KYOCERA mita

KM-3035
KM-4035
KM-5035

SERVICE MANUAL

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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 the manufacturer's instructions.

CAUTION

Double-pole/neutral fusing.

Safety precautions

This booklet provides safety warnings and precautions for our service personnel to ensure the safety of their customers, their machines as well as themselves during maintenance activities. Service personnel are advised to read this booklet carefully to familiarize themselves with the warnings and precautions described here before engaging in maintenance activities.

Safety warnings and precautions

Various symbols are used to protect our service personnel and customers from physical danger and to prevent damage to their property. These symbols are described below:

⚠**DANGER**: High risk of serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

⚠**WARNING**:Serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

⚠**CAUTION**: Bodily injury or damage to property may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

Symbols

The triangle (△) symbol indicates a warning including danger and caution. The specific point of attention is shown inside the symbol.

 General warning.

 Warning of risk of electric shock.

 Warning of high temperature.

⃠ indicates a prohibited action. The specific prohibition is shown inside the symbol.

 General prohibited action.

 Disassembly prohibited.

● indicates that action is required. The specific action required is shown inside the symbol.

 General action required.

 Remove the power plug from the wall outlet.

 Always ground the copier.

1. Installation Precautions

⚠ WARNING

- Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current. .....

- Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities. .....

⚠ CAUTION:

- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. .....

- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. .....

- Do not install the copier near a radiator, heater, other heat source or near flammable material. This may cause fire. .....

- Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool as possible. Insufficient ventilation may cause heat buildup and poor copying performance. .....

- Always handle the machine by the correct locations when moving it. .....

- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. .....

- Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention. .....

- Advice customers that they must always follow the safety warnings and precautions in the copier's instruction handbook. .....

2. Precautions for Maintenance

⚠WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. .....

- Always follow the procedures for maintenance described in the service manual and other related brochures. .....

- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. .....

- Always use parts having the correct specifications. .....

- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. .....

- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. .....

- Always check that the copier is correctly connected to an outlet with a ground connection. .....

- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. .....

- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. .....

- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. .....

⚠CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. .....

- Use utmost caution when working on a powered machine. Keep away from chains and belts. .....

- Handle the fixing section with care to avoid burns as it can be extremely hot. .....

- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. .....

- Do not remove the ozone filter, if any, from the copier except for routine replacement. .....

• Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself. .....

• Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item. .....

• Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks. .....

• Remove toner completely from electronic components. .....

• Run wire harnesses carefully so that wires will not be trapped or damaged. .....

• After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws. .....

• Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary. .....

• Handle greases and solvents with care by following the instructions below: .....
· Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
· Ventilate the room well while using grease or solvents.
· Allow applied solvents to evaporate completely before refitting the covers or turning the main switch on.
· Always wash hands afterwards.

• Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc. .....

• Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately. .....

3. Miscellaneous

⚠WARNING

• Never attempt to heat the drum or expose it to any organic solvents such as alcohol, other than the specified refiner; it may generate toxic gas. .....

CONTENTS

1-5 Troubleshooting

1-1-1 Specifications

Type	Desktop
Copying system	Indirect electrostatic system
Originals	Sheets and books Maximum size: A3/11" × 17"
Original feed system	Fixed
Copy paper	Drawer: Plain paper (64 – 105 g/m^2) Bypass table: Plain paper (45 – 200 g/m^2) Special paper: Transparencies, tracing paper, colored paper, letterhead and envelopes (when using the printer function only) Note: Use the bypass table for special paper.
Copying sizes	Maximum: A3/11" × 17" Minimum: A6R/5$^1/_2$" × 8$^1/_2$" (When the bypass table is used)
Magnification ratios	Manual mode: 25 – 400%, 1% increments Auto copy mode: fixed ratios Metric 1:1 ± 1.0%, 1:4.00/1:2.00/1:1.41/1:1.22/1:1.15/1:0.86/1:0.81/1:0.70/1:0.50/1:0.25 Inch 1:1 ± 1.0%, 1:4.00/1:2.00/1:1.29/1:1.21/1:0.78/1:0.64/1:0.50/1:0.25
Copy speed	At 100% magnification in copy mode: 30 cpm copier A3/11" × 17": 20 copies/min. B4/8$^1/_2$" × 14": 20 copies/min. A4/11" × 8$^1/_2$": 30 copies/min. A4R/8$^1/_2$" × 11": 22 copies/min. 40 cpm copier A3/11" × 17": 23 copies/min. B4/8$^1/_2$" × 14": 23 copies/min. A4/11" × 8$^1/_2$": 40 copies/min. A4R/8$^1/_2$" × 11": 27 copies/min. 50 cpm copier A3/11" × 17": 26 copies/min. B4/8$^1/_2$" × 14": 26 copies/min. A4/11" × 8$^1/_2$": 50 copies/min. A4R/8$^1/_2$" × 11": 31 copies/min.
First copy time	From 3.9 s (A4/11" × 8$^1/_2$") <30 cpm copier> From 3.5 s (A4/11" × 8$^1/_2$") <40 cpm copier/50 cpm copier>
Warm-up time	25 s or less (room temperature 23°C/73.4°F, 50% RH) In preheat/energy saver mode: 10 s or less (room temperature 23°C/73.4°F, 50% RH) [priorty to power save]
Paper feed system	Automatic feed Capacity: Drawers: 500 sheets Manual feed Capacity: Bypass: 200 sheets
Continuous copying	1 - 250 sheets
Photoconductor	a-Si (drum diameter 40 mm)
Charging system	Single positive corona charging (500 µA)
Exposure light source	Semiconductor laser
Exposure scanning system	Polygon mirror
Developing system	Dry, reverse developing (single component system) Developer: 1-component, magnetism toner Developing bias: +1.72 kV AC Developing shift bias: 160 V Toner replenishing: automatic from a toner container
Transfer system	Transfer roller (100 µA)
Separation system	Separation electrode (60 or 10 µA depending on the paper)

Fixing system	Heat roller Heat source: halogen heaters (120 V specifications:main 600 W, sub 500W/ 220-240 V specifications:main 630 W, sub 525 W) Control temperature: 175°C/347°F (at normal ambient temperature, 50 cpm copier) 170°C/338°F (at normal ambient temperature, 40 cpm copier) 165°C/329°F (at normal ambient temperature, 30 cpm copier) Abnormally high temperature protection device: 170°C/338°F thermostat Fixing pressure: 107.8 N
Charge erasing system	Exposure by cleaning lamp
Cleaning system	Cleaning blade and roller
Scanning system	Flat bed scanning by CCD image sensor
Bit map memory	27 MB (standard)
Image storage memory	37 MB (standard)
Resolution	600 × 600 dpi
Light source	Inert gas lamp
Dimensions	585 (W) × 646 (D) × 745 (H) mm 23" (W) × $25^{2}/_{5}$" (D) × $29^{1}/_{3}$" (H)
Weight	Approx. 82 kg/165 lbs
Floor requirements	1512 (W) × 646 (D) mm $59^{1}/_{2}$" (W) × $25^{2}/_{5}$" (D)
Functions	Auto paper selection mode, Image quality selection, Auto magnification selection mode, Zoom mode, Preset zoom mode, XY zoom mode, 2-sided copy modes, Page separation/Split copy modes, Margin mode, Centering/Image shift mode, Memo mode, Border erase modes, Combine/Merge Copy modes, Print page numbers mode, Form overlay mode, Booklet/Stitching mode, Book to Booklet mode, Sort/ Finished mode, Auto rotation function, Cover mode, Transparency + backing sheet mode, Invert mode, Mirror image mode, Proof mode, Repeat copy mode*, Batch scanning mode, Eco print mode, Program function, Job build mode, Form registration*, Shared data box*, Synergy print boxes*, Copy management mode, Language selection function *Requires the optional hard disk
Power source	120 V AC, 60 Hz, 12 A
	220 – 240 V AC, 50/60 Hz, 5.7 A (Average)
Power consumption	Max. 1450 W
Options	DP, paper feeder, large paper deck, job separator, 3000-sheet finisher, 1000-sheet finisher, booklet stitcher, built-in finisher, key counter, fax board, printer board, network printer board, network scanner board, hard disk

1-1-2 Parts names and their functions

(1) Copier

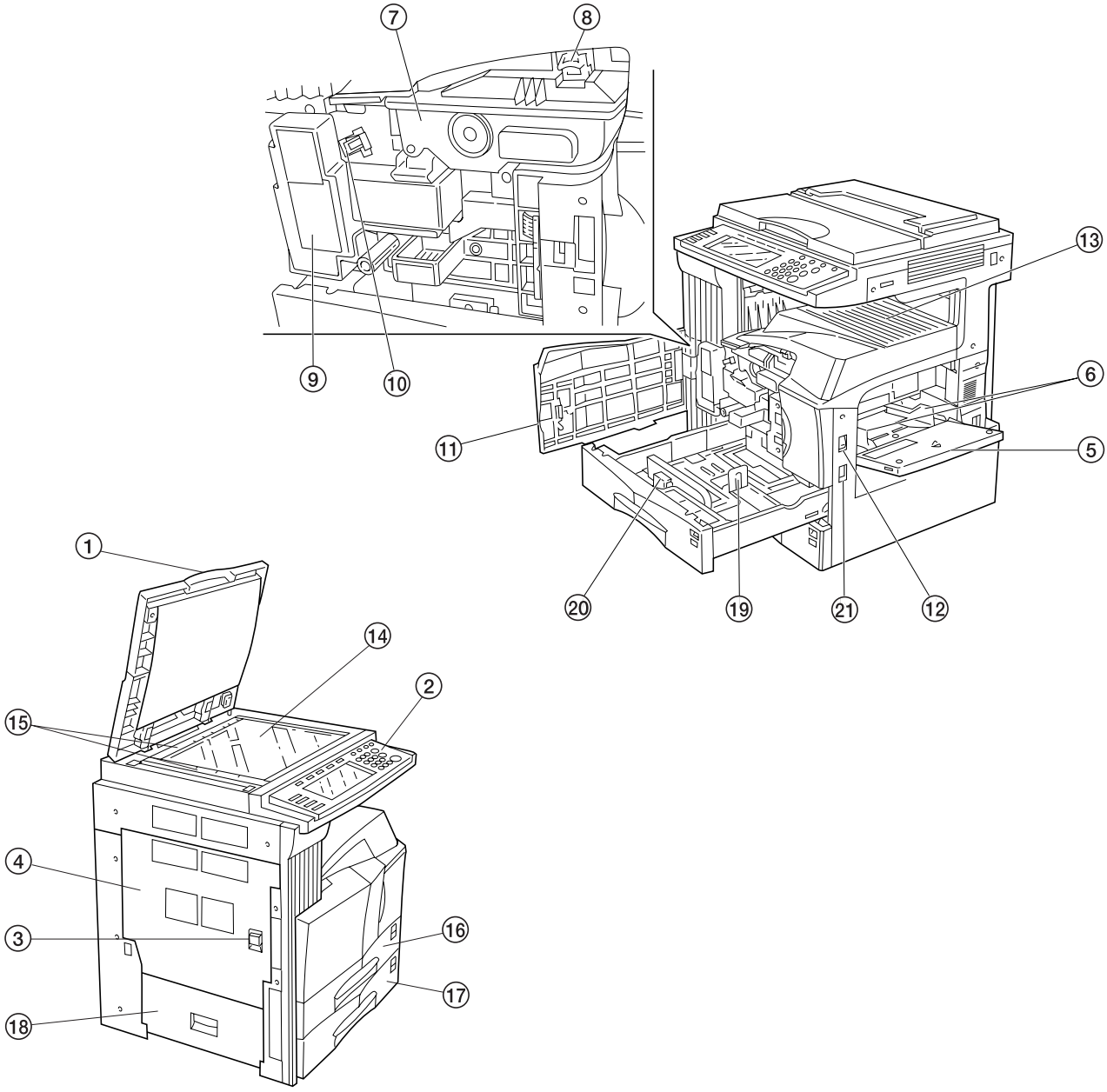


Figure 1-1-1

① Original cover
② Operation panel
③ Conveying cover handle
④ Conveying cover
⑤ Bypass tray
⑥ Insert guides
⑦ Toner container
⑧ Toner container release lever
⑨ Toner disposal tank
⑩ Cleaning shaft
⑪ Front cover
⑫ Power switch
⑬ Copy store section
⑭ Platen
⑮ Original size scales
⑯ Upper drawer
⑰ Lower drawer
⑱ Side cover
⑲ Length adjustment plate
⑳ Width adjustament lever
㉑ Handles for transport

(2) Operation panel

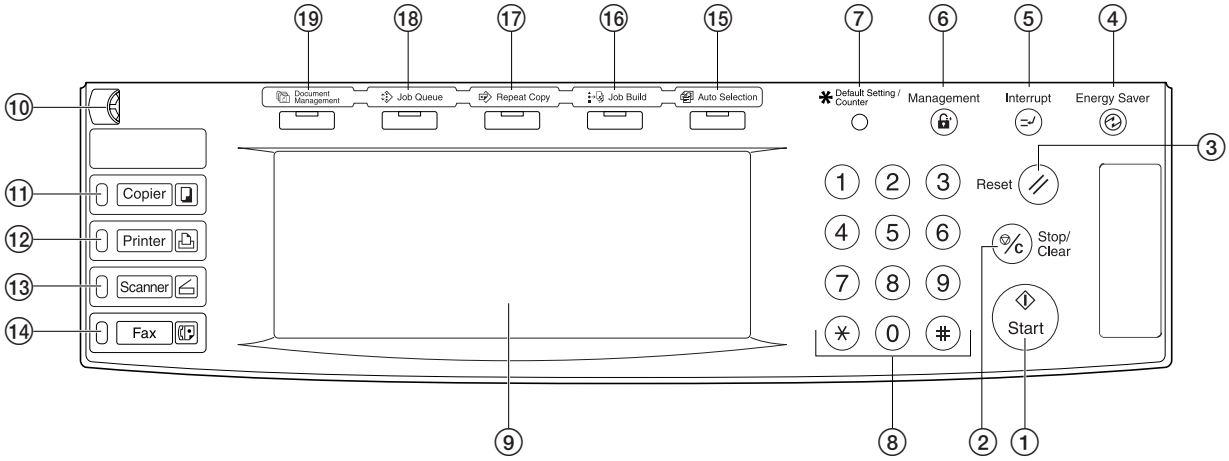


Figure 1-1-2

① Start key (Indicator lamp)
② Stop/clear key
③ Reset key
④ Energy Saver (preheat) key
⑤ Interrupt key (Indicator lamp)
⑥ Management key
⑦ Default Setting/Counter key
⑧ Numeric key
⑨ Touch panel
⑩ Brightness adjustment control dial
⑪ Copier key (Indicator lamp)
⑫ Printer key (Indicator lamp)
⑬ Scanner key (Indicator lamp)
⑭ Fax key (Indicator lamp)
⑮ Auto Selection key (Indicator lamp)
⑯ Job Build key (Indicator lamp)
⑰ Repeat Copy key (Indicator lamp)
⑱ Job Queue key (Indicator lamp)
⑲ Document Management key (Indicator lamp)

1-1-3 Machine cross section

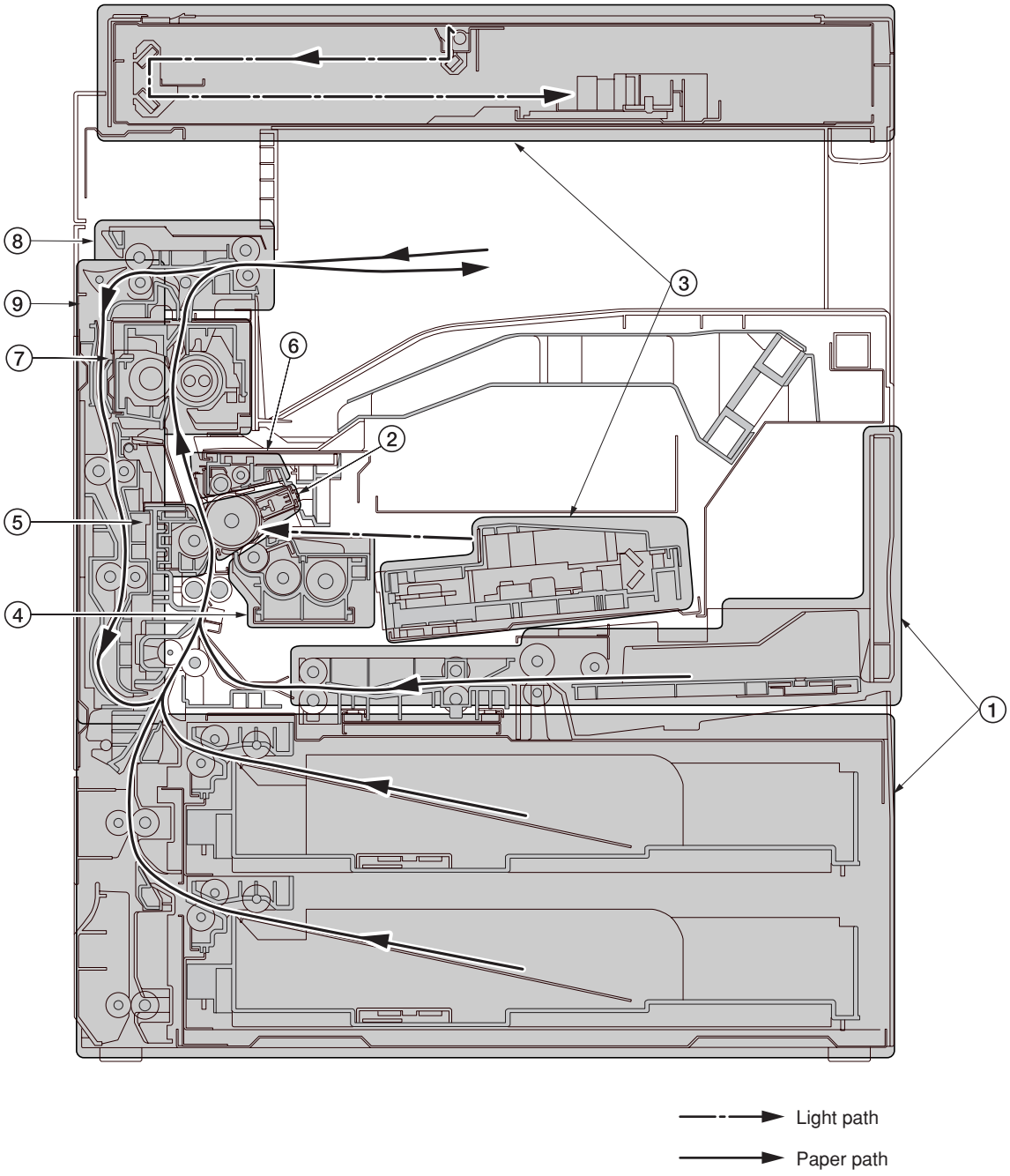
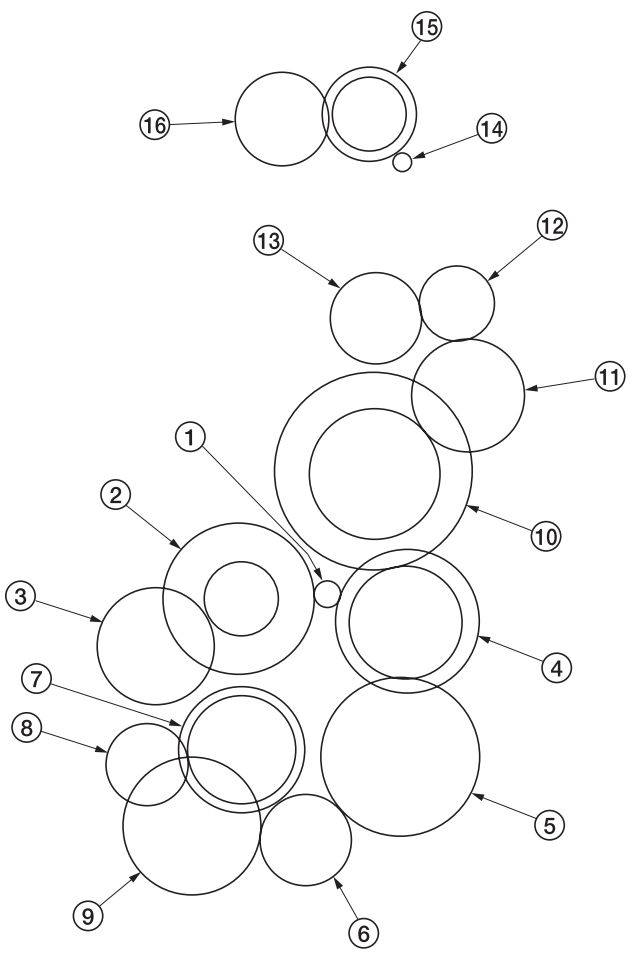


Figure 1-1-3 Machine cross section

① Paper feed section
② Main charging section
③ Optical section
④ Developing section
⑤ Transfer and separation section
⑥ Cleaning and charge erasing section section
⑦ Fixing section
⑧ Eject and switchback section
⑨ Duplex section

1-1-4 Drive system

(1) Drive system 1 (drive motor and eject motor drive trains)

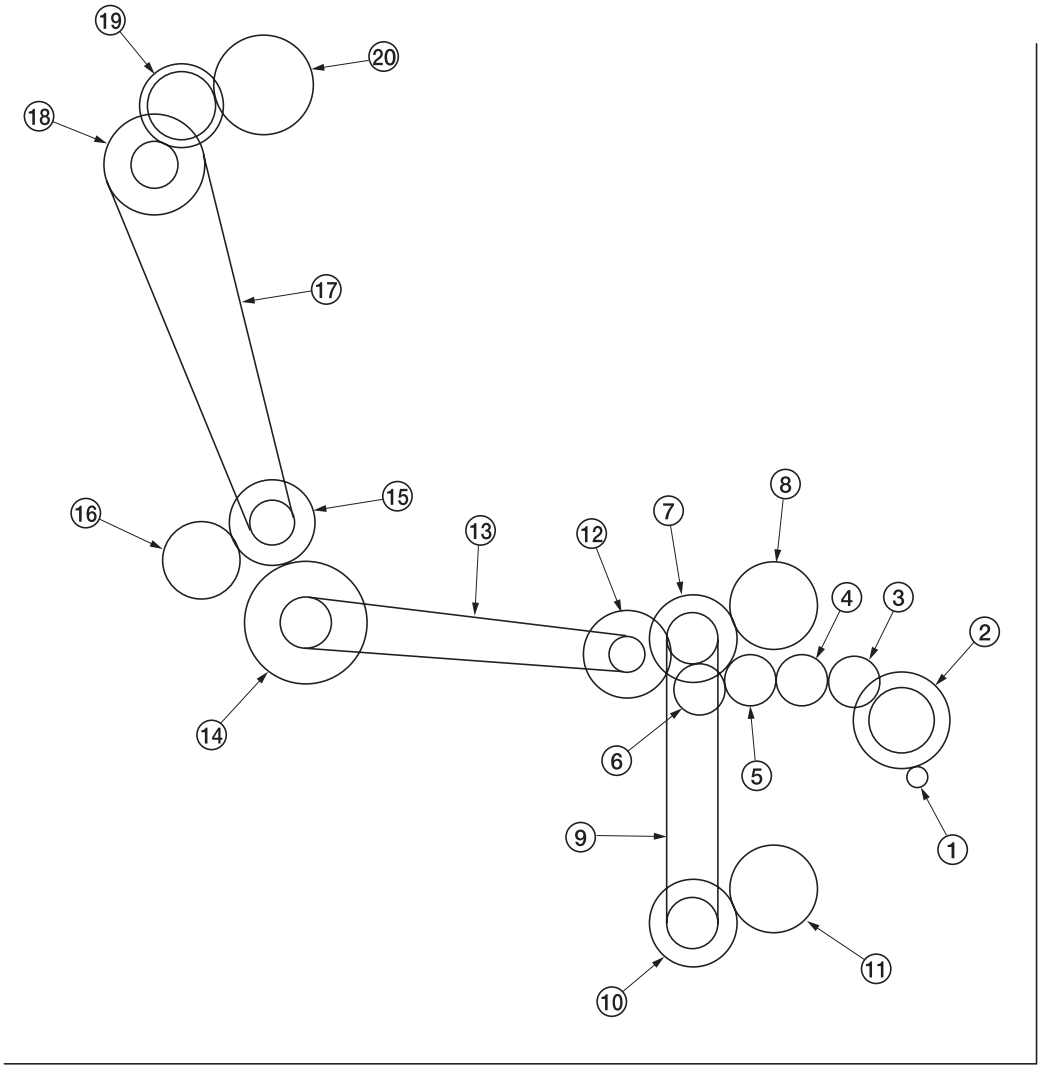


As viewed from machine rear

Figure 1-1-4

① Drive motor gear
② Drum gear Z76H/Z30H
③ Drum gear Z70H
④ Gear Z76H/Z35H
⑤ Gear Z50H
⑥ Gear Z36S/Z31H
⑦ Gear Z37H/28H
⑧ Gear Z34H
⑨ Registration clutch gear
⑩ Gear Z63H/Z45S
⑪ Gear Z37S
⑫ Gear Z24S
⑬ Joint gear Z32S
⑭ Eject motor gear
⑮ Gear Z47S/Z28S
⑯ Eject gear Z30S

(2) Drive system 2 (paper feed motor drive train)



As viewed from machine rear

Figure 1-1-5

① Paper feed motor gear
② Gear Z76H/Z35S
③ Feed gear Z25
④ Feed gear Z25
⑤ Feed gear Z25
⑥ Feed gear Z25
⑦ Gear Z41S/Z24S/P30
⑧ Upper paper feed clutch gear
⑨ Paper feed drive belt
⑩ Gear Z41S/Z24S
⑪ Lower paper feed clutch gear
⑫ Gear Z41S/P15
⑬ Bypass drive belt
⑭ Gear Z60S/P20
⑮ Gear Z41S/P18
⑯ Gear Z40S/Z32S
⑰ Container drive belt
⑱ Gear Z24S/P40
⑲ Gear Z40S/Z25S
⑳ Container gear

(3) Drive system 3 (duplex section)

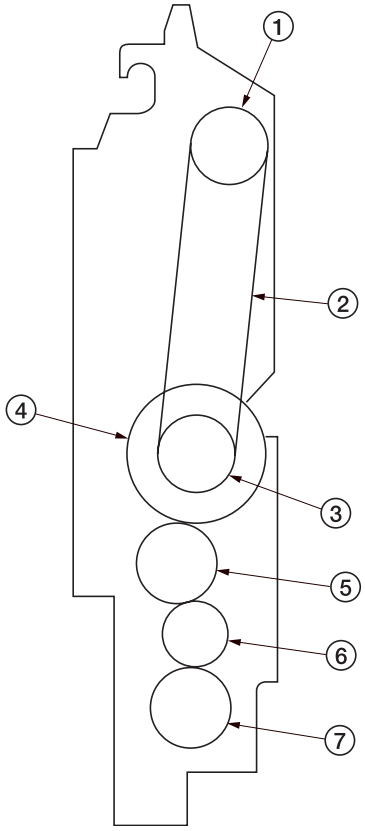


Figure 1-1-6

① Pulley T30
② Duplex belt
③ Pulley T30
④ Duplex feed clutch gear
⑤ Gear 25
⑥ Idle gear 20
⑦ Gear 25

1-2-1 Drum

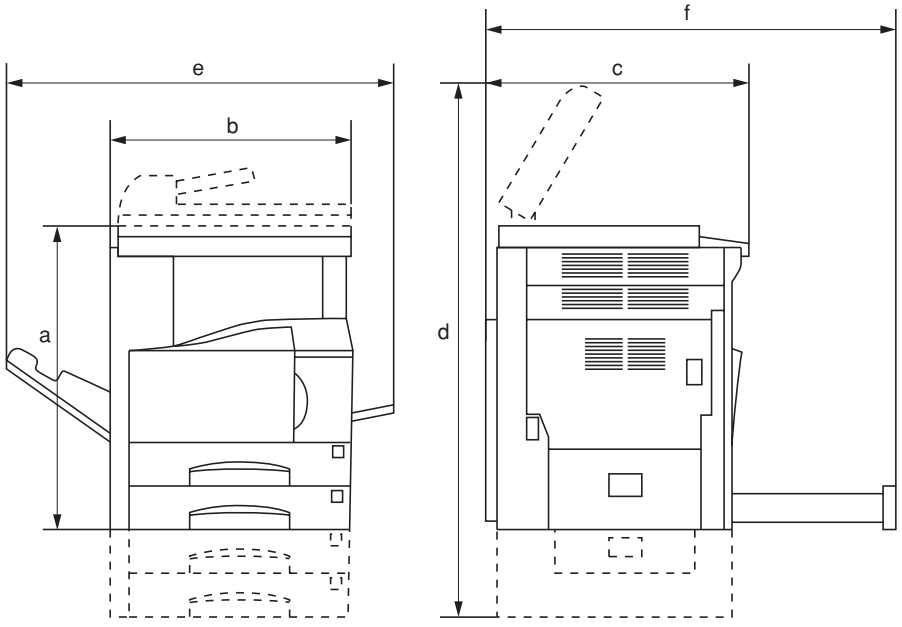
Note the following when handling or storing the drum.
- When removing the drum unit, never expose the drum surface to strong direct light.
- Keep the drum at an ambient temperature between 0°C/32°F and 35°C/95°F and at a relative humidity not higher than 85% RH. Avoid abrupt changes in temperature and humidity.
- Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
- Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.

1-2-2 Toner

Store the toner in a cool, dark place. Avoid direct light and high humidity.

1-2-3 Installation environment

1. Temperature: 10 - 35°C/50 - 95°F
2. Humidity: 15 - 85%RH
3. Power supply: 120 V AC, 12 A
   220 - 240 V AC, 5.7 A (Average)
4. Power source frequency: 50 Hz ±0.3%/60 Hz ±0.3%
5. Installation location
   - Avoid direct sunlight or bright lighting. Ensure that the photoconductor will not be exposed to direct sunlight or other strong light when removing paper jams.
   - Avoid extremes of temperature and humidity, abrupt ambient temperature changes, and hot or cold air directed onto the machine.
   - Avoid dust and vibration.
   - Choose a surface capable of supporting the weight of the machine.
   - Place the machine on a level surface (maximum allowance inclination: 1°).
   - Avoid air-borne substances that may adversely affect the machine or degrade the photoconductor, such as mercury, acidic of alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.
   - Select a room with good ventilation.
6. Allow sufficient access for proper operation and maintenance of the machine.
   Machine front: 1000 mm/39 3/8" Machine rear: 300 mm/11 13/16"
   Machine right: 300 mm/11 13/16" Machine left: 300 mm/11 13/16"

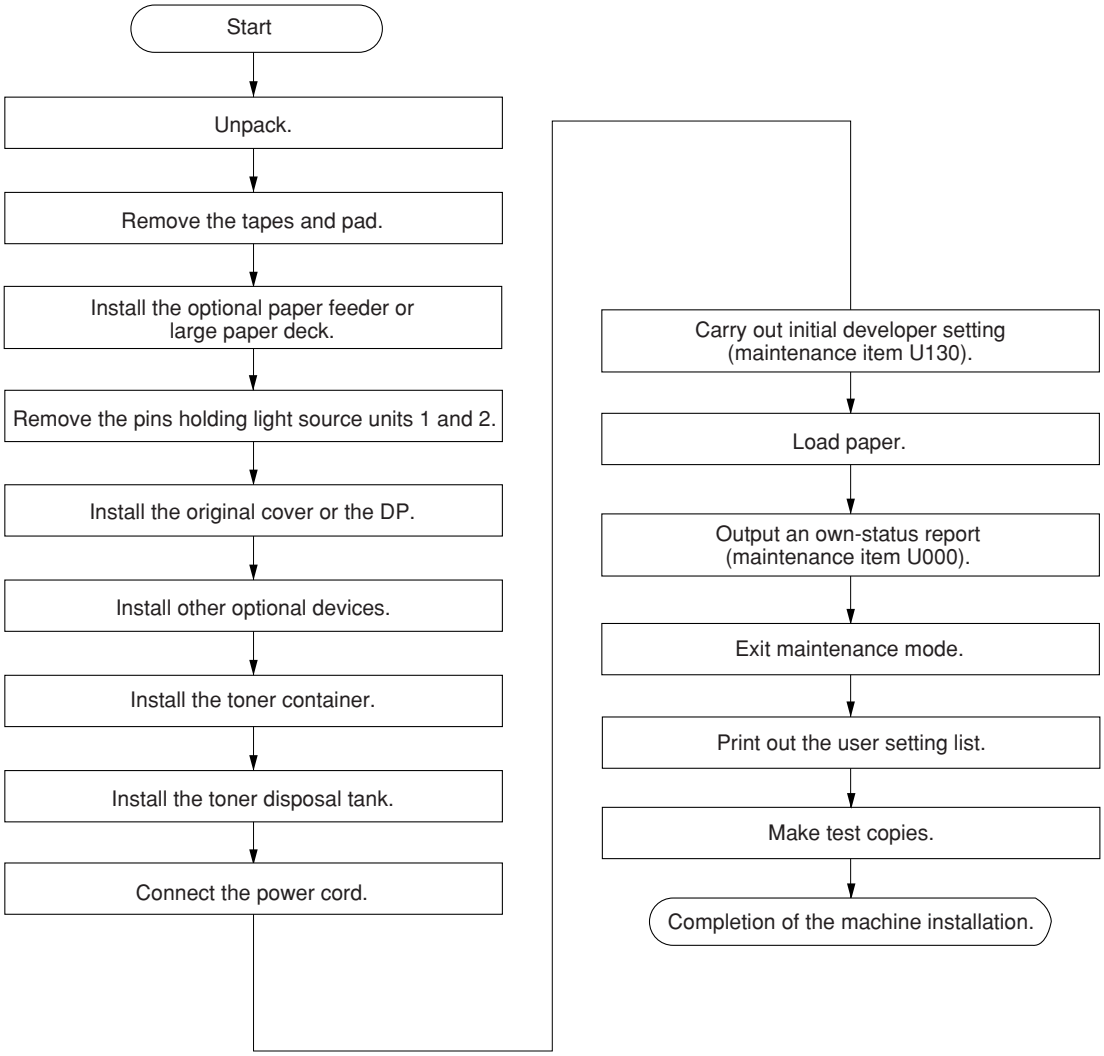


a: 745 mm/29 5/16"
b: 585 mm/23"
c: 646 mm/25 3/8"
d: 1510 mm/59 7/16"
e: 1032 mm/40 5/8"
f: 961 mm/37 13/16"

Figure 1-2-1 Installation dimensions

1-3-1 Unpacking and installation

(1) Installation procedure



Moving the machine

When moving the machine, pull out the four handles for transport on the right and left sides and hold them.

* For the left front handle for transport, open the door and push it into the machine before pulling out the handle.

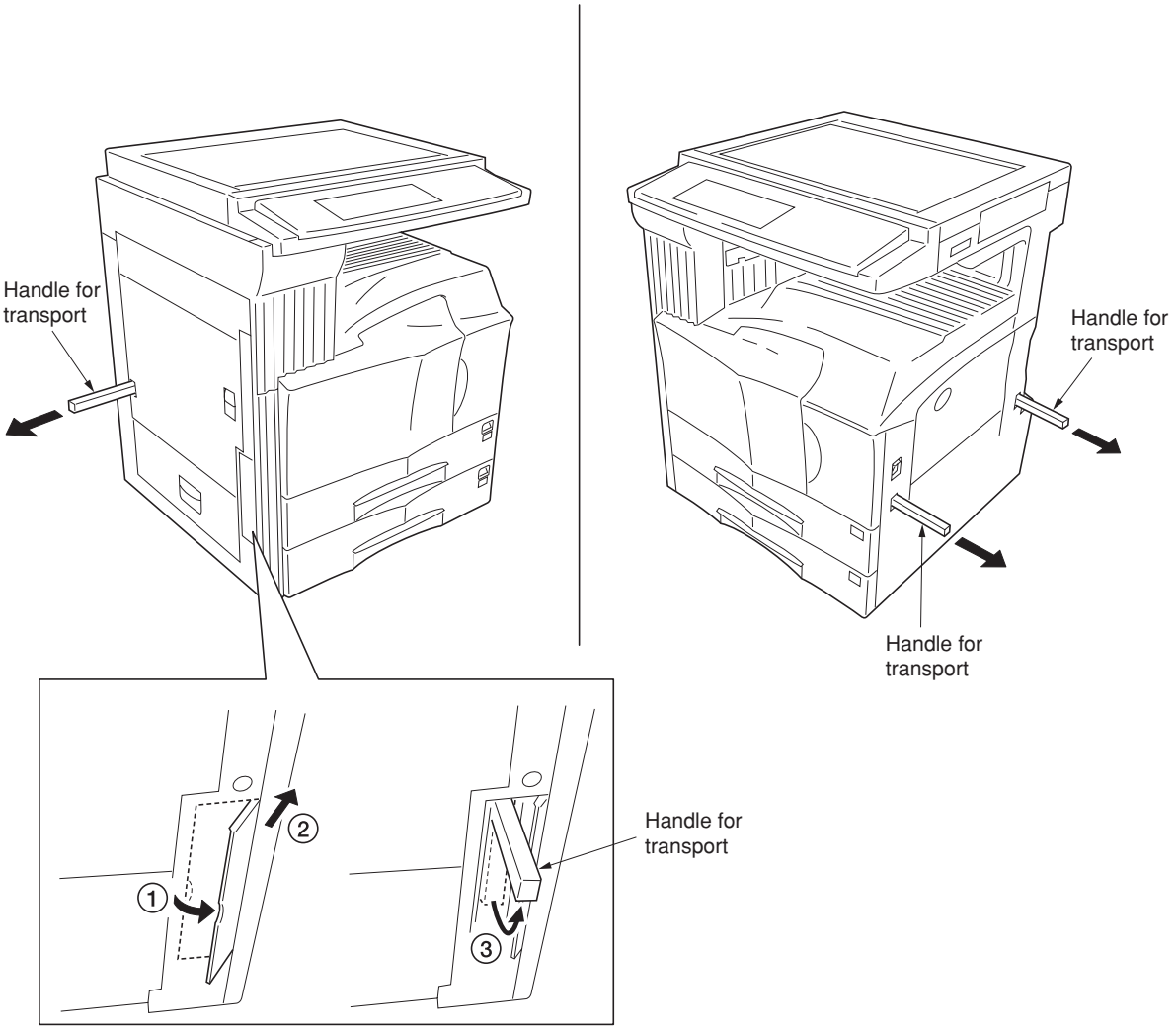


Figure 1-3-1

Unpack.

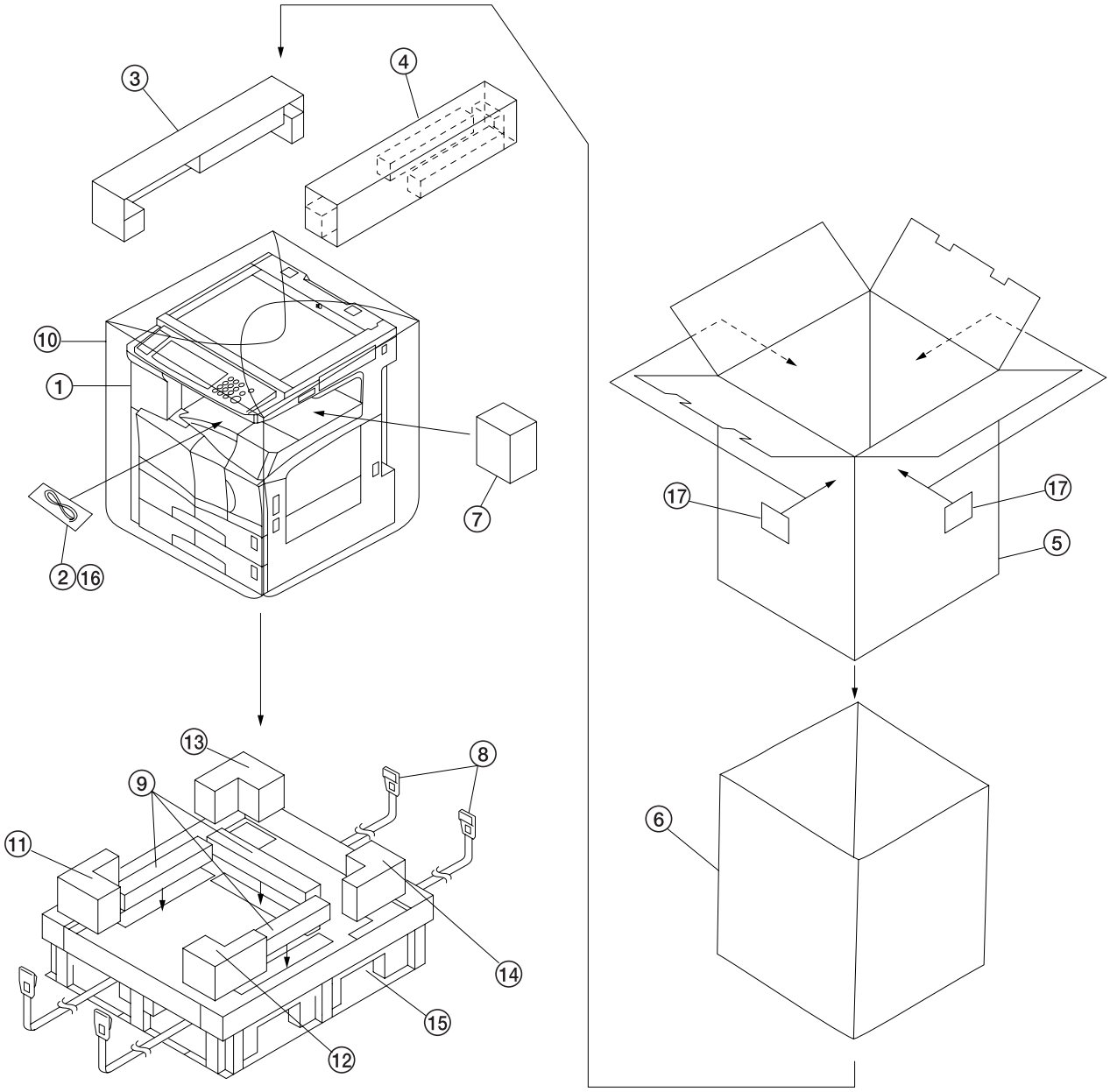


Figure 1-3-2 Unpacking

① Copier
② Power cord
③ Upper left pad
④ Upper right pad
⑤ Outer case
⑥ Inner frame
⑦ Eject spacer
⑧ Belts
⑨ Bottom pad
⑩ Machine cover
⑪ Front left pad
⑫ Front right pad
⑬ Bottom left pad
⑭ Bottom right pad
⑮ Skid
⑯ Plastic bag
⑰ Bar code labels

Caution: Place the machine on a level surface.

Remove the tapes and pad.

1. Remove the tapes holding the front cover, bypass tray, drawers and original detection switch.
2. Remove the pad at the eject section.
5. Remove the tape holding the power cord.

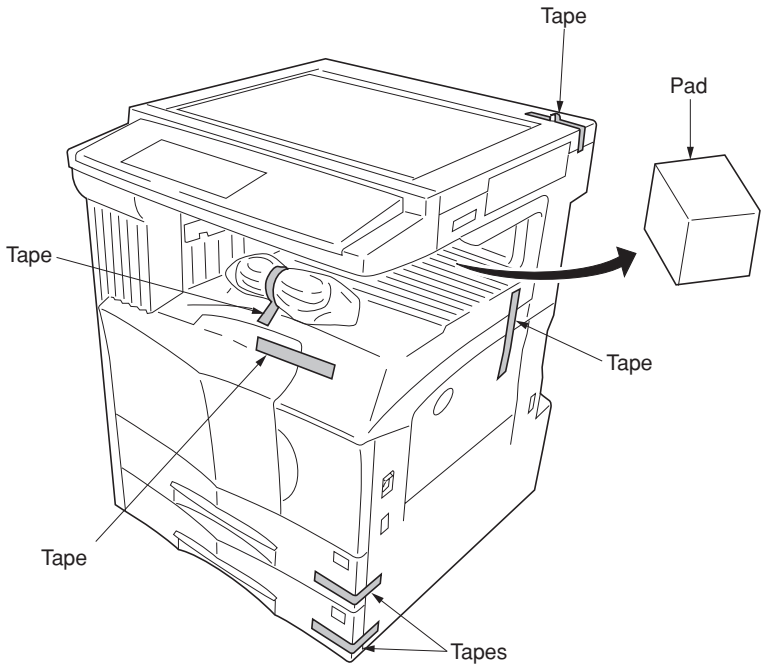


Figure 1-3-3

4. Remove the three tapes holding the pins for light source units 1 and 2.
5. Remove the tape holding the conveying cover.

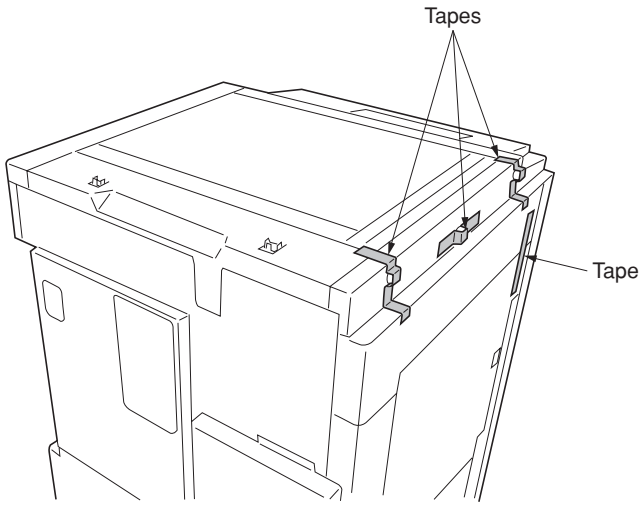


Figure 1-3-4

6. Pull upper and lower drawers out and remove the tape holding each of the drawer lift.

   *If necessary, please fix the cassette cursor with the screws included in the machine box.

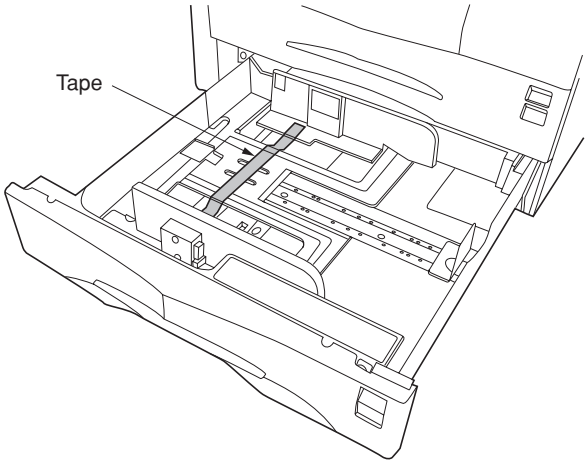


Figure 1-3-5

Install the optional paper feeder or large paper deck.

1. Install the optional paper feeder or large paper deck as necessary (see page 1-3-14 to 1-3-22).

Remove the pins holding light source units 1 and 2.

1. Remove the two pins for light source unit 1 and the pin for light source unit 2.

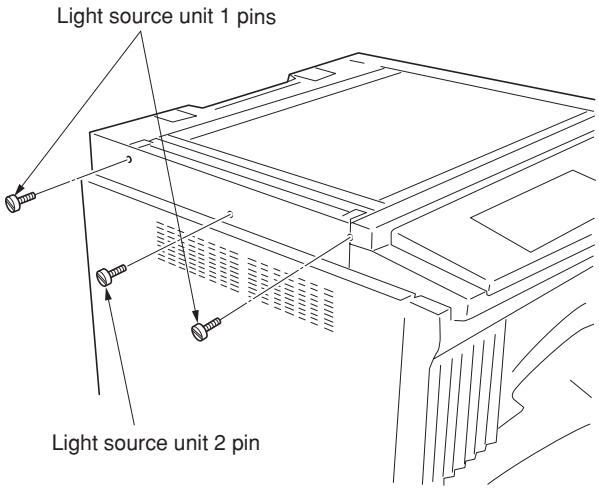


Figure 1-3-6

Install the original cover or the DP.

1. Install the original cover or DP (see page 1-3-34 when installing the DP).

Install other optional devices.

1. Install the optional devices (job separator, finisher, fax board, and/or printer board etc.) as necessary.

Install the toner container.

1. Open the front cover.
2. Tap the top of the toner container five to six times.

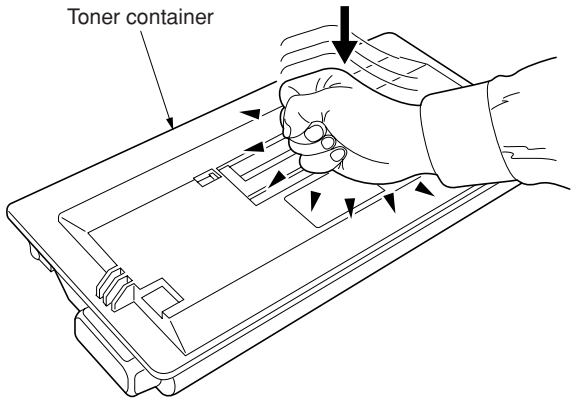


Figure 1-3-7

3. Shake the toner container approximately 10 times in the horizontal direction to stir toner.

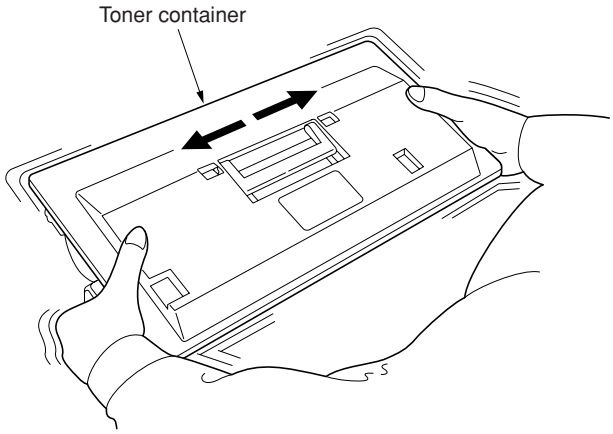


Figure 1-3-8

4. Gently push the toner container into the copier along the rails.
   * Push the container all the way into the copier until it locks in place.

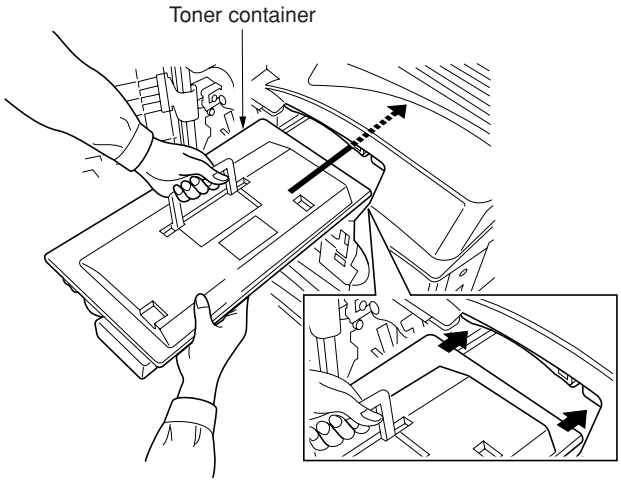


Figure 1-3-9

Install the toner disposal tank.

1. Install the toner disposal tank in the copier.
2. Close the front cover.

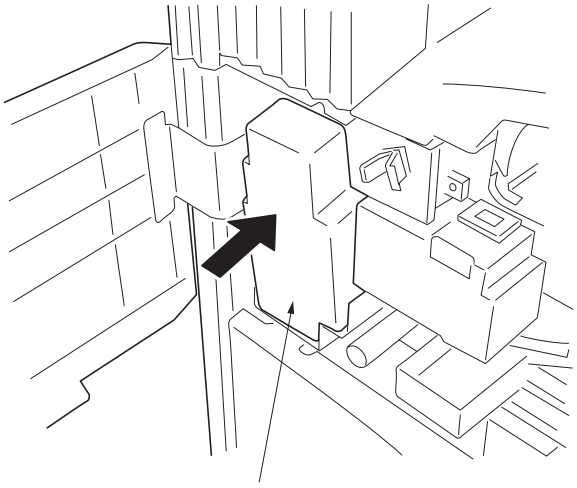


Figure 1-3-10

Connect the power cord.

1. Connect the power cord to the connector on the copier.
2. Insert the power plug into the wall outlet.

Carry out initial developer setting (maintenance item U130).

1. Turn the main switch on and enter the maintenance mode by entering “10871087” using the numeric keys.
2. Enter “130” using the numeric keys and press the start key.
3. Press the start key to execute the maintenance item.
   The drive stops within approximately 5 minutes.
4. Press the stop/clear key.

Load paper.

1. Load paper in the drawer.

Output an own-status report (maintenance item U000).

1. Enter “000” using the numeric keys and press the start key.
2. Select “MAINTENANCE” and press the start key to output a list of the current settings of the maintenance items.
3. Press the stop/clear key.

Exit maintenance mode.

1. Enter "001" using the numeric keys and press the start key.
   The machine exits the maintenance mode.

Print out the user setting list.

1. Press the * key to enter default setting and press the [Print form] key. The counter report will be output.

Make test copies.

1. Place an original and make test copies.

Completion of the machine installation.

1-3-2 Setting initial copy modes

Factory settings are as follows:

Maintenance item No.	Contents	Factory setting
U253	Switching between double and single counts	Double count
U254	Turning auto start function on/off	ON
U255	Setting auto clear time	90s
U258	Switching copy operation at toner empty detection	SINGLE MODE, 70
U260	Changing the copy count timing	After ejection
U264	Setting the display order of the date	Inch specifications: MONTH-DATE-YEAR Metric specifications: DATE-MONTH-YEAR
U277	Setting auto application change time	120
U329	Default setting Auto rotation copy/Sort copy	On/On
U331	Switching the finisher eject section	OFF
U342	Setting the ejection restriction	ON
U343	Switching between duplex/simplex copy mode	OFF
U344	Setting preheat/energy saver mode	ENERGY STAR

1-3-3 Installing the key counter (option)

Key counter installation requires the following parts:
Key counter set (P/N 2A369703)
Contents of the set:
- Key counter cover (P/N 2A360010)
- Key counter retainer (P/N 66060030)
- Key counter cover retainer (P/N 66060022)
- Key counter mount (P/N 66060040)
- Key counter socket assembly (P/N 41529210)
- Four (4) M4 × 6 bronze TP-A screws (P/N B4304060)
- Two (2) M4 × 10 bronze TP-A screws (P/N B4304100)
- One (1) M4 × 20 bronze TP-A screw (P/N B4304200)
- One (1) M4 × 6 chrome TP-A screw (P/N B4104060)
- One (1) M3 × 8 bronze binding screw (P/N B1303080)
- One (1) M4 × 30 bronze binding screw (P/N B1304300)
- Two (2) M3 × 6 bronze flat-head screws (P/N B2303060)
- One (1) M3 bronze nut (P/N C2303000)

Procedure

1. Fit the key counter socket assembly to the key counter retainer using the two screws and nut.
2. Fit the key counter mount to the key counter cover using the two screws, and attach the key counter retainer to the mount using the two screws.

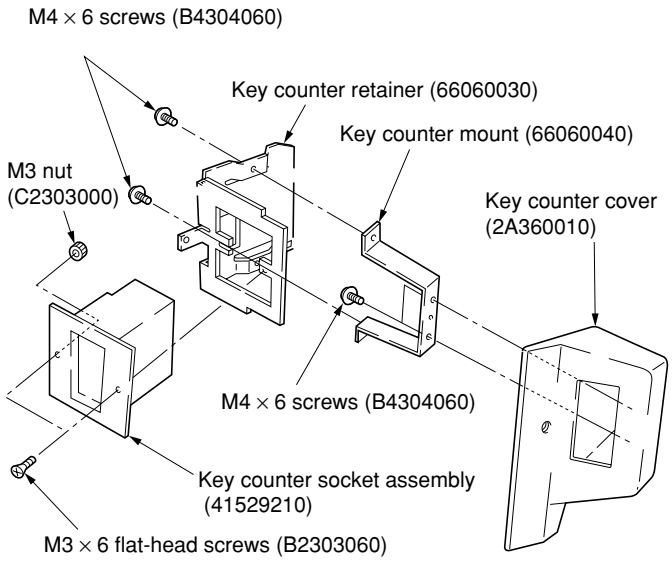


Figure 1-3-11

3. Remove the three screws holding the middle right cover and then the cover.
4. Cut out the aperture plate on the middle right cover using nippers.
5. Pass the connect inside the copier through the aperture and refit the middle right cover.

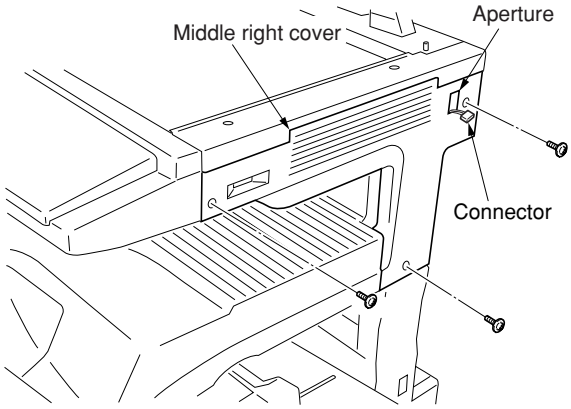


Figure 1-3-12

6. Pass the connector of the key counter through the aperture in the key counter retainer, and insert into the connector of the copier.
7. Seat the projection of the key counter cover retainer in the aperture in the middle right cover.
8. Fit the key counter cover with the key counter socket assembly inserted to the key counter cover retainer on the copier using the screw.
9. Insert the key counter into the key counter socket assembly.

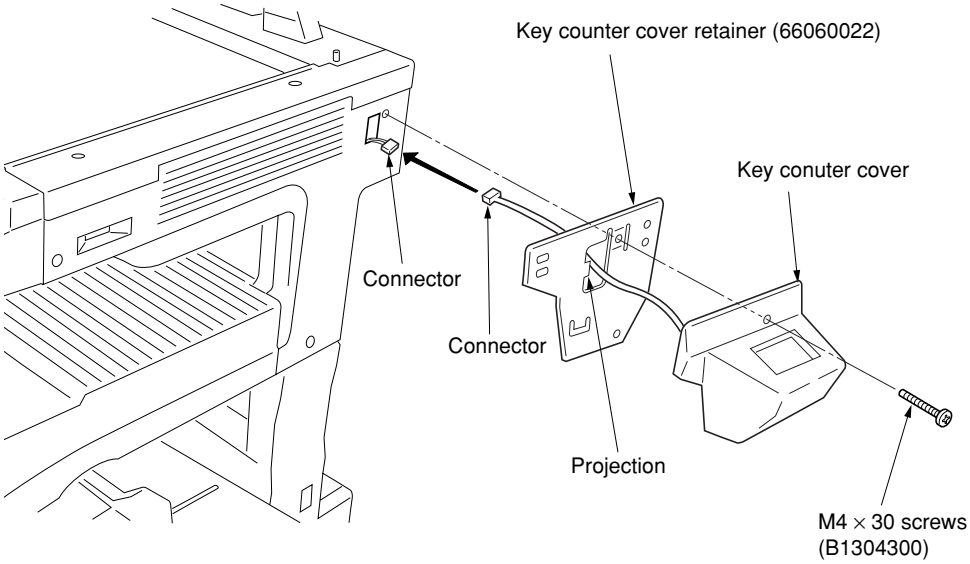


Figure 1-3-13

10. Turn the main switch on and enter the maintenance mode.
11. Run maintenance item U204 and select “KEY-COUNTER.”
12. Exit the maintenance mode.
13. Check that the message requesting the key counter to be inserted is displayed on the touch panel when the key counter is pulled out.
14. Check that the counter counts up as copies are made.

1-3-4 Installing the drawer heater (option)

Drawer heater installation requires the following parts:
- Drawer heater (P/N 34860030): for 120 V specifications
- Drawer heater (P/N 33960020): for 220 - 240 V specifications
- Band (P/N M2107120)

Procedure

1. Remove thirteen screws and then the rear cover.

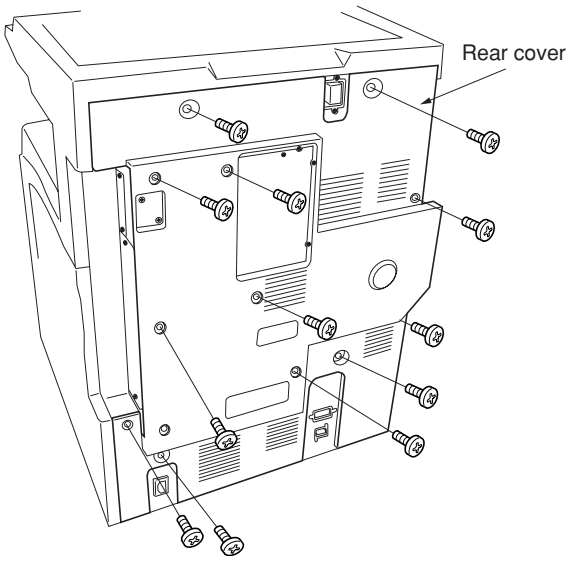


Figure 1-3-14

2. Pull the upper and lower drawers out.
3. Fit the drawer heater to the bottom of the machine and bind the wire of the drawer heater with the band.
4. Put the wire of the drawer heater out of the machine through the aperture of the rear frame.

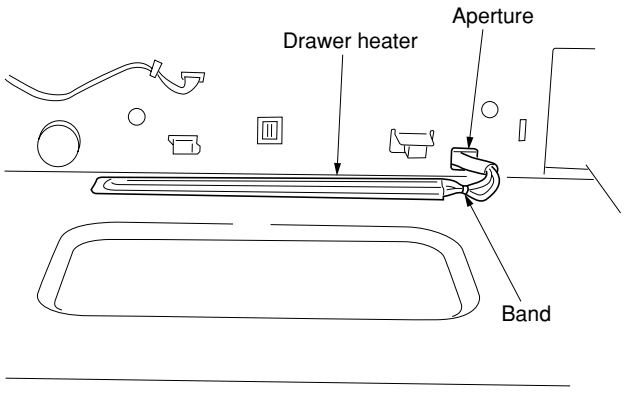


Figure 1-3-15

5. Remove the four screws and the two connectors and then remove the wires from the clamp.
   Remove the power source unit from the rear side of the machine.

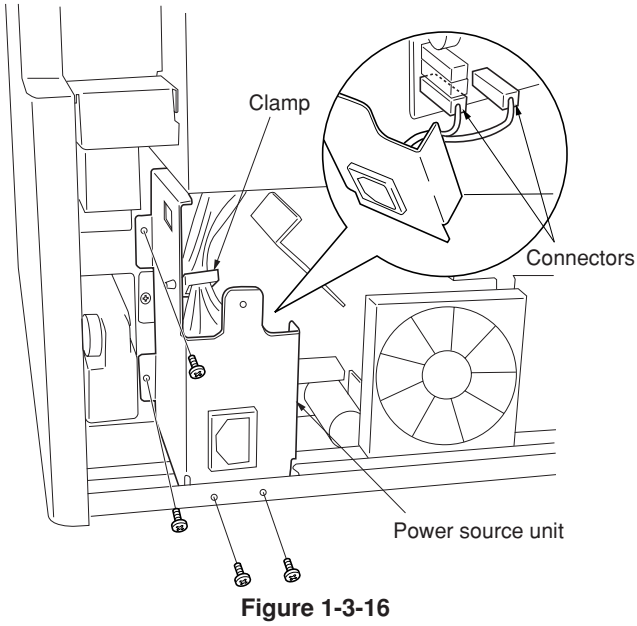


Figure 1-3-16

6. Remove the two screws and pull out the wire of the drawer heater that has been put out of the rear frame while raising the power source PCB unit.
7. Insert the connector of the drawer heater into the connector of the machine.
8. Refit all the removed parts.

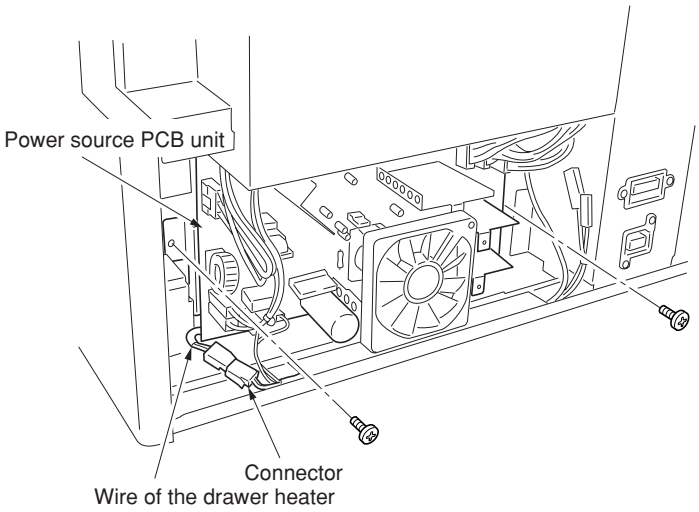


Figure 1-3-17

1-3-5 Installing the paper feeder (option)

Preparation

1. Remove the lower drawer from the copier.

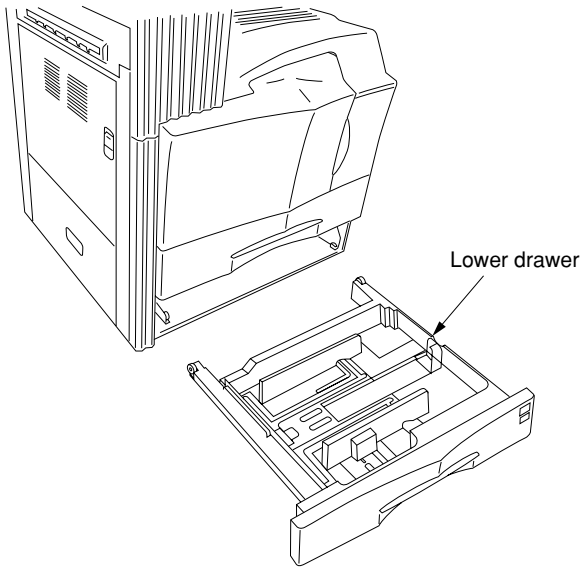


Figure 1-3-18

2. Place the copier on top of the paper feeder with the positioning pins at the front left and right of the paper feeder aligned with the holes in the base of the copier.

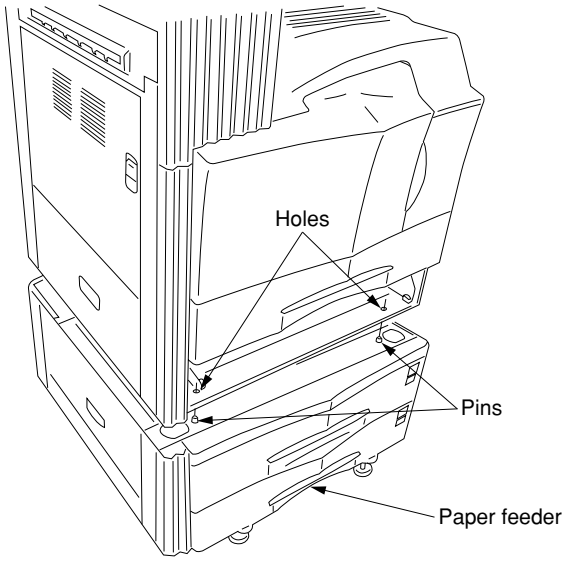


Figure 1-3-19

3. Secure the copier to the paper feeder using the two pins.
4. Refit the lower drawer to the copier.

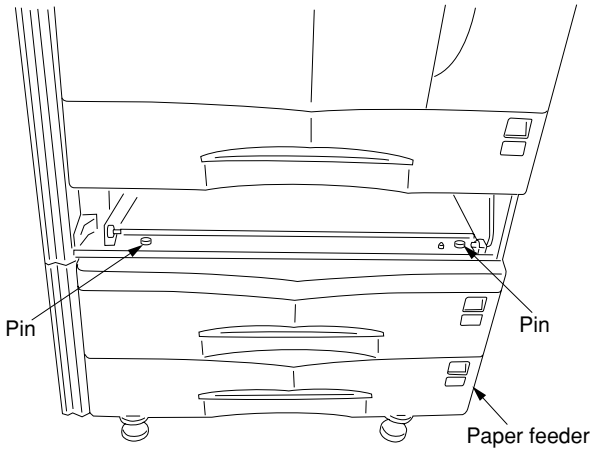


Figure 1-3-20

5. Remove the screw and then the cover from the rear of the paper feeder.
6. Remove the screw from the copier.

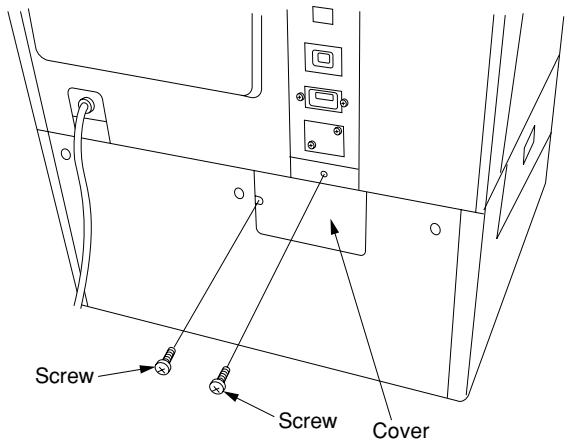


Figure 1-3-21

7. Insert the 12-P connector of the paper feed desk into the connector on the copier.

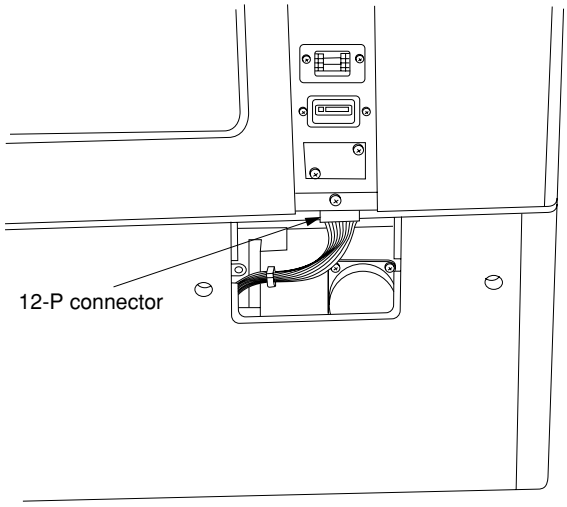


Figure 1-3-22

8. Route the harness through the clamp on the retainer.
   Check that the harness and the motor do not contact.
9. Fit the retainer using the screw removed in step 6 and the two CVM4 × 06 cross-head chromate binding screws.
10. Refit the cover.

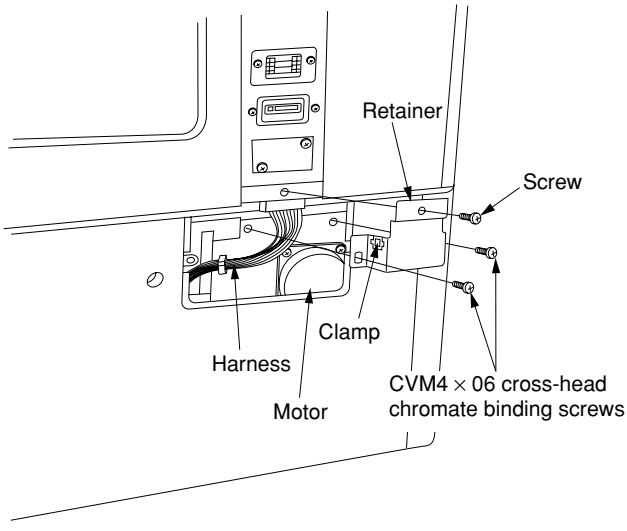


Figure 1-3-23

11. Turn the four leveling bolts until they reach the floor and adjust them to level the machine.

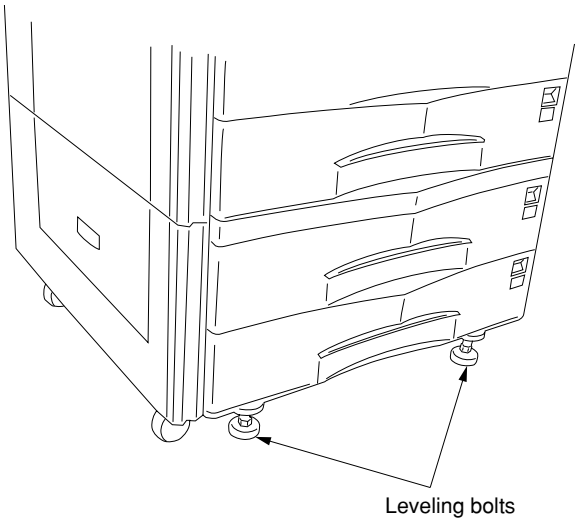


Figure 1-3-24

12. Fit the two stays to the left of the paper feeder (one toward the front and the other the rear) using the two M4 × 10 chrome TP screws such that they make contact with the floor.
    Note: Do not fit the stays if the finisher is to be installed.
13. Connect the copier power plug to the wall outlet and turn the copier power switch on.
14. Load paper into the drawer and make a test copy to check the operation.

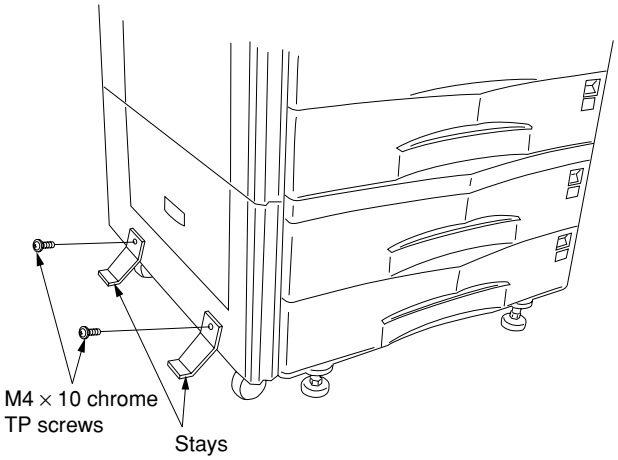


Figure 1-3-25

Adjusting the center line

1. Run maintenance item U993. Select “PG1” and output a test pattern.
2. Check if the center of the paper and that of the test pattern output are aligned. If not, perform the following adjustment.

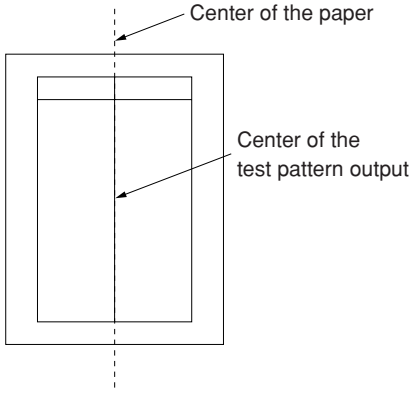


Figure 1-3-26

3. Open the drawer of the paper feeder and loosen the three screws securing the adjuster.

A and B: test pattern output examples

4. If the test pattern output example looks like A, move the adjuster in the direction of the white arrow (⇨) and retighten the three screws.
   If the test pattern output example looks like B, move the adjuster in the direction of the black arrow (⬅) and retighten the three screws.
5. Output the test pattern again.
6. Repeat steps 3 to 5 until the centers of the paper and the test pattern are aligned.

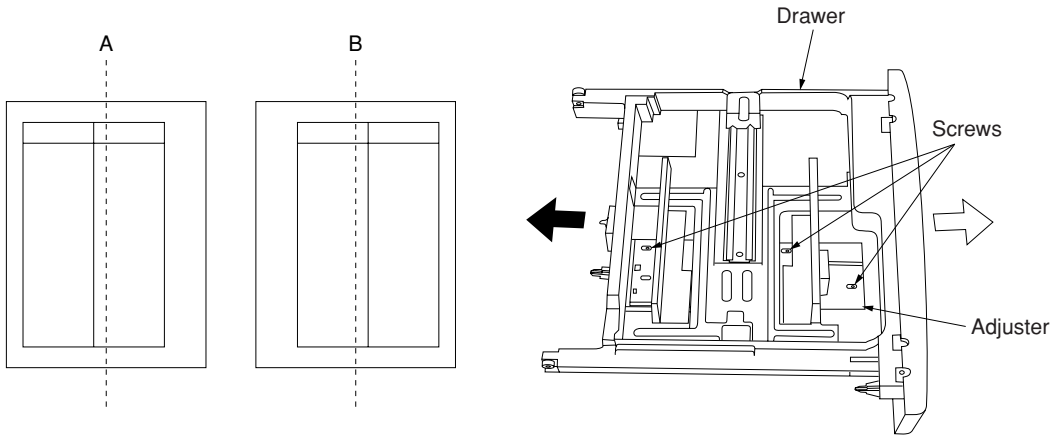


Figure 1-3-27

*If necessary, please fix the cassette cursor with the screws included in the machine box.

1-3-6 Installing the large paper deck (option)

Preparation

1. Remove the lower drawer from the copier.

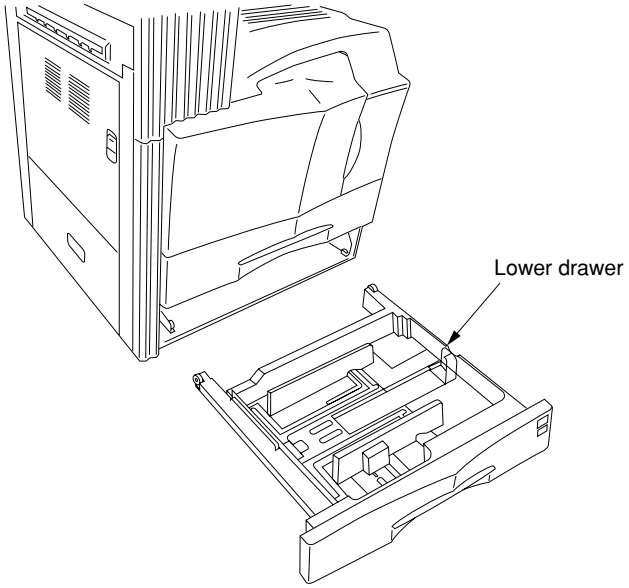


Figure 1-3-28

2. Place the copier on top of the large paper deck with the positioning pins at the front left and right of the large paper deck aligned with the holes in the base of the copier.

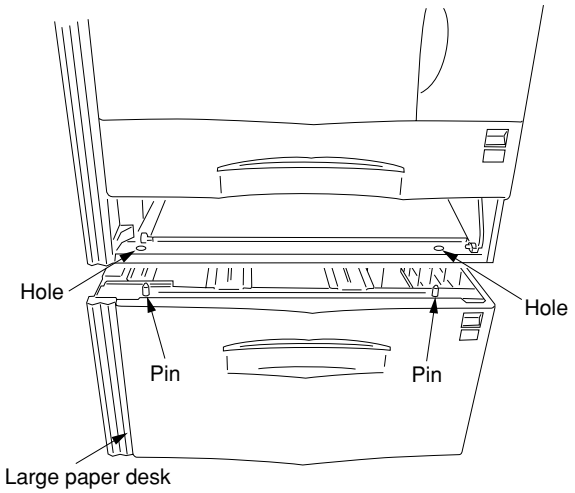


Figure 1-3-29

3. Secure the copier to the large paper deck using the two pins.
4. Refit the lower drawer to the copier.

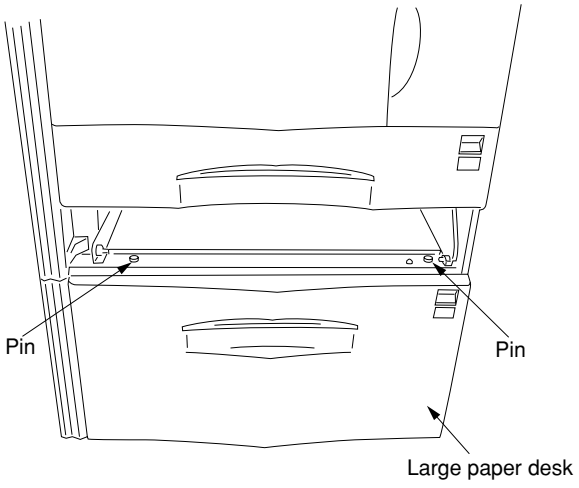


Figure 1-3-30

5. Remove the screw and then the cover from the rear of the large paper deck.
6. Remove the screw from the rear of the copier.

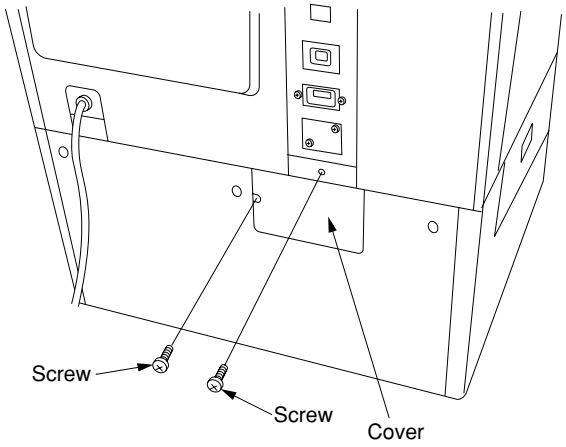


Figure 1-3-31

7. Insert the 12-pin connector of the large paper deck into the connector on the copier.

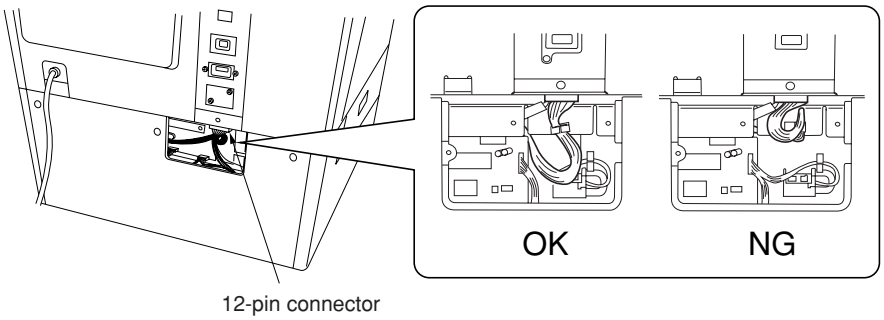


Figure 1-3-32

8. Fit the retainer using the screw removed in step 6 and the two CVM4 × 06 cross-head chromate binding screws.
9. Refit the cover using the screw (see step 5).

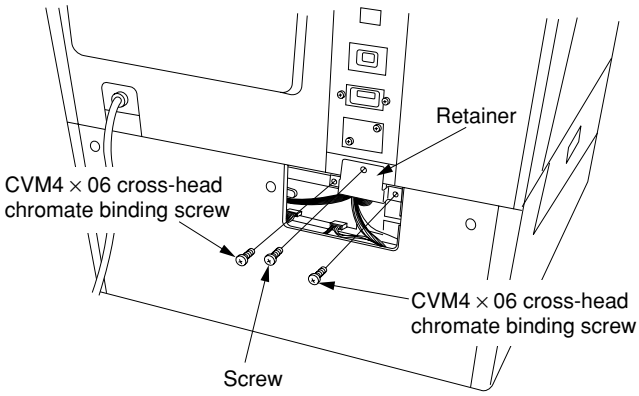


Figure 1-3-33

10. Turn the four leveling bolts until they reach the floor and adjust them to level the machine.

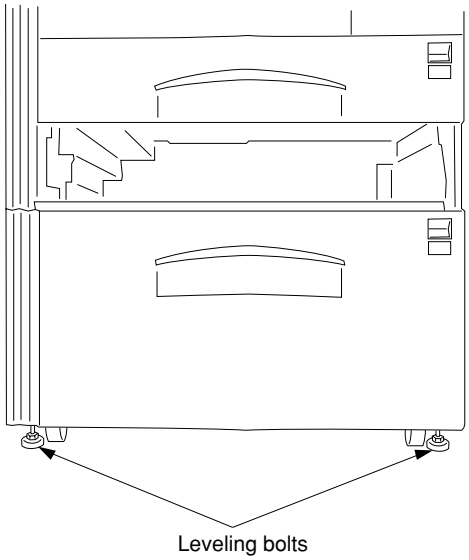


Figure 1-3-34

11. Fit the stay to the lower left of the large paper deck toward the rear using the two M4 × 16 chrome TP screws such that it makes contact with the floor.
    Note: Do not fit the stay if the finisher is to be installed.

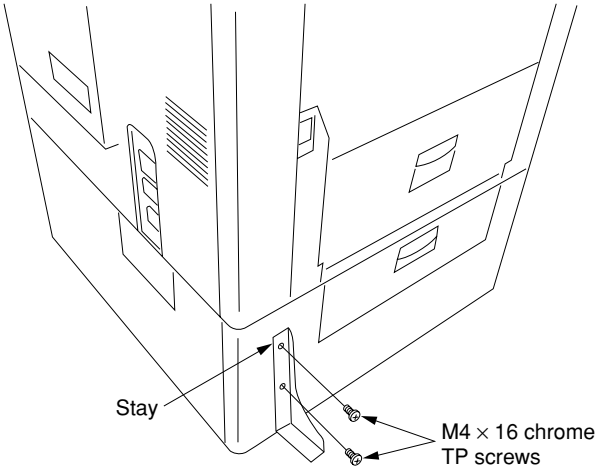


Figure 1-3-35

Setting the paper size

1. Open the large paper deck.
2. Move the sliders at the machine front and rear inward (two at each point).
3. Remove the screw from each of the front and rear lateral size adjusters.

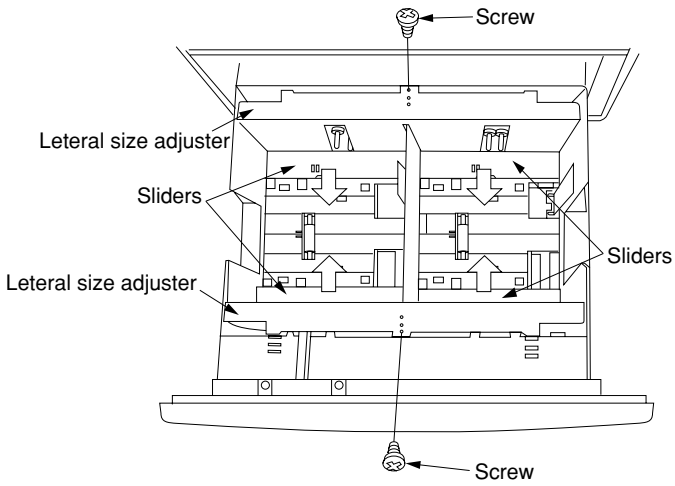


Figure 1-3-36

4. Insert the upper tabs and lower tabs of the front and rear lateral size adjusters into the upper slots and lower slots respectively such that the size indicators point to the size of paper to be used. Secure the lateral size adjusters using the screw for each.
5. Move the front and rear sliders (two at each point) outward until they make contact with the lateral size adjusters.

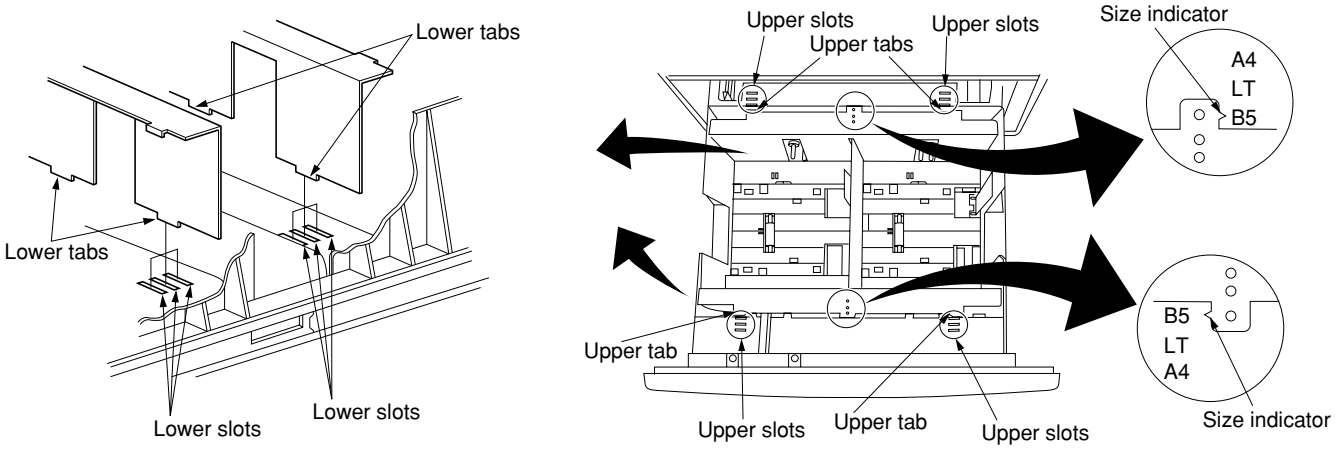


Figure 1-3-37

6. Remove the screw from each of the left and right longitudinal size adjusters.
7. Align the pin holes in the left and right longitudinal size adjusters with the A4 pins or B5 pins according to the size of paper to be used. Secure the adjusters using the screw for each.

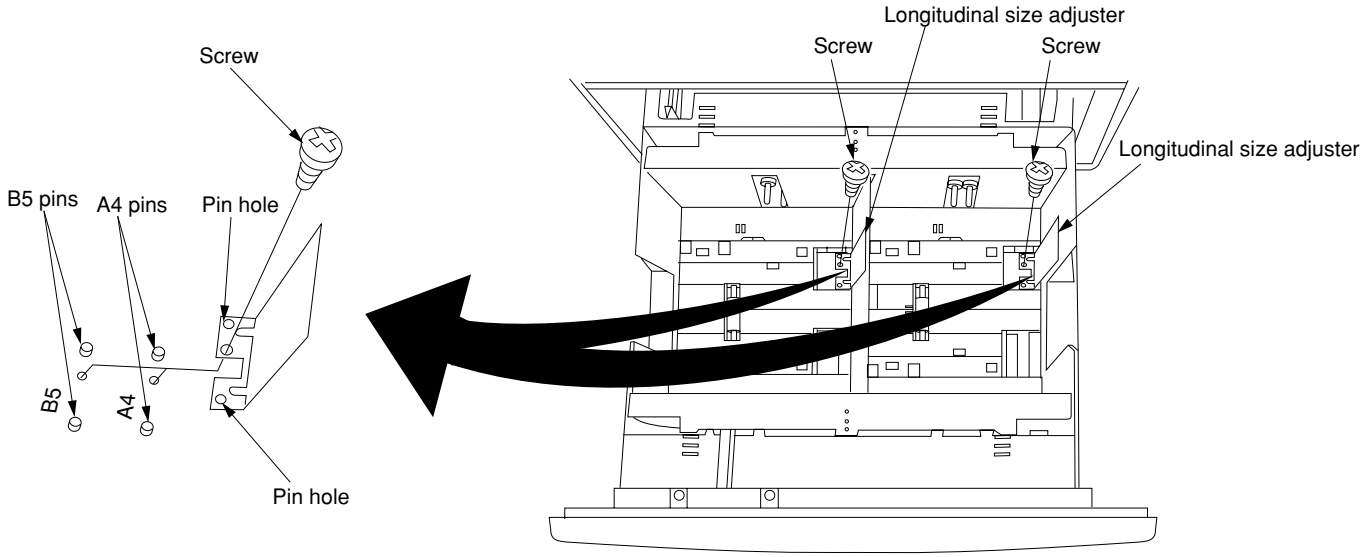


Figure 1-3-38

8. Connect the copier power plug to the wall outlet and turn the copier power switch on.
9. Run maintenance item U208 and set the paper size for the large paper deck (B5/A4/Letter).
10. Load paper into the drawer and make a test copy to check the operation.

Adjusting the center line

1. Run maintenance item U993. Select “PG1” and output a test pattern.
2. Check if the center of the paper and that of the test pattern output are aligned. If not, perform the following adjustment.

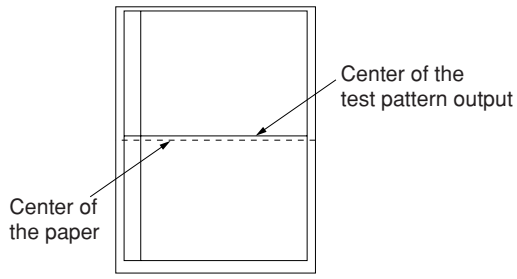


Figure 1-3-39

3. Pull out the cassette of the paper feeder and loosen the two screws securing the adjuster.

A and B: test pattern output examples

4. If the test pattern output looks like A, move the adjuster in the direction of the black arrow (⬅) and retighten the two screws.
   If the test pattern output looks like B, move the adjuster in the direction of the white arrow (⇨) and retighten the two screws.
5. Output a test pattern again.
6. Repeat steps 3 to 5 until the centers of the paper and the test pattern are aligned.

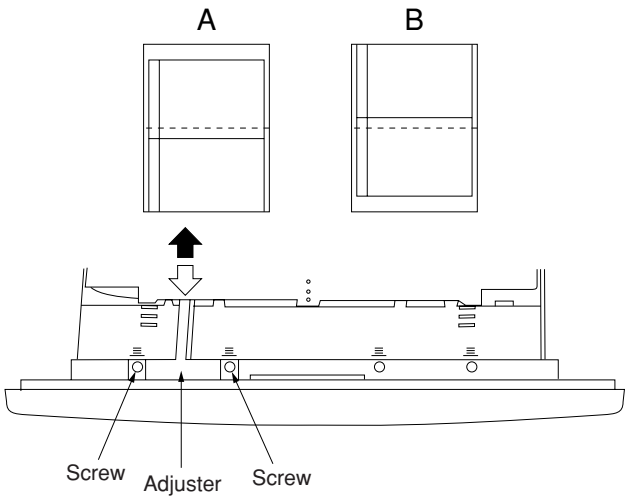


Figure 1-3-40

7. Loosen the five screws.
8. Adjust the position of the front cover so that the level indicating the position of the adjuster and the level, indicating the position of the front cover are the same. If the positions of the adjuster and front cover are not aligned, the paper cassette cannot be closed properly.
9. Retighten the five screws.

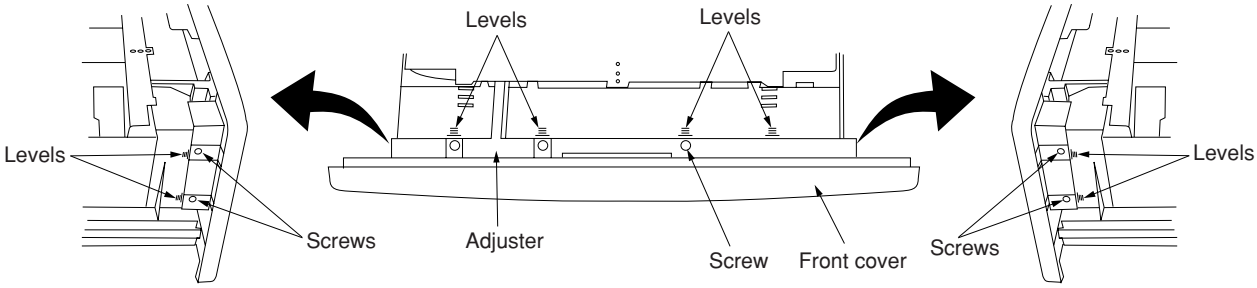


Figure 1-3-41

1-3-7 Installing the booklet stitcher/switchback unit (option)

Preparation

1. Open the conveying cover of the copier.
2. Remove the two screws securing the feedshift guide assembly and then the assembly.

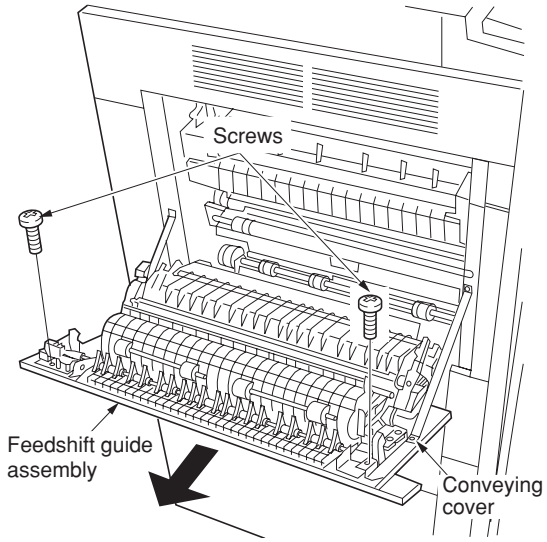


Figure 1-3-42

3. Fit the curl eliminator to the conveying cover such that the projections on the cover fit into the two ends of the curl eliminator.
4. Secure the curl eliminator using the two screws removed in step 2.

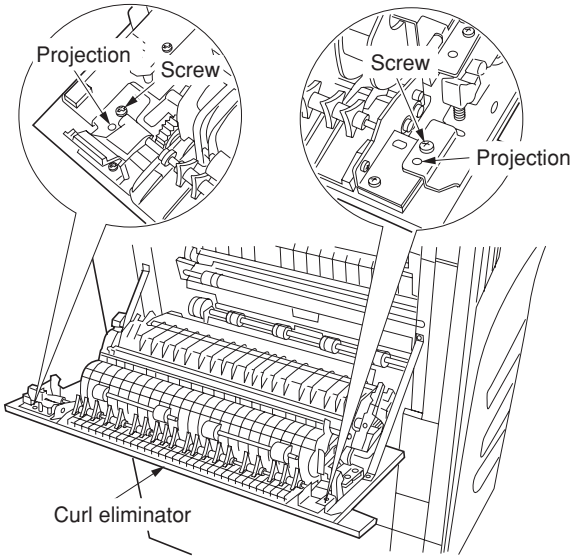


Figure 1-3-43

5. Close the conveying cover.
6. Fit the latch catch to the conveying cover using two M4 × 10 binding screws.

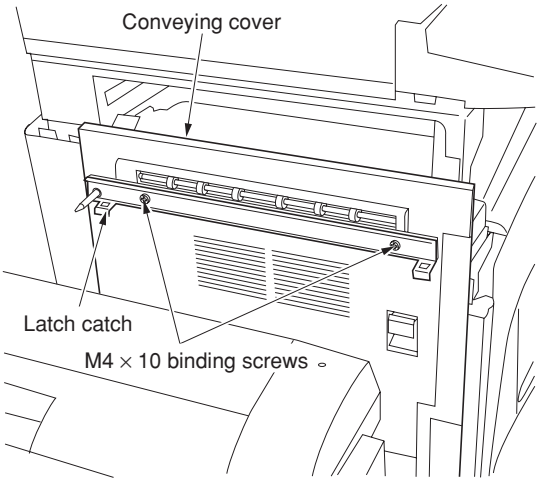


Figure 1-3-44

7. Remove 13 screws and take off the rear cover.

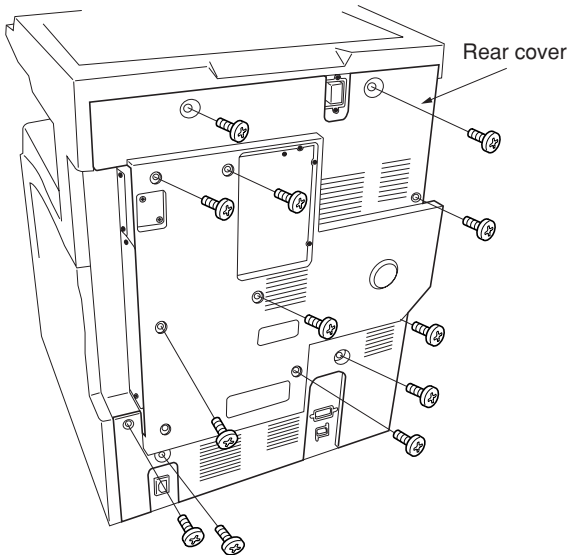


Figure 1-3-45

8. Remove 13 screws and take off the shield cover.

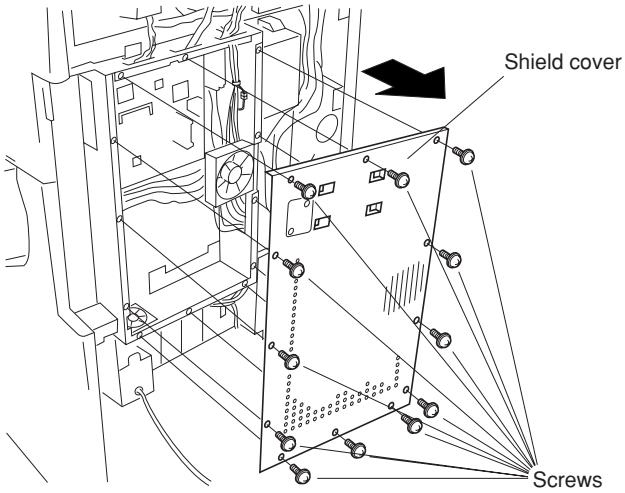


Figure 1-3-46

9. Insert the board supports into the three round holes of the IPC PCB.
   Detach the 10-pin connector (four wires) from YC4 on the main PCB and connect it to J2 on the IPC PCB.

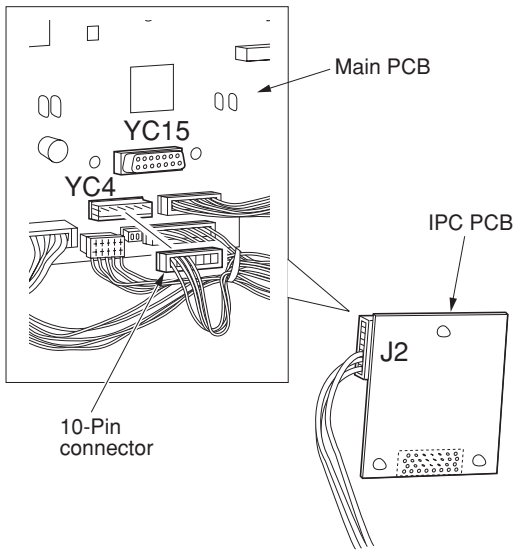


Figure 1-3-47

10. Connect J1 on the IPC PCB to YC15 on the main PCB.
11. Insert the board supports into the three round holes of the main PCB and secure the IPC PCB.
12. Refit the shield cover and rear cover.

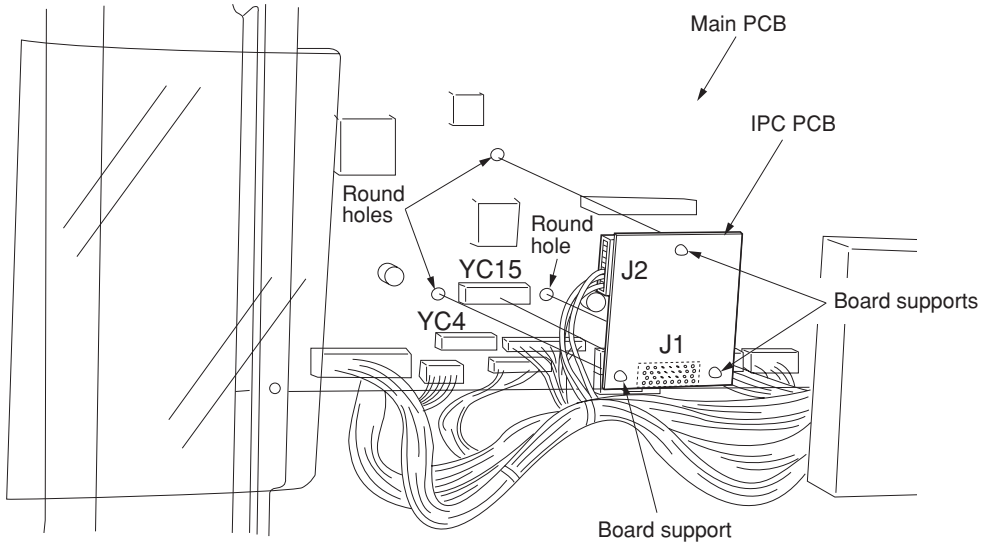


Figure 1-3-48

13. Align the rail retainer with the groove of the guide rail and attach the rail retainer to the guide rail. Make sure that the plate spring of the rail retainer fits into the groove and the edge of the guide rail fits between the pulleys on the reverse side of the rail retainer.

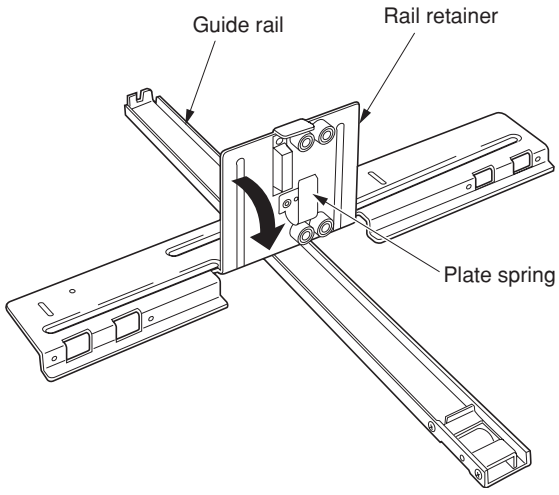


Figure 1-3-49

When the switchback unit is not to be installed

14. Orient the guide rail such that its pulley is positioned toward the copier, and then fit a caster rail to each side of the rail retainer.

When the switchback unit is to be installed

15. Attach a spacer to each end of the rail retainer using two M4 × 6 binding screws for each.
16. Orient the guide rail such that its pulley is positioned toward the copier, and then fit the caster rails to the spacer.

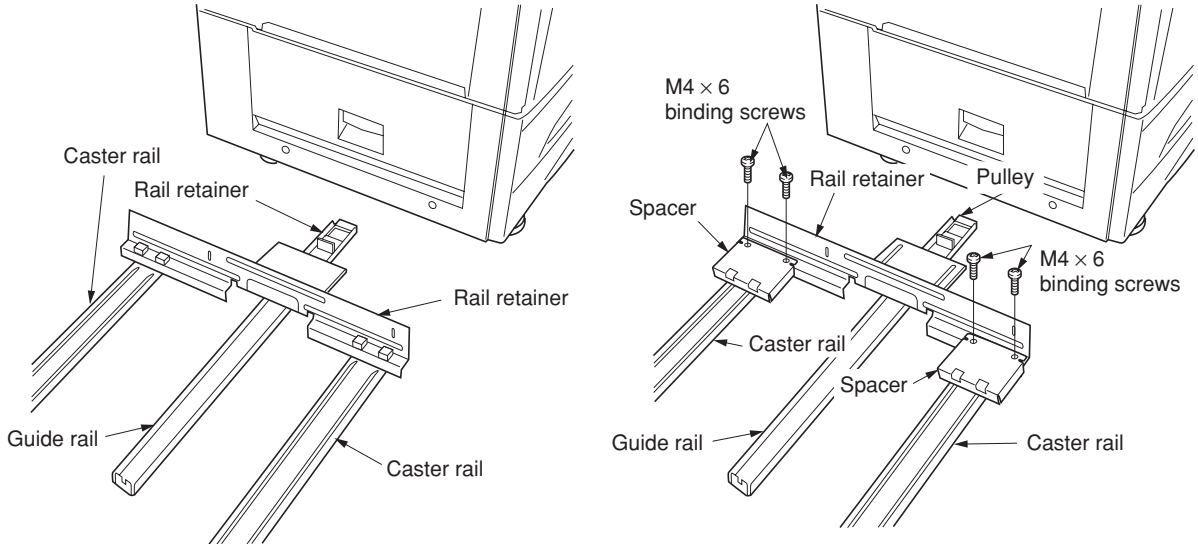


Figure 1-3-50

17. Secure the rail retainer to the copier using two M4 × 10 binding screws such that the front and rear gaps between the floor and rail retainer are approximately 10 mm.

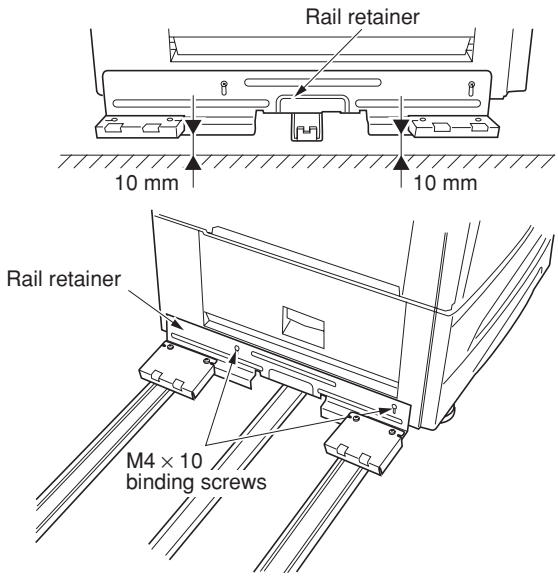


Figure 1-3-51

18. Slightly lift the bottom of the finisher and insert the rail fixing plate into the finisher, and then join them by inserting two M4 × 6 binding screws loosely.

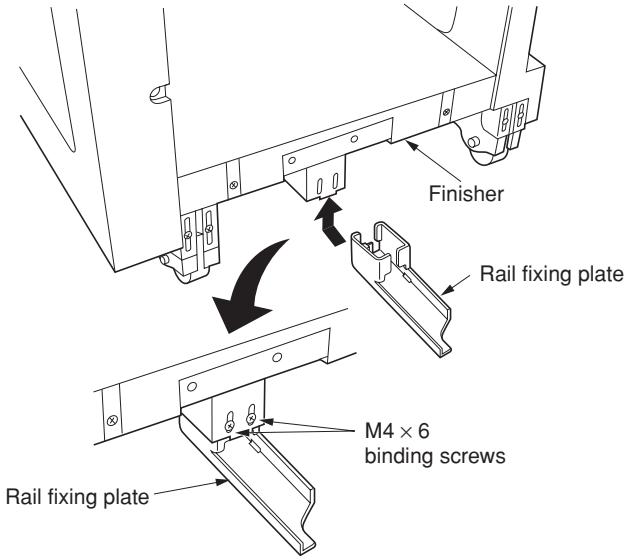


Figure 1-3-52

19. Insert the guide rail into the rail fixing plate and secure it using an M4 × 6 binding screw at the position where the screw hole in it and that in the rail fixing plate meet.
Note: When installing the switchback unit, use screw hole ⓐ in the guide rail; when not installing the switchback unit, use screw hole ⓑ in the guide rail.

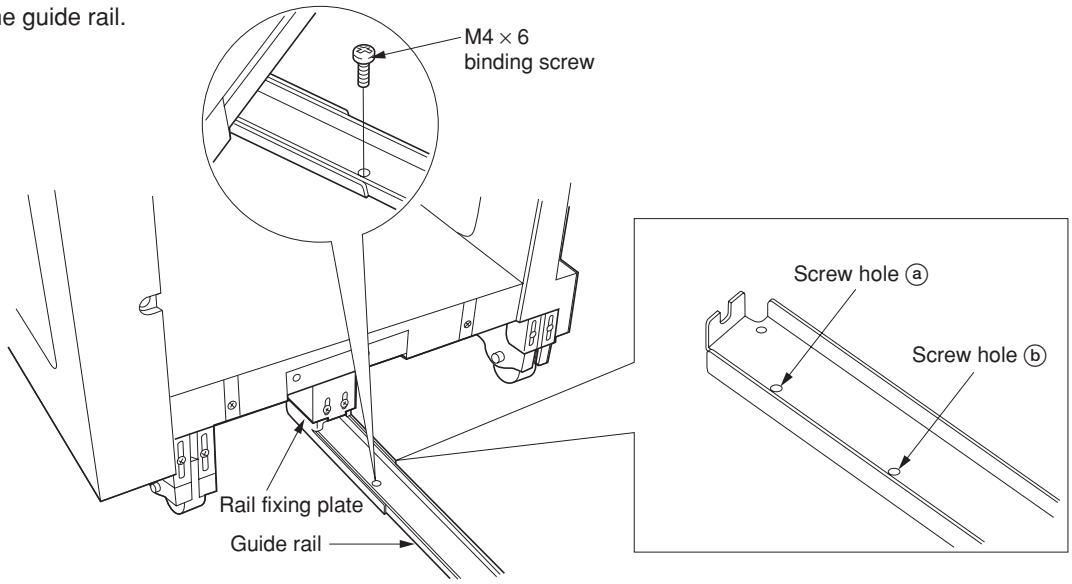


Figure 1-3-53

20. Adjust the position of the rail fixing plate so that the gap between the plate and the floor is approximately 8.0 mm, and then tighten the two loosely fitted M4 × 6 binding screws.

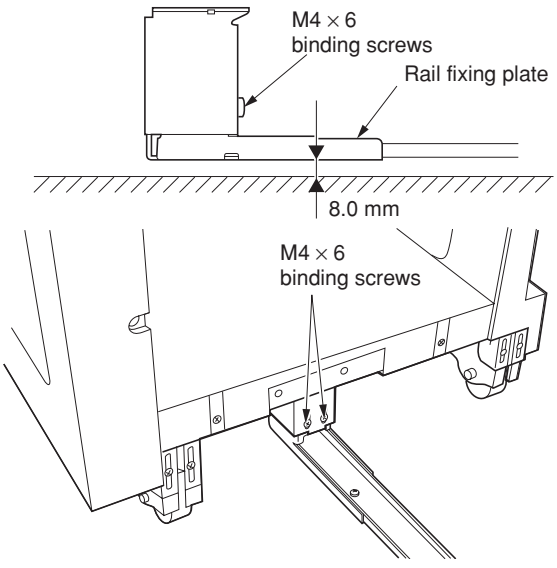


Figure 1-3-54

21. Fit the eject tray to the finisher by hooking the two claws and secure it using two M4 × 6 binding screws.

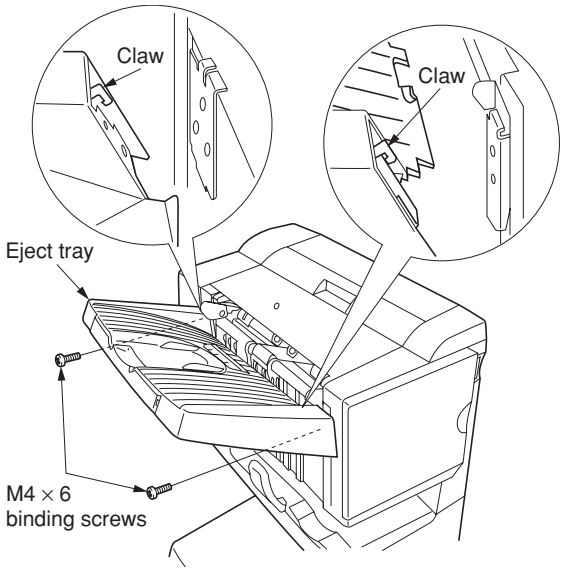


Figure 1-3-55

22. Open the front panel and insert the stapler unit into the finisher.
    When inserting the stapler unit into the finisher, be sure to grasp the upper portion (shaft) of the stapler unit as shown in the illustration. If the plate in the middle portion (stay transport) is grasped, the unit may be deformed, resulting in paper jams.
23. Close the front panel.

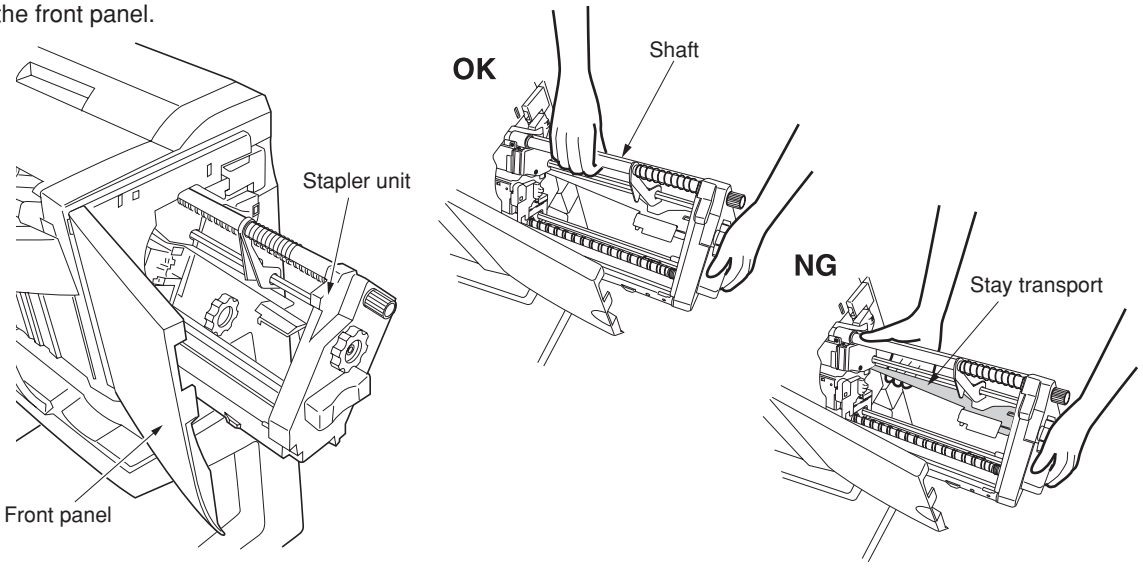


Figure 1-3-56

Installing the switchback unit

1. Remove the two support rubbers on the right of the finisher and loosely fit the two M3 × 8 binding screws in their places.
2. Remove the two screws.

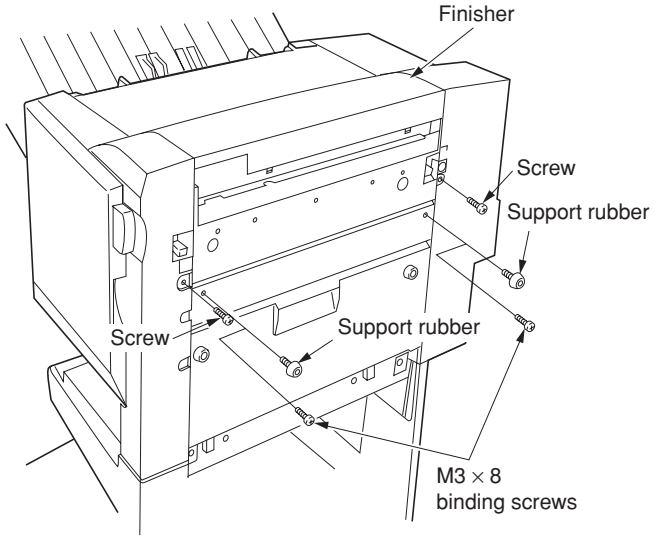


Figure 1-3-57

3. Release the hook of the switchback unit by lifting the release lever.

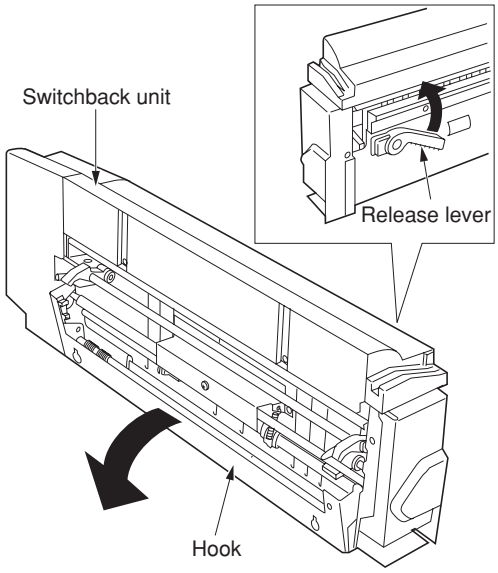


Figure 1-3-58

4. Fit the switchback unit to the finisher by hanging the hook of the switchback unit on the loosely fitted M3 × 8 binding screws.
5. Tighten the loosely fitted M3 × 8 binding screws.
6. Secure the switchback unit using two M4 × 12 TP screws.
7. Close the switchback unit.

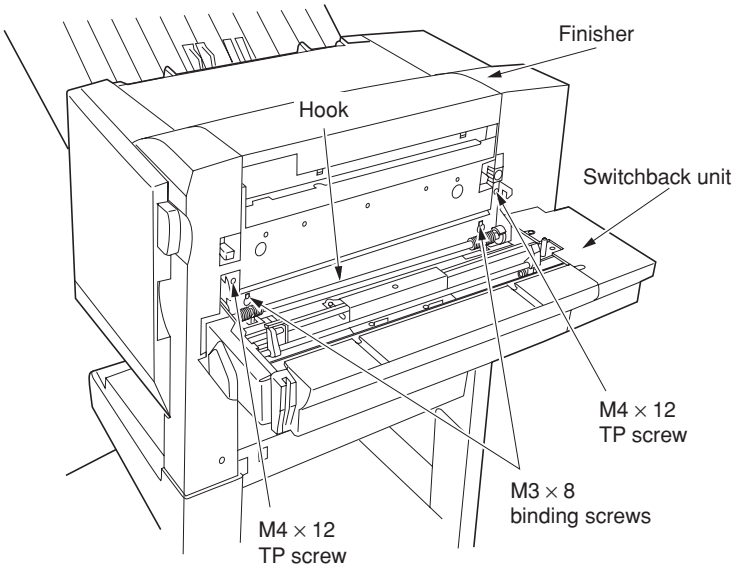


Figure 1-3-59

8. Remove the two screws from the cover of the finisher.

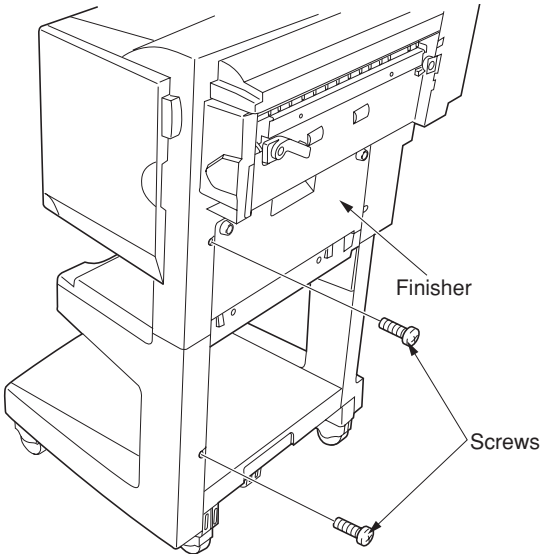


Figure 1-3-60

9. Insert the rib of the front cover into the groove in the top cover of the switchback unit, and then fit the front cover to the finisher.
10. Secure the front cover by fitting an M4 × 12 TP screw and M4 × 16 TP screw into the holes where screws were inserted (see step 8).

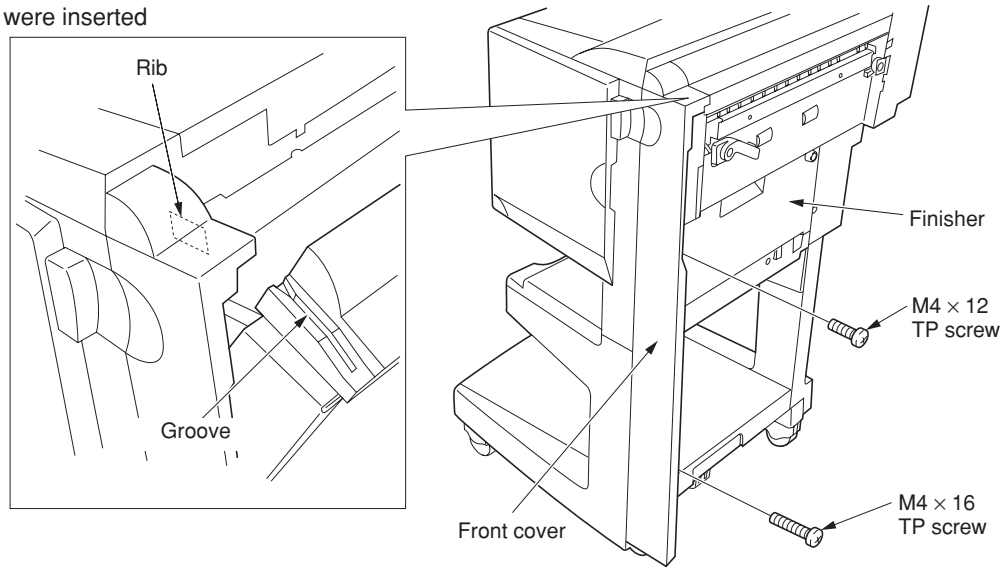


Figure 1-3-61

11. Fit the two support rubbers removed in step 1 to the switchback unit.
12. If the finisher and the copier do not engage securely, perform the following finisher height adjustment.

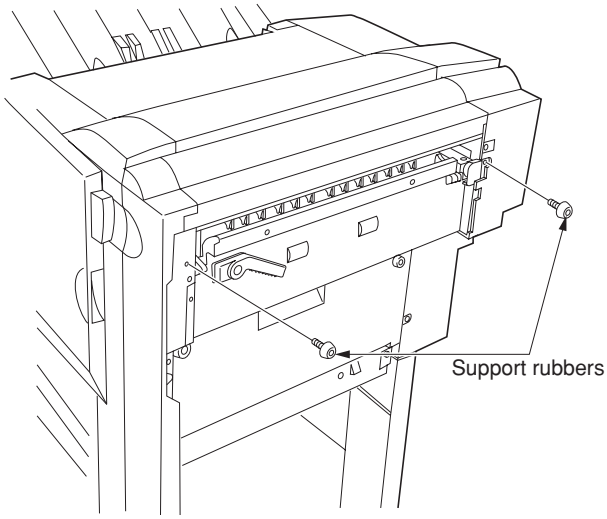


Figure 1-3-62

Adjusting the height of the finisher

1. Remove the two covers from the lower left part of the finisher by removing one screw each.
2. Remove the four caps from above the four casters of the finisher.

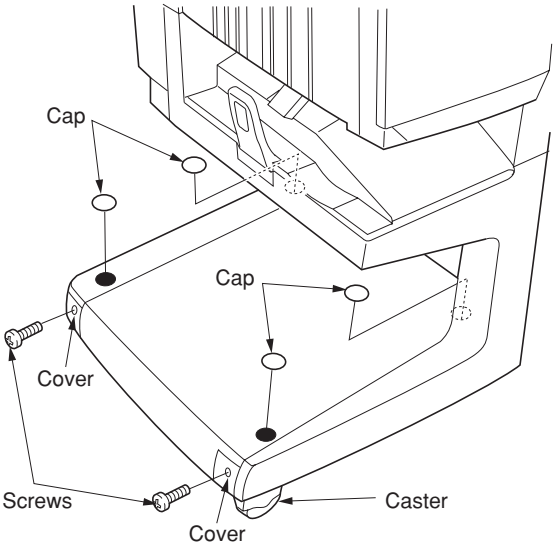


Figure 1-3-63

3. Loosen the two screws on each of the four casters.
4. Adjust the height of the rear right caster by turning its adjustment bolt using a cross-headed screwdriver so that the axis of the pin of the latch catch is aligned with the middle of the three markings on the right of the slot of the finisher or switchback unit when the finisher is joined to the copier (viewed from the machine front).
   Note: Turning the adjustment bolts clockwise lowers the finisher, while turning them counterclockwise lifts the finisher.

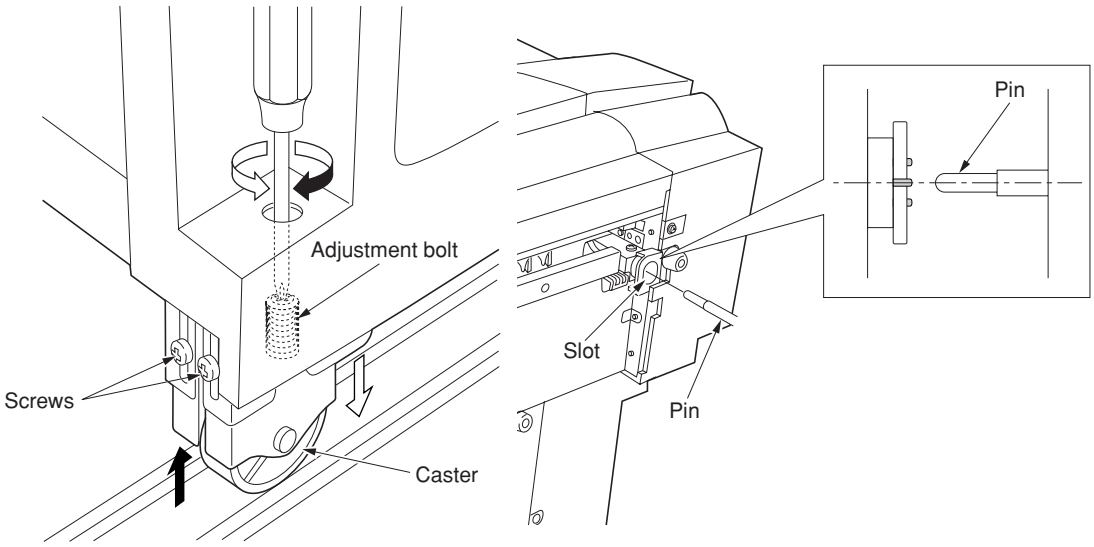


Figure 1-3-64

5. Adjust the height of the front right caster in the same manner as in step 4 so that the axis of the pin of the latch catch is aligned with the marking above the slot and the center of the two hooks on the finisher align with the center of the holes on the latch catch when the finisher is joined to the copier (viewed from above).

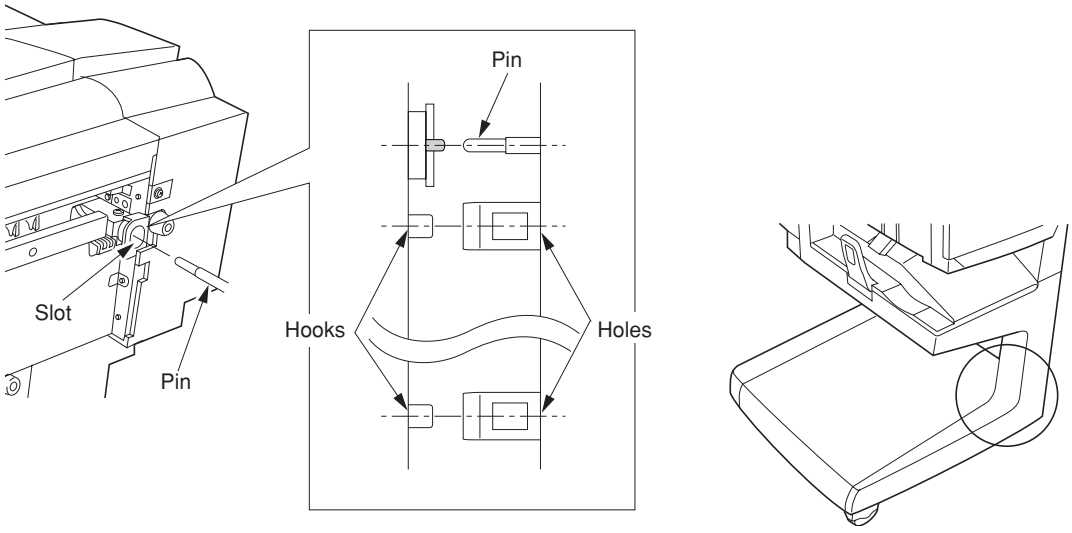


Figure 1-3-65

When the switchback unit is installed

6. Adjust the height of the front right caster in the same manner as in step 4 so that the hook of the latch catch is aligned with the projection of the switchback unit when the finisher is joined to the copier (viewed from front).

When the switchback unit is not installed

6. Adjust the height of the front right caster in the same manner as in step 4 so that the center of the hook of the latch catch is aligned with the marking of the finisher when the finisher is joined to the copier (viewed from front).

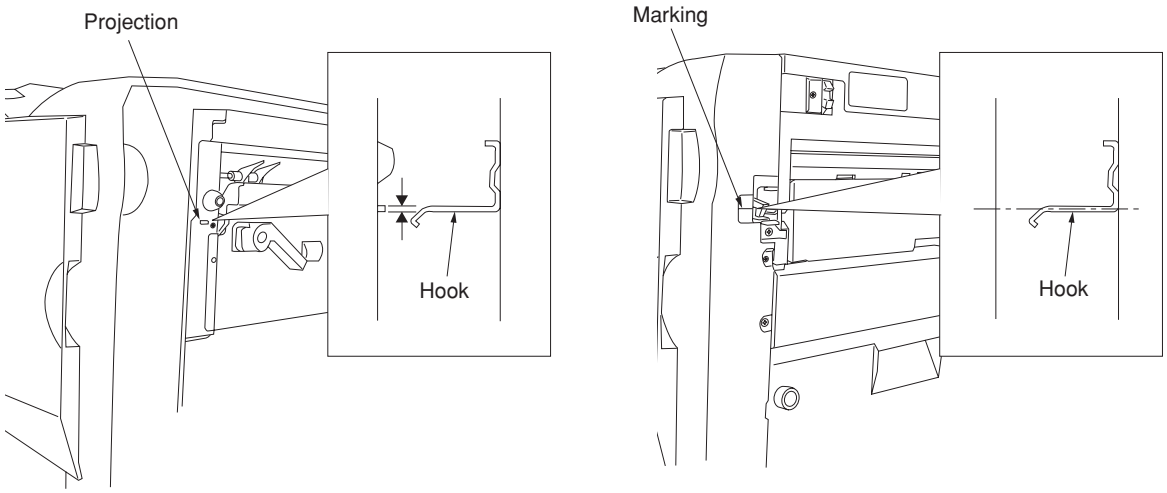


Figure 1-3-66

7. Adjust the height of the left two casters in the same manner as in step 4 so that the top and bottom gaps (A) between the finisher and the copier are the same when the finisher is detached from the copier.
8. Retighten the two screws on each of the four casters.
9. Refut the two covers and four caps.

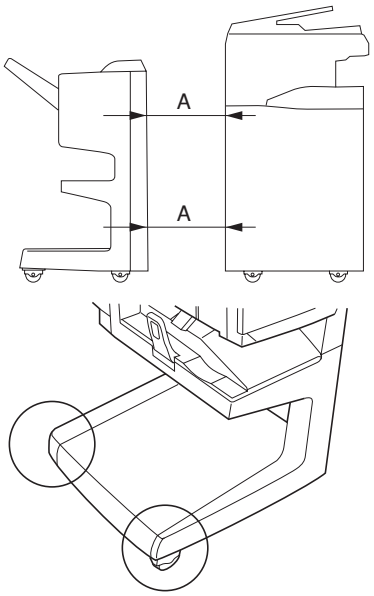


Figure 1-3-67

Connecting the signal cable

1. Connect the signal cable of the finisher to the copier. If the switchback unit has been installed, connect the signal cable of the switchback unit, as well.
2. Insert the copier power plug to the wall outlet and turn the power switch on.
3. Make test copeies and check that the finisher and the switchback unit operate correctly.

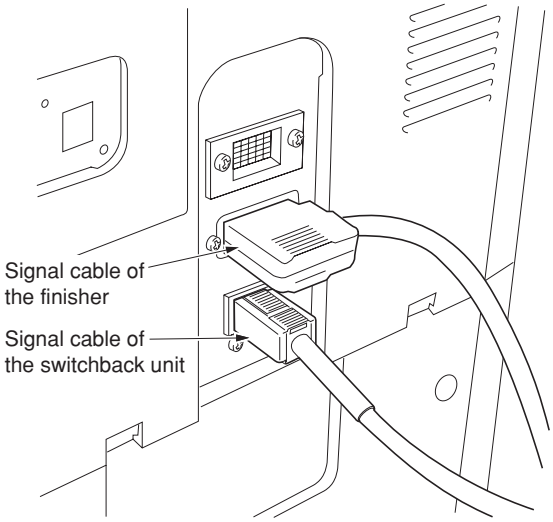


Figure 1-3-68

Setting the booklet stapling position

1. Enter the maintenance mode and run U246.
2. Select "Saddle finisher" and press the start key.
3. Select the size to be set. The selected item is displayed in reverse.
4. Change the setting using the cursor up/down keys.
   a: Decrease the preset value.
   b: Increase the preset value.
   *Setting range: –125 to +125
   Initial setting: 0
   Change in value per step: Approx. 0.25 mm
5. Press the start key. The value is set.
6. Press the stop/clear key twice.
7. Run U001 to exit the maintenance mode.

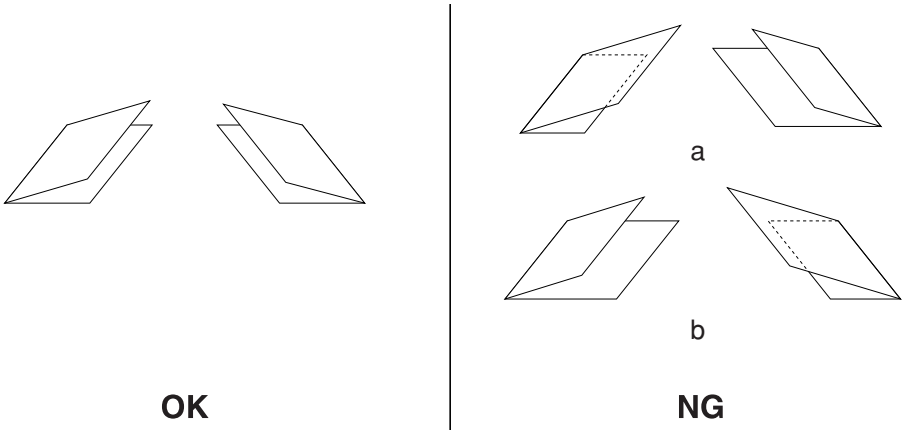


Figure 1-3-69

1-3-8 Installing the sheet-through document processor (option)

Preparation

1. Insert the DP into the copier.

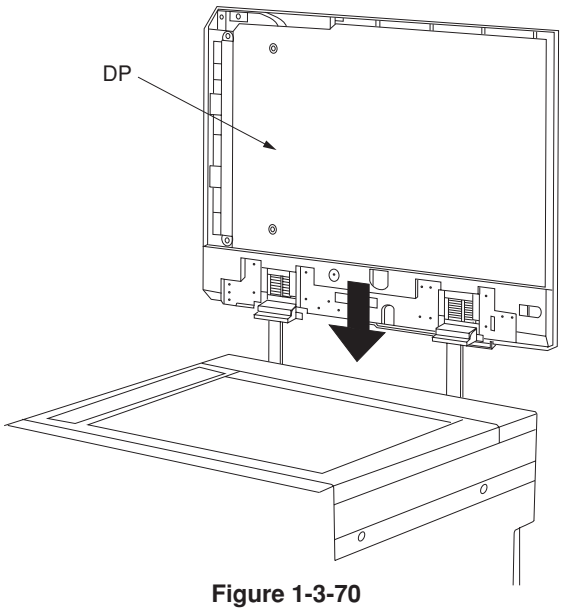


Figure 1-3-70

2. Connect the connector of the DP to the copier.
3. Insert the copier power plug to the wall outlet and turn the power switch on.

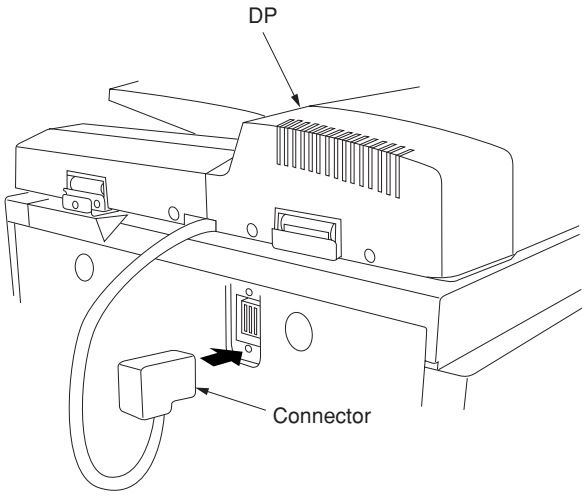


Figure 1-3-71

4. Place the original on the DP and make a test copy. Check the operation and the copy image.
5. If the copy image is different from the original, run the following adjustment.
   - Maintenance item U070 (sub-scan line adjustment) (see page 1-4-25)
   - Maintenance item U071 (leading edge timing adjustment) (see page 1-4-26)
   - Maintenance item U072 (center line adjustment) (see page 1-4-27)

1-3-9 Installing the Printing System (option)

Procedure

1. Remove 2 screws and take off the cover.

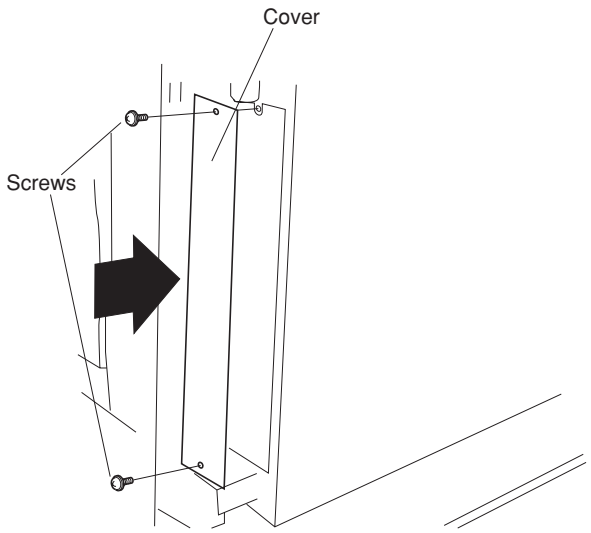


Figure 1-3-72

2. Push the printing system all the way in along the rails, and fasten it with 2 screws.

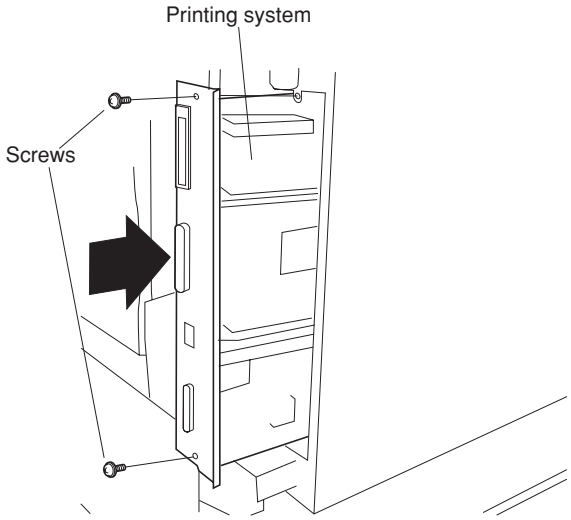


Figure 1-3-73

Install the (optional) network printer board.

3. Remove 2 screws and take off the cover.
4. Push the network printer board all the way in along the rails, and fasten it with 2 screws.

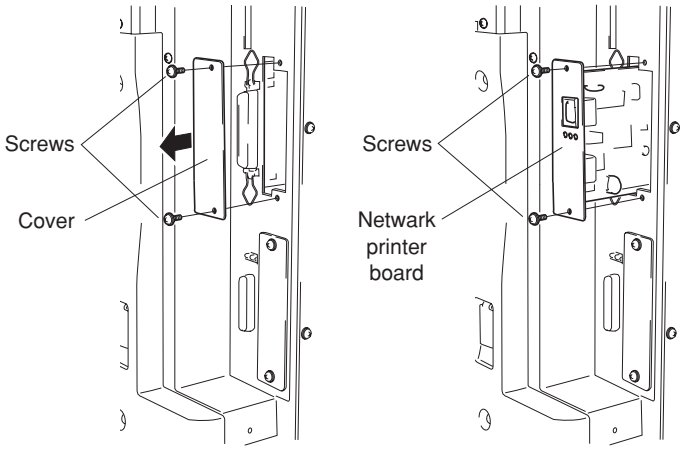


Figure 1-3-74

Install the (optional) hard disk.

5. Remove 2 screws and take off the cover.
6. Push the hard disk all the way in along the rails, and fasten it with 2 screws.

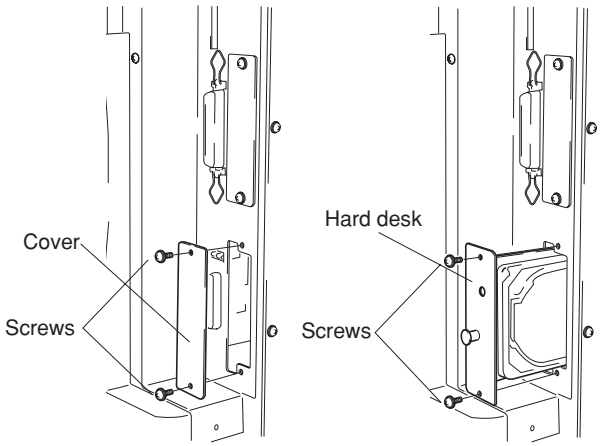


Figure 1-3-75

Installing the Optional Memory DIMM

7. Remove the printing system, and insert the optional memory DIMM firmly into either of the memory slots. Push the DIMM firmly into the slot so that the two hooks (one hook at each end of the slot) snap closed.
   - The board provides two DIMM slots, and can accept up to two optional DIMMs. If installing a single DIMM, you can use either slot.

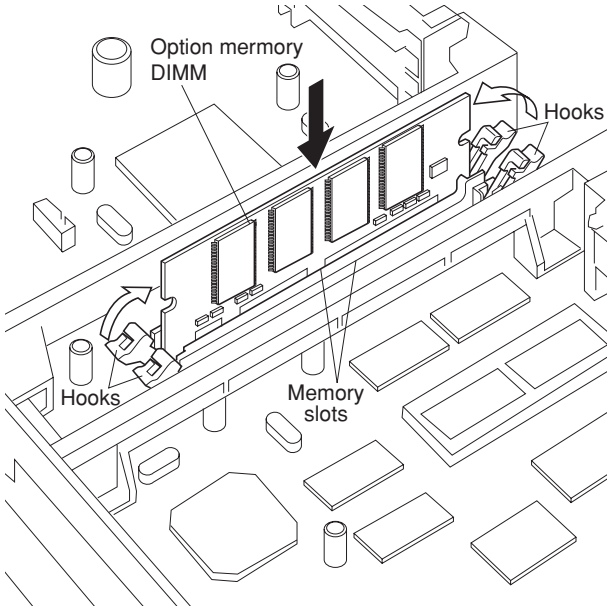


Figure 1-3-76

1-3-10 Installing the Scanning System (option)

Procedure

1. Remove 13 screws and take off the rear cover.

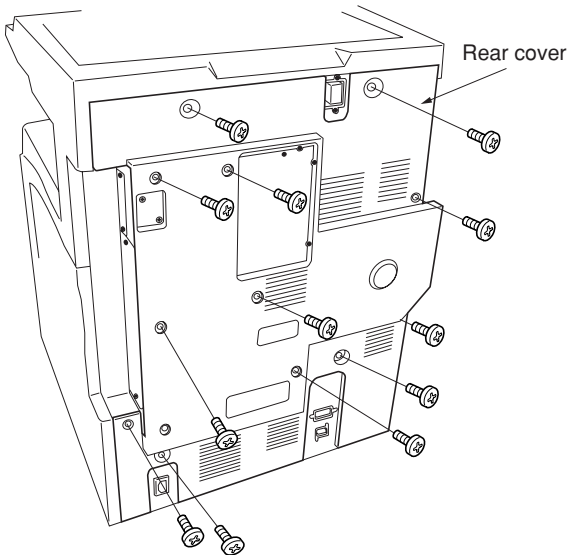


Figure 1-3-77

- If the printing system is installed

2. Remove the 2 screws holding the printer system in place, and pull the printing system out of the shield cover.

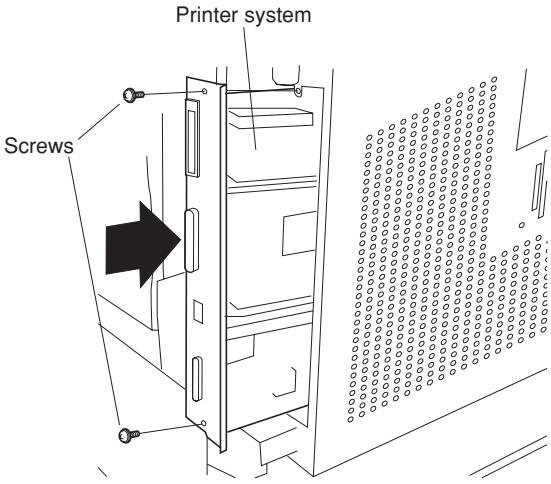


Figure 1-3-78

3. Remove 13 screws and take off the shield cover.

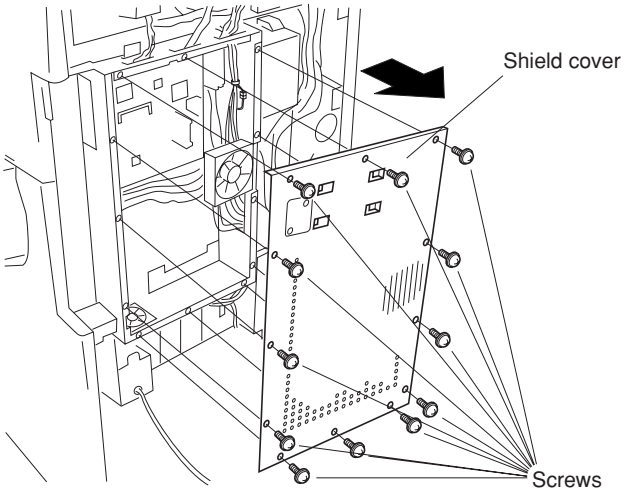


Figure 1-3-79

4. Remove 2 screws, and take off the cover.

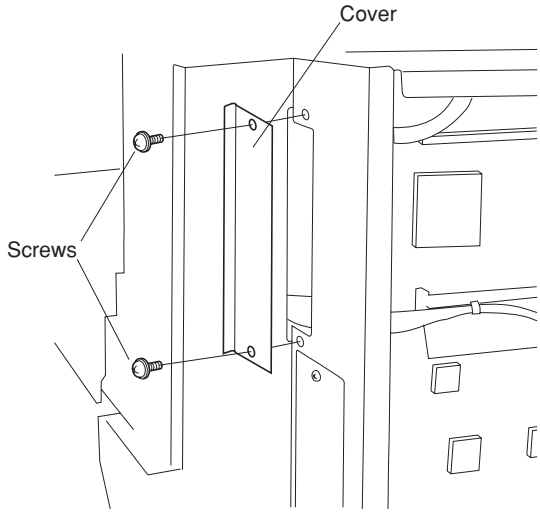


Figure 1-3-80

5. Firmly push connector CN1 on the scanner board all the way into connector YC46 on the main PCB.
6. Fasten the scanner board with 2 screws.

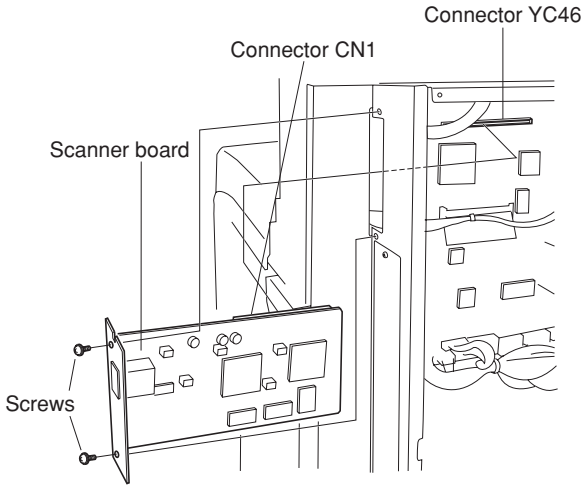


Figure 1-3-81

7. Fasten the shield cover into place with 13 screws.

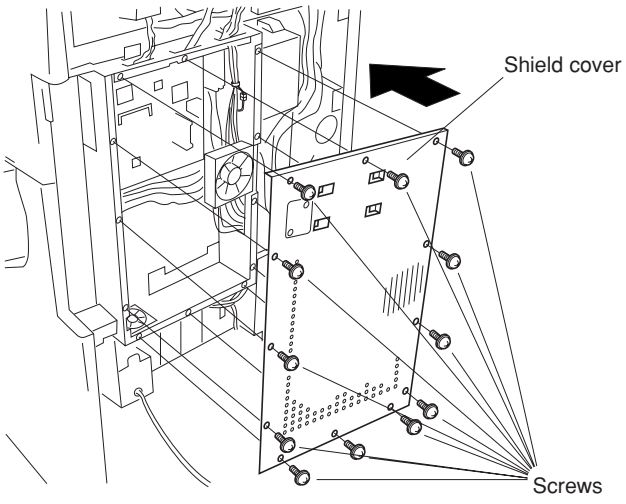


Figure 1-3-82

• If the printing system was installed

8. Reinstall the printing system into the shield cover, fastening it into place with 2 screws.

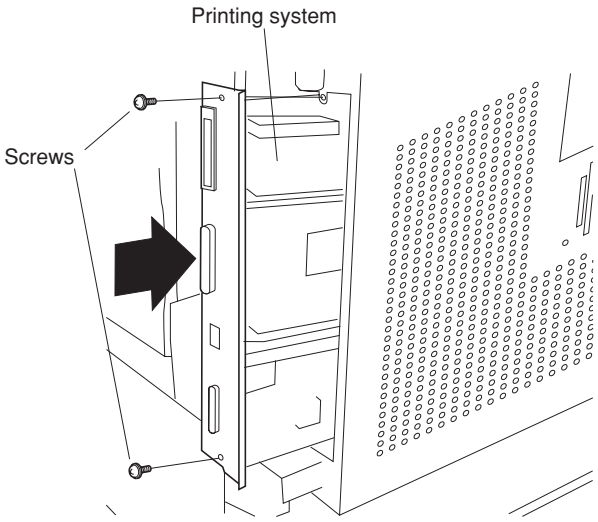


Figure 1-3-83

9. Reattach the rear cover with 13 screws.

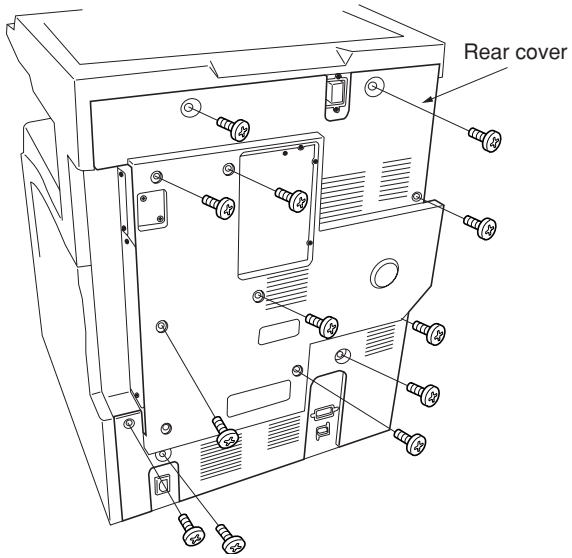


Figure 1-3-84

1-3-11 Installing the built-in finisher (option)

Preparation

Note: When placing the transfer unit on the floor or the like, be sure to place it upside down. If not, the stapler mounting plate may be deformed, resulting in a malfunction.

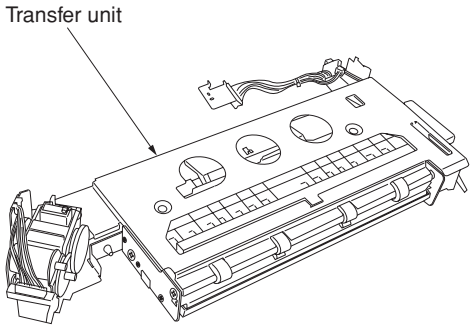


Figure 1-3-85

Procedure

1. Remove the screw and the pin to remove the upper left cover.

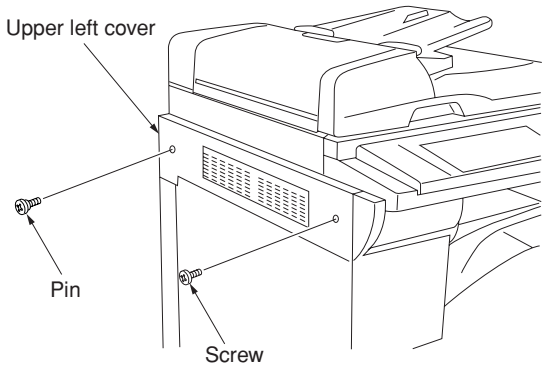


Figure 1-3-86

2. Open the conveying cover and the front cover.
3. Loosen the two screws on the left side and the screw on the front side, open the hook on the right side, and remove the left front cover.

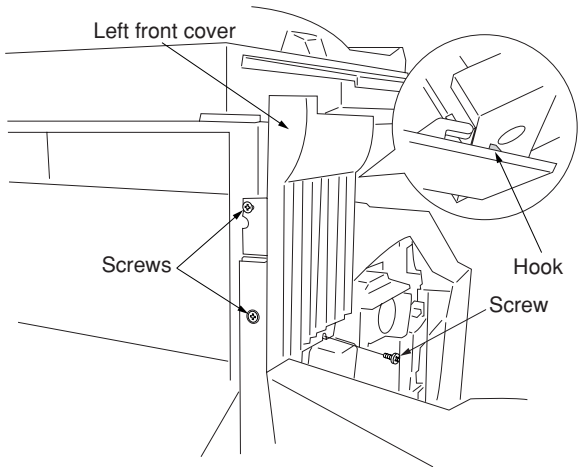


Figure 1-3-87

4. Close the conveying cover and the front cover.
5. Remove the two screws and then remove the ejection cover with the mounting plate.

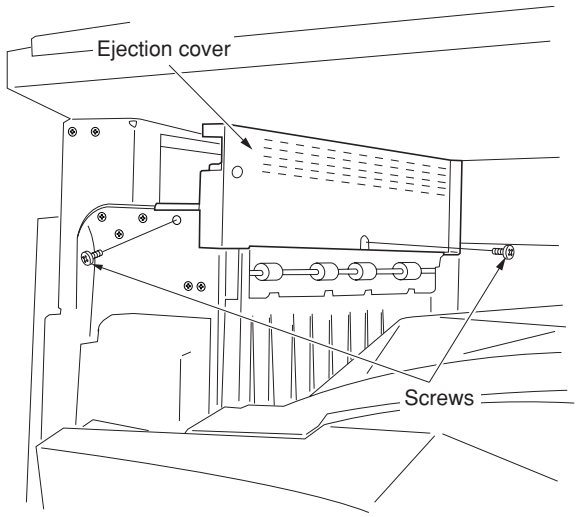


Figure 1-3-88

6. Remove the two screws and then remove the inner ejection cover.

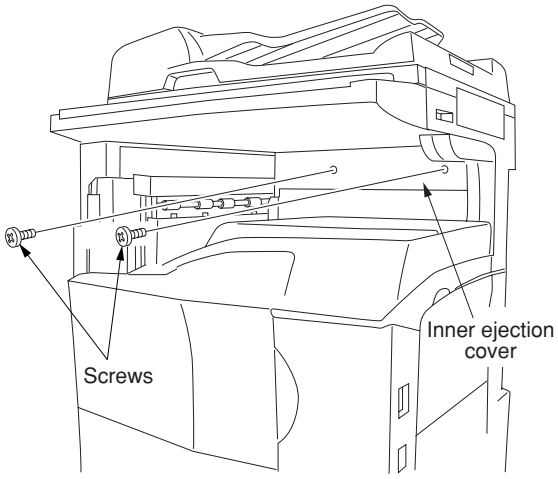


Figure 1-3-89

7. Remove the screw located at the front of the static charge eliminator of the copier, fit the flat spring ejection from the lower side, and secure it with the removed screw.

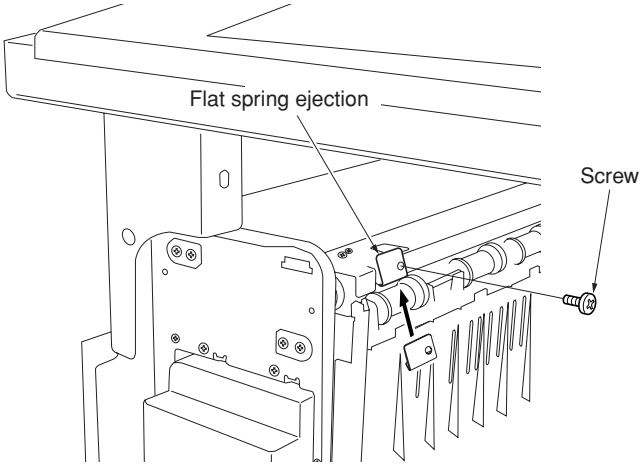


Figure 1-3-90

8. Remove the blue screw from the transfer unit and then remove the mounting plate.
9. Remove the securing tape from the 13-pin connector, pass the wire under the stapler motor, and connect the wire with the 13-pin connector.

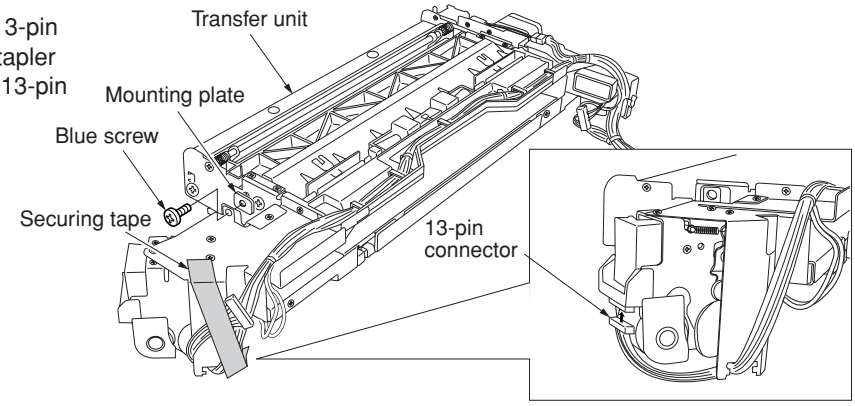


Figure 1-3-91

10. Insert the transfer unit into the copier from the front side and slide it to the left.
    Secure the unit using two +TP-A bronze screws M3 × 05 and the pin that has been fitted to the transfer unit.

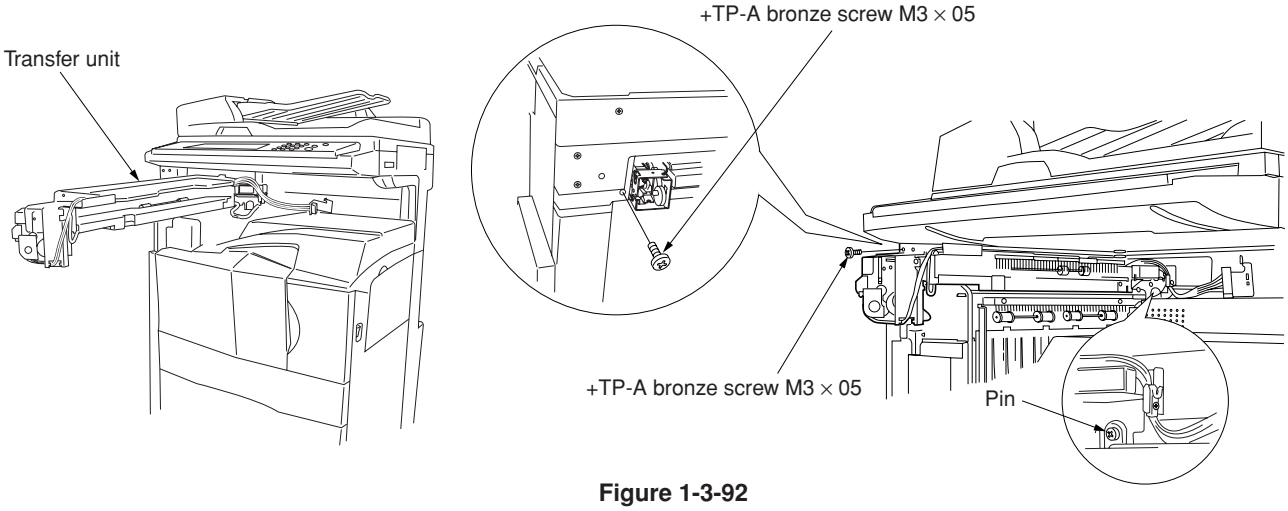


Figure 1-3-92

11. Insert the metal hook of the transfer unit into the oblong hole of the frame of the copier and secure it using a +TP-A bronze screw M3 × 05.
    * Insert the projection of the frame into the hole of the metal hook to position the hook.
    * Arrange the cable to position it under the metal fittings.

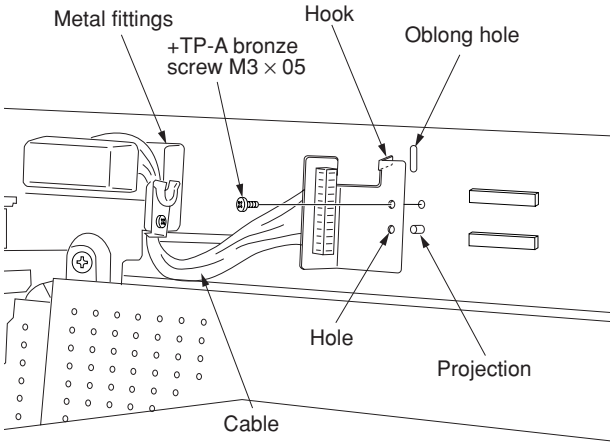


Figure 1-3-93

12. Remove a screw, turn the metal fittings upward, and fit the screw again to the lower hole.

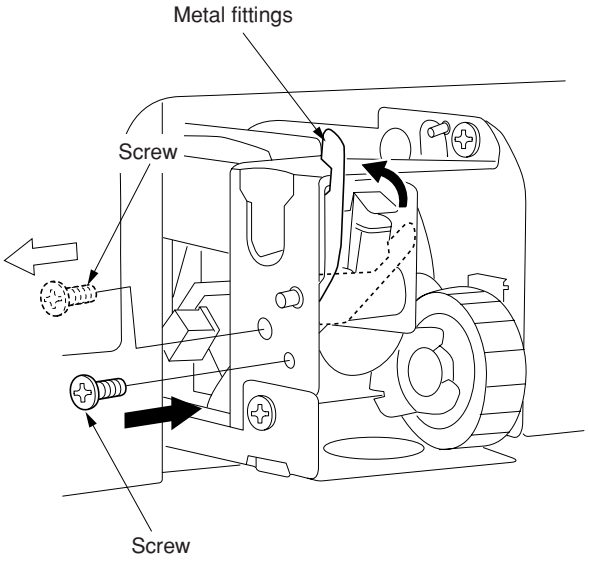


Figure 1-3-94

13. Insert the intermediate tray and connect the connector (white) of the intermediate tray to the transfer unit. Connect the connectors (gray) to the connectors of the copier as shown in the illustration.
Connect the gray connector with more pins to the upper connector and the gray connector with less pins to the lower connector.

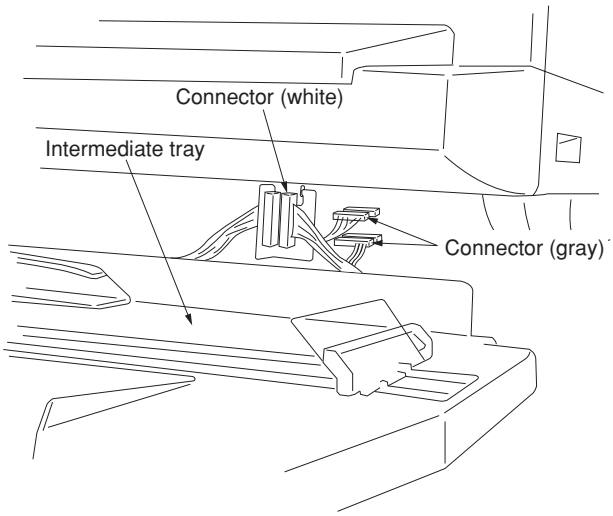


Figure 1-3-95

14. Attach the intermediate tray to the copier as shown in the illustration so that the right and left pins of the intermediate tray are positioned to the recessed portions of the copier and the transfer unit.

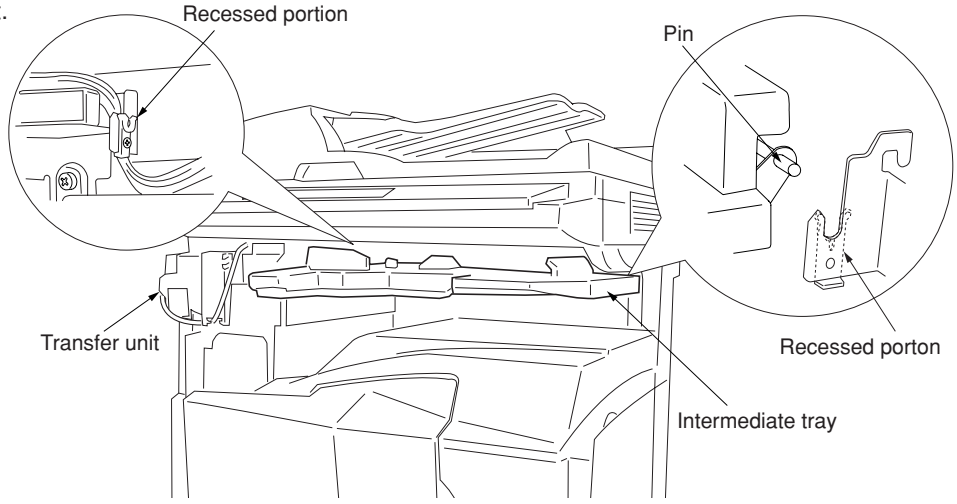


Figure 1-3-96

15. Attach the large ejection cover using the two screws that have secured the upper left cover.

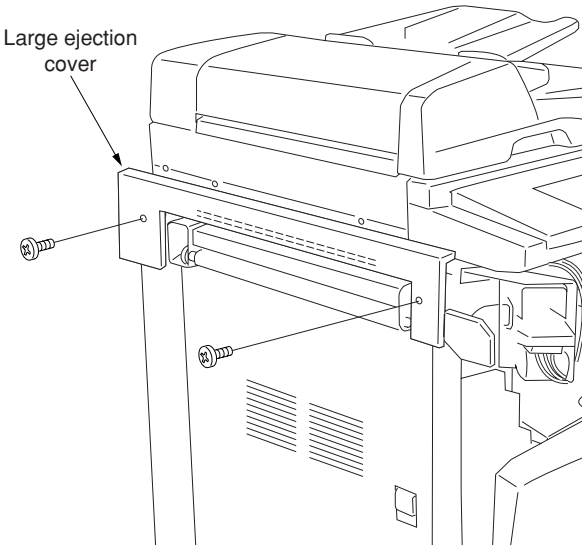


Figure 1-3-97

16. Open the front cover and the conveying cover.
17. Attach the staple cover.
    * Tighten the two screws on the left side to secure the cover with the copier, secure the front side using the screw that has been removed in step 3, and secure the right side using a +TP-A chrome screw M3 × 05.

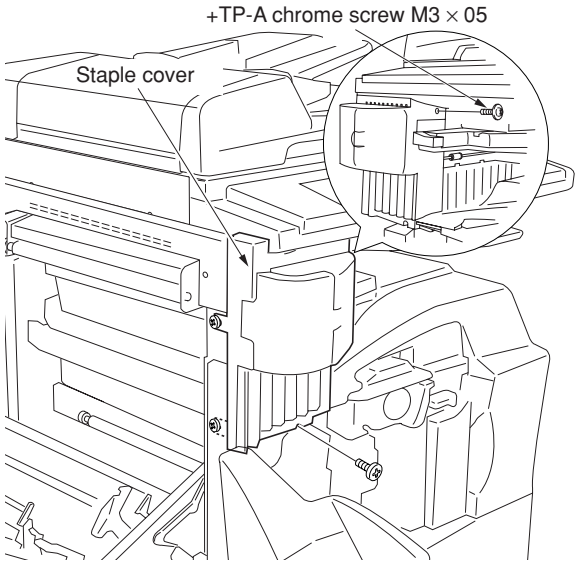


Figure 1-3-98

18. Close the conveying cover and the front cover. Attach the front ejection cover and the rear ejection cover using a +TP-A chrome screw M3 × 05 each.

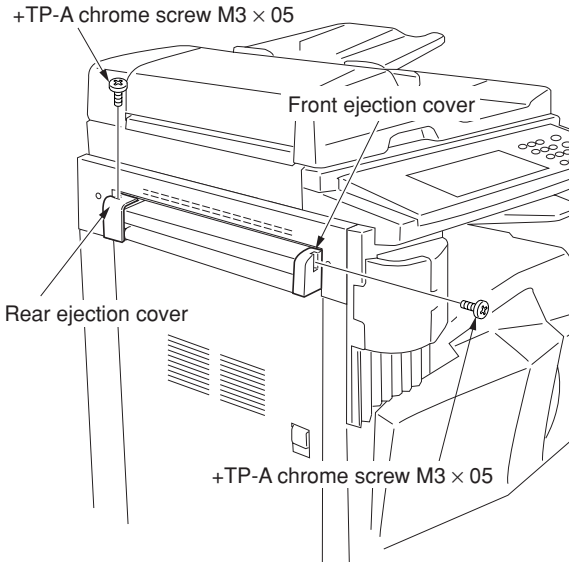


Figure 1-3-99

19. Attach the copy tray.

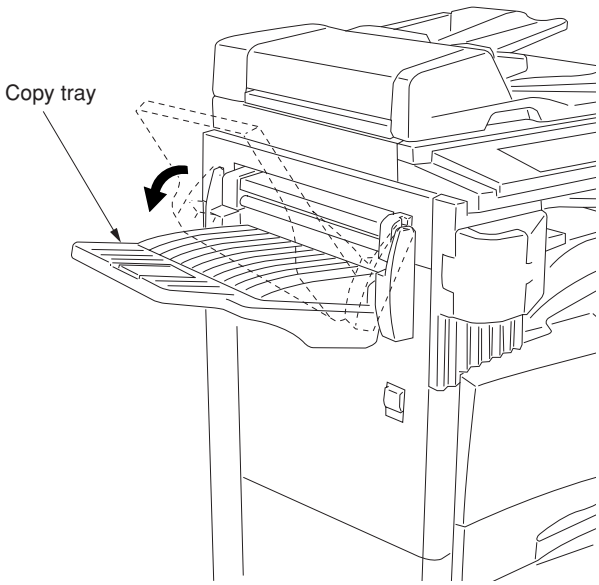


Figure 1-3-100

20. Open the staple cover and insert the staple cartridge into the stapler.
21. Close the staple cover.
22. Insert the power plug of the copier into an outlet and turn the power switch on.
23. Select the staple mode and make a stapled copy to check that stapling is performed properly.

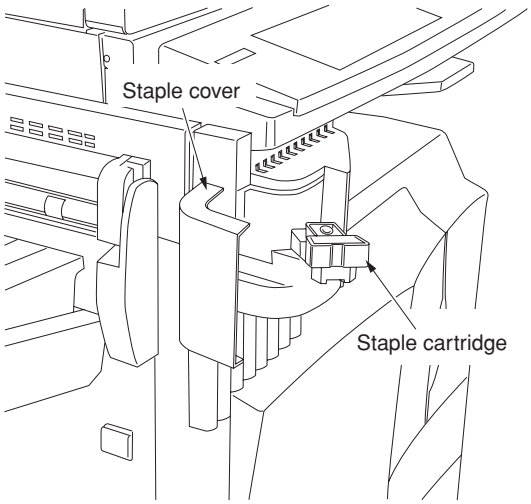


Figure 1-3-101

1-3-12 Installing the job separator (option)

Preparation

1. Insert the LED PCB into the job separator and connect the 2-pin connector of the LED PCB into the 2-pin connector of the job separator.
   * Arrange the wire into the two grooves of the job separator.

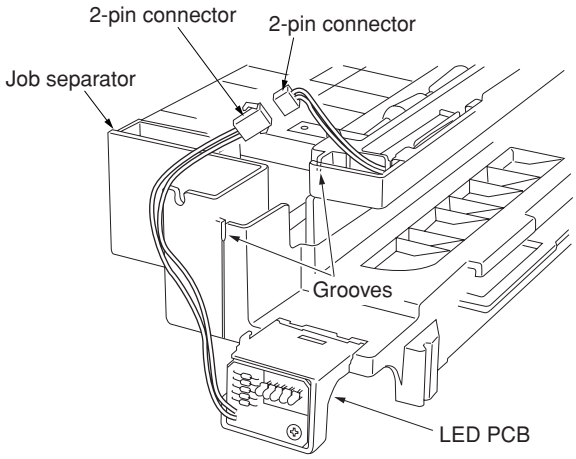


Figure 1-3-102

2. Open the conveying cover and the front cover.
3. Loosen the two left screws on the left side, remove the screw on the front side, open the hook on the right side, and remove the left front cover.
4. Close the conveying cover and the front cover.

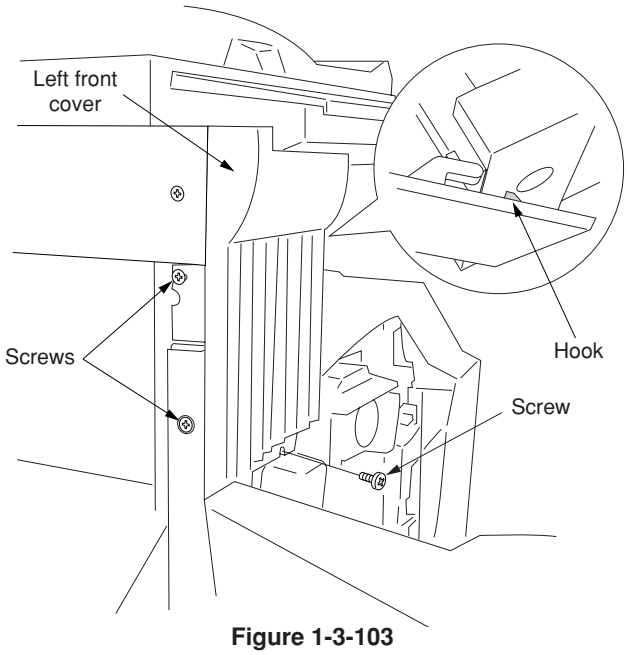


Figure 1-3-103

5. Remove the two screws and remove the ejection cover with the mounting plate.

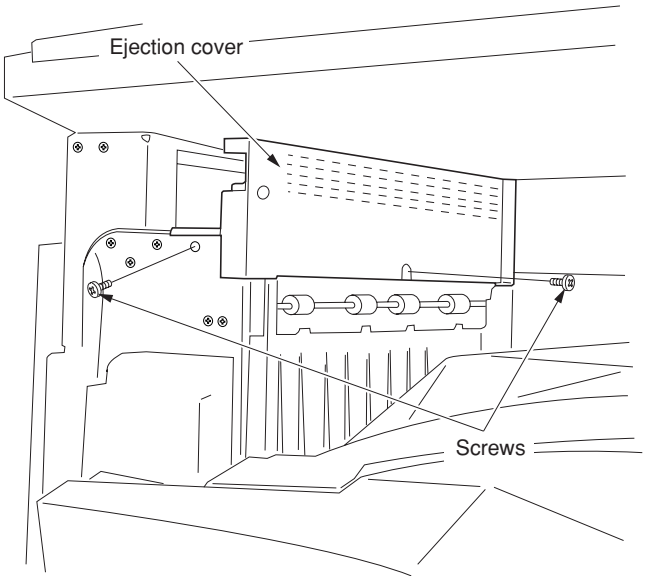


Figure 1-3-104

6. Remove the two screws and then remove the inner ejection cover.

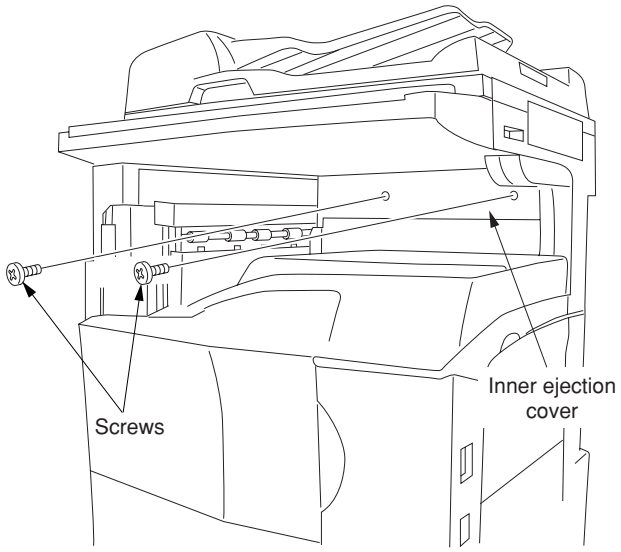


Figure 1-3-105

7. Insert the job separator into the copier from the front side and slide it to the left. Secure the front side using a +TP-A bronze screw M3 × 05 and the rear side using a pin.
   * Check to see if the branch pressure lever on the rear side of the job separator has lowered.

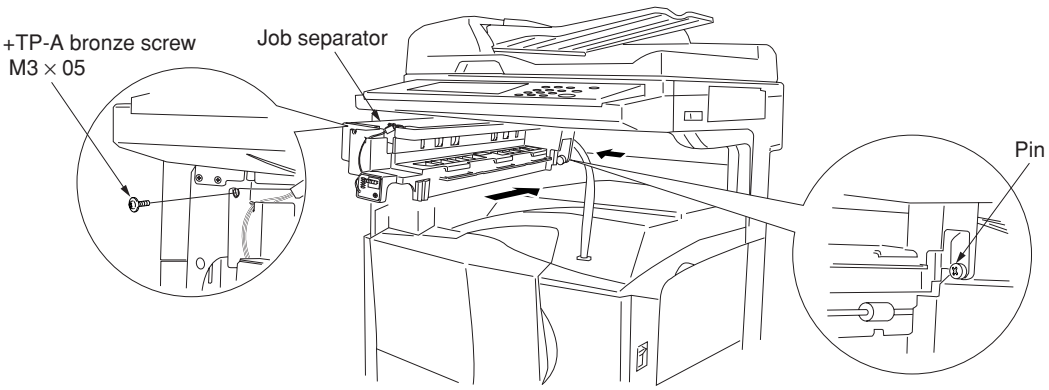


Figure 1-3-106

8. Connect the connector of the job separator to the lower connector of the copier.

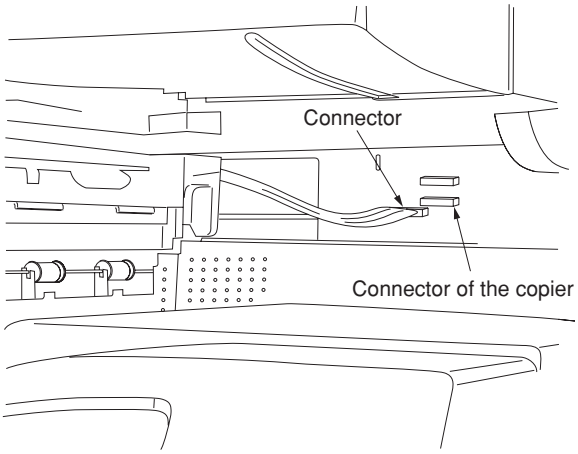


Figure 1-3-107

9. Attach the job separator tray to the rail of the job separator by sliding it from the front side.
   * Insert the fitting section on the right side of the job separator tray into the recessed portion of the copier.
   * Put the hook on the right side onto the pin.
10. Open the left transfer cover and the front cover. Fit the left front cover JS to the location to which the upper front cover that has been removed in step 3 was fitted.

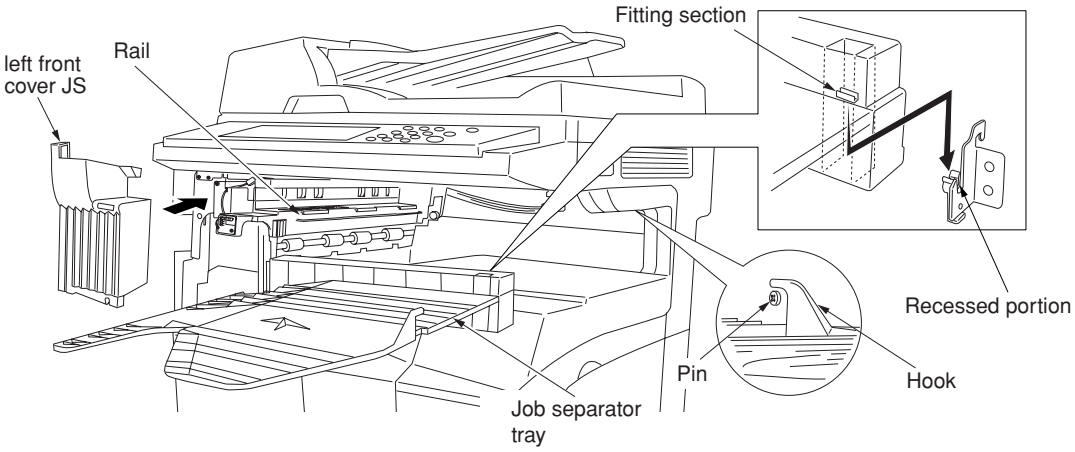


Figure 1-3-108

11. Insert the power plug of the copier into an outlet and turn the power switch on.
12. Set the “copy ejection location” of the machine default settings to job separator.
13. Make a test copy to check that a copy is ejected to the job separator tray.

1-3-13 Installing the Facsimile System (option)

Procedure

1. Remove 13 screws and take off the rear cover.

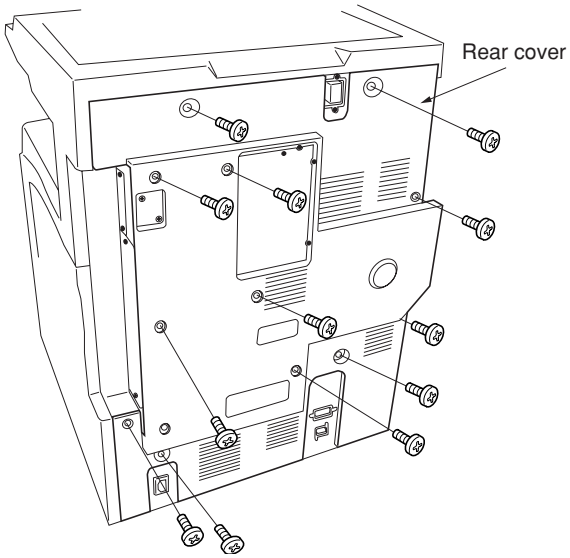


Figure 1-3-109

- If the printing system is installed

2. Remove the 2 screws holding the printer system in place, and pull the printing system out of the shield cover.

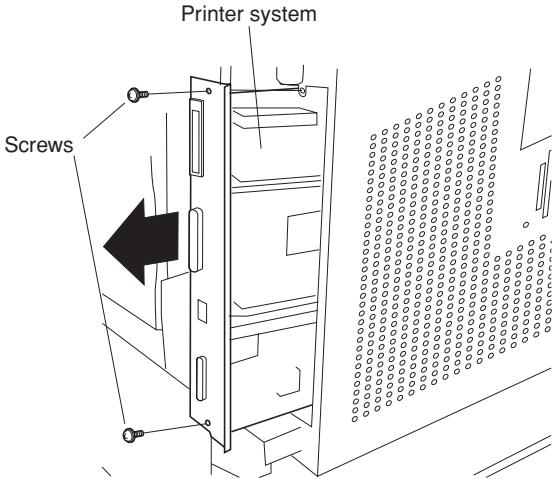


Figure 1-3-110

3. Remove 13 screws and take off the shield cover.

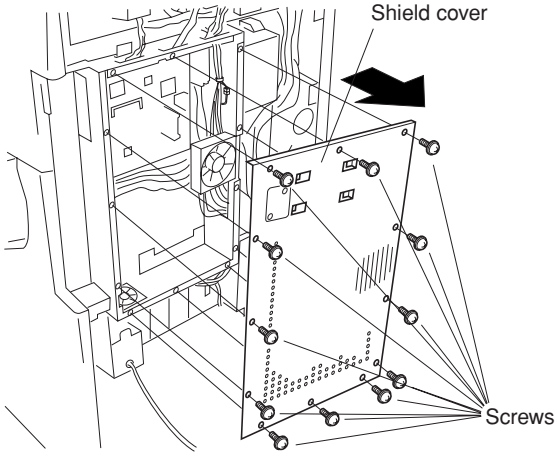


Figure 1-3-111

4. Move the film out of the way to the left, and fasten the fax board into place using four M3 × 06 chrome binding screws.

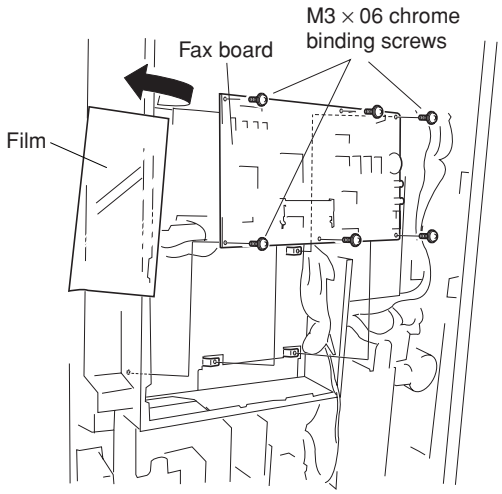


Figure 1-3-112

5. Connect the NCU cable to connector CN1 on the NCU board assembly.

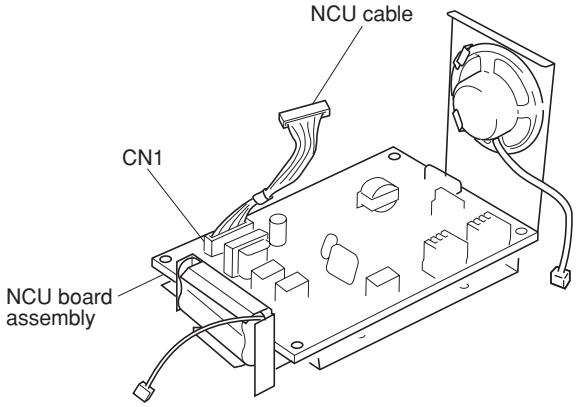


Figure 1-3-113

6. Fasten the NCU board assembly into place from the bottom with two M3 × 06 chrome binding screws.
7. Connect the three connectors from the NCU board assembly to the corresponding connectors on the fax board, as follows:
   • Speaker 2-pin connector → YC7
   • NCU board connector → YC3
   • Battery connector → YC6

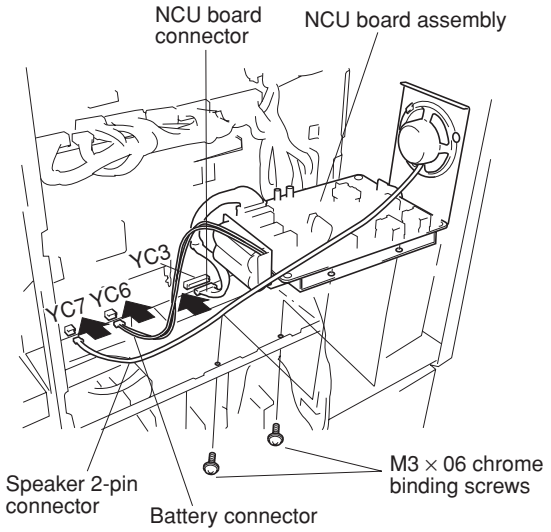


Figure 1-3-114

8. Remove the film that fixes the three positive connectors of the power source PCB from the optional interface mounting plate.
   Important: Dispose of the film that has been removed.

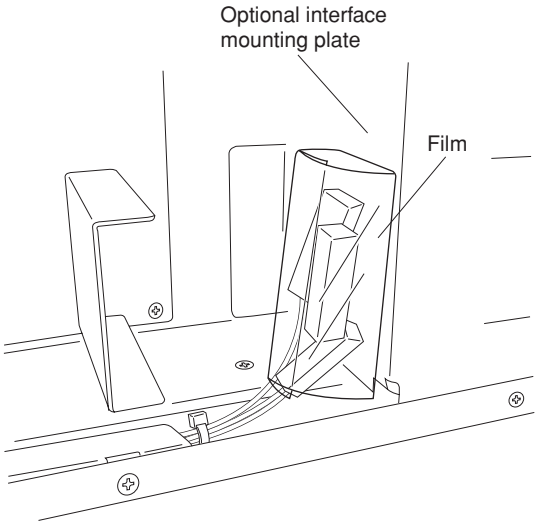


Figure 1-3-115

9. Connect the FAX-PCB-Power cable to connector CN1 on the auxiliary power source PCB assembly.

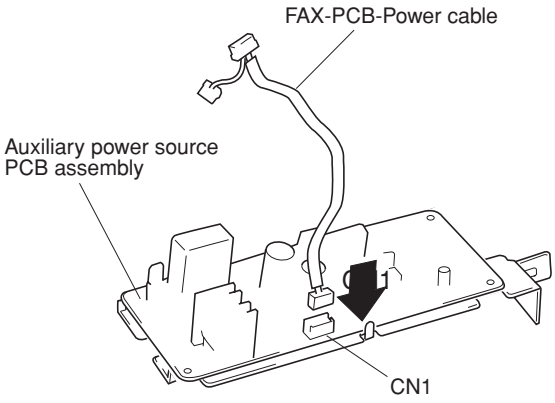


Figure 1-3-116

10. Connect the three positive connectors on the power board to the corresponding connectors on the auxiliary power source PCB assembly, as follows.
    • White positive connector → TB1 (white)
    • Green positive connector → TB2 (green)
    • Small white positive connector → TB3

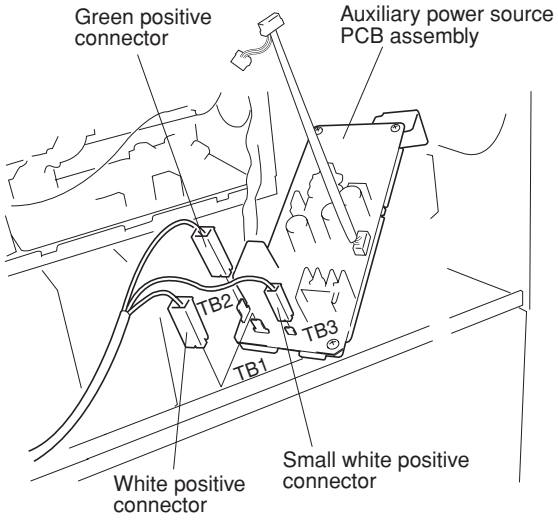


Figure 1-3-117

11. Fit the catch on the auxiliary power unit into the mount hole in the copier, and fasten the auxiliary power unit into place with one M3 × 06 chrome binding screw.

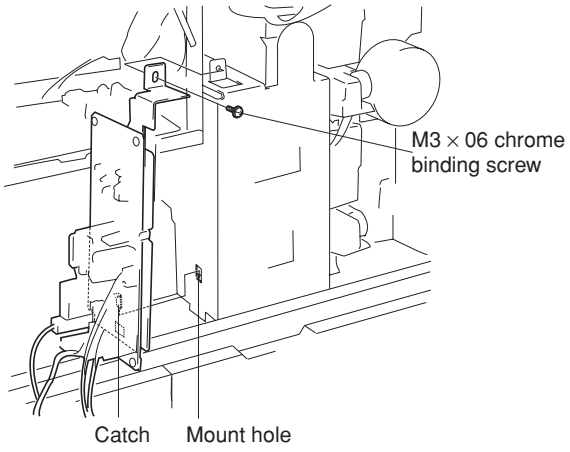


Figure 1-3-118

12. Through the opening of controller-box above the speaker, connect the FAX-PCB-Power cable on the auxiliary power source PCB assembly to connector YC8 on the fax board.
13. Connect the 2-pin connector to the 2-pin connector with green cable.

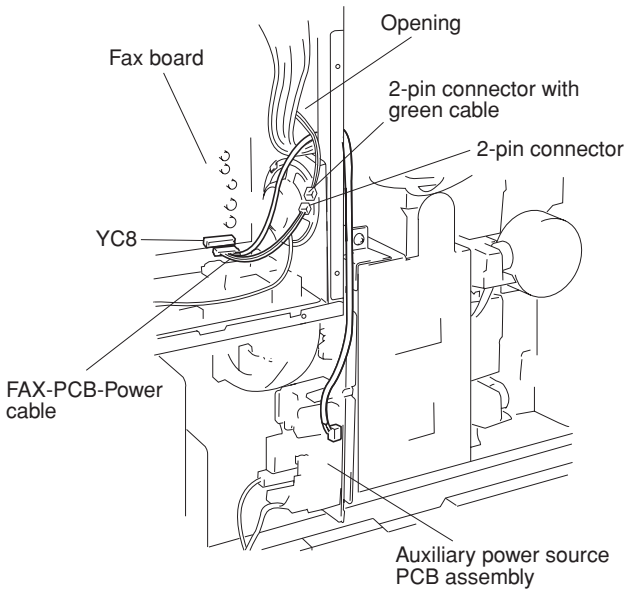


Figure 1-3-119

14. Unlock YC1 on the fax board by pulling its connector housing.
15. Hold the fax cable with its conductive side facing up, insert it into connector YC1, then push the housing back in to lock the connector.
16. Hold the other end of the fax cable with its conductive side facing down, and connect it to connector YC44 on the main PCB. (Pull the YC44 housing out to release the connector lock, then insert the cable, and then push the housing back in.)
    Important: Be sure to push the fax cable all the way in, and be sure that the connection is straight. A poor connection may result in a variety of problems.

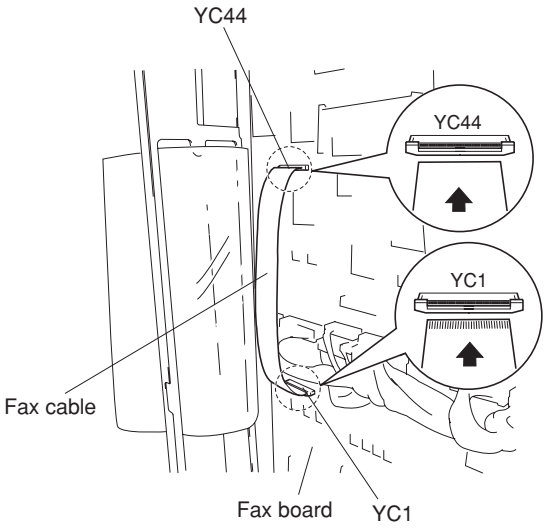


Figure 1-3-120

17. Fasten the shield cover into place with 13 screws.

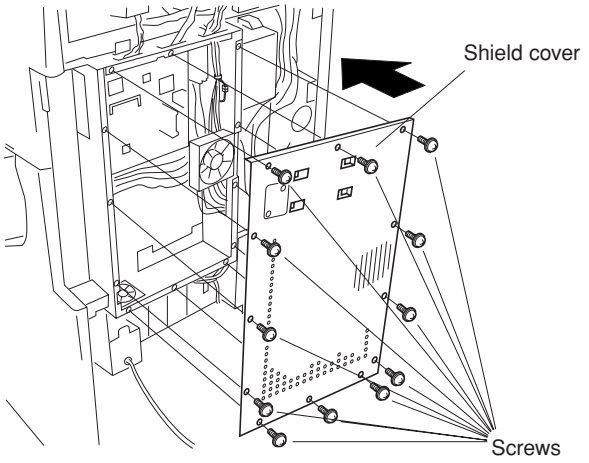


Figure 1-3-121

18. Remove 1 screw and take off the modular cover.

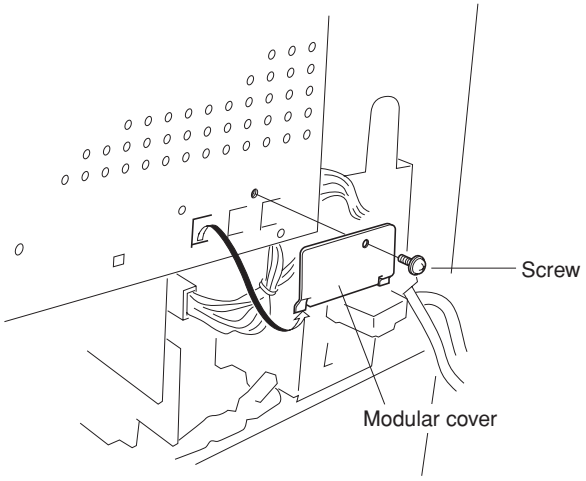


Figure 1-3-122

19. Hang the modular cover onto the holes on the controller-box cover, and fasten it into place with 1 screw.

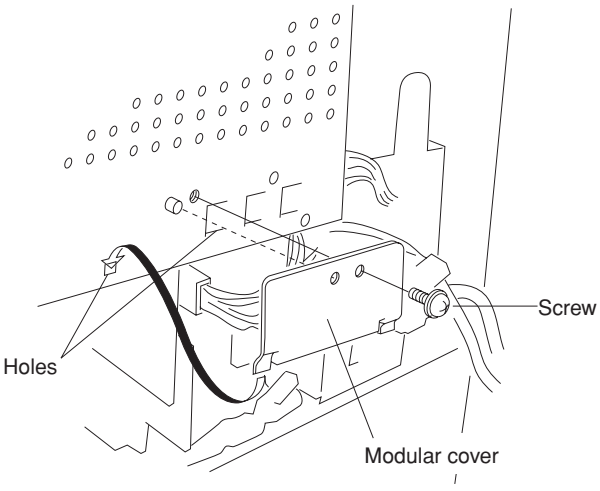


Figure 1-3-123

• If the printing system was installed

20. Reinstall the printing system into the shield cover, fastening it into place with 2 screws.

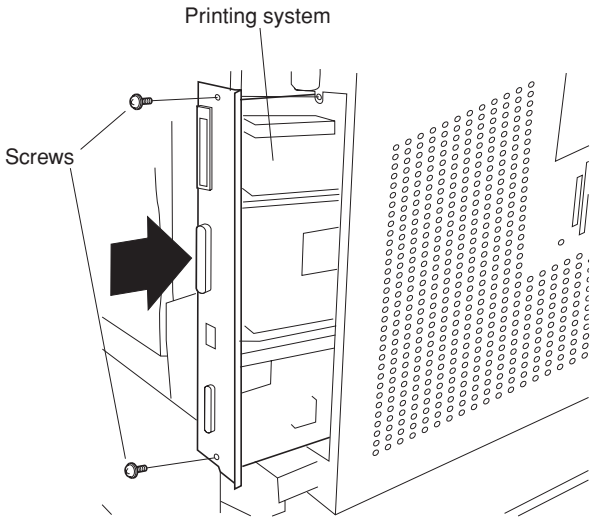


Figure 1-3-124

21. Reattach the rear cover with 13 screws.

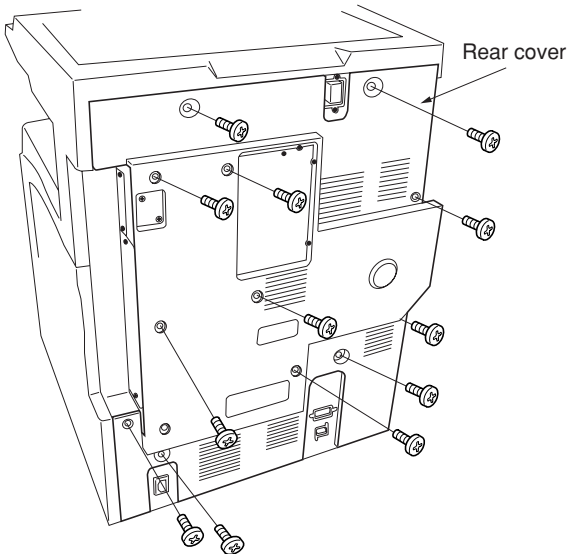


Figure 1-3-125

22. Adhere the certification labels to the rear cover at the locations indicated in the illustration (only 120 V Spac.).

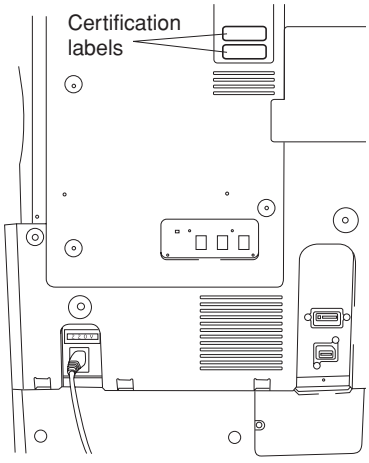


Figure 1-3-126

23. Take the power label from the fax-kit label sheet, and adhere it to the copier directly under the power switch.

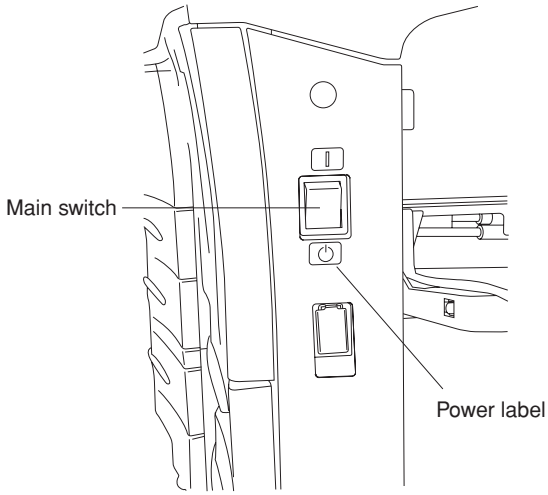


Figure 1-3-127

24. Take the alphabet labels from the fax-lit label sheet, and adhere them above the corresponding numeric keys on the operation panel.
    - In Asia, use the “PQRS TUV WXYZ” label, and do not use the “PRS TUV WXZ” and “OPER” labels.

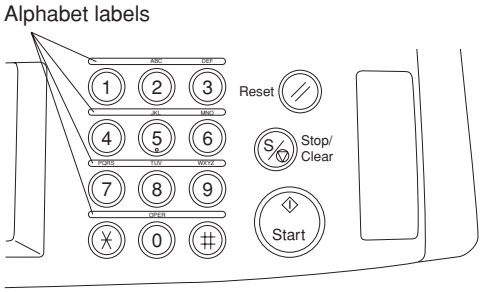


Figure 1-3-128

25. Connect the L terminal to the phone circuit using a modular connector cable.
    Important: On 120 V systems, use the included modular connector cable to make the connection.

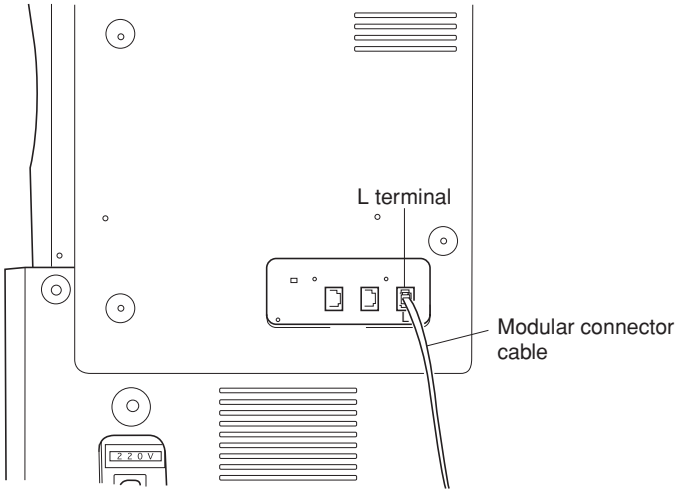


Figure 1-3-129

Initialization procedure after installation of facsimile system

1. Insert the copier power plug to the wall outlet and turn the power switch on.
2. Run maintenance item U601.
3. Enter a destination code using the numeric keys (refer to the destination code list) and then press the start key.
   * Enter a destination code with three digits.

Code	Destination	Code	Destination	Code	Destination
000	Japan	159	South Africa	253	Sweden
009	Australia	169	Thailand		France
080	Hong Kong	181	U.S.A.		Austria
084	Indonesia	242	South America		Switzerland
088	Israel	243	Saudi Arabia		Belgium
108	Malaysia	253	CTR21 (European nations)		Denmark
126	New Zealand		Italy		Finland
136	Peru		Germany		Portugal
137	Philippines		Spain		Ireland
152	Middle East		U.K.		Norway
156	Singapore		Netherlands	254	Taiwan

4. Enter the OEM code (000) and then press the start key.
5. Confirm that the display is changed as shown in the illustration.
   * At the position of @, the version number of the software is displayed.

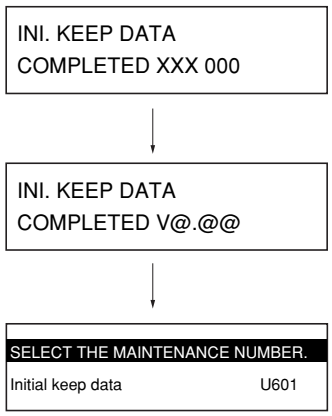


Figure 1-3-130

6. Press the cursor key to change the display to maintenance item U602.
7. Press the start key and confirm that the display is changed as shown in the illustration.
   * At the position of @, the version number of the software is displayed.
8. After completing the installation, run a communications test to confirm that the fax system is working correctly.

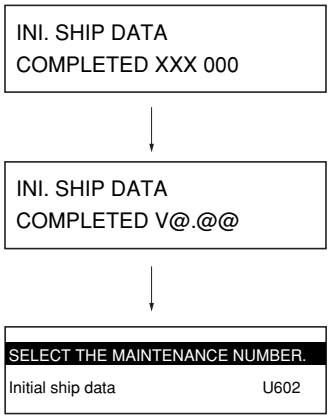


Figure 1-3-131

1-3-14 Installing the hard disk (option)

Procedure

1. Remove the screw and remove the cover for the rear cover.

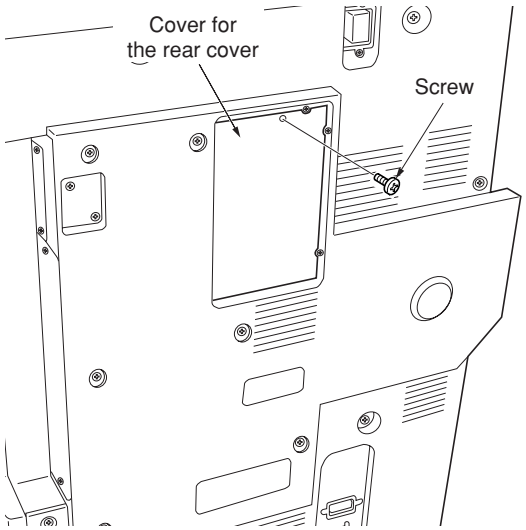


Figure 1-3-132

2. Attach the core to the wire of the hard disk by winding it one turn around the core.
   Attach the core to the 4-pin wire of the machine by winding it one turn around the core.

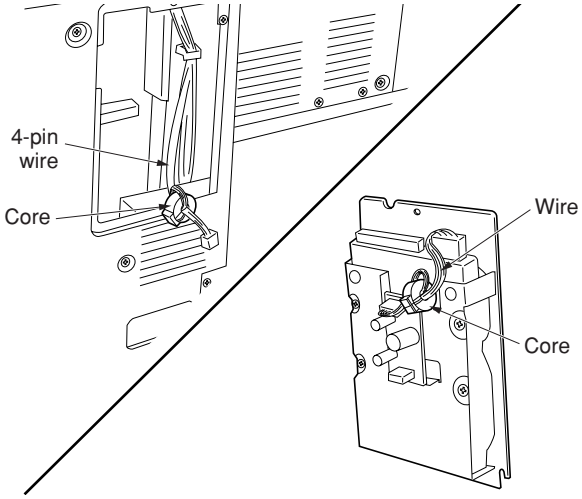


Figure 1-3-133

3. Connect the wire to the YC49 connector on the main PCB and to the connector on the hard disk.
   Caution: Connect the blue connector of the wire to the YC49 connector of the main PCB, and connect the black connector of the wire to the connector of the hard disk.
   Connect the 4-pin connector of the machine to the YC1 connector on the sub power supply PCB of the hard disk.

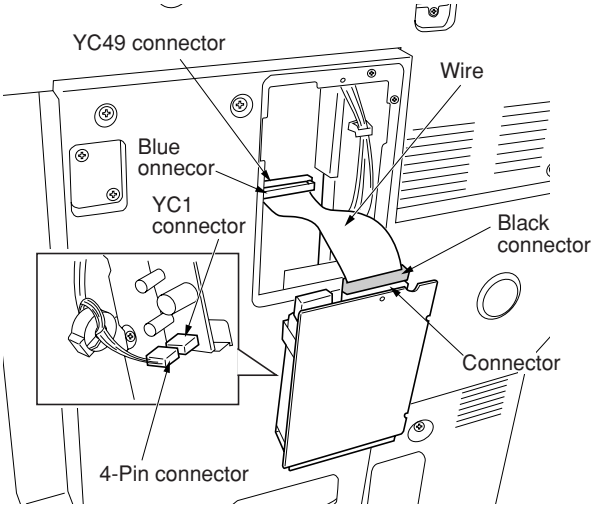


Figure 1-3-134

4. Insert the hard disk and secure it with the screw that has been removed in step 1.
5. Insert the power plug of the copier to the outlet and turn the power switch on.
6. Run maintenance item U024 to initialize the hard disk.

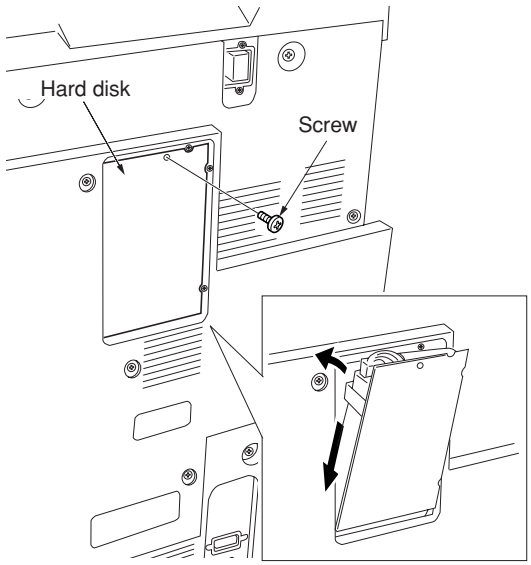


Figure 1-3-135

1-3-15 Installing the 1000-sheet finisher (option)

Procedure

1. Open the left cover of the copier.
2. Remove the two screws securing the feedshift guide assembly and then the assembly.

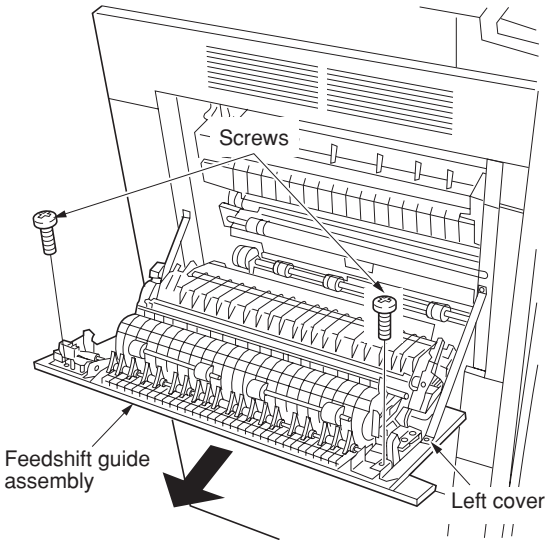


Figure 1-3-136

3. Fit the curl eliminator to the left cover such that the projections on the cover fit into the two ends of the curl eliminator.
4. Secure the curl eliminator using the two screws removed in step 2.

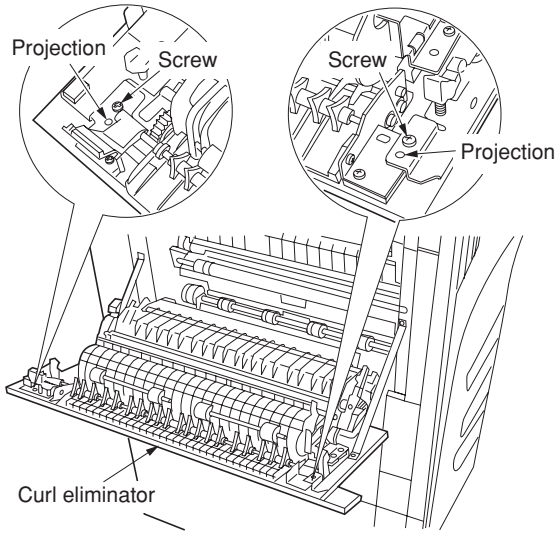


Figure 1-3-137

5. Close the left cover.
6. Fit the latch catch to the left cover using two M4 × 10 binding screws.

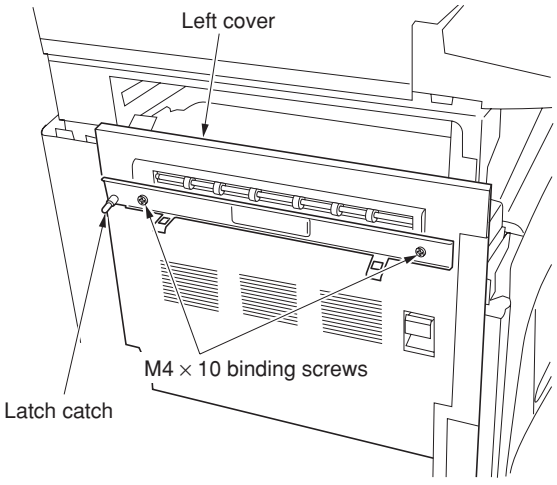


Figure 1-3-138

7. Align the rail retainer with the groove of the guide rail and attach the rail retainer to the guide rail. Make sure that the plate spring of the rail retainer fits into the groove and the edge of the guide rail fits between the pulleys on the reverse side of the rail retainer.

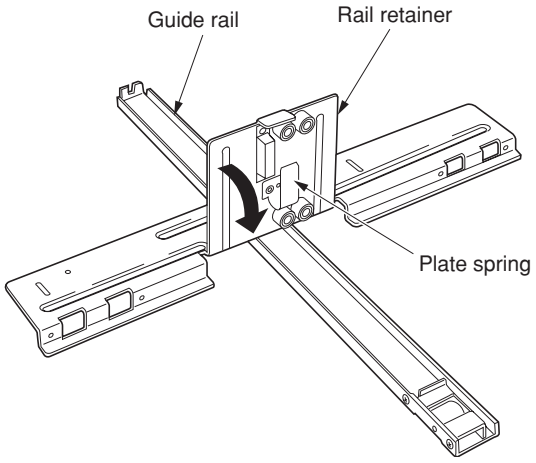


Figure 1-3-139

8. Orient the guide rail such that its pulley is positioned toward the copier.

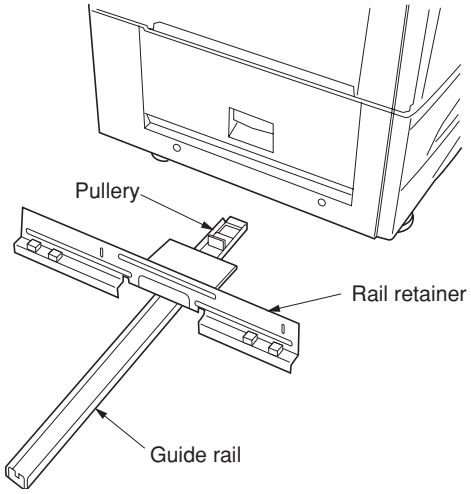


Figure 1-3-140

9. Secure the rail retainer to the copier using two M4 × 10 binding screws such that the front and the rear gaps between the floor and the rail retainer are approximately 10 mm.

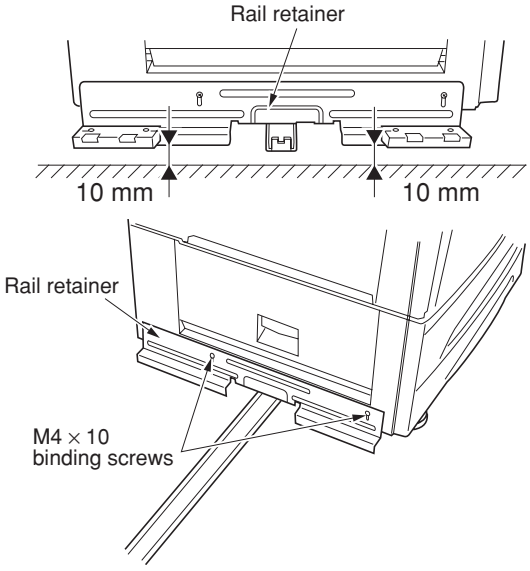


Figure 1-3-141

10. Insert the rail fixing plate into the bottom of the finisher and join them by inserting two M4 × 6 binding screws loosely.

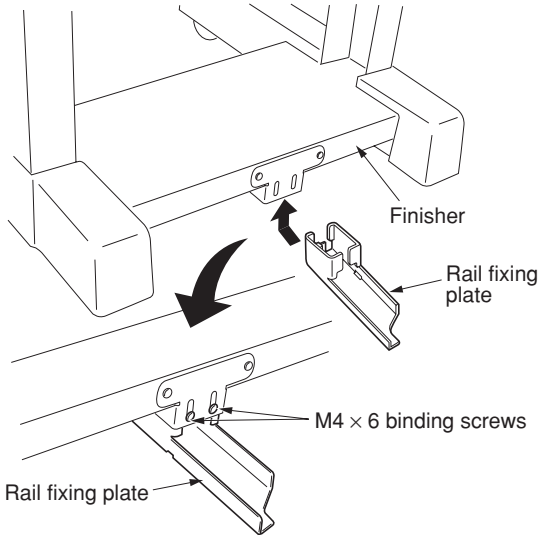


Figure 1-3-142

11. Insert the guide rail into the rail fixing plate and secure it using two M4 × 6 binding screws at the positions where the screw holes in it and those in the rail fixing plate meet.

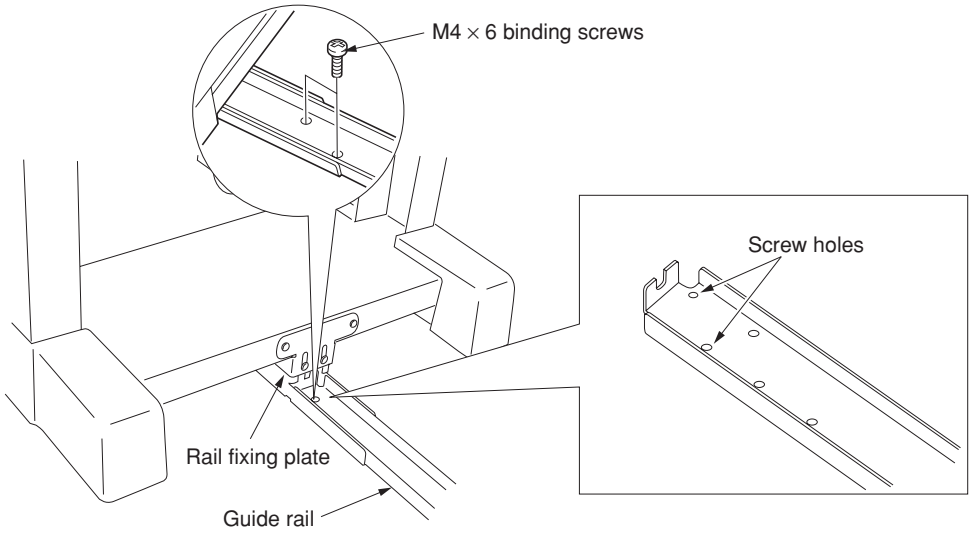


Figure 1-3-143

12. Adjust the position of the rail fixing plate so that the gap between the plate and the floor is approximately 8.0 mm, and then tighten the two loosely fitted M4 × 6 binding screws.
If the finisher and the copier do not engage securely, perform the following finisher height adjustment.

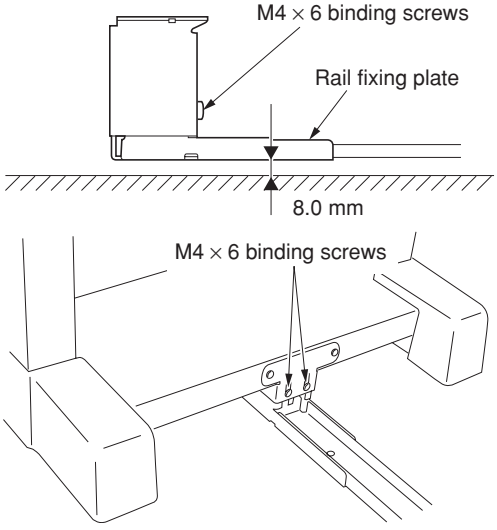


Figure 1-3-144

Adjusting the height of the finisher

1. Remove the front and rear covers from the finisher by removing two screws each.
   *When removing the covers, open both ends of the covers in the directions indicated by the arrows and remove three inside ribs to remove the covers.

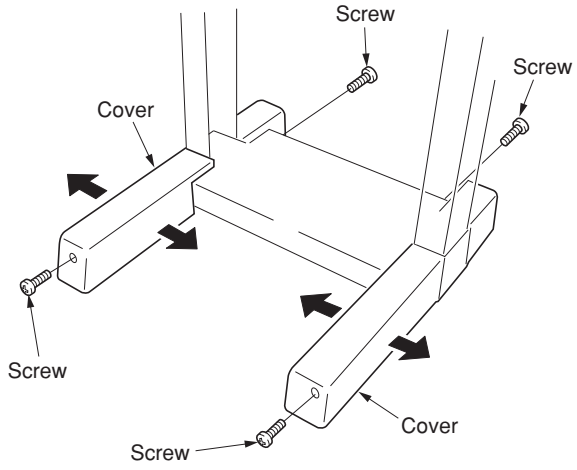


Figure 1-3-145

2. Loosen the two screws on the rear right caster of the finisher. Adjust the height of the rear right caster by turning its adjustment bolt using a cross-headed screwdriver so that the axis of the pin of the latch catch is aligned with the marking of the slot of the finisher when the finisher is joined to the copier (viewed from the machine front).
   Note: Turning the adjustment bolt clockwise lifts the finisher, while turning it counterclockwise lowers the finisher.

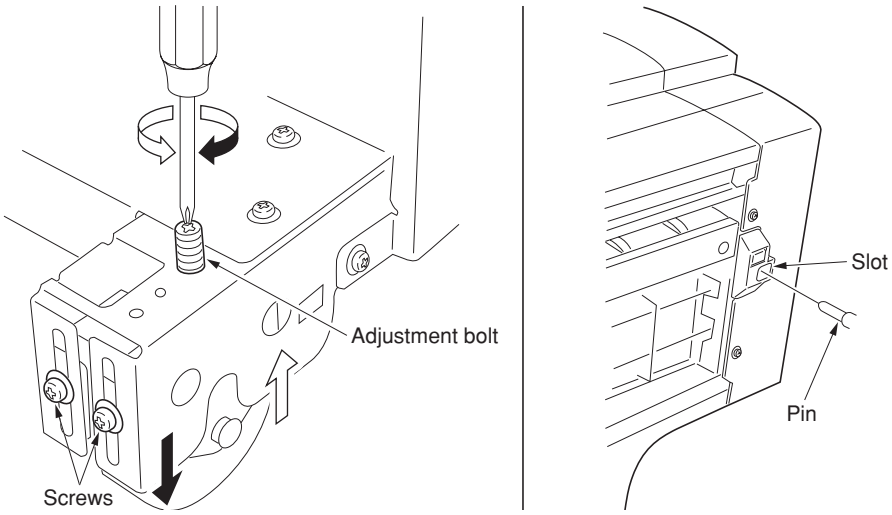


Figure 1-3-146

3. Adjust the height of the front right caster in the same manner as in step 2 so that each center of the hooking portions of the latch catch is aligned with the center of the two hooks on the finisher when the finisher is joined to the copier (viewed from above).

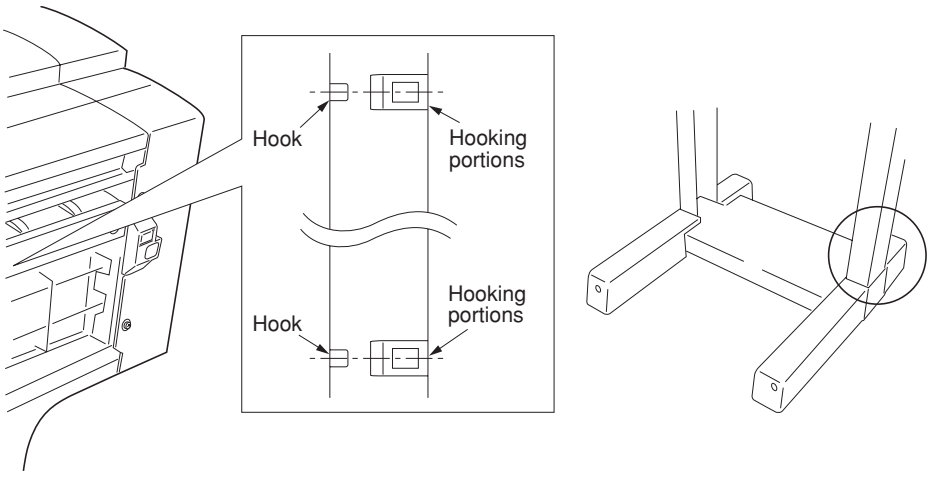


Figure 1-3-147

4. Adjust the height of the left two casters in the same manner as in step 2 so that the right and left gaps “a” between the finisher and the copier are the same at the top and bottom when the finisher is detached from the copier.
5. Reattach the removed parts to their original positions.

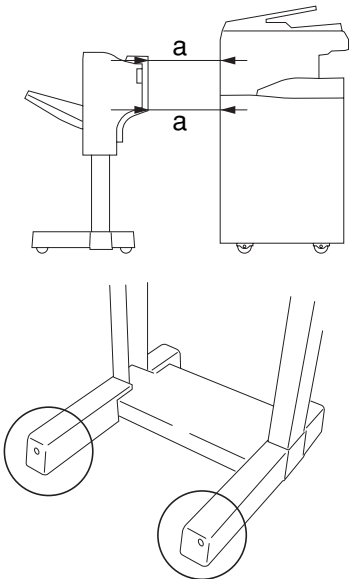


Figure 1-3-148

Connecting the signal cable

1. Connect the signal cable of the finisher to the copier.

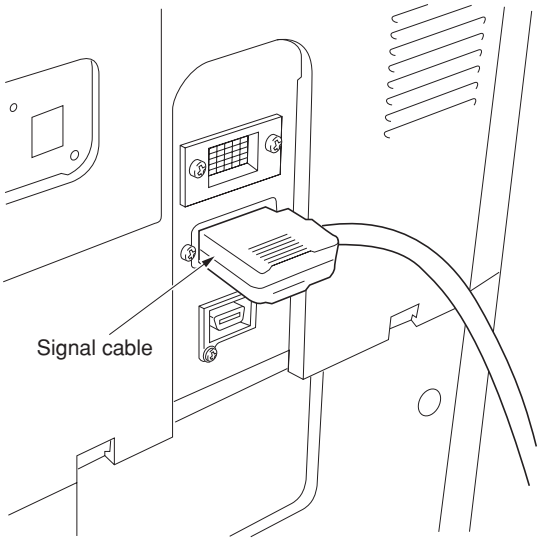


Figure 1-3-149

Operation check

1. Insert the copier power plug to the wall outlet and turn the power switch on.
2. Make test copies and check that the finisher operates correctly.

1-3-16 Installing the 3000-sheet finisher (option)

Procedure

[Mounting the curl eliminator]

1. Open the copier's left cover.
2. Remove two screws and take off the feedshift guide assembly.

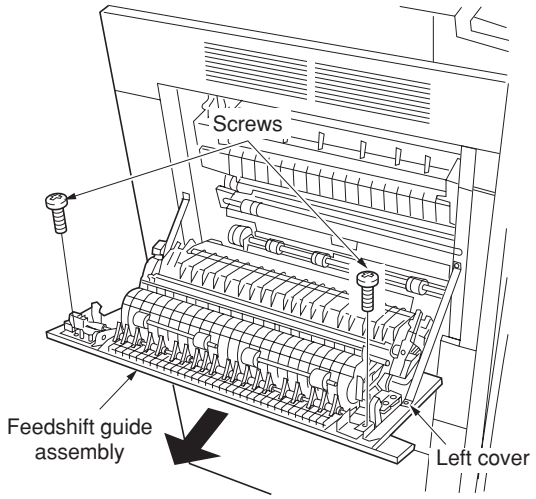


Figure 1-3-150

3. Mount the curl eliminator onto the left cover so that the projections at each end fits into place.
4. Fasten the curl eliminator into place with the two screws removed at step 2.

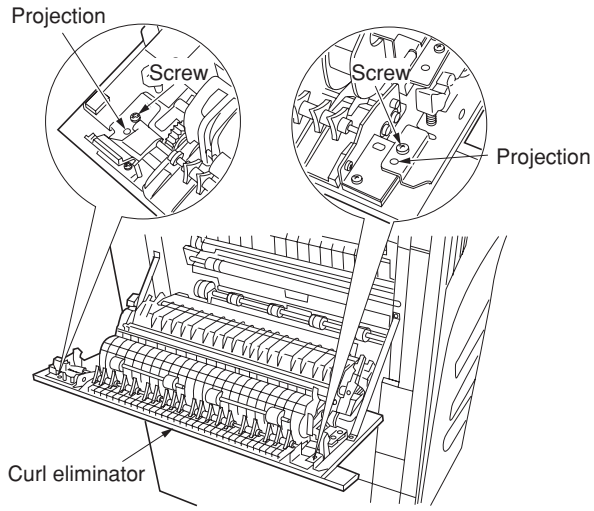


Figure 1-3-151

5. Fasten the retainer to the left cover with the two M4 × 8 TP-A chrome screws.
   Fasten at the center of the oblong holes.

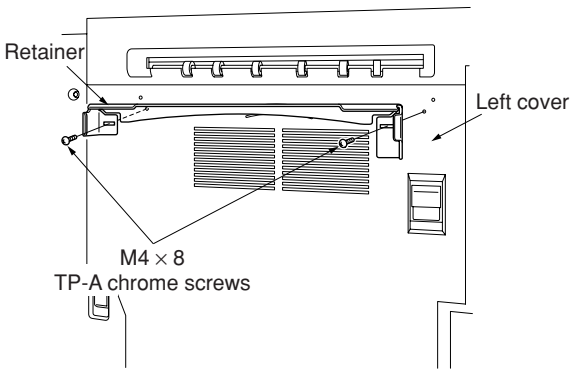


Figure 1-3-152

[Mounting the finisher]

1. Unscrew the two blue screws and remove the two metal fittings holding the rail unit to the finisher.

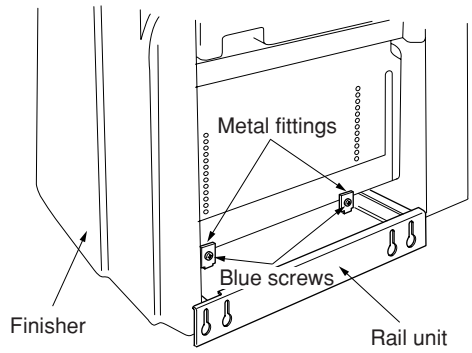


Figure 1-3-153

2. Unscrew the transport fastening screw from the rail unit, move it into the front screw hole, and screw it in.

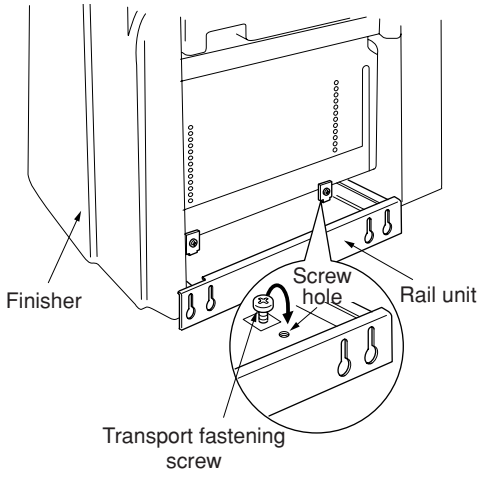


Figure 1-3-154

3. Pull out the two fastening pins holding the waste punch box in place, and take the waste punch box out of the finisher.

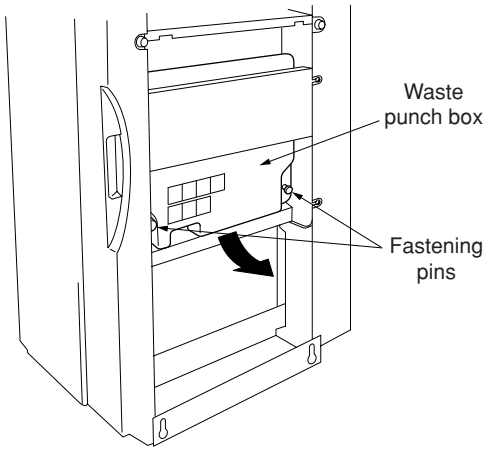


Figure 1-3-155

4. Remove the tape securing the solenoid, and the tape securing the shifting guide.
5. Set the waste punch box back into the finisher, and fasten it into place with the two fastening pins.

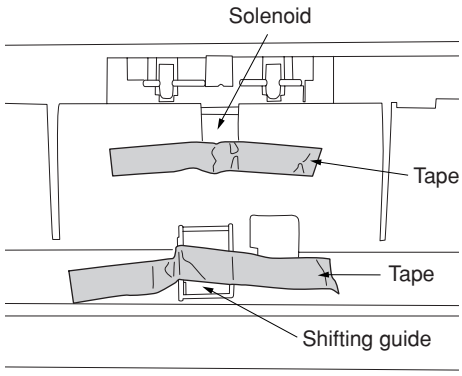


Figure 1-3-156

6. Pull the rail unit out of the finisher.
7. Loosely fasten the rail unit to the copier's finisher-attachment area with the two M4 × 10 TP-A bronze screws.

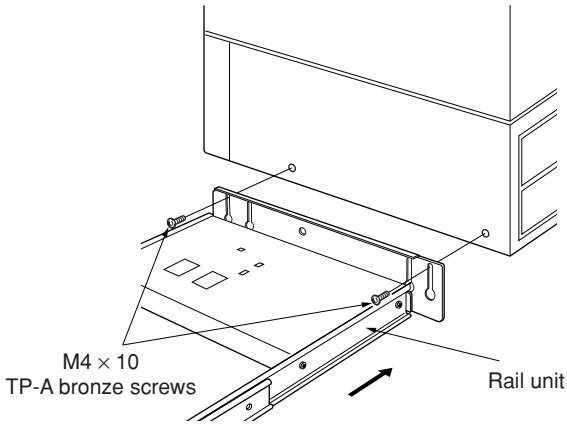


Figure 1-3-157

8. Move the finisher next to the copier, and open the finisher's front cover. Adjust the height-adjustment screw in the rail unit until the guideline marked on the retainer is aligned with the center of the height-adjustment plate.

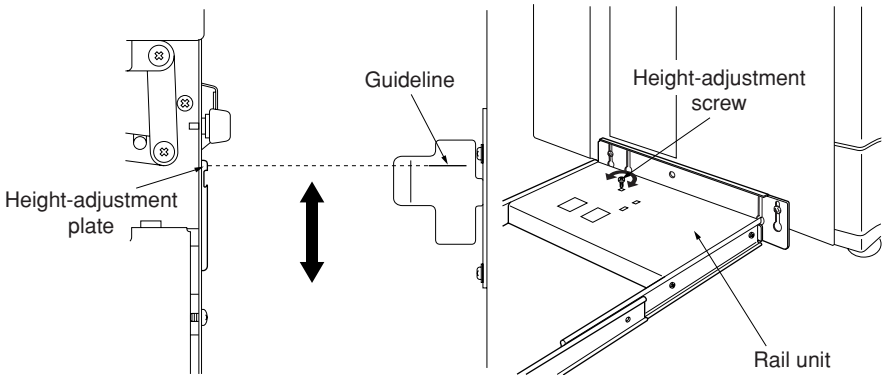


Figure 1-3-158

9. Pull the finisher away, and tighten up the two M4 × 10 TP-A bronze screws.
10. Set the finisher against the copier.

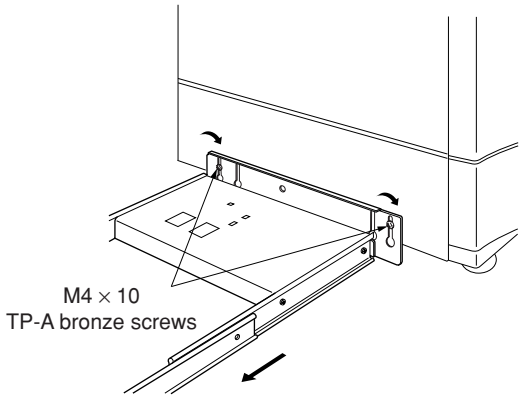


Figure 1-3-159

11. Open the finisher's front cover.
12. Remove the tape securing the internal tray unit.

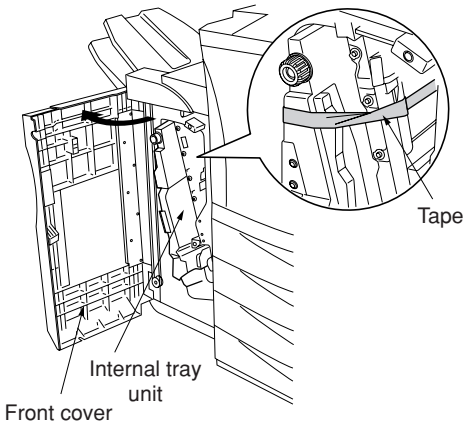


Figure 1-3-160

13. Remove the fastening pin holding the internal tray unit in place, and pull out the middle tray unit.

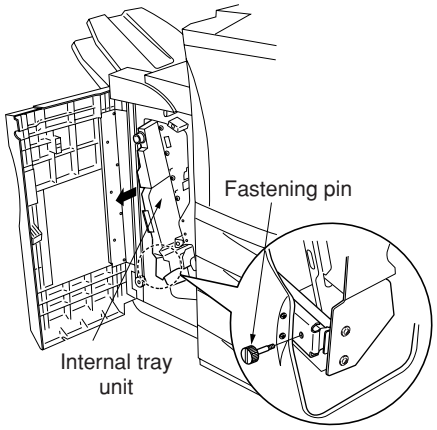


Figure 1-3-161

14. Remove the tape securing the cushioning material for the stapler unit, and remove the cushioning material.

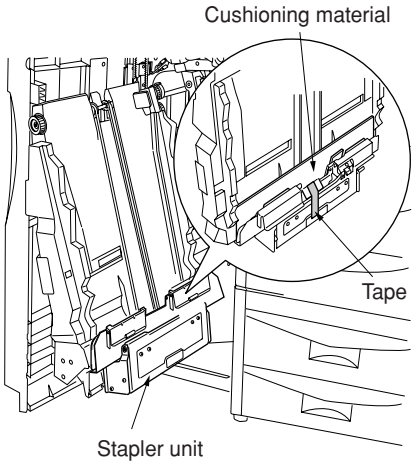


Figure 1-3-162

15. Remove the two fastening pins securing the stapler unit at the bottom of the intermediate tray unit.

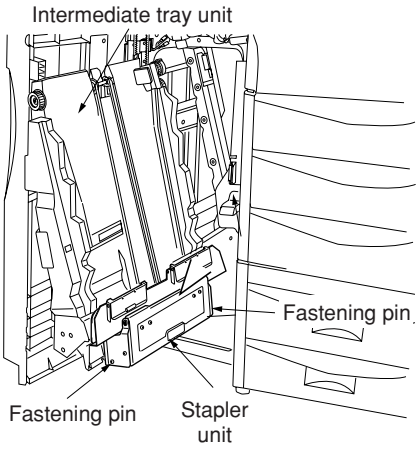


Figure 1-3-163

16. Raise the stapler unit in the indicated direction, and load the two stapler cartridges into the unit.

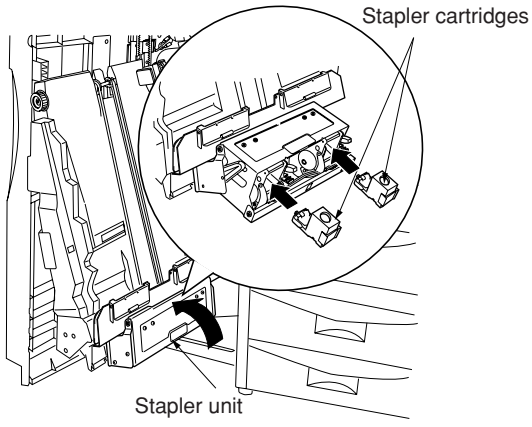


Figure 1-3-164

17. Lift the stapler unit further up, and then lower it.
18. Set the intermediate tray unit back into the finisher, and close the front cover.

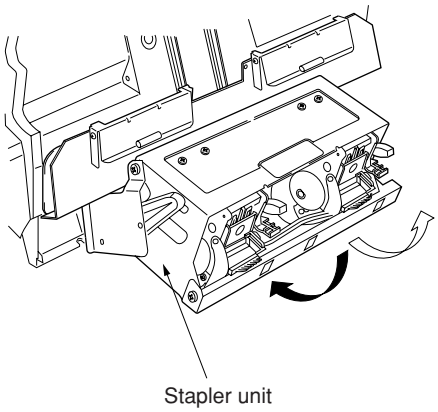


Figure 1-3-165

19. Fasten the main tray to the finisher using the two fixing guide pins and the two hexagonal cap nuts.

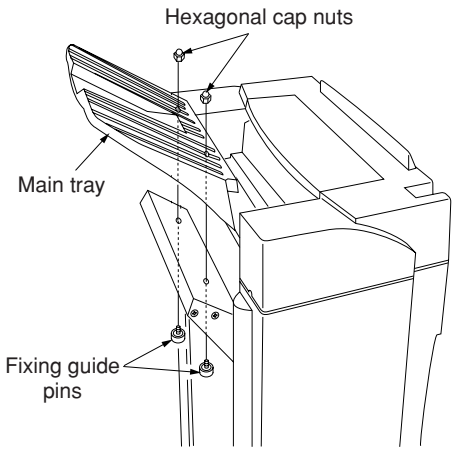


Figure 1-3-166

20. Hold the auxiliary tray vertically, attach it to the top of the finisher, and lower it toward the exit side.

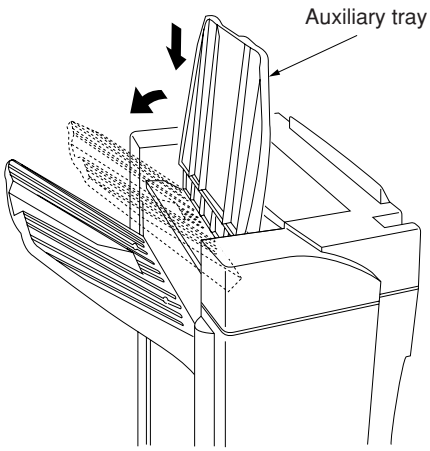


Figure 1-3-167

[Connecting the signal cable]

1. Connect the finisher's signal cable to the connector on the rear of the copier.
2. Plug the copier into a wall outlet, and turn its power switch on.

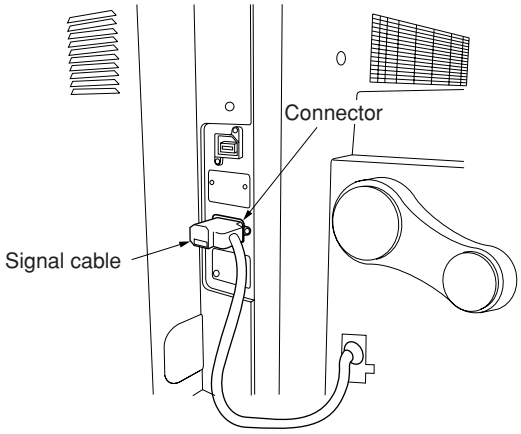


Figure 1-3-168

[Adjust the punch-hole centering]

1. Set the machine into punch mode, and make a test copy using manual feed.
   Note: Perform this check after checking that the center position of each drawer in the copier is correct.
2. Check the centering of the punch-holes on the test copy.
3. Loosen the two screws securing the retainer, move the retainer as necessary to adjust, and then retighten the screws.

If holes are off-center toward the front of the copier (case [a] in illustration):

- Move the retainer toward the rear of the machine (in the direction of the ⬅ in the illustration.)

If holes are off-center toward the rear of the copier (case [b] in illustration):

- Move the retainer toward the rear of the machine (in the direction of the ⇨ in the illustration).

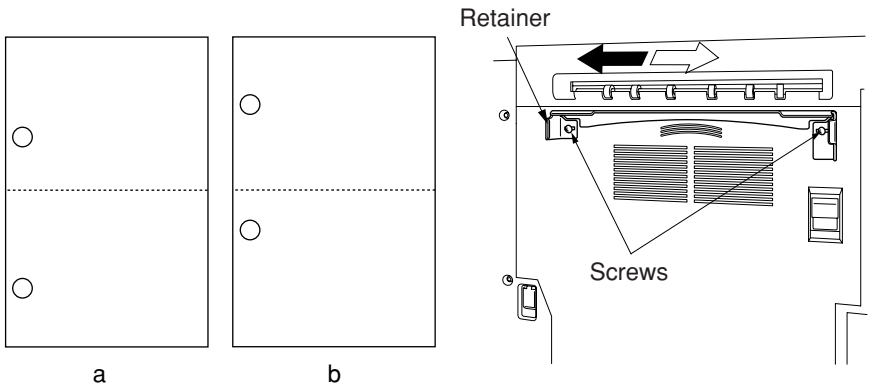


Figure 1-3-169

[Adjust the paper curl]

1. Run paper through the machine.
2. Check the curl on the paper ejected onto the finisher's auxiliary tray.

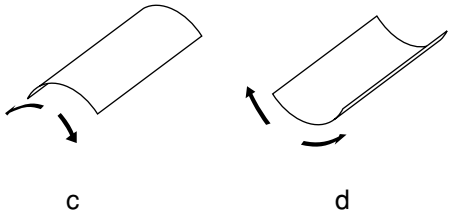


Figure 1-3-170

If excessive downward curl (case [c] in illustration):
(1) Open the document finisher's front cover.
(2) Move the lower lever one step to the left.
Note:The lever is initially set to position "1", and can be adjusted to five positions ("1" to "5").
(3) Run paper through the machine.
(4) Check the downward curl on the ejected paper.
(5) Repeat steps 2 to 4 until there is no curl.
(6) Close the finisher's front cover.

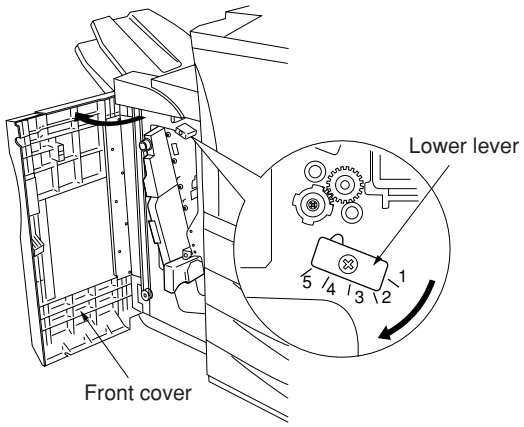


Figure 1-3-171

If excessive upward curl (case [d] in illustration):
(1) Loosen the four screws and remove the finisher's upper cover.

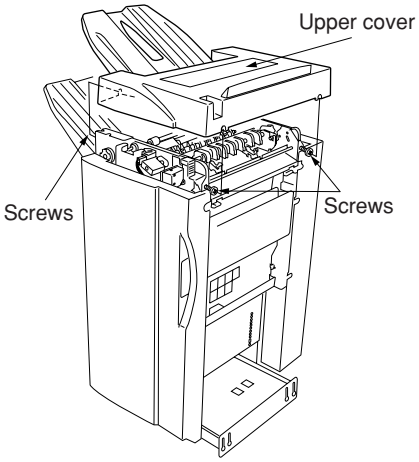


Figure 1-3-172

(2) Move the upper lever one step to the right.
Note:The lever is initially set to position "1", and can be adjusted to five positions ("1" to "5").
(3) Run paper through the machine.
(4) Check the upward curl on the ejected paper.
(5) Repeat steps 2 to 4 until there is no curl.
(6) Reattach the finisher's upper, and tighten the four screws.

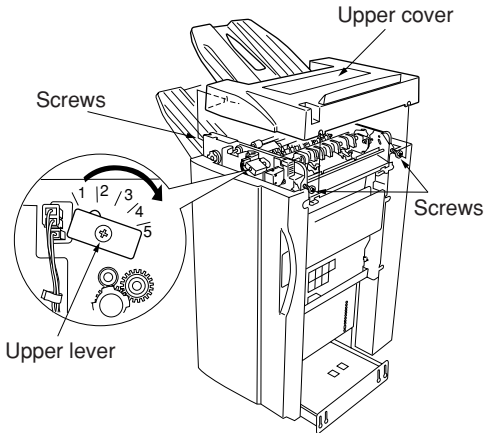
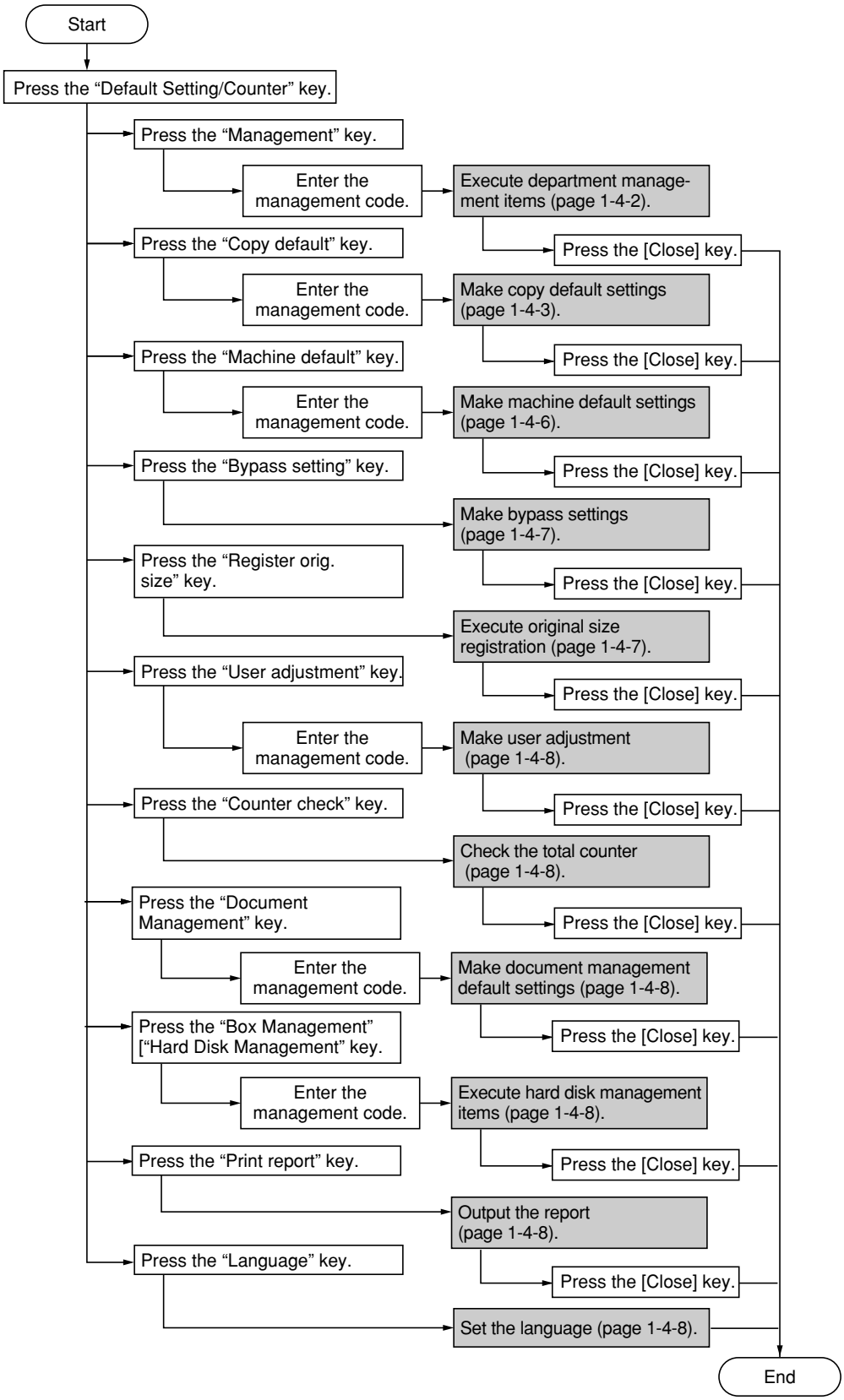


Figure 1-3-173

1-4-1 Copier management

In addition to a maintenance function for service, the copier is equipped with a management function which can be operated by users (mainly by the copier administrator). In this copier management mode, settings such as default settings can be changed.

(1) Using the copier management mode



(2) Setting department management items

Register new department ID-codes

Registers department ID-codes and the corresponding department name, and set certain restrictions for using the copier under that ID-code.

1. Press the “Management edit” key.
2. Press the “Register” key.
3. Select “ID-code” and then press the “Change #” key.
4. Enter the department ID-code to register (up to 8 digits) using the numeric keys.
5. Select “Name to display” and then press the “Change #” key.
6. Enter the name for that department, and then press the “End” key.
7. Set the restrictions for using the copier under that department ID-code and then press the “Registr.” key.

Delete department ID-codes

1. Press the “Management edit” key.
2. Select the department ID-code to delete, and then press the “Delete” key.
3. Verify that this is the ID-code to delete, and press the “Yes” key.

Change registered information

1. Press the “Management edit” key.
2. Select the department ID-code to change the registered information, and then press the “Mgt. Inf. Correction” key.
3. Select “ID-code” and then press the “Change #” key.
4. Press the “Clear” key to delete the old ID-code.
5. Enter the new ID-code (up to 8 digits) using the numeric keys.
6. Select “Name to display” and then press the “Change #” key.
7. Press the “AllDel.” key to delete the old department name, then enter the new name.
8. Press the “End” key.

Check all departments

Checks the total number of copies made under all department ID-codes as a whole, print out a copy management report and clear the copy counts for all of the registered department ID-codes.

1. Press the “Management total” key.
   The total number of copies made under all department ID-codes as a whole will be displayed.
2. Press the “Print report” key.
   The copy management report is printed out.
3. Press the “Counter clear” key to clear all of the copy counts,.
4. Press the “Yes” key.

Check individual departments

Checks the total number of copies made under each individual department ID-code and/or clears the copy counts for individual departments as well.

1. Press the “Each Mgt. Total” key.
2. Select the department ID-code to check the copy counts, and then press the “Total” key. The total number of copies made under that department ID-code will be displayed.
3. Press the “Counter clear” key to clear all of the copy counts for that ID-code.
4. Press the “Yes” key.

Turning the copy management function ON/OFF

1. Select “On” or “Off” key.

Copier function management ON/OFF

1. Press the “Management Def. Set.” key.
2. Select “Copy management” and then press the “Change #” key.
3. Press the “On” key.

Printer function management ON/OFF

Note:This setting is only available when the optional printer board or network printer board is installed in the copier.

Printer error report

Note:This setting is only available when the optional printer board or network printer board is installed in the copier.

Non-standard printer driver printout (printer)

Note:This setting is only available when the optional printer board or network printer board is installed in the copier.

Copy/Printer output management

1. Press the “Management Def. Set.” key.
2. Select “Copy/Printer output mgt.” and then press the “Change #” key.
3. Select “All” or “Each” key.

Scanner function management ON/OFF

Note: This setting is only available when the optional network scanner board is installed in the copier.

Fax function management ON/OFF

Note: This setting is only available when the optional fax kit is installed in the copier.

Response to exceeded restriction

Determines whether further use of the machine will be canceled or an error message will be generated when a department ID-code has exceeded its set limit.

1. Press the “Management Def. Set.” key.
2. Select “Excess of limit Setting” and then press the “Change #” key.
3. Select “Is not permitted” or “Only warning” key.

Default copy limit

1. Press the “Management Def. Set.” key.
2. Select “Def. Val. of coun. limit” and then press the “Change #” key.
3. Enter the default copy limit using the numeric keys. The limit can be set to any 1-page increment up to 999,999.

Total count for specified paper size (1 to 5)

1. Press the “Management Def. Set.” key.
2. Select one of the “Total size 1” through “Total size 5” settings and then press the “Change #” key.
3. Press the “On” key.
4. Press the “Select size” key.
5. Press the key that corresponds to the desired paper size, and then press the “Close” key.
6. To specify a paper type as well, press the “Select paper type” key.
7. Press the key that corresponds to the desired paper type, and then press the “Close” key.

(3) Copy default

Exposure mode

Selects the exposure mode at power-on.

1. Select “Exposure mode” and then press the “Change #” key.
2. Select “Manual” or “Auto” key.

Exposure adjustment step

Sets the number of exposure steps for the manual exposure mode.

1. Select “Exposure steps” and then press the “Change #” key.
2. Select “1 step” or “0.5 step” key.

Original quality

Sets the default mode for the image quality.

1. Select “Original image quality” [“Image quality Original”] and then press the “Change #” key.
2. Select “Text+Photo”, “Photo” or “Text” key.

Eco print mode ON/OFF

Determines whether or not the eco print mode will be the default setting in the initial mode.

1. Select “Eco Print” and then press the “Change #” key.
2. Select “On” or “Off” key.

Background exposure adjustment

Adjust the ground color of the copied paper.

1. Select “Background exp. adj.” and then press the “Change #” key.
2. Adjust the exposure using the “Lighter” key or the “Darker” key.
   Setting range: -2 to 2

Paper selection

Sets whether the copier will automatically select the same size of copy paper as the original once an original is set, or whether the designated default drawer will be automatically selected.

1. Select “Select paper” and then press the “Change #” key.
2. Select “APS” or “Default drawer[cassette]” key.

Paper type (Auto paper selection mode)

Selects the types of paper that will be available for selection under the APS (Auto Paper Selection) mode.

1. Select “Select paper type(APS)” and then press the “Change #” key.
2. Press the “On” key and then press the keys that correspond to the types of paper to allow to be used under the auto paper selection mode.

Default drawer

Sets one drawer that will be selected automatically regardless of the size of paper loaded in that drawer.

1. Select “Default drawer[cassette]” and then press the “Change #” key.
2. Press the key that corresponds to the desired drawer[cassette].
   Settings: 1st paper/2nd paper/3rd paper/4th paper
   * The setting for drawer 3 and 4 will only be available when the optional paper feeder is installed.

Cover drawer

Sets which drawer will be used to feed the cover sheets in the cover mode, the booklet/stitching mode and the book to booklet mode.

1. Select “Drawer for cover paper” [“Cassette for cover paper”] and then press the “Change #” key.
2. Press the key that corresponds to the desired drawer
   Settings: 1st paper/2nd paper/3rd paper/4th paper/Bypass
   * The setting for drawer 3 and 4 will only be available when the optional paper feeder is installed.

Default magnification ratio

Sets whether or not the appropriate magnification ratio to be calculated automatically when selecting the size of copy paper.

1. Select “Default magnification” [“Default mode”] and then press the “Change #” key.
2. Select “Manual” or “AMS” key.

Auto exposure adjustment

Adjusts the overall exposure level for the auto exposure mode when making color copies.

1. Select “Auto exposure adj.(Auto)” and then press the “Change #” key.
2. Adjust the exposure using the “Lighter” key or the “Darker” key.
   Setting range: -3 to 3

Auto exposure adjustment (OCR)

Adjusts the overall exposure level for scanning with OCR (Optical Character Recognition) software when using the optional scanner functions of this copier.

1. Select “Adjust auto exposure (OCR)” and then press the “Change #” key.
2. Adjust the exposure using the “Lighter” key or the “Darker” key.
   Setting range: -3 to 3

Manual exposure adjustment (text+photo mode)

Adjusts the median exposure value when the text+photo mode is selected for the image quality.

1. Select “Manual exp.adj. (Mixed)” and then press the “Change #” key.
2. Adjust the exposure using the “Lighter” key or the “Darker” key.
   Setting range: -3 to 3

Manual exposure adjustment (text mode)

Adjusts the median exposure value when the text mode is selected for the image quality.

1. Select “Manual exp.adj. (Text)” and then press the “Change #” key.
2. Adjust the exposure using the “Lighter” key or the “Darker” key.
   Setting range: -3 to 3

Manual exposure adjustment (photo mode)

Adjusts the median exposure value when the photo mode is selected for the image quality.

1. Select “Manual exp.adj. (Photo)” and then press the “Change #” key.
2. Adjust the exposure using the “Lighter” key or the “Darker” key.
   Setting range: -3 to 3

Sort mode ON/OFF

Determines whether or not the Sort mode will be the default setting in the initial mode.

1. Select “Sort” and then press the “Change #” key.
2. Select “Sort:On” or “Sort:Off” key.

Auto Rotation mode ON/OFF

Determines whether or not the Auto Rotation mode will be the default setting in the initial mode.

1. Select “Auto Rotation” and then press the “Change #” key.
2. Select “Rotate” or “No Rotate” key.

Margin width

Determines the default value of the location and width of the margins in the margin mode.

1. Select “Default margin width” and then press the “Change #” key.
2. Press the cursor up/down and left/right keys, as desired, to change the default margins and margin widths to the desired setting.
   Setting range: 0 to 3/4 (inch specifications)
   0 to 18 mm (metric specifications)

Erased border width

Determines the default value for the width of the border to be erased in the two border erase modes.

1. Select “Default erase width” and then press the “Change #” key.
2. Press the +/- keys to change the displayed widths to those desired.
   Setting range
   (Inch specifications)
   Outside border: 0 to 3/4”
   Center area: 0 to 1 1/2”
   (Metric specifications)
   Outside border: 0 to 18 mm
   Center area: 0 to 36 mm

Copy limit

Sets the limit for the number of copies (or copy sets) that can be made at a time.

1. Select “Preset limit” and then press the “Change #” key.
2. Press the +/- keys to change the copy limit to the desired setting.
   Setting range: 1 to 999

Repeat copying ON/OFF

Sets whether or not to prohibit repeat copying, as well as whether or not to make repeat copying the default setting in the initial mode.
Note: This setting is only available when the optional hard disk is installed in the copier.

1. Select “Modify Copy” and then press the “Change #” key.
2. Select “On” or “Off” key.

Registration keys ON/OFF

Sets whether or not to allow a “Register” key to be displayed in the screen for those function and modes which can be registered under the registration keys. Functions and/or modes can only be registered under registration keys through the “Register” key.

1. Select “Display register key” [“Display "Register" key”] and then press the “Change #” key.
2. Select “On” or “Off” key.

Customize screen layout (Main functions)

Changes the order of the main functions and modes that are displayed in the “Basic” and the “User choice” tabs in order to make the display more appropriate to the way you use the copier.

1. Select “Customize(Main function)” and then press the “Change #” key.
2. Press the cursor up/down keys, “Move Ahead” key or the “Move Behind” [“Move backward”] key to change the order of the basic functions and modes.

Customize screen layout (Add functions)

Adds often-used functions and/or modes, or to change the order of their layout, in order to make the display more appropriate to the way use of the copier.

1. Select “Customize(Add function)” and then press the “Change #” key.
2. Press the cursor up/down keys and “” key to change the order of layout.

(4) Machine default

Auto drawer switching ON/OFF

Turns automatic drawer switching ON or OFF.

1. Select “Auto drawer switching” [“Auto cassette switching”] and then press the “Change #” key.
2. Select “On” or “Off” key.
3. Select “All types of paper” or “Feed same paper type” key.

Paper size (drawer No.1 - No.4)

Sets the size of paper that is loaded in drawer No.1 through No.4.

1. Select one of the “Paper size” settings (“1st drawer[cassette]” through “4th drawer[cassette]”) and then press the “Change #” key.
2. If you select “Auto Detection” (automatic size detection) here, select the desired unit of measure (“Centimeter” or “Inch”).
   If you select “Standard sizes” (standard paper size) here, simply press the key that corresponds to the size of paper that is loaded in that drawer.
   Note: The setting for drawer No.3 and No.4 will only be available when the optional paper feeder is installed.

Paper type (drawer No.1 - No.4)

Sets the type of paper that is loaded in drawers No.1 through No.4.

1. Select one of the “Paper type” settings (“1st drawer[cassette]” through “4th drawer[cassette]”) and then press the “Change #” key.
2. Press the key that corresponds to the type of paper.
   Note: The setting for drawer No.3 and No.4 will only be available when the optional paper feeder is installed.

Custom paper type for 2-sided copying

Sets whether or not each custom type of paper (custom 1 – custom 8) will be available for use in 2-sided copying.

1. Select “Select paper type (2sided)” and then press the “Change #” key.
2. Select one of the “custom” paper type settings (“Custom 1” through “Custom 8”) and then press the “On / Off” key to change the setting.

Auto sleep time

Sets the amount of time that will elapse before the auto sleep function automatically engages and puts the copier in the sleep mode if no operation has been performed on the copier during that time.

1. Select “Sleep mode changing time” and then press the “Change #” key.
2. Press the +/- keys to change the displayed time to the desired setting.
   Setting range: 1/5/15/30/45/60/90/120/180/240 minutes

Auto low power time

Sets the amount of time that will elapse before the auto low power function automatically engages and puts the copier in the low power mode if no operation has been performed on the copier during that time.

1. Select “Low power mode chng. time” and then press the “Change #” key.
2. Press the +/- keys to change the displayed time to the desired setting.
   Setting range: 1/5/15/30/45/60/90/120/180/240 minutes

Copy eject location

Sets where finished copies will be ejected.
This setting is only available when the optional finisher, built-in finisher or job separator is installed in the copier.

1. Select “Select Copy output mode” and then press the “Change #” key.
2. Select the desired location.

Fax eject location

Sets where incoming faxes will be ejected.
This setting is only available when the optional fax kit and finisher (or the built-in finisher or job separator) are installed in the copier.

1. Select “Select FAX output mode” and then press the “Change #” key.
2. Select the desired location.

Default operation mode

Sets whether the display that appears after power is turned on to the copier will be the one for the copy operation mode or for the fax operation mode.
This setting is only available when the optional fax kit is installed.

1. Select “Select the main mode” [“Select main mode”] and then press the “Change #” key.
2. Select “Copy mode” or “FAX mode” key.

Touch panel sound ON/OFF

Sets whether or not the touch panel will emit a “beep” sound each time a key is pressed.

1. Select “Key sound ON/OFF” and then press the “Change #” key.
2. Select “On” or “Off” key.

Silent mode ON/OFF

Sets whether or not to use the silent mode which shortens the length of time that the laser data writing motor continues to spin after each copy job is finished.

1. Select “Silent mode” and then press the “Change #” key.
2. Select “On” or “Off” key.

Day and time

Sets the current date and time.

1. Select “Date/Time” and then press the “Change #” key.
2. Press the +/- keys to change the displayed information for each field (“Year”, “Month”, “Day” and “Time”) to the current time and date.

Time difference

Sets a designated time difference.

1. Select “Time difference” and then press the “Change #” key.
2. Press the +/- keys to change the displayed time difference to the desired setting.
   Setting range: +12:00 to –12:00

Changing the management code

Changes the management code used by the copy manager.

1. Select “Management code change” [“Change MGMT code with #”] and then press the “Change #” key.
2. Enter a new 4-digit management code using the numeric keys.

Auto sleep ON/OFF

Sets whether or not to have the auto sleep function automatically engage and put the copier in the sleep mode if no operation is performed on the copier for a designated amount of the time.

1. Select “Auto Sleep” and then press the “Change #” key.
2. Select “On” or “Off” key.

Changing the energy-saving mode

Changes the energy-saving mode that will be entered into when the energy saver key is pressed.
This setting is only available when the optional printer kit or printer/scanner kit is installed.

1. Select “Energy Saver key setting” and then press the “Change #” key.
2. Select “Low power mode” or “Sleep mode” key.

(5) Bypass setting

Paper size and type

Sets the paper size and paper type for the bypass settings.
When using special papers such as transparency, cards, and postcards, be sure to set the paper type to prevent faulty transfer and faulty fixing.

1. Press the key that corresponds to the size of paper to be used. If to set the custom size, press the “Input size” key.
   Press the +/- keys to change each of the displayed sizes (length and width) to the desired settings. In metric specifications, the desired sizes can also be entered directly by pressing the corresponding “#-Keys” key and then using the numeric keys.
   Setting range
   (Inch specifications)
   Width: 3 7/8" - 11 5/8"
   Length: 5 7/8" - 17"
   (Metric specifications)
   Width: 98 - 297 mm
   Length: 148 - 432 mm
2. Press the “Select paper type” key.
3. Press the key that corresponds to the type of paper to be used.

Selecting other standard sizes

Sets a special standard size.

1. Press the “Others Standard” key.
2. Press the “Select size” key.
3. Press the key that corresponds to the size of paper to use, and then press the “Close” key.
4. Press the “Select paper type” key. Press the key that corresponds to the type of paper to use, and then press the “Close” key.

(6) Original size registration

Sets a custom original size that can be used under the “Original size selection” procedure.

1. Press the “Register orig. size” key.
2. Select of the “Original size (custom 1)” to “Original size (custom 4)” settings and then press the “Change #” key.
3. Press the +/- keys to change each of the displayed sizes (Y = width and X = length) to the desired settings.
   Setting range
   (Inch specifications)
   Width: 2" - 11 5/8"
   Length: 2" - 17"
   (Metric specifications)
   Width: 50 - 297 mm
   Length: 50 - 432 mm

(7) User adjustment

Drum refresh

This operation should be performed when the copy image becomes blurred or if white spots which are not on the originals appear on the copies.

1. Press the “Drum refresh” key.
2. Press the “On” key. The drum refreshing process will begin. This operation will take approximately 5 minutes.

(8) Checking the total counter and printing out the counter report

Checks the total count of copies, etc., and prints out the information as a counter report.

1. Press the “Counter check” key. The total number of copies and printouts made will be displayed.
2. Press the “Print report” key to print out a counter report.

(9) Document management default setting

This setting is available when the optional hard disk is installed in the copier.

Document list print out

Prints out each job list.

1. Press the “Print the list” key to print out the document list you want.

Reset box

Prints out each job list.

1. Press the “Reset Box” key to delete all data for.
2. Press the “Yes” key.

Box name setting

Sets the name of synergy print box.

1. Press the “Box editting” key.
2. Select the desired box and press the “Enter” key.
3. Select “Box name” and press the “Change #” key.
4. Enter the box name.
5. Press the “Close” key.
6. Press the “End” key.

Box password setting

Sets the password for the synergy box.

1. Press the “Box editting” key.
2. Select the desired box.
3. Select “Password” and press the “Change #” key.
4. Enter the password and press the “Close” key.
5. Press the “Close” key.
6. Press the “End” key.

Box data deletion

Deletes the data in the synergy print box.

1. Press the “Box editting” key.
2. Select the desired box.
3. Press the “Reset Box” key.
4. Press the “Yes” key.
5. Press the “Close” key.
6. Press the “End” key.

Duration to save document data setting

Sets the duration to save the document data in the synergy print box.

1. Press the “Document save term” [Document saving] key.
2. Press the +/- keys to set the duration.
   Setting range: 1 to 7 days
   To save documents with no specific duration, press the “No time limit” key.
3. Press the “Close” key.

(10) Hard disk management

This setting is available when the optional hard disk is installed in the copier.
Checks available space and/or deletes any invalid data on the optional hard disk.

1. Press the “On” key under “Check HDD capacity”. The overall size of the hard disk and the currently available space will displayed.
2. Press the “On” key under “Delete invalid data”. The operation to delete invalid data will start.

(11) Status report print out

Prints out one of the status report.

1. Press the key of the report to print out.
   <Copy report>
   <Machine report>
   <Toner coverage report>
   The selected status report will be printed out.

(12) Language selection function

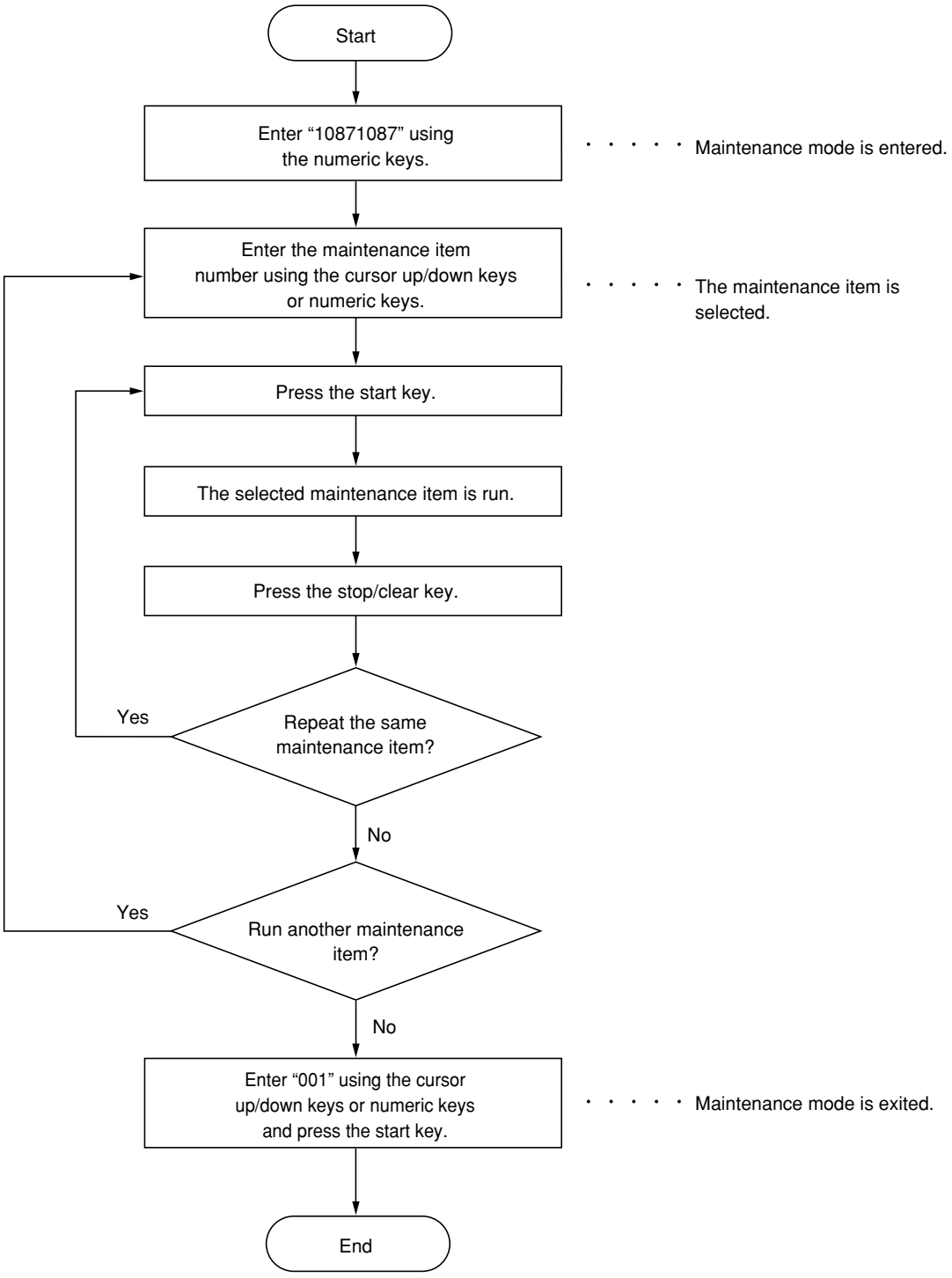
Switches the language to be displayed on the touch panel.

1. Press the “Language” key.
2. Press the key that corresponds to the language to use.
   Available languages:
   Inch specifications
   Japanese, English, French and Spanish
   Metric specifications
   English, German, French, Spanish and Italian

1-4-2 Maintenance mode

The copier is equipped with a maintenance function which can be used to maintain and service the machine.

(1) Executing a maintenance item



(2) Maintenance mode item list

Section	Item No.	Maintenance item contents	Initial setting*
General	U000	Outputting an own-status report	—
	U001	Exiting the maintenance mode	—
	U002	Setting the factory default data	—
	U003	Setting the service telephone number	**********
	U004	Displaying the machine number	—
	U005	Copying without paper	—
	U018	Displaying the ROM checksum	—
	U019	Displaying the ROM version	—
Initialization	U020	Initializing all data	—
	U021	Initializing counters and mode settings	—
	U022	Initializing backup memory	—
	U024	HDD formatting	—
Drive, paper feed, paper conveying and cooling system	U030	Checking motor operation	—
	U031	Checking switches for paper conveying	—
	U032	Checking clutch operation	—
	U033	Checking solenoid operation	—
	U034	Adjusting the print start timing • Adjusting the leading edge registration • Adjusting the center line	 0.5/0/-1.5 1.0/0
	U035	Setting folio size • Length/Width • Width	 330 210
	U038	Checking the copier cover switch	—
	U051	Adjusting the amount of slack in the paper • Regist data • Feed data	 0/0/0 0/20/0/0/0/0
	U053	Performing fine adjustment of the motor speed • Drive motor • Eject motor • Polygon motor	 7 9 0
Optical	U060	Adjusting the scanner input properties	12
	U061	Turning the exposure lamp on	—
	U063	Adjusting the shading position	0
	U065	Adjusting the scanner magnification • Main scanning direction/auxiliary scanning direction	 0/1
	U066	Adjusting the leading edge registration for scanning an original on the contact glass	5/10
	U067	Adjusting the center line for scanning an original on the contact glass	-18/-18
	U068	Adjusting the scanning position for originals from the DP	0
	U070	Adjusting the DP magnification	-2
	U071	Adjusting the DP scanning timing • DP leading edge registration/DP trailing edge registration	 12/-32
	U072	Adjusting the DP center line	-25/-21/-20
	U073	Checking scanner operation	—
	U074	Adjusting the DP input light luminosity	1
	U076	Adjusting the DP input light luminosity	—
	U080	Adjusting exposure in toner economy mode	-6
	U089	Outputting a MIP-PG pattern	—
	U091	Checking shading	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Optical	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient • Text and photo/text/photo/text in fax mode/photo in fax mode	 0/0/0/2/3
	U099	Initializing original size	—
High voltage	U100	Checking the operation of main high voltage	—
	U101	Setting high voltages • Developing bias AC component frequency at image formation • Developing bias AC component duty at image formation • Developing shift bias potential at image formation • Transfer control voltage	 0 0 0 120
	U109	Displaying the drum type	—
	U110	Checking/clearing the drum count	—
	U112	Setting toner refresh operation • Time of toner refreshment • Developing bias on time	 120 700 (30 cpm) 540 (40/50 cpm)
	U113	Performing the drum refreshment	—
Developing	U130	Initial setting for the developer	—
	U144	Setting toner loading operation	MODE2
	U150	Checking sensors and switches for toner	—
	U157	Checking/clearing the developing drive time	—
	U158	Checking the developing count	—
Fixing and cleaning	U161	Setting the fixing control temperature • Control temperature during copying • Primary stabilization fixing temperature • Secondary stabilization fixing temperature • OFF time of fixing heater M • Fixing correct temperature for large size copying • Fixing correct temperature for middle size copying • Fixing correct temperature for small size copying • Fixing temperature increase amount at low temperature and low humidity • Fixing temperature decrease amount at high temperature and high humidity • Fixing temperature decrease amount for duplex copying	 140 135 145 12 50 (30 cpm) 55 (40 cpm) 60 (50 cpm) 50 (30 cpm) 60 (40 cpm) 65 (50 cpm) 25 (30 cpm) 30 (40 cpm) 35 (50 cpm) 5 0 5
	U162	Stabilizing fixing forcibly	—
	U163	Resetting the fixing problem data	—
	U165	Checking fixing counts	—
	U196	Turning the fixing heater on	—
	U198	Setting the fixing phase control	ON
	U199	Checking the fixing temperature	—
Operation panel and support equipment	U200	Turning all LEDs on	—
	U201	Initializing the touch panel	—
	U202	Setting the KMAS host monitoring system	—
	U203	Checking DP operation	—
	U204	Setting the presence or absence of a key card or key counter	—
	U206	Setting the presence or absence of the coin vender	—
	U207	Checking the operation panel keys	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Operation panel and support equipment	U208	Setting the paper size for the large paper deck	Inch specifications: Letter Metric specifications: A4
	U236	Setting the limit for the ejection section of the built-in finisher	—
	U237	Setting finisher stack quantity	—
	U243	Checking the operation of the DP motors, solenoids and clutch	—
	U244	Checking the DP switches	—
	U245	Checking messages	—
	U246	Setting the finisher • Amount of slack in the paper • Booklet stapling position adjustment • Side registration cursor stop position	 0 0 0
	U247	Checking the operation of large paper deck and paper feeder	—
	U249	Checking the paper ejection to optional devices	—
Mode setting	U250	Setting the maintenance cycle	400000 (30 cpm) 500000 (40/50 cpm)
	U251	Checking/clearing the maintenance count	—
	U252	Setting the destination	Japan
	U253	Switching between double and single counts	Double count
	U254	Turning auto start function on/off	On
	U255	Setting auto clear time	90
	U258	Switching copy operation at toner empty detection	Single mode, 70
	U260	Changing the copy count timing	After ejection
	U264	Setting the display order of the date	Inch specifications: MONTH-DATE-YEAR Metric specifications: DATE-MONTH-YEAR
	U265	Setting OEM purchaser code	—
	U266	Setting the number of days after which to automatically delete documents	—
	U274	Setting the laser scanner unit type	2/0
	U277	Setting auto application change time	120
	U326	Setting the black line cleaning indication	ON
	U328	Side ejection setting	OFF
	U330	Setting the number of sheets to enter stacking mode during sort operation	—
	U331	Setting the paper ejection	FACE-DOWN
	U332	Setting the size conversion factor	—
	U341	Specific paper feed location setting for printing function	—
	U342	Setting the ejection restriction	On
	U343	Switching between duplex/simplex copy mode	Off
	U344	Setting preheat/energy saver mode	ENERGY STAR
	U345	Setting the value for maintenance due indication	—
	U346	Setting the sleep mode operation	MODE0
Image processing	U402	Adjusting margins of image printing	—
	U403	Adjusting margins for scanning an original on the contact glass	—
	U404	Adjusting margins for scanning an original from the DP	—
	U407	Adjusting the leading edge registration for memory image printing	2

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Network scanner	U504	Initializing the scanner NIC	—
	U505	Setting Data Base Assistant	On
	U506	Setting the time out	10
	U508	Setting the LDAP	Off
Others	U901	Checking/clearing copy counts by paper feed locations	—
	U902	Checking/clearing finisher punch count	75000
	U903	Checking/clearing the paper jam counts	—
	U904	Checking/clearing the service call counts	—
	U905	Checking/clearing counts by optional devices	—
	U906	Resetting partial operation control	—
	U908	Changing the total counter value	—
	U910	Clearing the black ratio data	—
	U911	Checking/clearing copy counts by paper sizes	—
	U917	Setting backup data reading/writing	—
	U920	Checking the copy counts	—
	U925	Checking/clearing the system error counts	—
	U926	Rewriting FAX program	—
	U927	Clearing the all copy counts and machine life counts	—
	U928	Checking machine life counts	—
	U941	Setting the default magnification ratio of the default drawer	—
	U960	Outputting the machine used circumstances list	—
	U988	ID-code scanner count mode setting	—
	U989	HDD Scandisk	—
	U990	Checking/clearing the time for the exposure lamp to light	—
	U991	Checking/clearing the scanner count	—
	U993	Outputting a VTC-PG pattern	—

* Initial setting for executing maintenance item U020

(3) Contents of maintenance mode items

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U000</td><td>
Outputting an own-status report
Description
Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences.
Purpose
To check the current setting of the maintenance items, or paper jam or service call occurrences.
Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be output. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Output list</th></tr>
<tr><td>MAINTENANCE
JAM
SERVICE CALL</td><td>List of the current settings of the maintenance modes
List of the paper jam occurrences
List of the service call occurrences</td></tr>
</table>
3. Press the start key. The interrupt copy mode is entered and a list is output.
When A4/11" × 8 1/2" paper is available, a report of this size is output. If not, specify the paper feed location.
When output is complete, the screen for selecting an item is displayed.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U001</td><td>
Exiting the maintenance mode
Description
Exits the maintenance mode and returns to the normal copy mode.
Purpose
To exit the maintenance mode.
Method
Press the start key. The normal copy mode is entered.
</td></tr>
<tr><td>U002</td><td>
Setting the factory default data
Description
Restores the machine conditions to the factory default settings.
Purpose
To move the mirror frame of the scanner to the position for transport (position in which the frame can be fixed).
Method
1. Press the start key. The screen for executing is displayed.
2. Press EXECUTE on the touch panel. It is displayed in reverse.
3. Press the start key.
The mirror frame of the scanner returns to the position for transport.
Completion
The power switch turns off.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U003</td><td>
Setting the service telephone number
Description
Sets the telephone number to be displayed when a service call code is detected.
Purpose
To set the telephone number to call service when installing the machine.
Method
Press the start key. The currently set telephone number is displayed.
Setting
1. Enter a telephone number (up to 15 digits) using the numeric keys.
• To enter symbols such as hyphens and parentheses, select as required from the symbols displayed on the touch panel as shown below. To move the cursor, press Left or Right in the bottom row.
<table>
<tr><td>*</td><td>#</td></tr>
<tr><td>(</td><td>)</td></tr>
<tr><td>-</td><td>(Space)</td></tr>
<tr><td>Left</td><td>Right</td></tr>
</table>
2. Press the start key. The phone number is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U004</td><td>
Displaying the machine number
Description
Displays the machine number.
Purpose
To check the machine number.
Method
Press the start key. The currently machine number is displayed.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U005</td><td>
Copying without paper
Description
Simulates the copy operation without paper feed.
Purpose
To check the overall operation of the machine.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be operated. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>PPC
PPC + DP</td><td>Only the copier operates.
Both the copier and DP operate (continuous operation).</td></tr>
</table>
3. Press the interrupt key. The copy mode screen is displayed.
4. Set the operation conditions required on the copy mode screen. Changes in the following settings can be made.
• Paper feed locations
• Magnifications
• Simplex or duplex copy mode
• Number of copies: in simplex copy mode, continuous copying is performed when set to 999; in duplex copy mode, continuous copying is performed regardless of the setting.
• Copy density
• Keys on the operation panel other than the energy saver (preheat) key
5. To control the paper feed pulley, remove all the paper in the drawers, or the drawers. With the paper present, the paper feed pulley does not operate.
6. Press the start key. The operation starts.
Copy operation is simulated without paper under the set conditions. When operation is complete, the screen for selecting an item is displayed.
7. To stop continuous operation, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U018</td><td>
Displaying the ROM checksum
Description
Displays the checksum of ROM.
Purpose
To check the checksum.
Method
1. Press the start key. Program names for the copier is displayed.
2. Press the start key. The ROM checksum is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN
MMI
LANGUAGE(Stand.)
LANGUAGE(Option)</td><td>Main PCB ROM checksum
Operation PCB ROM checksum
Standard language ROM checksum
Optional language ROM checksum</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U019</td><td>
Displaying the ROM version
Description
Displays the part number of the ROM fitted to each PCB.
Purpose
To check the part number or to decide if the ROM version is new from the last digit of the number.
Method
Press the start key. The last eight digits of the part number indicating the ROM version are displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN</td><td>Main ROM IC</td></tr>
<tr><td>MMI</td><td>Operation ROM IC</td></tr>
<tr><td>LANGUAGE(Stand.)</td><td>Standard language ROM IC</td></tr>
<tr><td>LANGUAGE(Option)</td><td>Optional language ROM IC</td></tr>
<tr><td>MAIN BOOT</td><td>Boot of main ROM IC</td></tr>
<tr><td>MMI BOOT</td><td>Boot of operation ROM IC</td></tr>
<tr><td>PRINTER</td><td>Boot of printer board ROM IC</td></tr>
<tr><td>NETWORK SCANNER</td><td>Network scanner ROM IC</td></tr>
<tr><td>POWER SAVE</td><td>???</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U020</td><td>
Initializing all data
Description
Initializes all the backup RAM on the main PCB to return to the original settings.
Purpose
Used when replacing the backup RAM on the main PCB.
Method
1. Press the start key. The screen for executing is displayed.
2. Press EXECUTE on the touch panel. It is displayed in reverse.
3. Press the start key. All data in the backup RAM is initialized, and the original settings for Inch specifications are set.
When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on and the display language to the initial setting of English.
Completion
To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U021</td><td>
Initializing counters and mode settings
Description
Initializes the setting data other than that for adjustments due to variations between respective machines, i.e., settings for counters, service call history and mode settings. As a result, initializes the backup RAM according to the specifications depending on the destination selected in U252.
Purpose
Used to return the machine settings to the factory settings.
Method
1. Press the start key. The screen for executing is displayed.
2. Press EXECUTE on the touch panel. It is displayed in reverse.
3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U022	**Initializing backup memory** **Description** Initializes only the data set for the optical section or initializes various setting data when installing the optional network scanner board. **Purpose** To be executed after replacing the scanner unit or installing the network scanner board. **Start** Press the start key. The screen for executing is displayed. **Method:Initializing the data for the optical section.** 1. Press SCANNER on the touch panel. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key. The data for the optical section (U060 to 067, U088 to 099, U403, U990 and U991) is initialized. **Method:Initializing the setting datadata for the network scanner.** 1. Press NETWORK SCANNER on the touch panel. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key. The setting data of scanner function initial settings are initialized, and the registered transmission and reception are cleared. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U024	**HDD formatting** **Description** Formats the document management data, HDD backup data areas for the network scanner and department administration. **Purpose** To initialize the HDD when installing or replacing the HDD after shipping. **Method** 1. Press the start key. The screen for executing is displayed. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key to initialize the hard disk. The EXECUTE display flashes during initializing. Initialization results will be displayed when initializing is completed. 4. Press the stop/clear key. The screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U030</td><td>
Checking motor operation
Description
Drives each motor.
Purpose
To check the operation of each motor.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the motor to be operated. The selected item is displayed in reverse and the operation starts.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>FEED</td><td>Paper feed motor operates</td></tr>
<tr><td>MAIN</td><td>Drive motor operates</td></tr>
<tr><td>EJECT(FW)</td><td>Eject motor rotates forward</td></tr>
<tr><td>EJECT(REV)</td><td>Eject motor rotates in reverse</td></tr>
</table>
3. To stop operation, press the stop/clear key.
Completion
Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U031</td><td>
Checking switches for paper conveying
Description
Displays the on-off status of each paper detection switch on the paper path.
Purpose
To check if the switches for paper conveying operate correctly.
Method
1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed.
2. Turn each switch on and off manually to check the status.
When the on-status of a switch is detected, that switch is displayed in reverse.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>F1</td><td>Feed switch 1 (FSW1)</td></tr>
<tr><td>F2</td><td>Feed switch 2 (FSW2)</td></tr>
<tr><td>F3</td><td>Feed switch 3 (FSW3)</td></tr>
<tr><td>BYP</td><td>Bypass feed switch (BYPFSW)</td></tr>
<tr><td>RES</td><td>Registration switch (RSW)</td></tr>
<tr><td>EJE</td><td>Eject switch (ESW)</td></tr>
<tr><td>BRA</td><td>Feedshift switch (FSSW)</td></tr>
<tr><td>DUP</td><td>Duplex paper conveying switch (DUPPCSW)</td></tr>
<tr><td>JOB</td><td>Job separator eject switch (JBESW)*</td></tr>
</table>
*Optional.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U032</td><td>
Checking clutch operation
Description
Turns each clutch on.
Purpose
To check the operation of each clutch.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the clutch to be operated. The selected item is displayed in reverse, and the clutch turns on for 1 s.
<table>
<tr><th>Display</th><th>Clutches</th></tr>
<tr><td>PF1</td><td>Upper paper feed clutch (PFCL-U)</td></tr>
<tr><td>PF2</td><td>Lower paper feed clutch (PFCL-U)</td></tr>
<tr><td>PFBYP</td><td>Bypass paper feed clutch (BYPPFCL)</td></tr>
<tr><td>FEED1</td><td>Feed clutch 1 (FCL1)</td></tr>
<tr><td>FEED2</td><td>Feed clutch 2 (FCL2)</td></tr>
<tr><td>FEED3</td><td>Feed clutch 3 (FCL3)</td></tr>
<tr><td>BYPF</td><td>Bypass feed clutch (BYPFCL)</td></tr>
<tr><td>RES</td><td>Registration clutch (RCL)</td></tr>
<tr><td>DUPF</td><td>Duplex feed clutch (DUPFCL)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U033</td><td>
Checking solenoid operation
Description
Turns each solenoid on.
Purpose
To check the operation of each solenoid.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the solenoid to be operated. The selected item is displayed in reverse, and the solenoid turns on for 1 s.
<table>
<tr><th>Display</th><th>Solenoids</th></tr>
<tr><td>TONER SOL</td><td>Toner feed solenoid (TNFSOL)</td></tr>
<tr><td>BRANCH1 SOL</td><td>Feedshift solenoid (FSSOL)</td></tr>
<tr><td>BRANCH2 SOL</td><td>Feedshift solenoid (FSSOL)*</td></tr>
<tr><td>MAIN SW SOL</td><td>Power switch turns on</td></tr>
</table>
*Optional.
Select MAIN SW SOL to check the operation of the power switch in auto shut off.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U034</td><td>
Adjusting the print start timing
Adjustment
See pages 1-6-10 and 12.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U035</td><td>
Setting folio size
Description
Changes the image area for copying onto folio size paper.
Purpose
To prevent the image at the trailing edge, or right or left side of the paper from not being copied by setting the actual size of the folio paper used.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the item to be set. The selected item is displayed in reverse.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>LENGTH DATA
WIDTH DATA</td><td>Length
Width</td><td>330 to 356 mm
200 to 220 mm</td><td>330
210</td></tr>
</table>
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U038</td><td>
Checking the copier cover switch
Description
Displays the on-off status of each cover switch.
Purpose
To check if the switches of covers operate correctly.
Method
1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed.
2. Open and close each cover to check the status of each switch.
When the cover is closed, the switch shall be displayed in reverse. When the cover is open, the switch shall be displayed normally.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>INTER LOCK SW
FRONT COVER
LEFT1 COVER
LEFT2 COVER</td><td>Safty switch 1 and 2 (SSW1 and 2)
Front cover switch (FRCSW)
Conveying cover switch (CCSW)
Side cover switch (SCSW)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U051</td><td>
Adjusting the amount of slack in the paper
Adjustment
See page 1-6-14.
</td></tr>
</table>

Maintenance item No.	Description
U053	**Performing fine adjustment of the motor speed** **Description** Performs fine adjustment of the speeds of the motors. **Purpose** Used to adjust the speed of the respective motors when the magnification is not correct. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
MAIN MOTOR	Drive motor speed adjustment	0 to +40	7
EJECT MOTOR	Eject motor speed adjustment	0 to +14	9
POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0

MAIN MOTOR /EJECT MOTOR
Increasing the setting makes the image shorter in the auxiliary scanning direction, and decreasing it makes the image longer in the auxiliary scanning direction.
POLYGON MOTOR
Increasing the setting makes the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction; decreasing the image longer in the main scanning direction and shorter in the auxiliary scanning direction.
EJECT MOTOR
Normally no change is necessary but this can be used as countermeasures against wrinkles (waving) of paper.

3. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode. Correct values for an A3/11" × 17" output are:
A = 300 ± 1.5 mm
B = 260 ± 1.0 mm

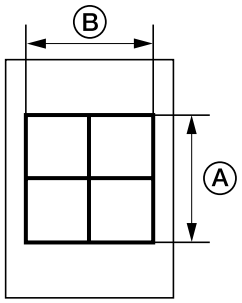


Figure 1-4-1

Adjustment
1. Output an A3/11" × 17" VTC pattern in interrupt mode.
2. Measure A and B on the VTC pattern (Figure 1-4-1), and perform the following adjustments if they are different from the correct sizes:
   A: Drive motor speed adjustment
   B: Polygon motor speed adjustment

Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U060</td><td>
Adjusting the scanner input properties
Description
Adjusts the image scanning density in text, text and photo, or photo mode.
Purpose
Used when the entire image appears too dark or light.
Method
Press the start key. The screen for executing is displayed.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Descrition</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Image scannnig density</td><td>1 to +23</td><td>12</td></tr>
</table>
Increasing the setting makes the density lower, and decreasing it makes the density higher.
2. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U061</td><td>
Turning the exposure lamp on
Description
Turns the exposure lamp on.
Purpose
To check the exposure lamp.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. The exposure lamp lights.
3. To turn the exposure lamp off, press the stop/clear key.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U063</td><td>
Adjusting the shading position
Description
Changes the shading position.
Purpose
Used when white lines continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains.
Method
1. Press the start key. The screen for adjustment is displayed.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>Shading position</td><td>–8 to +2</td><td>0</td><td>0.17 mm</td></tr>
</table>
Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left.
3. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U065</td><td>
Adjusting the scanner magnification
Adjustment
See pages 1-6-27 and 28.
</td></tr>
<tr><td>U066</td><td>
Adjusting the leading edge registration for scanning an original on the contact glass
Adjustment
See page 1-6-29.
</td></tr>
<tr><td>U067</td><td>
Adjusting the center line for scanning an original on the contact glass
Adjustment
See page 1-6-30.
</td></tr>
<tr><td>U068</td><td>
Adjusting the scanning position for originals from the DP
Description
Adjusts the position for scanning originals from the DP.
Purpose
Used when there is a regular error between the leading edges of the original and the copy image when the DP is used.
Method
Press the start key. The screen for executing is displayed.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>Scanning position</td><td>–32 to +32</td><td>0</td><td>0.17 mm</td></tr>
</table>
Increasing the setting moves the image backward, and decreasing it moves the image forward.
2. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U070	**Adjusting the DP magnification** **Description** Adjusts the DP original scanning speed. **Purpose** To be executed if the correct magnification is not obtained in the auxiliary scanning direction when the optional DP is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 ► U065 ► U070 **Method** Press the start key. The screen for executing is displayed. **Setting** 1. Change the setting using the cursor up/down keys.

Description	Setting range	Initial setting	Change in value per step
Original conveying motor speed	–25 to +25	–2	0.1%

Increasing the setting makes the image longer, and decreasing it makes the image shorter.

2. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U071	**Adjusting the DP scanning timing** **Description** Adjusts the DP original scanning timing. **Purpose** To be executed if there is a regular error between the leading or trailing edges of the original and the copy image when the optional DP is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U034 → U066 → U071 **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting	Change in value per step
LEAD EDGE ADJ	DP leading edge registration	–32 to +32	12	0.19 mm
TRAIL EDGE ADJ	DP trailing edge registration	–32 to +32	–32	0.19 mm

Increasing the setting moves the copy image backward, and decreasing it moves the copy image forward.

3. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Adjustment
1. In interrupt copy mode, make a copy using the DP.
2. Check the copy image and adjust the registration as follows.
   For copy example 1, increase the setting of LEAD EDGE ADJ.
   For copy example 2, decrease the setting of LEAD EDGE ADJ.

Figure 1-4-2

Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U072	**Adjusting the DP center line** **Description** Adjusts the scanning start position for the DP original. **Purpose** To be executed if there is a regular error between the centers of the original and the copy image when the optional DP is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U034 → U067 → U072 **Method** Press the start key. The screen for executing is displayed. **Setting** 1. Select the item to be set. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting	Change in value per step
1 sided	Simplex copy mode	–39 to +39	–25	0.17 mm
2 sided front	Front face in duplex copy mode	–39 to +39	–21	0.17 mm
2 sided back	Reverse face in duplex copy mode	–39 to +39	–20	0.17 mm

Increasing the setting moves the image to the right, and decreasing it moves the image to the left.

2. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Adjustment
1. In interrupt copy mode, make a copy using the DP.
2. Check the copy image and adjust the center line as follows.
   For copy example 1, increase the setting.
   For copy example 2, decrease the setting.

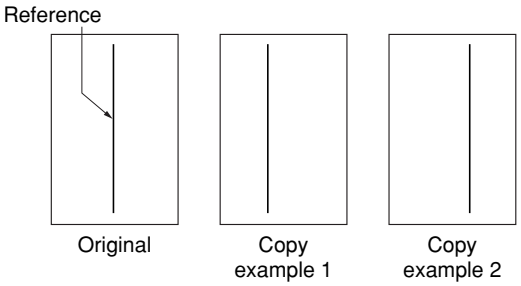


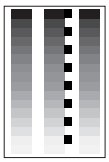
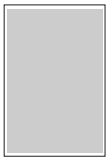
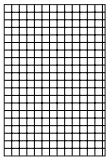
Figure 1-4-3

Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U073</td><td>
Checking scanner operation
Description
Simulates the scanner operation under arbitrary conditions.
Purpose
To check scanner operation.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be changed. The selected item is displayed in reverse.
3. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Operating conditions</th><th>Setting range</th></tr>
<tr><td>ZOOM
SIZE
LAMP</td><td>Magnification
Original size
On and off of the exposure lamp</td><td>100 to 400%
See below.
0 (off) or 1 (on)</td></tr>
</table>
Original sizes for each setting in SIZE
<table>
<tr><th>Setting</th><th>Paper size</th><th>Setting</th><th>Paper size</th></tr>
<tr><td>8
9
24
36
39
40
41</td><td>A4
B5
11" × 8$^1/_2$"
A3
B4
A4R
B5R</td><td>42
47
52
53
55
56
58</td><td>A5R
Folio
11" × 17"
11" × 15"
8$^1/_2$" × 14"
8$^1/_2$" × 11"
5$^1/_2$" × 8$^1/_2$"</td></tr>
</table>
4. Press the start key. Scanning starts under the selected conditions.
5. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U074</td><td>
Adjusting the DP input light luminosity
Description
Adjusts the luminosity of the exposure lamp for scanning originals from the DP.
Purpose
Used if the exposure amount differs significantly between when scanning an original on the contact glass and when scanning an original from the DP.
Method
Press the start key.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DP input light luminosity</td><td>0 to 8</td><td>1</td></tr>
</table>
Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.
2. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U076</td><td>
Executing DP automatic adjustment
Description
Uses a specified original and automatically adjusts the following items in the DP scanning section.
• Adjusting the DP magnification (U070)
• Adjusting the DP scanning timing (U071)
• Adjusting the DP center line (U072)
• Adjusting the margins for scanning an original from the DP (U404)
When you run this maintenance mode, the preset values of U070, U071, U072, and U404 will also be updated.
Purpose
To perform automatic adjustment of various items in the DP scanning section.
Method
1. Set a specified original (part number: 2AC68241) in the DP.
2. Press the start key. The screen for executing is displayed.
3. Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CONVEY SPEED</td><td>DP magnification in the auxiliary scanning direction</td></tr>
<tr><td>LEAD EDGE ADJ</td><td>DP leading edge registration</td></tr>
<tr><td>TRAIL EDGE ADJ</td><td>DP trailing edge registration</td></tr>
<tr><td>DP CENTER</td><td>DP original center line</td></tr>
<tr><td>DP A MARGIN</td><td>DP scanning margin (A side)</td></tr>
<tr><td>DP B MARGIN</td><td>DP scanning margin (B side)</td></tr>
<tr><td>DP C MARGIN</td><td>DP scanning margin (C side)</td></tr>
<tr><td>DP D MARGIN</td><td>DP scanning margin (D side)</td></tr>
</table>
If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.
Completion
Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item is displayed.
If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.
</td></tr>
<tr><td>U080</td><td>
Adjusting exposure in toner economy mode
Description
Adjusts the image density in the eco-print mode.
Purpose
To increase or decrease the image density in the eco-print mode.
Method
Press the start key. The screen for adjustment is displayed.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exposure is toner economy mode</td><td>–12 to 0</td><td>–6</td></tr>
</table>
Increasing the setting makes the image darker; decreasing it makes the image lighter.
2. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U089	**Outputting a MIP-PG pattern** **Description** Selects and outputs the MIP-PG pattern created in the copier. **Purpose** When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output MIP-PG pattern. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the MIP-PG pattern to be output.

Display	PG pattern to be output	Purpose
GRAYSCALE		To check the laser scanner unit engine output characteristics.
MONO-LEVEL		To check the drum quality.
256-LEVEL		To check resolution reproducibility in printing.
1 DOT-LINE		To check fine line reproducibility. To adjust the position of the laser scanner unit (lateral squareness)

3. To change the output conditions of MONO-LEVEL and 1dot-LINE, use the cursor up/down keys to change the preset values and press the Start key to register the setting.

Display	Setting range	Initial setting
Output density of MONO-LEVEL 1dot-LINE	0 or 70 0 to 21	0 0

4. Press the interrupt key. The copy mode screen is displayed.
5. Press the start key. A MIP-PG pattern is output.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for maintenance item No. is displayed.

Maintenance item No.	Description
U091	**Checking shading**

Description

Performs scanning under the same conditions as before and after shading is performed, displaying the original scanning values at nine points of the contact glass.

Purpose

To check the change in original scanning values before and after shading. The results may be used to decide the causes for fixing unevenness (uneven density) of the gray area of an image: either due to optical (shading or CCD) or other problems.
Also to check the causes for a white or black line appearing longitudinally.

Method

1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be operated. The selected item is displayed in reverse.

Display	Description
SHD BEFORE	Performs scanning before shading and displays the result.
SHD AFTER	Performs scanning after shading and displays the result.

3. Press the start key. Scanning is performed under the selected conditions and the result is displayed.
   When scanning is performed before shading, the scan value at the machine center should be slightly different from those at the machine front and rear. When scanning is performed after shading, there should be no difference between respective values. Any differences between the values at machine front and rear indicates that scanner problem causes the fixing unevenness.
   If the displayed results indicate no shading problems, the fixing unevenness (uneven copy density) is caused by factors other than in the scanner section (shading or CCD).
   If a black line appears, the cause may assumed to be based on the results of the scanning operation before shading: if a white line appears, they may be assumed based on the results of the scanning operation after shading. Note that depending on the thickness and location of the black or white line, it may not be possible to use this method to determine the cause. This is because the displayed values obtained from scanning at the limit of nine points are insufficient to provide significant information.

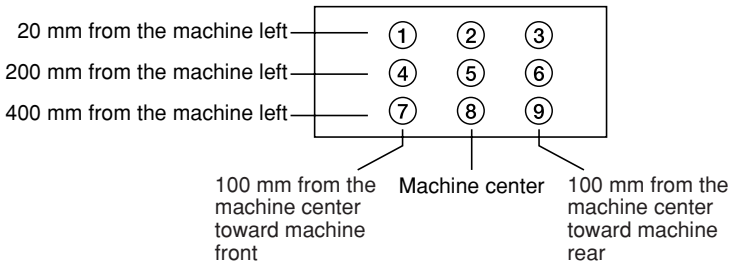


Figure 1-4-4

4. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for entering a maintenance item is displayed.

Maintenance item No.	Description
U092	**Adjusting the scanner automatically** **Description** Makes auto scanner adjustments in the order below using the specified original. • Adjusting the scanner center line (U067) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) • Adjusting the scanner margins (U403) When this maintenance item is performed, the settings in U065, U066, U067 and U403 are also changed. **Purpose** Used to make respective auto adjustments for the scanner. **Method** 1. Place the specified original (P/N: 2A068020) on the contact glass. 2. Press the start key. The screen for executing is displayed. 3. Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed.

Display	Description
SCAN CENTER	Scanner center line
SCAN TIMING	Scanner leading registration
SUB SCAN	Scanner magnification in the auxiliary scanning direction
MAIN SCAN	Scanner magnification in the main scanning direction
SCAN A MARGIN	Scanner reading margin (A side)
SCAN B MARGIN	Scanner reading margin (B side)
SCAN C MARGIN	Scanner reading margin (C side)
SCAN D MARGIN	Scanner reading margin (D side)

If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.

Completion

Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed.

If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.

Maintenance item No.	Description
U093	**Setting the exposure density gradient**

Description

Changes the exposure density gradient in manual density mode, depending on respective image modes (text, text and photo, photo, text in fax mode, photo in fax mode).

Purpose

To set how the image density is altered by a change of one step in the manual density adjustment. Also used to make copy image darker or lighter.

Start

1. Press the start key. The screen for selecting an item is displayed.
2. Select the image mode to be adjusted and press the start key. The screen for the selected item is displayed.

Display	Description
MIXED	Density in text and photo mode
TEXT	Density in text mode
PHOTO	Density in photo mode
FAX TEXT	Density in the text in fax mode
FAX PHOTO	Density in the photo in fax mode

Setting:Density in text and photo mode

1. Select the item to be adjusted. The selected item is displayed in reverse.
2. Adjust the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
MIXED DARKER	Change in density when manual density is set dark	0 to 3	0
MIXED LIGHTER	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

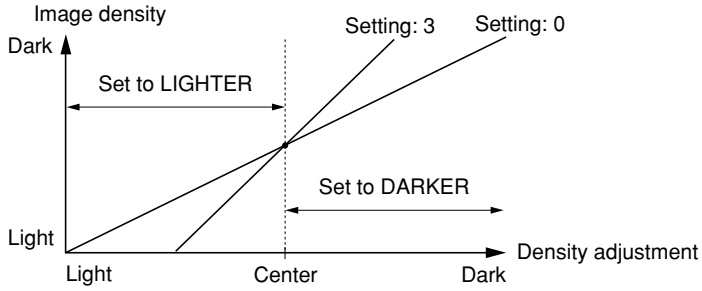


Figure 1-4-5 Exposure density gradient

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Setting:Density in text mode

1. Select the item to be adjusted. The selected item is displayed in reverse.
2. Adjust the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
TEXT DARKER	Change in density when manual density is set dark	0 to 3	0
TEXT LIGHTER	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Maintenance item No.	Description
U093	**Setting:Density in photo mode** 1. Select the item to be adjusted. The selected item is displayed in reverse. 2. Adjust the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
PHOTO DARKER	Change in density when manual density is set dark	0 to 3	0
PHOTO LIGHTER	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Setting:Density in the text in fax mode

1. Select the item to be adjusted. The selected item is displayed in reverse.
2. Adjust the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
FAX TEXT DARKER	Change in density when manual density is set dark	0 to 4	2
FAX TEXT LIGHTER	Change in density when manual density is set light	0 to 9	2

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Setting:Density in the photo in fax mode

1. Select the item to be adjusted. The selected item is displayed in reverse.
2. Adjust the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
FAX PHOTO DARKER	Change in density when manual density is set dark	0 to 6	3
FAX PHOTO LIGHT.	Change in density when manual density is set light	0 to 6	3

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U099	**Initializing original size**

Description

Checks the operation of the original size detection sensor and sets the sensing threshold value.

Purpose

To adjust the sensitiveness of the sensor and size judgement time if the original size detection sensor malfunctions frequently due to incident light or the like.

Start

1. Press the start key. The screen for selecting an item is displayed.
2. Select an item and press the start key. The screen for executing each item is displayed.

Display	Description
DATA	Displaying detection sensor transmission data
B/W LEVEL	Setting detection sensor threshold value
	Setting original size judgment time

Method to display the data for the sensor

1. Press the start key. The detection sensor transmission data is displayed.

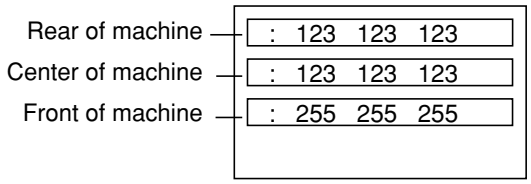


Figure 1-4-6

2. To return to the screen for selecting an item, press the stop/clear key.

Setting

1. Select an item to be set.

Display	Description	Setting range	Initial setting
LEVEL	Detection sensor threshold value	0 to 255	170
WAIT TIME	Original size judgment time*	0 to 100	50
A4R AREA	Threshold value in the main scan direction for A4R detection	220 (mm)/ 240 (mm)	240
ORIG. AREA	Original size detection position display (mm)	0 to 350	–
SIZE	Detected original size display	0 to 63	–

* Time from activation of the original detection switch (ODSW) to original size judgment

Method to set the detection threshold value

1. Adjust the preset value using the cursor up/down keys.
   * A larger value increases the sensor sensitivity, and a smaller value decreases it.
2. Press the start key. The value is set.
3. To return to the screen for selecting an item, press the stop/clear key.

Method to set the original size judgment time

1. Adjust the preset value using the cursor up/down keys.
   * A larger value increases the original size judgment time, and a smaller value decreases it.
2. Press the start key. The value is set.
3. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U100</td><td>
Checking the operation of main high voltage
Description
Performs main charging.
Purpose
To check main charging.
Start
Press the start key. The screen for selecting an item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MC ON
LASER ON/OFF</td><td>Turning the main charger on
Turning the main charger on and the laser scanner unit on and off</td></tr>
</table>
Method
1. Select the item to be operated.
2. Press the start key. The selected operation starts.
3. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item when main charger output stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U101</td><td>
Setting high voltages
Description
Changes the developing bias voltage and transfer voltage by changing the developing bias control voltage and transfer control voltage.
Purpose
To check the developing bias and the transfer voltage or to take measures against drop of image density or background fog.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the item to be set. The selected item is displayed in reverse.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DEV BIAS</td><td>Developing bias AC component frequency at image formation</td><td>-255 to 255</td><td>0</td></tr>
<tr><td>DEV DUTY</td><td>Developing bias AC component duty at image formation</td><td>-100 to 100</td><td>0</td></tr>
<tr><td>DEV SBIAS</td><td>Developing shift bias potential at image formation</td><td>-1 to 1</td><td>0</td></tr>
<tr><td>TC DATA</td><td>Transfer control voltage</td><td>0 to 255</td><td>120</td></tr>
</table>
Increasing the DEV BIAS setting makes the image lighter; decreasing it makes the image darker.
Increasing the DEV DUTY setting makes the image lighter; decreasing it makes the image darker.
Increasing the DEV SBIAS setting makes the image darker; decreasing it makes the image lighter.
Increasing the TC DATA setting makes the transfer voltage higher, and decreasing it makes the voltage lower.
3. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U109	**Displaying the drum type** **Description** Displays the drum surface potential set as EEPROM of the drum unit. **Purpose** To check the drum surface potential. **Method** Press the start key. * Drum surface potential (V) is displayed. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U110	**Checking/clearing the drum count** **Description** Displays the drum counts for checking, clearing or changing the figure, which is used as a reference when correcting the main charger potential output. **Purpose** To check the drum status. Also used to clear the count after replacing the drum during regular maintenance. Since the count was cleared before shipping, do not clear it when installing. **Method** Press the start key. The drum counter count is displayed. **Clearing** 1. Press the reset key. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. **Setting** 1. Enter a six-digit count using the numeric keys. 2. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit the maintenance mode without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U112</td><td>
Setting toner refresh operation
Description
Sets the drum refresh operation time and the developing bias on time at power on and after copying.
Purpose
To change the drum refresh operation time and the developing bias on time at power on and after copying if image flow level is low.
Method
Press the start key. The screen for executing is displayed.
Setting
1. Select the item to be set. The selected item is displayed in reverse.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>ON TIME(SEC)
BIAS TIME(MSEC)</td><td>Toner refresh operation time
Developing bias on time</td><td>50 to 150 (sec)
500 to 1000 (msec)</td><td>120
700 (30 cpm)
540 (40/50 cpm)</td></tr>
</table>
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U113</td><td>
Performing drum refresh operation
Description
Executes drum refresh operation.
Purpose
To operate when image flow occurs.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. Drum refresh operation starts. (approximately 3 minutes)
3. To stop the operation, press the stop/clear key.
Completion
Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U130</td><td>
Initial setting for the developer
Description
Replenishes toner to the developer unit to a certain level from the toner container that has been installed.
Purpose
To operate when installing the machine or replacing the developing unit.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. The time that elapses until initialization is complete and whether or not toner remains in the developing unit (0: No, 1: Yes) are displayed.
Supplement
The following data is also renewed or cleared by performing this maintenance item:
• Clearing the developing drive time (U157)
• Clearing the developing count (U158)
• Resetting the toner feed start level and toner empty detection
Completion
Press the stop/clear key after initial setting is complete. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U144</td><td>
Setting toner loading operation
Description
Sets toner loading operation after completion of copying.
Purpose
To set whether or not toner is loaded on the drum after low density copying. Normally no change is necessary from the initial setting.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item. The selected item is displayed im reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MODE0
MODE1
MODE2</td><td>Toner not loaded
Toner not loaded
Toner loaded</td></tr>
</table>
Initial setting: MODE2
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U150</td><td>
Checking sensors and switches for toner
Description
Displays the on-off status of each sensor or switch related to toner.
Purpose
To check if the sensors and switches operate correctly.
Method
1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed.
2. Turn each switch on and off manually to check the status.
When the on-status of a switch is detected, that switch is displayed in reverse.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>DEVELOPER SENSOR
CONTAINER SET
CONTAINER SENSOR
DISPOSAL TANK SET
DISPOSAL TANK SENSOR</td><td>Toner sensor (TNS)
Toner container detection switch (TCDSW)
Toner container sensor (TCS)
Toner disposal tank detection switch (TDDSW)
Overflow sensor (OFS)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U157</td><td>
Checking/clearing the developing drive time
Description
Displays the developing drive time for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.
Purpose
To check the developing drive time after replacing the developing unit.
Method
Press the start key. The developing drive time is displayed in minutes.
Clearing
1. Press the reset key.
2. Press the start key. The time is cleared, and the screen for selecting a maintenance item No. is displayed.
Setting
1. Enter a five-digit drive time (in minutes) using the numeric keys.
2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U158</td><td>
Checking the developing count
Description
Displays the developing count for checking a figure which is used as a reference when correcting the toner control.
Purpose
To check the developing count after replacing the developing unit.
Method
Press the start key. The developing count is displayed.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U161</td><td>
Setting the fixing control temperature
Description
Changes the fixing control temperature.
Purpose
Normally no change is necessary. However, can be used to prevent curling or creasing of paper, or solve a fixing problem on thick paper.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be set. The screen for executing each item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CONTROL TEMP
CORRECT TEMP</td><td>Sets the fixing control temperature.
Sets the fixing correct temperature.</td></tr>
</table>
Setting the fixing control temperature
1. Select the item to be set. The selecting item is displayed in reverse.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>CONT TEMP
1ST TEMP
2ND TEMP
MH OFF TIME(S)</td><td>Control temperature during copying
Primary stabilization fixing temperature
Secondary stabilization fixing temperature
OFF time of fixing heater M</td><td>100 to 200 (°C)
80 to 200 (°C)
100 to 200 (°C)
5 to 20</td><td>140
135
145
12</td></tr>
</table>
The respective temperatures are to be set such that 2ND TEMP ≧ 1ST TEMP.
If fixing offset occurs due to excessive fixing temperature, you can increase the preset value of MH OFF TIME(S) to increase the OFF time of fixing heater M to solve this problem.
3. Press the start key. The value is set.
Setting the fixing correct temperature
1. Select the item to be set. The selecting item is displayed in reverse.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>COPY UP TEMP(L)</td><td>Fixing correct temperature for large size copying</td><td>-30 to +100 (°C)</td><td>50 (30 cpm)
55 (40 cpm)
60 (50 cpm)</td></tr>
<tr><td>COPY UP TEMP(M)</td><td>Fixing correct temperature for middle size copying</td><td>-30 to +100 (°C)</td><td>50 (30 cpm)
60 (40 cpm)
65 (50 cpm)</td></tr>
<tr><td>COPY UP TEMP(S)</td><td>Fixing correct temperature for small size copying</td><td>-30 to +100 (°C)</td><td>25 (30 cpm)
30 (40 cpm)
35 (50 cpm)</td></tr>
<tr><td>L/L UP TEMP</td><td>Fixing temperature increase amount at low temperature and low humidity</td><td>0 to +20 (°C)</td><td>5</td></tr>
<tr><td>H/H DOWN TEMP</td><td>Fixing temperature decrease amount at high temperature and high humidity</td><td>0 to +20 (°C)</td><td>0</td></tr>
<tr><td>DUP DOWN TEMP</td><td>Fixing temperature decrease amount for duplex copying</td><td>0 to +20 (°C)</td><td>5</td></tr>
</table>
3. Press the start key. The value is set.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U161</td><td>Interrrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U162</td><td>Stabilizing fixing forcibly
Description
Stops the stabilization fixing drive forcibly, regardless of fixing temperature.
Purpose
To forcibly stabilize the machine before the fixing section reaches stabilization temperature.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. The forced stabilization mode is entered, and stabilization operation stops regardless of fixing temperature. The screen for selecting a maintenance item No. is displayed.
To exit the forced stabilization mode, turn the power off and on.
Completion
To exit this maintenance item without executing forced fixing stabilization, press the stop/clear key.The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U163</td><td>Resetting the fixing problem data
Description
Resets the detection of a service call code indicating a problem in the fixing section.
Purpose
To prevent accidents due to an abnormally high fixing temperature.
Method
1. Press the start key. The screen for executing is displayed.
2. Press EXECUTE on the touch panel. It is displayed in reverse.
3. Press the start key. The fixing problem data is initialized.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U165</td><td>Checking fixing counts
Description
Displays fixing counts.
Purpose
To check fixing counts after replacing the fixing unit.
Method
Press the start key. The fixing counts are displayed.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U196</td><td>Turning the fixing heater on
Description
Turns the fixing heater M or S on.
Purpose
To check fixing heaters turning on.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the heater to be turned on. The selected heater turns on for 3 s and then turns off.
<table><tr><th>Display</th><th>Description</th></tr><tr><td>MAIN
SUB</td><td>Fixing heater M (FH-M)
Fixing heater S (FH-S)</td></tr></table>Completion
Press the stop/clear key when fixing motors M and S are off. The screen for selecting the maintenance item No. is displayed.</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U198</td><td>
Setting the fixing phase control
Description
Sets the use of fixing phase control to reduce electrical noise generated by the copier.
Purpose
Normally no change is necessary. If electrical noise generated by the copier causes flickering of the lights around the copier, select fixing phase control to reduces the noise.
Method
Press the start key. The screen for adjustment is displayed.
Setting
1. Select ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Fixing phase control present
Fixing phase control absent</td></tr>
</table>
Initial setting: ON (220-240 V specifications) / OFF (120 V specifications)
2. If you select ON, use the ∗ or # key to set 0 (100 V system fixing heater phase control) or 1 (200 V system fixing heater phase control).
3. Press the start key. The value is set, and the maintenance mode is exited.
Completion
To exit this maintenance item without changing the current value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U199</td><td>
Checking the fixing temperature
Description
Displays the fixing temperature, the ambient temperature and the absolute humidity.
Purpose
To check the fixing temperature, the ambient temperature and the absolute humidity.
Method
Press the start key. The fixing temperature and ambient temperature are displayed in centigrade (°C) and the absolute humidity is displayed in percentage (%).
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FIX TEMP
SURROUND TEMP
HUMIDITY</td><td>Fixing temperature (°C)
Ambient temperature (°C)
Absolute humidity (%)</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U200	**Turning all LEDs on** **Description** Turns all the LEDs on the operation panel on. **Purpose** To check if all the LEDs on the operation panel light. **Method** Press the start key. All the LEDs on the operation panel light. Press the stop/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance item No. is displayed.
U201	**Initializing the touch panel** **Description** Automatically correct the positions of the X- and Y-axes of the touch panel. **Purpose** To automatically correct the display positions on the touch panel after it is replaced. **Method** 1. Press the start key. The screen for executing is displayed, and the + key displayed at the upper left of the touch panel flashes. 2. Press on the center of the + key. The + key on lower right flashes. 3. Press the center of the flashing +. Initialization of the touch panel is complete, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without initializing, press the stop/clear key. The screen for selecting a maintenance mode No. is displayed.
U202	**Setting the KMAS host monitoring system** **Description** Initializes or operates the KMAS host monitoring system. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U203</td><td>
Checking DP operation
Description
Simulates the original conveying operation separately in the optional DP.
Purpose
To check the DP.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Place an original in the DP if running this simulation with paper.
3. Select the item to be operated. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>ADP
RADP
ADP (NON-P)
RADP (NON-P)</td><td>With paper, single-sided original
With paper, double-sided original
Without paper, single-sided original (continuous operation)
Without paper, double-sided original (continuous operation)</td></tr>
</table>
4. Press the start key. The operation starts.
5. To stop continuous operation, press the stop/clear key.
Completion
Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U204</td><td>
Setting the presence or absence of a key card or key counter
Description
Sets the presence or absence of the optional key card or key counter.
Purpose
To run this maintenance item if a key card or key counter is installed.
Method
Press the start key. The screen for selecting an item is displayed
Setting
1. Select the optional counter to be installed using the cursor up/down keys. The selected counter is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>KEY-CARD
KEY-COUNTER</td><td>The key card is installed
The key counter is installed</td></tr>
</table>
2. Press the start key. The setting is set and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U206	**Setting the presence or absence of the coin vender** **Description** Sets the presence or absence of the optional coin vender. Also sets the details for coin vender operation, such as mode and unit price. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary.
U207	**Checking the operation panel keys** **Description** Checks operation of the operation panel keys. **Purpose** To check operation of all the keys and LEDs on the operation panel. **Method** 1. Press the start key. The screen for executing is displayed. 2. "COUNT1" is displayed and the leftmost LED on the operation panel lights. 3. As the keys lined up in the same line as the lit indicator are pressed in the order from the top to the bottom, the figure shown on the touch panel increases in increments of 1. When all the keys in that line are pressed and if there are any LEDs corresponding to the keys in the line on the immediate right, the top LED in that line will light. 4. When all the keys on the operation panel have been pressed, all the LEDs light for up to 10 seconds. 5. When the LEDs go off, press the start key. All the LEDs light for 10 seconds again. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U208	**Setting the paper size for the large paper deck** **Description** Sets the size of paper used in the optional large paper deck. **Purpose** To change the setting when the size of paper used in the large paper deck is changed. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the paper size (A4, B5 or LETTER). The selected item is displayed in reverse. Initial setting: LETTER (Inch specifications) A4 (Metric specifications) 2. Press the start key. The setting is set. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U236</td><td>
Setting the limit for the ejection section of the built-in finisher
Description
If the machine is equipped with an optional built-in finisher, this mode sets whether A5/5$^1/_2 \times 8^1/_2$ size paper is output to the machine internal tray or not.
Purpose
If the machine is equipped with an optional built-in finisher and if paper jams occur due to curling of paper in the built-in ejection section when two-sided copying onto A5/5$^1/_2 \times 8^1/_2$ size paper is performed, this mode is used to change the setting to ON to disable ejection to the machine internal tray.
Method
Press the start key. The screen for executing is displayed.
Setting
1. Select ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Does not eject to the machine internal tray.
Eject to the machine internal tray.</td></tr>
</table>
Initial setting: OFF
2. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selectiong a maintenance item No. is displayed.
</td></tr>
<tr><td>U237</td><td>
Setting finisher stack quantity
Description
Sets the number of sheets of each stack on the main tray and on the intermediate tray in the optional finisher.
Purpose
To change the setting when a stack malfunction has occurred.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be set. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN TRAY
MIDDLE TRAY</td><td>Number of sheets of stack on the main tray
Number of sheets of stack on the intermediate tray for sort copying or staple copying</td></tr>
</table>
Setting the number of sheets of stack on the main tray
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>0
1</td><td>3000-sheet finisher: 3000 sheets, built-in finisher: 500 sheets
3000-sheet finisher: 1500 sheets, built-in finisher: 250 sheets</td></tr>
</table>
Initial setting: 0
2. Press the start key. The setting is set.
Setting the number of sheets of stack on the intermediate tray for sort copying or staple copying
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>0
1</td><td>For sort copying: 30 sheets, for staple copying: 50 sheets
For sort copying: 30 sheets, for staple copying: 30 sheets</td></tr>
</table>
Initial setting: 0
2. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selectiong a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U243</td><td>
Checking the operation of the DP motors, solenoids and clutch
Description
Turns the motors, solenoids or clutch in the optional DP on.
Purpose
To check the operation of the DP motors, solenoids and clutch .
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be operated. The selected item is displayed in reverse and the operation starts.
<table>
<tr><th>Display</th><th>Motors, solenoids and clutch</th><th>Operation In operation</th></tr>
<tr><td>F MOT</td><td>Original feed motor (OFM)</td><td>In operation</td></tr>
<tr><td>C MOT</td><td>Original paper conveying motor (OCM)</td><td>On for 0.5 s</td></tr>
<tr><td>FD CL</td><td>Original feed clutch (OFCL)</td><td>On for 0.5 s</td></tr>
<tr><td>EJ SL</td><td>Eject feedshift solenoid (EFSSOL)</td><td>On for 0.5 s</td></tr>
<tr><td>RJ SL</td><td>Switchback feedshift solenoid (SBFSSOL)</td><td>On for 0.5 s</td></tr>
<tr><td>FD SL</td><td>Original feed solenoid (OFSOL)</td><td>On and off</td></tr>
<tr><td>RP SL</td><td>Switchback pressure solenoid (SBPSOL)</td><td>On and off</td></tr>
</table>
3. To turn each motor off, press the stop/clear key.
Completion
Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U244</td><td>
Checking the DP switches
Description
Displays the status of the respective switches in the optional DP.
Purpose
To check if respective switches in the optional DP operate correctly.
Start
1. Press the start key. The screen for selecting an item is displayed.
2. Select the type of switches (SW or VR) to be checked. The screen for executing each item is displayed.
<table>
<tr><th>Display</th><th>Type of switches</th></tr>
<tr><td>SW</td><td>On/off switches</td></tr>
<tr><td>VR</td><td>Volume switch</td></tr>
</table>
Method for the on/off switches
1. Turn the respective switches on and off manually to check the status.
If the on-status of a switch is detected, the corresponding switch is displayed in reverse.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>SET SW</td><td>Original set switch (OSSW)</td></tr>
<tr><td>FEED SW</td><td>Original feed switch (OFSW)</td></tr>
<tr><td>REV SW</td><td>Original switchback switch (OSBSW)</td></tr>
<tr><td>TMG SW</td><td>DP timing switch (DPTSW)</td></tr>
<tr><td>SZ A SW</td><td>Original size length switch (OSLSW)</td></tr>
</table>
2. To return to the screen for selecting an item, press the stop/clear key.
</td></tr>
</table>

Maintenance item No.	Description
U244	**Method for the volume switch** 1. Move the original insertion guides to check the detection status of the original size width switch. The detected original width is displayed as a numerical value with the decimals omitted.

Numerical value	Original width to be detected	
000 ⋮ 49.664	A5R	$5^1/_2" \times 8^1/_2"$
⋮ 50.176 ⋮ 61.440		
⋮ 61.952 ⋮ 103.936	B5R	$8^1/_2" \times 14"$/ $8^1/_2" \times 11"$
⋮ 104.448 ⋮ 139.264	Folio/A4R	
⋮ 139.776 ⋮ 146.432	B4/B5	
⋮ 146.994 ⋮ 197.120		
⋮ 197.632 ⋮ 197.720	CF (11" × 15")	11" × 17"/ 11" × 15"/ $11" \times 8^1/_2"$
⋮ 223.232 ⋮ 256	A3/A4	

For example, if any value between 105 and 139 is displayed when the original insertion guides are adjusted for A4R paper, it indicates that the original width is detected correctly.

2. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U245	**Checking messages** **Description** Displays a list of messages on the touch panel of the operation panel. **Purpose** To check the messages to be displayed. **Method** 1. Press the start key. 2. Select the item to be displayed. 3. Change the screen using the cursor up/down keys to display each message one at a time. When a message number is entered with the numeric keys and then the start key is pressed, the message corresponding the specified number is displayed. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U246	**Setting the finisher** **Description** Adjusts various items if the machine is equipped with an optional finisher. 3000-sheet finisher: Adjusts the amount of slack in the paper in punch mode. Booklet stitcher: Adjusts the booklet stapling position for each paper size. Built-in finisher: Adjusts the side registration cursor stop position in the staple sort mode. **Purpose** Adjusts the amount of slack in the paper while in the punch section if, in punch mode, paper jams or is Z-folded frequently due to too much slack in the paper, or, the position of punch holes varies due to too little slack in the paper. Adjusts the booklet stapling position in the stitching mode if the position is not proper. To adjust when registration is not proper or staple position is shifted in the staple sort mode. **Start** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be set and press the start key. The screen for executing each item is displayed.

Display	Description
3000 FINISHER	Adjustment of the amount of slack in the paper in punch mode
SADDLE FINISHER	Adjustment of the booklet stapling position
INNER FINISHER	Side registration cursor stop position

Setting the amount of slack in the paper

1. Change the setting using the cursor up/down keys.

Description	Setting range	Initial setting
Amount of slack in the paper	-15 to +15	0

If the position of punch holes varies, increase the setting to make the amount of slack larger.
If paper jams or is Z-folded frequently, decrease the setting to make the amount of slack smaller.

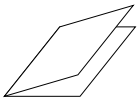
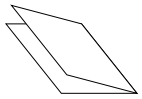
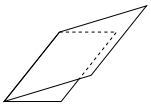
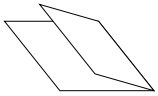
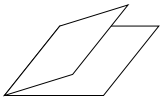
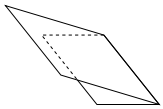
2. Press the start key. The value is set.
3. To return to the screen for selecting an item, press the stop/clear key.

Setting the booklet stapling position

1. Select the size to be set. The selected item is displayed in reverse.
2. Change the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting	Change in value per step
A4R/LTR	Adjustment of booklet stapling position for A4R/LTR size	–125 to +125	0	0.25 mm
B4R	Adjustment of booklet stapling position for B4R size	–125 to +125	0	0.25 mm
A3R/LDR	Adjustment of booklet stapling position for A3R/LDR size	–125 to +125	0	0.25 mm

Maintenance item No.	Description
U246	

Left stapling	Right stapling	Adjustment method
		Proper
 Upper side is longer.	 Lower side is longer.	Decrease the preset value.
 Lower side is longer.	 Upper side is longer.	Increase the preset value.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Setting the side registration cursor stop position

1. Select the desired cursor position. The selected item is displayed in reverse.
2. Change the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting
FRONT	Front side registration cursor stop position	-4 to +4	0
REAR	Rear side registration cursor stop position	-4 to +4	0
END	Trailing edge registration cursor stop position	-4 to +4	0

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U247	**Checking the operation of large paper deck and paper feeder**

Description

Turns on motors and clutches of optional large paper deck or paper feeder.

Purpose

To check the operation of motors and clutches of paper feed device.

Start

1. Press the start key. The screen for selecting an item is displayed.
2. Select the device to be checked.

Display	Paper feed device
3000 DECK	Large paer deck
500 × 2 DECK	Paper feeder

Method

1. Select the item to be operated. The selected item is displayed in reverse and operation starts.
   Large paper deck

Display	Motors and clutches	Operation
LCF MOT	Conveying motor (CM)	On for 5 s
B CL	Conveying clutch (CCL)	On for 1 s
PCL1	Paper feed clutch 1(PFCL1)	On for 1 s
PCL2	Paper feed clutch 2(PFCL2)	On for 1 s

   Paper feeder

Display	Motors and clutches	Operation
DESK MOT	Desk Drive motor (DDM)	On for 5 s
FEED CL	Desk feed clutch (DFCL)	On for 1 s
UPP CL	Desk upper paper feed clutch (DPFCL-U)	On for 1 s
LOW CL	Desk lower paper feed clutch (DPFCL-L)	On for 1 s

2. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U249</td><td>
Checking the paper ejection to optional devices
Description
Ejects paper to an optional mailbox or job separator, or to the ejection slot at the machine left.
Purpose
To check paper conveying operation to optional paper eject devices or the ejection slot at the machine left.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the paper eject location.
<table>
<tr><th>Display</th><th>Paper eject device</th></tr>
<tr><td>MAIL
JOB SEPARATOR
LEFT BIN OUTPUT</td><td>Mailbox
Job separator
Ejection slot at the machine left (finisher not installed)</td></tr>
</table>
3. When selecting the mailbox, specify the mail tray number (1 to 7) to which paper is to be ejected by using the cursor up/down keys. If 0 is selected, paper is ejected to the mail trays in ascending order from mail tray 1 to mail tray 7 repeatedly.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U250</td><td>
Setting the maintenance cycle
Description
Displays and changes the maintenance cycle.
Purpose
To check and change the maintenance cycle.
Method
Press the start key. The current setting is displayed as follows:
Setting
1. Change the setting using the numeric keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Maintenance cycle</td><td>0 to 9999999</td><td>400000 (30 cpm), 500000 (40/50 cpm)</td></tr>
</table>
2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U251</td><td>
Checking/clearing the maintenance count
Description
Displays, clears and changes the maintenance count.
Purpose
To check the maintenance count. Also to clear the count during maintenance service.
Method
Press the start key. The maintenance count is displayed.
Clearing
1. Press the reset key.
2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed.
Setting
1. Enter a seven-digit count using the numeric keys.
2. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U252</td><td>
Setting the destination
Description
Switches the operations and screens of the machine according to the destination.
Purpose
To be executed after replacing the backup RAM on the main PCB or initializing the backup RAM by running maintenance item U020, in order to return the setting to the value before replacement or initialization.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the destination. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>JAPAN METRIC
INCH
EUROPE METRIC
ASIA PACIFIC</td><td>Metric (Japan) specifications
Inch (North America) specifications
Metric (Europe) specifications
Metric (Asia Pacific) specifications</td></tr>
</table>
2. Press the start key. The setting is set, and the machine automatically returns to the same status as when the power is turned on.
Completion
To exit this maintenance item without changing the current count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
Supplement
The specified initial settings are provided according to the destinations in the maintenance items below. To change the initial settings in those items, be sure to run maintenance item U021 after changing the destination.
• Initial setting according to the destinations
<table>
<tr><th>Maintenance item No.</th><th>Title</th><th>Japan</th><th>Inch</th><th>Europe Metric, Asia Pacific</th></tr>
<tr><td>253
255</td><td>Switching between double and single counts
Setting auto clear time</td><td>Single
120 s</td><td>Double
90 s</td><td>Double
90 s</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U253</td><td>
Switching between double and single counts
Description
Switches the count system for the total counter and other counters.
Purpose
According to user (copy service provider) request, select if A3/11" × 17" paper is to be counted as one sheet (single count) or two sheets (double count).
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select double or single count. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SINGLE COUNT
DOUBLE COUNT (A3/LEDGER)
DOUBLE COUNT (B4)</td><td>Single count for all size paper
Double count for A3/11" × 17" paper only
Double count for B4 size or larger</td></tr>
</table>
Initial setting: DOUBLE COUNT
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U254</td><td>
Turning auto start function on/off
Description
Selects if the auto start function is turned on.
Purpose
Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select either ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Auto start function on
Auto start function off</td></tr>
</table>
Initial setting: ON
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U255</td><td>
Setting auto clear time
Description
Sets the time to return to initial settings after copying is complete.
Purpose
To be set according to frequency of use. Set to a comparatively long time for continuous copying at the same settings, and a comparatively short time for frequent copying at various settings.
Method
Press the start key. The current setting is displayed.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Auto clear time</td><td>0 to 270</td><td>90</td></tr>
</table>
The setting can be changed by 30 s per step.
When set to 0, the auto clear function is cancelled.
2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U258</td><td>
Switching copy operation at toner empty detection
Description
Selects if continuous copying is enabled after toner empty is detected, and sets the number of copies that can be made after the detection.
Method
Press the start key. The current setting is displayed.
Setting
1. Select single or continuous copying. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SINGLE
CONTINUE</td><td>Enables only single copying.
Enables single and continuous copying.</td></tr>
</table>
Initial setting: SINGLE
2. Set the number of copies that can be made using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Number of copies after toner empty detection</td><td>0 to 200 (copies)</td><td>70</td></tr>
</table>
The setting can be changed by 5 copies per step.
When set to 0, the number of copies is not limited regardless of the setting for single or continuous copying.
3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U260</td><td>
Changing the copy count timing
Description
Changes the copy count timing for the total counter and other counters.
Purpose
To be set according to user (copy service provider) request.
If a paper jam occurs frequently in the finisher when the number of copies is counted at the time of paper ejection, copies are provided without copy counts. The copy service provider cannot charge for such copying. To prevent this, the copy timing should be made earlier.
If a paper jam occurs frequently in the paper conveying or fixing sections when the number of copies is counted before the paper reaches those sections, copying is charged without a copy being made. To prevent this, the copy timing should be made later.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the copy count timing . The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FEED
EJECT</td><td>When secondary paper feed starts
When the paper is ejected</td></tr>
</table>
Initial setting: EJECT
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U264</td><td>
Setting the display order of the date
Description
Selects year, month and day as the order of that appears on lists, etc.
Purpose
Set according to the user preference.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Press the start key. The screen for selecting an item is displayed.
2. Select the desired order.
<table>
<tr><th>Display</th><th>Setting</th></tr>
<tr><td>YEAR-MONTH-DATE
MONTH-DATE-YEAR
DATE-MONTH-YEAR</td><td>Year/Month/Day
Month/Day/Year
Day/Month/Year</td></tr>
</table>
Initial setting: "MONTH-DATE-YEAR" (for the inch specifications)
"DATE-MONTH-YEAR" (for the metric specifications)
3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U265</td><td>
Setting OEM purchaser code
Description
Sets the OEM purchaser code.
Purpose
Sets the code when replacing the main PCB and the like.
Method
Press the start key.
Setting
1. Use the numeric keys or cursor up/down keys to adjust the preset value.
2. Press the start key. The count is set , and the screen for selecting a maintenance item is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.
</td></tr>
<tr><td>U266</td><td>
Setting the number of days after which to automatically delete documents
Descrioption
Sets the number of days to save documents on the HDD before automatically deleting.
Purpose
To change the number of days to retain data that is saved within the auto-delete area of the HDD before automatically deleting.
Method
Press the start key. The current setting is displayed.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Number of days after which to automatically delete documents</td><td>0 to 7 (days)</td><td>7</td></tr>
</table>
2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U274</td><td>
Setting the laser scanner unit type
Description
Sets the type of the laser scanner unit according to the label stuck on the laser scanner unit. Moreover, changes output power of the laser scanner unit.
Purpose
To set the type when the laser scanner unit control is changed. Also if reproducibility of half tone is not proper, this mode is used to increase the output power of the laser scanner unit to increase the density.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the item to be set. The selected item is displayed in reverse.
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>ADJUST DATA
LASER POWER</td><td>Type of the laser scanner unit
Laser scanner unit output power</td><td>0 to 3
0 to 1</td><td>2
0 (30 cpm)
1 (40/50 cpm)</td></tr>
</table>
The setting of LASER POWER is changed into 1 from 0, the output power of LSU is go up and half-tone is come to come out darkly.
3.Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U277</td><td>
Setting auto application change time
Description
Sets the time that passes until the machine starts automatically printing after completing copying or operation when the machine is used as a printer or fax (only if the printer kit or fax kit is installed).
Purpose
According to user request, changes the setting.
Method
Press the start key. The current setting is displayed.
Setting
1. Change the setting using the cursor up/down keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Switching time</td><td>30 to 270 (s)</td><td>120</td></tr>
</table>
The setting can be changed by 30 s per step.
2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U326</td><td>
Setting the black line cleaning indication
Description
Sets whether to display the cleaning guidance when detecting the black line.
Purpose
Displays the cleaning guidance in order to make the call for service with the black line decrease by the rubbish on the contact glass when scanning from the optional DP.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Displays the cleaning guidance
Not to display the cleaning guidance</td></tr>
</table>
Initial setting: ON
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U328</td><td>
Side ejection setting
Description
Sets whether to eject to the side of the machine when an optional curl eliminator is installed.
Purpose
Set according to the preference of the user.
Method
1. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>To eject to the side of the machine
Not to eject to the side of the machine</td></tr>
</table>
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U330</td><td>
Setting the number of sheets to enter stacking mode during sort operation
Description
When sort copying is set to perform automatically in the output form setting of the user simulation, sets the number of sheets at which the eject location is switched to the optional finisher (only when the finisher is installed).
Purpose
To be set as required according to the number of copies the user makes.
Method
Press the start key. The current setting is displayed.
Setting
1. Set the number of sheets (o to 250) using the numeric keys or cursor up/down keys.
2. Press the start key. The setting is set. The screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U331</td><td>
Setting the paper ejection
Description
Sets whether the copies will be ejected in the same or opposite order as the originals.
Purpose
Set according to the preference of the user.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the ejection order.
<table>
<tr><th>Display</th><th>Setting</th></tr>
<tr><td>FACE-DOWN (NOMAL)
FACE-UP (SPEED)
FACE-UP (MEMORY)</td><td>Face down ejection
Face up ejection with bitmap copy
Face up ejection with memory copy</td></tr>
</table>
Initial setting: FACE-DOWN
• To the auxiliary tray of the 3000-sheet finisher
• To the booklet stitcher
• To the 1000-sheet finisher
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U332</td><td>
Setting the size conversion factor
Description
Sets the coefficient of nonstandard sizes in relation to the A4/11" × 8 1/2" size. The coefficient set here is used to convert the black ratio in relation to the A4/11" × 8 1/2" size and to display the result in user simulation.
Purpose
To set the coefficient for converting the black ratio for nonstandard sizes in relation to the A4/11" × 8 1/2" size for copy mode, printer mode and fax mode respectively.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select copier mode (COPY), printer mode (PRT) or fax mode (FAX).
2. Change the setting using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>COPY</td><td>Size parameter for copier mode</td><td>0.1 to 3.0</td><td>1.0</td></tr>
<tr><td>PRT</td><td>Size parameter for printer mode</td><td>0.1 to 3.0</td><td>1.0</td></tr>
<tr><td>FAX</td><td>Size parameter for fax mode</td><td>0.1 to 3.0</td><td>1.0</td></tr>
</table>
3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.
</td></tr>
<tr><td>U341</td><td>
Specific paper feed location setting for printing function
Description
Sets a paper feed location specified for printer output (only if a printer kit is installed).
Purpose
To use a paper feed location only for printer output.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the paper feed location for the printer. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FIRST</td><td>Upper drawer</td></tr>
<tr><td>SECOND</td><td>Lower drawer</td></tr>
<tr><td>THIRD</td><td>Optional upper drawer</td></tr>
<tr><td>FOURTH</td><td>Optional lower drawer</td></tr>
<tr><td>LCF</td><td>Optional large paper deck</td></tr>
</table>
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selecting a maintenance item is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U342</td><td>
Setting the ejection restriction
Description
Sets or cancels the restriction on the number of sheets to be ejected continuously when the internal eject tray is selected as the eject location.
Purpose
According to user request, sets or cancels restriction on the number of sheets.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select ON or OFF.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Sets restriction on the number of sheets
Cancels restriction on the number of sheets</td></tr>
</table>
Details of restriction (number of sheets to be ejected continuously after the start key is pressed)
<table>
<tr><th>Condition</th><th>Number of sheets</th></tr>
<tr><td>When no optional ejection device is installed
When the job separator or duplex unit is installed
When the finisher is installed</td><td>250
150
100</td></tr>
</table>
3. Press the start key. The setting is set.
Completion
Press the stop/clear key. The screen for selectiong a maintenance item No. is displayed.
</td></tr>
<tr><td>U343</td><td>
Switching between duplex/simplex copy mode
Description
Switches the initial setting between duplex and simplex copy.
Purpose
To be set according to frequency of use: set to the more frequently used mode.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Duplex copy
Simplex copy</td></tr>
</table>
Initial setting: OFF
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U344</td><td>
Setting preheat/energy saver mode
Description
Changes the control for preheat/energy saver mode.
Purpose
According to user request, selects which has priority, the recovery time from preheat or energy saver.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select control mode. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Control in preheat mode</th></tr>
<tr><td>ENERGY STAR</td><td>The fixing control temperature is lowered by 20°C/68°F and forced stabilization is performed 30 seconds after exiting preheat.</td></tr>
<tr><td>GEEA</td><td>The fixing control temperature is lowered by 15°C/59°F and forced stabilization is performed 30 seconds after exiting preheat.</td></tr>
</table>
Initial setting: ENERGY STAR
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U345</td><td>
Setting the value for maintenance due indication
Description
Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends.
When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message is displayed.
This maintenance mode is effective for only Japanese specification.
</td></tr>
<tr><td>U346</td><td>
Setting the sleep mode operation
Description
If the machine is equipped with the facsimile feature, this mode sets whether or not the machine performs finisher initialization when the machine receives a facsimile with the main switch off.
Purpose
To disable finisher initialization, change the setting value to MODE1. If MODE1 is selected, however, even if the main switch is turned off, control in the sleep mode will be performed and the power supply PCB will not be turned off, resulting in increase of power consumption.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select MODE0 or MODE1. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MODE0</td><td>To enable finisher initialization</td></tr>
<tr><td>MODE1</td><td>To disable finisher initialization</td></tr>
</table>
Initial setting: MODE0
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U402</td><td>
Adjusting margins of image printing
Adjustment
See page 1-6-13.
</td></tr>
<tr><td>U403</td><td>
Adjusting margins for scanning an original on the contact glass
Adjustment
See page 1-6-31.
</td></tr>
</table>

Maintenance item No.	Description
U404	**Adjusting margins for scanning an original from the DP** **Description** Adjusts margins for scanning the original from the DP. **Purpose** Used if margins are not correct when the optional DP is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U402 → U403 → U404 **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys.

Display	Description	Setting range	Initial setting	Change in value per step
A MARGIN	Left margin	0 to 100	20	0.5 mm
B MARGIN	Leading edge margin	0 to 100	30	0.5 mm
C MARGIN	Right margin	0 to 100	20	0.5 mm
D MARGIN	Trailing edge margin	0 to 100	20	0.5 mm

Increasing the setting makes the margin wider, and decreasing it makes the margin narrower.

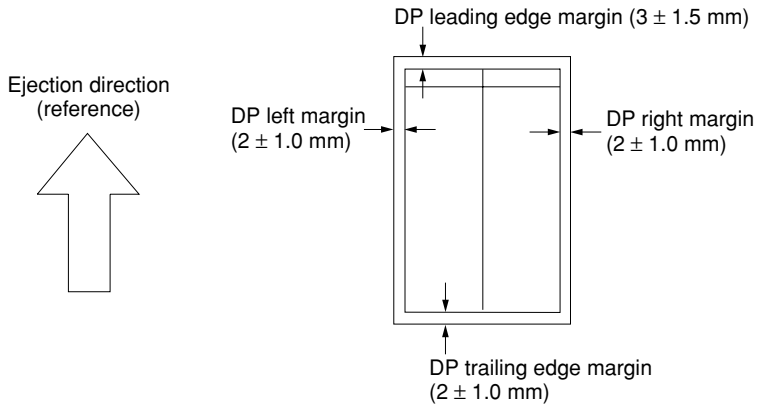


Figure 1-4-7 Correct margin amount

3. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

U407	**Adjusting the leading edge registration for memory image printing** **Adjustment** See page 1-6-11.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U504</td><td>
Initializing the scanner NIC
Description
Initializing the optional scanner NIC to its factory default.
Purpose
To return to a setup at the time of factory shipments.
Method
1. Press the start key. The screen for executing is displayed.
2. Press EXECUTE on the touch panel. It is displayed in reverse.
3. Press the start key. All data in the scanner NIC is initialized.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U505</td><td>
Setting Data Base Assistant
Description
Sets whether or not the database linkage setting is enabled if an optional network scanner is installed.
Purpose
According to user request, changes the setting.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Database linkage setting is enabled.
Database linkage setting is disabled.</td></tr>
</table>
Initial setting: ON
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U506</td><td>
Setting the time out
Description
Sets the communication timeout time for connection to a computer.
Purpose
To change the preset value if a communication error occurs after connection to a computer continues for a long time. By delaying the error detection timing, the error may be cleared. If the error is not cleared after the preset value is changed, however, return the preset value to the initial value.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>timeout time</td><td>10 to 120 (s)</td><td>10</td></tr>
</table>
The setting can be changed by 10 s per step.
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U508</td><td>
Setting the LDAP
Description
Enables or disables an LDAP server.
Purpose
To change the setting to ON when use of an LDAP server is requested.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>LDAP server is enabled.
LDAP server is disabled.</td></tr>
</table>
Initial setting: OFF
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U901</td><td>
Checking/clearing copy counts by paper feed locations
Description
Displays or clears copy counts by paper feed locations.
Purpose
To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.
Method
1. Press the start key. The counts by paper feed locations are displayed.
2. Change the screen using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Paper feed locations</th></tr>
<tr><td>BYPASS
FIRST
SECOND
THIRD
FORTH
LCF
DUPLEX</td><td>Bypass tray
Upper drawer
Lower drawer
Optional drawer 1
Optional drawer 2
Optional large paper deck
Duplex section</td></tr>
</table>
When an optional paper feed device is not installed, the corresponding count is not displayed.
Clearing
1. Select the count to be cleared. The selected item is displayed in reverse.
To clear the counts for all paper feed locations, press the reset key.
2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U902</td><td>
Checking/clearing finisher punch count
Description
Sets the punch limit and displays and clears the punch-hole scrap count when the optional 3000-sheet finisher is attached.
Purpose
Sets the punch limit to notify the user of the time to collect punch-hole scrap. Also, used to manually clear the punch-hole scrap count if a message requiring collection of punch-hole scrap is shown on the touch panel after collection. If punch-hole scrap is collected with the copier power turned off, the punch-hole scrap count is not cleared and consequently this problem occurs.
Start
1. Press the start key. The screen for selecting in item is displayed.
2. Select the item. The selecting an item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>PUNCH LIMIT</td><td>Punch limit
(maximum number of punching times)</td><td>0 to 999000</td><td>75000</td></tr>
<tr><td>PUNCH COUNT</td><td>Punch-hole scrap count
(current number of punching times)</td><td>–</td><td>–</td></tr>
</table>
Setting the punch limit
1. Change the setting using the numeric keys.
2. Press the start key. The value is set.
Clearing
1. Press the reset key.
2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U903</td><td>
Checking/clearing the paper jam counts
Description
Displays or clears the jam counts by jam locations.
Purpose
To check the paper jam status. Also to clear the jam counts after replacing consumable parts.
Implementation
Press the start key. The screen for selecting an item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>COUNT
TOTAL COUNT</td><td>Displays/clears the jam counts
Displays the total jam counts</td></tr>
</table>
Method: Displays/clears the jam counts
1. Select COUNT in the screen for selecting an item. The count for jam detection by type is displayed.
2. Change the screen using the ∗ or # keys.
3. Select the counts for all jam codes and press the reset key.
4. Press the start key. The count is cleared.
Method: Displays the total jam counts
1. Select TOTAL COUNT in the screen for selecting an item. The total number of jam counts by type is displayed.
2. Use the ∗ or # keys to switch the display.
The total number of jam count cannot be cleared.
To return to the screen for selecting an item, press the stop clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U904</td><td>
Checking/clearing the service call counts
Description
Displays or clears the service call code counts by types.
Purpose
To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts.
Method
1. Press the start key. The service call count is displayed by service call codes.
2. Change the screen using the ∗ or # keys.
Clearing
1. Select the count to be cleared. The selected item is displayed in reverse. To clear all counts, press the reset key.
2. Press the start key. The count is cleared. When all counts are cleared, the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U905</td><td>
Checking/clearing counts by optional devices
Description
Displays or clears the counts of the optional DP or finisher.
Purpose
To check the use of the DP and finisher. Also to clear the counts after replacing consumable parts.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the device, the count of which is to be checked and press the start key. The count of the selected device is displayed.
• DP
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ADP
RADP</td><td>No. of single-sided originals that has passed through the DP in ADP mode
No. of double-sided originals that has passed through the DP in RADP mode</td></tr>
</table>
• Finisher (SORTER)
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CP CNT
STAPLE
PUNCH
SADDLE</td><td>No. of copies that has passed
Frequency the stapler has been activated
Frequency the punch has been activated
Frequency the booklet has been activated</td></tr>
</table>
Clearing
1. Select the item to be cleared. The selected item is displayed in reverse.
2. Press the start key. The count is cleared.
3. To return to the screen for selecting an item, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U906	**Resetting partial operation control** **Description** Resets the service call code for partial operation control. **Purpose** To be reset after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced. **Method** 1. Press the start key. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key to reset partial operation control. The maintenance mode is exited, and the machine returns to the same status as when the main switch is turned on.
U908	**Changing the total counter value** **Description** Displays the total counter value. **Purpose** To check the total counter value. **Method** Press the start key. **Setting** 1. Select the count to be changed. 2. Enter a six-digit value using the numeric keys. 3. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the current total counter value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U910	**Clearing the black ratio data** **Description** Clears the accumulated black ratio data for A4 sheets. **Purpose** To clear data as required at times such as during maintenance service. **Method** 1. Press the start key. 2. Press CANCEL on the touch panel. 3. Press the start key. The accumulated black ratio data is cleared, and the screen for selecting a maintenance item is displayed. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.
U911	**Checking/clearing copy counts by paper sizes** **Description** Displays and clears the paper feed counts by paper sizes. **Purpose** To check or clear the counts after replacing consumable parts. **Method** Press the start key. The screen for the paper feed counts by paper size is displayed. **Clearing** 1. Select the paper size. The selected item is displayed in reverse. To clear all counts, press the reset key. 2. Press the start key. The count is cleared. When clearing all counts, the screen for selecting a maintenance item is displayed. **Completion** To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item is displayed.

Maintenance item No.	Description
U917	**Setting backup data reading/writing**

Description
Stores backup data from the fax control PCB (when an optional fax kit is installed) into CompactFlash or reads the data from CompactFlash.

Purpose
To store and write data when replacing the PCB.

Setting
1. Turn the power switch off and disconnect the power plug.
2. Remove the middle right cover.
3. Insert Compact Flash in a notch hole of the copier.
4. While pressing the Copier key, turn on the power switch and connect the power plug.
   Press and hold on the Copier key until the message “Please wait.” disappears.
5. Enter the maintenance item.
6. Press the start key. The screen for selecting an item is displayed.
7. Select the item. The selected item is displayed in reverse.

Display	Description
SRAM→CF:FAX DATA	Writing the backup data of fax control PCB
CF→SRAM:FAX DATA	Reading the backup data of fax control PCB
SRAM→CF:FAX DIAL	Writing the backup data of fax dial information
CF→SRAM:FAX DIAL	Reading the backup data of fax dial information

8. Press the start key. Reading or writing is executed, and the screen displays the result.

• If the operation was successful:
EXECUTE 0100
CODE 0000

• If the operation failed:
EXECUTE 0100
CODE XXXX
Where XXX is the error code indicating the reason for the failure.
See “Error Codes for Operation U917 and U926” below.

9. Turn the power switch off and disconnect the power plug.
10. Remove the Compact Flash from the copier.

Error Codes for Operation U917 and U926

Code	Meaning
0102	Detects call for service on fax control PCB.
0104	Communication error.
0105	Detects call for service on main PCB.
01FF	CF error.
0202	No CF card.
0203	No data in CF card.
0204	CF data is incompatible.
0205	Bad CF data (Checksum error)
0206	CF read error.
0207	CF write error.
0212	Fax control PCB flash memory error.

Maintenance item No.	Description
U920	**Checking the copy counts** **Description** Checks the copy counts. **Purpose** To check the copy counts. **Method** Press the start key. The current counts of copy counter, printer counter and fax counter are displayed. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U925	**Checking/clearing the system error counts** **Description** Displays and clears the count value of system error. **Purpose** To check the system error status by types. Also to clear the service call code counts after replacing consumable parts. **Method** Press the start key. The count for system error detection by type is displayed. **Clearing** 1. Change the screen using the ∗ or # keys. 2. Select the counts for all system error and press the reset key. 3. Press the start key. The count is cleared. **Completion** To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance No. item is displayed.
U926	**Rewriting FAX program** **Description** Downloads the fax program and fax fonts when installing an optional fax kit. **Purpose** To run when upgrading the fax program and fax fonts. **Setting** 1. Turn the power switch off and disconnect the power plug. 2. Remove the middle right cover. 3. Insert Compact Flash in a notch hole of the copier. 4. While pressing the Copier key, turn on the power switch and connect the power plug. Press and hold on the Copier key until the message “Please wait.” disappears. 5. Enter the maintenance item. 6. Press the start key. The screen for selecting an item is displayed. 7. Select FAX PROGRAM/FONT. Check that EXECUTE is displayed and then press the start key. Downloading of the fax program starts and the result shown below is displayed. • If the operation was successful: EXECUTE 0100 CHECKSUM ∗∗∗∗ CODE 0000 • If the operation failed: EXECUTE 0100 CHECKSUM ∗∗∗∗ CODE XXXX Where XXX is the error code indicating the reason for the failure.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U926</td><td>8. Then, downloading of the fax fonts starts and the result shown below is displayed.

• If the operation was successful:
EXECUTE 0100
CHECKSUM ****
CODE 0000

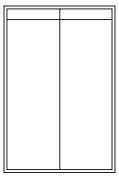
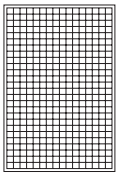
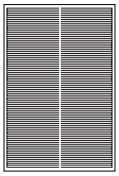
• If the operation failed:
EXECUTE 0100
CHECKSUM ****
CODE XXXX
Where XXX is the error code indicating the reason for the failure.
See "Error Codes for Operation U917 and U926" on page 1-4-69.

9. Turn the power switch off and disconnect the power plug.
10. Remove the Compact Flash from the copier.</td></tr>
<tr><td>U927</td><td>Clearing the all copy counts and machine life counts
Description
Resets all of the counts back to zero.
Purpose
The total account counter and the machine life counter can be cleared only once only if the count values are 1000 or less.
Method
1. Press the start key. The screen for executing is displayed.
2. Press EXECUTE on the touch panel. It is displayed in reverse.
3. Press the start key. All copy counts and machine life counts are cleared.
Completion
To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U928</td><td>Checking machine life counts
Description
Displays the machine life counts.
Purpose
To check the machine life counts.
Method
Press the start key. The current machine life counts is displayed.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U941</td><td>Setting the default magnification ratio of the default drawer
Description
Sets the default magnification ratio when paper selection of copy default setting is set to the default drawer.
Purpose
To check the machine life counts.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select 100% or AMS. The selected item is displayed in reverse.
<table><tr><th>Display</th><th>Description</th></tr><tr><td>100%
AMS</td><td>100 % magnification ratio
Automatical magnification ratio</td></tr></table>Initial setting: 100 % magnification ratio
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</td></tr>
</table>

Maintenance item No.	Description
U960	**Outputting the machine used circumstances list** **Description** Outputs machine used circumstances list and clears the data. **Purpose** To check the machine operation situation. Also to clear the data. **Method** Press the start key. **Outputting the list** 1. Select OUTPUT. 2. Press the start key to output the list. **Clearing** 1. Select COUNT CLEAR. 2. Press the start key to clear the count. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U989	**HDD Scandisk** **Description** Restores data in the hard disk by scanning the disk. **Purpose** If power is turned off while accessing to the hard disk is performed, the control information in the hard disk drive may be damaged. Use this mode to restore the data. **Method** 1. Press the start key. The screen for executing is displayed. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key. When scanning of the disk is complete, the execution result is displayed. 4. Press the stop/clear key. The screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without executing scandisk, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U990</td><td>
Checking/clearing the time for the exposure lamp to light
Description
Displays, clears or changes the accumulated time for the exposure lamp to light.
Purpose
To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement.
Method
Press the start key. The accumulated time of illumination for the exposure lamp is displayed in minutes.
Clearing
1. Press the reset key.
2. Press the start key. The accumulated time is cleared, and the screen for selecting a maintenance item No. is displayed.
Setting
1. Enter a six-digit accumulated time using the numeric keys.
2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the accumulated time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U991</td><td>
Checking the scanner count
Description
Displays the scanner operation count.
Purpose
To check the status of use of the scanner.
Method
Press the start key.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>COPY SCAN COUNT
FAX SCAN COUNT
NT SCAN COUNT</td><td>Scanner operation count for copying
Scanner operation count for fax
Network scanner operation count</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U993	**Outputting a VTC-PG pattern** **Description** Selects and outputs a VTC-PG pattern created in the copier. **Purpose** When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output VTC-PG pattern. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the VTC-PG pattern to be output.

Display	PG pattern to be output	Purpose
PG1		• Center line adjustment
PG2		• Lateral squareness adjustment • Magnification adjustment
PG3		———

3. Press the interrupt key. The copy mode screen is displayed.
4. Press the start key. A VTC-PG pattern is output.

Completion

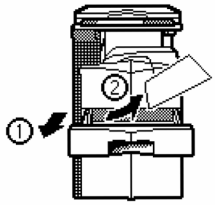
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

1-5-1 Paper misfeed detection

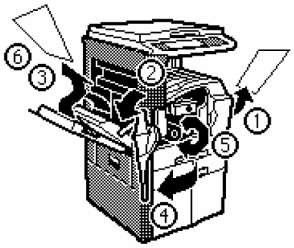
(1) Paper misfeed indication

When a paper misfeed occurs, the copier immediately stops copying and displays the jam location on the operation panel.
Paper misfeed counts sorted by the detection condition can be checked in maintenance item U903.
To remove paper jammed in the copier, open the front cover, conveying cover, side cover or drawer.
Paper misfeed detection can be reset by opening and closing the respective covers to turn safety switch 1or 2 off and on.

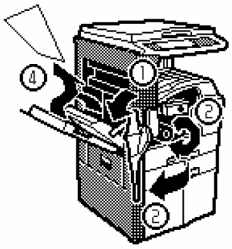
• Misfeed in drawer
Jam code 10
Jam code 11
Jam code 12
Jam code 13
Jam code 15
Jam code 16
Jam code 17



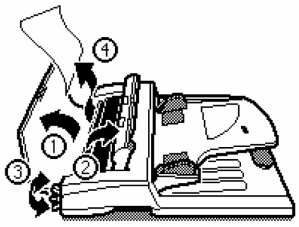
• Misfeed in bypass
Jam code 14
Jam code 20
Jam code 21
Jam code 23



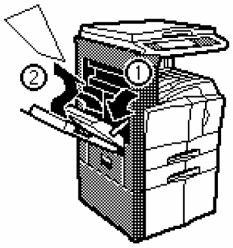
• Misfeed inside conveying cover
Jam code 18
Jam code 21
Jam code 22



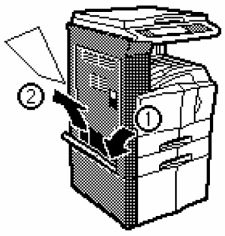
• Misfeed in DP*
Jam code 70
Jam code 71
Jam code 72
Jam code 73
Jam code 74
Jam code 75
Jam code 76



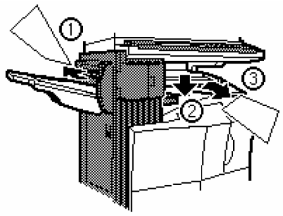
• Misfeed in conveying cover
Jam code 30
Jam code 35
Jam codes 40 to 44, 46,47
Jam code 50
Jam code 51
Jam code 52
Jam code 60
Jam code 61

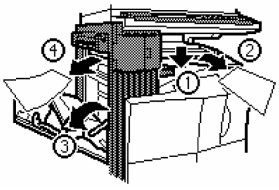


• Misfeed in side cover
Jam code 19



• Misfeed in built-in finisher*
Jam code 81
Jam code 82
Jam code 83
Jam code 84





(2) Paper misfeed detection conditions

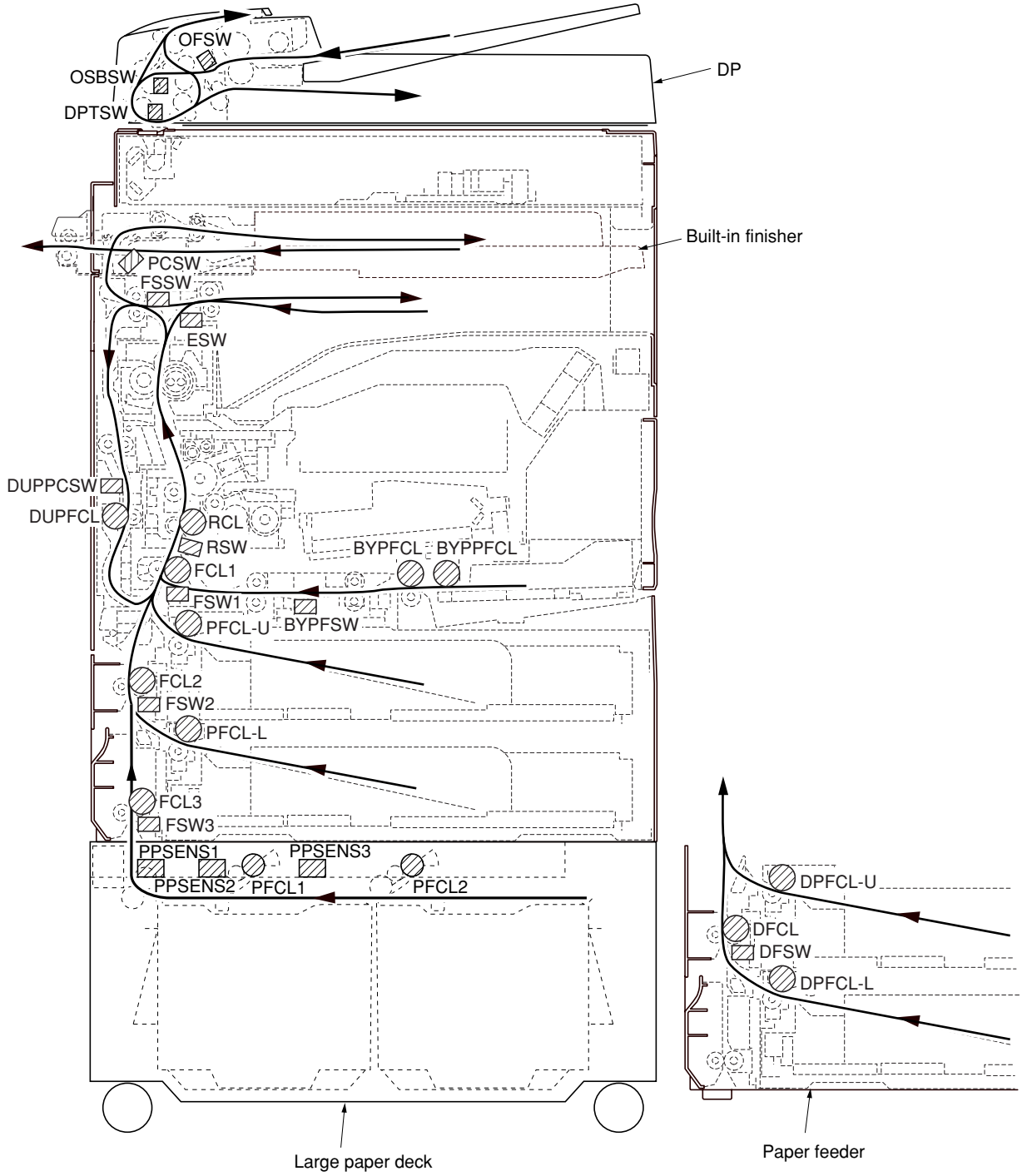


Figure 1-5-1

Section	Jam code	Description	Conditions
Paper feed section	10	No paper feed from the upper drawer	Feed switch 1 (FSW1) does not turn on within 841 ms of the upper paper feed clutch (PFCL-U) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within 841 ms.
	11	No paper feed from the lower drawer	Feed switch 2 (FSW2) does not turn on within 882 ms of the lower paper feed clutch (PFCL-L) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within 882 ms.
	12	No paper feed from large paper deck	Feed switch 3 (FSW3) does not turn on within 650 ms of paper feed clutch 1 (PFCL1) turning on.
		No paper feed from paper feeder upper drawer	Feed switch 3 (FSW3) does not turn on within 880 ms of the desk upper paper feed clutch (DPFCL-U) turning on; the clutch is then successively held off for 1 s and turned back on, but the switch again fails to turn on within 880 ms.
	13	No paper feed from paper feeder lower drawer	Desk feed switch (DFSW) does not turn on within 880 ms of the desk lower paper feed clutch (DPFCL-L) turning on; the clutch is then successively held off for 1 s and turned back on, but the switch again fails to turn on within 880 ms.
	14	No paper feed from bypass	The bypass feed switch (BYPFSW) does not turn on within 1730 ms of the bypass paper feed clutch (BYPPFCL) turning on; the clutch is then successively held off for 1 s and turned back on, but the switch again fails to turn on within 1730 ms.
	15	Jam in large paper deck horizontal paper conveying section 1	Paper path sensor 3 (PPSENS3) does not turn on within 290 ms of the paper feed clutch 2 (PFCL2) turning on.
	16	Jam in large paper deck horizontal paper conveying section 2	Paper path sensor 2 (PPSENS2) does not turn on within 310 ms of the paper path sensor 3 (PPSENS3) turning on.
	17	Jam in large paper deck horizontal paper conveying section 3	Paper path sensor 1 (PPSENS1) does not turn on within 190 ms of the paper path sensor 2 (PPSENS2) turning on.
	18	Misfeed in copier vertical paper conveying section	The registration switch (RSW) does not turn on within 936 ms of feed switch 1 (FSW1) turning on.
			Feed switch 1 (FSW1) does not turn on within 1079 ms of feed switch 2 (FSW2) turning on.
			Feed switch 2 (FSW2) does not turn on within 1203 ms of feed switch 3 (FSW3) turning on.
	19	Misfeed in paper feed desk vertical paper conveying section	Feed switch 3 (FSW3) does not turn on within 888 ms of the desk feed switch (DFSW) turning on.
	20	Misfeed in bypass vertical paper conveying section	The registration switch (RSW) does not turn on within 3932 ms of the bypass feed switch (BYPFSW) turning on.
	21	Multiple sheets in copier paper feed section	Feed switch 1 (FSW1) does not turn off within the time required to convey the length of the used paper size plus 1123 ms of turning on.
			Feed switch 2 (FSW2) does not turn off within the time required to convey the length of the used paper size plus 1123 ms of turning on.

Section	Jam code	Description	Conditions
Paper feed section	21	Multiple sheets in copier paper feed section	Feed switch 3 (FSW3) does not turn off within the time required to convey the length of the used paper size plus 635 ms of turning on.
			The desk feed switch (DFSW) does not turn off within the time required to convey the length of the used paper size plus 635 ms of turning on.
			The bypass feed switch (BYPFSW) does not turn off within the time required to convey the length of the used paper size plus 1123 ms of turning on.
			Feed switch 1 (FSW1) does not turn off within 841 ms of the upper paper feed clutch (PFCL-U) turning on.
			Feed switch 2 (FSW2) does not turn off within a specified time of the lower paper feed clutch (PFCL-L) turning on.
			Feed switch 3 (FSW3) does not turn off within a specified time of paper feed clutch 1 (PFCL1) turning on.
			Feed switch 3 (FSW3) does not turn off within a specified time of the desk upper paper feed clutch (DPFCL-U) turning on.
			The bypass feed switch (BYPFSW) does not turn off within 1730 ms of the bypass paper feed clutch (BYPPFCL) turning on.
	22	Multiple sheets in copier vertical conveying section	Feed switch 1 (FSW1) does not turn off within 1910 ms of feed switch 2 (FSW2) turning off.
			Feed switch 2 (FSW2) does not turn off within 1203 ms of feed switch 3 (FSW3) turning off.
			Feed switch 1 (FSW1) does not turn off within 1910 ms of feed switch 2 (FSW2) turning on.
			Feed switch 2 (FSW2) does not turn off within 1203 ms of feed switch 3 (FSW3) turning on.
	23	Multiple sheets in bypass vertical conveying section	The registration switch (RSW) does not turn off within 1510 ms of the bypass feed switch (BYPFSW) turning off.
			The registration switch (RSW) does not turn off within 1505 ms of the bypass feed switch (BYPFSW) turning on.
Paper conveying section	05	Secondary paper feed does not start.	Secondary paper feed does not start within 30 s of arrival of paper at the registration section.
	30	Misfeed in registration/ transfer section	The registration switch (RSW) does not turn off within 1657 ms of feed switch 1 (FSW1) turning off.
			The registration switch (RSW) does not turn off within 1657 ms of feed switch 1 (FSW1) turning on.
Fixing section	40	Misfeed in fixing section (bypass)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.
	41	Misfeed in fixing section (upper drawer)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.

Section	Jam code	Description	Conditions
Fixing section	42	Misfeed in fixing section (lower drawer)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.
	43	Misfeed in fixing section (paper feeder upper drawer)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.
	44	Misfeed in fixing section (paper feeder lower drawer)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.
	46	Misfeed in fixing section (large paper deck)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.
	47	Misfeed in fixing section (duplex section)	The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.
			The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.
Eject section	50	Misfeed in eject section	The eject switch (ESW) does not turn off within 2898 ms of the registration switch (RSW) turning off.
			The eject switch (ESW) does not turn off within 2898 ms of the registration clutch (RCL) turning on.
	51	Misfeed in job separator eject section	The job separator eject switch (JBESW) does not turn on within 2050 ms of the feedshift switch (FSSW) turning on.
			The job separator eject switch (JBESW) does not turn off within 2050 ms of the feedshift switch (FSSW) turning off.
			The job separator eject switch (JBESW) does not turn off within 2050 ms of the feedshift switch (FSSW) turning on.
Feedshift section	52	Misfeed in feedshift section	The feedshift switch (FSSW) does not turn on within 873 ms of the start of eject motor (EM) reverse rotation.
			During paper switchback operation, the feedshift switch (FSSW) does not turn off within the time required to convey the length of the used paper size plus 317 ms of turning on.
			The feedshift switch (FSSW) does not turn off within 2898 ms of the registration switch (RSW) turning off.
			The feedshift switch (FSSW) does not turn off within 2898 ms of the registration clutch (RCL) turning on.
Optional switchback unit	53	Misfeed in switchback section	The switchback eject switch (SBESW) does not turn off within 1421 ms (2797 ms) of the feedshift switch (FSSW) turning on.
			The switchback eject switch (SBESW) does not turn on within 1421 ms (2797 ms) of the feedshift switch (FSSW) turning on.

Section	Jam code	Description	Conditions
Optional switchback unit	53	Misfeed in switchback section	The switchback eject switch (SBESW) does not turn off within 1421 ms (2797 ms) of the feedshift switch (FSSW) turning off.
Duplex section	60	Duplex paper conveying section 1	The duplex paper conveying switch (DUPPCSW) does not turn on within 1285 ms of the feedshift switch (FSSW) turning on.
			The duplex paper conveying switch (DUPPCSW) does not turn off within 1285 ms of the feedshift switch (FSSW) turning off.
	61	Duplex paper conveying section 2	Feed switch 1 (FSW1) does not turn on within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning on.
			Feed switch 1 (FSW1) does not turn off within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning off.
Optional DP	70	No original feed	When the DF START signal is received, switches other than the original set switch (OSSW) and original size length switch (OSLSW) on the contact glass are on.
			During the primary feed of the first original in the single-sided or double-sided original mode, the original feed switch (OFSW) does not turn on within 800 ms of the original feed motor (OFM) turning on.
			During the primary feed of the second or later original in the single-sided or double-sided original mode, the original feed switch (OFSW) does not turn on within 800 ms of the start of forward rotation of the original feed motor (OFM).
	71	An original jam in the original feed/conveying section	During the secondary original feed in the single-sided original mode, the DP timing switch (DPTSW) does not turn on within 967 ms of the start of reverse rotation of the original feed motor (OFM). Alternatively, during continuous original feed in single-sided original mode, the DP timing switch (DPTSW) does not turn on for the second time under the above conditions.
	72	An original jam in the original feed section	During the secondary original feed in the single-sided original mode, the original feed switch (OFSW) does not turn off within 1654 ms of the DP timing switch (DPTSW) turning on.
			During original switchback operation in the double-sided original mode, the original feed switch (OFSW) remains on when the original switchback switch (OSBSW) turns off.
	73	An original jam in the original conveying section	During the secondary original feed in the single-sided or double-sided original mode, the DP timing switch (DPTSW) does not turn off within 2399 ms of turning on.
			In the single-sided or double-sided original mode, the DP timing switch (DPTSW) turns off within 474 ms of turning on.
	74	An original jam remaining after retries	In the single-sided or double-sided original mode, secondary original feed does not start after 5 retries.

Section	Jam code	Description	Conditions
Optional DP	75	An original jam in the switchback section 1	During the switchback operation of an original in the double-sided original mode, the original switchback switch (OSBSW) does not turn off within 7040 ms of turning on.
			During the secondary original feed in the double-sided original mode, the DP timing switch (DPTSW) does not turn on within 433 ms of the original conveying motor (OCM) turning on.
	76	An original jam in the switchback section 2	While scanning the first face (reverse face) of the original in the double-sided original mode, the original switchback switch (OSBSW) does not turn on within 770 ms of the DP timing switch (DPTSW) turning on.
			During the switchback operation of the second or later original in the double-sided original mode, the original switchback switch (OSBSW) remains off when the trailing edge of the preceding original turns the DP timing switch (DPTSW) off.
Optional large paper deck	09	Large paper deck sequence error jam	A communication sequence error occurs between the copier and the large paper deck.
Optional built-in finisher	81	Jam between the finisher and copier	The paper conveying switch does not turn on within 1550 ms of the signal requesting paper ejection is output from the copier.
	82	Intake jam	During paper intake from the copier, the paper conveying switch (PCSW) does not turn off within 1960 to 3480 ms (depending on paper size) of paper conveying switch (PCSW) turning on.
	83	Jam during paper conveying for batch ejection 1	When ejection a stack of paper, the paper conveying switch (PCSW) does not turn on within 1590 ms of the paper conveying motor (PCM) turning on.
	84	Jam during paper conveying for batch ejection 2	When ejection a stack of paper, the paper conveying switch (PCSW) does not turn off within 2260 to 3190 ms (varies depending on the paper size) of the paper conveying motor (PCM) turning on.
Optional 3000-sheet finisher	80	Jam between the finisher and copier	The finisher does not respond 15 s after the eject signal is sent to the finisher.
	81	Jam in paper entry section	See the 3000-sheet finisher service manual.
	82	Jam in eject section of non-sort tray	See the 3000-sheet finisher service manual.
	83	Jam in paper conveying section of internal tray	See the 3000-sheet finisher service manual.
	84	Jam in eject section of sort tray	See the 3000-sheet finisher service manual.

Section	Jam code	Description	Conditions
Optional mailbox	85	Jam between the mailbox and copier	The mailbox does not respond 15 s after the eject signal is sent to the mailbox.
	86	Jam in the mailbox 1	See the mailbox service manual.
	87	Jam in the mailbox 2	See the mailbox service manual.
	88	Jam in the mailbox 3	See the mailbox service manual.
	89	Jam in the mailbox 4	See the mailbox service manual.
Optional booklet stitcher	80	Entrance sensor delay jam	See the booklet stitcher service manual.
	81	Entrance sensor stay jam	See the booklet stitcher service manual.
	82	Early arrival jam	See the booklet stitcher service manual.
	83	Folding position sensor delay jam	See the booklet stitcher service manual.
	84	Folding position sensor conveying stay jam	See the booklet stitcher service manual.
	85	Stapler jam	See the booklet stitcher service manual.
	86	Staple jam	See the booklet stitcher service manual.
	87	Power on jam	See the booklet stitcher service manual.
	88	Door open jam	See the booklet stitcher service manual.
	89	Punch jam	See the booklet stitcher service manual.

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed, conveying or eject section is indicated as soon as the power switch is turned on.	A piece of paper torn from copy paper is caught around feed switch 1/2/3, registration switch, eject switch or feedshift switch.	Check visually and remove it, if any.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace feed switch 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace feed switch 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the eject switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from upper drawer). Jam code 10	Paper in the upper drawer is extremely curled.	Change the paper.
	Check if the upper paper feed pulley, separation pulley or forwarding pulley of the upper drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace feed switch 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the upper paper feed clutch malfunctions.	Run maintenance item U032 and select the upper paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the upper paper feed clutch.	Check (see page 1-5-48).

Problem	Causes/check procedures	Corrective measures
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from lower drawer). Jam code 11	Paper in the lower drawer is extremely curled.	Change the paper.
	Check if the lower paper feed pulley, separation pulley or forwarding pulley of the lower drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 2 actuator.	Check visually and replace feed switch 2 if its actuator is broken.
	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace feed switch 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the lower paper feed clutch malfunctions.	Run maintenance item U032 and select the lower paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the lower paper feed clutch.	Check (see page 1-5-48).
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from large paper deck*). Jam code 12	Paper in the large paper deck is extremely curled.	Change the paper.
	Broken feed switch 3 actuator.	Check visually and replace feed switch 3 if its actuator is broken.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if paper feed clutch 1 and 2 malfunctions.	Run maintenance item U247 and select paper feed clutch 1 or 2 on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 1 and 2.	Check.
	Check if the deck feed clutch malfunctions.	Run maintenance item U247 and select the deck feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the deck feed clutch.	Check.
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from paper feeder* upper drawer). Jam code 12	Paper in the paper feeder upper drawer is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the paper feeder upper drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 3 actuator.	Check visually and replace feed switch 3 if its actuator is broken.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.

*Optional.

Problem	Causes/check procedures	Corrective measures
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from paper feeder* upper drawer). Jam code 12	Check if the desk upper paper feed clutch malfunctions.	Run maintenance item U247 and select the desk upper paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the desk upper paper feed clutch.	Check.
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from paper feeder* lower drawer). Jam code 13	Paper in the paper feeder lower drawer is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the paper feeder lower drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken desk feed switch actuator.	Check visually and replace desk feed switch if its actuator is broken.
	Defective desk feed switch.	With 5 V DC present at CN2-8 on the desk main PCB, check if CN2-7 on the desk main PCB remains low when the desk feed switch is turned on and off. If it does, replace the desk feed switch.
	Check if the desk lower paper feed clutch malfunctions.	Run maintenance item U247 and select the desk lower paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the desk lower paper feed clutch.	Check.
(7) A paper jam in the paper feed section is indicated during copying (no paper feed from bypass). Jam code 14	Paper on the bypass table is extremely curled.	Change the paper.
	Check if the bypass paper feed pulley, separation pulley or forwarding pulley of the bypass are deformed.	Check visually and replace any deformed pulleys.
	Broken bypass feed switch actuator.	Check visually and replace bypass feed switch if its actuator is broken.
	Defective bypass feed switch.	Run maintenance item U031 and turn the bypass feed switch on and off manually. Replace the bypass feed switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the bypass paper feed clutch malfunctions.	Run maintenance item U032 and select the bypass paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the bypass paper feed clutch.	Check (see page 1-5-49).

*Optional.

Problem	Causes/check procedures	Corrective measures
(8) A paper jam in the paper feed section is indicated during copying (jam in large paper deck* horizontal paper conveying section). Jam code 15	Paper in the large paper deck is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 3.	With 5 V DC present at CN6-12 on the deck main PCB, check if CN6-11 on the deck main PCB remains low when paper path sensor 3 is turned on and off. If it does, replace paper path sensor 3.
	Check if paper feed clutch 2 malfunctions.	Run maintenance item U247 and select paper feed clutch 2 on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 2.	Check.
(9) A paper jam in the paper feed section is indicated during copying (jam in large paper deck* horizontal paper conveying section). Jam code 16	Paper in the large paper deck is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 2.	With 5 V DC present at CN6-9 on the deck main PCB, check if CN6-8 on the deck main PCB remains low when paper path sensor 2 is turned on and off. If it does, replace paper path sensor 2.
	Check if paper feed clutch 1 malfunctions.	Run maintenance item U247 and select paper feed clutch 1 on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 1.	Check.
(10) A paper jam in the paper feed section is indicated during copying (jam in large paper deck* horizontal paper conveying section). Jam code 17	Paper in the large paper deck is extremely curled.	Change the paper.
	Check if the paper side guides are deformed.	Check visually and replace.
	Defective paper path sensor 1.	With 5 V DC present at CN6-6 on the deck main PCB, check if CN6-5 on the deck main PCB remains low when paper path sensor 1 is turned on and off. If it does, replace paper path sensor 1.
	Check if the deck feed clutch malfunctions.	Run maintenance item U247 and select the deck feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the deck feed clutch.	Check.
(11) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section). Jam code 18	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace feed switch 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 2 actuator.	Check visually and replace feed switch 2 if its actuator is broken.

*Optional.

Problem	Causes/check procedures	Corrective measures
(11) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section). Jam code 18	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace feed switch 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 3 actuator.	Check visually and replace feed switch 3 if its actuator is broken.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the feed pulleys and feed roller are deformed.	Check and repair if necessary.
(12) A paper jam in the paper feed section is indicated during copying (jam in paper feeder* vertical conveying section). Jam code 19	Broken feed switch 3 actuator.	Check visually and replace feed switch 3 if its actuator is broken.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken desk feed switch actuator.	Check visually and replace desk feed switch if its actuator is broken.
	Defective desk feed switch.	With 5 V DC present at CN2-8 on the desk main PCB, check if CN2-7 on the desk main PCB remains low when the desk feed switch is turned on and off. If it does, replace the desk feed switch.
(13) A paper jam in the paper feed section is indicated during copying (jam in bypass conveying section). Jam code 20	Broken bypass feed switch actuator.	Check visually and replace the bypass feed switch if its actuator is broken.
	Defective bypass feed switch.	Run maintenance item U031 and turn the bypass feed switch on and off manually. Replace the bypass feed switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(14) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier paper feed section). Jam code 21	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace feed switch 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 2 actuator.	Check visually and replace feed switch 2 if its actuator is broken.
	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace feed switch 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 3 actuator.	Check visually and replace feed switch 3 if its actuator is broken.

*Optional.

Problem	Causes/check procedures	Corrective measures
(14) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier paper feed section). Jam code 21	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken desk feed switch* actuator.	Check visually and replace the desk feed switch if its actuator is broken.
	Defective desk feed switch*.	With 5 V DC present at CN2-8 on the desk main PCB, check if CN2-7 on the desk main PCB remains low when the desk feed switch is turned on and off. If it does, replace the desk feed switch.
	Broken bypass feed switch actuator.	Check visually and replace the bypass feed switch if its actuator is broken.
	Defective bypass feed switch.	Run maintenance item U031 and turn the bypass feed switch on and off manually. Replace the bypass feed switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the upper paper feed clutch malfunctions.	Run maintenance item U032 and select the upper paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the upper paper feed clutch.	Check (see page 1-5-48).
	Check if the lower paper feed clutch malfunctions.	Run maintenance item U032 and select the lower paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the lower paper feed clutch.	Check (see page 1-5-48).
	Check if the bypass paper feed clutch malfunctions.	Run maintenance item U032 and select the bypass feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the bypass paper feed clutch.	Check (see page 1-5-49).
	Check if the feed pulleys and feed roller are deformed.	Check and repair if necessary.
(15) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section). Jam code 22	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 2 actuator.	Check visually and replace feed switch 2 if its actuator is broken.
	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace feed switch 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 3 actuator.	Check visually and replace feed switch 3 if its actuator is broken.

*Optional.

Problem	Causes/check procedures	Corrective measures
(15) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section). Jam code 22	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace feed switch 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the feed pulleys and feed roller are deformed.	Check and repair if necessary.
(16) A paper jam in the paper feed section is indicated during copying (multiple sheets in bypass conveying section). Jam code 23	Broken bypass feed switch actuator.	Check visually and replace the bypass feed switch if its actuator is broken.
	Defective bypass feed switch.	Run maintenance item U031 and turn the bypass feed switch on and off manually. Replace the bypass feed switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(17) A paper jam in the paper conveying section is indicated during copying Jam code 05	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-49).
(18) A paper jam in the paper conveying section is indicated during copying (jam in registration/transfer section). Jam code 30	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace feed switch 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(19) A paper jam in the fixing section is indicated during copying (jam in fixing section). Jam codes 40 to 44, 46 and 47	Broken eject switch actuator.	Check visually and replace the eject switch if its actuator is broken.
	Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the eject switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the operation panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(19) A paper jam in the fixing section is indicated during copying (jam in fixing section). Jam codes 40 to 44, 46 and 47	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-49).
(20) A paper jam in the eject section is indicated during copying (jam in eject section). Jam code 50	Broken eject switch actuator.	Check visually and replace the eject switch if its actuator is broken.
	Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the eject switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(21) A paper jam in the eject section is indicated during copying (jam in job separator* eject section). Jam code 51	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken job separator eject switch actuator.	Check visually and replace the job separator eject switch if its actuator is broken.
	Defective job separator eject switch.	Run maintenance item U031 and turn the job separator eject switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(22) A paper jam in the feedshift section is indicated during copying (jam in feedshift section). Jam code 52	Check if the feedshift solenoid malfunctions.	Run maintenance item U033 and select the feedshift solenoid on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the feedshift solenoid.	Check (see page 1-5-49).
	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-49).

*Optional.

Problem	Causes/check procedures	Corrective measures
(23) A paper jam in the switchback section is indicated during copying (jam in switchback unit*). Jam code 53	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken switchback eject switch actuator.	Check visually and replace the switchback eject switch if its actuator is broken.
	Defective switchback eject switch.	With 5 V DC present at CN5-2 on the switchback unit main PCB, check if CN5-4 on the switchback unit main PCB remains low when the switchback eject switch is turned on and off. If it does, replace the switchback eject switch.
(24) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 1). Jam code 60	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplex paper conveying switch actuator.	Check visually and replace the duplex paper conveying switch if its actuator is broken.
	Defective duplex paper conveying switch.	Run maintenance item U031 and turn the duplex paper conveying switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(25) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 2). Jam code 61	Broken duplex paper conveying switch actuator.	Check visually and replace the duplex paper conveying switch if its actuator is broken.
	Defective duplex conveying switch.	Run maintenance item U031 and turn the duplex paper conveying switch on and off manually. Replace the duplex paper conveying switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if its actuator is broken.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(26) An original jams in the DP* is indicated during copying (no original feed). Jam code 70	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the operation panel to be turned on and off. Check the status and remedy if necessary.

*Optional.

Problem	Causes/check procedures	Corrective measures
(27) An original jams in the DP* is indicated during copying (a jam in the original feed/conveying section). Jam code 71	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the operation panel to be turned on and off. Check the status and remedy if necessary.
(28) An original jams in the DP* is indicated during copying (a jam in the original feed section). Jam code 72	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(29) An original jams in the DP* is indicated during copying (a jam in the original conveying section). Jam code 73	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(30) An original jams in the DP* is indicated during copying (a jam in the original switchback section 1). Jam code 75	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective DP timing switch.	Run maintenance item U244 and turn the DP timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor on the operation panel to be turned on and off. Check the status and remedy if necessary.
(31) An original jams in the DP* is indicated during copying (a jam in the original switchback section 2). Jam code 76	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.

*Optional.

Problem	Causes/check procedures	Corrective measures
(32) Paper jams in the built-in finisher* during copying (intake jam). Jam code 82	Defective paper conveying switch.	With 5 V DC present at CN4-9 on the finisher main PCB, check if CN4-10 on the finisher main PCB remains high or low when the paper conveying switch is turned on and off. If it does, replace the paper conveying switch.
	Check if the feedshift roller or feedshift pulley is deformed.	Check visually and replace the pulley or roller if deformed.
(33) Paper jams in the built-in finisher* during copying (jam during paper conveying for batch ejection 1). Jam code 83	Defective paper conveying switch.	With 5 V DC present at CN4-9 on the finisher main PCB, check if CN4-10 on the finisher main PCB remains high or low when the paper conveying switch is turned on and off. If it does, replace the paper conveying switch.
	Check if the feedshift roller or press roller is deformed.	Check visually and replace the pulley or roller if deformed.
(34) Paper jams in the built-in finisher* during copying (jam during paper conveying for batch ejection 2). Jam code 84	Defective paper conveying switch.	With 5 V DC present at CN4-9 on the finisher main PCB, check if CN4-10 on the finisher main PCB remains high or low when the paper conveying switch is turned on and off. If it does, replace the paper conveying switch.
	Check if the eject roller or eject pulley is deformed.	Check visually and replace the pulley or roller if deformed.

*Optional.

1-5-2 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of "C" followed by a number between 0030 and 8500, indicating the nature of the problem. A message is also displayed requesting the user to call for service.
After removing the problem, the self-diagnostic function can be reset by turning safety switches 1 or 2 off and back on.

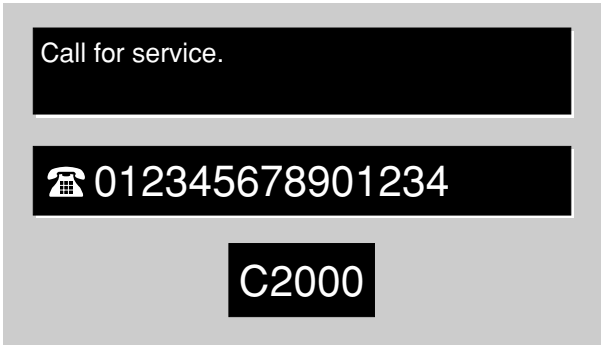


Figure 1-5-2 Service call code display

• List of system errors

When an unexpected error is detected for some reason, a system error will be indicated. After a system error is indicated, the error can be cleared by turning the main switch off and then on. If the error is detected continuously, however, perform the operation shown in Table 1-5-1. If a system error occurs frequently, a fault may have occurred. Check the details of the C call to take proper measures.

System error	Contens	Operation
0420	Large paper deck*/paper feeder* communication problem	System error → Normal C call processing
0440	Finisher* communication problem	System error → Normal C call processing
0450	Mailbox* communication problem	System error → Normal C call processing
0470	Switchback unit* communication problem	System error → Normal C call processing
0610	Bitmap problem	System error → Normal C call processing
0630	DMA problem	System error → Normal C call processing
0640	Hard disk drive problem	System error → Normal C call processing
3100	Scanner carriage problem	System error → Normal C call processing
4000	Polygon motor synchronization problem	System error → Normal C call processing
4010	Polygon motor steady-state problem	System error → Normal C call processing

Table 1-5-1 List of system errors

• Partial operation control

If any of the following calls for service is detected, partial operation control will be activated. After taking measures against the cause of trouble, run maintenance item U906 to reset partial operation control.

C0420(Large paper deck*/paper feeder* communication problem), C0440(Finisher* communication problem), C0450(Mailbox* communication problem), C0470(Switchback unit* communication problem), C0640(Hard disk drive problem), C1010(Upper lift motor problem), C1020(Lower lift motor problem), C1030(Desk upper lift motor problem), C1040(Desk lower lift motor problem), C1100(Paper deck motor 1* problem), C1110(Paper deck motor 2* problem), C1120(Deck right lift* position problem), C1130(Deck left lift* position problem), C2600(Deck conveying motor*/desk drive motor* problem), C8010(Finisher* paper conveying motor problem) to C8500(Mailbox* drive motor problem)
*Optional.

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0030	**Fax control PCB* problem** • Problems with data from fax control PCB.	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0070	**Abnormal detection of fax control PCB incompatibility** • In the initial communication with the fax control PCB, any normal communication command is not transmitted.	Defective fax software.	Install the fax software to Ver. 2.xx or later.
		Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0100	**Operation unit PCB backup memory read/write error** • Reading from or writing to the backup memory cannot be performed.	Defective EEPROM.	Replace EEPROM 3 and 4.
C0110	**Operation unit PCB backup memory data problem** • Data in the specified area of the backup memory does not match the specified values. (This code is not displayed. The service call counter counts the frequency of occurrence only as for this code.)	Problem with the backup memory data.	Turn safety switch 1 off and back on and run maintenance item U020 to set the contents of the backup memory data again.
		Defective backup RAM.	If the C0110 is displayed after re-setting the backup memory contents, replace the backup RAM.
C0150	**Backup memory read/write error 2** • Reading from or writing to the backup memory cannot be performed.	Defective EEPROM.	Replace EEPROM 1 and 2.
C0160	**Backup memory data problem** • A checksum error in backup data is detected. (This code is not displayed. The service call counter counts the frequency of occurrence only as for this code.)	Data damage of EEPROM.	Contact the Service Administrative Division.
C0170	**Accounting count error** • A checksum error in backup data of the accounting counter is detected.	Data damage of EEPROM.	Contact the Service Administrative Division.
C0210	**MMI communication problem** • There is no reply after 20 retries at communication.	Defective main PCB.	Replace the main PCB and check for correct operation.
C0240	**Printer board* communication problem** • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector YC43 on the main PCB and the connector on the printer board. Repair or replace if necessary.
		Defective main PCB or printer board.	Replace the main PCB or printer board and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0250	**Scanner network board* communication problem** • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector YC46 on the main PCB and the connector on the memory PCB. Repair or replace if necessary.
		Defective main PCB or scanner network board.	Replace the main PCB or scanner network board and check for correct operation.
C0280	**Fax control PCB* communication problem** • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector YC44 on the main PCB and the connector on the memory PCB. Repair or replace if necessary.
		Defective main PCB or fax control PCB.	Replace the main PCB or fax control PCB and check for correct operation.
C0320	**Energy save communication problem** • Communication errors from the communication microcomputer on the main PCB. No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Defective main PCB.	Replace the main PCB and check for correct operation.
C0420	**Large paper deck*/paper feeder* communication problem** • Communication errors from the communication microcomputer on the main PCB. No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connectors CN3 on the main PCB and the connector on the deck main PCB/desk main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective deck main PCB/desk main PCB.	Replace the deck main PCB/desk main PCB and check for correct operation.
C0440	**Finisher* communication problem** • Communication errors from the communication microcomputer on the main PCB. No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connectors YC4, YC5 on the main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0450	**Mailbox* communication problem** • Communication errors from the communication microcomputer on the main PCB. No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connectors YC3 on the main PCB and CN1 on the mailbox main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective mailbox main PCB.	Replace the mailbox main PCB and check for correct operation.
C0470	**Switchback unit* communication problem** • Communication errors from the communication microcomputer on the main PCB. No communication: there is no reply after 5 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connectors YC3 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective switchback unit main PCB.	Replace the switchback unit main PCB and check for correct operation.
C0610	**Bitmap problem** • There is a problem with the data or address bus of the bitmap DRAM. • The DIMM on the memory PCB does not operate correctly.	Defective main PCB.	Replace the main PCB and check for correct operation.
		DIMM installed incorrectly.	Check if the DIMM is inserted into the socket on the main PCB correctly.
		Defective DIMM.	Replace the DIMM and check for correct operation.
C0630	**DMA problem** • DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time.	Defective main PCB.	Replace the main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0640	**Hard disk drive problem** • The hard disk drive cannot be accessed.	Poor contact of the hard disk drive connector terminals.	Check the connection of connectors YC49 on the main PCB and hard disk drive, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective hard disk drive.	Run U024 (HDD formatting) without turning the power off to initialize the hard disk. Replace the hard disk drive and check for correct operation if the problem is still detected after initialization.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C0820	**Fax control PCB* CG ROM checksum error** • A checksum error occurred with the CG ROM data of the fax control PCB.	Defective fax software.	Install the fax software to Ver. 2.xx or later.
		Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0830	**Fax control PCB* flash program area checksum error** • A checksum error occurred with the program of the fax control PCB.	Defective fax software.	Install the fax software to Ver. 2.xx or later.
		Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0860	**Fax control PCB* software switch checksum error** • A checksum error occurred with the software switch value of the fax control PCB.	Defective fax software.	Install the fax software to Ver. 2.xx or later.
		Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0870	**Graphics data transfer problem** • High-capacity data transfer between the fax control PCB and the main PCB was not normally performed even if the data transfer was retried the specified times.	Poor contact in the connector terminals.	Check the connection of connector YC44 on the fax control PCB and the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB or fax control PCB.	Replace the main PCB or fax control PCB and check for correct operation.
C0880	**Program archive problem** • When power is turned on, the compressed program in the Flash ROM on the fax control PCB was not successfully decompressed.	Defective fax software.	Install the fax software to Ver. 2.xx or later.
		Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0890	**Fax control PCB* CG FONT archive problem** • When power is turned on, the compressed CG font in the Flash ROM on the fax control PCB was not successfully decompressed.	Defective fax software.	Install the fax software to Ver. 2.xx or later.
		Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0900	**Fax control PCB incompatibility detection problem*** • Fax software is not compatible with MMI software.	Fax software version is earlier.	Check the version of fax software and upgrade it to a version that accommodates the machine.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1010	**Upper lift motor problem** • When the upper drawer is inserted, the upper lift limit switch does not turn on within 6 s of the upper lift motor turning on and the upper lift limit switch does not turn on in a retry operation after turning off the upper lift motor for 200 ms. At this time, removal and insertion of the drawer is prompted. Even after removal and insertion of the drawer, the upper lift limit switch does not turn on. This problem occurs four times continuously. • During copying, the upper lift limit switch does not turn on within 200 ms of the upper lift motor turning on. At this time, removal and insertion of the drawer is prompted. Even after removal and insertion of the drawer, the upper lift limit switch does not turn on. This problem occurs four times continuously.	Broken gears or couplings of the upper lift motor.	Replace the upper lift motor.
		Defective upper lift motor.	Check for continuity across the coil. If none, replace the upper lift motor.
		Poor contact of the upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective upper lift limit switch.	Check if YC13-B9 on the main PCB goes low when the upper lift limit switch is turned off. If not, replace the upper lift limit switch.
		Poor contact of the upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C1020	**Lower lift motor problem** • When the lower drawer is inserted, the lower lift limit switch does not turn on within 6 s of the lower lift motor turning on and the lower lift limit switch does not turn on in a retry operation after turning off the lower lift motor for 200 ms. At this time, removal and insertion of the drawer is prompted. Even after removal and insertion of the drawer, the lower lift limit switch does not turn on. This problem occurs four times continuously. • During copying, the lower lift limit switch does not turn on within 200 ms of the lower lift motor turning on. At this time, removal and insertion of the drawer is prompted. Even after removal and insertion of the drawer, the lower lift limit switch does not turn on. This problem occurs four times continuously.	Broken gears or couplings of the lower lift motor.	Replace the lower lift motor.
		Defective lower lift motor.	Check for continuity across the coil. If none, replace the lower lift motor.
		Poor contact of the lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective lower lift limit switch.	Check if YC13-B15 on the main PCB goes low when the lower lift limit switch is turned off. If not, replace the lower lift limit switch.
		Poor contact of the lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1030	**Desk upper lift motor problem** • When the upper drawer of the optional paper feeder is inserted, the desk upper lift limit switch does not turn on within 10 s of the desk upper lift motor turning on. At this time, removal and insertion of the drawer is prompted. Even after removal and insertion of the drawer, the upper lift limit switch does not turn on. This problem occurs four times continuously.	Broken gears or couplings of the desk upper lift motor.	Replace the desk upper lift motor.
		Defective desk upper lift motor.	Check for continuity across the coil. If none, replace the desk upper lift motor.
		Poor contact of the desk upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk upper lift limit switch.	Check if CN1-5 on the desk main PCB goes low when the desk upper lift limit switch is turned off. If not, replace the desk upper lift limit switch.
		Poor contact of the desk upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C1040	**Desk lower lift motor problem** • When the lower drawer of the optional paper feeder is inserted, the desk lower lift limit switch does not turn on within 10 s of the desk lower lift motor turning on. At this time, removal and insertion of the drawer is prompted. Even after removal and insertion of the drawer, the lower lift limit switch does not turn on. This problem occurs four times continuously.	Broken gears of couplings of the desk lower lift motor.	Replace the desk lower lift motor.
		Defective desk lower lift motor.	Check for continuity across the coil. If none, replace the desk lower lift motor.
		Poor contact of the desk lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk lower lift limit switch.	Check if CN1-7 on the desk main PCB goes low when the desk lower lift limit switch is turned off. If not, replace the desk lower lift limit switch.
		Poor contact of the desk lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C1100	**Paper deck motor 1* problem** • A motor over-current signal is detected continuously for 1 s or longer.	Paper deck motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
		Paper deck motor 1 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1110	**Paper deck motor 2* problem** • A motor over-current signal is detected continuously for 1 s or longer.	Paper deck motor 2 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
		Paper deck motor 2 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C1120	**Deck right lift* position problem** • Deck level switch 2 does not turn on within 30 s of paper deck motor 2 turning on.	Defective deck level switch 2.	Check if CN5-4 on the desk main PCB goes low when desk level switch 2 is turned off. If not, replace desk level switch 2.
		Poor contact of deck level switch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective paper deck motor 2.	Check for continuity across the coil. If none, replace paper desk motor 2.
		Poor contact of paper deck motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The deck right lift does not rise properly.	Check the gears and belts, and remedy if necessary.
C1130	**Deck left lift* position problem** • Deck level switch 1 does not turn on within 30 s of paper deck motor 1 turning on.	Defective deck level switch 1.	Check if CN5-7 on the desk main PCB goes low when desk level switch 1 is turned off. If not, replace desk level switch 1.
		Poor contact of deck level switch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective paper deck motor 1.	Check for continuity across the coil. If none, replace paper desk motor 1.
		Poor contact of paper deck motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The deck left lift does not rise properly.	Check the gears and belts, and remedy if necessary.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2000	**Drive motor problem** • LOCK ALM signal remains high for 1 s, 1 s after the drive motor has turned on.	Poor contact in the drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective drive motor rotation control circuit.	Replace the drive motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C2500	**Paper feed motor problem** • LOCK ALM signal remains high for 1 s, 1 s after the paper feed motor has turned on.	Poor contact in the paper feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective paper feed motor rotation control circuit.	Replace the paper feed motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C2600	**Deck conveying motor*/desk drive motor* problem** • No pulse is input within 500 ms of the start-up. • No pulse is input within 100 ms of the previous pulse input.	Defective deck conveying motor PCB/desk drive motor PCB.	Replace the deck conveying motor PCB/ desk drive motor PCB and check for correct operation.
		Deck conveying motor /desk drive motor does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
		Poor contact in the deck conveying motor/desk drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C3100	**Scanner carriage problem** • The home position is not correct when the power is turned on or at the start of copying using the bypass table.	Poor contact in the connector terminals.	Check the connection of connector YC37 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective main PCB or scanner drive PCB.	Replace the main PCB or scanner drive PCB and check for correct operation.
		Defective scanner motor.	Replace the scanner motor.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C3200	**Exposure lamp problem** • Non-lighting of the exposure lamp is detected at the beginning of copying.	Poor contact of the connector terminals.	Check the connection of connector YC34 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective exposure lamp.	Replace the exposure lamp or inverter PCB and check for correct operation.
C3300	**Optical system problem** • After AGC, correct input is not obtained at CCD. (This code is not displayed. The service call counter counts the frequency of occurrence only as for this code.)	Poor contact of the connector terminals.	Check the connection of connector YC34 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective exposure lamp.	Replace the exposure lamp or inverter PCB and check for correct operation.
C4000	**Polygon motor synchronization problem** • When the polygon motor starts, the motor does not become stable even after 20 s.	Poor contact in the polygon motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective polygon motor.	Replace the LSU (see page 1-6-20).
		Defective power source PCB.	Check if 24 V DC is supplied to YC2-1 on the main PCB. If not, replace the power source PCB.
		Defective main PCB.	Check if 24 V DC is output from YC8-10 on the main PCB. If not, replace the main PCB.
C4010	**Polygon motor steady-state problem** • When high-speed rotation from low-speed rotation is requested, the motor does not become stable even after 20 s.	Poor contact in the polygon motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective polygon motor.	Replace the LSU (see page 1-6-20).
		Defective power source PCB.	Check if 24 V DC is supplied to YC2-1 on the main PCB. If not, replace the power source PCB.
		Defective main PCB.	Check if 24 V DC is output from YC8-10 on the main PCB. If not, replace the main PCB.
C4200	**BD steady-state problem** • The VTC detects a BD error for 600 ms after the polygon motor rotation has been stabilized.	Defective laser diode.	Replace the LSU (see page 1-6-20).
		Defective polygon motor.	Replace the LSU (see page 1-6-20).
		Defective main PCB.	Replace the main PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C5300	**Broken cleaning lamp wire** While the cleaning lamp is on, the broken cleaning lamp wire detection signal is detected for 2 s continuously.	Defective cleaning lamp.	Replace the cleaning lamp.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C6000	**Broken fixing heater wire** • When the power is turned on or at the start of fixing control from the sleep mode, 10 s after fixing heater M is turned on, the detected temperature of fixing thermistor 2 is lower than 40 °C/104 °F. • When the power is turned on or at the start of fixing control from the sleep mode, 7 s after fixing heater S is turned on, the detected temperature of fixing thermistor 1 is lower than 40 °C/104 °F. • During standby, the detected temperatures of fixing thermistors 1 and 2 become lower than 60 °C/140 °F.	Poor contact in the fixing unit thermistor 1 or 2 connector terminals.	Check the connection of connector YC10 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Fixing unit thermistor 1 or 2 installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.
		Fixing unit heater M or S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing unit heater M or S wire.	Check for continuity. If none, replace the fixing unit heater M or S (see page 1-6-38).
C6020	**Abnormally high fixing unit thermistor temperature** • Fixing thermistor 1 detects temperature 250 °C/482 °F or higher. • Fixing thermistor 2 detects temperature 210 °C/410 °F or higher.	Shorted fixing unit thermistor 1 or 2.	Measure the resistance. If it is 0 Ω, replace the fixing unit thermistor 1 or 2.
		Broken fixing unit heater control circuit on the power source PCB.	Replace the power source PCB.
C6050	**Abnormally low fixing unit thermistor temperature** • When only fixing heater M is on, fixing thermistor 2 detects temperature lower than 80 °C/176 °F during copying. • When fixing heater M and fixing heater S are on, fixing thermistor 2 detects temperature lower than 80 °C/176 °F or fixing thermistor 1 detects temperature lower than 100 °C/212 °F during copying.	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector YC10 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.
		Fixing unit heater M or S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing unit heater M or S wire.	Check for continuity. If none, replace the fixing unit heater M or S.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6400	**Zero-crossing signal problem** • The main PCB does not detect the zero-crossing signal (Z CROSS SIG) for the time specified below. At power-on: 5 s Others: 5 s	Poor contact in the connector terminals.	Check the connection of connectors YC1-3 on the main PCB and YC2-6 on the power source PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective power source PCB.	Check if the zero-crossing signal is output from YC2-6 on the power source PCB. If not, replace the power source PCB.
		Defective main PCB.	Replace the main PCB if C6400 is detected while YC2-6 on the power source PCB outputs the zero-crossing signal.
C6410	**Fixing unit connector insertion problem** • Absence of the fixing unit is detected.	Fixing unit connector inserted incorrectly.	Reinsert the fixing unit connector if necessary.
		Defective fixing unit connector.	Replace the fixing unit.
C6420	**Fixing unit fuse cut problem** • The fixing temperature remains at 0 °C/32 °F for 30 s continuously when the fixing heater is on.	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector YC10 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
C7300	**Toner sensor problem** • While the toner container sensor is on, the toner sensor in the developing unit does not turn on after the toner sensor turns off and toner is replenished from the toner container. (This code is not displayed. The service call counter counts the frequency of occurrence only as for this code.)	Defective toner sensor.	Replace the toner sensor.
		Poor contact in the toner sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective toner container sensor.	Replace the toner container sensor.
		Defective toner container.	Replace the toner container.
C7400	**Image formation unit connector insertion problem** • Absence of the image formation unit is detected.	Image formation unit connector inserted incorrectly.	Reinsert the image formation unit connector if necessary.
		Defective image formation unit connector.	Replace the image formation unit.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7410	**Drum unit connector insertion problem** • Absence of the drum unit is detected.	Drum unit connector inserted incorrectly.	Reinsert the drum unit connector if necessary.
		Defective drum unit connector.	Replace the drum unit.
C7450	**Image formation unit fuse cut problem** • The input voltage is above 4.5 V.	Image formation unit connector inserted incorrectly.	Reinsert the image formation unit connector if necessary.
		Defective image formation unit connector.	Replace the image formation unit.
C7800	**Broken external temperature thermistor wire** • The input voltage is above 4.5 V.	Poor contact in the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.
C7810	**Short-circuited external temperature thermistor** • The input voltage is below 1.0 V.	Poor contact in the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.
C8010	**Finisher paper conveying motor problem (3000-sheet finisher*)** • The paper conveying motor lockup signal is detected for 0.5 s or longer.	Poor contact in the paper conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The paper conveying motor malfunctions.	Replace the paper conveying motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8030	**Finisher paper conveying belt problem (3000-sheet finisher*)** • An on-to-off or off-to-on state change of the paper conveying belt home position sensor is not detected within 2 s of the paper conveying belt clutch turning on.	The paper conveying belt is out of phase.	Adjust the paper conveying belt so that it is in phase and check for correct operation.
		The paper conveying belt clutch malfunctions.	Replace the paper conveying belt clutch and check for correct operation.
		The paper conveying belt home position sensor malfunctions.	Replace the paper conveying belt home position sensor and check for correct operation.
		The paper conveying belt home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The internal tray is incorrectly inserted.	Check whether the internal tray unit or front cover catches are damaged.
C8140	**Finisher tray elevation motor problem (3000-sheet finisher*)** • The sort tray is not detected in the home position within 30 s of the start of the tray elevation motor rotation.	Poor contact in the tray elevation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The tray elevation motor malfunctions.	Replace the tray elevation motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8170	**Finisher front side registration motor problem (3000-sheet finisher* or built-in finisher*)** • If the front side registration home position sensor is on in initialization, the sensor does not turn off within 570 ms of starting initialization. • If the front side registration home position sensor is off in initialization, the sensor does not turn on within 3180 ms of starting initialization.	The front side registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front side registration motor malfunctions.	Replace the front side registration motor and check for correct operation.
		The front side registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front side registration home position sensor malfunctions.	Replace the front side registration home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8180	**Finisher rear side registration motor problem (3000-sheet finisher* or built-in finisher*)** • If the rear side registration home position sensor is on in initialization, the sensor does not turn off within 570 ms of starting initialization. • If the rear side registration home position sensor is off in initialization, the sensor does not turn on within 2880 ms of starting initialization.	The rear side registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The rear side registration motor malfunctions.	Replace the rear side registration motor and check for correct operation.
		The rear side registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The rear side registration home position sensor malfunctions.	Replace the rear side registration home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8190	**Finisher trailing edge registration motor problem (built-in finisher*)** • If the trailing edge registration home position sensor is on in initialization, the sensor does not turn off within 570 ms of starting initialization. • If the trailing edge registration home position sensor is off in initialization, the sensor does not turn on within 4550 ms of starting initialization.	The trailing edge registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The trailing edge registration motor malfunctions.	Replace the trailing edge registration motor and check for correct operation.
		The trailing edge registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The trailing edge registration home position sensor malfunctions.	Replace the trailing edge registration home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8210	**Finisher* front stapler problem** • The front stapler home position sensor does not change state from non-detection to detection within 200 ms of the start of front stapler motor counterclockwise (forward) rotation. • During initialization, the front stapler home position sensor does not change state from non-detection to detection within 600 ms of the start of front stapler motor clockwise (reverse) rotation.	The front stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front stapler malfunctions. a) The front stapler is blocked with a staple. b) The front stapler is broken.	a) Remove the front stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the front stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8220	**Finisher rear stapler problem (3000-sheet finisher*)** • The rear stapler home position sensor does not change state from non-detection to detection within 200 ms of the start of rear stapler motor counterclockwise (forward) rotation. • During initialization, the rear stapler home position sensor does not change state from non-detection to detection within 600 ms of the start of rear stapler motor clockwise (reverse) rotation.	The rear stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The rear stapler malfunctions. a) The rear stapler is blocked with a staple. b) The rear stapler is broken.	a) Remove the front stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the front stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8300	**Booklet stitcher* paper ejection motor problem**	A problem is detected with the paper ejection motor.	See the booklet stitcher service manual.
C8310	**Booklet stitcher* elevation motor problem**	A problem is detected with the elevation motor.	See the booklet stitcher service manual.
C8320	**Booklet stitcher* rear jog motor problem**	A problem is detected with the rear jog motor.	See the booklet stitcher service manual.
C8330	**Booklet stitcher* front jog motor problem**	A problem is detected with the front jog motor.	See the booklet stitcher service manual.
C8340	**Booklet stitcher* staple motor problem**	A problem is detected with the staple motor.	See the booklet stitcher service manual.
C8350	**Booklet stitcher* batch processing motor problem**	A problem is detected with the batch processing motor.	See the booklet stitcher service manual.
C8360	**Booklet stitcher* stapler shift motor problem**	A problem is detected with the stapler shift motor.	See the booklet stitcher service manual.
C8370	**Booklet stitcher* paddle motor problem**	A problem is detected with the paddle motor.	See the booklet stitcher service manual.
C8380	**Booklet stitcher* folding problem**	A problem is detected with the folding sensor.	See the booklet stitcher service manual.
C8390	**Booklet stitcher* backup RAM data problem**	A backup RAM data error is detected.	See the booklet stitcher service manual.
C8410	**Booklet stitcher* punch motor problem**	A problem is detected with the punch motor.	See the booklet stitcher service manual.

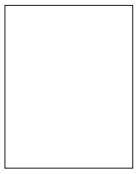
*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8420	**Booklet stitcher* shift motor problem**	A problem is detected with the shift motor.	See the booklet stitcher service manual.
C8430	**Booklet stitcher* punch communication problem**	A problem is detected with the punch communication.	See the booklet stitcher service manual.
C8440	**Booklet stitcher* punch sensor problem**	A problem is detected with the punch sensor.	See the booklet stitcher service manual.
C8450	**Booklet stitcher* side punch sensor problem**	A problem is detected with the side punch sensor.	See the booklet stitcher service manual.
C8460	**Booklet stitcher* punch backup RAM data problem**	A problem is detected with the punch backup RAM data.	See the booklet stitcher service manual.
C8470	**Booklet stitcher* punch dust sensor problem**	A problem is detected with the punch dust sensor.	See the booklet stitcher service manual.
C8480	**Booklet stitcher* broken punch power source wire problem**	A broken punch power source wire problem is detected.	See the booklet stitcher service manual.
C8500	**Mailbox* drive motor problem** • While the mailbox drive motor is driving, synchronization signals do not synchronize continually for 464 ms (motor lockup).	Defective mailbox drive motor or mailbox main PCB.	Run a simulation of the mailbox (communication test mode, see page 3-2-2 of the mailbox service manual). If there is any problem with the communication, replace the mailbox drive motor or the mailbox main PCB and check for correct operation.

*: Optional

1-5-3 Image formation problems

(1) No image appears (entirely white).



See page 1-5-38

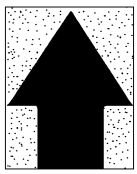
(2) No image appears (entirely black).

See page 1-5-39

(3) Image is too light.

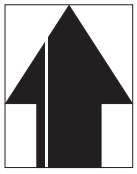
See page 1-5-40

(4) Background is visible.



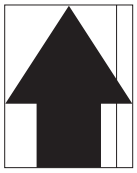
See page 1-5-40

(5) A white line appears longitudinally.



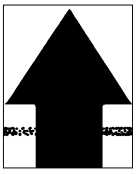
See page 1-5-40

(6) A black line appears longitudinally.



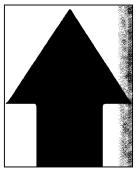
See page 1-5-41

(7) A black line appears laterally.



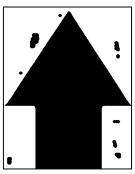
See page 1-5-41

(8) One side of the copy image is darker than the other.



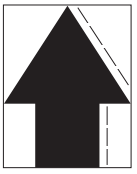
See page 1-5-41

(9) Black dots appear on the image.



See page 1-5-42

(10) Image is blurred.

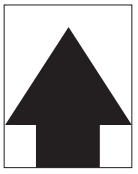


See page 1-5-42

(11) The leading edge of the image is consistently misaligned with the original.

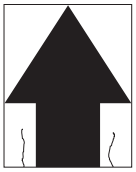
See page 1-5-42

(12) The leading edge of the image is sporadically misaligned with the original.



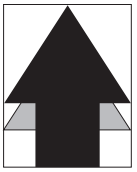
See page 1-5-43

(13) Paper creases.



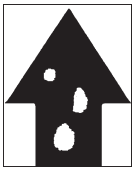
See page 1-5-43

(14) Offset occurs.



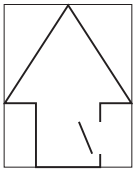
See page 1-5-43

(15) Image is partly missing.



See page 1-5-44

(16) Fixing is poor.

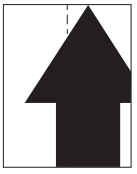


See page 1-5-44

(17) Image is out of focus.

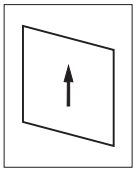
See page 1-5-44

(18) Image center does not align with the original center.



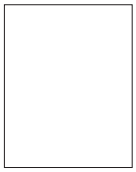
See page 1-5-45

(19) Image is not square.



See page 1-5-45

(1) No image appears (entirely white).



Causes
1. No transfer charging.
2. No LSU laser is output.
3. No developing bias is output.

Causes	Check procedures/corrective measures
1. No transfer charging.	
A. The connector terminals of the high-voltage transformer PCB make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
B. Defective main PCB.	Check if YC7-10 on the main PCB goes low when maintenance item U101 is run. If not, replace the main PCB.
C. Defective high-voltage transformer PCB.	Check if transfer charging takes place when CN1-10 on the high-voltage transformer PCB goes low while maintenance item U101 is run. If not, replace the high-voltage transformer PCB.
2. No LSU laser is output.	
A. Defective laser scanner unit.	Replace the laser scanner unit.
B. Defective main PCB.	Check if YC8-4 on the main PCB goes low when maintenance item U101 is run. If not, replace the main PCB.
3. No developing bias is output.	
A. Defective main PCB.	Check if YC7-1 on the main PCB goes low when maintenance item U101 is run. If not, replace the main PCB.
B. Defective high-voltage transformer PCB.	Check if developing bias voltage is output when the main PCB is normal while maintenance item U101 is run. If not, replace the high-voltage transformer PCB.

(2) No image appears (entirely black).

Causes
1. No main charging.
2. Exposure lamp fails to light.

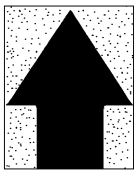
Causes	Check procedures/corrective measures
1. No main charging.	
A. Broken main charger wire.	Replace the main charger unit.
B. Leaking main charger housing.	Clean the main charger wire, grid and shield.
C. The connector terminals of the high-voltage transformer PCB make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
D. Defective main PCB.	Check if YC7-4 on the main PCB goes low when maintenance item U100 is run. If not, replace the main PCB.
E. Defective high-voltage transformer PCB.	Check if main charging takes place when CN1-3 on the high-voltage transformer PCB goes low while maintenance item U100 is run. If not, replace the high-voltage transformer PCB.
2. Exposure lamp fails to light.	
A. The connector terminals of the exposure lamp make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
B. Defective inverter PCB.	Check if the exposure lamp lights when CN1-1 and 1-2 on the inverter PCB go low while maintenance item U061 is run. If not, replace the inverter PCB.
C. Defective scanner drive PCB.	Check if the exposure lamp lights when YC1-3 on the scanner drive PCB goes low while maintenance item U061 is run. If not, replace the scanner drive PCB.
D. Defective main PCB.	Check if YC37-3 on the main PCB goes low when maintenance item U061 is run. If not, replace the main PCB.

(3) Image is too light.

Causes
1. Insufficient toner.
2. Deteriorated toner.
3. The transfer voltage is not output properly.
4. Dirty main charger wire.

Causes	Check procedures/corrective measures
1. Insufficient toner.	If the display shows the message requesting toner replenishment, replace the cartridge.
2. Deteriorated toner.	Perform the drum refresh operation.
3. The transfer voltage is not output properly.	Clean or check the transfer roller.
4. Dirty main charger.	Clean the main charger or, if it is extremely dirty, replace it.

(4) Background is visible.



Causes
1. Deteriorated toner.
2. Dirty main charger.

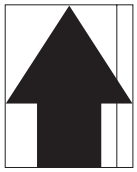
Causes	Check procedures/corrective measures
1. Deteriorated toner.	Perform the drum refresh operation.
2. Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace it.

(5) A white line appears longitudinally.

Causes
1. Foreign matter in the developing unit.
2. Dirty shading plate.

Causes	Check procedures/corrective measures
1. Foreign matter in the developing unit.	Check if the magnetic brush is formed uniformly. Replace the developing unit if any foreign matter.
2. Dirty shading plate.	Clean the shading plate.

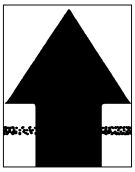
(6) A black line appears longitudinally.



Causes
1. Dirty contact glass.
2. Dirty or flawed drum.
3. Deformed or worn cleaning blade.
4. Dirty scanner mirror.
5. Dirty main charger wire.

Causes	Check procedures/corrective measures
1. Dirty contact glass.	Clean the contact glass.
2. Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit.
3. Deformed or worn cleaning blade.	Replace the cleaning blade.
4. Dirty scanner mirror.	Clean the scanner mirror.
5. Dirty main charger wire.	Clean the main charger wire or, if it is extremely dirty, replace it.

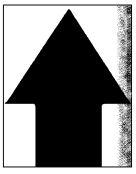
(7) A black line appears laterally.



Causes
1. Flawed drum.
2. Dirty developing section.
3. Leaking main charger housing.
4. Leaking separation electrode.

Causes	Check procedures/corrective measures
1. Flawed drum.	Replace the drum unit.
2. Dirty developing section.	Clean any part contaminated with toner in the developing section.
3. Leaking main charger housing.	Clean the main charger wire, grid and shield.
4. Leaking separation electrode.	Clean the separation electrode.

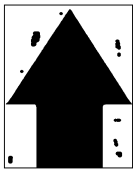
(8) One side of the copy image is darker than the other.



Causes
1. Dirty main charger wire.
2. Defective exposure lamp.

Causes	Check procedures/corrective measures
1. Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace it.
2. Defective exposure lamp.	Check if the exposure lamp light is distributed evenly. If not, replace the exposure lamp (see page 1-6-25).

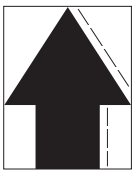
(9) Black dots appear on the image.



Causes
1. Dirty or flawed drum.
2. Dirty contact glass.
3. Deformed or worn cleaning blade.
4. Dirty drum separation claws.
5. Dirty heat roller separation claws.

Causes	Check procedures/corrective measures
1. Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit.
2. Dirty contact glass.	Clean the contact glass.
3. Deformed or worn cleaning blade.	Replace the cleaning blade.
4. Dirty drum separation claws.	Clean the drum separation claws.
5. Dirty the heat roller separation claws.	Clean the heat roller separation claws.

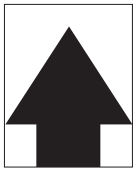
(10) Image is blurred.



Causes
1. Scanner moves erratically.
2. Deformed press roller.
3. Paper conveying section drive problem.

Causes	Check procedures/corrective measures
1. Scanner moves erratically.	Check if there is any foreign matter on the front and rear scanner rails. If any, remove it.
2. Deformed press roller.	Replace the press roller (see page 1-6-63).
3. Paper conveying section drive problem.	Check the gears and belts and, if necessary, grease them.

(11) The leading edge of the image is consistently misaligned with the original.

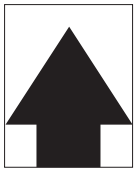


Causes
1. Misadjusted leading edge registration.
2. Misadjusted scanner leading edge registration.

Causes	Check procedures/corrective measures
1. Misadjusted leading edge registration.	Readjust the leading edge registration (see pages 1-6-17).
2. Misadjusted scanner leading edge registration.	Readjust the scanner leading edge registration (see page 1-6-17).

(12) The leading edge of the image is sporadically misaligned with the original.

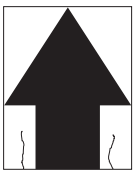
Causes
1. Feed clutch, paper feed clutch, bypass paper feed clutch or registration clutch installed or operating incorrectly.



Causes	Check procedures/corrective measures
1. Feed clutch, paper feed clutch, bypass paper feed clutch or registration clutch installed or operating incorrectly.	Check the installation position and operation of the feed clutch, paper feed clutch, bypass paper feed clutch and registration clutch. If any of them operates incorrectly, replace it.

(13) Paper creases.

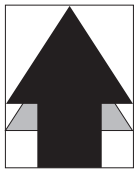
Causes
1. Paper curled.
2. Paper damp.
3. Defective pressure springs.
4. Defective separation.
5. Defective fans.



Causes	Check procedures/corrective measures
1. Paper curled.	Check the paper storage conditions.
2. Paper damp.	Check the paper storage conditions.
3. Defective pressure springs.	Replace the pressure springs.
4. Defective separation.	Check the drum separation claws and heat roller separation claws.
5. Defective fans.	Replace the fans.

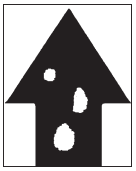
(14) Offset occurs.

Causes
1. Defective cleaning blade.
2. Defective fixing section.



Causes	Check procedures/corrective measures
1. Defective cleaning blade.	Replace the cleaning blade (see page 1-6-46).
2. Defective fixing section.	Replace the heat roller and press roller.

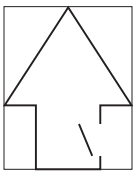
(15) Image is partly missing.



Causes
1. Paper damp.
2. Paper creased.
3. Drum condensation.
4. Flawed drum.

Causes	Check procedures/corrective measures
1. Paper damp.	Check the paper storage conditions.
2. Paper creased.	Replace the paper.
3. Drum condensation.	Perform the drum refresh operation.
4. Flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit.

(16) Fixing is poor.



Causes
1. Wrong paper.
2. Defective pressure springs.
3. Flawed press roller.
4. Defective fixing heater S.

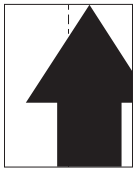
Causes	Check procedures/corrective measures
1. Wrong paper.	Check if the paper meets specifications.
2. Defective pressure springs.	Replace the pressure springs.
3. Flawed press roller.	Replace the press roller (see page 1-6-63).
4. Defective fixing heater S.	Replace the fixing heater S (see page 1-6-63).

(17) Image is out of focus.

Causes
1. Defective image scanning unit.
2. Drum condensation.

Causes	Check procedures/corrective measures
1. Defective image scanning unit.	Replace the image scanning unit (see page 1-6-30).
2. Drum condensation.	Perform the drum refresh operation.

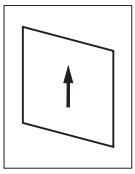
(18) Image center does not align with the original center.



Causes
1. Misadjusted center line of image printing.
2. Misadjusted scanner center line.
3. Original placed incorrectly.

Causes	Check procedures/corrective measures
1. Misadjusted center line of image printing.	Readjust the center line of image printing (see page 1-6-19).
2. Misadjusted scanner center line.	Readjust the scanner center line (see page 1-6-37).
3. Original placed incorrectly.	Place the original correctly.

(19) Image is not square.



Causes
1. Laser scanner unit positioned incorrectly.
2. Image scanning unit positioned incorrectly.

Causes	Check procedures/corrective measures
1. Laser scanner unit positioned incorrectly.	Adjust the installation position of the laser scanner unit (see page 1-6-30).
2. Image scanning unit positioned incorrectly.	Adjust the installation position of the image scanning unit (see page 1-6-30).

1-5-4 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The machine does not operate when the power switch is turned on.	No electricity at the power outlet.	Measure the input voltage.
	The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	The front cover, conveying cover and/or side cover are/is not closed completely.	Check the front cover, conveying cover and side cover.
	Broken power cord.	Check for continuity. If none, replace the cord.
	Defective power switch.	Check for continuity across the contacts. If none, replace the power switch.
	Blown fuse in the power source PCB.	Check for continuity. If none, remove the cause of blowing and replace the fuse.
	Defective safety switch 1 or 2.	Check for continuity across the contacts of each switch. If none, replace the switch.
	Defective power source PCB.	With AC present, check for 24 V DC at YC1-1, 3.4 V DC at YC1-6 and YC1-7, 5.1 V DC at YC1-9 on the power source PCB. If none, replace the power source PCB.
(2) The drive motor does not operate (C2000).	Poor contact in the drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken drive motor gear.	Check visually and replace the drive motor if necessary.
	Defective drive motor.	Run maintenance item U030 and check if the drive motor operates when YC11-9 on the main PCB goes low. If not, replace the drive motor.
	Defective main PCB.	Run maintenance item U030 and check if YC11-9 on the main PCB goes low. If not, replace the main PCB.
(3) The paper feed motor does not operate (C2500).	Poor contact in the paper feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper feed motor gear.	Check visually and replace the paper feed motor if necessary.
	Defective paper feed motor.	Run maintenance item U030 and check if the paper feed motor operates when YC11-10 on the main PCB goes low. If not, replace the paper feed motor.
	Defective main PCB.	Run maintenance item U030 and check if YC11-10 on the main PCB goes low. If not, replace the main PCB.
(4) The eject motor does not operate.	Poor contact in the eject motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken eject motor gear.	Check visually and replace the eject motor if necessary.
	Defective eject motor.	Run maintenance item U030 and check if the eject motor operates when YC16-B11, YC16-B12, YC16-B13 and YC16-B14 on the main PCB go low. If not, replace the eject motor.
	Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.

Problem	Causes	Check procedures/corrective measures
(4) The eject motor does not operate.	Defective main PCB.	Run maintenance item U030 and check if YC16-B11, YC16-B12, YC16-B13 and YC16-B14 on the main PCB go low. If not, replace the main PCB.
(5) The upper lift motor does not operate (C1010).	Broken upper lift motor coil.	Check for continuity across the coil. If none, replace the upper lift motor.
	Poor contact in the upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Check if 24 V DC is output across YC13-A17 on the main PCB right after the upper drawer is installed. If not, replace the main PCB.
(6) The lower lift motor does not operate (C1020).	Broken lower lift motor coil.	Check for continuity across the coil. If none, replace the lower lift motor.
	Poor contact in the lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Check if 24 V DC is output across YC13-B7 on the main PCB right after the lower drawer is installed. If not, replace the main PCB.
(7) The scanner motor does not operate.	Broken scanner motor coil.	Check for continuity across the coil. If none, replace the scanner motor.
	Poor contact in the scanner motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(8) Cooling fan motor 1 does not operate.	Broken cooling fan motor 1 coil.	Check for continuity across the coil. If none, replace cooling fan motor 1.
	Poor contact in the cooling fan motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(9) Cooling fan motor 2 does not operate.	Broken cooling fan motor 2 coil.	Check for continuity across the coil. If none, replace cooling fan motor 2.
	Poor contact in the cooling fan motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(10) Cooling fan motor 3 does not operate.	Broken cooling fan motor 3 coil.	Check for continuity across the coil. If none, replace cooling fan motor 3.
	Poor contact in the cooling fan motor 3 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(11) Cooling fan motor 4 does not operate.	Broken cooling fan motor 4 coil.	Check for continuity across the coil. If none, replace cooling fan motor 4.
	Poor contact in the cooling fan motor 4 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Problem	Causes	Check procedures/corrective measures
(12) Cooling fan motor 5 does not operate.	Broken cooling fan motor 5 coil.	Check for continuity across the coil. If none, replace cooling fan motor 5.
	Poor contact in the cooling fan motor 5 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(13) Cooling fan motor 6 does not operate.	Broken cooling fan motor 6 coil.	Check for continuity across the coil. If none, replace cooling fan motor 6.
	Poor contact in the cooling fan motor 6 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(14) Cooling fan motor 7 does not operate.	Broken cooling fan motor 7 coil.	Check for continuity across the coil. If none, replace cooling fan motor 7.
	Poor contact in the cooling fan motor 7 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(15) The upper paper feed clutch does not operate.	Broken upper paper feed clutch coil.	Check for continuity across the coil. If none, replace the upper paper feed clutch.
	Poor contact in the upper paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC16-B1 on the main PCB goes low. If not, replace the main PCB.
(16) The lower paper feed clutch does not operate.	Broken lower paper feed clutch coil.	Check for continuity across the coil. If none, replace the lower paper feed clutch.
	Poor contact in the lower paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC16-B4 on the main PCB goes low. If not, replace the main PCB.
(17) Feed clutch 1 does not operate.	Broken feed clutch 1 coil.	Check for continuity across the coil. If none, replace feed clutch 1.
	Poor contact in feed clutch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC11-14 on the main PCB goes low. If not, replace the main PCB.
(18) Feed clutch 2 does not operate.	Broken feed clutch 2 coil.	Check for continuity across the coil. If none, replace feed clutch 2.
	Poor contact in feed clutch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC13-A12 on the main PCB goes low. If not, replace the main PCB.

Problem	Causes	Check procedures/corrective measures
(19) Feed clutch 3 does not operate.	Broken feed clutch 3 coil.	Check for continuity across the coil. If none, replace feed clutch 3.
	Poor contact in feed clutch 3 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC13-A5 on the main PCB goes low. If not, replace the main PCB.
(20) The bypass paper feed clutch does not operate.	Broken bypass paper feed clutch coil.	Check for continuity across the coil. If none, replace the bypass paper feed clutch.
	Poor contact in the bypass paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC6-A9 on the main PCB goes low. If not, replace the main PCB.
(21) The bypass feed clutch does not operate.	Broken bypass feed clutch coil.	Check for continuity across the coil. If none, replace the bypass feed clutch.
	Poor contact in the bypass feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC6-A11 on the main PCB goes low. If not, replace the main PCB.
(22) The registration clutch does not operate.	Broken registration clutch coil.	Check for continuity across the coil. If none, replace the registration clutch.
	Poor contact in the registration clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC16-B6 on the main PCB goes low. If not, replace the main PCB.
(23) The duplex feed clutch does not operate.	Broken duplex feed clutch coil.	Check for continuity across the coil. If none, replace the duplex feed clutch.
	Poor contact of the duplex feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U032 and check if YC10-B2 on the copier main PCB goes low. If not, replace the main PCB.
(24) The feedshift solenoid does not operate.	Broken feedshift solenoid coil.	Check for continuity across the coil. If none, replace the feedshift solenoid.
	Poor contact in the feedshift solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U033 and check if YC16-A1 and YC16-A2 on the main PCB go low. If not, replace the main PCB.

Problem	Causes	Check procedures/corrective measures
(25) The toner feed solenoid does not operate.	Broken toner feed solenoid coil.	Check for continuity across the coil. If none, replace the toner feed solenoid.
	Poor contact in the toner feed solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective main PCB.	Run maintenance item U033 and check if YC9-B2 on the main PCB goes low. If not, replace the main PCB.
(26) The cleaning lamp does not turn on.	Poor contact in the cleaning lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective cleaning lamp.	Check for continuity. If none, replace the cleaning lamp.
	Defective main PCB.	If the cleaning lamp turns on when YC9-B7 on the main PCB is held low, replace the main PCB.
(27) The exposure lamp does not turn on.	Poor contact in the exposure lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective inverter PCB.	Run maintenance item U061 and check if the exposure lamp turns on with CN1-1 and CN1-2 on the inverter PCB go low. If not, replace the inverter PCB.
	Defective scanner drive PCB.	Run maintenance item U061 and check if the exposure lamp turns on with YC1-3 on the scanner drive PCB goes low. If not, replace the scanner drive PCB.
	Defective main PCB.	Run maintenance item U061 and check if YC37-3 on the main PCB goes low. If not, replace the main PCB.
(28) The exposure lamp does not turn off.	Defective inverter PCB.	If the exposure lamp does not turn off with CN1-1 and CN1-2 on the inverter PCB high, replace the inverter PCB.
	Defective scanner drive PCB.	If YC1-3 on the scanner drive PCB are always low, replace the scanner drive PCB.
(29) The fixing heater does not turn on (C6000).	Broken wire in fixing heater M or S.	Check for continuity across each heater. If none, replace the heater M or S.
	Fixing unit thermostat triggered.	Check for continuity across thermostat. If none, remove the cause and replace the thermostat.
(30) The fixing heater does not turn off.	Broken fixing unit thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
	Dirty sensor part of the fixing unit thermistor.	Check visually and clean the thermistor sensor parts.
(31) Main charging is not performed.	Broken main charger wire.	See page 1-5-39.
	Leaking main charger housing.	
	Poor contact in the high-voltage transformer PCB connector terminals.	
	Defective main PCB.	
	Defective high- voltage transformer PCB.	

Problem	Causes	Check procedures/corrective measures
(32) Transfer charging is not performed.	Poor contact in the high-voltage transformer PCB connector terminals.	See page 1-5-38.
	Defective main PCB.	
	Defective high-voltage transformer PCB.	
(33) No developing bias is output.	Defective main PCB.	See page 1-5-38.
	Defective high-voltage transformer PCB.	
(34) The original size is not detected.	Defective original detection switch.	If the level of YC5-2 on the scanner drive PCB does not change when the original detection switch is turned on and off, replace the original detection switch.
(35) The original size is not detected correctly.	Original is not placed correctly.	Check the original and correct if necessary.
	Poor contact in the original size detection sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective original size detection sensor.	Check if sensor operates correctly. If not, replace it.
(36) The touch panel keys do not work.	Poor contact in the touch panel connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective touch panel or operation unit PCB.	If any keys do not work after the touch panel has been initialized, replace the touch panel or operation unit PCB.
(37) The message requesting paper to be loaded is shown when paper is present in the upper drawer.	Poor contact in the upper paper switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective upper paper switch.	Check if YC13-B12 on the main PCB goes low when the upper paper switch is turned on with 5 V DC present at YC13-B13 on the main PCB. If not, replace the upper paper switch.
(38) The message requesting paper to be loaded is shown when paper is present in the lower drawer.	Poor contact in the lower paper switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper switch.	Check if YC13-B18 on the main PCB goes low when the upper paper switch is turned on with 5 V DC present at YC13-B19 on the main PCB. If not, replace the lower paper switch.
(39) The message requesting paper to be loaded is shown when paper is present on the bypass tray.	Poor contact in the bypass paper switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective bypass paper switch.	Check if YC6-A6 on the main PCB goes low when the bypass paper switch is turned on with 5 V DC present at YC6-A5 on the main PCB. If not, replace the bypass paper switch.

Problem	Causes	Check procedures/corrective measures
(40) The size of paper in the upper drawer is not displayed correctly.	Poor contact in the upper paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective upper paper length switch.	Check if YC13-B2 on the main PCB goes low when the upper paper length switch is turned on. If not, replace the upper paper length switch.
	Poor contact in the upper paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective upper paper width switch.	Check if the levels of YC12-3, YC12-4 and YC12-5 on the main PCB change alternately when the width guide in the upper drawer is moved. If not, replace the upper paper width switch.
(41) The size of paper in the lower drawer is not displayed correctly.	Poor contact in the lower paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper length switch.	Check if YC13-A19 on the main PCB goes low when the lower paper length switch is turned on. If not, replace the lower paper length switch.
	Poor contact in the lower paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper width switch.	Check if the levels of YC12-9, YC12-10 and YC12-11 on the main PCB change alternately when the width guide in the lower drawer is moved. If not, replace the lower paper width switch.
(42) The printing width of the paper on the bypass tray is not detected correctly.	Poor contact in the bypass paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective bypass paper length switch.	Check if YC6-B11 on the main PCB goes low when the bypass paper length switch is turned on. If not, replace the bypass paper length switch.
	Poor contact in the bypass paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective bypass paper width switch.	Check if the levels of YC6-A1, YC6-A2 and YC6-A3 on the main PCB change alternately when the insert guide on the bypass table is moved. If not, replace the bypass paper width switch.

Problem	Causes	Check procedures/corrective measures
(43) A paper jam in the paper feed, paper conveying or fixing section is indicated when the power switch is turned on.	A piece of paper torn from copy paper is caught around feed switch 1/2/3, registration switch, feedshift switch or eject switch.	Check and remove if any.
	Defective feed switch 1.	Run maintenance item U031 and turn feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective feed switch 2.	Run maintenance item U031 and turn feed switch 2 on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective feed switch 3.	Run maintenance item U031 and turn feed switch 3 on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(44) The message requesting covers to be closed is displayed when the front cover and conveying cover are closed.	Poor contact in the connector terminals of safety switch 1 or 2.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective safety switch 1 or 2.	Check for continuity across each switch. If there is no continuity when the switch is on, replace it.
(45) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

1-5-5 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers or pulleys are dirty with paper powder: upper/lower forwarding pulleys, upper/lower paper feed pulleys, upper/lower separation pulleys, feed rollers, registration rollers, bypass forwarding pulleys, bypass paper feed pulleys and bypass separation pulleys.	Clean with isopropyl alcohol.
	Check if the upper/lower forwarding pulleys, upper/lower paper feed pulleys or upper/lower separation pulleys is deformed.	Check visually and replace any deformed pulleys (see page 1-6-3).
	Electrical problem with the following electromagnetic clutches: upper/lower paper feed clutches, feed clutches 1/2/3, bypass paper feed clutch and bypass feed clutch.	See pages 1-5-48 and 49.
(2) No secondary paper feed.	Check if the surfaces of the right and left registration rollers are dirty with paper powder.	Clean with isopropyl alcohol.
	Electrical problem with the registration clutch.	See page 1-5-49.
(3) Skewed paper feed.	Width guide in a drawer installed incorrectly.	Check the width guide visually and correct or replace if necessary.
	Deformed width guide in a drawer.	Repair or replace if necessary .
	Check if a pressure spring along the paper conveying path is deformed or out of place.	Repair or replace.
(4) The scanner does not travel.	Check if the scanner wire is loose.	Reinstall the scanner wire (see page 1-6-16).
	The scanner motor malfunctions.	See page 1-5-47.
(5) Multiple sheets of paper are fed at one time.	Check if the upper or lower separation pulley is worn.	Replace the upper or lower separation pulley if it is worn (see page 1-6-3).
	Check if the paper is curled.	Change the paper.
(6) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Deformed guides along the paper conveying path.	Repair or replace if necessary.
	Check if the contact between the right and left registration rollers is correct.	Check visually and remedy if necessary.
	Check if the contact between the feed roller and feed pulley is correct.	Check visually and remedy if necessary.
	Check if the press roller is extremely dirty or deformed.	Clean or replace the press roller.
	Check if the contact between the heat roller and its separation claws is correct.	Repair if any springs are off the separation claws.
	Check if the contact between the eject roller and pulley is correct.	Check visually and remedy if necessary.
	The feedshift solenoid malfunctions.	See page 1-5-49.

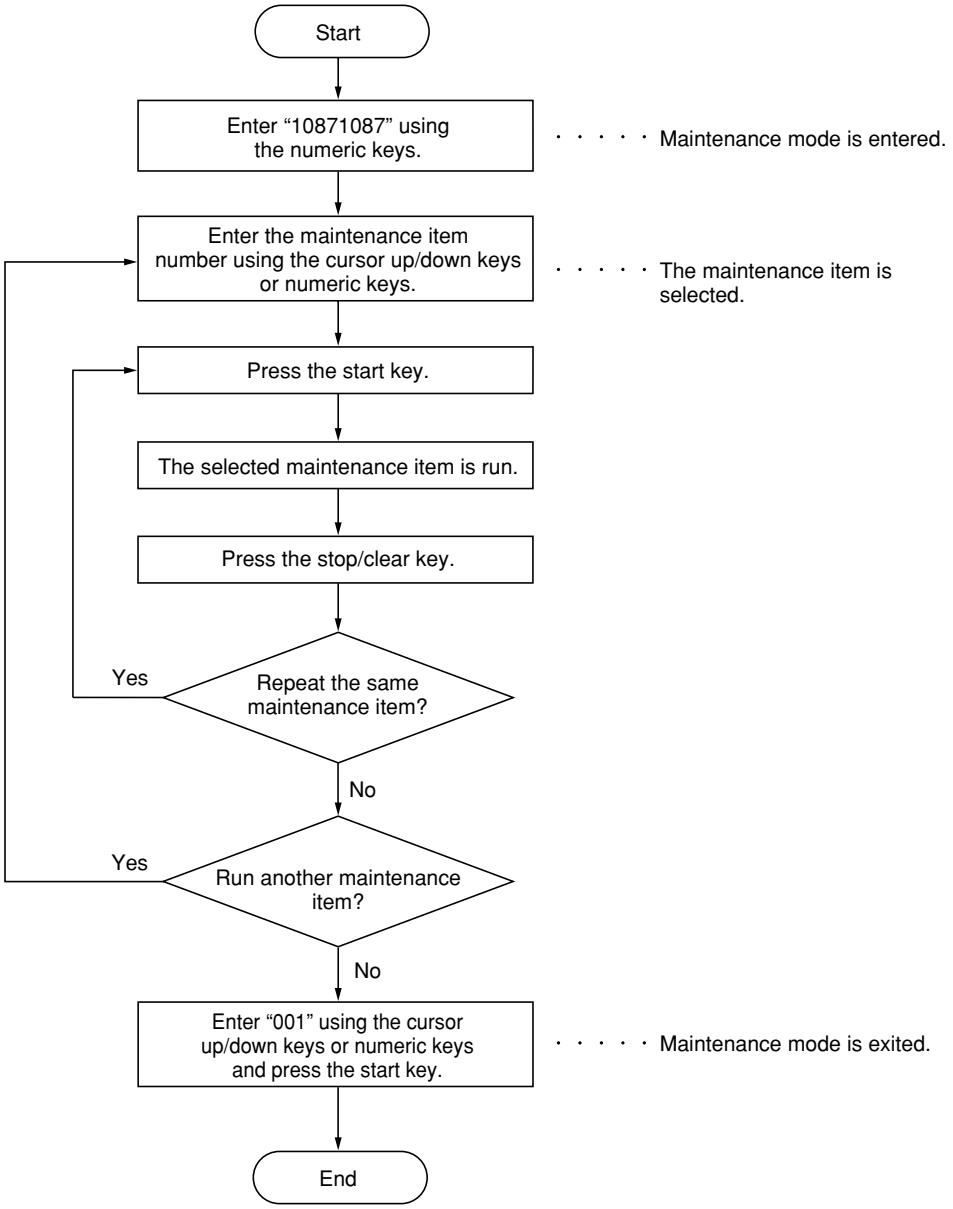
Problem	Causes/check procedures	Corrective measures
(6) Paper jams.	Check if the duplex feed pulley, upper duplex feed roller or lower duplex feed roller is deformed.	Check visually and replace the pulley or roller if deformed.
(7) Toner drops on the paper conveying path.	Check if the developing unit is extremely dirty.	Clean the developing unit.
(8) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.
	Check if the following electromagnetic clutches are installed correctly: upper/lower paper feed clutches, feed clutches 1/2/3, bypass paper feed clutch and bypass feed clutch.	Correct.

1-6-1 Precautions for assembly and disassembly

(1) Precautions

- Be sure to turn the power switch off and disconnect the power plug before starting disassembly.
- When handling PCBs, do not touch connectors with bare hands or damage the board.
- Do not touch any PCB containing ICs with bare hands or any object prone to static charge.
- Use only the specified parts to replace the fixing unit thermostat. Never substitute electric wires, as the copier may be seriously damaged.
- Use the following testers when measuring voltages:
  Hioki 3200
  Sanwa MD-180C
  Sanwa YX-360TR
  Beckman TECH300
  Beckman DM45
  Beckman 330*
  Beckman 3030*
  Beckman DM850*
  Fluke 8060A*
  Arlec DMM1050
  Arlec YF1030C
  * Capable of measuring RMS values.
- Prepare the following as test originals:
  1. NTC (new test chart)
  2. NPTC (newspaper test chart)
- When replacing battery on a PCB, dispose properly according to laws and regulations.

(2) Running a maintenance item



1-6-2 Paper feed section

(1) Detaching and refitting the forwarding, paper feed and separation pulleys
Follow the procedure below to replace the forwarding, paper feed and separation pulleys.

Procedure
• Removing the primary paper feed units
1. Open the front cover and pull out the upper and lower drawers.
2. Remove the one screw from each of the primary paper feed units and then the units.

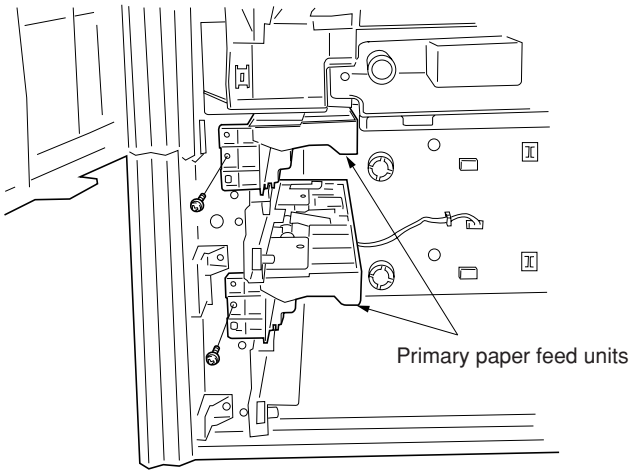


Figure 1-6-1

• Removing the forwarding pulley
3. Remove the stopper.
4. Raise the forwarding pulley retainer in the direction the arrow, and remove from the primary paper feed unit.

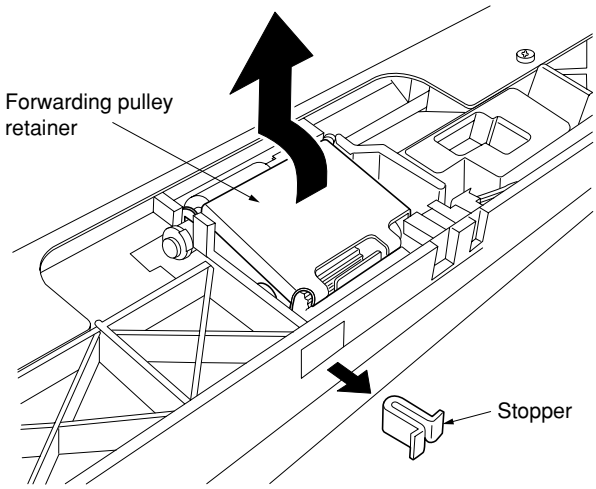


Figure 1-6-2

5. Remove the stop ring, pull the forwarding pulley shaft in the direction of the arrow, and remove the forwarding pulley.

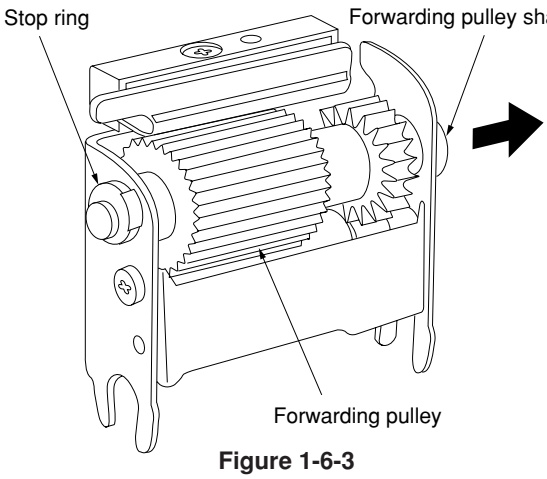


Figure 1-6-3

• Removing the paper feed pulley
6. Remove the two stop rings.
7. Pull the paper feed shaft toward the rear of the primary paper feed unit (in the direction of the arrow) and remove the paper feed pulley.

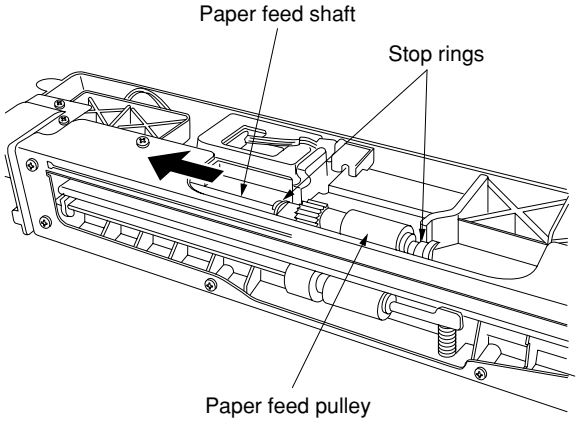


Figure 1-6-4

• Removing the separation pulley
8. Remove the stop ring on the rear of the primary paper feed unit.
9. Pull the separation shaft toward the machine rear (in the direction of the arrow) and remove the separation pulley.

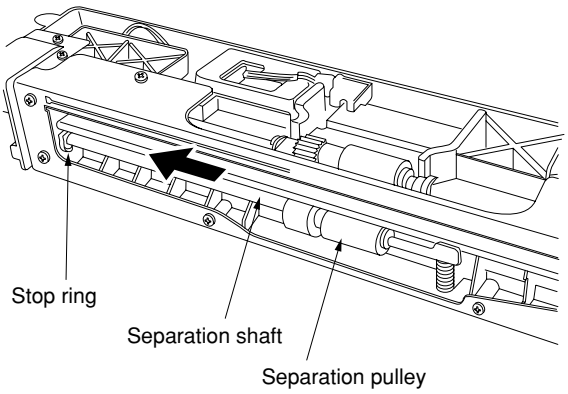


Figure 1-6-5

10. Replace the forwarding, paper feed and separation pulleys.

Caution:
• When fitting the forwarding pulley, orient it correctly as shown in Figure 1-6-6.
• When fitting the separation pulley, keep the blue end of the separation toward the machine rear.

11. Refit all removed parts.

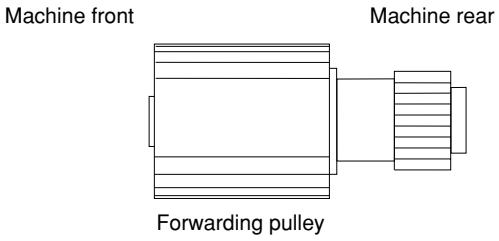


Figure 1-6-6

(2) Detaching and refitting the bypass separation, bypass paper feed and bypass forwarding pulleys
Follow the procedure below to replace the bypass separation, bypass paper feed and bypass forwarding pulleys.

Procedure
• Removing the bypass unit
1. Remove the four screws holding the lower right cover and then the cover.

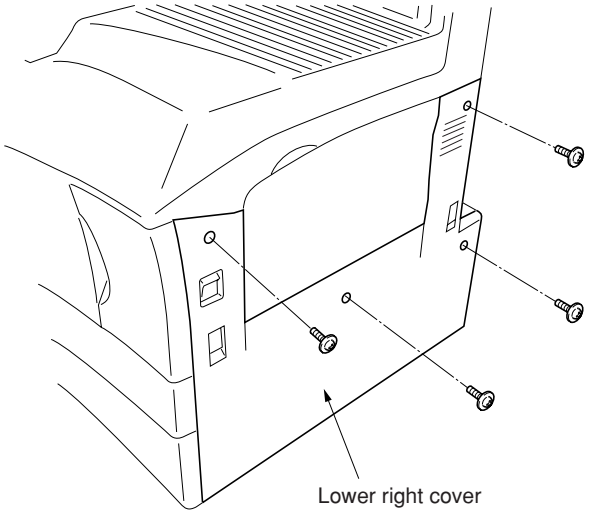


Figure 1-6-7

2. Remove the two screws holding the bypass unit and disconnect the two connectors, and then remove the unit.

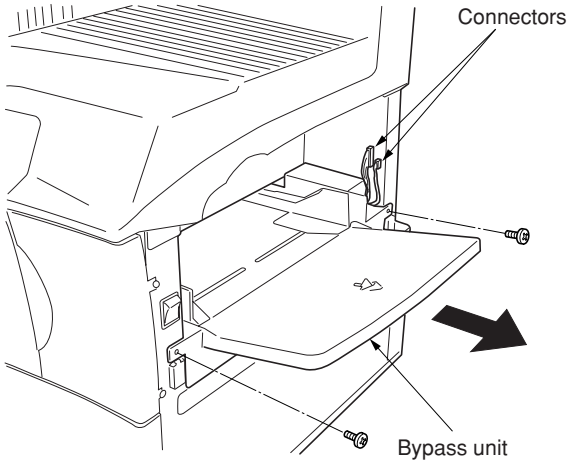


Figure 1-6-8

• Removing the bypass separation pulley
3. Reverse the bypass unit and remove the spring and stop ring from the bypass separation pulley and move the bushing inside.

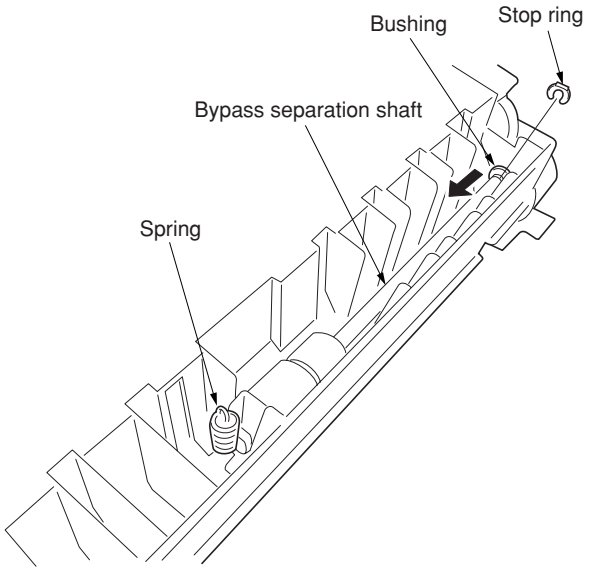


Figure 1-6-9

4. Raise the bypass separation shaft as shown in the diagram, remove the holder plate and the bushing, and then remove the bypass separation pulley.
   * Take care not to remove the spring pin of the gear at the rear of the bypass separation shaft. If it is removed, refit it to its original position.

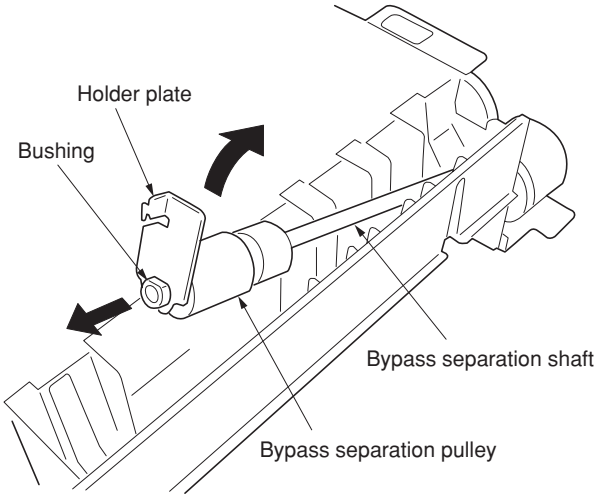


Figure 1-6-10

• Removing the bypass paper feed pulley

5. Detach the connector of the bypass paper switch and remove the wire from the three clamps.
6. Remove the screw holding the bypass unit cover and then the cover.

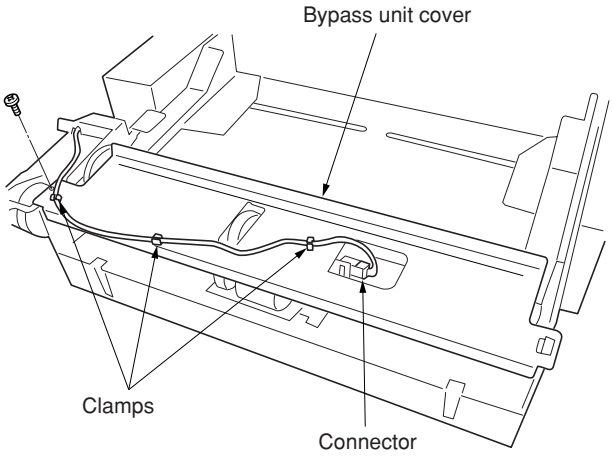


Figure 1-6-11

7. Remove the stop ring and bushing on the front of the bypass paper feed shaft.

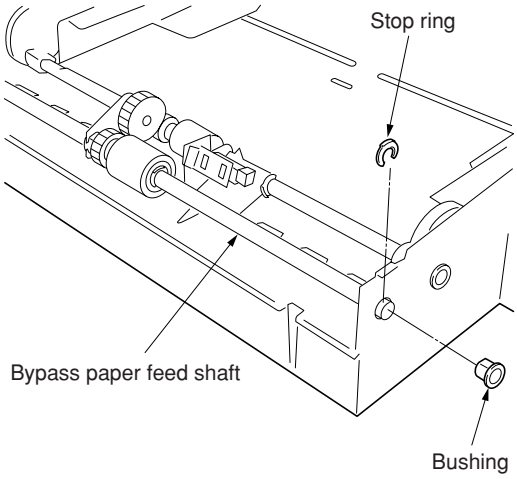


Figure 1-6-12

8. Raise the bypass paper feed shaft as shown in the illustration, remove the stop ring, and then remove the bypass paper feed pulley.

Caution:

• When fitting the bypass paper feed pulley, keep the blue end of the paper feed toward the machine rear.

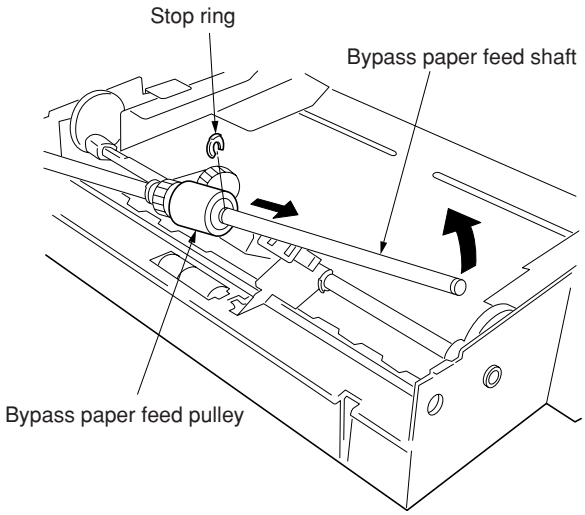


Figure 1-6-13

• Removing the bypass forwarding pulley

9. Remove the wire of the bypass paper feed clutch from the clamp.
10. Remove the stop ring and bypass paper feed clutch.
    • When refitting, insert the cutout in the bypass paper feed clutch over the stopper on the copier.

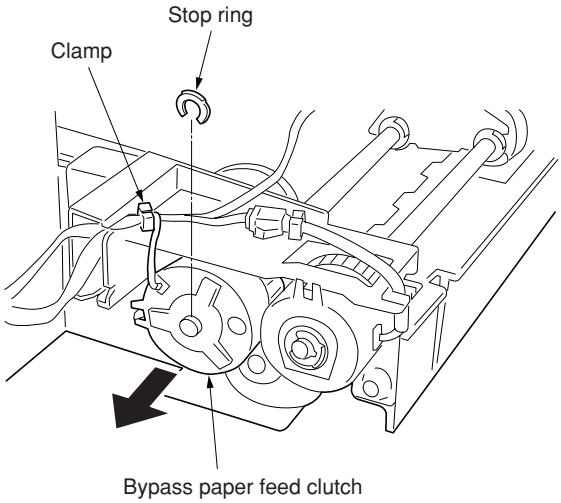


Figure 1-6-14

11. Remove the screw from the cam at the rear of the bypass forwarding pulley shaft and move the cam and the bushing toward the inner side.

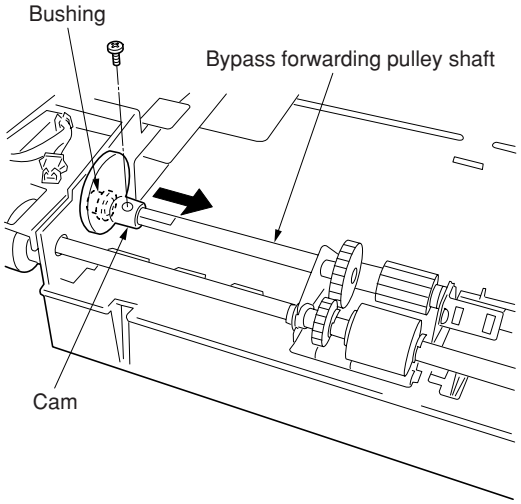


Figure 1-6-15

12. Remove the stop ring of the bypass paper feed shaft and slide the bushing in the direction of the arrow.

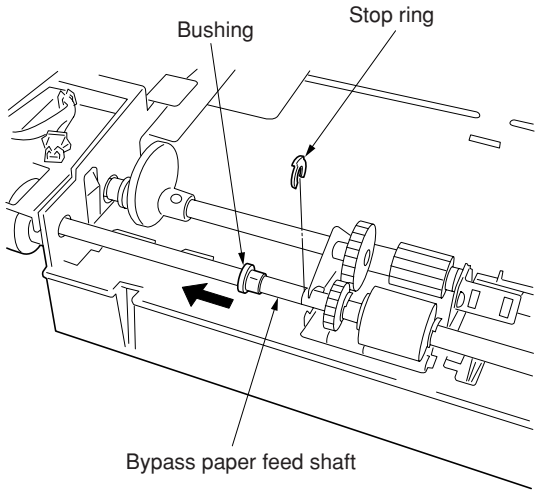


Figure 1-6-16

13. Slide the bypass forwarding pulley shaft temporarily toward the rear side and then raise it to remove from the bypass unit.
    * Remove the shaft while raising the actuator of the bypass paper switch.

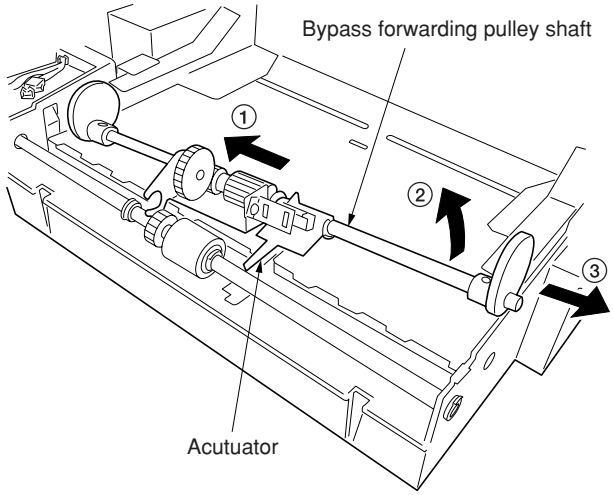


Figure 1-6-17

14. Remove the bushing an cam on the rear of the bypass forwarding pulley shaft.

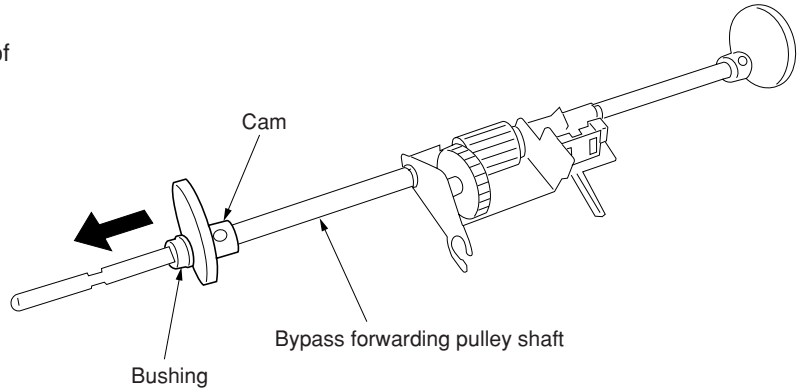


Figure 1-6-18

15. Remove the stop ring and slide the bypass forwarding pulley with the forwarding pulley retainer from the shaft to remove it.
16. Replace the bypass separation, bypass paper feed and bypass forwarding pulleys.

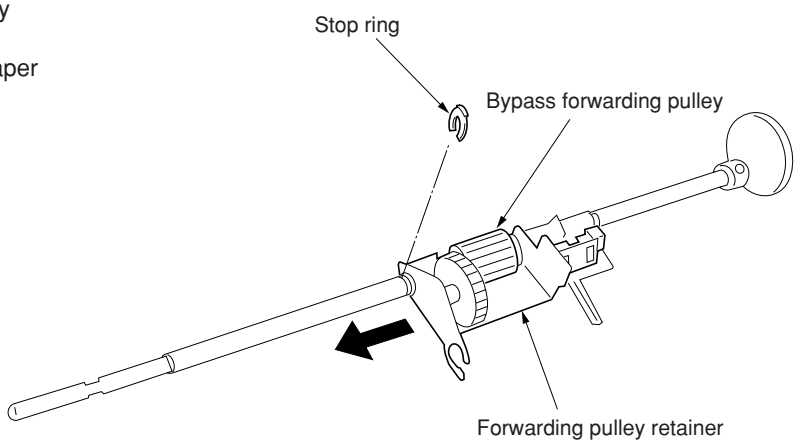


Figure 1-6-19

17. Refit all removed parts.
    * Fit the bypass unit cover so that the film on the cover is positioned under the bypass paper feed shaft.

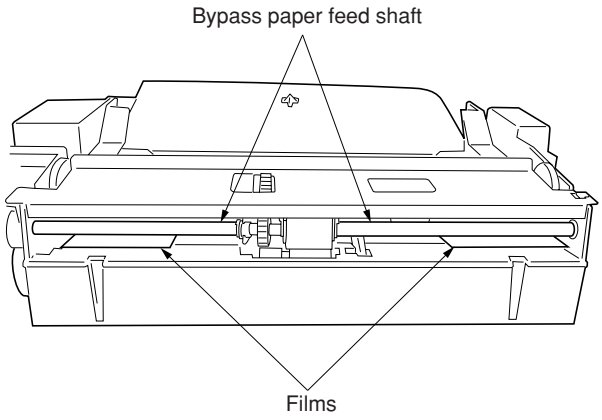
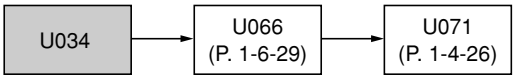


Figure 1-6-20

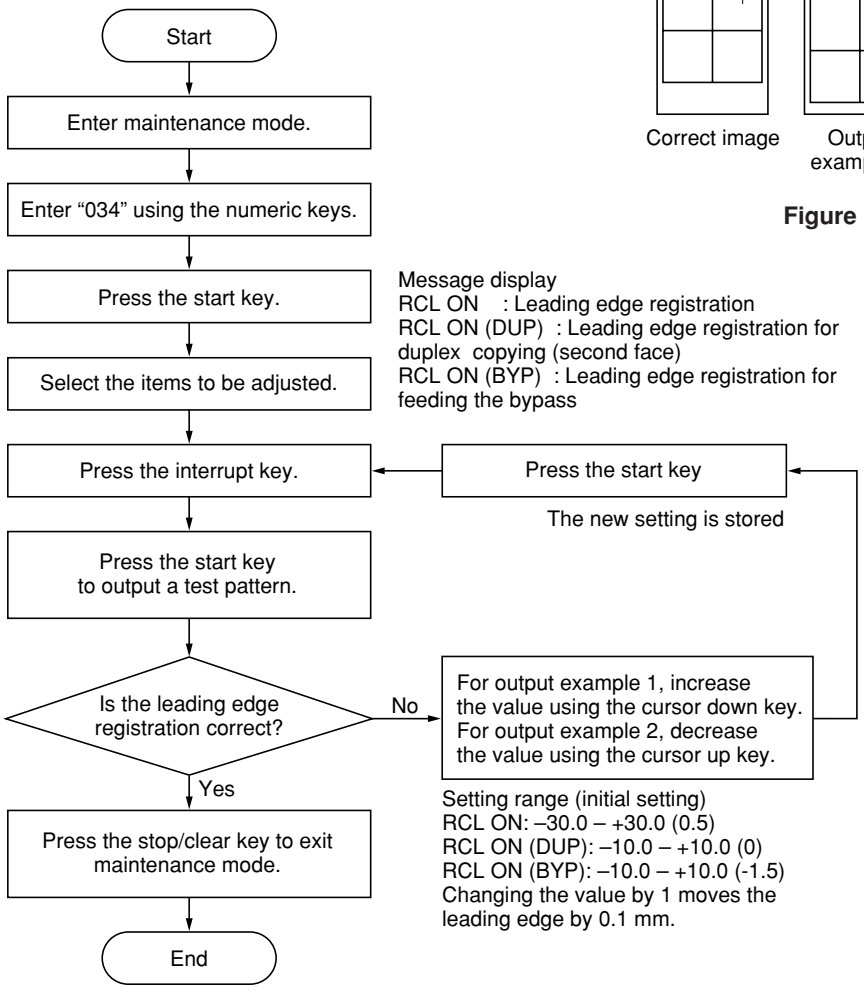
(3) Adjustment after roller and clutch replacement
Perform the following adjustment after refitting rollers and clutches.

(3-1) Adjusting the leading edge registration of image printing
Make the following adjustment if there is a regular error between the leading edges of the copy image and original.



Caution:
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure



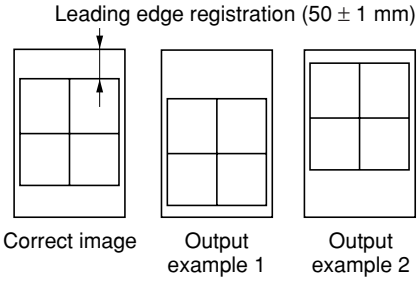
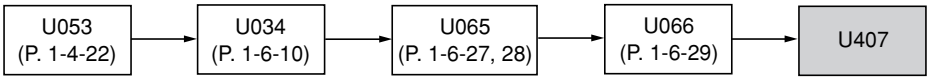


Figure 1-6-21

(3-2) Adjusting the leading edge registration for memory image printing

Make the following adjustment if there is a regular error between the leading edge of the copy image and the leading edge of the original during memory copying.



Caution:

Before making the following adjustment, ensure the above adjustments have been made in maintenance mode.

Procedure

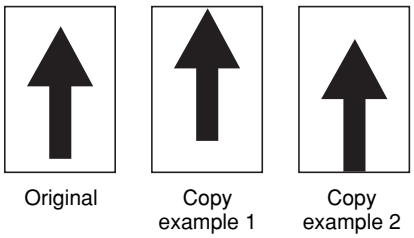
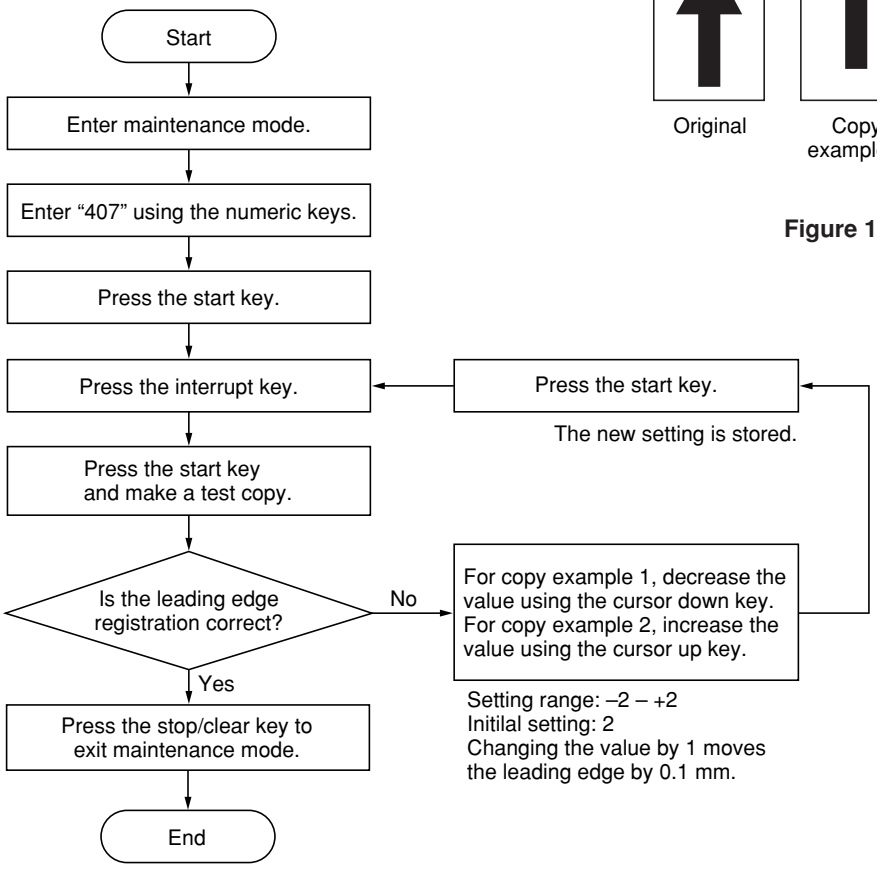
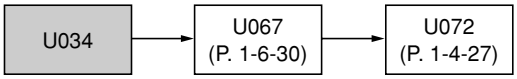


Figure 1-6-22



(3-3) Adjusting the center line of image printing

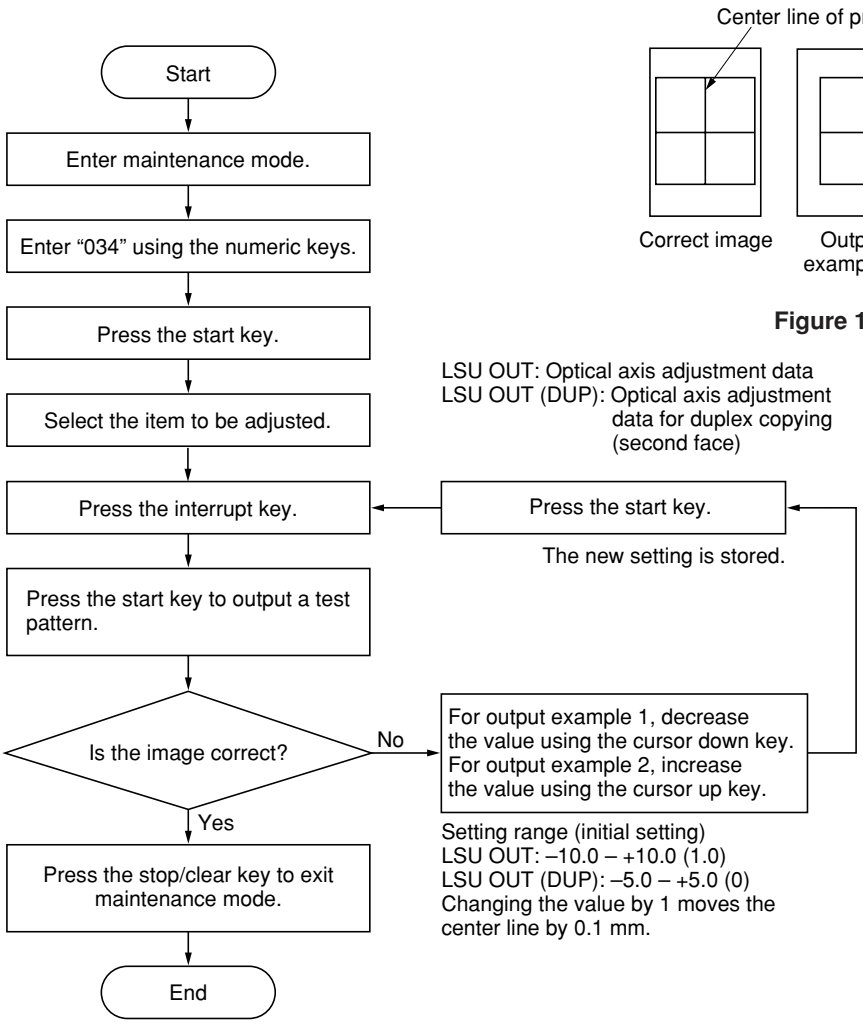
Make the following adjustment if there is a regular error between the center lines of the copy image and original when paper is fed from the drawer.



Caution:

Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure



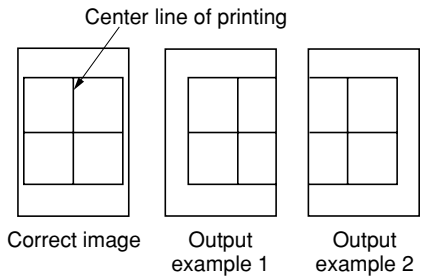
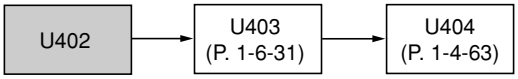


Figure 1-6-23

(3-4) Adjusting the margins for printing

Make the following adjustment if the margins are not correct.



Caution:

Check the copy image after the adjustment. If the margins are still incorrect, perform the above adjustments in maintenance mode.

Procedure

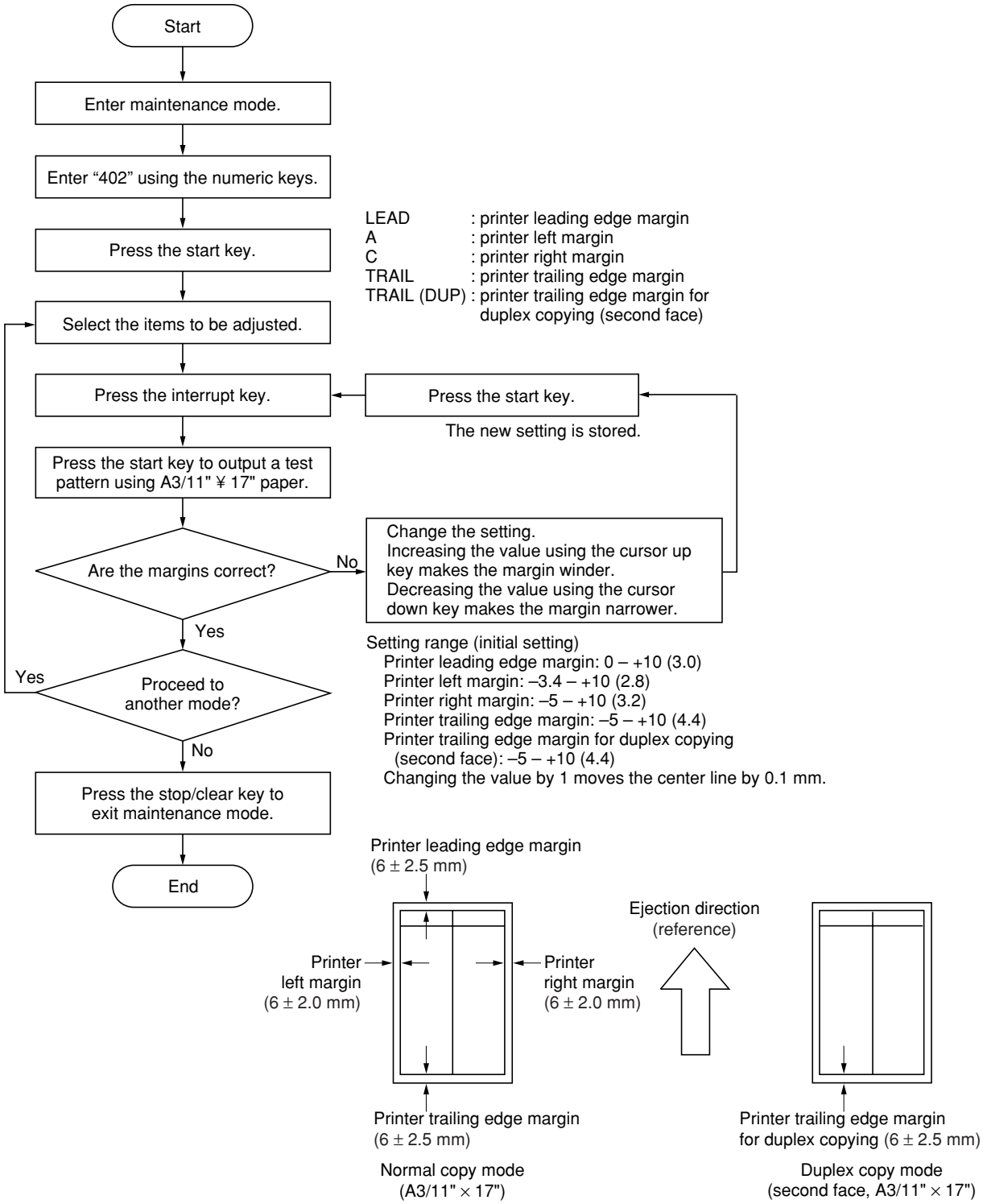


Figure 1-6-24

(3-5) Adjusting the amount of slack in the paper

Make the following adjustment if the leading edge of the copy image is missing or varies randomly, or if the copy paper is Z-folded.

Procedure

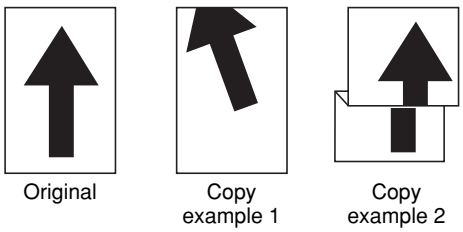
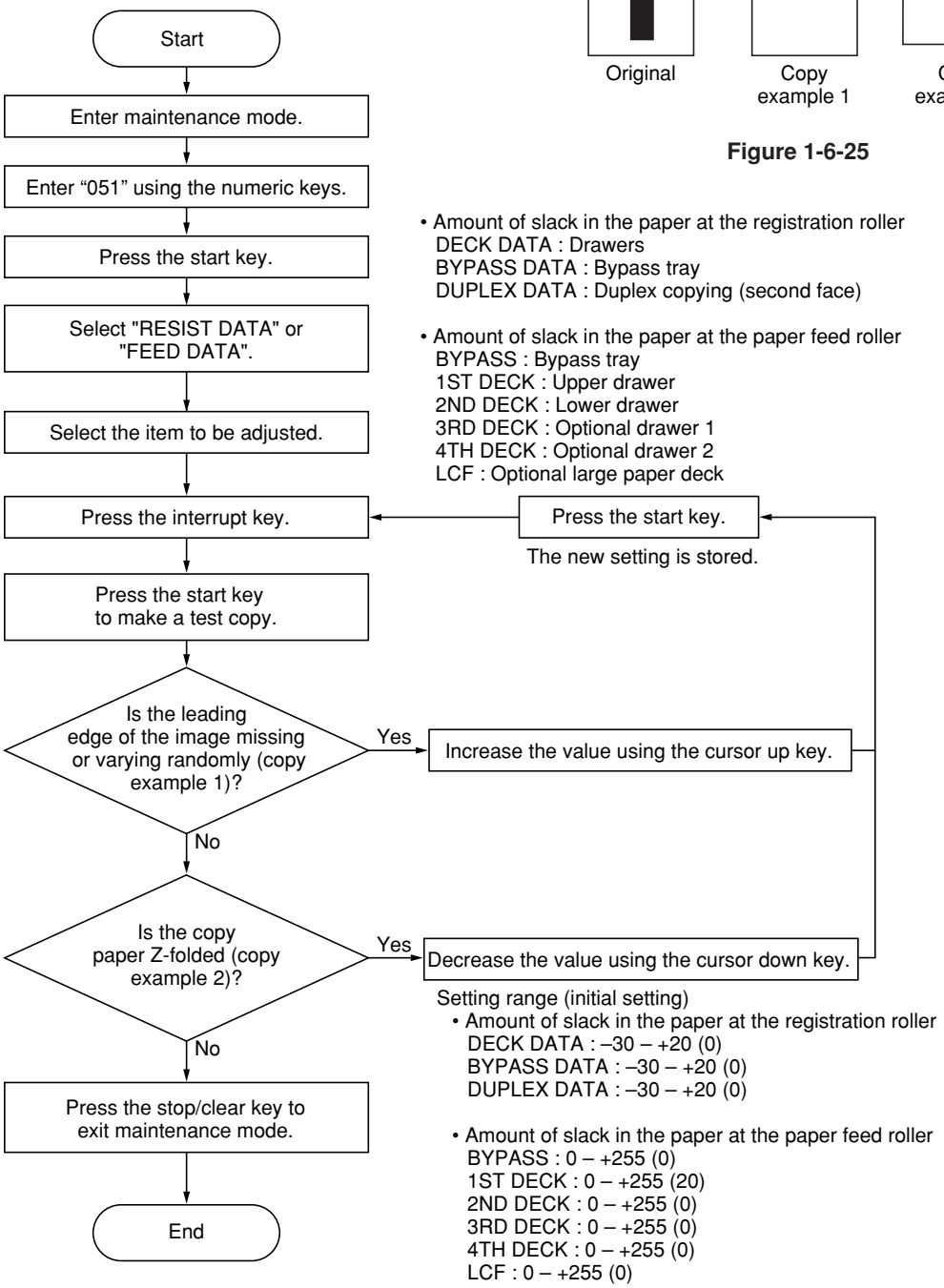


Figure 1-6-25



• Amount of slack in the paper at the registration roller
DECK DATA : Drawers
BYPASS DATA : Bypass tray
DUPLEX DATA : Duplex copying (second face)

• Amount of slack in the paper at the paper feed roller
BYPASS : Bypass tray
1ST DECK : Upper drawer
2ND DECK : Lower drawer
3RD DECK : Optional drawer 1
4TH DECK : Optional drawer 2
LCF : Optional large paper deck

Setting range (initial setting)

• Amount of slack in the paper at the registration roller
DECK DATA : –30 – +20 (0)
BYPASS DATA : –30 – +20 (0)
DUPLEX DATA : –30 – +20 (0)

• Amount of slack in the paper at the paper feed roller
BYPASS : 0 – +255 (0)
1ST DECK : 0 – +255 (20)
2ND DECK : 0 – +255 (0)
3RD DECK : 0 – +255 (0)
4TH DECK : 0 – +255 (0)
LCF : 0 – +255 (0)

The greater the value, the larger the amount of slack; the smaller the value, the smaller the amount of slack.

1-6-3 Optical section

(1) Detaching and refitting the exposure lamp
Replace the exposure lamp as follows.

Procedure
1. Remove the original cover or the DP.
2. Remove the upper right cover, upper front cover, upper rear cover and contact glass.

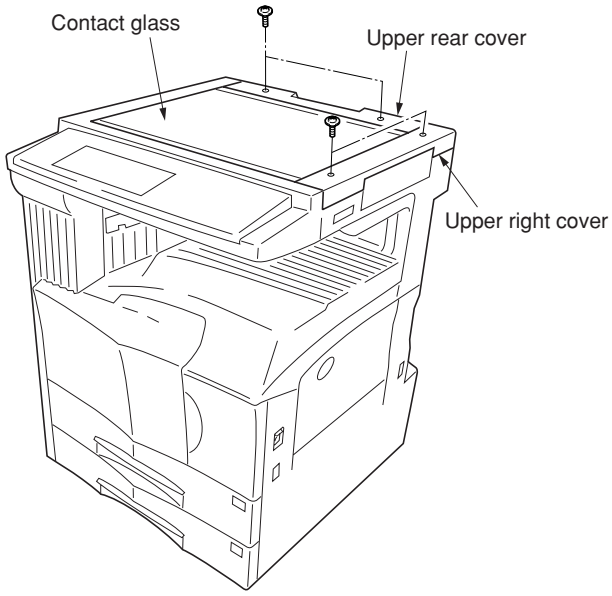


Figure 1-6-26

3. Move the mirror 1 frame to the cutouts of the machine.
   Caution: When moving the mirror 1 frame, do not touch the exposure lamp nor the inverter PCB.
4. Remove the two screws holding the metal plate on the rear of the machine and then the plate.

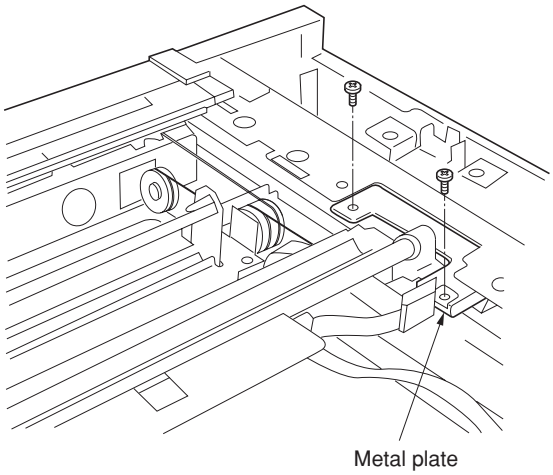


Figure 1-6-27

5. Detach the exposure lamp connector from the inverter PCB.
6. Remove the two screws holding the exposure lamp and then the lamp.
7. Replace the exposure lamp and refit all the removed parts.

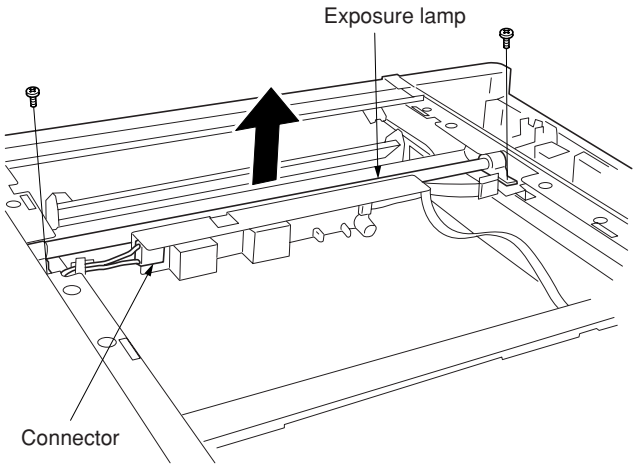


Figure 1-6-28

(2) Detaching and refitting the scanner wires
Take the following procedure when the scanner wires are broken or to be replaced.

Caution:
After replacing the scanner wire, make a test copy and check the copy image. If the image is incorrect, perform the adjustments (see pages 1-6-25 to 31).

(2-1) Detaching the scanner wires

Procedure
1. Remove the exposure lamp (see page 1-6-19).
2. Remove the upper left cover and scanner left cover.

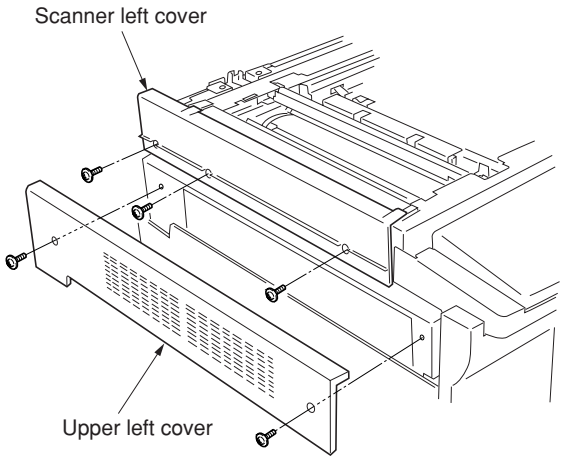


Figure 1-6-29

3. Remove the inverter wire guide plate and then the wire from the inverter PCB.

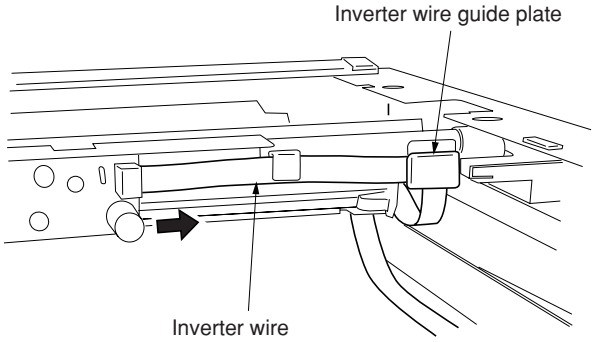


Figure 1-6-30

4. Remove the screw holding each of the front and rear wire retainers and then remove the mirror 1 frame from the scanner unit.

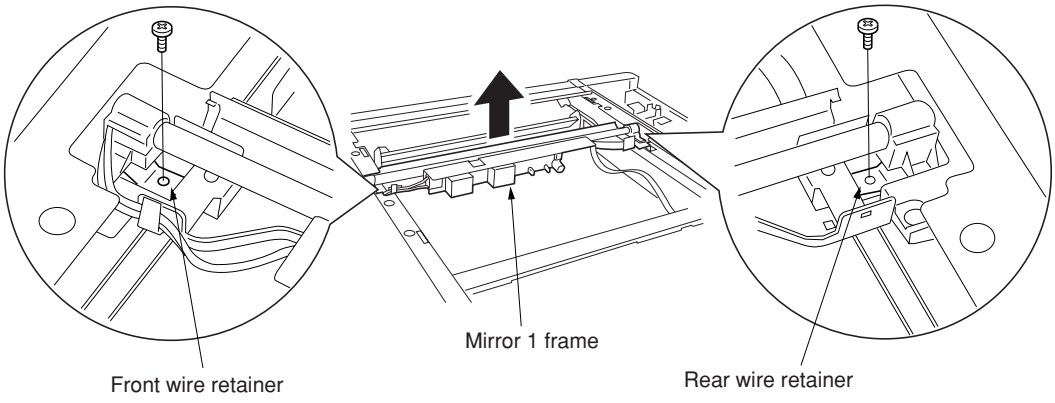


Figure 1-6-31

5. Unhook the round terminal of the scanner wire from the scanner tension spring on the left side of the scanner unit.
6. Remove the scanner wire.

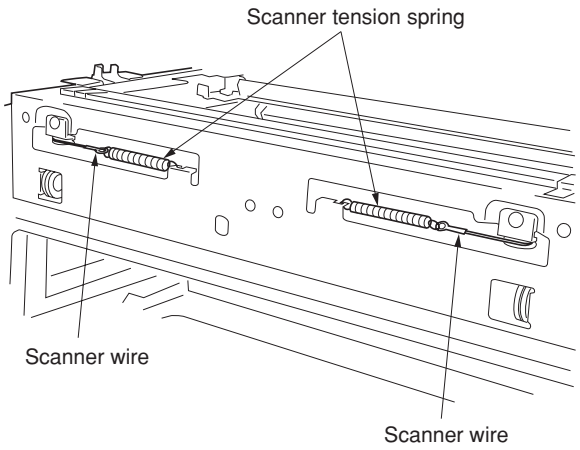


Figure 1-6-32

(2-2) Refitting the scanner wires

Caution:
When fitting the wires, be sure to use those specified below.
Machine front: P/N 2AV1219 (black)
Machine rear: P/N 2AV1220 (gray)

Fitting requires the following tools:
Two frame securing tools (P/N 2AV6808)
Two scanner wire stoppers (P/N 3596811)

Procedure

1. Insert the locating ball on each of the scanner wires into the hole in the respective scanner wire drum and wind the scanner wire three turns inward and four turns outward.
   • With the locating ball as the reference point, wind the shorter end of each of the wires inward.
2. Secure the scanner wires using the scanner wire stoppers.

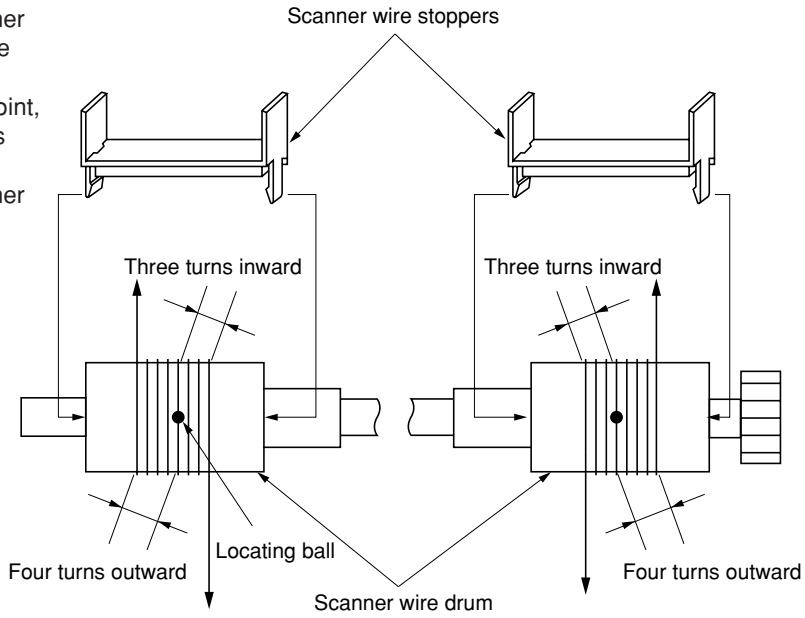


Figure 1-6-33

3. Insert the two frame securing tools into the positioning holes at the front and rear of the scanner unit to pin the mirror 2 frame in position.

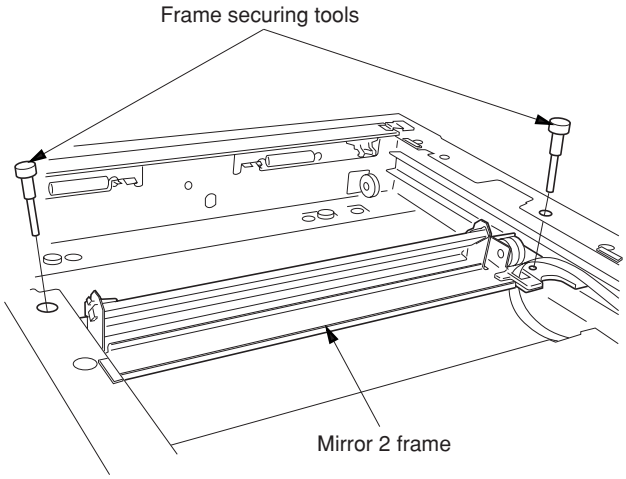


Figure 1-6-34

4. Loop the inner ends of the scanner wires around the grooves in the pulleys at the right of the scanner unit, winding from below to above. ..... ①
5. Loop the scanner wires around the inner grooves in the pulleys on the mirror 2 frame, winding from above to below. ..... ②
6. Hook the round terminals onto the catches inside the scanner unit. ..... ③

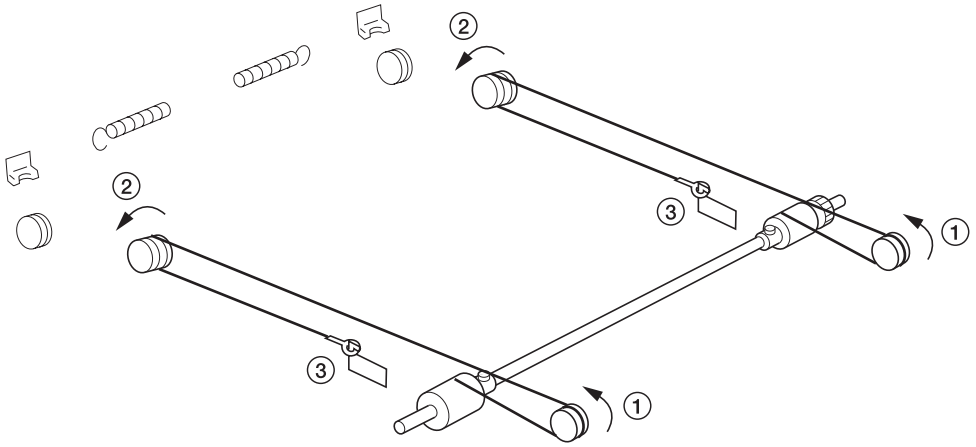


Figure 1-6-35

7. Loop the outer ends of the scanner wires around the grooves in the scanner wire pulleys at the left of the scanner unit, winding from below to above. ..... ④
8. Loop the scanner wires around the outer grooves in the pulleys on the mirror 2 frame, winding from below to above. ..... ⑤
9. Wind the scanner wires around the grooves in the scanner wire guides at the left of the scanner unit. ..... ⑥
10. Hook the round terminals onto the scanner tension springs. ..... ⑦

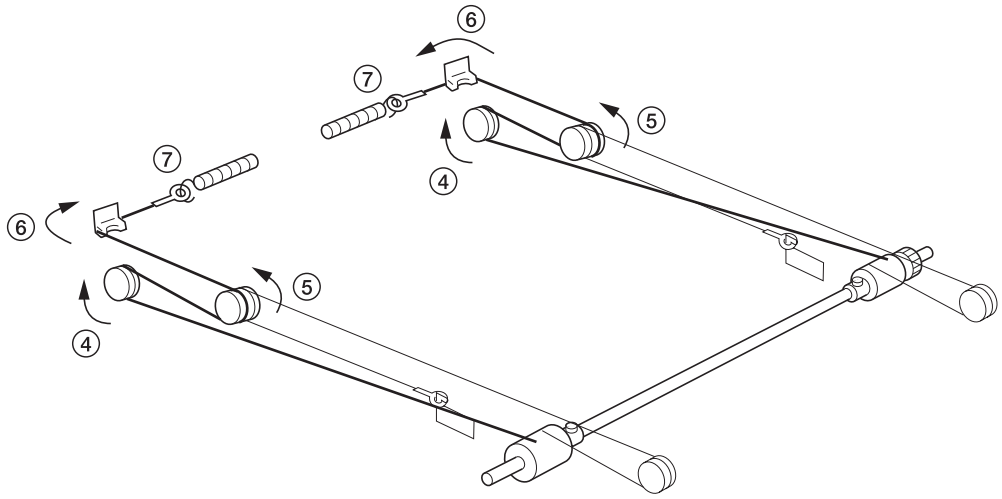


Figure 1-6-36

11. Remove the scanner wire stoppers and frame securing tools.
12. Gather the scanner wires toward the locating balls.
13. Move the mirror 2 frame from side to side to correctly locate the wires in position.
14. Put the mirror 1 frame on the scanner rail and move it toward the left side of the machine.
15. Insert the frame securing tools into the positioning holes (leftmost holes) at the front and the rear of the scanner unit and screw the mirror 1 frame while securing both the mirror 1 frame and the mirror 2 frame.
16. Remove the two frame securing tools
17. Refit all the removed parts.

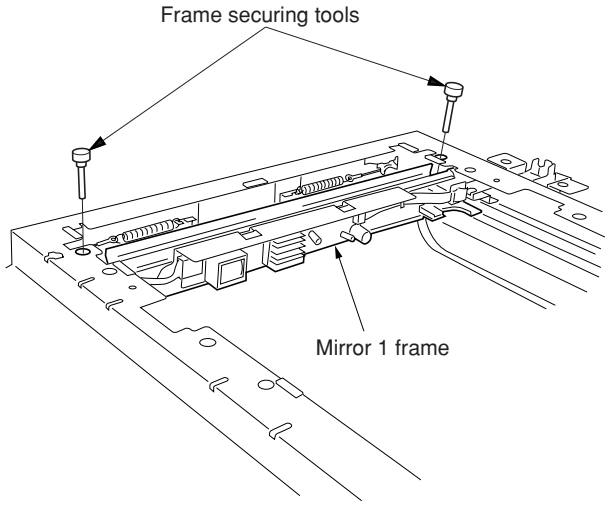


Figure 1-6-37

(3) Detaching and refitting the laser scanner unit

Take the following procedure when the laser scanner unit is to be checked or replaced.

Procedure

1. Remove the developing unit and drum unit (see pages 1-6-32 and 34).
2. Remove the four screws holding the lower right cover and then the cover.
   Remove the three screws holding the eject cover and then the cover.

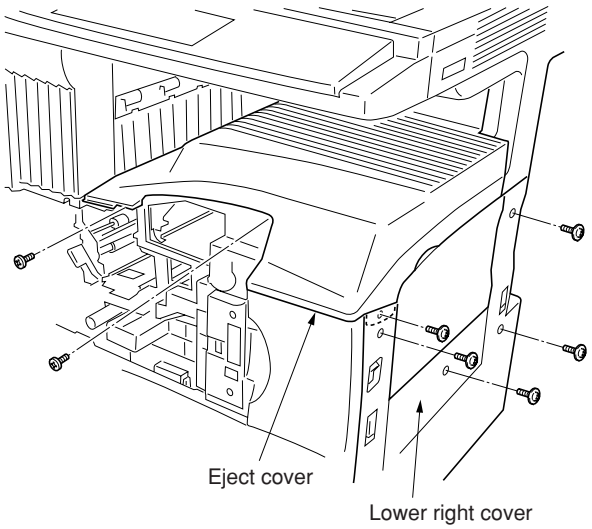


Figure 1-6-38

3. Remove the four screws holding the front right cover and then the cover.

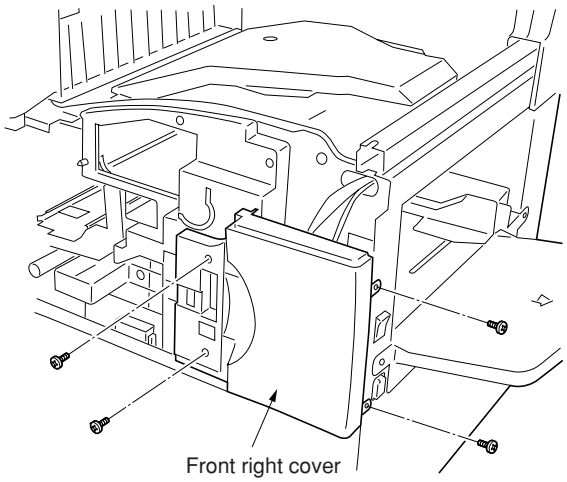


Figure 1-6-39

4. Remove the five screws holding the inner cover and then the cover.

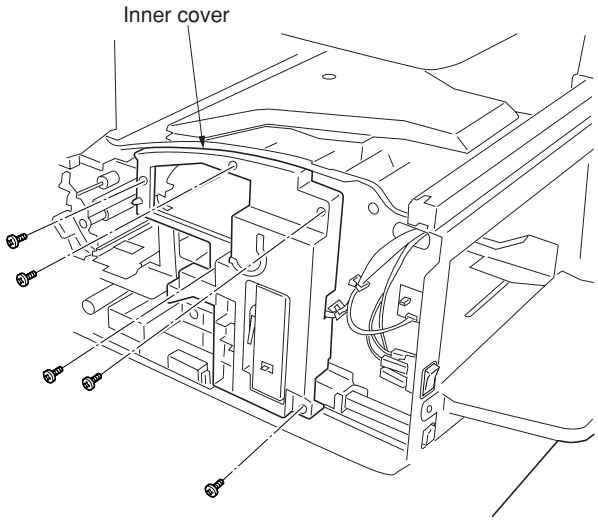


Figure 1-6-40

5. Remove the two screws and detach the connector and then remove the fan duct.

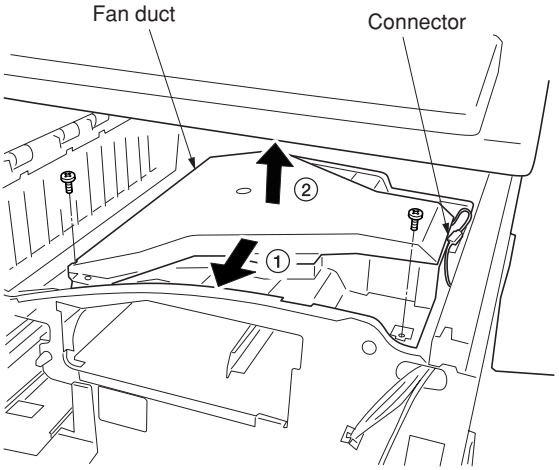


Figure 1-6-41

6. Remove the six screws holding the toner container retainer and then the retainer.

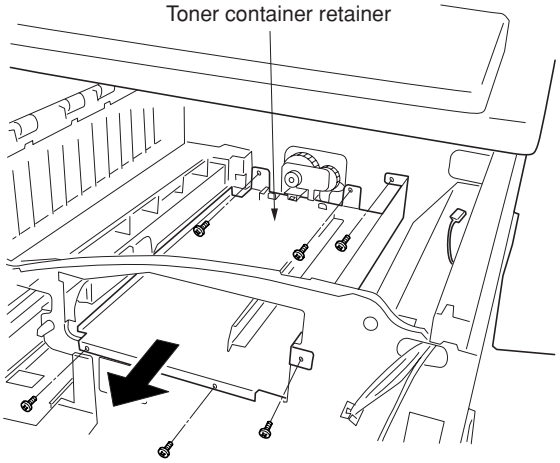


Figure 1-6-42

7. Remove the four screws and detach the connector and then remove the laser scanner unit.
8. Replace the laser scanner unit and refit all the removed parts.

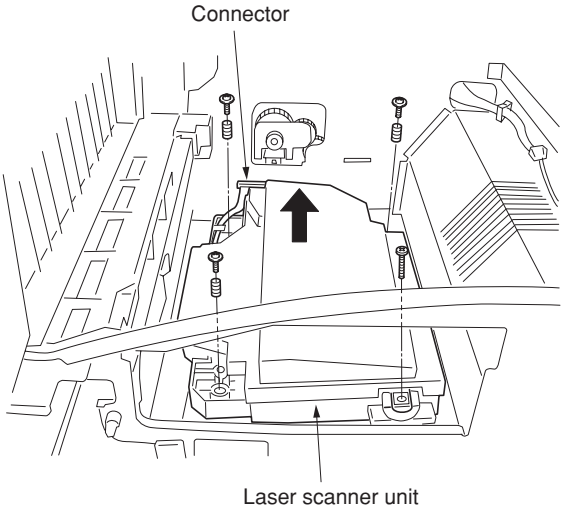


Figure 1-6-43

(4) Adjusting the skew of the laser scanner unit (reference)

Perform the following adjustment if the leading and trailing edges of the copy image are laterally skewed (lateral squareness not obtained).

Caution:

• After adjusting the skew of the laser scanner unit, make a test copy and check the copy image. If lateral squareness is still not obtained, perform "(6) Adjusting the position of the ISU" (see page 1-6-25).

Procedure

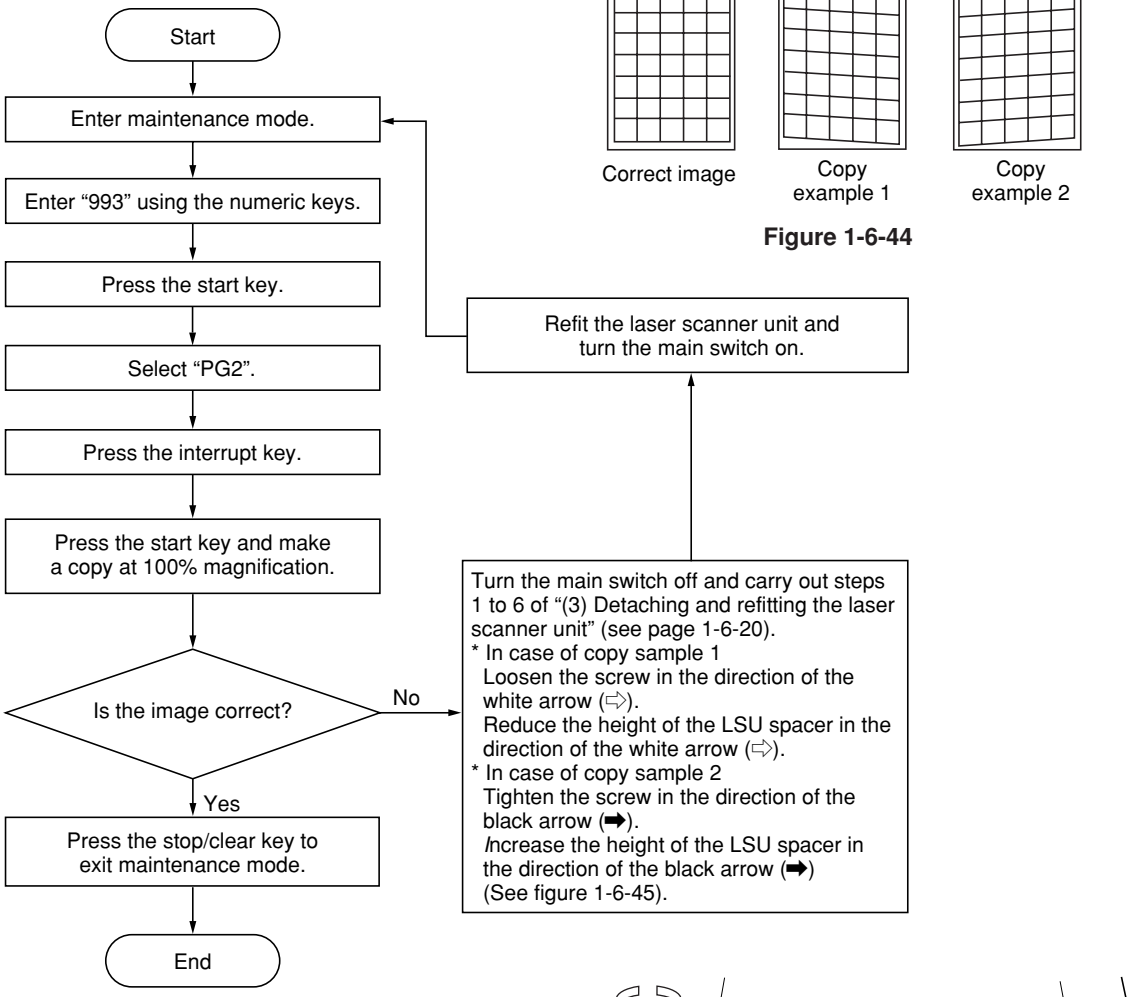


Figure 1-6-44

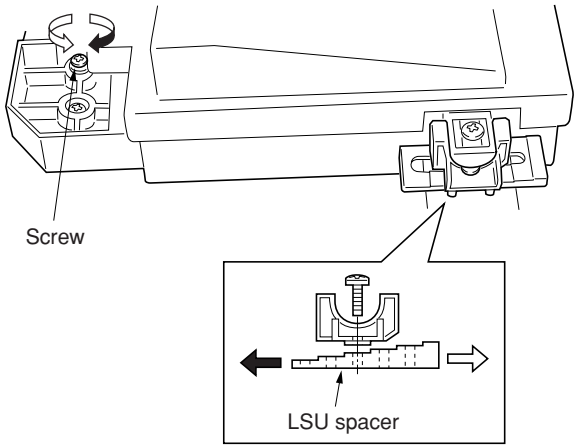


Figure 1-6-45

(5) Detaching and refitting the ISU (reference)
Take the following procedure when the ISU is to be checked or replaced.

Caution:
After replacing the ISU, make a test copy and check the copy image. If the image is incorrect, perform the adjustments (see pages 1-6-25 to 31).

ISU installation requires the following tools:
Two positioning pins (P/N 1856812)

Procedure
• Detaching the ISU
1. Remove the contact glass (see page 1-6-19).
2. Remove the rear and shield covers and detach connector YC34 on the main PCB.

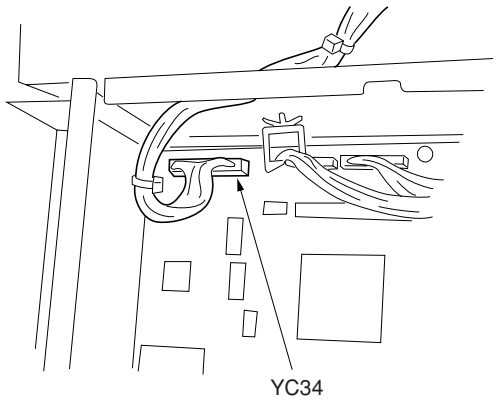


Figure 1-6-46

3. Remove the eight screws holding the ISU cover and then the cover.

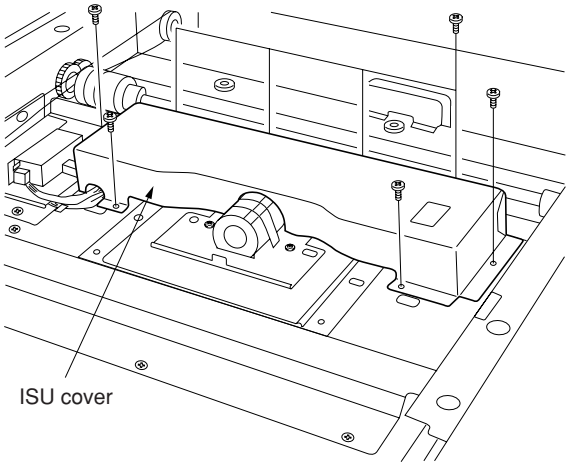


Figure 1-6-47

4. Remove the two screws holding the original size detection sensor retainer and then the retainer.
5. Remove the four screws holding the ISU and then the ISU.
6. Check or replace the ISU.

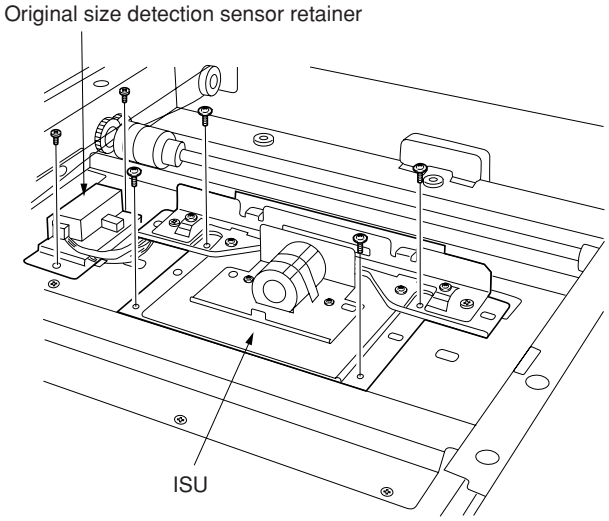


Figure 1-6-48

• Refitting the ISU
  1. Fit the ISU using the two positioning pins.
  2. Secure the ISU using the four screws.
  3. Remove the two positioning pins and refit all the removed parts.

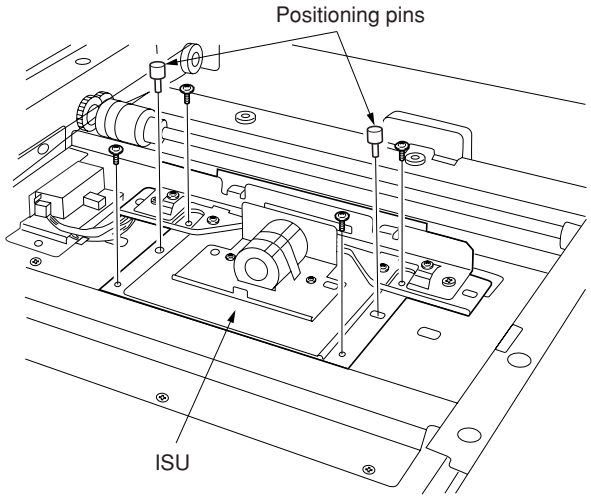


Figure 1-6-49

(6) Adjusting the position of the ISU (reference)
Perform the following adjustment if the leading and trailing edges of the copy image are laterally skewed (lateral squareness not obtained).

Caution:
- Be sure to perform "(4-1) Adjusting the skew of the laser scanner unit" (page 1-6-22) first.
- Before making the following adjustment, output a VTC-PG2 pattern in maintenance item U993 to use as the original for the adjustment.

Procedure

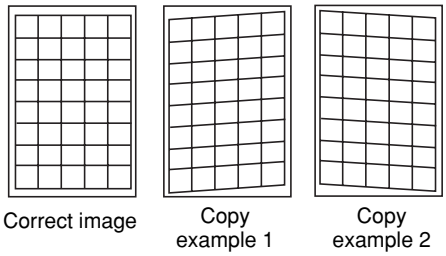
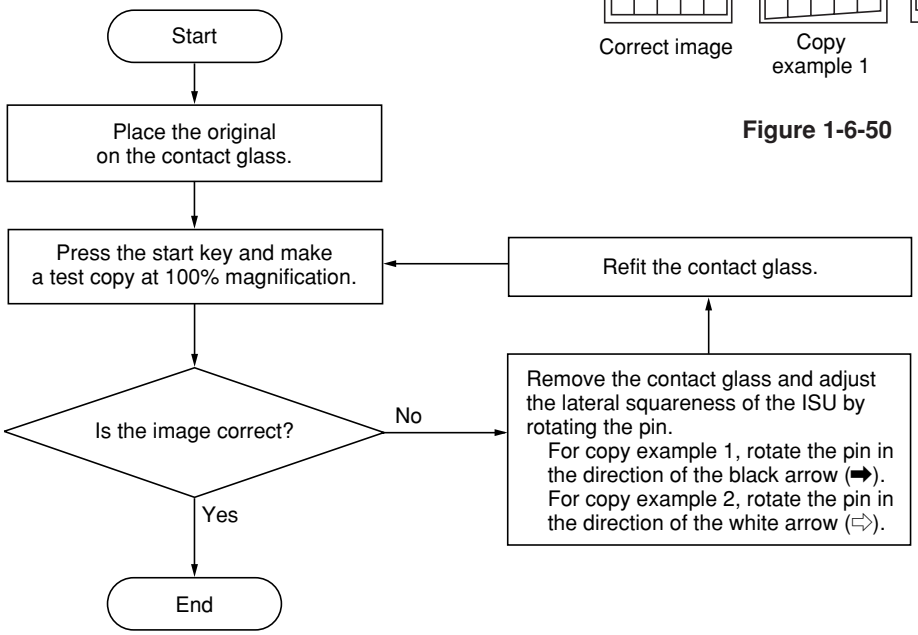


Figure 1-6-50



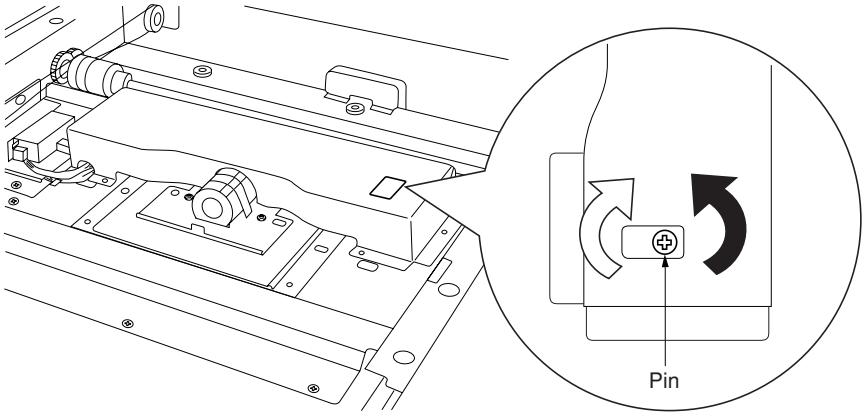


Figure 1-6-51

(7) Adjusting the longitudinal squareness (reference)
Perform the following adjustment if the copy image is longitudinally skewed (longitudinal squareness not obtained).

Caution:
- Adjust the amount of slack in the paper (page 1-6-14) first. Check for the longitudinal squareness of the copy image, and if it is not obtained, perform the longitudinal squareness adjustment.
- Before making the following adjustment, output a VTC-PG2 pattern in maintenance item U993 to use as the original for the adjustment.

Procedure

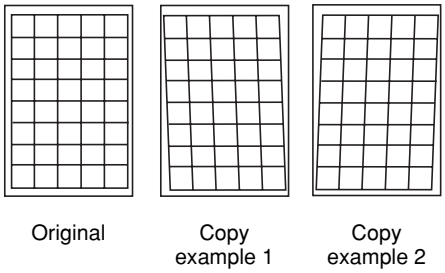
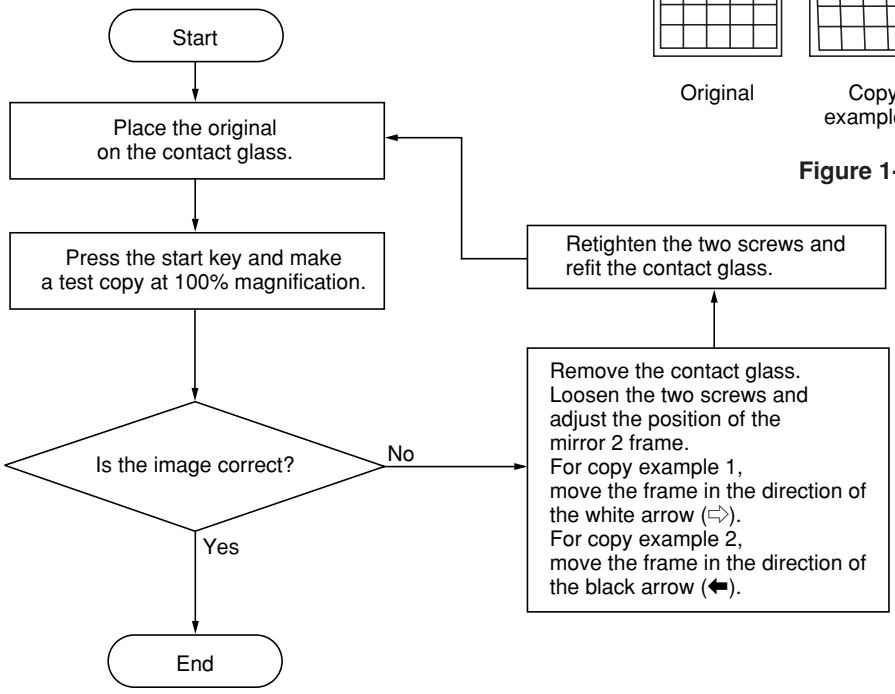


Figure 1-6-52



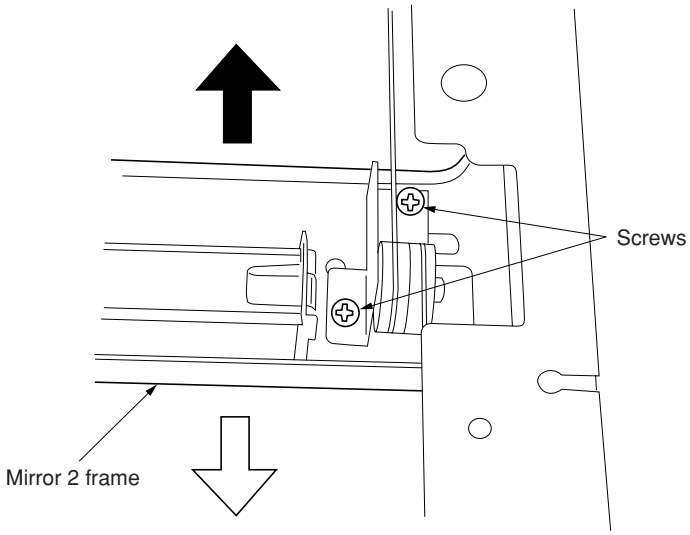
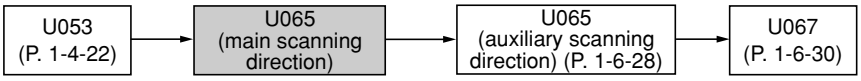


Figure 1-6-53

(8) Adjusting magnification of the scanner in the main scanning direction

Perform the following adjustment if the magnification in the main scanning direction is not correct.



Caution:

Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode. Also, perform "(9) Adjusting magnification of the scanner in the auxiliary scanning direction" (page 1-6-28) and "(11) Adjusting the scanner center line" (page 1-6-30) after this adjustment.

Procedure

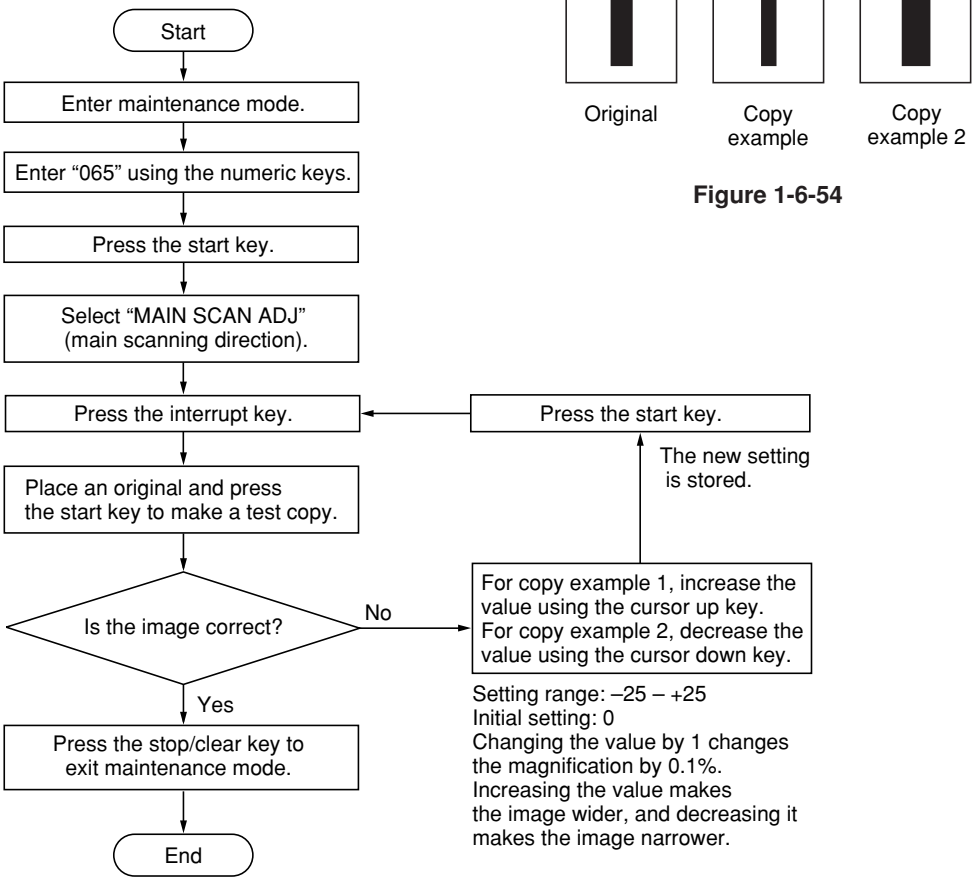
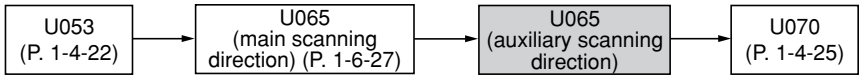


Figure 1-6-54

(9) Adjusting magnification of the scanner in the auxiliary scanning direction

Perform the following adjustment if the magnification in the auxiliary scanning direction is not correct.



Caution:

Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure

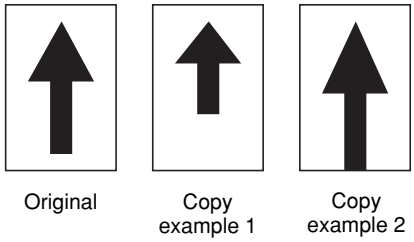
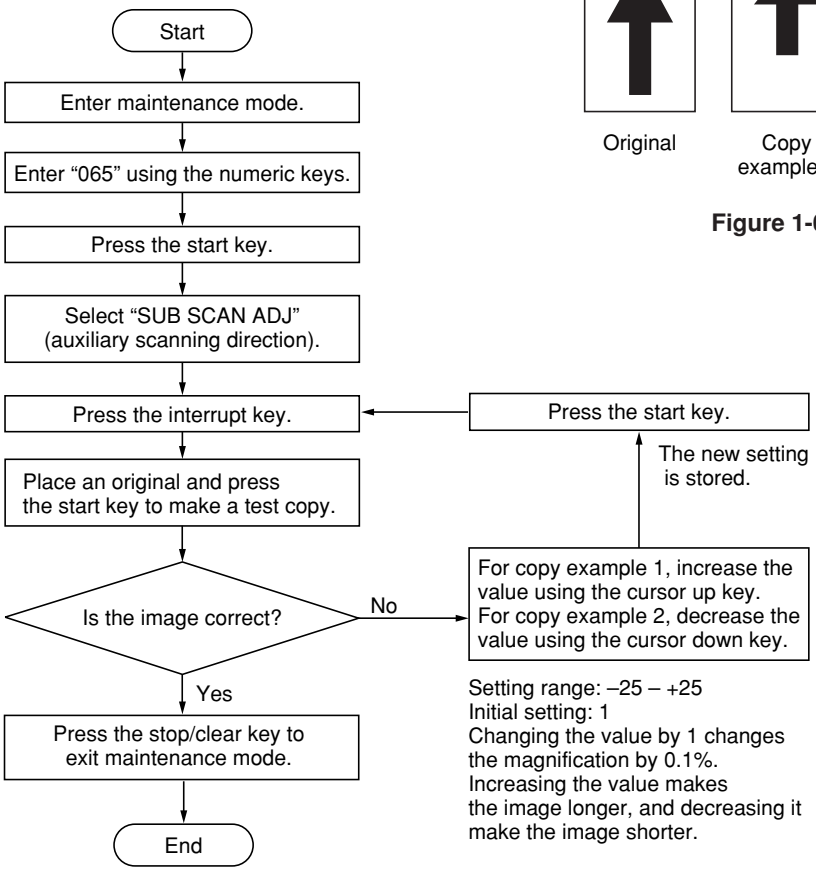


Figure 1-6-55



(10) Adjusting the scanner leading edge registration

Perform the following adjustment if there is regular error between the leading edges of the copy image and original.

U034 (P. 1-6-10) → U066 → U071 (P. 1-4-26)

Caution:

Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure

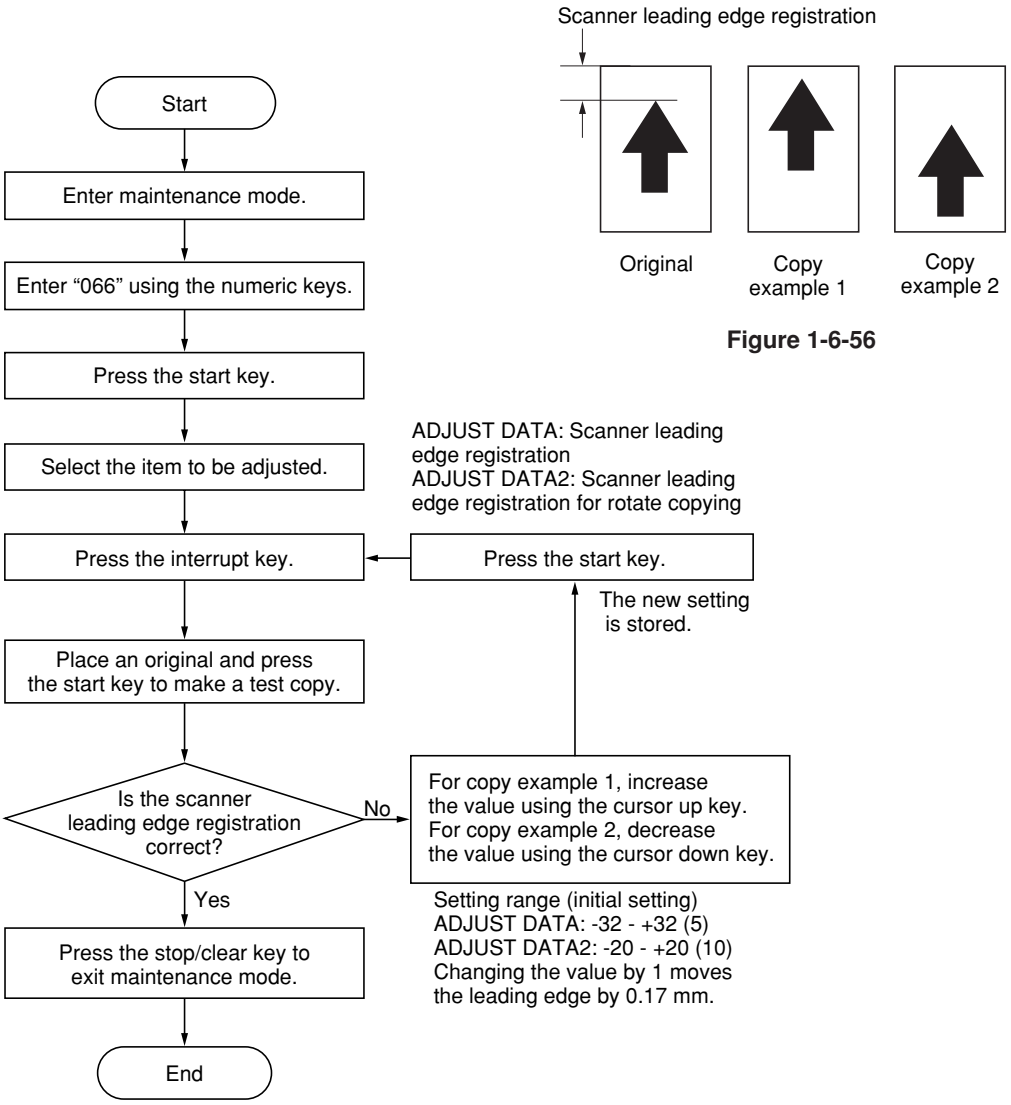
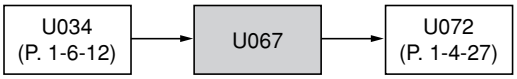


Figure 1-6-56

(11) Adjusting the scanner center line

Perform the following adjustment if there is a regular error between the center lines of the copy image and original.



Caution:

Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure

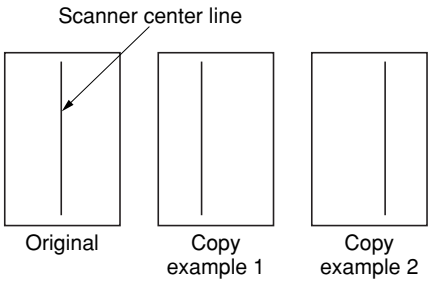
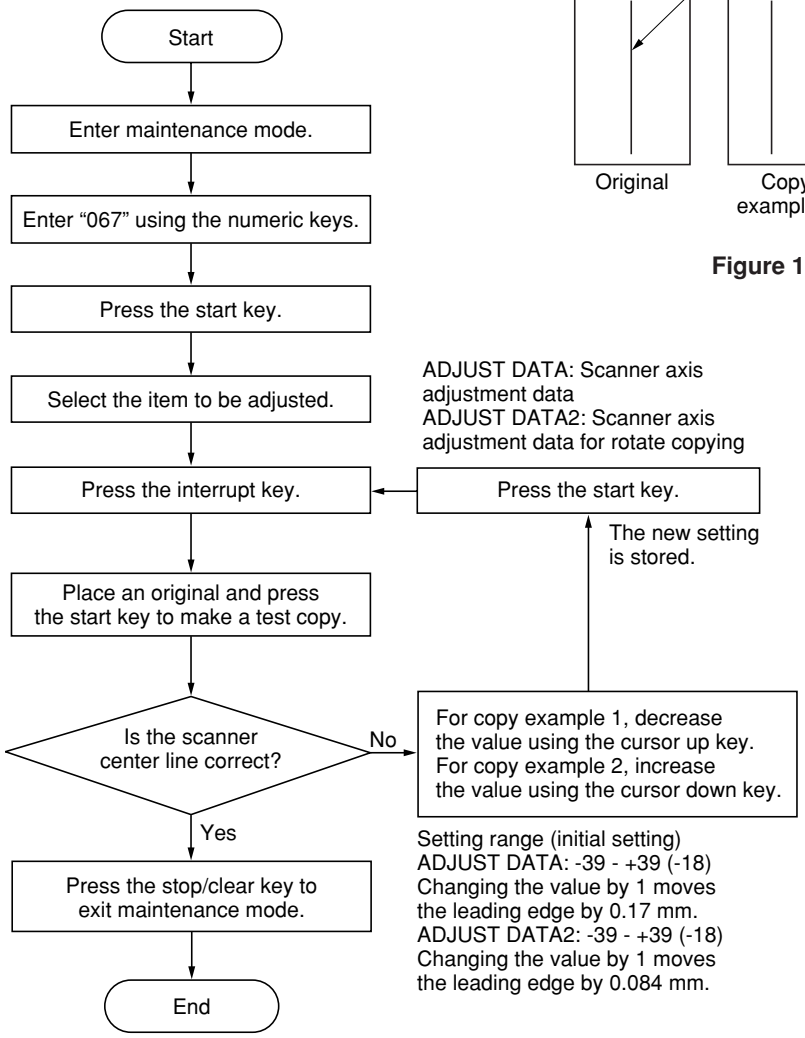


Figure 1-6-57



(12) Adjusting the margins for scanning an original on the contact glass

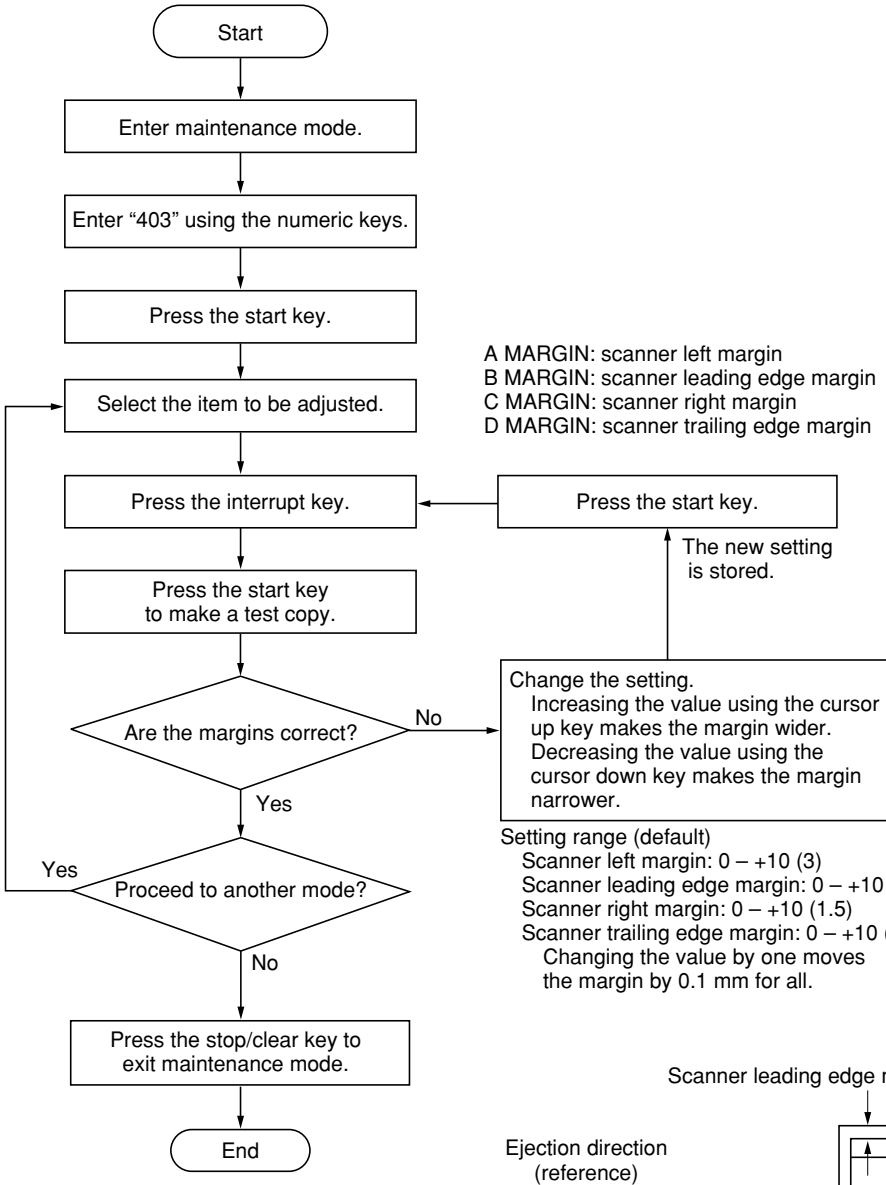
Perform the following adjustment if the margins are not correct.

U402 (P. 1-6-13) → U403 → U404 (P. 1-4-63)

Caution:

Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure



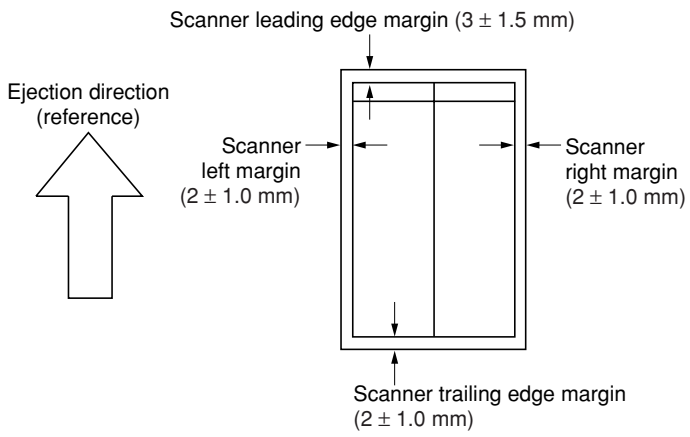


Figure 1-6-58

1-6-4 Drum section

(1) Detaching and refitting the drum unit
Follow the procedure below to replace the drum unit.

Cautions:
- Avoid direct sunlight or strong light when detaching and refitting the drum unit.
- Never touch the drum surface when holding the drum unit.

Procedure
1. Open the conveying cover and remove the developing unit (see page 1-6-34).
2. Remove the screws holding the drum unit and then the unit.
3. Replace the drum unit and refit all the removed parts.

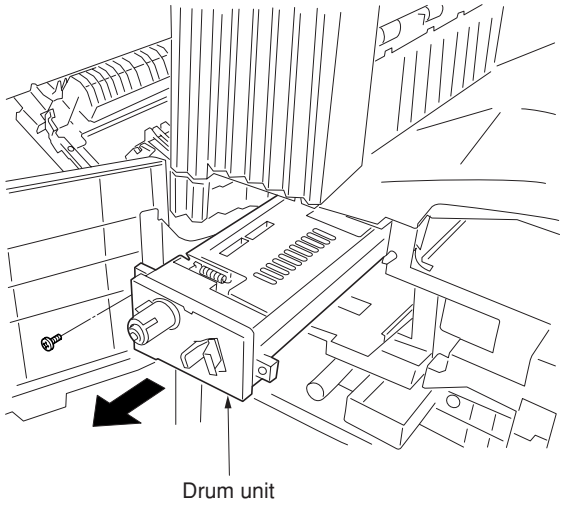


Figure 1-6-59

(2) Detaching and refitting the main charger unit
Follow the procedure below to replace the main charger unit.

Procedure
1. Open the front cover.
2. Pull out the main charger unit holding the knob.
3. While pushing the hole with a sharp-pointed object, remove the main charger unit.
4. Replace the main charger unit and refit all the removed parts.

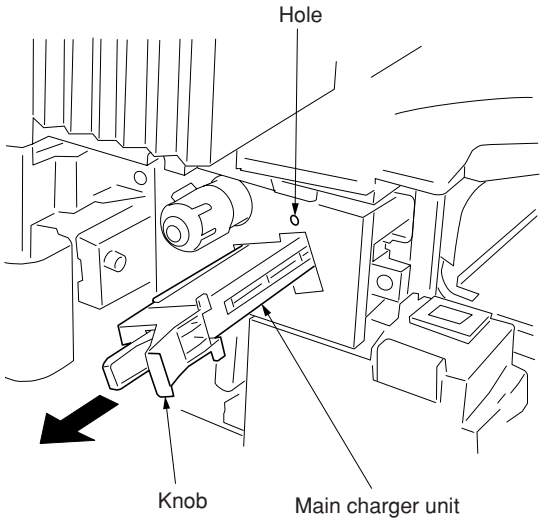


Figure 1-6-60

(3) Detaching and refitting the drum separation claw assemblies

Follow the procedure below to replace the drum separation claw assemblies.

Procedure

1. Remove the drum unit (see page 1-6-32).
2. Push the drum separation claw assemblies with the minus driver from the top of the corner hole and remove the claw assemblies.
3. Replace the drum separation claw assemblies and refit all the removed parts.

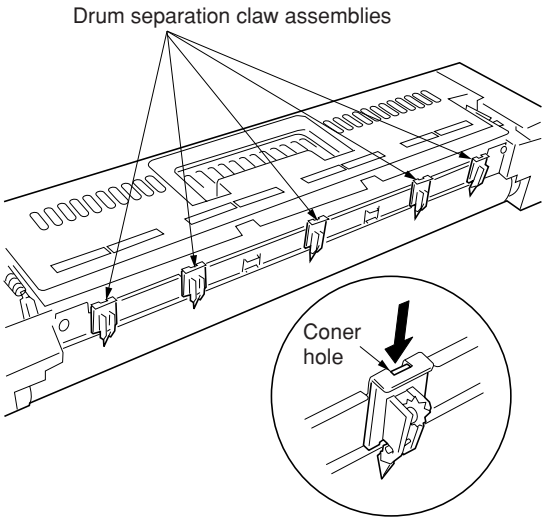


Figure 1-6-61

1-6-5 Developing section

(1) Detaching and refitting the developing unit
Follow the procedure below to replace the developing unit.

Procedure
1. Open the front cover.
2. Remove the toner container and toner disposal tank.
3. Remove the screw and turn the developing release lever in the direction of the arrow.

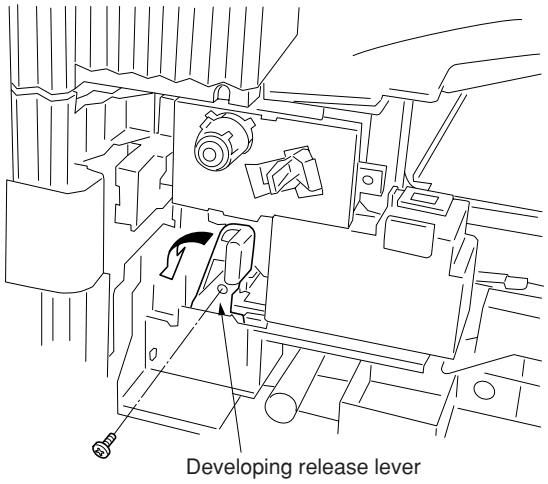


Figure 1-6-62

4. Remove the developing unit.
5. Replace the developing unit and refit all the removed parts.

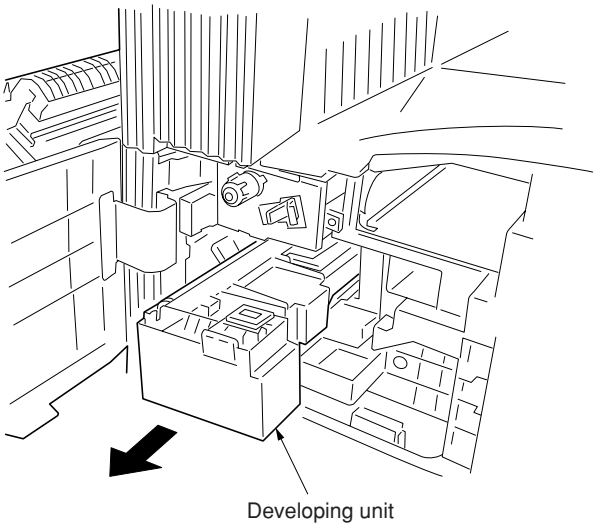


Figure 1-6-63

1-6-6 Transfer section

(1) Detaching and refitting the transfer roller assembly
Follow the procedure below to replace the transfer roller assembly.

Procedure
1. Open the conveying cover.
2. While holding down the projection, slide the transfer roller assembly toward the front to remove it.
3. Replace the transfer roller assembly and refit all the removed parts.

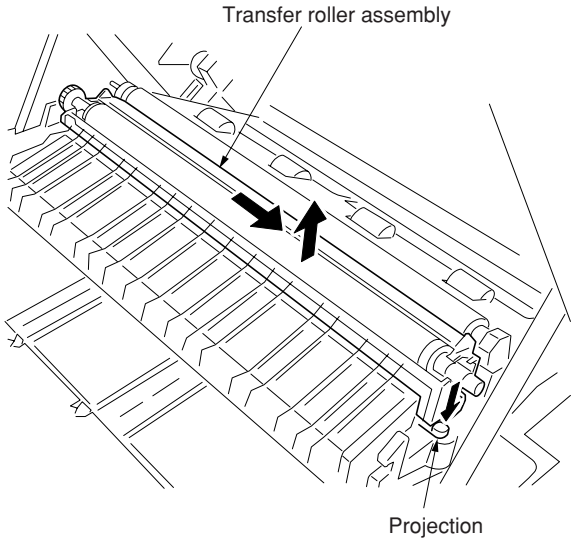


Figure 1-6-64

1-6-7 Fixing section

(1) Detaching and refitting the fixing unit
Follow the procedure below to check or replace the fixing unit.

Procedure
1. Open the front cover and conveying cover.
2. Remove the three screws holding the front left cover and then the cover.

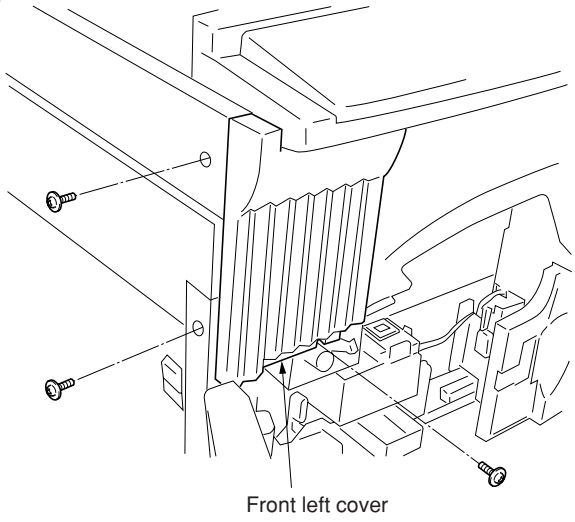


Figure 1-6-65

3. Remove the screw holding the fixing unit and then the unit.
4. Check or replace the transfer roller assembly and refit all the removed parts.

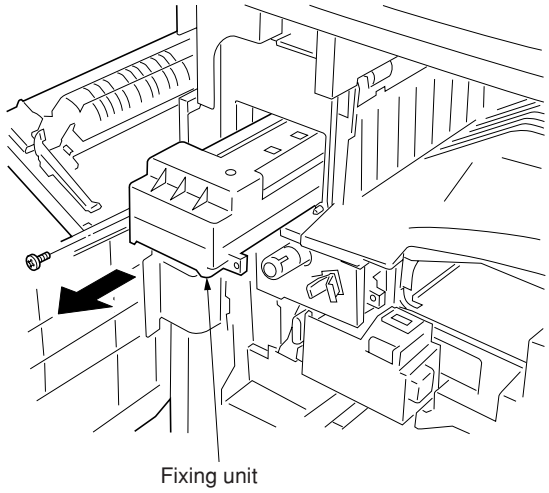


Figure 1-6-66

(2) Detaching and refitting the heat roller separation claws
Follow the procedure below to replace the heat roller separation claws.

Procedure
1. Remove the fixing unit.
2. Remove the two screws and detach the upper fixing cover while holding the four claws.

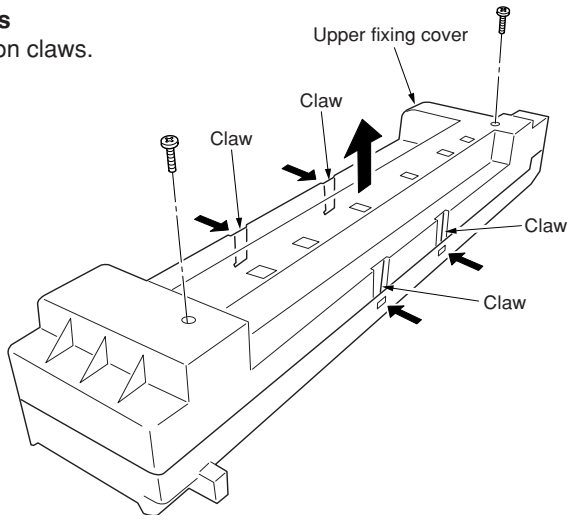


Figure 1-6-67

3. Remove the heat roller separation claws from the upper fixing cover.
4. Replace the heat roller separation claws and refit all the removed parts.

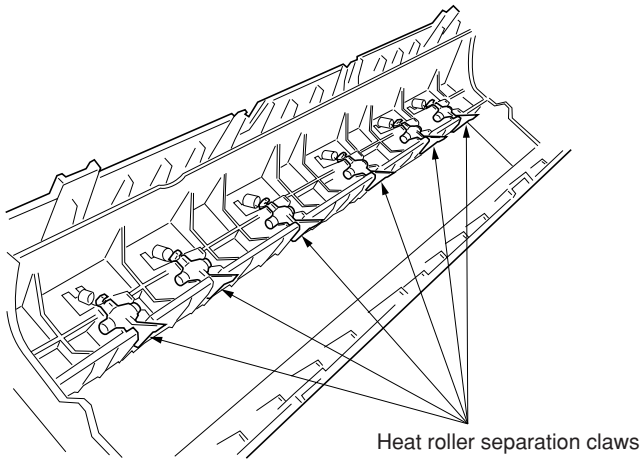


Figure 1-6-68

(3) Detaching and refitting the press roller

Follow the procedure below to replace the press roller.

Procedure

1. Remove the fixing unit (see page 1-6-36).
2. Remove the upper fixing cover (see page 1-6-36).
3. Remove the front and rear press springs.

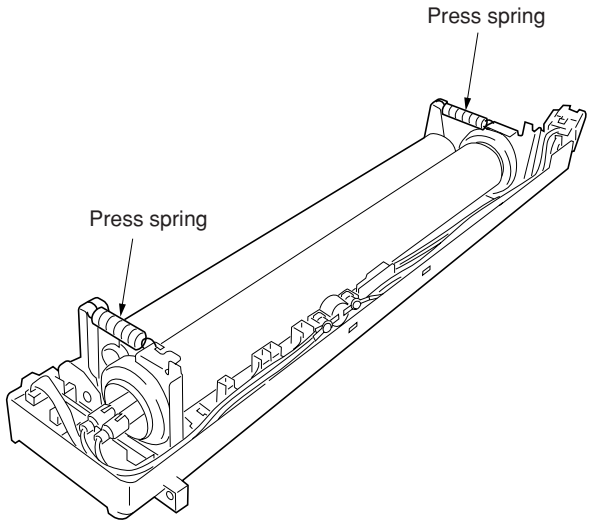


Figure 1-6-69

4. Detach the press roller from the fixing unit and remove the front and rear bearings.
5. Replace the press roller and refit all the removed parts.

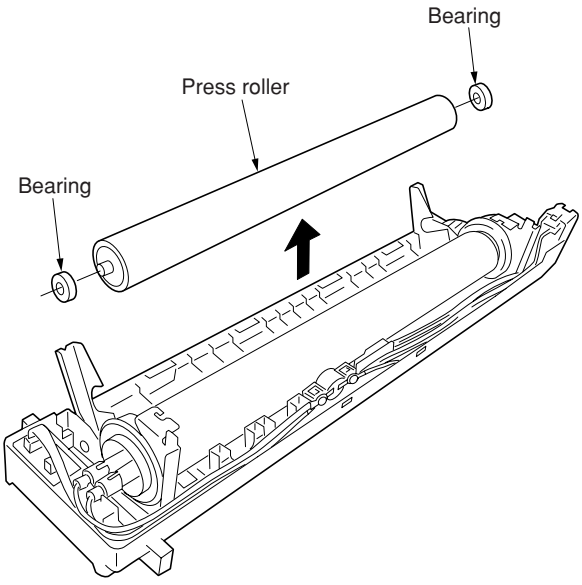


Figure 1-6-70

(4) Detaching and refitting the fixing heater M and S

Follow the procedure below to replace the fixing heater M and S.

Procedure

1. Remove the fixing unit (see page 1-6-36).
2. Remove the upper fixing cover (see page 1-6-36).
3. Remove the screw on the front of the fixing unit thermostat and two screws on the rear of the fixing unit.

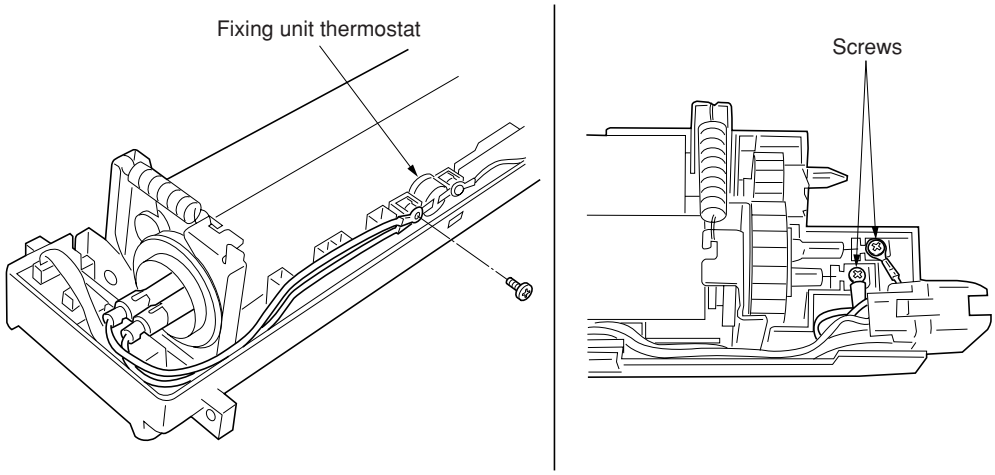


Figure 1-6-71

4. Pull out the fixing heater M and S from the fixing unit.

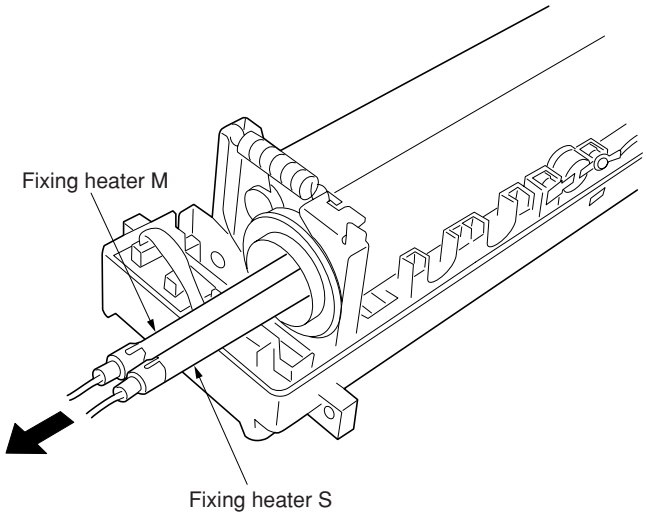


Figure 1-6-72

5. Replace the fixing heater M and S, and refit all the removed parts.
   * When refitting the fixing heaters, take care not to refit fixing heaters M and S to wrong positions. Refit fixing heater M (black wire) to the fixing unit housing with mark B and fixing heater S (white wire) to the housing with mark W.

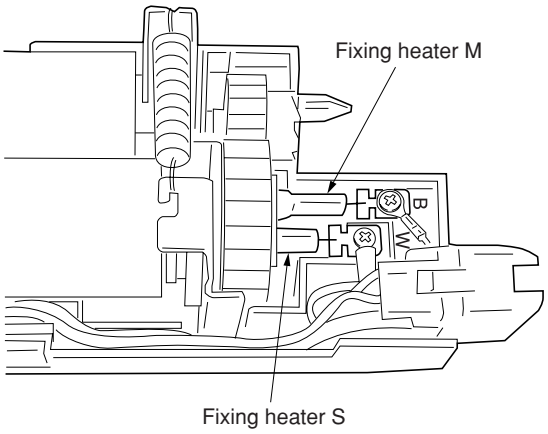


Figure 1-6-73

(5) Detaching and refitting the heat roller

Follow the procedure below to replace the heat roller.

Procedure

1. Remove the fixing unit (see page 1-6-36).
2. Remove the upper fixing cover (see page 1-6-36).
3. Remove the press roller and fixing heater M and S (see pages 1-6-37 and 38).
4. Remove the fixing gear.

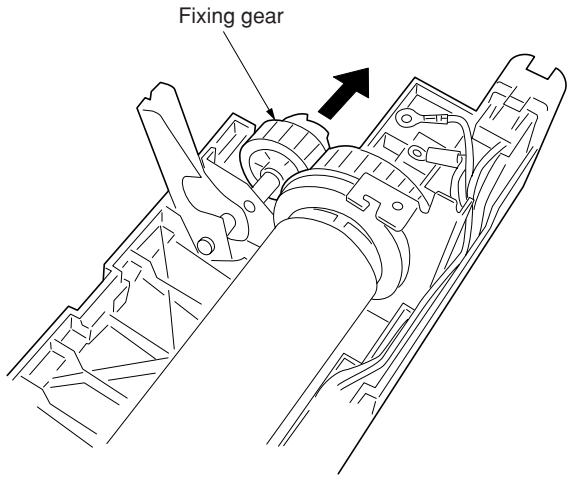


Figure 1-6-74

5. Detach the heat roller from the fixing unit. Remove the C ring, gear, bearing and bushing on the rear of the heat roller and then remove the C ring, bearing and bushing on the front.
6. Replace the heat roller and refit all the removed parts.

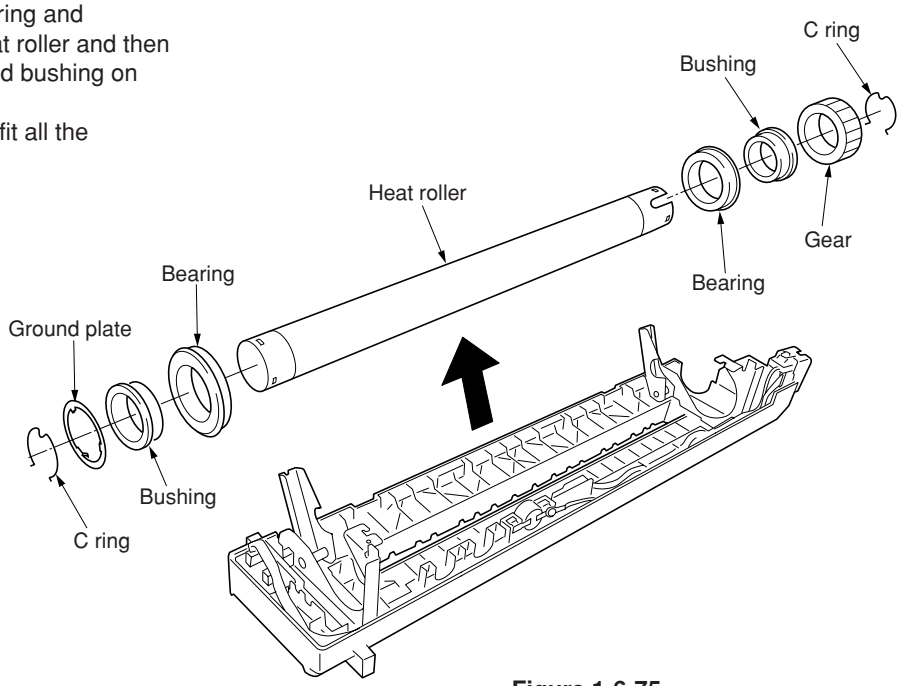


Figure 1-6-75

(6) Detaching and refitting the fixing unit thermistor 1 and 2

Follow the procedure below to replace the fixing unit thermistor 1 and 2.

Procedure

1. Remove the fixing unit (see page 1-6-36).
2. Remove the upper fixing cover (see page 1-6-36).
3. Disconnect the connector of the fixing unit thermistor 1.

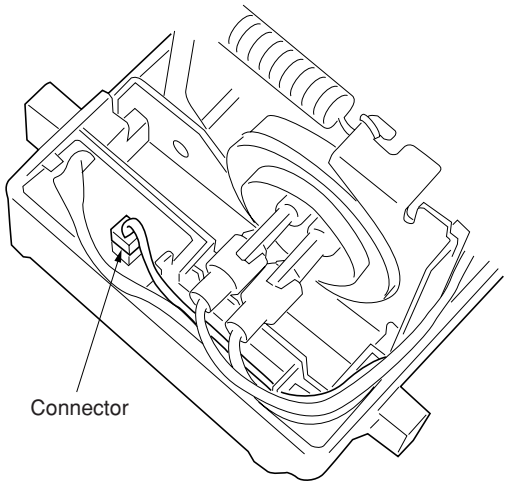


Figure 1-6-76

4. Remove the heat roller (see page 1-6-39).
5. Remove the screw and disconnect the connector, and then remove the fixing unit thermistor 2.

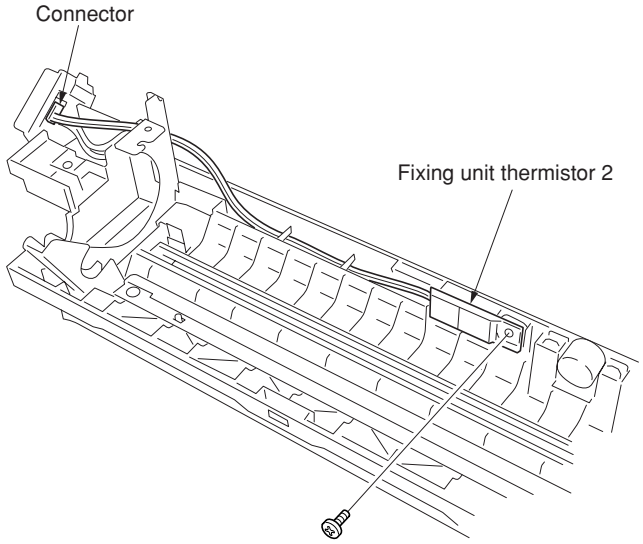


Figure 1-6-77

6. Turn the fixing unit over and remove the screw to remove the fixing unit thermistor 1.

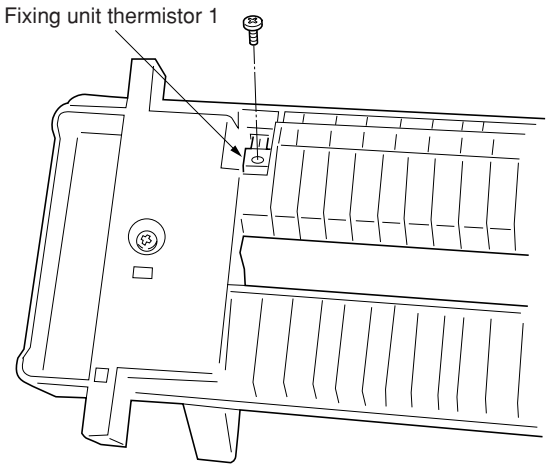


Figure 1-6-78

1-7-1 Upgrading the firmware on the main PCB

Firmware upgrading requires the following tools:
Compact Flash (Products manufactured by SANDISK are recommended.)

NOTE
When writing data to a new Compact Flash from a computer, be sure to format it in advance.

Procedure

1. Turn the power switch off and disconnect the power plug.
2. Remove the middle right cover.
   Insert it with its rear side toward the front side of the machine.
3. Insert Compact Flash in a notch hole of the copier.
4. Insert the power plug and turn the power switch on. Upgrading firmware starts for 3 minutes.
   Caution:
   Never turn the main switch off during upgrading.
5. "Completed" is displayed on the touch panel when upgrading is complete.
6. Turn the power switch off and disconnect the power plug.
7. Remove Compact Flash from the copier and refit the middle right cover.
8. Insert the power plug and turn the power switch on.

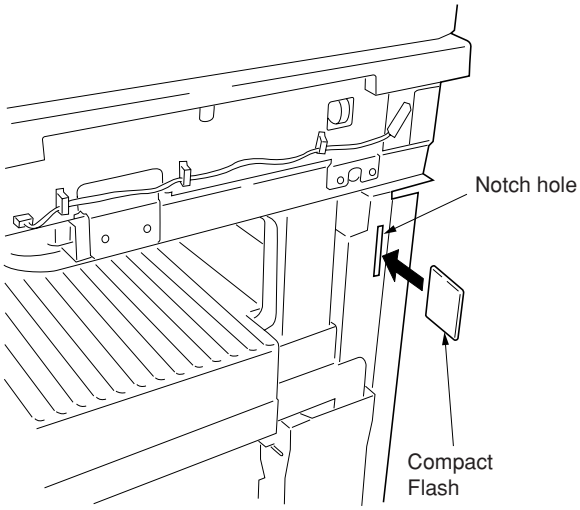


Figure 1-7-1

1-7-2 Adjustment-free variable resistors (VR)

The variable resistors listed below are set at the factory prior to shipping and cannot be adjusted in the field.
• High-voltage transformer PCB: VR42, VR201, VR204, VR205
• Inverter PCB: VR1, VR2

1-7-3 Remarks on main PCB replacement

When replacing the main PCB, remove EEPROM 1 to 4 from the main PCB that has been removed and then reattach it to the new main PCB.

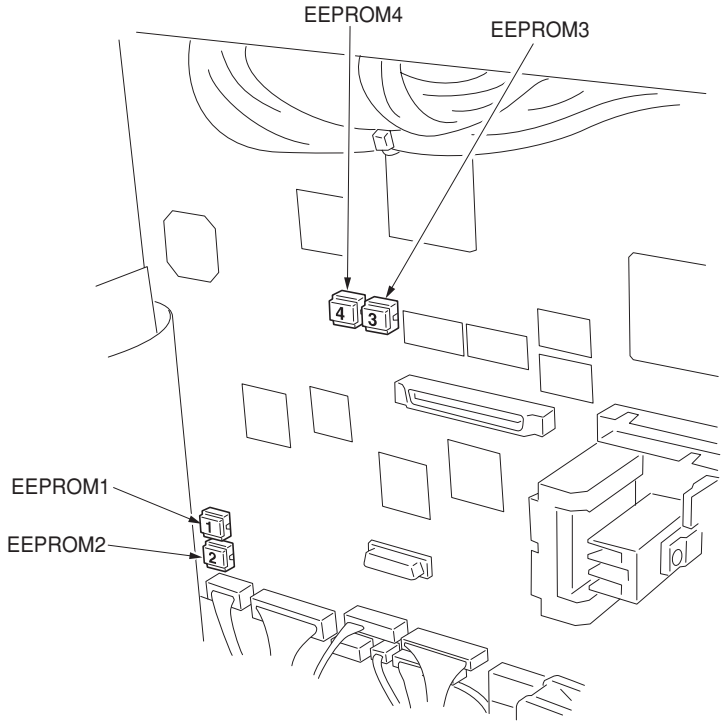


Figure 1-7-2

1-7-4 Upgrading the the printer board firmware

Follow the procedure below to upgrade the firmware on the optional printer board.
Firmware upgrading requires the following tools:
Compact Flash (Products manufactured by SANDISK are recommended.)

NOTE
When writing data to a new Compact Flash from a computer, be sure to format it in advance.

Procedure

1. Turn the power switch off and disconnect the power plug.
2. Insert Compact Flash which has firmware in to the printer board.
3. Insert the power plug and turn the power switch on. Upgrading firmware starts.
4. When upgrading the firmware is completed correctly, the display in Figure 1-7-3 will be shown on the operation panel screen.
5. Turn the power switch off at the operation panel screen which shown on Figure 1-7-3 and disconnect the power plug.
6. Remove Compact Flash from the printer board.
   Caution:
   If pressing the “Reset“ button shown on Figure 1-7-3, upgrading the firmware will start again and if turn the power switch off before the download is finished, writing for the program will not finish till the end and [Checksum error F010] will occur.

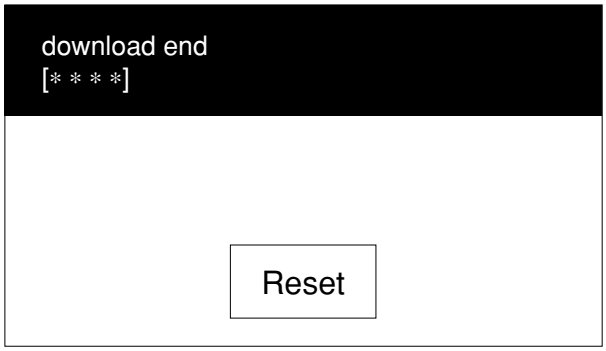


Figure 1-7-3

2-1-1 Paper feed section

The paper feed section consists of the primary feed and secondary feed subsections. Primary feed conveys paper from the upper drawer, lower drawer or bypass tray to the left and right registration rollers, at which point secondary feed takes place and the paper travels to the transfer section in sync with the printing timing.

Each drawer consists of a lift driven by the lift motor and other components. Each drawer can hold up to 500 sheets of paper. Paper is fed from the drawer by the rotation of the forwarding pulley and paper feed pulley. The separation pulley prevents multiple sheets from being fed at one time, via the torque limiter.

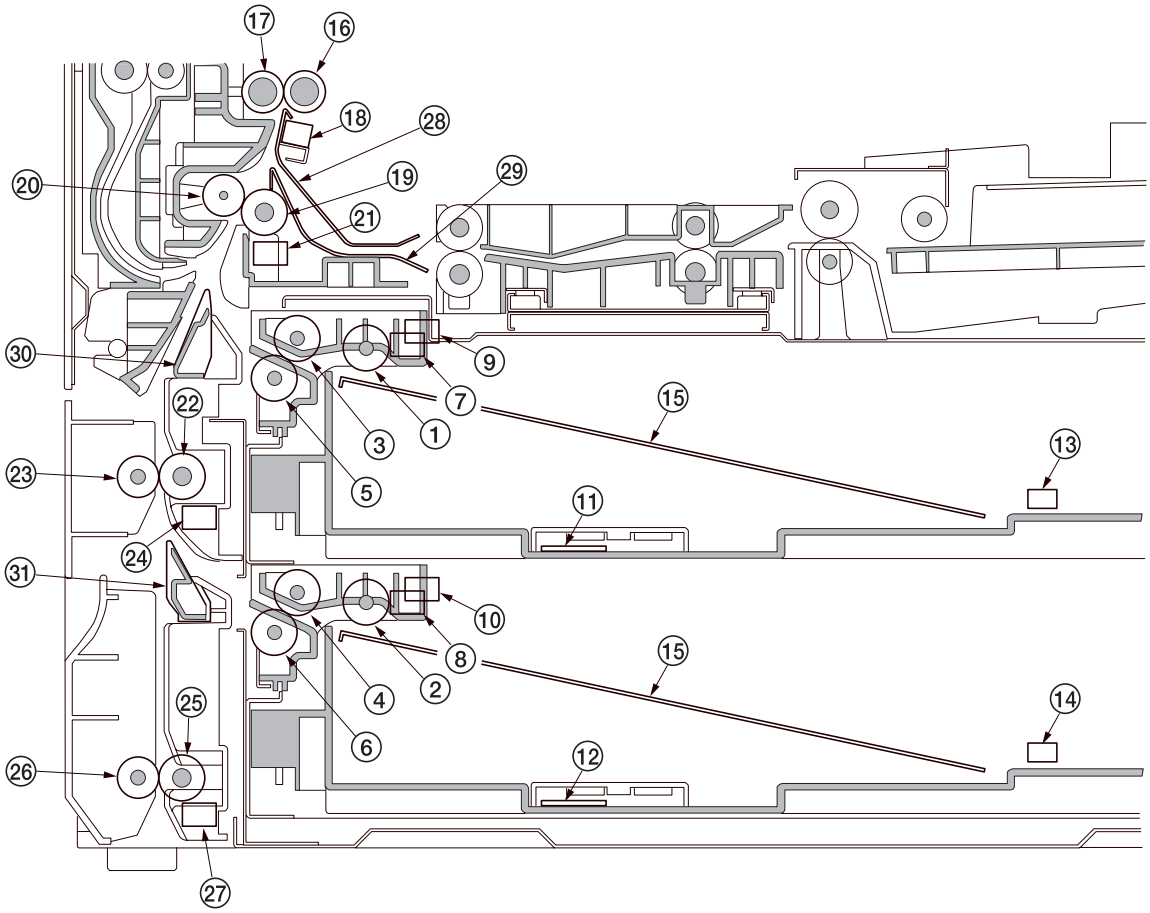


Figure 2-1-1 Paper feed from the upper and lower drawers

① Upper forwarding pulley
② Lower forwarding pulley
③ Upper paper feed pulley
④ Lower paper feed pulley
⑤ Upper separation pulley
⑥ Lower separation pulley
⑦ Upper paper switch (PPSW-U)
⑧ Lower paper switch (PPSW-L)
⑨ Upper lift limit switch (LICSW-U)
⑩ Lower lift limit switch (LICSW-L)
⑪ Upper paper width switch (PWSW-U)
⑫ Lower paper width switch (PWSW-L)
⑬ Upper paper length switch (PLSW-U)
⑭ Lower paper length switch (PLSW-L)
⑮ Drawer lift
⑯ Right registration roller
⑰ Left registration roller
⑱ Registration switch (RSW)
⑲ Feed roller 1
⑳ Feed pulley
㉑ Feed switch 1 (FSW1)
㉒ Feed roller 2
㉓ Feed pulley
㉔ Feed switch 2 (FSW2)
㉕ Feed roller 3
㉖ Feed pulley
㉗ Feed switch 3 (FSW3)
㉘ Front registration guide
㉙ Paper conveying guide
㉚ Vertical paper conveying guide 1
㉛ Vertical paper conveying guide 2

The bypass table can be hold up to 200 sheets of paper at one time. Paper is fed from the bypass table by the rotation of the bypass forwarding pulley and bypass paper feed pulley. Also during paper feed, the bypass separation pulley prevents multiple sheets from being fed at one time by the torque limiter.

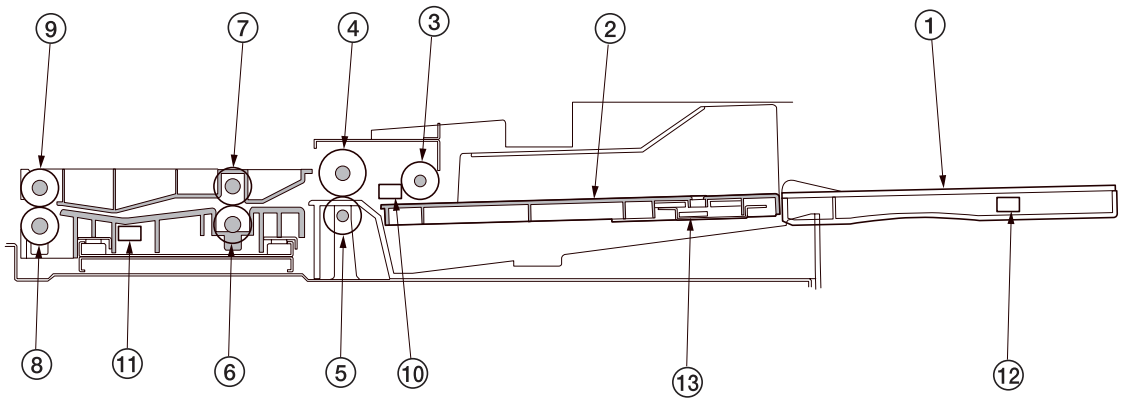


Figure 2-1-2 Paper feed from the bypass table

① Bypass table
② Bypass lift guide
③ Bypass forwarding pulley
④ Bypass paper feed pulley
⑤ Bypass separation pulley
⑥ Bypass feed roller 1
⑦ Bypass feed pulley
⑧ Bypass feed roller 2
⑨ Bypass feed pulley
⑩ Bypass paper switch (BYPPSW)
⑪ Bypass feed switch (BYPFSW)
⑫ Bypass paper length switch (BYPPLSW)
⑬ Bypass paper width switch (BYPPWSW)

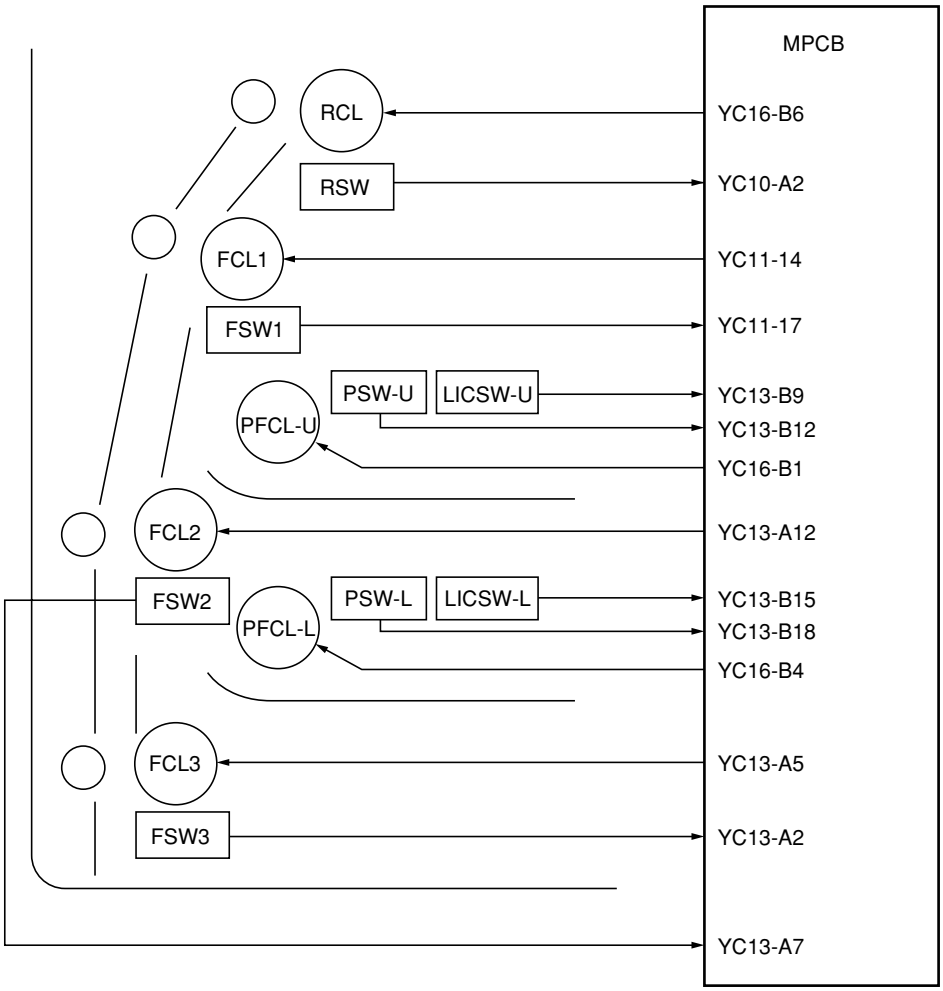


Figure 2-1-3 Paper feed section block diagram (upper and lower drawers)

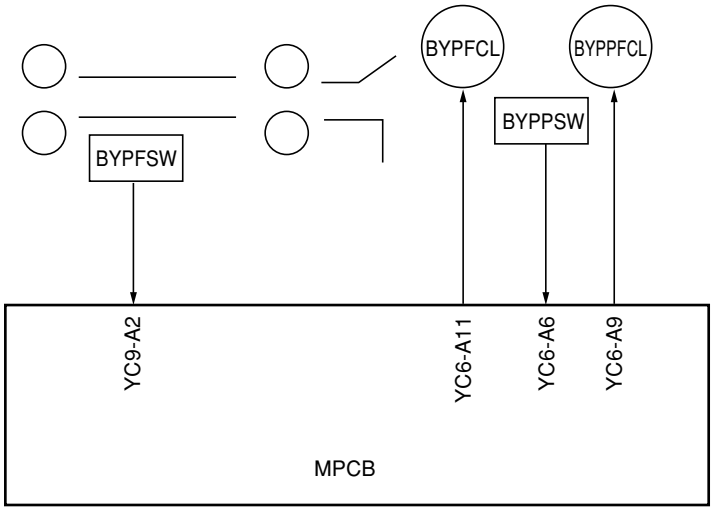
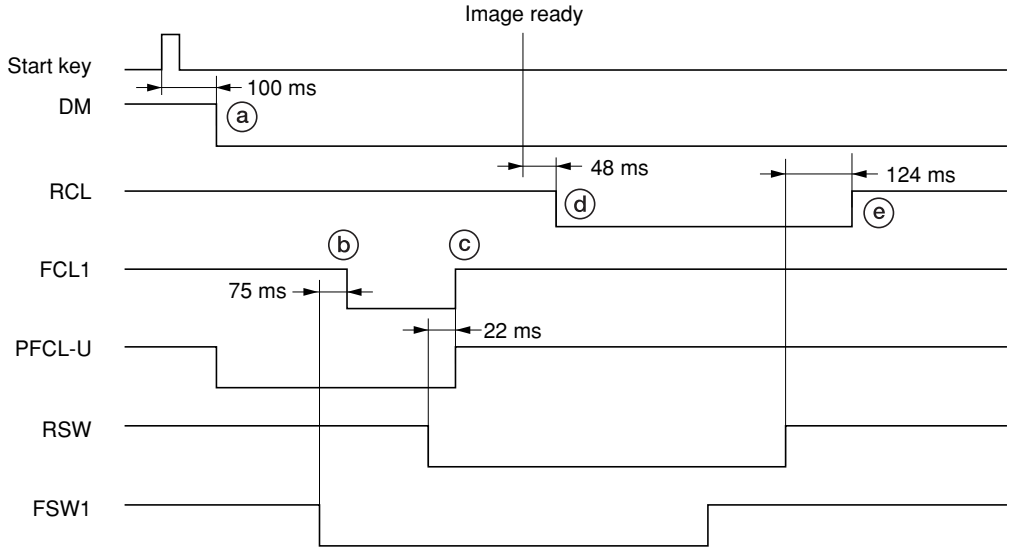
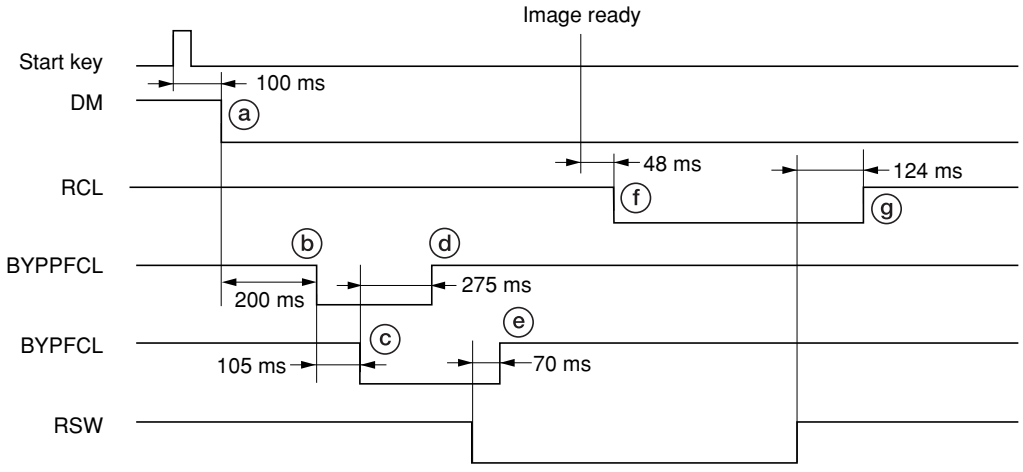


Figure 2-1-4 Paper feed section block diagram (bypass table)



Timing chart 2-1-1 Paper feed from the upper drawer

ⓐ:100 ms after the start key is pressed, the drive motor (DM) turns on to start the drive for the paper feed section. At the same time, the upper paper feed clutch (PFCL-U) turns on, and the forwarding and paper feed pulleys rotate to start primary paper feed.
ⓑ:75 ms after the leading edge of the paper turns the feed switch 1 (FSW1) on, the feed clutch 1 (FCL1) turns on and the feed roller 1 rotates.
ⓒ:22 ms after the leading edge of the paper turns the registration switch (RSW) on, the upper paper feed clutch (PFCL-U) and feed clutch 1 (FCL1) turn off.
ⓓ: 48 ms after image ready signal turns on, the registration clutch (RCL) turns on, and the right registration roller rotates to start secondary paper feed.
ⓔ: 124 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off.



Timing chart 2-1-2 Paper feed from the bypass tray

ⓐ: 100 ms after the start key is pressed, the drive motor (DM) turns on to start the drive for the paper feed section.
ⓑ: 200 ms after the drive motor (DM) turns on, the bypass paper feed clutch (BYPPFCL) turns on.
ⓒ: 105 ms after the bypass paper feed clutch (BYPPFCL) turns on, the bypass feed clutch (BYPFCL) turns on.
ⓓ: 275 ms after the bypass feed clutch (BYPFCL) turns on, the bypass paper feed clutch (BYPPFCL) turns off.
ⓔ: 70 ms after the registration switch (RSW) turns on, the bypass feed clutch (BYPFCL) turns off.
ⓕ: 48 ms after image ready signal turns on, the registration clutch (RCL) turns on, and the right registration roller rotates to start secondary paper feed.
ⓖ:124 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off.

2-1-2 Main charging section

The main charging section consists of the main charger assembly, drum and so on. The drum is electrically charged uniformly (500 µA) by means of a grid to form a latent image on the surface.
The main charger unit charges the drum so that a latent image is formed on the surface, the shield grid ensuring the charge is applied uniformly.

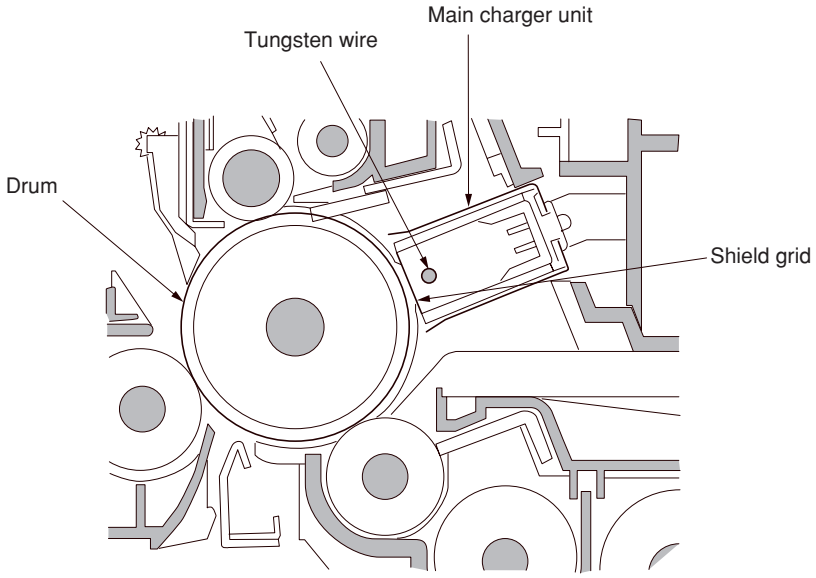


Figure 2-1-5 Main charging section

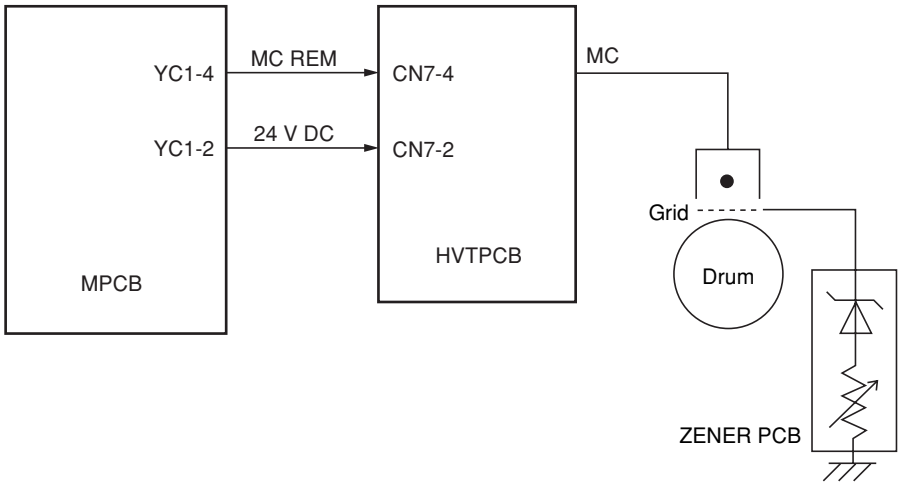
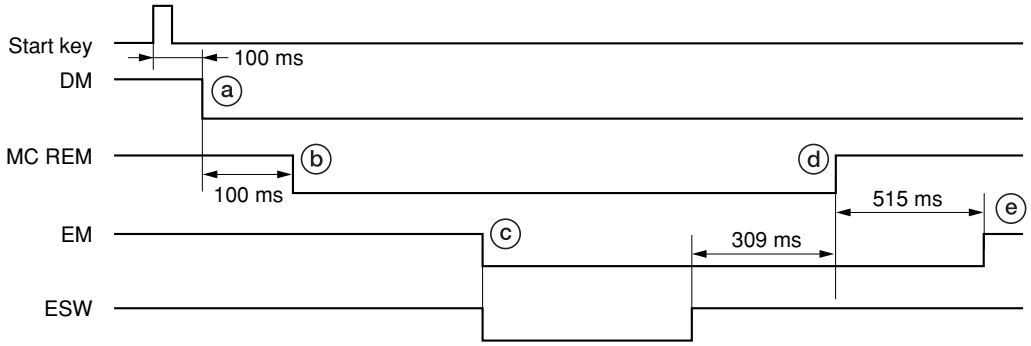


Figure 2-1-6 Main charging section block diagram



Timing chart 2-1-3 Main charging section operation

ⓐ:100 ms after the start key is pressed, the drive motor (DM) turns on.
ⓑ:100 ms after the drive motor (DM) turns on, main charging (MC REM) starts.
ⓒ:The leading edge of the paper turns on the eject switch (ESW), and at the same time the eject motor (EM) turns on.
ⓓ:309 ms after the paper is ejected and the eject switch (ESW) turns off, main charging (MC REM) ends.
ⓔ:515 ms after the end of main charging (MC REM), the eject motor (EM) turns off.

2-1-3 Optical section

The optical section consists of the scanner, mirror frame and image scanning unit for scanning and the laser scanner unit for printing.

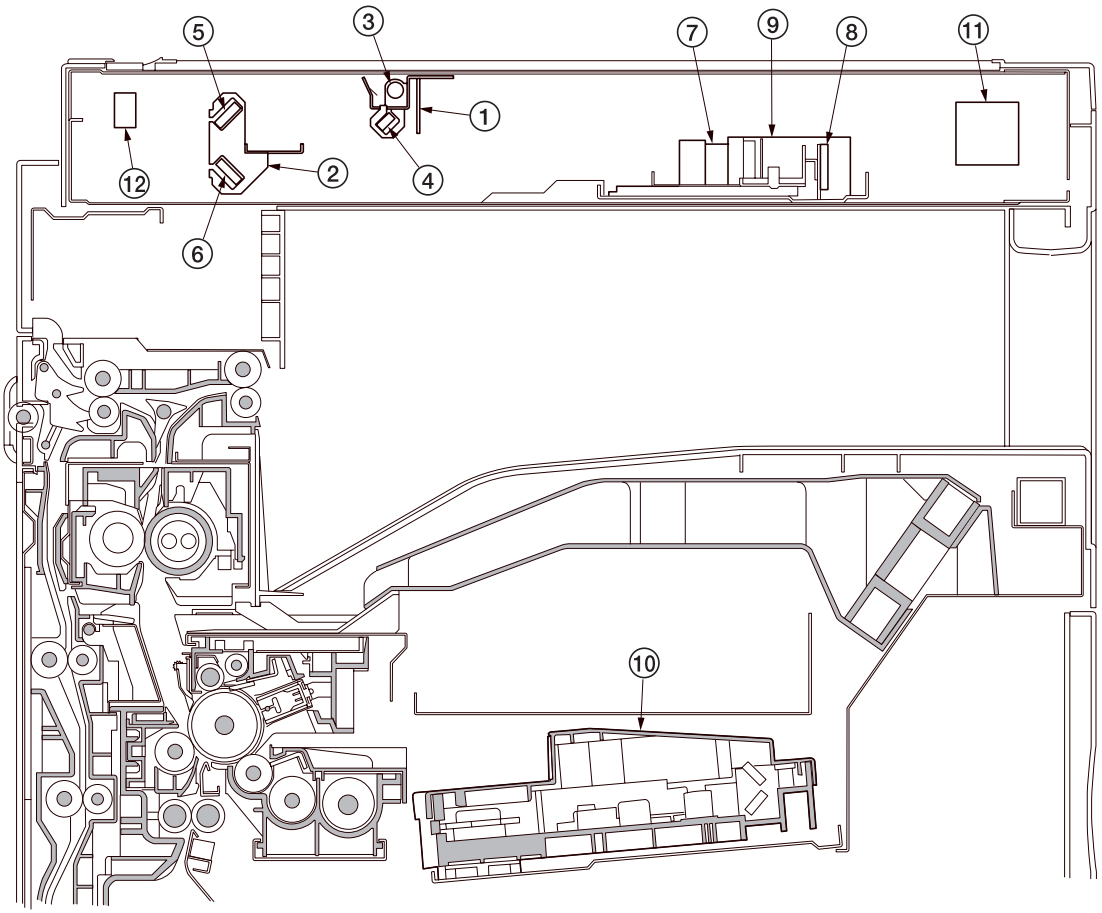


Figure 2-1-7 Optical section

① Mirror 1 frame
② Mirror 2 frame
③ Exposure lamp (EL)
④ Mirror 1
⑤ Mirror 2
⑥ Mirror 3
⑦ Lens
⑧ CCD PCB (CCDPCB)
⑨ Image scanning unit
⑩ Laser scanner unit (LSU)
⑪ Scanner motor (SM)
⑫ Scanner home position switch (SHPSW)

(1) Original scanning

The original image is illuminated by the exposure lamp (EL) and scanned by the CCD PCB (CCDPCB) in the image scanning unit via the three mirrors, the reflected light being converted to an electrical signal.
The scanner and mirror frames travel to scan on the optical rails on the front and rear of the machine to scan from side to side. The speed of the mirror frames is half the speed of the scanner.
When the DF* is used, the scanner and mirror frames stop at the DF original scanning position to start scanning.
* Optional.

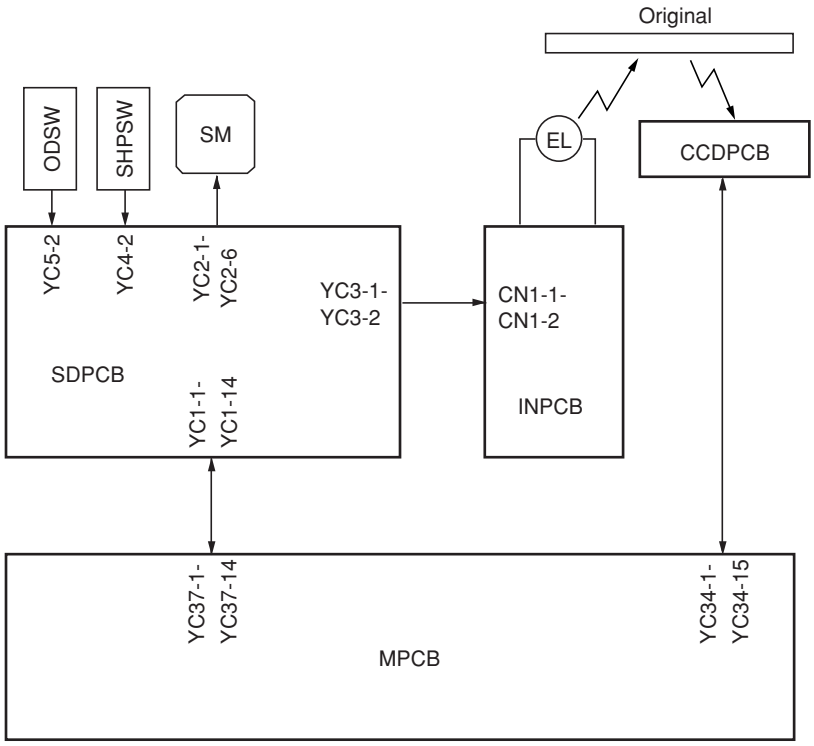
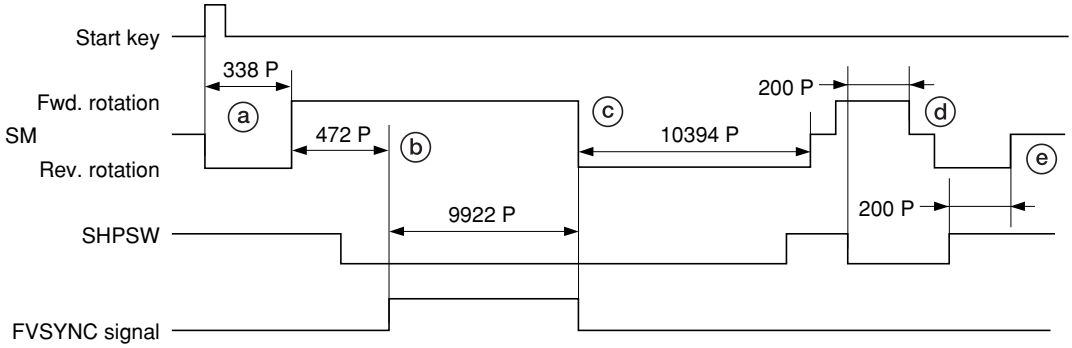


Figure 2-1-8 Optional section block diagram



Timing chart 2-1-4 Scanner operation

ⓐ: When the start key is pressed, the scanner motor (SM) reverses for 338 pulses and then rotates forward.
ⓑ: 472 pulses after the scanner motor (SM) starts rotating forward, the FVSYNC signal turns on for 9922 pulses for scanning.
ⓒ: The scanner motor (SM) reverses for 10394 pulses and then rotates forward.
ⓓ: 200 pulses after the scanner home position switch (SHPSW) turns on, the scanner motor (SM) reverses.
ⓔ: 200 pulses after the scanner home position switch (SHPSW) turns off, the scanner motor (SM) turns off, and the scanner stops at its home position.

(2) Image printing

The image data scanned by the CCD PCB (CCDPCB) is processed on the main PCB (MPCB) and transmitted as image printing data to the laser scanner unit (LSU). By repeatedly turning the laser on and off, the laser scanner unit forms a latent image on the drum surface.

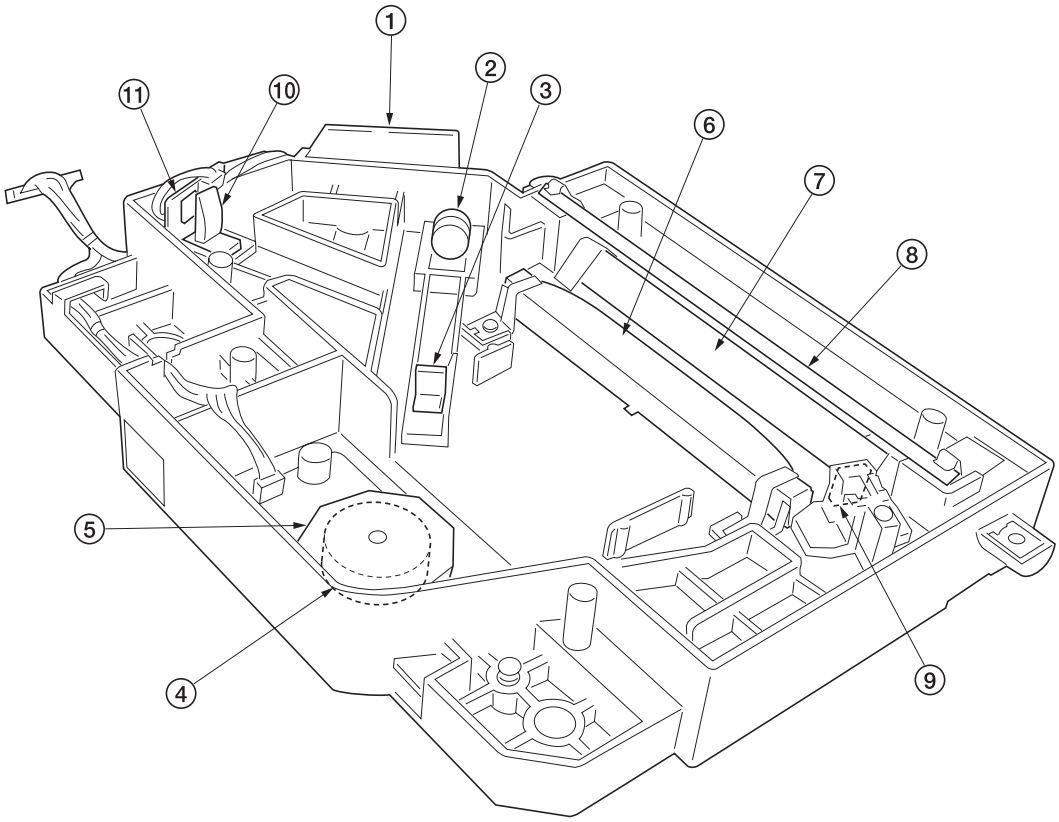


Figure 2-1-9 Laser scanner unit (1)

① Laser diode PCB (LDPCB)
② Collimator lens
③ Cylindrical lens
④ Polygon motor (PM)
⑤ Polygon mirror
⑥ fθ lens
⑦ Mirror
⑧ Mirror
⑨ BD sensor mirror
⑩ Cylindrical correcting lens
⑪ BD sensor

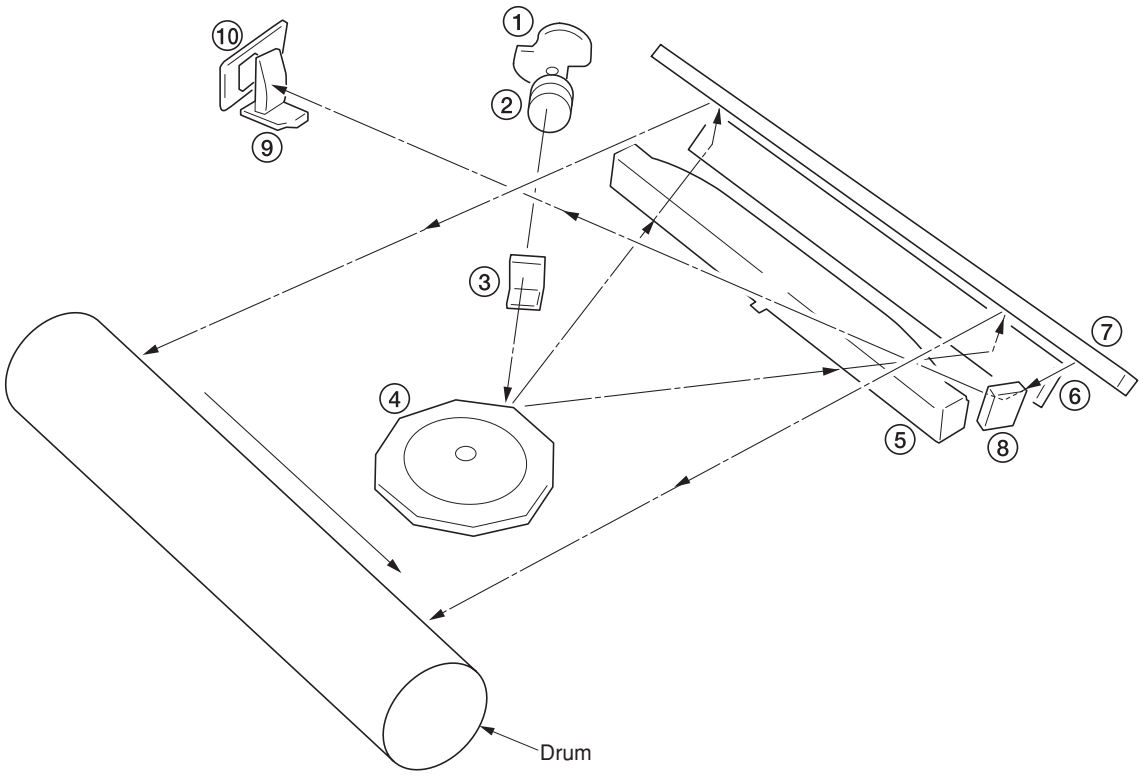


Figure 2-1-10 Laser scanner unit (2)

① Laser diode: Generates the laser beam which forms a latent image on the drum.
② Collimator lens: Collimates the diffused laser beam emitted from the laser diode to convert it into a cylindrical beam.
③ Cylindrical lens: Shapes the collimated laser beam to suit the printing resolution.
④ Polygon mirror: Six-facet mirror that rotates at approximately 28031 rpm with each face reflecting the laser beam toward the drum for one main-direction scan.
⑤ fθ lens: Corrects for non-linearity of the laser beam scanning speed on the drum surface, keeps the beam diameter constant and corrects for the vertical alignment of the polygon mirror to ensure that the focal plane of the laser beam is on the drum surface.
⑥ Mirror: Reflects the laser beam and changes the irradiation direction.
⑦ Mirror: Reflects the laser beam and changes the irradiation direction.
⑧ BD sensor mirror: Reflects the laser beam to the BD sensor to generate the main-direction (horizontal) sync signal.
⑨ Cylindrical correcting lens: Corrects for the deviation of the laser beam reflected by the BD sensor mirror to the BD sensor.
⑩ BD sensor: Detects the beam reflected by the BD sensor mirror, outputting a signal to the main PCB (MPCB) to provide timing for the main-direction sync signal.

The dimensions of the laser beam are as shown in Figure 2-1-11.

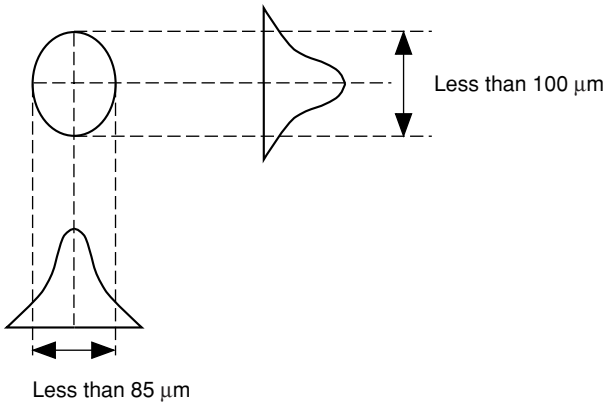


Figure 2-1-11

Scanning in the main direction is provided by the rotating polygon mirror, while scanning in the auxiliary direction is provided by the rotating drum, forming a static latent image on the drum.
The static latent image of the letter “A”, for example, is formed on the drum surface as shown in Figure 2-1-12. Electrical charge is dissipated on the area of the drum surface irradiated by the laser.
The focal point of the laser beam is moved line by line, and adjacent lines slightly overlap each other.

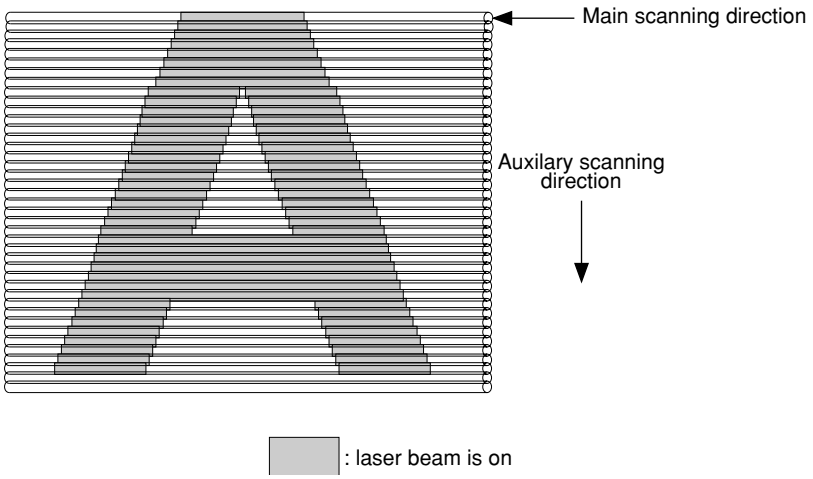
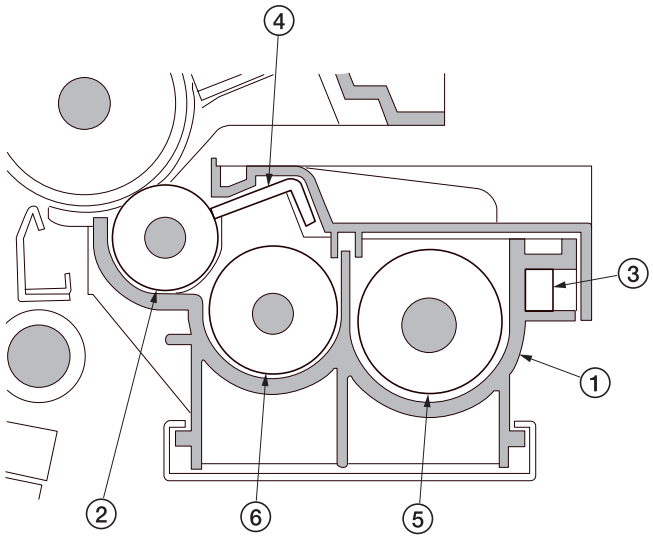


Figure 2-1-12

2-1-4 Developing section

The developing section consists of the developing unit and the toner container.
The developing unit consists of the developing roller where a magnetic brush is formed, the doctor blade and the developing spirals that agitate the toner.
When the toner sensor (TNS) detects a low toner level in the developing unit, the toner replenishment signal is output to the main PCB (MPCB). The main PCB (MPCB) that has received the signal turns on the toner replenishment solenoid (TNFSOL) and replenishes toner from the toner container to the developing unit.
Also, the toner container sensor (TCS) checks whether or not toner remains in the toner container.



① Developing unit housing
② Developing roller
③ Toner sensor (TNS)
④ Doctor blade
⑤ Right developing spiral
⑥ Left developing spiral

Figure 2-1-13 Developing section

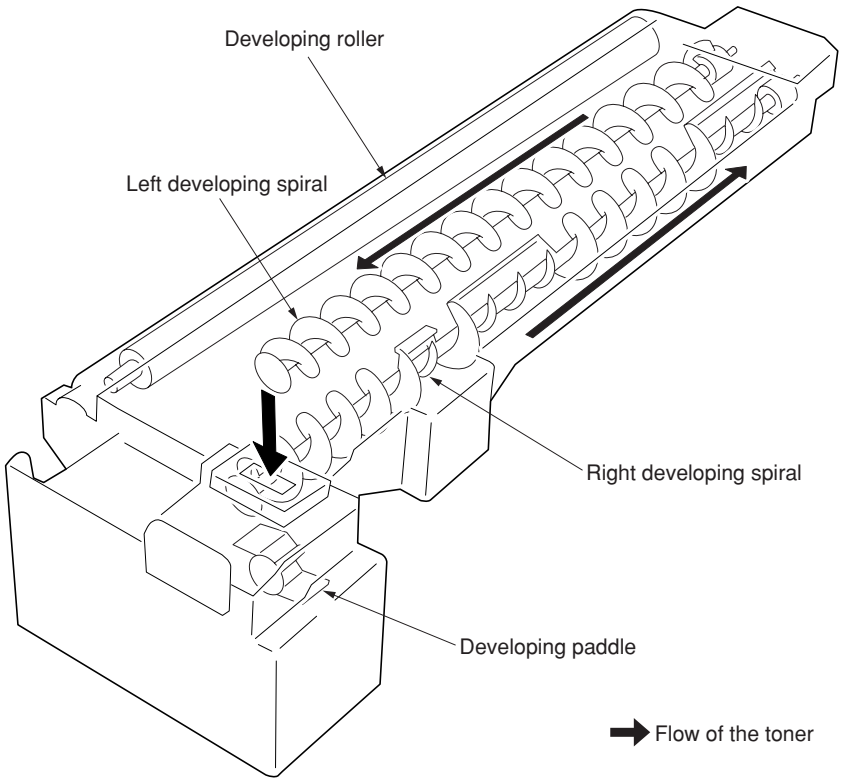
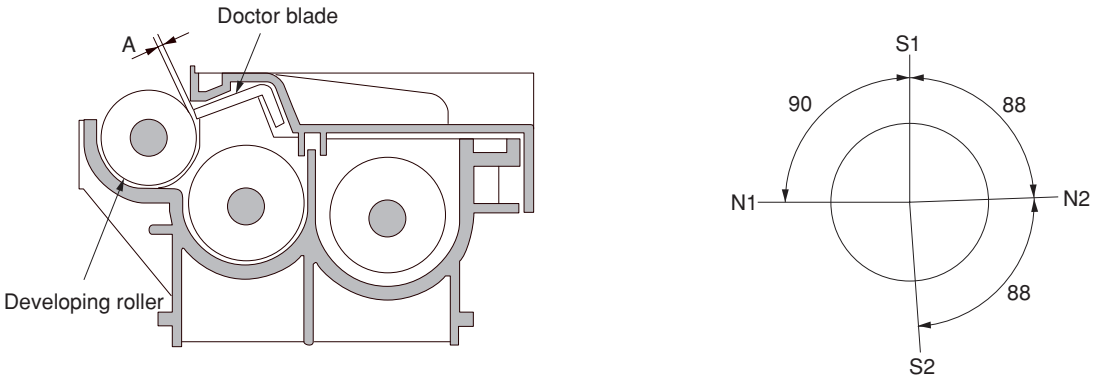


Figure 2-1-14 Flow of the toner

(1) Formation of magnetic brush

The developing roller consists of a magnet roller with four poles and a sleeve roller. Rotation of the sleeve roller around the magnet roller entrains toner, which in turn forms a magnetic brush at pole N1 on the magnet roller. The height of the magnetic brush is regulated by the doctor blade; the developing result is affected by the position of the poles on the magnet roller and the position of the doctor blade.
A developing bias voltage generated by the high-voltage transformer PCB (HVTPCB) is applied to the developing roller to provide image contrast.



A: Distance between the doctor blade and developing roller; 0.23 to 0.35 mm

N1:870 × 10^{-4}T
N2:420 × 10^{-4}T
S1:700 × 10^{-4}T
S2:910 × 10^{-4}T

Figure 2-1-15 Forming a magnetic brush

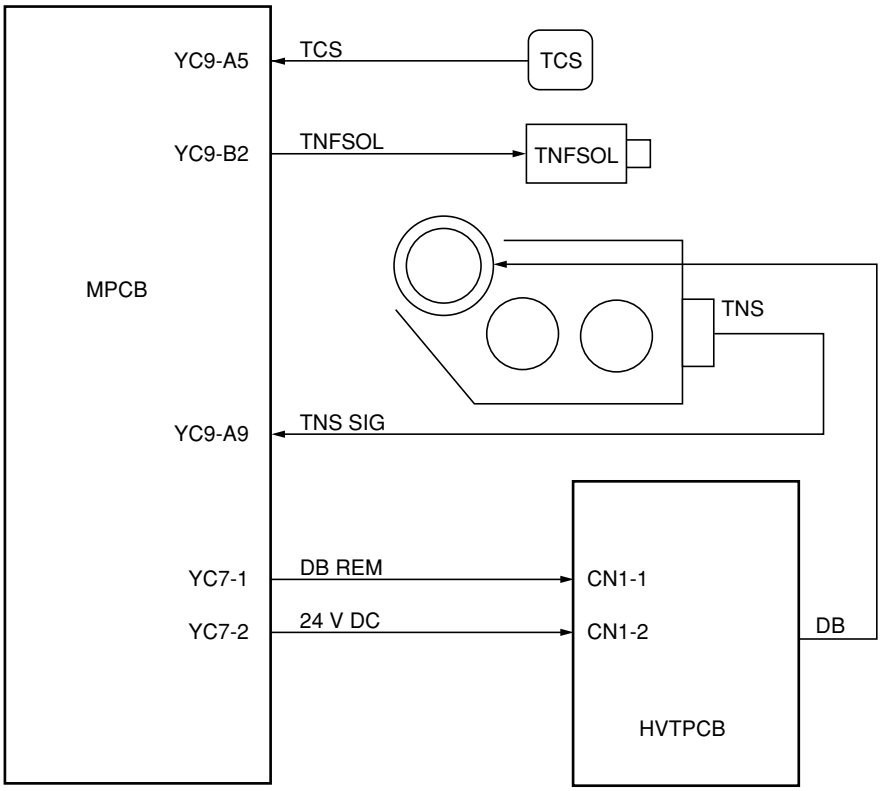


Figure 2-1-16 Developing section block diagram

(2) Computing the absolute humidity
The humidity sensor (HUMSENS) converts the relative humidity detected by the humidity sensing element into a voltage and sends it to the main PCB (MPCB). The main PCB (MPCB) computes the absolute humidity based on this HUMSENS signal and the temperature (ETTH signal) detected by the external temperature thermistor (ETTH).

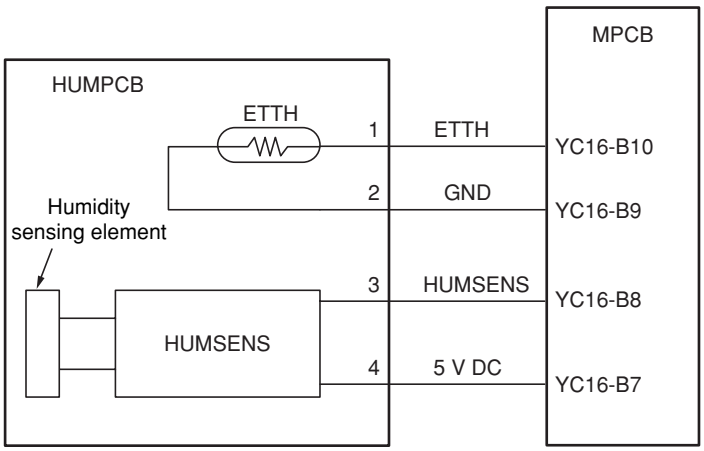


Figure 2-1-17 Absolute humidity computation block diagram

(3) Single component developing system

This machine uses the single component developing system, and reversal processing is performed with a + charged drum (a-Si) and a + charged magnetic toner.

With the single component developing system, toner is electrically charged by friction with the developing sleeve and + charged when it passes through the magnetic doctor blade. The toner that has passed through the magnetic doctor blade forms a uniform layer on the developing sleeve. When the toner layer comes to the location where the developing sleeve is the nearest to the drum, toner moves between the drum and the developing sleeve by an electric field of the magnetic pole. Then, when the developing sleeve rotates and passes through the nearest location to the drum, on the portion of the drum that has been exposed to light, toner is attracted toward the drum by potential difference between the developing bias and the drum surface and development is performed. On the other hand, on the portion of the drum that has not been exposed to light, toner is attracted toward the sleeve and development is not performed. When toner comes to an area where the gap between the drum and the developing sleeve is large, an electric field disappears and toner does not leave the developing sleeve. Development is complete.

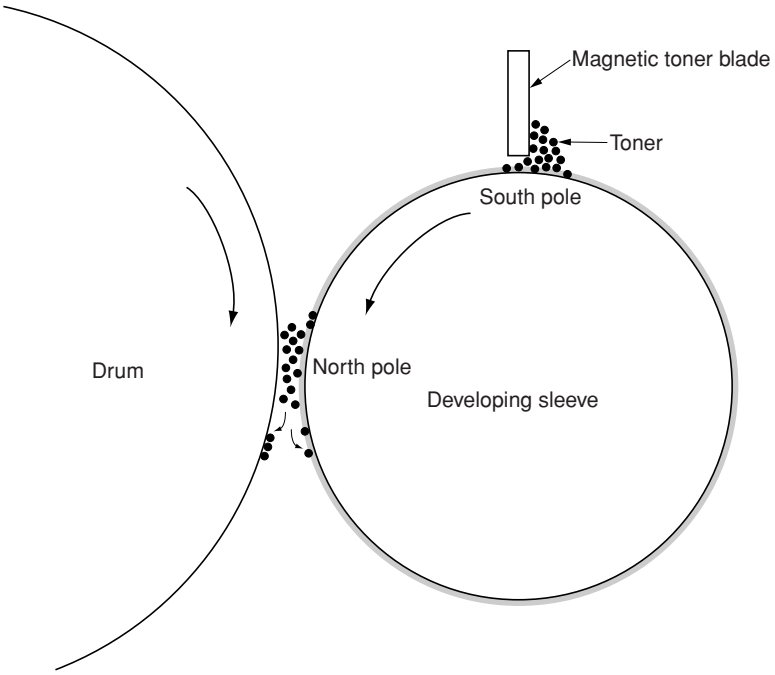


Figure 2-1-18 Single component developing system

Developing bias parameters
For the bias to the developing sleeve, an alternating current (AC) is applied. Parameters for the developing bias are shown below.

Vp-p: Difference between the maximum and the minimum of applied voltage
1.72 kV (fixed)
Vf: Frequency
Typically 2.6 kHz. This value varies depending on the preset value of the drum surface potential and the environmental correction. (Can be adjusted with the maintenance item U101.)
Duty: Ratio of time where + voltage is applied in a cycle
Typically 45%. This value varies depending on the preset value of the drum surface potential and the environmental correction. (Can be adjusted with the maintenance item U101.)
Vde: Developing shift bias potential
160 V (Can be changed to 180 V with the maintenance item U101)

Supplementation
V0: Drum surface potential on non-image area (area not exposed to light)
VL: Drum surface potential on image area (area exposed to light)

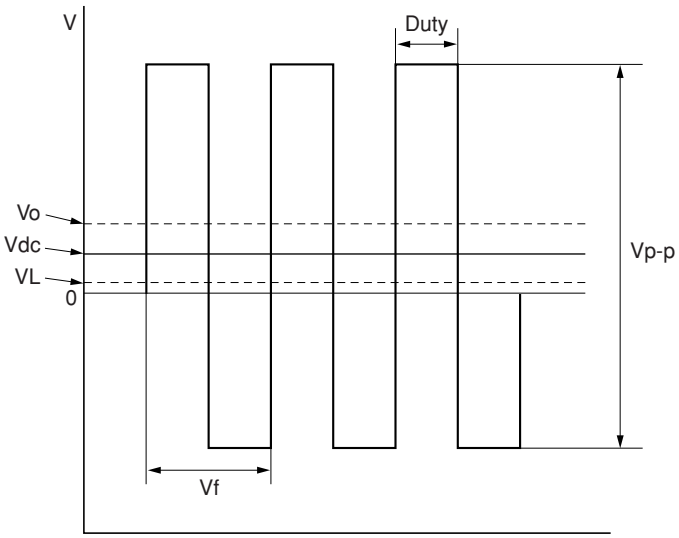


Figure 2-1-19 Developing bias waveform

2-1-5 Transfer and separation sections

The transfer and separation section consists mainly of the transfer roller, separation electrode and drum separation claws.
A high voltage generated by the high-voltage transformer PCB (HVTPCB) is applied to the transfer roller for transfer charging (100 µA).
aper after transfer is separated from the drum by applying separation bias that is output from the high-voltage transformer PCB (HVTPCB) to the separation electrode (60 or 10 µA depending on the paper).

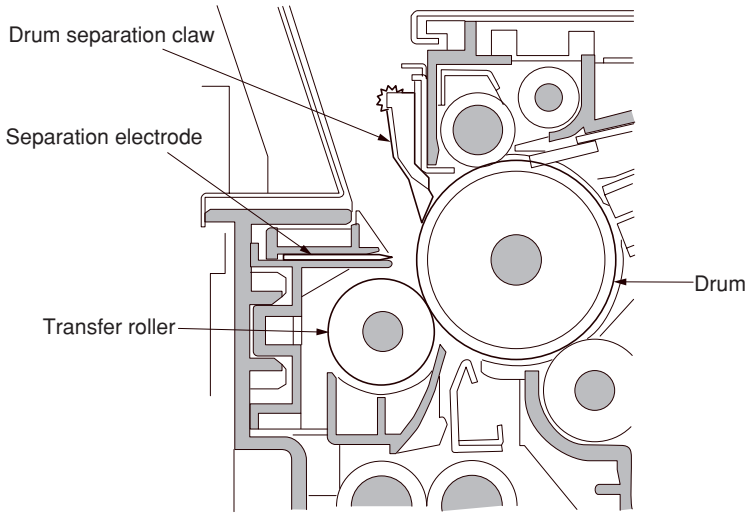


Figure 2-1-20 Transfer and separation sections

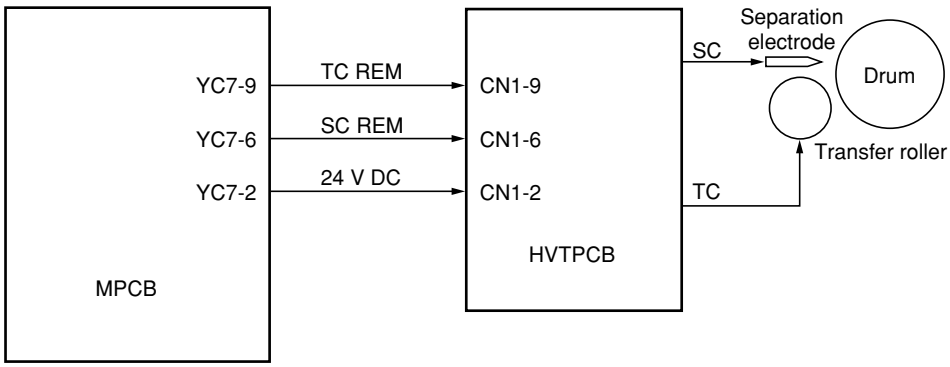
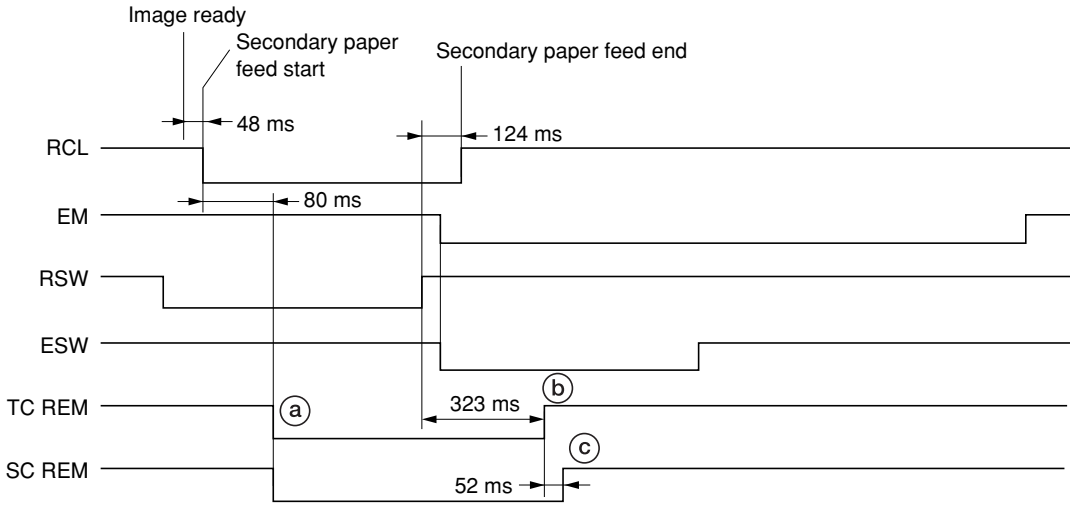


Figure 2-1-21 Transfer and separation sections block diagram



Timing chart 2-1-5 Transfer and separation sections operation

ⓐ: 80 ms after the registration clutch (RCL) turns on to start secondary paper feed, transfer charging (TC REM) starts. Also separation bias (SC REM) turns on.
ⓑ: 323 ms after the trailing edge of the paper turns the registration switch (RSW) off, transfer charging (TC REM) ends.
ⓒ: 52 ms after transfer charging (TC REM) ends, separation bias (SC REM) turns off.

2-1-6 Cleaning and charge erasing sections

The cleaning section consists of the cleaning blade that removes residual toner from the drum surface after the transfer process, and the cleaning spiral that carries the residual toner back to the waste toner tank.
The cleaning lamp (CL) consists of LEDs and removes residual charge on the drum before main charging.
Also the toner quantity in the waste toner tank is sensed with the overflow sensor (OFS).

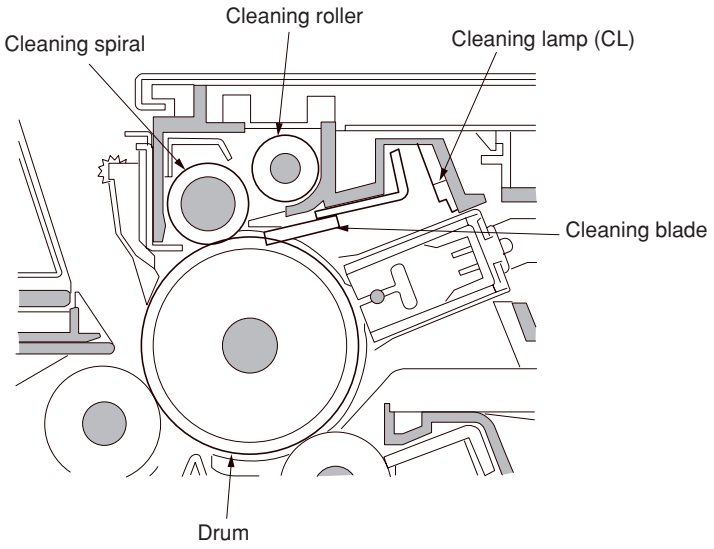


Figure 2-1-22 Cleaning and charge erasing sections

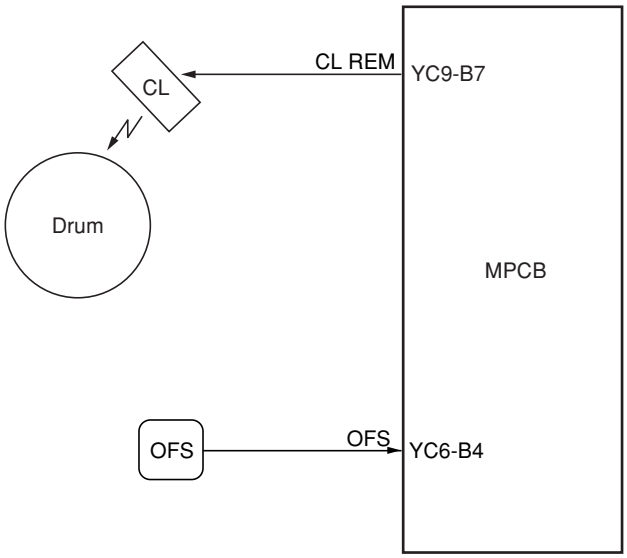
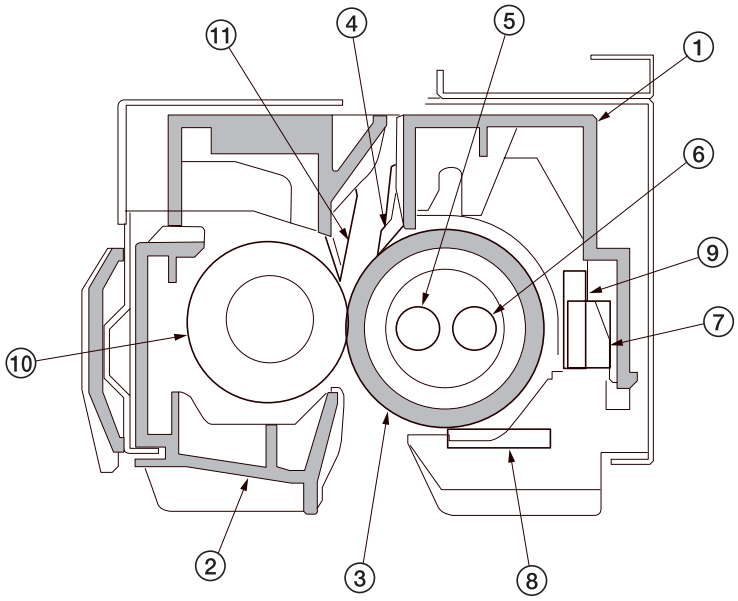


Figure 2-1-23 Cleaning and charge erasing sections block diagram

2-1-7 Fixing section

The fixing section consists of the parts shown in Figure 2-1-24. When paper reaches the fixing section after the transfer process, it passes between the press roller and heat roller, which is heated by fixing heaters M or S (FH-M or FH-S). Pressure is applied by the fixing unit pressure springs so that the toner on the paper is melted, fused and fixed onto the paper. The heat roller is heated by fixing heaters M or S (FH-M or FH-S) inside it; its surface temperature is detected by the fixing unit thermistor 1 and 2 (FTH1,2), and is regulated by the fixing heaters turning on and off.
If the fixing section becomes abnormally hot, fixing unit thermostat (FTS) operates shutting the power to the fixing heaters off. When the fixing process is completed, the paper is separated from the heat roller by its separation claws and is conveyed from the copier to eject and switchback section.



① Upper fixing unit cover
② Fixing housing
③ Heat roller
④ Heat roller separation claw
⑤ Fixing heater M (FH-M)
⑥ Fixing heater S (FH-S)
⑦ Fixing unit thermostat (FTS)
⑧ Fixing unit thermistor 1 (FTH1)
⑨ Fixing unit thermistor 2 (FTH2)
⑩ Press roller
⑪ Press roller separation claw

Figure 2-1-24 Fixing section

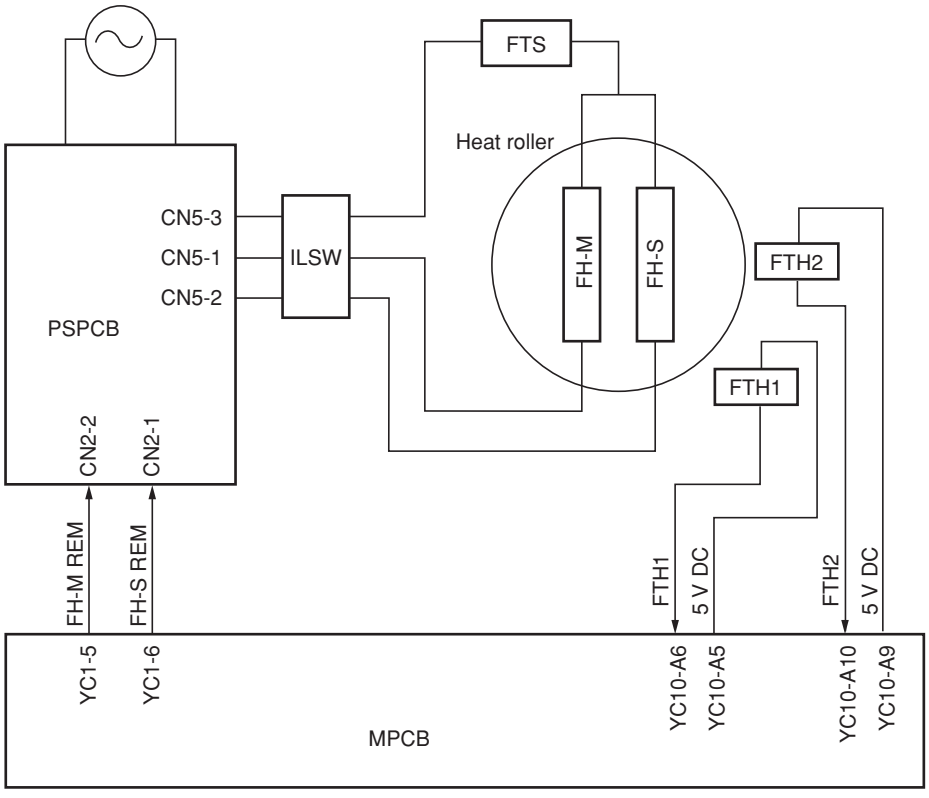
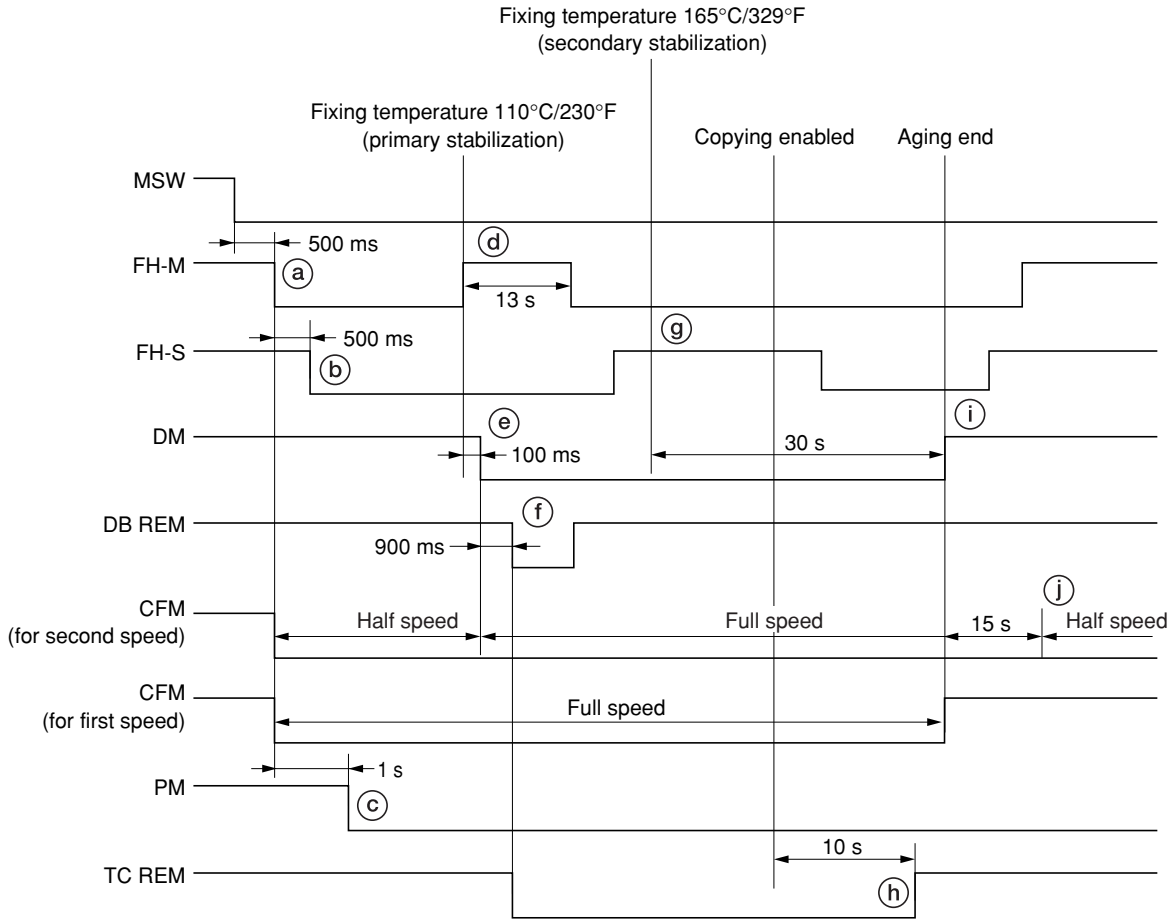


Figure 2-1-25 Fixing section block diagram



Timing chart 2-1-6 Fixing section operation

ⓐ: 500 ms after the main switch (MSW) is turned on, fixing heater M (FH-M) turns on to heat the heat roller. At the same time, cooling fan motor (CFM) turns on.
* The fan motor for second speed rotates at half speed and the motor for first speed rotates at full speed.
ⓑ: 500 ms after fixing heater M (FH-M) turns on, fixing heater S (FH-S) turns on.
ⓒ: 1 s after fixing heater M (FH-M) turns on, the polygon motor (PM) of the laser scanner unit turns on.
ⓓ: When the fixing temperature reaches 110°C/230°F, the copier enters primary stabilization, and fixing heater M (FH-M) turns off temporarily and turns on again after 13 s.
ⓔ: 100 ms after the primary stabilization, the drive motor (DM) turns on. Also the cooling fan motor (for second speed) switches to full speed rotation.
ⓕ: 900 ms after the drive motor (DM) turns on, the developing bias (DB REM) turns on and at the same time transfer charging (TC REM) starts.
ⓖ: When the fixing temperature reaches 165°C/329°F, the copier enters secondary stabilization. Fixing heaters M and S (FH-M and FH-S) are turned on and off to keep the fixing temperature at 165°C/329°F and aging starts.
ⓗ: 10 s after copying is enabled, transfer charging (TC REM) ends.
ⓘ: 30 s after the secondary stabilization, the drive motor (DM) turns off and the aging ends.
ⓙ: 15 s after the drive motor (DM) turns off, the cooling fan motor (for second speed) switches to half speed rotation.

2-1-8 Eject and switchback sections

The eject and switchback sections eject paper on which fixing has ended with the eject roller that is rotated by forward rotation of the eject motor.
In duplex copying, paper is turned over by reverse rotation of the eject motor. When paper is transferred to the job separator or the internal finisher, the feedshift solenoid (FSSOL) is turned on to activate the feedshift guide to switch the paper transfer path.

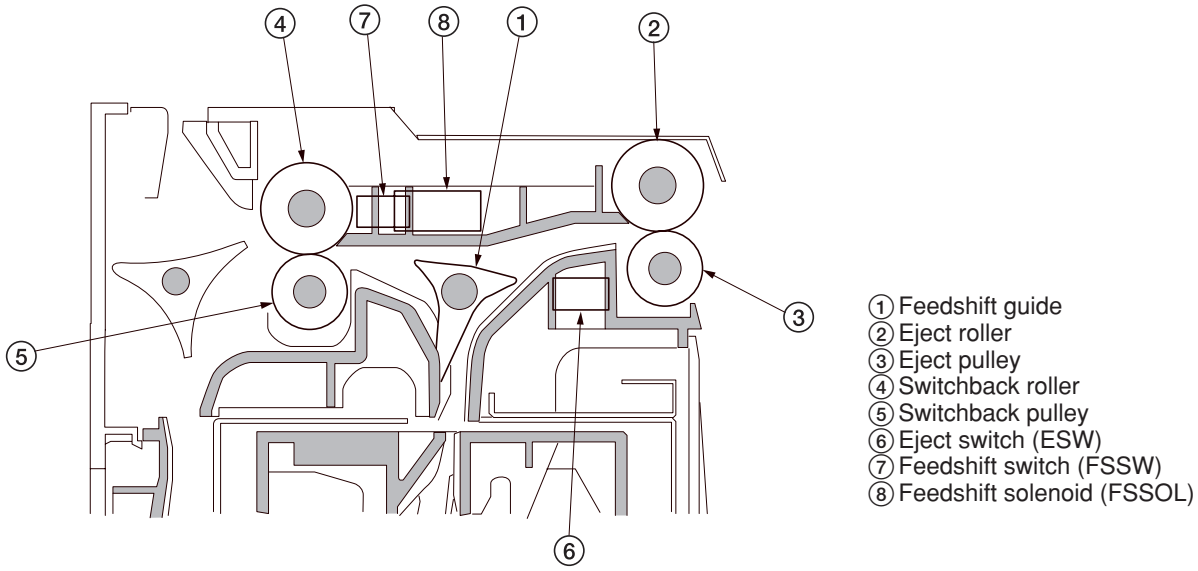


Figure 2-1-26 Eject and switchback sections

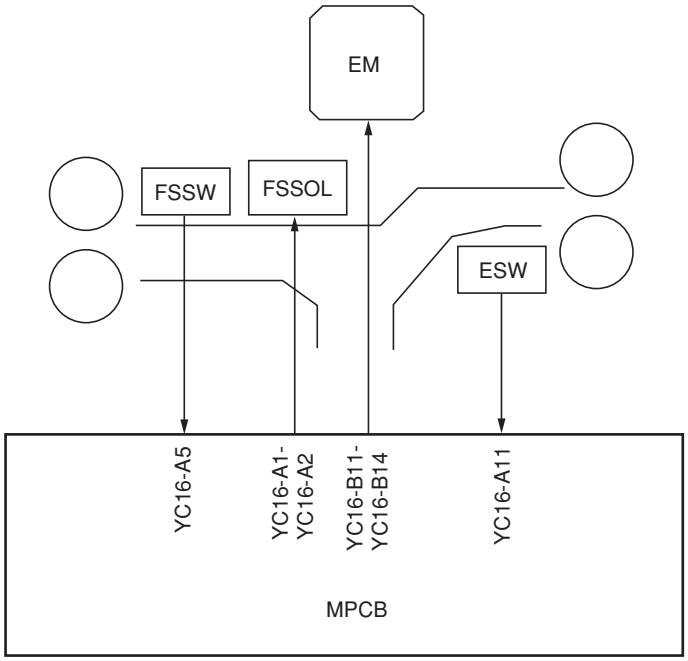
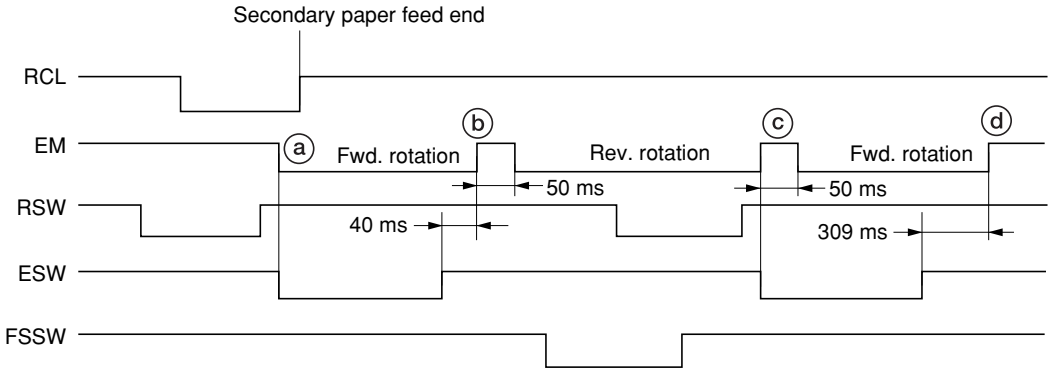


Figure 2-1-27 Eject and switchback sections block diagram

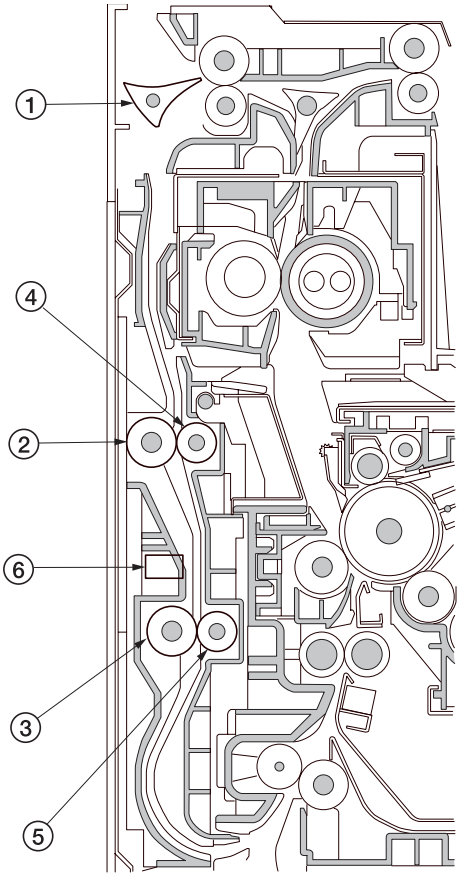


Timing chart 2-1-7 Eject and switchback sections operation

ⓐ: The leading edge of paper (front face) turns on the eject switch (ESW), and at the same time the eject motor (EM) starts forward rotation.
ⓑ: 40 ms after passing of the trailing edge of paper turns off the eject switch (ESW), the eject motor (EM) turns off for 50 ms and then starts reverse rotation.
ⓒ: The leading edge of paper (reverse face) turns on the eject switch (ESW), and at the same time the eject motor (EM) turns off for 50 ms and then starts forward rotation.
ⓓ: 309 ms after passing of the trailing edge of the paper turns off the eject switch (ESW), the eject motor (EM) turns off.

2-1-9 Duplex section

The duplex section consists of the components shown in figure. In duplex mode, after copying on to the reverse face of the paper, the paper is reversed in the switchback section and conveyed to the duplex section. The paper is then conveyed to the copier paper feed section by the upper and lower duplex feed rollers.



① Feedshift guide
② Upper duplex feed roller
③ Lower duplex feed roller
④ Duplex feed pulley
⑤ Duplex feed pulley
⑥ Duplex paper conveying switch (DUPPCSW)

Figure 2-1-28 Duplex section

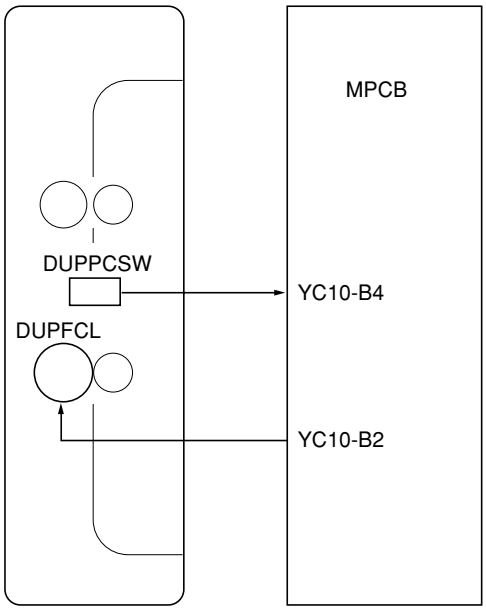


Figure 2-1-29 Duplex section block diagram

(1) Paper conveying operation in duplex copying

Paper of which copying onto the reverse side is complete is conveyed to the switchback section, the eject motor switches from nomal rotation to reverse rotation to switch the eject roller to reverse rotation, and the paper conveying direction is reversed. Paper that has been switched back is conveyed to the duplex section via the eject roller and the switchback roller. Paper that has been conveyed to the duplex section is conveyed to the paper feed section again by rotation of the upper duplex feed roller and the lower duplex feed roller and copying onto the front side is performed.

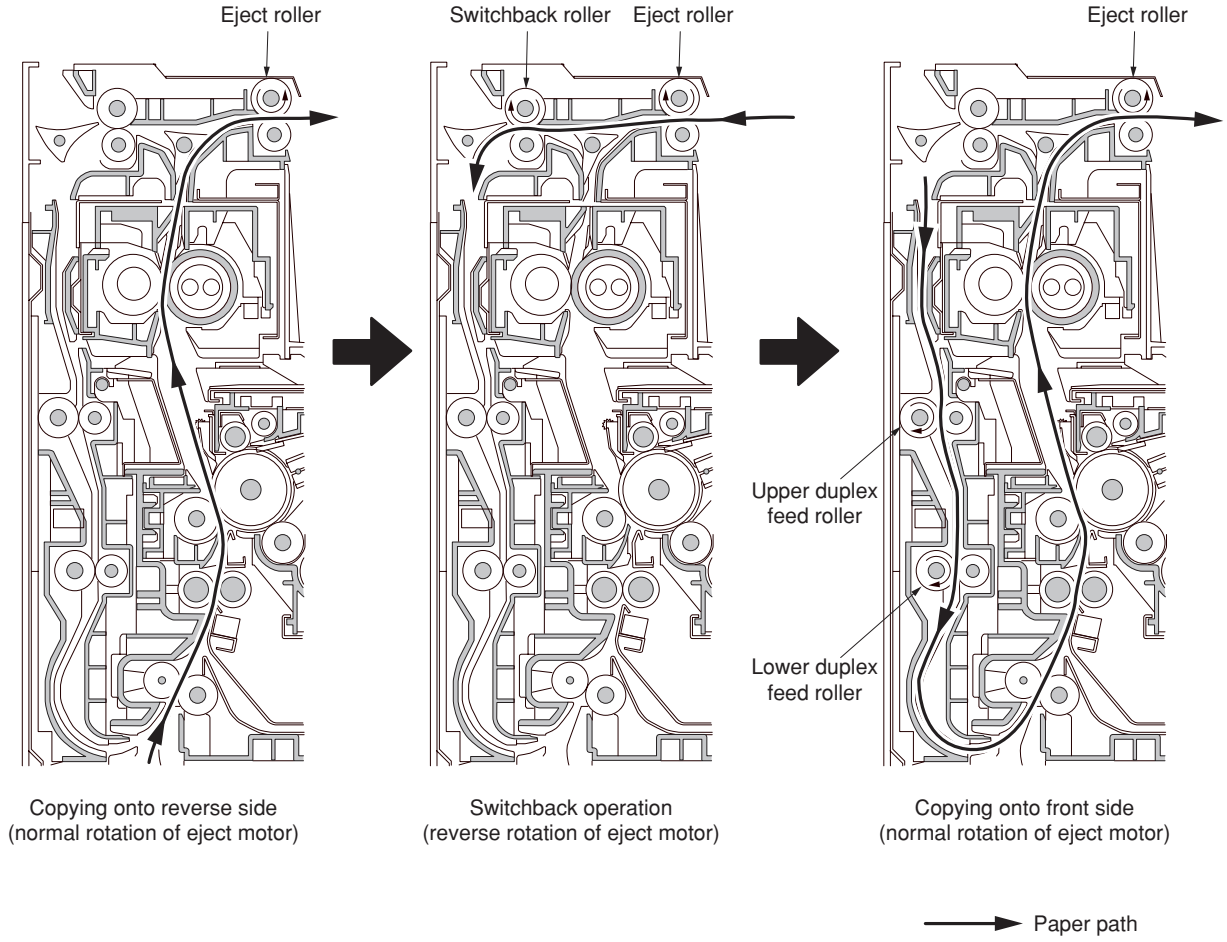


Figure 2-1-30

2-2-1 Electrical parts layout

(1) PCBs

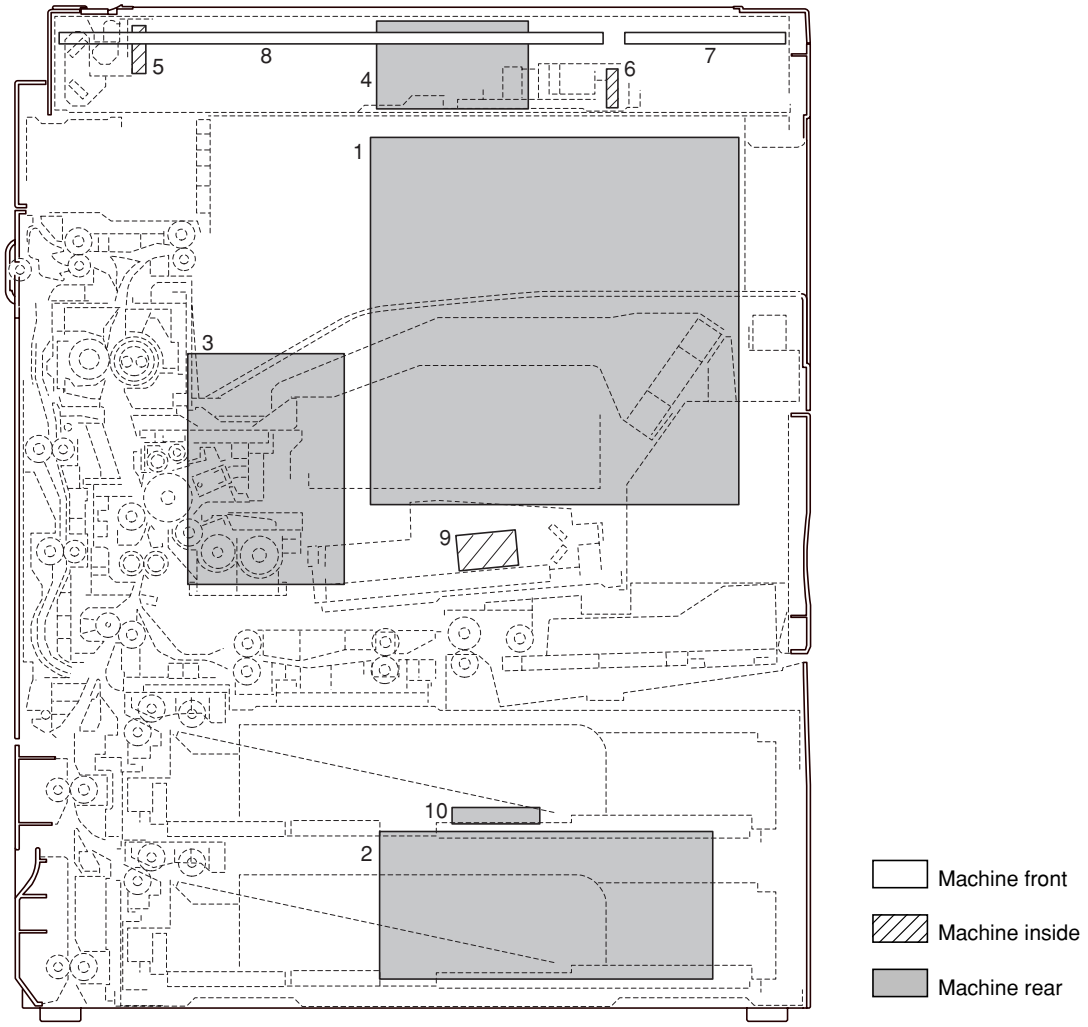


Figure 2-2-1 PCBs

1. Main PCB (MPCB) ..... Controls the other PCBs, electrical components and optional devices.
2. Power source PCB (PSPCB) ..... Generates +24 V DC, 12 V DC and 5V DC; controls the fixing heater.
3. High-voltage transformer PCB (HVTPCB) ..... Main charging. Generates developing bias and high voltages for transfer.
4. Scanner drive PCB (SDPCB) ..... Controls the scanning section.
5. Inverter PCB (INPCB) ..... Controls the exposure lamp.
6. CCD PCB (CCDPCB) ..... Reads the image off originals.
7. Right operation unit PCB (OPCB-R) ..... Consists of the operation keys and display LEDs.
8. Left operation unit PCB (OPCB-L) ..... Controls touch panel and LCD indication.
9. Laser diode PCB (LDPCB) ..... Generates and controls the laser light.
10. Noise filter PCB (NFPCB) ..... Reducts the noise.

(2) Switches and sensors

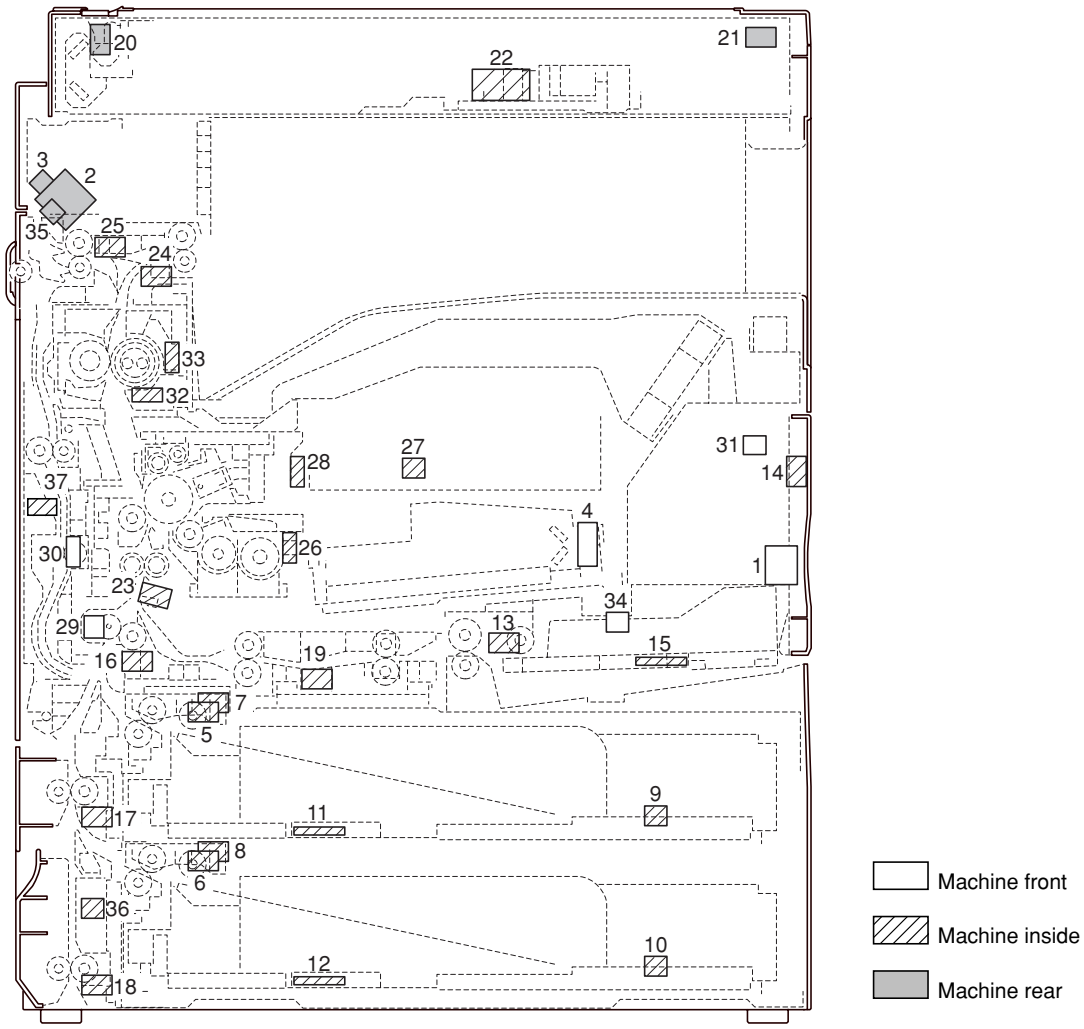


Figure 2-2-2 Switches and sensors

1. Power switch (PSW) ..... Turns the AC power on and off.
2. Interlock switch (ILSW) ..... Turns the AC power for the fixing heater on and off.
3. Safety switch 1 (SSW1) ..... Breaks the safety circuit when the front cover is opened.
4. Safety switch 2 (SSW2) ..... Breaks the safety circuit when the conveying unit is opened.
5. Upper paper switch (PPSW-U) ..... Detects the presence of paper in the upper drawer.
6. Lower paper switch (PPSW-L) ..... Detects the presence of paper in the lower drawer.
7. Upper lift limit switch (LICSW-U) ..... Detects the upper drawer lift reaching the upper limit.
8. Lower lift limit switch (LICSW-L) ..... Detects the lower drawer lift reaching the upper limit.
9. Upper paper size length switch (PLSW-U) ..... Detects the length of paper in the upper drawer.
10. Lower paper size length switch (PLSW-L) ..... Detects the length of paper in the lower drawer.
11. Upper paper size width switch (PWSW-U) ..... Detects the width of paper in the upper drawer.
12. Lower paper size width switch (PWSW-L) ..... Detects the width of paper in the lower drawer.
13. Bypass paper switch (BYPPSW) ..... Detects the presence of paper on the bypass tray.
14. Bypass paper size length switch (BYPPLSW) ..... Detects the length of paper on the bypass tray.

15. Bypass paper size width switch (BYPPWSW) ..... Detects the width of paper on the bypass tray.
16. Feed switch 1 (FSW1) ..... Controls feed clutch 1 drive timing.
17. Feed switch 2 (FSW2) ..... Controls feed clutch 2 drive timing
18. Feed switch 3 (FSW3) ..... Controls feed clutch 3 drive timing
19. Bypass feed switch (BYPFSW) ..... Controls bypass feed clutch drive timing
20. Scanner home position switch (SHPSW) .... Detects the optical system in the home position.
21. Original detection switch (ODSW) ..... Operates the original size detection sensor.
22. Original size detection sensor (OSDS) ..... Detects the size of the original.
23. Registration switch (RSW) ..... Controls the secondary paper feed start timing.
24. Eject switch (ESW) ..... Detects a paper misfeed in the fixing section.
25. Feedshift switch (FSSW) ..... Detects a paper misfeed in the switchback section in a duplex copy.
26. Toner sensor (TNS) ..... Detects the toner density in the developing unit.
27. Toner container detection switch (TCDSW) ..... Detects the presence of the toner container.
28. Toner container sensor (TCS) ..... Detects the quantity of toner in a toner container.
29. Toner disposal tank detection switch (TDDSW) ..... Detects the presence of the toner disposal tank.
30. Overflow sensor (OFS) ..... Detects when the toner disposal tank is full.
31. Humidity sensor (HUMSENS) ..... Detects absolute humidity.
32. Fixing unit thermistor 1 (FTH1) ..... Detects the heat roller temperature.
33. Fixing unit thermistor 2 (FTH2) ..... Detects the heat roller temperature.
34. Front cover switch (FRCSW) ..... Detects the opening and closing of the front cover.
35. Conveying cover switch (CCSW) ..... Detects the opening and closing of the conveying cover.
36. Side cover switch (SCSW) ..... Detects the opening and closing of the side cover.
37. Duplex paper conveying switch (DUPPCSW) ..... Detects a paper jam in the duplex section.

(3) Motors

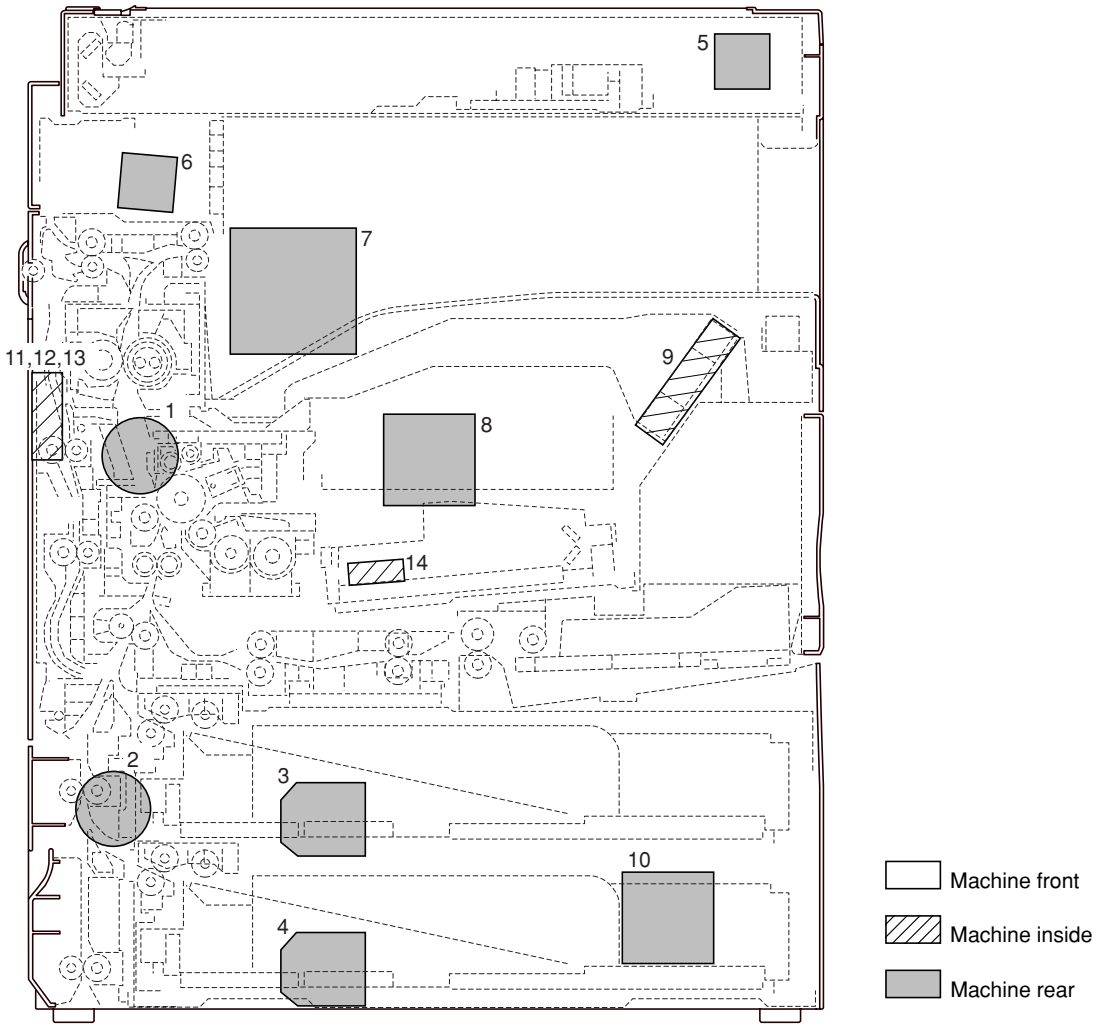


Figure 2-2-3 Motors

1. Drive motor (DM) ..... Drives the machine.
2. Paper feed motor (PFM) ..... Drives paper feed section.
3. Upper lift motor (LM-U) ..... Drives upper drawer lift.
4. Lower lift motor (LM-L) ..... Drives lower drawer lift.
5. Scanner motor (SM) ..... Drives the optical system.
6. Eject motor (EM) ..... Drives the eject section.
7. Cooling fan motor 1 (CFM1) ..... Cools the machine interior.
8. Cooling fan motor 2 (CFM2) ..... Cools the machine interior.
9. Cooling fan motor 3 (CFM3) ..... Cools the machine interior.
10. Cooling fan motor 4 (CFM4) ..... Cools the machine interior (around the power supply unit).
11. Cooling fan motor 5 (CFM5) ..... Cools the machine interior and supports paper transfer for duplex copying.
12. Cooling fan motor 6 (CFM6) ..... Cools the machine interior and supports paper transfer for duplex copying.
13. Cooling fan motor 7 (CFM7) ..... Cools the machine interior and supports paper transfer for duplex copying.
14. Polygon motor (PM) ..... Drives the polygon mirror.

(4) Other electrical components

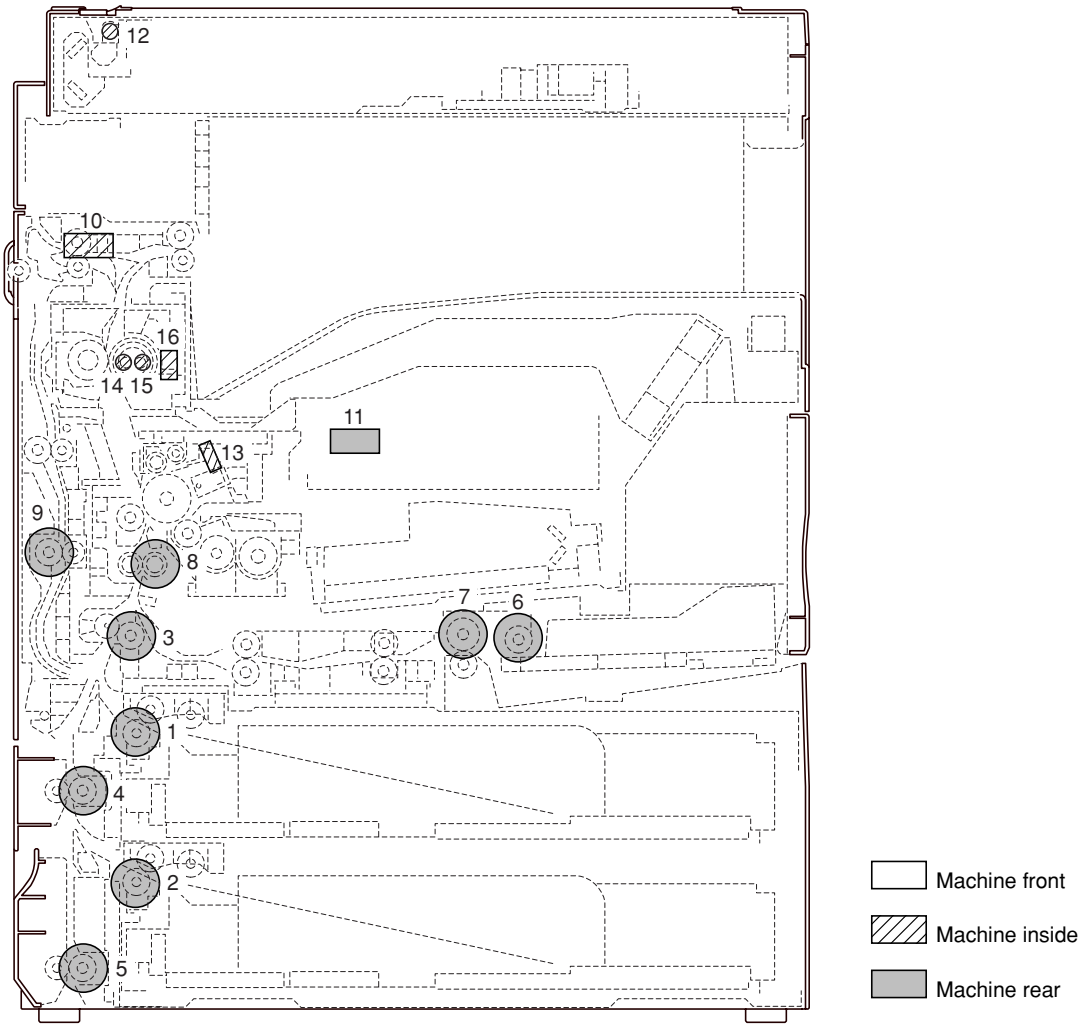


Figure 2-2-4 Other electrical components

1. Upper paper feed clutch (PFCL-U) ..... Primary paper feed from the upper drawer.
2. Lower paper feed clutch (PFCL-L) ..... Primary paper feed from the lower drawer.
3. Feed clutch 1 (FCL1) ..... Controls the drive of feed roller.
4. Feed clutch 2 (FCL2) ..... Controls the drive of feed roller.
5. Feed clutch 3 (FCL3) ..... Controls the drive of feed roller.
6. Bypass paper feed clutch (BYPPFCL) ..... Primary paper feed from the bypass tray.
7. Bypass feed clutch (BYPFCL) ..... Controls the drive of bypass feed roller.
8. Registration clutch (RCL) ..... Secondary paper feed.
9. Duplex paper feed clutch (DUPFCL) ..... Controls the drive of the duplex feed roller.
10. Feedshift solenoid (FSSOL) ..... Operates the feedshift guide.
11. Toner feed solenoid (TNFSOL) ..... Replenishes toner.
12. Exposure lamp (EL) ..... Exposes originals.
13. Cleaning lamp (CL) ..... Removes residual charge from the drum surface.
14. Fixing heater M (FH-M) ..... Heats the heat roller.
15. Fixing heater S (FH-S) ..... Heats the heat roller.
16. Fixing unit thermostat (FTS) ..... Prevents overheating in the fixing section.

2-3-1 Power source PCB

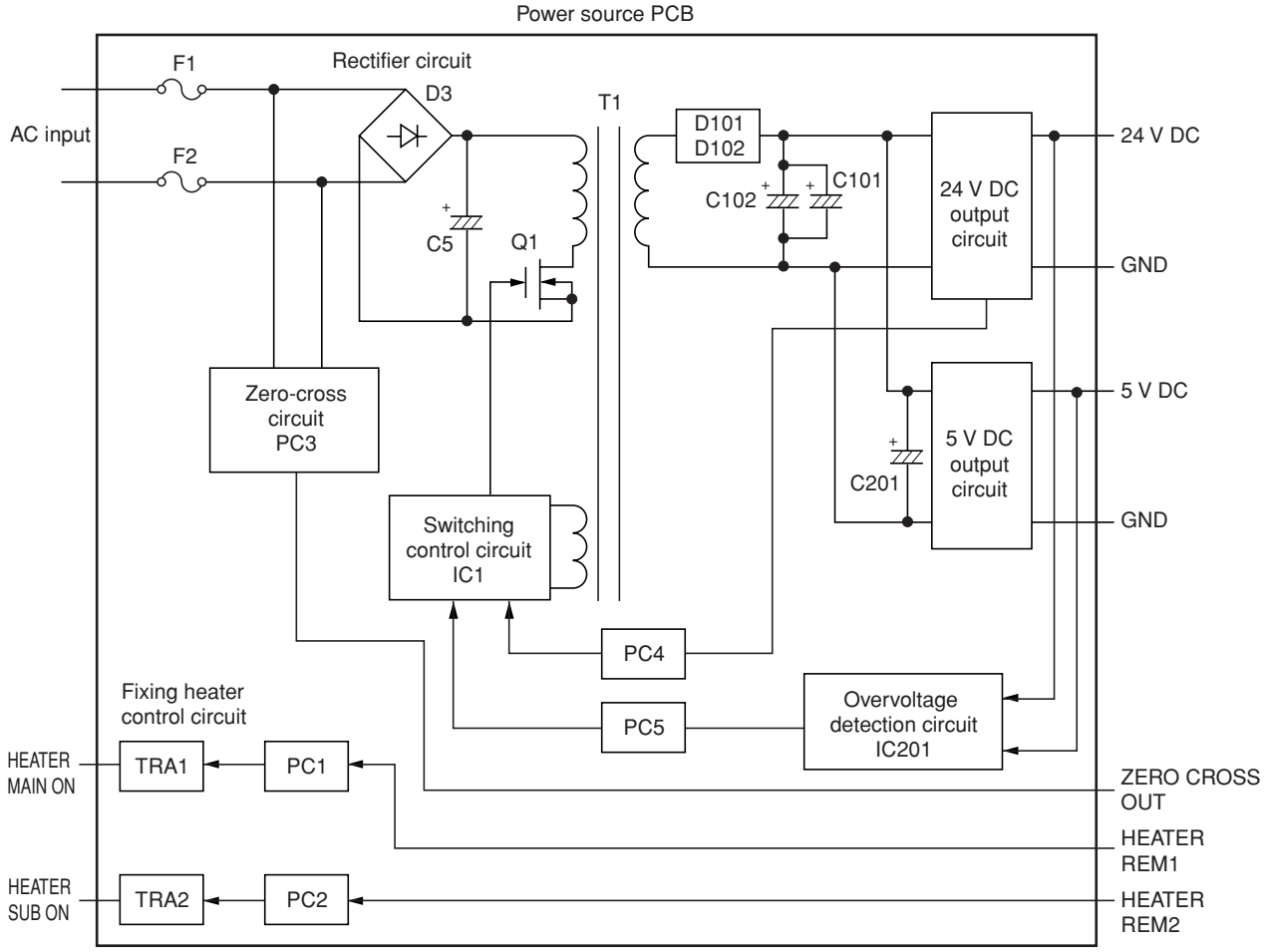


Figure 2-3-1 Power source PCB block diagram

The power source PCB (PSPCB) is a switching regulator that converts an AC input to generate 24 V DC and 5 V DC. It includes a rectifier circuit, a switching regulator circuit, a 24 V DC output circuit, a 5 V DC output circuit and a fixing heater control circuit.

The rectifier circuit full-wave rectifies the AC input using the diode bridge D3. The smoothing capacitor C5 smoothes out the pulsed current from the diode bridge.

In the switching control circuit, PWM controller IC1 turns the power MOSFET Q1 on and off to switch the current induced in the primary coil of the transformer T1.

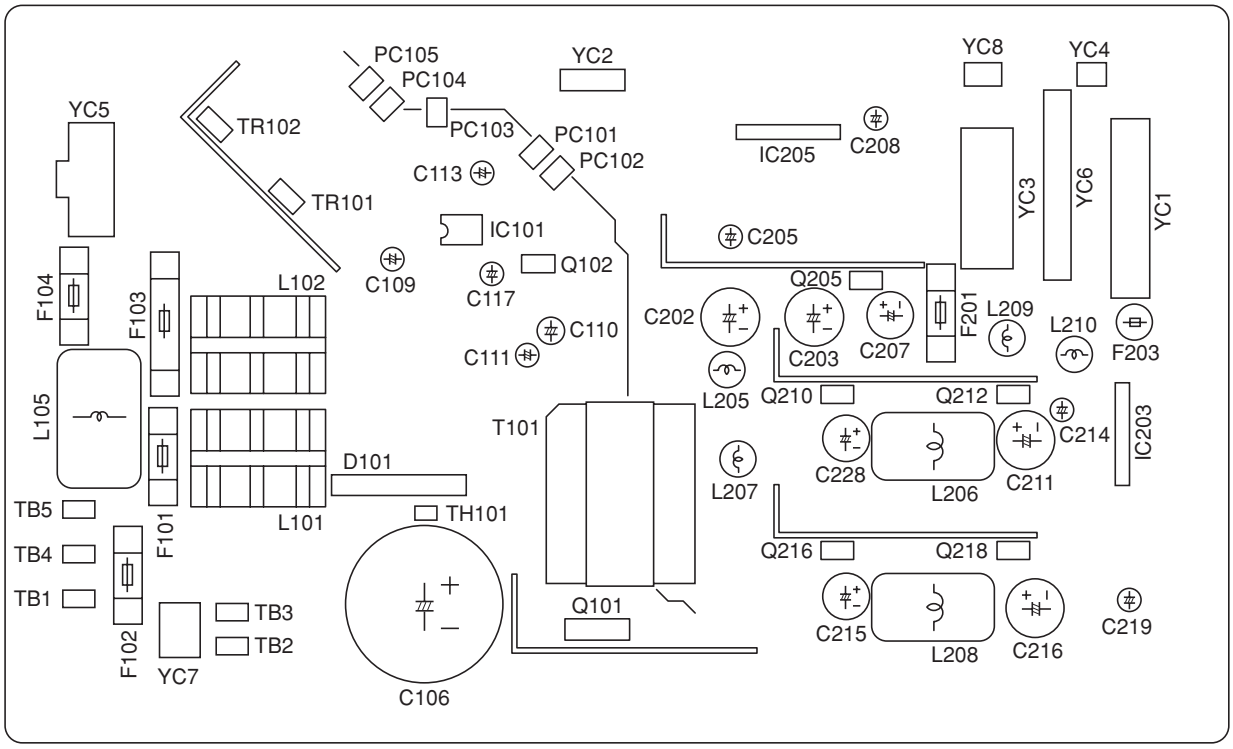
The 24 V DC output circuit smoothes the current induced in the secondary coil of the transformer T1 via diodes D101 and D102 and smoothing capacitors C101 and C102, and the output is controlled by the overvoltage detection circuit IC201 and the power MOSFET Q201. For 24 V DC output, the PWM controller IC (IC1) of the switching control circuit changes the duty of the switching pulse width of the power MOSFET Q1 via a photo coupler PC4 based on the output voltage status to adjust the 24 V DC output.

The 5 V DC output circuit smoothes the current induced in the secondary coil of the transformer T1 via diodes D101 and D102 and smoothing capacitors C101 and C102, and the output is controlled by the overvoltage detection circuit IC201 and the power MOSFET Q201. For 5 V DC output, the PWM controller IC (IC1) of the switching control circuit changes the duty of the switching pulse width of the power MOSFET Q1 via a photo coupler PC5 based on the output voltage status to adjust the 5 V DC output.

The overvoltage detection circuit IC201 monitors the overvoltage status of 24 V DC and 5 V DC, and when it detects an abnormal status, it gives immediately feedback to the PWM controller IC (IC1) via a photocoupler PC5 to stop control operation and moves the power source to a standby condition.

The fixing heater control circuit sends a waveform of which zero-cross is detected to the main PCB (MPCB), which controls the timing of HEATER REM 1 and 2 based on it to turn on the phototriacs PC1 and PC2. When the phototriacs PC1 and PC2 turn on, AC current flows through the triacs TRA1 and TRA2 to turn the fixing heaters M and S on.

100V



200V

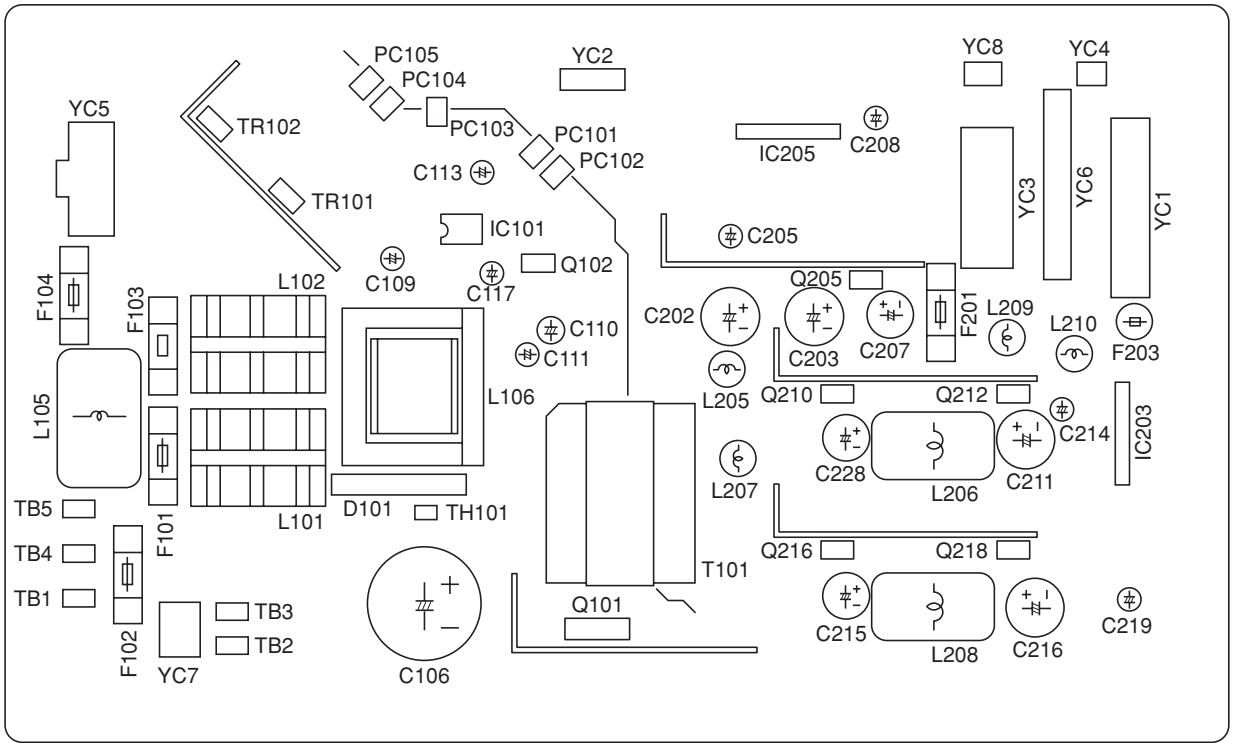


Figure 2-3-2 Power source PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
TB Connected to the AC power plug and power relay.	TB1	LIVE	I	120 V AC	120 V AC supply
	TB1	LIVE	I	220-240 V AC	220-240 V AC supply
	TB2	COM	I	120 V AC	120 V AC supply
	TB2	COM	I	220-240 V AC	220-240 V AC supply
	TB3	NEUTRAL	O	120 V AC	120 V AC supply
	TB3	NEUTRAL	O	220-240 V AC	220-240 V AC supply
	TB4	LIVE	I	120 V AC	120 V AC supply
	TB4	LIVE	I	220-240 V AC	220-240 V AC supply
	TB5	LIVE	O	120 V AC	120 V AC supply
	TB5	LIVE	O	220-240 V AC	220-240 V AC supply
CN3 Connected to the 3000-sheet finisher* or booklet stitcher*.	1	24V	O	24 V DC	24 V DC supply
	2	24V	O	24 V DC	24 V DC supply
	3	24V	O	24 V DC	24 V DC supply
	4	24V	O	24 V DC	24 V DC supply
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	GND	-	-	Ground
	9	GND	-	-	Ground
	10	5.1V	O	5.1 V DC	5.1 V DC supply
YC1 Connected to the safty switch 1, safty switch 2 and main PCB.	1	24V	O	24 V DC	24 V DC supply for SSW1
	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	3.4V	O	3.4 V DC	3.4 V DC supply for MPCB
	6	3.4V	O	3.4 V DC	3.4 V DC supply for MPCB
	7	3.4V	O	3.4 V DC	3.4 V DC supply for MPCB
	8	5.1V	O	5.1 V DC	5.1 V DC supply for MPCB
	9	5.1V	O	5.1 V DC	5.1 V DC supply for MPCB
	10	24V	I	24 V DC	24 V DC supply for MPCB
YC2 Connected to the main PCB.	1	HEATERON	O	0 to 5 V DC	Heater current monitor signal
	2	GND	-	-	Ground
	3	FH-S	I	0/5 V DC	FH-S ON/OFF
	4	FH-M	I	0/5 V DC	FH-M ON/OFF
	5	5.1V	I	5.1 V DC	5.1 V DC supply from MPCB
	6	ZCROSS	O	0/5 V DC (pulse)	Zero-cross signal
YC3 Connected to the paper feeder*/ large paper deck* and mailbox*/ switchback unit*.	11	5.1V	I	5.1 V DC	5.1 V DC supply
	12	GND	-	-	Ground
	13	GND	-	-	Ground
	14	24V	I	24 V DC	24 V DC supply
	15	24V	I	24 V DC	24 V DC supply
	16	24V	I	24 V DC	24 V DC supply
	17	5.1V	I	5.1 V DC	5.1 V DC supply
	18	GND	-	-	Ground
	19	GND	-	-	Ground
	20	GND	-	-	Ground
YC4 Connected to the cooling fan motor 4.	1	CFM4 REM	O	DC0V/24V	CFM4 ON/OFF
	2	24V	O	24 V DC	24 V DC supply for CFM4

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC5	1	FH-M ON	O	120/0 V AC	FH-M ON/OFF
Connected to the fixing heater M and S.	1	FH-M ON	O	220-240/0 V AC	FH-M ON/OFF
	2	FH-S ON	O	120/0 V AC	FH-S ON/OFF
	2	FH-S ON	O	220-240/0 V AC	FH-S ON/OFF
	3	FH LIVE	O	120 V AC	120 V AC supply
	3	FH LIVE	O	220-240 V AC	220-240 V AC supply
YC6	1	GND	-	-	Ground
Connected to the scanner drive PCB, DP* and hard disk*.	2	24V	O	24 V DC	24 V DC supply for SDPCB
	3	GND	-	-	Ground
	4	5V	O	DC5V	5 V DC supply for SDPCB
	5	F2 24V	O	24 V DC	24 V DC supply for DP*
	6	F2 24V	O	24 V DC	24 V DC supply for DP*
	7	GND	-	-	Ground
	8	GND	-	-	Ground
	9	F3 5V	O	DC5V	5 V DC supply for DP*
	10	F3 5V	O	DC5V	5 V DC supply for DP*
	11	GND	-	-	Ground
	12	GND	-	-	Ground
	13	GND	-	-	Ground
	14	GND	-	-	Ground
	15	24V	O	24 V DC	24 V DC supply for hard disk*
	16	5V	O	DC5V	5 V DC supply for hard disk*
CN8	1	CFM4	I	0/5 V DC	CFM4 remote signal
Connected to the main PCB.	3	POWDOWN	I	0/5 V DC	SLEEP singal

*: Optional

2-3-2 Main PCB

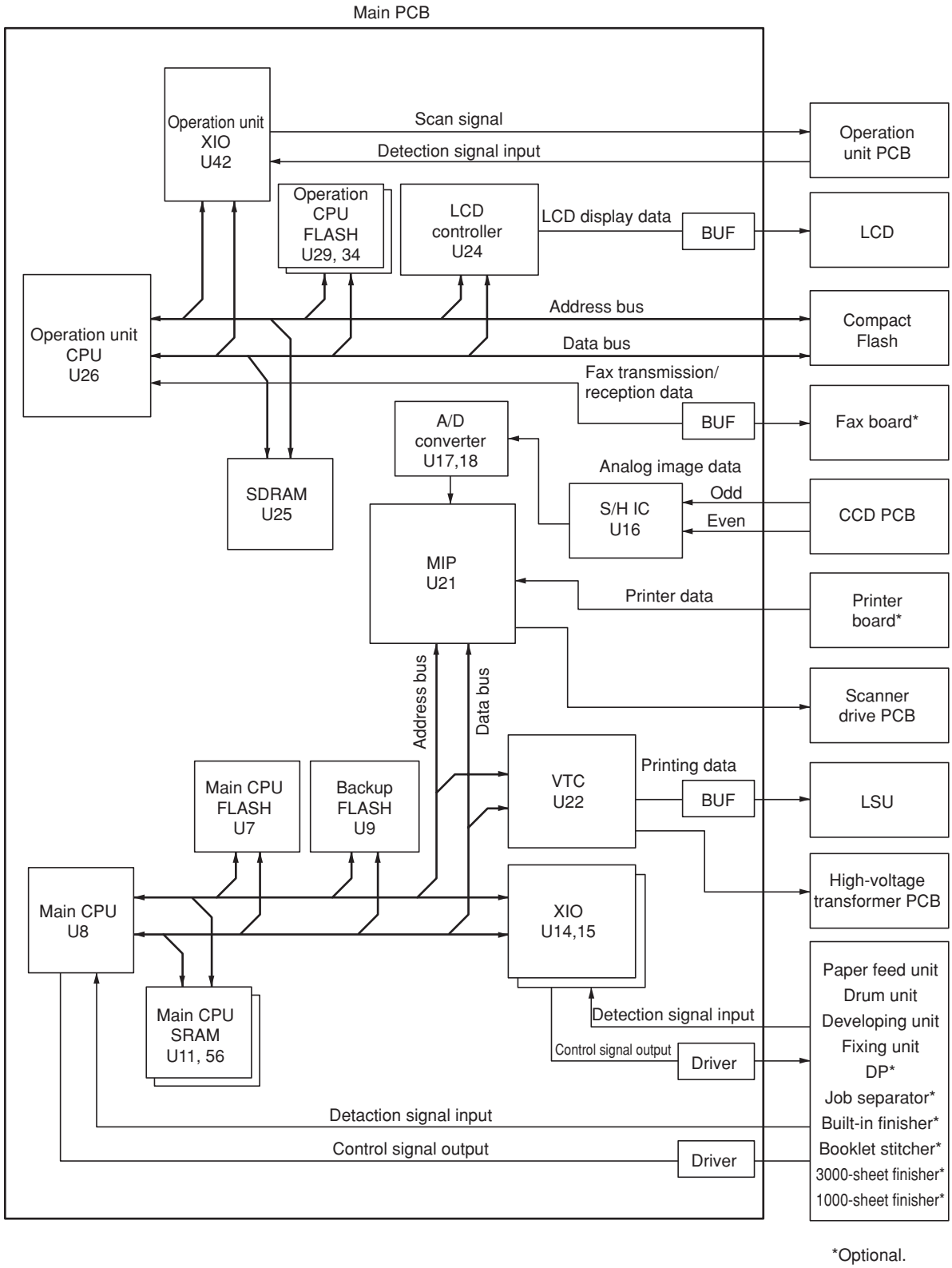


Figure 2-3-3 Main PCB block diagram

The main PCB (MPCB) consists of the main CPU and operation unit CPU. The main CPU U8 communicates with other PCBs, the image processing system and the engine drive system. The operation unit CPU U26 controls the LCD display and the entire operation section.
The main CPU U8 operates on an 8-bit bus. It uses the SRAM U11 and U56 for work memory and FLASH U9 for backup memory. In accordance with the control program in the main CPU FLASH U7, the main CPU U8 communicates with the operation unit CPU and optional devices via the serial communication function in the CPU and XIO U14 and U15. The main CPU U8 controls the CCD PCB (CCDPCB), which is for image input control, and the LSU, which is for image output control via the image processing ASIC MIP U21, and drives the machine, conveys paper and detects abnormalities via XIO U14, U15 and U22.
The operation unit CPU U26 operates on an 32-bit bus. It uses the SRAM U25 for work memory. In accordance with the control program in the main CPU FLASH U29, which also contains LCD display fonts, the operation unit CPU U26 controls key switches and LEDs on the operation unit PCB (OPCB) and controls the LCD display via the LCD controller U24.

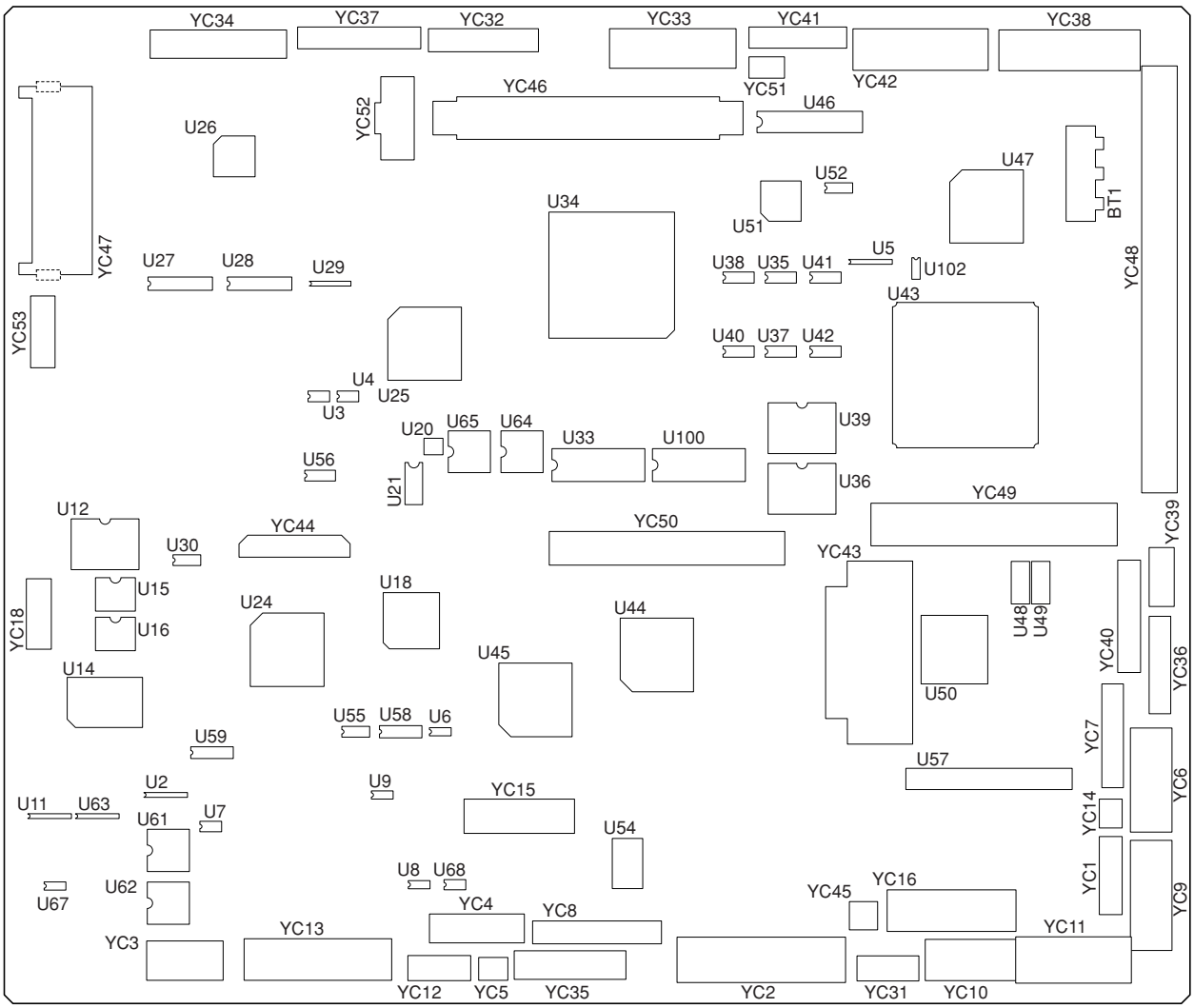


Figure 2-3-4 Main PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the power source PCB.	1	POWDOWN	O	0/5 V DC	SLEEP signal
	2	CFM4	O	0/5 V DC	CFM4 remote signal
	3	ZCROSS	I	0/5 V DC (pulse)	Zero-cross signal
	4	5.1V	O	5.1 V DC	5.1V DC supply for PSPCB
	5	FH-M	O	0/5 V DC	FH-M ON/OFF
	6	FH-S	O	0/5 V DC	FH-S ON/OFF
	7	GND	-	-	Ground
	8	HEATER ON	I	0 to 5 V DC	Heater current monitor signal
YC2 Connected to the power source PCB.	1	R24V	I	24 V DC	24 V DC supply from SSW2
	2	GND	-	-	Ground
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	3.4V	I	3.4 V DC	3.4 V DC supply from PSPCB
	6	3.4V	I	3.4 V DC	3.4 V DC supply from PSPCB
	7	3.4V	I	3.4 V DC	3.4 V DC supply from PSPCB
	8	5.1V	I	5.1 V DC	5.1 V DC supply from PSPCB
	9	5.1V	I	5.1 V DC	5.1 V DC supply from PSPCB
	10	24V	I	24 V DC	24 V DC supply from PSPCB
YC3 Connected to the mailbox*/ reverse unit* and large paper deck*/paper feeder.	A1	RXD	I	0/5 V DC (pulse)	Serial signal from mailbox*/reverse unit*
	A2	GND	-	-	Ground
	A3	TXD	O	0/5 V DC (pulse)	Serial signal for mailbox*/reverse unit*
	A4	GND	-	-	Ground
	A5	SET SIG	I	0/5 V DC	Mailbox*/reverse unit* connection signal
	A6	RESET	O	0/5 V DC	RESET signal for mailbox*/reverse unit*
	B1	LCF TXD	O	0/5 V DC (pulse)	Serial signal for large paper deck*/paper feeder*
	B2	GND	-	-	Ground
	B3	LCF RXD	I	0/5 V DC (pulse)	Serial signal from large paper deck*/paper feeder*
	B4	GND	-	-	Ground
	B5	FEED SW SIG	I	0/5 V DC	FSW on/off signal from large paper deck*/paper feeder*
	B6	RESET	O	0/5 V DC	RESET signal for large paper deck*/paper feeder*
YC4 Connected to the 3000-sheet finisher* or booklet stitcher*.	1	RXD	I	0/5 V DC (pulse)	Serial signal
	2	GND	-	-	Ground
	3	TXD	O	0/5 V DC (pulse)	Serial signal
	5	N.C	-	-	Not used
	6	N.C	-	-	Not used
	7	N.C	-	-	Not used
	8	N.C	-	-	Not used
	9	N.C	-	-	Not used
	10	N.C	-	-	Not used
YC5 Connected to the 3000-sheet finisher* or booklet stitcher*.	1	RESET	O	0/5 V DC	RESET signal
	2	SET SIG	I	0/5 V DC	3000-sheet finisher*/booklet stitcher* connection signal

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC6 Connected to the BYPPWSW, BYPPSW, BYPPFCL, BYPFCL, FRCSW, CFM3 and BYPPLSW.	A1	BYPPWSW0	I	0/5 V DC	BYPPWSW paper width detection signal
	A2	BYPPWSW1	I	0/5 V DC	BYPPWSW paper width detection signal
	A3	BYPPWSW2	I	0/5 V DC	BYPPWSW paper width detection signal
	A4	GND	-	-	Ground
	A5	5V	O	5 V DC	5 V DC supply for BYPPSW
	A6	BYPPSW	I	0/5 V DC	BYPPSW ON/OFF
	A7	GND	-	-	Ground
	A8	24V	O	24 V DC	24 V DC supply for BYPPFCL
	A9	BYPPFCL	O	0/24 V DC	BYPPFCL ON/OFF
	A10	24V	O	24 V DC	24 V DC supply for BYPFCL
	A11	BYPFCL	O	0/24 V DC	BYPFCL ON/OFF
	B1	5V	O	5 V DC	5 V DC supply for TDDSW
	B2	TDDSW	I	0/5 V DC	TDDSW ON/OFF
	B3	GND	-	-	Ground
	B4	OFS	I	0/5 V DC	OFS ON/OFF
	B5	GND	-	-	Ground
	B6	FRCSW	I	0/5 V DC	FRCSW ON/OFF
	B7	GND	-	-	Ground
	B8	CFM3 24V	O	0/24 V DC	CFM3 ON/OFF
	B9	GND	-	-	Ground
	B10	5V	O	5 V DC	5 V DC supply for BYPPLSW
	B11	BYPPLSW	I	0/5 V DC	BYPPLSW ON/OFF
	B12	GND	-	-	Ground
YC7 Connected to the high-voltage transformer PCB.	1	BVSEL	O	0 to 5 V DC	Developing bias control voltage
	2	R24V	O	24 V DC	24 V DC supply for HVTPCB
	3	GND	-	-	Ground
	4	MHVDR	O	0/5 V DC	Main charging ON/OFF
	5	HVCLK	O	0/5 V DC (pulse)	Developing bias CLOCK signal
	6	RHVDR	O	0/5 V DC	Separation charging ON/OFF
	7	RISEL	O	0 to 5 V DC	Separation charging control voltage
	8	TICTL	O	0 to 5 V DC	Transfer charging control voltage
	9	TVSEL	O	0 to 5 V DC	Transfer limit voltage
	10	THVDR	O	0/5 V DC	Transfer charging ON/OFF
	11	THRDR	O	0/5 V DC	Transfer reverse bias remote signal
	12	THFDR	O	0/5 V DC	Transfer forward bias remote signal
	13	TISENS	I	0/5 V DC	Transfer current detection signal
	14	TVSENS	I	0/5 V DC	Transfer current detection signal
YC8 Connected to the laser scanner unit.	1	5V SAFE	O	5 V DC	5 V DC supply for LSU
	2	SAMPLE	O	0/5 V DC	LSU SAMPLE signal
	3	POWCONT	O	0/5 V DC	LSU POWCONT signal
	4	LASER	O	0/5 V DC	LSU LASER signal
	5	VDO+	O	0/5 V DC	LSU VIDEO + signal
	6	VDO-	O	0/5 V DC	LSU VIDEO - signal
	7	GND	-	-	Ground
	8	PD	I	0/5 V DC	LSU PD signal
	9	GND	-	-	Ground
	10	R24V	O	24 V DC	24 V DC supply for PM
	11	GND	-	-	Ground
	12	SCAN	O	0/24 V DC	PM SCAN signal
	13	SCRDYN	I	0/5 V DC	PM READY signal
	14	SCCLK	O	0/5 V DC (pulse)	PM CLOCK signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC9	A1	GND	-	-	Ground
Connected to the BYPFSW, TCS, TNS, developing unit, TNFSOL, TCDSW and drum unit.	A2	BYPFSW	I	0/5 V DC	BYPFSW ON/OFF
	A3	5V	O	5 V DC	5 V DC supply for BYPFSW
	A4	5V	O	5 V DC	5 V DC supply for TCS
	A5	TCS	I	0/5 V DC	TCS ON/OFF
	A6	GND	-	-	Ground
	A7	PO	-	-	Ground
	A8	5V	O	5 V DC	5 V DC supply for TNS
	A9	TNS	I	0/5 V DC	TNS ON/OFF
	A10	GND	-	-	Ground
	A11	DVUNITN	I	0/5 V DC	Developing unit detection signal
	A12	FUSE CUT REM	O	0/5 V DC	Developing unit FUSE CUT signal
	A13	N.C	-	-	Not used
	B1	GND	-	-	Ground
	B2	TNFSOL	O	0/24 V DC	TNFSOL ON/OFF
	B3	TCDSW	I	0/5 V DC	TCDSW ON/OFF
	B4	GND	-	-	Ground
	B5	PO	-	-	Ground
	B6	GND	-	-	Ground
	B7	CL	O	0/5 V DC	CL ON/OFF
	B8	EEDATA	O	0/5 V DC	Drum unit DATA signal
	B9	EESCLK	O	0/5 V DC	Drum unit CLOCK signal
	B10	GND	-	-	Ground
	B11	DRUNITN	I	0/5 V DC	Drum unit detection signal
	B12	5V	O	5 V DC	5 V DC supply for drum unit
	B13	N.C	-	-	Not used
YC10	A1	GND	-	-	Ground
Connected to the RSW, fixing unit, DUPFCL, DUPPCSW and CFM 5 to 7.	A2	RSW	I	0/5 V DC	RSW ON/OFF
	A3	5V	O	5 V DC	5 V DC supply for RSW
	A4	PO	-	-	Ground
	A5	5V	I	5 V DC	5 V DC supply from FTH1
	A6	FTH1	I	0 to 5 V DC	FTH1 detection voltage
	A7	FUSE CUT REM	I	0/5 V DC	FTH1 detection voltage
	A8	GND	-	-	Ground
	A9	5V	I	5 V DC	5 V DC supply from FTH2
	A10	FTH2	I	0 to 5 V DC	FTH2 detection voltage
	B1	24V	O	24 V DC	24 V DC supply for DUPFCL
	B2	DUPFCL	O	0/24 V DC	DUPFCL ON/OFF
	B3	GND	-	-	Ground
	B4	DUPPCSW	I	0/5 V DC	DUPPCSW ON/OFF
	B5	5V	I	5 V DC	5 V DC supply from DUPPCSW
	B6	GND	-	-	Ground
	B7	SET SIG	I	0/5 V DC	Duplex section connection signal
	B8	DUP PO	-	-	Ground
	B9	R24V	O	24 V DC	24 V DC supply for CFM5 to 7
	B10	CFM5,6,7	O	0/24 V DC	CFM5 to 7 ON/OFF
YC11	1	R24V	O	24 V DC	24 V DC supply for DM
Connected to the DM, PFM, FCL1 and FSW1.	3	PG	-	-	Ground
	5	5V	O	5 V DC	5 V DC supply for DM
	7	SG	-	-	Ground
	9	DM S/S	O	0/24 V DC	DM S/S signal
	11	DM L/D	I	0/24 V DC	DM L/D signal
	13	DM CLK	O	0/5 V DC (pulse)	DM CLOCK signal
	2	R24V	O	24 V DC	24 V DC supply for PFM
	4	PG	-	-	Ground
	6	5V	O	5 V DC	5 V DC supply for PFM
	8	SG	-	-	Ground
	10	PFM S/S	O	0/24 V DC	PFM S/S signal
	12	PFM L/D	I	0/24 V DC	PFM L/D signal
	14	FCL1	O	0/24 V DC	FCL1 ON/OFF

Connector	Pin No.	Signal	I/O	Voltage	Description
YC11	15	24V	O	24 V DC	24 V DC supply for FCL1
Connected to the DM, PFM, FCL1 and FSW1.	16	GND	-	-	Ground
	17	FSW1	I	0/5 V DC	FSW1 ON/OFF
	18	5V	O	5 V DC	5 V DC supply for FSW1
YC12	1	R24V	O	24 V DC	24 V DC supply for PWSW-U
Connected to the upper and lower paper size length switches.	2	UP24V	I	24 V DC	24 V DC supply from PWSW-U
	3	PWSW-U0	I	0/24 V DC	PWSW-U paper width detection signal
	4	PWSW-U1	I	0/24 V DC	PWSW-U paper width detection signal
	5	PWSW-U2	I	0/24 V DC	PWSW-U paper width detection signal
	6	GND	-	-	Ground
	7	R24V	O	24 V DC	24 V DC supply for PWSW-L
	8	LO24V	I	24 V DC	24 V DC supply from PWSW-L
	9	PWSW-L0	I	0/24 V DC	PWSW-L paper width detection signal
	10	PWSW-L1	I	0/24 V DC	PWSW-L paper width detection signal
	11	PWSW-L2	I	0/24 V DC	PWSW-L paper width detection signal
	12	GND	-	-	Ground
YC13	A1	GND	-	-	Ground
Connected to the FSW2, FSW3, FCL2, FCL3, SCSW, LM-U, LM-L, PLSW-U, PLSW-L, LICSW-U, LICSW-L, PPSW-U and PPSW-L.	A2	FSW3	I	0/5 V DC	FSW3 ON/OFF
	A3	5V	O	5 V DC	5 V DC supply for FSW3
	A4	24V	O	24 V DC	24 V DC supply for FCL3
	A5	FCL3	O	0/24 V DC	FCL3 ON/OFF
	A6	GND	-	-	Ground
	A7	FSW2	I	0/5 V DC	FSW2 ON/OFF
	A8	5V	O	5 V DC	5 V DC supply for FSW2
	A9	GND	-	-	Ground
	A10	SCSW	I	0/5 V DC	SCSW ON/OFF
	A11	24V	O	24 V DC	24 V DC supply for FCL2
	A12	FCL2	O	0/24 V DC	FCL2 ON/OFF
	A13	LM-U SW2	I	0/5 V DC	LM-U paper level detection switch ON/OFF
	A14	GND	-	-	Ground
	A15	LM-U SW1	I	0/5 V DC	LM-U paper level detection switch ON/OFF
	A16	GND	-	-	Ground
	A17	LM-U REM	O	0/24 V DC	LM-U ON/OFF
	A18	GND	-	-	Ground
	A19	PLSW-L	I	0/5 V DC	PLSW-L ON/OFF
	B1	GND	-	-	Ground
	B2	PLSW-U	I	0/5 V DC	PLSW-U ON/OFF
	B3	LM-L SW2	I	0/5 V DC	LM-L paper level detection switch ON/OFF
	B4	GND	-	-	Ground
	B5	LM-L SW1	I	0/5 V DC	LM-L paper level detection switch ON/OFF
	B6	GND	-	-	Ground
	B7	LM-L REM	O	0/24 V DC	LM-L ON/OFF
	B8	GND	-	-	Ground
	B9	LICSW-U	I	0/5 V DC	LICSW-U ON/OFF
	B10	5V	O	5 V DC	5 V DC supply for LICSW-U
	B11	GND	-	-	Ground
	B12	PPSW-U	I	0/5 V DC	PPSW-U ON/OFF
	B13	5V	O	5 V DC	5 V DC supply for PPSW-U
	B14	GND	-	-	Ground
	B15	LICSW-L	I	0/5 V DC	LICSW-L ON/OFF
	B16	5V	O	5 V DC	5 V DC supply for LICSW-L
	B17	GND	-	-	Ground
	B18	PPSW-L	I	0/5 V DC	PPSW-L ON/OFF
	B19	5V	O	5 V DC	5 V DC supply for PPSW-L

Connector	Pin No.	Signal	I/O	Voltage	Description
YC14 Connected to the cooling fan motor 2.	1	GND	-	-	Ground
	2	CFM2 REM	O		CFM2 ON/OFF
YC16 Connected to the FSSOL, FSSW, CFM1, CCSW, PFCL-U, PFCL-L, RCL, HUMSENS and EM.	A1	FSSOL2	O	0/24 V DC	FSSOL release signal
	A2	FSSOL1	O	0/24 V DC	FSSOL acutuate signal
	A3	24V	O	24 V DC	24 V DC supply for FSSOL
	A4	GND	-	-	Ground
	A5	FSSW	I	0/5 V DC	FSSW ON/OFF
	A6	5V	O	5 V DC	5 V DC supply for FSSW
	A7	GND	-	-	Ground
	A8	-	-	-	Not used
	A9	5V	-	-	5 V DC supply
	A10	GND	-	-	Ground
	A11	ESW	I	0/5 V DC	ESW ON/OFF
	A12	5V	O	5 V DC	5 V DC supply for ESW
	A13	CFM1 24V	O	0/24 V DC	CFM1 ON/OFF
	A14	GND	-	-	Ground
	A15	GND	-	-	Ground
	A16	CCSW	I	0/5 V DC	CCSW ON/OFF
	B1	PFCL-U	O	0/24 V DC	PFCL-U ON/OFF
	B2	UP24V	O	24 V DC	24 V DC supply for PFCL-U
	B3	LO24V	O	24 V DC	24 V DC supply for PFCL-L
	B4	PFCL-L	O	0/24 V DC	PFCL-L ON/OFF
	B5	24V	O	24 V DC	24 V DC supply for RCL
	B6	RCL	O	0/24 V DC	RCL ON/OFF
	B7	5V	O	5 V DC	5 V DC supply for HUMSENS
	B8	HUMSENS	I	DC0Å`5V	HUMSENS detection voltage
	B9	GND	-	-	Ground
	B10	ETTH	I	0 to 5 V DC	ETTH detection voltage
	B11	EM B-D	O	0/24 V DC (pulse)	EM coil energization pulse (_B)
	B12	EM B	O	0/24 V DC (pulse)	EM coil energization pulse (B)
	B13	EM A-D	O	0/24 V DC (pulse)	EM coil energization pulse (_A)
	B14	EM A	O	0/24 V DC (pulse)	EM coil energization pulse (A)
YC31 Connected to the PSW, total counter* and key counter*.	1	24V	I	24 V DC	24 V DC supply for PSW
	2	MAIN SW OFF REM	O	0/5 V DC	PSW ON/OFF
	3	24V	O	24 V DC	24 V DC supply for total counter*
	4	TC REM	O	0/5 V DC	Total counter* signal
	7	GND	-	-	Ground
	8	SET SIG	I	0/5 V DC	Key counter* connection signal
	9	24V	O	24 V DC	24V DC supply for key counter*
	10	K.COUNT REM	O	0/5 V DC	Key counter* count signal
YC32 Connected to the DP*.	1	OFM RET	O	0/5 V DC	OFM*RET signal
	2	OFM CLK	O	0/5 V DC (pulse)	OFM*CLOCK signal
	3	OFM CWB	O	0/5 V DC	OFM*CWB signal
	4	OCM ENABLE	O	0/5 V DC	OCM*ENABLE signal
	5	OCM RET	O	0/5 V DC	OCM*RET signal
	6	OCM CLK	O	0/5 V DC (pulse)	OCM*CLOCK signal
	7	OCM CWB	O	0/5 V DC	OCM*CWB signal
	8	OCM VREF	O	0/5 V DC	OCM* current control voltage Vref
	9	OCM M3	O	0/5 V DC	OCM* drive control signal M3
	10	OCM M2	O	0/5 V DC	OCM* drive control signal M2
	11	OCM M1	O	0/5 V DC	OCM* drive control signal M1

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC33	1A	OFM ENABLE	I	0/5 V DC	OFM*ENABLE signal
Connected to the DP*.	2A	OSBSW	I	0/5 V DC	OSBSW*ON/OFF
	3A	OFSW	I	0/5 V DC	OFSW*ON/OFF
	4A	SET SW	I	0/5 V DC	OSSW*ON/OFF
	5A	RESERVE(SW)	I		
	6A	RESERVE(SW)	I		
	7A	DP SHORT	I	0/5 V DC	DP* connection signal
	8A	OSWSW	I	0/5 V DC	OSWSW*ON/OFF
	9A	DFSSW2	I	0/5 V DC	DFSSW2*ON/OFF
	10A	DFSSW1	I	0/5 V DC	DFSSW1*ON/OFF
	11A	OSLSW	I	0/5 V DC	OSLSW*ON/OFF
	12A	DFTSW	I	0/5 V DC	DFTSW*ON/OFF
	1B	OSLED(RED)	O	0/5 V DC	OSLED* (red) on/off
	2B	OSLED(GN)	O	0/5 V DC	OSLED* (green) on/off
	3B	SBPSOL(RET)	O	0/24 V DC	SBPSOL* release signal
	4B	SBPSOL(ACT)	O	0/24 V DC	SBPSOL* actuate signal
	5B	OFCL	O	0/24 V DC	OFCL*ON/OFF
	6B	EFSSOL	O	0/24 V DC	EFSSOL*ON/OFF
	7B	RESERVE(SOL)	O		
	8B	SBFSSOL	O	0/24 V DC	SBFSSOL*ON/OFF
	9B	OFSOL(RET)	O	0/24 V DC	OFSOL* release signal
	10B	FOFSOL(ACT)	O	0/24 V DC	OFSOL* actuate signal
	11B	OFM ENABLE	O	0/5 V DC	OFM*ENABLE signal
YC34	1	GND	-	-	Ground
Connected to the CCD PCB.	2	ODD	I	DC4.5V (pulse)	CCDPCB ODD signal (analog)
	3	GND	-	-	Ground
	4	EVEN	I	DC4.5V (pulse)	CCDPCB EVEN signal (analog)
	5	12V	O	12 V DC	12 V DC supply for CCDPCB
	6	5.1V	O	5.1 V DC	5.1 V DC supply for CCDPCB
	7	GND	-	-	Ground
	8	CLP	O	0/5 V DC (pulse)	CCDPCB CLP signal
	9	GND	-	-	Ground
	10	SHIFT	O	0/5 V DC (pulse)	CCDPCB SHIFT signal
	11	GND	-	-	Ground
	12	CLK-	O	0/5 V DC (pulse)	CCDPCB CLOCK - signal
	13	CLK+	O	0/5 V DC (pulse)	CCDPCB CLOCK + signal
	14	RS+	O	0/5 V DC (pulse)	CCDPCB RS + signal
	15	RS-	O	0/5 V DC (pulse)	CCDPCB RS - signal
YC35	1	F2 24V	O	24 V DC	24 V DC supply for built-in finisher*
Connected to the built-in finisher*.	2	F2 24V	O	24 V DC	24 V DC supply for built-in finisher*
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	5V	O	5 V DC	5 V DC supply for built-in finisher*
	6	GND	-	-	Ground
	7	TXD	O	0/5 V DC (pulse)	Serial signal TXD
	8	GND	-	-	Ground
	9	RXD	I	0/5 V DC (pulse)	Serial signal RXD
	10	GND	-	-	Ground
	11	SET SIG	I	0/5 V DC	Built-in finisher* connection signal
	12	RESET	O	0/5 V DC	RESET signal
YC36	1	JBESW	I	0/5 V DC	JBESW* ON/OFF
Connected to the job separator*.	2	5V	O	5 V DC	5 V DC supply for JBESW*
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	SET SIG	I	0/5 V DC	Job separator* connection signal
	6	GND	-	-	Ground
	7	EPDSW	I	0/5 V DC	EPDSW* ON/OFF
	8	5V	O	5 V DC	5 V DC supply for EPDSW*
	9	LED REM	O	0/5 V DC	LED(JOB)* on/off

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC36	10	5V	O	5 V DC	5 V DC supply for LED(JOB)*
Connected to the job separator*.	11	FSSOL2	O	0/24 V DC	FSSOL(JOB)* release signal
	12	FSSOL1	O	0/24 V DC	FSSOL(JOB)* actuate signal
	13	R24V	O	24 V DC	24 V DC supply for FSSOL(JOB)*
YC37	1	GND	-	-	Ground
Connected to the scanner drive PCB and original detection switch.	2	SHPSW	I	0/5 V DC	SHPSW ON/OFF
	3	LAMP ON REM	O	0/5 V DC	EL ON/OFF
	4	SM ENABLE	O	0/5 V DC	SM ENABLE signal
	5	SM RET	O	0/5 V DC	SM RET signal
	6	SM CWB	O	0/5 V DC	SM CWB signal
	7	SM CLK	O	0/5 V DC (pulse)	SM CLOCK signal
	8	SM M5	O	0/5 V DC	SM drive control signal M5
	9	SM M4	O	0/5 V DC	SM drive control signal M4
	10	SM M3	O	0/5 V DC	SM drive control signal M3
	11	SM M2	O	0/5 V DC	SM drive control signal M2
	12	SM M1	O	0/5 V DC	SM drive control signal M1
	13	SM VREF	O	0/5 V DC	SM current control voltage Vref
	14	ODSW	I	0/5 V DC	ODSW ON/OFF
	15	GND	-	-	Ground
	16	OSDS	I	0/5 V DC	OSDS ON/OFF
	17	5V	O	5 V DC	5 V DC supply for OSDS
YC41	1	DIGLED6	O	0/5 V DC (pulse)	OPCB-L DIGLED6 signal
Connected to the left operation unit PCB.	2	DIGLED5	O	0/5 V DC (pulse)	OPCB-L DIGLED5 signal
	3	DIGLED4	O	0/5 V DC (pulse)	OPCB-L DIGLED4 signal
	4	DIGLED3	O	0/5 V DC (pulse)	OPCB-L DIGLED3 signal
	5	DIGLED2	O	0/5 V DC (pulse)	OPCB-L DIGLED2 signal
	6	DIGLED1	O	0/5 V DC (pulse)	OPCB-L DIGLED1 signal
	7	SCAN4	O	0/5 V DC (pulse)	OPCB-L SCAN4 signal
	8	SCAN3	O	0/5 V DC (pulse)	OPCB-L SCAN3 signal
	9	SCAN2	O	0/5 V DC (pulse)	OPCB-L SCAN2 signal
	10	SCAN1	O	0/5 V DC (pulse)	OPCB-L SCAN1 signal
	11	DIGKEY3	I	0/5 V DC	OPCB-L DIGKEY3 signal
	12	DIGKEY2	I	0/5 V DC	OPCB-L DIGKEY2 signal
	13	DIGKEY1	I	0/5 V DC	OPCB-L DIGKEY1 signal
YC42	A1	BUZZER	O	0/5 V DC	OPCB-L BUZZER signal
Connected to the left and right operation unit PCBs.	A2	X1	I	0/5 V DC (pulse)	Touch panel detection voltage X1
	A3	Y1	I	0/5 V DC (pulse)	Touch panel detection voltage Y1
	A4	X2	O	0/5 V DC (pulse)	Touch panel detection voltage X2
	A5	Y2	O	0/5 V DC (pulse)	Touch panel detection voltage Y2
	A6	LCD FRAME	O	0/5 V DC (pulse)	LCD FRAME signal
	A7	LCD LOAD	O	0/5 V DC (pulse)	LCD LOAD signal
	A8	LCD CP	O	0/5 V DC (pulse)	LCD CP signal
	A9	LCD VSS(SG)	O	-	LCD VSS signal
	A10	LCD VDD(+5V)	O	5 V DC	LCD VDD signal
	A11	LCD VSS(SG)	O	-	LCD VSS signal
	A12	LCD DISP OFF	O	0/5 V DC	LCD DISPLAY signal
	A13	LCD D0	O	0/5 V DC (pulse)	LCD D0 data
	A14	LCD D1	O	0/5 V DC (pulse)	LCD D1 data
	A15	LCD D2	O	0/5 V DC (pulse)	LCD D2 data
	A16	LCD D3	O	0/5 V DC (pulse)	LCD D3 data
	A17	VEE OFF	O	0/5 V DC (pulse)	LCD VEE signal
	B1	P.GND	-	-	Ground
	B2	R24V	O	24 V DC	24 V DC supply for OPCB-R
	B3	LAMP OFF	O	0/5 V DC	OPCB-R LAMP OFF signal
	B4	S.GND	-	-	Ground
	B5	5V	O	5 V DC	5 V DC supply for OPCB-R
	B6	DIGLED8	O	0/5 V DC (pulse)	OPCB-R DIGLED8 signal
	B7	DIGLED7	O	0/5 V DC (pulse)	OPCB-R DIGLED7 signal
	B8	SCAN8	O	0/5 V DC (pulse)	OPCB-R SCAN8 signal

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC42	B9	SCAN7	O	0/5 V DC (pulse)	OPCB-R SCAN7 signal
Connected to the left and operation unit PCBs.	B10	SCAN6	O	0/5 V DC (pulse)	OPCB-R SCAN6 signal
	B11	SCAN5	O	0/5 V DC (pulse)	OPCB-R SCAN5 signal
	B12	DIGKEY9	I	0/5 V DC	OPCB-R DIGKEY9 signal
	B13	DIGKEY8	I	0/5 V DC	OPCB-R DIGKEY8 signal
	B14	DIGKEY7	I	0/5 V DC	OPCB-R DIGKEY7 signal
	B15	DIGKEY6	I	0/5 V DC	OPCB-R DIGKEY6 signal
	B16	DIGKEY5	I	0/5 V DC	OPCB-R DIGKEY5 signal
	B17	DIGKEY4	I	0/5 V DC	OPCB-R DIGKEY4 signal
YC43	A1	PRINTN	O	5/0 V DC (pulse)	Printer board* PRINTN signal
Connected to the printer board*.	A2	GND	-	-	Ground
	A3	SI	O	5/0 V DC (pulse)	Printer board* SI signal
	A4	SCLK	I	5/0 V DC (pulse)	Printer board* SCLK signal
	A5	SBSY	O	5/0 V DC (pulse)	Printer board* SBSY signal
	A6	SO	I	5/0 V DC (pulse)	Printer board* SO signal
	A7	RESET	O	5/0 V DC (pulse)	Printer board* RESET signal
	A8	PDOUT	O	5/0 V DC (pulse)	Printer board* PDOUT signal
	A9	GND	-	-	Ground
	A10	VDATAP	I	5/0 V DC (pulse)	Printer board* VDATAP signal
	A11	GND	-	-	Ground
	A12	VDATAN	I	5/0 V DC (pulse)	Printer board* VDATAN signal
	A13	GND	-	-	Ground
	A14	FPCLK	O	5/0 V DC (pulse)	Printer board* FPCLK signal
	A15	FPDAT	I	5/0 V DC (pulse)	Printer board* FPDAT signal
	A16	GND	-	-	Ground
	A17	VDATA	I	5/0 V DC (pulse)	Printer board* VDATA signal
	A18	GND	-	-	Ground
	A19	GND	-	-	Ground
	A20	GND	-	-	Ground
	B1	5V	O	5 V DC	Printer board* 5 V DC supply
	B2	5V	O	5 V DC	Printer board* 5 V DC supply
	B3	5V	O	5 V DC	Printer board* 5 V DC supply
	B4	SDIR	O	5/0 V DC (pulse)	Printer board* SDIR signal
	B5	ESGIR	O	5/0 V DC (pulse)	Printer board* ESGIR signal
	B6	VDFON	O	5/0 V DC (pulse)	Printer board* VDFON signal
	B7	VSREQN	O	5/0 V DC (pulse)	Printer board* VSREQN signal
	B8	GND	-	-	Ground
	B9	GND	-	-	Ground
	B10	GND	-	-	Ground
	B11	GND	-	-	Ground
	B12	FPDIR	O	5/0 V DC (pulse)	Printer board* FPDIR signal
	B13	FPPOWER	O	5/0 V DC (pulse)	Printer board* FPPOWER signal
	B14	GND	-	-	Ground
	B15	5V	O	5 V DC	Printer board* 5 V DC supply
	B16	5V	O	5 V DC	Printer board* 5 V DC supply
	B17	5V	O	5 V DC	Printer board* 5 V DC supply
	B18	5V	O	5 V DC	Printer board* 5 V DC supply
	B19	5V	O	5 V DC	Printer board* 5 V DC supply
	B20	5V	O	5 V DC	Printer board* 5 V DC supply
YC44	1	M3.3V	O	3.3 V DC	Fax control PCB* 3.3 V DC supply
Connected to the fax control PCB*.	2	GND	-	-	Ground
	3	FPVCLK	O	5/0 V DC (pulse)	Fax control PCB* FPVCLK signal
	4	GND	-	-	Ground
	5	FVCLK	I	5/0 V DC (pulse)	Fax control PCB* FVCLK signal
	6	GND	-	-	Ground
	7	FMRE	I	5/0 V DC (pulse)	Fax control PCB* FMRE signal
	8	GND	-	-	Ground
	9	/FPVD	I	5/0 V DC (pulse)	Fax control PCB* /FPVD signal
	10	GND	-	-	Ground
	11	/FPHSYNC	O	5/0 V DC (pulse)	Fax control PCB* /FPHSYNC signal

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC44 Connected to the fax control PCB*.	12	GND	-	-	Ground
	13	/FPVSYNC	O	5/0 V DC (pulse)	Fax control PCB* /FPVSYNC signal
	14	GND	-	-	Ground
	15	FOVSYNC	O	5/0 V DC (pulse)	Fax control PCB* /FOVSYNC signal
	16	GND	-	-	Ground
	17	/FOHSTHIN	O	5/0 V DC (pulse)	Fax control PCB* /FOHSTHIN signal
	18	GND	-	-	Ground
	19	FMIPOUTO	O	5/0 V DC (pulse)	Fax control PCB* FMIPOUTO signal
	20	GND	-	-	Ground
	21	FMREOUT	O	5/0 V DC (pulse)	Fax control PCB* FMREOUT signal
	22	GND	-	-	Ground
	23	FFOCLK	O	5/0 V DC (pulse)	Fax control PCB* FFOCLK signal
	24	GND	-	-	Ground
	25	/MMISTS	O	5/0 V DC (pulse)	Fax control PCB* /MMISTS signal
	26	GND	-	-	Ground
	27	FMMI_TXD2	O	Analog	Fax control PCB* FMMI_TXD2 signal
	28	GND	-	-	Ground
	29	FMMI_RXD2	I	Analog	Fax control PCB* FMMI_RXD2 signal
	30	GND	-	-	Ground
	31	/FAXRESET	O	5/0 V DC (pulse)	Fax control PCB* /FAXRESET signal
	32	/FAXREADY	I	5/0 V DC (pulse)	Fax control PCB* /FAXREADY signal
	33	/PREQ	I	5/0 V DC (pulse)	Fax control PCB* /PREQ signal
	34	/SREQ	I	5/0 V DC (pulse)	Fax control PCB* /SREQ signal
	35	/SETFAX	I	5/0 V DC (pulse)	Fax control PCB* /SETFAX signal
	36	/MAINSTS	O	5/0 V DC (pulse)	Fax control PCB* /MAINSTS signal
	37	GND	-	-	Ground
	38	FMAIN_TXD0	O	Analog	Fax control PCB* FMAIN_TXD0 signal
	39	GND	-	-	Ground
	40	FMAIN_RXD0	I	Analog	Fax control PCB* FMAIN_RXD0 signal
YC45 Connected to the fax control PCB*.	1	GND	-	-	Ground
	2	+24V	O	24 V DC	24 V DC supply
YC51 Connected to the right operation unit PCB.	14	PH KEY	I	0/5 V DC (pulse)	PH KEY signal
	15	PH LED	I	0/5 V DC (pulse)	PH LED signal
	16	S.GND	-	-	Ground

*: Optional

2-3-3 Operation unit PCB

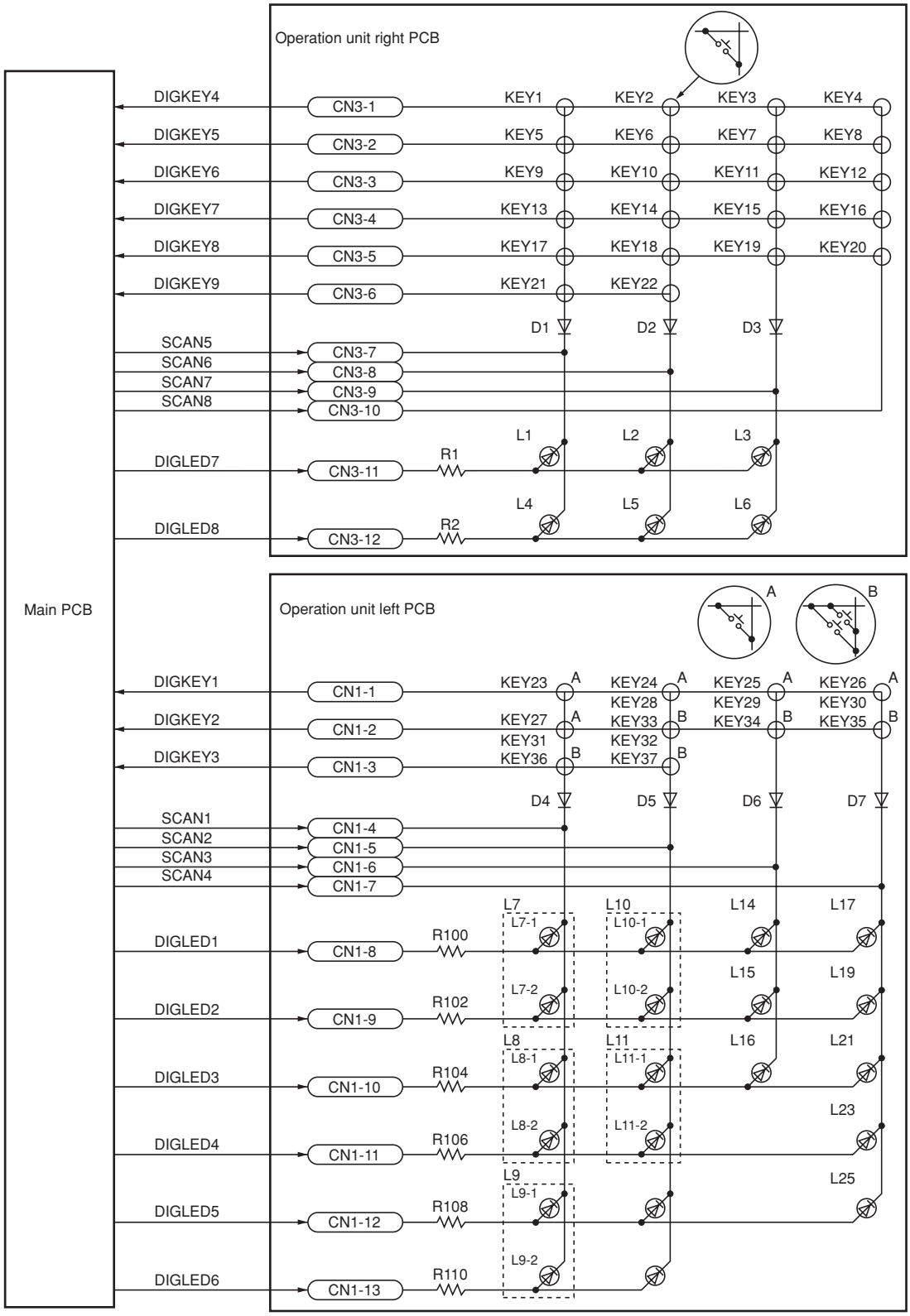


Figure 2-3-5 Operation unit PCB block diagram

The operation unit PCB (OPCB) consists of the operation unit left PCB (OPCB-L) and the operation unit right PCB (OPCB-R).
The operation unit right PCB (OPCB-R) consists of key switches and LEDs. The lighting of LEDs is determined by scan signals (SCAN5 to SCAN8) and LED lighting selection signals (DIGLED7 to DIGLED8) from the main PCB (MPCB). The key switches operated are identified by the scan signals (SCAN5 to SCAN8) and the return signals (DIGKEY4 to DIGKEY9).
As an example, to light LED 1 (L1), the LED lighting selection signal (DIGLED7) should be driven low in synchronization with a low level on the scan signal (SCAN5). LEDs can be lit dynamically by repeating such operations.
As another example, if KEY 1 is pressed, the corresponding key switch is turned on feeding the low level of the scan signal (SCAN5) back to the main PCB (MPCB) via the return signal (DIGKEY4). The main PCB (MPCB) locates the position where the line outputting the scan signal and the line inputting the return signal cross, and thereby determines which key switch was operated.
The operation unit left PCB (OPCB-L) consists of key switches and LEDs. The lighting of LEDs is determined by scan signals (SCAN1 to SCAN4) and LED lighting selection signals (DIGLED1 to DIGLED6) from the main PCB (MPCB). The key switches operated are identified by the scan signals (SCAN1 to SCAN4) and the return signals (DIGKEY1 to DIGKEY3).
As an example, to light LED 7 (L7), the LED lighting selection signal (DIGLED1) should be driven low in synchronization with a low level on the scan signal (SCAN1). LEDs can be lit dynamically by repeating such operations.
As another example, if KEY 23 is pressed, the corresponding key switch is turned on feeding the low level of the scan signal (SCAN1) back to the main PCB (MPCB) via the return signal (DIGKEY1). The main PCB (MPCB) locates the position where the line outputting the scan signal and the line inputting the return signal cross, and thereby determines which key switch was operated.

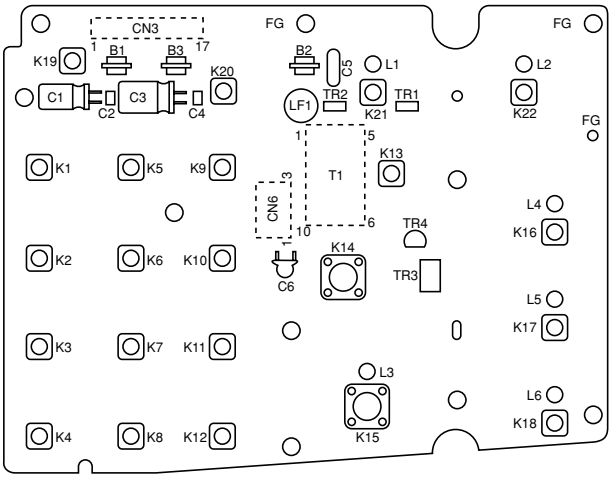


Figure 2-3-6 Operation unit right PCB silk-screen diagram

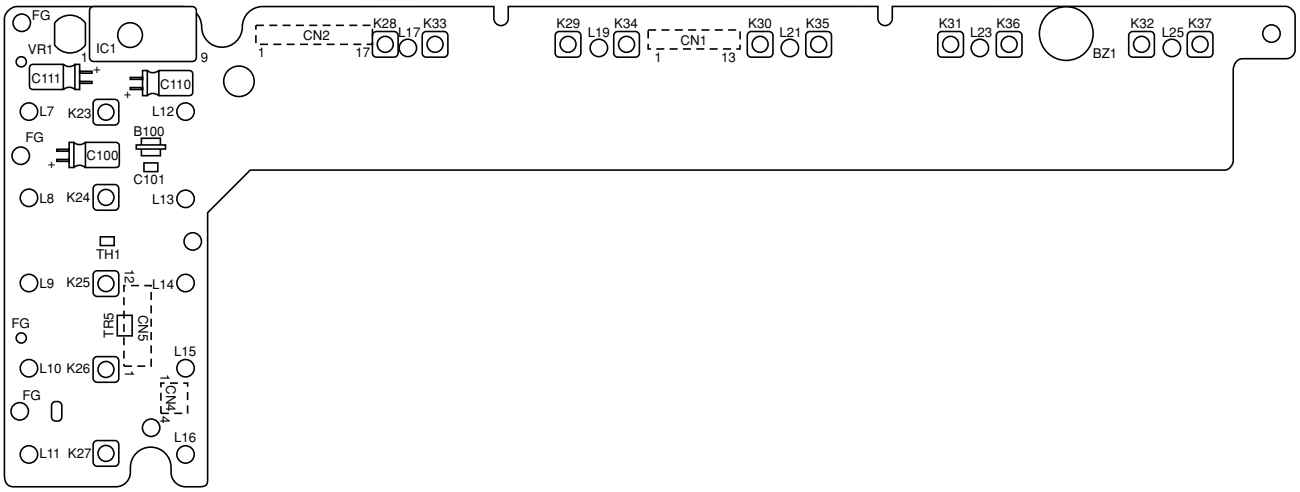


Figure 2-3-7 Operation unit left PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1	1	DIGKEY1	O	0/5 V DC	OPCB-L DIGKEY1 signal
Connected to the main PCB.	2	DIGKEY2	O	0/5 V DC	OPCB-L DIGKEY2 signal
	3	DIGKEY3	O	0/5 V DC	OPCB-L DIGKEY3 signal
	4	SCAN1	I	0/5 V DC (pulse)	OPCB-L SCAN1 signal
	5	SCAN2	I	0/5 V DC (pulse)	OPCB-L SCAN2 signal
	6	SCAN3	I	0/5 V DC (pulse)	OPCB-L SCAN3 signal
	7	SCAN4	I	0/5 V DC (pulse)	OPCB-L SCAN4 signal
	8	DIGLED1	I	0/5 V DC (pulse)	OPCB-L DIGLED1 signal
	9	DIGLED2	I	0/5 V DC (pulse)	OPCB-L DIGLED2 signal
	10	DIGLED3	I	0/5 V DC (pulse)	OPCB-L DIGLED3 signal
	11	DIGLED4	I	0/5 V DC (pulse)	OPCB-L DIGLED4 signal
	12	DIGLED5	I	0/5 V DC (pulse)	OPCB-L DIGLED5 signal
	13	DIGLED6	I	0/5 V DC (pulse)	OPCB-L DIGLED6 signal
CN2	1	VEE OFF	I	0/5 V DC	LCD VEE signal
Connected to the main PCB.	2	LCD D3	I	0/5 V DC (pulse)	LCD D3 data
	3	LCD D2	I	0/5 V DC (pulse)	LCD D2 data
	4	LCD D1	I	0/5 V DC (pulse)	LCD D1 data
	5	LCD D0	I	0/5 V DC (pulse)	LCD D0 data
	6	LCD DISP OFF	I	0/5 V DC	LCD DISPLAY signal
	7	LCD VSS(SG)	I	-	LCD VSS signal
	8	LCD VDD(+5V)	I	5 V DC	LCD VDD signal
	9	LCD VSS(SG)	I	-	LCD VSS signal
	10	LCD CP	I	0/5 V DC (pulse)	LCD CP signal
	11	LCD LOAD	I	0/5 V DC (pulse)	LCD LOAD signal
	12	LCD FRAME	I	0/5 V DC (pulse)	LCD FRAME signal
	13	Y2	I	0/5 V DC (pulse)	Touch panel detection voltage Y2
	14	X2	I	0/5 V DC (pulse)	Touch panel detection voltage X2
	15	Y1	O	0/5 V DC (pulse)	Touch panel detection voltage Y1
	16	X1	O	0/5 V DC (pulse)	Touch panel detection voltage X1
	17	BUZZER	I	0/5 V DC (pulse)	OPCB-L BUZZER signal
CN3	1	DIGKEY4	O	0/5 V DC	OPCB-R DIGKEY4 signal
Connected to the main PCB.	2	DIGKEY5	O	0/5 V DC	OPCB-R DIGKEY5 signal
	3	DIGKEY6	O	0/5 V DC	OPCB-R DIGKEY6 signal
	4	DIGKEY7	O	0/5 V DC	OPCB-R DIGKEY7 signal
	5	DIGKEY8	O	0/5 V DC	OPCB-R DIGKEY8 signal
	6	DIGKEY9	O	0/5 V DC	OPCB-R DIGKEY9 signal
	7	SCAN5	I	0/5 V DC (pulse)	OPCB-R SCAN5 signal
	8	SCAN6	I	0/5 V DC (pulse)	OPCB-R SCAN6 signal
	9	SCAN7	I	0/5 V DC (pulse)	OPCB-R SCAN7 signal
	10	SCAN8	I	0/5 V DC (pulse)	OPCB-R SCAN8 signal
	11	DIGLED7	I	0/5 V DC (pulse)	OPCB-R DIGLED7 signal
	12	DIGLED8	I	0/5 V DC (pulse)	OPCB-R DIGLED8 signal
	13	5V	I	5 V DC	5 V DC supply from MPCB
	14	S.GND	-	-	Ground
	15	LAMP OFF	I	0/5 V DC	OPCB-R LAMP OFF signal
	16	R24V	I	24 V DC	24 V DC supply from MPCB
	17	P.GND	-	-	Ground
	18	S.GND	-	-	Ground
	19	PH LED	O	0/5 V DC (pulse)	PH LED signal
	20	PH KEY	O	0/5 V DC (pulse)	PH KEY signal
CN5	1	Y2	O	0/5 V DC (pulse)	Touch panel detection voltage Y2
Connected to the touch panel.	2	X2	O	0/5 V DC (pulse)	Touch panel detection voltage X2
	3	Y1	I	0/5 V DC (pulse)	Touch panel detection voltage Y1
	4	X1	I	0/5 V DC (pulse)	Touch panel detection voltage X1

Connector	Pin No.	Signal	I/O	Voltage	Description
CN5	1	LCD FRAME	O	0/5 V DC (pulse)	LCD FRAME signal
Connected to the LCD.	2	LCD LOAD	O	0/5 V DC (pulse)	LCD LOAD signal
	3	LCD CP	O	0/5 V DC (pulse)	LCD CP signal
	4	LCD VSS(SG)	O	GND	LCD VSS signal
	5	LCD VDD(+5V)	O	5 V DC	LCD VDD signal
	6	LCD VSS(SG)	O	GND	LCD VSS signal
	7	LCD CONT	O	Analog	LCD control signal
	8	LCD DISP OFF	O	0/5 V DC	LCD DISPLAY signal
	9	LCD D0	O	0/5 V DC (pulse)	LCD D0 data
	10	LCD D1	O	0/5 V DC (pulse)	LCD D1 data
	11	LCD D2	O	0/5 V DC (pulse)	LCD D2 data
	12	LCD D3	O	0/5 V DC (pulse)	LCD D3 data
CN6	1	CCFT HOT	O	Analog	LCD BACK LIGHT control signal
Connected to the back light.	2	N.C	-	-	Not used
	3	N.C	-	-	Not used
	4	CCFT COLD	O	-	LCD BACK LIGHT control signal

2-3-4 Scanner drive PCB

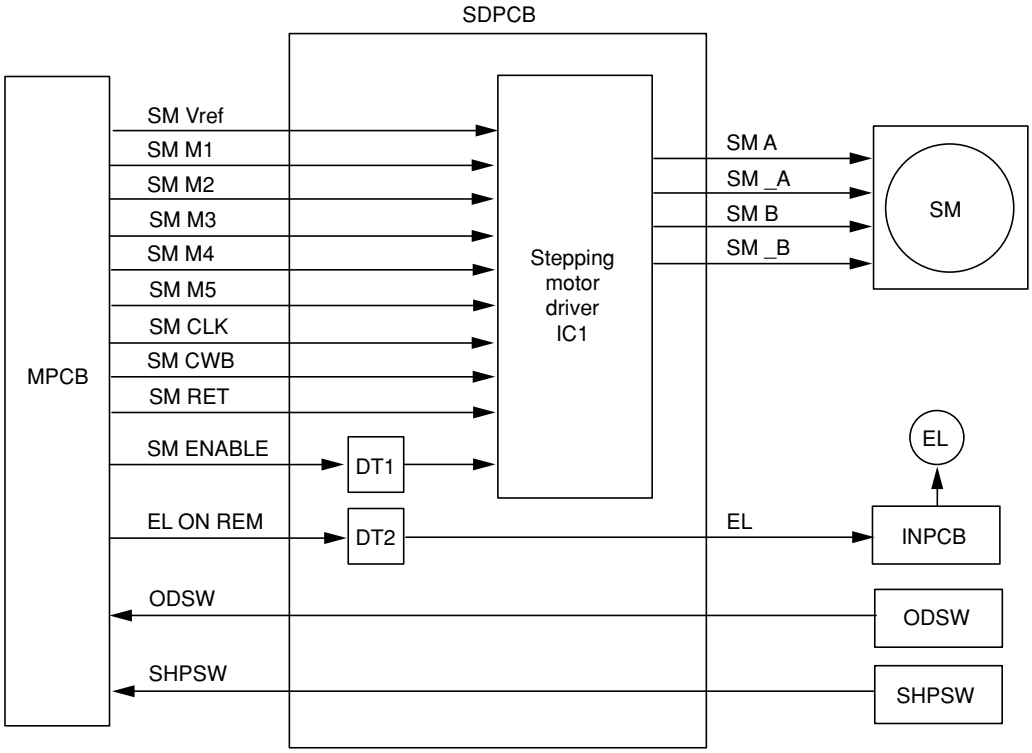


Figure 2-3-8 Scanner drive PCB block diagram

The scanner drive PCB (SDPCB) consists of a stepping motor driver IC (IC1) as the center, digital transistors DT1 and DT2, etc.
Drive of the scanner motor (SM) is controlled by the current setting voltage (SM Vref) that is output from the main PCB (MPCB), the mode signals (SM M1 to M5, SM CWB), the phase switchover clock signal (SM CLK), and the drive/stop signal (SM ENABLE).
Also the main PCB (MPCB) outputs a control signal (EL) through a digital transistor (DT2) to the inverter PCB (INPCB) to turn on or off the exposure lamp (EL).
Also the scanner drive PCB (SDPCB) acts as an interchange circuit of signals for the original detection switch (ODSW) and the scanner home position switch (SHPSW).

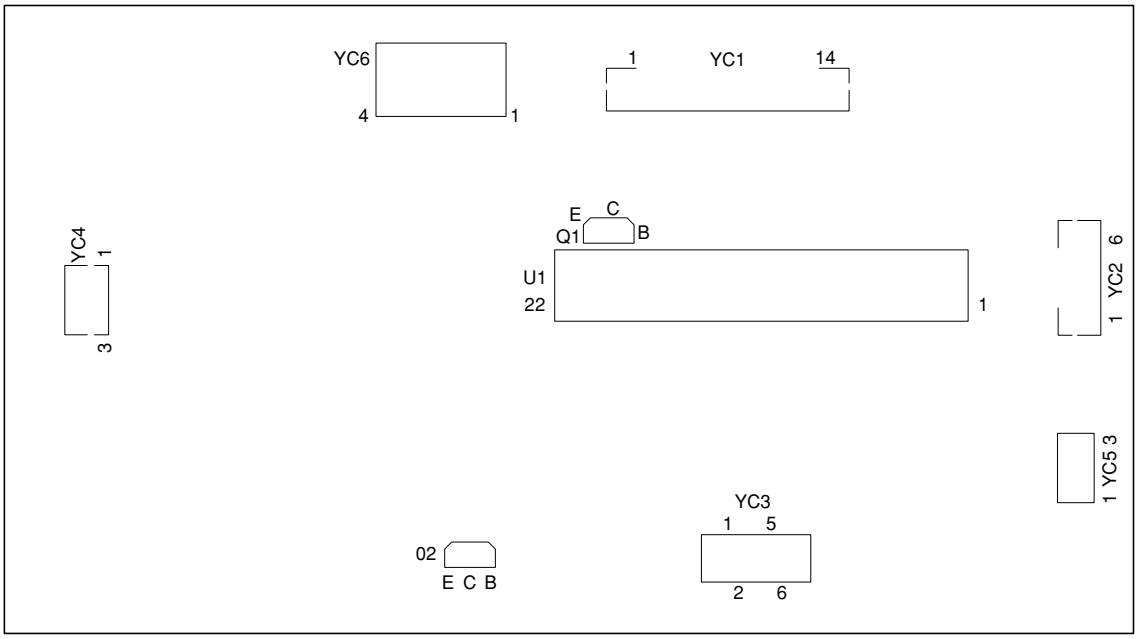


Figure 2-3-9 Scanner drive motor PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the main PCB.	1	GND	-	-	Ground
	2	SHPSW	O	0/5 V DC	SHPSW ON/OFF
	3	LAMP ON REM	I	0/5 V DC	EL ON/OFF
	4	SM ENABLE	I	0/5 V DC	SM ENABLE signal
	5	SM RET	I	0/5 V DC	SM RET signal
	6	SM CWB	I	0/5 V DC	SM CWB signal
	7	SM CLK	I	0/5 V DC (pulse)	SM CLOCK signal
	8	SM M5	I	0/5 V DC	SM drive control voltage M5
	9	SM M4	I	0/5 V DC	SM drive control voltage M4
	10	SM M3	I	0/5 V DC	SM drive control voltage M3
	11	SM M2	I	0/5 V DC	SM drive control voltage M2
	12	SM M1	I	0/5 V DC	SM drive control voltage M1
	13	SM VREF	I	0/5 V DC	SM current control voltage Vref
	14	ODSW	I	0/5 V DC	ODSW ON/OFF
YC2 Connected to the scanner motor.	1	/B	O	0/24 V DC (pulse)	SM coil energization pulse (_B)
	2	24V	O	24 V DC	24 V DC supply for SM
	3	B	O	0/24 V DC (pulse)	SM coil energization pulse (B)
	4	A	O	0/24 V DC (pulse)	SM coil energization pulse (A)
	5	24V	O	24 V DC	24 V DC supply for SM
	6	/A	O	0/24 V DC (pulse)	SM SM coil energization pulse (_A)
YC3 Connected to the inverter PCB.	1	LAMP ON	O	0/5 V DC	EL ON/OFF
	2	LAMP ON	O	0/5 V DC	EL ON/OFF
	3	24V	O	24 V DC	24 V DC supply for INPCB
	4	24V	O	24 V DC	24 V DC supply for INPCB
	5	GND	-	-	Ground
	6	GND	-	-	Ground
YC4 Connected to the scanner home position switch.	1	5V	O	5 V DC	5 V DC supply for SHPSW
	2	SHPSW	I	0/5 V DC	SHPSW ON/OFF
	3	GND	-	-	Ground
YC5 Connected to the original detection switch.	1	5V	O	5 V DC	5 V DC supply for ODSW
	2	ODSW	I	0/5 V DC	ODSW ON/OFF
	3	GND	-	-	Ground
YC6 Connected to the power source PCB.	1	GND	-	-	Ground
	2	24V	I	24 V DC	24 V DC supply form PSPCB
	3	GND	-	-	Ground
	4	5V	I	5 V DC	5 V DC supply form PSPCB

2-3-5 CCD PCB

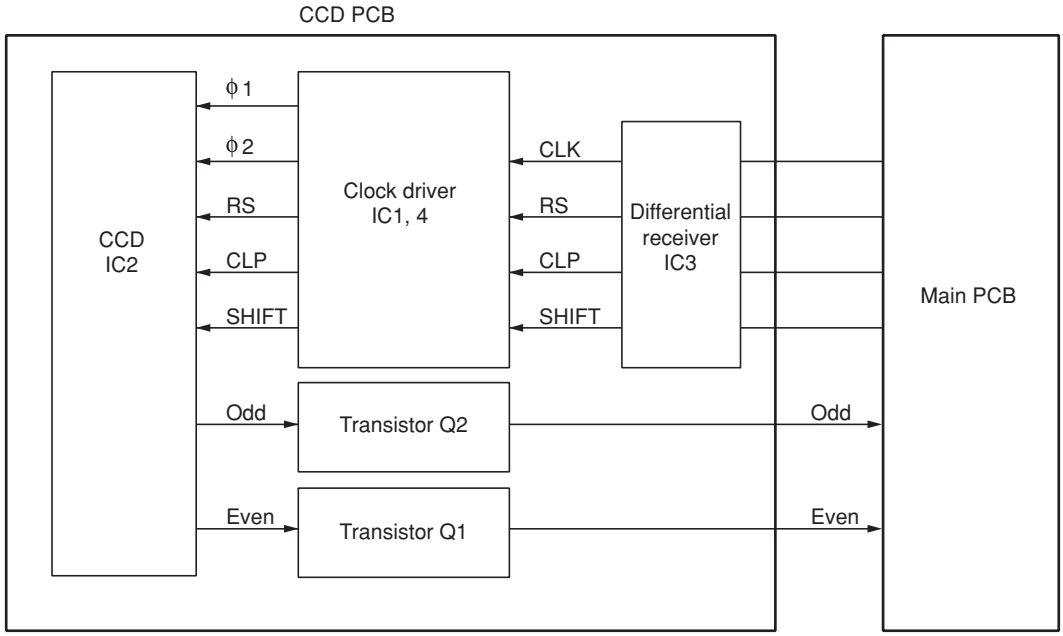


Figure 2-3-10 CCD PCB block diagram

The CCD PCB (CCDPCB) is equipped with a CCD sensor IC2 for original scanning.
The clock signals (CLK, RS, CLP, and SHIFT) for driving the CCD sensor (IC2) are sent as differential signals from the main PCB (MPCB), reconstructed to normal signals by the differential receiver (IC3), and then input to the CCD sensor (IC2) via the clock driver (IC1 and IC4).
Image signals are analog signals. Even- and odd-numbered pixels are output separately. These analog image signals are amplified by emitter followers in the transistors Q1 and Q2 and then transmitted to the analog signal processing circuit in the main PCB (MPCB).

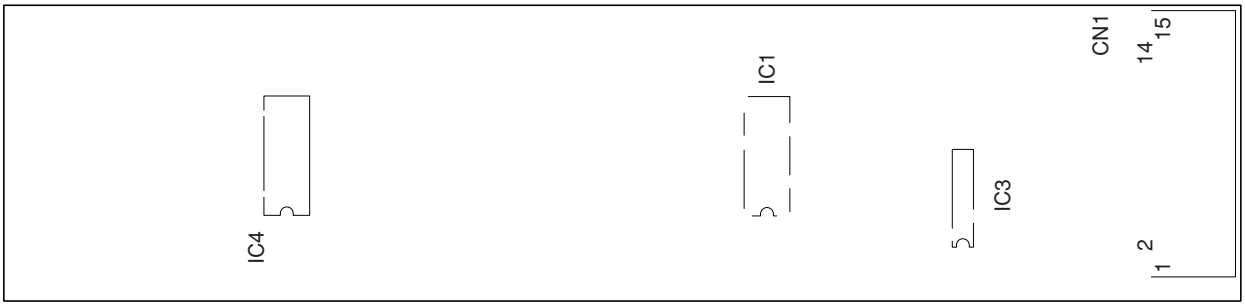
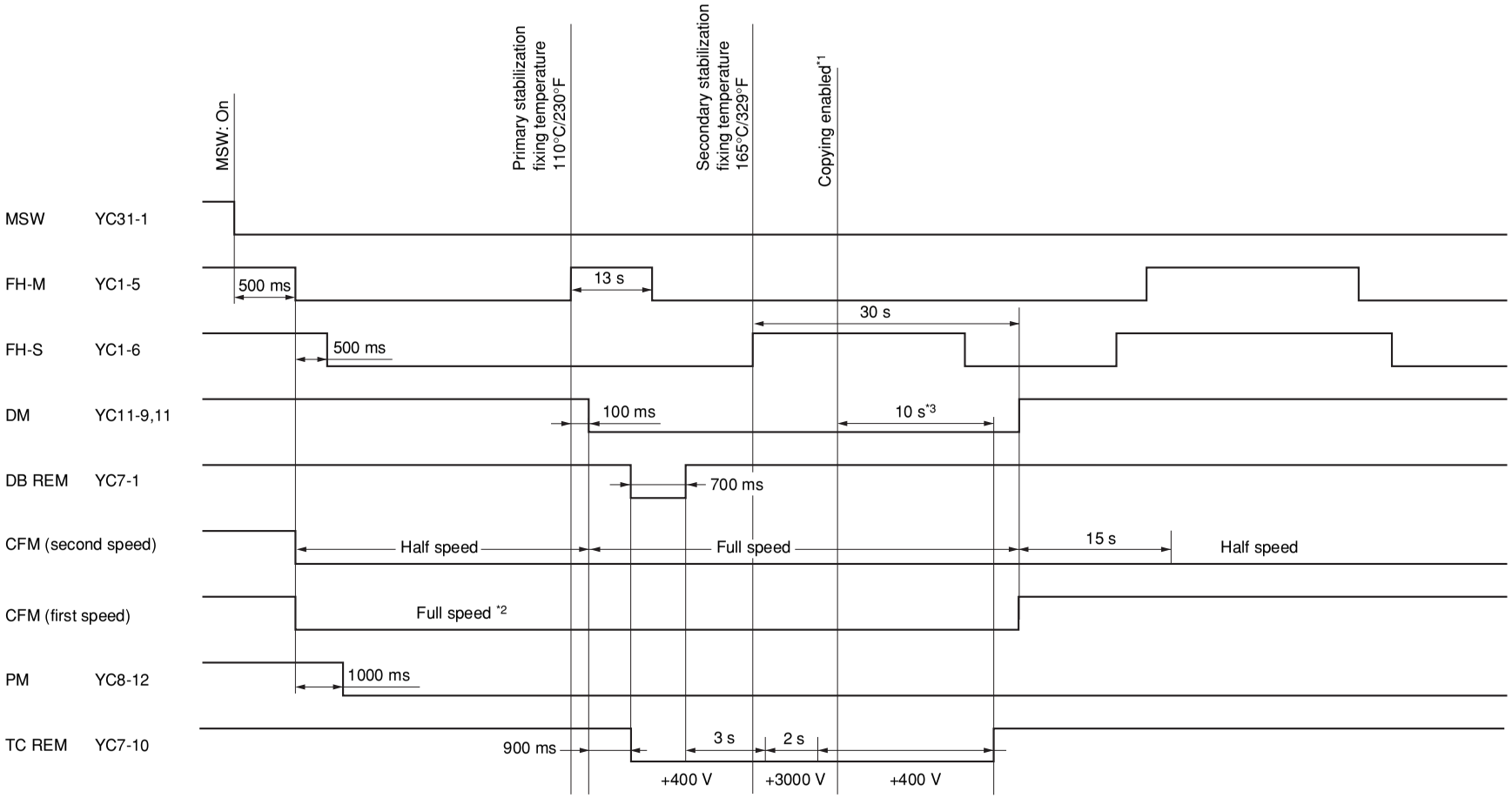


Figure 2-3-11 CCD PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1	1	RS-	I	0/5 V DC (pulse)	RS - signal
Connected to the main PCB.	2	RS+	I	0/5 V DC (pulse)	RS + signal
	3	CLK+	I	0/5 V DC (pulse)	CLOCK + signal
	4	CLK-	I	0/5 V DC (pulse)	CLOCK - signal
	5	GND	-	-	Ground
	6	SHIFT	I	0/5 V DC (pulse)	SHIFT signal
	7	GND	-	-	Ground
	8	CLP	I	0/5 V DC (pulse)	CLP signal
	9	GND	-	-	Ground
	10	5.1V	I	5.1 V DC	5.1 V DC supply from MPCB
	11	12V	I	12 V DC	12 V DC supply from MPCB
	12	EVEN	O	4.5 V DC (pulse)	EVEN signal (analog)
	13	GND	-	-	Ground
	14	ODD	O	4.5 V DC (pulse)	ODD signal (analog)
	15	GND	-	-	Ground

Timing chart No. 1 From the main switch turned on to machine stabilization



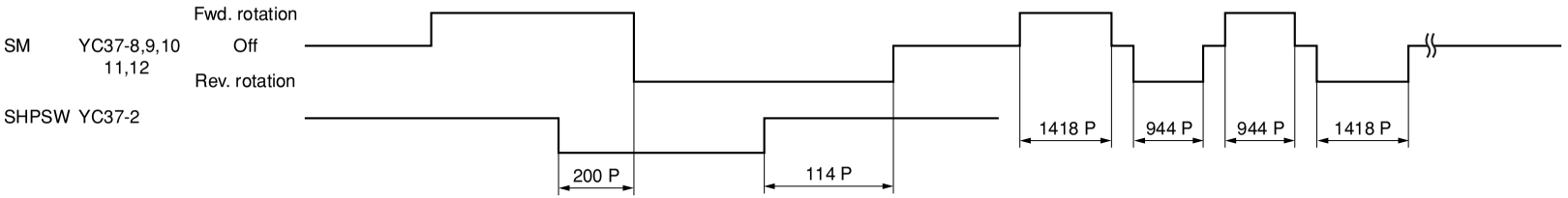
*1: Copying is enabled as follows:
1. When fixing temperature at the main switch turning on is 100°C/212°F or lower
Absolute humidity is 15 g/m^3 or higher:
Copying is enabled 120 s after fixing heater M (FH-M) turning on.
2. When fixing temperature at the main switch turning on is 100°C/212°F or lower
The fixing temperature at the main switch turning on is 13°C/55.4°F or higher and the ambient temperature is 18°C/64.4°F or higher:
Copying is enabled at the earlier timing of either 41 s after fixing heater M (FH-M) turning on or when the copier enters secondary stabilization.
Other than the above:
Copying is enabled at the later timing of either 69 s after fixing heater M (FH-M) turning on or when the copier enters secondary stabilization.
3. Other conditions than 1 and 2
Copying is enabled when the copier enters secondary stabilization.

*2: Rotates for 180 s at full speed when the fixing temperature at the main switch turning on is 100°C/212°F or lower, and the absolute humidity is 15 g/m^3 or higher.

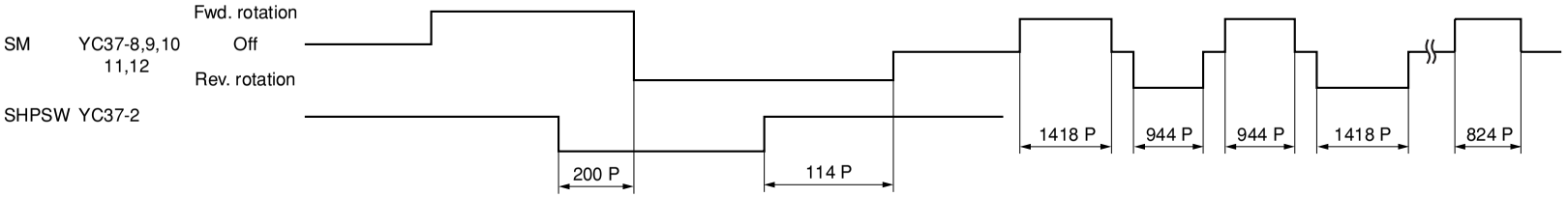
*3: 60 s when the fixing temperature at main switch turning on is 100°C/212°F or lower, and the absolute humidity is 15 g/m^3 or higher.

Timing chart No. 2 Scanner initialization

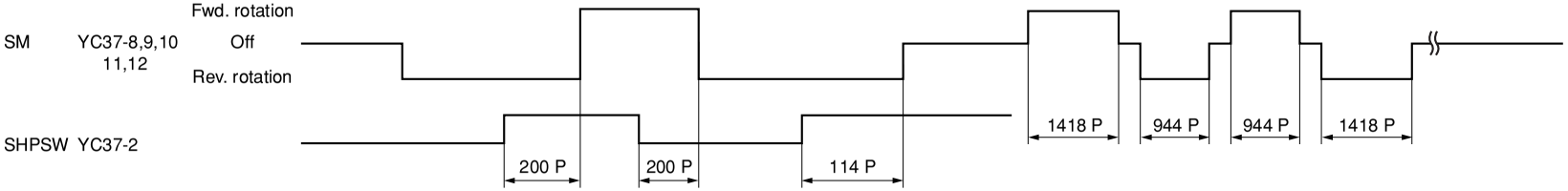
Scanner initialization (SHPSW: ON, ODSW: ON)



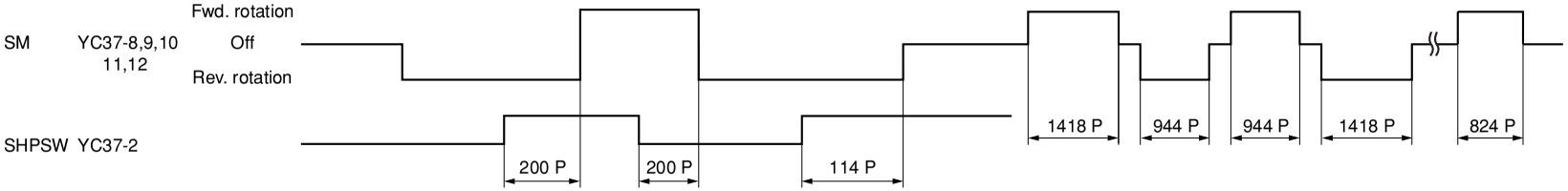
Scanner initialization (SHPSW: ON, ODSW: OFF)



Scanner initialization (SHPSW: OFF, ODSW: ON)

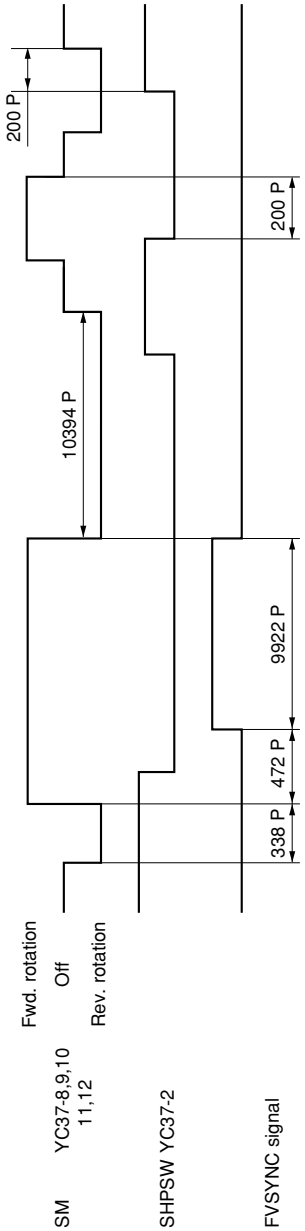


Scanner initialization (SHPSW: OFF, ODSW: OFF)

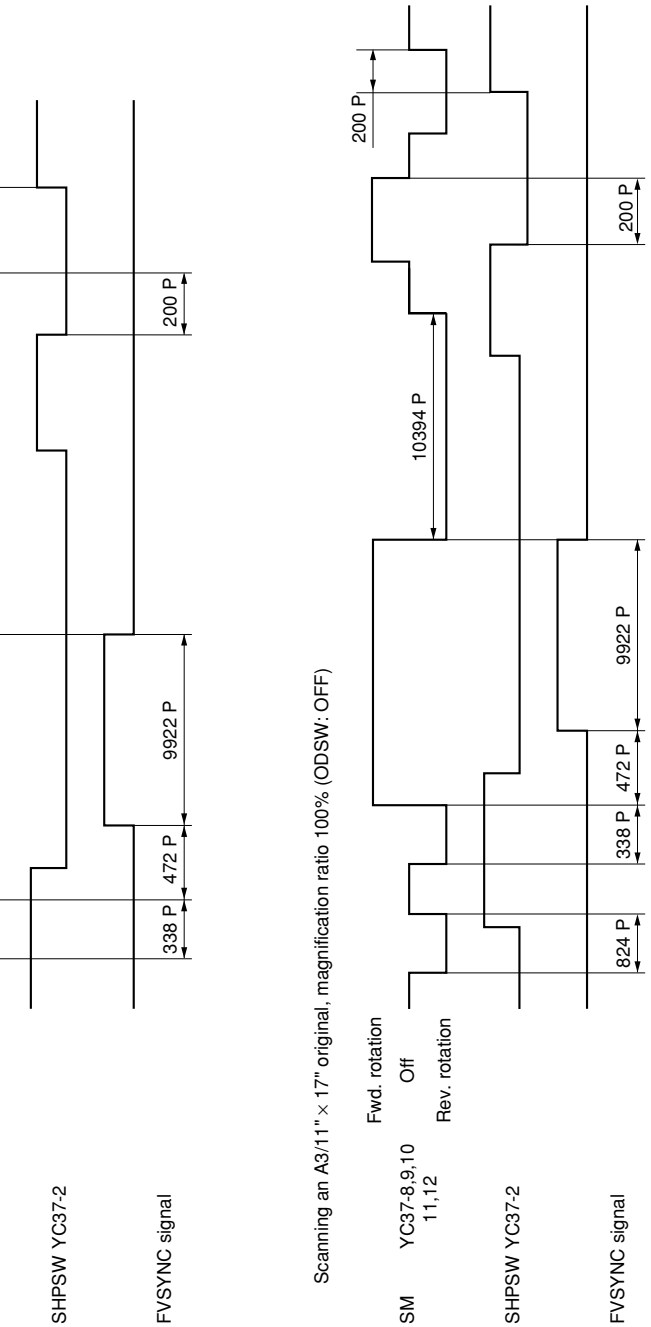


Timing chart No. 3 Original scanning operation

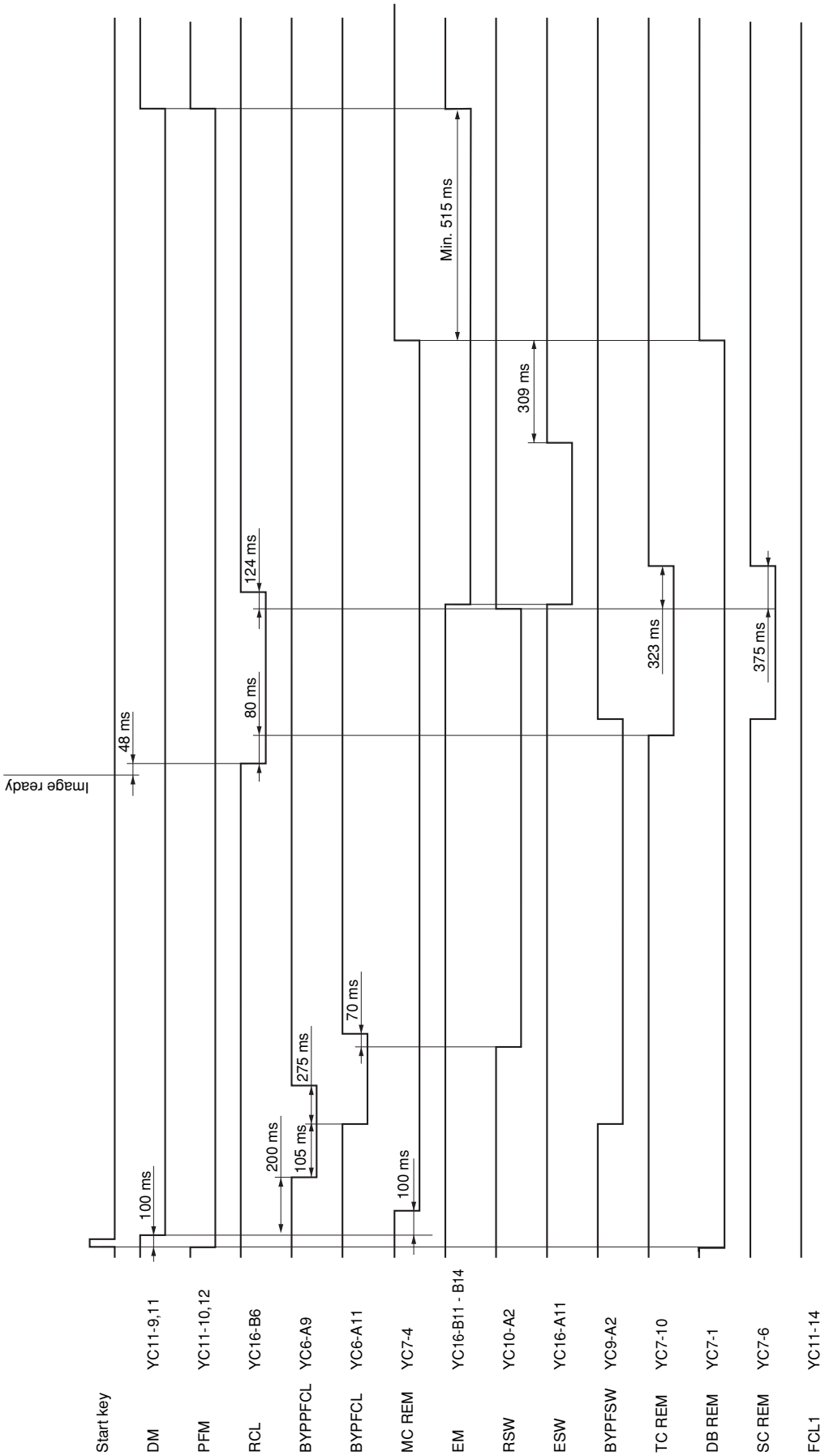
Scanning an A3/11" × 17" original, magnification ratio 100% (ODSW: ON)



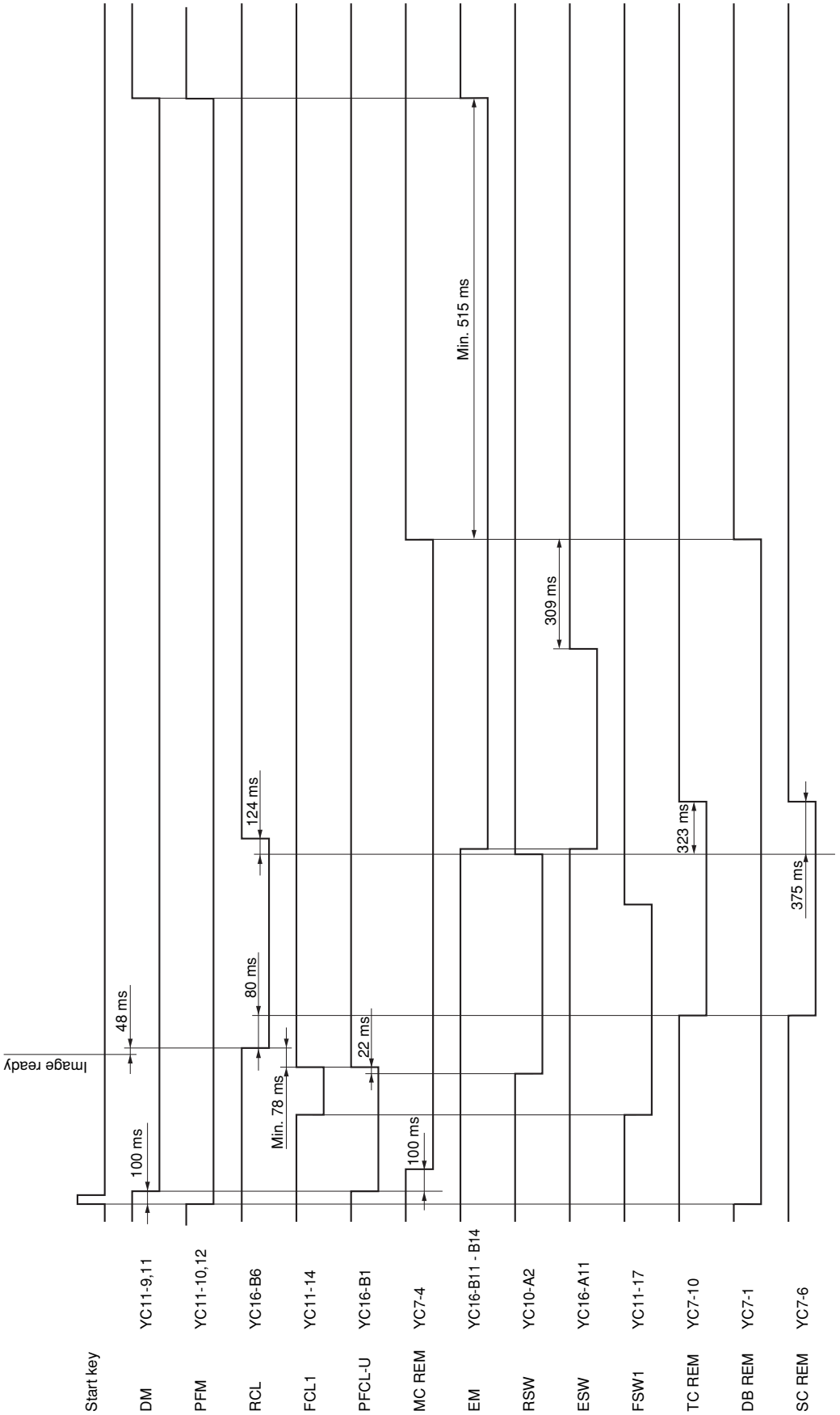
Scanning an A3/11" × 17" original, magnification ratio 100% (ODSW: OFF)



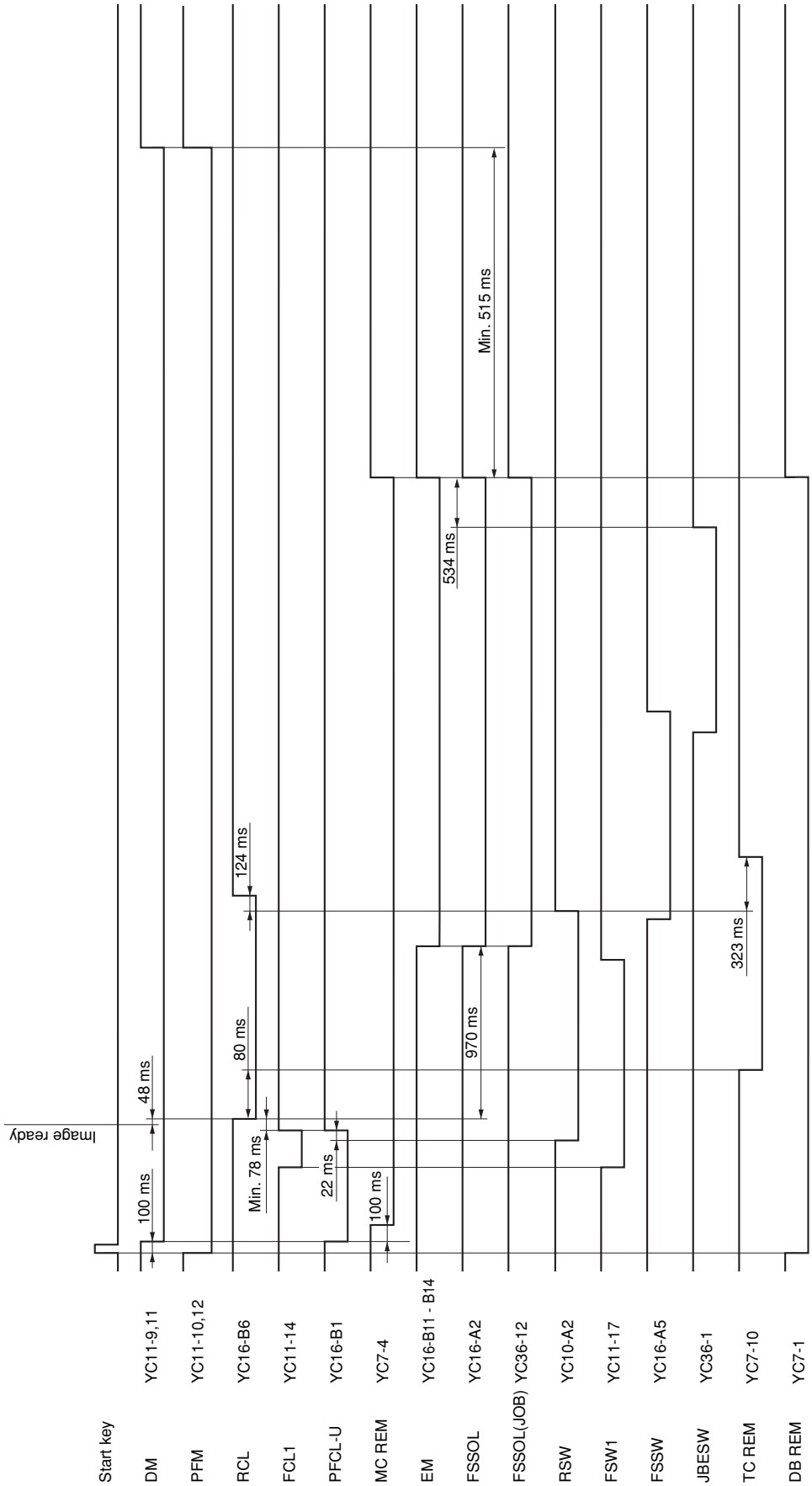
Timing chart No. 4 Copying an A3/11"×17" original onto an A5R/5$^{1}/_{2}$"×8$^{1}/_{2}$" copy paper from the bypass table, magnification ratio 25%, manual copy density control



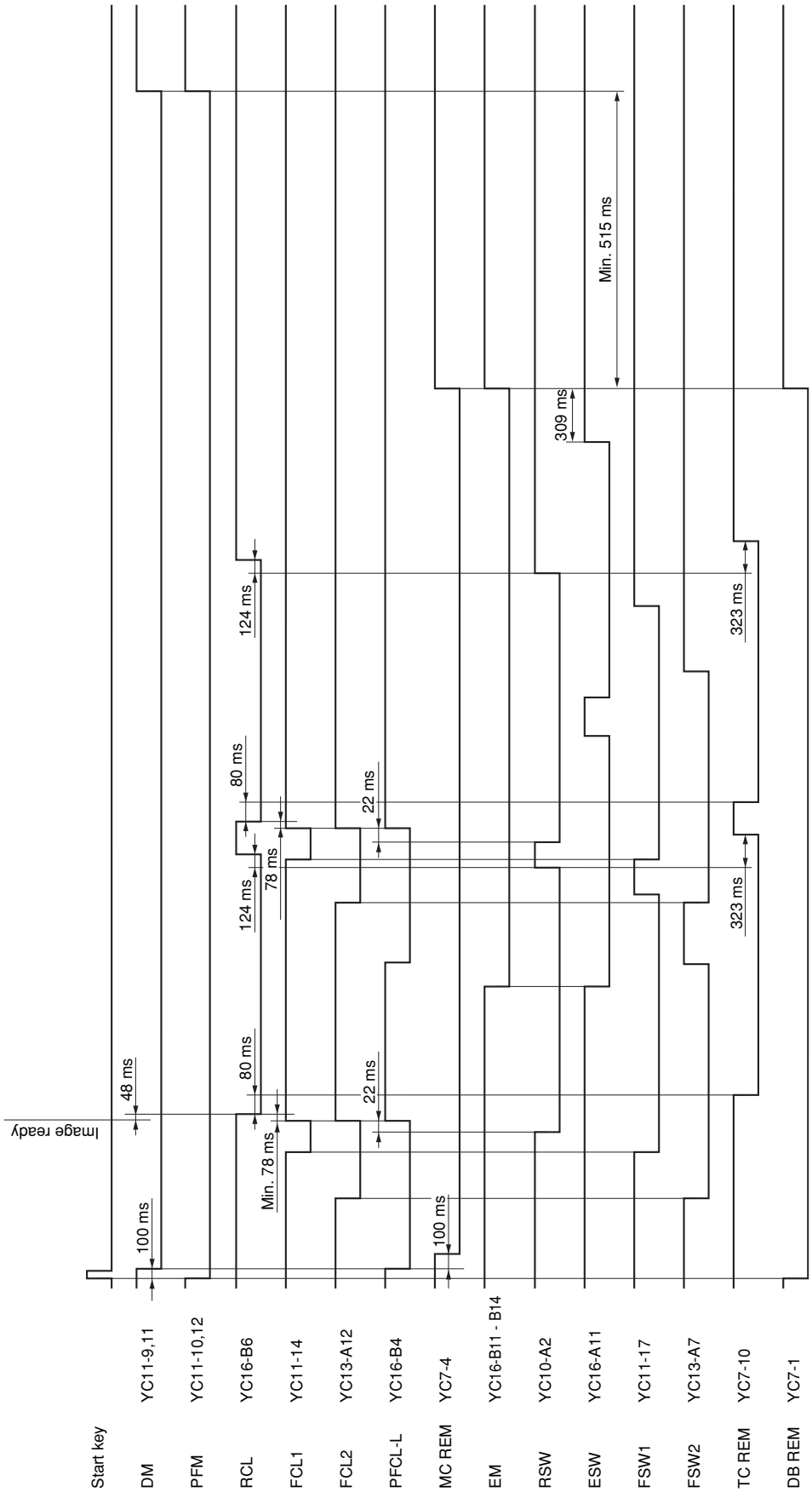
Timing chart No. 5 Copying an A4/11"×8 1/2" original onto an A4/11"×8 1/2" copy paper from the copier upper drawer, magnification ratio 100%, auto copy density control



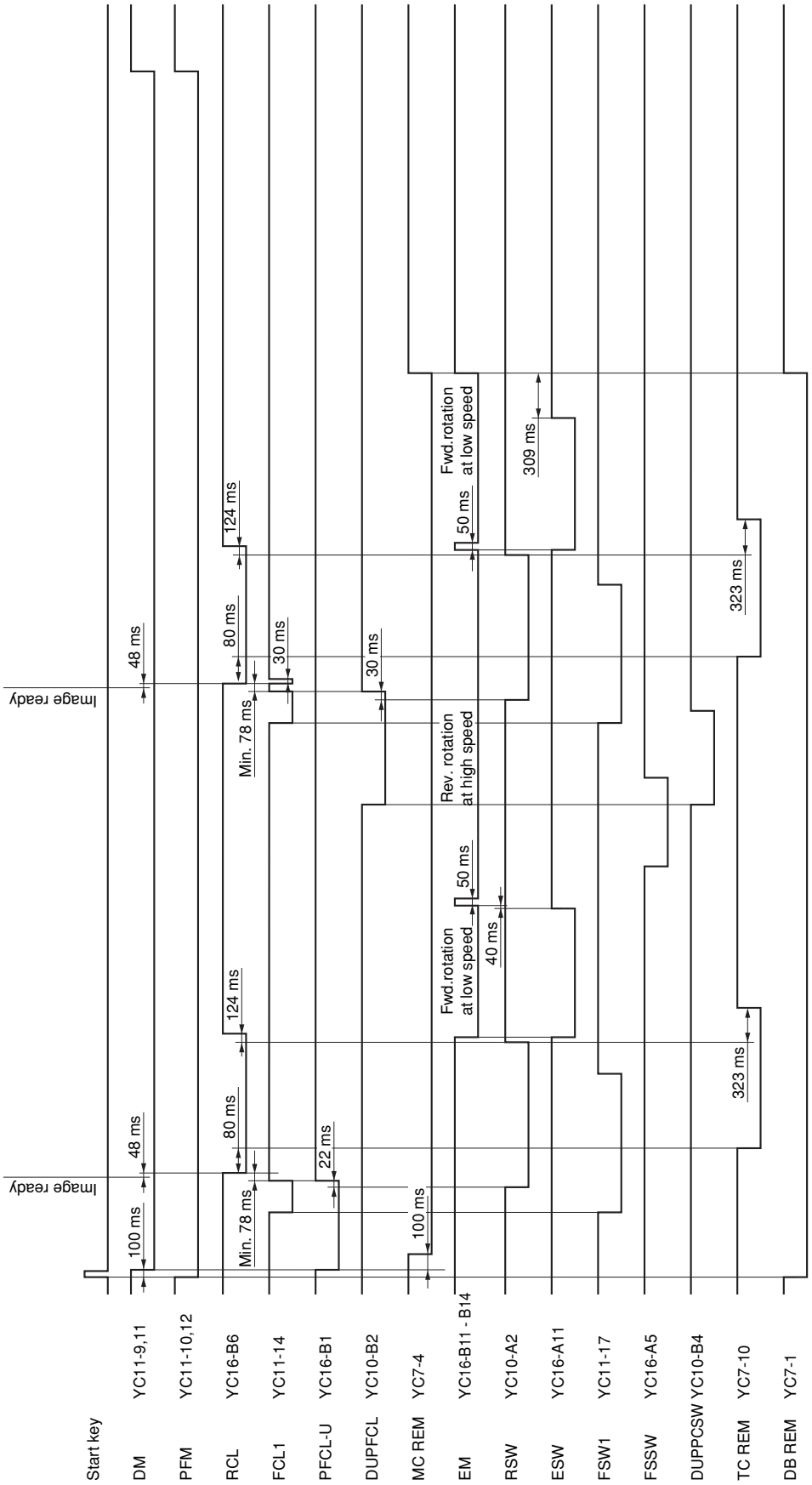
Timing chart No. 6 Copying an A4/11"×8$^1/_2$" original onto an A4/11"×8$^1/_2$" copy paper from the copier upper drawer, magnification ratio 100%, auto copy density control, ejection to the job separator



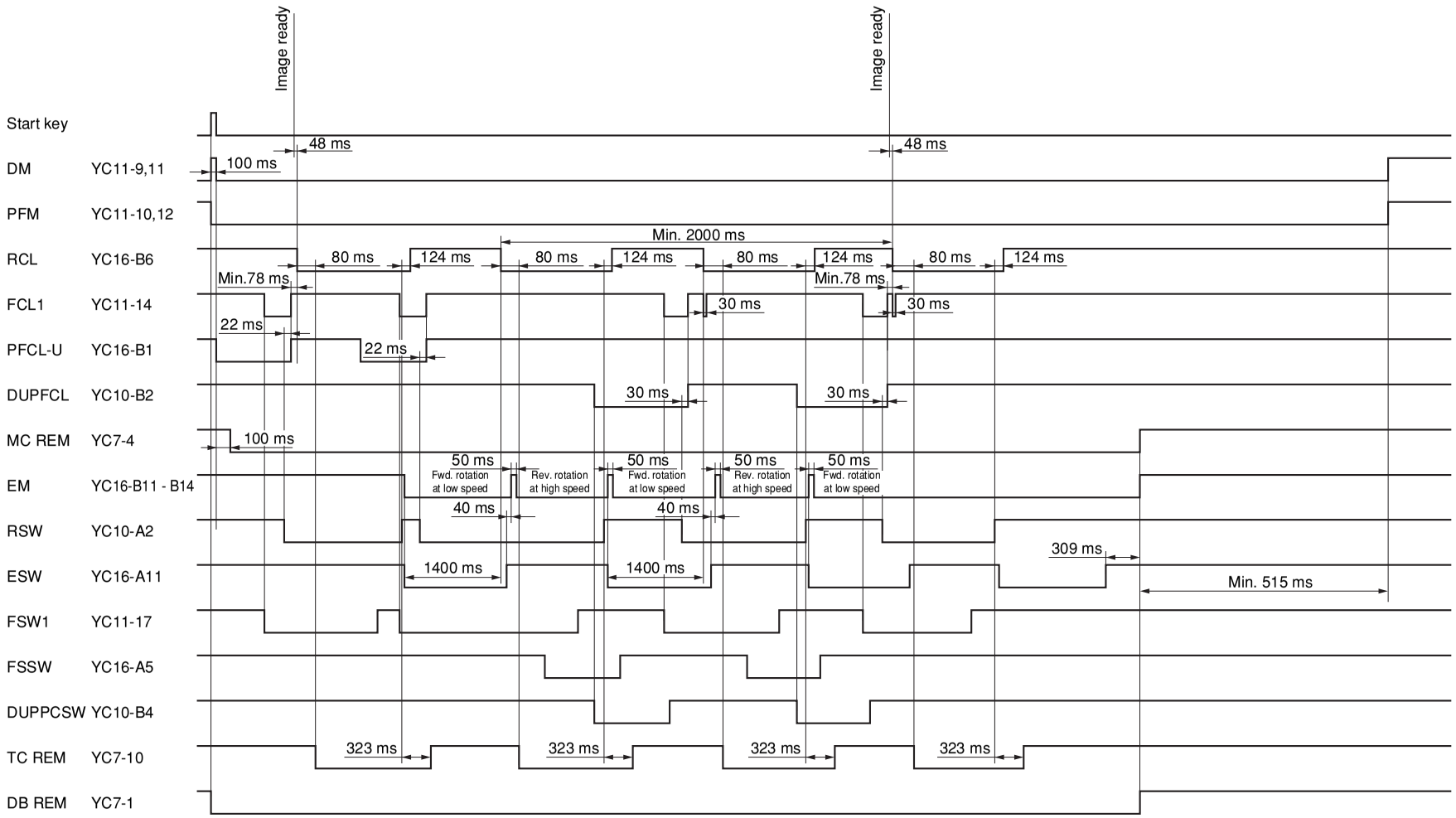
Timing chart No. 7 Continuous copying of an A5R/5$^1/_2$"×8$^1/_2$" original onto two sheets of A3/11"×17" copy paper from the copier lower drawer, magnification ratio 400%, manual copy density control



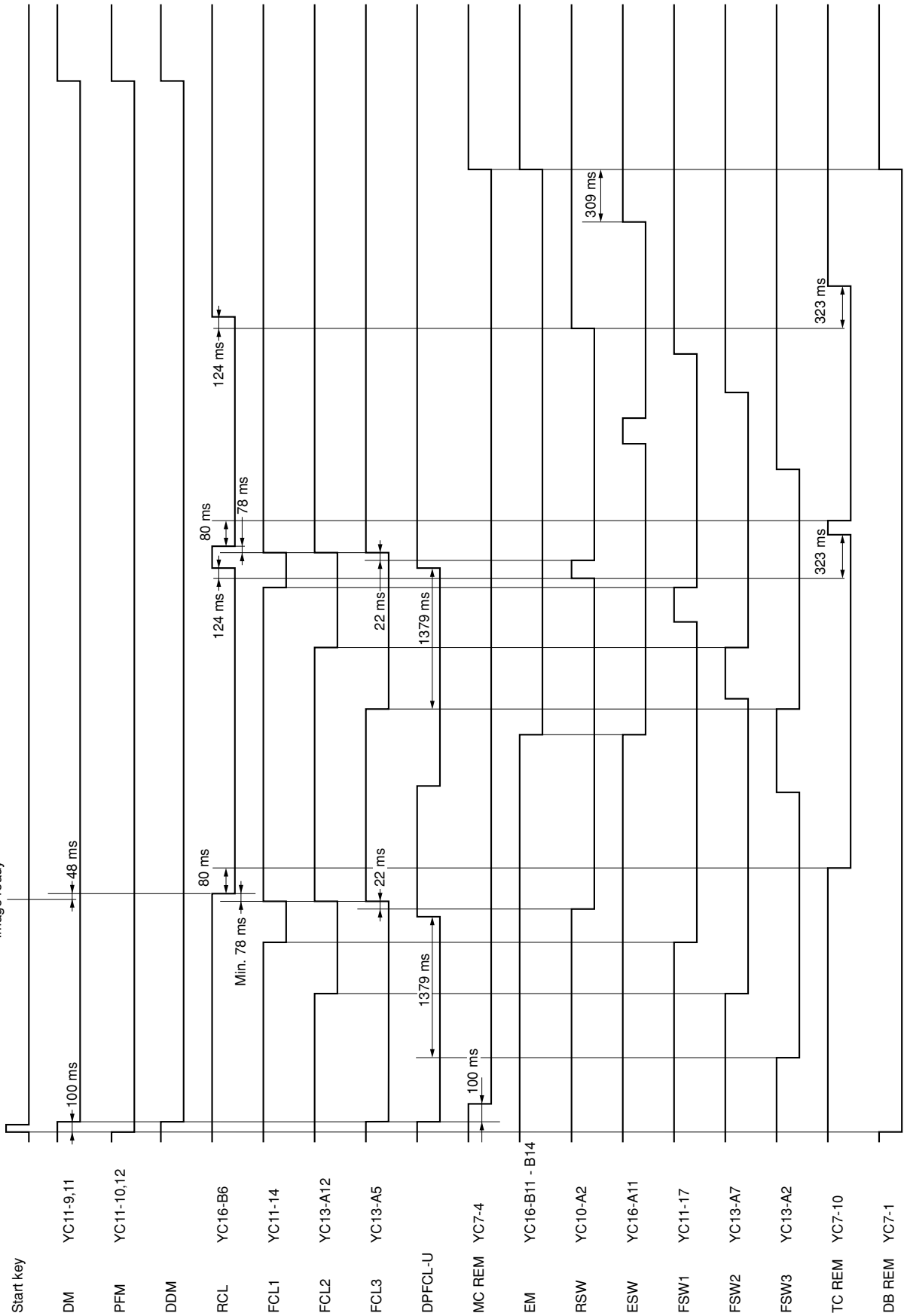
Timing chart No. 8 Duplex copying of an A3/11"×17" book original onto one duplex A4/11"×8$^{1}/_{2}$" copy from the copier upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 9 Continuous, duplex copying of two single-sided A4/11"×8$^1/_2$" originals onto two duplex A4/11"×8$^1/_2$" copies from the copier upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 10 Continuous copying an A3/11"×17" original onto two sheets of A3/11"×17" copy paper from the paper feed desk upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 11 Copying an A4/11"×8 1/2" original onto an A4/11"×8 1/2" copy paper from the paper feed desk lower drawer, magnification ratio 100%, manual copy density control

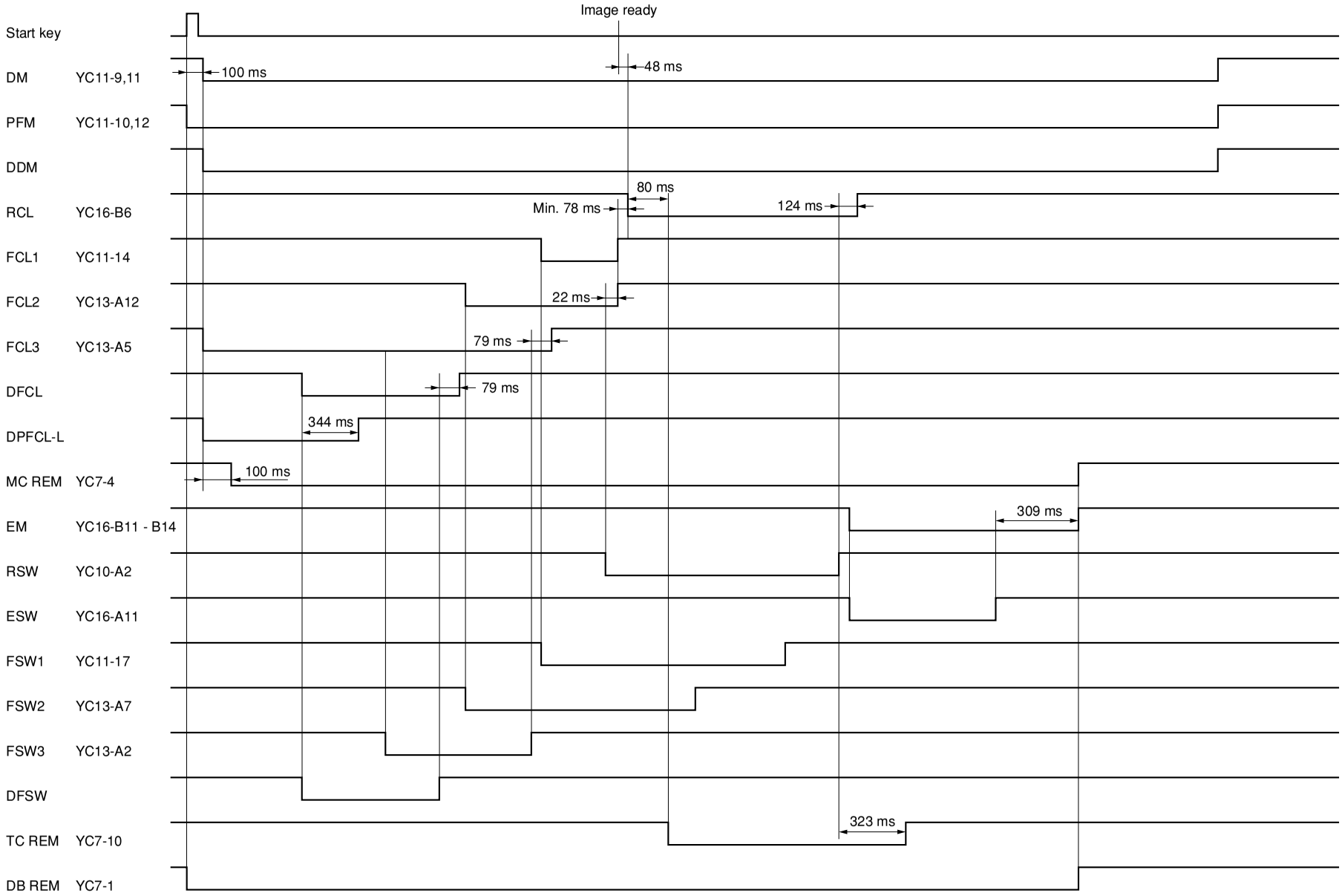
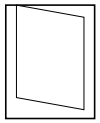
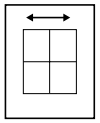
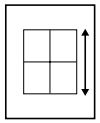
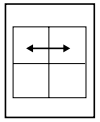
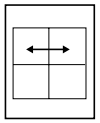
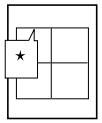
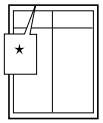
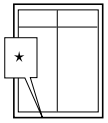
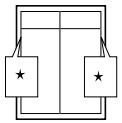
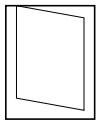
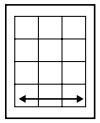
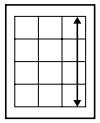
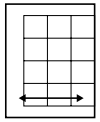
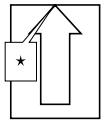
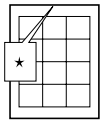
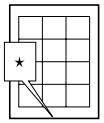
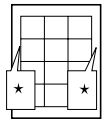


Chart of image adjustment procedures

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
①	Adjusting the lateral squareness (printing adjustment)		Adjusting the skew of the laser scanner unit (printing adjustment)	—	—	U993 (PG2) Test chart	1-6-22	
②	Adjusting the magnification in the main scanning direction (printing adjustment)		Polygon motor speed adjustment	U053	POLYGON MOTOR	U053 test pattern	1-4-22	
③	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Drive motor speed adjustment	U053	MAIN MOTOR	U053 test pattern	1-4-22	
④	Adjusting the center line of the bypass table (printing adjustment)		Adjusting the LSU print start timing	U034	LSUOUT	U034 test pattern	1-6-12	The center line of the bypass table is used as the reference in the adjustment of the center lines for other paper sources.
⑤	Adjusting the center line of the drawers and large paper deck (printing adjustment)		Adjusting the position of the rack adjuster	—	—	U034 test pattern	—	Adjusts the position of each paper source.
⑥	Adjusting the leading edge registration (printing adjustment)		Registration clutch turning on timing (secondary paper feed start timing)	U034	RCL ON	U034 test pattern	1-6-10	To make an adjustment for duplex copying, select “RCL ON (DUP)”.
⑦	Adjusting the leading edge margin (printing adjustment)		LSU illumination start timing	U402	LEAD	U402 test pattern	1-6-13	
⑧	Adjusting the trailing edge margin (printing adjustment)		LSU illumination end timing	U402	TRAIL	U402 test pattern	1-6-13	To make an adjustment for duplex copying, select “TRAIL (DUP)”.

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
⑨	Adjusting the left and right margins (printing adjustment)		LSU illumination start/end timing	U402	A C	U402 test pattern	1-6-13	
⑩	Adjusting the lateral squareness (scanning adjustment)		Adjusting the position of the ISU (scanning adjustment)	—	—	Test chart	1-6-25	
⑪	Adjusting magnification of the scanner in the main scanning direction (scanning adjustment)		Data processing	U065	MAIN SCAN ADJ	Test chart	1-6-27	No adjustment for copying using the DP.
⑫	Adjusting magnification of the scanner in the auxiliary scanning direction (scanning adjustment)		Original scanning speed	U065 U070	SUB SCAN ADJ ADJUST DATA	Test chart	1-6-28 1-4-25	U065: For copying an original placed on the contact glass. U070: For copying originals from the DP.
⑬	Adjusting the center line (scanning adjustment)		Adjusting the original scan data (image adjustment)	U067 U072	ADJUST DATA 1 sided	Test chart	1-6-30 1-4-27	U067: For copying an original placed on the contact glass. U072: For copying originals from the DP.
⑭	Adjusting the leading edge registration (scanning adjustment)		Original scan start timing	U066 U071	ADJUST DATA LEAD EDGE ADJ	Test chart	1-6-29 1-4-26	U066: For copying an original placed on the contact glass. U071: For copying originals from the DP.
⑮	Adjusting the leading edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	B MARGIN B MARGIN	Test chart	1-6-31 1-4-63	U403: For copying an original placed on the contact glass. U404: For copying originals from the DP.
⑯	Adjusting the trailing edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	D MARGIN D MARGIN	Test chart	1-6-31 1-4-63	U403: For copying an original placed on the contact glass. U404: For copying originals from the DP.

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
⑰	Adjusting the left and right margins (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	A MARGIN C MARGIN A MARGIN C MARGIN	Test chart	1-6-31 1-4-63	U403: For copying an original placed on the contact glass. U404: For copying originals from the DP.

When maintenance item U092 (Adjusting the scanner automatically) is run using the specified original (P/N 2A068020), the following adjustments are automatically made:

- Adjusting the scanner center line (U067)
- Adjusting the scanner leading edge registration (U066)
- Adjusting the scanner magnification in the main scanning direction (U065)
- Adjusting the scanner magnification in the auxiliary scanning direction (U065)

Image quality

Item	Specifications
100% magnification	Copier: ±0.8%
	Using DP: ±1.5%
Enlargement/reduction	Copier: ±1.0%
	Using DP: ±1.5%
Lateral squareness (copier mode)	Copier: ±1.5 mm/375 mm
	Using DP: ±2.5 mm/375 mm
Lateral squareness (printer mode)	±1.0 mm/375 mm
Margins (copier mode)	A: $2.0^{+2.0}_{-1.5}$ mm
	B: 3.0 ± 2.5 mm
	C: $2.0^{+2.0}_{-1.5}$ mm
	D: $3.0^{+3.0}_{-2.5}$ mm
Margins (printer mode)	A: 5.0 ± 2.0 mm
	B: 5.0 ± 2.5 mm
	C: 5.0 ± 2.0 mm
	D: 5.0 ± 2.5 mm
Leading edge registration	Drawer: ±2.5 mm
	Bypass: ±2.5 mm
	Duplex copying: ±2.5 mm
Skewed paper feed (left-right difference)	Drawer: 1.5 mm or less
	Bypass: 1.5 mm or less
	Duplex copying: 2.0 mm or less
Lateral image shifting	Drawer: ±2.0 mm or less
	Bypass: ±2.0 mm or less
	Duplex copying: ±3.0 mm or less
Curling	Drawer: ±3.0 mm or less
	Bypass: 10.0 mm or less
	Duplex copying: 10.0 mm or less

Maintenance parts list

Maintenance part name		Part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list			
Upper/lower paper feed pulley	PULLEY, PAPER FEED	2AR07220	4	4
Upper/lower separation pulley	PULLEY, SEPARATION	2AR07230	4	5
Upper/lower fowarding pulley	PULLEY, LEADING FEED	2AR07240	4	6
Bypass paper feed pulley	UPPER PULLEY, BYPASS	61706770	10	29
Bypass separation pulley	PULLEY, SEPARATION	2AR07230	10	34
Bypass forwarding pulley	PULLEY, LEADING FEED	2AR07240	10	20
Bypass feed roller 1	ROLLER2 BYPASSFEED	2BL06540	11	11
Bypass feed roller 2	ROLLER4 BYPASSFEED	2BL06560	11	12
Left registration roller	ROLLER REGIST	2FG16020	7	11
Right registration roller	RIGHT ROLLER REGIST	2BL06270	5	51
Feed pulley	PULLEY FEED	2BL16080	6,7	37,8
Feed roller 1	PULLEY FEED	2BL06930	5	59
Feed roller 2	ROLLER B FEED	2BL06080	5	5
Feed roller 3	ROLLER C FEED	2BL06090	5	6
Registration switch	SWITCH REGISTRATION	2FG27110	5	83
Lower regist cleaner	UNDER CLEANER REGIST	2BL07950	7	46
Registration switch	GUIDE REGIST F	2BL16060	7	16
Contact glass	CONTACT GLASS	35912010	9	46
Slit glass	CONTACT GLASS, ADF	2FG12020	9	19
Mirror 1	MIRROR A	2AV12150	9	9
Mirror 2 and mirror 3	MIRROR B	2AV12160	9	10
Exposure lamp	LAMP, SCANNER	2AV12100	9	4
Original size detection switch	SENSOR ORIGINAL	2C927090	9	53
Transfer roller unit	TR-700 TRANSFER UNIT	2BK93070	7	25
Transfer roller unit	TR-701 TRANSFER UNIT	2BL93030	7	25
Developing unit	PARTS, DEVELOPER ASS'Y	2BJ93010	13	1
Drum unit	PARTS, DRUM ASS'Y,SP	2FG93010	15	1
Drum unit	PARTS, DRUM ASS'Y	2BJ93020	15	1
Main charger unit	PARTS MAIN-C, MC700	2BL93090	15	5
Fixing unit	PARTS, FIXING ASS'Y 120,SP	2FG93030	14	-
	PARTS, FIXING ASS'Y 230,SP	2FG93040	14	-
Press roller separation claw	CLAW, PRESS ROLLER	2BL20350	6	8
Eject roller	ROLLER EXIT	2BL21020	8	4
Switchback roller	ROLLER FEED SHIFT	2BL21030	8	3
Eject pulley	PULLEY EXIT C	2BL21520	8	37
Switchback pulley	PULLEY FEED SHIFT	2BL21330	6	2

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Test copy and test print	Perform at the maximum copy size	Test copy	Every service		

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper feed section	Upper/lower paper feed pulley	Replace	400K (30)/500K (40/50)	Replace.*	1-6-3
	Upper/lower separation pulley	Replace	400K (30)/500K (40/50)	Replace.*	1-6-3
	Upper/lower forwarding pulley	Replace	400K (30)/500K (40/50)	Replace.*	1-6-3
	Bypass paper feed pulley	Replace	400K (30)/500K (40/50)	Replace.*	1-6-5
	Bypass separation pulley	Replace	400K (30)/500K (40/50)	Replace. *	1-6-5
	Bypass forwarding pulley	Replace	400K (30)/500K (40/50)	Replace. *	1-6-5
	Bypass feed roller 1	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Bypass feed roller 2	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Left registration roller	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Right registration roller	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Feed pulley	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Feed roller 1	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Feed roller 2	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Feed roller 3	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Registration switch	Clean	400K (30)/500K (40/50)	Clean with a dry cloth.	
	Lower regist cleaner	Replace	400K (30)/500K (40/50)	Replace.	
	Registration guide	Replace	400K (30)/500K (40/50)	Replace.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Optical section	Slit glass	Clean	400K (30)/500K (40/50)	Clean with a dry cloth.	
	Contact glass	Clean	400K (30)/500K (40/50)	Clean with alcohol and then a dry cloth.	
	Mirror 1	Clean	User call	Clean with alcohol and then a dry cloth only if vertical black lines appear on the copy image.	
	Mirror 2 and mirror 3	Clean	User call	Clean with alcohol and then a dry cloth only if vertical black lines appear on the copy image.	
	Lens	Clean	User call	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Reflector	Clean	User call	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Exposure lamp	Clean or replace	User call	Replace if an image problem occurs.	
	Optical rail	Grease	User call	Check noise and shifting and then apply scanner rail grease PG671.	
	Original size detection	Clean	User call	Clean the sensor emitter and sensor receiver with alcohol or a dry cloth only if there is a problem.	

*Check and clean with alcohol when user call occurs.

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Transfer/ separation section	Transfer roller unit	Replace	400K (30)/500K (40/50)	Replace. (Clean when user call occurs.)	1-6-35

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Developing section	Developing unit	Replace	400K (30)/500K (40/50)	Replace. (Check and replace when user call occurs.)	1-6-34

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Main charging/ drum section	Drum unit	Replace	400K (30)/500K (40/50)	Replace. (Check and replace when user call occurs.)	1-6-32
	Main charger unit	Clean	400K (30)/500K (40/50)	Clean with a wet cloth and then a dry cloth.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Fixing section	Fixing unit	Replace	400K (30)/500K (40/50)	Replace.	1-6-36
	Press roller separation	Check, replace	400K (30)/500K (40/50)	Clean with alcohol. (Check and replace when user call occurs.)	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Eject section	Eject roller	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Eject pulley	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Switchback roller	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	
	Switchback pulley	Clean	400K (30)/500K (40/50)	Clean with alcohol.*	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers	Clean	Every service	Clean with alcohol or a dry cloth.	

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Other	Image quality	Check and adjust	Every service		

*Check and clean with alcohol when user call occurs.

Optional devices supplied parts list

Paper feed desk

Name used in service manual	Name used in installation guide	Part No.
Retainer	Retainer	3AT02150
Pin	Pin	74315200
CVM4 × 06 cross-head chromate binding screw	Cross-head chromate binding screw, CVM4 × 06	B1004060
Stay	Stay	3AT02250
M4 × 10 chrome TP screw	Chrome TP screw, M4 × 10	B4104100

Network facsimile System

Name used in service manual	Name used in installation guide	Part No.
Fax board	Fax board	3DB01010
Auxiliary power source PCB assembly (100 V)	Auxiliary power source PCB assembly (100 V)	3CM01030
Auxiliary power source PCB assembly (200 V)	Auxiliary power source PCB assembly (200 V)	3CM01040
Fax kit label sheet	Fax kit label sheet	3CM05010
Certification label (120 V only)	FCC68 label sheet (120 V only)	3CM05040
Certification label (120 V only)	LINE IC label sheet (120 V only)	3CM05030
Modular connecter cable (120 V only)	“B“ Modular connecter cable (120 V only)	76727300
M3 × 06 chrome binding screw	+TP-A chrome binding screw M3 × 06	B4103060
Fax cable	Fax cable	3CM27010
Fax-PCB-Power cable	Fax-PCB-Power cable	3CM27040
NCU board assembly (N.A.)	NCU board assembly (N.A.)	3B101030
NCU board assembly (CTR)	NCU board assembly (CTR)	3B101040
NCU cable	NCU cable	2AW27020

Printing System

Name used in service manual	Name used in installation guide	Part No.
Clamp	Clamp, CKN-05	M2105890
Band	Band	M2307010

Scanning System

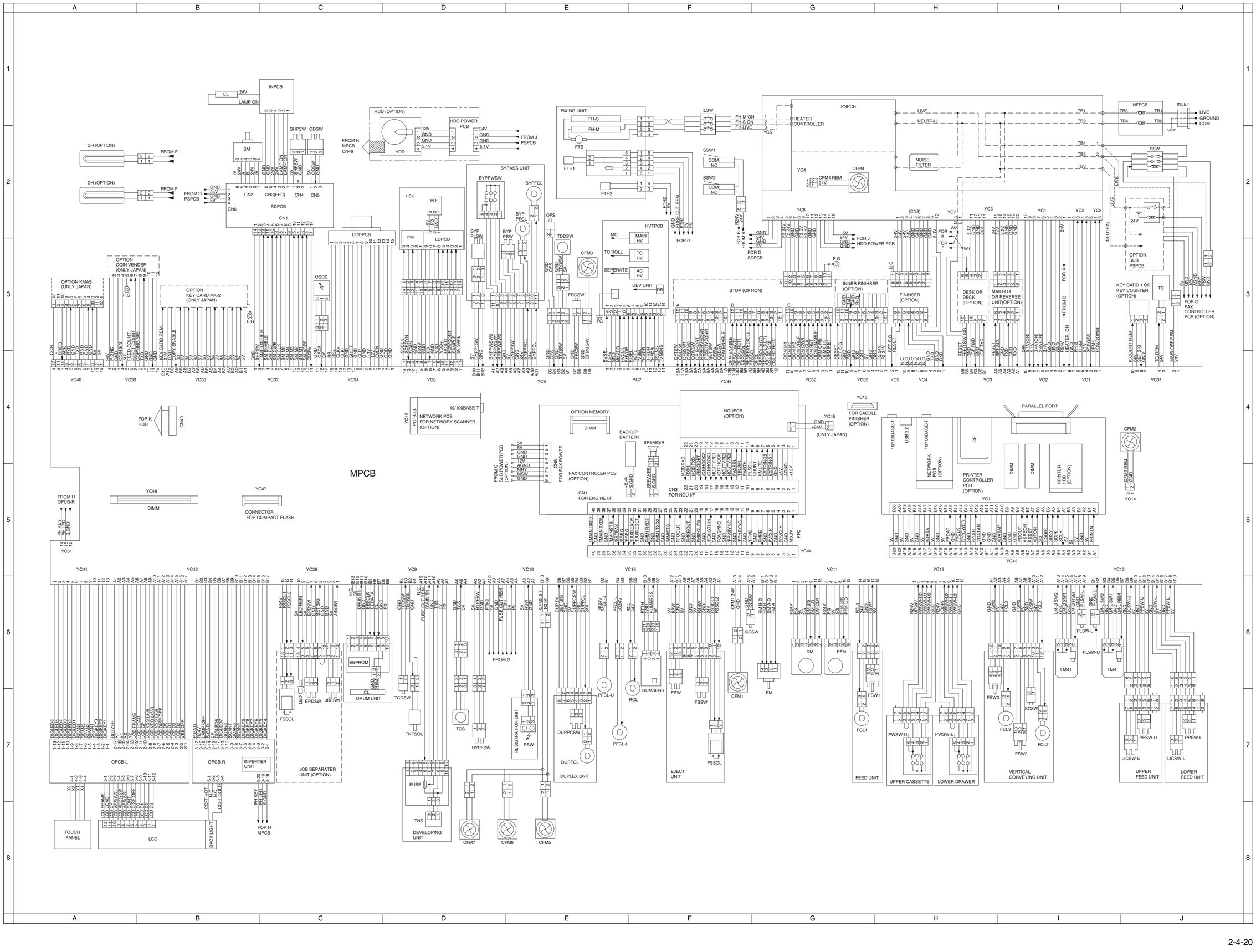
Name used in service manual	Name used in installation guide	Part No.
Sccaner board	Sccaner board	3B301010
CD-ROM (scanner)	CD-ROM (scanner)	3B327010
CD-ROM (document processing)	CD-ROM (document processing)	3BJ27060

Built-in finisher

Name used in service manual	Name used in installation guide	Part No.
Large ejection cover	Large ejection cover	3B504020
Front ejection cover	Front ejection cover	3B504080
Rear ejection cover	Rear ejection cover	3B504090
Flat spring ejection	Flat spring ejection	3B502050
+TP-A chrome screw M3 × 05	+TP-A chrome screw M3 × 05	B4103050
+TP-A bronze screw M3 × 05	+TP-A bronze screw M3 × 05	B4303050

Job separator

Name used in service manual	Name used in installation guide	Part No.
Job separator tray	Job separator tray	3B620030
Left front cover JS	Left front cover JS	3B604010
+TP-A bronze screw M3 × 05	+TP-A bronze screw M3 × 05	B4303050


MPCB
INPCB
HDD (OPTION)
HDD POWER PCB
FIXING UNIT
PSPCB
HEATER CONTROLLER
NFPCB
INLET
LIVE
NEUTRAL
GROUND
COM
BYPASS UNIT
LSU
LDPCB
CCDPCB
SDPCB
HVTPCB
OPTION KMAS (ONLY JAPAN)
OPTION COIN VENDER (ONLY JAPAN)
OPTION KEY CARD MK-2 (ONLY JAPAN)
STDP (OPTION)
INNER FINISHER (OPTION)
FINISHER (OPTION)
DESK OR DECK (OPTION)
MAILBOX OR REVERSE UNIT(OPTION)
KEY CARD 1 OR KEY COUNTER (OPTION)
OPTION SUB PSPCB
FOR C FAX CONTROLLER PCB (OPTION)
NOISE FILTER
CFM4
CFM3
CFM2
CFM1
CFM5
CFM6
CFM7
TDDSW
OFS
FRCSW
PSW
SSW1
SSW2
FTS
FTH1
FTH2
ILSW
FH-S
FH-M
FH-M ON
FH-S ON
FH LIVE
DH (OPTION)
FROM E
FROM F
FROM D PSPCB
FROM J PSPCB
FROM K MPCB CN49
FOR G
FOR B
FOR A
FOR D SDPCB
FOR J HDD POWER PCB
FOR M
FOR W
FOR F
FOR A
FOR B
OPCB-L
OPCB-R
INVERTER UNIT
JOB SEPARATER UNIT (OPTION)
TOUCH PANEL
LCD
BACK LIGHT
FOR H MPCB
FROM H OPCB-R
DIMM
CONNECTOR FOR COMPACT FLASH
NETWORK PCB FOR NETWORK SCANNER (OPTION)
10/100BASE-T
PCI BUS
OPTION MEMORY
BACKUP BATTERY
SPEAKER
NCUPCB (OPTION)
FAX CONTROLER PCB (OPTION)
FROM C SUB POWER PCB (OPTION)
CN1 FOR ENGINE I/F
CN3 FOR NCU I/F
FOR SADDLE FINISHER (OPTION)
(ONLY JAPAN)
PARALLEL PORT
USB 2.0
CF
NETWORK BOARD (OPTION)
PRINTER CONTROLLER PCB (OPTION)
PRINTER HDD (OPTION)
DEVELOPING UNIT
DRUM UNIT
EEPROM
CL
TNS
FUSE
TCDSW
TNFSOL
TCS
BYPFSW
RESISTRATION UNIT
RSW
DUPPCSW
DUPPCL
DUPLEX UNIT
PFCL-U
PFCL-L
RCL
HUMSENS
ESW
FSSW
FSSOL
EJECT UNIT
CCSW
EM
DM
PFM
FCL1
FSW1
FEED UNIT
PWSW-U
PWSW-L
UPPER CASSETTE
LOWER DRAWER
FSW3
FSW2
SCSW
FCL3
FCL2
VERTICAL CONVEYING UNIT
LM-U
LM-L
PLSW-L
PLSW-U
LICSW-U
LICSW-L
PPSW-U
PPSW-L
UPPER FEED UNIT
LOWER FEED UNIT
TC
TC REM
MSW OFF REM
K COUNT REM
SHD SIG
SHD
DH KEY
PH LED
S.GND
CCFT HOT
CCFT COLD
LCD FRAME
LCD VSS
LCD VDD
LCD VEE
LCD VO
LCD RS
LCD R/W
LCD E
LCD D7
LCD D6
LCD D5
LCD D4
LCD D3
LCD D2
LCD D1
LCD D0
YC1
YC2
YC3
YC4
YC5
YC6
YC7
YC8
YC9
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YC31
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YC40
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YC46
YC47
YC48
YC51
CN1
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CN3(FFC)
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