since the MFP control PWB and the LSU mother PWB are connected together (board to board), use enough care when removing and attaching them.

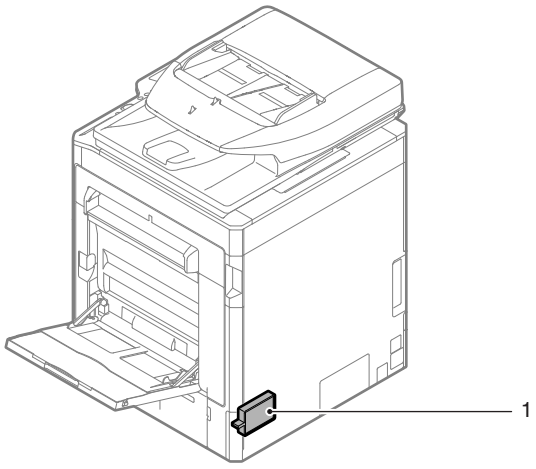


3) Remove the LSU mother PWB.



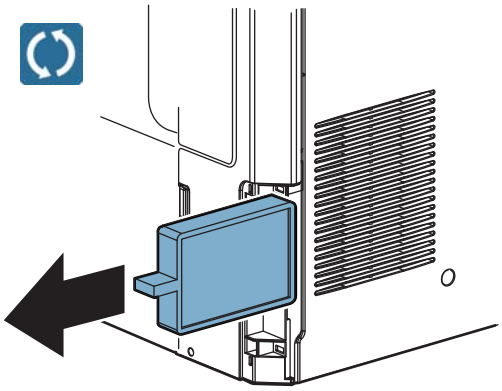
## Q. Filter section

| No. | Name |
|---|---|
| 1 | Ozone filter |




### (1) Ozone filter

1) Remove the ozone filter cover.
2) Remove the ozone filter.

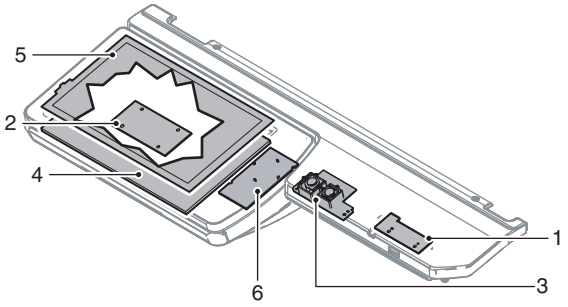


# 2. Disassembly and assembly of each unit

## A. Operation panel section

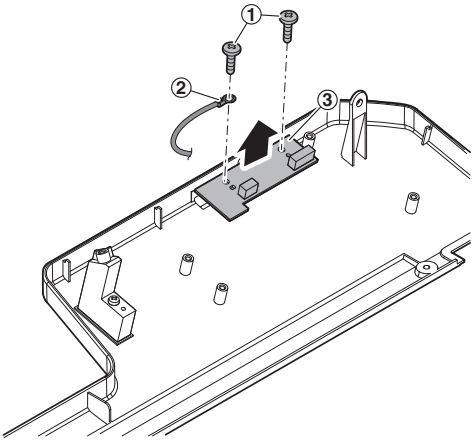
### (1) Operation panel unit

| No. | Name |
|---|---|
| 1 | USB I/F PWB |
| 2 | LVDS PWB |
| 3 | KEY PWB |
| 4 | LCD PWB |
| 5 | Touch panel |
| 6 | HOME KEY PWB |



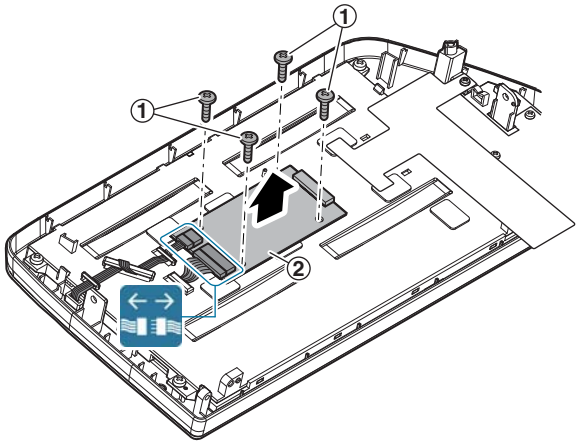

**a. USB I/F PWB**

1) Remove the USB I/F PWB.



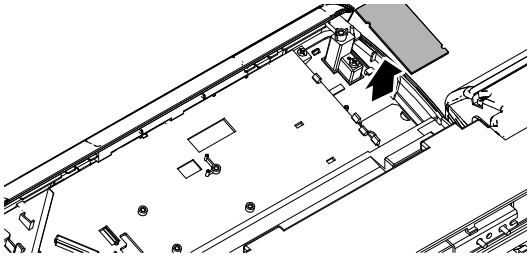

**b. LVDS PWB**

1) Disconnect the connector, and remove the LVDS PWB.

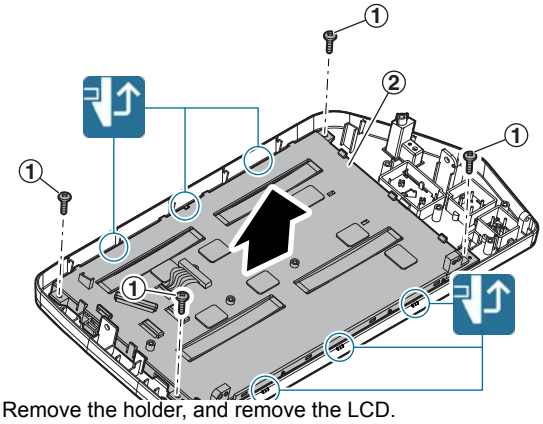


**c. HOME KEY PWB, LCD, Touch panel**

1) Disconnect the connector, and remove the HOME KEY PWB.



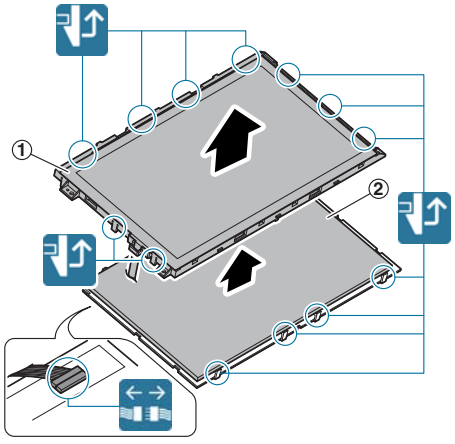
2) Remove the LCD holder.



3) Remove the holder, and remove the LCD.

Important

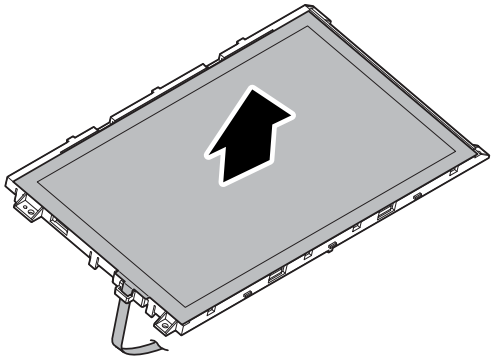
Use enough care not to put finger prints on the LCD surface.



4) Remove the touch panel.

Important

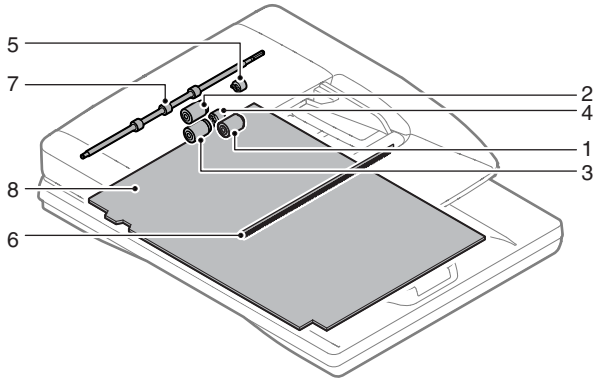
Use enough care not to put finger pr ints on the touch panel surface.



## B. RSPF section

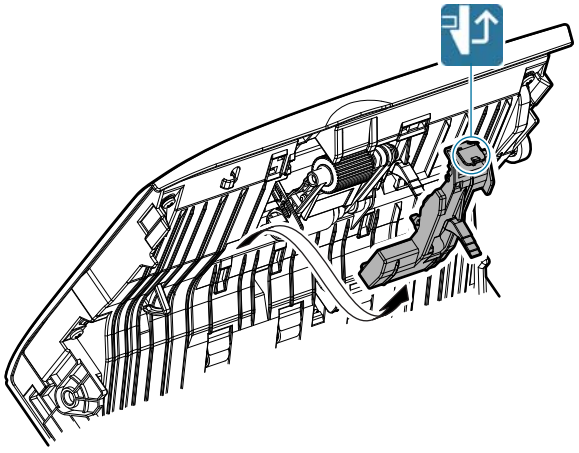
### (1) RSPF unit

| 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 |

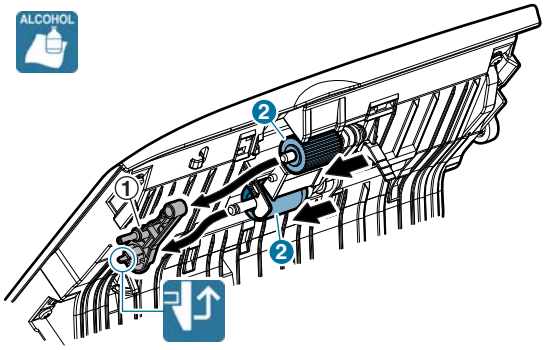



**a. Document pickup roller, Paper feed roller**

1) Open the paper feed unit, and remove the cover.

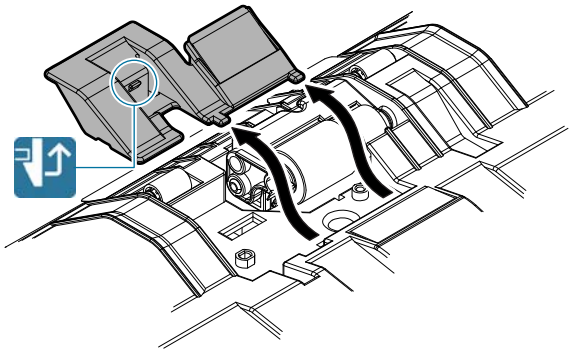


2) Remove the holder, and remove the document pickup roller, and the paper feed roller.

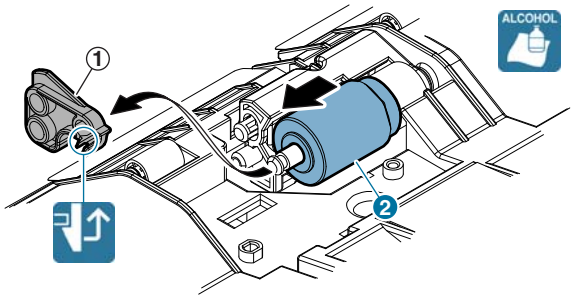


**b. Separation roller, Torque limiter SPF**

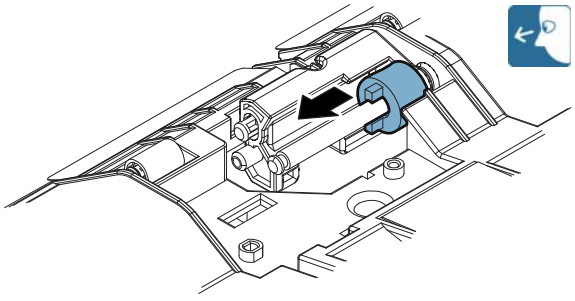
1) Open the paper feed unit, and remove the cover.



2) Remove the holder, and remove the separation roller.

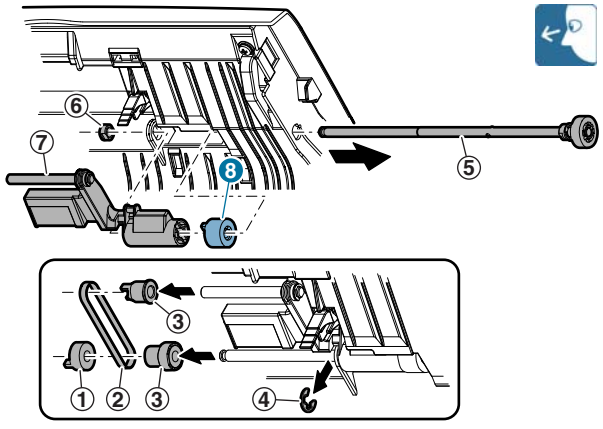



3) Remove the torque limiter SPF.



**c. Take-up torque limiter**

1) Remove the one-way coup ling, 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.

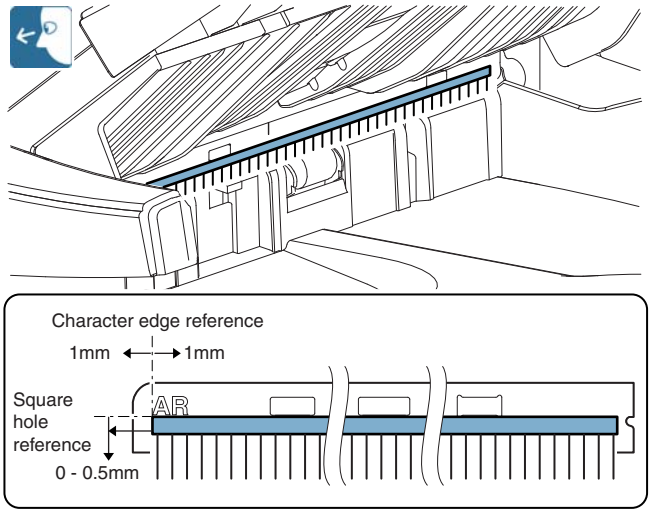



**d. Discharge brush**

1) Open the document tray, and remove the discharge brush.

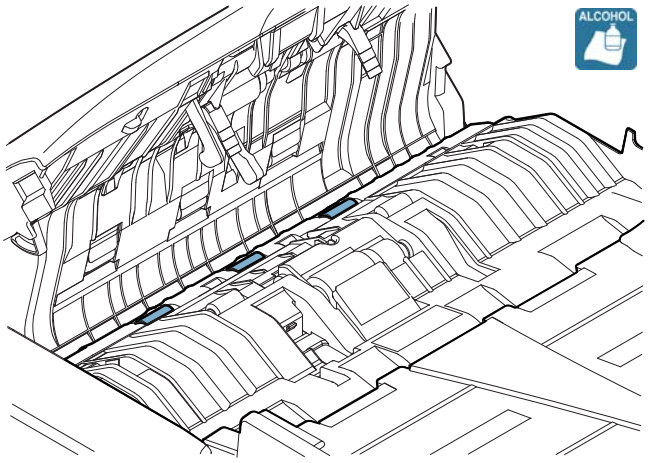
Important

When replacing the discharge brush, attach a new brush to the reference.



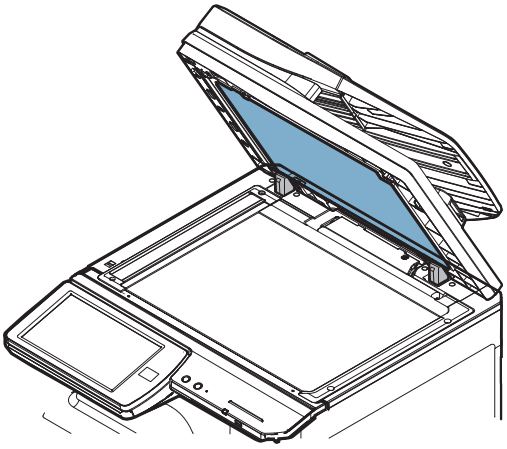

**e. Registration roller**

1) Open the paper feed unit, and clean the registration roller.



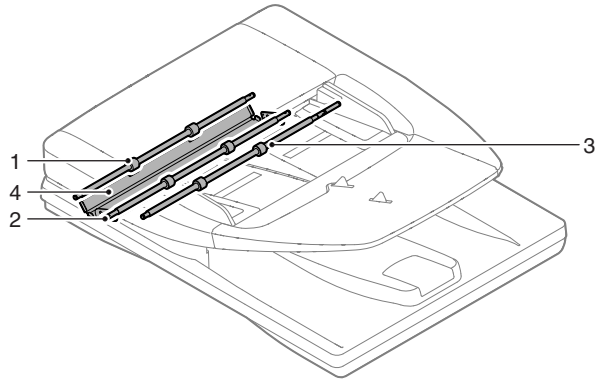

**f. OC mat**

1) Open the RSPF unit, and clean the OC mat.



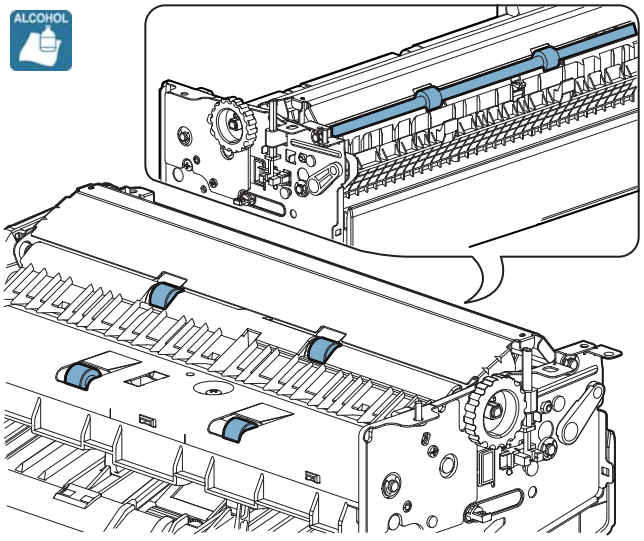
### (2) RSPF transport unit

| No. | Name |
|---|---|
| 1 | Transport roller 2 |
| 2 | Transport roller 3 |
| 3 | Paper exit roller |
| 4 | Scan plate |



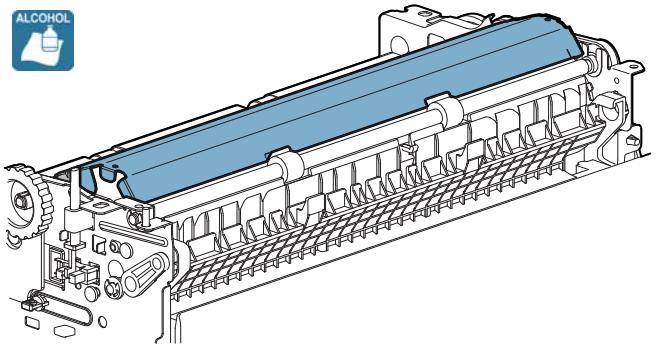

**a. Transport roller 2, Transport roller 3, Paper exit roller**

1) Clean the transport ro ller 2, the transport roller 3, and the paper exit roller




**b. Scan plate**

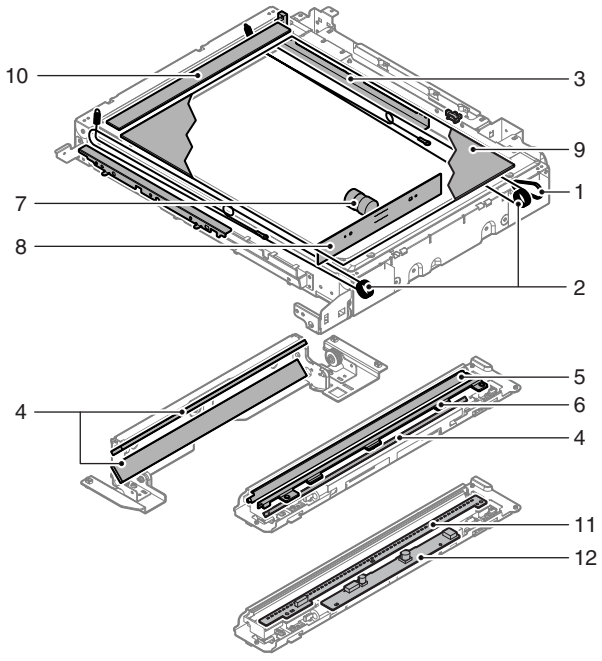
1) Clean the scan plate.




## C. Scanner section

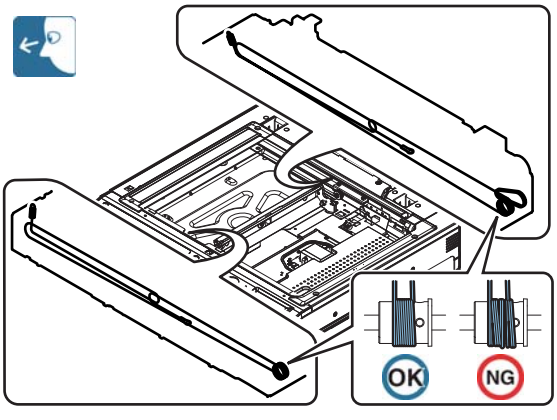
### (1) Scanner unit

| 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**

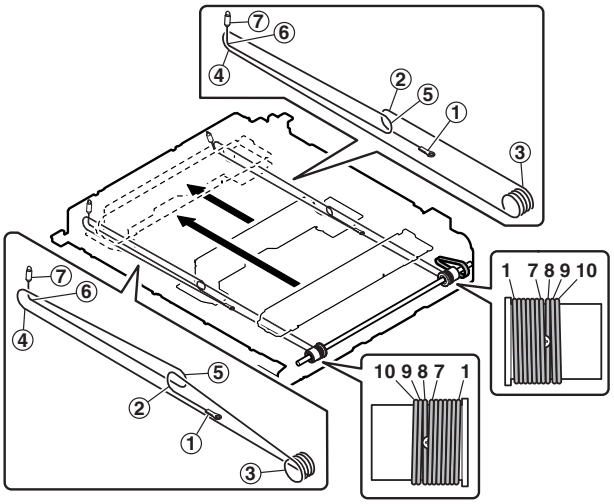
1) Remove the table glass.
2) Check the tension of the drive belt and the drive wire. Check to confirm that the drive wire in the winding pulley is wound without clearance.



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.



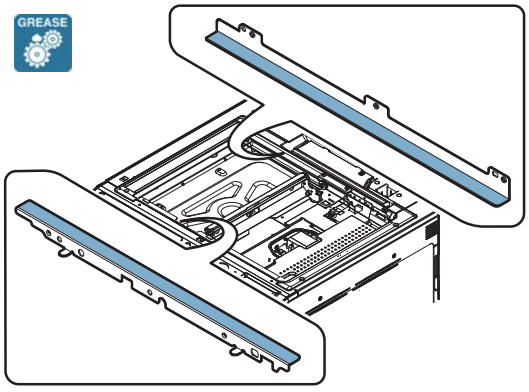

**b. Rails**

1) Remove the table glass.
2) Grease each rail.

Important

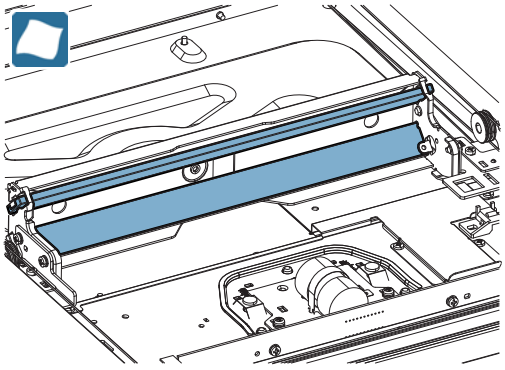
Be careful not to allow grease to come in contact with drive wires.

If grease contacts drive wires, clean wires thoroughly.

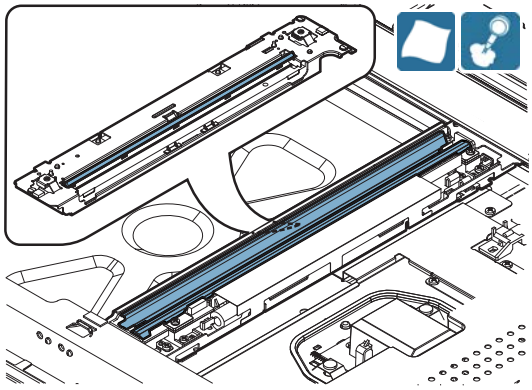



**c. Mirror, Reflector, Scanner lamp**

1) Remove the table glass.
2) Clean the No. 2 mirror, and the No. 3 mirror.

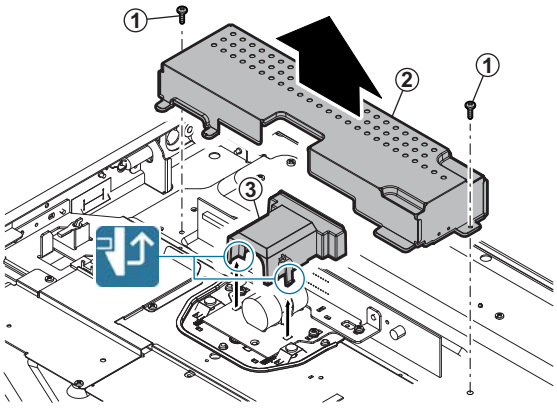


3) Clean the reflector, the scanner lamp, and the No. 2 mirror.

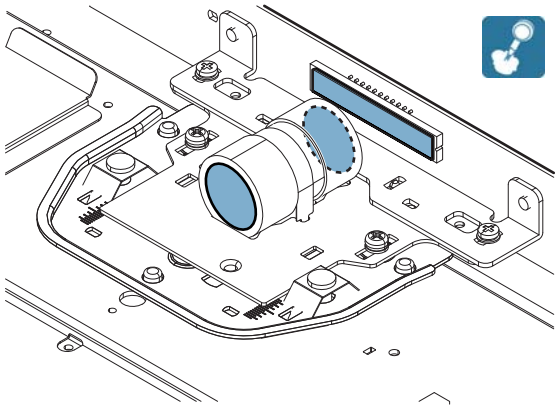


**d. Lens, CCD**

1) Remove the table glass.
2) Remove the dark box, and the cover.

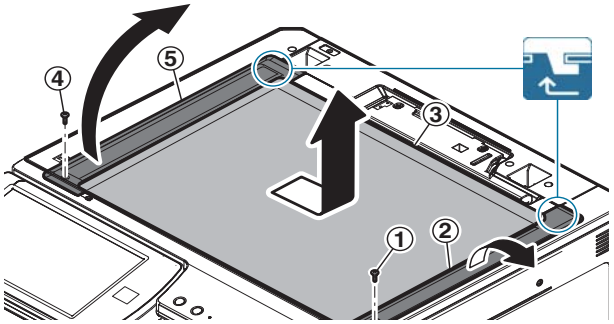


3) Clean the lens, and the CCD.

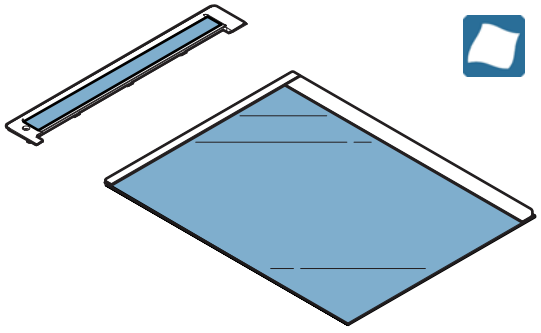


**e. Table glass, SPF glass**

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

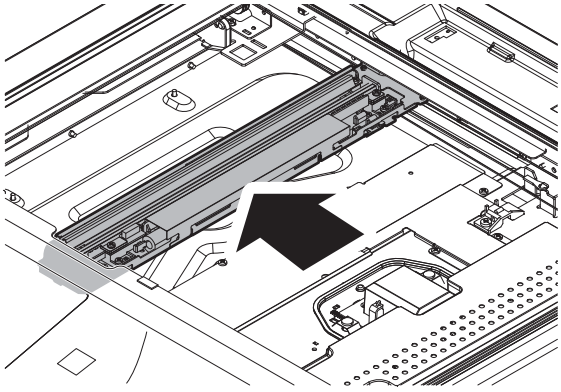


2) Clean the both surfaces of the table glass, and the SPF glass.



**f. LED PWB, LED driver PWB**

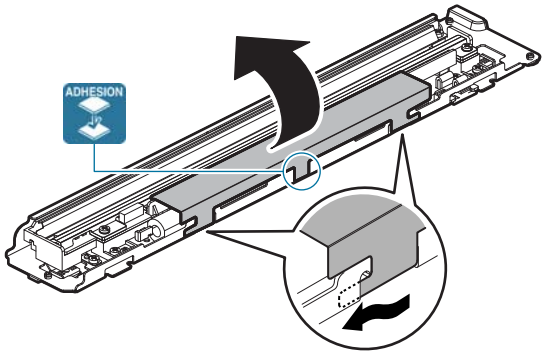
1) Remove the table glass.
2) Shift the lamp unit to the notch section of the scanner base plate.



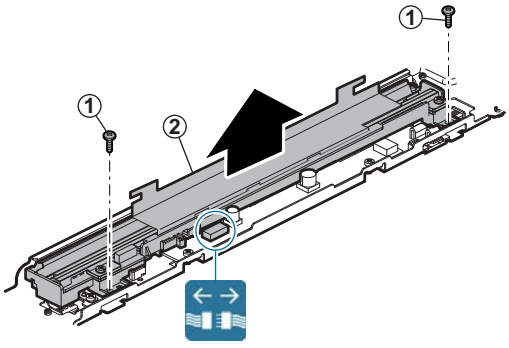
3) Turn over the sheet.

Important

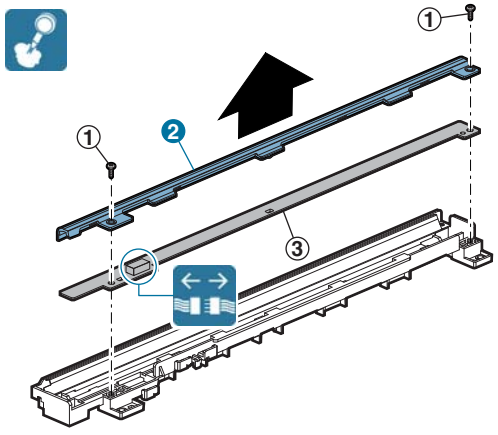
When attaching the sheet to the origin al position, insert the L-shape sections into the inside of the metal plate and attach the center portion to the metal plate with double-stick tape.



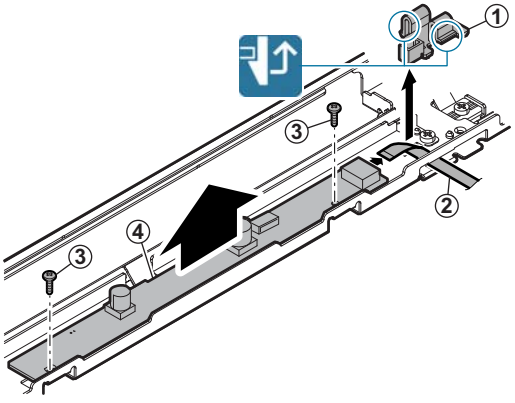

4) Remove the lamp guid e. Disconnect the connector fr om the LED driver PWB.



5) Remove the scanner lamp, and the LED PWB. Disconnect the connector from the LED PWB.



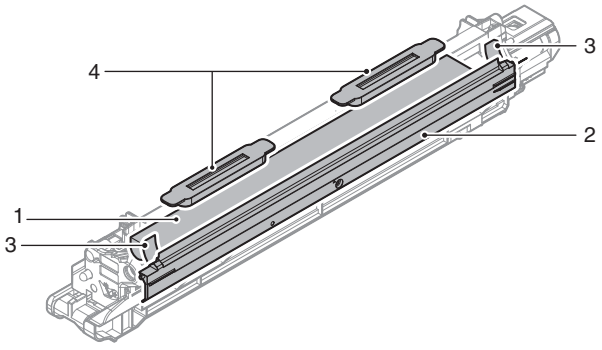
6) Remove the harness holder, and remove the flat cable fr om the LED driver PWB. Remove the LED driver PWB.



## D. Developing section

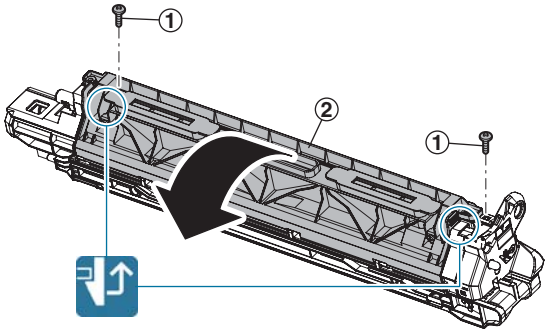
### (1) Developing unit

| No. | Name |
|---|---|
| 1 | Developer |
| 2 | DV seal |
| 3 | DV side seals F/R |
| 4 | Toner filter |

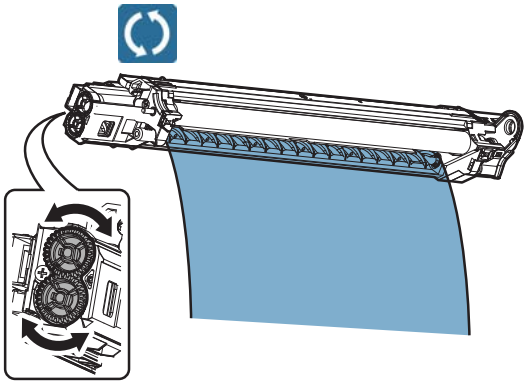



**a. Developer**

1) Open the cover, and remove the developing unit.

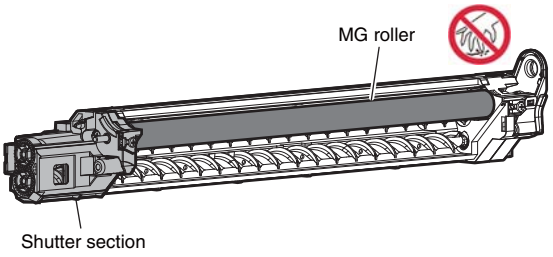



2) While rotating the gear, dispose of developer.



Important

Thoroughly clean developer unit so that no developer remains in the unit. Be careful not to scratch the MG roller.



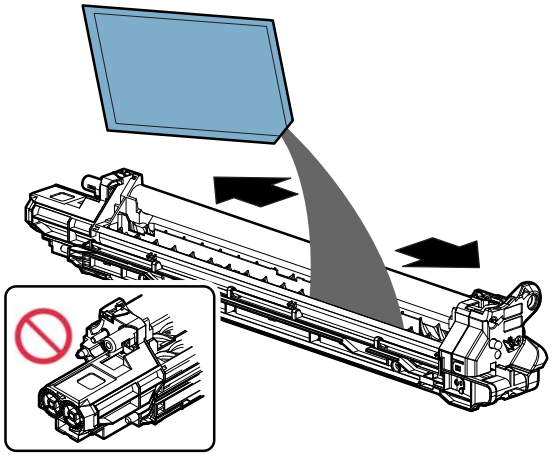

3) Loading developer to the developing units.

Important

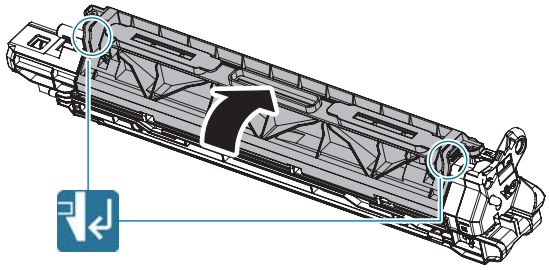
Be sure to shake the bag of developer thoroughly before pouring into the developing unit.

Important

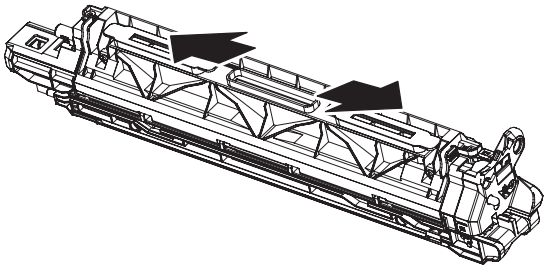
When pouring the developer into the unit, use care to not get developer in to the drive section.



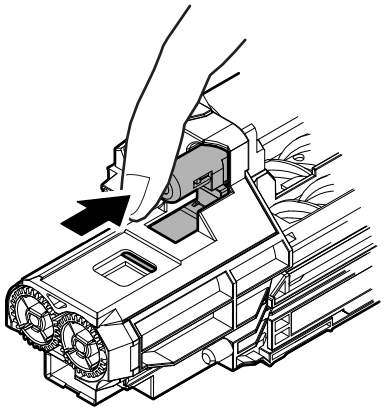
4) Install the cover.



5) Shake the developing unit several times horizontally and strongly.



6) Open the toner shutter of the developing unit and check to confirm that there is proper amount of developer. If not, perform procedure 5) again.



- Check that there is proper amount of developer. (The stirring screw can be partly seen.)

- There is no developer in the shutter position.

- There is too much developer. (The stirring screw cannot be seen.)

Important

Be sure to keep the developing unit level while supplying the developer.

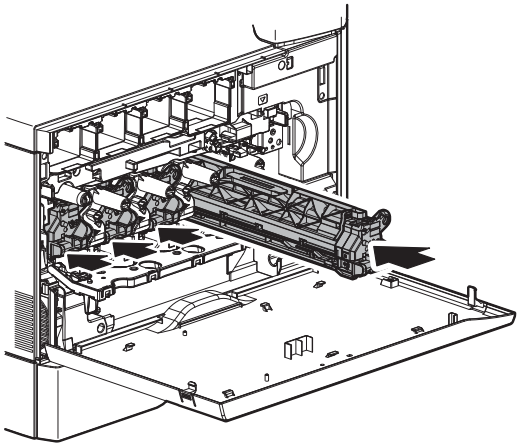
7) Insert the developing unit so as not to give a str ong shock to the main unit.

Important

Slide the developing unit horizontally into the machine, in the direction of the arrow , until developing unit locks in to. place. Do not push the unit diagon ally, as contact with the drum may occur causing damage.

Important

When removing or installing the developing unit, put your hand from below the unit and slide it in parallel along the guide.
At that time, be careful not to touch the roller surface.



Important

When performing the above operation, there is no need to uninstall or install the OPC drum unit. If it must be uninstalled or installed for any reason, follow the procedures below. When uninstalling or installing the OPC drum unit, put your hand from below the unit and slide it in p arallel along the guide on the right side.
At that time, be careful not to touch the OPC drum surface.

8) Set the ADJ 1C toner density control reference value.

**b. DV seal**

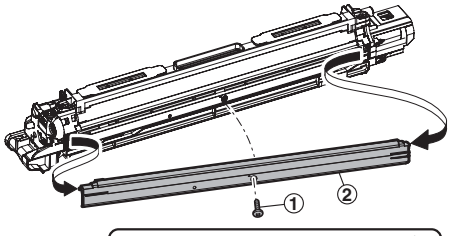
1) Remove the DV seal.

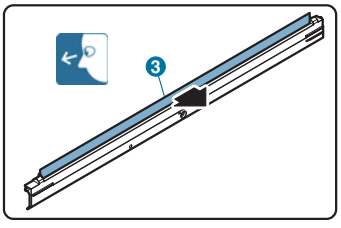
Important

Remove the cover with a screwdriver (-) from the rear side. At that time, be careful not to break the boss on the front side.

Important

When attaching the DV seal to the cover, use care and do not wrinkle the seal.



**c. DV side seals F/R**

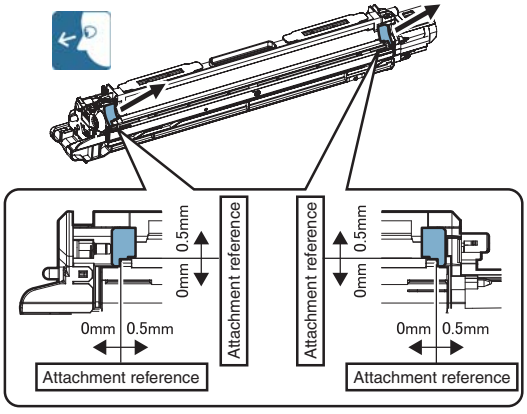
1) Remove the DV side seals F/R.

Important

When replacing the toner DV side seals F/R, attach a new one to the reference.

Important

Before attaching a new seal, be sure to remove foreign materials or remained adhesive completely from the attachment surface.

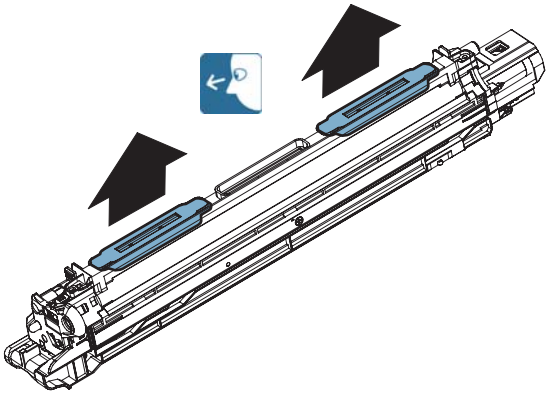



**d. Toner filter**

1) Remove the toner filter.

Important

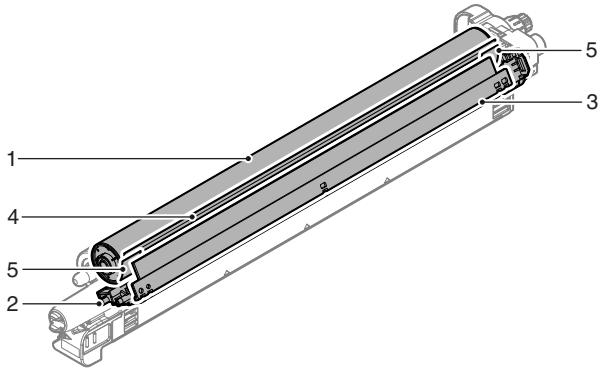
When attaching the toner filter, be su re filter is completely seated.



## E. OPC drum section

### (1) OPC drum unit

| No. | Name |
|---|---|
| 1 | Drum |
| 2 | MC unit |
| 3 | Cleaning blade |
| 4 | Toner reception blade |
| 5 | Side seals F/R |

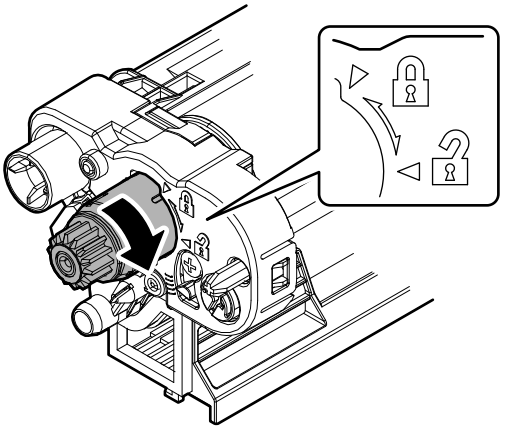



**a. Drum**

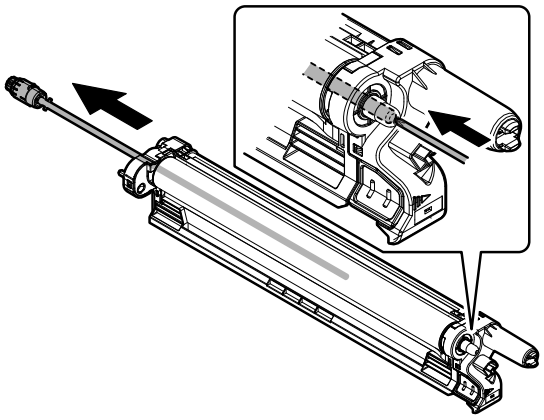
1) Rotate the OPC drum drive gear in the arrow direction (clockwise) to release the drum shaft lock.

Note

When locking or releasing the lock of the drum shaft, check the direction of rotating the drum drive gear indicated on the drum holder on the rear frame side.



2) Insert a small screwdriver or a hex wrench into the hole in the shaft cover on the opposite side of the OPC drum drive gear, and push it in the arrow direction to pull out the drum shaft.



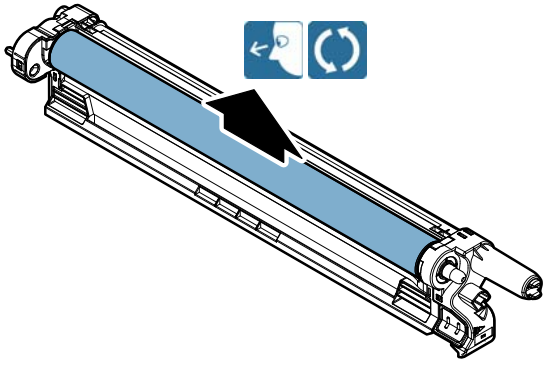
**Note**

In order to improve the image quality, the backlash between the OPC drum shaft and the OPC drum is minimized in this machine. To pull out the OPC drum shaft, therefore, follow the above procedure.

**Important**

Note that conduction grease is applied to the shaft on the OPC drum drive gear side. Be careful not to attach conduction grease to the OPC drum surface.

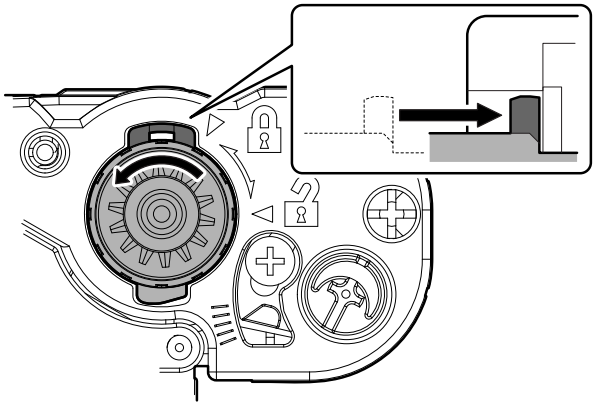
3) Remove the drum.



**Important**

When assembling the drum shaft, set the projection with an opening for the drum drive gear to the position shown in the figure, and push the drum shaft inside. Then, rotate the drum drive gear in the arrow direction (counterclockwise) to lock it.

Check to confirm that the projection of the drum drive gear is securely in the drum holder.



**Important**

**Note for servicing the OPC drums**

**1. Prevent contamination**

**Note**

- Be careful not to leave 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 stearic acid powder 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) If the OPC drum is subject to stress by being exposed to strong light, it may be recovered by leaving it in a dark and cool place.

   If it may not be recovered, replace it with a new one.

**b. MC unit**

1) Remove the cover, and slide the MC un it to the rear side to remove.

Important

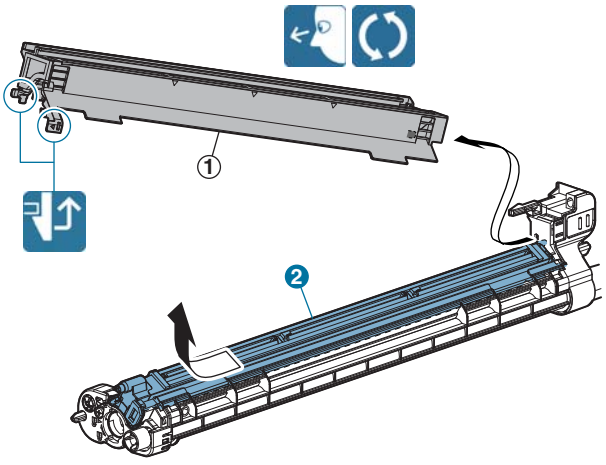
When replacing the MC unit, do not touch the MC grid surface.

Important

When attaching the cover, check to confirm that the seat attached to the cover is not in contact with the MC grid.

Important

Check to confirm that the MC grid of the MC unit is not in contact with the lens and that it is not deformed.




**c. Cleaning blade**

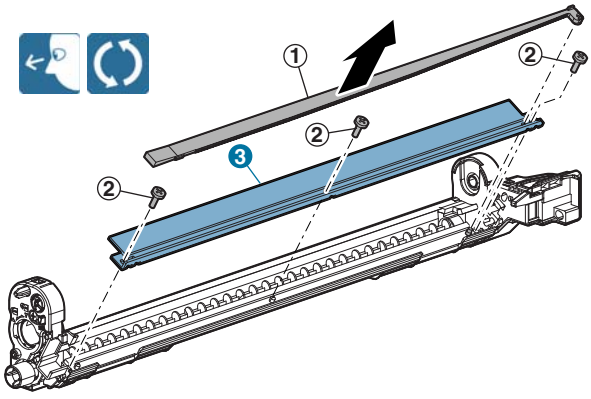
1) Remove the lens. Remove the cleaning blade.

Important

When toner is attached to the lens, wipe with dry cloth or cloth immersed in alcohol.

Important

Do not touch the tip of the cleaning blade.

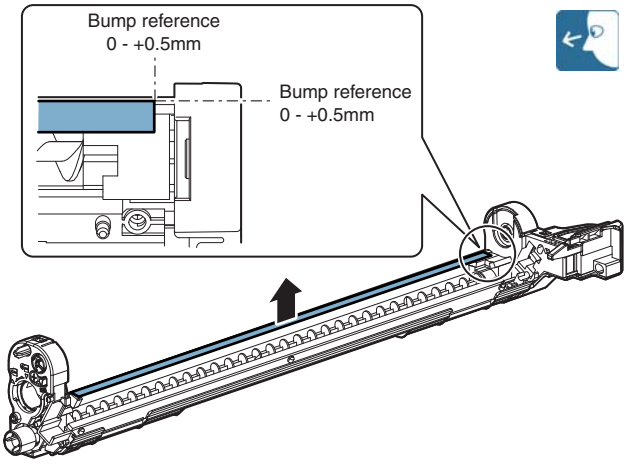



**d. Toner reception blade**

1) Remove the toner reception blade.

Important

When replacing the toner reception blade, attach a new one to the reference.




**e. Side seals F/R**

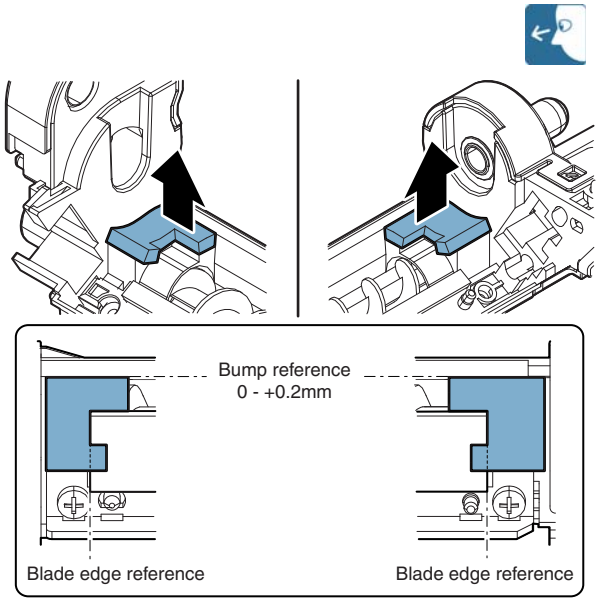
1) Remove the side seals F/R.

Important

When replacing the side seals F/R, attach the cleaning blade in advance, then attach a new seal to the reference.

Important

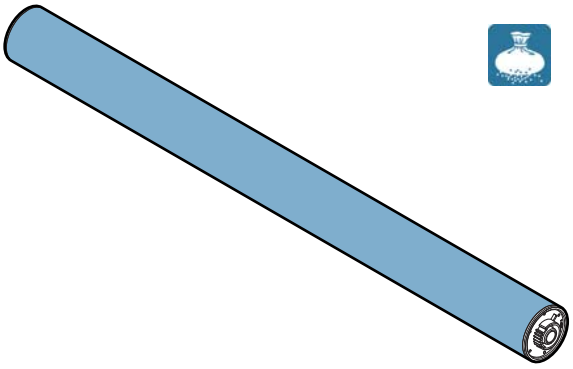
Thoroughly clean the fr ame surface of any old glue residue before attaching the new seals.



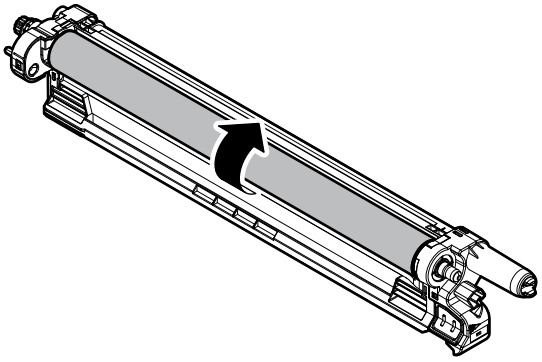
Important

When the OPC drum is removed, perform the following procedures.

1) After removing the OPC drum, apply stea ric acid powder (UKOG-0312FCZZ) to the whole surface of the OPC drum.



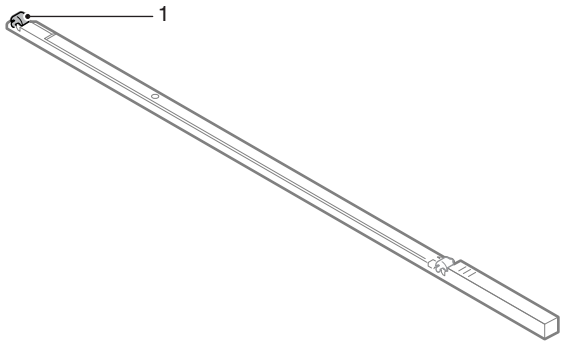
2) After attaching the OPC drum to the OPC drum frame, use the black protect sheet or copy p aper, and manually r otate the OPC drum two turns in the forward direction to remove stearic acid powder applied to the OPC drum surface.



- Do not touch the OPC drum surface except for the both ends (5mm) of the OPC drum.
- Any section of the OPC drum ma y be touched from above the black protect sheet, but do not touch too strongly.

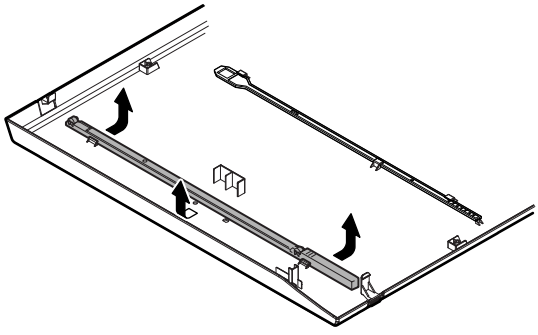
### (2) MC cleaning rod

| No. | Name |
|---|---|
| 1 | Charger cleaner |

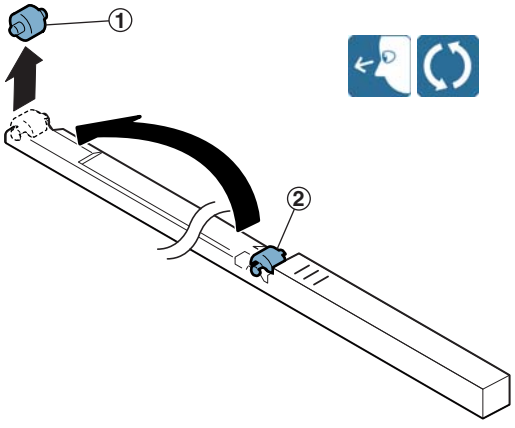



**a. Charger cleaner**

1) Open the front cabinet, and remove the MC cleaning rod.



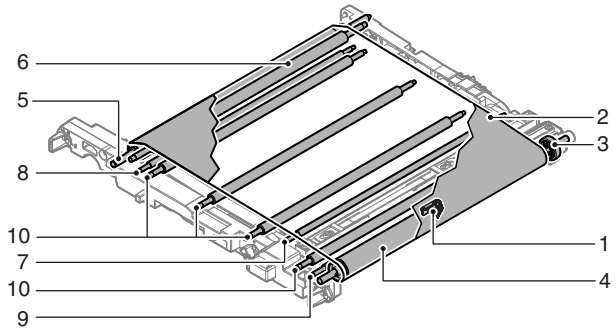
2) Remove the charger cleaner at the lead edge of the MC cleaning rod, and attach a new charger cleaner.



## F. Transfer section

### (1) Primary transfer unit

| No. | Name |
|---|---|
| 1 | Separation pawl |
| 2 | Primary transfer belt |
| 3 | Secondary transfer drive transmission gear |
| 4 | Primary transfer belt drive roller |
| 5 | Primary transfer belt follower roller |
| 6 | Primary transfer belt tension roller |
| 7 | Registration backup roller |
| 8 | Y auxiliary roller |
| 9 | PTC backup roller |
| 10 | Primary transfer roller |



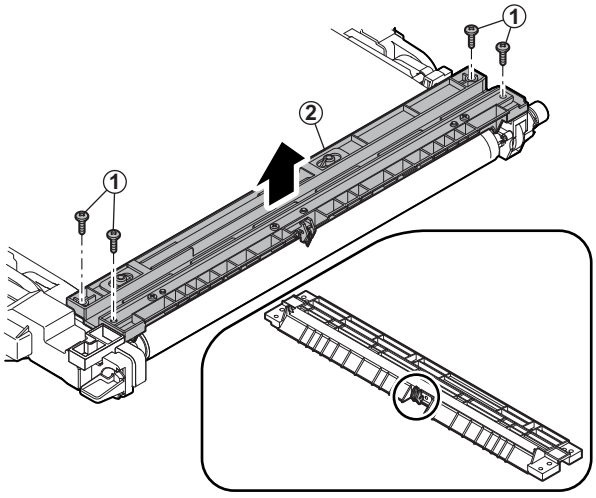

#### a. Separation pawl, Primary transfer belt

1) Remove the paper guide.

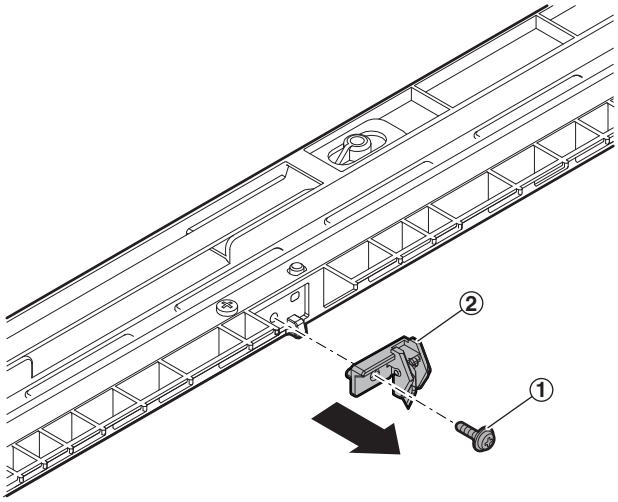
Important

After removing the paper guide, place it so that the separation pawl faces upward in order to protect the separation pawl tip from damages.

In addition, when attaching the paper guide, be careful not to damage the transfer belt by the separation pawl.




2) Remove the separation pawl from the paper guide.

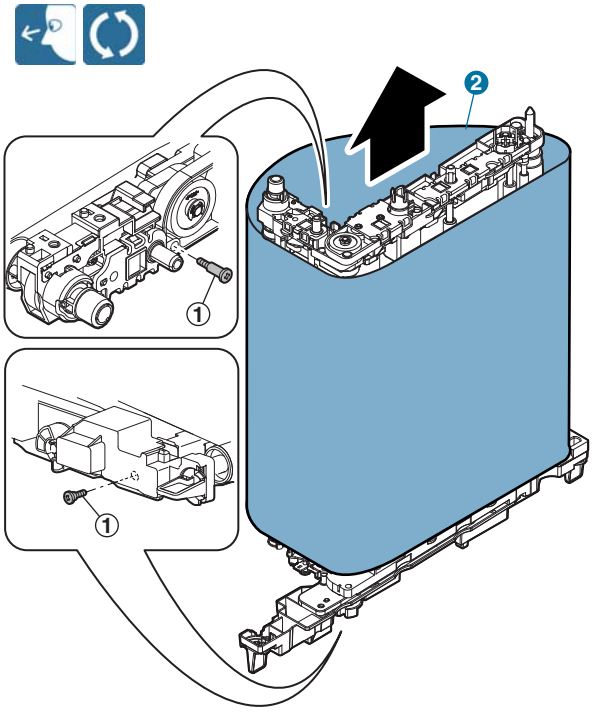



3) Remove the primary transfer unit.

4) Fold the primary transfer unit, and remove the primary transfer belt.

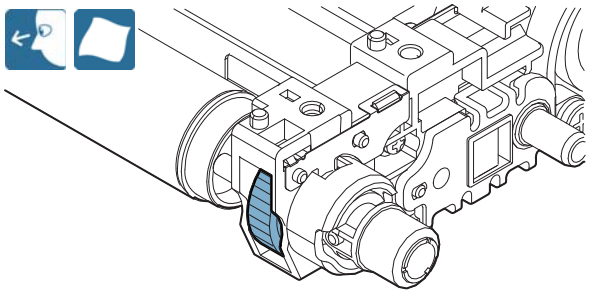
Important

The length of the mounting screw on the front side differs from that on the rear side. The screw on the rear side is longer than that on the front side.



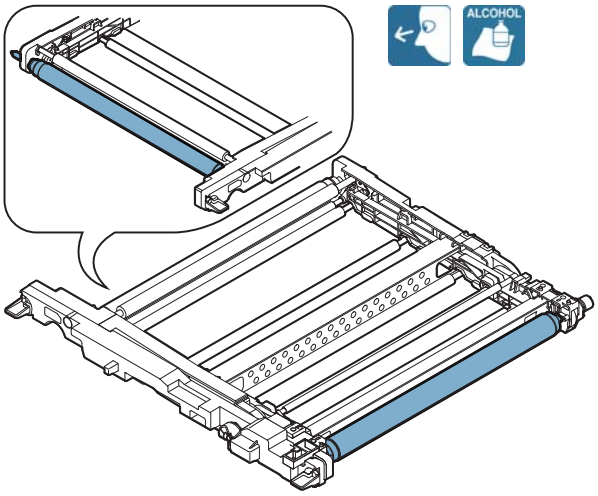

#### b. Secondary transfer drive transmission gear

1) Clean the secondary transfer driver transmission gear.



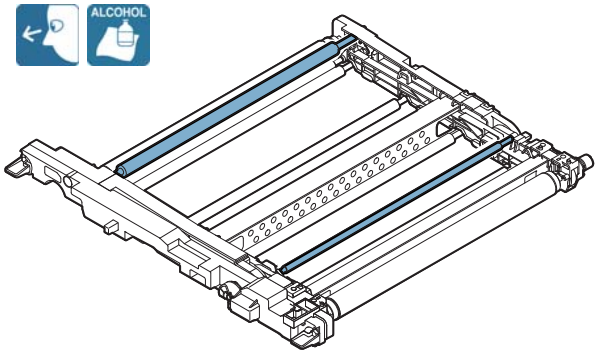
**c. Primary transfer belt drive roller, Primary transfer belt follower roller**

1) Clean the primary transfer belt drive roller, and the primary transfer belt follower roller.



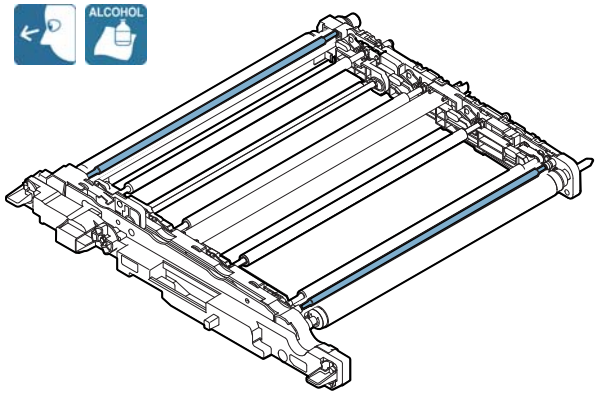

**d. Primary transfer belt tension roller, Registration backup roller**

1) Clean the primary transfer belt tension roller, registration backup roller.




**e. Y auxiliary roller, PTC backup roller**

1) Clean the Y auxiliary roller, and the PTC backup roller.



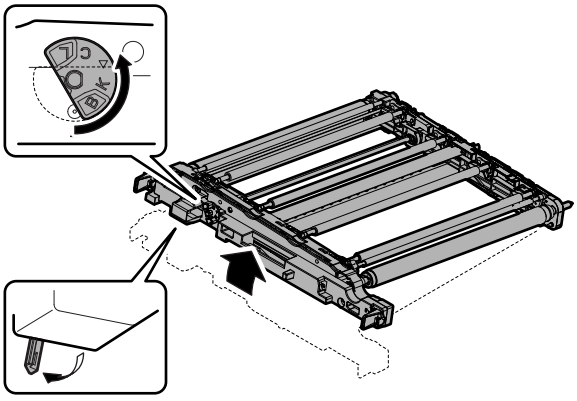

**f. Primary transfer roller**

1) With the front section of the primary transfer unit slightly lifted, rotate the transfer lock cam knob counterclockwise so that it is at the angle shown in the figure.

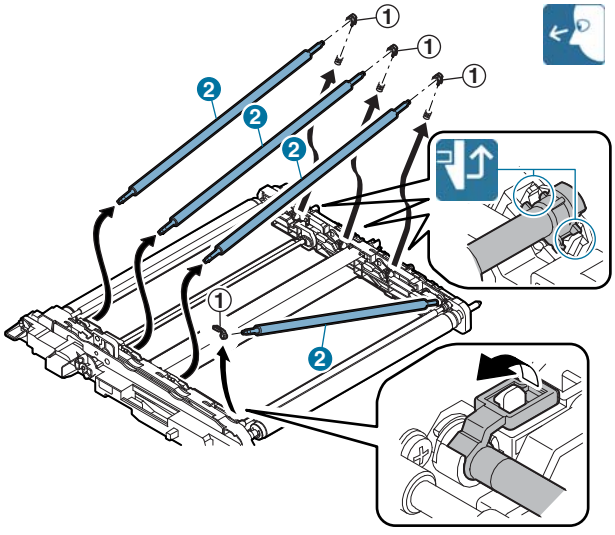
With the above procedure, the primary transfer roller may be removed.

Important

Be sure to slightly lift the front section of the primary transfer unit when rotating the transfer lock cam knob. If not, a stress is applied to the standard reflection plate lever, causing a trouble.



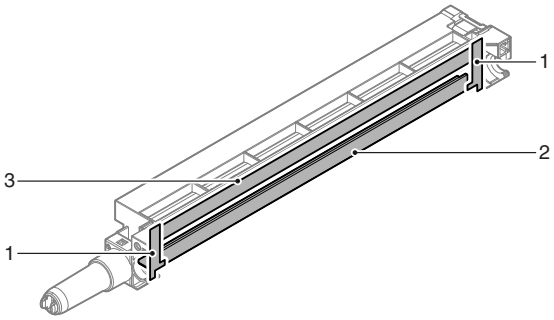
2) Release the lock of the bearing, and remove the bearing and the primary transfer roller.




3) With the front section of the primary transfer unit slightly lifted, return the transfer lock cam knob to the neutral angle.

## (2) Primary transfer cleaner unit

| No. | Name |
|---|---|
| 1 | Transfer cleaner seal F/R |
| 2 | Primary transfer belt cleaner blade |
| 3 | Primary transfer toner reception blade |



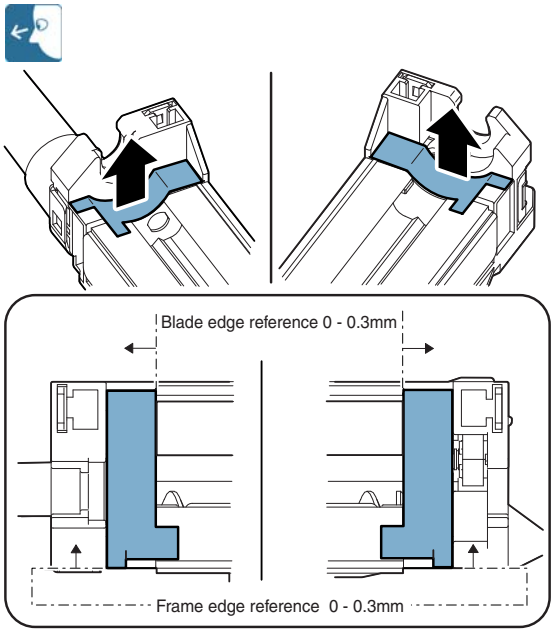

### a. Transfer cleaner seal F/R

1) Remove the transfer cleaner seal F/R.

Important

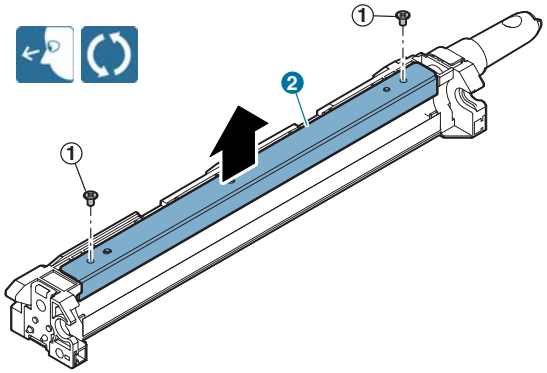
When replacing the transfer cleaner seals R/F, attach a new seal to the reference.

Thoroughly clean the frame surface of any old glue residue before attaching the new seals.




### b. Primary transfer belt cleaner blade

1) Remove the primary transfer belt cleaner blade.



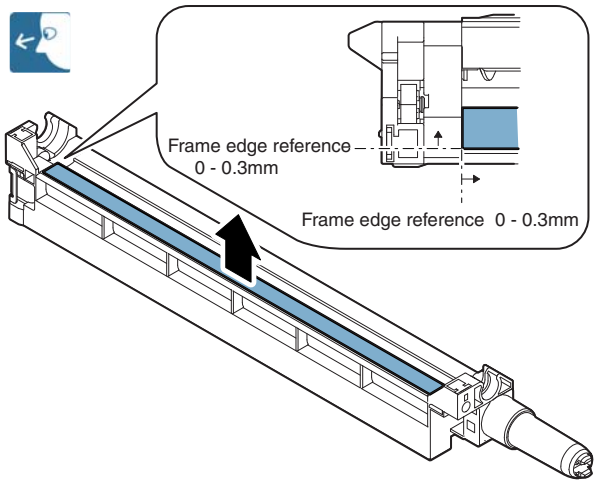

### c. Primary transfer toner reception blade

1) Remove the primary transfer toner reception blade.

Important

When replacing the primary transfer toner reception blade, attach a new one to the reference.

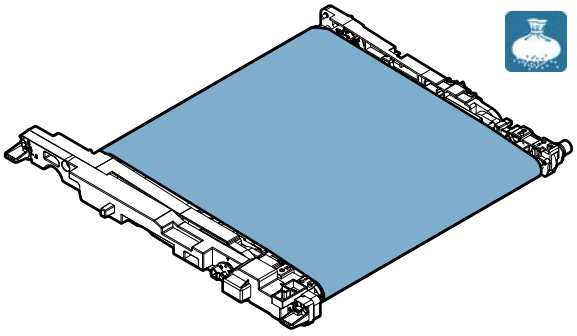
Thoroughly clean the fr ame surface of any old glue residue before attaching the new seals.



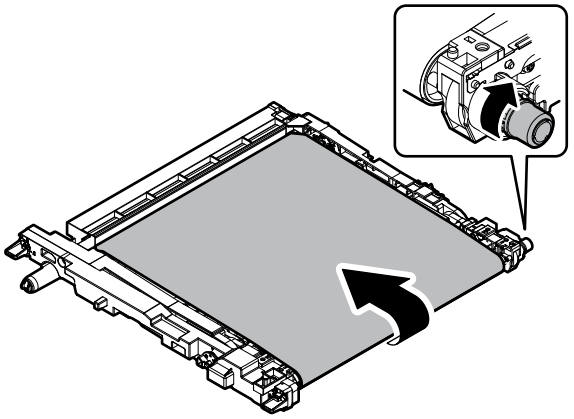

Important

After replacement of the primary transfer belt, perform the following procedures.

1) With the primary transfer cleaner unit removed, apply starting powder (UKOG-0123FCZZ) to the whole surface of the primary transfer belt.

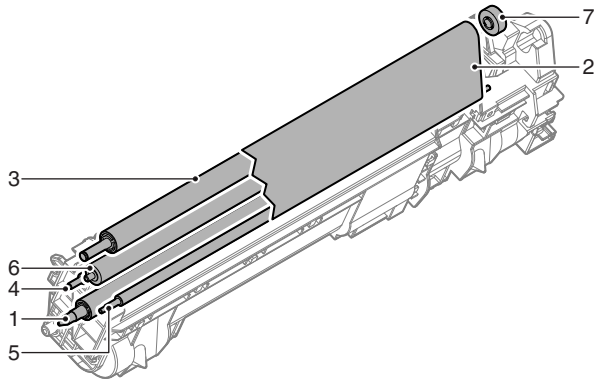


2) Attach the primary transfer cleaner unit.
3) Manually rotate the transfer belt drive gear to remove starting powder from the primary transfer belt clearly.



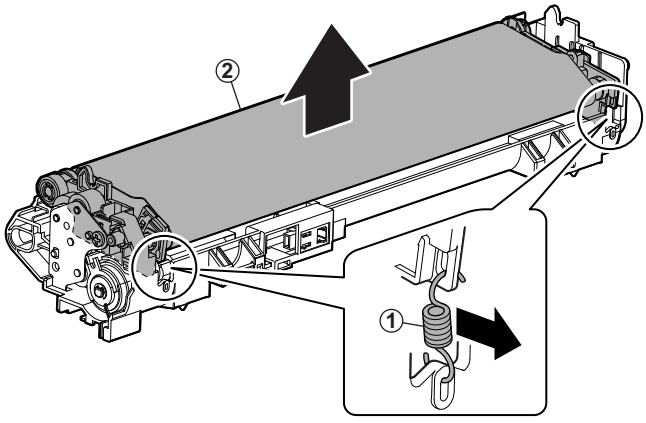
### (3) Secondary transfer unit

| No. | Name |
|---|---|
| 1 | Secondary transfer belt follower roller |
| 2 | Secondary transfer belt |
| 3 | Secondary transfer belt drive roller |
| 4 | Secondary transfer backup roller |
| 5 | Secondary transfer belt tension roller |
| 6 | Secondary transfer roller |
| 7 | Secondary transfer drive gear |




**a. Secondary transfer belt follower roller, Secondary transfer belt**

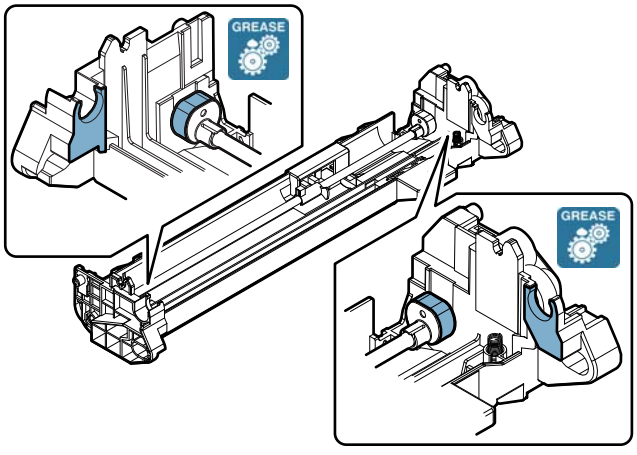
1) Remove the spring, and separate the secondary transfer belt unit and the secondary transfer base unit.



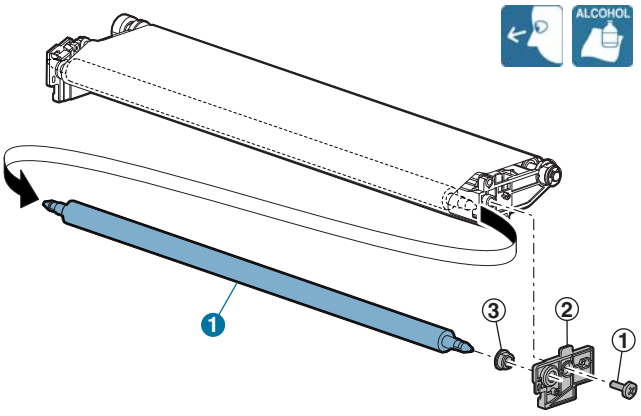

Important

Before assembling the secondary transfer belt unit and the secondary transfer base unit, apply grease (HANAL FL-955R) to the cam and the frame of the secondary transfer base unit.

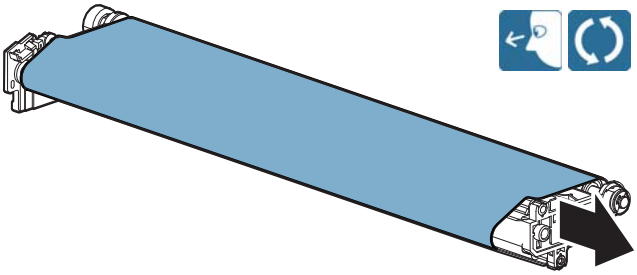
* Use care not to apply grease to the secondary transfer belt.




2) Remove the holder, and remove the secondary transfer belt follower roller. Clean the secondary transfer belt follower roller.

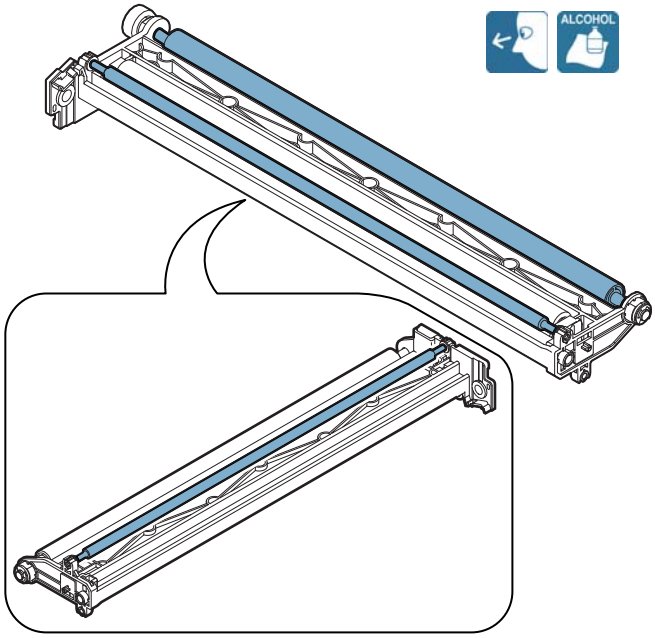



3) Remove the secondary transfer belt.



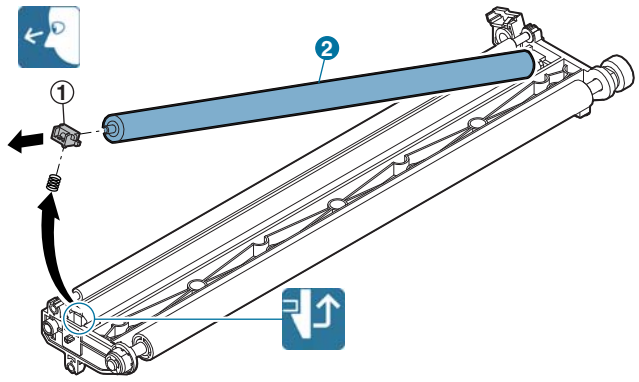
**b. Secondary transfer belt drive roller, Secondary transfer backup roller, Secondary transfer belt tension roller**

1) Clean the secondary transfer belt drive roller, the secondary transfer backup roller, and the secondary transfer belt tension roller.



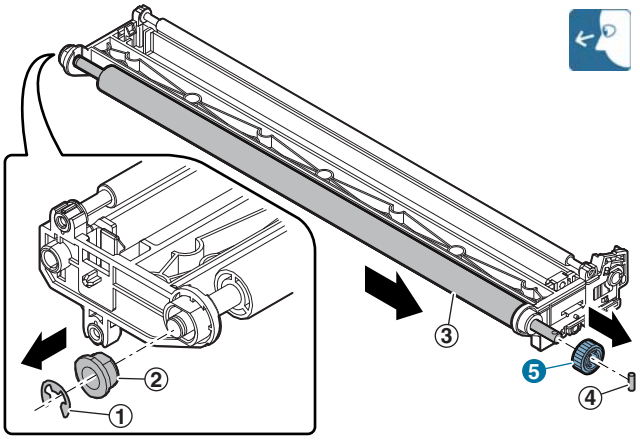
**c. Secondary transfer roller**

1) Remove the bearing, and r emove the secondary transfer roller.



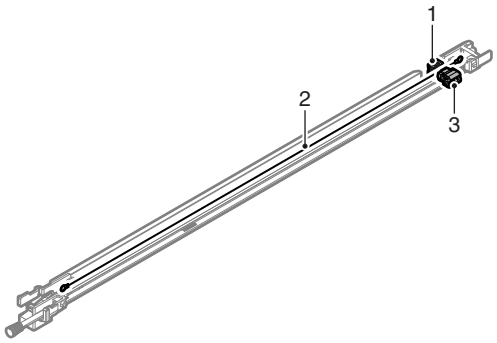

**d. Secondary transfer drive gear**

1) Remove the E-ring and the bearing. Slide the secondary transfer belt drive roller, and remove the parallel pin and the secondary transfer drive gear.




**(4) PTC unit**

| No. | Name |
|---|---|
| 1 | PTC cleaner |
| 2 | PTC wire |
| 3 | PTC cleaner holder |

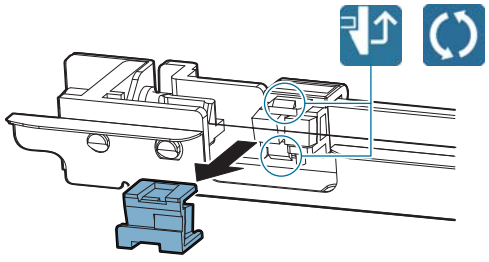



**a. PTC cleaner, PTC wire, PTC cleaner holder**

1) Remove the PTC cleaner.

Important

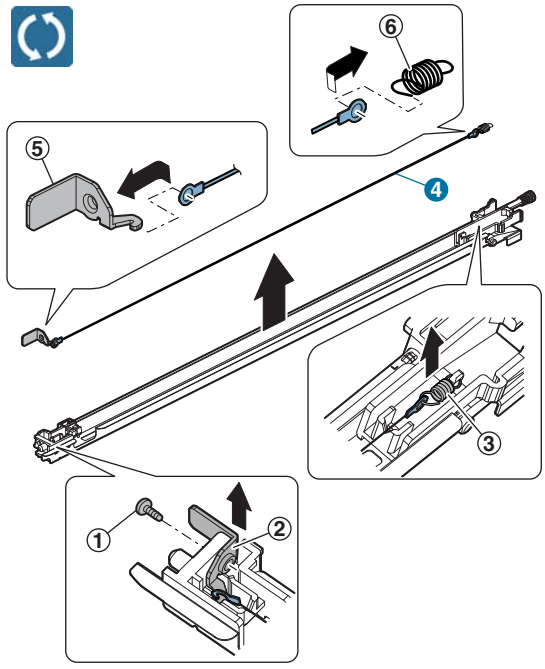
Check to confirm that the P TC wire is located at the cente r between the PTC cleaner holder and the PTC cleaner.



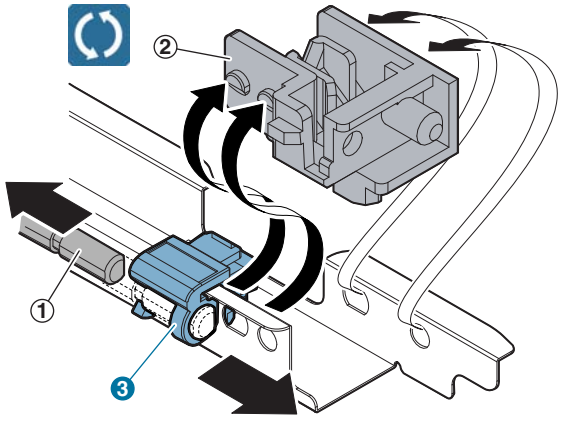
2) Remove the electrode plate, and r emove the spring. Remove the electrode plate and the spring from the PTC wire.

Important

Do not touch the wire section of the PTC wire with bare hands.



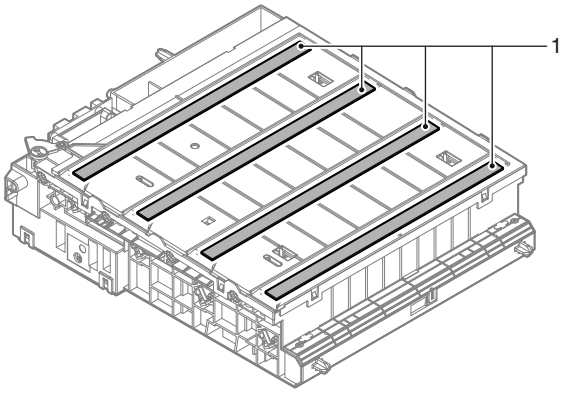

3) Remove the holder, and remove the PTC cleaner holder.




## G. LSU section

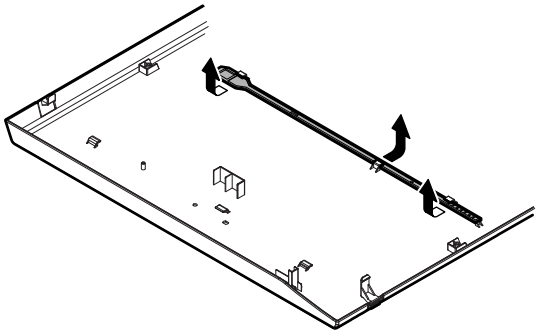
### (1) LSU

| No. | Name |
|---|---|
| 1 | Dust-proof glass |

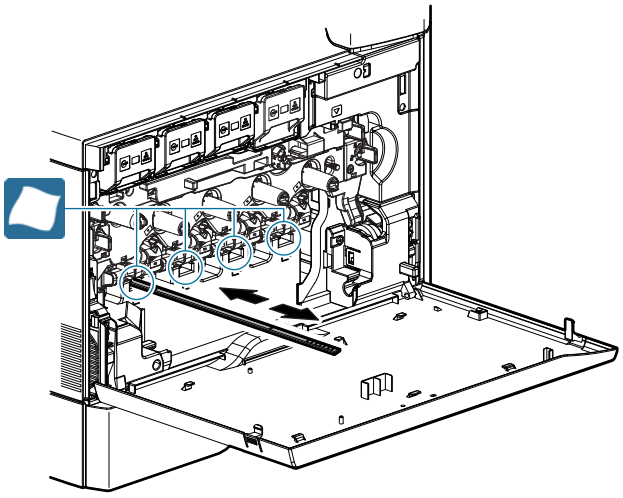



**a. Dust-proof glass**

1) Remove the waste toner box.
2) Remove the LSU cleaning rod from the front cabinet.

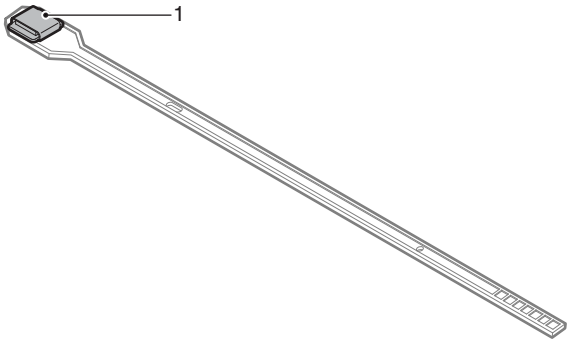


3) Insert the LSU cleaning rod with the felt side dow nward, and move it back and forth several times to clean the LSU dust-proof glass.



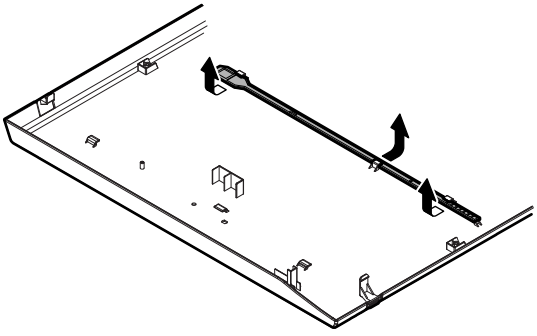
### (2) LSU cleaning rod

| No. | Name |
|---|---|
| 1 | Cleaning base |

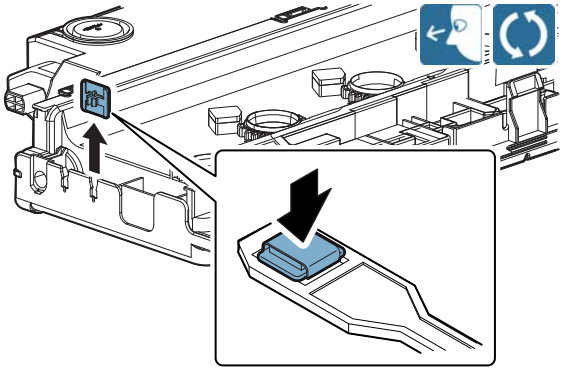



**a. Cleaning base**

1) Remove the waste toner box.
2) Remove the LSU cleaning rod from the front cabinet.



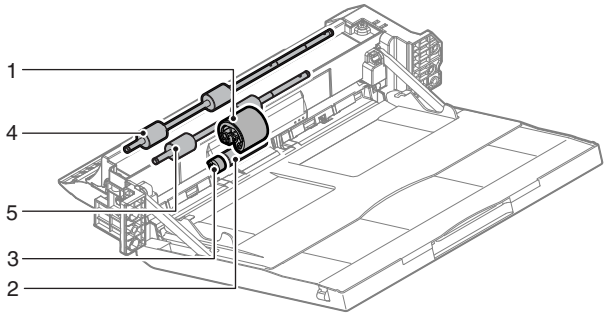
3) Remove the cleaning base from the waste toner box, and attach it to the LSU cleaning rod.



## H. Manual paper feed section

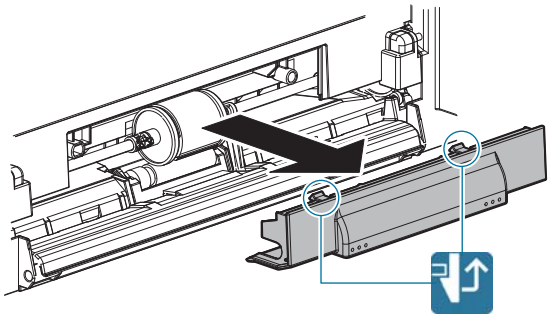
### (1) Manual paper feed unit

| No. | Name |
|---|---|
| 1 | Paper feed roller |
| 2 | Separation roller |
| 3 | Torque limiter |
| 4 | Transport roller 9 |
| 5 | Transport roller 10 (36cpm machine) |

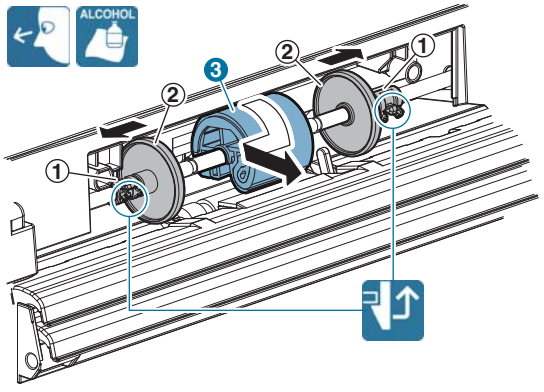



**a. Paper feed roller, Separation roller, Torque limiter**

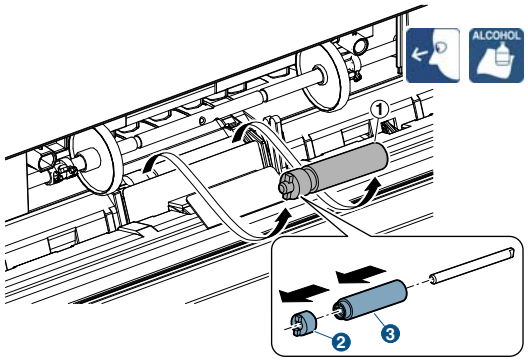
1) Remove the cover.



2) Slide the stopper and the collar, and remove the paper feed roller.

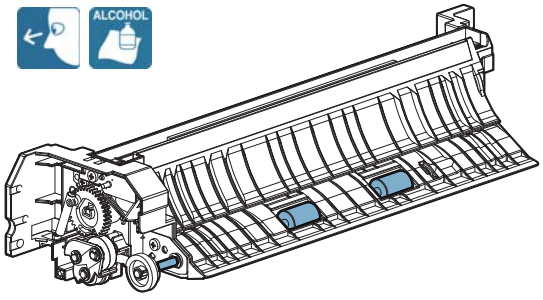


3) Remove the separation roller, and the torque limiter.



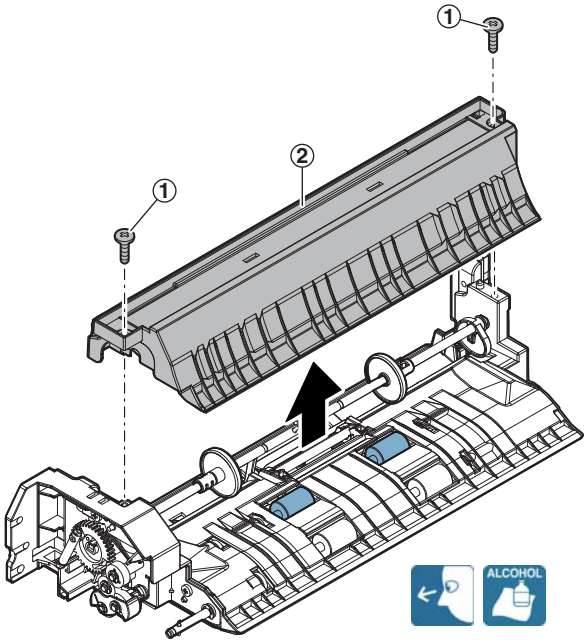

**b. Transport roller 9**

1) Clean the transport roller 9.




**c. Transport roller 10**

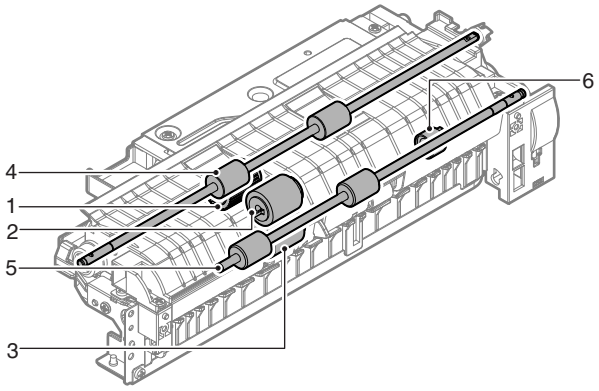
1) Remove the paper guide, and clean the transport roller 10.




## I. Tray paper feed section

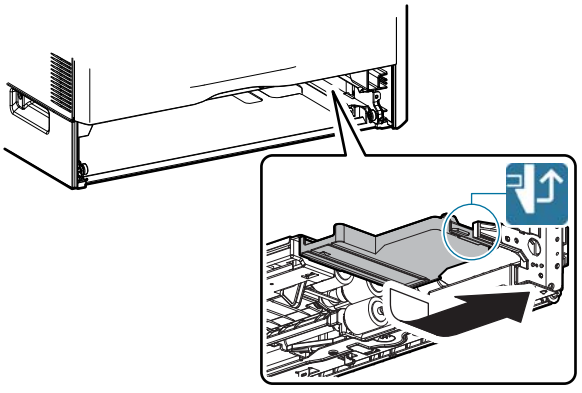
### (1) Tray paper feed unit

| No. | Name |
|---|---|
| 1 | Paper pickup roller |
| 2 | Paper feed roller |
| 3 | Separation roller |
| 4 | Transport roller 4 |
| 5 | Transport roller 2 |
| 6 | Torque limiter |

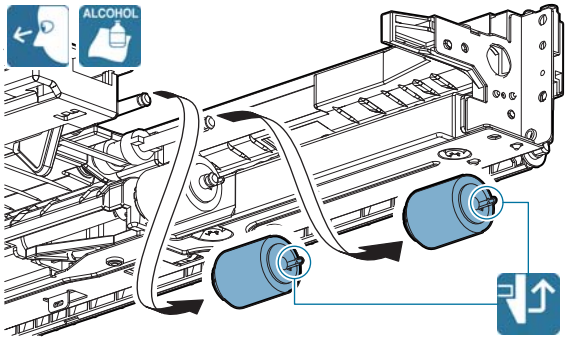



**a. Paper pickup roller, Paper feed roller, Separation roller**

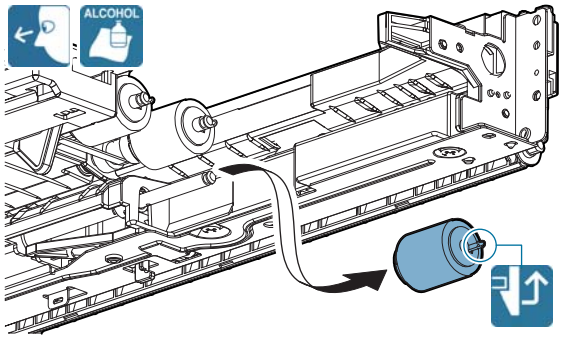
1) Remove the paper feed tray.
2) Remove the paper guide.



3) Remove the paper pickup roller, and the paper feed roller.

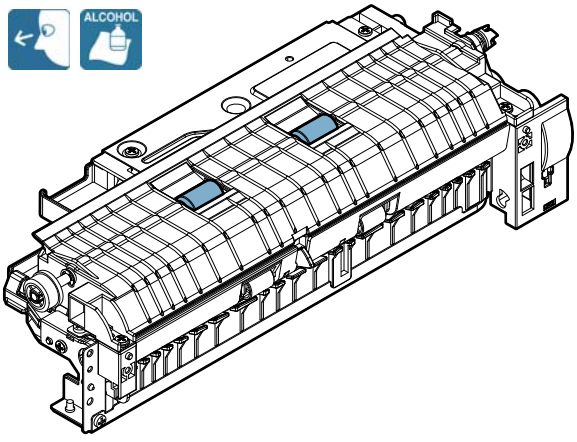


4) Remove the separation roller.



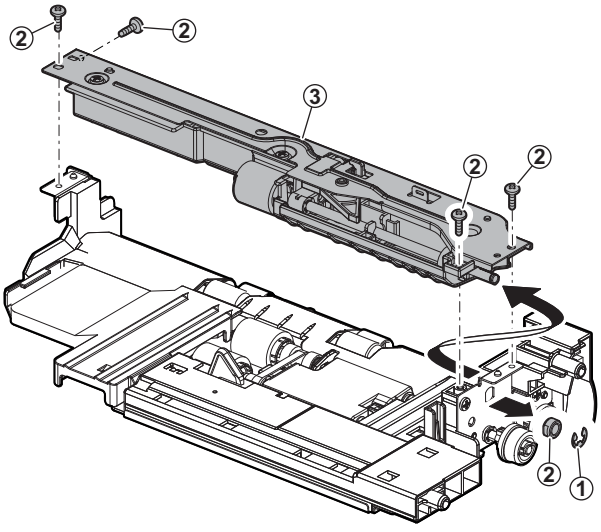

**b. Transport roller 4**

1) Clean the transport roller 4.

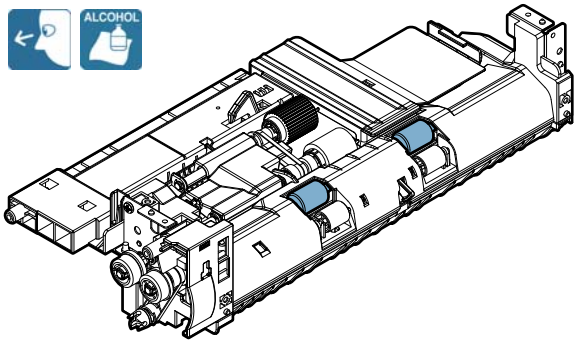



**c. Transport roller 2**

1) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.

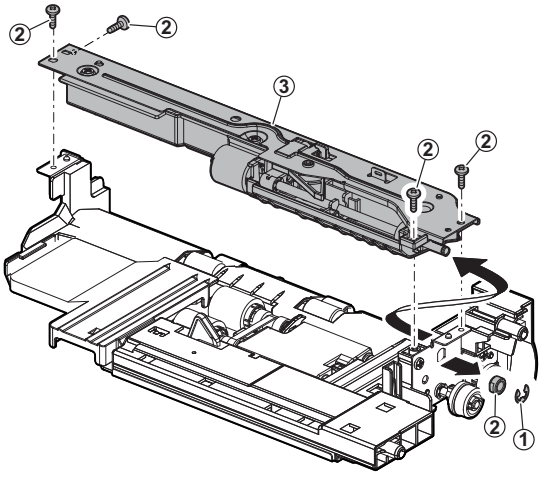



2) Clean the transport roller 2.

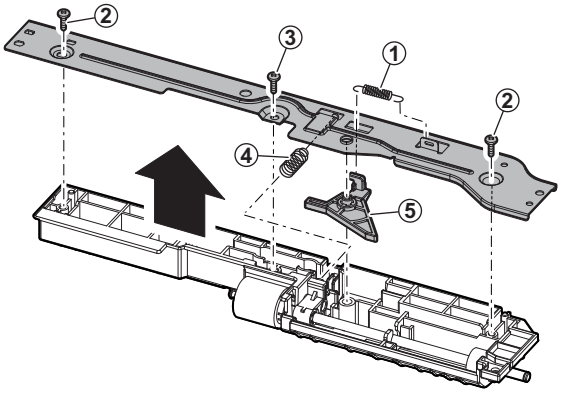



**d. Torque limiter**

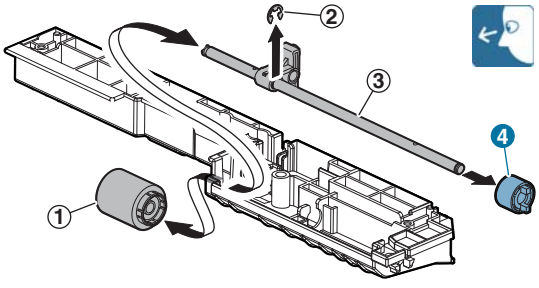
1) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.




2) Remove the spring, and remove the reinforcement plate. Remove the spring, and the separation pressure release plate.



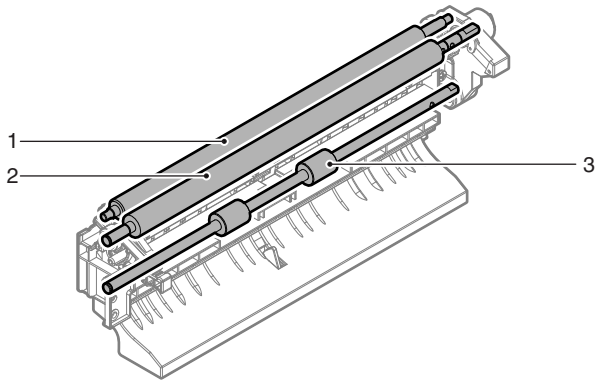

3) Remove the separation roller. Remove the E-ring, and the shaft, and remove the torque limiter.



## J. Paper transport/Paper exit/ADU section

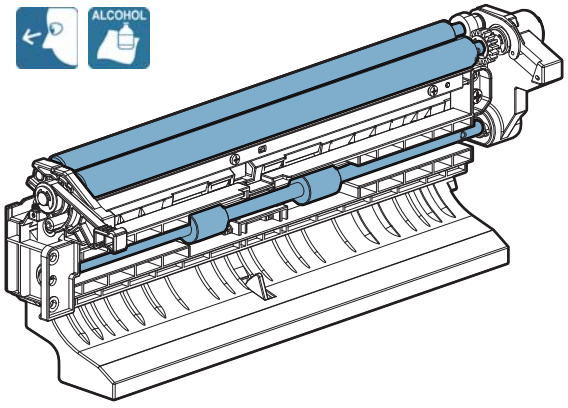
### (1) PS unit

| No. | Name |
|---|---|
| 1 | Registration roller (Idle) |
| 2 | Registration roller (Drive) |
| 3 | Transport roller 5 |



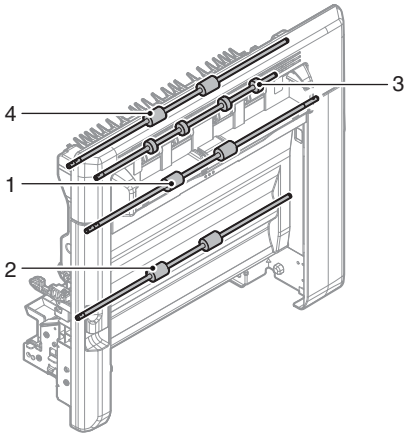

**a. Registration roller (Idle), Registration roller (Drive), Transport roller 5**

1) Clean the registration roller (Idle), the registration roller (Drive), and the transport roller 5.



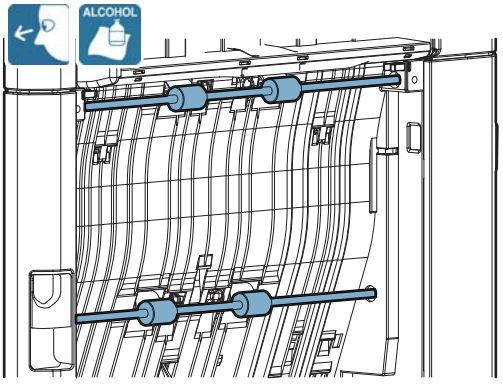

### (2) Right door unit

| No. | Name |
|---|---|
| 1 | Transport roller 7 |
| 2 | Transport roller 8 |
| 3 | Paper exit roller 3 |
| 4 | Paper exit roller 2 |



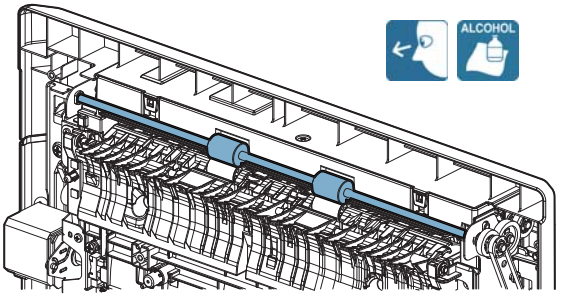

**a. Transport roller 7, Transport roller 8**

1) Open the ADU open/close door, and clean the transport roller 7, and the transport roller 8.



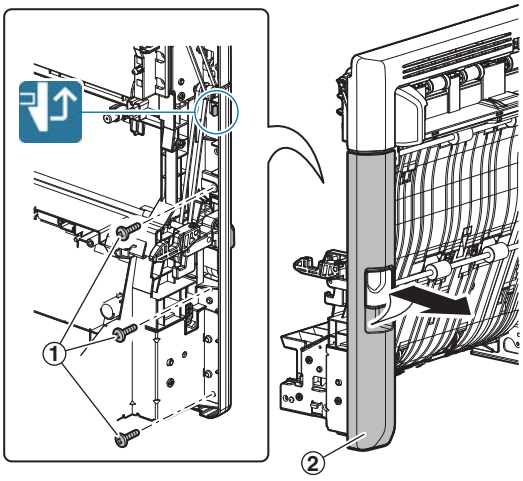

**b. Paper exit roller 3**

1) Open the right door unit, and clean the paper exit roller 3.

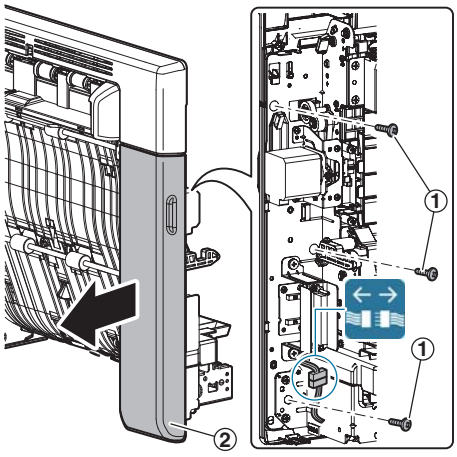


**c. Paper exit roller 2**

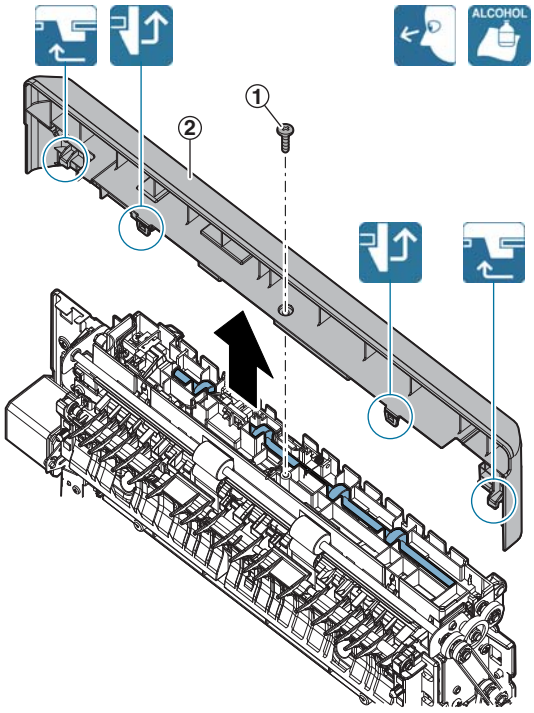
1) Open the right door unit, and remove the cover.




2) Remove the cover.

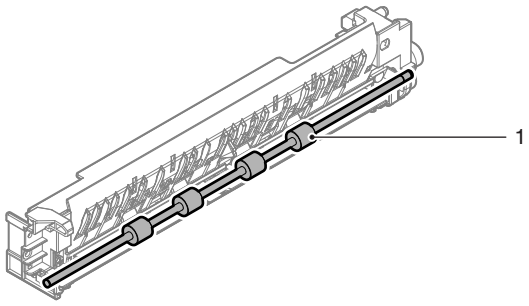



3) Remove the cover, and clean the paper exit roller 2.



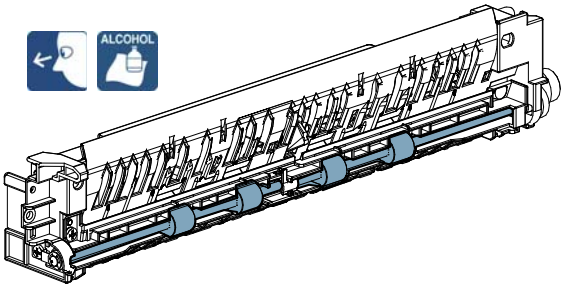

## (3) Fusing rear unit

| No. | Name |
|---|---|
| 1 | Transport roller 6 |



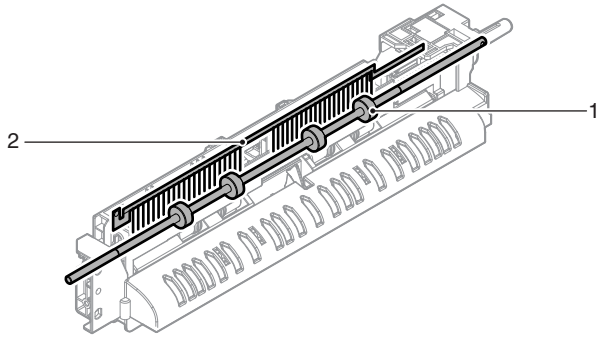

**a. Transport roller 6**

1) Clean the transport roller 6.



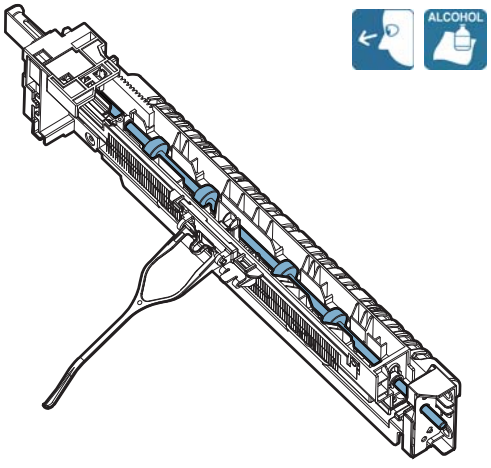
### (4) Paper exit unit

| No. | Name |
|---|---|
| 1 | Paper exit roller 1 |
| 2 | Discharge brush |



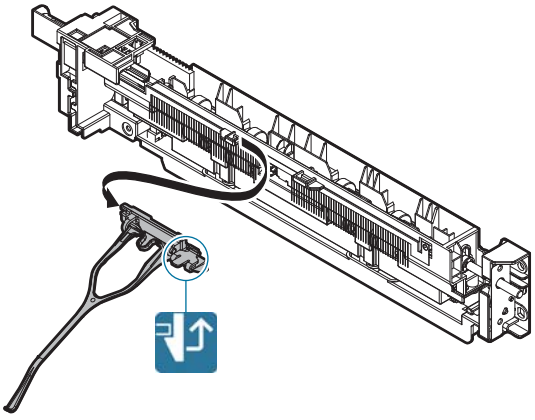

**a. Paper exit roller 1**

1) Clean the paper exit roller 1.




**b. Discharge brush**

1) Remove the holder.



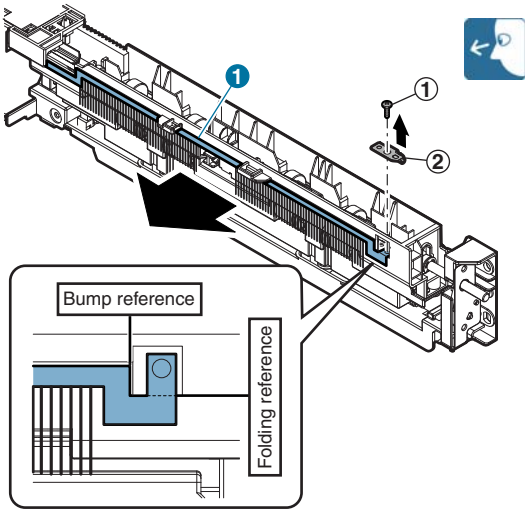
2) Remove the earth plate. Remove the discharge brush.

Important

When replacing the discharge brush, attach a new brush to the reference.

Important

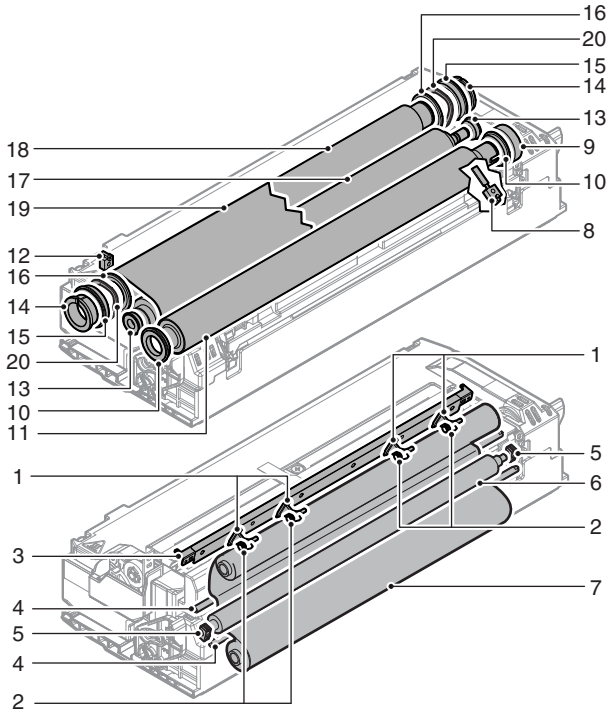
Thoroughly clean the fr ame surface of any old glue residue before attaching the new seals.



## K. Fusing section

### (1) Fusing unit

| No. | Name |
|---|---|
| 1 | Lower separation pawl |
| 2 | Lower separation pawl spring |
| 3 | Separation plate |
| 4 | Web guide shaft |
| 5 | Web pressure roller bearing |
| 6 | Web pressure roller |
| 7 | Web roller |
| 8 | Lower thermistor |
| 9 | Pressure roller gear |
| 10 | Pressure roller gear bearing |
| 11 | Pressure roller |
| 12 | Sub thermistor |
| 13 | Fusing roller bearing |
| 14 | Insulation bush |
| 15 | Heating roller bearing |
| 16 | Meandering suppress collar |
| 17 | Fusing roller |
| 18 | Heating roller |
| 19 | Fusing belt |
| 20 | Washer |

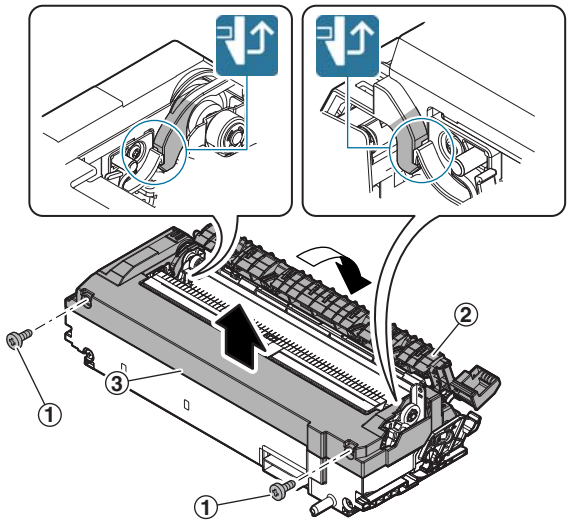



**a. Lower separation pawl, Lower separation pawl spring**

1) Open the fusing rear lower PG unit, and remove the fusing cover.

Important

When removing the fusing cover, lift the pawl section with a screwdriver (-) and remove.



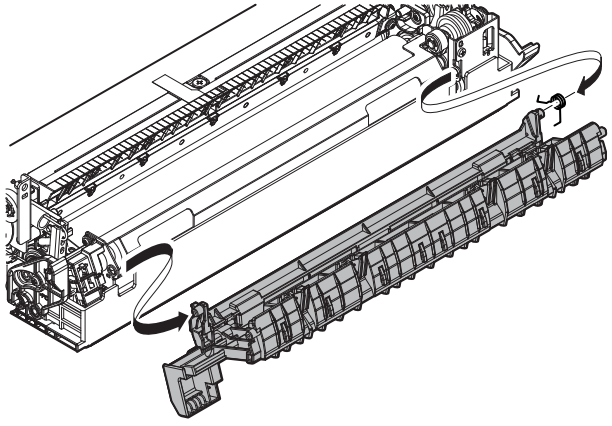

2) Remove the fusing rear lower PG unit.

Important

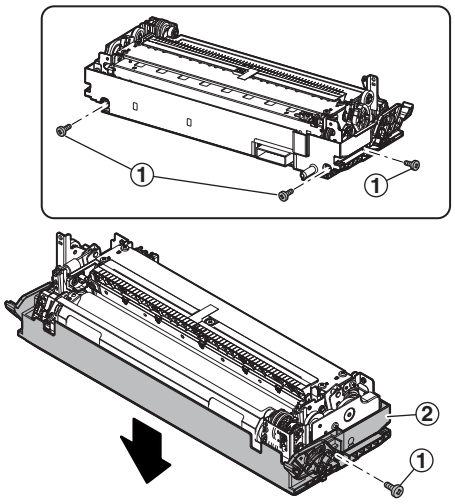
When removing, be careful not to lose the spring.

Important

When attaching, check to confirm that t he spring hook is engaged.



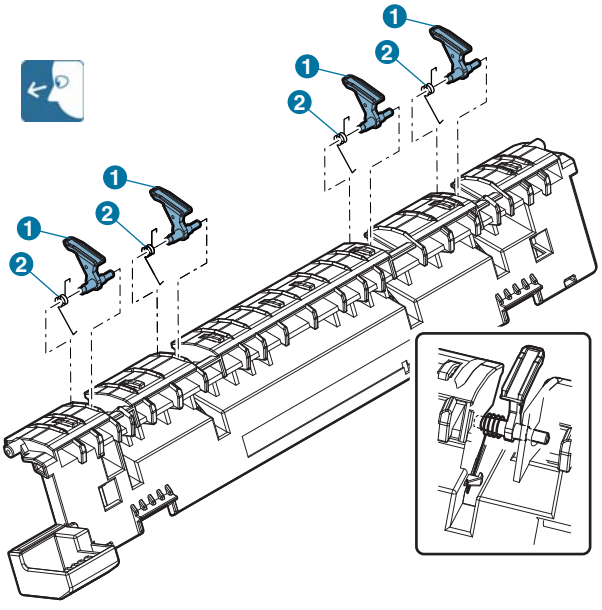
3) Remove the fusing cover.



4) Remove the lower separation pawl and the lower separation pawl spring from the paper guide.

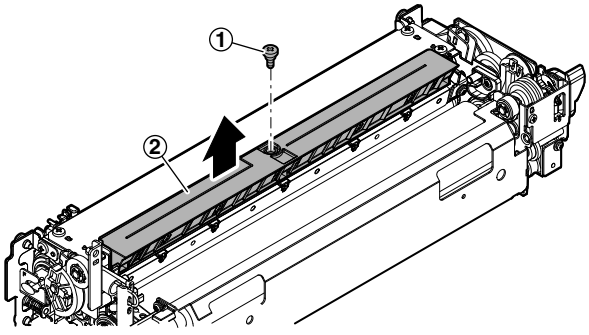
Important

When assembling, check to confirm that the hook of the lower separation pawl spring is engaged.



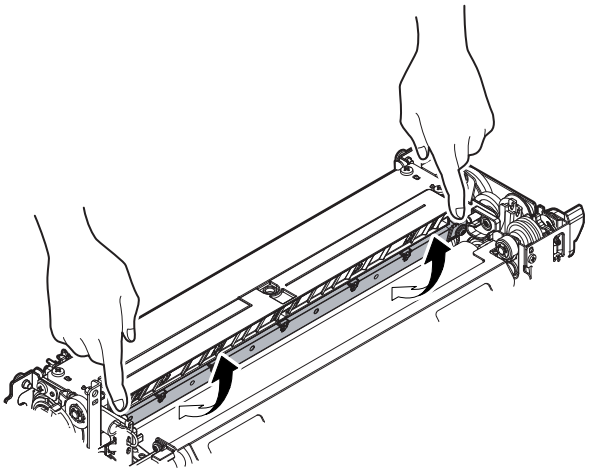
**b. Separation plate**

1) Remove the paper guide.



Important

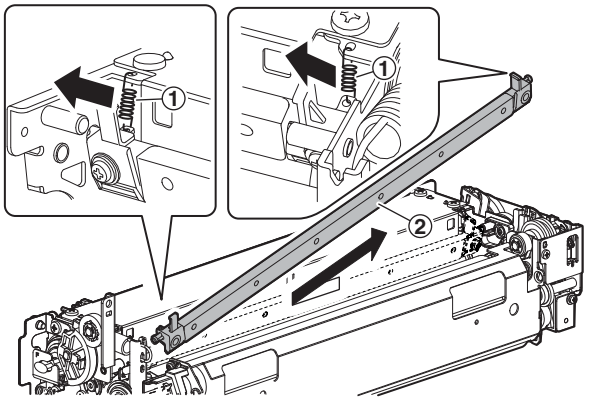
After installing the separation plate and the paper guide, manually move the separation plate to check the operation.



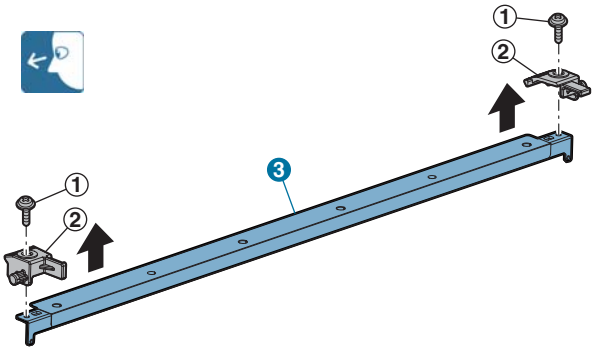
2) Remove the spring, and slide it to the front side, and remove the separation plate.

Important

Be careful not to damage or scratch the separation plate surface.

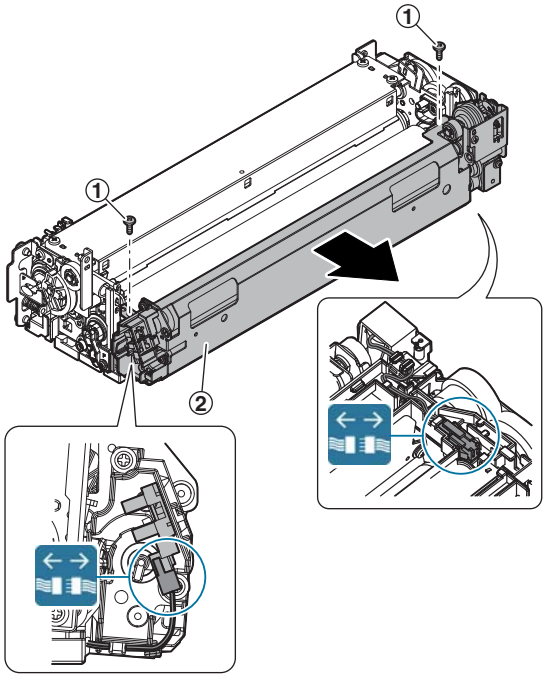


3) Remove the holder, from the separation plate.



**c. Web guide shaft, Web pressure roller bearing, Web pressure roller, Web roller**

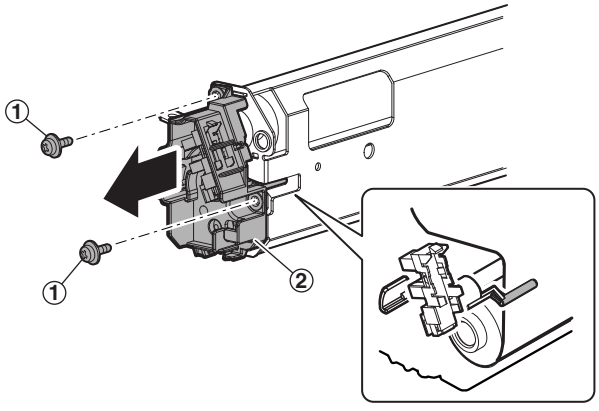
1) Disconnect the connector and remove the harness. Remove the web unit.



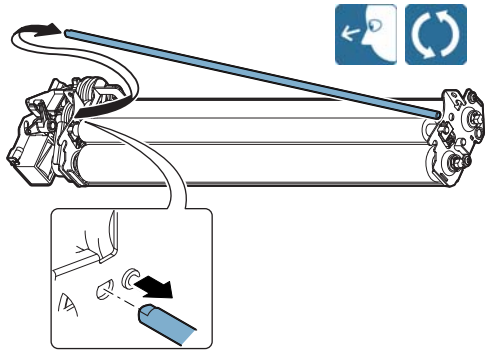
2) Remove the holder.

Important

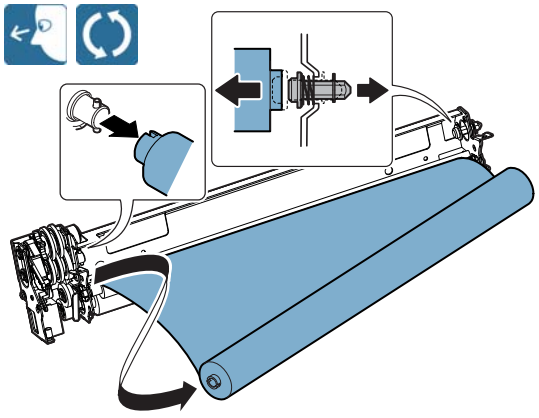
When assembling, place the actuator tip on the outside of the web sheet.



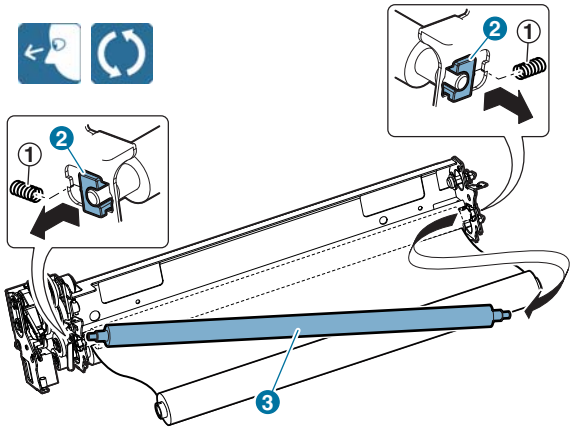
3) Remove the web guide shaft.



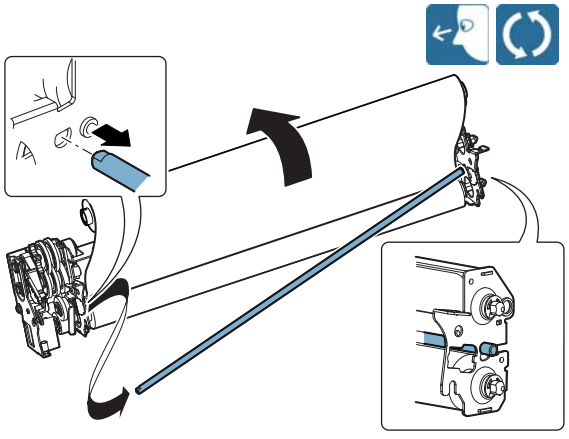
4) Remove the web roller (on the winding side).



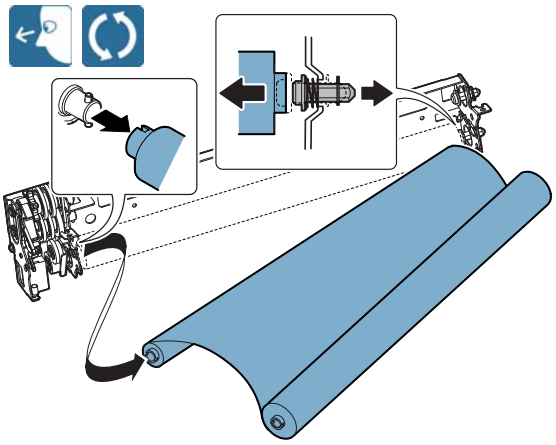
5) Remove the spring and the web pressure roller bearing, and remove the web pressure roller.



6) Remove the web guide shaft.

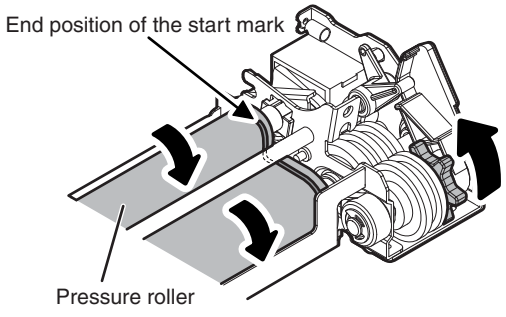


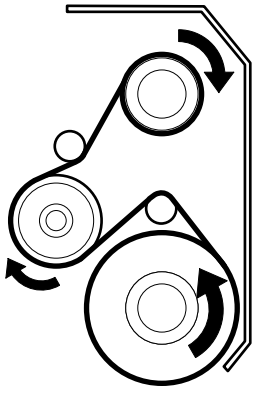
7) Remove the web roller (on the feeding side).



Important

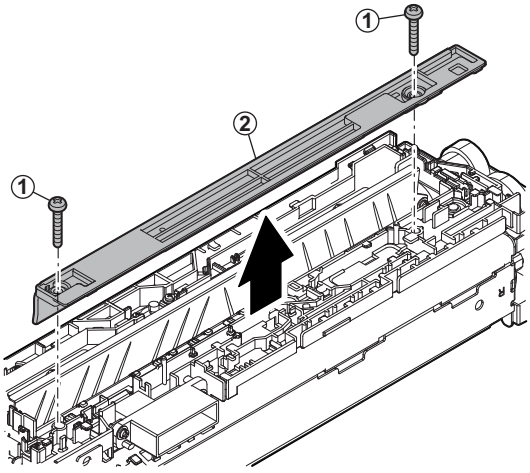
After assembling the web unit, rotate the drive gear until the end position of the start mark on the web sheet comes to the pressure roller.



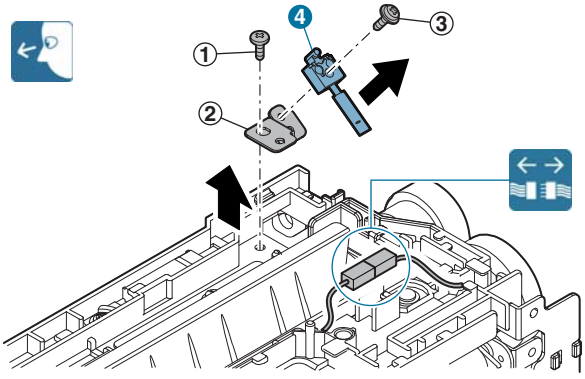



**d. Lower thermistor**

1) Remove the paper guide.

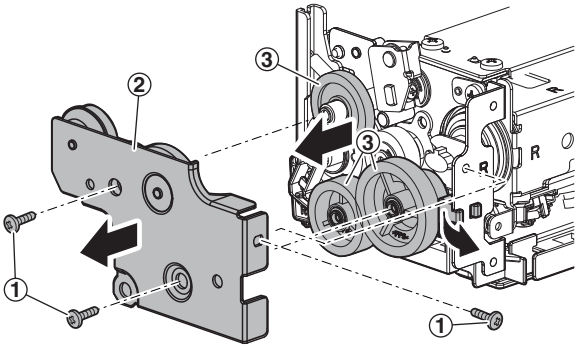


2) Disconnect the connector, and remove the mounting plate. Remove the lower thermistor from the mounting plate.

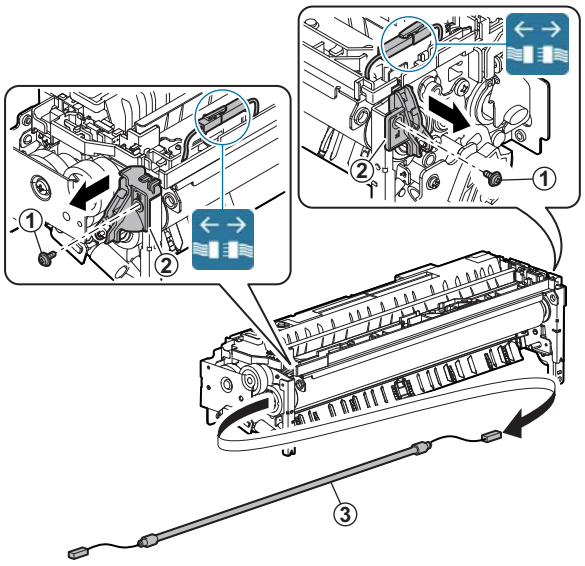


**e. Pressure roller gear, Pressure roller gear bearing, Pressure roller**

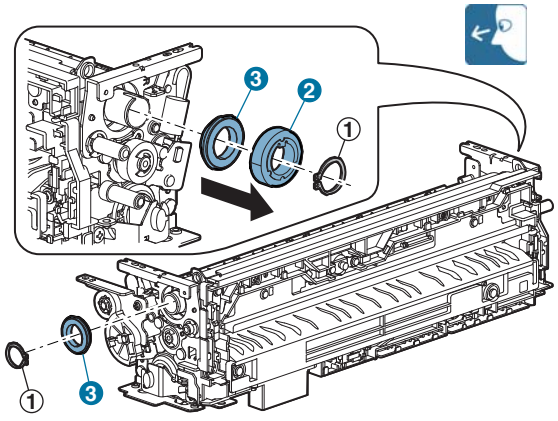
1) Remove the drive plate, and remove the gear.



2) Disconnect the connector of the heater lamp. Remove the holder, and remove the heater lamp.



3) Remove the C-ring, the pressure roller gear, and the pressure roller gear bearing.



4) Remove the pressure roller.

Important

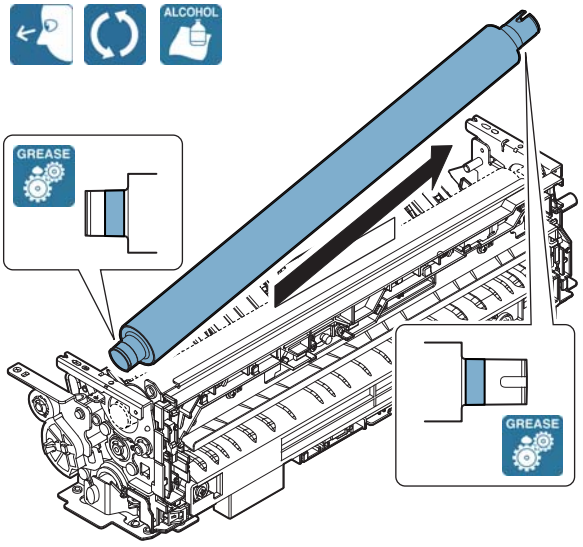
When attaching the pressure roller, attach it with the protection sheet on it. After completion of assembly, remove the protection sheet.

Important

When replacing the pressure roller, apply grease (JFE552). In addition, wipe the pressure roller surface with alcohol.

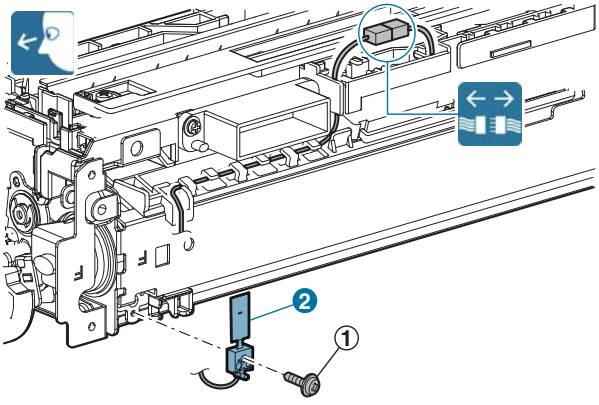
Important

For removal of the pressure roller, remove the lower thermistor then remove the roller.



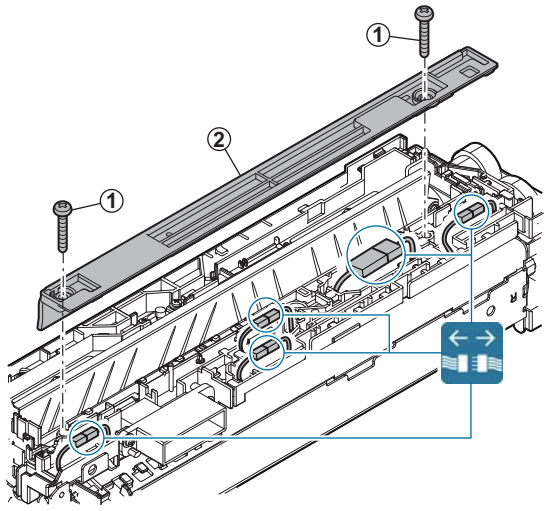

**f. Sub thermistor**

1) Disconnect the connector, and remove the sub thermistor.

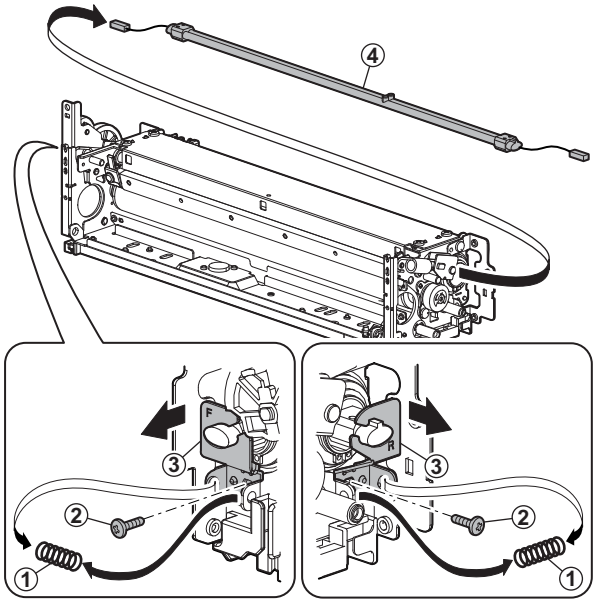


**g. Fusing roller bearing, heat-insulating bush, heating roller bearing, meandering suppress collar, fusing roller, heating roller, fusing belt**

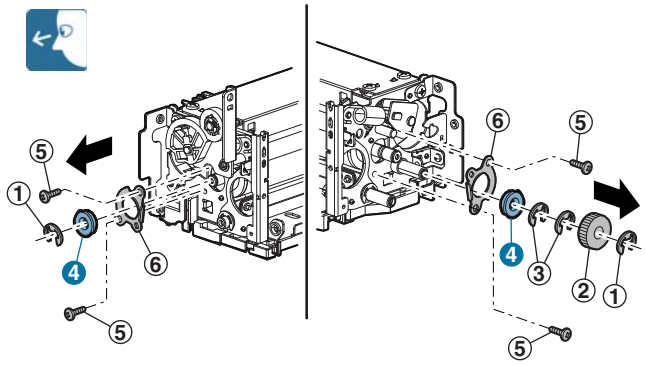
1) Remove the paper guide. Disconnect the connector.



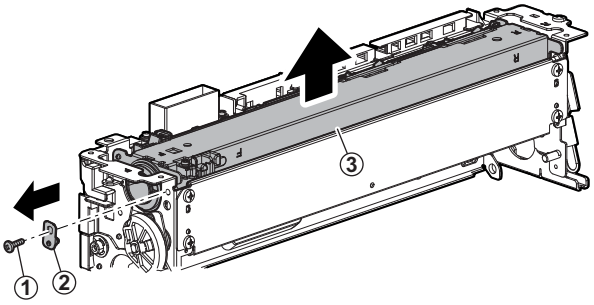
2) Remove the spr ing. Remove the holder, and remo ve the heater lamp.



3) Remove the E-ring, the gear, the fusing roller bearing, and the support plate.



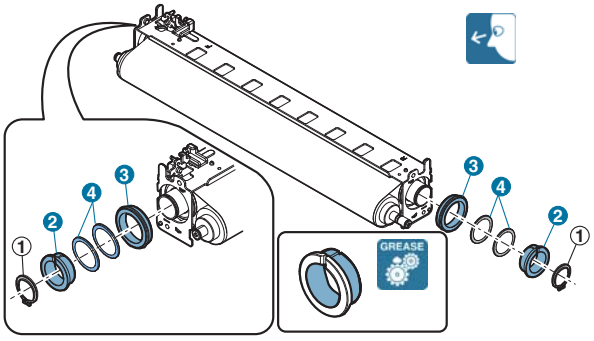
4) Remove the fulcrum plate, and remove the fusing belt unit.



5) Remove the C-ring, the insulation bush, the washers and the heating roller bearing.

Important

When replacing the insulation bush, apply grease (JFE552) to the inner race and the outer race.



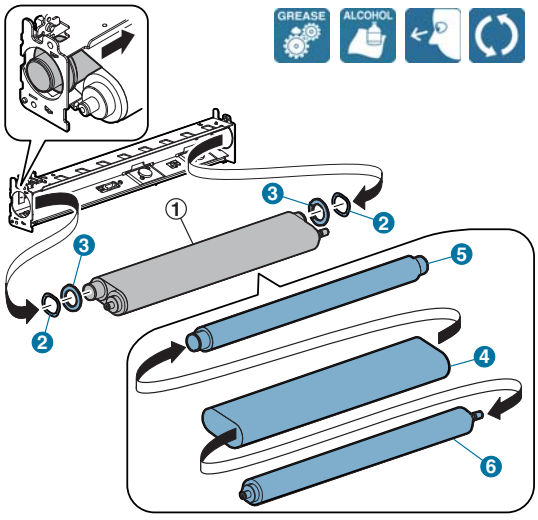

6) Remove the heating roller from the frame. Remove the washer and the meandering suppress collar from the heating roller. Remove the heating roller and the fusing roller from the fusing belt.

Important

When attaching the fusing belt, attach it w ith the protection sheet on it. A fter attaching the fusing roller bearing, remove the protection sheet.

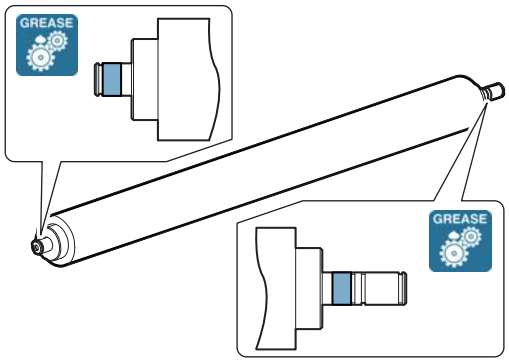
Important

After attaching the fusing belt, wipe the belt surface with alco - hol.



**Important**

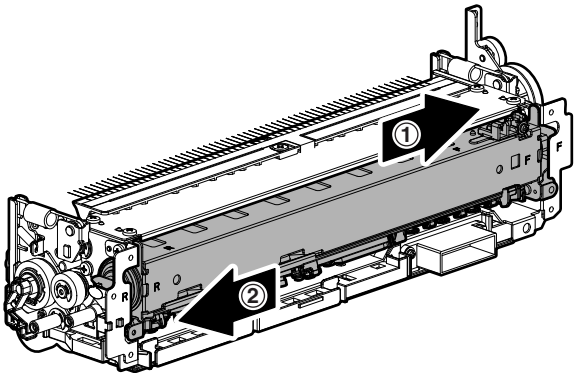
When replacing the fusing roller, apply grease (JFE552) to the shaft section.




**Important**

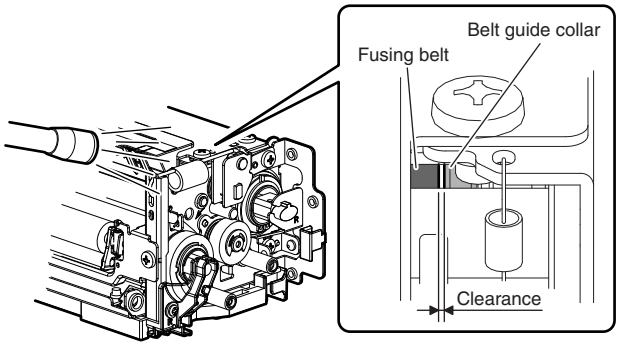
When attaching the fusing pressure spring, perform the following procedures.

1) Slide the fusing belt unit to the front side, then to the rear side.




2) Attach the pressure spring, and connect the fusing heater lamp connector.
3) Shine a light through the clearance between the rear side of the fusing unit and the frame to confirm that there is a clearance between the fusing belt and the belt guide collar.

   If there is a clearance between the fusing belt and the belt guide collar, black color on the surface of the fusing roller (F1) can be seen. It serves as a criterion of the judgment for presence of a clearance.

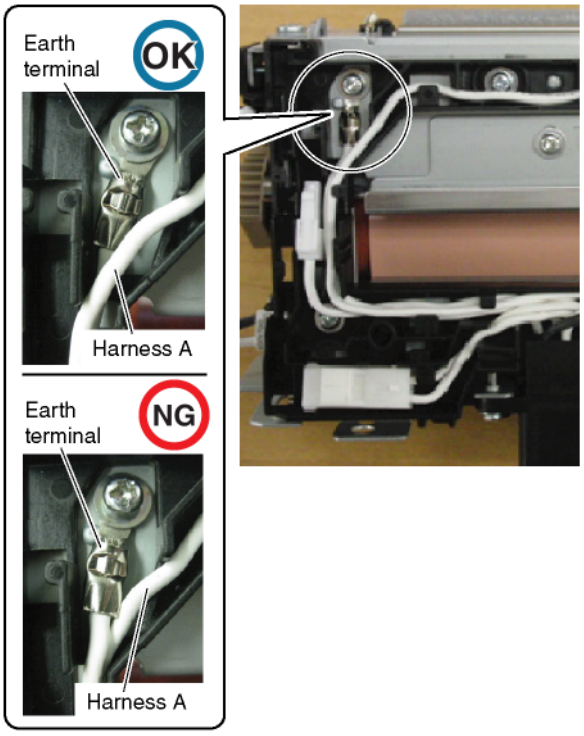



**Important**

When processing the fusing unit harness, note the following.

If the harness is improperly processed, short-circuit may occur.

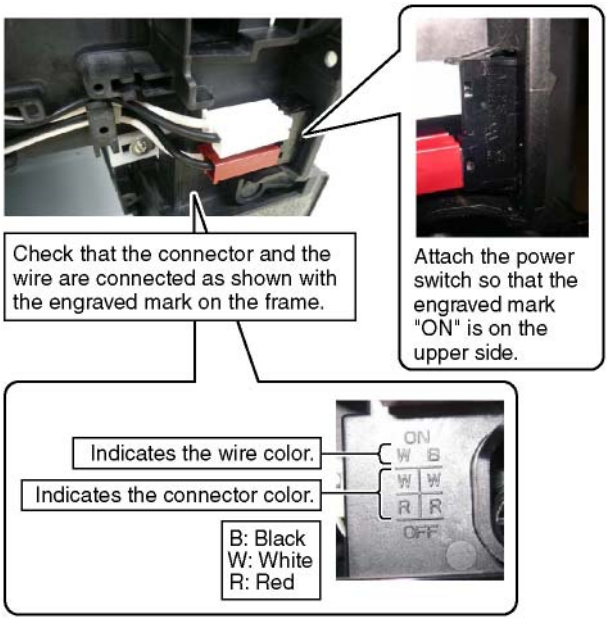
Harness A should be passed over the earth terminal.




**Important**

For connection of the power switch connector, follow the procedures below.

Be sure to identify the colors and connecting directions of the connector and the wire.

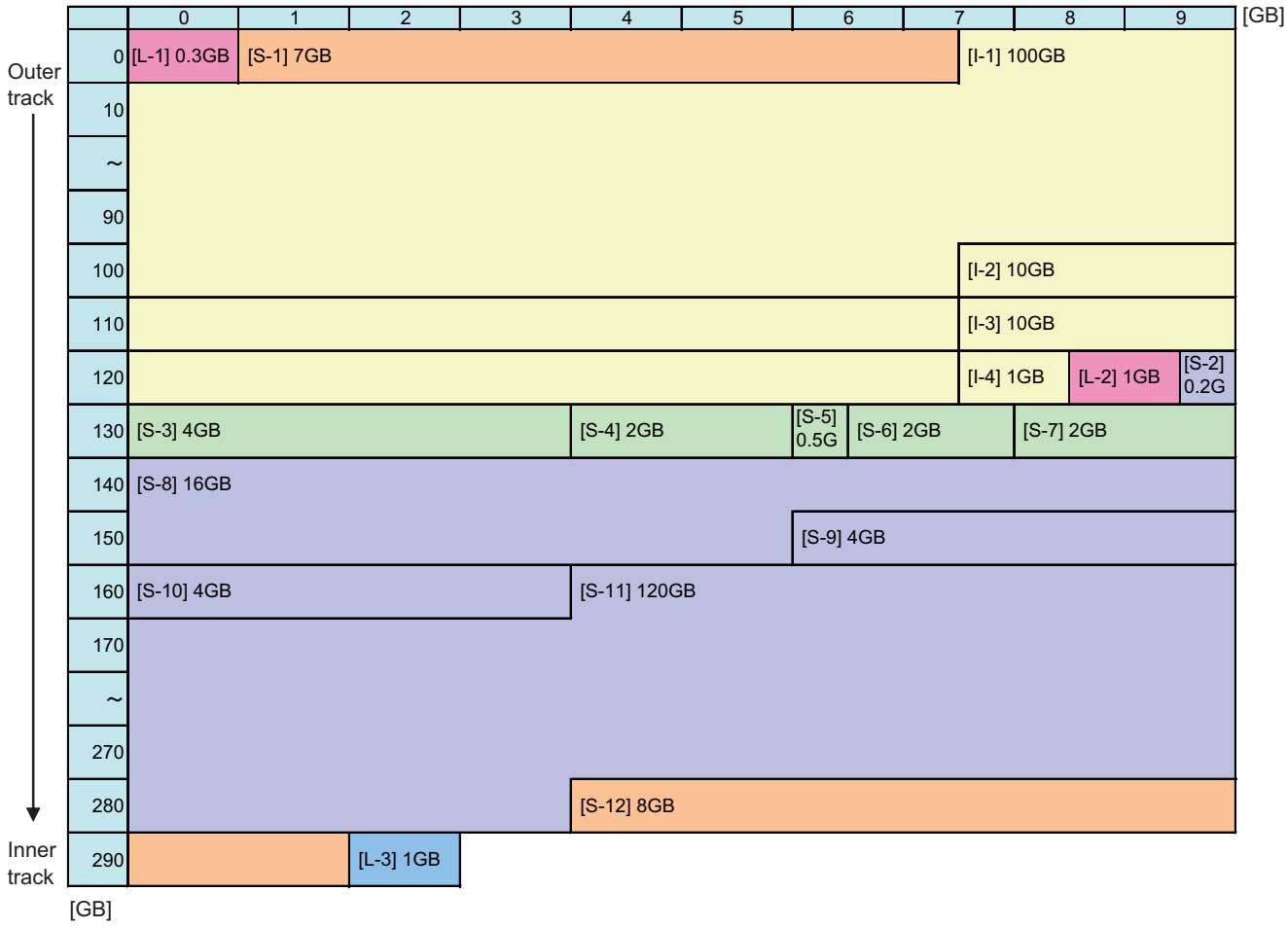


# [11] VARIOUS STORAGE DATA HANDLING

## 1. HDD/SD card memory map

### A. HDD partition

HDD size = 320GB (Actual size 289GB)




### B. HDD data contents

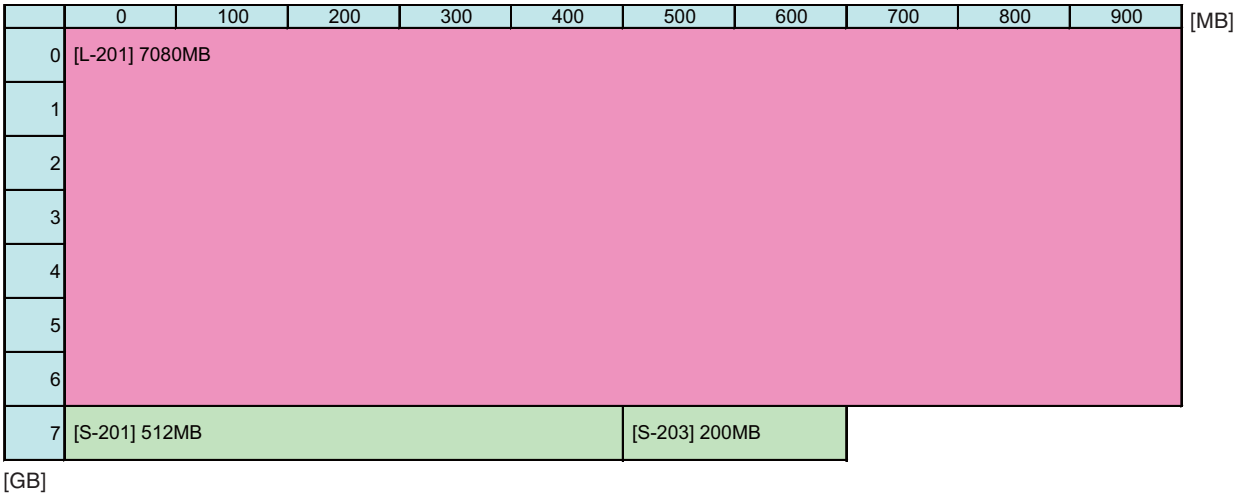
| No | File system | Stored data | NOTE |
|---|---|---|---|
| L-1 | Not available | | |
| S-1 | Universal | e-manual<br>Watermark | |
| I-1 | Image data | Image data (ERDH/Document filing) | 3000 documents,ÅA20000 images |
| I-2 | Image data | Image data (Temporary storageÅj | 1000 documentsÅA10000 images |
| I-3 | Image data | User watermark/Stamp | 1000 documentsÅA10000 images |
| I-4 | Image data | FAX/Internet FAX receive images | 3000 documentsÅA5000 images |
| L-2 | Not available | Syatem storage data | |
| S-2 | Universal | System storage data (for backup) | |
| S-3 | Universal | Download font<br>User profile<br>User macro<br>strage data<br>System setting data | |
| S-4 | Universal | System log | |
| S-5 | Universal | Document filing (Database)<br>Job log ÅiDatabaseÅj<br>Job completion list | |
| S-6 | Universal | Address book ÅiDatabaseÅj<br>Account information ÅiDatabaseÅj<br>Direct WEB browsing setting information<br>OSA application cookie file | |
| S-7 | Universal | Database file | |
| S-8 | Universal | Spool area for printer | |

1 : '14/Jun

| No | File system | Stored data | NOTE |
|---|---|---|---|
| S-9 | Universal | Application work area (User file used in SMB direct print | |
| S-10 | Universal | eOSA application file | |
| S-11 | Universal | User file saved in the SMB server | |
| S-12 | Universal | Data backup when installing DSK ÅiAddress bookÅAAccount informationÅj | |
| L-3 | Not available | RAID system information | |

## C. CF card partition

CF card size = 8GB (Actual size 7.8GB)

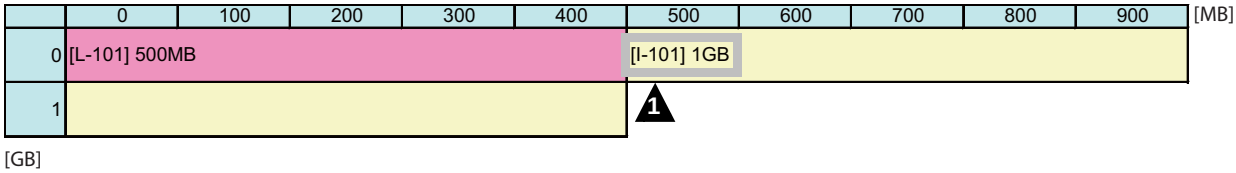



## D. CF card data contents

| 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 FontROM | |
| S-203 | Universal | System setting value data file | |

## E. SD card partition

SD card size = 4GB (Actual size 3.6GB)




## F. SD card data contents

| No. | File system | Stored data | NOTE |
|---|---|---|---|
| L-101 | Not availablr | ICU (Reus) firmware (Boot/Main) | |
| I-101 | Image data | FAX/Intermet FAX receive images ÅibackupÅj | |

# 2. Necessary steps when replacing the PWB, HDD, 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 Sim66-02 (clear the software switches related to FAX).

   Important

   Make sure to execute even if the fax option is not installed on the machine.

## B. Procedures necessary for HDD replacement

**Note for HDD replacement**

- Data of the following list are saved in the HDD of the complex machine. If the HDD operates normally and data backup is possible before replacement, perform data backup and then replace the HDD.
- If the HDD does not operate normally, data cannot be backed up.
- The HDD replacement procedures with a broken HDD differs from that with a normal HDD.

**Contents of this chapter**

- HDD storage data and backup
- Replacement procedures when HDD storage data can be backed up
- Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD
- Reinstall and update procedures of Operation Manual data saved in HDD
- Reinstall and update procedures of watermark data.

### (1) HDD storage data and backup

Some HDD storage data can be backed up, and some other data cannot. Some HDD storage data can be reinstalled, and some other storage data cannot.

If the HDD operates normally before replacement and data can be backed up, back up the data before replacement of the HDD referring to the HDD storage data list. Then reinstall the data after replacement of the HDD.

**a. HDD storage data list**

| No. | Data kind | Before installation (When shipping from the factory) | After installation (After use by users) | Enable/ Disable of data backup | Backup means | Enable/ Disable of data reinstall | Data reinstall procedures | Reinstall operator |
|---|---|---|---|---|---|---|---|---|
| 1 | e-Manual | Available | Available | Disable | *1 | Enable | Sim49-3 | Service |
| 2 | Address book | Not available | Available | Enable | Sim56-2 / Device cloning / Storage backup | Enable | Sim56-2 / Device cloning / Storage backup | Service |
| 3 | Image send series registration data (Sender's information, meta data, etc.) | Not available | Available | Enable | Sim56-2 / Device cloning / Storage backup | Enable | Sim56-2 / Device cloning / Storage backup | Service |
| 4 | User authentication Account management | Not available | Available | Enable | Sim56-2 | Enable | Sim56-2 | Service |
| 5 | Japanese FEP dictionary (Learning) | Not available | Available | Disable | Not available | Disable | | - |
| 6 | Chinese FEP dictionary (Learning) | Not available | Available | Disable | Not available | Disable | | - |
| 7 | JOB LOG | Not available | Available | Enable | Perform with 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 WEB PAGE. | Service or User |
| 11 | User macro | Not available | Available | Disable | Not available | Enable | Perform with WEB PAGE. | |
| 12 | Document filing | Not available | Available | Enable | Perform with WEB PAGE. | Enable | Perform with WEB PAGE. | |
| 13 | Some of system setting data | Not available | Available | Enable | Sim56-2 / Device cloning / Storage backup | Enable | Sim56-2 / Device cloning / Storage backup | Service |
| 14 | Watermark | Available | Available | Disable | *2 | Enable | Sim49-5 | Service |
| 15 | User color profile | Not available | Available | Disable | Not available | Enable | Perform with WEB PAGE. | Service |
| 16 | Mirroring information (When the mirroring kit is installed, the mirroring information is written.) | Not available | Available (After installation of the mirroring kit) | Disable | Not available | Enable | The mirroring information is erased by forcible build or RIB BUSTER. | Service |
| 17 | Individual setting information for direct WEB browsing | Not available | Available | Disable | | Disable | | Service |
| 18 | Cookie file for OSA application | Not available | Available | Disable | | Disable | | Service |
| 19 | eOSA application file | Not available | Installation of application | Disable | | Enable | Reinstallation of application | Service |
| 20 | User file saved in the SMB 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.<br>Import enable data: Document filing data, User font, Use macro<br>(The JOB LOG data can be backed up but cannot be imported.) | |

### (3) Replacement procedures when the HDD storage data cannot be backed up due to breakdown

#### a. Display when HDD breakdown

When a trouble occurs in the HDD, the error code display of E7-03 is popped up.

In this case, the main power must be turned OFF and the HDD must be replaced.

#### b. Work contents and procedures

| Procedures | When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used. | When a used HDD (used in the same model) is used * |
|---|---|---|
| Step 1 | Install a HDD to the machine, and boot the complex machine.<br>→ 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.

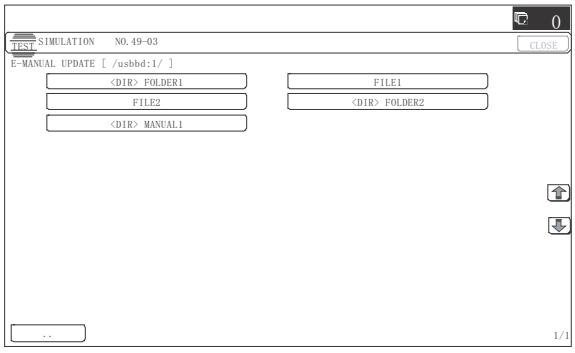
### (4) Reinstall and update procedures of the HDD storage Operation Manual data

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 STORAGEE-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).

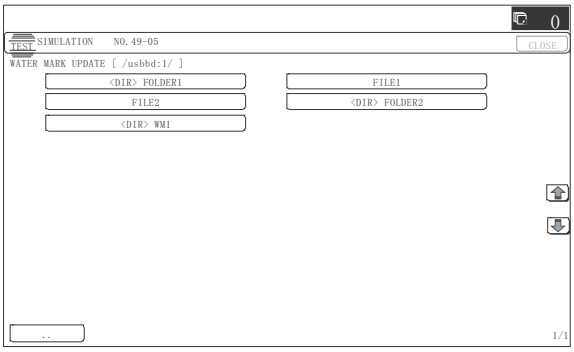
   Copy the downloaded files to the USB device without changing the file hierarchy.

   **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 STORAGEE-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.

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## 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 SIM56-02 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 SIM56-02 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.

1

## D. Procedures necessary for CF card replacement

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.

**CF card backup**

| 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 FontROM | |
| S-203 | Universal | System setting value data file | |

1) Use SIM56-2 to back up the CF card data to the USB flash drive.
2) Back up the CF card data by the device cloning function when the operation panel screen is customized..
3) Replace the CF card with a new one.
4) Upgrade the firmware to the latest version.
5) Use SIM56-02 to restore the data backed up in procedure 1).
6) Restore the data backed up in procedure 2) by using the device cloning function.

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## 1 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 (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 |

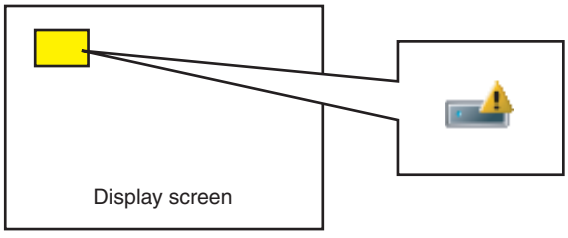
**Mirroring kit status and status icons**

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. 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.

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## 1 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'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.") |

## 1 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 nor 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 use. |

**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. |

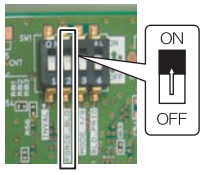
## D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine (Details of the remedies and the procedures)

### (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 use. |

**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, SIIM62-1 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 once used.

*When replacing the HDD because of a HDD trouble, do not replace it with a HDD which has been once used in a mirroring kit.

*When replacing the HDD because of a HDD trouble in the machine, do not replace it with a HDD which has been once used in a mirroring kit.

**Note**

When a HDD is once used in a mirroring kit, the mirroring information is written into the HDD. This causes a trouble by erroneous using.

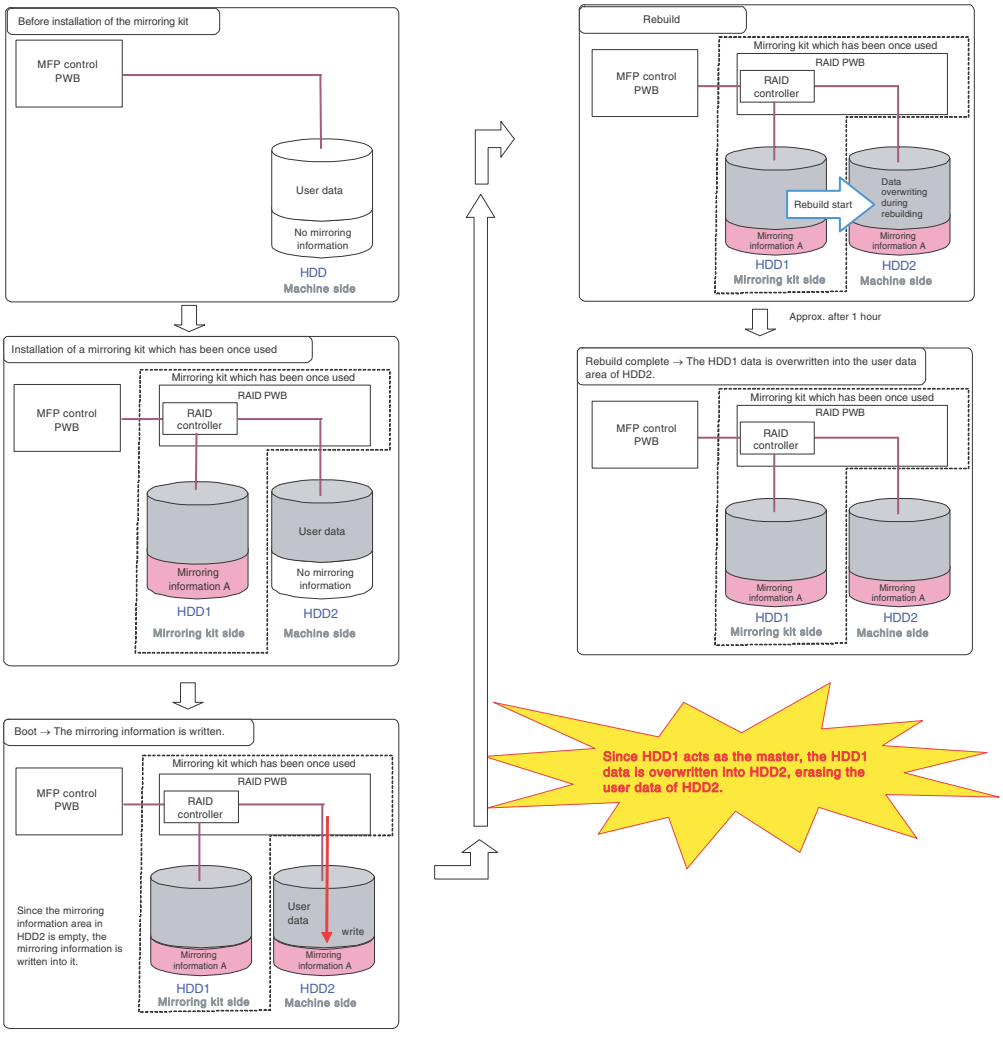
The details of inhibited items, results of erroneous procedures, and precautions for avoiding those errors are described below.

## A. Details of inhibited items

### (1) When newly installing a mirroring kit, do not use one which has been once used.

**Trouble contents**

If HDD1 which has been once used is used for new installation of a mirroring kit, the data in HDD1 will be written into HDD2. This causes erasion of the original user data, freeze of the machine, or other troubles. The "HDD which has been once used" includes a HDD which was just installed and conducted only.




**Countermeasures**

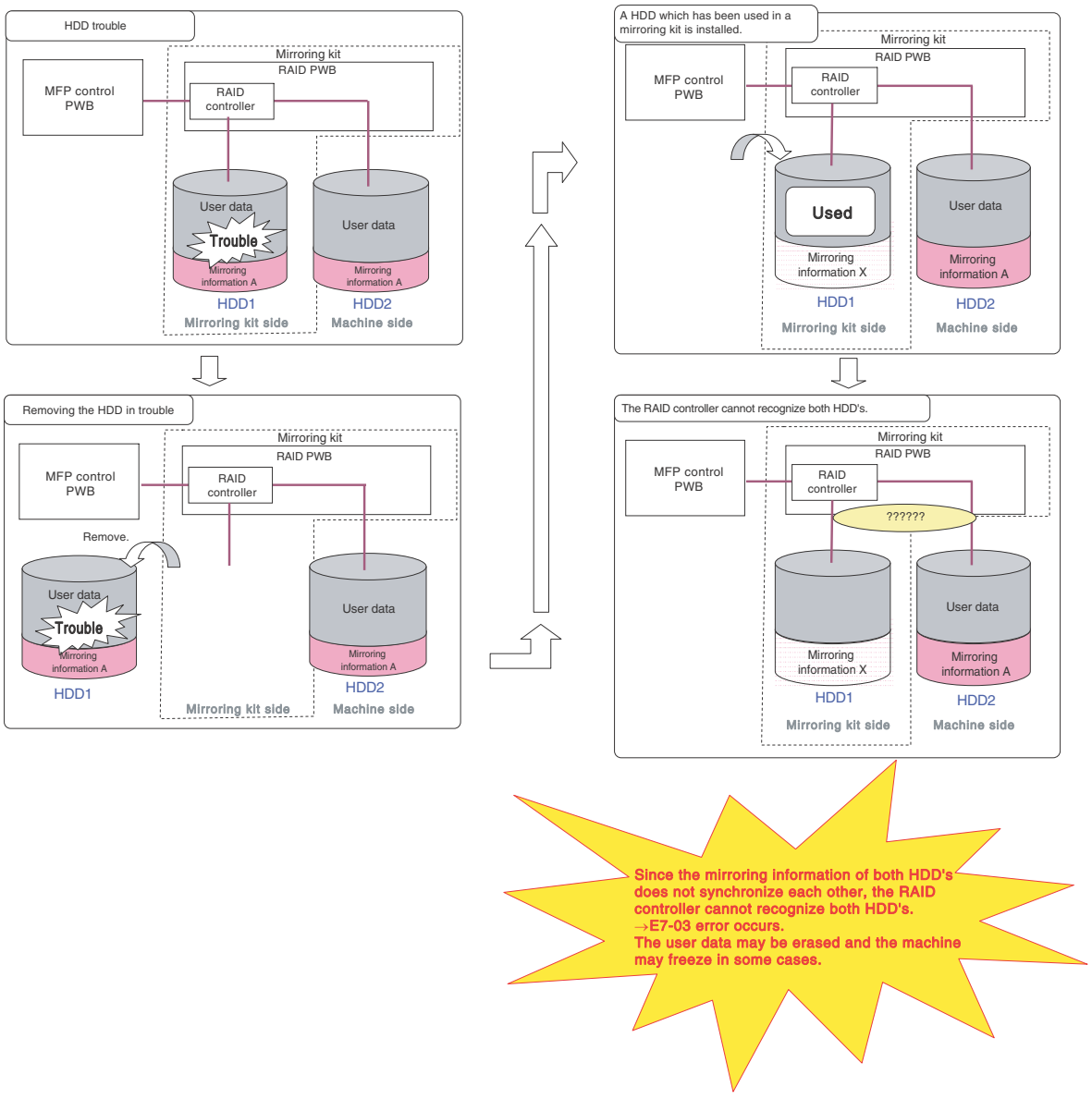
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

**(2) When replacing the HDD in case of a trouble in the HDD, do not use a HDD which has been used in another mirroring kit of another machine.**

**Trouble contents**

If a HDD which has been used in another mirroring kit, the RAID controller cannot recognize the HDD, causing E7-03 error, and the necessary data may be destructed in some cases.




**Countermeasures**

Use a new mirroring kit for installation.

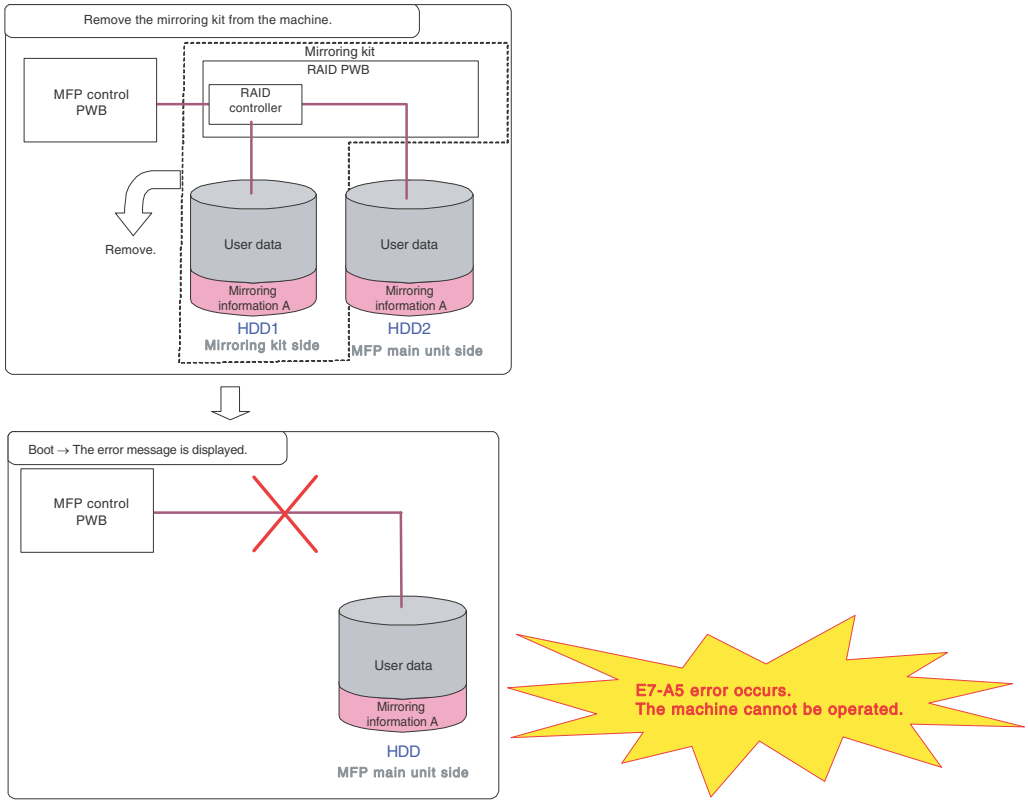
If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

### (3) When the HDD is replaced because of a HDD trouble, do not use a HDD which has been used in a mirroring kit of another machine.

**Trouble contents**

E7-A5 error occurs. If a HDD which has been used in a mirroring kit is used as the machine HDD, the machine does not operate normally.

In this case, the trouble of erasing the original data is avoided.




**Countermeasures**

Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

When a HDD is used without any other HDD, the mirroring information must be erased before executing SIM62-1 to format.

This procedure allows the HDD being treated as a new HDD.

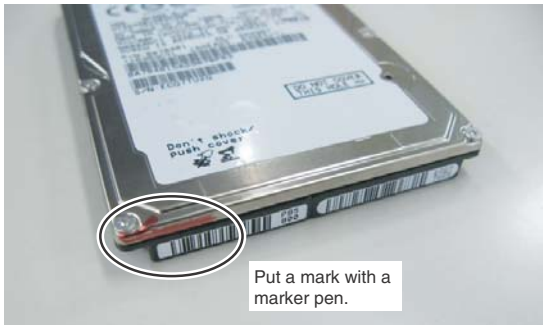
When removing the HDD after installation of the mirroring kit, remove both HDD's simultaneously. If only one HDD is removed and then installed again, the data of both HDD's may not match, causing a trouble.

[Simultaneous removal of both HDD's] Disconnect the HDD SATA connector of the MFP PWB, and both HDD's are brought into disconnected state from the machine.

## B. How to check the usage history of a HDD in a mirroring kit

As stated before, when installing a mirroring kit or replacing a HDD, be sure to check the usage history of a HDD or a mirroring kit which is to be used.

For convenience of checking the usage history, put a mark on the mirroring kit HDD and the machine HDD when installing them to indicate that they have been used.

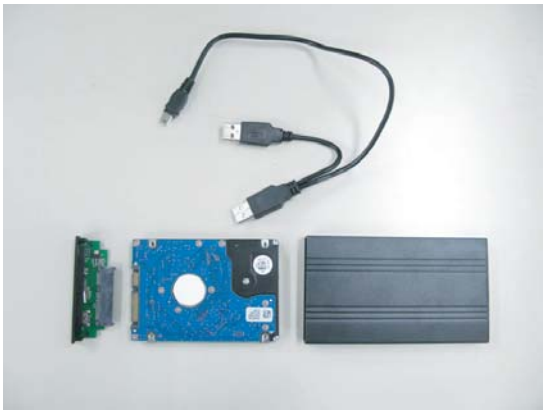



## C. Deleting the HDD mirroring information

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 aD case unitvailable USB HD (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

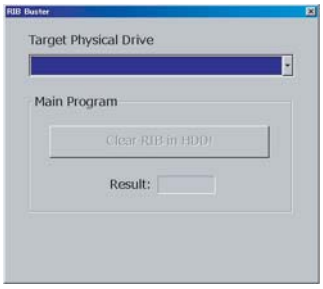
When removing or attaching a HDD to the HDD case, be sure to disconnect the USB cable from the PC in advance.

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.

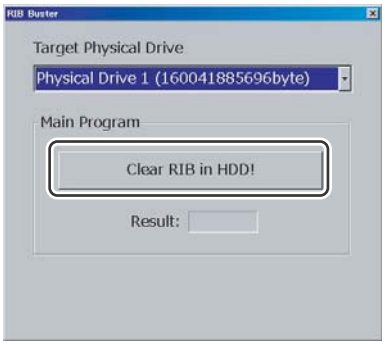
4) Double-click RIB Buster {YYYYMMDD}.exe to boot the RIB Buster software.

   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.

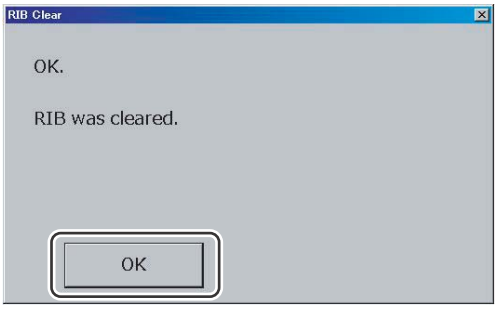



5) Select the target HDD to delete the mirroring information.

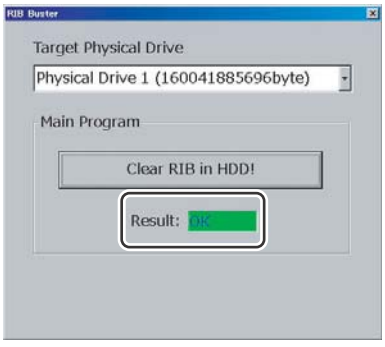
6) Click [Clear RIB in HDD] button.




7) Click [OK] button. (The mirroring information is deleted.)




8) After completion of deleting the mirroring information, "OK" is displayed.

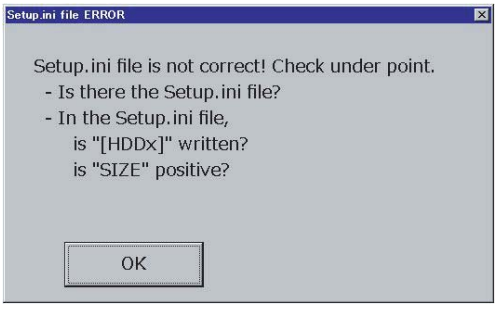



## (3) Kinds of errors, causes and remedies

**Phenomenon 1**

An error indicating an abnormality in the Setup.ini file when booting the RIB Buster software.

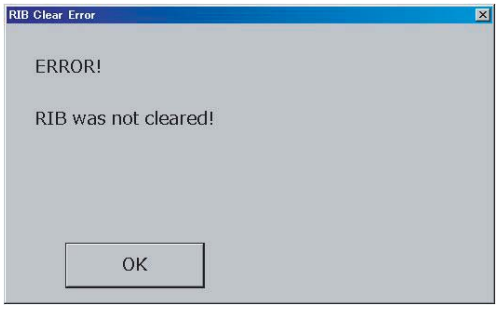
| Cause | Setup.ini file does not exists, or there is any abnormality in the file. |
|---|---|
| Countermeasures | Check to confirm that there is Setup.ini file in the proper directory and that there is no abnormality in the descriptions. |

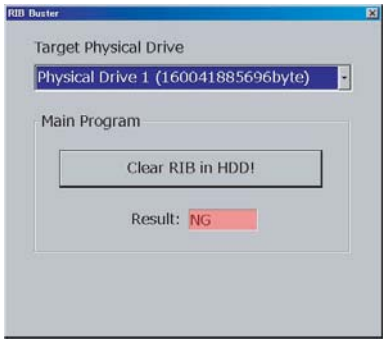



**Phenomenon 2**

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. . |

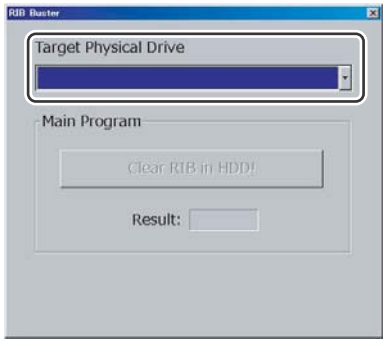



**Phenomenon 3**

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. . |



# [12] SERVICE WEB PAGE

## 1. General

The following functions are available on the Hidden Web Page exclusively used for the serviceman.

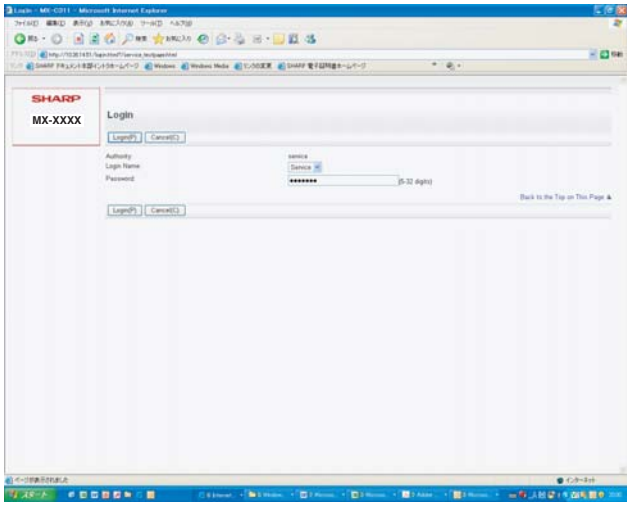
| Menu/Item | | Function and content |
|---|---|---|
| Output of Test Page | | Used to print out the test page (system setting contents). |
| Font/Form Download | | Used to download Font/Form.<br>Font/Form of PCL and PostScript, macro, and other resources are downloaded to the HDD and controlled.<br>(PS, PCL5 only) |
| Device Cloning | | Used to import/export the system setting information in XML format. By importing the export file to the other device, the setting values and setting contents of the device can be copied to another device. This function is useful to set the same setting to two or more machines efficiently. |
| Filing Data Backup | | Used to import/export the document filing data in the unit of folder. |
| User Control | | Used to shift to the user mode. After log in, the screen is shifted to the setting screen of user management. |
| User Control 2 | | Used to set the Pages Limit Group and the Favorite Operation Group by authority of the serviceman.<br>(Select among preset items.) |
| Job Log | Save Job Log | Used to save the Job Log. |
| | View Job Log | Used to display the Job Log. |
| Update of Firmware | | Used to update the firmware version. |
| Syslog*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.

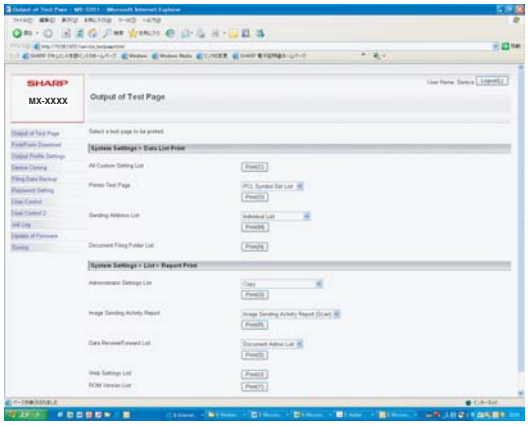
## 2. Details and operation procedures

### 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) and enter the servicing page menu.
   Default password: "service"

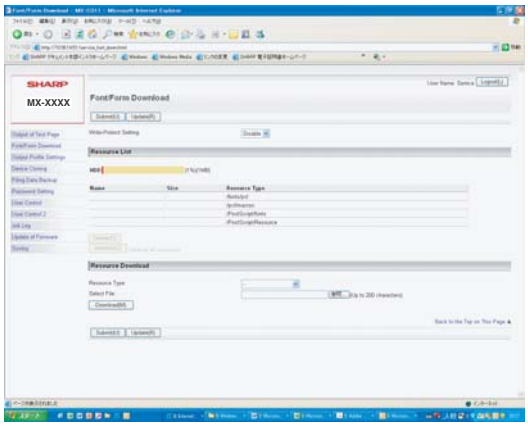



### B. Output of Test Page




1) Click "Print" button of an item or report to be printed.
   When there is a list of items for selection, select one of the items in the pull-down menu list, and click "Print" button.
   The list is printed out.

## C. Font/Form Download




### (1) Download of Font, Form, and Macro

1) Select "Resource Type" from the pull-down menu list.
   (Example: PCL/PostScript Font/Form or Macro)
2) Click "Refer" button to select a target file.
3) Click "Download" button.
4) Click "Submit" (registration) button.
   The file is downloaded to the HDD.
   The list of the downloaded files and the use percentage of the HDD are displayed.

### (2) Delete of downloaded font (Procedures to delete a file separately)

1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
2) Check that the confirmation message is displayed, and press Yes key.
3) Click "Submit" (registration) button.
   The file in the HDD is deleted.

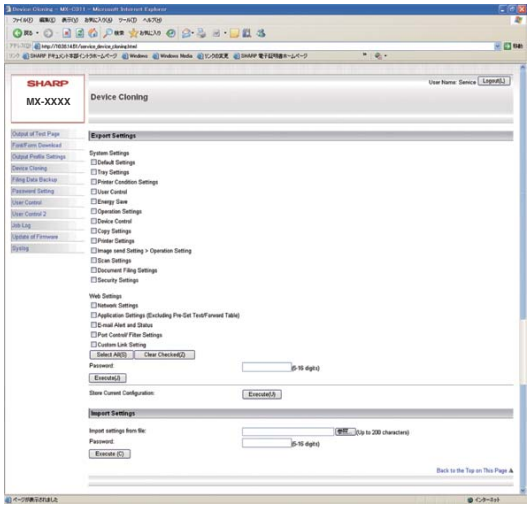
### (3) Procedures to delete all the files at a time

1) Click "Initialize" button.
2) Check that the confirmation message is displayed, and press OK key.
3) Click "Submit" (registration) button.

**Note**

By the Write-Protect Setting function, the downloaded files can be set to write protect.

## D. Device Cloning



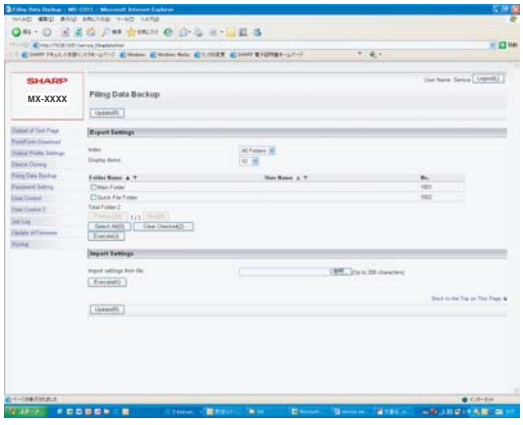

### (1) Export

1) Select an item to be backed up.
2) Click "Execute" button.
   Specify the save position of the file, and save the file. (File name: *****.bin)
   When the password is set, the set password must be entered when importing.

### (2) Import

1) Import from a file: Click "Refer" button to select the back-up file. (File name: *****.bin)
2) Click "Execute" button to execute import.
   If the password is set when exporting, the password must be entered.
3) Reboot the machine.

## E. Filing Data Backup



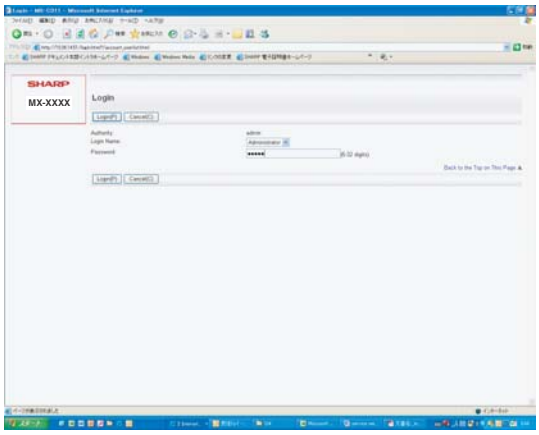

### (1) Export

1) Select the folder to be backed up.
   The list display conditions can be specified by changing the index and the number of display items on the pull-down menu.
2) Click "Execute" button.
   Specify the save position of the file, and save the file. (File name: *****.bin)
3) Click "Update" button.

### (2) Import

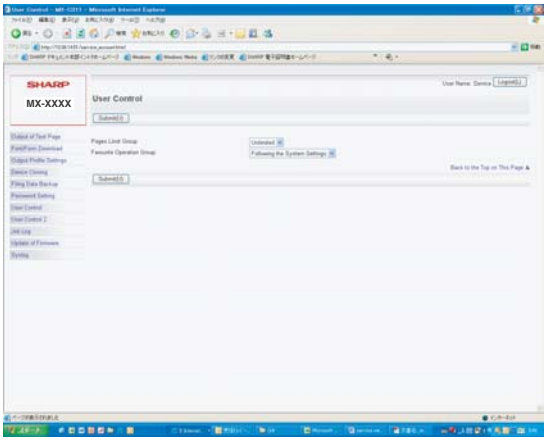
1) Click "Refer" button to select a target file. (File name: *****.bin)
2) Click "Execute" button.
   The target file is imported.
3) Click "Update" button.

## F. User Control 1




1) Enter the password to log in.
   Default Password: admin
   The screen is shifted to the setting menu of user management.

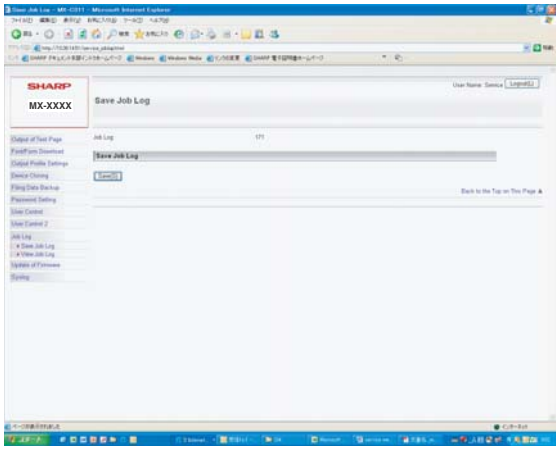
## G. User Control 2




1) Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)
   **(Example of use)**
   The use sets the conditions for servicing work by using the Pages Limit Group and the Favorite Operation Group functions in advance, and the serviceman selects the set conditions in this mode for servicing work.

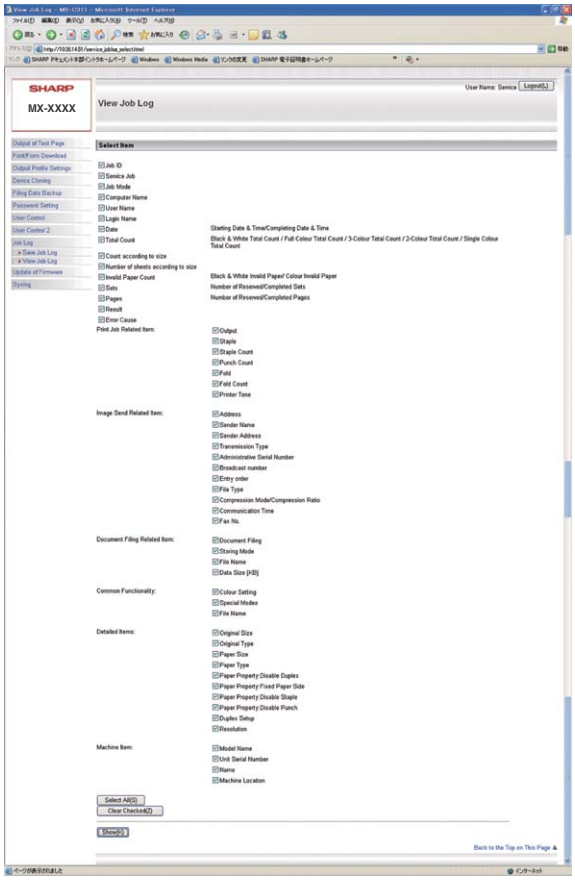
## H. Job Log

### (1) Save Job Log



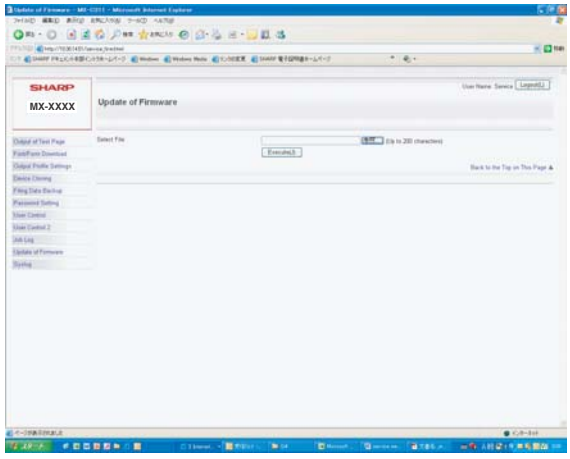

1) Click "Save" button, and specify the save position of the Job Log to save it.

### (2) View Job Log




1) Select a Jog Log item to be displayed. (In the default setting, all the items are selected. Remove check marks of the items which are not to be displayed.)
2) Click "Show" (display) button.
   The Jog Log is displayed.

## I. Update of Firmware




1) Click "Refer" button to select a firmware file.
2) After selecting a firmware file, click "Execute" button.
   The firmware data are sent to the machine, and update of the firmware is processed.

During the process, the message of "Firmware Update, now processing..." is displayed.

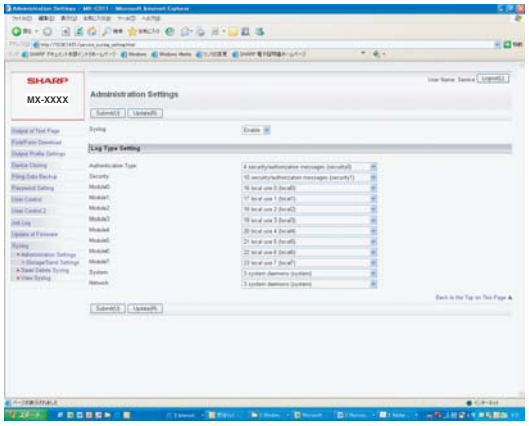
## J. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to trouble-shoot when a trouble occurs.

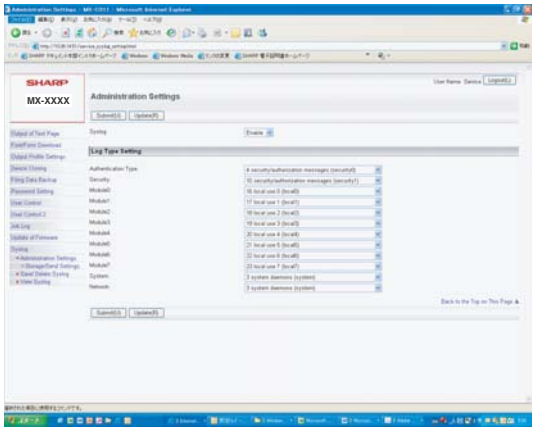
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

| | | |
|---|---|---|
| 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

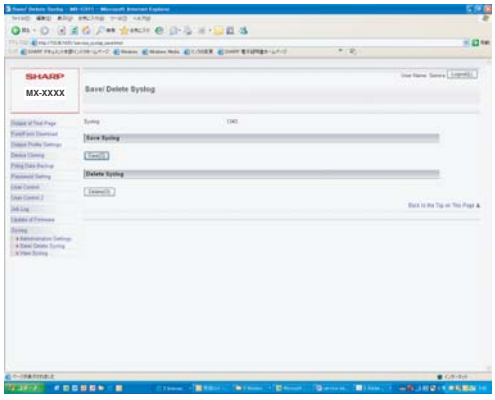
Set to the default.



### (2) Storage/Send Settings

Keep all the items selected.

### (3) Save/ Delete Syslog

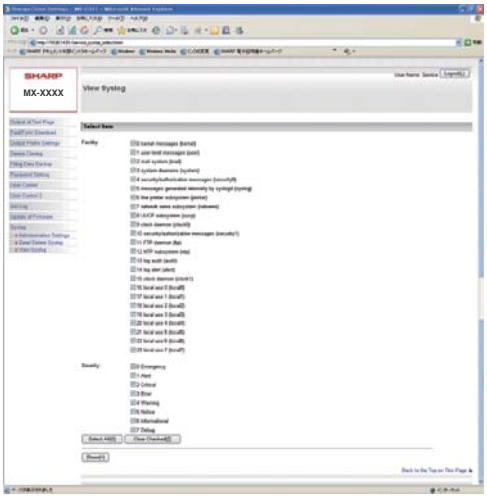


When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

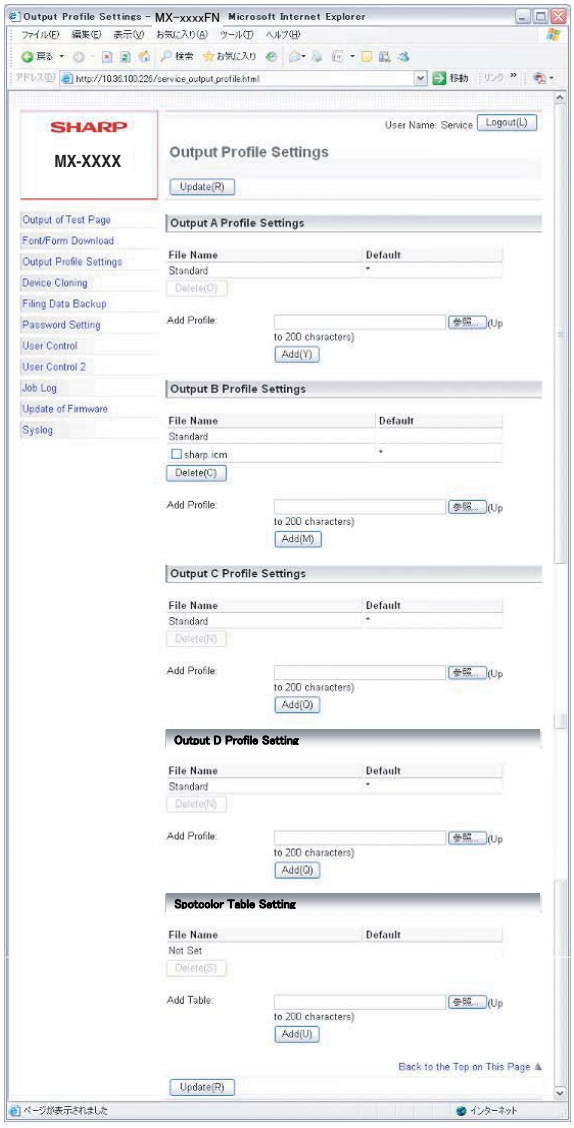
Check to confirm that the confirmation message is displayed, and press OK key.

### (4) View Syslog



1) Select a Syslog item to be displayed.
2) Click "Show" button.
   The Syslog is displayed.

## K. Output Profile Settings




### (1) Download procedures of custom output profile

1) Click "Refer" button to select the output profile.
2) Click "Add" button to add the output profile.
3) Click "Add" button to add the output profile.

   The added profile is displayed on the list. For the output A profile and the output B profile, the newly added profile becomes valid.

   When no profile is added, the default output profile in the firmware of the machine set when shipping from the factory is valid.

   Output A profile / Output B profile / Output D profile: Selectively used.

   Output C profile: PS mode, for CMYK simulation (Custom)

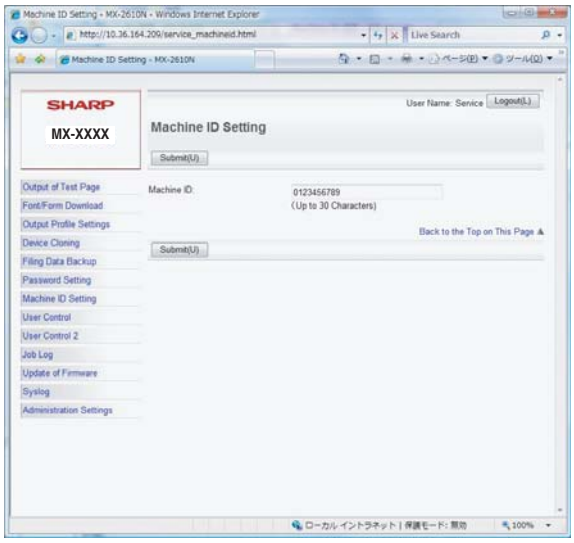
   Spot Color Table: For PS mode

### (2) Procedures to delete the custom output profile and return to the default output profile

1) Clock "Delete" button of the output profile to be deleted.
2) Click "Update" button.

   The custom output profile is deleted and the default output profile in the firmware of the machine becomes valid.

## L. Machine ID Setting




1) Enter the machine ID.

   Max. 30 digits of numeral figures and characters can be entered.

2) Press the registration button.

**Note**

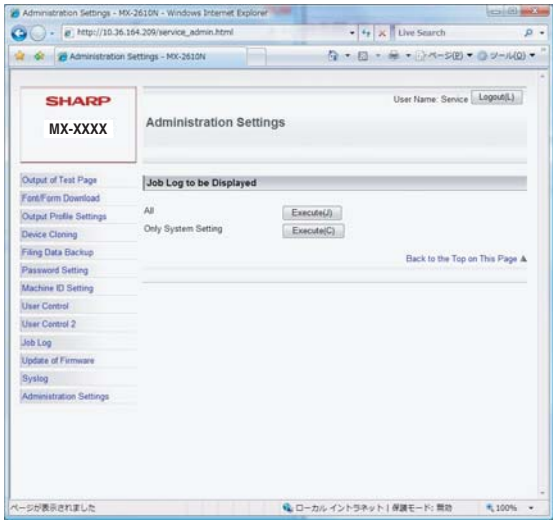
The machine ID can be set with SIM26-7 as well as this function.

## M. Administration Settings (Menu display setting)

This setting is to select whether to display all the menus of Web Page on the machine display or to display only the restricted system setting menu of the default.

Setting must be executed according to the user request.

1) Press the setting execution button corresponding to the display mode.



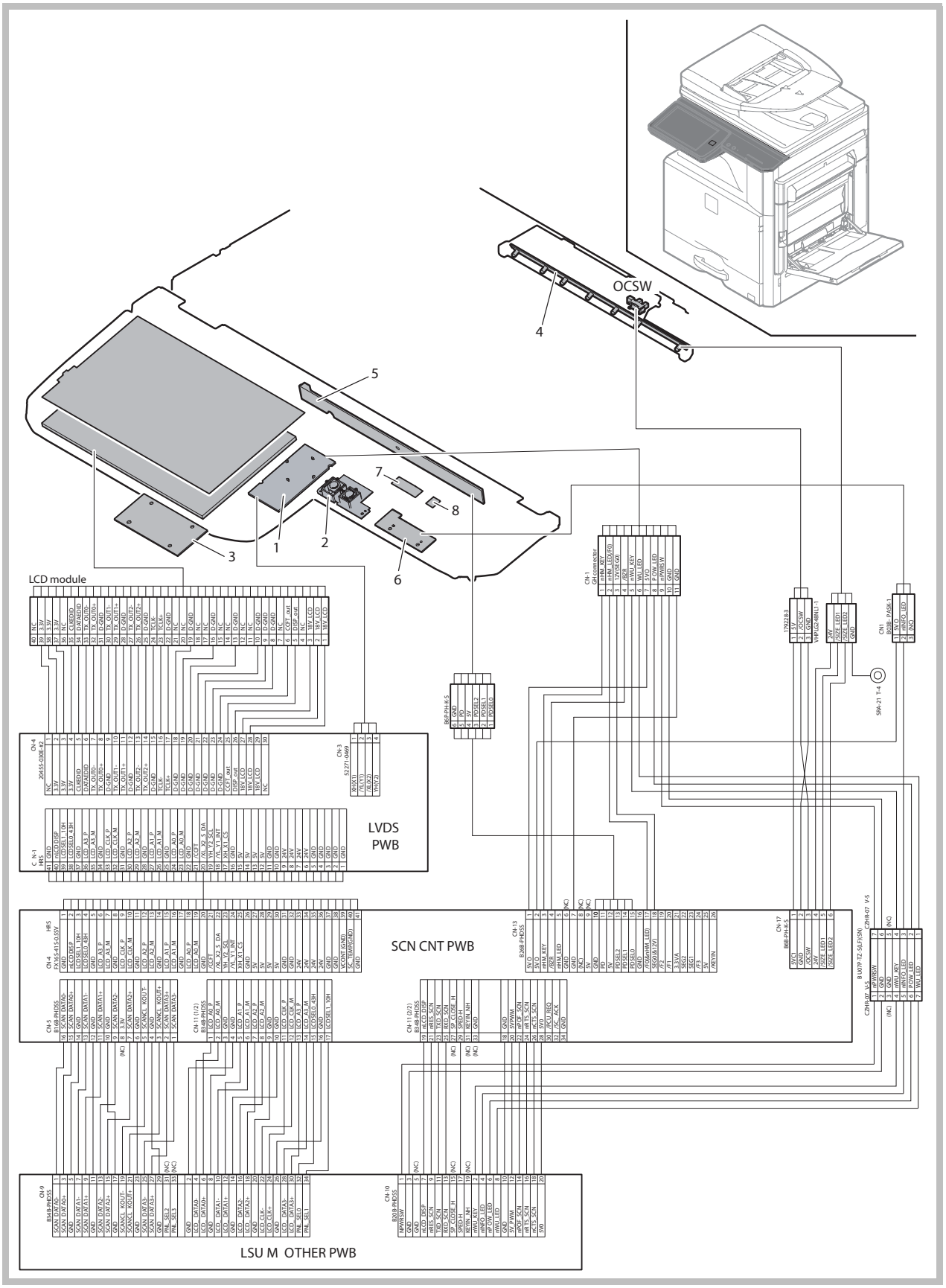
1 : '14/Jun

# [13] OPERATIONAL DESCRIPTIONS

## 1. Operation panel section

### A. Electrical and mechanism relation diagram

1



1 : '14/Jun

| Signal name | Name | Function/Operation |
|---|---|---|
| OCSW | Paper size detection trigger sensor | Generates the document size detection trigger signal. |

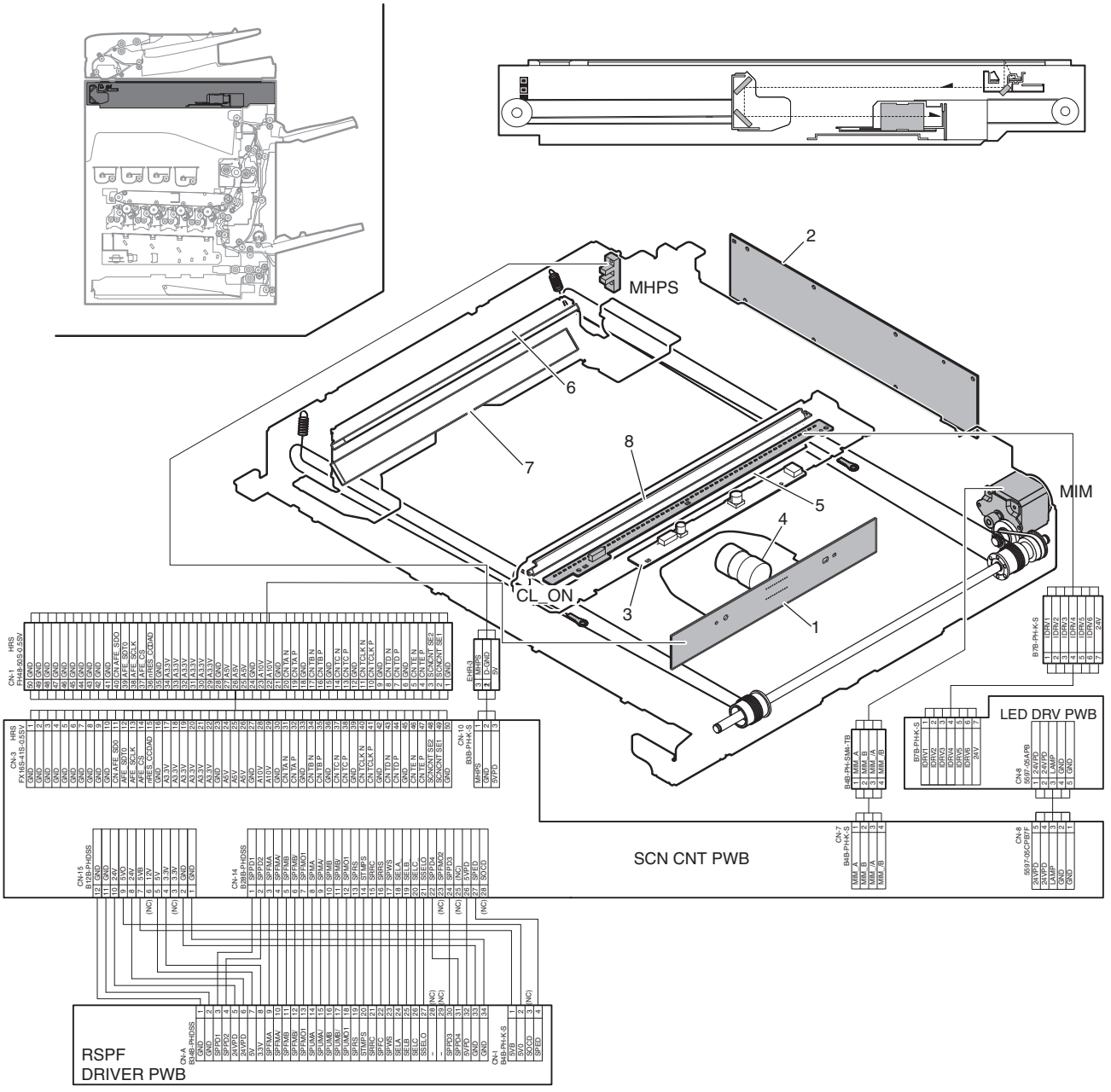
| No. | Name | Function/Operation |
|---|---|---|
| 1 | HW-KEY PWB | Outputs the key operation signal. |
| 2 | PW-KEY PWB | Turns ON/OFF the power on the secondary side. |
| 3 | LVDS PWB | Converts the display data signal to the LCD display signal. / Controls the touch panel. |
| 4 | Document size detection PWB (Light emitting) | Drives the LED for the document size detection. |
| 5 | Document size detection PWB (Light receiving) | Outputs the document size detection signal. |
| 6 | USB I/F PWB | USB Interface |
| 1 7 | USB CONV PWB | Converts to the USB connection |
| 8 | Wireless LAN PWB | Connects the network with the wireless LAN |

| Signal name | Name | Function/Operation |
|---|---|---|
| OCSW | Paper size detection trigger sensor | Generates the document size detection trigger signal. |
| PWRSW | Operation panel power switch | Turns ON/OFF the power on the secondary side. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | KEY PWB | Outputs the key operation signal. |
| 2 | LVDS PWB | Converts the display data signal to the LCD display signal. / Controls the touch panel. |
| 3 | Document size detection PWB (Light emitting) | Drives the LED for the document size detection. |
| 4 | Document size detection PWB (Light receiving) | Outputs the document size detection signal. |
| 5 | USB I/F PWB | USB Interface |

# 2. Scanner section

## A. Electrical and mechanism relation diagram




| Signal name | Name | Function/Operation |
|---|---|---|
| CL_ON | Scanner lamp | Radiates light onto a document for the CCD to scan the document image. |
| 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 | CCD PWB | Scans document images and performs A/D conversion of the scanning signal. |
| 2 | SCU PWB | Controls the scanner and the operation section. |
| 3 | Scanner lamp drive PWB | Drives the scanner lamp |
| 4 | Lens | Reduces a document image (light) and project it to the CCD. |
| 5 | 1st mirror | Leads a document image to the lens. |
| 6 | 2nd mirror | |
| 7 | 3rd mirror | |
| 8 | Reflector | Converges the scanner lamp lights and radiates onto the document. |

## B. Operational descriptions

### (1) General

This section performs the following operations.

1) Light is radiated onto the document by the scanner lamp and the reflected image is scanned by the 3-line (RGB) CCD elements to be converted into analog image signals.
2) The analog image signals are converted into 10-bit digital signals by the A/D converter.
3) The digital image signals are sent to the scanner control PWB for image processing.

### (2) Detailed descriptions

#### a. Optical section drive

The optical section is driven as follows: The drive power is transmitted from the scanner motor (MIM) through the belt to the drive pulley/wire, and the copy lamp unit and the mirror base which are attached to the wire are driven.

The scanner motor (MIM) is controlled with the signals sent from the scanner control PWB.

#### b. Scanner lamp drive

The scanner lamp is driven by the scanner lamp drive voltage which is generated by the scanner lamp drive PWB with the control signals sent from the scanner control PWB.

#### c. Image scan and color separation

Light is radiated onto the document by the scanner lamp and the reflected image is scanned by the 3-line (RGB) CCD elements to be converted into analog image signals.

The color components are extracted into R, G, and B by the three kinds of CCD elements (R, G, and B).

The red CCD extracts the red component of an image, the green CCD extracts the green component, and the blue CCD extracts the blue component. This operation is called color separation.

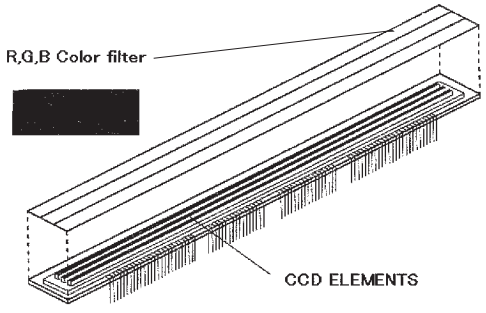
The CCD element is apparently seen as one unit, but it includes the three kinds of elements (R, G, and B).

The CCD element scans the document in the main scanning direction. Scanning in the sub scanning direction is made by shifting the scanner unit with the scanner motor.

The document images are optically reduced by the lens and reflected to the CCD.

The scanning direction is 600dpi.

3 LINES CCD UNIT



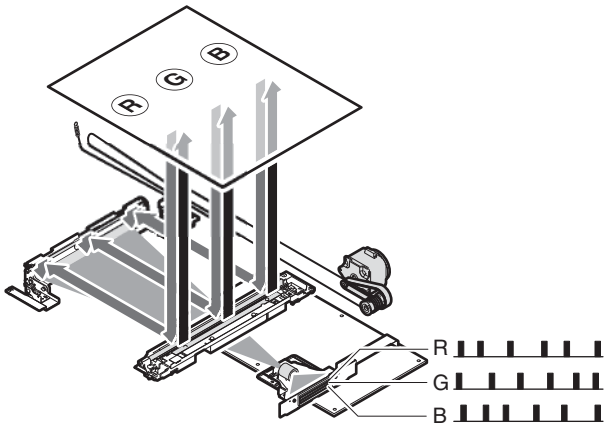
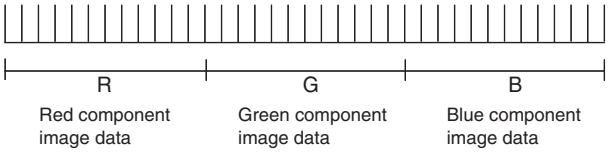
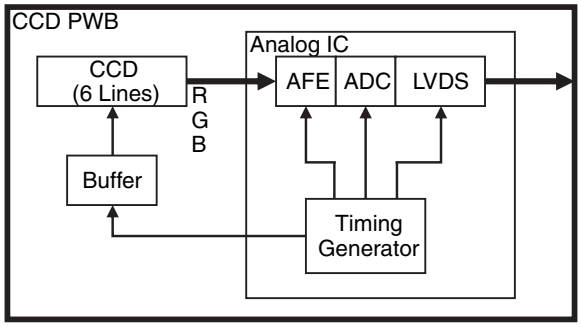




**Image data of one line**




#### d. Image signal A/D conversion

1) Each image signal (analog) of R, G, and B is converted into a 10bit digital signal by the A/D converter in the CCD PWB.
   Each color pixel has 10bit information.
2) Each 10bit digital image signal of R, G, and B is outputted from the CCD PWB and sent to the SCU PWB, where it is converted into an 8bit signal and sent to the MFP PWB.



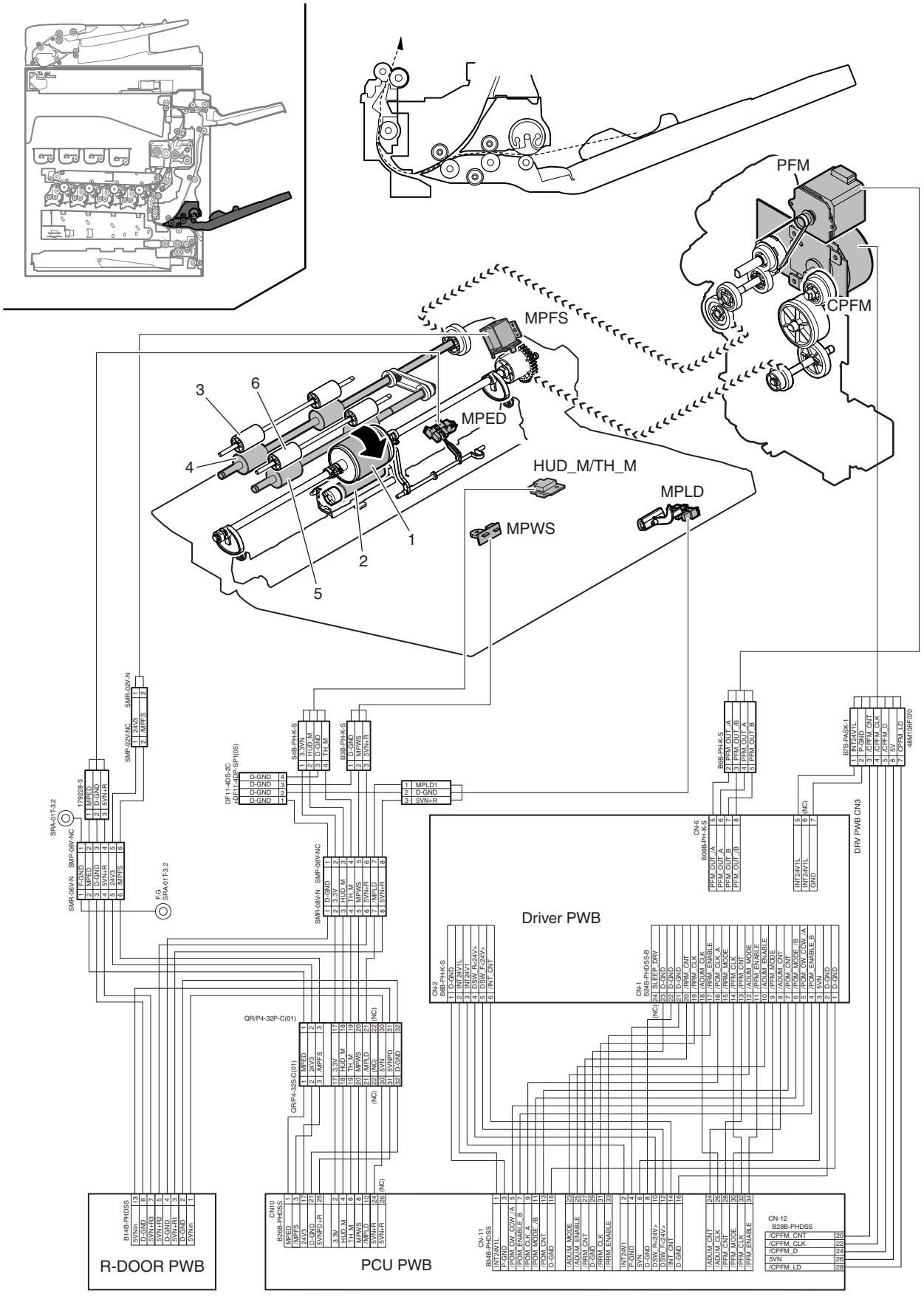

#### e. Zooming operation

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 made optically, but performed by the image process technology (software).

## 3. Manual paper feed section

### A. Electrical and mechanical relation diagram



| Signal name | Name | Function/Operation |
|---|---|---|
| CPFM | Paper feed motor | Drives the paper feed section. |
| HUD_M/TH_M | Temperature/humidity sensor | Detects the temperature and the humidity. (For the process control) |
| MPED | Paper empty sensor (Manual paper feed tray) | Detects presence of paper. (Manual paper feed tray) |
| MPFS | Paper feed solenoid (Manual paper feed) | Controls the paper feed roller. (Manual paper feed) |
| MPLD | Paper length detector (Manual paper feed tray) | Detects the paper length. (Manual paper feed tray) |
| MPWS | Paper width detector (Manual paper feed tray) | Detects the paper width. (Manual paper feed tray) |
| PFM | Transport motor | Drives the transport rollers 5 and 9. |

| 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-feeding. |
| 3 | Transport roller 9 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 4 | Transport roller 9 (Drive) | Transports paper transported from the transport roller 5 to the transport roller 9. |
| 5 | Transport roller 10 (Drive) | Transports paper from manual paper feed section to the transport roller 9. |
| 6 | Transport roller 10 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |

## B. Operational descriptions

### (1) Paper feed operation

The pickup roller moves up and down to 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 registration roller by the manual transport roller.

### (2) Paper size detection

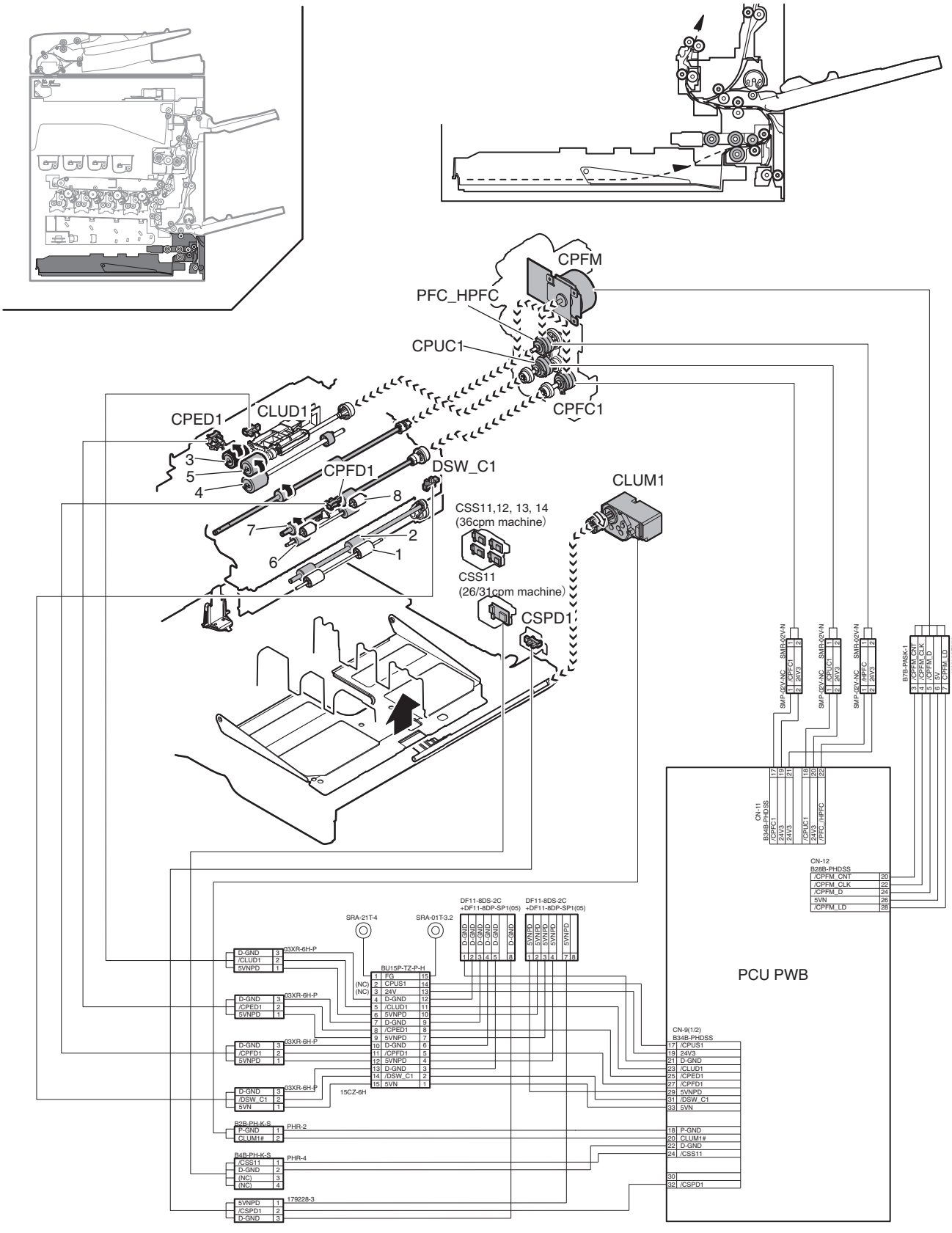
The paper size is detected by the combination of the following detectors on the manual paper feed tray.

**Paper size detection table**

| Series | Paper size | Paper length detector (MPLD) | Paper width detector (MPWS) |
|---|---|---|---|
| | | | Detection width (mm) |
| AB series | A3W | ON | 301 - 310.4 |
| | A3 | ON | 291 - 301 |
| | 11" x 17" | ON | 273.4 - 285.4 |
| | B4 | ON | 251 - 263 |
| | 8.5" x 14" | ON | 209.9 - 221.9 |
| | 8.5" x 13" | ON | 209.9 - 221.9 |
| | A4 | – | 291 - 305 |
| | 8.5" x 11" | – | 273.4 - 285.4 |
| | B5 | – | 251 - 263 |
| | A4R | – | 204 - 216 |
| | B5R | – | 176 - 188 |
| | A5R | – | 142.5 - 154 |
| | Postcard | – | 96 - 106 |
| INCH series | 12" x 18" | ON | 301 - 310.4 |
| | A3 | ON | 291 - 301 |
| | 11" x 17" | ON | 273.4 - 285.4 |
| | B4 | ON | 251 - 263 |
| | 8.5" x 14" | ON | 209.9 - 221.9 |
| | 8.5" x 13" | ON | 209.9 - 221.9 |
| | A4 | – | 291 - 305 |
| | 8.5" x 11" | – | 273.4 - 285.4 |
| | B5 | – | 251 - 263 |
| | 8.5" x 11"R | – | 209.9 - 221.9 |
| | 7.25" x 10.5"R | – | 178.1 - 190.1 |
| | 5.5" x 8.5"R | – | 133.7 - 145.7 |

# 4. Tray paper feed section

## A. Electrical and mechanical relation diagram



| Signal name | Name | Function/Operation |
|---|---|---|
| CLUD1 | Paper feed tray upper limit sensor (Paper feed tray 1) | Detects the upper limit of the paper lift up. (Paper feed tray 1) |
| CLUM1 | Paper tray lift motor (Paper feed tray 1) | Lifts the lift plate of the paper feed tray. (Paper feed tray 1) |
| CPED1 | Paper empty sensor (Paper feed tray 1) | Detects paper empty. (Paper feed tray 1) |
| CPFC1 | Tray vertical transport clutch 1 | Controls the transport roller of the paper feed tray 1 section. |
| CPFD1 | Paper transport detector (Paper feed tray 1) | Detects paper pass in the paper transport section of the paper feed tray 1. |
| CPFM | Paper feed motor | Drives the paper feed section. |
| CPUC1 | Paper feed clutch (Paper feed tray 1) | Controls ON/OFF of the paper feed roller in the paper feed tray 1 section. (Paper feed tray 1) |
| CSPD1 | Paper remaining quantity sensor (Paper feed tray 1) | Detects the paper remaining quantity. (Paper feed tray 1) |
| CSS11 | Paper feed tray size detector (Paper feed tray 1) | Detects closing of the paper feed tray. (Paper feed tray 1) |
| CSS11 - 14 | Paper feed tray size detector (Paper feed tray 1) | Detects the paper size. (Paper size detection is only for 36cpm machine. )<br>Detects closing of the paper feed tray. (Paper feed tray 1) |
| DSW_C1 | Transport cover open/close detector (Paper feed tray 1) | Detects open/close of the transport section cover. (Paper feed tray 1) |
| PFC_HPFC | Transport roller clutch | Controls the transport roller 4. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Transport roller 1 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 2 | Transport roller 1 (Drive) | Transports paper fed from the paper feed desk tray to the transport roller 4. |
| 3 | Paper pickup roller (No. 1 paper feed tray) | Feeds paper to the paper feed roller. |
| 4 | Separation roller (No. 1 paper feed tray) | Separates paper to prevent double-feeding. |
| 5 | Paper feed roller (No. 1 paper feed tray ) | Feeds paper to the paper transport section. |
| 6 | Transport roller 2 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 7 | Transport roller 2 (Drive) | Transports paper fed from the paper feed tray 1 to the transport roller 3. |
| 8 | Transport roller 3 | Transports paper from the transport roller 2 to the transport roller 4. |

## B. Operational descriptions

### (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.

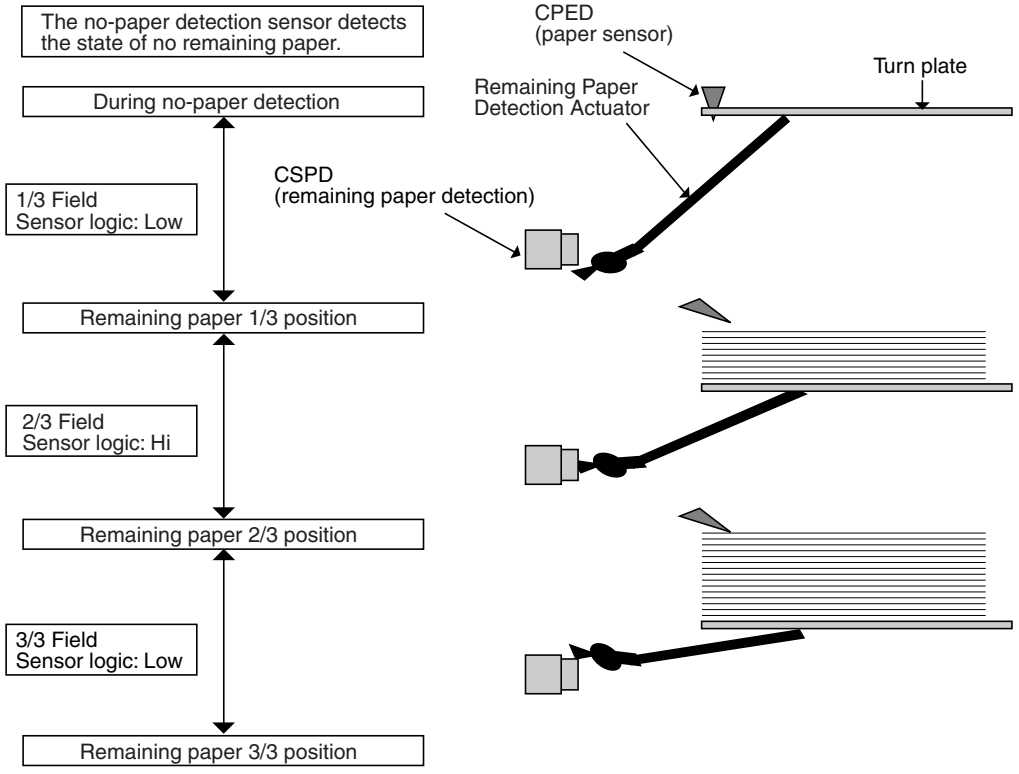
### (3) Paper remaining detection

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

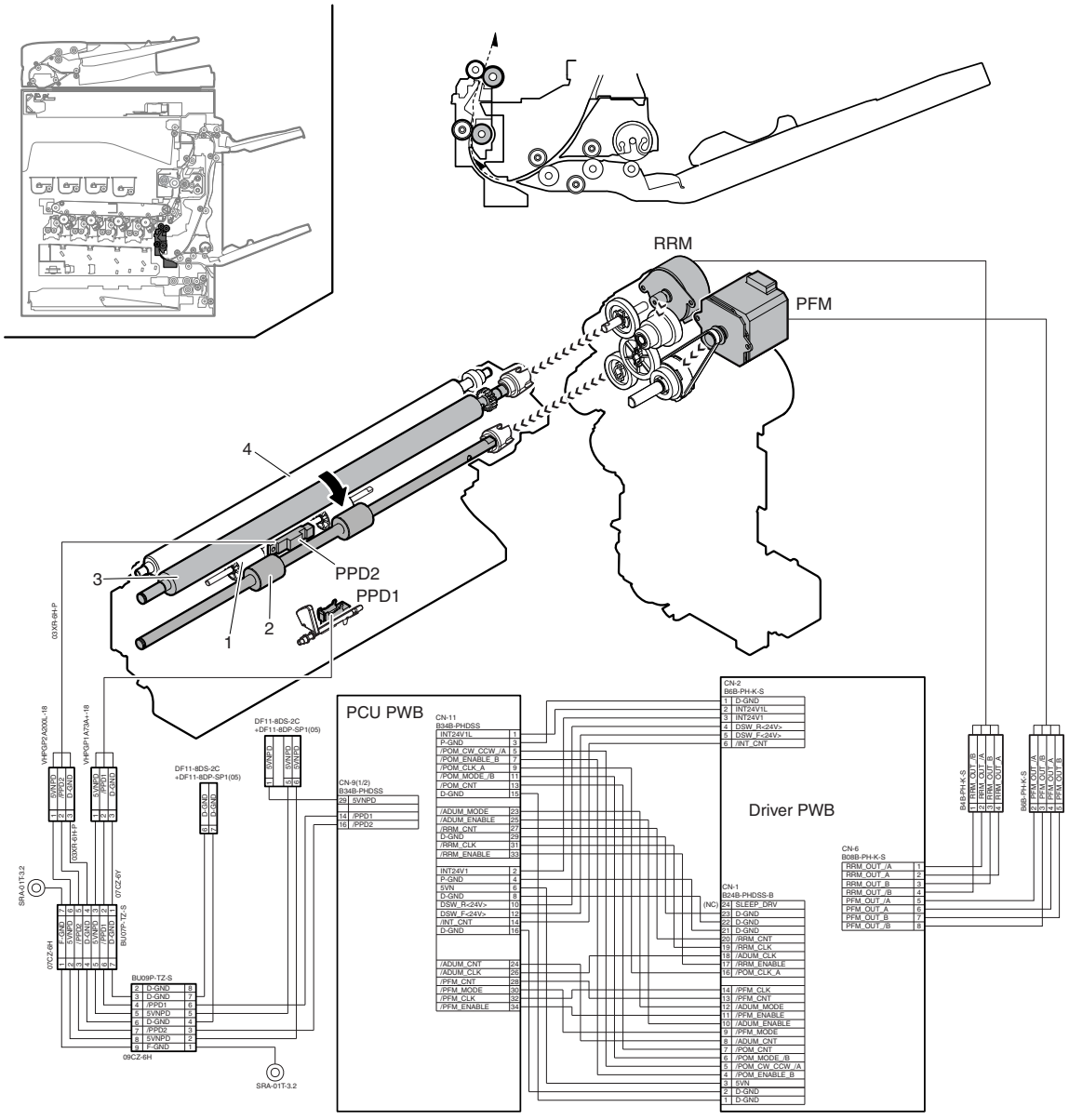
- The paper remaining quantity is judged from the number of rotations of the remaining quantity sensor from starting the lift-up operation of the paper feed tray to turning ON the upper limit sensor.

**(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)**



# 5. Paper registration section (Paper transport section)

## A. Electrical and mechanical relation diagram




| Signal name | Name | Function/Operation |
|---|---|---|
| PFM | Transport motor | Drives the transport rollers 5 and 9. |
| PPD1 | Paper transport detector 1 | Detects paper pass in front of the transport roller 5. |
| PPD2 | Paper transport detector 2 | Detects paper pass in the transport roller 5 in front of the registration roller. |
| RRM | Registration motor | Drives the registration roller. (Controls the timing of the transfer image for the paper.) |

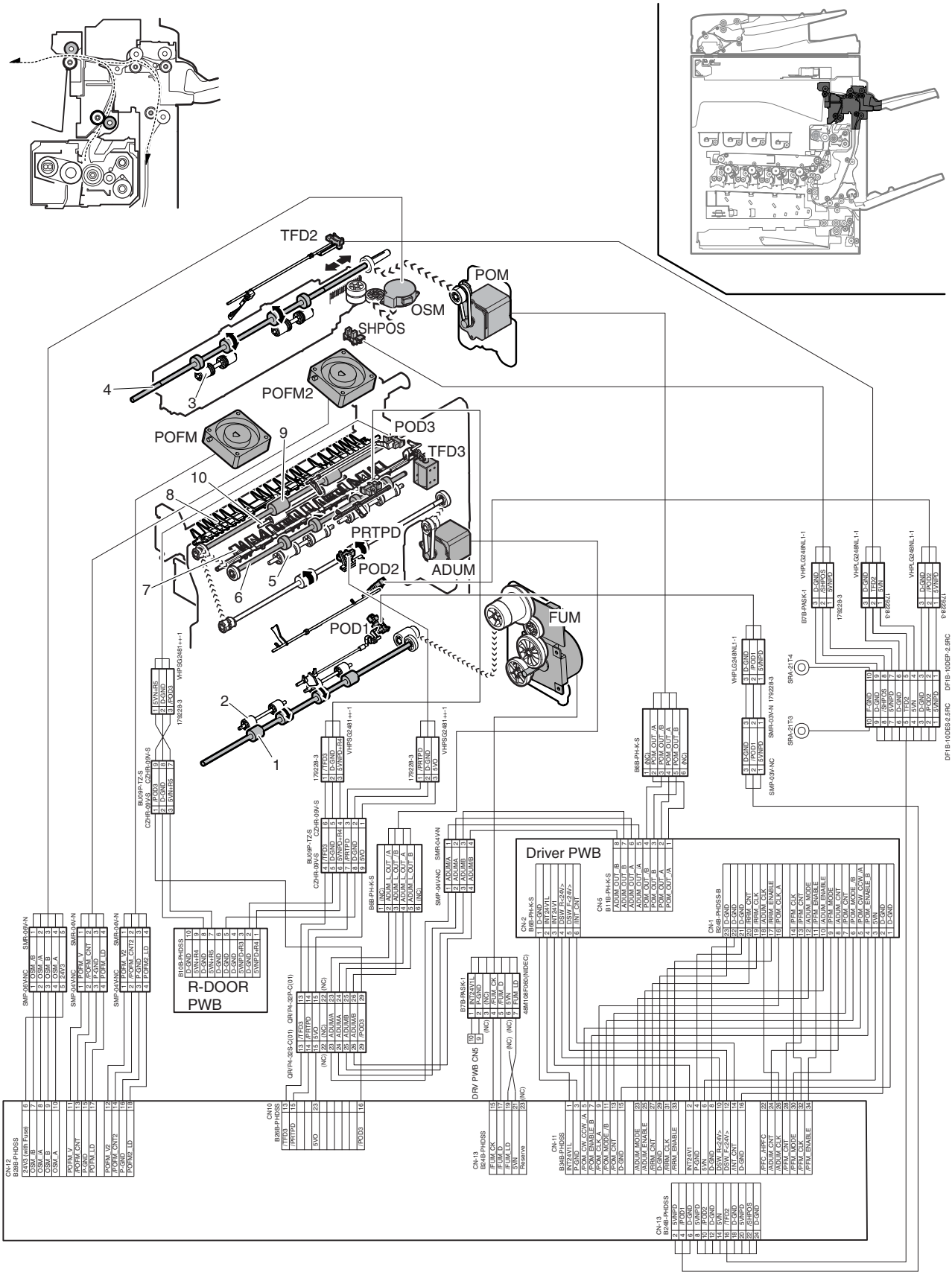
| No. | Name | Function/Operation |
|---|---|---|
| 1 | Transport roller 5 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 2 | Transport roller 5 (Drive) | Transports paper to the registration roller. / Paper is warped between the registration roller and this roller to correct the paper skew and the relation between images and paper. |
| 3 | Registration roller (Drive) | Transports paper to the transfer section. / Controls the transport timing of paper and adjusts relative relations between the image and paper. |
| 4 | Registration roller (Idle) | Apply a pressure to paper and the registration roller to provide the transport power of the transport roller to paper. |

## B. Operational descriptions

Paper is fed from each paper feed section and transported to the registration roller by the transport rollers. ON/OFF control of each transport roller is made by the paper transport clutch. The registration roller controls the relative positions of transported paper and the transfer image. The registration roller is driven by the transport motor. The relative positions of paper and the transfer image are determined by the ON timing of the transport motor.

# 6. Paper exit section

## A. Electrical and mechanical relation diagram




| Signal name | Name | Function/Operation |
|---|---|---|
| ADUM | ADU motor | Drives the ADU and the transport roller in the right paper exit section. |
| FUM | Fusing motor | Drives the fusing section. |

| Signal name | Name | Function/Operation |
|---|---|---|
| OSM | Offset motor | Offsets (shifts) paper. |
| POD1 | Paper exit detector 1 | Detects paper transport from the fusing section. |
| POD2 | Paper exit detector 2 | Detects paper transport to the face-down paper exit tray. |
| POD3 | Paper exit detector 3 | Detects paper transport to the right paper exit tray. |
| POFM | Paper exit cooling fan | Cools the fusing section and the paper exit section. |
| POFM2 | Paper exit cooling fan | Cools the fusing section and the paper exit section. |
| POM | Paper exit motor | Drives the roller in the paper exit section. |
| PRTPD | Paper exit tray paper detector (Right paper exit tray) | Detects paper empty in the paper exit tray (Right paper exit tray). |
| SHPOS | Shifter home positions sensor | Detects the shifter home position. |
| TFD2 | Paper exit tray full detector (Face-down tray) | Detects paper full in the face-down paper exit tray. |
| TFD3 | Paper exit tray full detector (Right paper exit tray) | Detects paper full in the right paper exit tray. |

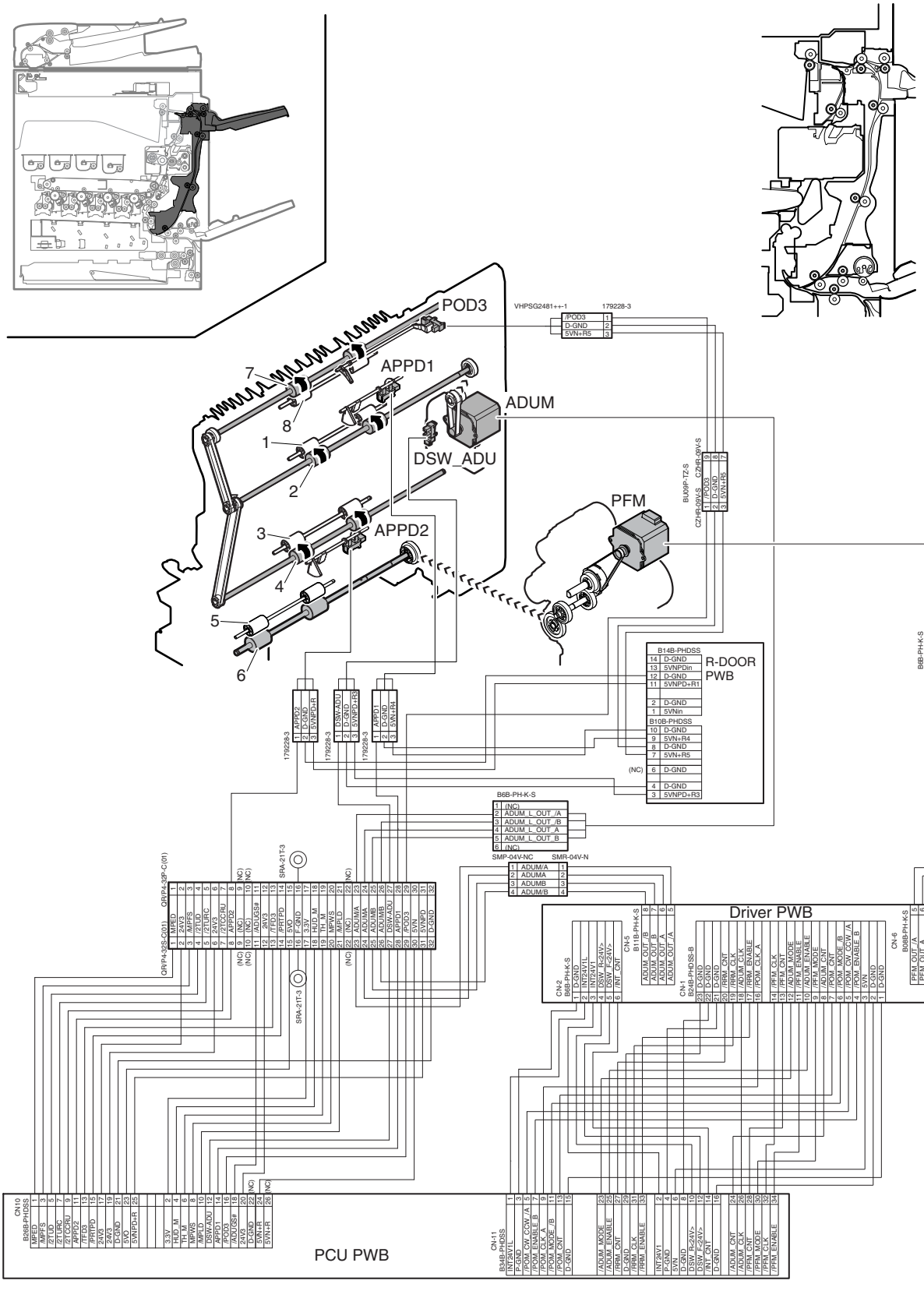
| No. | Name | Function/Operation |
|---|---|---|
| 1 | Transport roller 6 (Drive) | Transports paper transported from the fusing section to the paper exit section and the switchback section. |
| 2 | Transport roller 6 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 3 | Paper exit roller 1 (Idle) | Apply a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper. |
| 4 | Paper exit roller 1 (Drive) | Transports paper to the left paper exit section. |
| 5 | 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. |
| 6 | Paper exit roller 2 (Drive) | Discharges paper to the right paper exit tray. |
| 7 | Paper exit gate | Selects the paper path: to transport paper to the back surface print transport section or to the right tray. |
| 8 | Switchback gate | Switchbacks paper to transport it to the back surface print section. |
| 9 | Paper exit roller 3 (Drive) | Discharges paper to the right paper exit tray. |
| 10 | Paper exit roller 3 (Idle) | Apply a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper. |

## B. Operational descriptions

- The paper transported from the fusing section is sent from transport roller 6 (which is driven by the ADU motor) to paper exit roller 1, and then discharged to the inner tray.
- When the paper is discharged to the right tray: The paper is transported to paper exit roller 1, and the paper exit motor is reversed. Then the paper is passed over the right paper exit gate through paper exit roller 2 to the right tray.

# 7. ADU section

## A. Electrical and mechanical relation diagram



| Signal name | Name | Function/Operation |
|---|---|---|
| ADUM | ADU motor | Drives the transport roller in the ADU right paper exit section. |
| APPD1 | ADU paper transport detector 1 | Detects paper entry and paper pass in the ADU. |
| APPD2 | ADU paper transport detector 2 | Detects paper pass in the ADU transport roller 8. |
| DSW_ADU | ADU paper guide open/close detector | Detects open/close of the ADU paper guide. |
| PFM | Transport motor | Drives the transport rollers 5 and 9. |
| POD3 | Paper exit detector 3 | Detects paper transport to the right paper exit tray. |

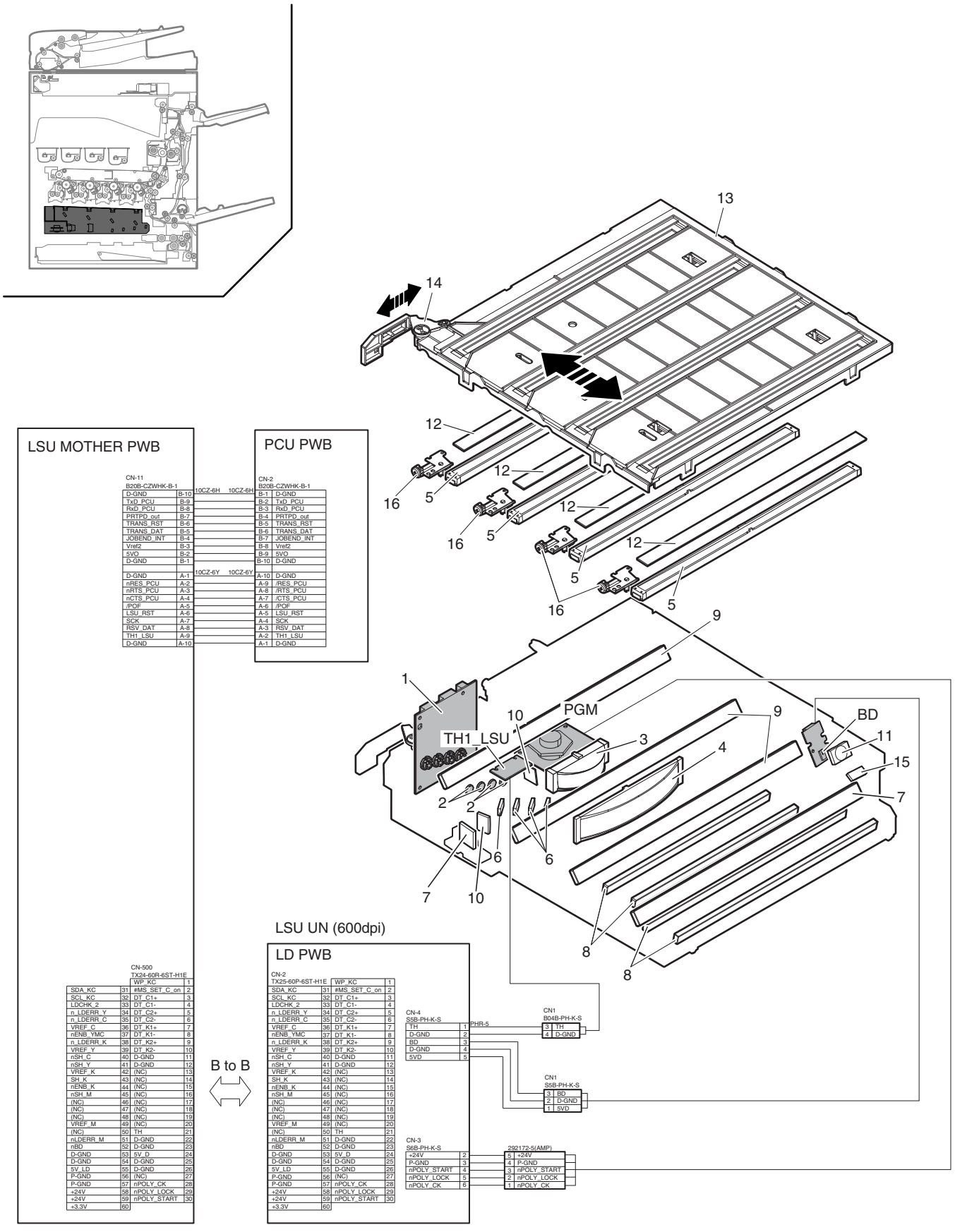
| No. | Name | Function/Operation |
|---|---|---|
| 1 | Transport roller 7 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 2 | Transport roller 7 (Drive) | Transports paper transported from the switchback section to the transport roller 8. |
| 3 | Transport roller 8 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 4 | Transport roller 8 (Drive) | Transports paper transported from the transport roller 7 to the transport roller 9. |
| 5 | Transport roller 9 (Idle) | Apply a pressure to paper and the transport roller to provide the transport power of the transport roller to paper. |
| 6 | Transport roller 9 (Drive) | Transports paper transported from the transport roller 8 to the transport roller 5. |
| 7 | Paper exit roller 3 (Drive) | Discharges paper to the right paper exit tray. |
| 8 | Paper exit roller 3 (Idle) | Apply a pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper. |

## B. Operational descriptions

- The paper transported from the fusing section is sent from transport roller 6 (which is driven by the ADU motor) to paper exit roller 1. At that time, the paper passed under the gate.
- When POD1 detects the paper lead edge, the paper exit drive motor reverses.
- By reversion of the paper exit motor, the paper is sent to the ADU section. At that time, the paper passes over the ADU guide which fell by its own weight.
- Transport rollers 7 and 8 are driven the ADU motor, and transport roller 9 by the transport motor. The paper is transported to the duplex paper feed position.
- The paper is once stopped at the duplex paper feed position, and transported again to the inside of the machine.

# 8. LSU section

## A. Electrical and mechanical relation diagram




| WP_KC | | | 1 |
|---|---|---|---|
| SDA_KC | 31 | #MS_SET_C_on | 2 |
| SCL_KC | 32 | DT_C1+ | 3 |
| LDCHK_2 | 33 | DT_C1- | 4 |
| n_LDERR_Y | 34 | DT_C2+ | 5 |
| n_LDERR_C | 35 | DT_C2- | 6 |
| VREF_C | 36 | DT_K1+ | 7 |
| nENB_YMC | 37 | DT_K1- | 8 |
| n_LDERR_K | 38 | DT_K2+ | 9 |
| VREF_Y | 39 | DT_K2- | 10 |
| nSH_C | 40 | D-GND | 11 |
| nSH_Y | 41 | D-GND | 12 |
| VREF_K | 42 | (NC) | 13 |
| SH_K | 43 | (NC) | 14 |
| nENB_K | 44 | (NC) | 15 |
| nSH_M | 45 | (NC) | 16 |
| (NC) | 46 | (NC) | 17 |
| (NC) | 47 | (NC) | 18 |
| (NC) | 48 | (NC) | 19 |
| VREF_M | 49 | (NC) | 20 |
| (NC) | 50 | TH | 21 |
| nLDERR_M | 51 | D-GND | 22 |
| nBD | 52 | D-GND | 23 |
| D-GND | 53 | 5V_D | 24 |
| D-GND | 54 | D-GND | 25 |
| 5V_LD | 55 | D-GND | 26 |
| P-GND | 56 | (NC) | 27 |
| P-GND | 57 | nPOLY_CK | 28 |
| +24V | 58 | nPOLY_LOCK | 29 |
| +24V | 59 | nPOLY_START | 30 |
| +3.3V | 60 | | |

| Signal name | Name | Function/Operation |
|---|---|---|
| BD | Laser beam detector | Detects (monitors) the laser bean scan timing. |
| PGM | Polygon motor | Scans laser beams. |
| TH1_LSU | LSU temperature sensor | Detects the temperature in the LSU. (For correction of the LSU distortion) |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | LD PWB | Drives the laser diode and controls the power. |
| 2 | Colimeter lens | Forms laser beams. |
| 3 | f θ lens 1 | Equalizes the laser beam dot intervals in the main scanning direction. (Corrects the laser dot intervals on the OPC drum.) |
| 4 | f θ lens 2 | |
| 5 | f θ lens 3 | |
| 6 | 1st mirror | Reflects laser beams to the OPC drum. |
| 7 | 2nd mirror | Reflects laser beams to the OPC drum. |
| 8 | 3rd mirror | Reflects laser beams to the OPC drum. |
| 9 | 4th mirror | Reflects laser beams to the OPC drum. |
| 10 | Cylindrical lens | Leads laser beams to the polygon mirror. |
| 11 | Conversion lens for BD | Converges laser beams and leads to the BD (Bean Detector). |
| 12 | Filter glass | Prevents dust, toner, and foreign materials from entering the LSU. |
| 13 | LSU shutter | Closes the exposure opening port in conjunction with opening of the waste toner box, preventing dust, toner, and foreign materials from attaching. |
| 14 | Shutter ring cam | Shutter closes the exposure opening port in conjunction with opening of the waste toner box. |
| 15 | BD mirror | Leads laser beams to the BD (Beam Detector). |
| 16 | Skew adjustment screw (C, M, Y, K) | Adjusts the radiating angle of laser beams for the OPC drum. By turning this adjustment screw, image skew can be adjusted. |

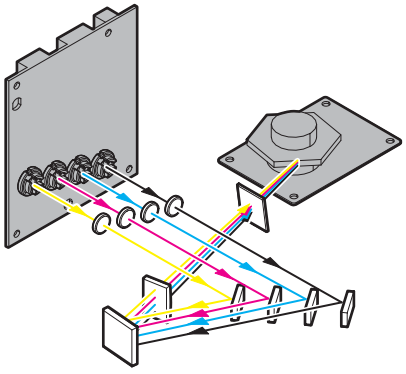
## B. Operational descriptions

### (1) General

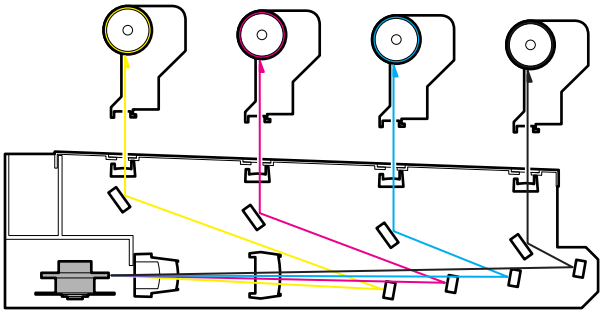
Image data sent from the LSU Mother PWB are converted into laser beams and radiated onto the OPC drum surface. The LSU unit is composed of : (1) the optical elements from the laser to the polygon mirror, (2) the primary system including the mirror which secures the optical path, (3) the optical elements including the polygon mirror, and (4) the scanning system including the mirror which secure the optical path.

### (2) Composition

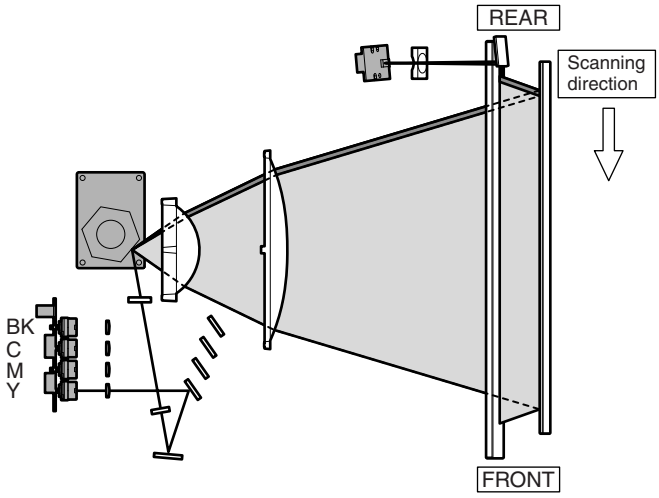
**Primary system**



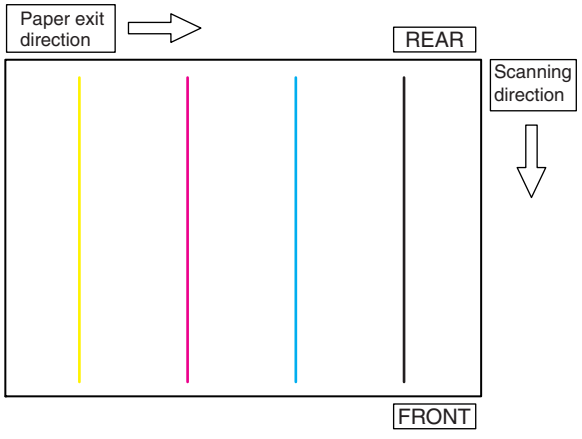
**Scanning system**



**Main scanning direction**




**Writing position on paper**



1 : '14/Jun

### (3) Outline of LSU specifications

1

**26cpm/31cpm machine**

| | |
|---|---|
| Process speed | 140mm/sec |
| Resolution | 1200dpi |
| Laser beam | 2 beams |
| Polygon motor rotation speed | 33070.9rpm |
| Laser power | 0.110mW |
| Bearing type | Oil bearing |
| Number of mirrors | 6 |
| Laser beam diameter | 50 - 85 x 50 - 80μm |
| Effective scan length | 310mm |
| Laser wave length | 790 +/-10nm |

**36cpm machine**

| | |
|---|---|
| Process speed | 165mm/sec |
| Resolution | 1200dpi |
| Laser beam | 2 beams |
| Polygon motor rotation speed | 38976.4rpm |
| Laser power | 0.130mW |
| Bearing type | Oil bearing |
| Number of mirrors | 6 |
| Laser beam diameter | 50 - 85 x 50 - 80μm |
| Effective scan length | 310mm |
| Laser wave length | 790 +/-10nm |

# 9. Process section

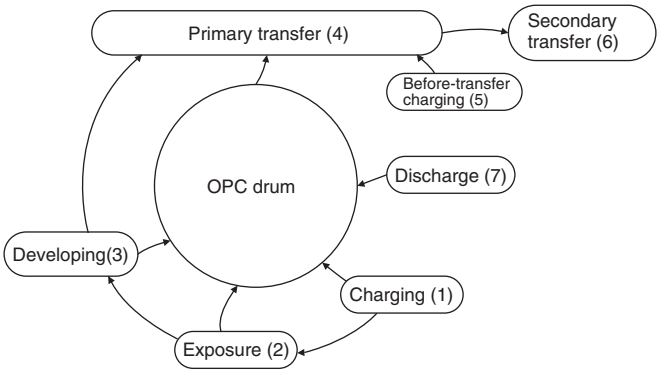
## A. General

The process section is composed of the following major devices.

Laser beams generated by the LSU are converted into visible toner images via the OPC drum, the developing unit, and the transfer unit, and transferred on paper.

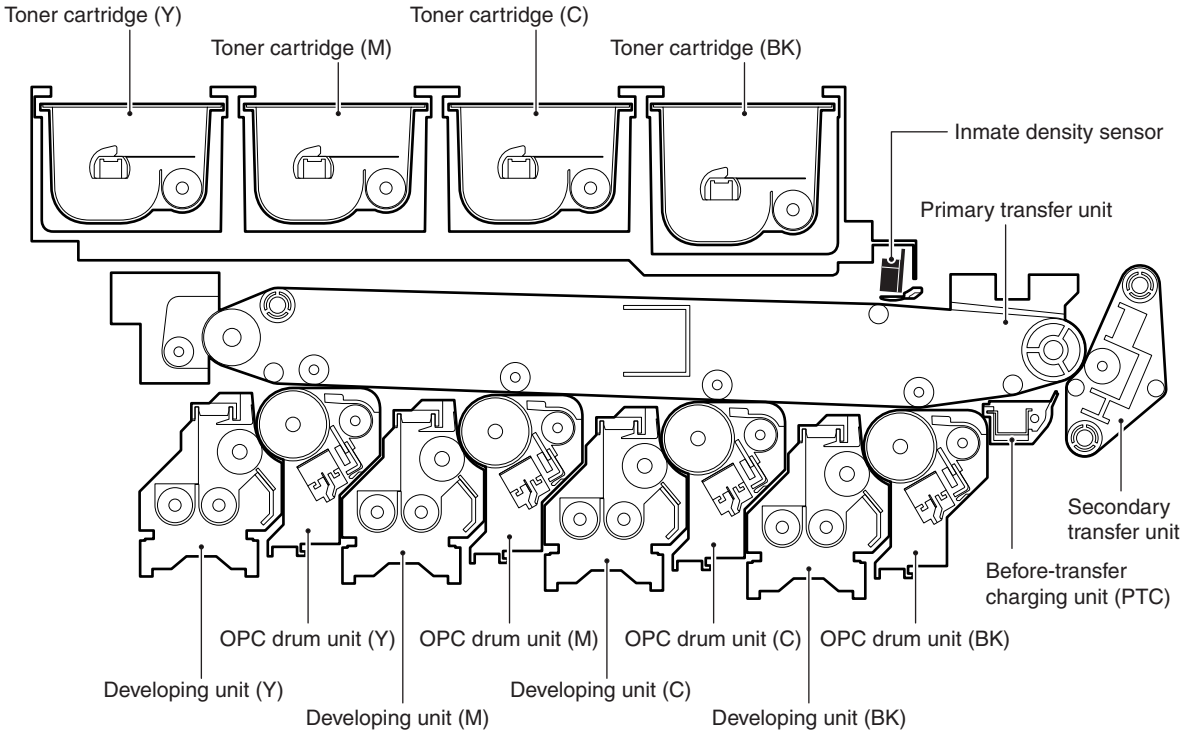
The process operations are performed in the following sequence:

Charging - Exposure - Developing - Primary transfer - Secondary transfer



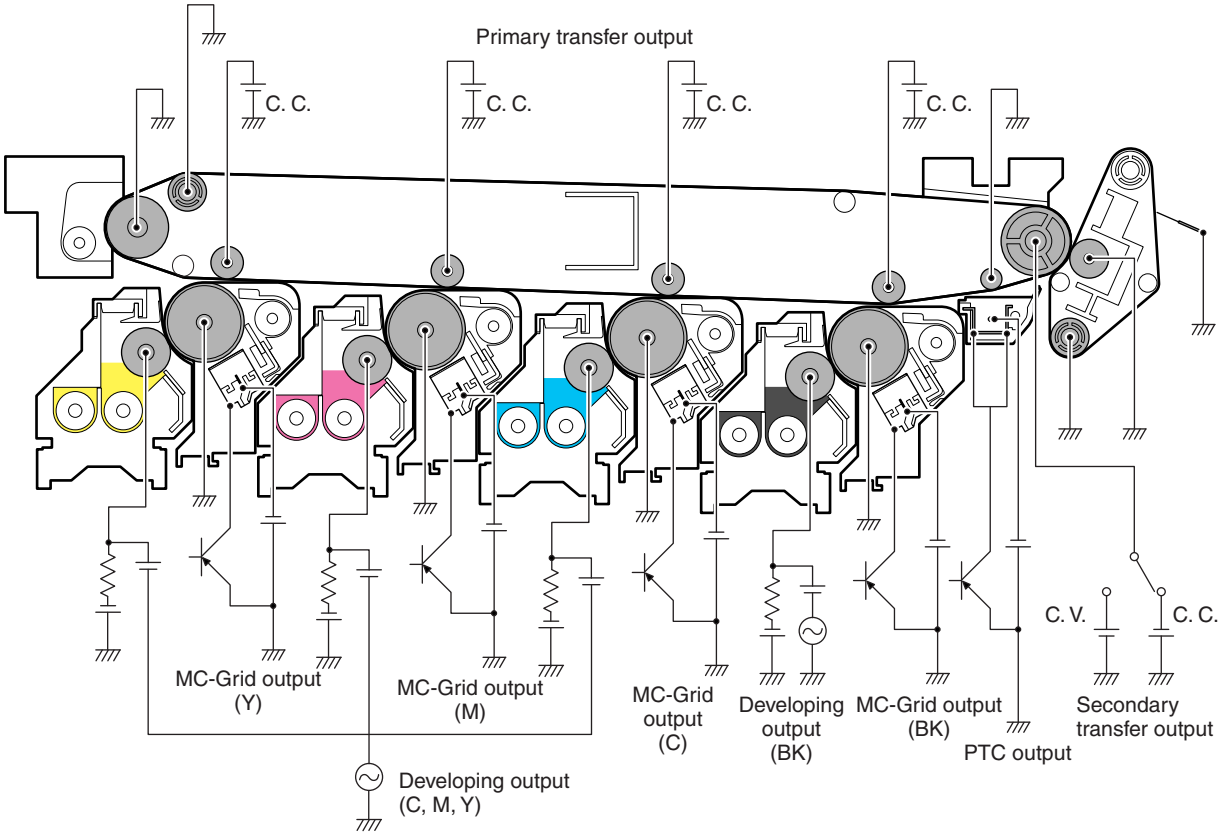

In addition, the process control system is employed to maintain stable print image qualities.

## B. Major units and functions




| Name | Content |
|---|---|
| OPC drum unit | Generates electrostatic latent images with the main charger and the image laser beams. |
| Toner cartridge | Supplies toner to the developing unit with the toner motor. |
| Developing unit | Converts electrostatic latent images on the OPC drum into visible toner images. |
| Primary transfer unit | Transfers toner images on the OPC drum to the primary transfer belt. |
| Secondary transfer unit | Transfers toner images from the primary transfer belt to paper. |
| Waste toner collection section | Collects waste toner generated in the OPC drum section and the transfer section. |
| Image density sensor (Registration sensor) | Detects the toner patch density on the primary transfer belt during operation of the process control system. Detects the color shift amount. |
| MC/DV PWB | Generates the main charger voltage and the DV bias voltage. |
| TC PWB | Generates the transfer voltage. |
| Before-transfer charging unit (PTC) | Charges toner so as to be easily transferred on paper. |

## C. Process section equivalent circuit diagram



## D. Process control

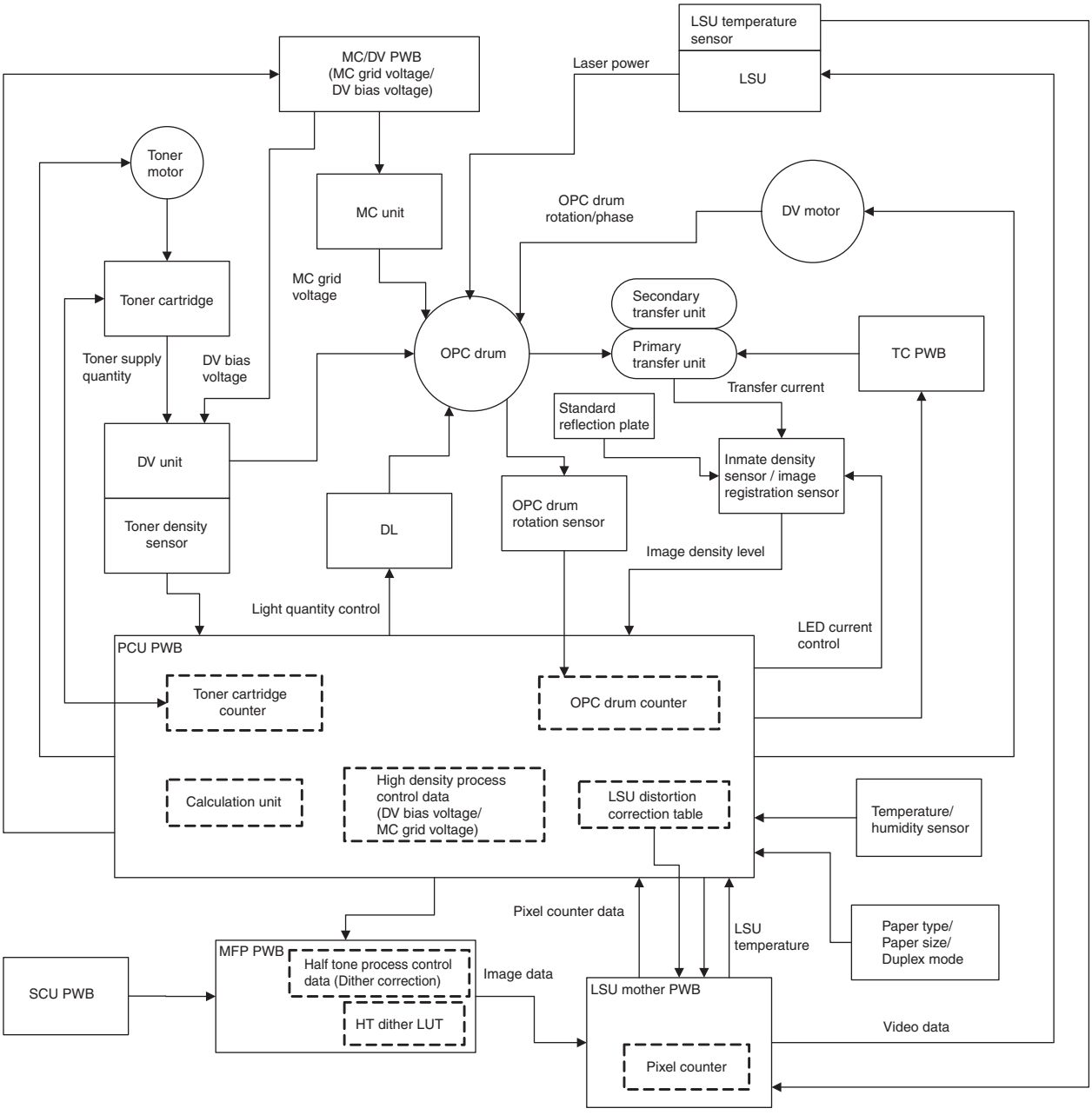
### (1) General

The process control system is provided to maintain stable print image qualities under changes in the environmental conditions and in characteristics of supply parts.

The major operation of the process control is to detect a change in the print density with the image density sensor and change the DV bias, the MC grid voltage and the dither pattern according to the detection result, maintaining the stable color balance and the print density.

### (2) Block diagram

The process control system is composed as shown in the block diagram below.



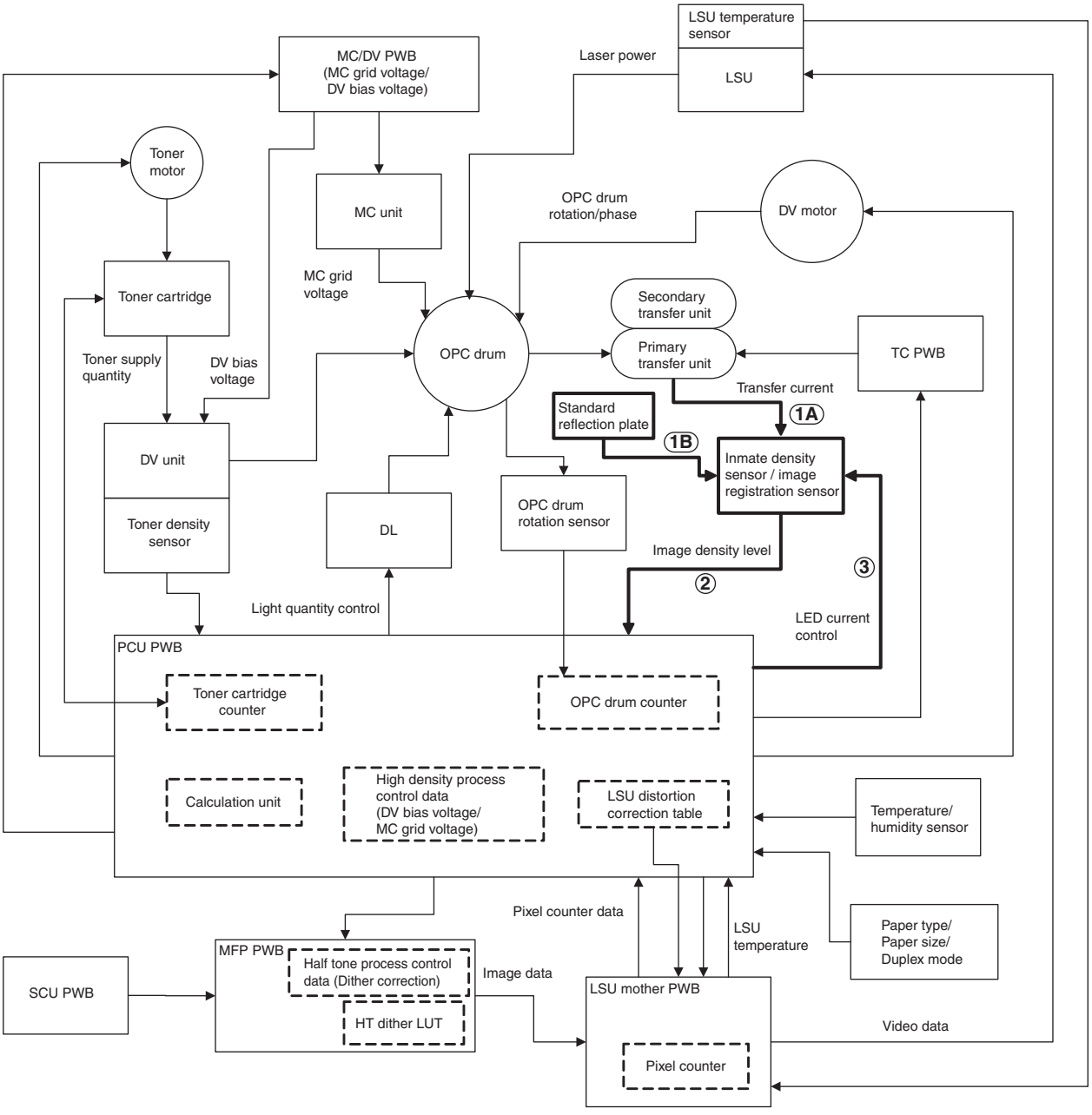
### (3) Process control items and contents

The table below shows the correction item, the change item, the purpose/effect, and the operation timing for each process control item.

| Item No. | Correction item | | Change item | Purpose/Effect | Operation timing/ Operation condition |
|---|---|---|---|---|---|
| 1 | Color image density sensor sensitivity adjustment (Image registration sensor F) | Color image density sensor (Image registration sensor F) LED current adjustment | Color image density sensor LED current adjustment value | A change in the sensitivity due to dirt on the sensor or a change in the temperature is corrected to enable always correct detection of the image patch density. | SIM44-2 / Before high density process control operation |
| | Monochrome image density sensor sensitivity adjustment (Image registration sensor R) | Monochrome image density sensor (Image registration sensor R) LED current adjustment | Monochrome image density sensor amp gain and sensor LED current adjustment value | A change in the sensitivity due to dirt on the sensor or a change in the temperature is corrected to enable always correct detection of the image patch density. | SIM44-2 / Before high density process control operation |
| 2 | High density process control | Developing bias voltage correction | Developing bias voltage | A change in the density due to a change in characteristics of the image generating section and overlap copy are prevented to maintain the density in the high density image section at the proper level. | SIM44-6 (Compulsory execution)<br><br>When warming up after resetting the OPC drum counter, the developing counter, and the transfer counter (SIM25-2/24-4/24-5/24-7).<br><br>When warming up after resetting the OPC drum counter, the developing counter, and the transfer counter (SIM25-2/24-4/24-5/24-7).<br>When warming up after replacement of the toner cartridge.<br><br>For the other operation timing, conform to the setting of SIM44-28. |
| | | Main charger grid voltage correction | Main charger grid voltage 3 | The developing bias voltage correction (change) is corrected to maintain the relation between the developing bias voltage and the main charger grid voltage difference to a constant one. (Prevention of overlap copy and developer drop) | After the developing bias voltage changes by the high density process control. |
| 3 | Half-tone process control | Half-tone process control (Copy mode) | Dither pattern (LUT) | The color balance (gamma) adjusted by the serviceman color balance adjustment is maintained. | 1) SIM44-26 (Compulsory execution)<br>2) After the high density process control (However, depending on the conditions)<br><br>For the other operation timing, conform to the setting of SIM44-28. |
| | | Half-tone process control (Printer mode) | Dither pattern (LUT) | The result of the half-tone correction executed in the copy mode is applied to the printer mode. | After the copy mode half-tone density image correction |
| 4 | Toner density correction / Toner density control | Correction for the environmental toner supply quantity (Toner density correction) (Temperature and humidity change) | Toner supply quantity (Toner supply time) | By changing the toner motor rotation level, the toner supply is corrected to maintain the toner density at a proper level. | When the temperature and the humidity change |
| | | Toner supply quantity correction for the result of the high density process control | Toner supply quantity (Toner supply time) | When the developing bias voltage is changed by the high density process control, if the toner density is judged to be low, the toner supply quantity is corrected to maintain the proper density for print. | After the developing bias voltage is changed to the higher level than the specified level by the high density process control. |
| | | Correction of the toner supply quantity for the toner cartridge counter | Toner motor rotation number Toner supply quantity (Toner supply time) | The toner supply quantity to the developing unit for the certain number of rotations of the toner motor differs depending on the remaining toner quantity in the toner cartridge. Therefore, the toner motor RPM is changed according to the remaining toner quantity (toner motor counter) to maintain the proper toner supply operation. | When the toner motor counter changes |
| | | Correction of the toner supply quantity for the output image density (number of pixels) | Toner supply quantity (Toner supply time (duty)) | The toner supply quantity is maintained properly for the area (pixel count) of output images (for the actual toner consumption quantity), keeping the toner density at the proper level. | During output operation (for every page) |

## (4) Operational descriptions

### a. Image density sensor sensitivity adjustment operation



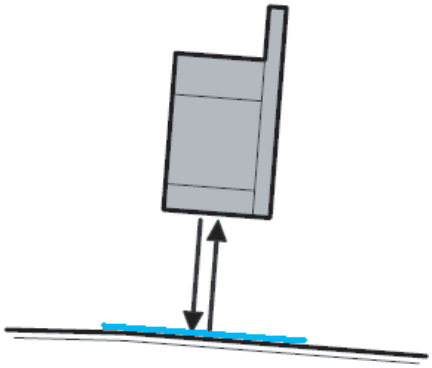
1

**Sensitivity adjustment of the color sensor light receiving elements (Photo transistors)**

Purpose: To maintain the sensitivity of the light receiving elements even if the environmental conditions (temperature and humidity) vary.

Execution timing: This adjustment is executed in the process control when the temperature or the humidity varies.

Method: Use the patch written on the primary transfer to adjust the sensor sensitivity.

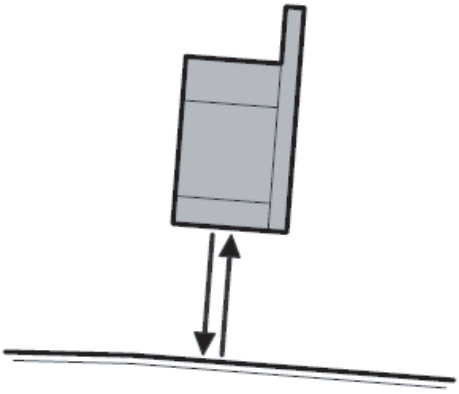


**Light emitting current of the sensor LED (Light emitting diode)**

Purpose: To maintain the light emitting quantity of the sensor even if the sensor LED is aged or the environmental conditions vary.

Execution timing: Every time when the process control is made.

Method: Reflection on the surface of the primary transfer belt is used to adjust the sensor sensitivity.

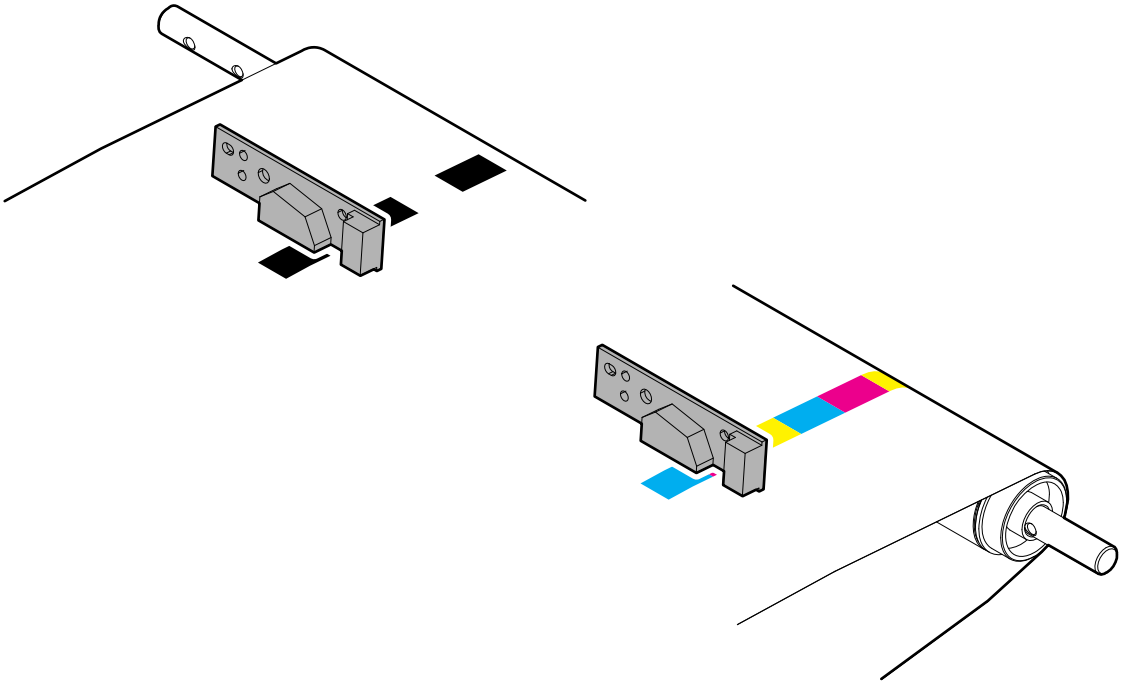


**b. High density process control operation (Toner patch generation and density correction operations)**

1) When the machine enters the high density process control mode, the secondary transfer unit enters the free state.

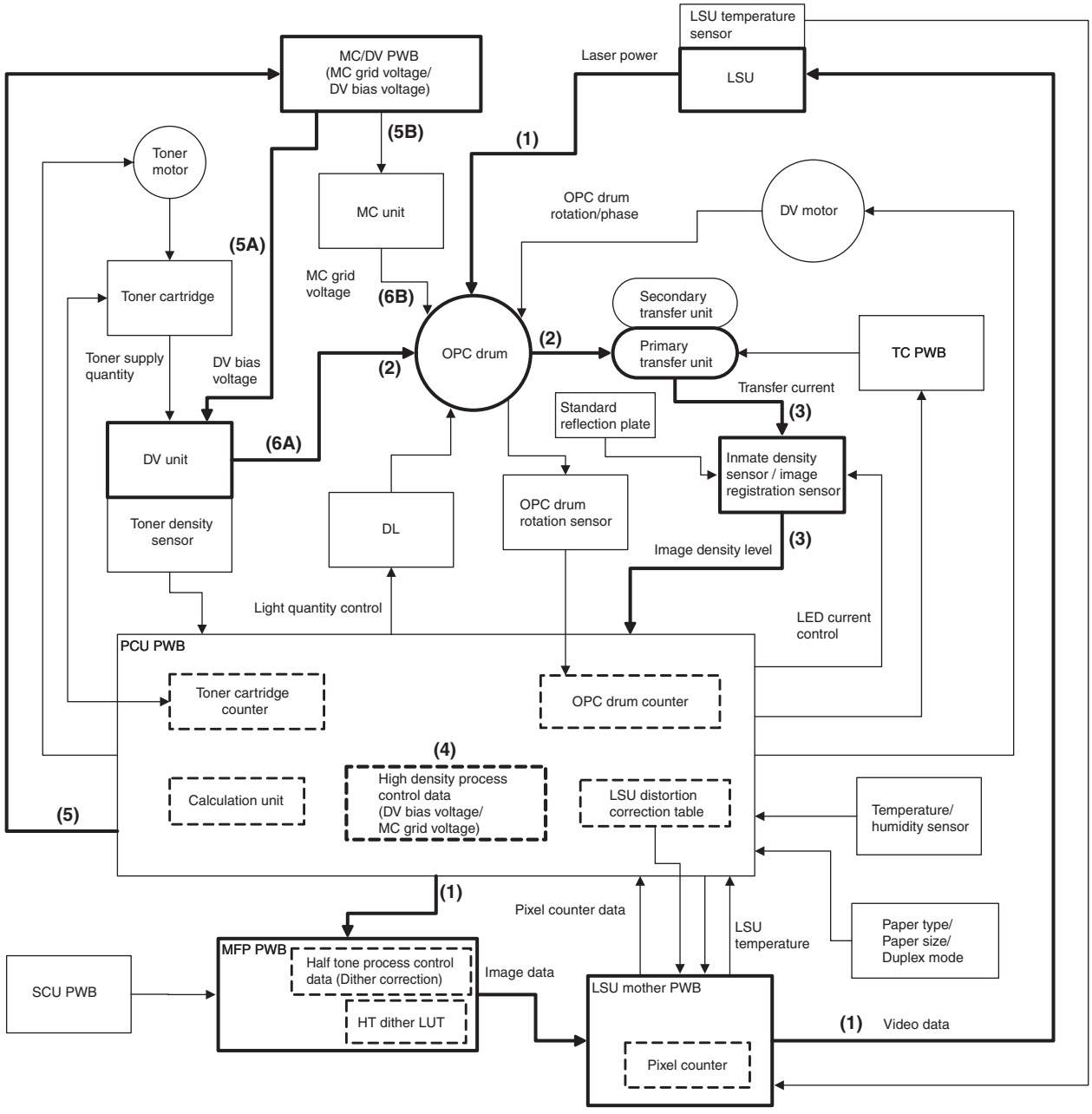
2) While changing the DV bias voltage step by step, a number of toner patches in different densities are generated on the F side and the R side of the primary transfer belt.

F side: The color toner patch is generated.
R side: The black toner patch is generated.



3) Each toner patch density is detected by the image density sensor, and the DV bias correction voltage is calculated in the PCU PWB so that the proper density is obtained from the relation between the DV bias voltage at the time when each toner patch is made and the toner patch density.

**Operation flow**

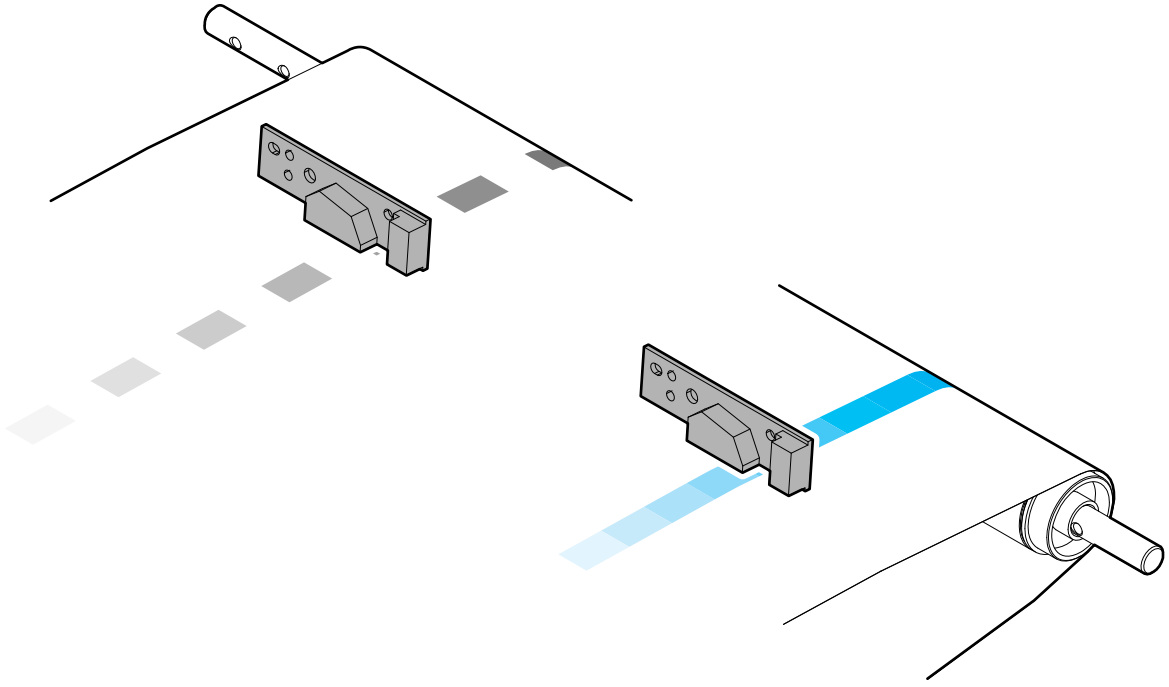



(1) Toner patch electrostatic latent images are formed on the OPC drum.
(2) The toner patch electrostatic latent images are developed and transferred on the primary transfer belt.
(3) Each toner patch density is detected by the toner density sensor.
(4) The DV bias correction value is calculated.
(5) The DV bias correction value is applied to the actual operation mode.
(6) The calculated DV bias voltage is applied to the actual operation mode.

**c. Half-tone process control operation (Toner patch generation and half-tone correction operation)**

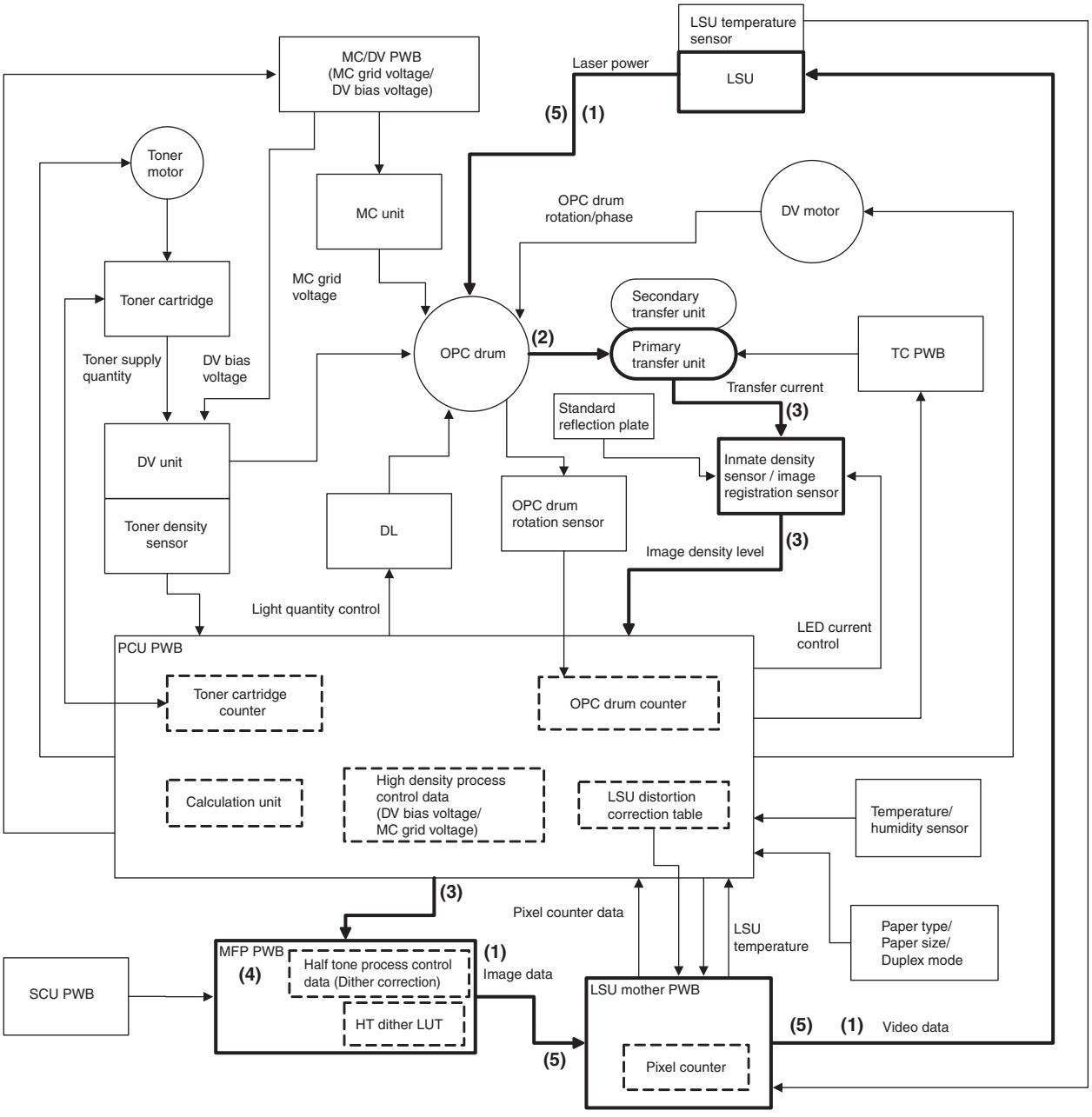
1) When the machine enters the half-tone process control mode, the secondary transfer unit enters the free state.
2) While changing the dither pattern step by step by the MFP PWB, a number of toner patches in different densities are generated on the F side and the R side of the primary transfer belt.

   F side: The color toner patch is generated.
   R side: The black toner patch is generated.



3) Each toner patch density is detected by the image density sensor, and each toner patch density are compared with the reference gamma to calculate the correction amount.
4) The dither pattern in the actual operation mode is generated in the MFP PWB with the reference gamma and the correction amount.

**Operation flow**




(1) Toner patch electrostatic latent images are formed on the OPC drum.

(2) The toner patch electrostatic latent images are developed and transferred on the primary transfer belt.

(3) Each toner patch density is detected by the toner density sensor.

(4) By comparing with the reference gamma, the correction value is calculated.

(5) The dither data in the actual operation mode are formed in the MFP PWB according to the correction value, and applied to the actual operation mode.

**d. Toner density correction / Toner density control**

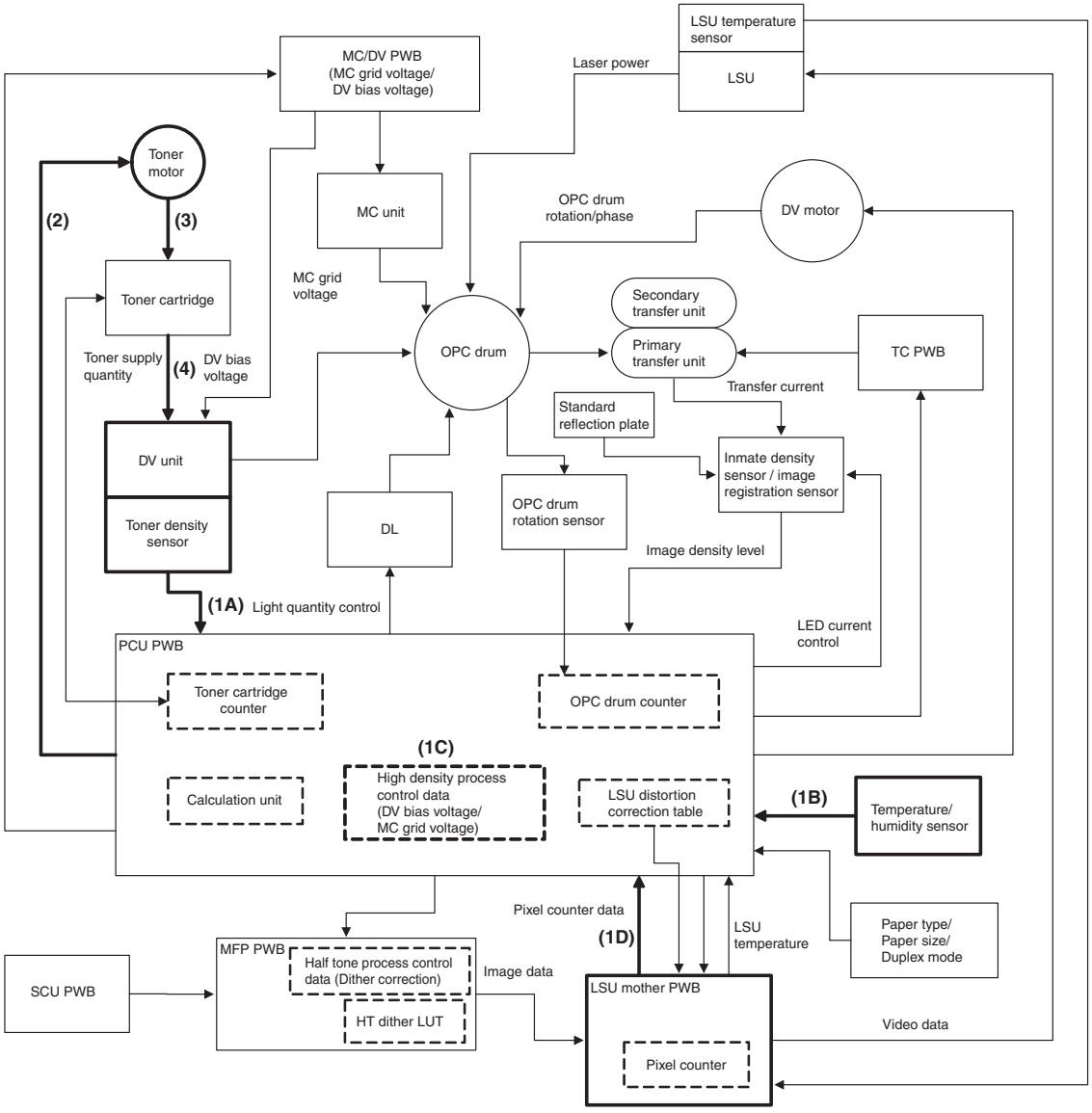
Different from the conventional models, this machine does not control the toner density in the developing unit according to the toner density detected by the toner density sensor.

The toner supply operation from the toner cartridge to the developing unit is controlled according to the following data so that the optimum developing is performed.

- The print pixel number for every page is counted and the toner consumption is calculated by the LSU mother PWB.
- The toner density is checked to be proper or not according to the result of the high density process control.
- The remaining toner quantity is presumed with the toner cartridge counter, and the toner supply quantity to the developing unit for the number of rotations of the toner motor is corrected. (This is because the toner supply quantity to the developing unit for the number of rotation of the toner motor differs depending on the remaining toner quantity in the toner cartridge.)
- Correction for the temperature and the humidity

The toner density sensor in this machine performs the following functions.

- Judges whether toner is supplied from the toner cartridge to the developing unit or not during rotation of the toner motor.
- Judges whether the toner density is abnormal or not.




(1) The basic information of the toner density control is acquired.

- Temperature and humidity
- Print pixel number for every page
- High density process control data
- Toner cartridge counter
- Toner density sensor data

(2) The necessary toner supply quantity (toner motor rotation number) is calculated according to the basic information of the toner density control. (PCU PWB)

(3) The toner motor is rotated for the time corresponding to the calculated toner motor rotation number.

(4) Toner is supplied from the toner cartridge to the developing unit.

### (5) Setting of process control execution conditions

#### a. General

The SIM44-62 function facilitates changing the process control execution conditions.

The SIM44-62 function also allows collective change of the set contents of SIM44-4 and SIM44-28 easily.

This is used to assure stable image qualities by executing proper operations of the process control according to the machine use status.

#### b. SIM44-62 function and use

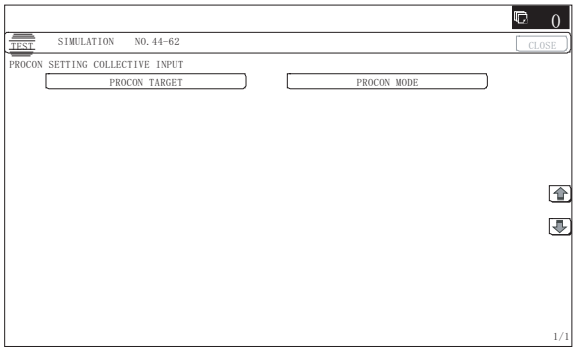
1) Changes the image density in the high density area.
2) Changes the execution frequency of the process control.

#### c. Setting method

1) Enter the SIM44-62 mode, and select the set item.

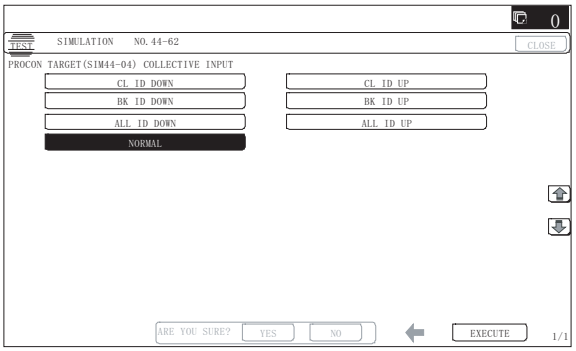
   To change the image density in the high density area, select PROCON TARGET.

   To change the frequency of the process control operations, select PROCON MODE.




(When PROCON TARGET is selected.)

2A) Select the density level.




(Relation between the selected density level and the output image density)

| | |
|---|---|
| CL ID DOWN | The densities of C, M, and Y decrease. (The C/M/Y high density process control target values decrease.) |
| CL ID UP | The densities of C, M, and Y increase. (The C/M/Y high density process control target values increase.) |
| BK ID DOWN | The density of K decreases. (The high density process control target value decreases.) |
| BK ID UP | The density of K increases. (The high density process control target value increases.) |
| ALL ID DOWN | The densities of C, M, Y and K decrease. (The C/M/Y/K high density process control target values decrease.) |
| ALL ID UP | The densities of C, M, Y and K increase. (The C/M/Y/K high density process control target values increase.) |
| NORMAL | The standard density of C, M, Y and K. (The C/M/Y/K high density process control target values are the standard values.) |

(Relation between the selected density level and the SIM44-4 set values)

| | | SIM44-62 PROCON TARGET (Selected density level) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Low | | | Normal | High | | | |
| Item (SIM44-4) | | CL ID Down | BK ID Down | ALL ID Down | Normal (Default) | CL ID Up | BK ID Up | ALL ID Up | |
| A | PCS_CL TARGET | 98 | 98 | 98 | 98 | 98 | 98 | 98 | SIM44-4 set value |
| B | PCS_K TARGET | 208 | 208 | 208 | 208 | 208 | 208 | 208 | |
| C | LED_CL OUTPUT | 21 | 21 | 21 | 21 | 21 | 21 | 21 | |
| D | LED_K OUTPUT | 21 | 21 | 21 | 21 | 21 | 21 | 21 | |
| E | PCS ADJSTMENT LIMIT | 4 | 4 | 4 | 4 | 4 | 4 | 4 | |
| F | BELT GROUND DIF | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| G | BIAS_CL STANDARD DIF | 60 | 60 | 60 | 60 | 60 | 60 | 60 | |
| H | BIAS_BK STANDARD DIF | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| I | BIAS PATCH INTERVAL | 60 | 60 | 60 | 60 | 60 | 60 | 60 | |
| J | Y_PAT TARGET ID | 101 | 111 | 101 | 111 | 126 | 111 | 126 | |
| K | M_PAT TARGET ID | 125 | 135 | 125 | 135 | 150 | 135 | 150 | |
| L | C_PAT TARGET ID | 118 | 128 | 118 | 128 | 143 | 128 | 143 | |
| M | K_PAT TARGET ID | 45 | 40 | 40 | 45 | 45 | 55 | 55 | |
| N | HV BK_GROUND LIMIT | 60 | 60 | 60 | 60 | 60 | 60 | 60 | |

3A) Press [EXECUTE] key.

4A) Press [YES] key.

The SIM44-4 set value varies according to the selected density level.

5A) Execute SIM46-74 to adjust the copy and printer color balance.

(When PROCON MODE is selected.)

2B) Select the execution frequency level of the process control.

(Setting level and application)

HighQuality2:

The execution frequency of the process control is highest.

It is set when the color image quality is given priority.

Every time the power is turned ON, the process control is executed.

The execution frequency of the process control is about 3 times greater than the normal setting.

For a user who's main jobs are color jobs of more than 100 sheets/day with priority on the color image quality.

HighQuality1:

The execution frequency of the process control is high.

It is set when the color image quality is given priority.

Every time the power is turned ON, the process control is executed.

For a user of about 100 sheets/day with priority on the color image quality.

Normal (Default):

The process control is executed in the normal frequency.

BW Mode:

The process control is executed in the normal frequency.

It is set when there are little color jobs and many monochrome jobs.

The black process control is executed.

The color process control is occasionally executed according to the color toner consumption.

The color toner consumption is suppressed.

Print Performance:

The execution frequency of the process control is low.

It is set when the job speed is given priority.

The process control is executed in about 50% of the normal frequency during jobs.

For jobs of 100 or less, the process control is executed after completion of the jobs.

(Relation between the selected mode and the SIM44-28 set values)

| | | SIM44-62 and PROCON MODE (process control execution frequency level) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Highest | High | Normal | | Low | |
| Item (SIM44-28) | | HighQuality2 | HighQuality1 | Normal (Default) | BW Mode | Print Performance | |
| A | INITIAL | 0 | 0 | 0 | 0 | 0 | SIM44-28 set value |
| B | SW ON | 0 | 0 | 3 | 3 | 3 | |
| C | TIME | 0 | 0 | 3 | 3 | 3 | |
| D | HUM_LIMIT | 0 | 0 | 0 | 2 | 0 | |
| E | HUM | 0 | 0 | 0 | 2 | 0 | |
| F | REV1 | 0 | 0 | 0 | 1 | 1 | |
| G | REV2_BK | 0 | 0 | 0 | 0 | 0 | |
| H | REV2_CL | 0 | 0 | 0 | 0 | 0 | |
| I | REFRESH MODE | 1 | 1 | 1 | 1 | 1 | |
| J | DAY | 1 | 1 | 1 | 0 | 1 | |
| K | HI-COV | 0 | 0 | 0 | 0 | 1 | |
| L | LO-COV | 0 | 0 | 0 | 0 | 1 | |
| M | TonerCA-END | 1 | 1 | 1 | 1 | 1 | |
| O | AVERAGE-PAGE | 3 | 3 | 3 | 3 | 3 | |
| P | LIMIT PAGE | 5 | 5 | 10 | 10 | 10 | |
| Q | PIX_RATIO_BK | 10 | 10 | 10 | 10 | 10 | |
| R | PIX_RATIO_CL | 10 | 10 | 10 | 50 | 10 | |
| S | INTERVAL TIME | 3 | 3 | 3 | 3 | 3 | |
| T | HUM HOUR | 2 | 2 | 2 | 2 | 2 | |
| U | HUM_DIF | 2 | 2 | 2 | 2 | 4 | |
| V | BK_RATIO | 5 | 10 | 15 | 30 | 30 | |
| W | M_RATIO | 5 | 10 | 15 | 30 | 30 | |
| X | COLOR BORDER | 20 | 20 | 20 | 100 | 20 | |
| Y | BK ONLY | 5 | 5 | 5 | 6 | 5 | |
| Z | HT_DIF | 1 | 20 | 40 | 40 | 40 | |
| AA | RG_ON_SYNC | 0 | 0 | 0 | 0 | 0 | |
| AB | RG_TEMP_TIMER | 0 | 0 | 0 | 0 | 0 | |
| AC | RG_PERM_TIMER | 0 | 1 | 1 | 1 | 1 | |
| AC | RG_HOUR_TIMER | 3 | 5 | 5 | 11 | 11 | |
| AD | RG_BW_SYNC | 1 | 1 | 1 | 1 | 1 | |

Items out of application: 2TRAN_CLEAN_TIME1/2TRAN_CLEAN_TIME2/2TRAN_CLEAN_TIME3

3B) Press [EXECUTE] key.

4B) Press [YES] key.

The SIM44-28 set value varies according to the selected execution frequency level of the process control.

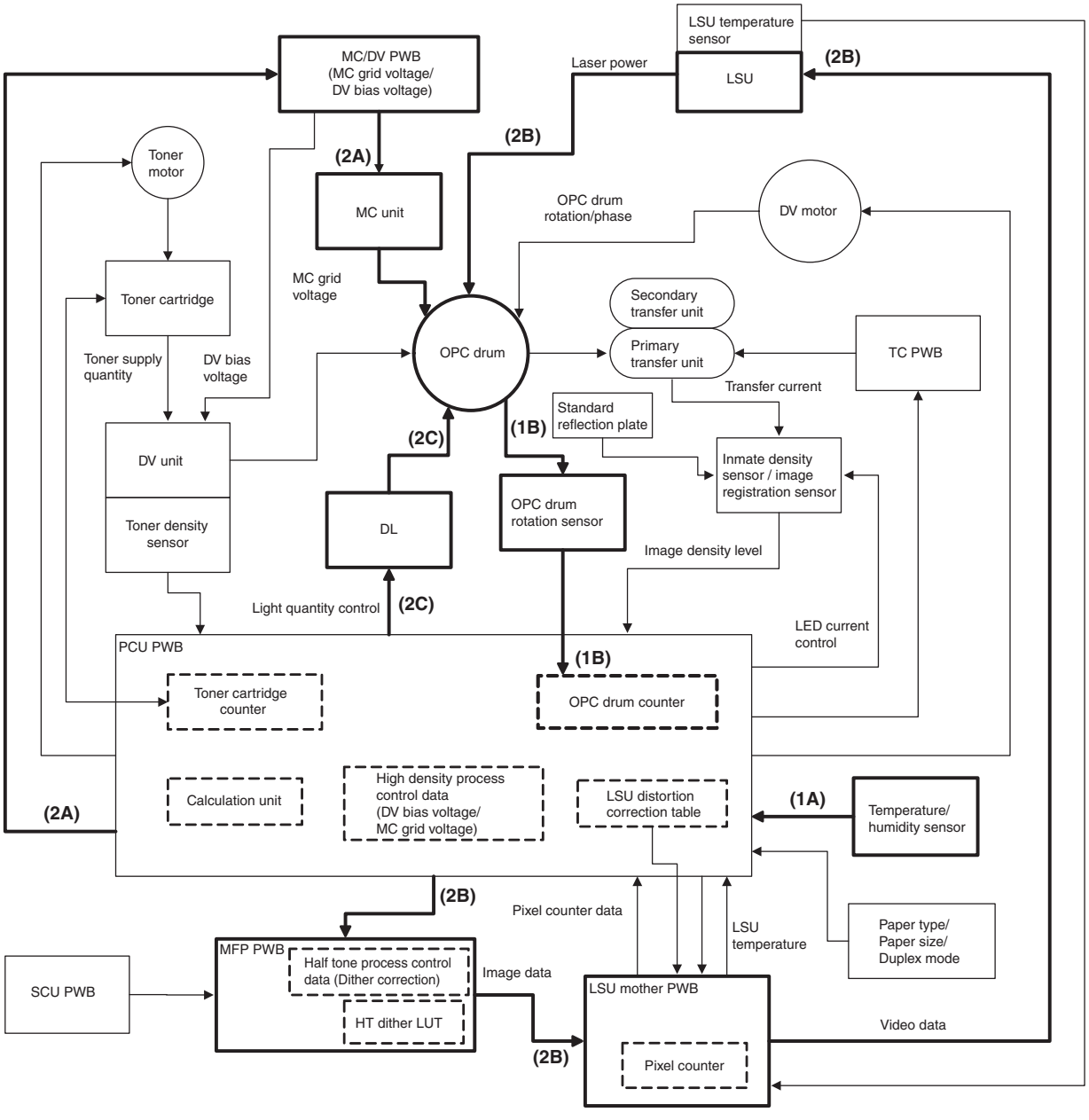
**Note**

This simulation may not function with some firmware versions. In such a case, the firmware must be upgraded to the latest version

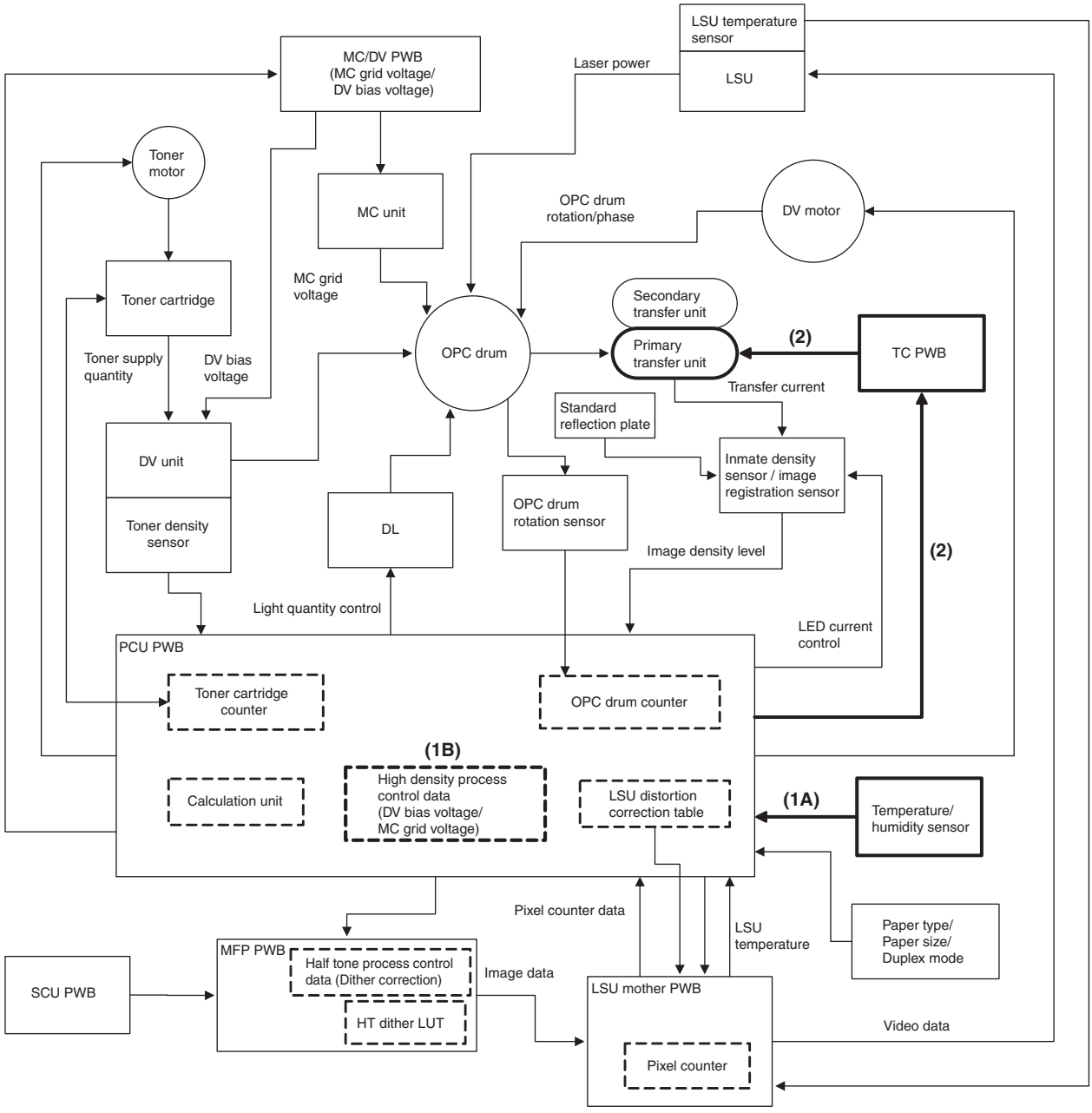
## E. Other correction items and contents

The table below shows the correction item, the change item, the purpose/effect, and the operation timing for the other correction items.

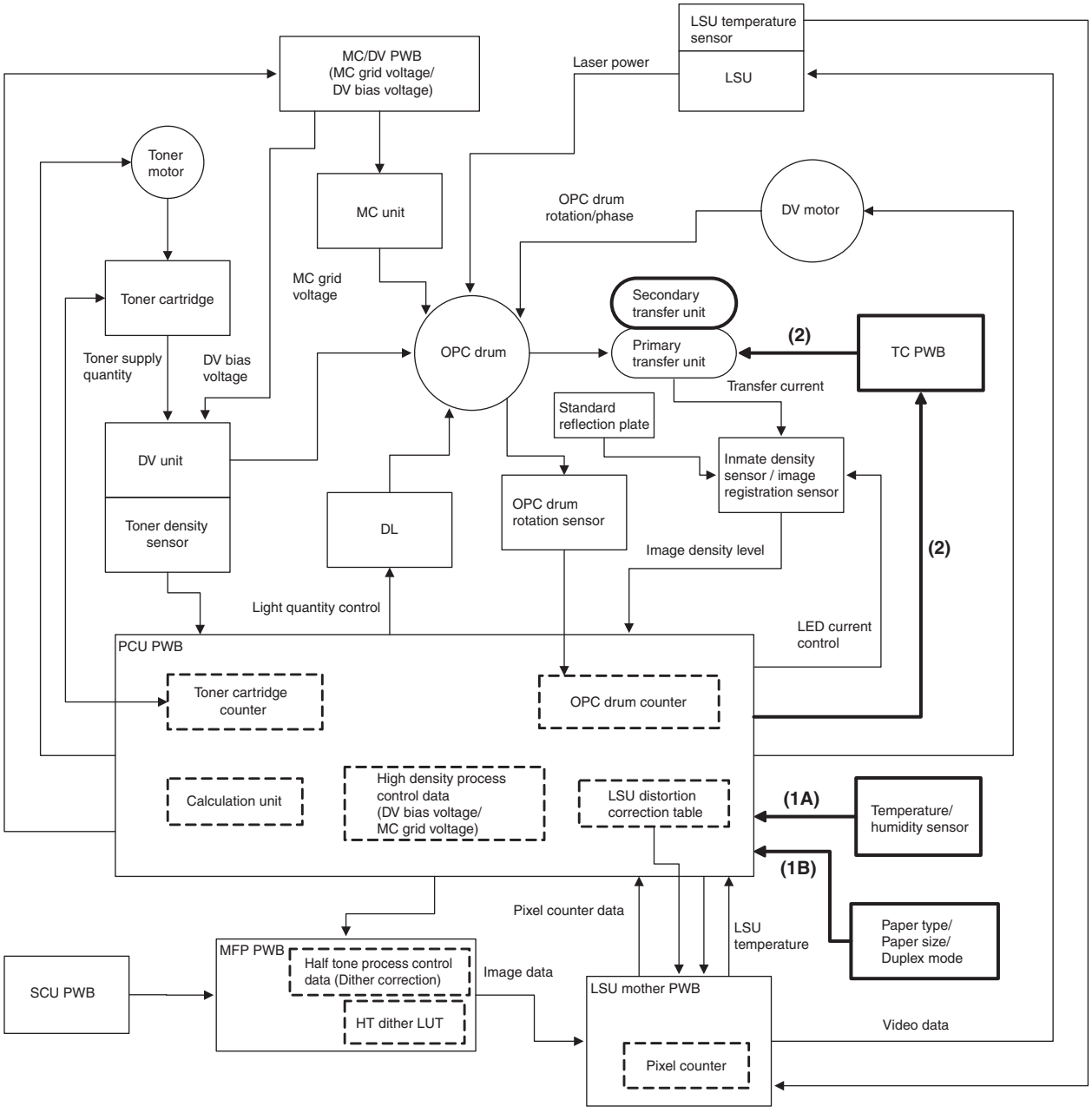
| Item No. | Correction item | | Change item | Purpose/Effect | Operation timing/ Operation condition |
|---|---|---|---|---|---|
| 1 | OPC drum deterioration correction | Main charger grid voltage correction | Main charger grid voltage 1 | The surface dark potential fall due to the OPC drum OPC layer membrane decrease and electric and optical stress is corrected to maintain the proper density for print and prevent overlap copy. | When executing the high density process control. |
| | | | Main charger grid voltage 2 | The surface dark potential fall due to the temperature and the humidity is corrected to maintain the proper density for print and prevent overlap copy. | |
| | | Discharge lamp light quantity correction | Discharge lamp light quantity (ON DUTY 1) | A change (an increase in the surface dark potential) in a change in the OPC drum sensitivity (a change in the discharge efficiency) due to the OPC drum OPC layer membrane decrease and electrical and optical stress is corrected to maintain the proper density for print. | |
| | | | Discharge lamp light quantity (ON DUTY 2) | A change in the OPC drum sensitivity (a change in the discharge efficiency) (a change in the surface dark potential) due to the temperature and the humidity is corrected to maintain the proper density for print. | |
| | | Laser power correction | Laser power 1 | A fall in the OPC drum photo sensitivity due to the OPC drum OPC layer membrane decrease and electrical and optical stress is corrected to maintain the proper density for print. | |



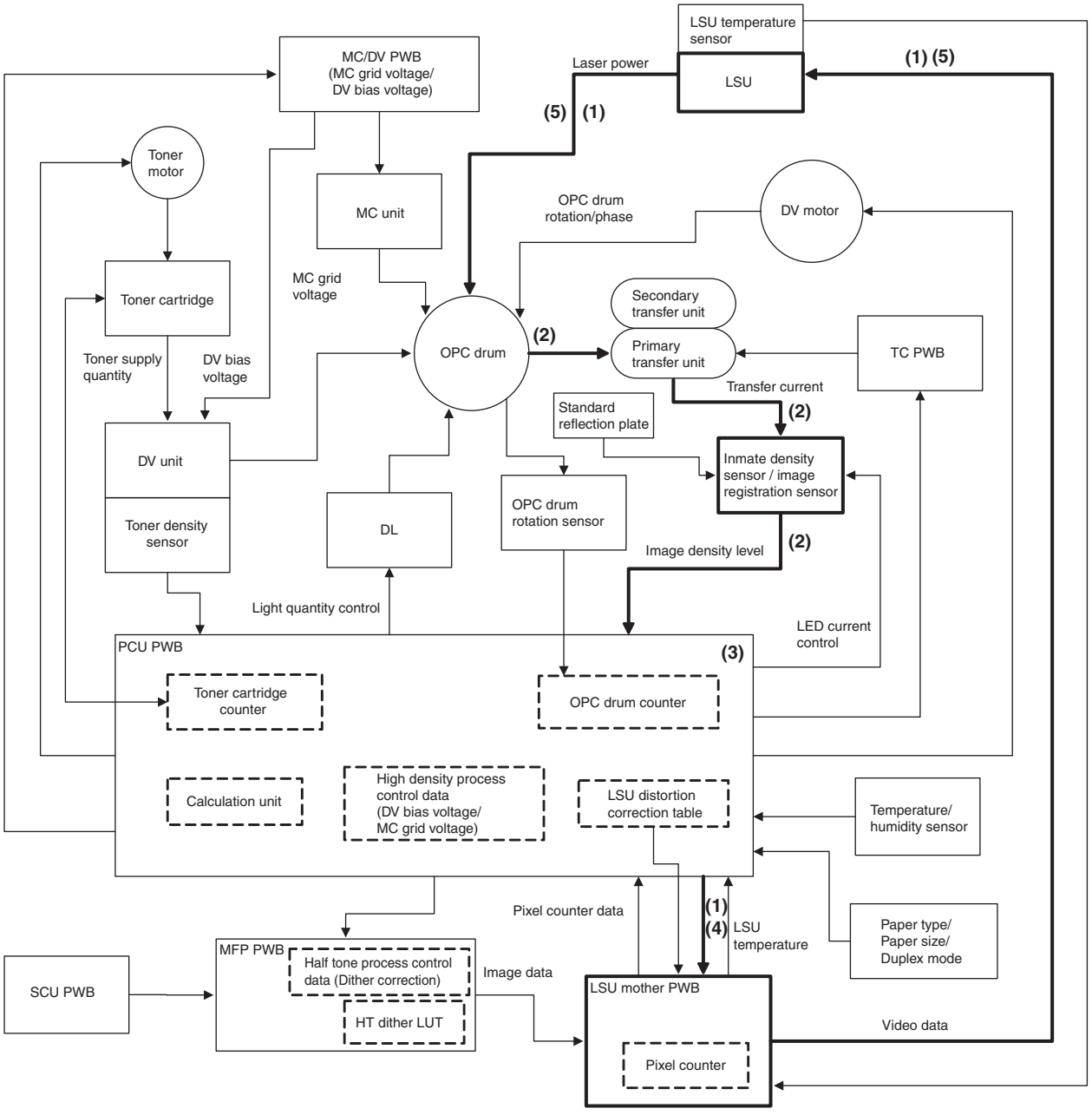
| Item No. | Correction item | | Change item | Purpose/Effect | Operation timing/ Operation condition |
|---|---|---|---|---|---|
| 2 | Transfer capability correction (Primary transfer) | Correction of the transfer current for the environment (A change in the temperature and the humidity) | Primary transfer current 1 | A change in the transfer characteristics (transfer efficiency) due to a change in the temperature and the humidity is corrected by changing the transfer current. | A change in the environmental area (temperature and humidity) / Before the high density process control operation (AND condition) |
| | | Correction of the transfer current for the high density process control (MC grid voltage) | Primary transfer current 2 | A change in the transfer characteristics (transfer efficiency / memory) according to the surface potential of the OPC drum is corrected by changing the transfer current value. | After the OPC drum surface potential is changed by the high density process control |



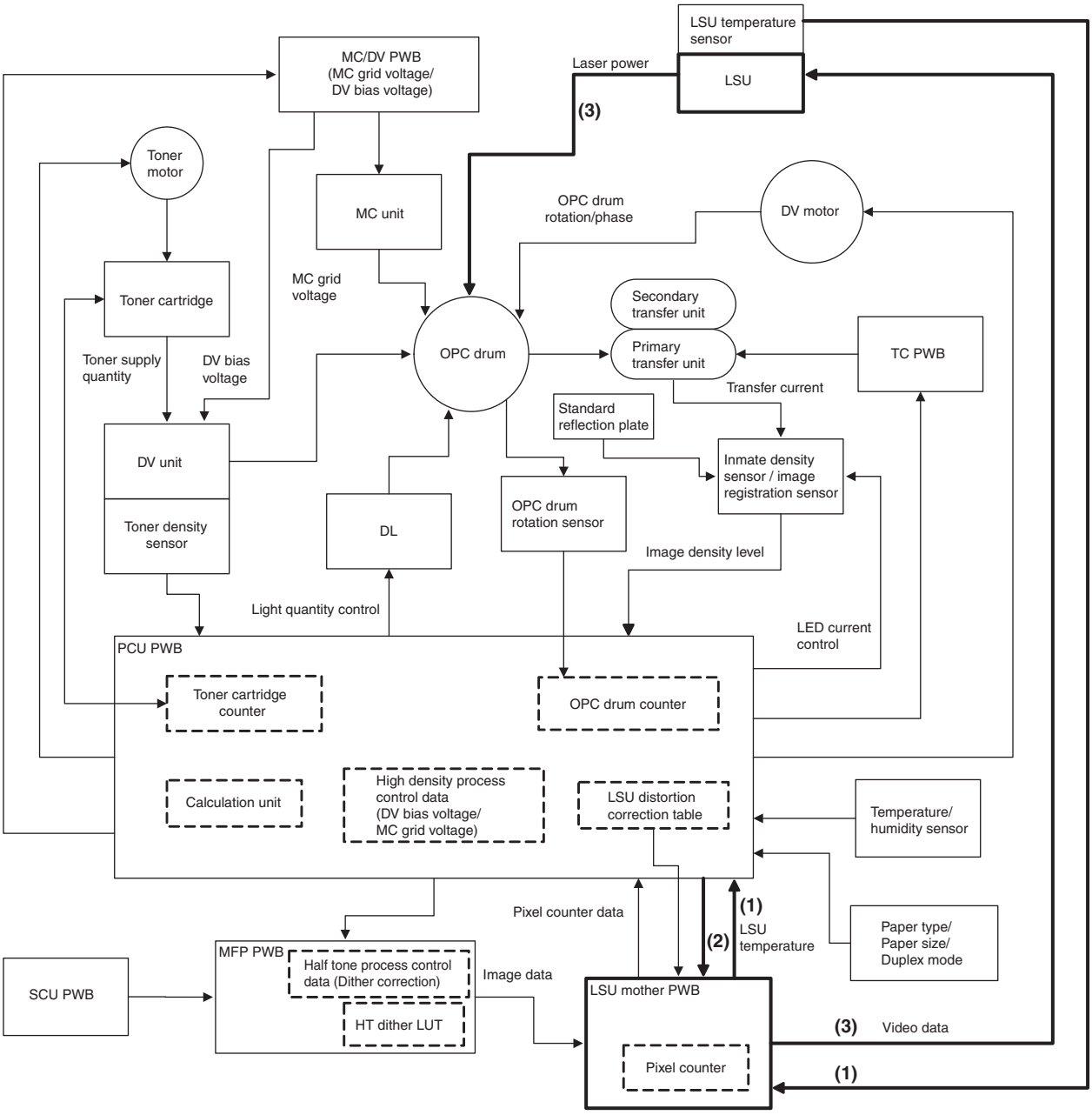
| Item No. | Correction item | | Change item | Purpose/Effect | Operation timing/ Operation condition |
|---|---|---|---|---|---|
| 3 | Transfer capability correction (Secondary transfer) | Correction of the transfer current for the environment (A change in the temperature and the humidity) | Secondary transfer current 1 | A change in the transfer characteristics for a change in the paper state due to a change in the temperature and the humidity is corrected by changing the transfer current. | Environmental area (temperature and humidity) change |
| | | Transfer current correction for back surface print | Secondary transfer current 2 | A change in the transfer efficiency for a change in the paper state is corrected to maintain the proper density for print. | When printing the back surface |
| | | Correction of the transfer current for the paper kind (thickness and material) for transfer and the size | Secondary transfer current 3 | A difference in the flow of the transfer current due to the paper kind and size is corrected. | For every change in the paper kind or size |



| ItemNo. | Correction item | Change item | Purpose/Effect | Operation timing/Operation condition |
|---|---|---|---|---|
| 4 | Automatic image registration adjustment | LSU exposure timing | An image registration generated by a variation in the LSU unit, a position shift and rotations of the transfer belt is automatically adjusted. | After execution of SIM50-22 / User image registration adjustment / After high density process control operation |

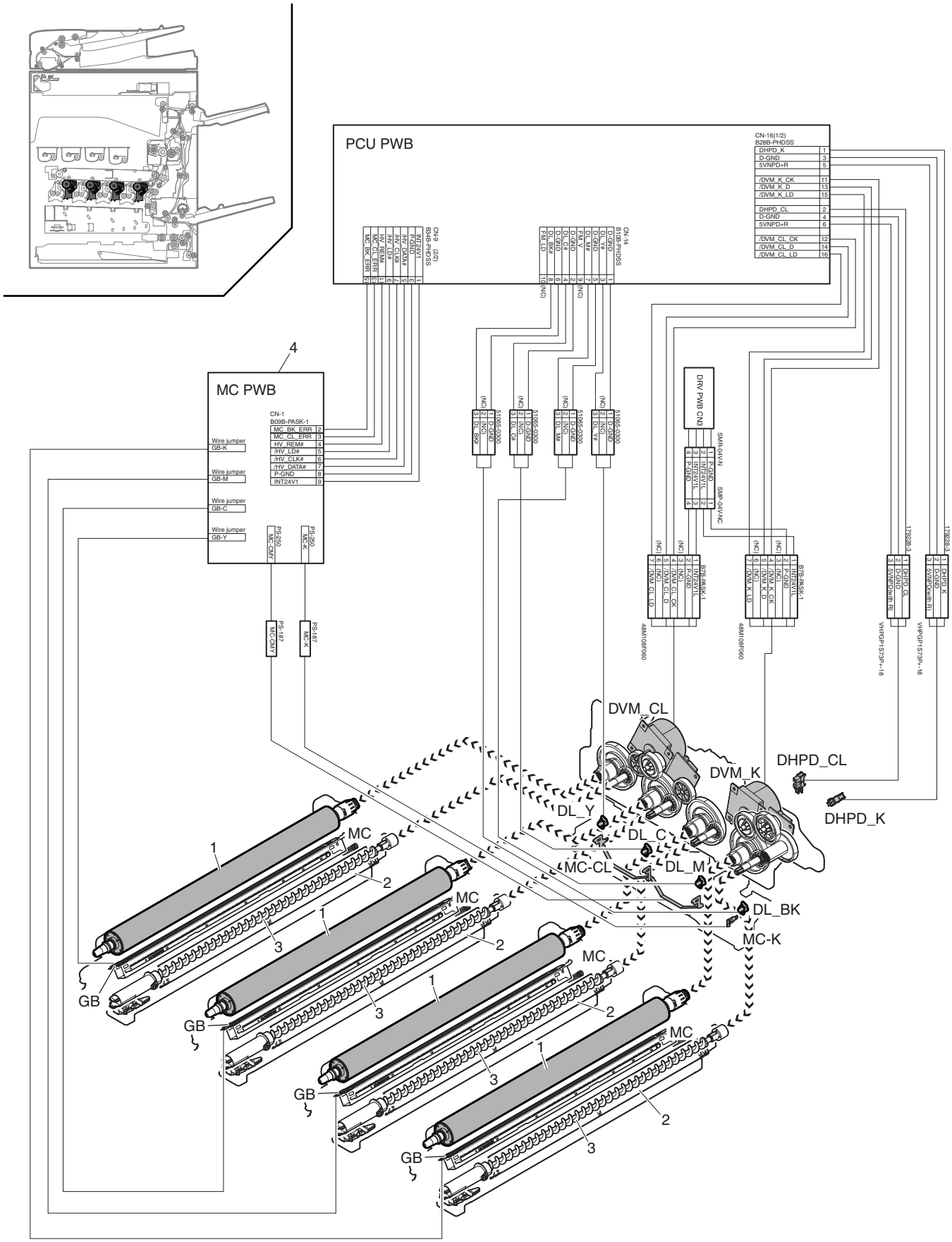


| ItemNo. | Correction item | Change item | Purpose/Effect | Operation timing/Operation condition |
|---|---|---|---|---|
| 5 | LSU heat distortion correction | LSU exposure timing | An image registration and distortion generated by the optical axis shift due to the LSU heat distortion are automatically corrected. | Laser ON timing |



## F. OPC drum section

### (1) Electrical and mechanism relation diagram



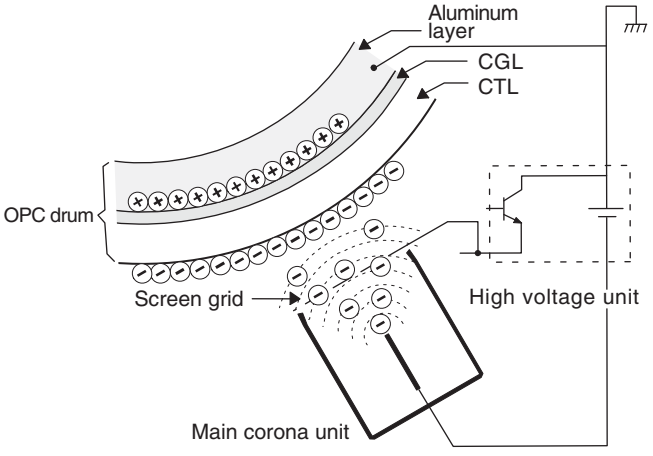
| Signal name | Name | Function/Operation |
|---|---|---|
| DHPD_CL | OPC drum rotation sensor (CL) | Detects rotation and the phase of the OPC drum (CL). |
| DHPD_K | OPC drum rotation sensor (BK) | Detects rotation and the phase of the OPC drum (BK). |
| DL_BK | Discharge lamp (K) | Discharges electric charges on the OPC drum (K). |
| DL_C | Discharge lamp (C) | Discharges electric charges on the OPC drum (C). |
| DL_M | Discharge lamp (M) | Discharges electric charges on the OPC drum (M). |
| DL_Y | Discharge lamp (Y) | Discharges electric charges on the OPC drum (Y). |
| DVM_CL | Developing motor (CL) | Drives the developing/OPC drum section (CL). |
| DVM_K | Developing motor (K) | Drives the developing/black OPC drum (BK)/transfer section. |
| GB (Y, M, C, K) | Grid (Y, M, C, K) | The OPC drum surface potential is controlled. |
| GB (K, M, C, Y) | Main charger grid voltage (K, M, C, Y) | The OPC drum surface charging voltage is controlled. |
| MC (Y, M, C, K) | Main charger (Y, M, C, K) | The OPC drum surface is negatively charged. |
| MC-CL | Main charger applying voltage (CL) | The main charger is charged to generate negative electric charges. |
| MC-K | Main charger applying voltage (K) | |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | OPC drum unit (Y, M, C, K) | Latent electrostatic images are formed. |
| 2 | Cleaning blade (Y, M, C, K) | Remaining toner on the OPC drum surface is cleaned. |
| 3 | Waste toner transport screw | Waste toner in the OPC drum unit is transported to the waste toner collection section. |
| 4 | High voltage PWB (MC/DV PWB) | Generates the main charger voltage and the DV bias voltage. |

### (2) Operational descriptions

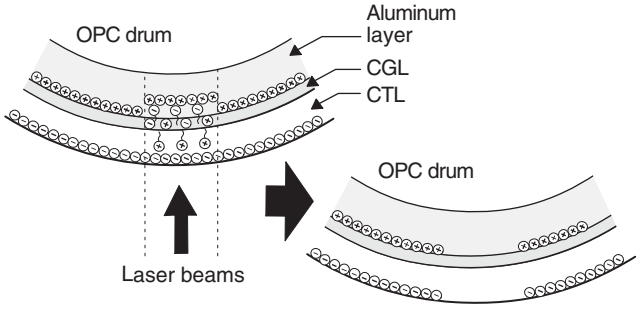
The OPC drum surface is negatively charged by the main charger, then laser image beams are radiated to the OPC drum surface by the laser (writing) unit to form electrostatic latent images.

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 beams are radiated to the OPC drum surface by the laser (writing) unit to form electrostatic latent images.




When laser beams are radiated onto the CGL of the OPC drum, positive and negative charges are generated.

Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

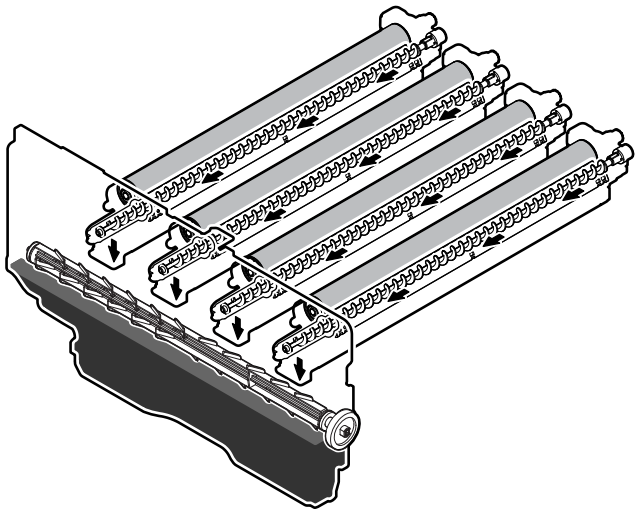
Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where laser beam 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.



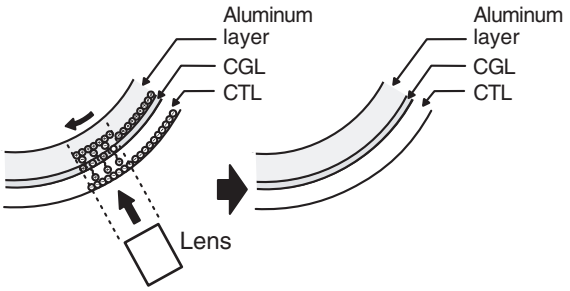
**OPC drum rotation control**

The OPC drum (K) is driven by the DV motor (DVM_K), and the rotation speed is monitored by the OPC drum rotation sensor (DHPD_K).

The color OPC drums (C, M, and Y) are driven by the DV motor (DVM_CL), and the rotation speed is monitored by the OPC drum rotation sensor (DHPD_CL).

Based on the signals monitored by the two sensors, the rotation speeds of K OPC drum and the color OPC drums and the rotation phase are controlled.

4) The whole surface of the OPC drum is discharged.

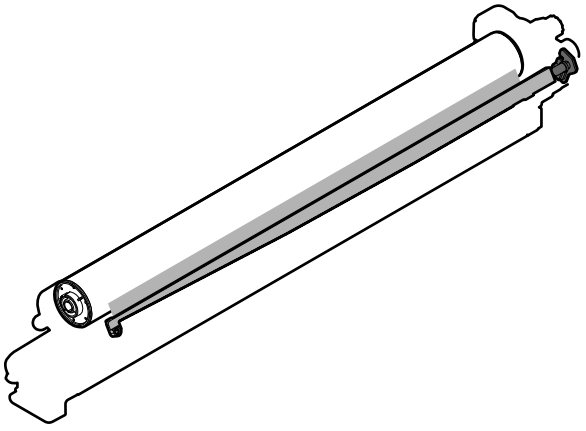



By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

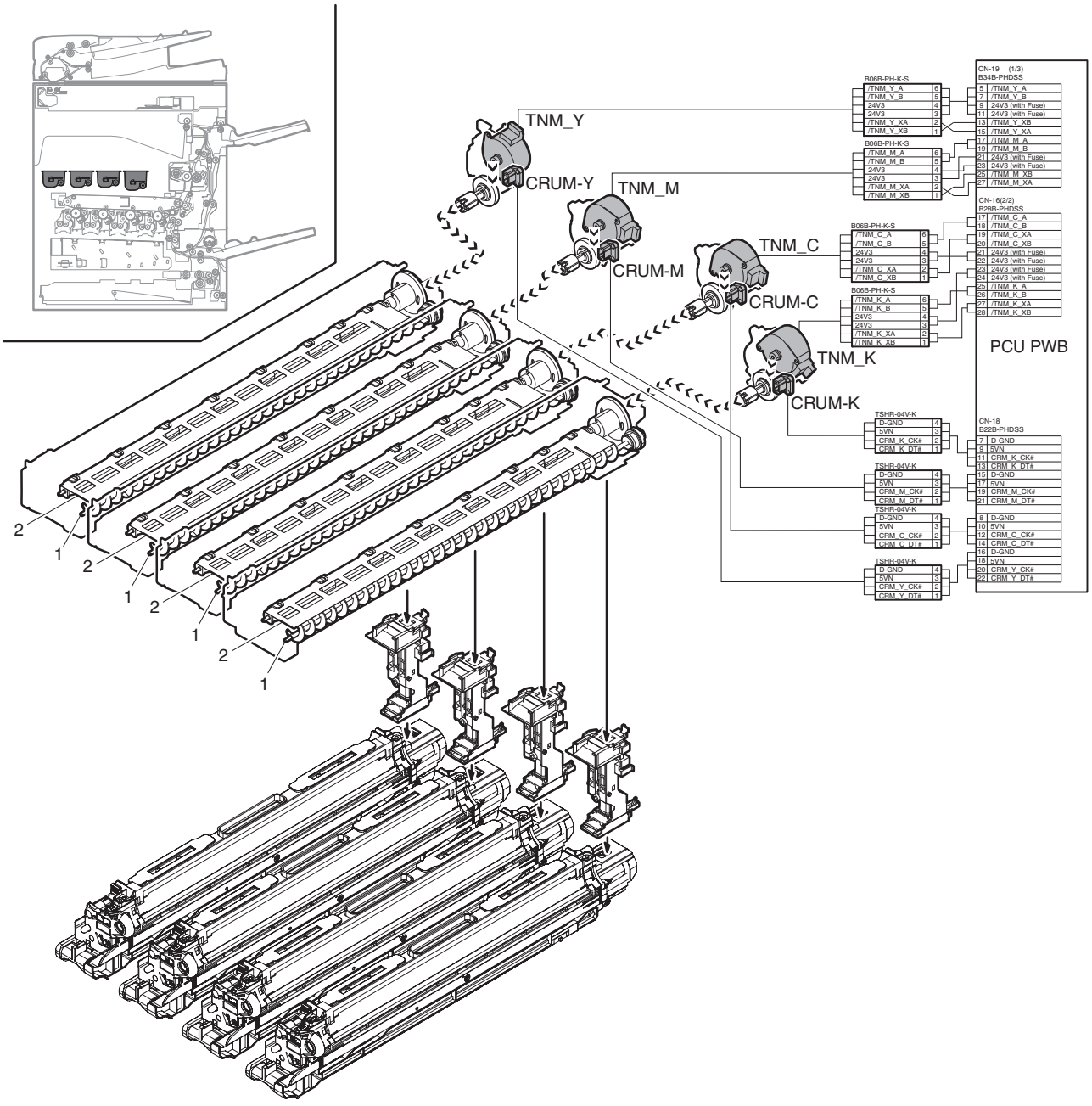
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.



## G. Toner supply section

### (1) Electrical and mechanism relation diagram




| Signal name | Name | Function/Operation |
|---|---|---|
| CRUM | CRUM (Y, M, C, K) | Saves various data of the toner cartridge. |
| TNM_C | Toner motor (C) | Supplies toner from the toner cartridge (C) to the developing unit. |
| TNM_K | Toner motor (K) | Supplies toner from the toner cartridge (K) to the developing unit. |
| TNM_M | Toner motor (M) | Supplies toner from the toner cartridge (M) to the developing unit. |
| TNM_Y | Toner motor (Y) | Supplies toner from the toner cartridge (Y) to the developing unit. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Toner transport screw | Transports toner from the toner cartridge to the developing unit. |
| 2 | Toner stirring plate | Moves the toner stirring plate and toner to the toner transport screw to assist the toner transport operation. |

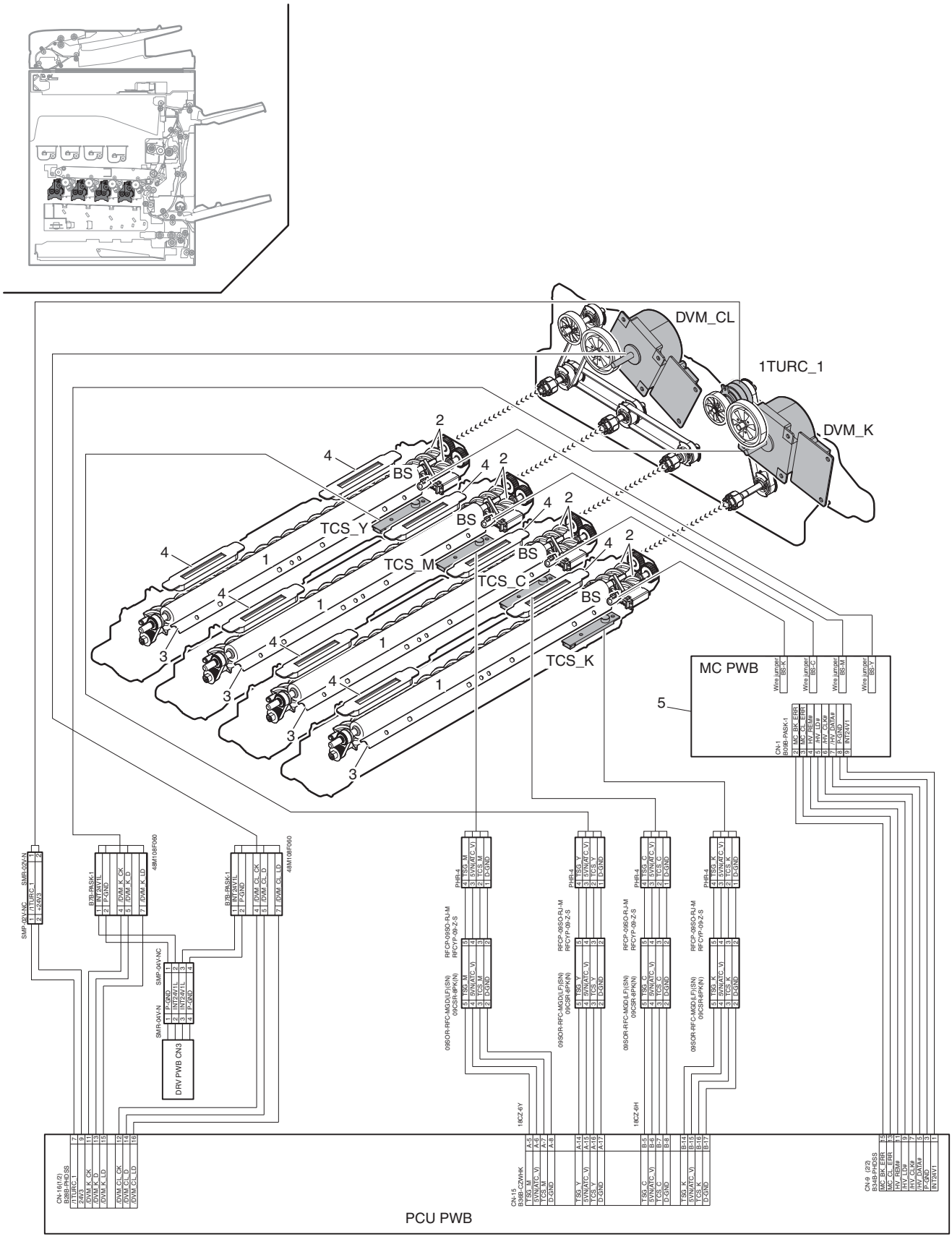
### (2) Operational descriptions

Based on the print pixel count and the process control information, Yes/No of toner supply is judged.

When it is judged that the toner density is decreasing, the toner motor is rotated to supply toner in the toner cartridge through the toner transport screw and the toner duct to the developing unit.

## H. Developing section

### (1) Electrical and mechanism relation diagram

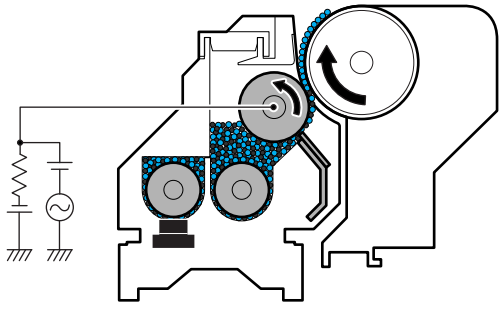


| Signal name | Name | Function/Operation |
|---|---|---|
| 1TURC_1 | Primary transfer separation clutch 1 | Controls separation of the primary transfer unit. |
| BS (K, M, C, Y) | Developing bias voltage (K, M, C, Y) | Voltage to form toner images on the OPC drum. Controls the developing density. |
| DVM_CL | Developing motor (CL) | Drives the developing/OPC drum section (CL). |
| DVM_K | Developing motor (K) | Drives the developing/black OPC drum (BK)/transfer section. |
| TCS_C | Toner sensor (C) | Detects toner supply from the toner cartridge. Detects the toner density (C). |
| TCS_K | Toner sensor (K) | Detects toner supply from the toner cartridge. Detects the toner density (K). |
| TCS_M | Toner sensor (M) | Detects toner supply from the toner cartridge. Detects the toner density (M). |
| TCS_Y | Toner sensor (Y) | Detects toner supply from the toner cartridge. Detects the toner density (Y). |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Developing roller | Attaches toner to electrostatic latent images on the OPC drum and forms toner images. |
| 2 | Stirring roller | Stirs developer and toner to negatively charge toner. |
| 3 | Doctor | Maintains the quantities of toner and developer on the DV roller at a constant levels. |
| 4 | Toner filter (K, M, C, Y) | Prevents toner splash. |
| 5 | High voltage PWB (MC/DV PWB) | Generates the main charger voltage and the DV bias voltage. |

### (2) Operational descriptions

Toner is attached to electrostatic latent images formed on the OPC drum surface by laser image beams to form toner images.



Toner and carrier in the developing unit are agitated and transported by the mixing roller.

By stirring, toner and carrier are negatively charged by mechanical friction.

The developing bias voltage (AC component and negative DC component) 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.

If the OPC drum is not exposed, the negative potential is higher than the developing bias voltage, and toner is not attracted.

The toner sensor detects the toner supply state from the toner cartridge.

In this machine, the toner density is detected by the toner sensor, but the toner supply operation is not controlled only by the toner density detection result. The toner density control is performed according to the process control data.

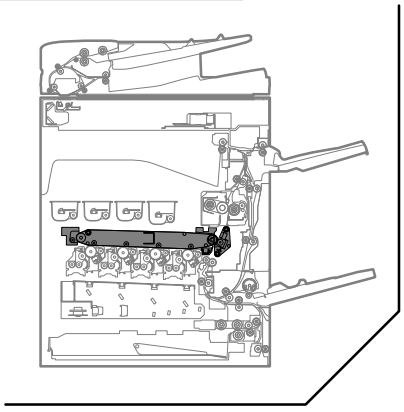
1 : '14/Jun

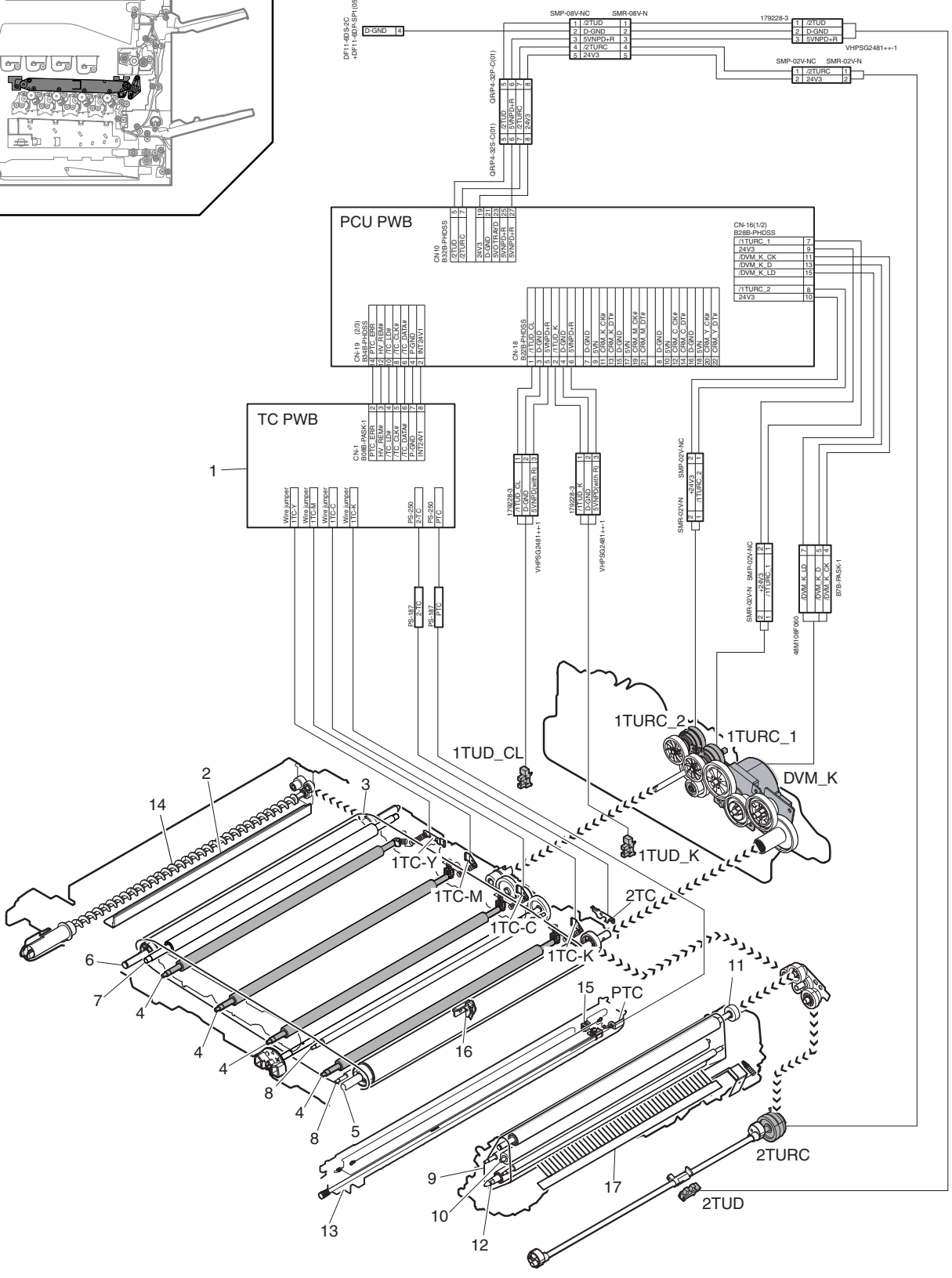
# I. Transfer section

## (1) Electrical and mechanism relation diagram

### a. Transfer section

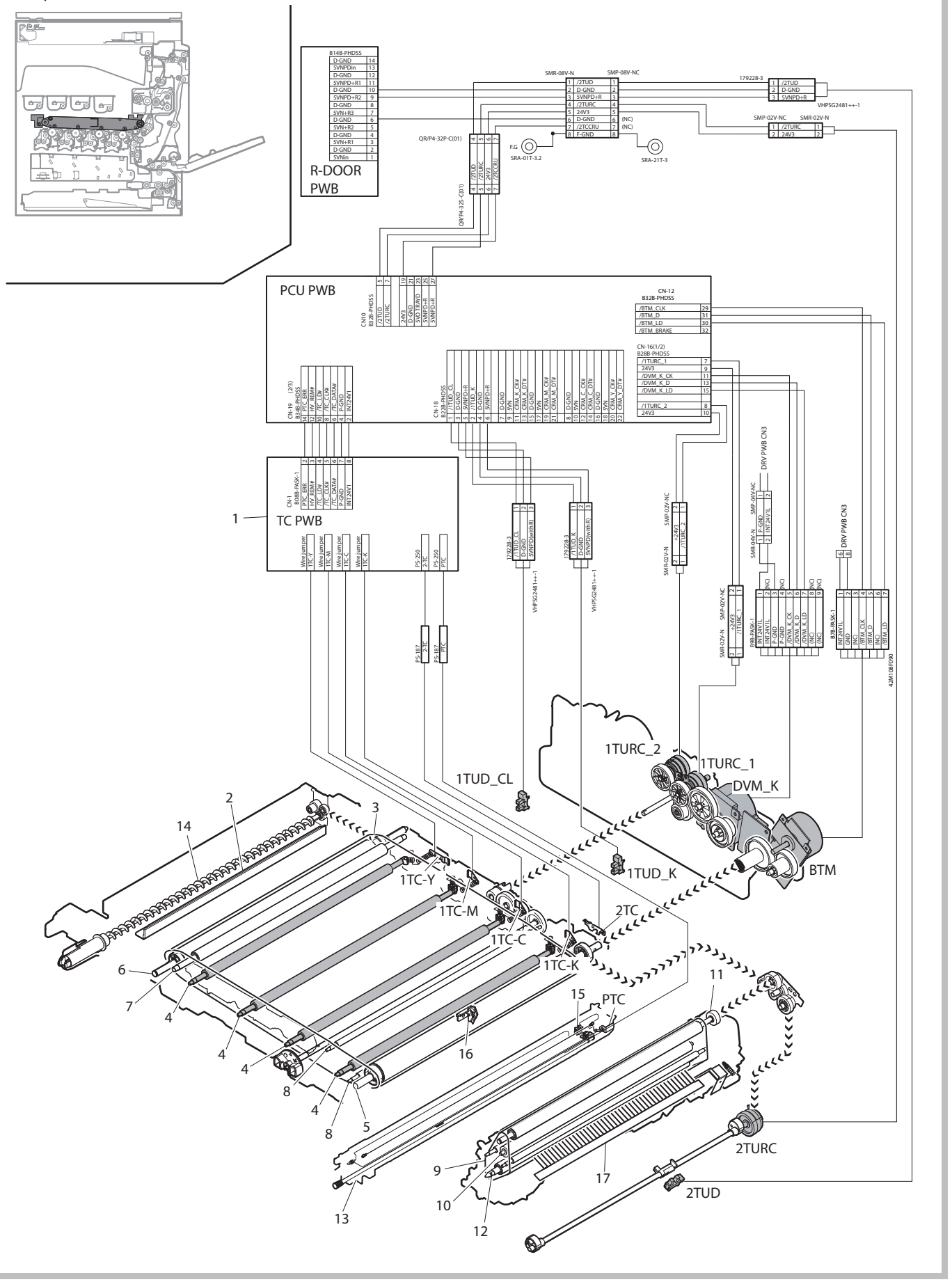
1 a-1 26cpm/31cpm machine





1 : '14/Jun

1 a-2 36cpm machine

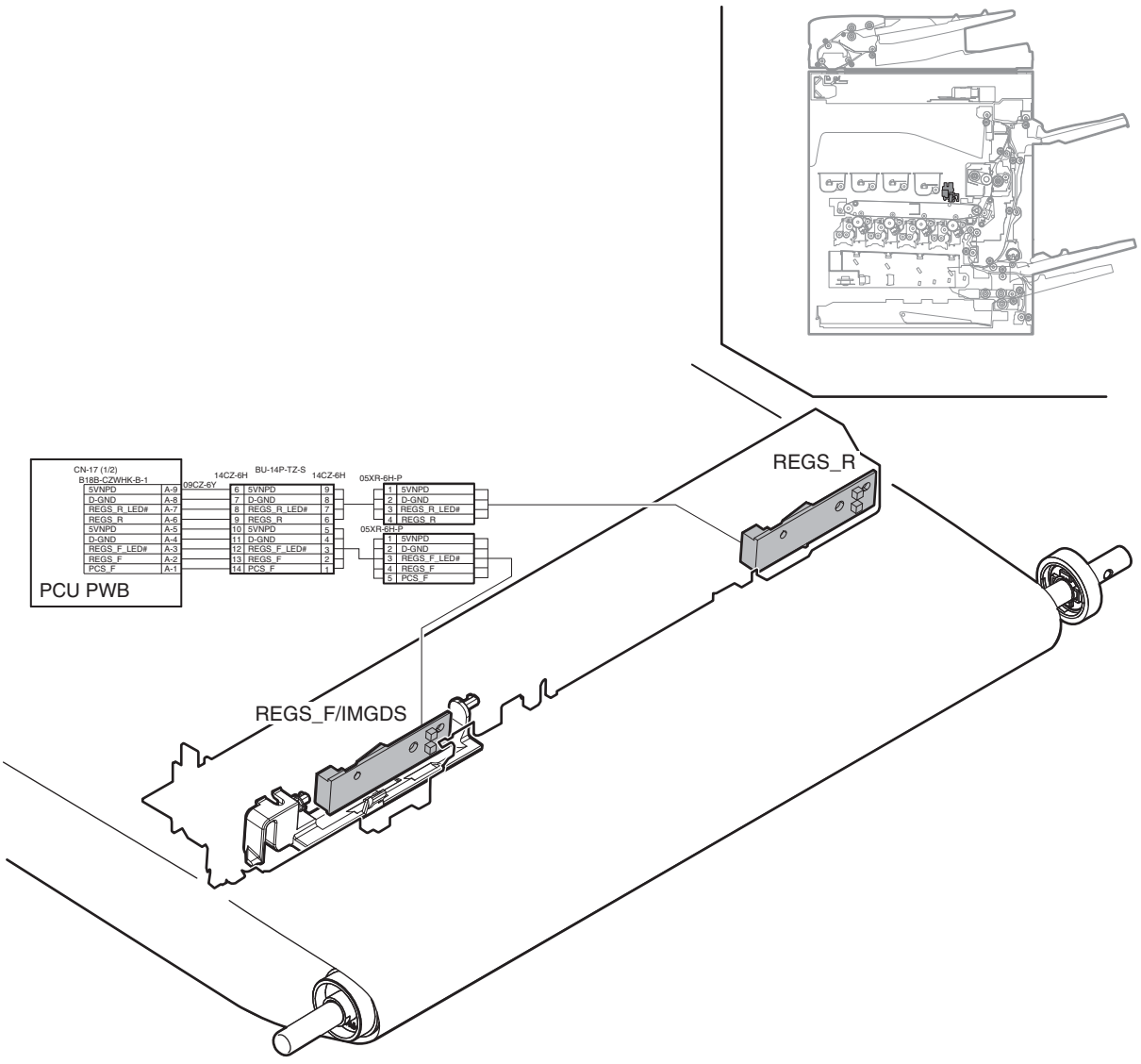


1 : '14/Jun

| Signal name | Name | Function/Operation |
|---|---|---|
| 1TC (CMY) | Primary transfer voltage (CMY) | Flows the transfer current to the primary transfer belt, and transfers toner images from the OPC drum to the transfer belt. |
| 1TC (K) | Primary transfer voltage (K) | Flows the transfer current to the primary transfer belt, and transfers toner images from the OPC drum to the transfer belt. |
| 1TUD_CL | Transfer mode detector (CL) | Detects separation of the transfer belt and the transfer mode. (Detection is made by combination of 1TUD_CL/1TUD_K signals.) |
| 1TUD_K | Transfer mode detector (BK) | Detects separation of the transfer belt and the transfer mode. (Detection is made by combination of 1TUD_CL/1TUD_K signals.) |
| 1TURC_1 | Primary transfer separation clutch 1 | Controls separation of the primary transfer unit. |
| 1TURC_2 | Primary transfer separation clutch 2 | Controls separation of the primary transfer unit. |
| 2TC | Secondary transfer belt voltage | Flows the transfer current to the secondary transfer belt, and transfers toner images from the primary transfer belt to paper. |
| 2TUD | Secondary transfer position detector | Detects the position (separation) of the secondary transfer unit. |
| 2TURC | Secondary transfer separation clutch | Controls separation of the secondary transfer unit. |
| 1 BTM | Transfer belt drive motor | Drives the transfer belt. (For 36 cpm machine) |
| DVM_K | Developing motor (K) | Drives the developing/black OPC drum (BK)/transfer section. |
| PTC | PTC voltage | High voltage for PTC |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | High voltage PWB (TC PWB) | Generates the transfer voltage. |
| 2 | Cleaning blade | Cleans residual toner on the primary transfer belt. |
| 3 | Primary transfer belt | Transfers toner images of the OPC drum onto the transfer belt. |
| 4 | Primary transfer roller (K, C, M, Y) | Applies a high positive voltage to the primary transfer belt. |
| 5 | Primary transfer belt drive roller | Drives the transfer belt. A negative voltage is applied when in the transfer operation, and an alternate high voltage (positive and negative) is applied when cleaning. |
| 6 | Primary transfer belt follower roller | Transfer belt follower drive |
| 7 | Primary transfer belt tension roller | Applies a tension to the transfer belt. |
| 8 | PTC opposed roller | Flows the PTC current to the GND. |
| 9 | Secondary transfer belt | Transfers toner images on the primary transfer belt to paper. |
| 10 | Secondary transfer roller | Connects the secondary transfer belt to the GND, and flows the transfer current. |
| 11 | Secondary transfer belt drive roller | Drives the transfer belt. |
| 12 | Secondary transfer belt follower roller | Transfer belt follower drive |
| 13 | PTC unit | Reduces positive charges on the primary transfer belt, and improves the transfer efficiency. |
| 14 | Primary transfer waste toner transport screw | Transports waste toner in the primary transfer cleaning unit to the waste toner collection section. |
| 15 | PTC cleaner | Clean the PTC wire. |
| 16 | Separation pawl | Separates paper after transfer. |
| 17 | Discharge brush | Discharges the secondary transfer belt surface after transfer to neutralize it. |

**b. Process registration sensor section**



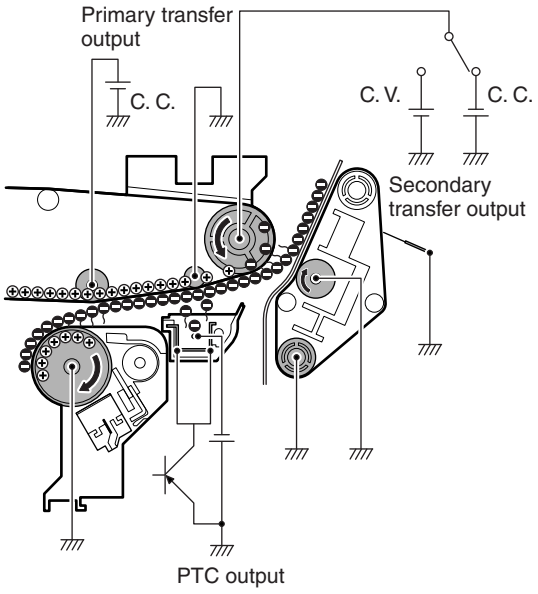

| Signal name | Name | Function/Operation |
|---|---|---|
| REGS_F/IMGDS | Registration sensor F (Inmate density sensor) | Detects color shift. (F side) / Detects the toner patch density. |
| REGS_R | Registration sensor R (Inmate density sensor) | Detects color shift. (R side) / Detects the toner patch density. |

## (2) Operational descriptions

### a. Transfer

#### a-1. Transfer, cleaning operation

**Transfer operation**




A high positive voltage is applied to the primary transfer roller to transfer toner images from the OPC drum to the primary transfer belt.

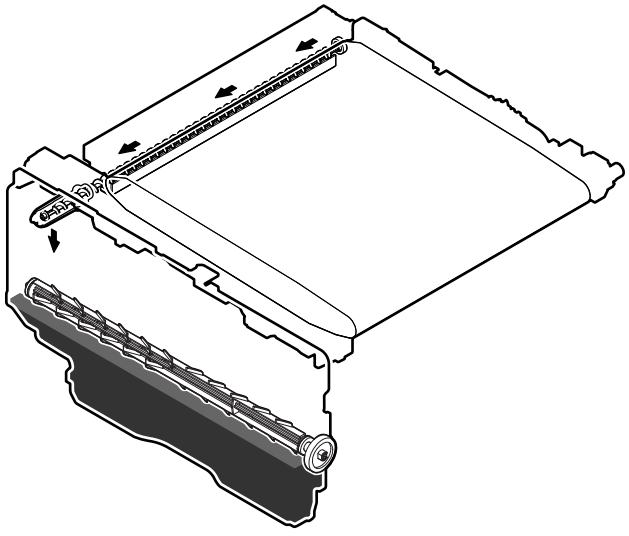
Negative electronic charges are generated by the PTC unit, supplying negative charges to toner.

This operation improves the transfer efficiency in the secondary transfer.

Then a high negative voltage is applied to the primary transfer drive roller, to transfer toner images from the primary transfer belt to paper.

**Primary transfer cleaning operation**

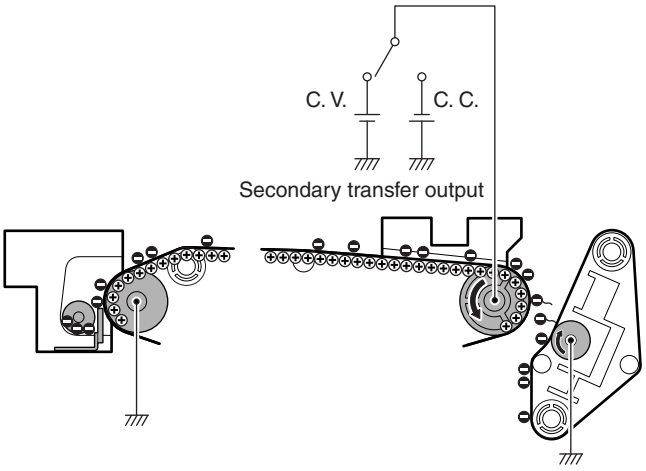
The primary transfer belt is cleaned mechanically by the cleaning blade.



Remaining toner removed from the primary transfer belt is transported to the waste toner collection section by the waste toner transport screw.

**Secondary transfer cleaning**

A high positive voltage is applied to the primary transfer belt to attach unnecessary toner to the primary transfer belt, and it is cleaned by the primary transfer belt cleaning.




**Primary transfer belt mode select**

There are three kinds of modes of the transfer belt: the free position, the color print mode, and the monochrome print mode.

Mode select is made with the developing motor, the mode select clutches 1TURC1 and 1TURC2.

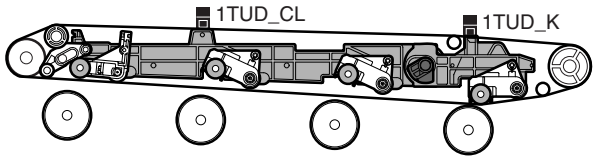
When the roller separation clutch is turned ON, the transfer cam rotates, and the primary transfer link in conjunction with the cam is shifted in the arrow direction, separating the transfer roller.

The color transfer rollers (C, M, and Y) and the black transfer roller (K) perform an independent separation operation, and the mode state is detected by the combination of the transfer mode detector 1TUD_CL and 1TUD_K signals.

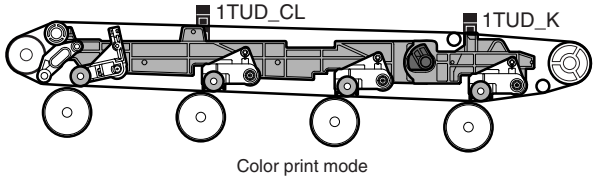
To select the rotating direction of the mode select cam, two mode select clutches 1TURC1 and 1TURC2 are used.

The two mode select clutches are used to select the mode in the shortest time.

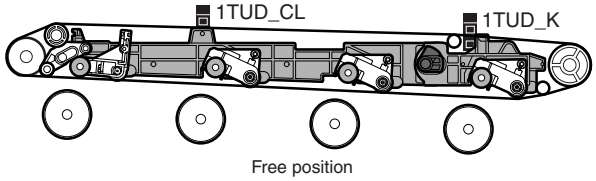
| Mode | Transfer mode detector | |
|---|---|---|
| | 1TUD_CL | 1TUD_K |
| Monochrome print mode | ON | ON |
| Color print mode | OFF | ON |
| Free position | ON | OFF |




Monochrome print mode




Color print mode




Free position

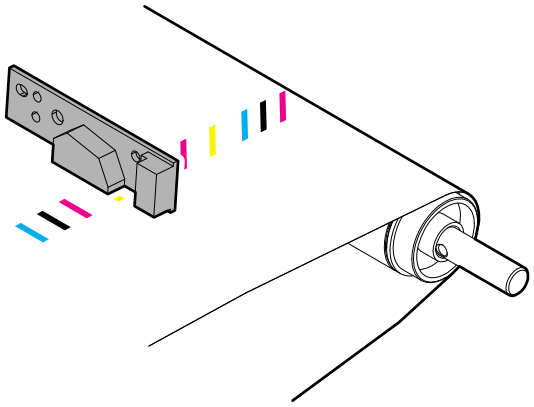
**b. Image density detection and registration detection operation**

The image density detection and the image registration detection are performed the sensors which are provided separately on the front frame side and the rear frame side.

**b-1. Functions and operations of the color image density sensor and the image registration sensor F (REGS F) provided on the front frame side**

When the process control is performed with one sensor, the color toner patch density is detected. When the image registration adjustment is performed, the image registration shift on the front frame side is detected.

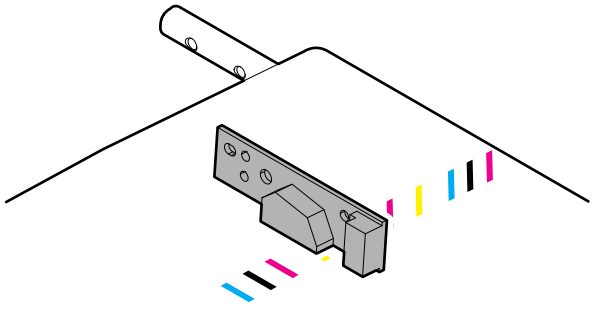
A shutter plate is provided on the sensor. Before execution of the process control and the automatic registration adjustment, the standard reflection plate is closed and the sensor sensitivity adjustment is performed by using the standard reflection plate.



**b-2. Functions and operations of the black image density sensor and the image registration sensor R (REGS R) provided on the rear frame side**

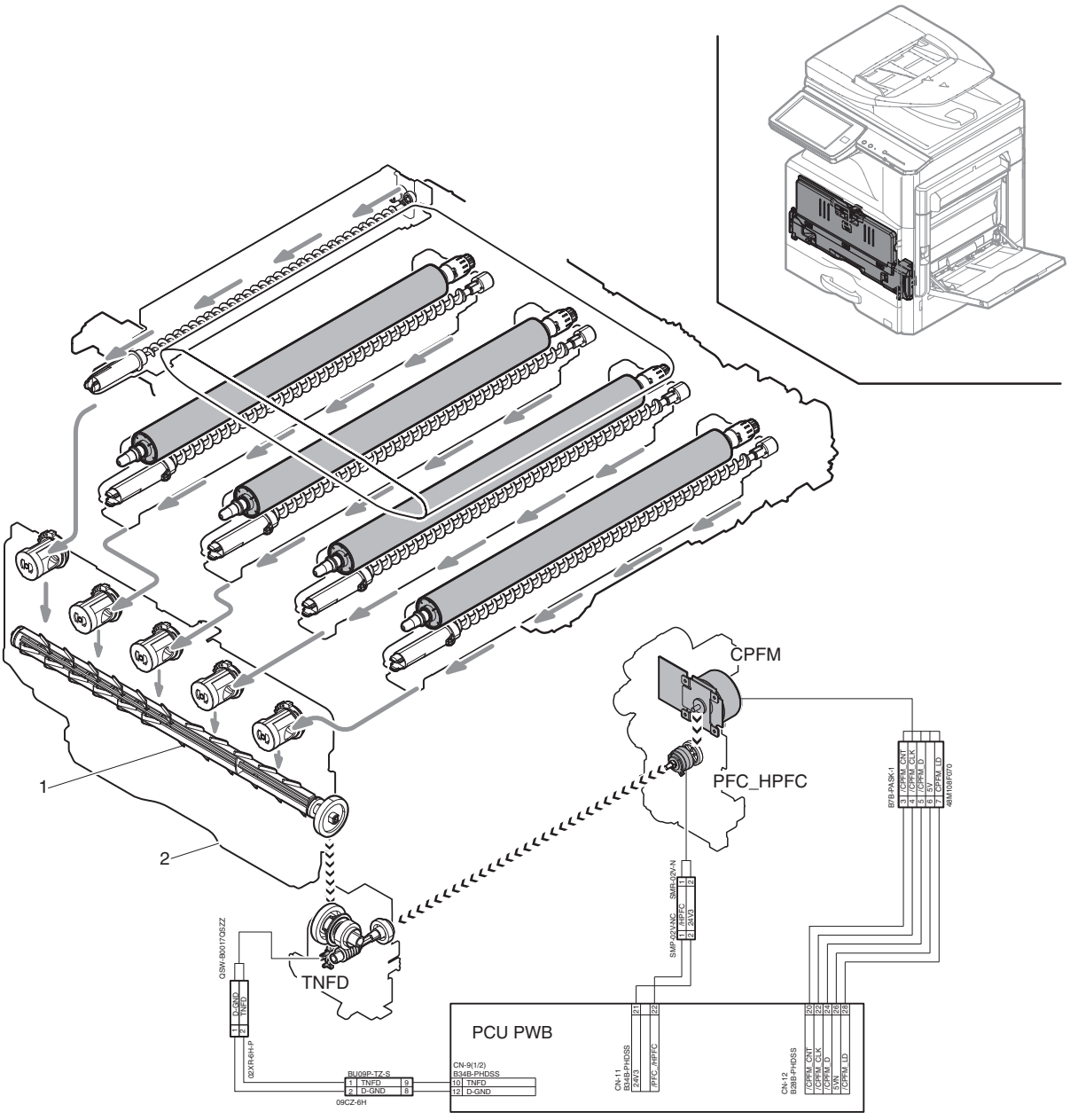
When the process control is performed with one sensor, the black toner patch density is detected. When the image registration adjustment is performed, the image registration shift on the rear frame side is detected.

The sensor sensitivity adjustment is performed by using the standard reflection plate before execution of the process control and the automatic registration adjustment.



## J. Waste toner collection section

### (1) Electrical and mechanism relation diagram




| Signal name | Name | Function/Operation |
|---|---|---|
| CPFM | Paper feed motor | Drives the paper feed section. |
| PFC_HPFC | Transport roller clutch | Controls the transport roller 4. / Drives the waste toner transport section. |
| TNFD | Waste toner full detector | Detects full of waste toner. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Waste toner transport screw | Transports waste toner to the waste toner box. |
| 2 | Waste toner box | Collects waste toner. |

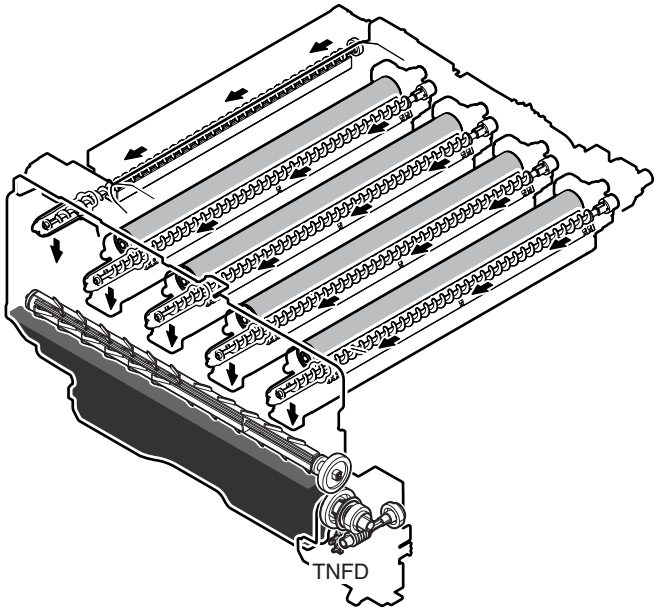
### (2) Operational descriptions

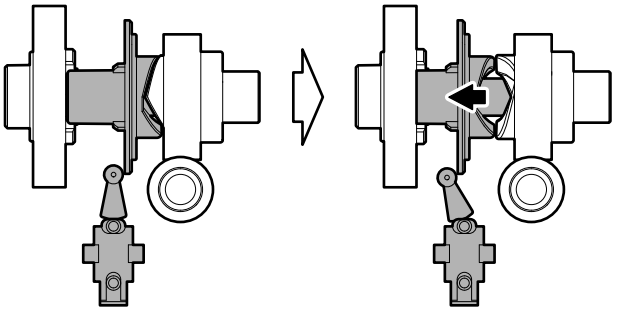
#### a. Waste toner full detection operation

Waste toner generated in the OPC drum and the primary transfer cleaning section is transported to the waste toner box by the waste toner transport screw which is driven by the paper feed motor.

The toner collection box section is provided with the waste toner full detection mechanism. When the waste toner quantity in the toner collection box becomes full, the rotation load of the waste toner transport screw increases and the waste toner transport screw drive coupler is stranded to turn ON the waste toner full detector (TNFD).

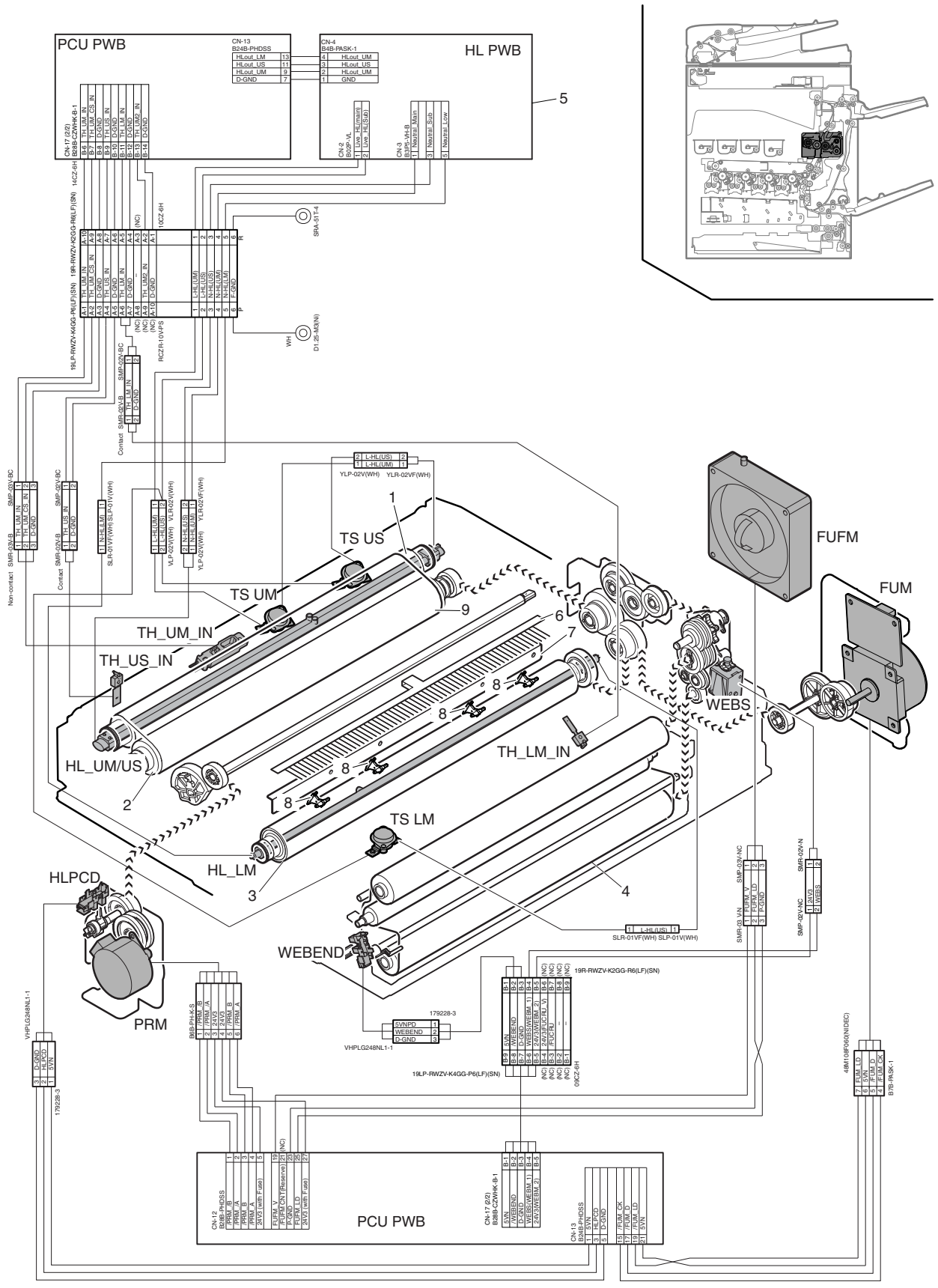
When the waste toner full detector is turned ON continuously for 1 sec, it is judged as near end, and the message is display to indicate that the replacement of the toner collection box is approaching.



# 10. Fusing section

## A. Electrical and mechanism relation diagram




| Signal name | Name | Function/Operation |
|---|---|---|
| FUFM | Fusing cooling fan | Cools the fusing section and the paper exit section. |
| FUM | Fusing motor | Drives the fusing section. |

| Signal name | Name | Function/Operation |
|---|---|---|
| HL_LM | Heater lamp (HL_LM) | Heats the fusing roller (B). |
| HL_UM/US | Heater lamp (HL_UM/US) | Heats the fusing roller (F1), and fusing belt. |
| HLPCD | Fusing pressure detector | Detects the fusing pressure state. |
| PRM | Fusing pressure control motor | Controls ON/OFF of the fusing roller pressure. |
| TH_LM_IN | Fusing temperature sensor | Detects the surface temperature of the fusing roller (B). |
| TH_UM_IN | Fusing temperature sensor (Main) | Detects the surface temperature at the center of the fusing belt. |
| TH_US_IN | Fusing temperature sensor (Sub) | Detects the suffered temperature at the edge section of the fusing belt. |
| TS LM | Thermostat LM | Shuts down the heater lamp (HL_LM) circuit when the fusing section is overheated. |
| 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) |
| WEBEND | Web end detector | Detects web end of the fusing unit. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Fusing roller (F1) | Heats the fusing belt. |
| 2 | Fusing roller (F2) | The cushion layer of the roller forms a wide nip between the fusing belt and fusing roller (B). |
| 3 | Fusing roller (B) | Heats the back surface of paper to fuse toner on the paper. |
| 4 | Fusing web roller | Cleans the fusing roller (B) and the fusing belt. |
| 5 | HL control PWB | Drives the heater lamp. |
| 6 | Discharge brush | Discharges static electricity generated in the fusing section to the ground. |
| 7 | Separation plate | Separates the whole surface of paper. (non-contact) |
| 8 | Separation pawl | Separates fusing roller (B) when it is attached. |
| 9 | Fusing belt | Heats the front surface of paper to fuse toner on the paper. |

## B. Outline of operations

This machine employs the fusing system by the belt.

**The features of the belt-type fusing system are as follows:**

1) Short warm-up time
2) Low power consumption
3) Wide nip providing high fusing capability

## C. Heater lamp driving

The surface temperature of the heat roller and the fusing belt detected by the fusing temperature sensor is sent to the PCU. If the temperature is lower than the specified temperature, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the HL PWB.

When the power triac in the heater lamp drive circuit is turned ON, the AC power is supplied to the heater lamp to light the lamp and heat the fusing belt.

A thermostat is provided as a safety device against an abnormally high temperature in the heat roller and the fusing belt.

When the thermostat is opened, the AC power supply to the heater lamp is cut off.

The heater lamp is arranged to fusing roller (F1) and fusing roller (B).

In heater lamp (HL_UM/US), two lamps are integrated into one.

**Heater lamp operations**

| Heater lamp | Operation |
|---|---|
| Heater lamp (HL_UM) | Heats fusing roller (F1) and the fusing belt. |
| Heater lamp (HL_US) | Heats fusing roller (F1) and the fusing belt.<br>Turns ON continuously when in warming up. |
| Heater lamp (HL_LM) | Heats fusing roller (B). Does not turn ON while heater lamp (HL_UM) and heater lamp (HL_US) light up. |

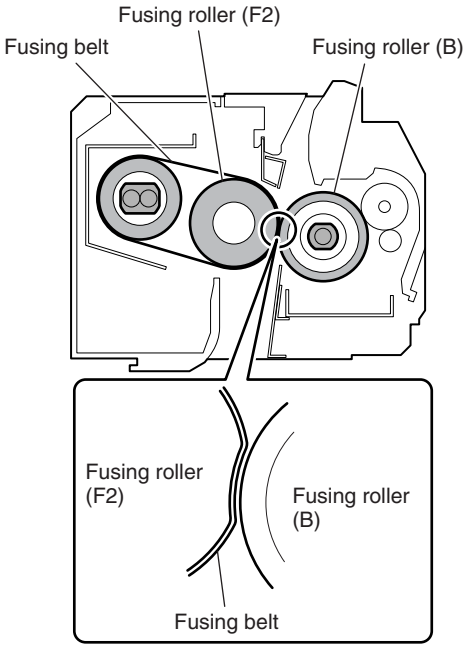
## D. Fusing operation

Color toner (Y, M, C, and K) on paper is heated and pressed by the fusing belt, fusing roller (F2), and fusing roller (B) to be fused on paper.

Toner in the four layers on the paper is fused by heating from up and down and both sides.

The fusing belt, fusing roller (F2) which is provided with the cushion layer, and fusing roller (B) realize the following operations.

1) The nip amount is increased and the heat capacity to paper is increased.
2) By pressing with the flexible roller, toner of many layers can be fused without being deformed.
3) An even pressure is applied to rough surface of toner (due to the multi-layer composition).



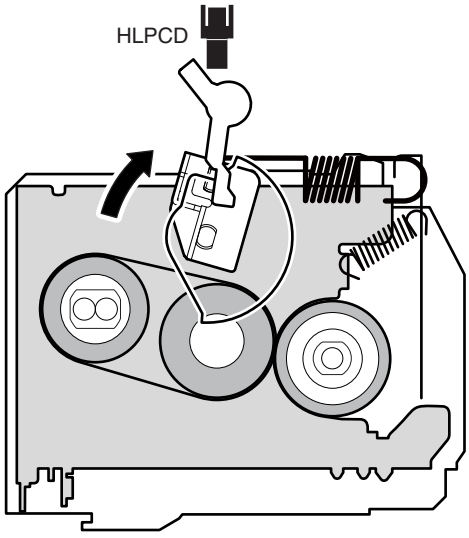
## E. Automatic pressure release system

Normally the upper and lower heat rollers are pressed. When, however, the following conditions are satisfied, the pressure is released.

- When the machine shifts to the preheat mode.
- When the machine shifts to the auto power shut off mode.
- When the power switch of the operation panel is turned OFF.
- When the machine is left for 90 sec under the ready state.
- When in the envelope mode.
- When a jam occurs.

### (1) Pressure release operation

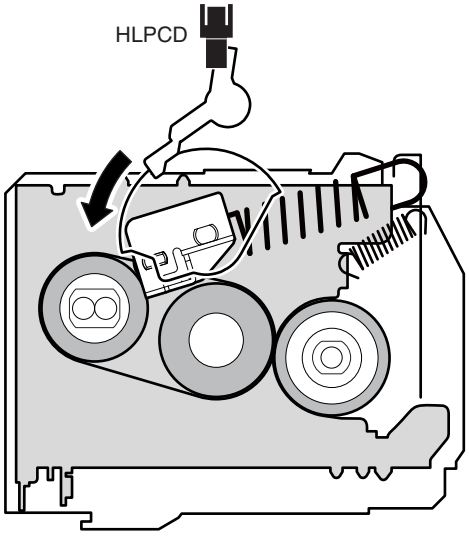
The fusing pressure control motor (PRM) rotates to turn ON the fusing pressure detector (HLPCD) (H level). When the specified time passes after turning ON the fusing pressure detector (HLPCD) (H level) by rotation of the fusing pressure control roller (PRM), the pressure release motor stops to complete the pressure release operation.




### (2) Pressure release operation

When the end user makes some operations or when the machine receives the Job signal, the fusing pressure control motor (PRM) rotates reversely to drive the pressure release lever to the pressing state.

When the specified time passes from turning OFF the fusing pressure detector (HLPCD), the pressure release motor stops to complete the pressing operation.




Important

When turning OFF the main power switch of the machine, be sure to turn OFF the power switch of the operation panel and check to confirm that the LCD display goes off before turning OFF the main power switch.

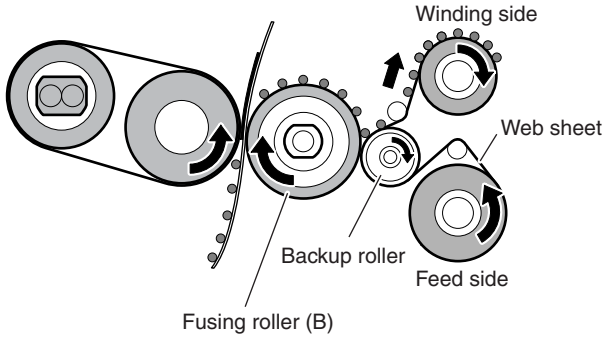
If the main power switch is turned OFF with the LCD lighted, the power is cut off before completion of the pressure release operation. If this state is kept for a long time, the fusing roller may be deformed.

## F. Fusing section cleaning

In this machine, the fusing roller (B) is cleaned by the web.

The cleaning unit is composed of the web feed roller, the winding roller, and the backup roller which presses the web onto the fusing roller (B) with the proper pressure.

Residual toner on the fusing roller (B) is cleaned by the web which contains silicon oil.

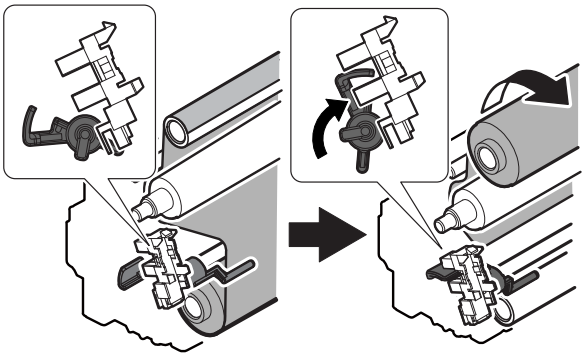



## G. Web life end detection

The web life near end is detected by the web print counter. When the life reaches 200K prints, the following message is displayed to notify that the replacement timing is approaching.
(Maintenance required.: FK3)

The web life end is detected by the web end detector. When the life end is detected, a job is forcibly interrupted even the job is being performed.

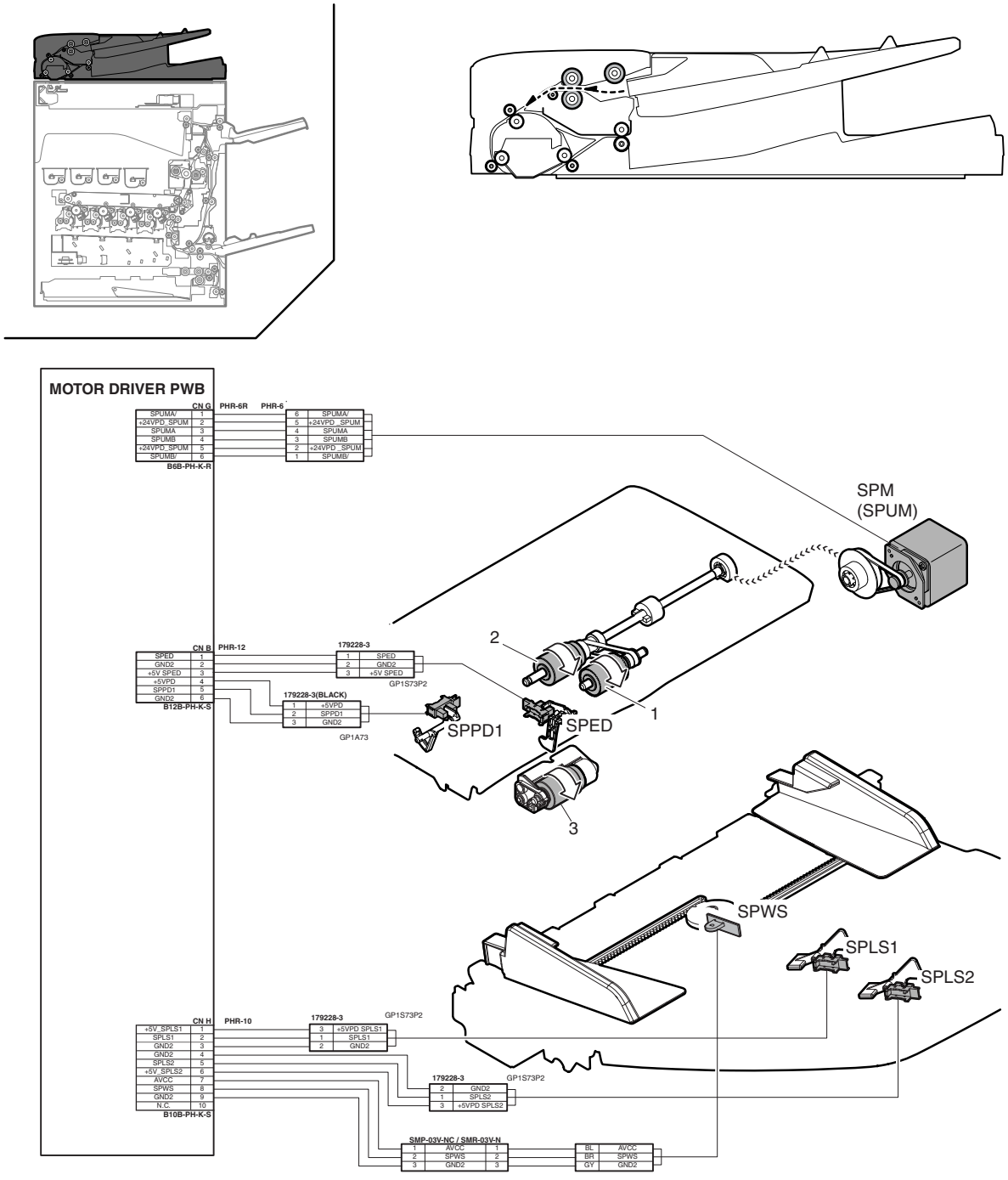
After replacing the web with a new one, reset the web life counter and the web send counter to clear the life end state.



# 11. RSPF section

## A. Electrical and mechanical relation diagram

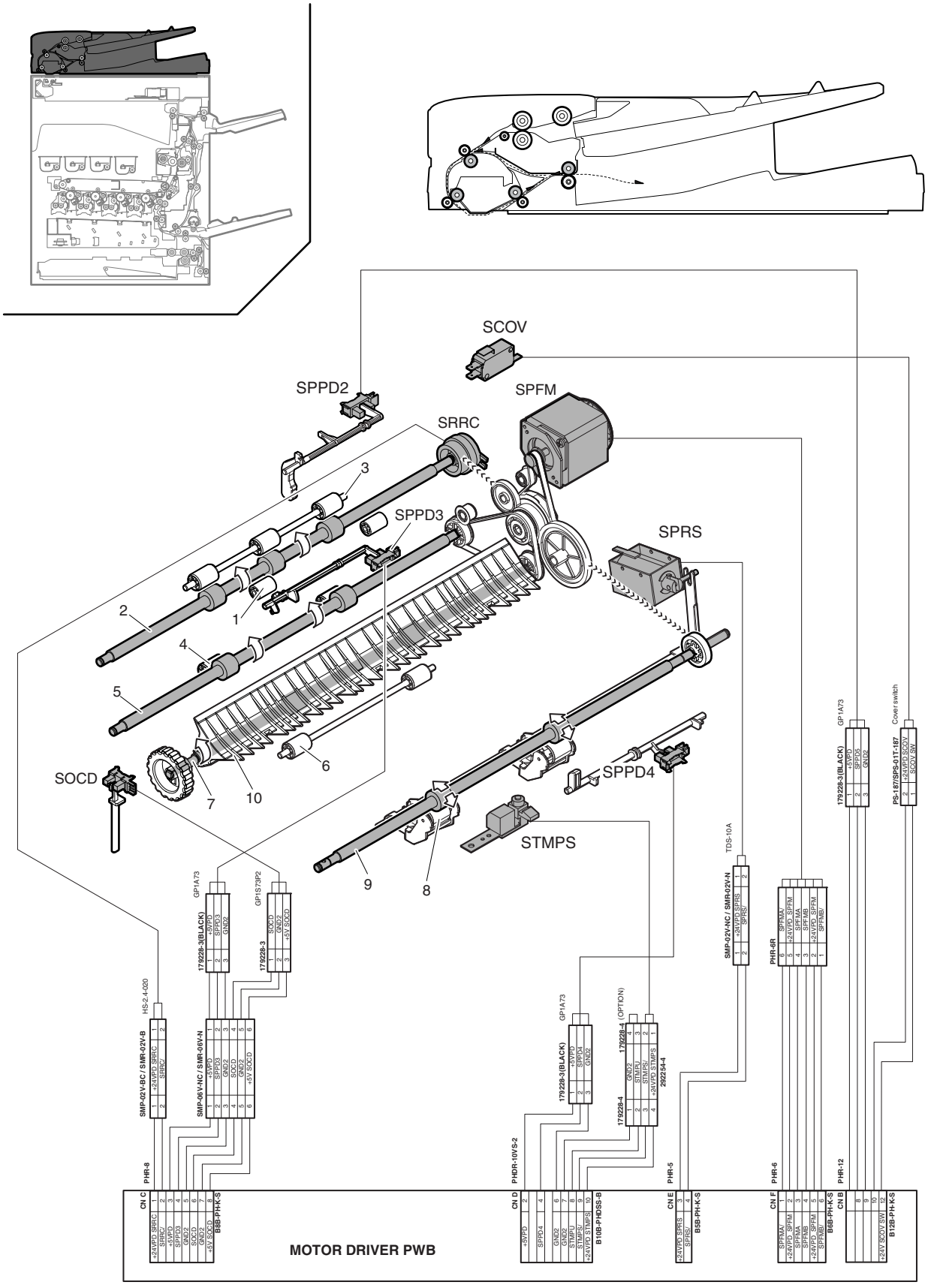
### (1) Paper feed section




| Signal name | Name | Function/Operation |
|---|---|---|
| SPED | Document sensor | Detects document empty in the RSPF paper feed tray. |
| SPLS1 | Paper size detector 1 | Detects the document length in the RSPF paper feed tray. |
| SPLS2 | Paper size detector 2 | Detects the document length in the RSPF paper feed tray. |
| SPM (SPUM) | RSPF paper feed motor | Feeds a document. |
| SPPD1 | Document transport sensor 1 | Detects paper feed and the document size in random paper feed. |
| SPWS | Document size detector | Detects the document width. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Document pickup roller (RSPF) | Feeds a document to the paper feed roller. |
| 2 | Paper feed roller (RSPF) | Feeds a document to the transport section. Makes a warp on paper between the registration roller and this roller to correct the start position of document skew and document image scan. |
| 3 | Separation roller (RSPF) | Separates a document to prevent double-feeding. |

**(2) Transport/paper exit section**



| Signal name | Name | Function/Operation |
|---|---|---|
| SCOV | RSPF cover open/close detector | Detects open/close of the RSPF cover. |
| SOCD | RSPF open/close sensor | Detects open/close of the RSPF unit. |
| SPFM | RSPF transport motor | Transports a document. |
| SPPD2 | Document transport sensor 2 | Detects paper pass. |
| SPPD3 | Document transport sensor 3 | Detects paper pass. |
| SPPD4 | Document transport sensor 4 | Detects paper exit and switchback. |
| SPRS | Paper exit roller pressure control solenoid (RSPF) | Controls ON/OFF of the transport power of the paper exit roller. (Releases the paper exit roller pressure when reversing paper.) |
| SRRC | Registration roller clutch (RSPF) | Controls the registration roller. (Controls the timing of document transport.) |
| STMPS | Stamp solenoid | Drives the finish stamp. |

| No. | Name | Function/Operation |
|---|---|---|
| 1 | Transport auxiliary roller (RSPF) | Reduces friction between a document and the paper guide to transport the document smoothly to the registration roller. |
| 2 | Registration roller (Drive) (RSPF) | Transports a document to the transport roller 2. / Controls the transport timing of the document and adjusts the document scanning timing. |
| 3 | Registration roller (Idle) (RSPF) | Apply a pressure to a document and the registration roller to provide the transport power of the transport roller to the document. |
| 4 | Transport roller 3 (Idle) (RSPF) | Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document. |
| 5 | Transport roller 3 (Drive) (RSPF) | Transports a document transported from the document scanning section to the paper exit roller. |
| 6 | Transport roller 2 (Idle) (RSPF) | Apply a pressure to a document and the transport roller to provide the transport power of the transport roller to the document. |
| 7 | Transport roller 2 (Drive) (RSPF) | Transports a document transported from the registration roller to the document scanning section. |
| 8 | Paper exit roller (Idle) (RSPF) | Apply a pressure to a document and the paper exit roller to provide the transport power of the paper exit roller to the document. |
| 9 | Paper exit roller (Drive) (RSPF) | Discharges a document. Switchbacks the document and transports it to the registration roller when scanning the back surface. |
| 10 | Document reverse gate | Reverses a document when scanning images on the back surface. |
| 11 | RSPF driver PWB | Drives the motor, the solenoid, and the clutch in the RSPF section. |

## B. Operational descriptions

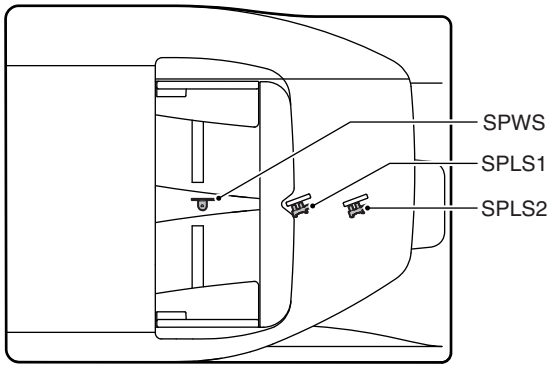
### (1) Document size detection

Size detection on the document tray

The document width is detected with the RSPF document width sensor (SPWS), and the document length is detected with the RSPF document length sensors (SPLS1, SPLS2). The document size is judged from the document width and the document length according to the table below. When documents of different sizes are mixed and set on the document tray, the largest document 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 |
| | 8.5" x 14" | ON | ON |
| | 8.5" x 13.4" | ON | ON |
| | 8.5" x 13.5" | 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 |
| | 8.5" x 13.4" | ON | ON |

**RSPF unit**




### (2) Document scanning

The document scanning mode is available in 400dpi and 600dpi.

| Resolution | Document transport speed |
|---|---|
| 400dpi | 259mm/sec |
| 600dpi | 173mm/sec |

### (3) RSPF paper feed and transport operations

#### a. Paper feed operation

The paper feed motor is turned ON and the power of the paper feed motor is transmitted to the pickup roller and the paper feed roller.

The pickup roller descends to pickup the top document and feed it to the paper feed roller.

The paper feed roller feeds a document to the transport section.

At that time, the document is separated by the separation roller to prevent double-feeding.

#### b. Single face scanning

The lead edge of the fed document is aligned (registration) by the registration roller, and passed through transport roller 1 to the document scanning section, where images are scanned.

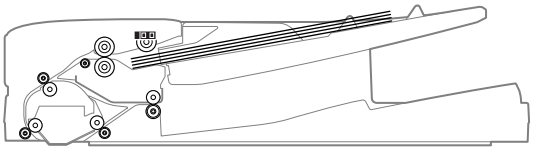
Then the document is passed through transport roller 2 to the paper exit roller.

The rollers (the registration roller, transport rollers 1 and 2, the paper exit roller) in the transport section are driven by the transport motor.

The paper exit roller (drive pulley) is separated by the paper exit roller pressure control solenoid.

When the read edge of the document passes the scanning section, the both rollers are brought into close contact to supply the power for paper exit.

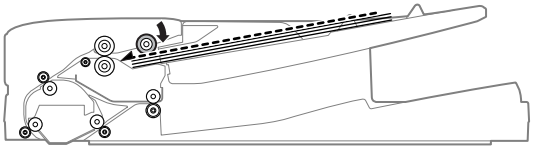
1) Document set (Document empty sensor ON)



2) Paper feed start (1st sheet)

The pick-up roller descends. (The paper feed motor is booted.)

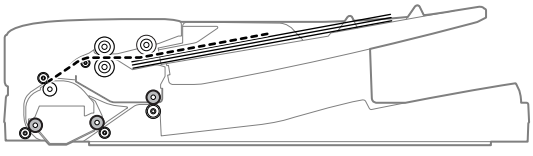
(The transport motor is booted simultaneously.)



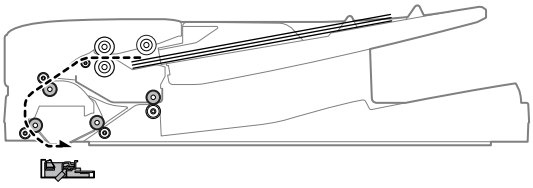
3) Registration operation (1st sheet)

(Registration clutch ON)

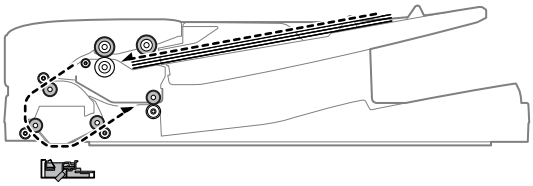
(When a certain time passes after turning ON the registration clutch, the paper feed motor is turned OFF.)



4) Scanning start (1st sheet)

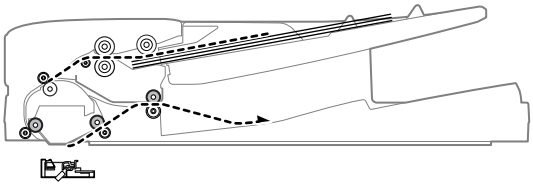


5) Paper feed start (2nd sheet)

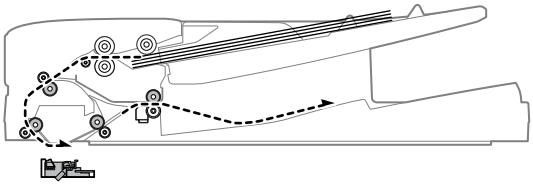


6) Scanning complete (1st sheet)/Registration operation (2nd sheet)

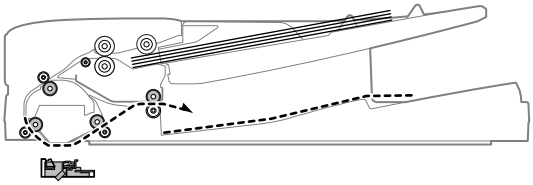
(When a certain time passes after turning ON the registration clutch, the paper feed motor is turned OFF.)



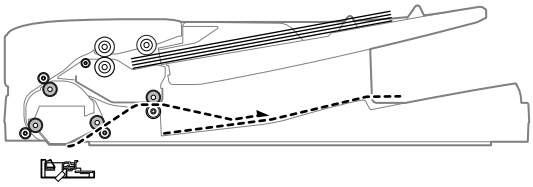
7) Scanning start (2nd sheet)



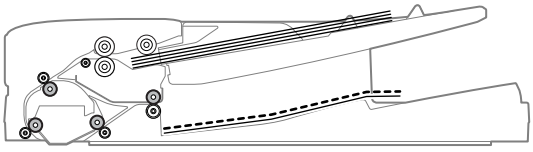
8) Paper exit complete (1st sheet)



9) Scanning complete (2nd sheet)

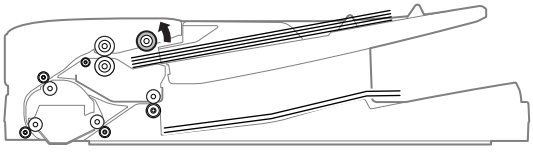


10) Paper exit complete (2nd sheet)



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.)



**c. Duplex scanning**

Images on the document surface are scanned, and detection of the rear edge of the document by sensor SPPD3 triggers the following. That is, when the rear edge of the document passes the reverse gate, the transport motor is reversed.

Due to the above operation, the paper exit roller is reversed to switchback the document, returning it to the registration roller section and aligning (registration) the document.

Then the transport motor is rotated normally to transport the document to the scanning section, scanning images on the back surface.

To reset the page order of the documents, the following operations are made which are triggered by the detection of the rear edge of the document. That is, when the rear edge of the document passes the reverse gate, the transport motor is reversed.

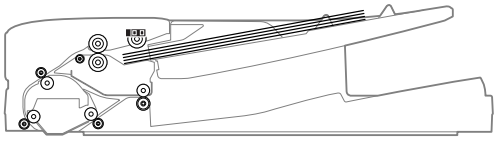
Due to the above operation, the paper exit roller is reversed to switchback the document, returning it to the registration roller section and aligning (registration) the document.

Then the transport motor is rotated normally to transport the document to the paper exit section and discharge it.

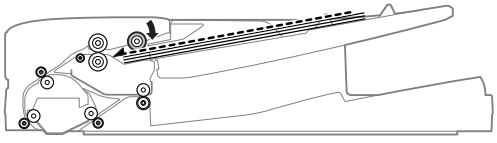
When a duplex document is scanned, the document lead edge section and the rear edge section intersect. At that timing, the paper exit roller pressure release solenoid is turned ON to make a gap between the paper exit roller (drive) and the paper exit roller (idle).

During the time from when the document rear edge passes the scanning section to when it is switch backed and send to the registration roller section, the paper exit roller pressure release solenoid is turned OFF to keep the paper exit roller (drive) and the paper exit roller (idle) in contact.

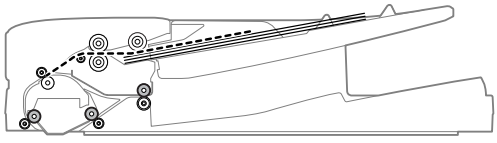
1) Document set (Document empty sensor ON)



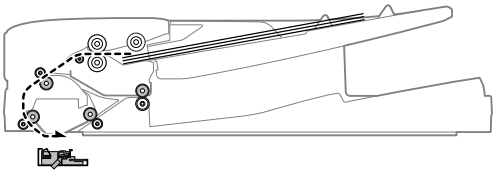
2) Paper feed start (1st sheet)
   Pick-up roller descending



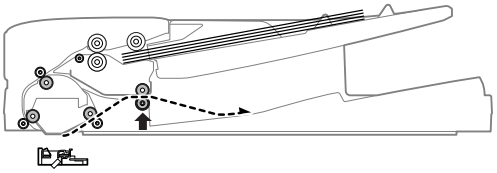
3) Registration operation (1st sheet, front surface)



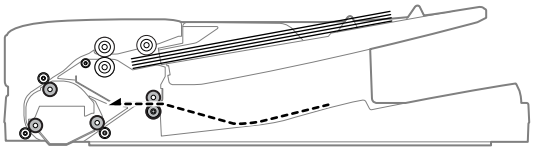
4) Scanning start (1st sheet, front surface)



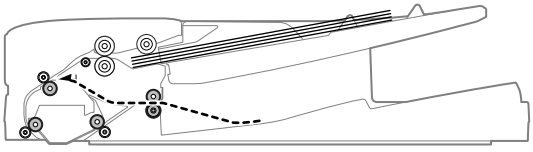
5) After completion of scanning, the reverse follower roller is pressed. (Solenoid ON)



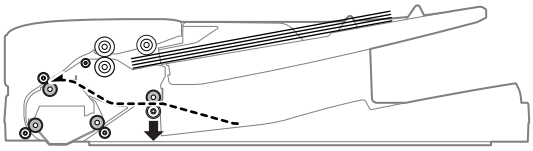
6) After stopping the operation, reversing is started.



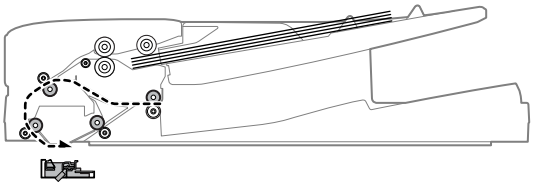
7) After reversing, registration operation is executed.



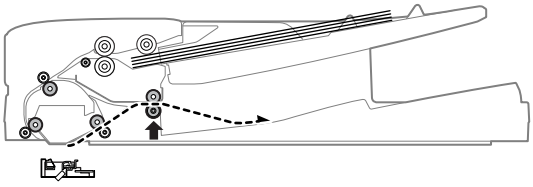
8) After turning ON the PS clutch, the reverse follower roller pressure is released.



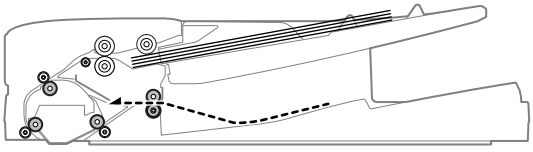
9) Scanning start (First sheet, back surface)



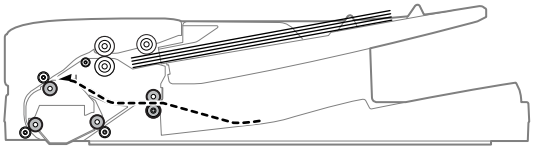
10) After completion of scanning, the reverse follower roller is pressed.



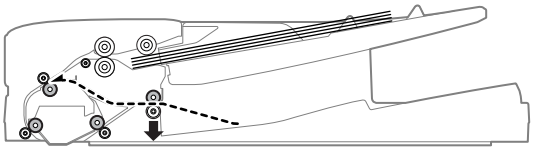
11) After stopping the operation, reversing is started.



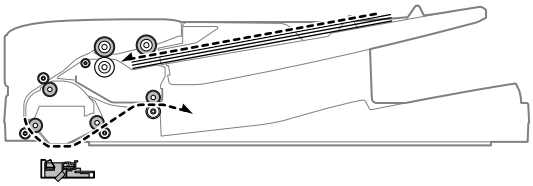
12) After reversing, registration operation is executed.



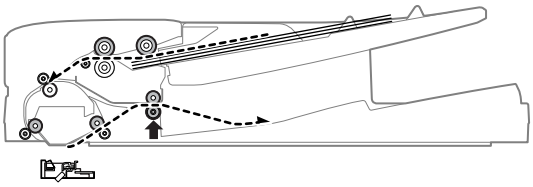
13) After turning ON the PS clutch, the reverse follower roller pressure is released.



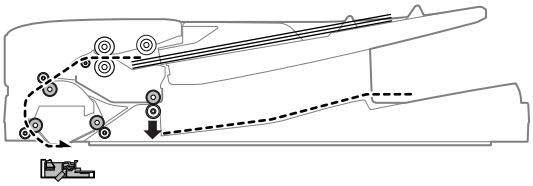
14) Scanning start (Second sheet)



15) After passing the scanning section, the reverse follower roller is pressed.

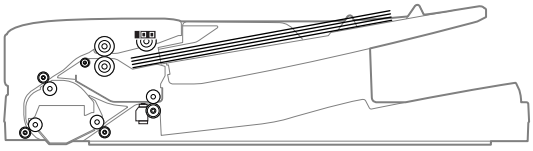


16) After discharge (First sheet), the reverse follower roller pressure is released.

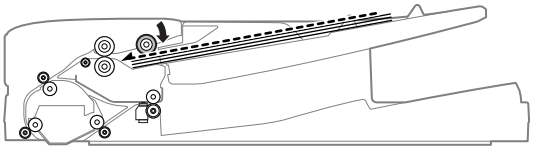


**d. Stamp operation**

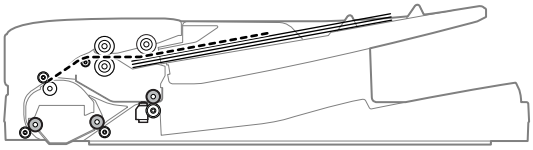
1) Document set (Document empty sensor ON)



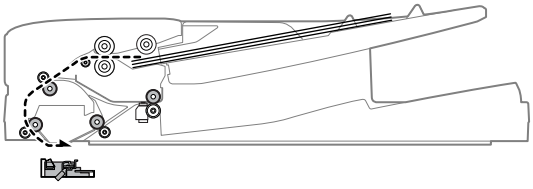
2) Paper feed start (1st sheet)
Pick-up roller descending (The paper feed motor is booted.)
(The transport motor is booted simultaneously.)



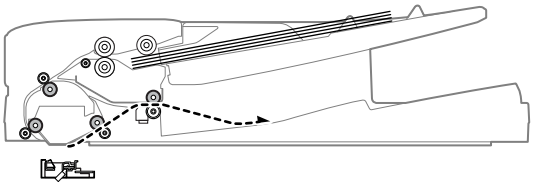
3) Registration operation (1st sheet)
(Registration clutch ON)
(When a certain time passes after turning ON the registration clutch, the paper feed motor is turned OFF.)



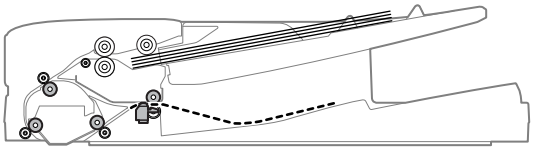
4) Scanning start (1st sheet)



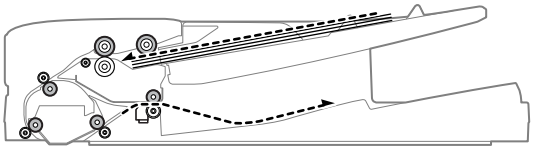
5) Scanning complete (1st sheet)



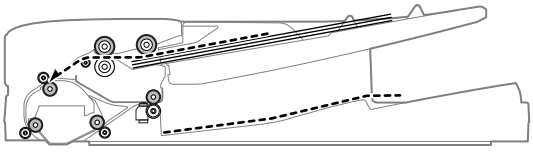
6) Stop at the stamp position/Stamp operation (1st sheet)
(Stamp solenoid ON)



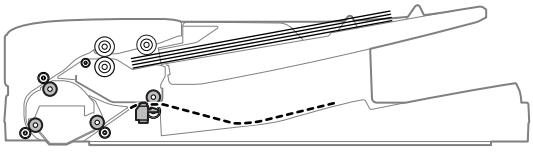
7) Paper exit start (1st sheet)/Preliminary paper feed start (2nd sheet)



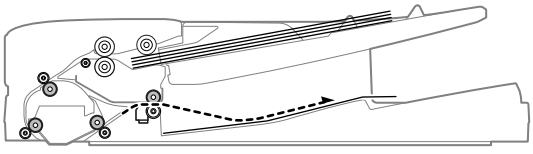
8) Paper exit complete (1st sheet)



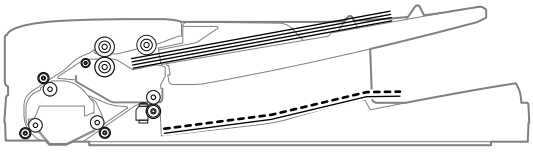
9) Stop at the stamp position/Stamp operation (2nd sheet)
(Stamp solenoid ON)



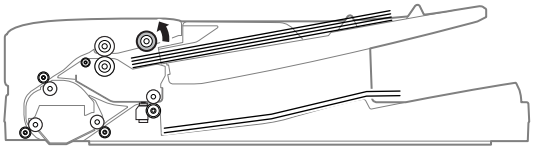
10) Paper exit start (2nd sheet)



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.)

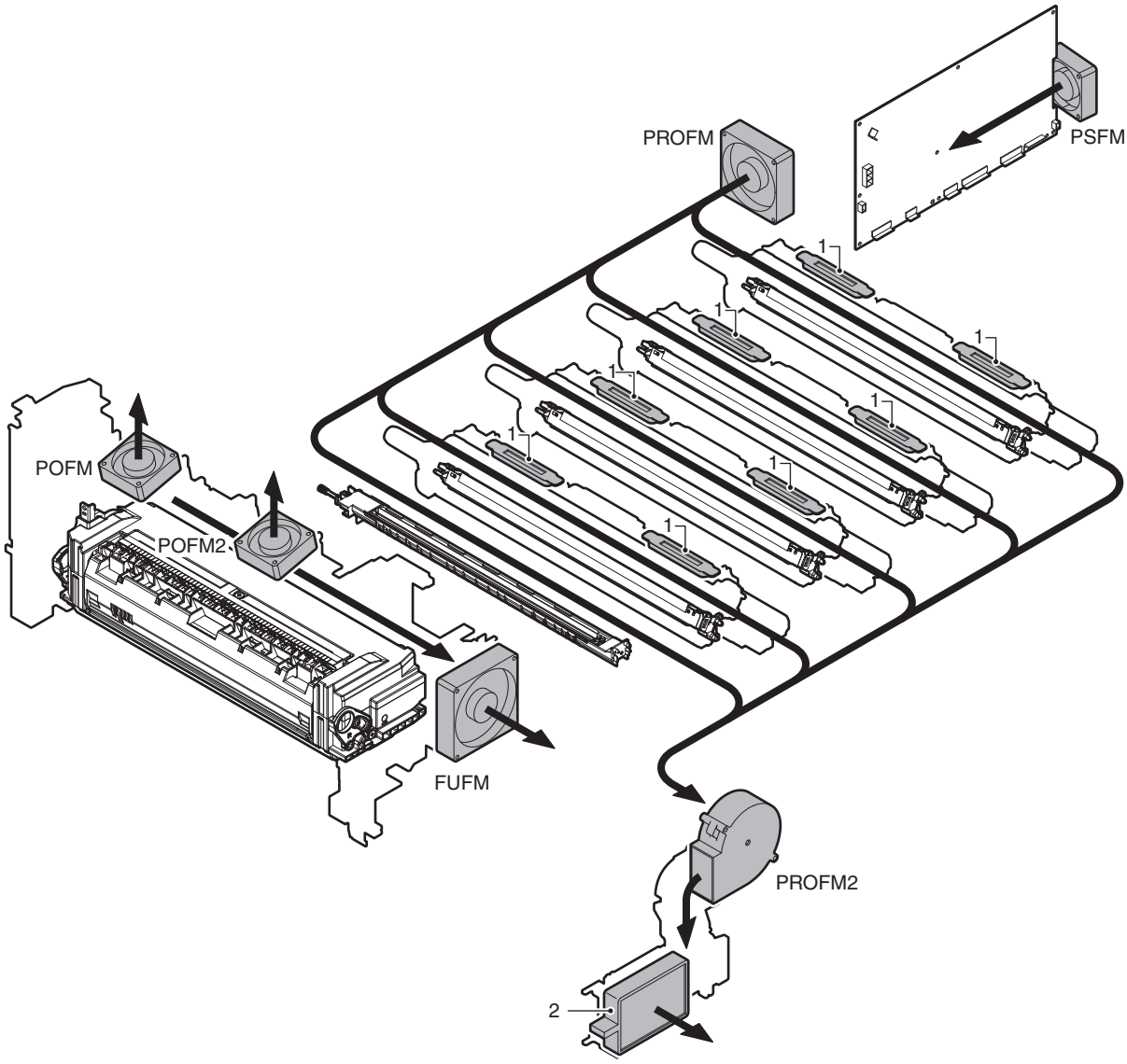


## 12. Fan and filter

The machine is provided with the following fan to discharge air from the process section and cool the fusing section and the power unit.

| Signal name | Name | Function/Operation |
|---|---|---|
| FUFM | Fusing cooling fan | Prevents heat generated in the fusing section from lowing into the toner cartridge and the paper exit section. |
| POFM | Paper exit cooling fan | Cools the fusing section and the paper exit section. |
| POFM2 | Paper exit cooling fan | Cools the fusing section and the paper exit section. |
| PROFM | Process fan motor 1 | Blows air to the main charger and the PTC unit to promote discharging of ozone generated. |
| PROFM2 | Process fan motor 2 | Discharges ozone generated in the main charger and the PTC unit, and cools the developing unit. |
| PSFM | Power cooling fan motor | Cools the power unit. |

The flow of air is as shown in the figure below.




The machine is provided with the following filter to remove ozone generated in the process section.

Filter process fan motor 1 produces an air flow to generate a difference in the air pressure between inside outside of the developing unit, preventing toner from splashing from the open port of the developing unit.

The toner filter prevents toner from leaking from the slit caused by this difference in air pressure.

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

# 13. Operations and specifications of counters

## A. Counters and count conditions

| Condition | | Counter | | | | | |
|---|---|---|---|---|---|---|---|
| | | Print image | Total counter | User counter | Pixel count | Job log | |
| | | | | | | Valid paper counter | Invalid paper counter |
| Normal discharge paper | | Valid image | Counted | Counted | Counted as a corresponding job. | Counted | Not counted |
| Simplex surface white paper in the duplex job | | White paper | Not counted | Not counted | Not counted | Not counted | Not counted |
| White paper of cover paper, insert paper | | White paper | Select with the setting of SIM26-52. | Select with the setting of SIM26-52. | Not counted | Select with the setting of SIM26-52. | Not counted |
| Size illegal | Transfer completed | Valid image for some paper sizes | Counted | Counted | Counted as a corresponding job. | Counted | Not counted |
| | Transfer not completed | White paper | Not counted | Not counted | Not counted | Not counted | Counted |
| Document jam involvement in the RSPF pulling mode | | White paper | Not counted | Not counted | Not counted | Not counted | Counted |
| Anti copy | Paper for transfer OFF | Invalid image | Counted | Counted | Counted as a corresponding job. | Counted | Not counted |
| | Following paper | White paper | Not counted | Not counted | Not counted | Not counted | Counted |
| White paper at CA cancel | | White paper | Not counted | Not counted | Not counted | Not counted | Counted |
| Remaining paper at a paper jam | | Not discharged | Not counted | Not counted | Counted as the other. | Not counted | Not counted |
| Amount of print cancel for paper feed slip or paper empty | | - | - | - | Counted as the other. | - | - |

## B. Maintenance system counters (Print counter)

| Counter name | Count-up timing | Display SIM | Reset SIM | Count-up number | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Simplex surface print | | Duplex surface print | | | |
| | | | | Paper feed tray - Paper exit completed | | Paper feed tray - ADU paper entry completed | | ADU paper feed - Paper exit completed | |
| | | | | Small size | Large size | Small size | Large size | Small size | Large size |
| Maintenance counter (Total) | All paper exit operations completed | SIM22-13 | SIM24-4 | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Maintenance counter (Color) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Fusing belt print counter | All paper exit operations completed | SIM22-13 | SIM24-4 | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Fusing roller print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Pressure roller print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Separation pawl print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Separation plate print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Fusing web print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Primary transfer unit print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Transfer blade print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| PTC print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Secondary transfer unit print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| PS paper dust cleaner print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Developer cartridge print counter (K) | All paper exit operations completed | SIM22-13 | SIM24-5 SIM25-2 | 1 | 2(1)*3 | 1 | 2(1)*3 | 1 | 2(1)*3 |
| Developer cartridge print counter (C) | Color paper exit operations completed | | | 1 | 2(1)*3 | 1 | 2(1)*3 | 1 | 2(1)*3 |
| Developer cartridge print counter (M) | Color paper exit operations completed | | | 1 | 2(1)*3 | 1 | 2(1)*3 | 1 | 2(1)*3 |
| Developer cartridge print counter (Y) | Color paper exit operations completed | | | 1 | 2(1)*3 | 1 | 2(1)*3 | 1 | 2(1)*3 |

| Counter name | Count-up timing | Display SIM | Reset SIM | Count-up number | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Simplex surface print | | Duplex surface print | | | |
| | | | | Paper feed tray - Paper exit completed | | Paper feed tray - ADU paper entry completed | | ADU paper feed - Paper exit completed | |
| | | | | Small size | Large size | Small size | Large size | Small size | Large size |
| Drum cartridge print counter (K) | All paper exit operations completed | SIM22-13 | SIM24-4 | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum cartridge print counter (C) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum cartridge print counter (M) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum cartridge print counter (Y) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Main charger print counter (K) | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Main charger print counter (C) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Main charger print counter (M) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Main charger print counter (Y) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum blade print counter (K) | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum blade print counter (C) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum blade print counter (M) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Drum blade print counter (Y) | Color paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Ozone filter print counter | All paper exit operations completed | | | 1 | 2(1)*1 | 1 | 2(1)*1 | 1 | 2(1)*1 |
| Toner cartridge print counter (K) | All paper exit operations completed | SIM22-13 | – | 1 | 2(1)*4 | 1 | 2(1)*4 | 1 | 2(1)*4 |
| Toner cartridge print counter (C) | Color paper exit operations completed | | | 1 | 2(1)*4 | 1 | 2(1)*4 | 1 | 2(1)*4 |
| Toner cartridge print counter (M) | Color paper exit operations completed | | | 1 | 2(1)*4 | 1 | 2(1)*4 | 1 | 2(1)*4 |
| Toner cartridge print counter (Y) | Color paper exit operations completed | | | 1 | 2(1)*4 | 1 | 2(1)*4 | 1 | 2(1)*4 |

*1: The number in ( ) is the count-up number when the large-size count-up setting is changed to the single count-up with SIM26-5 (Maintenance count (B/W, COL)).

*3: The number in ( ) is the count-up number when the large-size count-up setting is changed to the single count-up with SIM26-5 (Developer count (B/W, COL)).

*4: The number in ( ) is the count-up number when the large-size count-up setting is changed to the single count-up with SIM26-5 (Total count (B/W, COL)).

## C. Maintenance system counters (Number of rotations)

| Counter name | Count-up timing | Display SIM | Reset SIM | Count-up number | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Simplex surface print | | Duplex surface print | | | |
| | | | | Paper feed tray - Paper exit completed | | Paper feed tray - ADU paper entry completed | | ADU paper feed - Paper exit completed | |
| | | | | Small size | Large size | Small size | Large size | Small size | Large size |
| Fusing belt accumulated rotation time | While the fusing motor is driven. | SIM22-13 | SIM24-4 | RPM (Unit: 1)<br>* Calculated from the traveling distance. | | | | | |
| Fusing roller accumulated rotation time | While the fusing motor is driven. | | | | | | | | |
| Pressure roller accumulated rotation time | While the fusing motor is driven. | | | | | | | | |
| Separation pawl accumulated rotation time | While the fusing motor is driven. | | | | | | | | |
| Separation plate accumulated rotation time | While the fusing motor is driven. | | | | | | | | |
| Primary transfer unit accumulated rotation time | While the primary transfer unit is driven. | | | | | | | | |
| Transfer blade accumulated rotation time | While the drum (K) is driven. | | | | | | | | |
| PTC accumulated rotation time | While the drum (K) is driven. | | | | | | | | |
| Secondary transfer unit accumulated rotation time | While the secondary transfer unit is driven | | | | | | | | |
| Developer cartridge accumulated rotation time (K) | While the drum (K) is driven. | SIM22-13 | SIM24-5<br>SIM25-2 | | | | | | |
| Developer cartridge accumulated rotation time (C) | While the drum (C) is driven. | | | | | | | | |
| Developer cartridge accumulated rotation time (M) | While the drum (M) is driven. | | | | | | | | |
| Developer cartridge accumulated rotation time (Y) | While the drum (Y) is driven. | | | | | | | | |
| Drum cartridge accumulated rotation time (K) | While the drum (K) is driven. | SIM22-13 | SIM24-4 | | | | | | |
| Drum cartridge accumulated rotation time (C) | While the drum (C) is driven. | | | | | | | | |
| Drum cartridge accumulated rotation time (M) | While the drum (M) is driven. | | | | | | | | |
| Drum cartridge accumulated rotation time (Y) | While the drum (Y) is driven. | | | | | | | | |
| Main charger accumulated rotation time (K) | While the drum (K) is driven. | | | | | | | | |
| Main charger accumulated rotation time (C) | While the drum (C) is driven. | | | | | | | | |
| Main charger accumulated rotation time (M) | While the drum (M) is driven. | | | | | | | | |
| Main charger accumulated rotation time (Y) | While the drum (Y) is driven. | | | | | | | | |
| Drum blade accumulated rotation time (K) | While the drum (K) is driven. | | | | | | | | |
| Drum blade accumulated rotation time (C) | While the drum (C) is driven. | | | | | | | | |
| Drum blade accumulated rotation time (M) | While the drum (M) is driven. | | | | | | | | |
| Drum blade accumulated rotation time (Y) | While the drum (Y) is driven. | | | | | | | | |
| Toner motor accumulated rotation time (K) | While the toner motor (K) is driven. | SIM22-13 | – | RPM (Unit: 1)<br>* Calculated from the rotating time. | | | | | |
| Toner motor accumulated rotation time (C) | While the toner motor (C) is driven. | | | | | | | | |
| Toner motor accumulated rotation time (M) | While the toner motor (M) is driven. | | | | | | | | |
| Toner motor accumulated rotation time (Y) | While the toner motor (Y) is driven. | | | | | | | | |

## D. Maintenance system counters (Number of use days)

| Counter name | Count-up timing | Display SIM | Reset SIM | Count-up number | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Simplex surface print | | Duplex surface print | | | |
| | | | | Paper feed tray - Paper exit completed | | Paper feed tray - ADU paper entry completed | | ADU paper feed - Paper exit completed | |
| | | | | Small size | Large size | Small size | Large size | Small size | Large size |
| Number of day that used maintenance counter (Total) | Date change | SIM22-13 | SIM24-4 | 1 (Unit: day) | | | | | |
| Number of day that used maintenance counter (Color) | | | | | | | | | |
| Number of day that used fusing belt (Excluding the 18cpm/20cpm machine) | Date change | SIM22-13 | SIM24-4 | | | | | | |
| Number of day that used fusing roller | | | | | | | | | |
| Number of day that used pressure roller | | | | | | | | | |
| Number of day that used separation pawl | | | | | | | | | |
| Number of day that used separation plate | | | | | | | | | |
| Number of day that used fusing web | | | | | | | | | |
| Number of day that used primary transfer unit | | | | | | | | | |
| Number of day that used transfer blade | | | | | | | | | |
| Number of day that used PTC | | | | | | | | | |
| Number of day that used secondary transfer unit | | | | | | | | | |
| Number of day that used PS paper dust cleaner | | | | | | | | | |
| Number of day that used developer cartridge (K) | Date change | SIM22-13 | SIM24-5<br>SIM25-2 | | | | | | |
| Number of day that used developer cartridge (C) | | | | | | | | | |
| Number of day that used developer cartridge (M) | | | | | | | | | |
| Number of day that used developer cartridge (Y) | | | | | | | | | |
| Number of day that used drum cartridge (K) | Date change | SIM22-13 | SIM24-4 | | | | | | |
| Number of day that used drum cartridge (C) | | | | | | | | | |
| Number of day that used drum cartridge (M) | | | | | | | | | |
| Number of day that used drum cartridge (Y) | | | | | | | | | |
| Number of day that used main charger (K) | | | | | | | | | |
| Number of day that used main charger (C) | | | | | | | | | |
| Number of day that used main charger (M) | | | | | | | | | |
| Number of day that used main charger (Y) | | | | | | | | | |
| Number of day that used drum blade (K) | | | | | | | | | |
| Number of day that used drum blade (C) | | | | | | | | | |
| Number of day that used drum blade (M) | | | | | | | | | |
| Number of day that used drum blade (Y) | | | | | | | | | |
| Number of day that used ozone filter | | | | | | | | | |
| Number of day that used toner cartridge (K) | Date change | SIM22-13 | – | | | | | | |
| Number of day that used toner cartridge (C) | | | | | | | | | |
| Number of day that used toner cartridge (M) | | | | | | | | | |
| Number of day that used toner cartridge (Y) | | | | | | | | | |

## E. Maintenance system counters (Other)

| Counter name | Count-up timing | Display SIM | Reset SIM | Count-up number | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Simplex surface print | | Duplex surface print | | | |
| | | | | Paper feed tray - Paper exit completed | | Paper feed tray - ADU paper entry completed | | ADU paper feed - Paper exit completed | |
| | | | | Small size | Large size | Small size | Large size | Small size | Large size |
| Staple counter | When requesting for staple | SIM22-8 | SIM24-3 | Number of staples | | | | | |
| Punch counter | When requesting for punch | | | 1 | | | | | |
| Manual paper feed counter (Total) | When manual paper feed is started | SIM22-9 | SIM24-2 | 1 | | | | | |
| Manual paper feed counter (Heavy paper) | When manual paper feed of heavy paper is started (without distinction between heavy paper 1 and 2) | | | | | | | | |
| Manual paper feed counter (OHP) | When manual paper feed of OHP sheet is started | | | | | | | | |
| Manual paper feed counter (Envelope) | When manual paper feed of envelopes is started | | | | | | | | |
| Tray 1 counter | When tray 1 paper feed is started | | | | | | | | |
| Tray 2 counter | When tray 2 paper feed is started (request) | | | | | | | | |
| Tray 3 counter | When tray 3 paper feed is started (request) | | | | | | | | |
| Tray 4 counter | When tray 4 paper feed is started (request) | | | | | | | | |
| LCC counter | When LCC paper feed is started (request) | | | | | | | | |
| ADU counter | When ADU paper feed is started | SIM22-9 | SIM24-2 | 1 | | | | | |
| Fusing web cleaning feed counter (36cpm machine only) | When the fusing web cleaning roller is rotated | SIM22-13 | SIM24-4 | Number of pulses | | | | | |
| Toner use number counter (K) | When toner near end is detected (*2) | SIM22-14 | SIM24-35 | 1 | | | | | |
| Toner use number counter (C) | | | | | | | | | |
| Toner use number counter (M) | | | | | | | | | |
| Toner use number counter (Y) | | | | | | | | | |
| Toner near end number counter (K) | When toner near near end is detection | | | | | | | | |
| Toner near end number counter (C) | | | | | | | | | |
| Toner near end number counter (M) | | | | | | | | | |
| Toner near end number counter (Y) | | | | | | | | | |

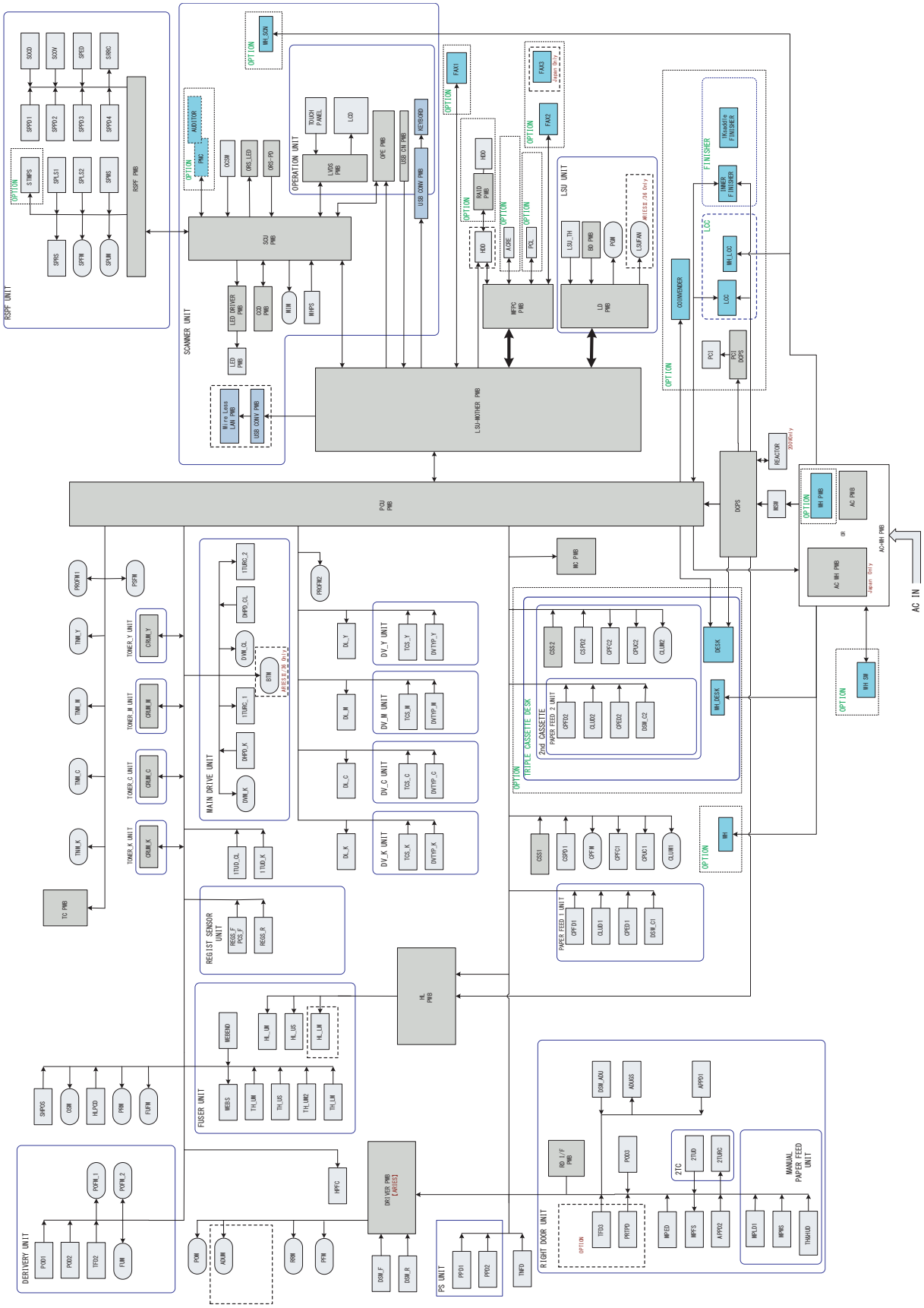
## F. RSPF/Scanner counter

| Counter name | Display SIM | Reset SIM | Count-up timing | NOTE |
|---|---|---|---|---|
| RSPF counter | SIM22-8 | SIM24-3 | When SPF document discharge is completed. The front surface in duplex scan is counted when the reverse operation is stopped. | Number of discharge of document from the SPF |
| Scan counter | SIM22-8 | SIM24-3 | When the scanner carriage feed is completed. | Number of times of scan |
| Finish stamp counter | SIM22-8 | SIM24-3 | When the stamp is ON. | Number of use of the finish stamp |
| Cover open/close counter | SIM22-8 | SIM24-3 | When the document cover close is detected. | Number of open/close of the cover |
| Home detection counter | SIM22-8 | SIM24-3 | When the home sensor ON is detected. | Number of detection of the home position |
| Scanner lamp lighting time counter | SIM22-8 | SIM24-3 | When the scanner lamp is lighted. | Scanner lamp lighting time |

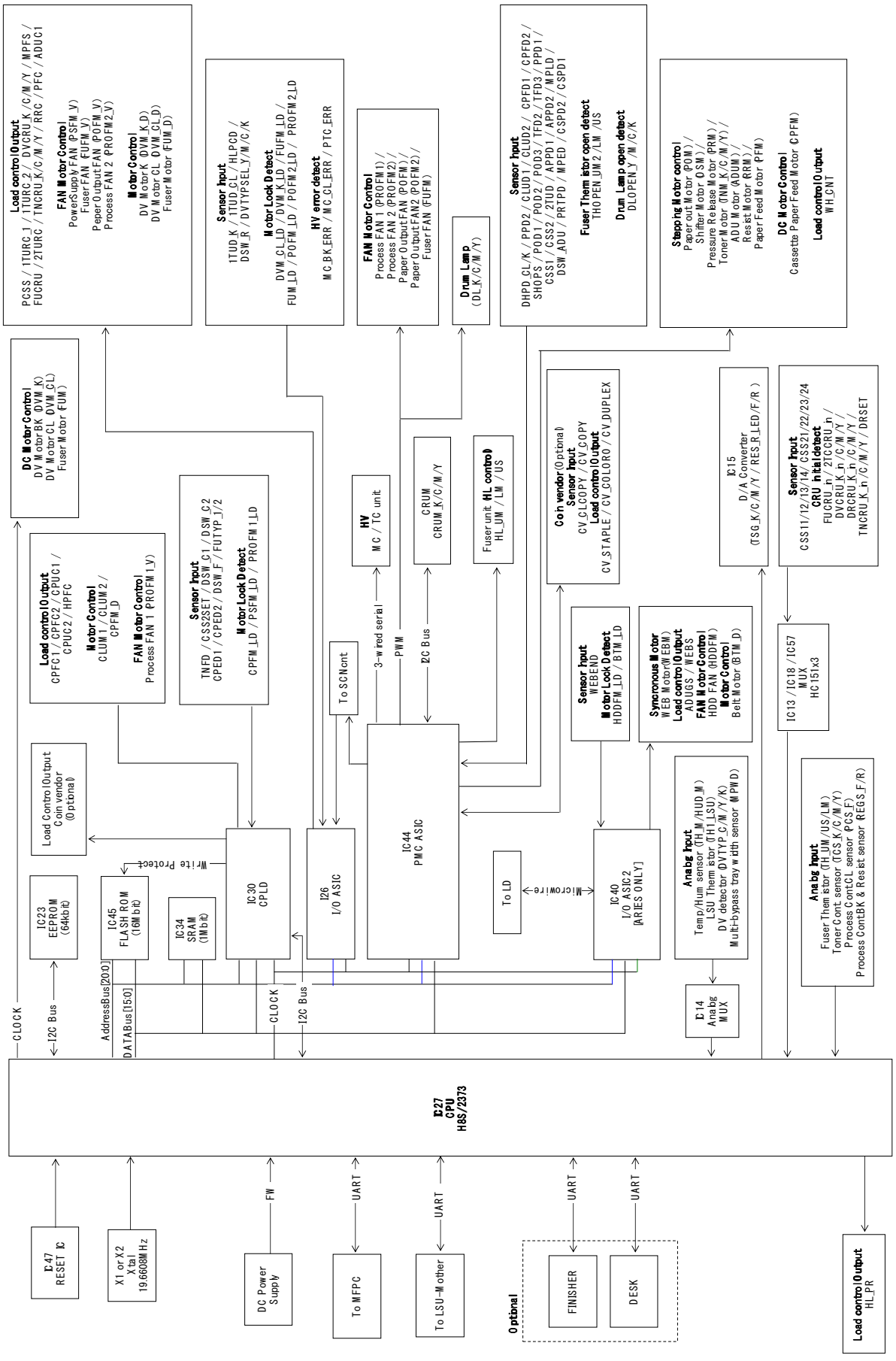
# [14] ELECTRICAL SECTION

## 1. Block diagram

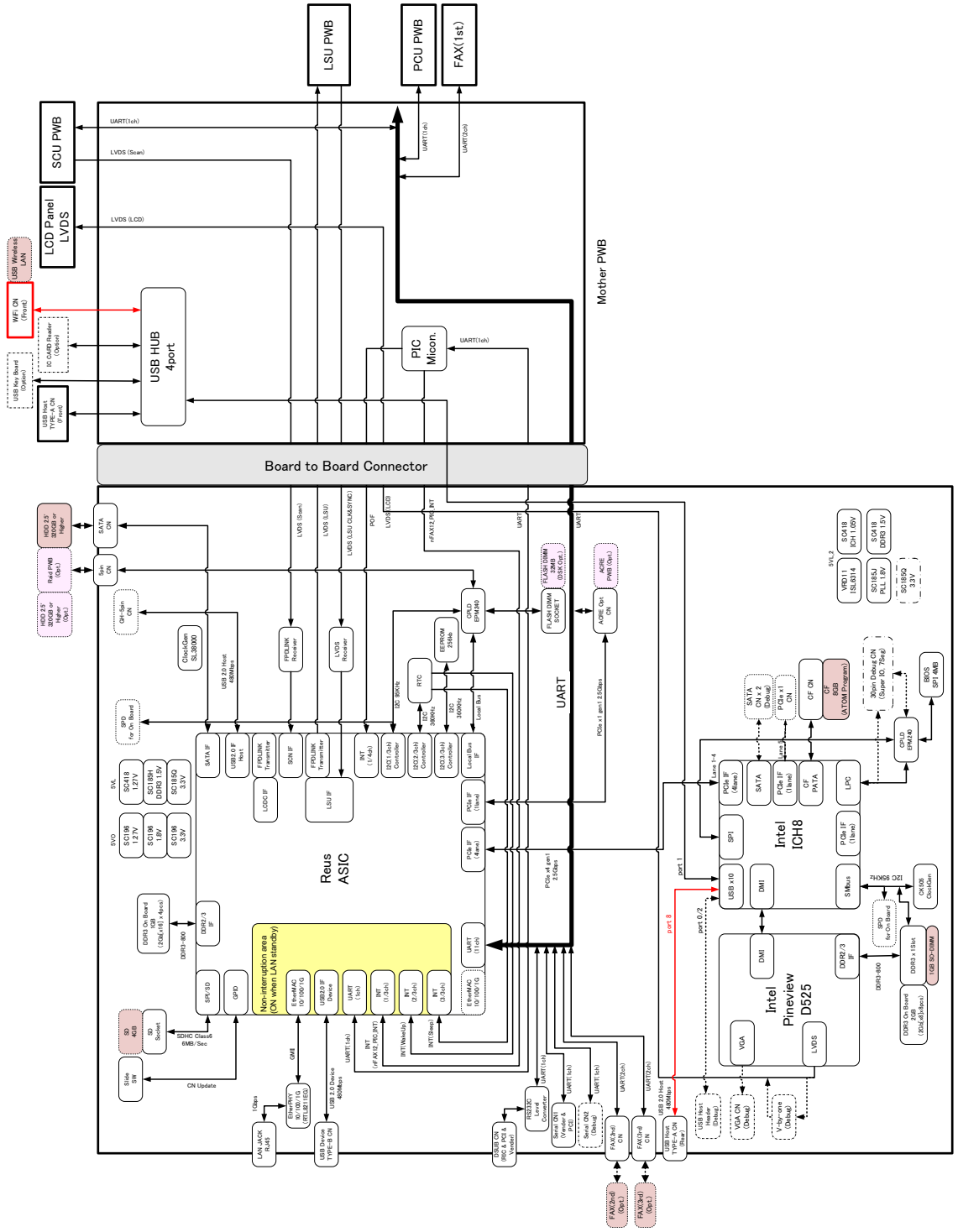
### A. System block diagram



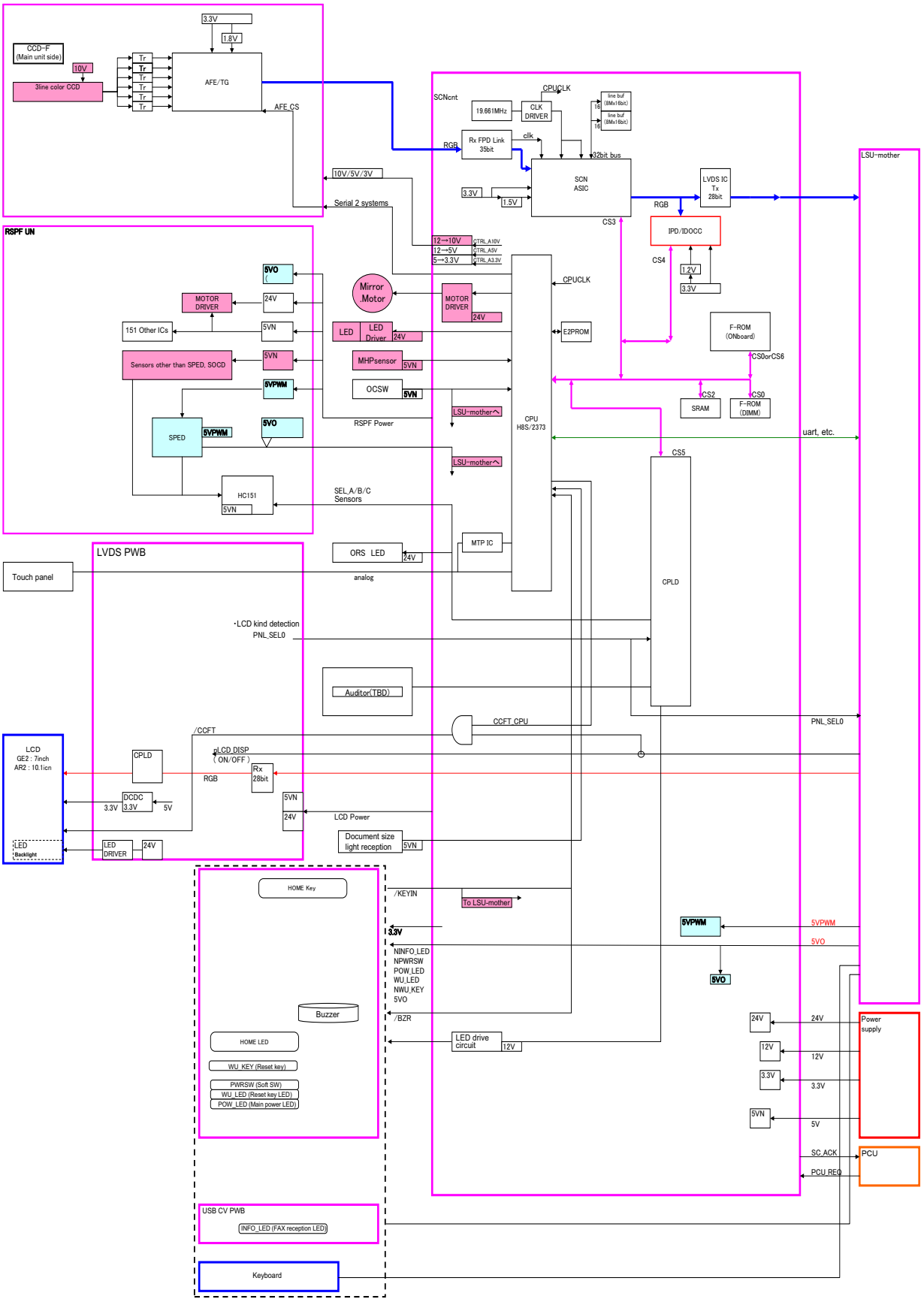
## B. PCU PWB


Load control Output
PCSS_/1TURC_1_/1TURC_2_/DVCRU_K_C_M_Y_/MPFS_/FUCRU_/2TURC_/TNCRU_K_C_M_Y_/RRC_/PFC_/ADUC1
FAN Motor Control
PowerSupply FAN (PSFM_Y)
FuserFAN (FUFM_Y)
PaperOutputFAN (POFM_Y)
Process FAN 2 (PROFM2_Y)
Motor Control
DV MotorK (DVM_K_D)
DV MotorCL (DVM_CL_D)
FuserMotor (FUM_D)
Sensor input
1TUD_K_/1TUD_CL_/HLPCD_/DSW_R_/DVTYPSEL_Y_M_C_K
Motor Lock Detect
DVM_CL_LD_/DVM_K_LD_/FUFM_LD_/FUM_LD_/POFM_LD_/POFM2_LD_/PROFM2_LD
HV error detect
MC_BK_ERR_/MC_CL_ERR_/PTC_ERR
FAN Motor Control
Process FAN 1 (PROFM1)/
Process FAN 2 (PROFM2)/
PaperOutputFAN (POFM)/
PaperOutputFAN2 (POFM2)/
FuserFAN (FUFM)
Drum Lamp
(DL_K_C_M_Y)
Sensor input
DHPD_CL_K_/PPD2_/CLUD1_/CLUD2_/CPFD1_/CPFD2_/SHOPS_/POD1_/POD2_/POD3_/TFD2_/TFD3_/PPD1_/CSS1_/CSS2_/2TUD_/APPD1_/APPD2_/MPLD_/DSW_ADU_/PRTPD_/MPED_/GSPD2_/GSPD1
Fuser Therm istor open detect
THOPEN_UM2_LM_/US
Drum Lamp open detect
DLOPEN_Y_M_C_K
Stepping Motor control
Paperout Motor (POM)/
Shifter Motor (OSM)/
Pressure Release Motor (PRM)/
Toner Motor (TNM_K_C_M_Y)/
ADU Motor (ADUM)/
Resist Motor (RRM)/
PaperFeed Motor (PFM)
DC Motor Control
Cassette PaperFeed Motor (CPFM)
Load control Output
WH_CNT
DC Motor Control
DV MotorBK (DVM_K)
DV MotorCL (DVM_CL)
Fuser Motor (FUM)
Load control Output
CPFC1/CPFC2/CPUC1/CPUC2/HPFC
Motor Control
CLUM1/CLUM2/CPFM_D
FAN Motor Control
Process FAN 1 (PROFM1_Y)
Sensor input
TNFD/CSS2SET/DSW_C1/DSW_C2
CPED1/CPED2/DSW_F/FUTYP_1/2
Motor Lock Detect
CPFM_LD/PSFM_LD/PROFM1_LD
HV
MC/TC unit
CRUM
CRUM_K_C_M_Y
Fuserunit HL control)
HL_UM/LM/US
Coin vendor (Optional)
Sensor input
CV_CLCOPY/CV_COPY
Load control Output
CV_STAPLE/CV_COLORO/CV_DUPLEX
IC15
D/A Converter
(TSG_K_C_M_Y/RES_R_LED_F_R)
Sensor input
CSS11/12/13/14/CSS21/22/23/24
CRU initial detect
FUCRU_n/2TCCRU_n/
DVCRU_K_n_C_M_Y/
DRCRU_K_n_C_M_Y/
TNCRU_K_n_C_M_Y/DRSET
Load Control Output
Coin vendor
(Optional)
IC23
EEPROM
(64kbit)
IC45
FLASH ROM
(16Mbit)
IC34
SRAM
(1Mbit)
IC30
CPLD
I26
I/O ASIC
IC44
PMC ASIC
To SCNCont
3-wired serial
PWM
I2C Bus
Sensor input
WEBEND
Motor Lock Detect
HDDFM_LD/BTM_LD
Synchronous Motor
WEB Motor(WEBM)
Load control Output
ADUGS/WEBS
FAN Motor Control
HDD FAN (HDDFM)
Motor Control
Belt Motor (BTM_D)
IC13/IC18/IC57
MUX
HC151x3
Write Protect
To LD
Microwire
IC40
I/O ASIC2
[ARIES ONLY]
Analog Input
Temp/Hum sensor (TH_M/HUD_M)
LSU Thermistor (TH1_LSU)
DV detector (DVTYP_C_M_Y_K)
Multi-bypass tray width sensor (MPWD)
IC14
Analog
MUX
Analog Input
FuserThermistor (TH_UM/US/LM)
TonerCont sensor (TCS_K_C_M_Y)
Process ContCL sensor (PCS_F)
Process ContBK & Resist sensor (REGS_F_R)
AddressBus[20:0]
DATABus[15:0]
CLOCK
I2C Bus
CLOCK
I2C Bus
IC27
CPU
H8S/2373
IC47
RESET IC
X1 or X2
Xtal
19.6608MHz
DC Power
Supply
FW
To MFPC
UART
To LSU-Mother
UART
Optional
FINISHER
UART
DESK
UART
Load control Output
HL_PR

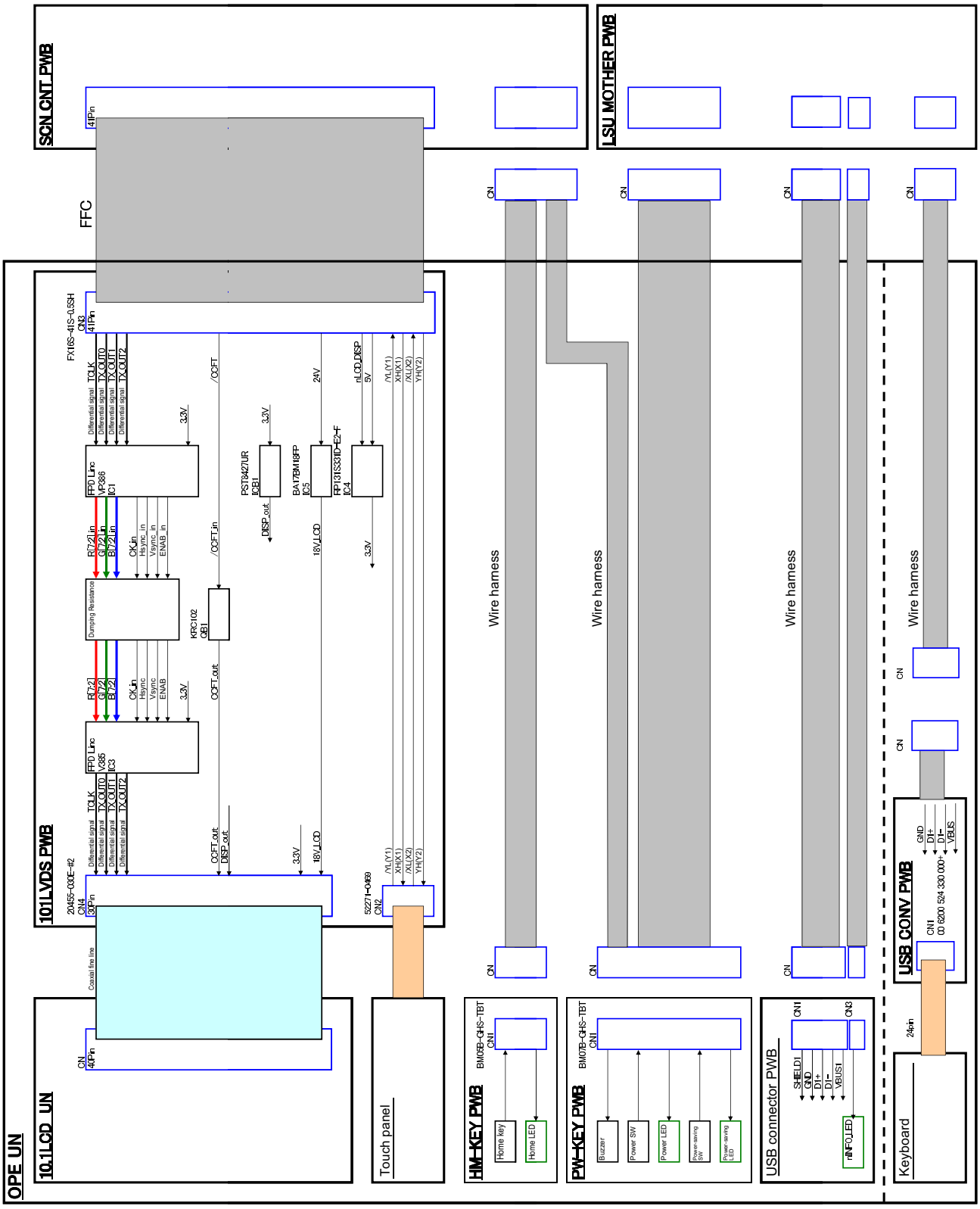
## C. MFP control PWB



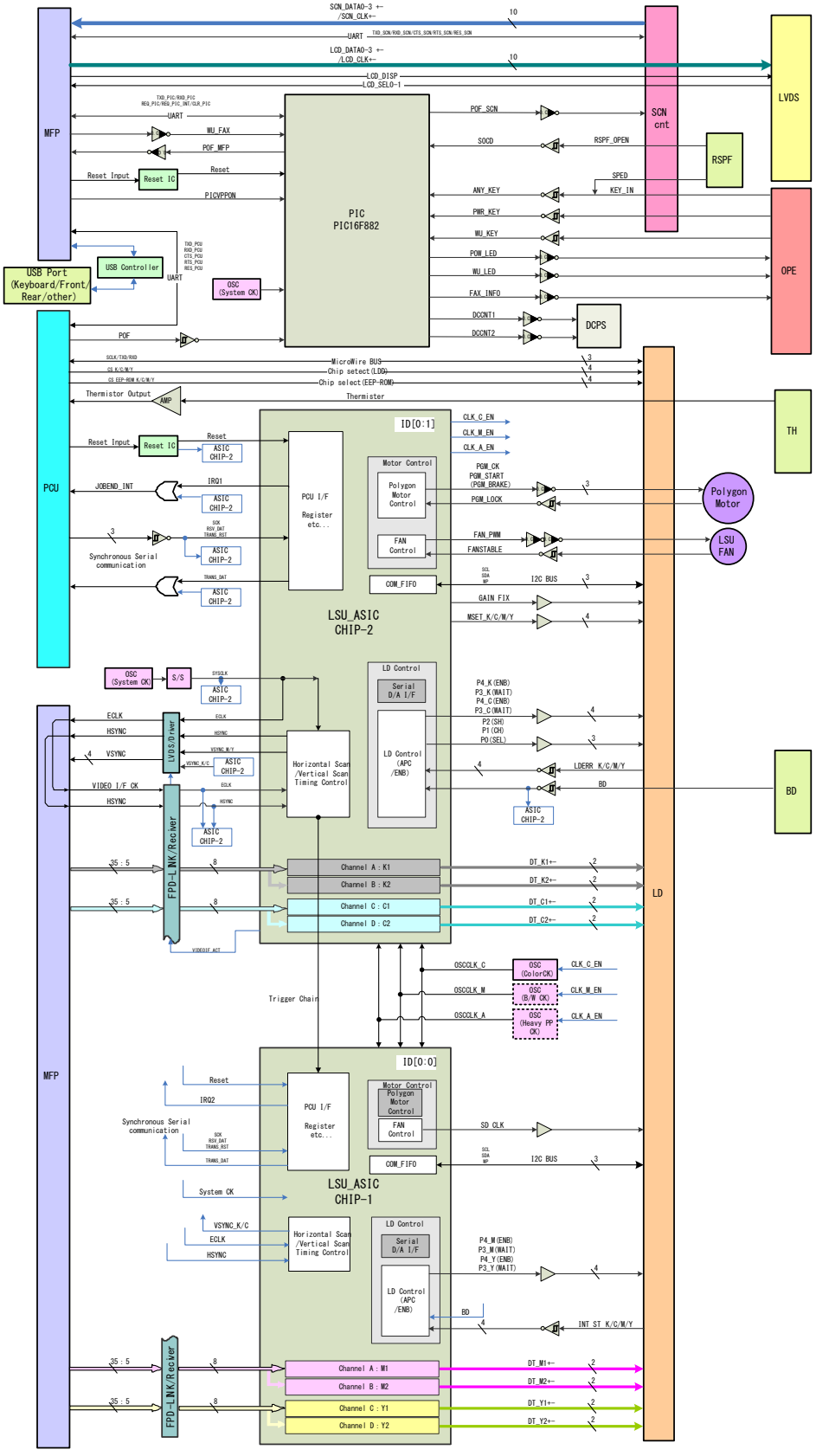
## D. Scanner control PWB



## E. Operation unit

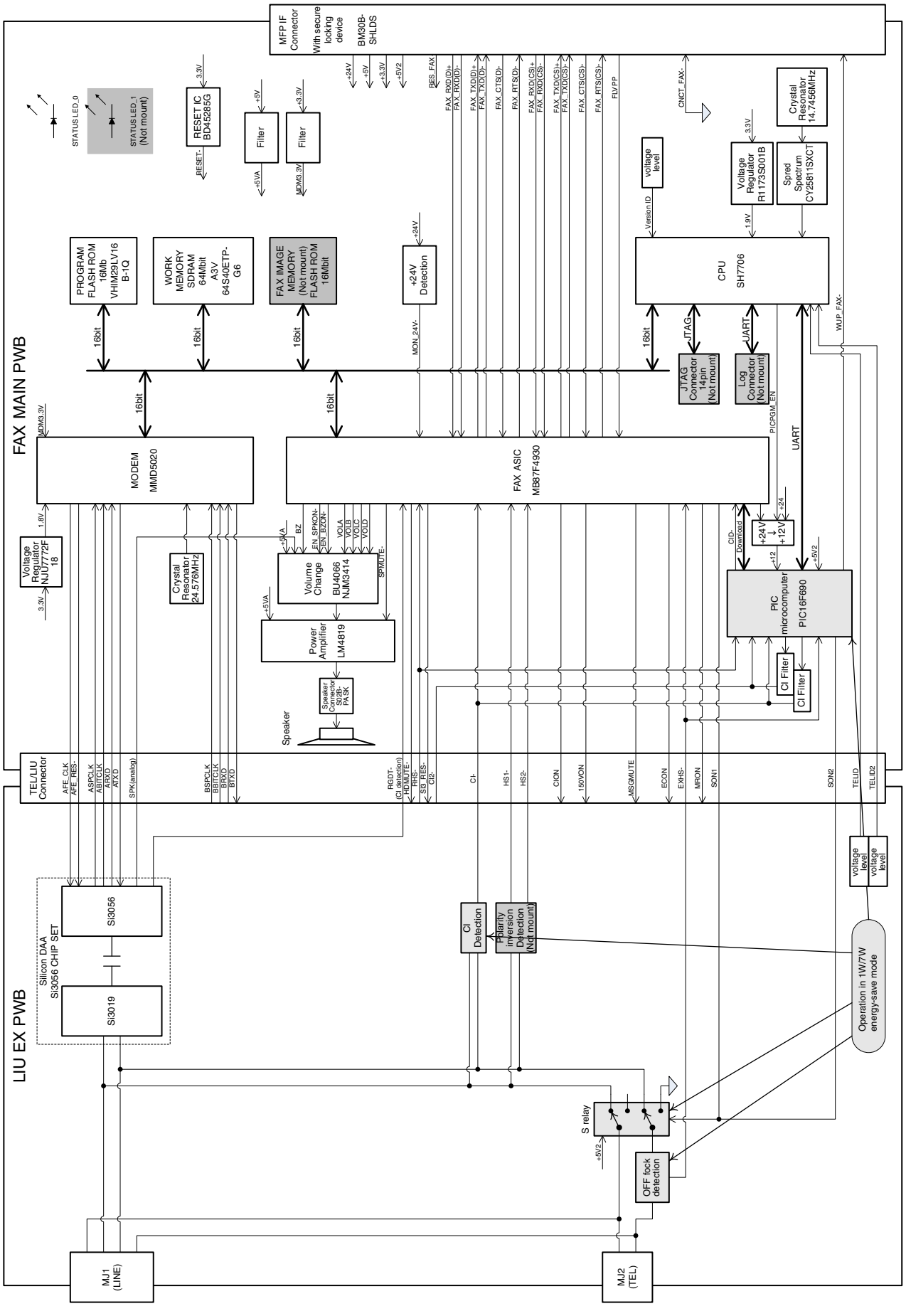


## F. LSU-mother PWB

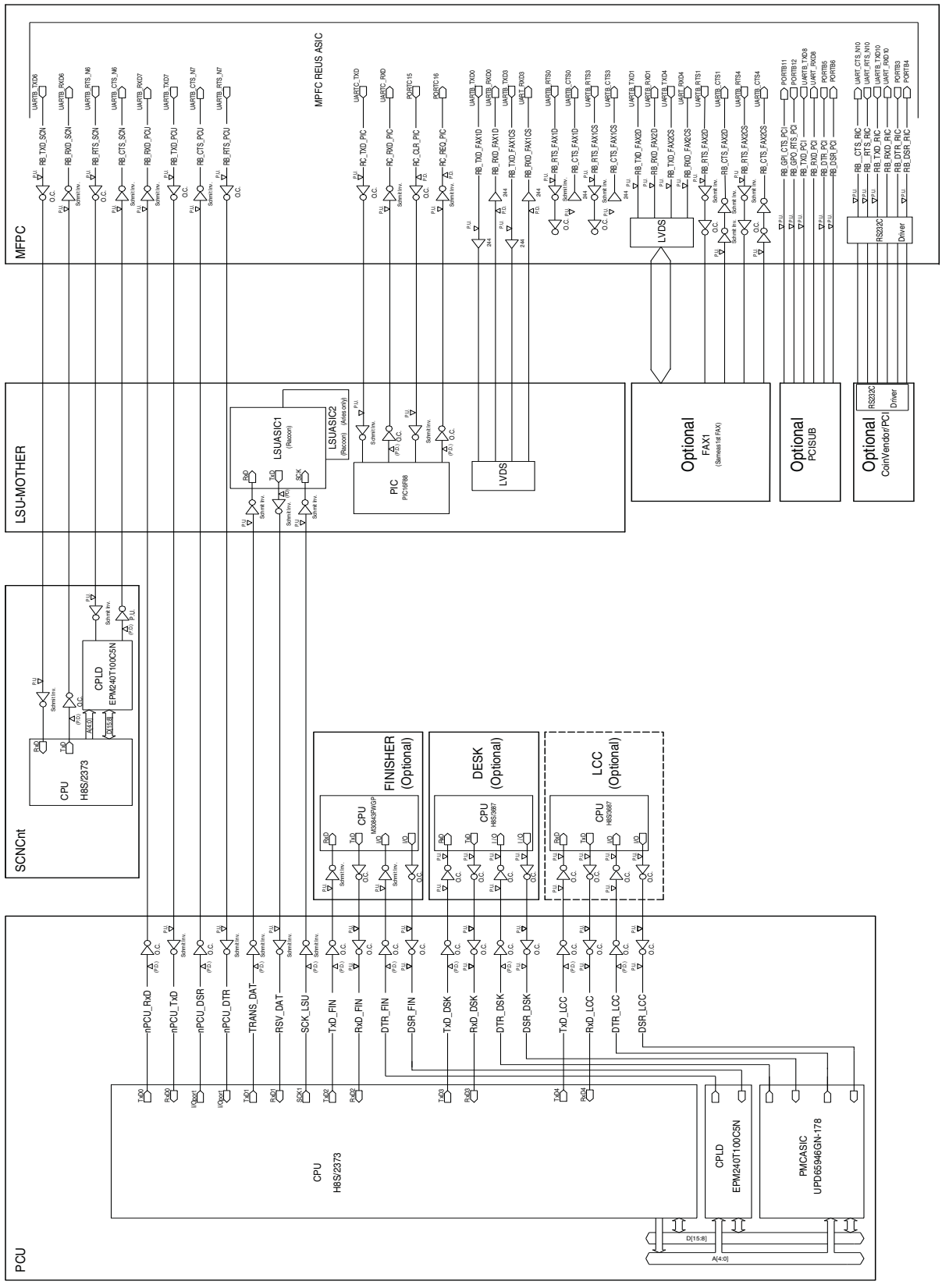


## G. FAX section

### (1) MX-FX11



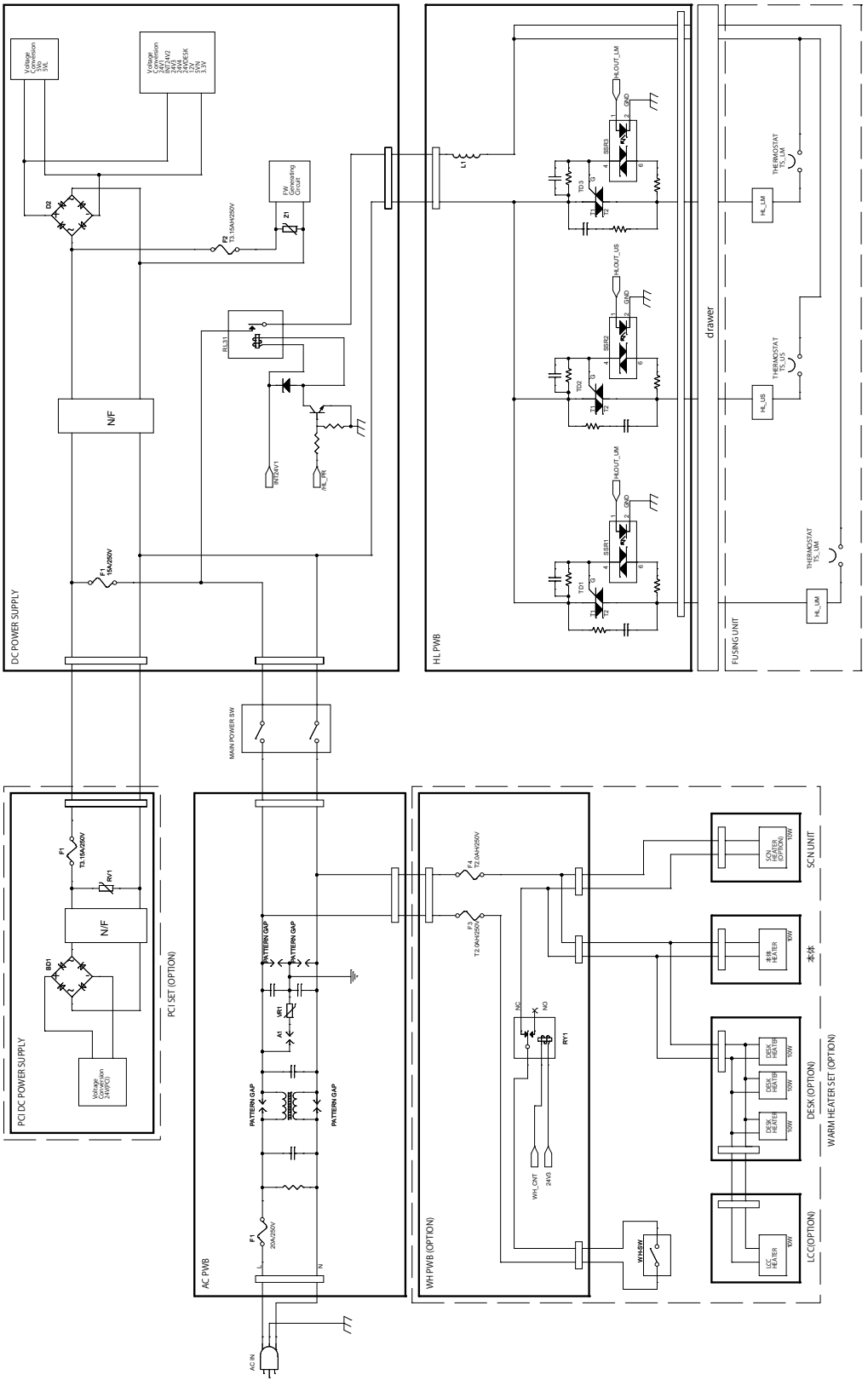
## H. SERIAL COMMUNICATION



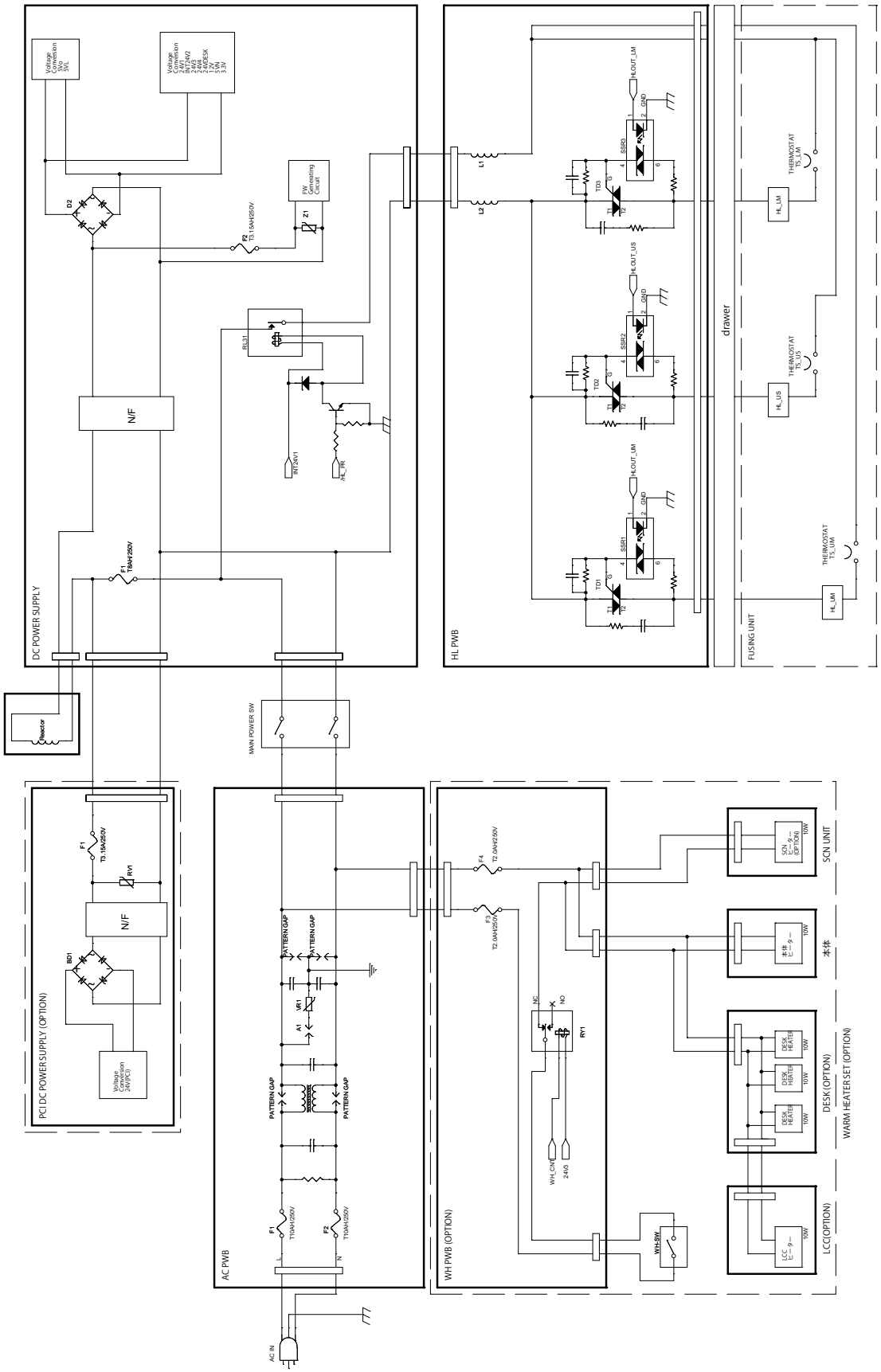
# 2. Power line diagram

## A. AC power line diagram

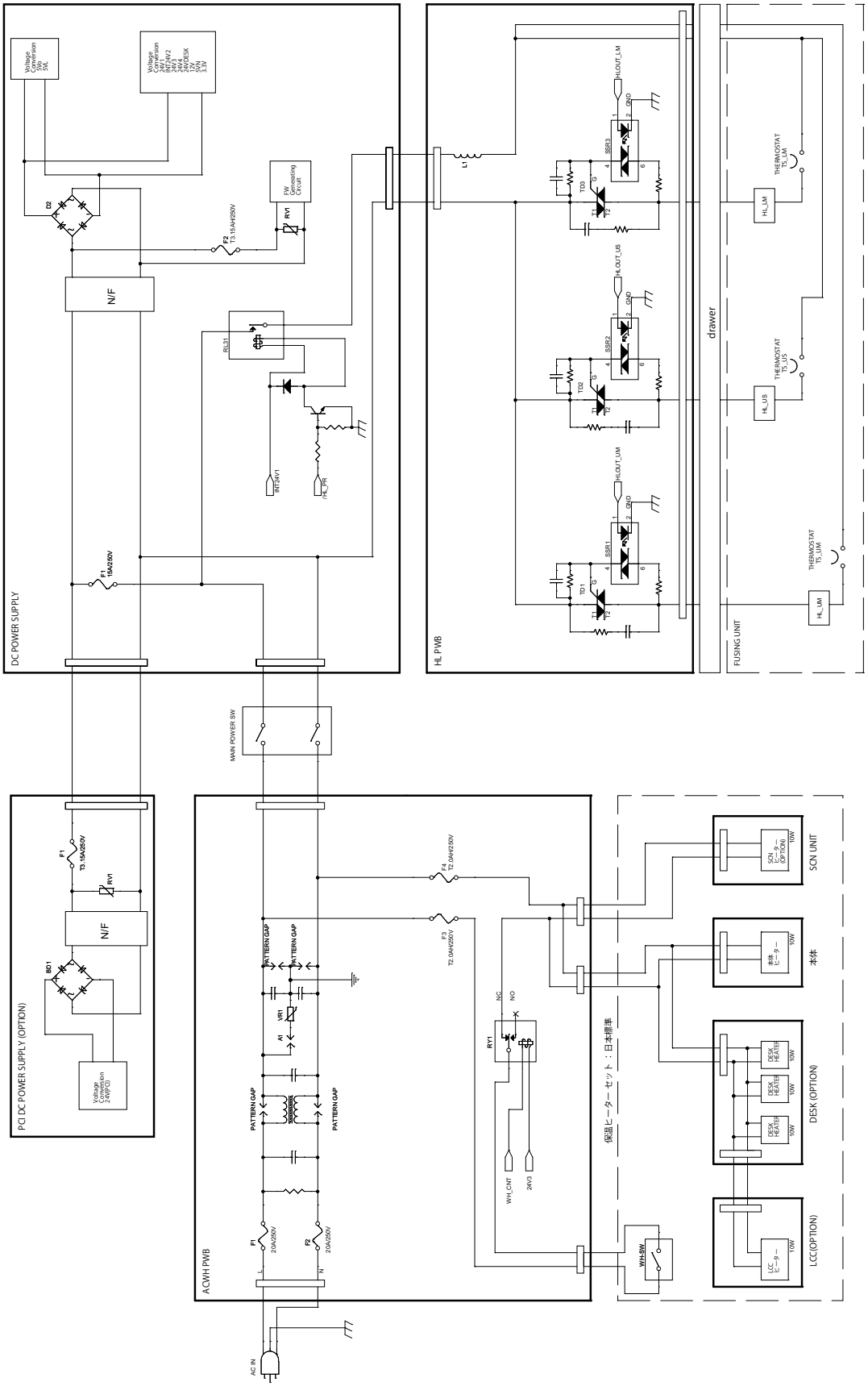
### (1) AC power line diagram (120V)



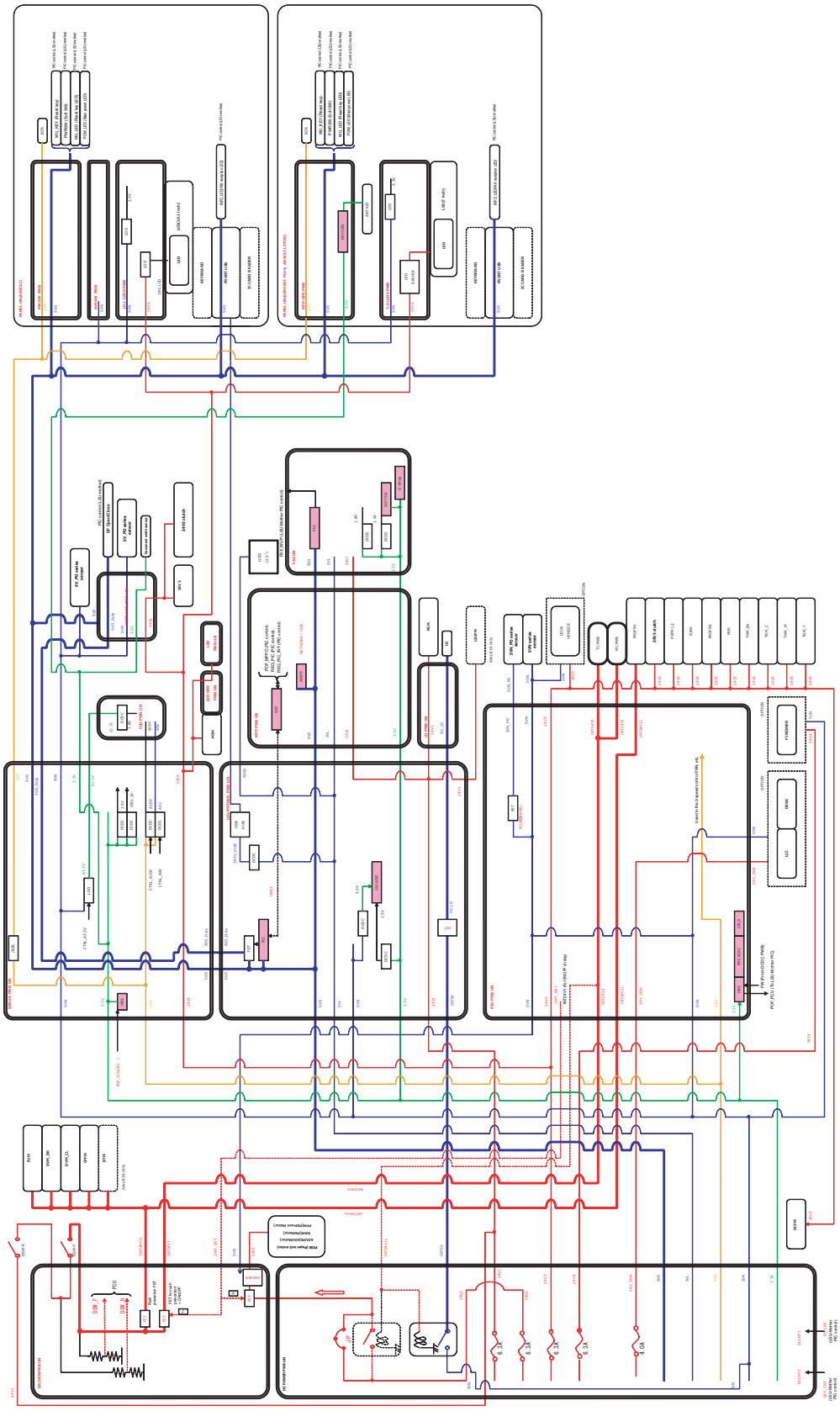
**(2) AC power line diagram (230V)**



### (3) AC power line diagram (Japan)

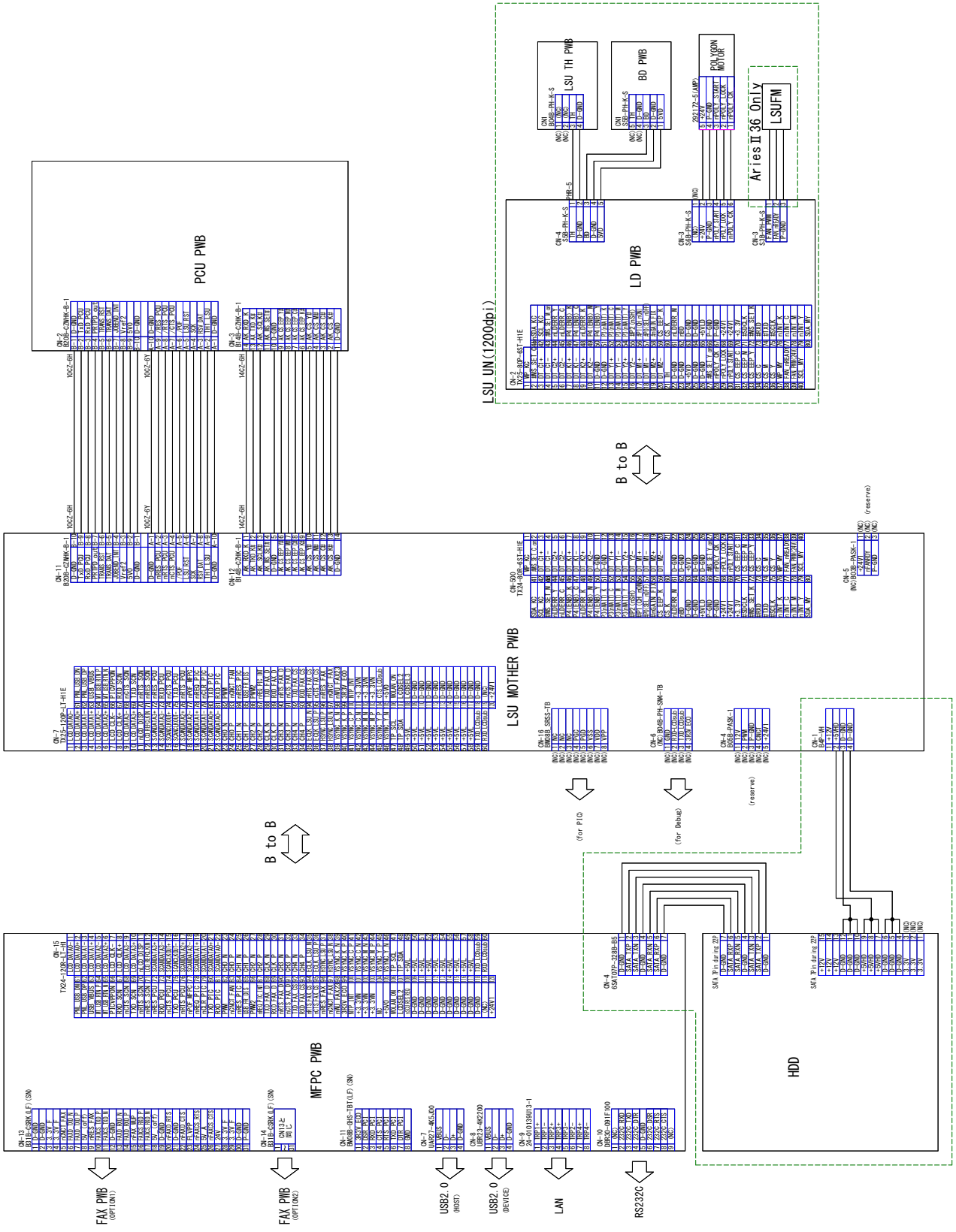


## B. DC power line diagram

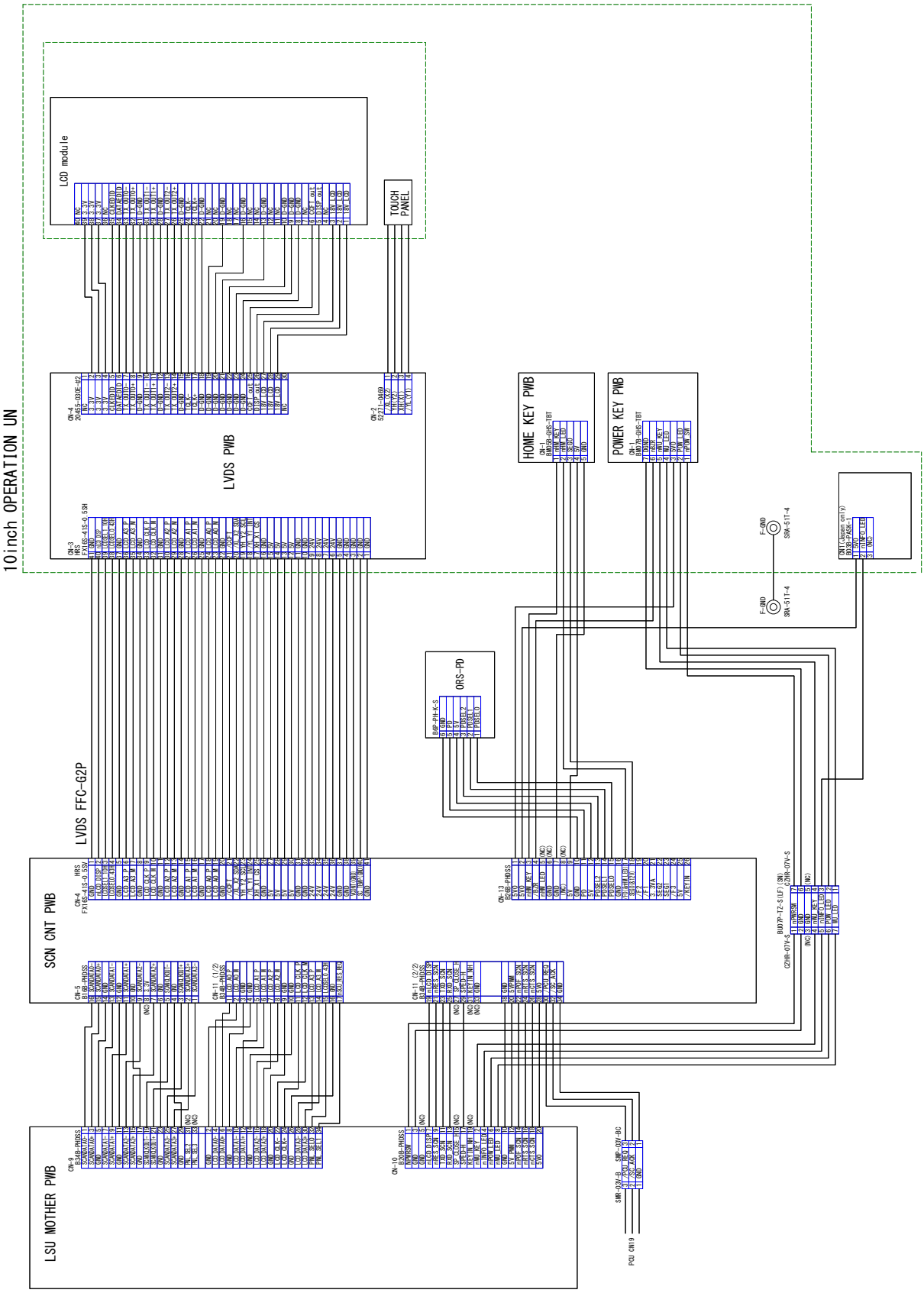


# 3. Actual wiring chart

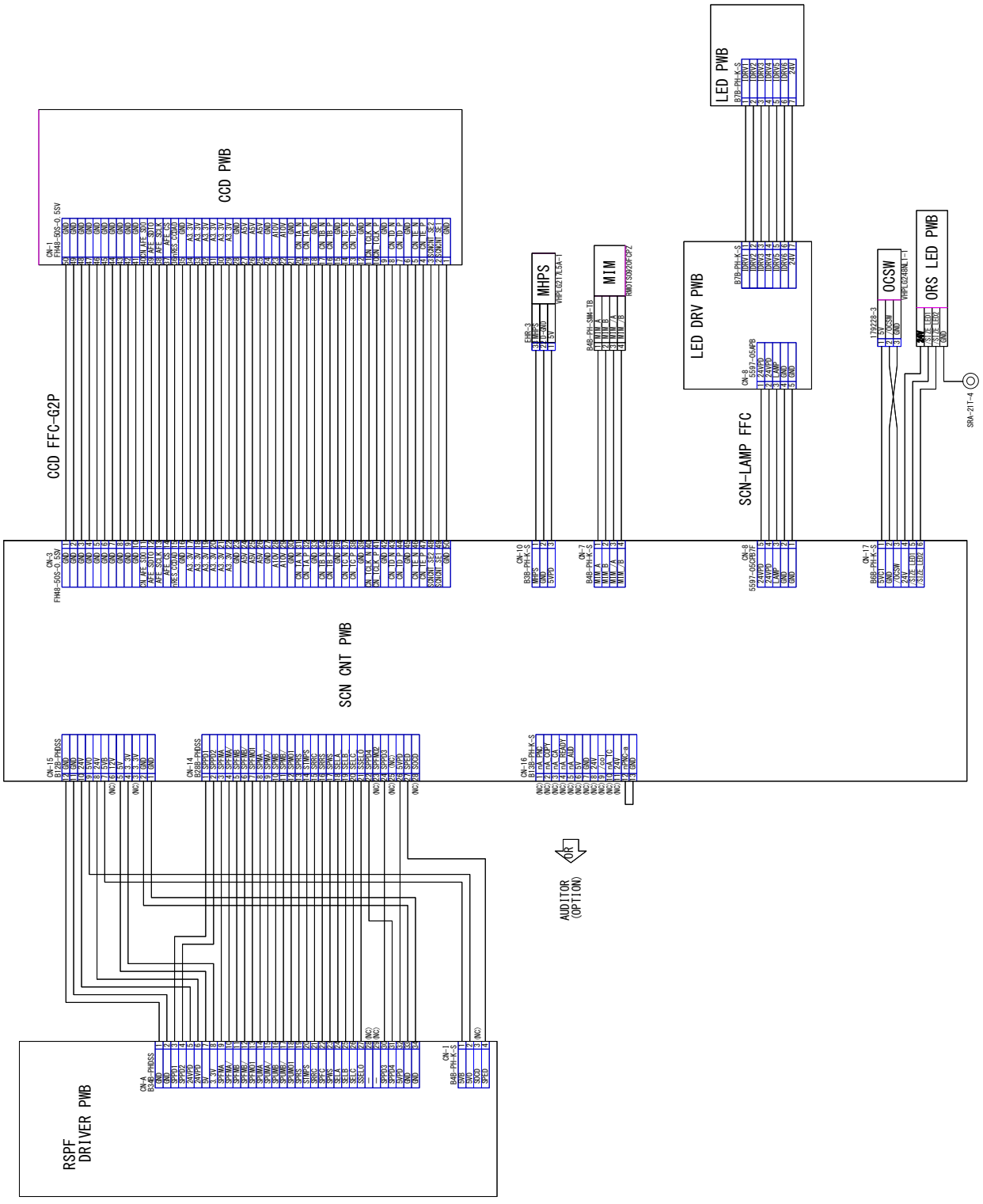
## A. MFPC, LSU



## B. Scanner, operation panel

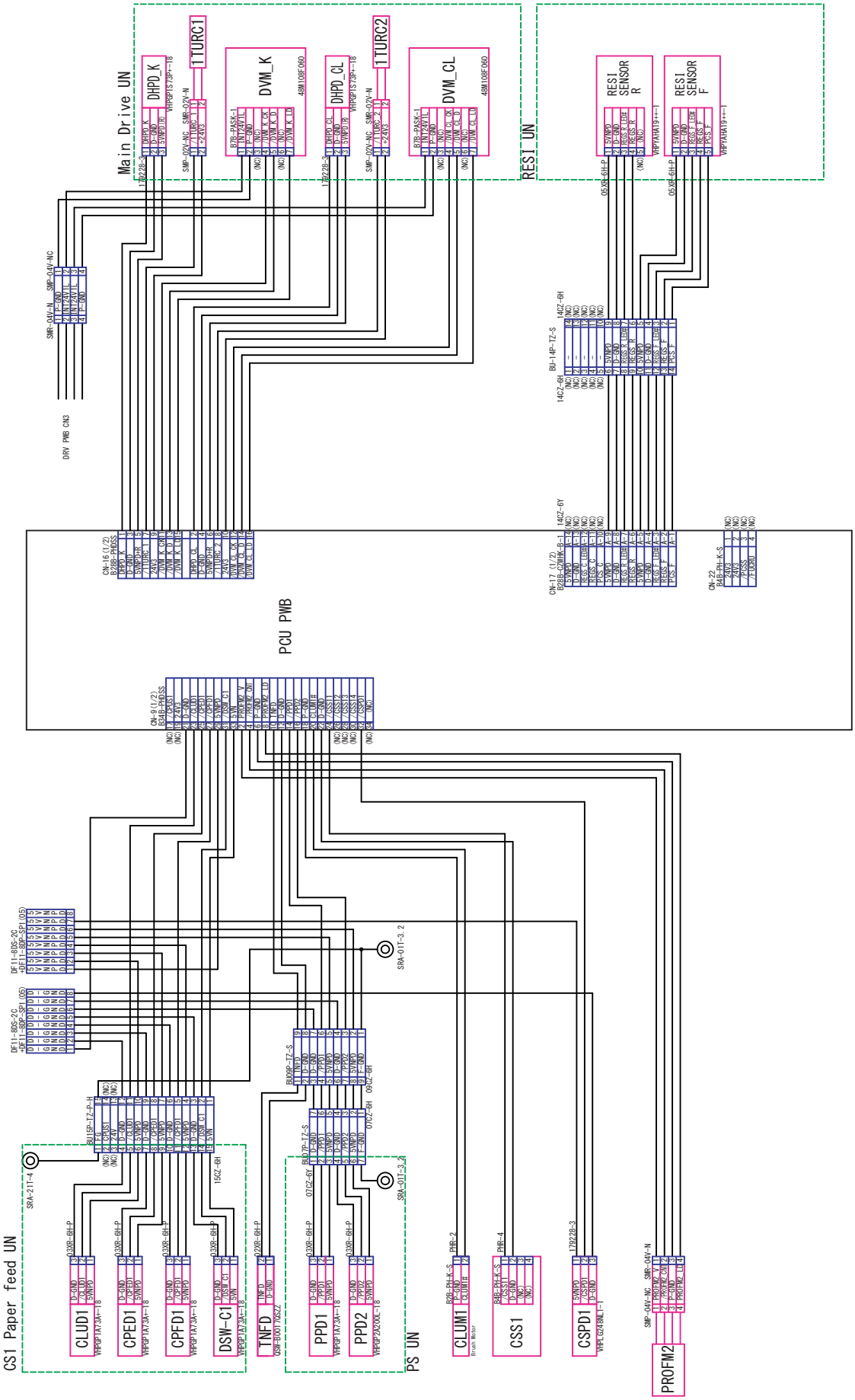


## C. Scanner, RSPF

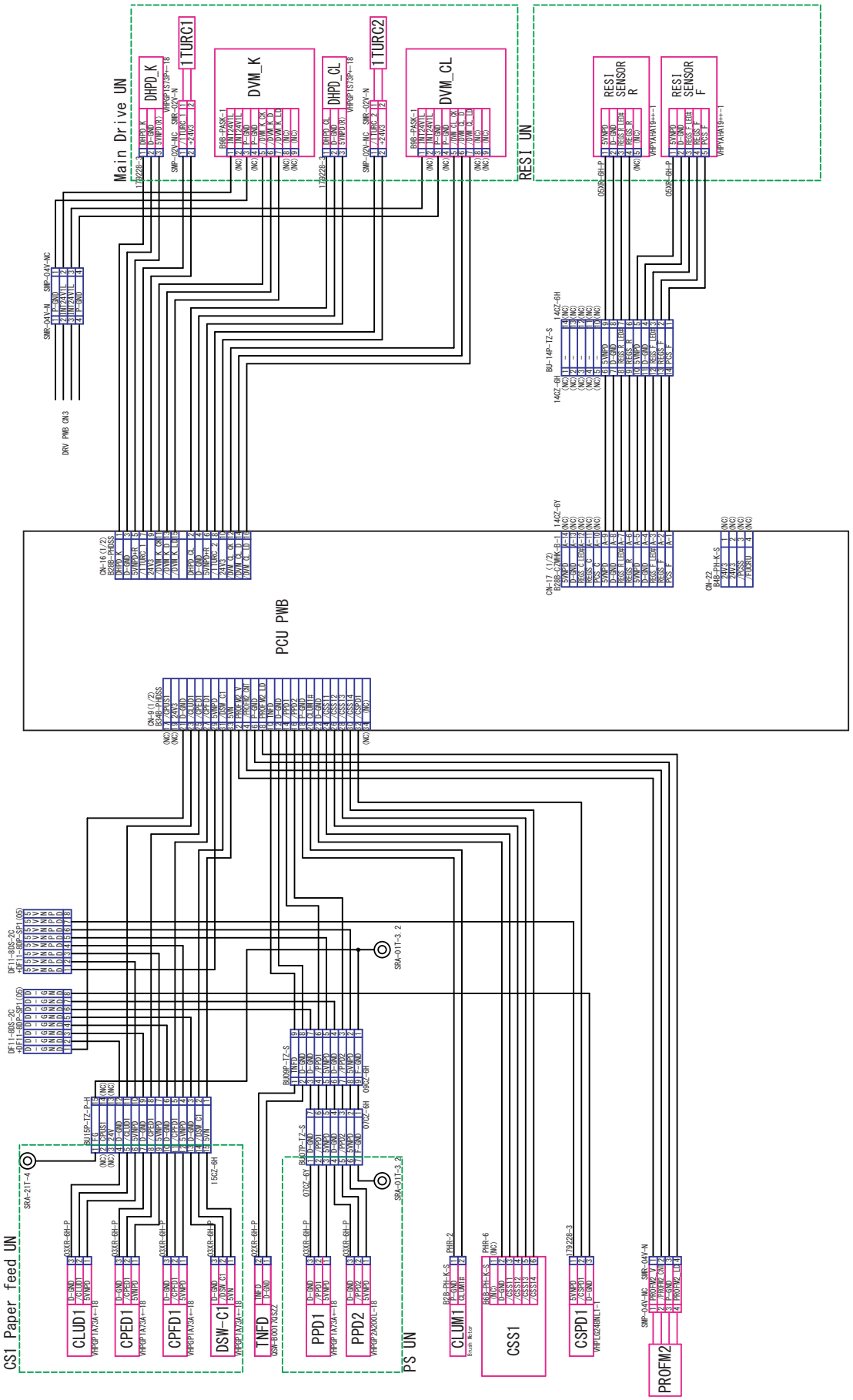


## D. CSS1, Paper feed, Transport, Main drive, RESI

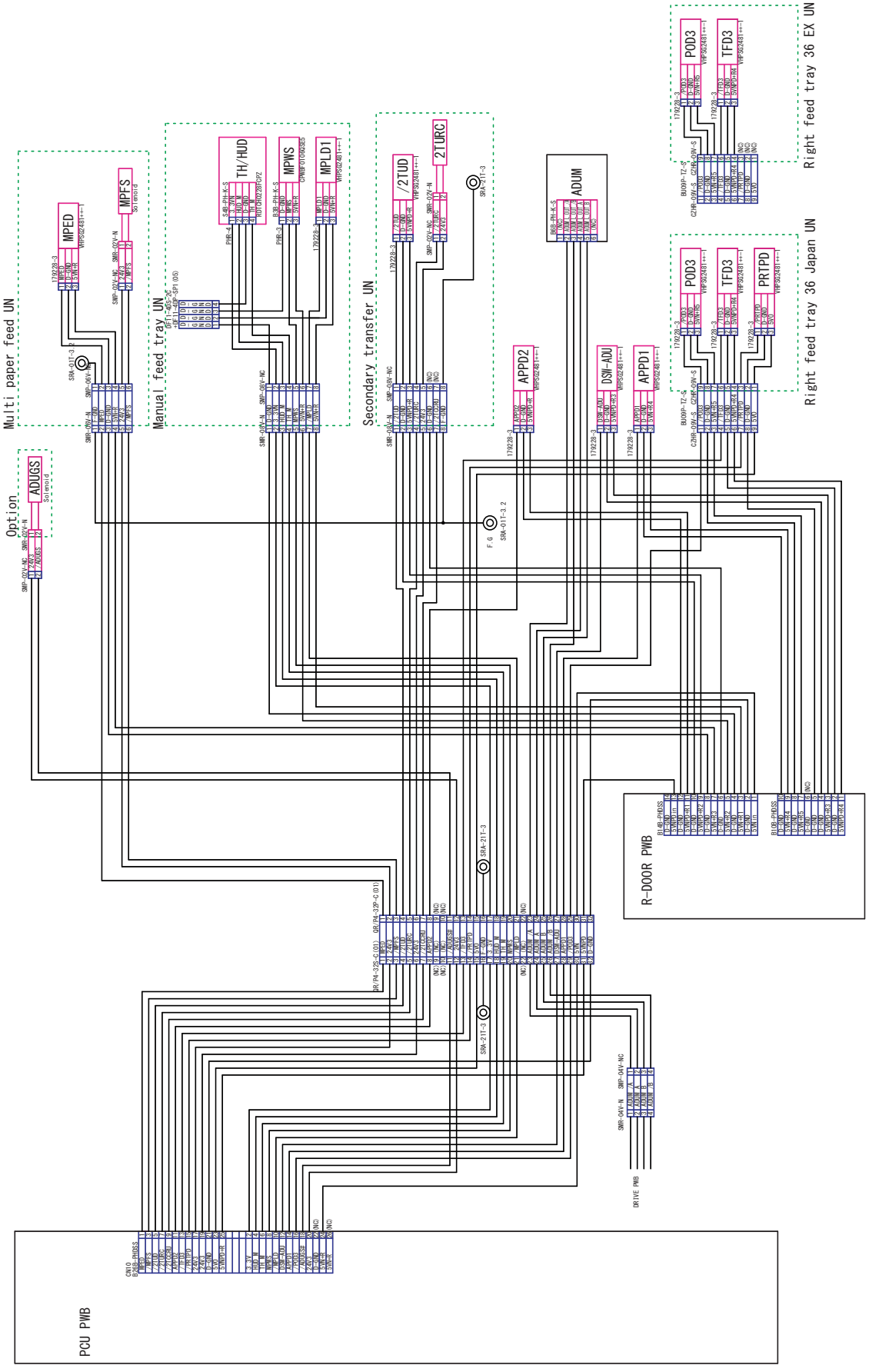
### (1) 26cpm, 31cpm



**(2) 36cpm**

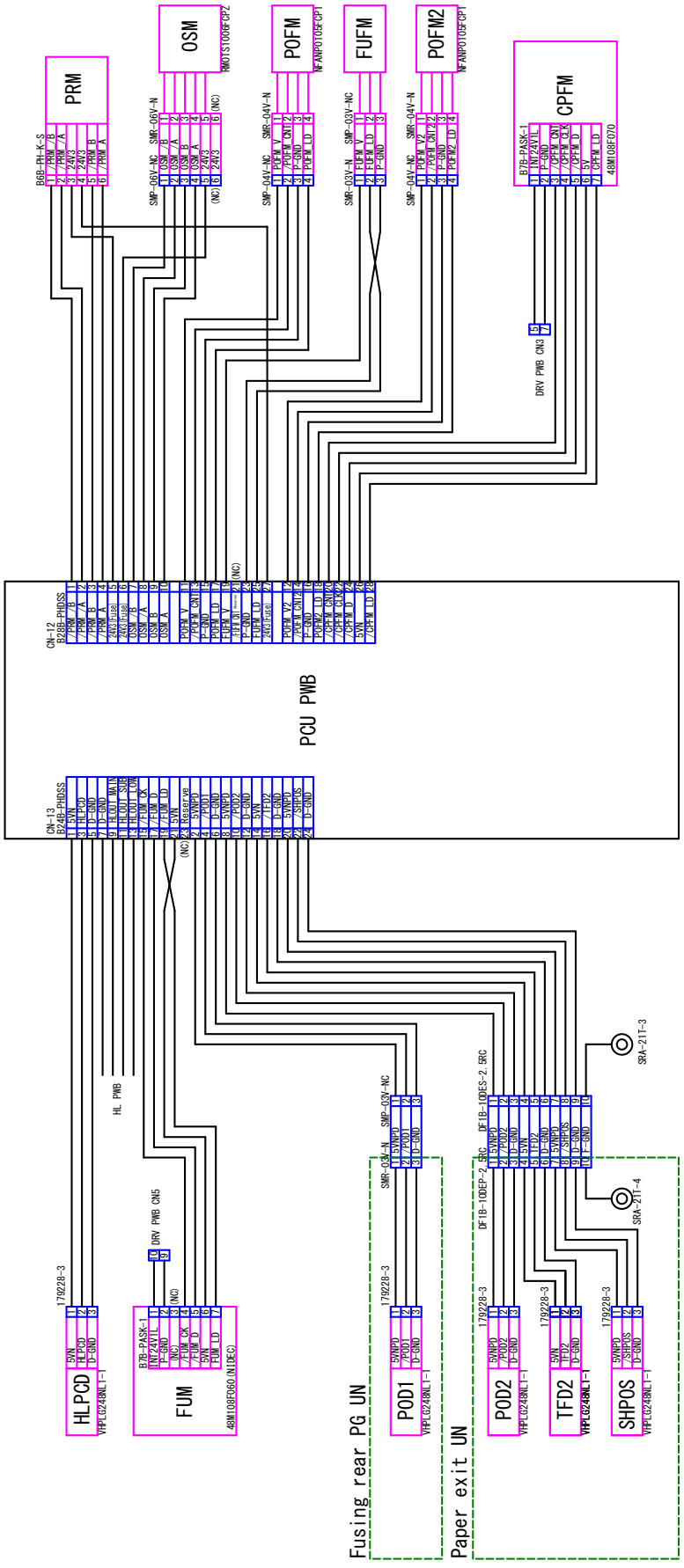

Main Drive UN
RES1 UN
PCU PWB
PS UN
CS1 Paper feed UN
DHPD_K
DHPD_CL
DVM_K
DVM_CL
1TURC1
1TURC2
RES1 SENSOR R
RES1 SENSOR F
CLUD1
CPED1
CPFD1
DSW-C1
TNFD
PPD1
PPD2
CLUM1
CSS1
CSPD1
PROFM2

## E. Right door, Manual paper feed

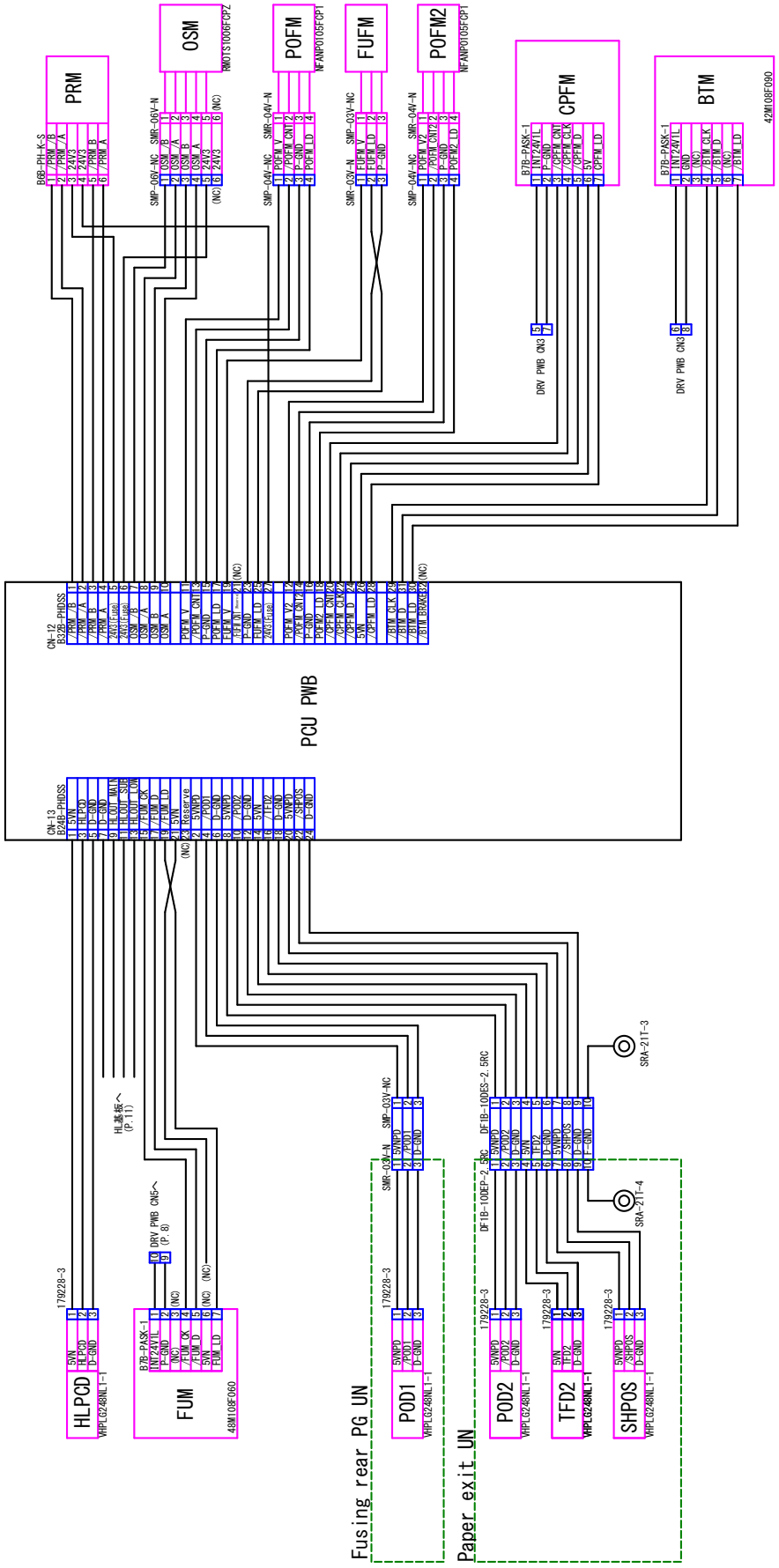


## F. Paper exit, Frame fusing, DRV PWB

### (1) 26cpm, 31cpm

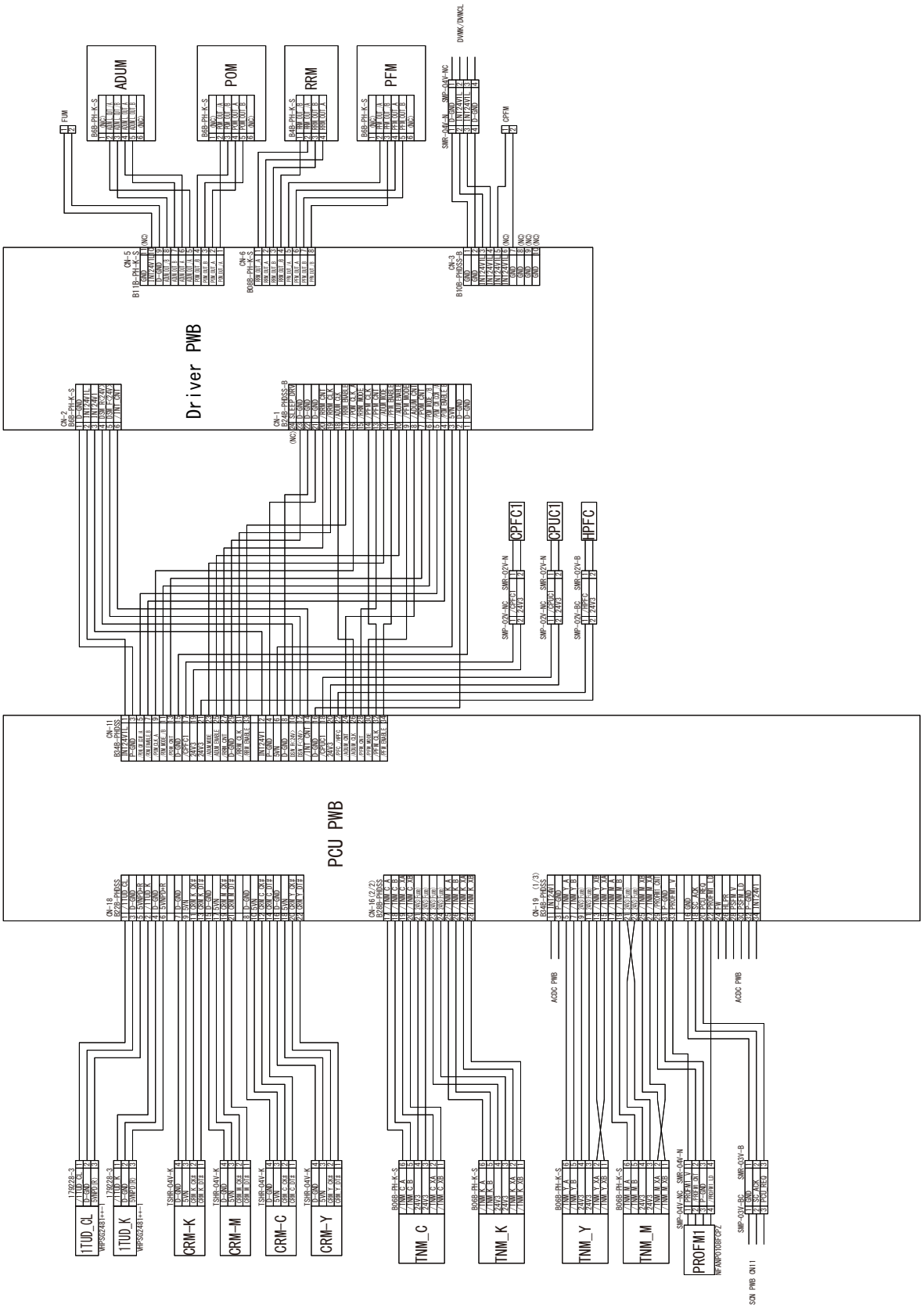


**(2) 36cpm**

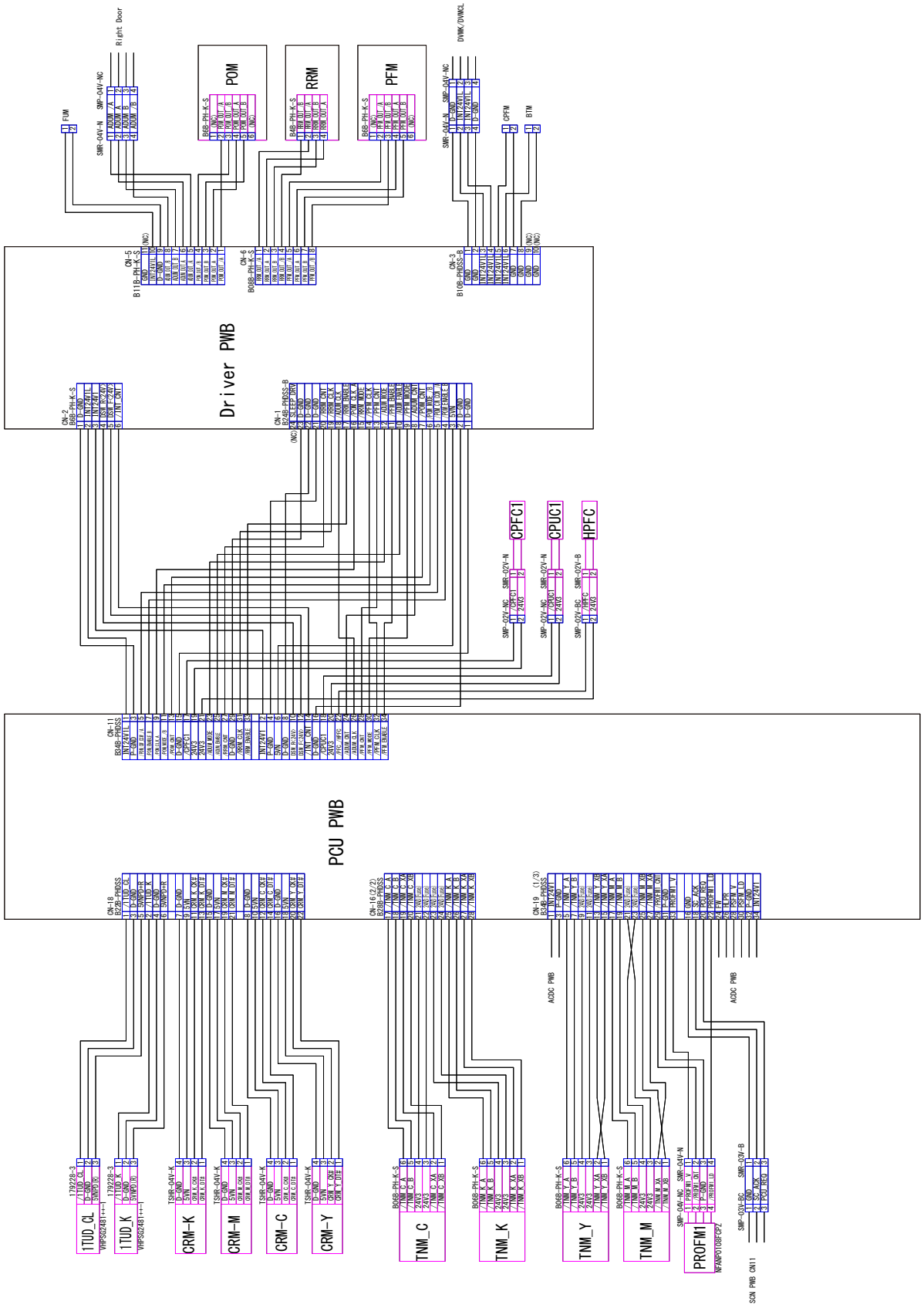

PRM
OSM
POFM
FUFM
POFM2
CPFM
BTM
PCU PWB
HLPCD
FUM
POD1
POD2
TFD2
SHPOS
Fusing rear PG UN
Paper exit UN
DRV PWB CN6
DRV PWB CN5
SRA-21T-3
SRA-21T-4

## G. CRUM, Motor

### (1) 26cpm, 31cpm

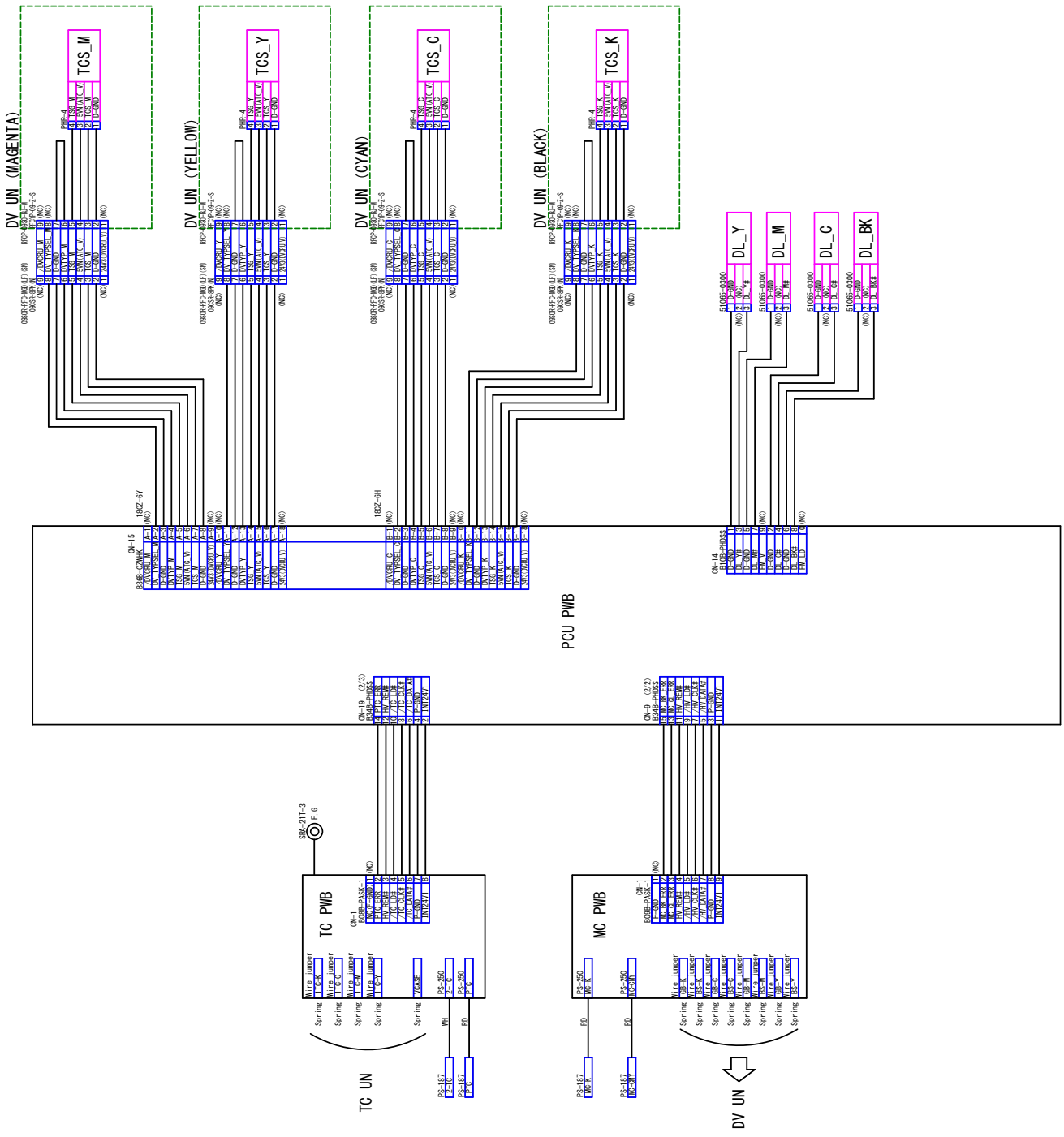


**(2) 36cpm**

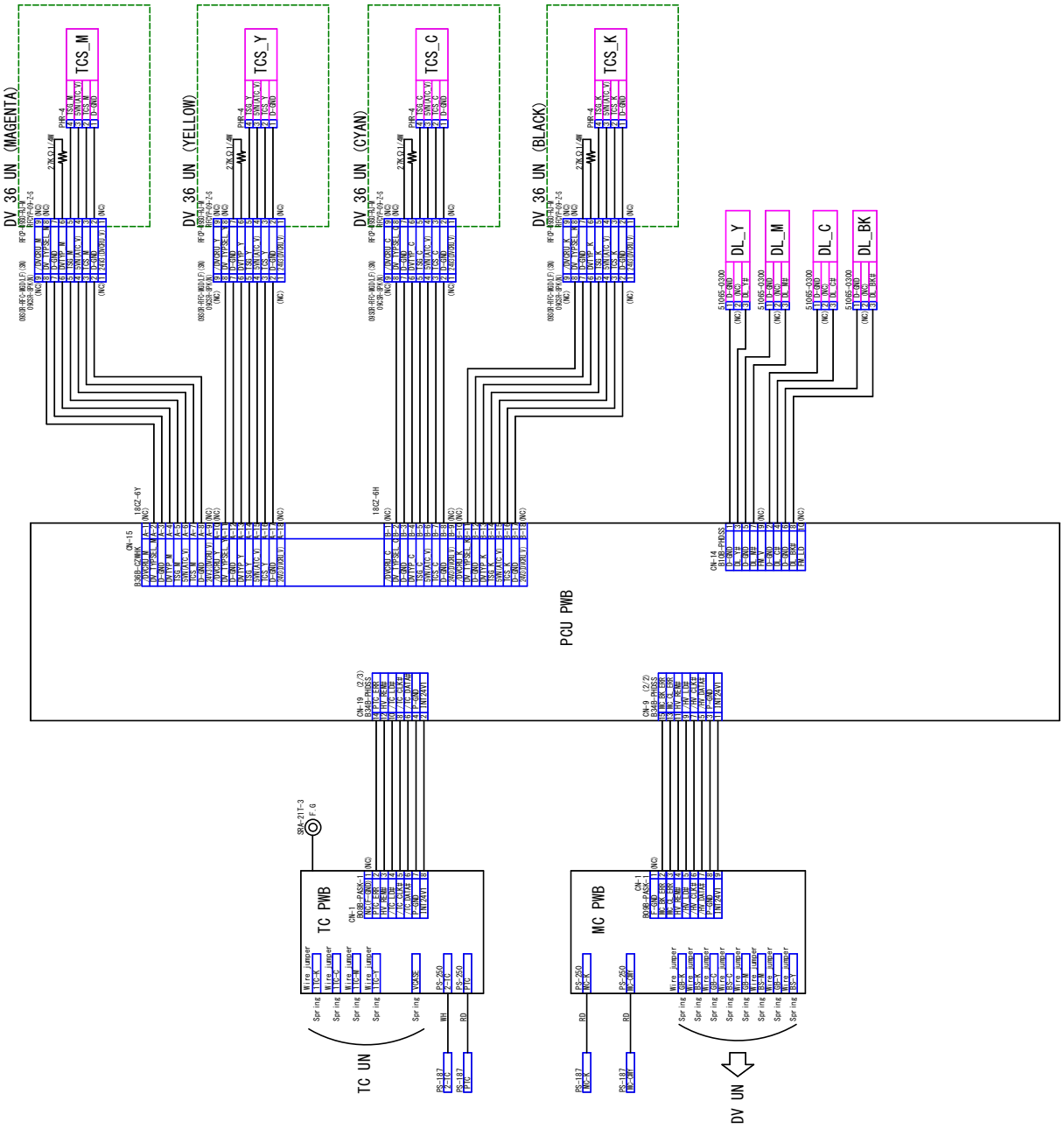

Driver PWB
PCU PWB
POM
RRM
PFM
Right Door
FUM
DVMK/DVMCL
CPFM
BTM
CPFC1
CPUC1
HPFC
1TUD_CL
1TUD_K
CRM-K
CRM-M
CRM-C
CRM-Y
TNM_C
TNM_K
TNM_Y
TNM_M
PROFM1
AGDC PWB
SCN PWB CN11

## H. Process, DV, High voltage

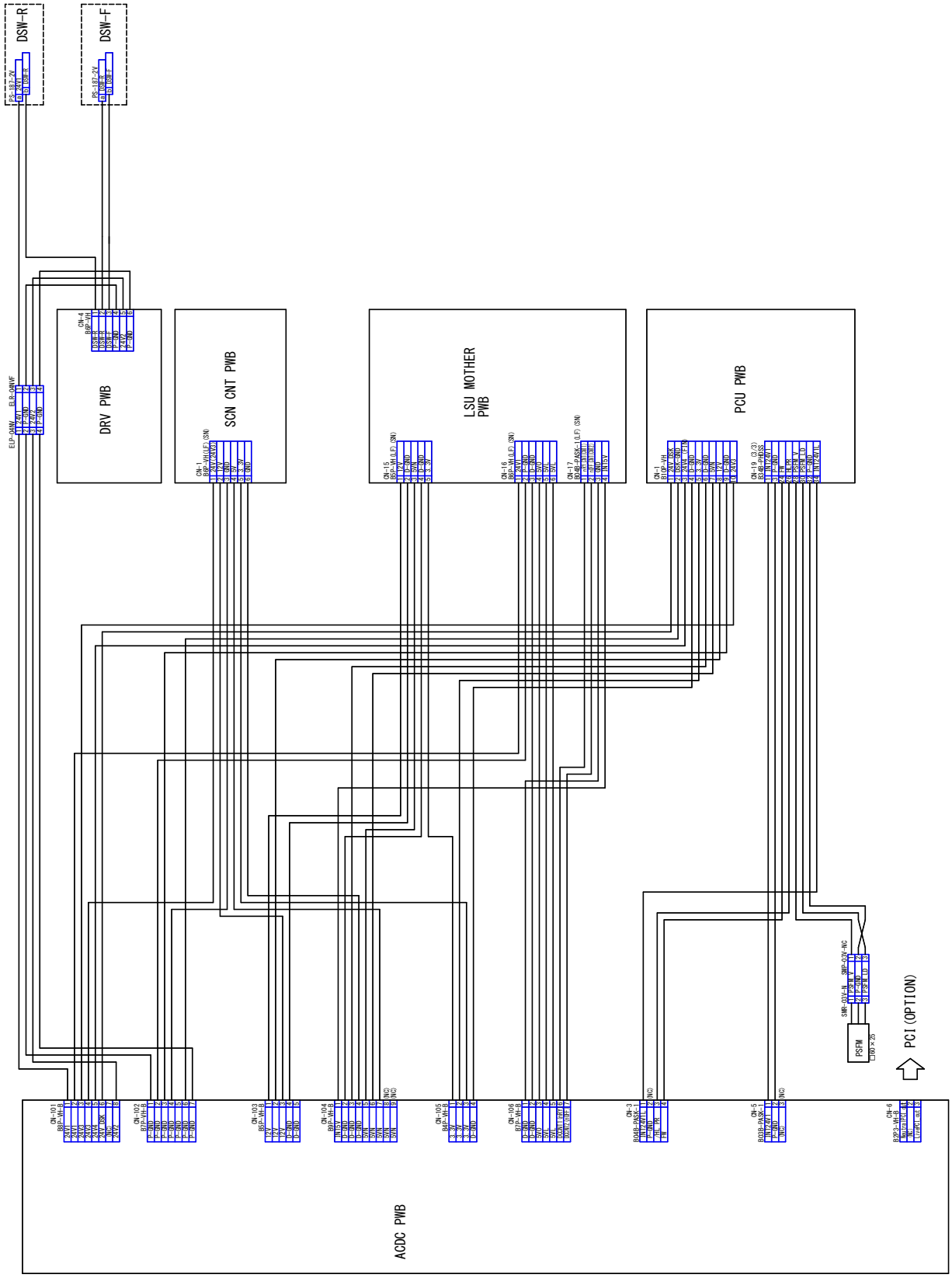
### (1) 26cpm, 31cpm



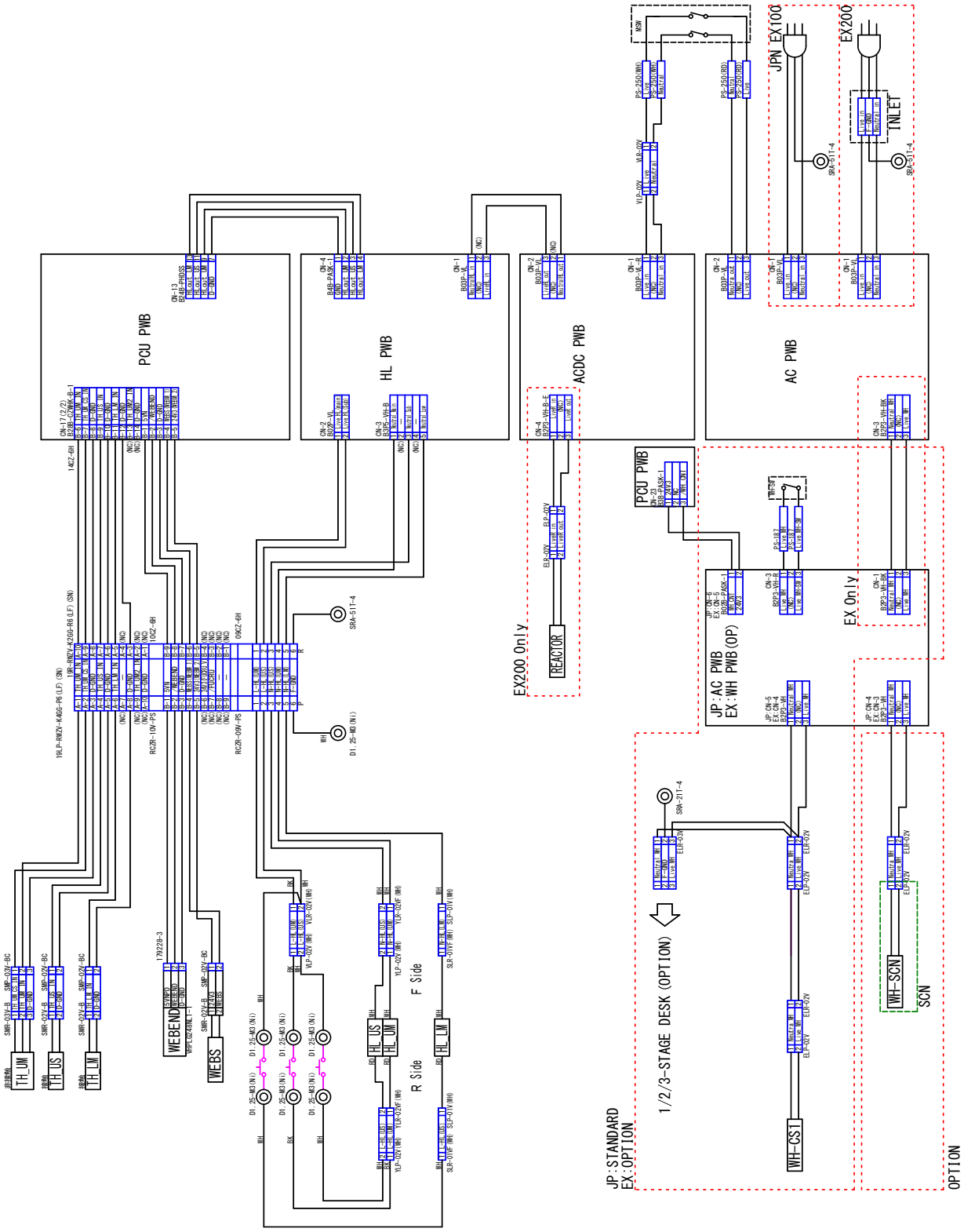
**(2) 36cpm**


DV 36 UN (MAGENTA)
DV 36 UN (YELLOW)
DV 36 UN (CYAN)
DV 36 UN (BLACK)
TCS_M
TCS_Y
TCS_C
TCS_K
DL_Y
DL_M
DL_C
DL_BK
PCU PWB
TC PWB
MC PWB
TC UN
DV UN

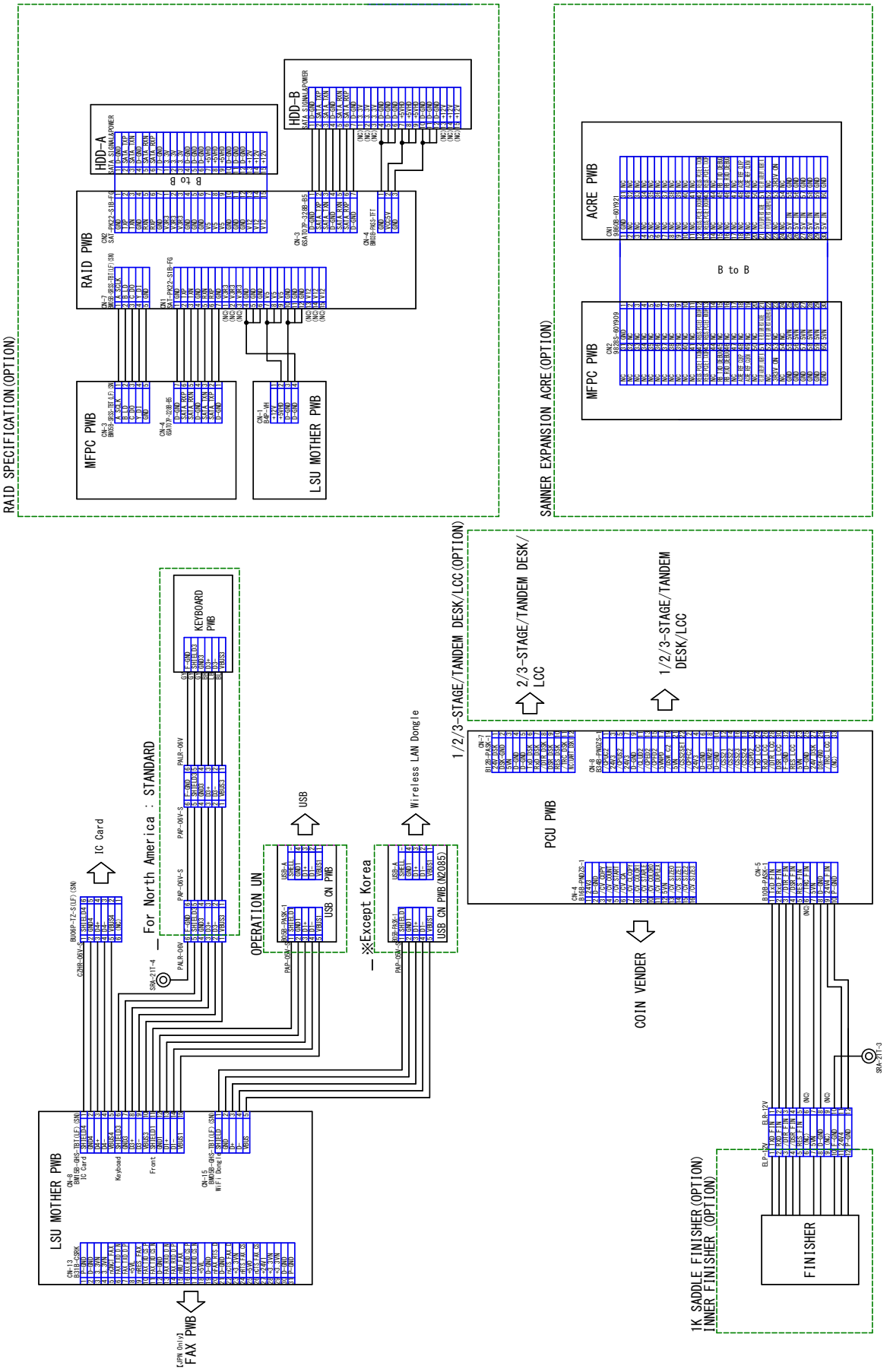
## I. Power supply



## J. AC, Fusing


PCU PWB
HL PWB
ACDC PWB
AC PWB
EX200 Only
REACTOR
JP:AC PWB
EX:WH PWB(OP)
EX Only
JP:STANDARD
EX:OPTION
1/2/3-STAGE DESK (OPTION)
OPTION
JPN
EX100
EX200
INLET
WH-SCN
SCN
WH-CST
WEBEND
WEBSS
TH_UM
TH_US
TH_LM
HL_US
HL_UM
HL_LM
F Side
R Side

## K. USB, Option (Desk, Finisher)



# 4. Signal list

| Signal name | Name [Type] | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | NOTE |
|---|---|---|---|---|---|---|---|---|
| | | | L | H | | | | |
| 1TUD_CL | Transfer belt separation CL detection | Detects the transfer belt separation CL. | – | – | CN18 | 1 | PCU | |
| 1TUD_K | Transfer belt separation BK detection | Detects the transfer belt separation BK. | – | – | CN18 | 2 | PCU | |
| 1TURC_1 | Primary transfer separation clutch | Controls the primary transfer separation mode. [Electromagnetic clutch] | Separation select | – | CN16 | 7 | PCU | |
| 1TURC_2 | Primary transfer separation clutch [Electromagnetic clutch] | Controls the primary transfer separation mode. | Separation select | – | CN16 | 8 | PCU | |
| 2TCCRU | Secondary transfer unit initial detection | Detects the initial state of the secondary transfer unit. | – | – | CN10 | 9 | PCU | |
| 2TUD | Secondary transfer position detection | Detects the position of the secondary transfer. | Separate | Contact | CN10 | 5 | PCU | |
| 2TURC | Secondary transfer separation clutch [Electromagnetic clutch] | Controls the secondary transfer separation mode. | Separation select | – | CN10 | 7 | PCU | |
| ADUGS | ADU gate solenoid | Controls the ADU gate solenoid. | ON | OFF | CN10 | 18 | PCU | |
| ADUM | ADU motor | | – | – | CN11 | 23, 25, 26 | PCU | |
| ADUM_CNT | ADU motor current select | ADU motor lower current select | Current Large | Current Small | CN11 | 24 | PCU | |
| APPD1 | ADU transport path detection 1 [Transmission type] | Detects paper pass in the ADU upper stream section. | Pass | – | CN10 | 14 | PCU | |
| APPD2 | ADU transport path detection 2 [Transmission type] | ADU midstream paper pass detection | Pass | – | CN10 | 11 | PCU | |
| CCFT | LCD backlight [CCFT cool cathode ray tube] | LCD backlight | ON | OFF | CN4 | 21 | SCNcnt | |
| CL_ON | Scanner lamp | Radiates light onto a document for the CCD to scan the document image. | ON | OFF | CN8 | 3 | SCNcnt | |
| CLUD1 | Tray 1 upper limit detection (Lift HP detection) [Transmission type] | Detects the tray 1 upper limit. | – | Upper limit | CN9 | 23 | PCU | |
| CLUD2 | Tray 2 upper limit detection (Lift HP detection) [Transmission type] | Detects the tray 2 upper limit. | – | Upper limit | CN8 | 11 | PCU | |
| CLUM1 | Paper tray lift-up motor (Paper feed tray 1) [DC brush motor] | Drives the paper tray lift plate. | Stop | Drive | CN9 | 20 | PCU | |
| CLUM2 | Paper tray lift-up motor (Paper feed tray 2) [DC brush motor] | Drives the paper tray lift plate. | Stop | Drive | CN8 | 8 | PCU | |
| CPED1 | Tray 1 paper empty detection [Transmission type] | Detects paper empty in the tray 1. | YES | NO | CN9 | 25 | PCU | |
| CPED2 | Tray 2 paper empty detection [Transmission type] | Detects paper empty in the tray 2. | YES | NO | CN8 | 13 | PCU | |
| CPFC1 | Tray vertical transport clutch 1 [Electromagnetic clutch] | Controls ON/OFF of the paper transport roller in the paper feed tray section. | ON | OFF | CN11 | 17 | PCU | |
| CPFC2 | Tray vertical transport clutch 2 [Electromagnetic clutch] | Controls ON/OFF of the paper transport roller in the paper feed tray section. | ON | OFF | CN8 | 2 | PCU | |
| CPFD1 | Tray 1 transport detection (Paper entry detection) [Transmission type] | Detects paper pass in the tray 1. | Pass | – | CN9 | 27 | PCU | |
| CPFD2 | Tray 2 transport detection (Paper entry detection) [Transmission type] | Detects paper pass in the tray 2. | Pass | – | CN8 | 15 | PCU | |
| CPFM_D | Paper feed motor [Brushless motor] | Drives the paper feed section. | Drive | Stop | CN12 | 24 | PCU | |
| CPFM_LD | Paper feed motor lock detection | Detects the paper feed motor lock. | – | Lock detection | CN12 | 28 | 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 | CN11 | 18 | 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 | CN8 | 1 | PCU | |
| CPUS1 | Paper feed pickup solenoid (Paper feed tray 2) [Solenoid] | Controls the paper pickup solenoid. | ON | OFF | CN9 | 17 | PCU | |
| CPUS2 | Paper feed pickup solenoid (Paper feed tray 2) [Solenoid] | Controls the paper pickup solenoid. | ON | OFF | CN8 | 5 | PCU | |

| Signal name | Name [Type] | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | NOTE |
|---|---|---|---|---|---|---|---|---|
| | | | L | H | | | | |
| CSPD1 | Tray 1 remaining paper quantity detection | Detects the remaining paper quantity in the tray 1. | Remaining quantity | – | CN9 | 32 | PCU | Detects during lifting up. |
| CSPD2 | Tray 2 remaining paper quantity detection | Detects the remaining paper quantity in the tray 2. | Remaining quantity | – | CN8 | 20 | PCU | Detects during lifting up. |
| CSS11 | Tray 1 detection | Detects the tray 1. | YES | NO | CN9 | 24 | PCU | |
| CSS21 | Tray 2 detection | Detects the tray 2. | YES | NO | CN8 | 12 | PCU | |
| CSS2SET | Cassette 2 unit detection | Detects the cassette 2 unit. | YES | NO | CN8 | 22 | PCU | |
| DHPD_CL | CL phase detection | Detects the CL phase. | Reference | – | CN16 | 2 | PCU | |
| DHPD_K | BK phase detection | Detects the BK phase. | Reference | – | CN16 | 1 | PCU | |
| DL_BK | Discharge lamp BK [LED] | Discharges electric charges on the OPC drum. | OFF | ON | CN14 | 8 | PCU | |
| DL_C | Discharge lamp C [LED] | Discharges electric charges on the OPC drum. | OFF | ON | CN14 | 4 | PCU | |
| DL_M | Discharge lamp M [LED] | Discharges electric charges on the OPC drum. | OFF | ON | CN14 | 7 | PCU | |
| DL_Y | Discharge lamp Y [LED] | Discharges electric charges on the OPC drum. | OFF | ON | CN14 | 3 | PCU | |
| DSW_ADU | ADU transport open/close detection [Transmission type] | Detects ADU cover open/ close. | Open | Close | CN10 | 12 | PCU | |
| DSW_C1 | Tray 1 transport cover open/ close detection | Detects tray 1 transport cover open/close. | Open | Close | CN9 | 31 | PCU | |
| DSW_C2 | Tray 2 transport cover open/ close detection | Detects tray 2 transport cover open/close. | Open | Close | CN8 | 19 | PCU | |
| 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 | CN11 | 12 | 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 | CN11 | 10 | PCU | |
| DVM_CL_D | Development drive motor (CL) [Brushless motor] | Drives the development section, the color OPC drum, and the transfer section. | Drive | Stop | CN16 | 14 | PCU | |
| DVM_CL_LD | Development drive motor (CL) lock detection | Detects the development drive motor (CL) lock. | – | Lock detection | CN16 | 16 | PCU | |
| DVM_K_D | Development drive motor (K) [Brushless motor] | Drives the development section, the black OPC drum, and the transfer section. | Drive | Stop | CN16 | 13 | PCU | |
| DVM_K_LD | Development drive motor (K) lock detection | Detects the development drive motor (K) lock. | – | Lock detection | CN16 | 15 | PCU | |
| FUFM_LD | Fusing fan motor lock detection | Detects the fusing fan motor lock. | – | Lock detection | CN12 | 25 | PCU | |
| FUFM_V | Fusing fan motor | Cools the motor related to the fusing and the paper exit sections. | OFF | ON | CN12 | 19 | PCU | |
| FUM_D | Fusing drive motor [Brushless motor] | Drives the fusing unit. | Drive | Stop | CN13 | 17 | PCU | |
| FUM_LD | Fusing drive motor lock detection | Detects the fusing drive motor lock. | – | Lock detection | CN13 | 19 | PCU | |
| HL_LM_out | Lower heater lamp | Turns ON/OFF the lower heater lamp. | OFF | ON | CN13 | 13 | PCU | |
| HL_PR | Heater lamp power relay | Heater lamp power line ON/ OFF | OFF (Open) | ON (Close) | CN19 | 26 | PCU | |
| HL_UM_out | Heater lamp main | Turns ON/OFF the heater lamp main. | OFF | ON | CN13 | 9 | PCU | |
| HL_US_out | Heater lamp sub | Turns ON/OFF the heater lamp sub. | OFF | ON | CN13 | 11 | PCU | |
| HLPCD | Fusing pressure detection sensor [Transmission sensor] | Detects a change in the fusing pressure. | Pressure release | Pressure applying | CN13 | 3 | PCU | |
| HPOS (SHPOS) | Shifter home position sensor | Detects the shifter home position. | – | Home position | CN13 | 22 | PCU | |
| HUD_M | Humidity detection | Detects the humidity. | – | – | CN10 | 4 | PCU | Analog detection |
| INT_CNT | Interlock control | ON/OFF control of INT24V1,V2 | ON | OFF | CN11 | 14 | PCU | |
| MHPS | Scanner home position sensor [Transmission type] | Detects the scanner home position. | – | Home | CN10 | 1 | SCNcnt | |
| MIM_* | Scanner motor [Stepping motor] | Scanner (reading) section | – | – | CN7 | 1, 2, 3, 4 | SCNcnt | |
| MPED | Manual feed paper empty detection [Transmission type] | Detects paper empty in the manual paper feed tray. | YES | NO | CN10 | 1 | PCU | |

| Signal name | Name [Type] | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | NOTE |
|---|---|---|---|---|---|---|---|---|
| | | | L | H | | | | |
| MPFS | Paper pickup solenoid (Manual paper feed) [Electromagnetic solenoid] | Paper pickup solenoid (Manual paper feed) [Electromagnetic solenoid] | Pickup | – | CN10 | 3 | PCU | |
| MPLD | Manual feed paper length detector | Detects the paper length in the manual paper feed tray. | – | Detection | CN10 | 10 | PCU | |
| MPWS | Manual feed tray paper width sensor | Detects the paper width in the manual feed tray. | – | – | CN10 | 8 | PCU | |
| OCSW | Light emitting unit open/close detector | Detects the light emitting unit open/close. | Close | Open | CN17 | 3 | SCNcnt | |
| OSM | Shifter motor [Stepping motor] | Offsets the paper. | – | – | CN12 | 7, 8, 9, 10 | PCU | Drives with the 4-phase signal. |
| PFC_HPFC | PS front clutch | Controls the PS front clutch. | ON | OFF | CN11 | 22 | PCU | |
| PFM | Transport motor | | – | – | CN11 | 30, 32, 34 | PCU | |
| PFM_CNT | Transport motor current select | Selects the transport motor current. | Current Large | Current Small | CN11 | 28 | PCU | |
| POD1 | Fusing rear detection [Transmission type] | Detects the paper exit from fusing. | Pass | – | CN13 | 4 | PCU | |
| POD2 | Paper exit detection [Transmission type] | Detects the discharged paper. | Pass | – | CN13 | 10 | PCU | |
| POD3 | Right tray paper exit detection | Detects paper exit to the right tray. | Pass | – | CN10 | 16 | PCU | |
| POFM_CNT | Paper exit cooling fan motor speed control | Controls the speed of the paper exit cooling fan motor. | – | – | CN12 | 13, 14 | PCU | Pulse (Duty) drive |
| POFM_LD1 | POFM lock detection | Detects the POFM lock. | – | Lock detection | CN12 | 17 | PCU | |
| POFM_LD2 | POFM lock detection | Detects the POFM lock. | – | Lock detection | CN12 | 18 | PCU | |
| POFM_V | Paper exit cooling fan motor | Cools the fusing unit. | Stop | Drive | CN12 | 11,12 | PCU | |
| POM | Paper exit drive motor | Drives the paper exit roller. | – | – | CN11 | 5, 7, 9, 11 | PCU | |
| POM_CNT | Paper exit drive motor current select | Selects the paper exit drive motor current. | Current Large | Current Small | CN11 | 13 | PCU | |
| PPD1 | Registration front detection [Transmission type] | Detects paper in front of the registration roller. | Pass | – | CN9 | 14 | PCU | |
| PPD2 | Registration detection | Detects paper at the rear of the registration roller. | Pass | – | CN9 | 16 | PCU | |
| PRM | Fusing pressure release motor [Stepping motor] | Changes the fusing voltage. | – | – | CN12 | 1, 2, 3, 4 | PCU | Drives with the 4-phase signal. |
| PROFM1_CNT | Process fan motor 2 speed control | Controls the speed of the process fan motor. | – | – | CN19 | 29 | PCU | |
| PROFM1_LD | Process fan motor 2 lock detection | Process fan motor lock detection | – | Lock detection | CN19 | 22 | PCU | |
| PROFM1_V | Process fan motor 2 | Cools the process. | OFF | ON | CN19 | 33 | PCU | |
| PROFM2_CNT | Process fan motor 2 speed control | Controls the speed of the process fan motor 2. | – | – | CN9 | 4 | PCU | Pulse (Duty) drive |
| PROFM2_LD | Process fan motor 2 lock detection | Detects process fan motor 2 lock. | – | Lock detection | CN9 | 8 | PCU | |
| PROFM2_V | Process fan motor 2 | Cools the process. | OFF | ON | CN9 | 2 | PCU | |
| PRTPD | Right paper exit tray paper empty detection | Detects paper empty in the right paper exit tray. | NO | YES | CN10 | 15 | PCU | |
| PSFM_LD | Power cooling fan motor lock detection | Detects the power cooling fan motor lock. | – | Lock detection | CN19 | 30 | PCU | |
| PSFM_V | Power cooling fan motor | Cools the power unit. | Stop | Drive | CN19 | 28 | PCU | |
| REGS_F | Registration sensor (Front) [Reflection type] | Registration shift detection | – | – | CN17 | A-2 | PCU | Analog detection |
| REGS_F_LED | Registration sensor LED (Front) [LED] | Registration sensor LED light emitting | – | – | CN17 | A-3 | PCU | Analog output |
| REGS_R | Registration sensor (Rear) [Reflection type] | Registration shift detection | – | – | CN17 | A-6 | PCU | Analog detection |
| REGS_R_LED | Registration sensor LED (Rear) [LED] | Registration sensor LED light emitting | – | – | CN17 | A-7 | PCU | Analog output |
| RRM | Registration motor | | – | – | CN11 | 31, 33 | PCU | |
| RRM_CNT | Registration motor current select | Selects the registration motor current. | Current Large | Current Small | CN11 | 27 | PCU | |
| SOCD | SPF open/close sensor | Detects open/close of the SPF. | Close | – | CN14 | 28 | SCNcnt | |
| SPED | Document empty sensor | Detects document empty. | Detection | – | CN14 | 27 | SCNcnt | |
| SPFM* | SPF transport motor | Drives the SPF transport motor. | – | – | CN14 | 3, 4, 5, 6, 7 | SCNcnt | |
| SPM* | SPF paper feed motor | Drives the SPF paper feed motor. | – | – | CN14 | 8, 9, 10, 11, 12 | SCNcnt | |

| Signal name | Name [Type] | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | NOTE |
|---|---|---|---|---|---|---|---|---|
| | | | L | H | | | | |
| SPPD1 | SPF transport sensor 1 | Detects paper pass. | Detection | – | CN14 | 1 | SCNcnt | |
| SPPD2 | SPF transport sensor 2 | Detects paper pass. | Detection | – | CN14 | 2 | SCNcnt | |
| SPPD3 | SPF transport sensor 3 | Detects paper pass. | Detection | – | CN14 | 24 | SCNcnt | |
| SPPD4 | SPF transport sensor 4 | Detects paper pass. | Detection | – | CN14 | 22 | SCNcnt | |
| SPRS | Pressure release solenoid | Controls the pressure release solenoid. | OFF | ON | CN14 | 13 | SCNcnt | |
| SPWS | Document width sensor | Detects document width. | – | – | CN14 | 17 | SCNcnt | |
| SRRC | PS clutch | Controls the PS clutch. | OFF | ON | CN14 | 15 | SCNcnt | |
| STMPS | Stamp solenoid | Controls the stamp solenoid. | – | Stamp | CN14 | 14 | SCNcnt | |
| TCS_C | Toner density sensor [Magnetic sensor] | Detects the toner density (C) | – | – | CN15 | B-7 | PCU | Analog detection |
| TCS_K | Toner density sensor [Magnetic sensor] | Detects the toner density (K) | – | – | CN15 | B-16 | PCU | Analog detection |
| TCS_M | Toner density sensor [Magnetic sensor] | Detects the toner density (M) | – | – | CN15 | A-7 | PCU | Analog detection |
| TCS_Y | Toner density sensor [Magnetic sensor] | Detects the toner density (Y) | – | – | CN15 | A-16 | PCU | Analog detection |
| TFD2 | Paper exit full detection [Transmission type] | Detects the face-down paper exit tray full. | Full | – | CN13 | 16 | PCU | |
| TFD3 | Right tray paper exit full detection | Detects paper exit full in the right tray. | Full | – | CN10 | 13 | PCU | |
| TH_LM_IN | Lower thermistor | Detects the temperature. | – | – | CN17 | B-11 | PCU | Analog detection |
| TH_M | Temperature detection | Detects the temperature. | – | – | CN10 | 6 | PCU | Analog detection |
| TH_UM_CS_IN | Main thermistor | Detects the temperature. | – | – | CN17 | B-7 | PCU | Analog detection |
| TH_UM_IN | Main thermistor | Detects the temperature. | – | – | CN17 | B-6 | PCU | Analog detection |
| TH_US_IN | Sub thermistor | Detects the temperature. | – | – | CN17 | B-9 | PCU | Analog detection |
| TH1_LSU | LSU unit thermistor | Detects the temperature. | – | – | CN2 | A-2 | PCU | Analog detection |
| TNFD | Waste toner full detection switch [Mechanical switch] | Detects waste toner full. | Empty | Full | CN9 | 10 | PCU | |
| TNM_C | Toner motor C [Stepping motor] | Transports toner from the toner cartridge to the developing unit. | – | – | CN16 | 17, 18, 19, 20 | PCU | Drives with the 4-phase signal. |
| TNM_K | Toner motor K [Stepping motor] | Transports toner from the toner cartridge to the developing unit. | – | – | CN16 | 25, 26, 27, 28 | PCU | Drives with the 4-phase signal. |
| TNM_M | Toner motor M [Stepping motor] | Transports toner from the toner cartridge to the developing unit. | – | – | CN19 | 17, 19, 25, 27 | PCU | Drives with the 4-phase signal. |
| TNM_Y | Toner motor Y [Stepping motor] | Transports toner from the toner cartridge to the developing unit. | – | – | CN19 | 5, 7, 13, 15 | PCU | Drives with the 4-phase signal. |
| WEBEND | Web end detection | Detects the fusing web end. | – | End | CN17 | B-2 | PCU | |
| WEBS | Web drive solenoid | Drives the web. | ON | OFF | CN17 | B-4 | PCU | |

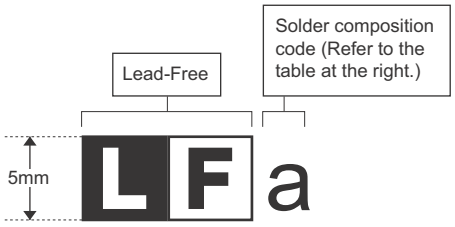
# [15] TOOL LIST

| Name | Part code | Note |
|---|---|---|
| Color copy test chart | UKOG-0326FCZZ/UKOG-0326FC11 | |
| SIT chart | UKOG-0280FCZZ/UKOG-0280FCZ1 | |
| Gray test chart | UKOG-0162FCZZ | |
| Kynar powder | UKOG-0123FCZZ | For transfer belt |
| Grease (HANARL FL-955R) | UKOG-0299FCZZ | |
| Conduction grease (FLOIL GE-676) | UKOG-0012QSZZ | Other shaft |
| Grease (FLOIL G-313S) | UKOG-0307FCZZ | |
| Grease (JFE552) | UKOG-0235FCZZ | |
| Stearic acid powder | UKOG-0312FCZZ | OPC drum |
| Grease (FLOIL GP-501MR) | UKOG-0013QSZZ | RSPF paper feed roller shaft |
| Grease (MOLYKOTE X5-6020) | UKOG-0158FCZZ | |
| Grease (MOLYKOTE BR-2 Plus) | UKOG-0097FCZZ | |

# LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder.
The alphabet following the LF mark shows the kind of lead-free solder.

**Example:**




**<Solder composition code of lead-free solder>**

| Solder composition | Solder composition code |
|---|---|
| Sn-Ag-Cu | a |
| Sn-Ag-Bi<br>Sn-Ag-Bi-Cu | b |
| Sn-Zn-Bi | z |
| Sn-In-Ag-Bi | i |
| Sn-Cu-Ni | n |
| Sn-Ag-Sb | s |
| Bi-Sn-Ag-P<br>Bi-Sn-Ag | p |

## (1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting-point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommended.

## (2) NOTE FOR SOLDERING WORK

Since the melting-point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

## CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

## CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)
"BATTERY DISPOSAL"
THIS PRODUCT CONTAINS A LITHIUM PRIMARY (MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE BATTERY FROM THE PRODUCT AND CONTACT YOUR LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE) QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE AGENCE ENVIRONNEMENTALE LOCALE POUR DES INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET DE TRAITEMENT.

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