

Ri-2530/3530/4030

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RA-1
PF-75
Fax System (C)
Fax System (F)

SERVICE MANUAL

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Revision 1

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.

ATTENTION


IL Y A DANGER D'EXPLOSION S'IL Y A REMPLACEMENT INCORRECT DE LA BATTERIE. REMPLACER UNIQUEMENT AVEC UNE BATTERIE DU MÊME TYPE OU D'UN TYPE RECOMMANDÉ PAR LE CONSTRUCTEUR. METTRE AU RÉBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.


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.
- Advise 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.



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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 – 80 g/m ²)
	Bypass table: Plain paper (60 – 160 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:
	25 cpm copier
	A3/11" × 17": 15 copies/min.
	B4/8 ¹ / ₂ " × 14": 18 copies/min.
	A4/11" × 8 ¹ / ₂ " : 25 copies/min.
	A4R/8 ¹ / ₂ " × 11": 20 copies/min.
	35 cpm copier
	A3/11" × 17": 19 copies/min.
	B4/8 ¹ / ₂ " × 14": 23 copies/min.
	A4/11" × 8 ¹ / ₂ " : 35 copies/min.
	A4R/8 ¹ / ₂ " × 11": 25 copies/min.
	40 cpm copier
	A3/11" × 17": 19 copies/min.
	B4/8 ¹ / ₂ " × 14": 23 copies/min.
	A4/11" × 8 ¹ / ₂ " : 40 copies/min.
	A4R/8 ¹ / ₂ " × 11": 25 copies/min.
First copy time	From 3.9 s (A4/11" × 8 ¹ / ₂ ")
Warm-up time	60 s or less (room temperature 20°C/68°F, 65% RH)
	In preheat/energy saver mode: 30 s or less (room temperature 20°C/68°F, 65% RH)
	[priority to power save]
	In preheat/energy saver mode: 10 s or less (room temperature 20°C/68°F, 65% RH)
	[priority to recovery]
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 (magnetic brush)
	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 400W/ 220-240 V specifications: main 630 W, sub 420 W) Control temperature: 165°C/329°F (at normal ambient temperature) 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
Scanning system	Flat bed scanning by CCD image sensor
Bit map memory	9 MB (standard)
Image storage memory	23 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. 79 kg/165 lbs
Floor requirements	1356 (W) × 646 (D) mm 53 ^{3/8} " (W) × 25 ^{2/5} " (D)
Functions	Self-diagnostics, preheat, automatic copy density control, original size detection, auto paper size selection function, auto magnification selection mode, zoom copy mode, standard copy mode, size zoom mode, photo mode, margin mode, page separation copy mode, border erase mode, layout copy, sort mode, copy management function, language selection function
Power source	120 V AC, 60 Hz, 11 A 220 – 240 V AC, 50/60 Hz, 4.5 A (Average)
Power consumption	1320 W (120V) 1368W (220 – 240V)
Options	STDF*, SRDF, paper feed desk, large paper deck, duplex unit, job separator, finisher, booklet stitcher, built-in finisher, key counter, fax board, printer board, network printer board, network scanner board *Optional for 25 cpm copier only.

1-1-2 Parts names and their functions

(1) Copier

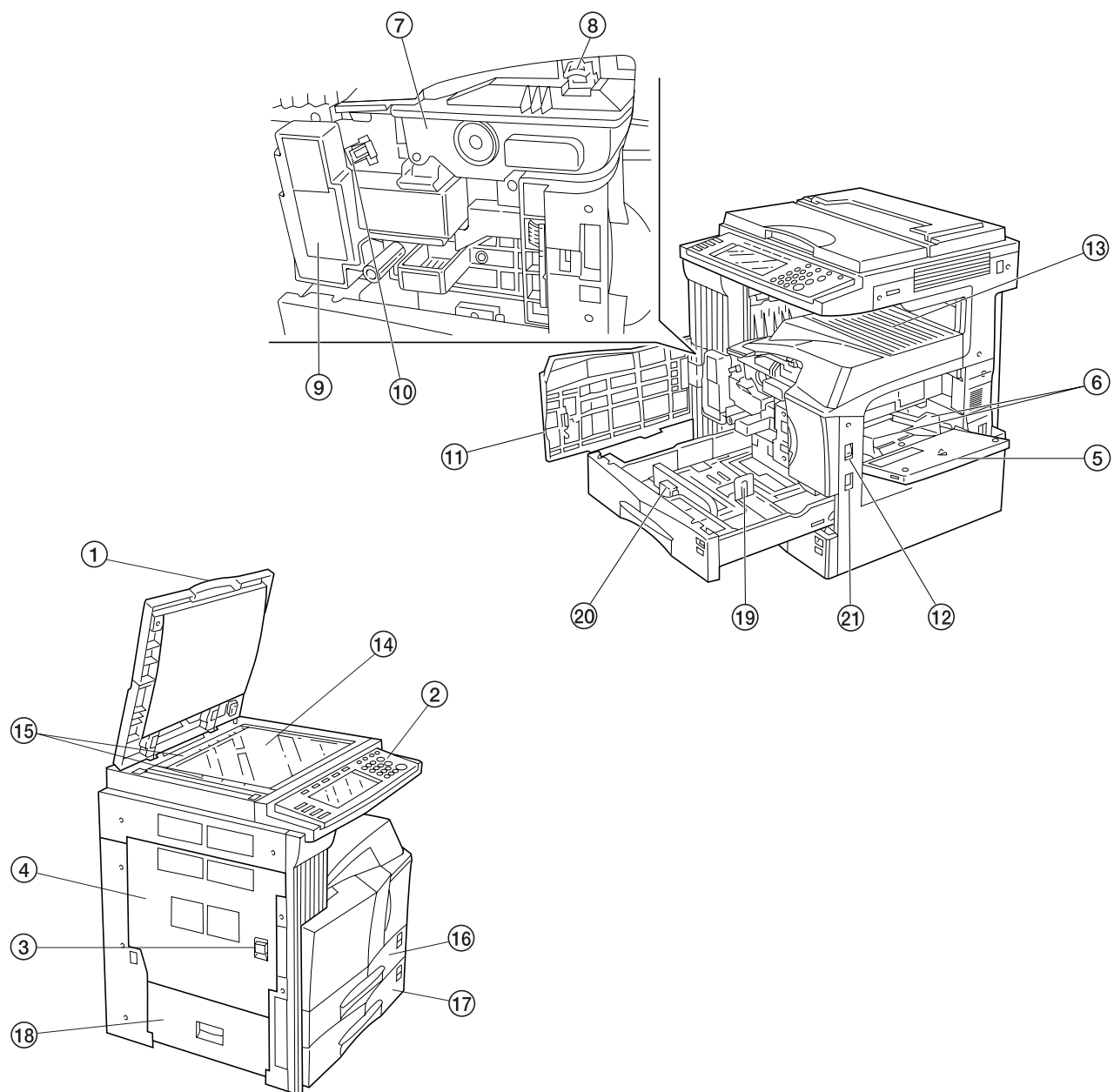
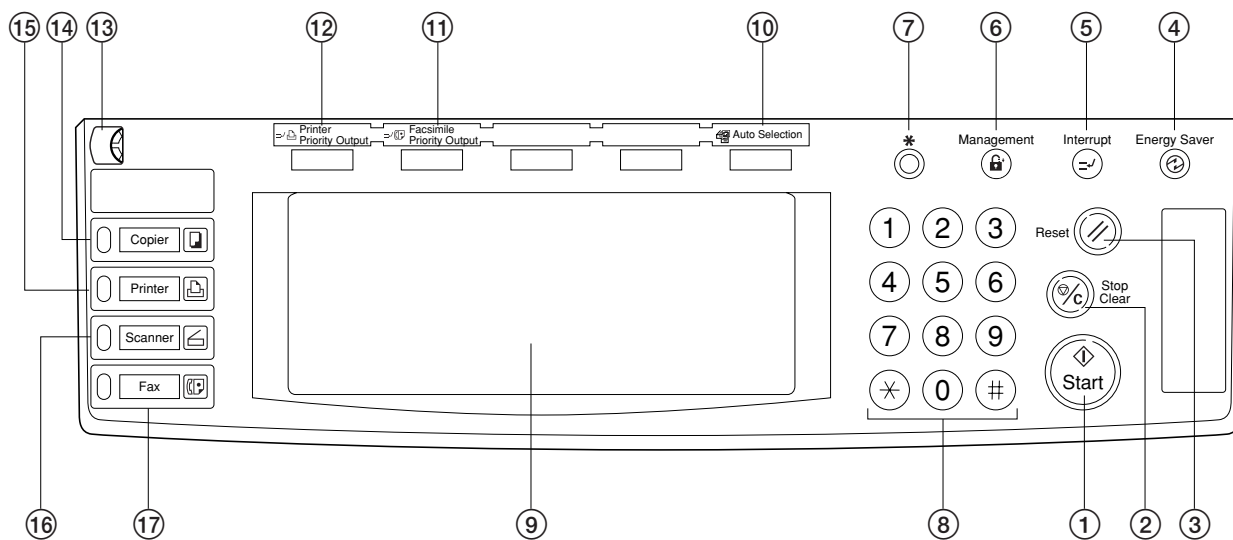


Figure 1-1-1

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

(2) Operation panel**Figure 1-1-2**

- | | |
|------------------------------|---|
| ① Start key (Indicator) | ⑩ Auto selection key (Indicator) |
| ② Stop/clear key | ⑪ Facsimile priority output key (Indicator) |
| ③ Reset key | ⑫ Printer priority output key (Indicator) |
| ④ Energy Saver (preheat) key | ⑬ Brightness adjustment control dial |
| ⑤ Interrupt key (Indicator) | ⑭ Copier key (Indicator) |
| ⑥ Management key | ⑮ Printer key (Indicator) |
| ⑦ * (Default) key | ⑯ Scanner key (Indicator) |
| ⑧ Numeric key | ⑰ Fax key (Indicator) |
| ⑨ Touch panel | |

1-1-3 Machine cross section

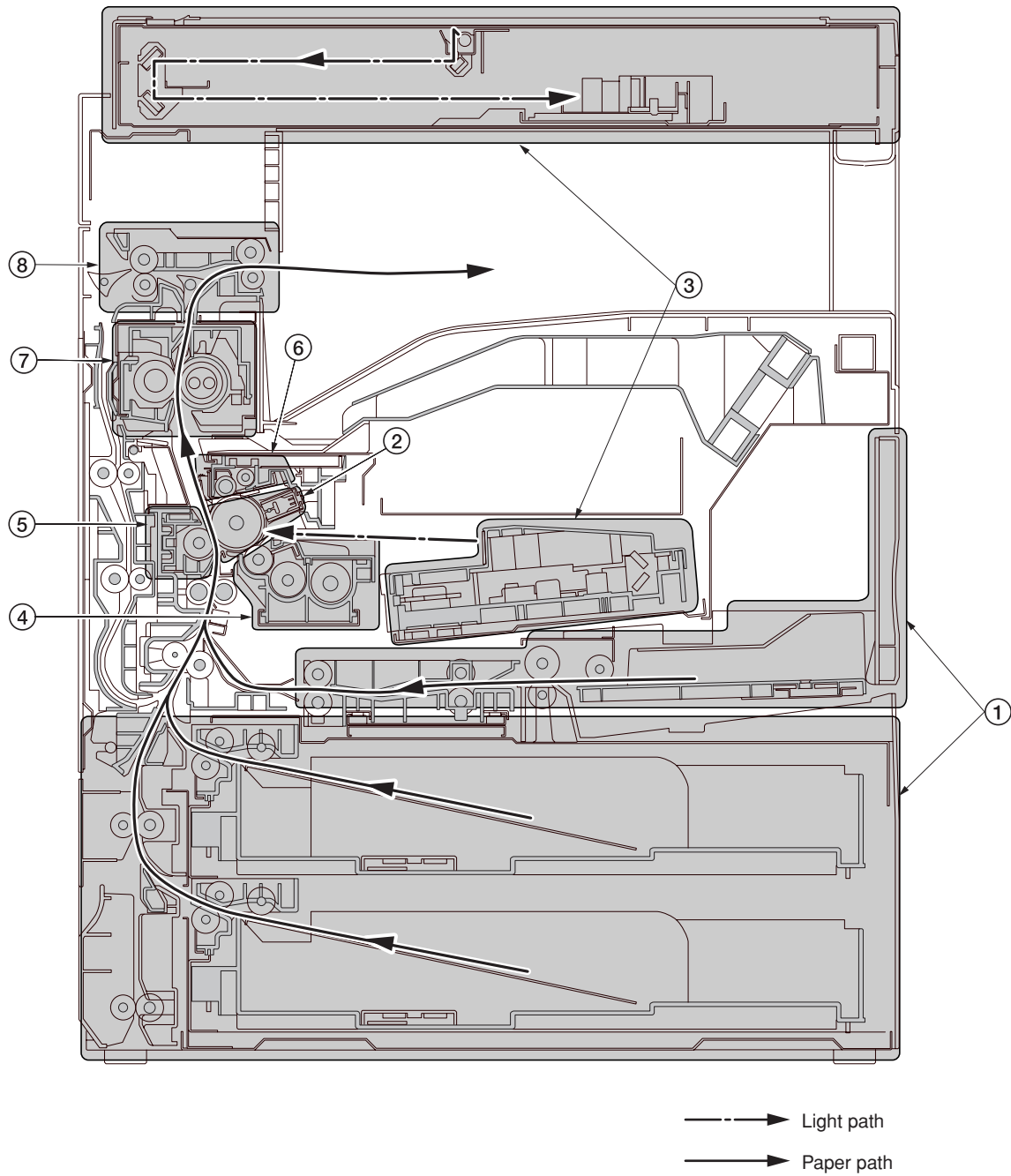
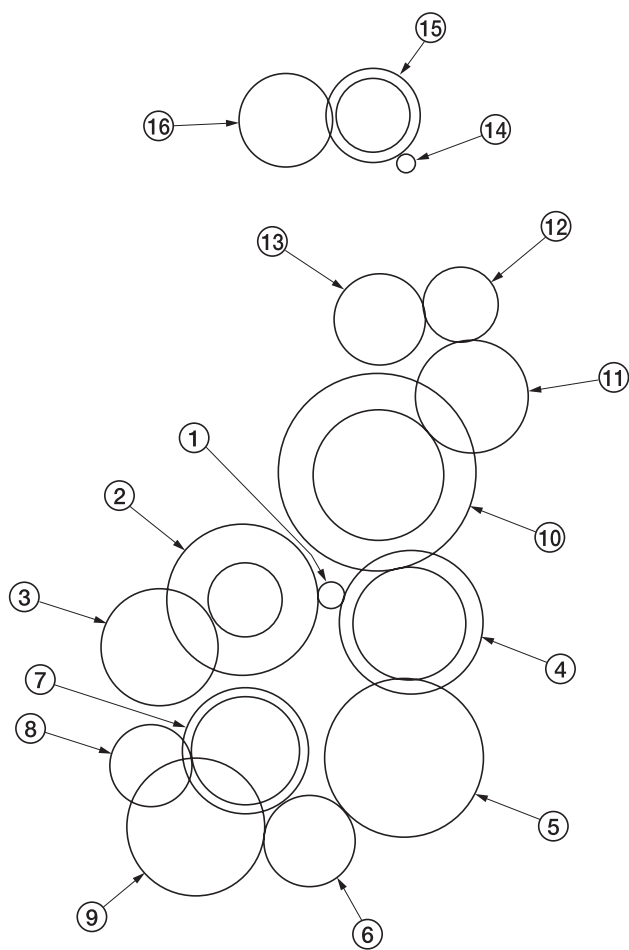


Figure 1-1-4 Machine cross section

- 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

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

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

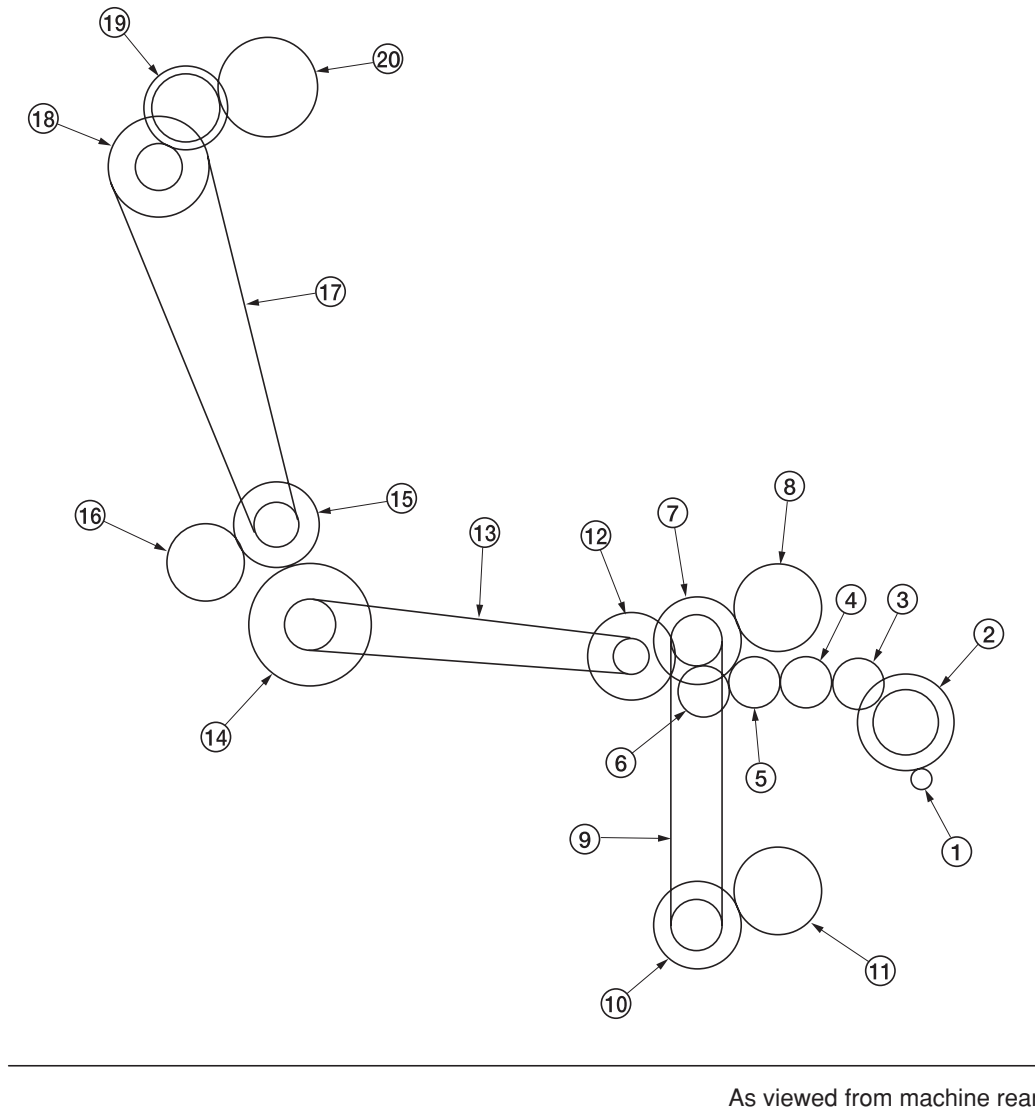


Figure 1-1-5

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

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, 11 A
220 - 240 V AC, 4.5 A (Average)
4. Power source frequency: 50 Hz $\pm 0.3\%$ /60 Hz $\pm 0.3\%$
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 or 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/39³/₈" Machine rear: 300 mm/11¹³/₁₆"
Machine right: 300 mm/11¹³/₁₆" Machine left: 300 mm/11¹³/₁₆"

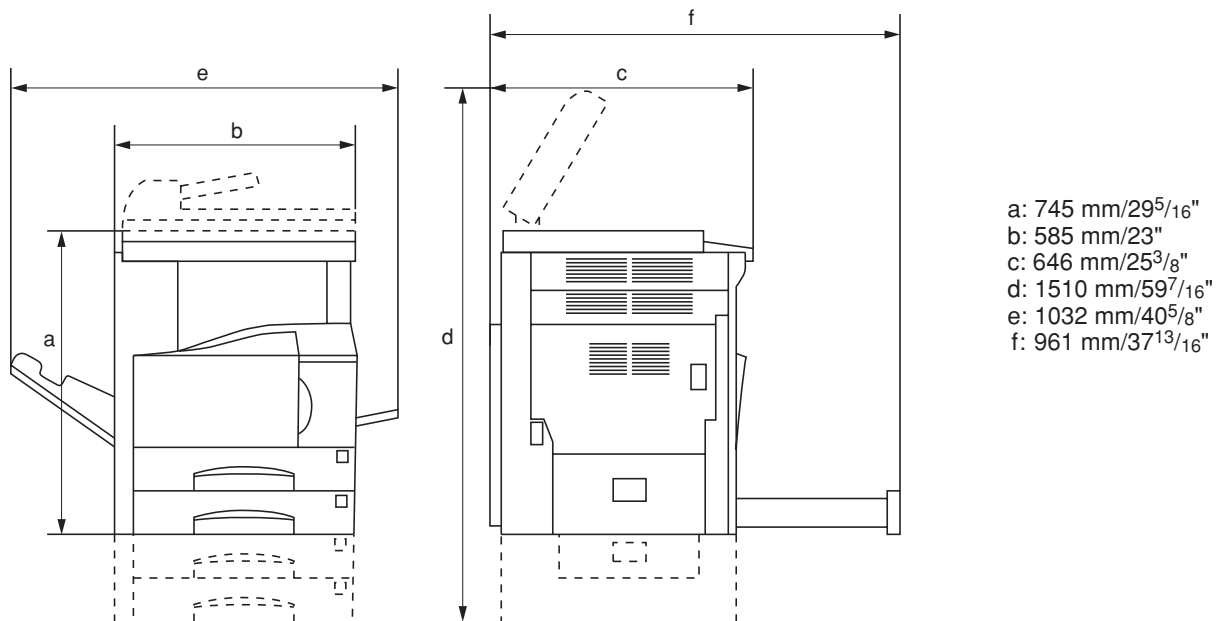
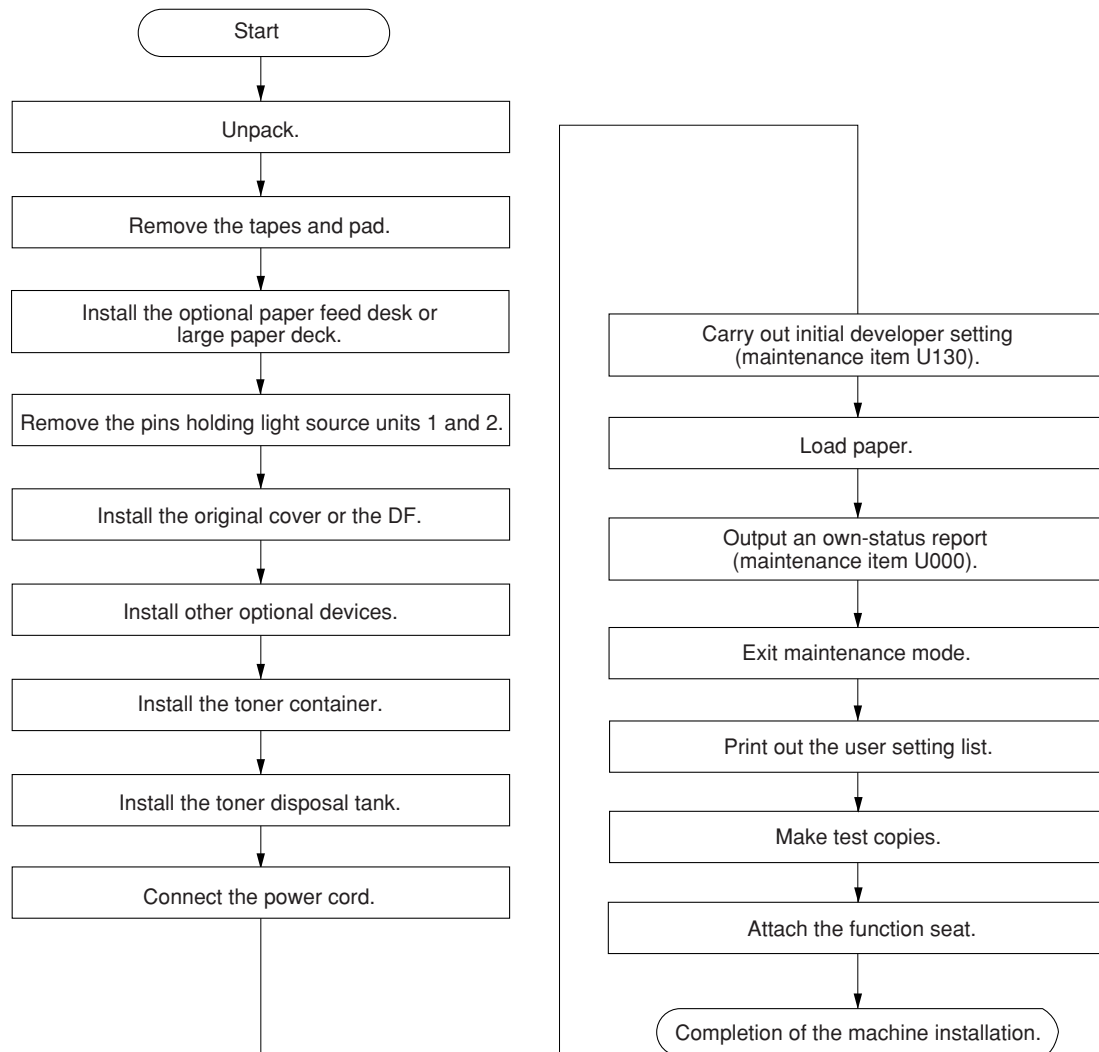


Figure 1-2-1 Installation dimensions

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.

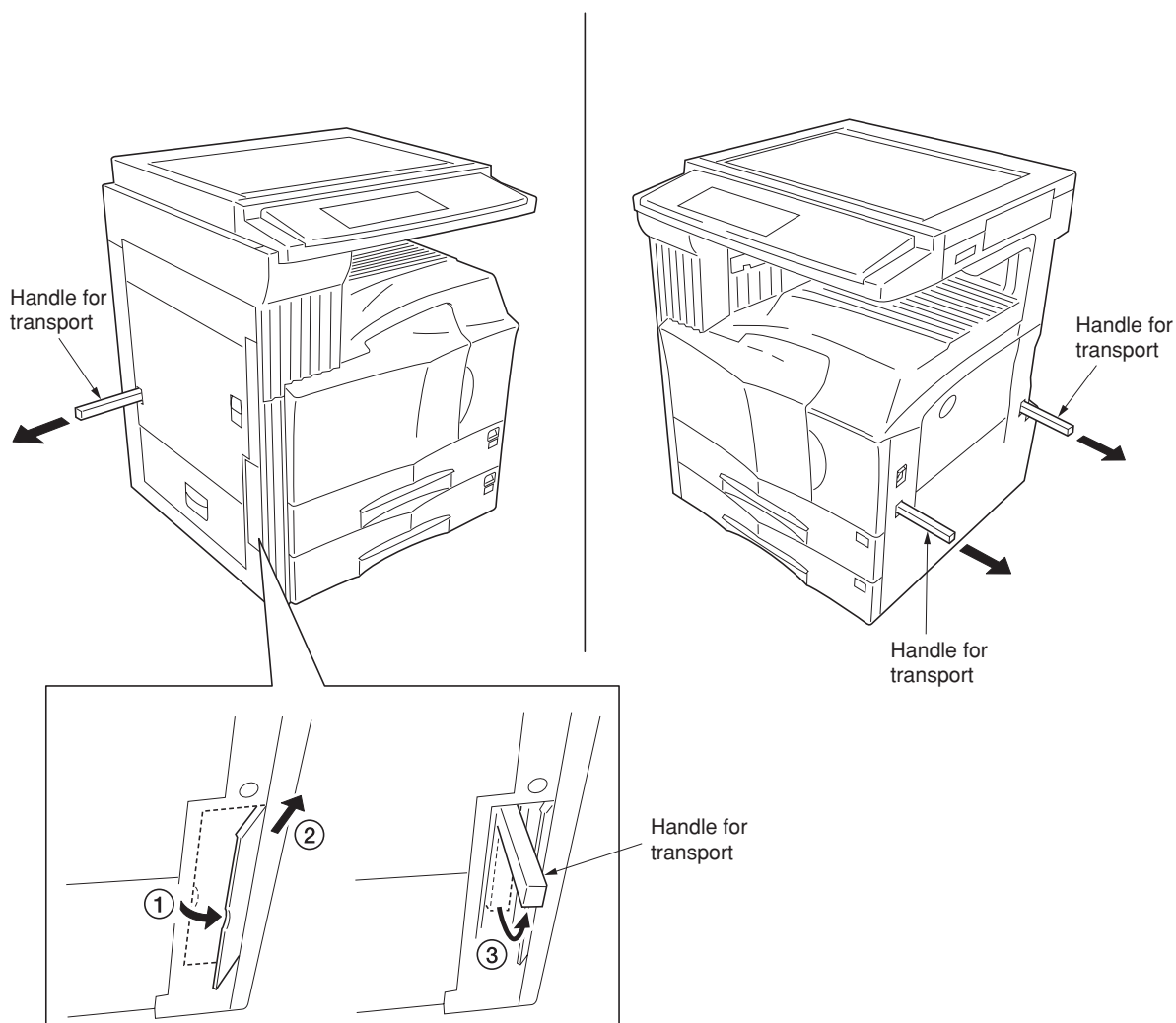


Figure 1-3-1

Unpack.

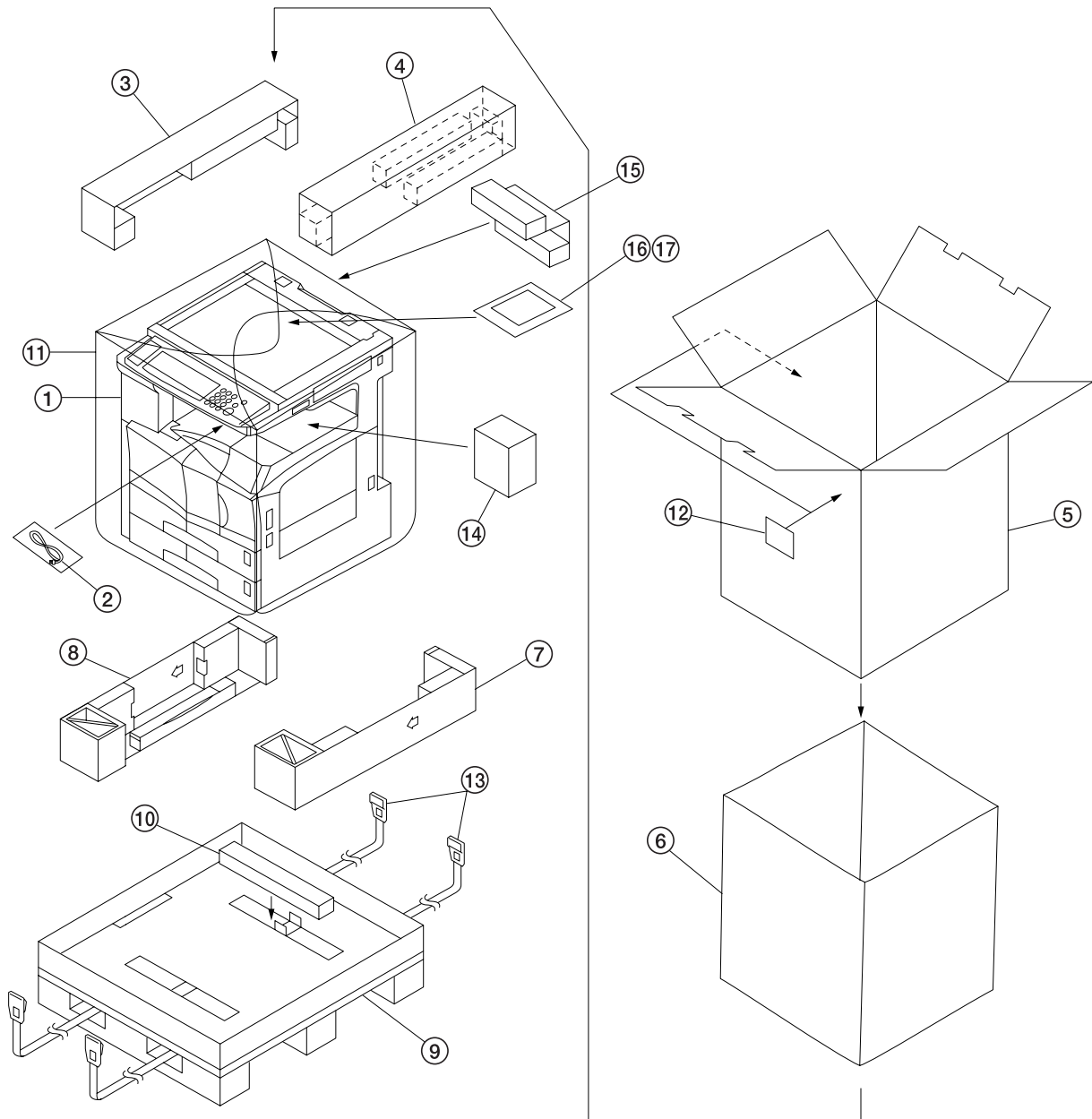


Figure 1-3-2 Unpacking

- | | |
|-------------------|-------------------|
| ① Copier | ⑩ Bottom pad |
| ② Power cord | ⑪ Machine cover |
| ③ Upper left pad | ⑫ Bar code labels |
| ④ Upper right pad | ⑬ Belt |
| ⑤ Outer case | ⑭ Eject spacer |
| ⑥ Inner frame | ⑮ Spacer* |
| ⑦ Lower right pad | ⑯ Plastic bag |
| ⑧ Lower left pad | ⑰ Operation guide |
| ⑨ Skid | |

*220-230 V specifications only.

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.

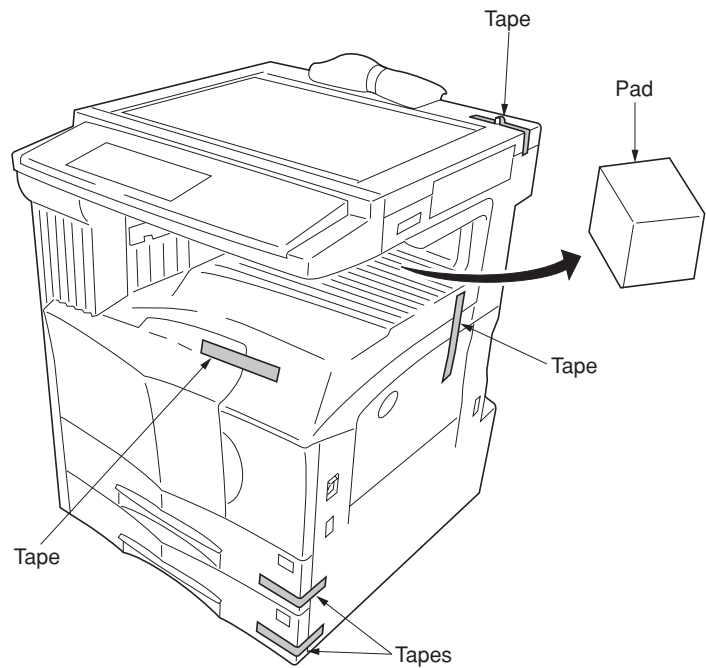


Figure 1-3-3

3. Remove the three tapes holding the pins for light source units 1 and 2.
 4. Remove the tape holding the conveying cover.
 5. Remove the two tapes holding the power cord.*
- *120 V specifications only.

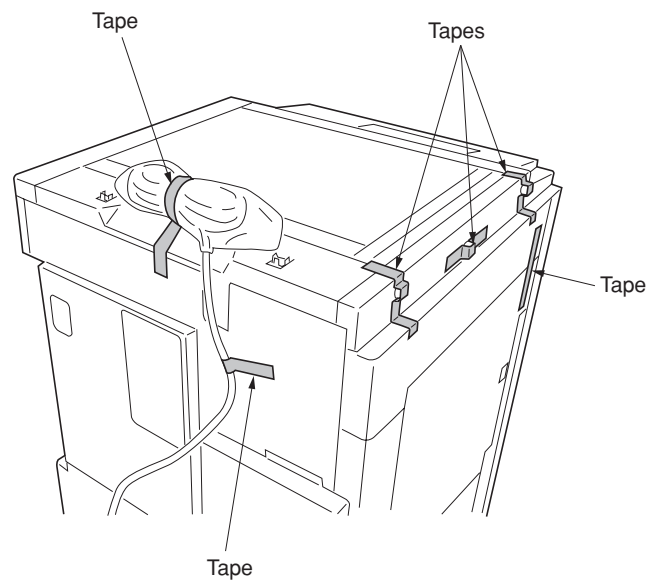


Figure 1-3-4

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

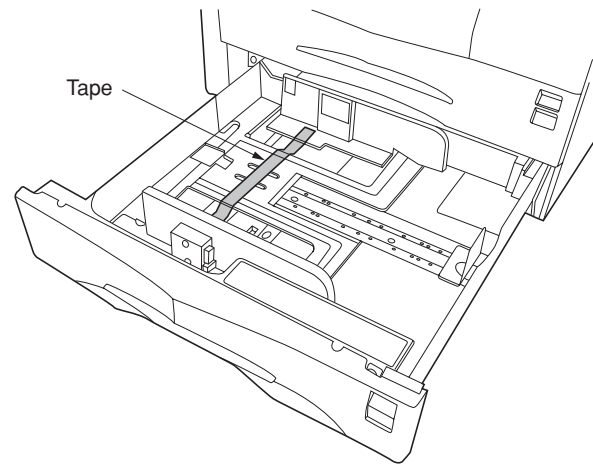


Figure 1-3-5

Install the optional paper feed desk or large paper deck.

1. Install the optional paper feed desk or large paper deck as necessary (see page 1-3-18 to 1-3-24).

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.

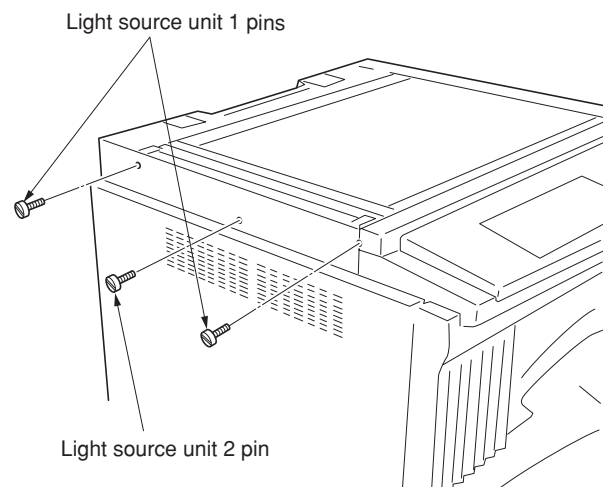


Figure 1-3-6

Install the original cover or the DF.

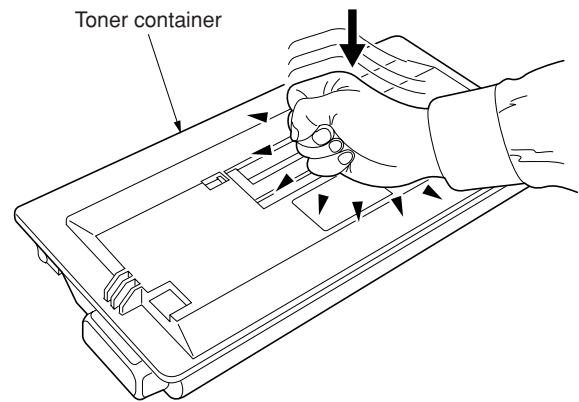
1. Install the original cover or DF (see page 1-3-34 when installing the DF).

Install other optional devices.

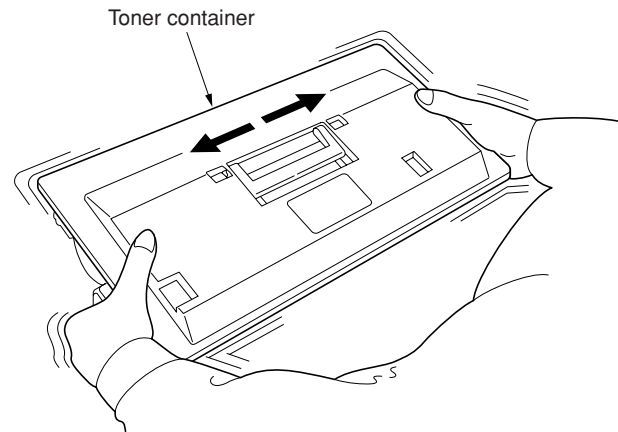
1. Install the optional devices (job separator, duplex unit, finisher, fax board, and/or printer board etc.) as necessary (see pages 1-3-35 to 1-3-56).

Install the toner container.

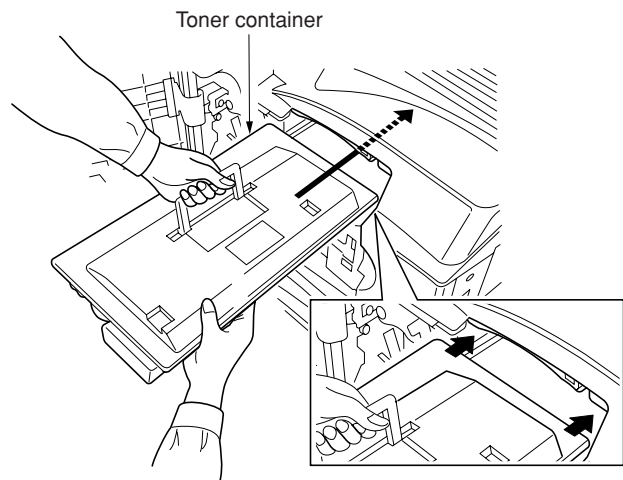
1. Open the front cover.
2. Tap the top of the toner container five to six times.

**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.

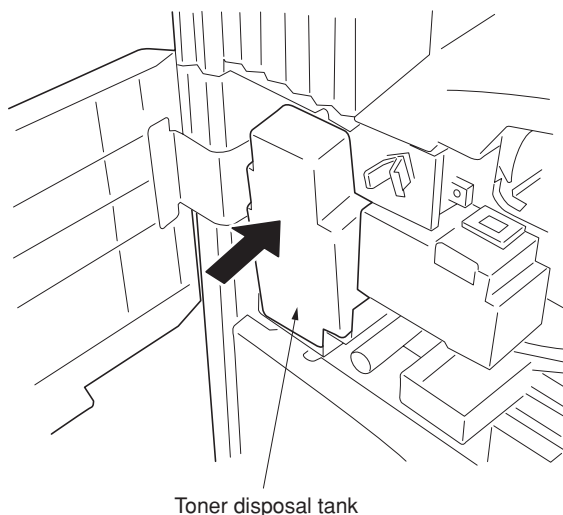


Figure 1-3-10

Connect the power cord.

1. Connect the power cord to the connector on the copier.*
*200-240 V specifications only.
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.

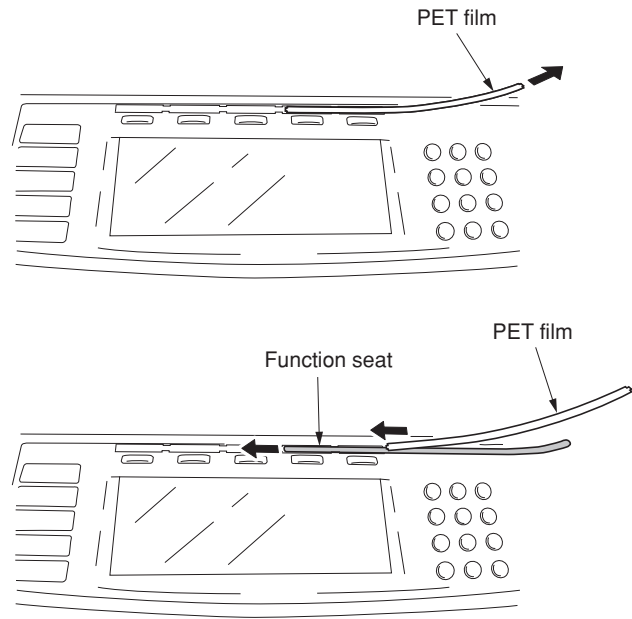
1. Press the * key to enter default setting and press the [Print form] key. The counter report will be output.

Make test copies.

1. Place an original and make test copies.

Attach the function seat.

1. Remove the PET film from the operation panel.
2. Fit the relevant function sheet.
If the DF has been installed, select a function sheet among No. 1 to 4 based on installation of the fax board and the printer board.
If the DF has not been installed, select a function sheet among No. 5 to 8 based on installation of the fax board and the printer board.
3. Refit the PET film to its original position.

**Figure 1-3-11****Completion of the machine installation.**

1-3-2 Setting initial copy modes

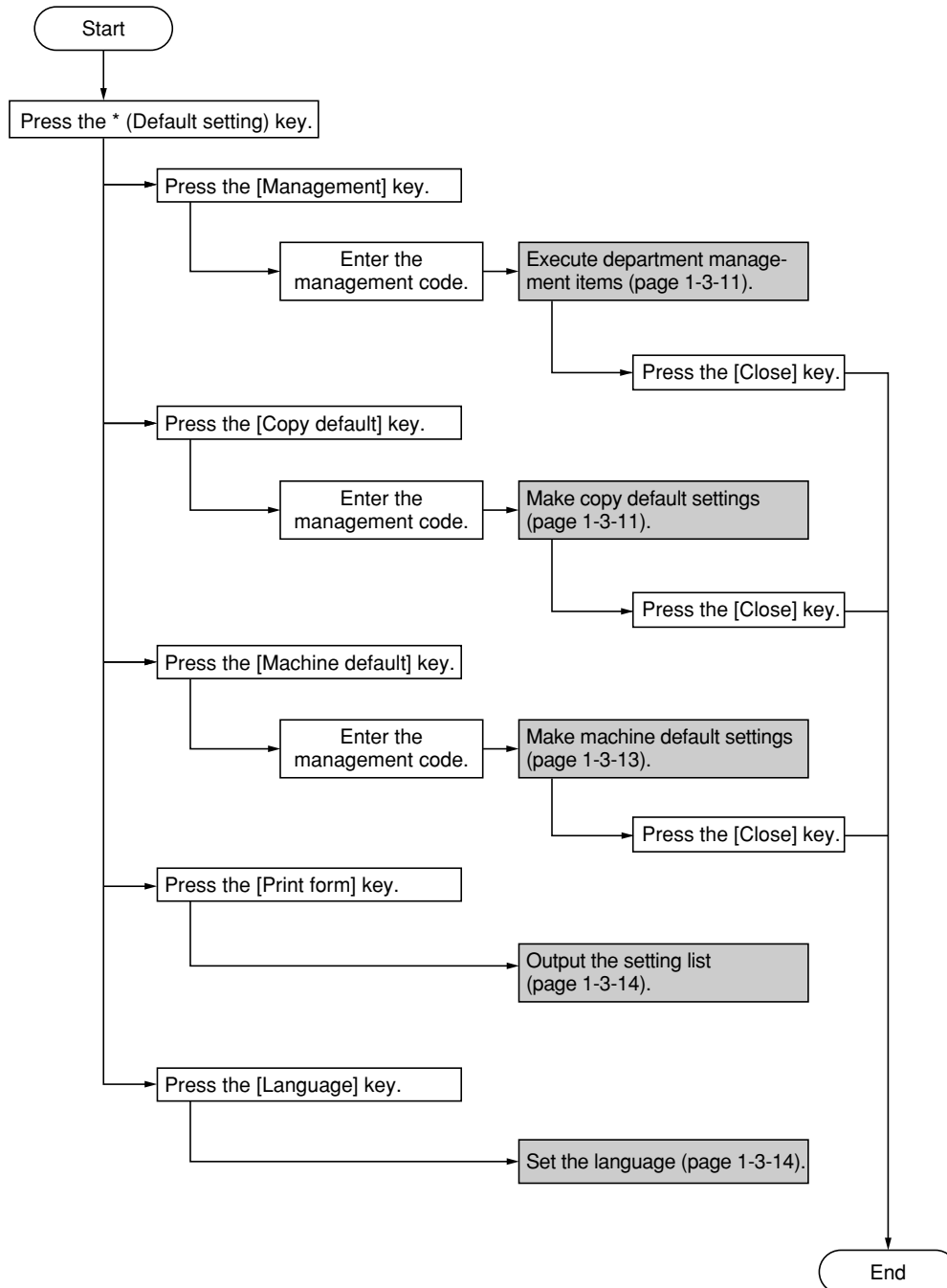
Factory settings are as follows:

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
U256	Turning auto preheat/energy saver function on/off	ON
U258	Switching copy operation at toner empty detection	SINGLE MODE, 70
U260	Changing the copy count timing	After ejection
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 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**Registering a new department code**

Sets a department code and the limit of the number of copies for that department.

1. Press the [ID-code Reg./Del.] key.
2. Press the [Register] key and press the [# keys].
3. Enter a department code (8-digit) using the numeric keys and press the [# keys].
4. Enter the number of copies limit using the numeric keys. Setting range is 1000 pieces of units to 1000-999000 pieces. Entering "0" enables unlimited copying.
5. Press the [Close] key.
6. Press the [Close] key.
7. Press the [On] key.
8. Press the [Close] key.

Deleting a department code

1. Press the [ID-code Reg./Del.] key.
2. Select the department code to be deleted and press the [Delete] key.
3. Select "Yes" or "No".
4. Press the [Close] key.
5. Press the [On] key.
6. Press the [Close] key.

Altering the copy limit

1. Press the [# of copy correct] key.
2. Select the department code to be altered and press the [Correction] key.
3. Enter the number of copies limit using the numeric keys. Setting range is 1000 pieces of units to 1000-999000 pieces. Entering "0" enables unlimited copying.
4. Press the [Close] key.
5. Press the [Close] key.
6. Press the [On] key.
7. Press the [Close] key.

Clearing copy counts

1. Press the [Counter clear] key.
2. Select "Yes" or "No".
3. Press the [Close] key.

Viewing copy counts

1. Press the [Counter by ID-code] key.
2. View copy counts using the cursor up/down keys.
3. Press the [Close] key.
4. Press the [Close] key.

Print management list

1. Press the [Print the list] key.
If A4/11" × 81/2" paper is present, the list is automatically printed out. Otherwise, select the paper source and press the start key.

(3) Copy default**Exposure mode**

Selects the exposure mode at power-on.

1. Select "Exposure mode" and press the [Change #] key.
2. Select "Manual" or "Auto".

Exposure steps

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

1. Select "Exposure steps" and press the [Change #] key.
2. Select "1 step" or "0.5 step".

Original type

Selects the copy quantity mode at power-on.

1. Select "Original type" and press the [Change #] key.
2. Select "Text+Photo", "Photo" or "Text".

Eco print

Selects the toner economy mode to be automatically on or off at power-on.

1. Select "ECO print" and press the [Change #] key.
2. Select "On" or "Off".

Paper selection

Sets whether the same sized paper as the original to be copied is automatically selected.

1. Select "Paper selection" and press the [Change #] key.
2. Select "APS" or "Default cassette".

Default drawer

Sets the drawer to be selected in cases such as after the reset key is pressed.

1. Select "Default cassette" and press the [Change #] key.
2. Select priority drawer.

Default magnification

Selects whether auto magnification selection or 100% magnification is to be given priority when the sizes of the original and copy paper are different.

1. Select "Default magnification" and press the [Change #] key.
2. Select "Manual" or "AMS".

Auto exposure adjustment

Adjusts the exposure for the auto exposure mode.

1. Select "Auto exposure adjustment" and press the [Change #] key.
2. Press the [Lighter] or [Darker] key to adjust default setting of copy exposure.
Setting range: -3 to +3

Manual exposure adjustment (Mixed)

Adjusts the exposure to be used when text and photo original is selected for the image mode.

1. Select "Manual exp. adj. (Mixed)" and press the [Change #] key.
2. Press the [Lighter] or [Darker] key to adjust default setting of copy exposure.
Setting range: -3 to +3

Manual exposure adjustment (Text)

Adjusts the exposure to be used when text original is selected for the image mode.

1. Select "Manual exp. adj. (Text)" and press the [Change #] key.
2. Press the [Lighter] or [Darker] key to adjust default setting of copy exposure.
Setting range: -3 to +3

Manual exposure adjustment (Photo)

Adjusts the exposure to be used when photo original is selected for the image mode.

1. Select "Manual exp. adj. (Photo)" and press the [Change #] key.
2. Press the [Lighter] or [Darker] key to adjust default setting of copy exposure.
Setting range: -3 to +3

Margin width

Sets the default setting of the margin width for the margin copying.

1. Select "Default margin width" and press the [Change #] key.
2. Press the +/- keys to adjust default margin width.
Setting range: 0 to 3/4" (inch specifications)
0 to 18 mm (metric specifications)

Border erase width

Sets the default setting of the border erase width for the border erase mode.

1. Select "Default erase width" and press the [Change #] key.
2. Press the +/- keys to adjust default erase width.
Setting range: 0 to 3/4" (inch specifications)
0 to 18 mm (metric specifications)

Copy limit

Sets the number of copies limit for multiple copying.

1. Select "Preset limit" and press the [Change #] key.
2. Press the +/- keys to set copy preset in one job.
Setting range: 1 to 999 copies

Display register key

Sets whether or not to display the Register key in the copy operation screen.

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

Customize the base screen (main function)

Changes the layout of the main functions of the base screen.

1. Select "Customize (Main function)" and press the [Change #] key.
2. Change the layout to press [Move ahead] or [Move to behind].

Customize the copy operating screen (add function)

Changes the layout of the functions except the main functions of the copy operating screens.

1. Select "Customize (Add function)" and press the [Change #] key.
2. Change the layout to press [←].

(4) Machine default**Auto drawer switching**

Sets whether the auto drawer switching function is available.

1. Select "Auto cassette switching" and press the [Change #] key.
2. Select "On" or "Off".

Special paper

Sets the drawer for such special paper as colored paper or recycled paper.

1. Select "Special paper" and press the [Change #] key.
2. Select "1st paper" or "2nd paper".

APS for special paper

Sets whether to use the paper source with the special paper for auto paper selection and auto drawer switching.

1. Select "APS for special paper" and press the [Change #] key.
2. Select "On" or "Off".

Paper size (upper drawer)

Sets the paper size for upper drawer.

1. Select "Paper size (1st cassette)" and press the [Change #] key.
2. Select the paper size.

Paper size (lower drawer)

Sets the paper size for lower drawer.

1. Select "Paper size (2nd cassette)" and press the [Change #] key.
2. Select the paper size.

Paper type (upper drawer)

Sets the paper type (standard or special) for upper drawer.

1. Select "Paper type (1st cassette)" and press the [Change #] key.
2. Select the paper type.

Paper type (lower drawer)

Sets the paper type (standard or special) for lower drawer.

1. Select "Paper type (2nd cassette)" and press the [Change #] key.
2. Select the paper type.

Check bypass sizing

Sets whether or not to display the paper size key of the basic screen when copying with the bypass tray.

1. Select "Check bypass express" and press the [Change #] key.
2. Select "On" or "Off".

Auto shutoff time

Sets the auto shutoff time.

1. Select "Auto shut-off time" and press the [Change #] key.
 2. Press the +/- keys to set the auto shutoff time.
- Setting range: 15 to 240 minutes

Auto preheat time

Sets the auto preheat time.

1. Select "Auto preheat time" and press the [Change #] key.
2. Press the +/- keys to set the auto preheat time.

Setting range: 1 to 45 minutes

Note: Set the auto preheat time to be shorter than the auto shutoff time.

Copy eject location setting

Selects whether to eject copies to copier, finisher or job separator.

1. Select "Select Copy output mode" and press the [Change #] key.
2. Select the eject location.

Key sound

Sets if a beep sounds when a key on the key press panel is pressed.

1. Select "Key sound ON/OFF" and press the [Change #] key.
2. Select "On" or "Off".

Silent mode

Selects whether or not to enter silent mode after copying.

1. Select "Silent Mode" and press the [Change #] key.
2. Select "On" or "Off".

Management code change

Changes the management code.

1. Select "Management code change" and press the [Change #] key.
2. Enter the 4-digit management code using the numeric keys and press the enter key.

Auto shutoff

Sets whether the auto shutoff function is available.

1. Select "Auto shut-off" and press the [Change #] key.
2. Select "On" or "Off".

(5) Report

Outputs the setting reports.

1. Press the [Print form] key.
2. Select the report.
Copy report/Option report/Counter report/
Machine report

(6) Language

Switches the language to be displayed on the press panel.

1. Press the [Language] key.
2. Select the display language.

1-3-4 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.

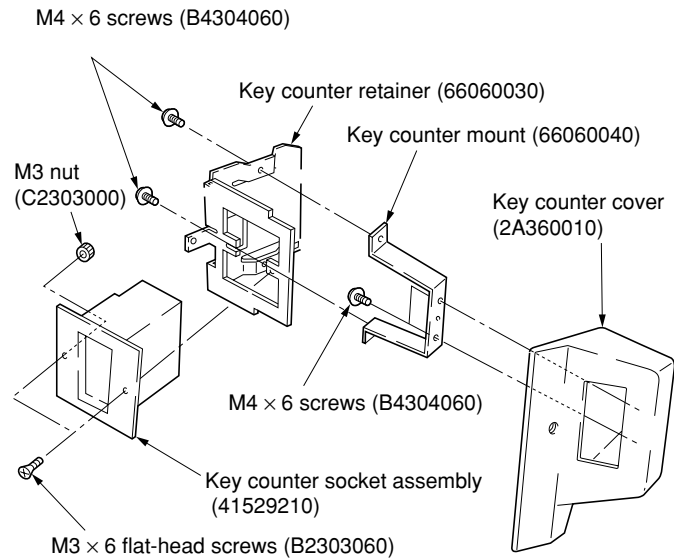


Figure 1-3-12

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.

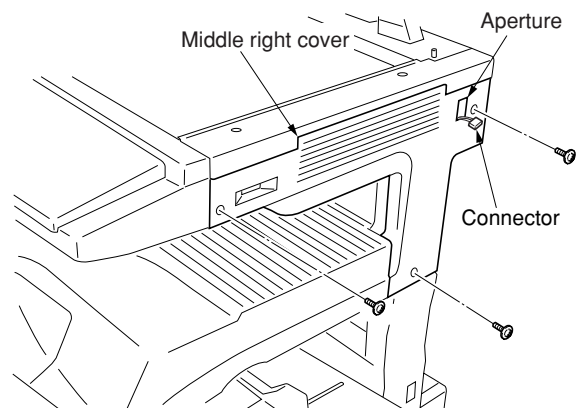
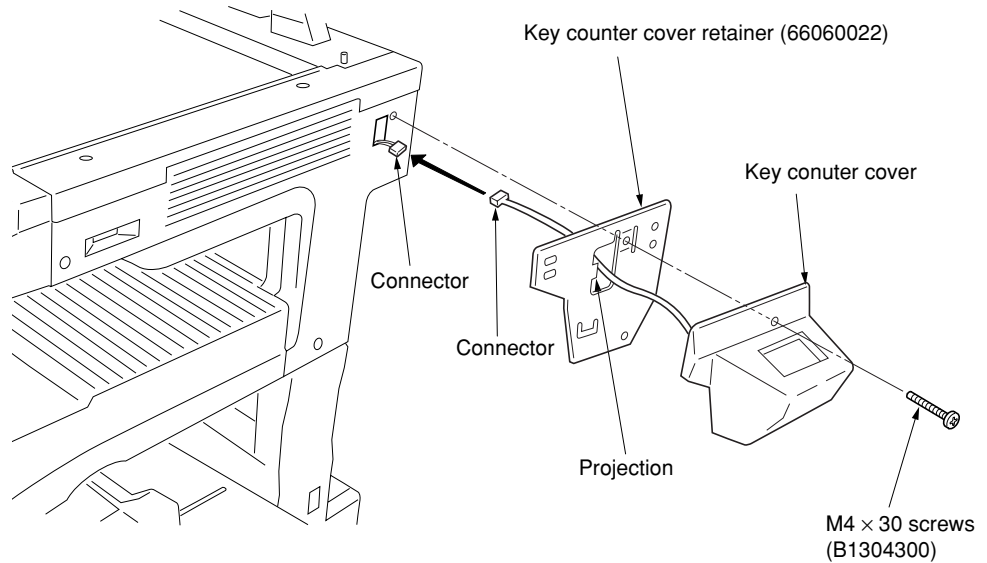


Figure 1-3-13

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 1-3-14**

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.

1-3-5 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. Pull the upper and lower drawers out.
2. Fit the drawer heater to the bottom of the machine and bind the wire of the drawer heater with the band.
3. Put the wire of the drawer heater out of the machine through the aperture of the rear frame.

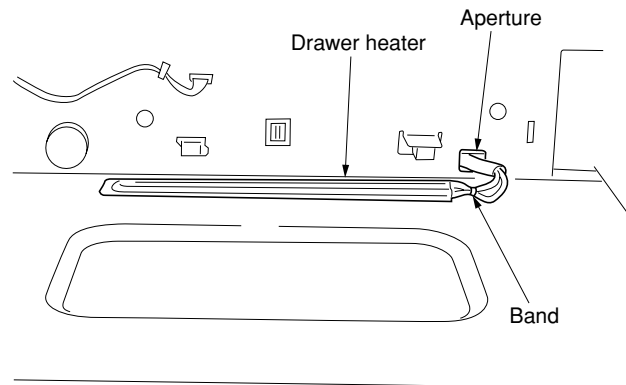


Figure 1-3-15

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

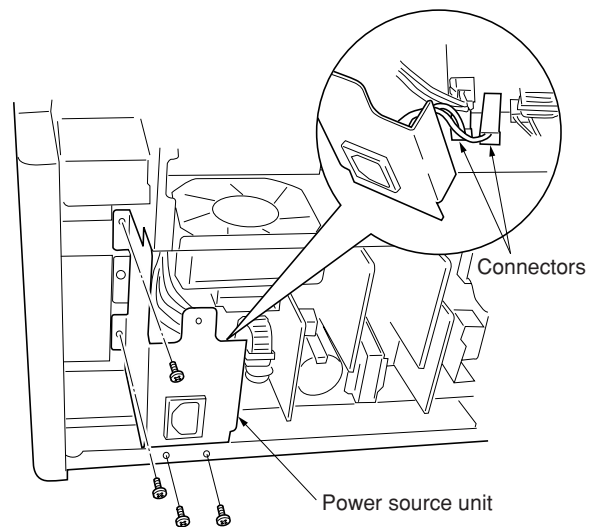


Figure 1-3-16

5. 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.
6. Insert the connector of the drawer heater into the connector of the machine.
7. Refit all the removed parts.

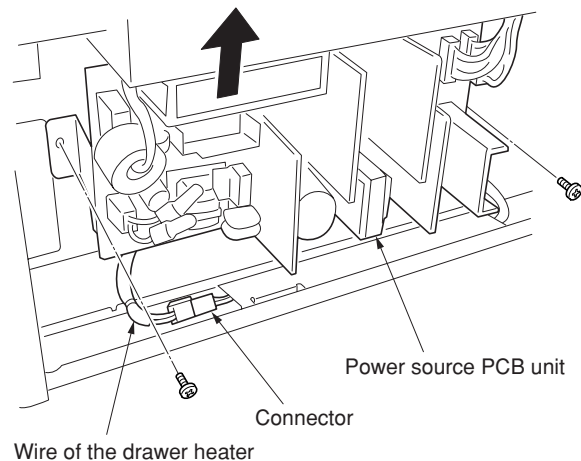


Figure 1-3-17

1-3-6 Installing the paper feed desk (option)

Preparation

1. Remove the lower drawer from the copier.

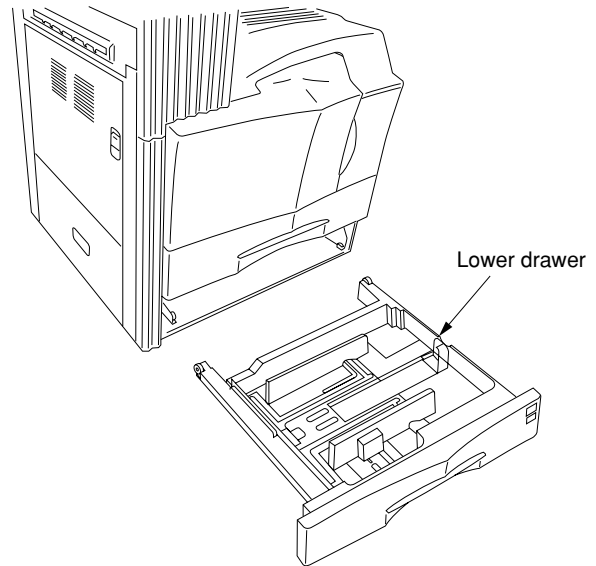


Figure 1-3-18

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

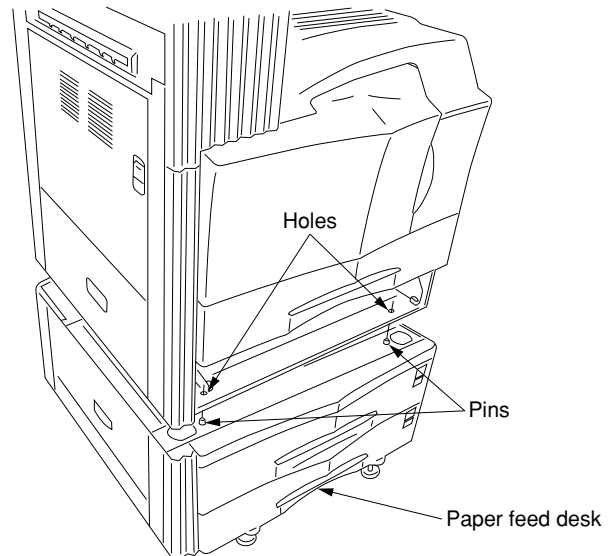


Figure 1-3-19

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

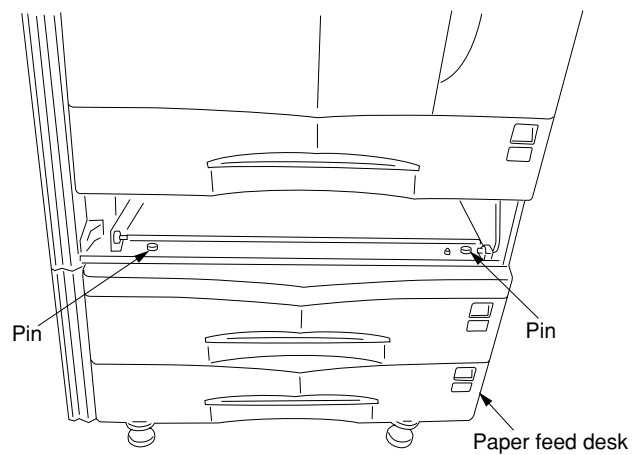


Figure 1-3-20

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

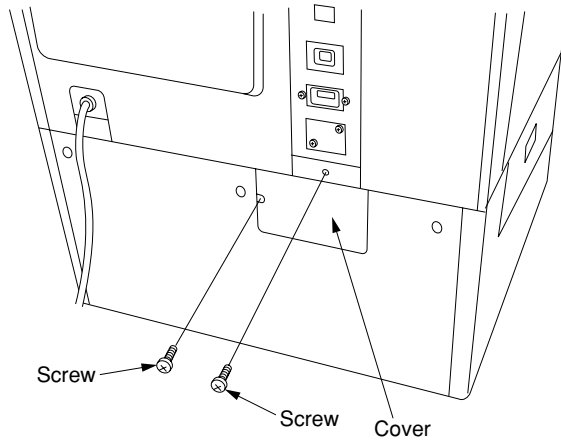


Figure 1-3-21

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

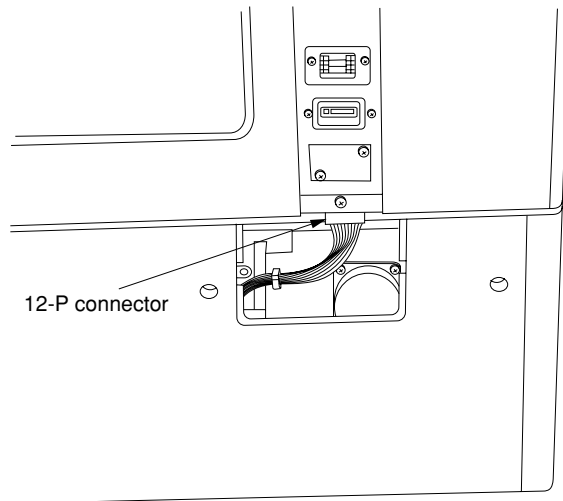


Figure 1-3-22

8. Route the harness through the clamp on the retainer.
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.

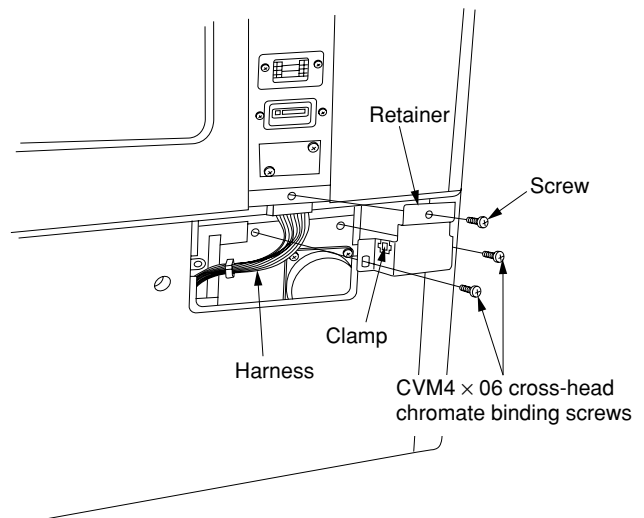


Figure 1-3-23

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

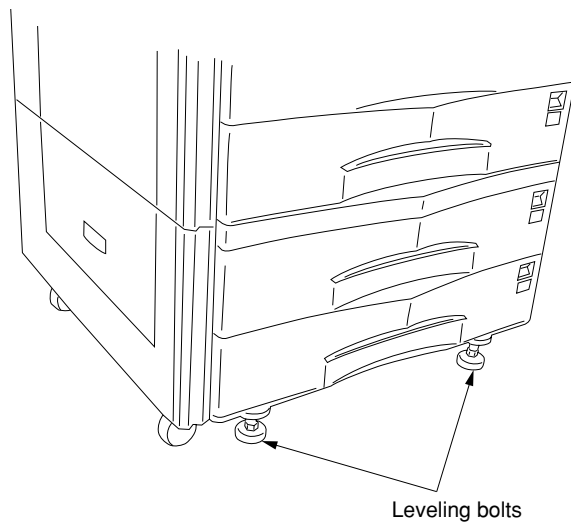


Figure 1-3-24

12. Fit the two stays to the left of the paper feed desk (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 main switch on.
14. Load paper into the drawer and make a test copy to check the operation.

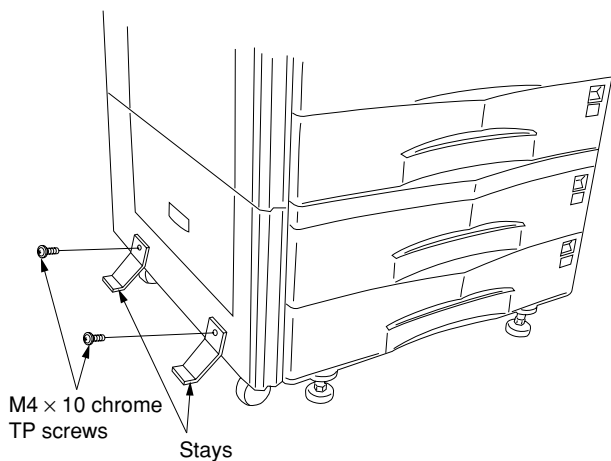


Figure 1-3-25

1-3-7 Installing the large paper deck (option)

Preparation

1. Remove the lower drawer from the copier.

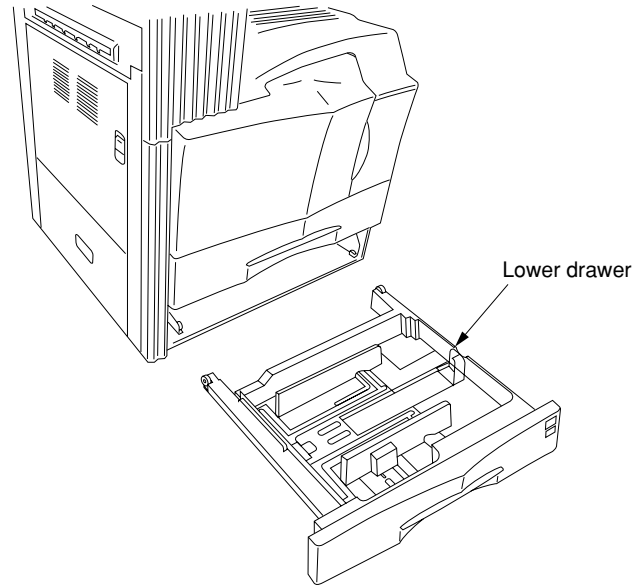


Figure 1-3-26

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.

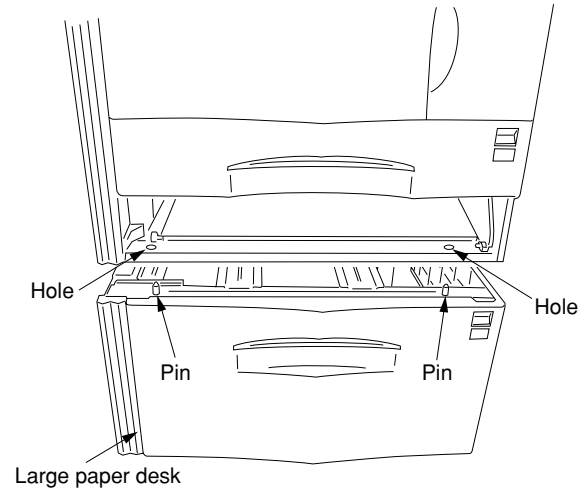


Figure 1-3-27

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

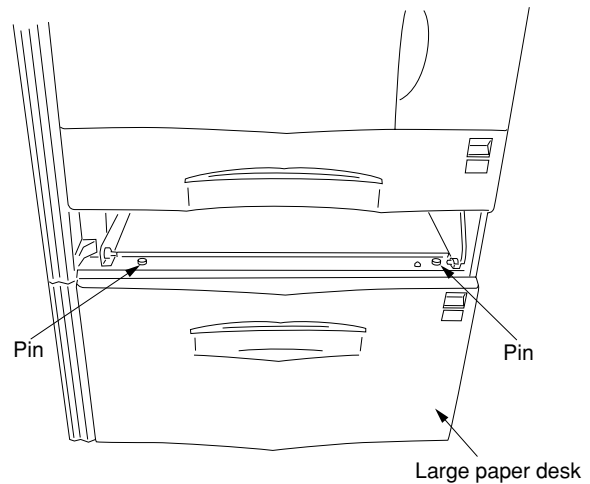
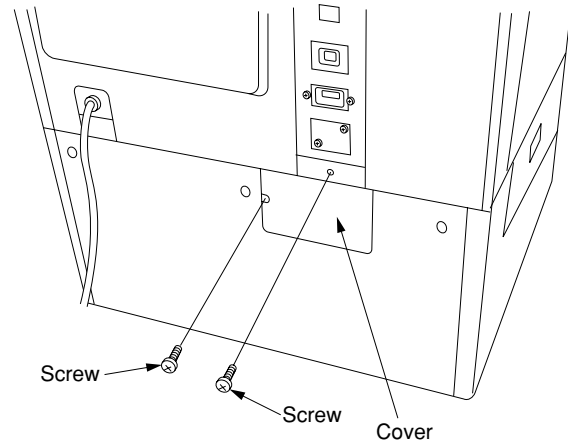
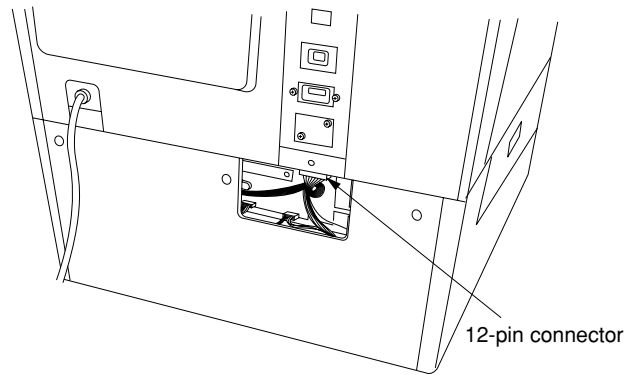


Figure 1-3-28

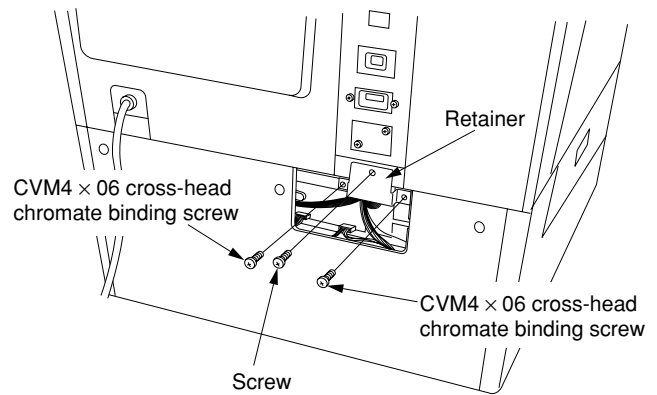
5. Remove the screw and then the cover from the rear of the large paper deck.
6. Remove the screw from the rear of the copier.

**Figure 1-3-29**

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

**Figure 1-3-30**

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 1-3-31**

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

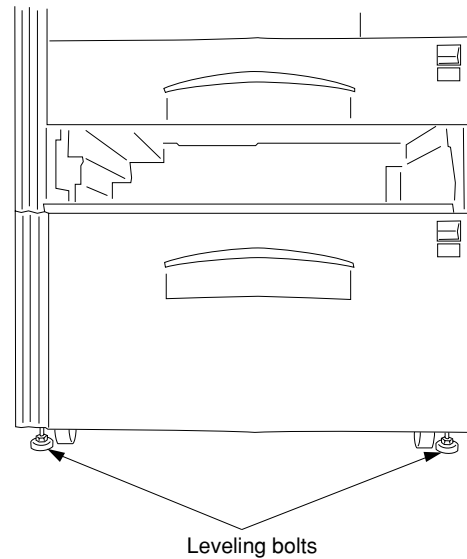


Figure 1-3-32

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.

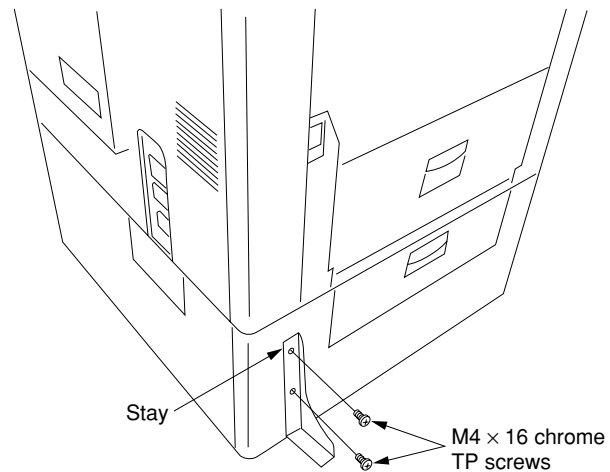


Figure 1-3-33

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.

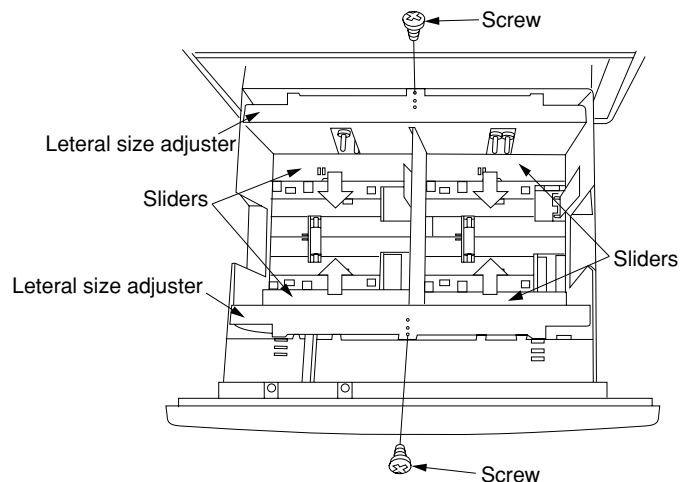


Figure 1-3-34

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.

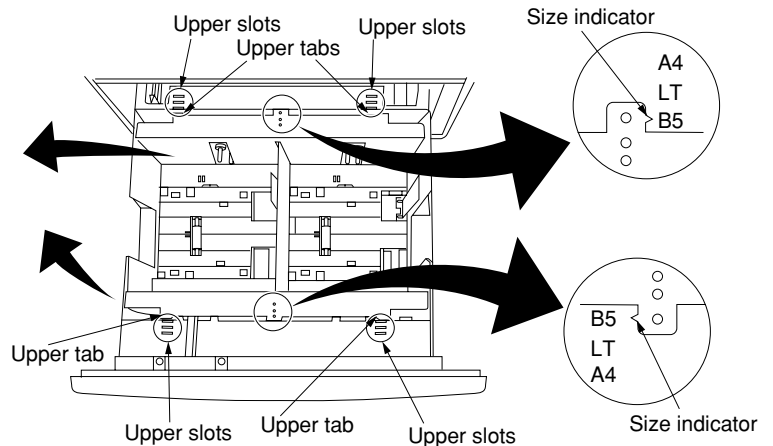
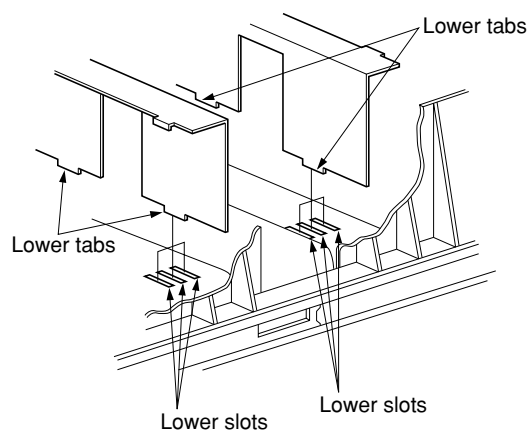


Figure 1-3-35

Steps 6 to 9 are for metric specifications only.

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.
8. Connect the copier power plug to the wall outlet and turn the copier main switch on.
9. Run maintenance item 208 and set the paper size for the large paper deck (B5/A4).
10. Load paper into the drawer and make a test copy to check the operation.

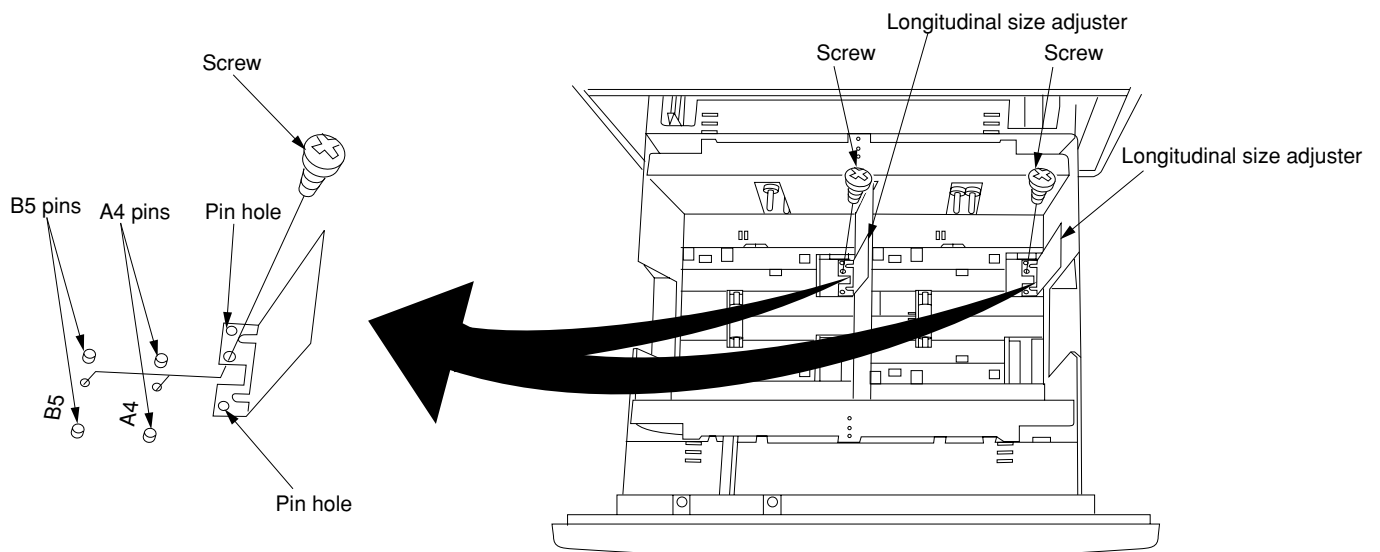


Figure 1-3-36

1-3-8 Installing the saddle finisher/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.

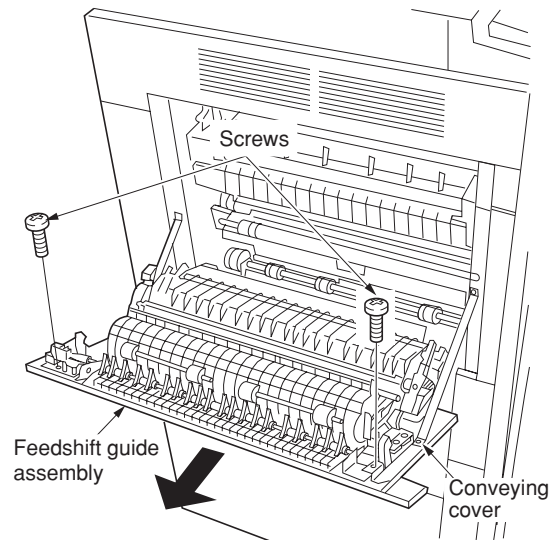


Figure 1-3-37

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.

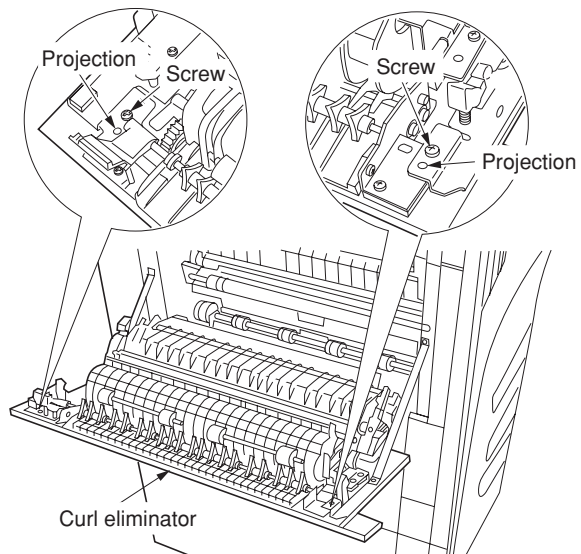


Figure 1-3-38

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

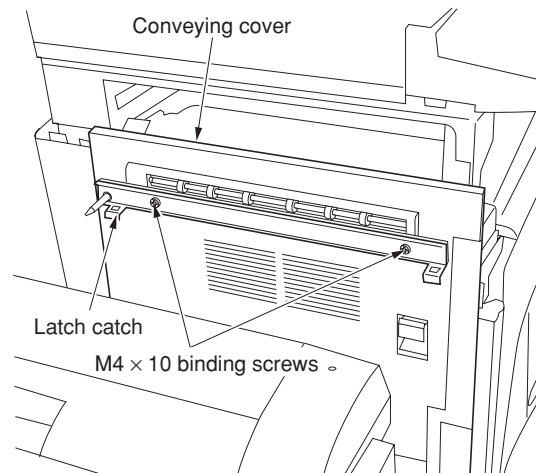


Figure 1-3-39

7. Remove the two screws securing the shield cover and then the cover.

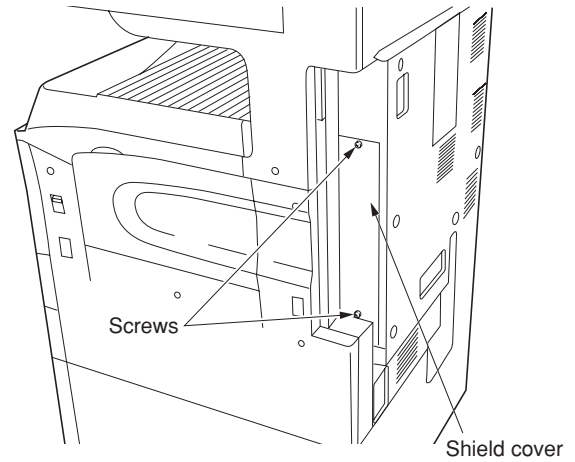


Figure 1-3-40

8. Detach the 10-pin connector (four wires) from CN4 on the main PCB and connect it to J2 on the IPC PCB.

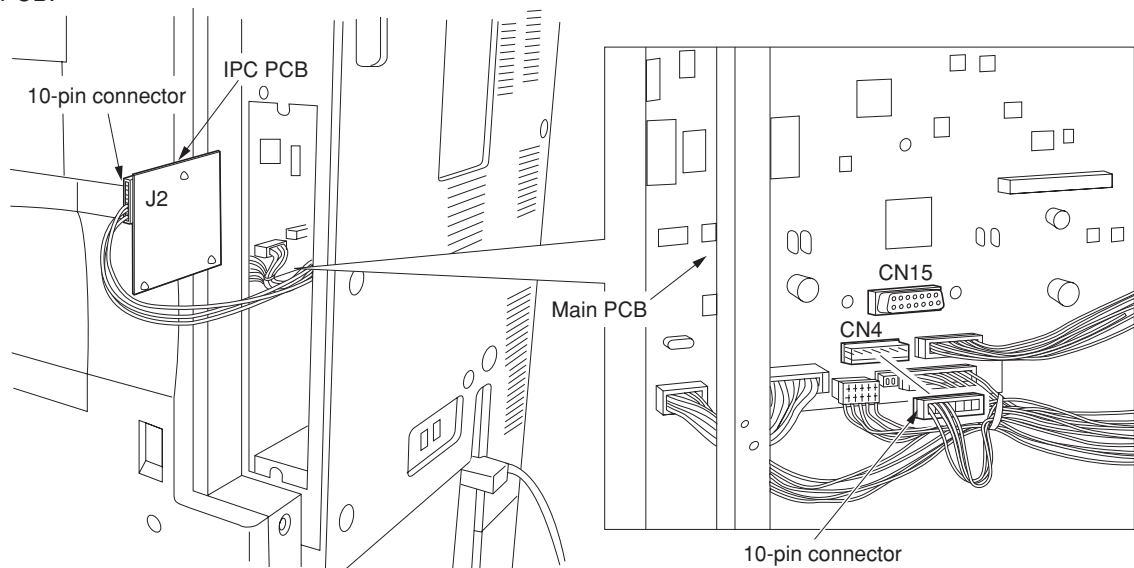


Figure 1-3-41

9. Connect J1 on the IPC PCB to CN15 on the main PCB.
10. Insert the three board supports of the IPC PCB into the main PCB to secure them.
11. Refit the shield cover.

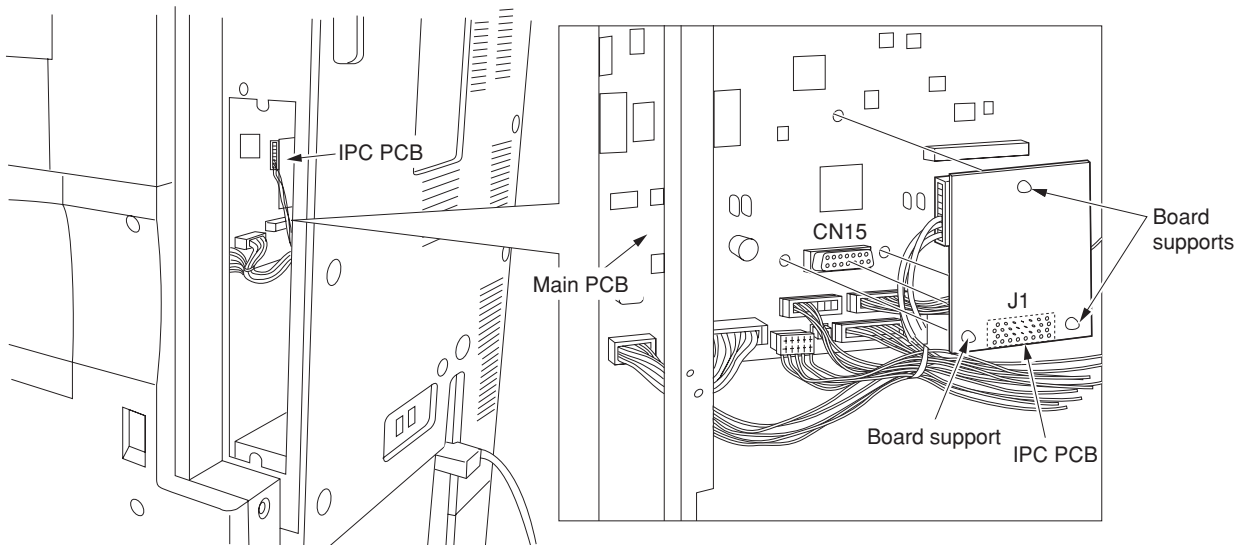


Figure 1-3-42

12. 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.

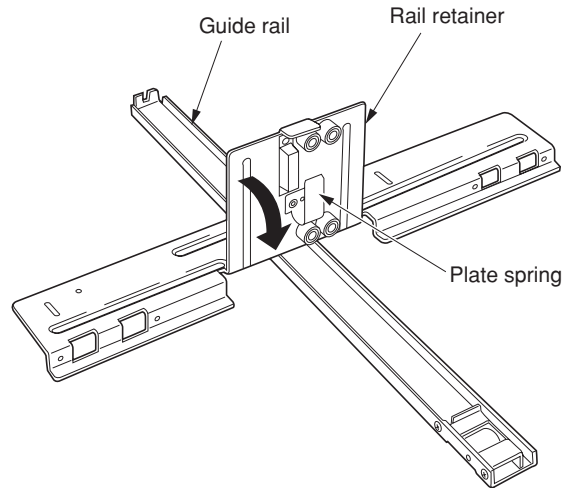


Figure 1-3-43

When the switchback unit is not to be installed

13. 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

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

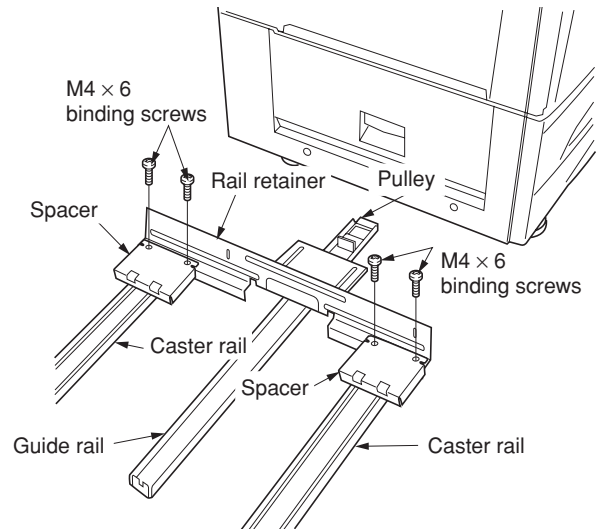
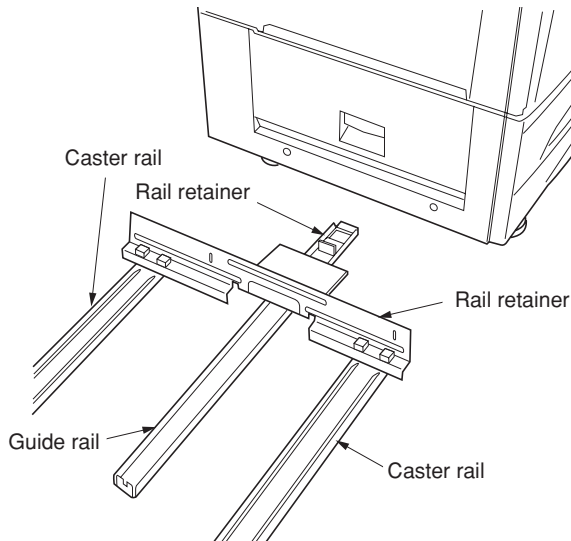


Figure 1-3-44

16. 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.

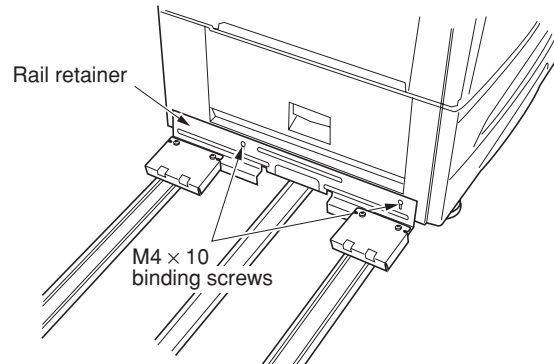
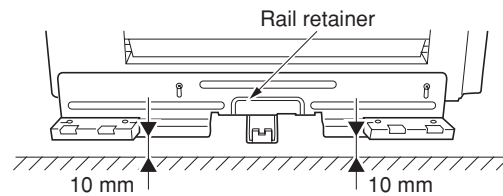


Figure 1-3-45

17. 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.

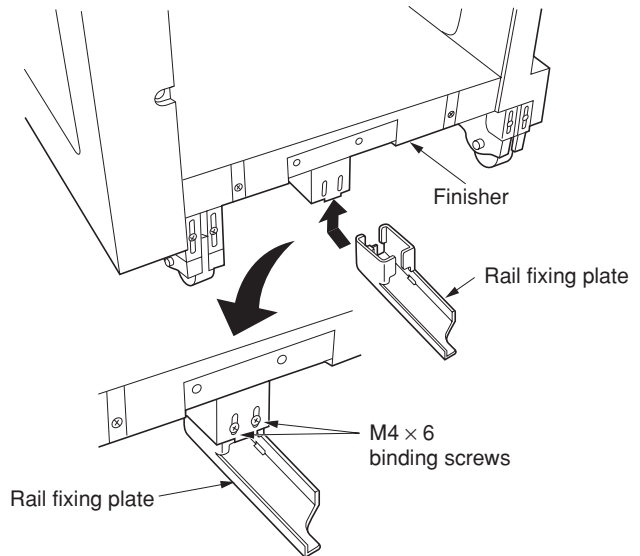


Figure 1-3-46

18. 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 (a) in the guide rail; when not installing the switchback unit, use screw hole (b) in the guide rail.

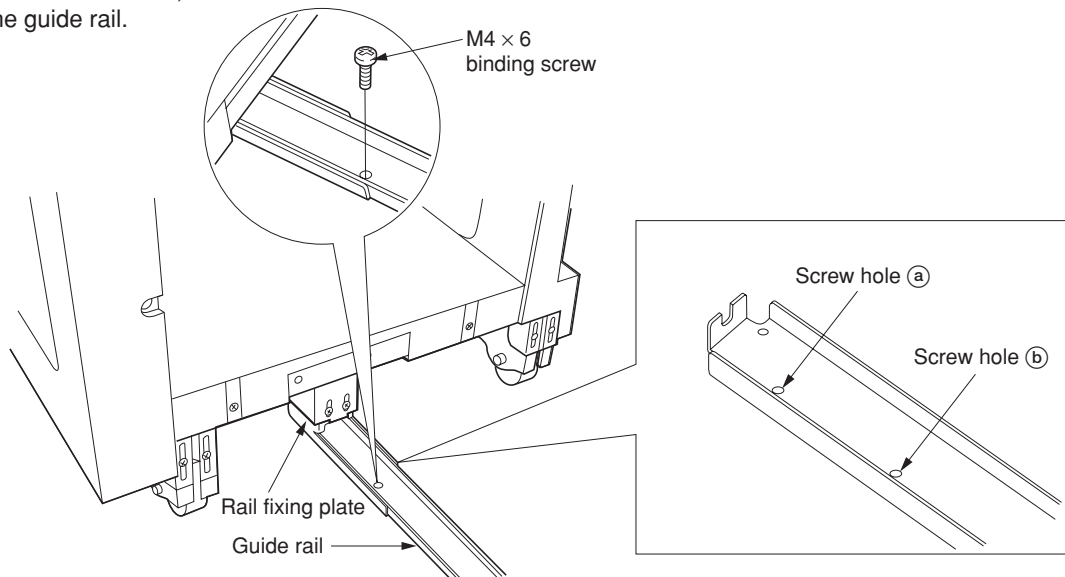


Figure 1-3-47

19. 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.

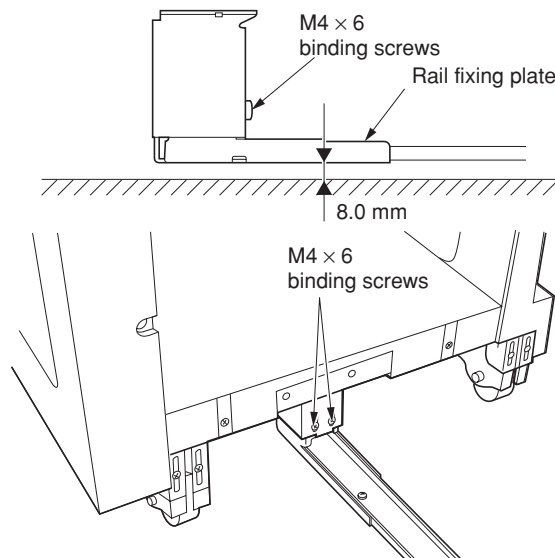


Figure 1-3-48

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

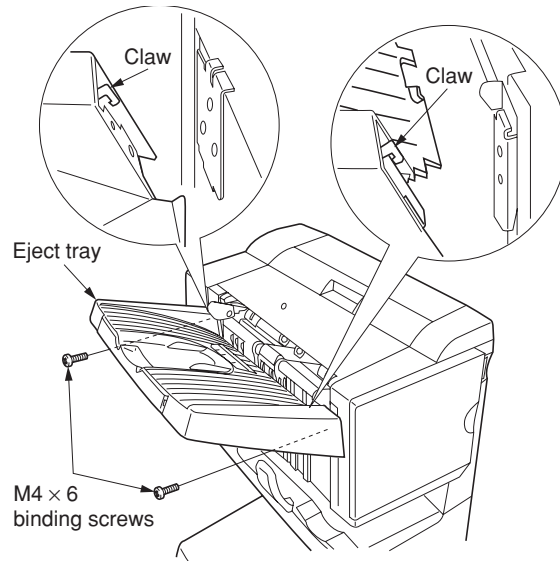


Figure 1-3-49

21. Open the front panel and insert the stapler unit into the finisher.
22. Close the front panel.

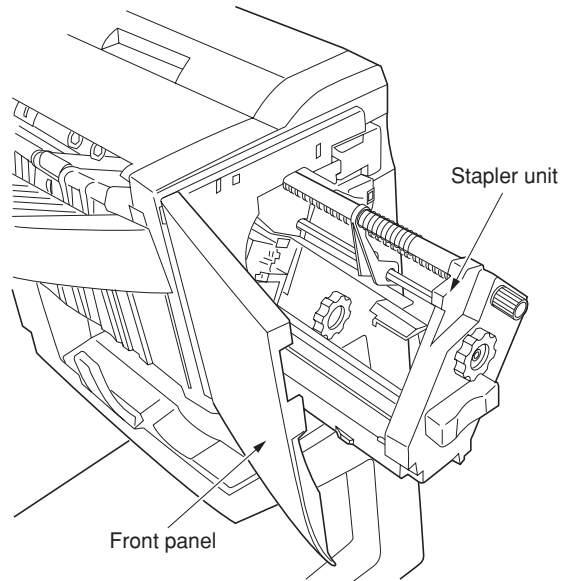


Figure 1-3-50

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.

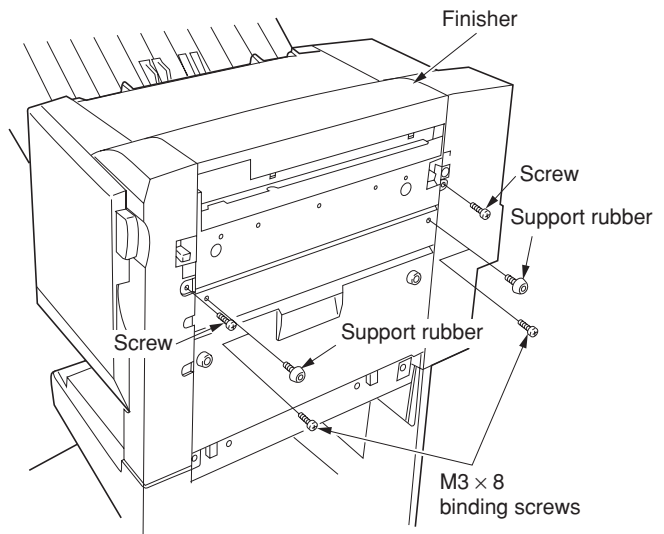


Figure 1-3-51

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

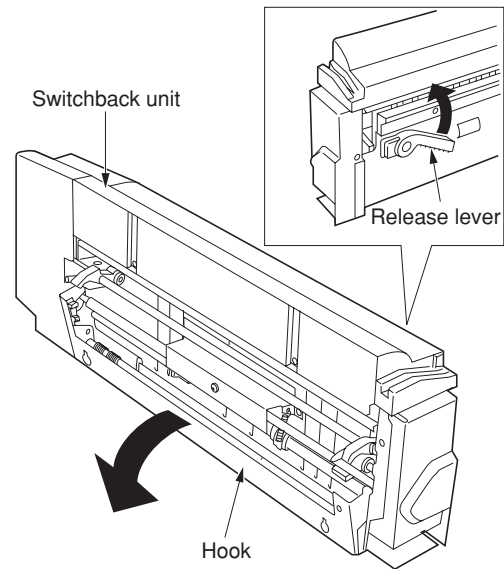


Figure 1-3-52

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.

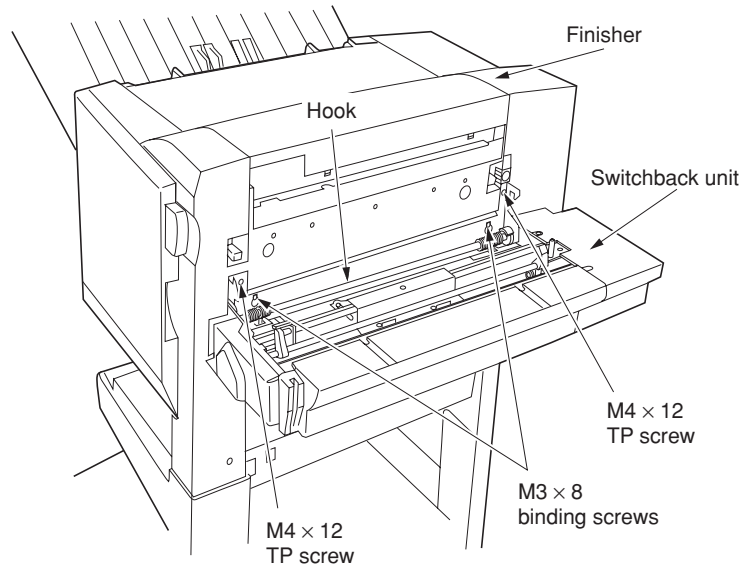


Figure 1-3-53

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

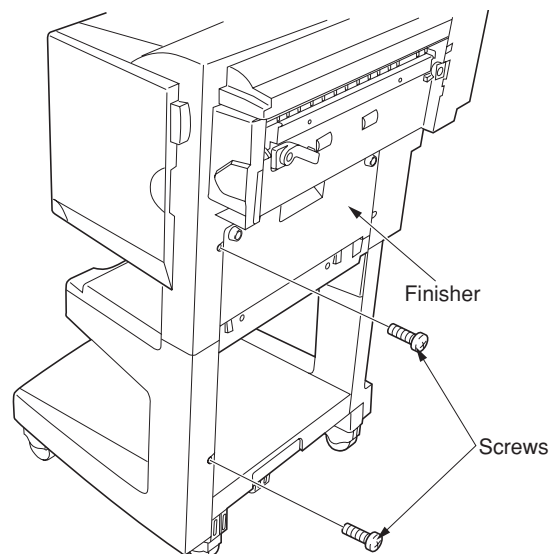


Figure 1-3-54

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).

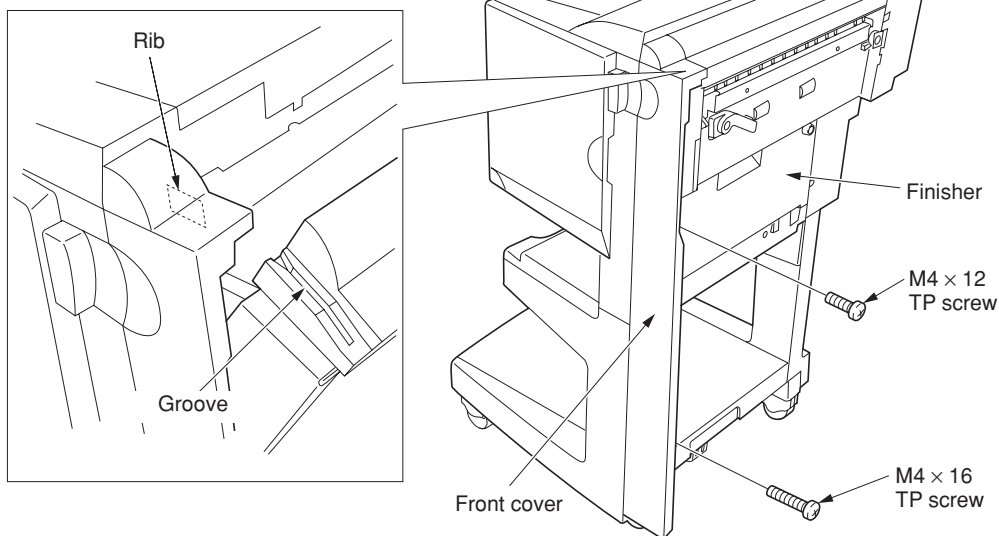


Figure 1-3-55

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.

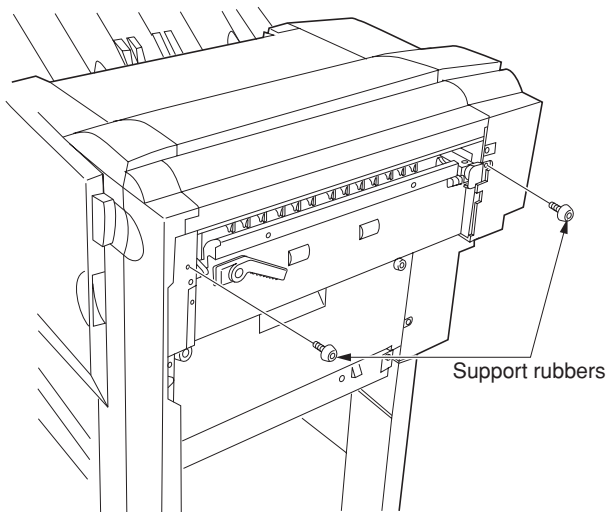


Figure 1-3-56

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.

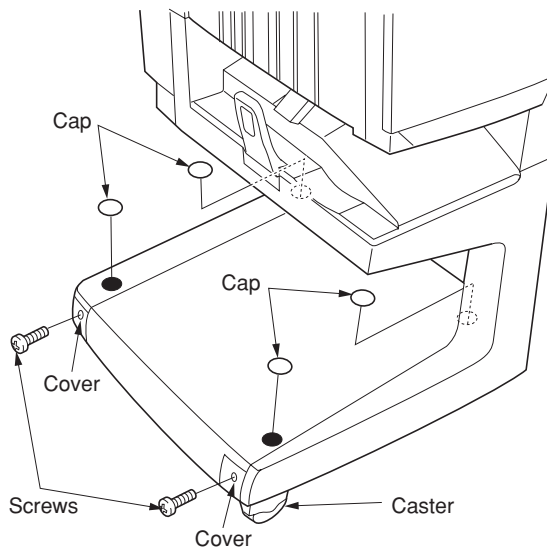


Figure 1-3-57

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.

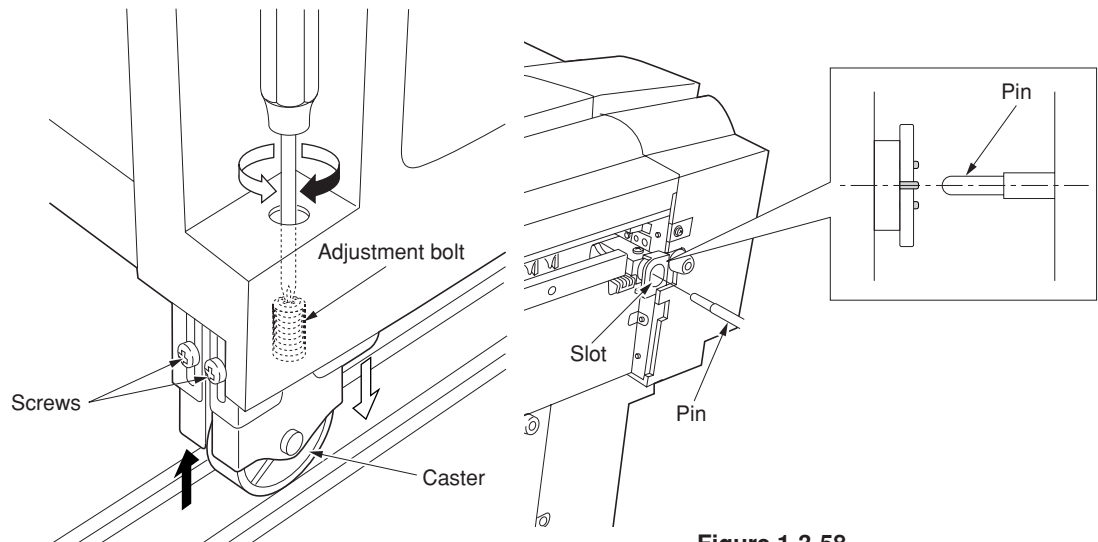


Figure 1-3-58

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).

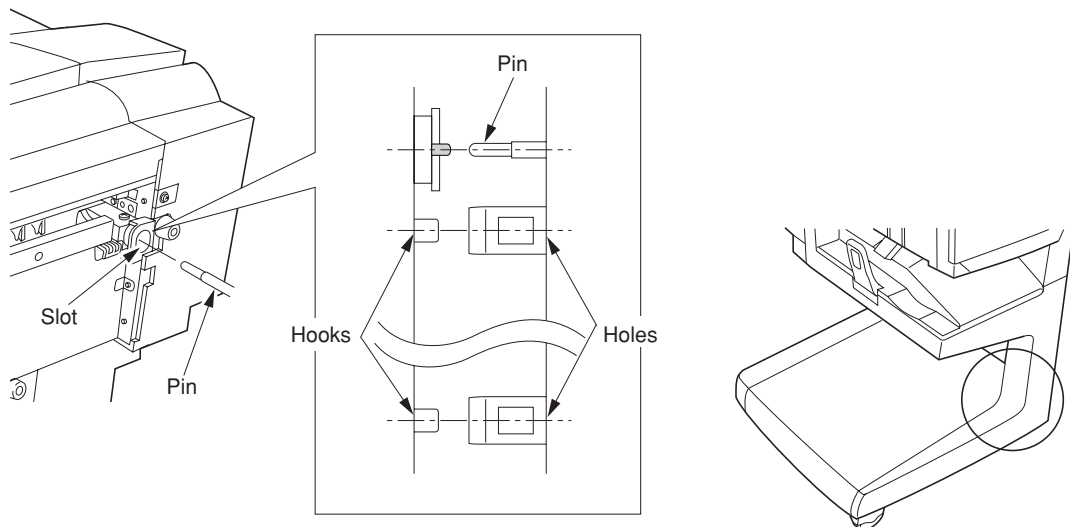


Figure 1-3-59

6. 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.
7. Retighten the two screws on each of the four casters.
8. Refit the two covers and four caps.

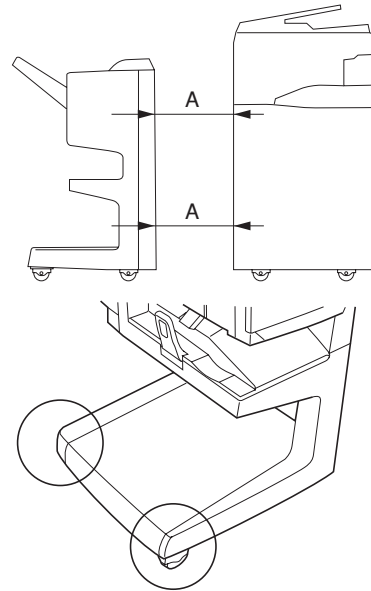


Figure 1-3-60

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 main switch on.
3. Make test copies and check that the finisher and the switchback unit operate correctly.

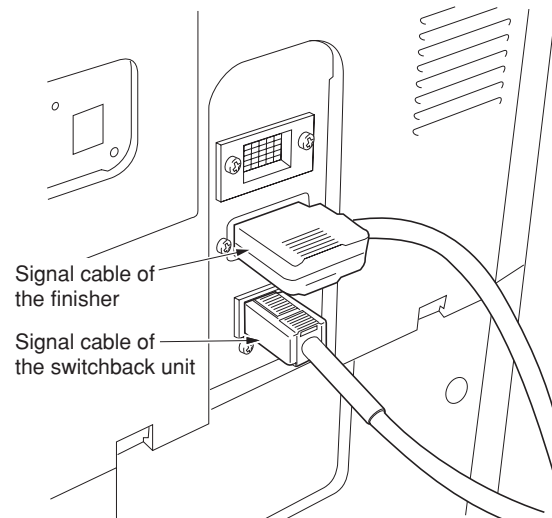


Figure 1-3-61

1-3-9 Installing the sheet-through document holder (option)

Preparation

1. Insert the DF into the copier.

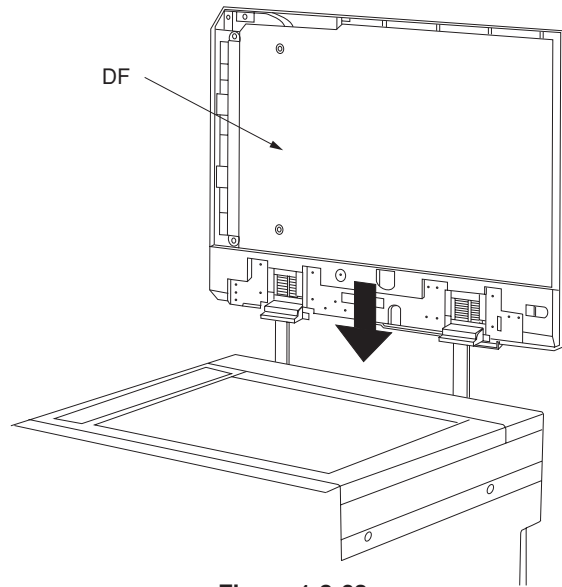


Figure 1-3-62

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

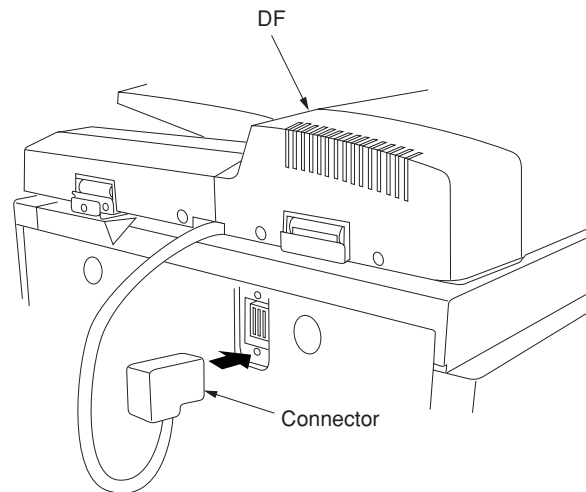


Figure 1-3-63

4. Run maintenance item U211 to set "SADF" (25 cpm copier only).
5. Place the original on the DF and make a test copy. Check the operation and the copy image.
6. If the copy image is different from the original, run the following adjustment.
 - Maintenance item U70 (sub-scan line adjustment)(see page 1-4-15)
 - Maintenance item U71 (leading edge timing adjustment)(see page 1-4-16)
 - Maintenance item U72 (center line adjustment)(see page 1-4-17)

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

Procedure

1. Fit the battery pack into the NCU retainer as shown in the illustration.
2. Fit the speaker onto the two catches on the NCU retainer, and fasten it into place with one M3 × 06 chrome binding screw.
3. Fasten the NCU board to the NCU retainer with four M3 × 06 chrome binding screws.
4. Connect the NCU cable to connector CN1 on the NCU board.

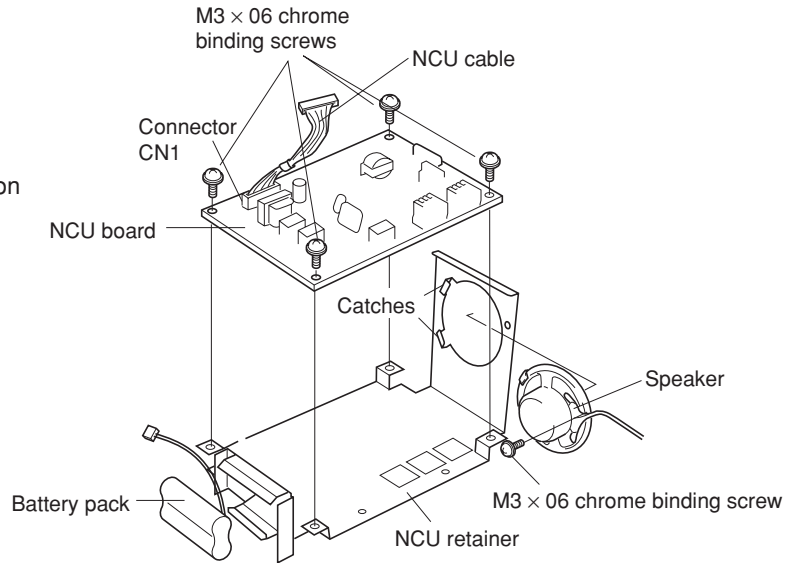


Figure 1-3-64

5. Adhere the lower-sheet to the auxiliary power source retainer.
6. Fasten the auxiliary power source PCB, together with the upper-sheet, to the auxiliary power source retainer, using three M3 × 06 chrome binding screws.
7. Pass the FAX-PCB-Power cable through the cutout in the upper-sheet, and connect it to connector CN1 on the auxiliary power source PCB.

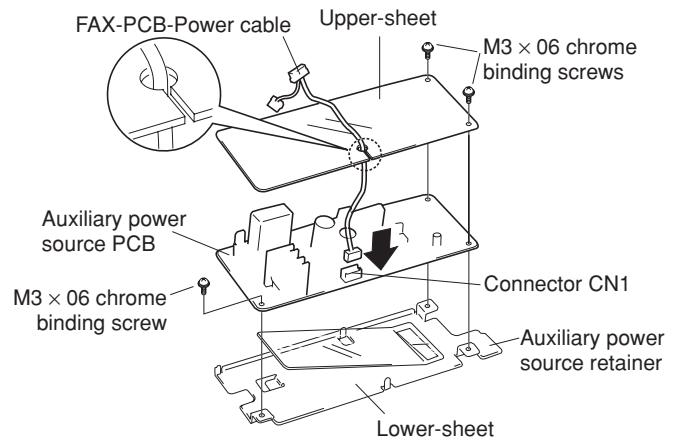


Figure 1-3-65

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

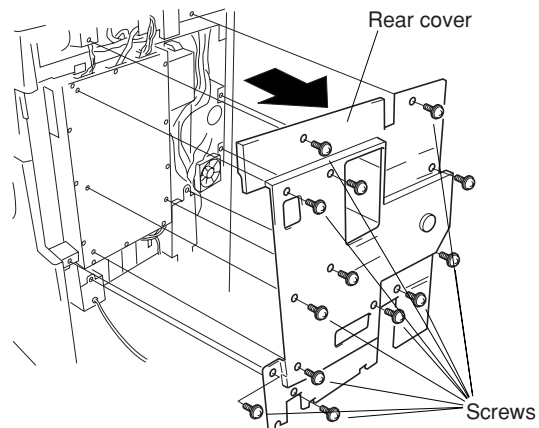


Figure 1-3-66

- If the printing system is installed
9. Remove the 2 screws holding the printer system in place, and pull the printing system out of the shield cover.

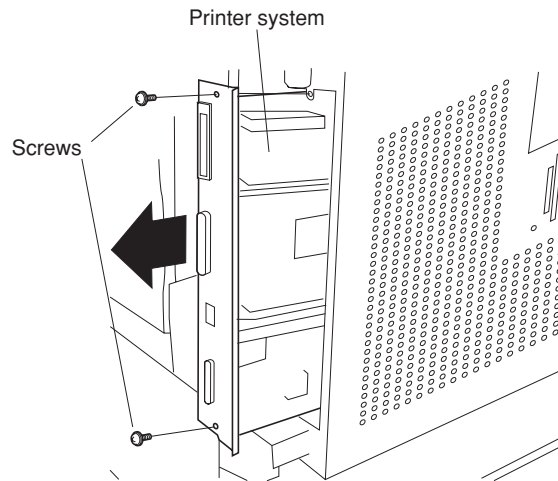


Figure 1-3-67

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

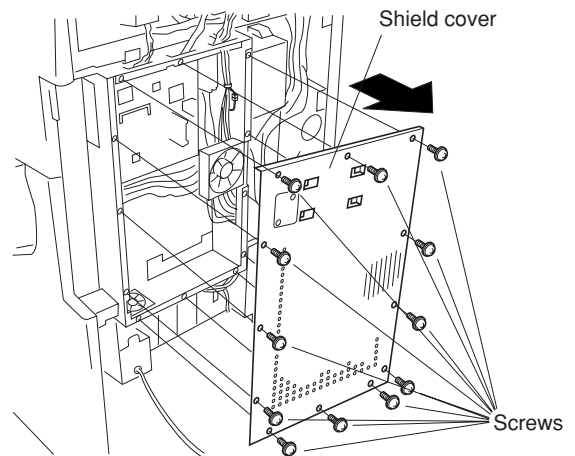


Figure 1-3-68

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

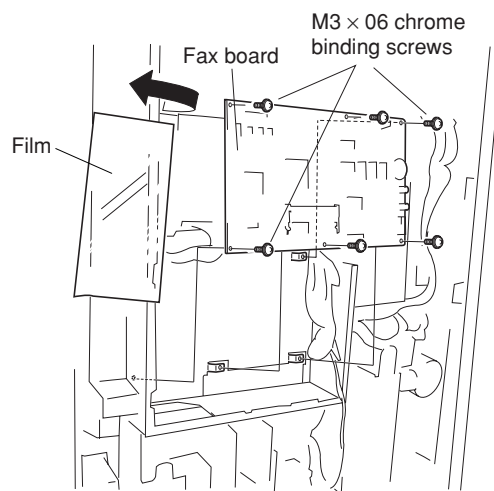


Figure 1-3-69

12. Fasten the NCU unit into place from the bottom with two M3 × 06 chrome binding screws.
13. Connect the three connectors from the NCU board to the corresponding connectors on the fax board, as follows:
 - Speaker 2-pin connector → CN7
 - NCU board connector → CN3
 - Battery connector → CN6

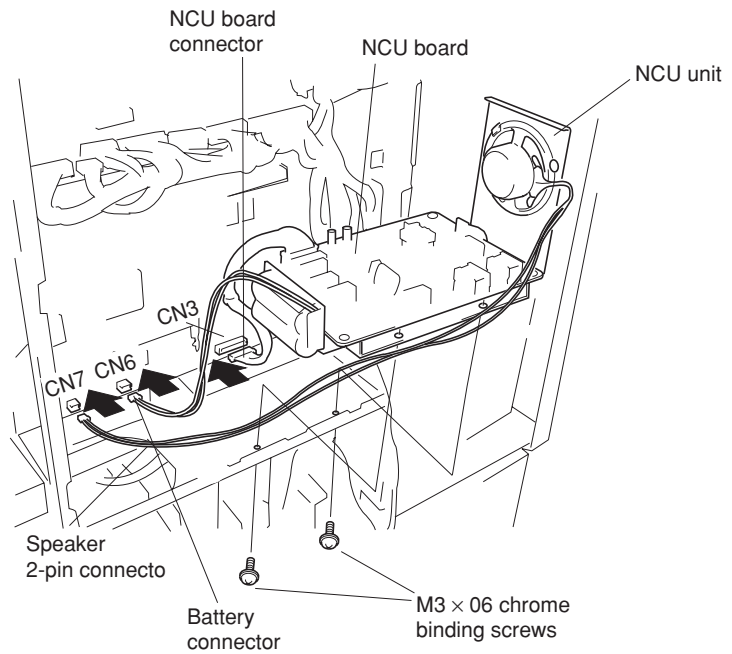


Figure 1-3-70

14. 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.

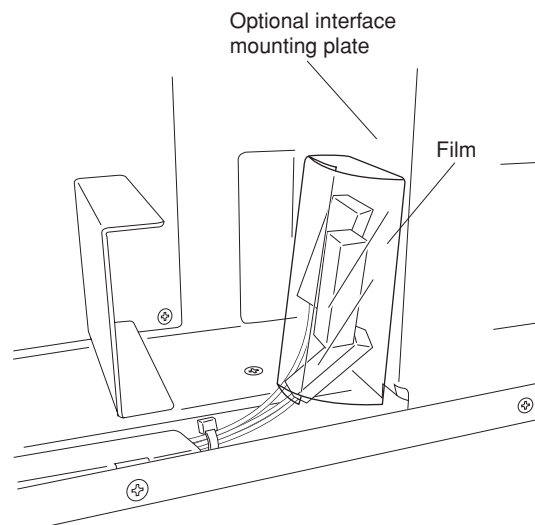


Figure 1-3-70-1

15. Connect the three positive connectors on the power board to the corresponding connectors on the auxiliary power source PCB, as follows.

- White positive connector → TB1 (white)
- Green positive connector → TB2 (green)
- White positive connector → TB3

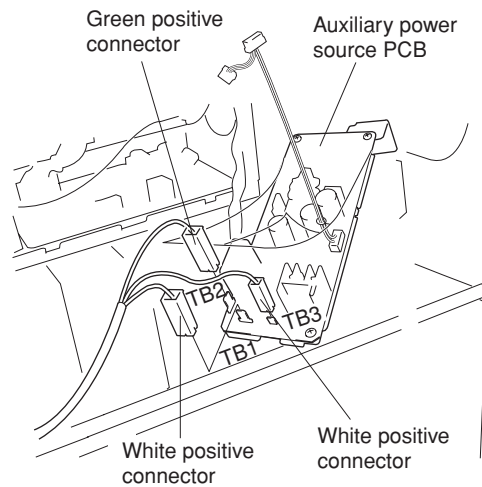


Figure 1-3-71

16. 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.

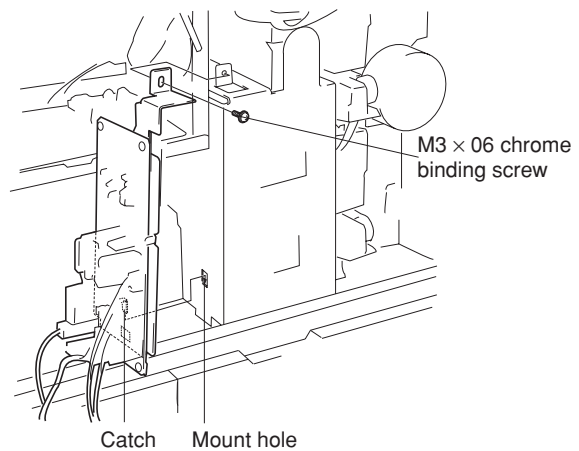


Figure 1-3-72

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17. Through the opening of controller-box above the speaker, connect the FAX-PCB-Power cable on the auxiliary power source PCB to connector CN8 on the fax board.
18. Connect the 2-pin connector to the 2-pin connector with green cable.

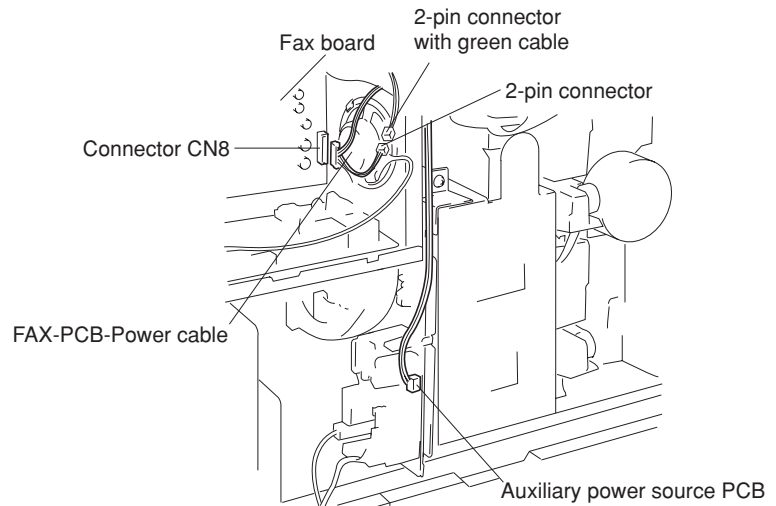


Figure 1-3-73

19. Unlock CN1 on the fax board by pulling its connector housing.
 20. Hold the fax cable with its conductive side facing up, insert it into connector CN1, then push the housing back in to lock the connector.
 21. Hold the other end of the fax cable with its conductive side facing down, and connect it to connector CN44 on the main PCB. (Pull the CN44 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.

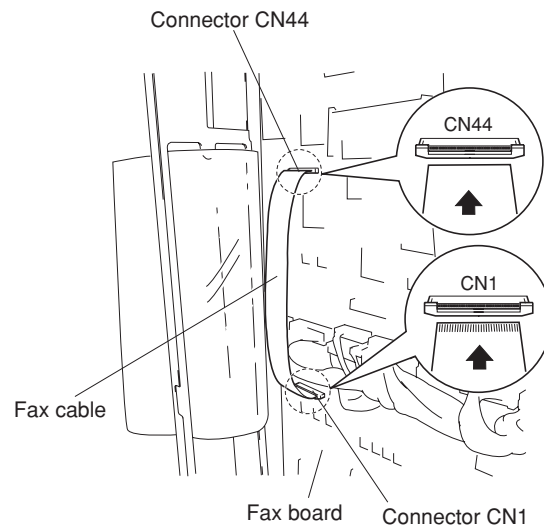


Figure 1-3-74

- Important:** The Memory module DIMM (8MB) must be installed onto the fax board. Please be sure that you do not install it onto the main PCB.
22. Insert the Memory module DIMM (8MB) at an angle into the memory slot on the fax board.
 23. Push the free end of the module down toward the board.

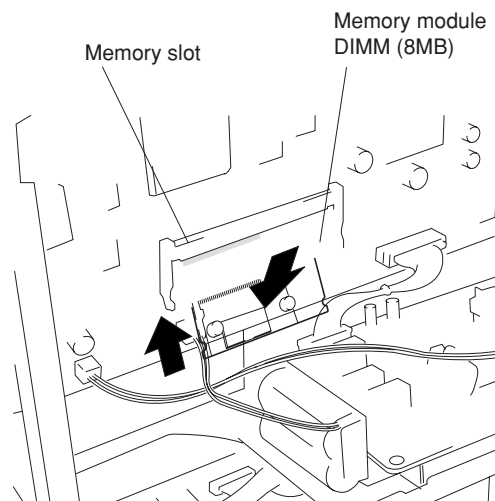


Figure 1-3-75

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

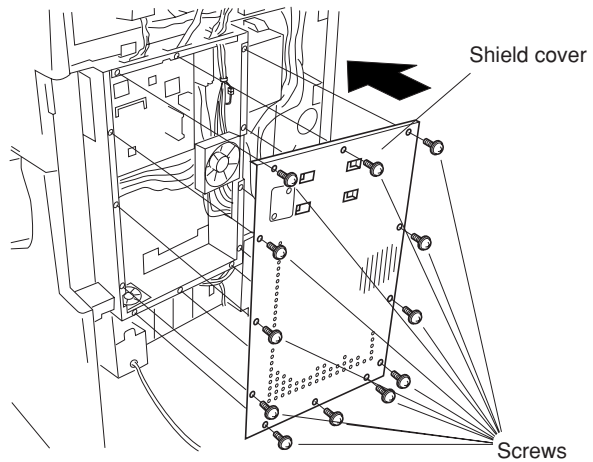


Figure 1-3-76

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

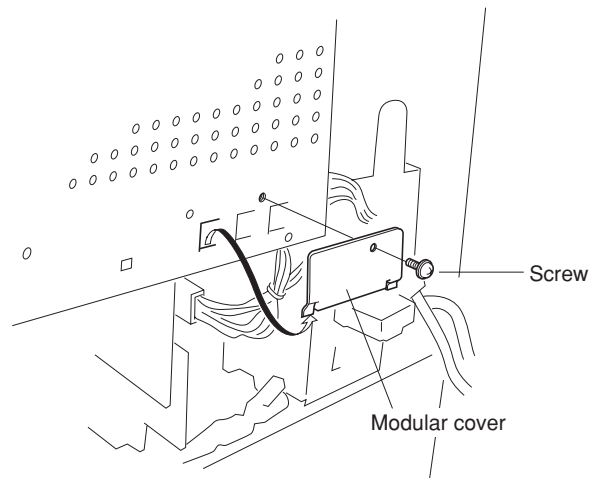


Figure 1-3-77

26. Hang the modular cover onto the holes on the shield cover, and fasten it into place with 1 screw.

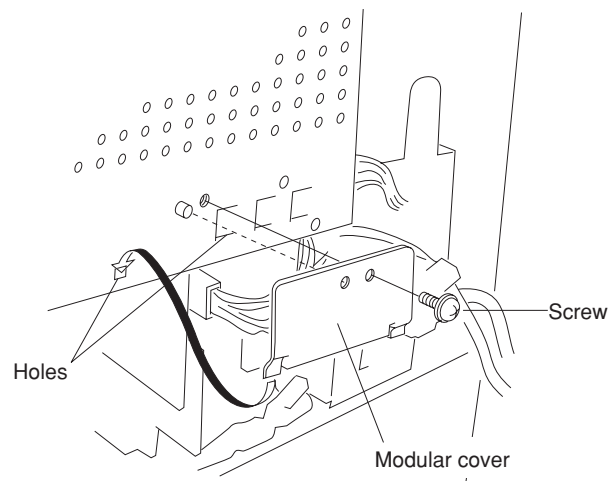


Figure 1-3-78

- If the printing system was installed
27. Reinstall the printing system into the shield cover, fastening it into place with 2 screws.

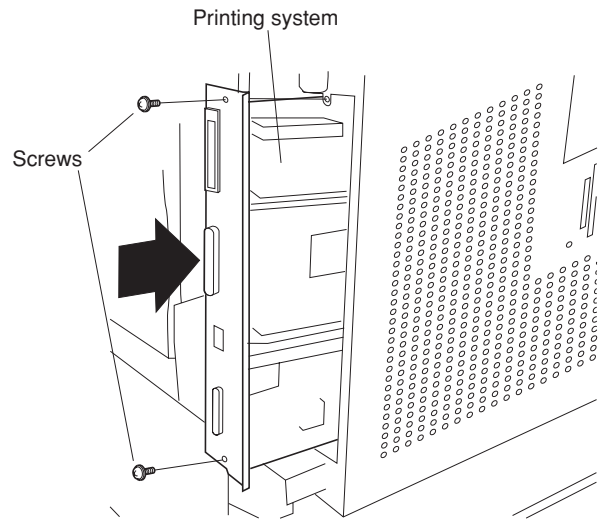


Figure 1-3-79

28. Reattach the rear cover with 13 screws.

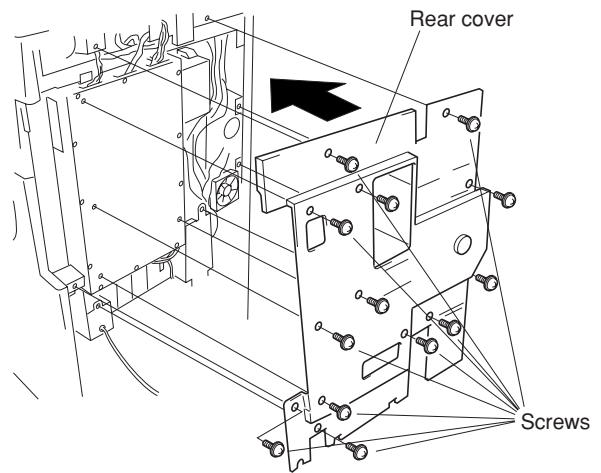


Figure 1-3-80

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

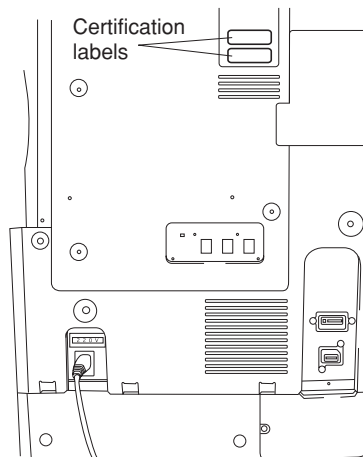


Figure 1-3-81

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

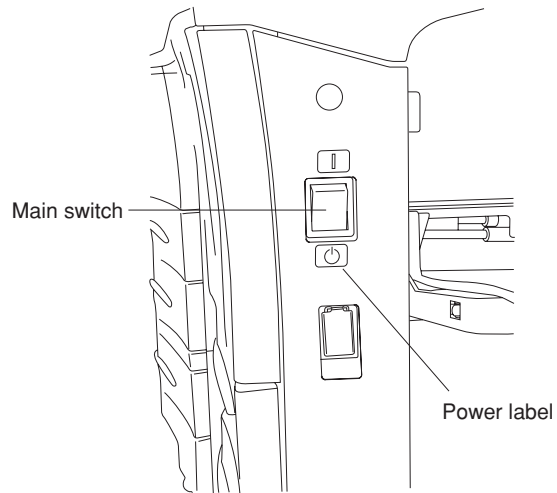


Figure 1-3-82

31. Take the alphabet labels from the fax-kit 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.

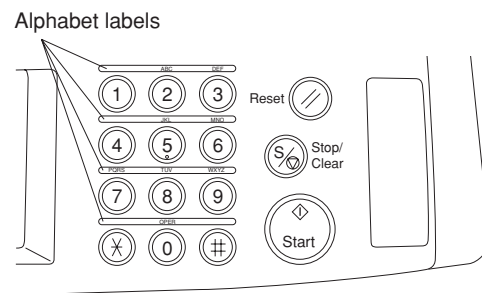


Figure 1-3-83

32. 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.

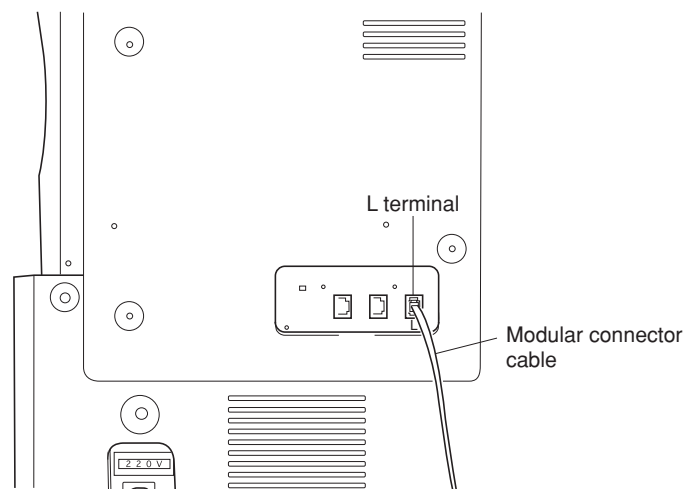


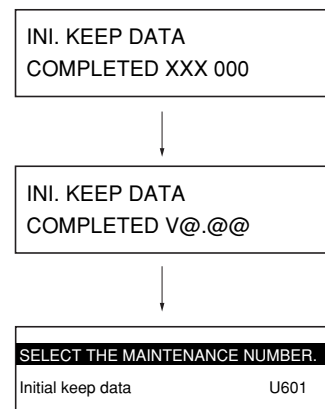
Figure 1-3-84

Initialization procedure after installation of facsimile system

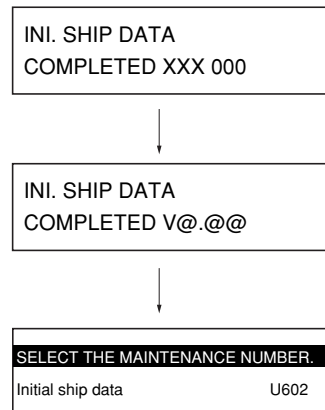
1. Insert the copier power plug to the wall outlet and turn the main switch on.
2. Run maintenance item U601.
3. Enter a destination code using the numeric keys (refer to the destination code list) and then press the start key.
- * Enter a destination code with three digits.

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 1-3-85**

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 1-3-86**

1-3-11 Installing the Printing System (option)

Procedure

1. Remove 2 screws and take off the cover.

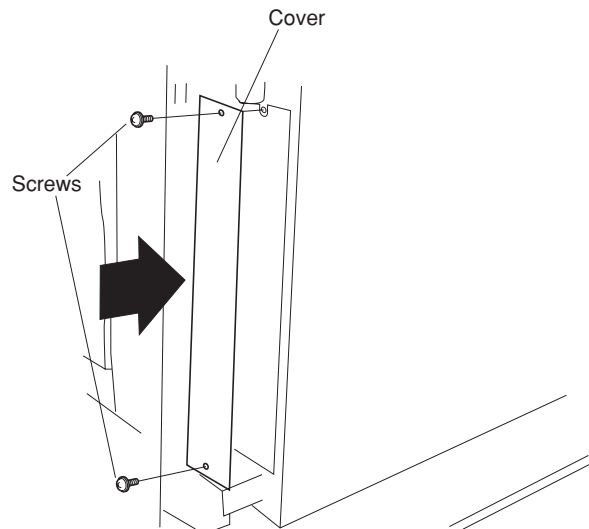


Figure 1-3-87

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

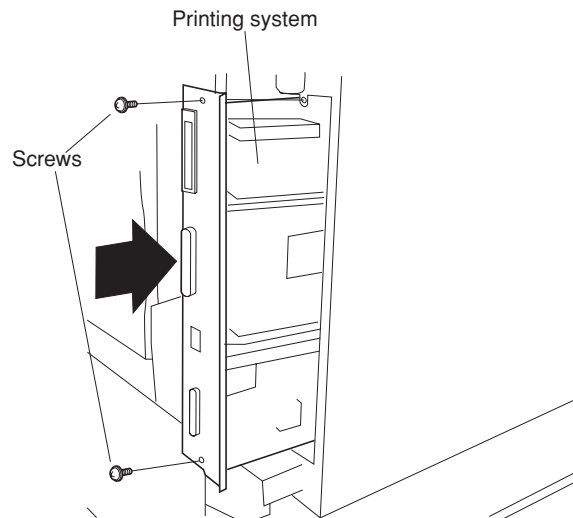


Figure 1-3-88

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.

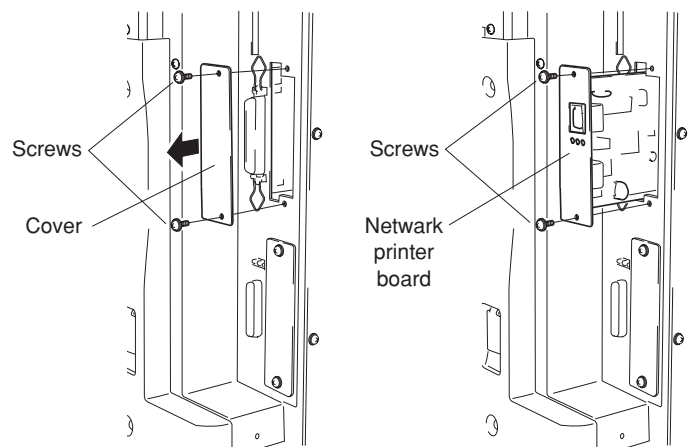
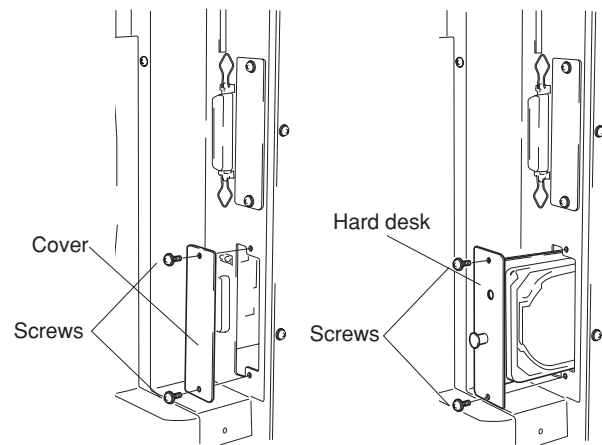


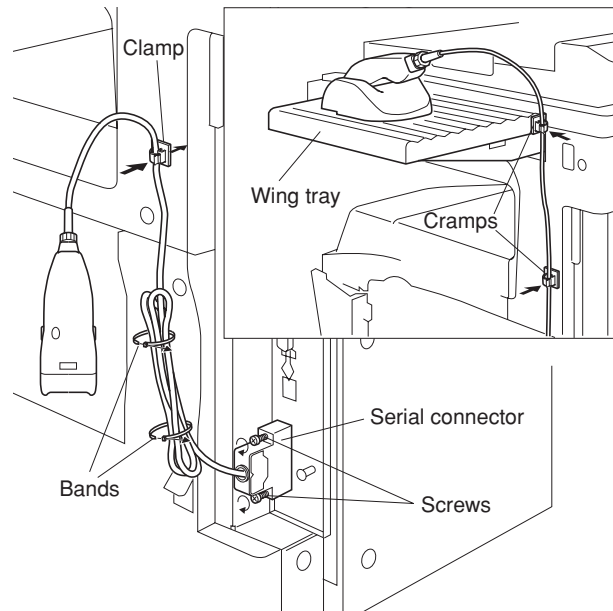
Figure 1-3-89

Install the (optional) hard disk.

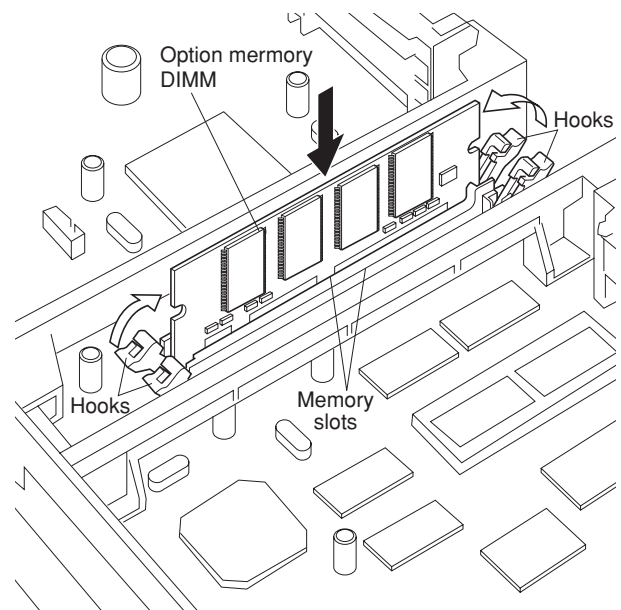
5. Remove 2 screws and take off the cover.
6. Push the hard disk all the way in along the rails, and fasten it with 2 screws.

**Figure 1-3-90****Installing the Optional Bar-Code Reader**

7. Fasten the serial connector in place with 2 screws.
8. Tie the excess cord with the two bands, so that the free cord length comes to about 1 meter.
9. Peel off the backing from one of the clamps, adhere the clamp to the copier at the position shown in the illustration, and pass the wire through the clamp.
 - If a wing tray is installed, attach the other clamp to the wing tray and pass the wire through both clamps.

**Figure 1-3-91****Installing the Optional Memory DIMM**

10. 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 1-3-92**

1-3-12 Installing the Scanning System (option)

Procedure

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

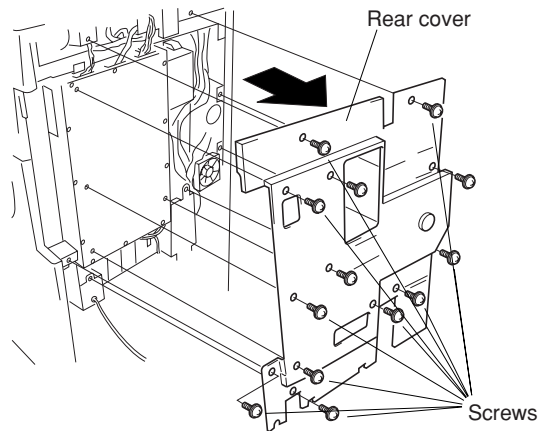


Figure 1-3-93

- 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.

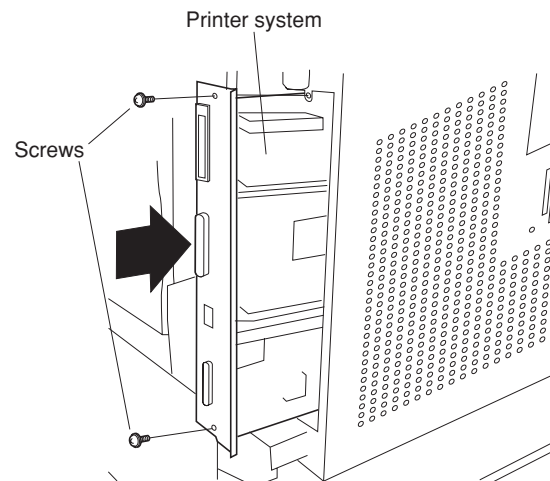


Figure 1-3-94

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

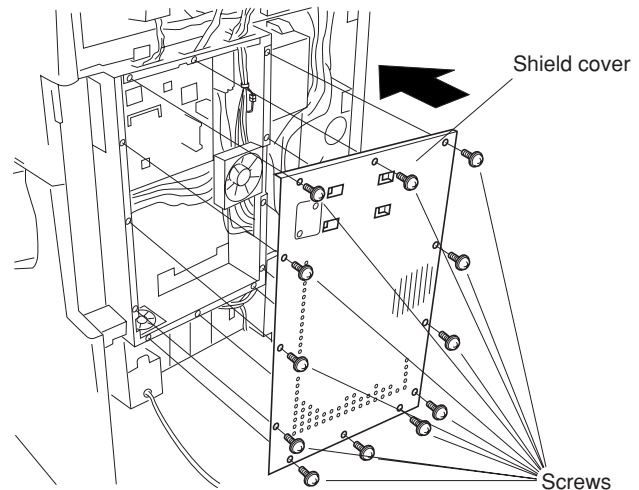


Figure 1-3-95

4. Insert the RTC board at an angle into the RTC board slot on the main PCB.
5. Push the free end of the RTC board down toward the fax board.

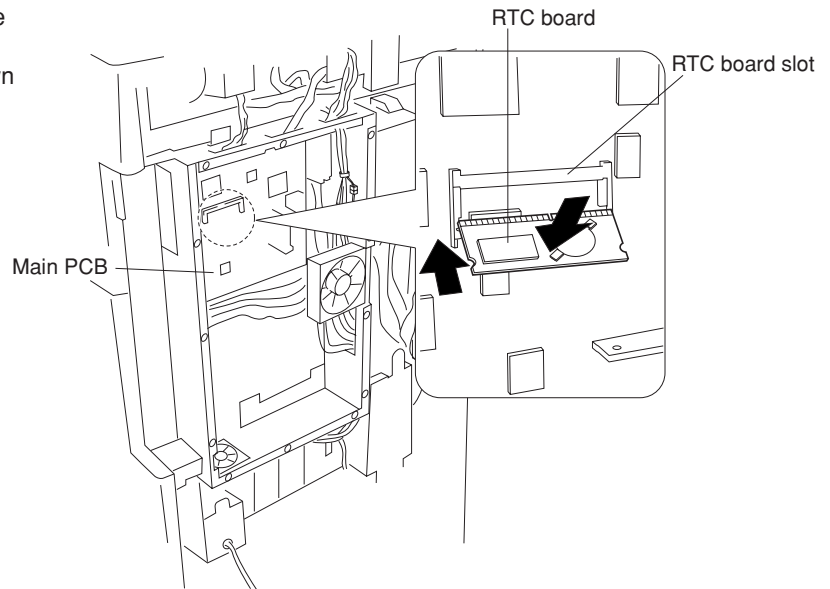


Figure 1-3-96

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

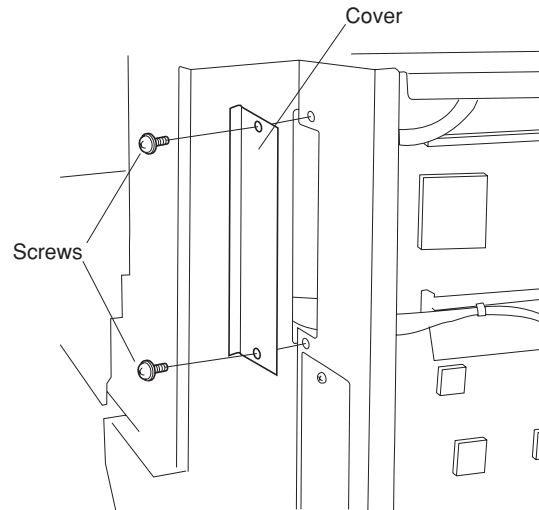


Figure 1-3-97

7. Firmly push connector CN1 on the scanner board all the way into connector CN50 on the main PCB.
8. Fasten the scanner board with 2 screws.

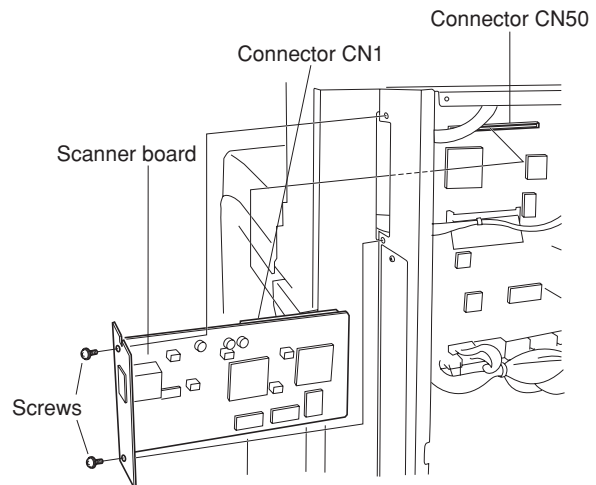


Figure 1-3-98

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

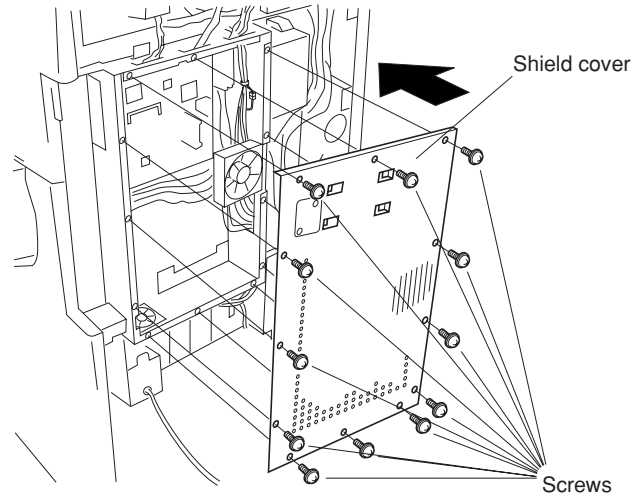


Figure 1-3-99

- If the printing system was installed
10. Reinstall the printing system into the shield cover, fastening it into place with 2 screws.

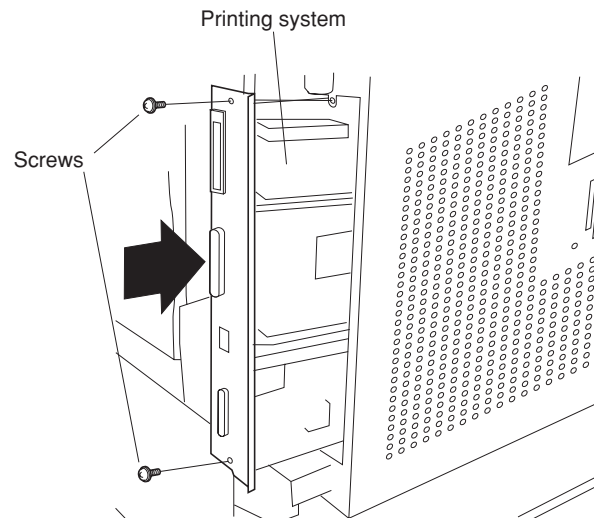


Figure 1-3-100

11. Reattach the rear cover with 13 screws.

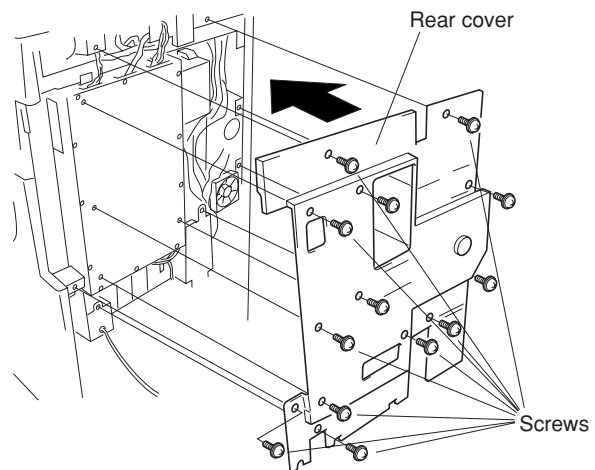


Figure 1-3-101

1-3-13 Installing the duplex unit (option)

Preparation

1. Open the conveying cover.
2. Remove the screw from the front and rear struts respectively to remove the struts and remove the conveying cover in the horizontal direction.

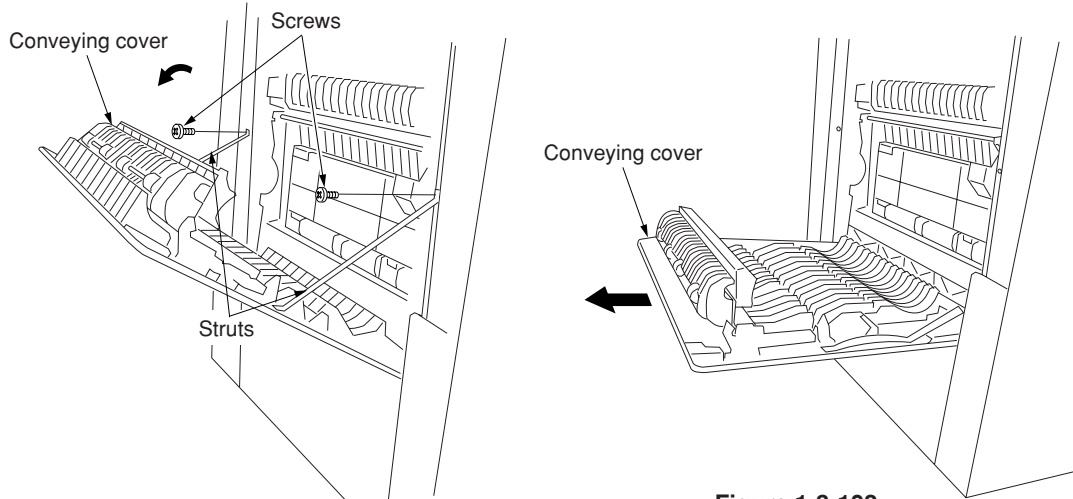


Figure 1-3-102

3. Insert the nut plates into the paper conveying bases.

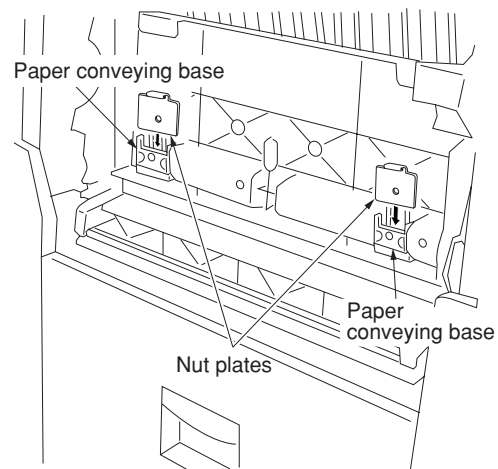


Figure 1-3-103

4. Raise the release lever of the conveying unit, open the conveying unit a little, and hang the hook sections in the front and rear of the duplex unit on the shaft of the conveying unit.
5. Secure the duplex unit using the four M3 × 10 bronze binding screws.

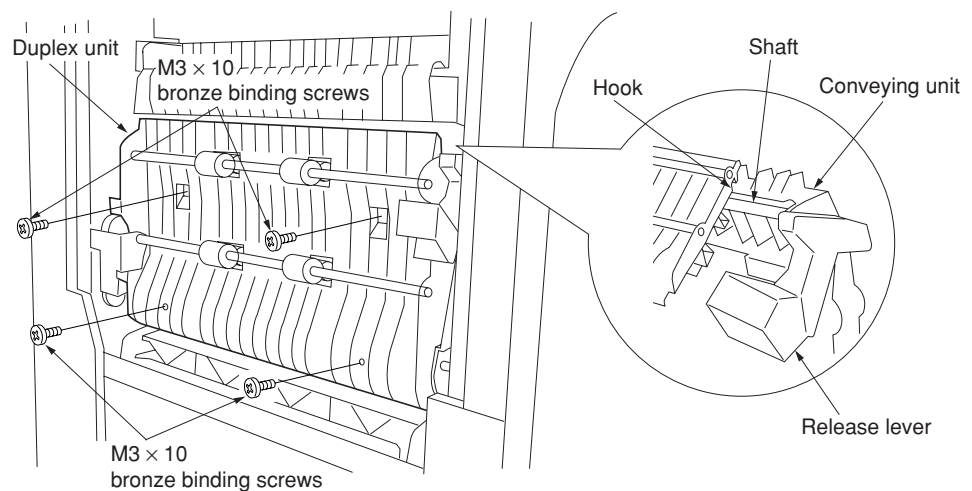


Figure 1-3-104

6. Insert the 8-pin connector of the duplex unit into the groove of the housing and pull out the harness.
7. Connect the 8-pin connector of the duplex unit to the connector of the copier and arrange wiring so that the harness is placed down.

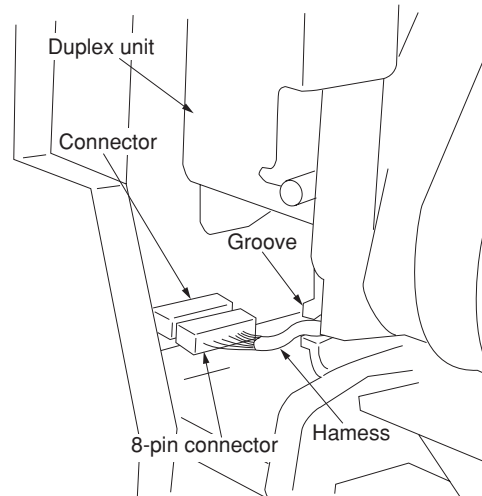


Figure 1-3-105

8. Insert the removed conveying cover in the horizontal direction and reattach the front and rear struts using the screw respectively.
9. Close the conveying cover.

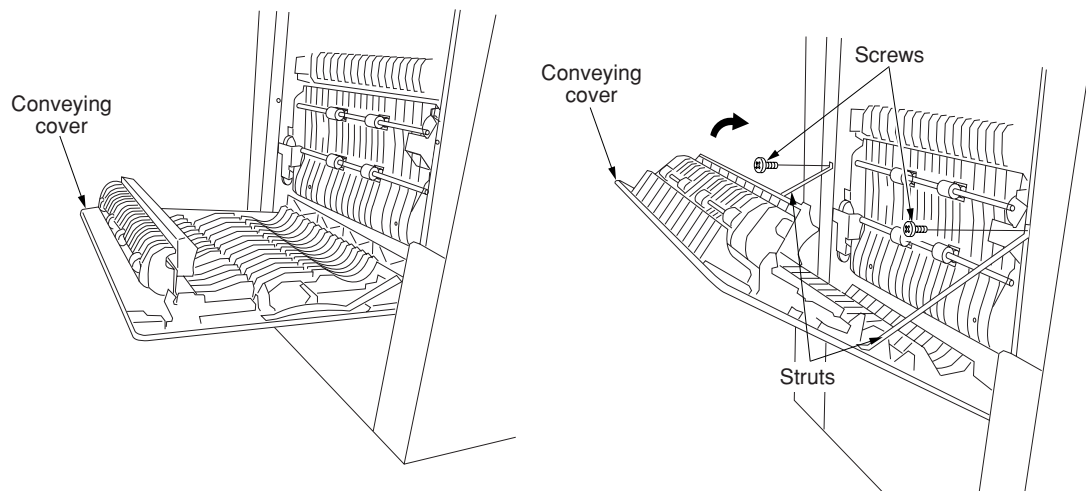


Figure 1-3-106

10. Connect the copier power plug to the wall outlet and turn the copier main switch on.
11. Run maintenance item U034 to adjust the center line for duplex copying (see page 1-6-12).

1-3-14 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.

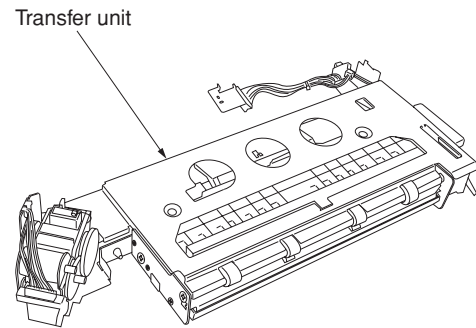


Figure 1-3-106-1

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

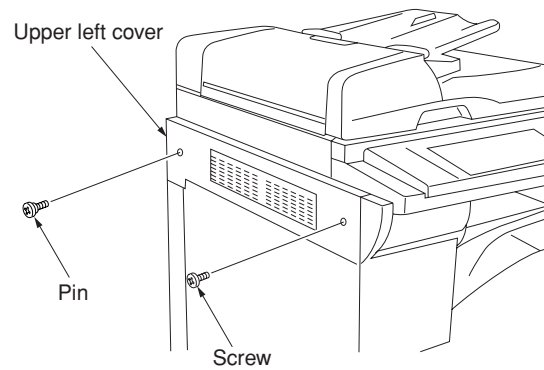


Figure 1-3-107

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.

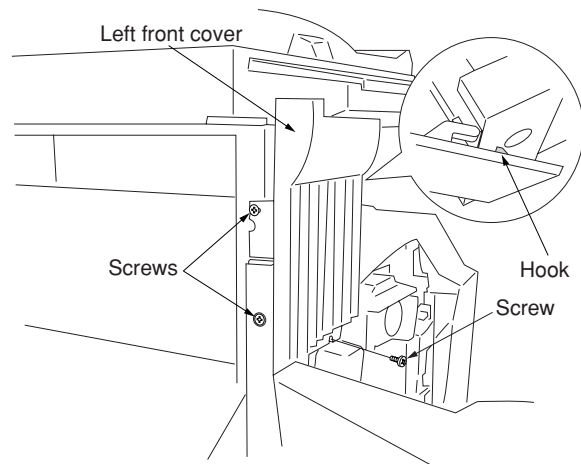


Figure 1-3-108

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

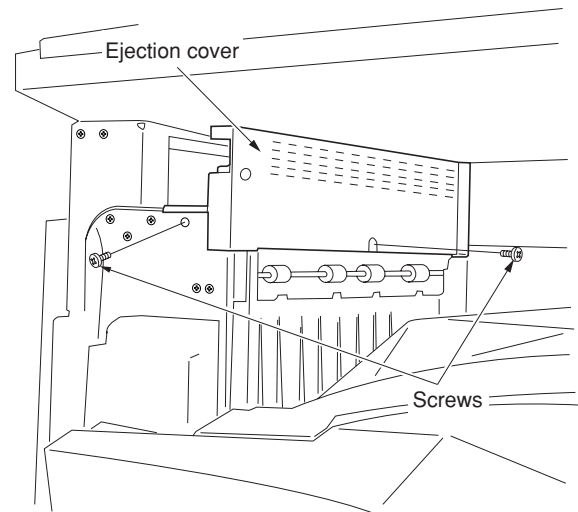


Figure 1-3-109

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

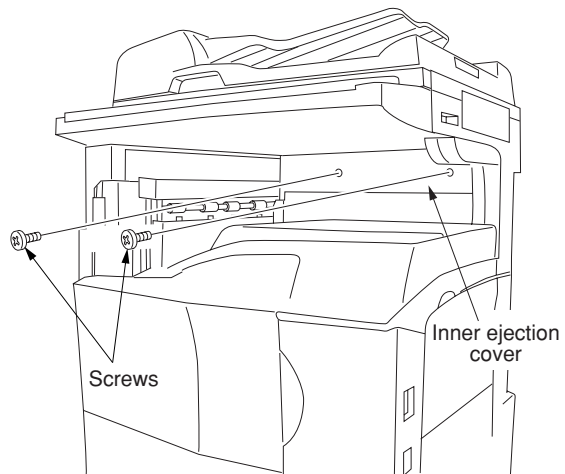


Figure 1-3-110

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.

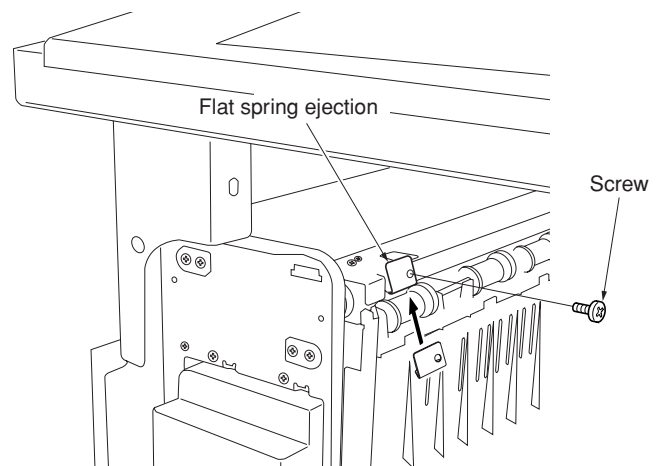


Figure 1-3-110-1

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.

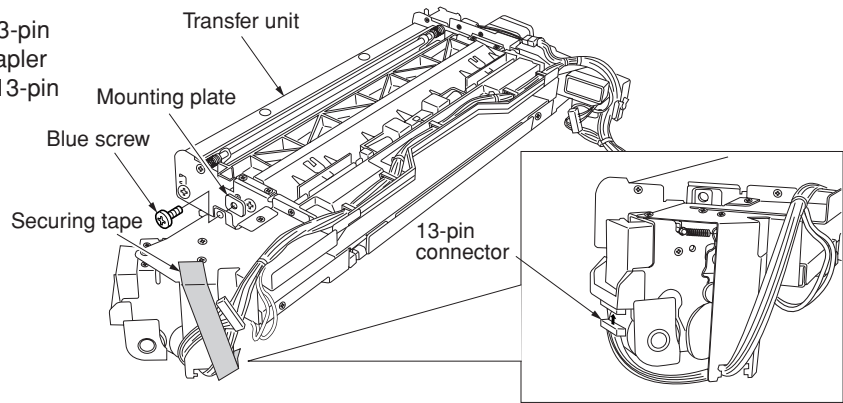


Figure 1-3-110-2

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.

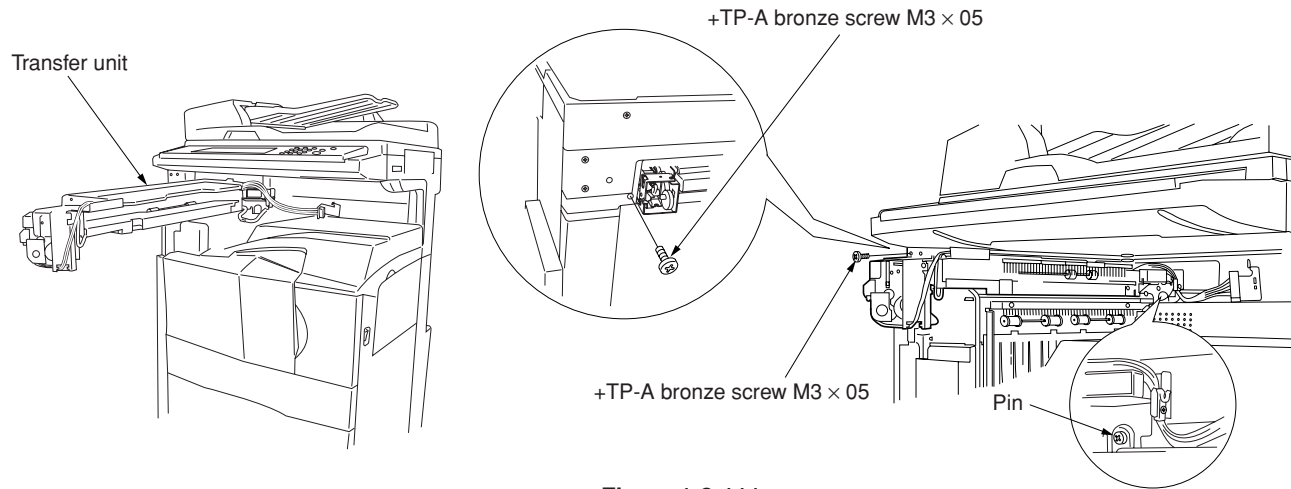


Figure 1-3-111

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.

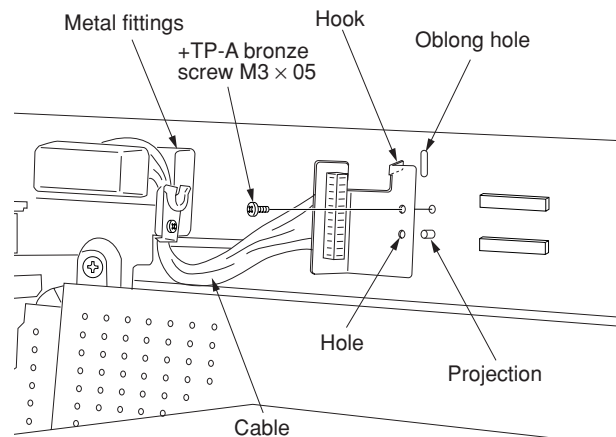


Figure 1-3-112

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

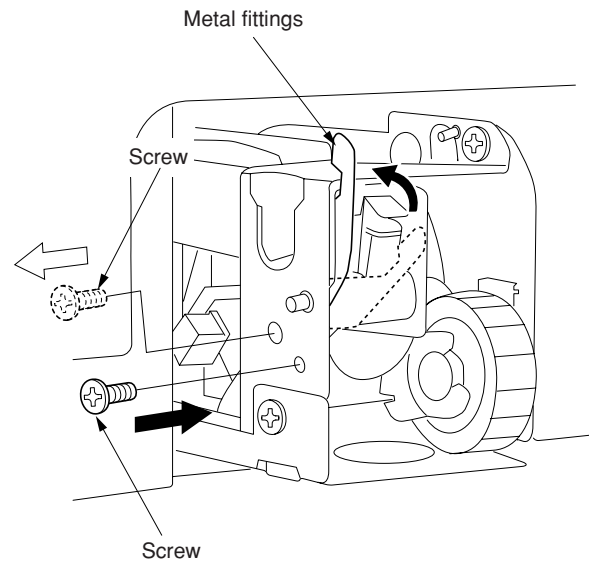


Figure 1-3-113

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.

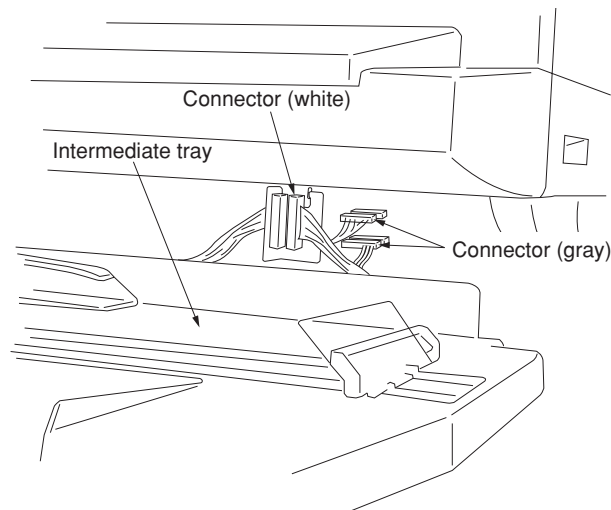


Figure 1-3-114

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.

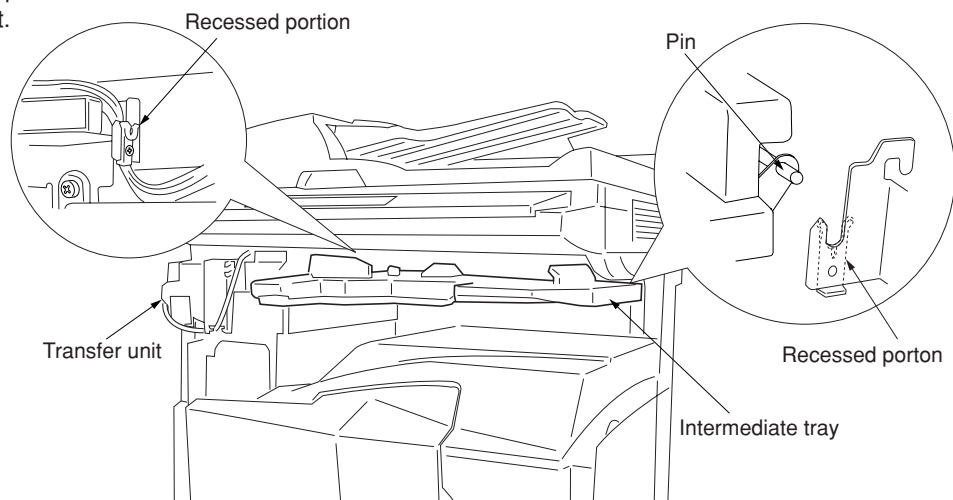


Figure 1-3-115

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

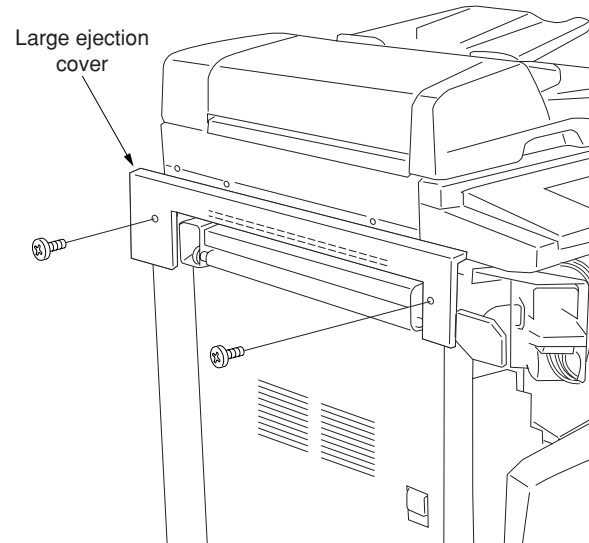


Figure 1-3-116

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.

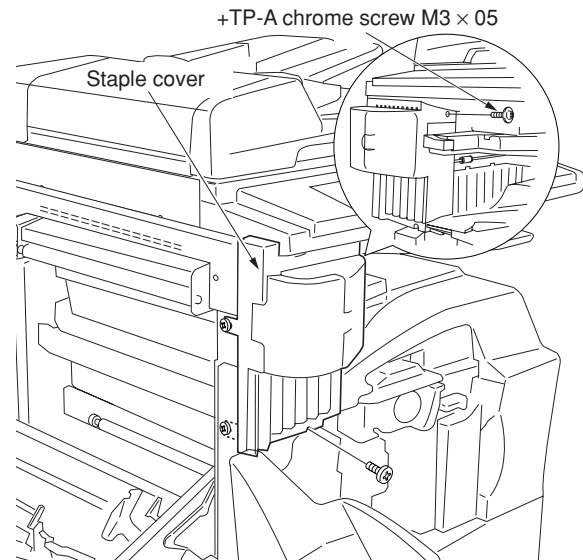


Figure 1-3-117

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.

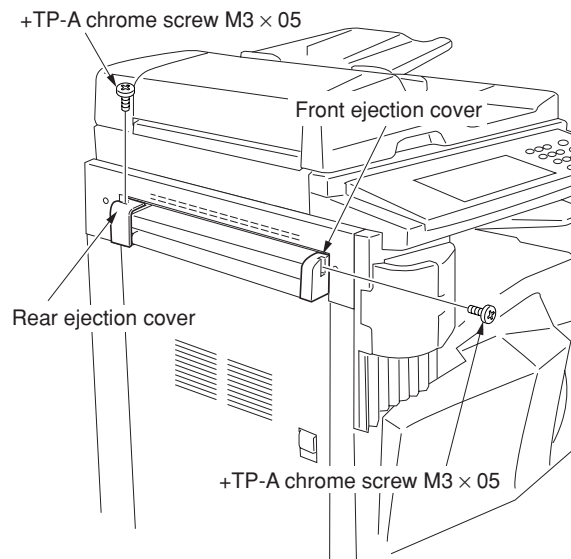


Figure 1-3-118

19. Attach the copy tray.

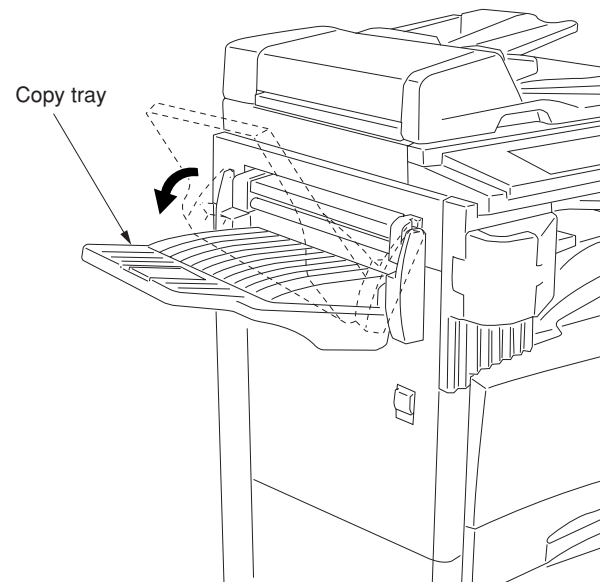


Figure 1-3-119

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 main switch on.
23. Select the staple mode and make a stapled copy to check that stapling is performed properly.

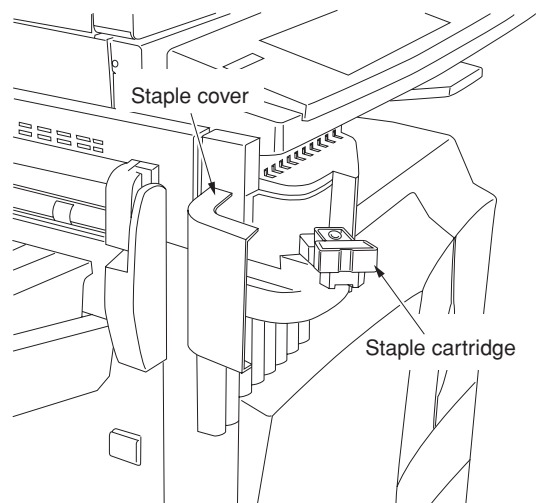


Figure 1-3-120

1-3-15 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.

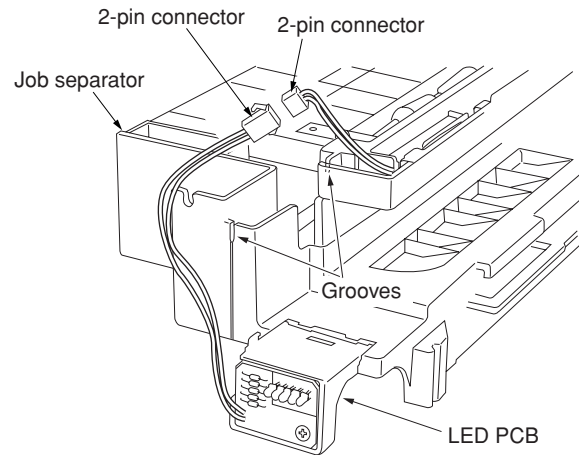


Figure 1-3-120-1

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.

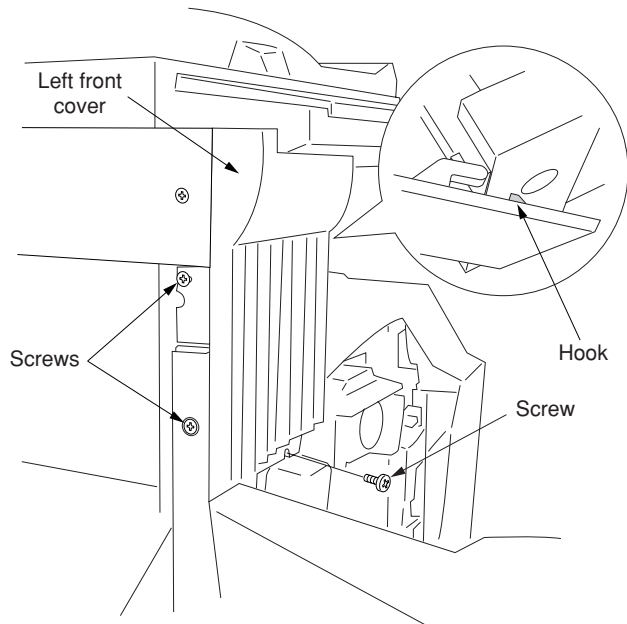


Figure 1-3-121

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

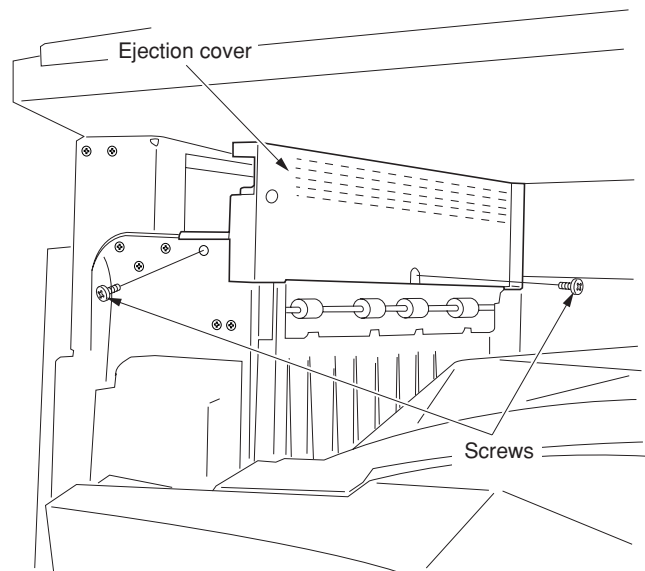


Figure 1-3-122

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

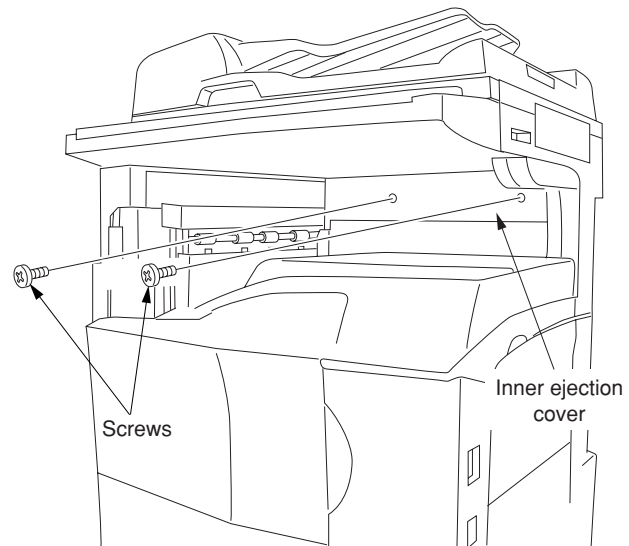


Figure 1-3-123

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.

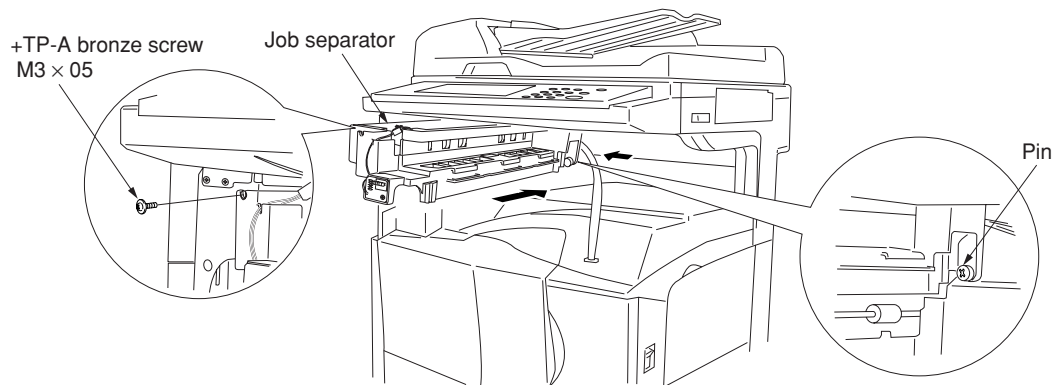


Figure 1-3-124

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

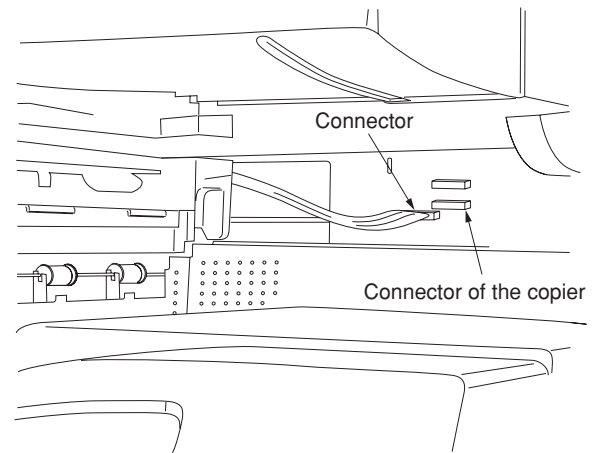


Figure 1-3-125

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.

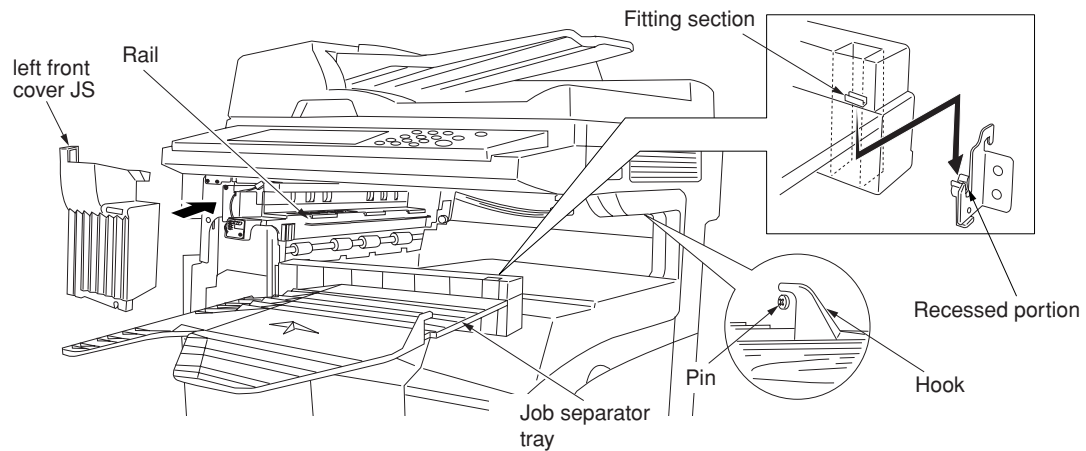


Figure 1-3-126

11. Insert the power plug of the copier into an outlet and turn the main 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.

1-3-16 Installing the Network Facsimile System (option)

Procedure

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

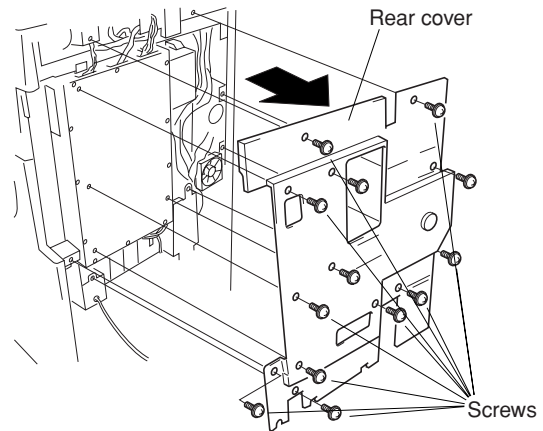


Figure 1-3-127

- 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.

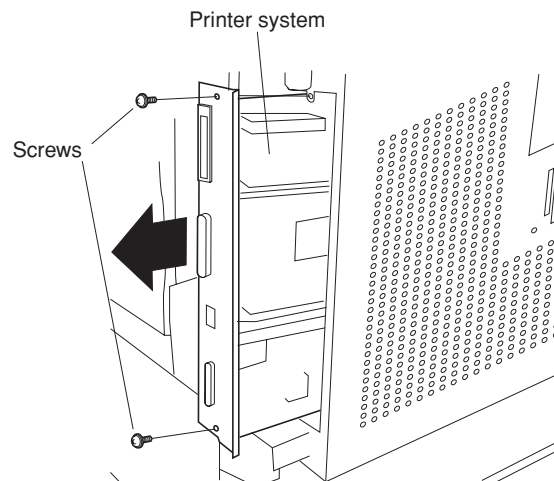


Figure 1-3-128

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

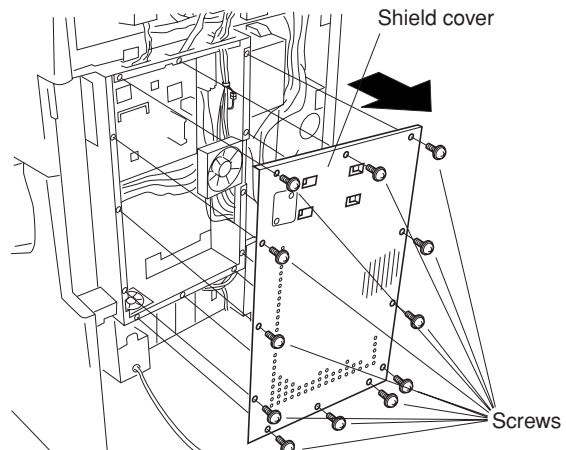


Figure 1-3-129

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.

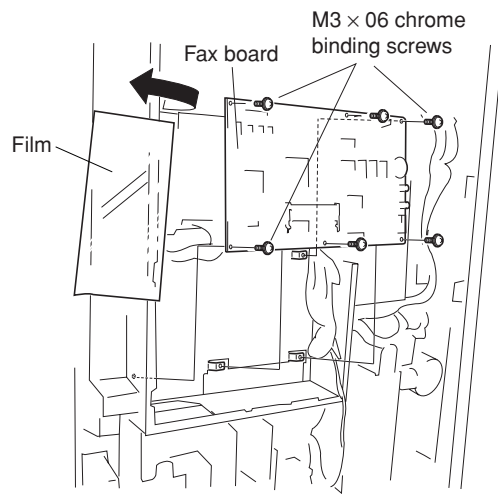


Figure 1-3-130

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

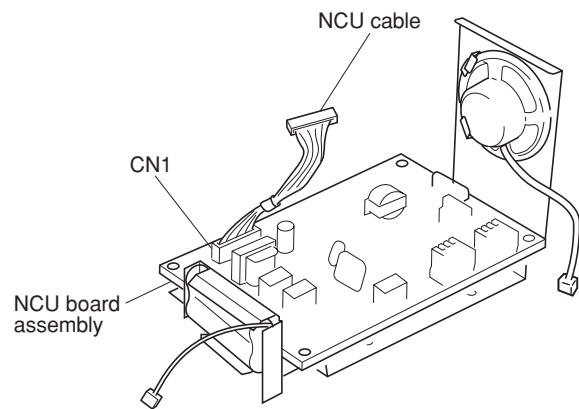


Figure 1-3-131

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

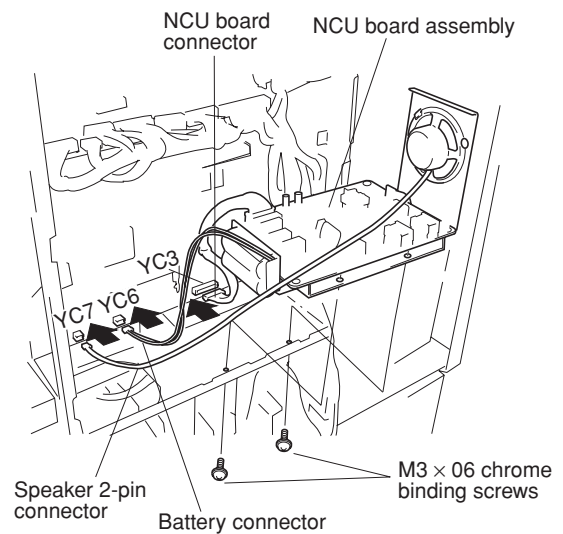


Figure 1-3-132

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.

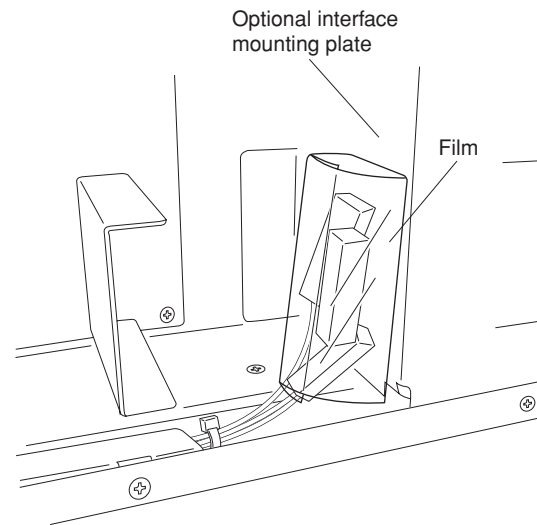


Figure 1-3-133

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

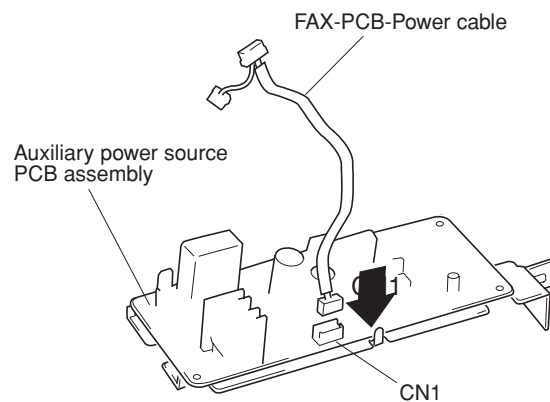


Figure 1-3-134

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

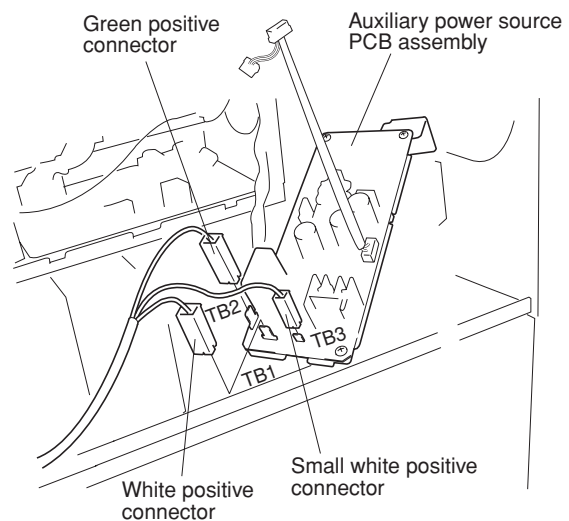


Figure 1-3-135

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.

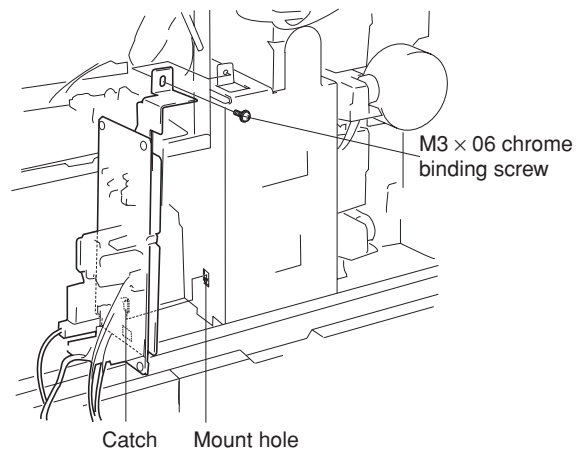


Figure 1-3-136

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.

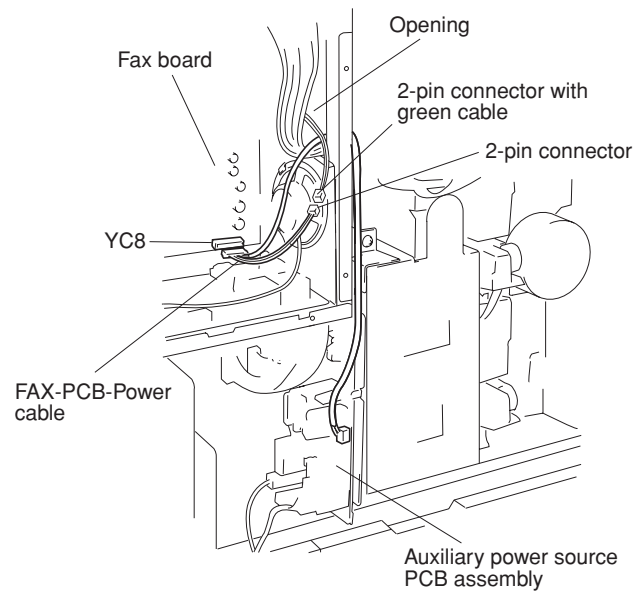


Figure 1-3-137

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 CN44 on the main PCB. (Pull the CN44 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.

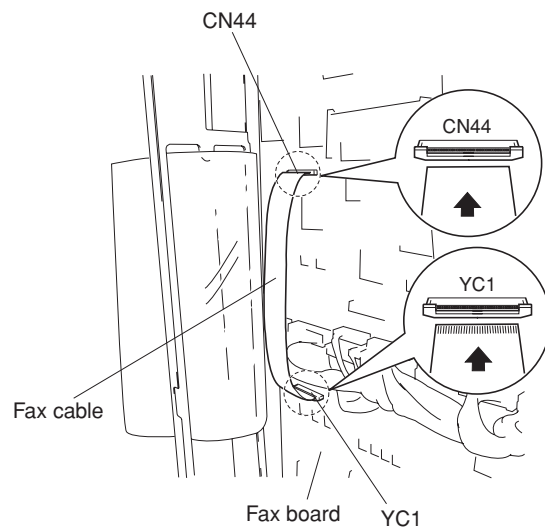


Figure 1-3-138

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

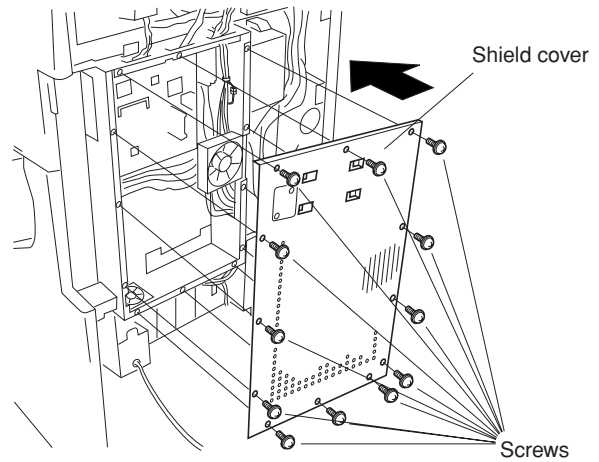


Figure 1-3-139

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

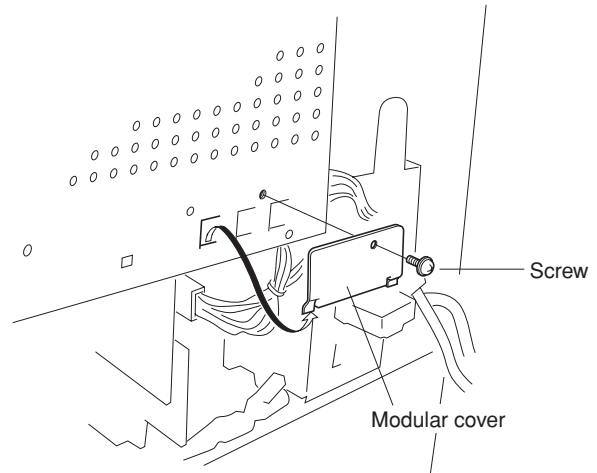


Figure 1-3-140

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

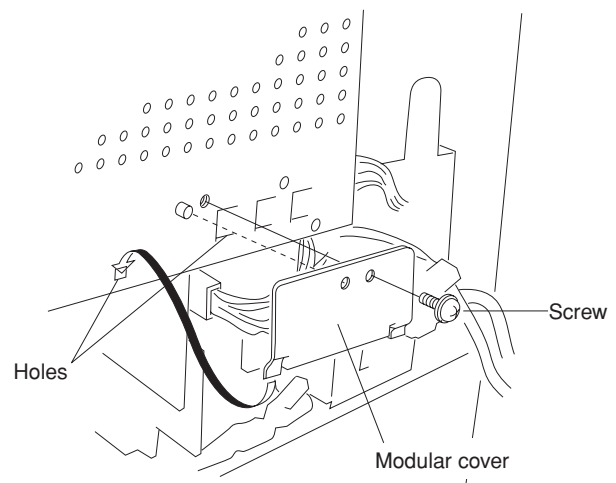


Figure 1-3-141

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

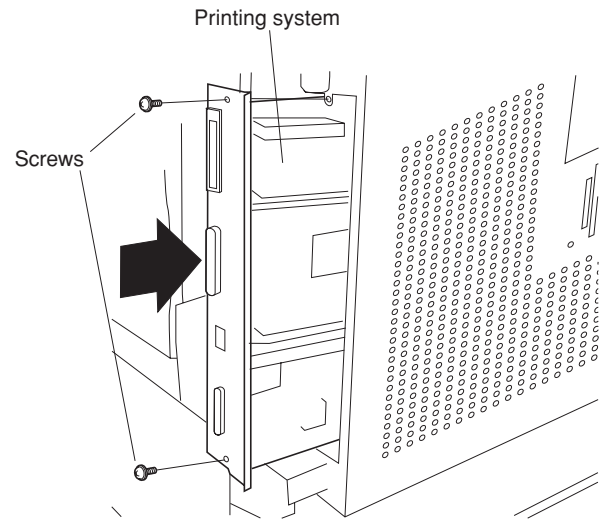


Figure 1-3-142

21. Reattach the rear cover with 13 screws.

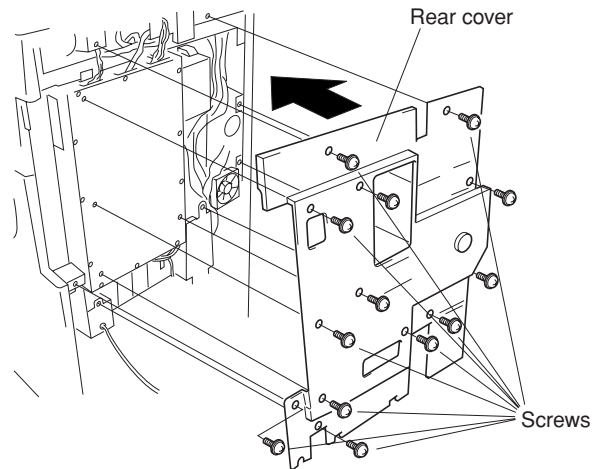


Figure 1-3-143

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

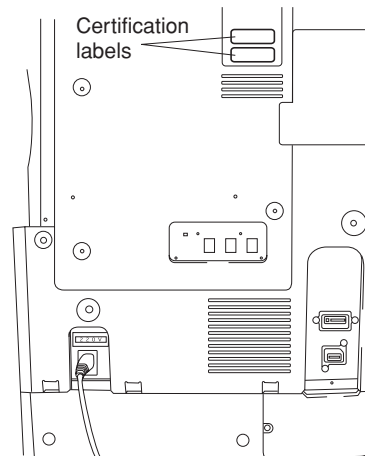


Figure 1-3-144

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

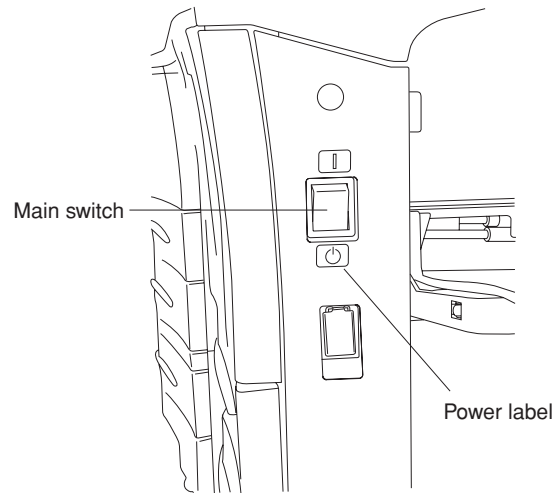


Figure 1-3-145

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.

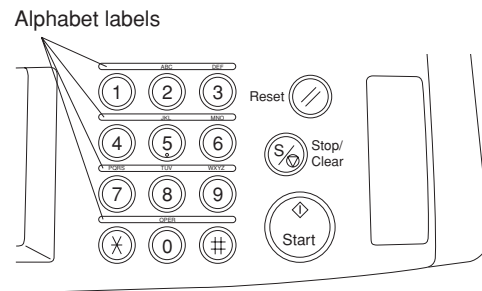


Figure 1-3-146

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.
26. After installation is complete, the fax board must be initialized (see the P.1-3-42).

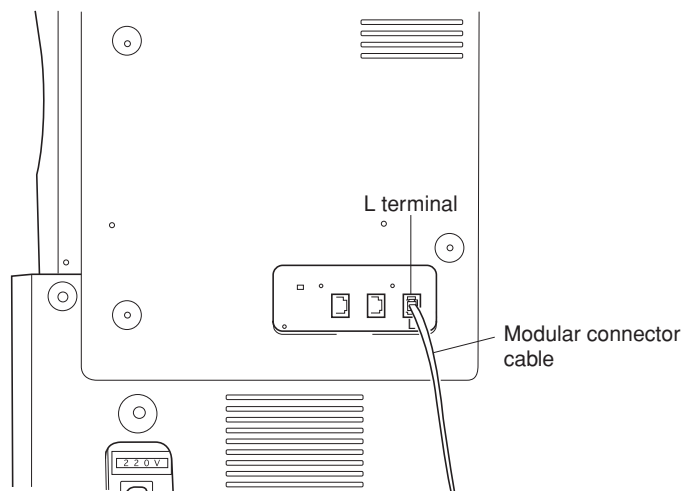
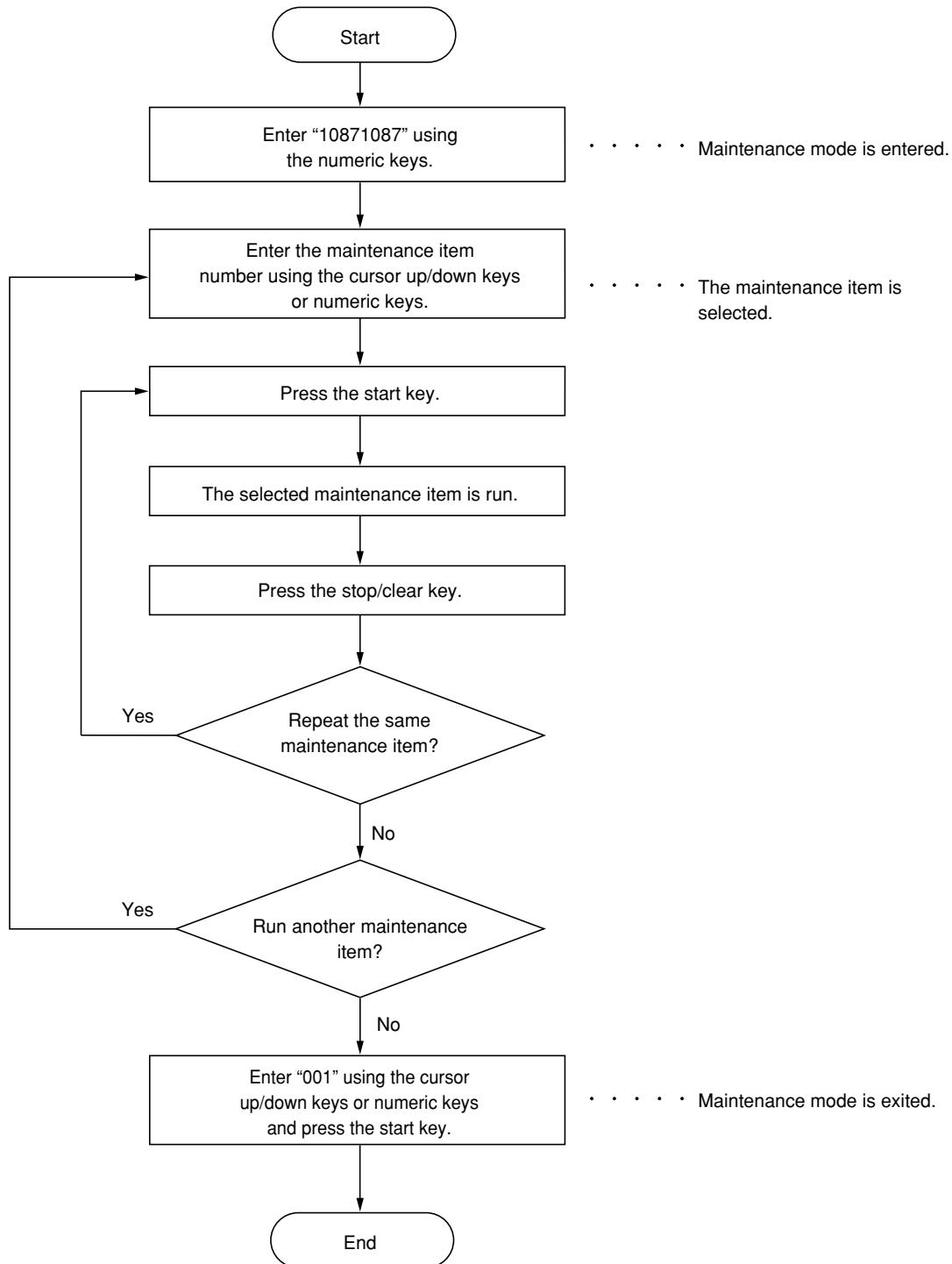


Figure 1-3-147

1-4-1 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	—
	U003	Setting the service telephone number	*****
	U004	Setting the machine number	000000
	U005	Copying without paper	—
	U019	Displaying the ROM version	—
Initialization	U020	Initializing all data	—
	U021	Initializing counters and mode settings	—
	U022	Initializing data for optical system	—
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/-0.1 7.2/0
	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	0/0/0 110/20/0/0/0/0
	U053	Performing fine adjustment of the motor speed • Drive motor • Eject motor • Polygon motor	7 9 0
	U060	Adjusting the scanner input properties	11
Optical	U061	Turning the exposure lamp on	—
	U063	Adjusting the shading position	0
	U065	Adjusting the scanner magnification • Main scanning direction/auxiliary scanning direction	0/-2
	U066	Adjusting the leading edge registration for scanning an original on the contact glass	7/0
	U067	Adjusting the center line for scanning an original on the contact glass	-18/0
	U068	Adjusting the scanning position for originals from the DF	0
	U070	Adjusting the DF magnification	-3
	U071	Adjusting the DF scanning timing • DF leading edge registration/DF trailing edge registration	8/0
	U072	Adjusting the DF center line	15
	U073	Checking scanner operation	—
	U074	Adjusting the DF input light luminosity	1
	U087	Turning the DF scanning position adjust mode on/off	On
	U088	Setting the input filter (moiré reduction mode)	Off
	U089	Outputting a MIP-PG pattern	—
	U091	Checking shading	—
	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient • Text and photo/text/photo/text in fax/photo in fax mode	0/0/0/2/3
	U099	Checking and setting the original size detection sensor	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
High voltage	U100	Checking the operation of main high voltage	184
	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	Drum type display	—
	U110	Checking/clearing the drum count	—
	U112	Setting toner refresh operation • Time of toner refreshment/Developing bias on time	120/700
	U113	Operating 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/clearing 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	165 110 110 12
	U162	Stabilizing fixing forcibly	—
	U163	Resetting the fixing problem data	—
	U165	Checking/clearing fixing counts	—
	U196	Turning the fixing heater on	—
	U199	Checking the fixing temperature	—
Operation panel and support equipmen	U200	Turning all LEDs on	—
	U201	Initializing the touch panel	—
	U202	Setting the KMAS host monitoring system	—
	U203	Operating DF separately	—
	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	—
	U208	Setting the paper size for the large paper deck	A4
	U211	Setting DF type	—
	U217	Setting 8 ¹ / ₂ " × 13" paper	—
	U236	Setting the limit for the ejection section of the built-in finisher	—
	U237	Setting finisher stack quantity	—
	U243	Checking the operation of the DF motors, solenoids and clutch	—
	U244	Checking the DF 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 feed desk	—
	U249	Checking the paper ejection to optional devices	—
Mode setting	U250	Setting the maintenance cycle	500000 (35/40 cpm) 400000 (25 cpm)
	U251	Checking/clearing the maintenance count	—
	U252	Setting the destination	Japan

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Mode setting	U253	Switching between double and single counts	Double count
	U254	Turning auto start function on/off	On
	U255	Setting auto clear time	90
	U256	Turning auto preheat/energy saver function on/off	On
	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	—
	U274	Setting the laser scanner unit type	0
	U329	Default setting Auto rotation copy/Sort copy	On/On
	U330	Setting the number of sheets to enter stacking mode during sort operation	—
	U331	Switching the finisher eject section	OFF
	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 DF	—
	U407	Adjusting the leading edge registration for memory image printing	0
	U500	Setting the limit on data size for e-mail transmission	LITTLE
	U501	Setting image area	ON
	U504	Initializing the scanner NIC	—
	U505	Setting Data Base Assistant	On
	U540	Adjusting the auxiliary scanning magnification	0
Others	U901	Checking/clearing copy counts by paper feed locations	—
	U902	Checking/clearing finisher punch count	20000
	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	—
	U937	Model name setting	**30
	U960	Outputting the machine used circumstances list	—
	U968	Shading plate switching setting	—
	U990	Checking/clearing the time for the exposure lamp to light	—
	U991	Checking/clearing the scanner count	—
	U992	Checking or clearing the printer/fax count	—
	U993	Outputting a VTC-PG pattern	—

* Initial setting for executing maintenance item U020

(3) Contents of maintenance mode items

Maintenance item No.	Description								
U000	<p>Outputting an own-status report</p> <p>Description Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences.</p> <p>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.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1"> <thead> <tr> <th>Display</th><th>Output list</th></tr> </thead> <tbody> <tr> <td>MAINTENANCE</td><td>List of the current settings of the maintenance modes</td></tr> <tr> <td>JAM</td><td>List of the paper jam occurrences</td></tr> <tr> <td>SERVICE CALL</td><td>List of the service call occurrences</td></tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The interrupt copy mode is entered and a list is output. When A4/11" × 8¹/₂" 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. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Output list	MAINTENANCE	List of the current settings of the maintenance modes	JAM	List of the paper jam occurrences	SERVICE CALL	List of the service call occurrences
Display	Output list								
MAINTENANCE	List of the current settings of the maintenance modes								
JAM	List of the paper jam occurrences								
SERVICE CALL	List of the service call occurrences								
U001	<p>Exiting the maintenance mode</p> <p>Description Exits the maintenance mode and returns to the normal copy mode.</p> <p>Purpose To exit the maintenance mode.</p> <p>Method Press the start key. The normal copy mode is entered.</p>								

Maintenance item No.	Description								
U003	<p>Setting the service telephone number</p> <p>Description Sets the telephone number to be displayed when a service call code is detected.</p> <p>Purpose To set the telephone number to call service when installing the machine.</p> <p>Method Press the start key. The currently set telephone number is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Enter a telephone number (up to 15 digits) using the numeric keys. <ul style="list-style-type: none"> 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 border="1" data-bbox="345 554 535 682"> <tbody> <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> </tbody> </table> Press the start key. The phone number is set, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>	*	#	()	-	(Space)	LEFT	RIGHT
*	#								
()								
-	(Space)								
LEFT	RIGHT								
U004	<p>Setting the machine number</p> <p>Description Displays and changes the machine number.</p> <p>Purpose To check or set the machine number.</p> <p>Method Press the start key. The currently set machine number is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Enter the last six digits of the machine number using the numeric key. Do not enter the first two digits, 3 and 7. Press the start key. The machine number is set, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>								

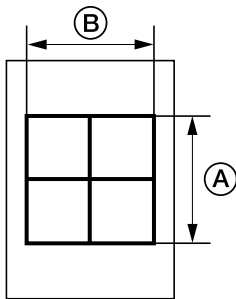
Maintenance item No.	Description																
U005	<p>Copying without paper</p> <p>Description Simulates the copy operation without paper feed.</p> <p>Purpose To check the overall operation of the machine.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Operation</th></tr> </thead> <tbody> <tr> <td>PPC</td><td>Only the copier operates.</td></tr> <tr> <td>PPC + DF</td><td>Both the copier and DF operate (continuous operation).</td></tr> </tbody> </table> <ol style="list-style-type: none"> 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. <ul style="list-style-type: none"> • 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. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operation	PPC	Only the copier operates.	PPC + DF	Both the copier and DF operate (continuous operation).										
Display	Operation																
PPC	Only the copier operates.																
PPC + DF	Both the copier and DF operate (continuous operation).																
U019	<p>Displaying the ROM version</p> <p>Description Displays the part number of the ROM fitted to each PCB.</p> <p>Purpose To check the part number or to decide if the ROM version is new from the last digit of the number.</p> <p>Method Press the start key. The last eight digits of the part number indicating the ROM version are displayed.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <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(Optional)</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>NETWORK SCANNER</td><td>Network scanner ROM IC</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN	Main ROM IC	MMI	Operation ROM IC	LANGUAGE(Stand.)	Standard language ROM IC	LANGUAGE(Optional)	Optional language ROM IC	MAIN BOOT	Boot of main ROM IC	MMI BOOT	Boot of operation ROM IC	NETWORK SCANNER	Network scanner ROM IC
Display	Description																
MAIN	Main ROM IC																
MMI	Operation ROM IC																
LANGUAGE(Stand.)	Standard language ROM IC																
LANGUAGE(Optional)	Optional language ROM IC																
MAIN BOOT	Boot of main ROM IC																
MMI BOOT	Boot of operation ROM IC																
NETWORK SCANNER	Network scanner ROM IC																

Maintenance item No.	Description
U020	<p>Initializing all data</p> <p>Description Initializes all the backup RAM on the main PCB to return to the original settings.</p> <p>Purpose Used when replacing the backup RAM on the main PCB.</p> <p>Method</p> <ol style="list-style-type: none"> 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 Japan 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. <p>Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U021	<p>Initializing counters and mode settings</p> <p>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.</p> <p>Purpose Used to return the machine settings to the factory settings.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U022	<p>Initializing data for optical system</p> <p>Description Initializes only the data set for the optical section.</p> <p>Purpose To be executed after replacing the scanner unit.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. Press SCANNER on the touch panel. 3. Press EXECUTE on the touch panel. It is displayed in reverse. 4. Press the start key. The data for the optical section (U060 to 067, U088 to 099, U403, U990 and U991) is initialized. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description																				
U030	<p>Checking motor operation</p> <p>Description Drives each motor.</p> <p>Purpose To check the operation of each motor.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1"> <thead> <tr> <th>Display</th><th>Operation</th></tr> </thead> <tbody> <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> </tbody> </table> <ol style="list-style-type: none"> 3. To stop operation, press the stop/clear key. <p>Completion Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operation	FEED	Paper feed motor operates	MAIN	Drive motor operates	EJECT(FW)	Eject motor rotates forward	EJECT(REV)	Eject motor rotates in reverse										
Display	Operation																				
FEED	Paper feed motor operates																				
MAIN	Drive motor operates																				
EJECT(FW)	Eject motor rotates forward																				
EJECT(REV)	Eject motor rotates in reverse																				
U031	<p>Checking switches for paper conveying</p> <p>Description Displays the on-off status of each paper detection switch on the paper path.</p> <p>Purpose To check if the switches for paper conveying operate correctly.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <p>When the on-status of a switch is detected, that switch is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Switches</th></tr> </thead> <tbody> <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> </tbody> </table> <p>*Optional.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	F1	Feed switch 1 (FSW1)	F2	Feed switch 2 (FSW2)	F3	Feed switch 3 (FSW3)	BYP	Bypass feed switch (BYPFSW)	RES	Registration switch (RSW)	EJE	Eject switch (ESW)	BRA	Feedshift switch (FSSW)	DUP	Duplex paper conveying switch (DUPPCSW)*	JOB	Job separator eject switch (JBESW)*
Display	Switches																				
F1	Feed switch 1 (FSW1)																				
F2	Feed switch 2 (FSW2)																				
F3	Feed switch 3 (FSW3)																				
BYP	Bypass feed switch (BYPFSW)																				
RES	Registration switch (RSW)																				
EJE	Eject switch (ESW)																				
BRA	Feedshift switch (FSSW)																				
DUP	Duplex paper conveying switch (DUPPCSW)*																				
JOB	Job separator eject switch (JBESW)*																				

Maintenance item No.	Description																				
U032	<p>Checking clutch operation</p> <p>Description Turns each clutch on.</p> <p>Purpose To check the operation of each clutch.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1"> <thead> <tr> <th>Display</th><th>Clutches</th></tr> </thead> <tbody> <tr> <td>PF1</td><td>Upper paper feed clutch (PFCL-U)</td></tr> <tr> <td>PF2</td><td>Lower paper feed clutch (PFCL-L)</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> </tbody> </table> <p>*Optional.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Clutches	PF1	Upper paper feed clutch (PFCL-U)	PF2	Lower paper feed clutch (PFCL-L)	PFBYP	Bypass paper feed clutch (BYPPFCL)	FEED1	Feed clutch 1 (FCL1)	FEED2	Feed clutch 2 (FCL2)	FEED3	Feed clutch 3 (FCL3)	BYPF	Bypass feed clutch (BYPFCL)	RES	Registration clutch (RCL)	DUPF	Duplex feed clutch (DUPFCL)*
Display	Clutches																				
PF1	Upper paper feed clutch (PFCL-U)																				
PF2	Lower paper feed clutch (PFCL-L)																				
PFBYP	Bypass paper feed clutch (BYPPFCL)																				
FEED1	Feed clutch 1 (FCL1)																				
FEED2	Feed clutch 2 (FCL2)																				
FEED3	Feed clutch 3 (FCL3)																				
BYPF	Bypass feed clutch (BYPFCL)																				
RES	Registration clutch (RCL)																				
DUPF	Duplex feed clutch (DUPFCL)*																				
U033	<p>Checking solenoid operation</p> <p>Description Turns each solenoid on.</p> <p>Purpose To check the operation of each solenoid.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1"> <thead> <tr> <th>Display</th><th>Solenoids</th></tr> </thead> <tbody> <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>Main switch turns on</td></tr> </tbody> </table> <p>*Optional. Select MAIN SW SOL to check the operation of the main switch in auto shut off.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Solenoids	TONER SOL	Toner feed solenoid (TNFSOL)	BRANCH1 SOL	Feedshift solenoid (FSSOL)	BRANCH2 SOL	Feedshift solenoid (FSSOL)*	MAIN SW SOL	Main switch turns on										
Display	Solenoids																				
TONER SOL	Toner feed solenoid (TNFSOL)																				
BRANCH1 SOL	Feedshift solenoid (FSSOL)																				
BRANCH2 SOL	Feedshift solenoid (FSSOL)*																				
MAIN SW SOL	Main switch turns on																				
U034	<p>Adjusting the print start timing</p> <p>Adjustment See pages 1-6-10 and 12.</p>																				




Maintenance item No.	Description												
U035	<p>Setting folio size</p> <p>Description Changes the image area for copying onto folio size paper.</p> <p>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.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <div><div><div>1. Select the item to be set. The selected item is displayed in reverse.</div><div>2. Change the setting using the cursor up/down keys.</div></div><table><tr><th>Display</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>LENGTH DATA</td><td>Length</td><td>330 to 356 mm</td><td>330</td></tr><tr><td>WIDTH DATA</td><td>Width</td><td>200 to 220 mm</td><td>210</td></tr></table><div><div>3. Press the start key. The value is set.</div></div></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Setting	Setting range	Initial setting	LENGTH DATA	Length	330 to 356 mm	330	WIDTH DATA	Width	200 to 220 mm	210
Display	Setting	Setting range	Initial setting										
LENGTH DATA	Length	330 to 356 mm	330										
WIDTH DATA	Width	200 to 220 mm	210										
U038	<p>Checking the copier cover switch</p> <p>Description Displays the on-off status of each cover switch.</p> <p>Purpose To check if the switches of covers operate correctly.</p> <p>Method</p> <div><div><div>1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed.</div><div>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.</div></div><table><tr><th>Display</th><th>Switches</th></tr><tr><td>INTER LOCK SW</td><td>Safety switch 1 and 2 (SSW1 and 2)</td></tr><tr><td>FRONT COVER</td><td>Front cover switch (FRCSW)</td></tr><tr><td>LEFT1 COVER</td><td>Conveying cover switch (CCSW)</td></tr><tr><td>LEFT2 COVER</td><td>Side cover switch (SCSW)</td></tr></table></div> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	INTER LOCK SW	Safety switch 1 and 2 (SSW1 and 2)	FRONT COVER	Front cover switch (FRCSW)	LEFT1 COVER	Conveying cover switch (CCSW)	LEFT2 COVER	Side cover switch (SCSW)		
Display	Switches												
INTER LOCK SW	Safety switch 1 and 2 (SSW1 and 2)												
FRONT COVER	Front cover switch (FRCSW)												
LEFT1 COVER	Conveying cover switch (CCSW)												
LEFT2 COVER	Side cover switch (SCSW)												
U051	<p>Adjusting the amount of slack in the paper</p> <p>Adjustment See page 1-6-14.</p>												

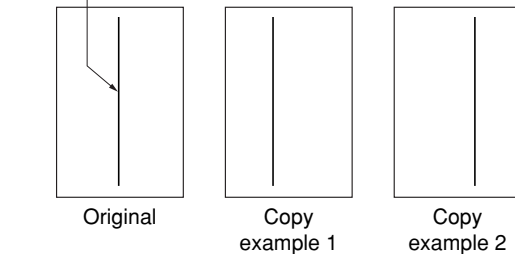
Maintenance item No.	Description																
U053	<p>Performing fine adjustment of the motor speed</p> <p>Description Performs fine adjustment of the speeds of the motors.</p> <p>Purpose Used to adjust the speed of the respective motors when the magnification is not correct.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <div><div>1. Select the item to be set. The selected item is displayed in reverse.</div><div>2. Change the setting using the cursor up/down keys.</div></div> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>MAIN MOTOR</td><td>Drive motor speed adjustment</td><td>0 to +14</td><td>7</td></tr><tr><td>EJECT MOTOR</td><td>Eject motor speed adjustment</td><td>0 to +14</td><td>9</td></tr><tr><td>POLYGON MOTOR</td><td>Polygon motor speed adjustment</td><td>-20 to +20</td><td>0</td></tr></table> <p>MAIN MOTOR /EJECT MOTOR Increasing the setting makes the image longer in the auxiliary scanning direction, and decreasing it makes the image shorter in the auxiliary scanning direction.</p> <p>POLYGON MOTOR Increasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction; decreasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction.</p> <p>EJECT MOTOR Normally no change is necessary but this can be used as countermeasures against wrinkles (waving) of paper.</p> <div><div>3. Press the start key. The value is set.</div></div> <p>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</p> <div></div> <p>Figure 1-4-1</p> <p>Adjustment</p> <div><div>1. Output an A3/11" × 17" VTC pattern in interrupt mode.</div><div>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</div></div> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	MAIN MOTOR	Drive motor speed adjustment	0 to +14	7	EJECT MOTOR	Eject motor speed adjustment	0 to +14	9	POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0
Display	Description	Setting range	Initial setting														
MAIN MOTOR	Drive motor speed adjustment	0 to +14	7														
EJECT MOTOR	Eject motor speed adjustment	0 to +14	9														
POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0														

Maintenance item No.	Description						
U060	<p>Adjusting the scanner input properties</p> <p>Description Adjusts the image scanning density in text, text and photo, or photo mode.</p> <p>Purpose Used when the entire image appears too dark or light.</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting 1. Change the setting using the cursor up/down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Image scannnig density</td><td>0 to +24</td><td>11</td></tr></table> <p>Increasing the setting makes the density lower, and decreasing it makes the density higher.</p> <p>2. Press the start key. The value is set.</p> <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p> <p>Caution The following settings are also reset to the initial values by performing this maintenance item:</p> <ul style="list-style-type: none">• Exposure density gradient set in maintenance mode (U093)• Exposure set in the copy default item of the copier management mode	Description	Setting range	Initial setting	Image scannnig density	0 to +24	11
Description	Setting range	Initial setting					
Image scannnig density	0 to +24	11					
U061	<p>Turning the exposure lamp on</p> <p>Description Turns the exposure lamp on.</p> <p>Purpose To check the exposure lamp.</p> <p>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.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description								
U063	<p>Adjusting the shading position</p> <p>Description Changes the shading position.</p> <p>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.</p> <p>Method 1. Press the start key. The screen for adjustment is displayed. 2. Change the setting using the cursor up/down keys.</p> <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>-5 to +5</td><td>0</td><td>0.17 mm</td></tr></table> <p>Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left.</p> <p>3. Press the start key. The value is set.</p> <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Shading position	-5 to +5	0	0.17 mm
Description	Setting range	Initial setting	Change in value per step						
Shading position	-5 to +5	0	0.17 mm						
U065	<p>Adjusting the scanner magnification</p> <p>Adjustment See pages 1-6-27 and 28.</p>								
U066	<p>Adjusting the leading edge registration for scanning an original on the contact glass</p> <p>Adjustment See page 1-6-29.</p>								
U067	<p>Adjusting the center line for scanning an original on the contact glass</p> <p>Adjustment See page 1-6-30.</p>								
U068	<p>Adjusting the scanning position for originals from the DF</p> <p>Description Adjusts the position for scanning originals from the DF.</p> <p>Purpose Used when there is a regular error between the leading edges of the original and the copy image when the DF is used.</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting 1. Change the setting using the cursor up/down keys.</p> <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>-2 to +3</td><td>0</td><td>0.254 mm</td></tr></table> <p>Increasing the setting moves the image backward, and decreasing it moves the image forward.</p> <p>2. Press the start key. The value is set.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Scanning position	-2 to +3	0	0.254 mm
Description	Setting range	Initial setting	Change in value per step						
Scanning position	-2 to +3	0	0.254 mm						

Maintenance item No.	Description								
U070	<p>Adjusting the DF magnification</p> <p>Description Adjusts the DF original scanning speed.</p> <p>Purpose To be executed if the correct magnification is not obtained in the auxiliary scanning direction when the optional DF is used.</p> <p>Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <p>U053 → U065 → U070</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting 1. Change the setting using the cursor up/down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Original conveying motor speed</td><td>−25 to +25</td><td>−3</td><td>0.1%</td></tr></table> <p>Increasing the setting makes the image longer, and decreasing it makes the image shorter.</p> <p>2. Press the start key. The value is set.</p> <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Original conveying motor speed	−25 to +25	−3	0.1%
Description	Setting range	Initial setting	Change in value per step						
Original conveying motor speed	−25 to +25	−3	0.1%						

Maintenance item No.	Description															
U071	<p>Adjusting the DF scanning timing</p> <p>Description Adjusts the DF original scanning timing.</p> <p>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 DF is used.</p> <p>Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <p>U034 → U066 → U071</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none">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><th>Change in value per step</th></tr><tr><td>LEAD EDGE ADJ</td><td>DF leading edge registration</td><td>-20 to +20</td><td>8</td><td>0.17 mm</td></tr><tr><td>TRAIL EDGE ADJ</td><td>DF trailing edge registration</td><td>-10 to +10</td><td>0</td><td>0.17 mm</td></tr></table> <p>Increasing the setting moves the copy image backward, and decreasing it moves the copy image forward.</p> <ol style="list-style-type: none">3. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Adjustment</p> <ol style="list-style-type: none">1. In interrupt copy mode, make a copy using the DF.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. <div><div><p>Original</p></div><div><p>Copy example 1</p></div><div><p>Copy example 2</p></div></div> <p>Figure 1-4-2</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	LEAD EDGE ADJ	DF leading edge registration	-20 to +20	8	0.17 mm	TRAIL EDGE ADJ	DF trailing edge registration	-10 to +10	0	0.17 mm
Display	Description	Setting range	Initial setting	Change in value per step												
LEAD EDGE ADJ	DF leading edge registration	-20 to +20	8	0.17 mm												
TRAIL EDGE ADJ	DF trailing edge registration	-10 to +10	0	0.17 mm												

Maintenance item No.	Description								
U072	<p>Adjusting the DF center line</p> <p>Description Adjusts the scanning start position for the DF original.</p> <p>Purpose To be executed if there is a regular error between the centers of the original and the copy image when the optional DF is used.</p> <p>Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <p>U034 → U067 → U072</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting 1. Change the setting using the cursor up/down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>DF center line</td><td>−39 to +39</td><td>15</td><td>0.17 mm</td></tr></table> <p>Increasing the setting moves the image to the right, and decreasing it moves the image to the left.</p> <p>2. Press the start key. The value is set.</p> <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Adjustment 1. In interrupt copy mode, make a copy using the DF. 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.</p> <div><p>Reference</p></div> <p>Figure 1-4-3</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	DF center line	−39 to +39	15	0.17 mm
Description	Setting range	Initial setting	Change in value per step						
DF center line	−39 to +39	15	0.17 mm						

Maintenance item No.	Description																																												
U073	<p>Checking scanner operation</p> <p>Description Simulates the scanner operation under arbitrary conditions.</p> <p>Purpose To check scanner operation.</p> <p>Method</p> <ol style="list-style-type: none">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</td><td>Magnification</td><td>100 to 400%</td></tr><tr><td>SIZE</td><td>Original size</td><td>See below.</td></tr><tr><td>LAMP</td><td>On and off of the exposure lamp</td><td>0 (off) or 1 (on)</td></tr></table> <p>Original sizes for each setting in SIZE</p> <table><tr><th>Setting</th><th>Paper size</th><th>Setting</th><th>Paper size</th></tr><tr><td>8</td><td>A4</td><td>42</td><td>A5R</td></tr><tr><td>9</td><td>B5</td><td>47</td><td>Folio</td></tr><tr><td>24</td><td>11" × 8½"</td><td>52</td><td>11" × 17"</td></tr><tr><td>36</td><td>A3</td><td>53</td><td>11" × 15"</td></tr><tr><td>39</td><td>B4</td><td>55</td><td>8½" × 14"</td></tr><tr><td>40</td><td>A4R</td><td>56</td><td>8½" × 11"</td></tr><tr><td>41</td><td>B5R</td><td>58</td><td>5½" × 8½"</td></tr></table> <ol style="list-style-type: none">4. Press the strat key. The setting is set.5. Press the interrupt key. The copy mode screen is displayed.6. Press the start key. Scanning starts under the selected conditions.7. To stop operation, press the stop/clear key. <p>Completion Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operating conditions	Setting range	ZOOM	Magnification	100 to 400%	SIZE	Original size	See below.	LAMP	On and off of the exposure lamp	0 (off) or 1 (on)	Setting	Paper size	Setting	Paper size	8	A4	42	A5R	9	B5	47	Folio	24	11" × 8½"	52	11" × 17"	36	A3	53	11" × 15"	39	B4	55	8½" × 14"	40	A4R	56	8½" × 11"	41	B5R	58	5½" × 8½"
Display	Operating conditions	Setting range																																											
ZOOM	Magnification	100 to 400%																																											
SIZE	Original size	See below.																																											
LAMP	On and off of the exposure lamp	0 (off) or 1 (on)																																											
Setting	Paper size	Setting	Paper size																																										
8	A4	42	A5R																																										
9	B5	47	Folio																																										
24	11" × 8½"	52	11" × 17"																																										
36	A3	53	11" × 15"																																										
39	B4	55	8½" × 14"																																										
40	A4R	56	8½" × 11"																																										
41	B5R	58	5½" × 8½"																																										
U074	<p>Adjusting the DF input light luminosity</p> <p>Description Adjusts the luminosity of the exposure lamp for scanning originals from the optional DF.</p> <p>Purpose Used if the exposure amount differs significantly between when scanning an original on the contact glass and when scanning an original from the DF.</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting</p> <ol style="list-style-type: none">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>DF input light luminosity</td><td>0 to 8</td><td>1</td></tr></table> <p>Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.</p> <ol style="list-style-type: none">2. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	DF input light luminosity	0 to 8	1																																						
Description	Setting range	Initial setting																																											
DF input light luminosity	0 to 8	1																																											

Maintenance item No.	Description																		
U087	<p>Turning the DF scanning position adjust mode on/off</p> <p>Description</p> <p>Turns on or off the DF scanning position adjust mode, in which the DF original scanning position is adjusted automatically by determining the presence or absence of dust on the slit glass. Also changes the reference data for identifying dust.</p> <p>Reference</p> <p>In the DF original scanning position adjust mode, the presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DF original scanning position. If dust is identified, the DF original scanning position is adjusted for the following originals.</p> <p>Purpose</p> <p>Used to prevent appearance of black lines due to dust adhering in the original scanning position on the slit glass when the DF is used.</p> <p>Method</p> <ol style="list-style-type: none">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. <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON/OFF</td><td>Setting the mode on/off</td></tr><tr><td>DATA</td><td>Setting the reference data for identifying dust</td></tr></table> <p>Setting the mode on/off</p> <ol style="list-style-type: none">1. Select ON or OFF. The selected item is displayed in reverse. <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON DF</td><td>scanning position adjust mode on</td></tr><tr><td>OFF DF</td><td>scanning position adjust mode off</td></tr></table> <p>Initial setting: ON</p> <ol style="list-style-type: none">2. Press the start key. The setting is set. The screen for selecting an item is displayed. <p>Setting the reference data for identifying dust</p> <p>Available only when the mode is turned on.</p> <ol style="list-style-type: none">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>Minimum density to be regarded as dust</td><td>10 to 95</td><td>35</td></tr></table> <p>Example</p> <p>The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original).</p> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON/OFF	Setting the mode on/off	DATA	Setting the reference data for identifying dust	Display	Description	ON DF	scanning position adjust mode on	OFF DF	scanning position adjust mode off	Description	Setting range	Initial setting	Minimum density to be regarded as dust	10 to 95	35
Display	Description																		
ON/OFF	Setting the mode on/off																		
DATA	Setting the reference data for identifying dust																		
Display	Description																		
ON DF	scanning position adjust mode on																		
OFF DF	scanning position adjust mode off																		
Description	Setting range	Initial setting																	
Minimum density to be regarded as dust	10 to 95	35																	

Maintenance item No.	Description															
U088	<p>Setting the input filter (moiré reduction mode)</p> <p>Description Turns moiré reduction mode on and off by switching the input filter on and off.</p> <p>Purpose Used to prevent regular density unevenness (moiré) on halftone image areas of the copy image in text mode and text and photo mode. Such moiré is more likely to appear when an enlargement or reduction copy is made in text mode from an original containing large halftone image areas.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select ON or OFF. The selected item is displayed in reverse.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON</td><td>Moiré reduction mode</td></tr><tr><td>OFF</td><td>Normal copy mode</td></tr></table> <p>Initial setting: OFF If moiré on the copy image is significant, change the setting to ON. Note that when the moiré reduction mode is turned on, the resolution may be slightly reduced.</p> <p>2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	ON	Moiré reduction mode	OFF	Normal copy mode									
Display	Description															
ON	Moiré reduction mode															
OFF	Normal copy mode															
U089	<p>Outputting a MIP-PG pattern</p> <p>Description Selects and outputs the MIP-PG pattern created in the copier.</p> <p>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.</p> <p>Method 1. Press the start key. 2. Select the MIP-PG pattern to be output.</p> <table><tr><th>Display</th><th>Description</th><th>Adjusting range</th></tr><tr><td>GRAYSCALE</td><td>Gray scale</td><td>—</td></tr><tr><td>MONO-LEVEL</td><td>Mono level</td><td>0 to 255</td></tr><tr><td>256-LEVEL</td><td>256 level</td><td>—</td></tr><tr><td>1dot-LINE</td><td>1 dot level</td><td>—</td></tr></table> <p>3. Press the interrupt key to set the pattern output mode. 4. Press the start key. A MIP-PG pattern is output.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Adjusting range	GRAYSCALE	Gray scale	—	MONO-LEVEL	Mono level	0 to 255	256-LEVEL	256 level	—	1dot-LINE	1 dot level	—
Display	Description	Adjusting range														
GRAYSCALE	Gray scale	—														
MONO-LEVEL	Mono level	0 to 255														
256-LEVEL	256 level	—														
1dot-LINE	1 dot level	—														

Maintenance item No.	Description						
U091	<p>Checking shading</p> <p>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.</p> <p>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.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1" data-bbox="316 562 1367 674"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SHD BEFORE</td><td>Performs scanning before shading and displays the result.</td></tr> <tr> <td>SHD AFTER</td><td>Performs scanning after shading and displays the result.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 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. <div data-bbox="470 1071 1201 1331" data-label="Diagram"> <p>The diagram illustrates the nine scanning points (1-9) on a contact glass. The points are arranged in a 3x3 grid. The left side is labeled with distances from the machine left: 20 mm, 200 mm, and 400 mm. The bottom is labeled with distances from the machine center: 100 mm toward machine front, Machine center, and 100 mm toward machine rear.</p> </div> <p>Figure 1-4-4</p> <ol style="list-style-type: none"> 4. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for entering a maintenance item is displayed.</p>	Display	Description	SHD BEFORE	Performs scanning before shading and displays the result.	SHD AFTER	Performs scanning after shading and displays the result.
Display	Description						
SHD BEFORE	Performs scanning before shading and displays the result.						
SHD AFTER	Performs scanning after shading and displays the result.						

Maintenance item No.	Description								
U092	<p>Adjusting the scanner automatically</p> <p>Description Makes auto scanner adjustments in the order below using the specified original.</p> <ul style="list-style-type: none"> • Adjusting the scanner center line (U067) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) <p>When this maintenance item is performed, the settings in U065, U066 and U067 are also changed.</p> <p>Purpose Used to make respective auto adjustments for the scanner.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <table border="1" data-bbox="344 621 1398 760"> <thead> <tr> <th data-bbox="344 621 721 663">Display</th><th data-bbox="721 621 1398 663">Description</th></tr> </thead> <tbody> <tr> <td data-bbox="344 663 721 695">SCAN CENTER</td><td data-bbox="721 663 1398 695">Scanner center line</td></tr> <tr> <td data-bbox="344 695 721 726">SCAN TIMING</td><td data-bbox="721 695 1398 726">Scanner leading edge registration</td></tr> <tr> <td data-bbox="344 726 721 760">SUB SCAN</td><td data-bbox="721 726 1398 760">Scanner magnification in the auxiliary scanning direction</td></tr> </tbody> </table> <p>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.</p> <p>Completion Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed.</p> <p>If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.</p>	Display	Description	SCAN CENTER	Scanner center line	SCAN TIMING	Scanner leading edge registration	SUB SCAN	Scanner magnification in the auxiliary scanning direction
Display	Description								
SCAN CENTER	Scanner center line								
SCAN TIMING	Scanner leading edge registration								
SUB SCAN	Scanner magnification in the auxiliary scanning direction								

Maintenance item No.	Description																																				
U093	<p>Setting the exposure density gradient</p> <p>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).</p> <p>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.</p> <p>Start</p> <ol style="list-style-type: none">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. <table><tr><th>Display</th><th>Description</th></tr><tr><td>MIXED</td><td>Density in text and photo mode</td></tr><tr><td>TEXT</td><td>Density in text mode</td></tr><tr><td>PHOTO</td><td>Density in photo mode</td></tr><tr><td>FAX TEXT</td><td>Density in the text in fax mode</td></tr><tr><td>FAX PHOTO</td><td>Density in the photo in fax mode</td></tr></table> <p>Setting</p> <ol style="list-style-type: none">1. Select the item to be adjusted. The selected item is displayed in reverse. <table><tr><th>Display</th><th>Description</th></tr><tr><td>DARKER</td><td>Change in density when manual density is set dark</td></tr><tr><td>LIGHTER</td><td>Change in density when manual density is set light</td></tr></table> <ol style="list-style-type: none">2. Adjust the setting using the cursor up/down keys. <table><tr><th>Display</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>MIXED DARKER/MIXED LIGHTER</td><td>0 to 3/0 to 3</td><td>0/0</td></tr><tr><td>TEXT DARKER/TEXT LIGHTER</td><td>0 to 3/0 to 3</td><td>0/0</td></tr><tr><td>PHOTO DARKER/PHOTO LIGHTER</td><td>0 to 3/0 to 3</td><td>0/0</td></tr><tr><td>FAX TEXT DARKER/FAX TEXT LIGHTER</td><td>0 to 4/0 to 9</td><td>2/2</td></tr><tr><td>FAX PHOTO DARKER/FAX PHOTO LIGHTER</td><td>0 to 6/0 to 6</td><td>3/3</td></tr></table> <p>Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.</p> <div></div> <p>Figure 1-4-5 Exposure density gradient</p> <ol style="list-style-type: none">3. Press the start key. The value is set.4. To return to the screen for selecting an item, press the stop/clear key. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	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	Display	Description	DARKER	Change in density when manual density is set dark	LIGHTER	Change in density when manual density is set light	Display	Setting range	Initial setting	MIXED DARKER/MIXED LIGHTER	0 to 3/0 to 3	0/0	TEXT DARKER/TEXT LIGHTER	0 to 3/0 to 3	0/0	PHOTO DARKER/PHOTO LIGHTER	0 to 3/0 to 3	0/0	FAX TEXT DARKER/FAX TEXT LIGHTER	0 to 4/0 to 9	2/2	FAX PHOTO DARKER/FAX PHOTO LIGHTER	0 to 6/0 to 6	3/3
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																																				
Display	Description																																				
DARKER	Change in density when manual density is set dark																																				
LIGHTER	Change in density when manual density is set light																																				
Display	Setting range	Initial setting																																			
MIXED DARKER/MIXED LIGHTER	0 to 3/0 to 3	0/0																																			
TEXT DARKER/TEXT LIGHTER	0 to 3/0 to 3	0/0																																			
PHOTO DARKER/PHOTO LIGHTER	0 to 3/0 to 3	0/0																																			
FAX TEXT DARKER/FAX TEXT LIGHTER	0 to 4/0 to 9	2/2																																			
FAX PHOTO DARKER/FAX PHOTO LIGHTER	0 to 6/0 to 6	3/3																																			

Maintenance item No.	Description																												
U099	<p>Checking and setting the original size detection sensor</p> <p>Description Checks the operation of the original size detection sensor and sets the sensing threshold value.</p> <p>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.</p> <p>Start</p> <ol style="list-style-type: none">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. <table><tr><th>Display</th><th>Description</th></tr><tr><td>DATA</td><td>Displaying detection sensor transmission data</td></tr><tr><td>B/W LEVEL</td><td>Setting detection sensor threshold value</td></tr><tr><td></td><td>Setting original size judgment time</td></tr></table> <p>Method to display the data for the sensor</p> <ol style="list-style-type: none">1. Press the start key. The detection sensor transmission data is displayed. <div><div>Rear of machine Center of machine Front of machine</div><div><div>: 123 123 123</div><div>: 123 123 123</div><div>: 255 255 255</div></div></div> <p>Figure 1-4-6</p> <ol style="list-style-type: none">2. To return to the screen for selecting an item, press the stop/clear key. <p>Setting</p> <ol style="list-style-type: none">1. Select an item to be set. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>LEVEL</td><td>Detection sensor threshold value</td><td>0 to 255</td><td>170</td></tr><tr><td>WAIT TIME</td><td>Original size judgment time*</td><td>0 to 100</td><td>50</td></tr><tr><td>ORIG. AREA</td><td>Original size detection position display (mm)</td><td>0 to 350</td><td>—</td></tr><tr><td>SIZE</td><td>Detected original size display</td><td>0 to 63</td><td>—</td></tr></table> <p>* Time from activation of the original detection switch (ODSW) to original size judgment</p> <p>Method to set the detection threshold value</p> <ol style="list-style-type: none">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. <p>Method to set the original size judgment time</p> <ol style="list-style-type: none">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. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for maintenance item No. is displayed.</p>	Display	Description	DATA	Displaying detection sensor transmission data	B/W LEVEL	Setting detection sensor threshold value		Setting original size judgment time	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	ORIG. AREA	Original size detection position display (mm)	0 to 350	—	SIZE	Detected original size display	0 to 63	—
Display	Description																												
DATA	Displaying detection sensor transmission data																												
B/W LEVEL	Setting detection sensor threshold value																												
	Setting original size judgment time																												
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																										
ORIG. AREA	Original size detection position display (mm)	0 to 350	—																										
SIZE	Detected original size display	0 to 63	—																										

Maintenance item No.	Description																				
U100	<p>Checking the operation of main high voltage</p> <p>Description Performs main charging.</p> <p>Purpose To check main charging.</p> <p>Start Press the start key. The screen for selecting an item is displayed.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>MC ON</td><td>Turning the main charger on</td></tr><tr><td>ON TIME(SEC)</td><td>Turning the main charger on and the laser scanner unit on and off</td></tr></table> <p>Method</p> <ol style="list-style-type: none">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. <p>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.</p>	Display	Description	MC ON	Turning the main charger on	ON TIME(SEC)	Turning the main charger on and the laser scanner unit on and off														
Display	Description																				
MC ON	Turning the main charger on																				
ON TIME(SEC)	Turning the main charger on and the laser scanner unit on and off																				
U101	<p>Setting high voltages</p> <p>Description Changes the developing bias voltage and transfer voltage by changing the developing bias control voltage and transfer control voltage.</p> <p>Purpose To check the developing bias and the transfer voltage or to take measures against drop of image density or background fog.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none">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> <p>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.</p> <ol style="list-style-type: none">3. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	DEV BIAS	Developing bias AC component frequency at image formation	-255 to 255	0	DEV DUTY	Developing bias AC component duty at image formation	-100 to 100	0	DEV SBIAS	Developing shift bias potential at image formation	-1 to 1	0	TC DATA	Transfer control voltage	0 to 255	120
Display	Description	Setting range	Initial setting																		
DEV BIAS	Developing bias AC component frequency at image formation	-255 to 255	0																		
DEV DUTY	Developing bias AC component duty at image formation	-100 to 100	0																		
DEV SBIAS	Developing shift bias potential at image formation	-1 to 1	0																		
TC DATA	Transfer control voltage	0 to 255	120																		

Maintenance item No.	Description												
U109	<p>Drum type display</p> <p>Description Displays the drum surface potential set as EEPROM of the drum unit.</p> <p>Purpose To check the drum surface potential.</p> <p>Method Press the start key. * Drum surface potential (V) is displayed.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>												
U110	<p>Checking/clearing the drum count</p> <p>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.</p> <p>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.</p> <p>Method Press the start key. The drum counter count is displayed.</p> <p>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.</p> <p>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.</p> <p>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.</p>												
U112	<p>Setting toner refresh operation</p> <p>Description Sets the drum refresh operation time and the developing bias on time at power on and after copying.</p> <p>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.</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>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.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>ON TIME(SEC)</td><td>Toner refresh operation time</td><td>50 to 150 (sec)</td><td>120</td></tr><tr><td>BIAS TIME(MSEC)</td><td>Developing bias on time</td><td>500 to 1000 (msec)</td><td>700</td></tr></table> <p>3. Press the start key. The value is set.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	ON TIME(SEC)	Toner refresh operation time	50 to 150 (sec)	120	BIAS TIME(MSEC)	Developing bias on time	500 to 1000 (msec)	700
Display	Description	Setting range	Initial setting										
ON TIME(SEC)	Toner refresh operation time	50 to 150 (sec)	120										
BIAS TIME(MSEC)	Developing bias on time	500 to 1000 (msec)	700										

Maintenance item No.	Description								
U113	<p>Performing drum refresh operation</p> <p>Description Executes drum refresh operation.</p> <p>Purpose To operate when image flow occurs.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <p>Completion Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.</p>								
U130	<p>Initial setting for the developer</p> <p>Description Replenishes toner to the developer unit to a certain level from the toner container that has been installed.</p> <p>Purpose To operate when installing the machine or replacing the developing unit.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <p>Supplement The following data is also renewed or cleared by performing this maintenance item:</p> <ul style="list-style-type: none"> • Clearing the developing drive time (U157) • Clearing the developing count (U158) • Resetting the toner feed start level and toner empty detection <p>Completion Press the stop/clear key after initial setting is complete. The screen for selecting a maintenance item No. is displayed.</p>								
U144	<p>Setting toner loading operation</p> <p>Description Sets toner loading operation after completion of copying.</p> <p>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.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MODE0</td><td>Toner not loaded</td></tr> <tr> <td>MODE1</td><td>Toner not loaded</td></tr> <tr> <td>MODE2</td><td>Toner loaded</td></tr> </tbody> </table> <p>Initial setting: MODE2</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MODE0	Toner not loaded	MODE1	Toner not loaded	MODE2	Toner loaded
Display	Description								
MODE0	Toner not loaded								
MODE1	Toner not loaded								
MODE2	Toner loaded								

Maintenance item No.	Description												
U150	<p>Checking sensors and switches for toner</p> <p>Description Displays the on-off status of each sensor or switch related to toner.</p> <p>Purpose To check if the sensors and switches operate correctly.</p> <p>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.</p> <table border="1" data-bbox="345 474 1398 676"> <thead> <tr> <th data-bbox="345 474 721 516">Display</th><th data-bbox="725 474 1398 516">Switches</th></tr> </thead> <tbody> <tr> <td data-bbox="345 522 721 554">DEVELOPER SENSOR</td><td data-bbox="725 522 1398 554">Toner sensor (TNS)</td></tr> <tr> <td data-bbox="345 554 721 585">CONTAINER SET</td><td data-bbox="725 554 1398 585">Toner container detection switch (TCDSW)</td></tr> <tr> <td data-bbox="345 585 721 617">CONTAINER SENSOR</td><td data-bbox="725 585 1398 617">Toner container sensor (TCS)</td></tr> <tr> <td data-bbox="345 617 721 648">DISPOSAL TANK SET</td><td data-bbox="725 617 1398 648">Toner disposal tank detection switch (TDDSW)</td></tr> <tr> <td data-bbox="345 648 721 676">DISPOSAL TANK SENSOR</td><td data-bbox="725 648 1398 676">Overflow sensor (OFS)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	DEVELOPER SENSOR	Toner sensor (TNS)	CONTAINER SET	Toner container detection switch (TCDSW)	CONTAINER SENSOR	Toner container sensor (TCS)	DISPOSAL TANK SET	Toner disposal tank detection switch (TDDSW)	DISPOSAL TANK SENSOR	Overflow sensor (OFS)
Display	Switches												
DEVELOPER SENSOR	Toner sensor (TNS)												
CONTAINER SET	Toner container detection switch (TCDSW)												
CONTAINER SENSOR	Toner container sensor (TCS)												
DISPOSAL TANK SET	Toner disposal tank detection switch (TDDSW)												
DISPOSAL TANK SENSOR	Overflow sensor (OFS)												
U157	<p>Checking/clearing the developing drive time</p> <p>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.</p> <p>Purpose To check the developing drive time after replacing the developing unit.</p> <p>Method Press the start key. The developing drive time is displayed in minutes.</p> <p>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.</p> <p>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.</p> <p>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.</p>												

Maintenance item No.	Description																										
U158	<p>Checking/clearing the developing count</p> <p>Description Displays the developing count 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.</p> <p>Purpose To check the developing count after replacing the developing unit.</p> <p>Method Press the start key. The developing count is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none">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. <p>Setting</p> <ol style="list-style-type: none">1. Enter a six-digit count using the numeric keys.2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>																										
U161	<p>Setting the fixing control temperature</p> <p>Description Changes the fixing control temperature.</p> <p>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.</p> <p>Method</p> <ol style="list-style-type: none">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</td><td>Sets the fixing control temperature.</td></tr><tr><td>CORRECT TEMP</td><td>Sets the fixing correct temperature.</td></tr></table> <p>Setting the fixing control temperature</p> <ol style="list-style-type: none">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</td><td>Control temperature during copying</td><td>100 to 200 (°C)</td><td>165</td></tr><tr><td>1ST TEMP</td><td>Primary stabilization fixing temperature</td><td>80 to 200 (°C)</td><td>110</td></tr><tr><td>2ND TEMP</td><td>Secondary stabilization fixing temperature</td><td>100 to 200 (°C)</td><td>165</td></tr><tr><td>MH OFF TIME(S)</td><td>OFF time of fixing heater M</td><td>5 to 20</td><td>12</td></tr></table> <p>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.</p> <ol style="list-style-type: none">3. Press the start key. The value is set.	Display	Description	CONTROL TEMP	Sets the fixing control temperature.	CORRECT TEMP	Sets the fixing correct temperature.	Display	Description	Setting range	Initial setting	CONT TEMP	Control temperature during copying	100 to 200 (°C)	165	1ST TEMP	Primary stabilization fixing temperature	80 to 200 (°C)	110	2ND TEMP	Secondary stabilization fixing temperature	100 to 200 (°C)	165	MH OFF TIME(S)	OFF time of fixing heater M	5 to 20	12
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Maintenance item No.	Description																												
U161	<p>Setting the fixing correct temperature</p> <p>1. Select the item to be set. The selecting item is displayed in reverse.</p> <p>2. Change the setting using the cursor up/down keys.</p> <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 +30 (°C)</td><td>5</td></tr><tr><td>COPY UP TEMP(M)</td><td>Fixing correct temperature for middle size copying</td><td>-30 to +30 (°C)</td><td>2</td></tr><tr><td>COPY UP TEMP(S)</td><td>Fixing correct temperature for small size copying</td><td>-30 to +30 (°C)</td><td>0</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>5</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> <p>3. Press the start key. The value is set.</p> <p>Interrupt copy mode</p> <p>While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	COPY UP TEMP(L)	Fixing correct temperature for large size copying	-30 to +30 (°C)	5	COPY UP TEMP(M)	Fixing correct temperature for middle size copying	-30 to +30 (°C)	2	COPY UP TEMP(S)	Fixing correct temperature for small size copying	-30 to +30 (°C)	0	L/L UP TEMP	Fixing temperature increase amount at low temperature and low humidity	0 to +20 (°C)	5	H/H DOWN TEMP	Fixing temperature decrease amount at high temperature and high humidity	0 to +20 (°C)	5	DUP DOWN TEMP	Fixing temperature decrease amount for duplex copying	0 to +20 (°C)	5
Display	Description	Setting range	Initial setting																										
COPY UP TEMP(L)	Fixing correct temperature for large size copying	-30 to +30 (°C)	5																										
COPY UP TEMP(M)	Fixing correct temperature for middle size copying	-30 to +30 (°C)	2																										
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L/L UP TEMP	Fixing temperature increase amount at low temperature and low humidity	0 to +20 (°C)	5																										
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DUP DOWN TEMP	Fixing temperature decrease amount for duplex copying	0 to +20 (°C)	5																										
U162	<p>Stabilizing fixing forcibly</p> <p>Description</p> <p>Stops the stabilization fixing drive forcibly, regardless of fixing temperature.</p> <p>Purpose</p> <p>To forcibly stabilize the machine before the fixing section reaches stabilization temperature.</p> <p>Method</p> <p>1. Press the start key. The screen for executing is displayed.</p> <p>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.</p> <p>To exit the forced stabilization mode, turn the power off and on.</p> <p>Completion</p> <p>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.</p>																												
U163	<p>Resetting the fixing problem data</p> <p>Description</p> <p>Resets the detection of a service call code indicating a problem in the fixing section.</p> <p>Purpose</p> <p>To prevent accidents due to an abnormally high fixing temperature.</p> <p>Method</p> <p>1. Press the start key. The screen for executing is displayed.</p> <p>2. Press CANCEL on the touch panel.</p> <p>3. Press the start key. The fixing problem data is initialized.</p> <p>Completion</p> <p>Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>																												

Maintenance item No.	Description								
U165	<p>Checking/clearing fixing counts</p> <p>Description Displays or clears fixing counts.</p> <p>Purpose To check fixing counts after replacing the fixing unit.</p> <p>Method Press the start key. The fixing counts are displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> 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. <p>Setting</p> <ol style="list-style-type: none"> 1. Enter a four-digit value using the numeric keys. 2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>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.</p>								
U196	<p>Turning the fixing heater on</p> <p>Description Turns the fixing heater M or S on.</p> <p>Purpose To check fixing heaters turning on.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1" data-bbox="315 963 1369 1077"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MAIN</td><td>Fixing heater M (FH-M)</td></tr> <tr> <td>SUB</td><td>Fixing heater S (FH-S)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key when fixing motors M and S are off. The screen for selecting the maintenance item No. is displayed.</p>	Display	Description	MAIN	Fixing heater M (FH-M)	SUB	Fixing heater S (FH-S)		
Display	Description								
MAIN	Fixing heater M (FH-M)								
SUB	Fixing heater S (FH-S)								
U199	<p>Checking the fixing temperature</p> <p>Description Displays the fixing temperature, the ambient temperature and the absolute humidity.</p> <p>Purpose To check the fixing temperature, the ambient temperature and the absolute humidity.</p> <p>Method Press the start key. The fixing temperature and ambient temperature are displayed in centigrade (°C) and the absolute humidity is displayed in percentage (%).</p> <table border="1" data-bbox="315 1444 1369 1583"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>FIX TEMP</td><td>Fixing temperature (°C)</td></tr> <tr> <td>SURROUND TEMP</td><td>Ambient temperature (°C)</td></tr> <tr> <td>HUMIDITY</td><td>Absolute humidity (%)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	FIX TEMP	Fixing temperature (°C)	SURROUND TEMP	Ambient temperature (°C)	HUMIDITY	Absolute humidity (%)
Display	Description								
FIX TEMP	Fixing temperature (°C)								
SURROUND TEMP	Ambient temperature (°C)								
HUMIDITY	Absolute humidity (%)								

Maintenance item No.	Description
U200	<p>Turning all LEDs on</p> <p>Description Turns all the LEDs on the operation panel on.</p> <p>Purpose To check if all the LEDs on the operation panel light.</p> <p>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.</p>
U201	<p>Initializing the touch panel</p> <p>Description Automatically correct the positions of the X- and Y-axes of the touch panel.</p> <p>Purpose To automatically correct the display positions on the touch panel after it is replaced.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <p>Completion To exit this maintenance item without initializing, press the stop/clear key. The screen for selecting a maintenance mode No. is displayed.</p>
U202	<p>Setting the KMAS host monitoring system</p> <p>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.</p>

Maintenance item No.	Description																				
U203	<p>Operating DF separately</p> <p>Description Simulates the original conveying operation separately in the optional DF.</p> <p>Purpose To check the DF.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key. The screen for selecting an item is displayed.2. Place an original in the DF if running this simulation with paper.3. Select the item to be operated. The selected item is displayed in reverse.4. Select the magnification using the cursor up/down keys. <table><tr><th>Display</th><th>Operation</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>ADF</td><td>With paper, single-sided original</td><td>50 to 200 (%)</td><td>100</td></tr><tr><td>RADF</td><td>With paper, double-sided original</td><td>50 to 200 (%)</td><td>100</td></tr><tr><td>ADF (NON-P)</td><td>Without paper, single-sided original (continuous operation)</td><td>50 to 200 (%)</td><td>100</td></tr><tr><td>RADF (NON-P)</td><td>Without paper, double-sided original (continuous operation)</td><td>50 to 200 (%)</td><td>100</td></tr></table> <ol style="list-style-type: none">5. Press the start key. The operation starts for the selected magnification.6. To stop continuous operation, press the stop/clear key. <p>Completion Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operation	Setting range	Initial setting	ADF	With paper, single-sided original	50 to 200 (%)	100	RADF	With paper, double-sided original	50 to 200 (%)	100	ADF (NON-P)	Without paper, single-sided original (continuous operation)	50 to 200 (%)	100	RADF (NON-P)	Without paper, double-sided original (continuous operation)	50 to 200 (%)	100
Display	Operation	Setting range	Initial setting																		
ADF	With paper, single-sided original	50 to 200 (%)	100																		
RADF	With paper, double-sided original	50 to 200 (%)	100																		
ADF (NON-P)	Without paper, single-sided original (continuous operation)	50 to 200 (%)	100																		
RADF (NON-P)	Without paper, double-sided original (continuous operation)	50 to 200 (%)	100																		
U204	<p>Setting the presence or absence of a key card or key counter</p> <p>Description Sets the presence or absence of the optional key card or key counter.</p> <p>Purpose To run this maintenance item if a key card or key counter is installed.</p> <p>Method Press the start key. The screen for selecting an item is displayed</p> <p>Setting</p> <ol style="list-style-type: none">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</td><td>The key card is installed</td></tr><tr><td>KEY-COUNTER</td><td>The key counter is installed</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The setting is set and the screen for selecting a maintenance item No. is displayed. <p>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.</p>	Display	Description	KEY-CARD	The key card is installed	KEY-COUNTER	The key counter is installed														
Display	Description																				
KEY-CARD	The key card is installed																				
KEY-COUNTER	The key counter is installed																				

Maintenance item No.	Description						
U206	<p>Setting the presence or absence of the coin vender</p> <p>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.</p>						
U207	<p>Checking the operation panel keys</p> <p>Description Checks operation of the operation panel keys.</p> <p>Purpose To check operation of all the keys and LEDs on the operation panel.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						
U208	<p>Setting the paper size for the large paper deck</p> <p>Description Sets the size of paper used in the optional large paper deck. Note that the setting cannot be changed on inch-specification machines since the paper size for the large paper deck is fixed.</p> <p>Purpose To change the setting when the size of paper used in the large paper deck is changed.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the paper size (A4 or B5). The selected item is displayed in reverse. Initial setting: A4 2. Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						
U211	<p>Setting DF type</p> <p>Description Sets the optional DF type (STDF or SRDF). (For 25 cpm copier only)</p> <p>Purpose To set DF type when installing.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select DF type. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SADF</td><td>Single-sided (STDF)</td></tr> <tr> <td>SRADF</td><td>Double-sided (SRDF)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The type is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SADF	Single-sided (STDF)	SRADF	Double-sided (SRDF)
Display	Description						
SADF	Single-sided (STDF)						
SRADF	Double-sided (SRDF)						

Maintenance item No.	Description						
U217	<p>Setting 8 1/2" × 13" paper</p> <p>Description Turn on the setting when using 8 1/2" × 13" paper.</p> <p>Purpose To change the setting as needed.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select ON or OFF. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>8 1/2" × 13" paper is used.</td></tr> <tr> <td>OFF</td><td>8 1/2" × 13" paper is not used.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	ON	8 1/2" × 13" paper is used.	OFF	8 1/2" × 13" paper is not used.
Display	Description						
ON	8 1/2" × 13" paper is used.						
OFF	8 1/2" × 13" paper is not used.						
U236	<p>Setting the limit for the ejection section of the built-in finisher</p> <p>Description If the machine is equipped with an optional built-in finisher, this mode sets whether A5/5 1/2 × 8 1/2 size paper is output to the machine internal tray or not.</p> <p>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 × 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.</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting 1. Select ON or OFF. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Does not eject to the machine internal tray.</td></tr> <tr> <td>OFF</td><td>Eject to the machine internal tray.</td></tr> </tbody> </table> <p>Initial setting: OFF</p> <p>2. Press the start key. The setting is set.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Does not eject to the machine internal tray.	OFF	Eject to the machine internal tray.
Display	Description						
ON	Does not eject to the machine internal tray.						
OFF	Eject to the machine internal tray.						

Maintenance item No.	Description																		
U237	<p>Setting finisher stack quantity</p> <p>Description Sets the number of sheets of each stack on the main tray and on the intermediate tray in the optional finisher.</p> <p>Purpose To change the setting when a stack malfunction has occurred.</p> <p>Method</p> <ol style="list-style-type: none"> 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 border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MAIN TRAY</td><td>Number of sheets of stack on the main tray</td></tr> <tr> <td>MIDDLE TRAY</td><td>Number of sheets of stack on the intermediate tray for sort copying or staple copying</td></tr> </tbody> </table> <p>Setting the number of sheets of stack on the main tray</p> <ol style="list-style-type: none"> 1. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Setting</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>3000-sheet finisher: 3000 sheets, built-in finisher: 500 sheets</td></tr> <tr> <td>1</td><td>3000-sheet finisher: 1500 sheets, built-in finisher: 250 sheets</td></tr> </tbody> </table> <p>Initial setting: 0</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set. <p>Setting the number of sheets of stack on the intermediate tray for sort copying or staple copying</p> <ol style="list-style-type: none"> 1. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Setting</th><th>Description</th></tr> </thead> <tbody> <tr> <td>0</td><td>For sort copying: 30 sheets, for staple copying: 50 sheets</td></tr> <tr> <td>1</td><td>For sort copying: 30 sheets, for staple copying: 30 sheets</td></tr> </tbody> </table> <p>Initial setting: 0</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN TRAY	Number of sheets of stack on the main tray	MIDDLE TRAY	Number of sheets of stack on the intermediate tray for sort copying or staple copying	Setting	Description	0	3000-sheet finisher: 3000 sheets, built-in finisher: 500 sheets	1	3000-sheet finisher: 1500 sheets, built-in finisher: 250 sheets	Setting	Description	0	For sort copying: 30 sheets, for staple copying: 50 sheets	1	For sort copying: 30 sheets, for staple copying: 30 sheets
Display	Description																		
MAIN TRAY	Number of sheets of stack on the main tray																		
MIDDLE TRAY	Number of sheets of stack on the intermediate tray for sort copying or staple copying																		
Setting	Description																		
0	3000-sheet finisher: 3000 sheets, built-in finisher: 500 sheets																		
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Setting	Description																		
0	For sort copying: 30 sheets, for staple copying: 50 sheets																		
1	For sort copying: 30 sheets, for staple copying: 30 sheets																		

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Maintenance item No.	Description																								
U243	<p>Checking the operation of the DF motors, solenoids and clutch</p> <p>Description Turns the motors, solenoids or clutch in the optional DF on.</p> <p>Purpose To check the operation of the DF motors, solenoids and clutch .</p> <p>Method</p> <ol style="list-style-type: none">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> <ol style="list-style-type: none">3. To turn each motor off, press the stop/clear key. <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motors, solenoids and clutch	Operation In operation	F MOT	Original feed motor (OFM)	In operation	C MOT	Original paper conveying motor (OCM)	On for 0.5 s	FD CL	Original feed clutch (OFCL)	On for 0.5 s	EJ SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s	RJ SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s	FD SL	Original feed solenoid (OFSOL)	On and off	RP SL	Switchback pressure solenoid (SBPSOL)	On and off
Display	Motors, solenoids and clutch	Operation In operation																							
F MOT	Original feed motor (OFM)	In operation																							
C MOT	Original paper conveying motor (OCM)	On for 0.5 s																							
FD CL	Original feed clutch (OFCL)	On for 0.5 s																							
EJ SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s																							
RJ SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s																							
FD SL	Original feed solenoid (OFSOL)	On and off																							
RP SL	Switchback pressure solenoid (SBPSOL)	On and off																							
U244	<p>Checking the DF switches</p> <p>Description Displays the status of the respective switches in the optional DF.</p> <p>Purpose To check if respective switches in the optional DF operate correctly.</p> <p>Start</p> <ol style="list-style-type: none">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> <p>Method for the on/off switches</p> <ol style="list-style-type: none">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>DF timing switch (DFTSW)</td></tr><tr><td>SZ A SW</td><td>Original size length switch (OSLSW)</td></tr></table> <ol style="list-style-type: none">2. To return to the screen for selecting an item, press the stop/clear key.	Display	Type of switches	SW	On/off switches	VR	Volume switch	Display	Switches	SET SW	Original set switch (OSSW)	FEED SW	Original feed switch (OFSW)	REV SW	Original switchback switch (OSBSW)	TMG SW	DF timing switch (DFTSW)	SZ A SW	Original size length switch (OSLSW)						
Display	Type of switches																								
SW	On/off switches																								
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SZ A SW	Original size length switch (OSLSW)																								

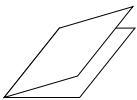
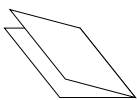
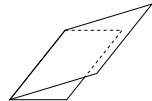
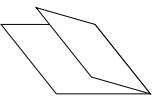
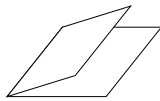
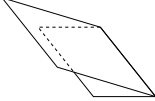
Maintenance item No.	Description						
U244	<p>Method for the volume switch</p> <p>1. Move the original insertion guides to check the detection status of the original size width switch. The detected original width is displayed as a numerical value with the decimals omitted.</p> <table><tr><th>Numerical value</th><th colspan="2">Original width to be detected</th></tr><tr><td>000 ⋮ 49.664 50.176 ⋮ 61.440 61.952 ⋮ 103.936 104.448 ⋮ 139.264 139.776 ⋮ 146.432 146.994 ⋮ 197.120 197.632 ⋮ 197.720 223.232 ⋮ 256</td><td><div><div></div><div>A5R</div><div></div></div><div><div></div><div>B5R</div><div></div></div><div><div></div><div>Folio/A4R</div><div></div></div><div><div></div><div>B4/B5</div><div></div></div><div><div></div><div>CF (11" × 15")</div><div></div></div><div><div></div><div>A3/A4</div><div></div></div></td><td><div><div></div><div>$5\frac{1}{2}" \times 8\frac{1}{2}"$</div><div></div></div><div><div></div><div>$8\frac{1}{2}" \times 14"/$ $8\frac{1}{2}" \times 11"$</div><div></div></div><div><div></div><div>$11" \times 17"/$ $11" \times 15"/$ $11" \times 8\frac{1}{2}"$</div><div></div></div></td></tr></table> <p>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.</p> <p>2. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Numerical value	Original width to be detected		000 ⋮ 49.664 50.176 ⋮ 61.440 61.952 ⋮ 103.936 104.448 ⋮ 139.264 139.776 ⋮ 146.432 146.994 ⋮ 197.120 197.632 ⋮ 197.720 223.232 ⋮ 256	<div><div></div><div>A5R</div><div></div></div> <div><div></div><div>B5R</div><div></div></div> <div><div></div><div>Folio/A4R</div><div></div></div> <div><div></div><div>B4/B5</div><div></div></div> <div><div></div><div>CF (11" × 15")</div><div></div></div> <div><div></div><div>A3/A4</div><div></div></div>	<div><div></div><div>$5\frac{1}{2}" \times 8\frac{1}{2}"$</div><div></div></div> <div><div></div><div>$8\frac{1}{2}" \times 14"/$ $8\frac{1}{2}" \times 11"$</div><div></div></div> <div><div></div><div>$11" \times 17"/$ $11" \times 15"/$ $11" \times 8\frac{1}{2}"$</div><div></div></div>
Numerical value	Original width to be detected						
000 ⋮ 49.664 50.176 ⋮ 61.440 61.952 ⋮ 103.936 104.448 ⋮ 139.264 139.776 ⋮ 146.432 146.994 ⋮ 197.120 197.632 ⋮ 197.720 223.232 ⋮ 256	<div><div></div><div>A5R</div><div></div></div> <div><div></div><div>B5R</div><div></div></div> <div><div></div><div>Folio/A4R</div><div></div></div> <div><div></div><div>B4/B5</div><div></div></div> <div><div></div><div>CF (11" × 15")</div><div></div></div> <div><div></div><div>A3/A4</div><div></div></div>	<div><div></div><div>$5\frac{1}{2}" \times 8\frac{1}{2}"$</div><div></div></div> <div><div></div><div>$8\frac{1}{2}" \times 14"/$ $8\frac{1}{2}" \times 11"$</div><div></div></div> <div><div></div><div>$11" \times 17"/$ $11" \times 15"/$ $11" \times 8\frac{1}{2}"$</div><div></div></div>					

Maintenance item No.	Description																																		
U245	<p>Checking messages</p> <p>Description Displays a list of messages on the touch panel of the operation panel.</p> <p>Purpose To check the messages to be displayed.</p> <p>Method</p> <ol style="list-style-type: none">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. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>																																		
U246	<p>Setting the finisher</p> <p>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 sticher: Adjusts the booklet stapling position for each paper size. Built-in finisher: Adjusts the side registration cursor stop position in the staple sort mode.</p> <p>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.</p> <p>Start</p> <ol style="list-style-type: none">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. <table><tr><th>Display</th><th>Description</th></tr><tr><td>3000 FINISHER</td><td>Adjustment of the amount of slack in the paper in punch mode</td></tr><tr><td>SADDLE FINISHER</td><td>Adjustment of the booklet stapling position</td></tr><tr><td>INNER FINISHER</td><td>Side registration cursor stop position</td></tr></table> <p>Setting the amount of slack in the paper</p> <ol style="list-style-type: none">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>Amount of slack in the paper</td><td>-15 to +15</td><td>0</td></tr></table> <p>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.</p> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the booklet stapling position</p> <ol style="list-style-type: none">1. Select the size 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><th>Change in value per step</th></tr><tr><td>A4R/LTR</td><td>Adjustment of booklet stapling position for A4R/LTR size</td><td>-125 to +125</td><td>0</td><td>0.25 mm</td></tr><tr><td>B4R</td><td>Adjustment of booklet stapling position for B4R size</td><td>-125 to +125</td><td>0</td><td>0.25 mm</td></tr><tr><td>A3R/LDR</td><td>Adjustment of booklet stapling position for A3R/LDR size</td><td>-125 to +125</td><td>0</td><td>0.25 mm</td></tr></table>	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	Description	Setting range	Initial setting	Amount of slack in the paper	-15 to +15	0	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
Display	Description																																		
3000 FINISHER	Adjustment of the amount of slack in the paper in punch mode																																		
SADDLE FINISHER	Adjustment of the booklet stapling position																																		
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Description	Setting range	Initial setting																																	
Amount of slack in the paper	-15 to +15	0																																	
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.

U246

Description

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	<p>Checking the operation of large paper deck and paper feed desk</p> <p>Description Turns on motors and clutches of optional large paper deck or paper feed desk.</p> <p>Purpose To check the operation of motors and clutches of paper feed device.</p> <p>Start</p> <p>1. Press the start key. The screen for selecting an item is displayed.</p> <p>2. Select the device to be checked.</p> <table><tr><th>Display</th><th>Paper feed device</th></tr><tr><td>3000 DECK</td><td>Large paer deck</td></tr><tr><td>500 × 2 DECK</td><td>Paper feed desk</td></tr></table> <p>Method</p> <p>1. Select the item to be operated. The selected item is displayed in reverse and operation starts.</p> <p>Large paper deck</p> <table><tr><th>Display</th><th>Motors and clutches</th><th>Operation</th></tr><tr><td>LCF MOT</td><td>Conveying motor (CM)</td><td>On for 5 s</td></tr><tr><td>B CL</td><td>Conveying clutch (CCL)</td><td>On for 1 s</td></tr><tr><td>PCL1</td><td>Paper feed clutch 1(PFCL1)</td><td>On for 1 s</td></tr><tr><td>PCL2</td><td>Paper feed clutch 2(PFCL2)</td><td>On for 1 s</td></tr></table> <p>Paper feed desk</p> <table><tr><th>Display</th><th>Motors and clutches</th><th>Operation</th></tr><tr><td>DESK MOT</td><td>Desk Drive motor (DDM)</td><td>On for 5 s</td></tr><tr><td>FEED CL</td><td>Desk feed clutch (DFCL)</td><td>On for 1 s</td></tr><tr><td>UPP CL</td><td>Desk upper paper feed clutch (DPFCL-U)</td><td>On for 1 s</td></tr><tr><td>LOW CL</td><td>Desk lower paper feed clutch (DPFCL-L)</td><td>On for 1 s</td></tr></table> <p>2. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Paper feed device	3000 DECK	Large paer deck	500 × 2 DECK	Paper feed desk	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	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
Display	Paper feed device																																				
3000 DECK	Large paer deck																																				
500 × 2 DECK	Paper feed desk																																				
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																																			
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																																			

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Maintenance item No.	Description								
U249	<p>Checking the paper ejection to optional devices</p> <p>Description Ejects paper to an optional mailbox or job separator, or to the ejection slot at the machine left.</p> <p>Purpose To check paper conveying operation to optional paper eject devices or the ejection slot at the machine left.</p> <p>Method</p> <div><div>1. Press the start key. The screen for selecting an item is displayed.</div><div>2. Select the paper eject location.</div></div> <table><tr><th>Display</th><th>Paper eject device</th></tr><tr><td>MAIL</td><td>BOX Mailbox</td></tr><tr><td>JOB SEPARATOR</td><td>Job separator</td></tr><tr><td>LEFT BIN OUTPUT</td><td>Ejection slot at the machine left (finisher not installed)</td></tr></table> <div><div>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.</div></div> <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Paper eject device	MAIL	BOX Mailbox	JOB SEPARATOR	Job separator	LEFT BIN OUTPUT	Ejection slot at the machine left (finisher not installed)
Display	Paper eject device								
MAIL	BOX Mailbox								
JOB SEPARATOR	Job separator								
LEFT BIN OUTPUT	Ejection slot at the machine left (finisher not installed)								
U250	<p>Setting the maintenance cycle</p> <p>Description Displays and changes the maintenance cycle.</p> <p>Purpose To check and change the maintenance cycle.</p> <p>Method Press the start key. The current setting is displayed as follows:</p> <p>Setting</p> <div><div>1. Change the setting using the numeric keys.</div></div> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Maintenance cycle</td><td>0 to 600000</td><td>500000 (35/40 cpm) 400000 (25 cpm)</td></tr></table> <div><div>2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.</div></div> <p>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.</p>	Description	Setting range	Initial setting	Maintenance cycle	0 to 600000	500000 (35/40 cpm) 400000 (25 cpm)		
Description	Setting range	Initial setting							
Maintenance cycle	0 to 600000	500000 (35/40 cpm) 400000 (25 cpm)							

Maintenance item No.	Description																	
U251	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 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 this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.																	
U252	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</td><td>Metric (Japan) specifications</td></tr><tr><td>INCH</td><td>Inch (North America) specifications</td></tr><tr><td>EUROPE METRIC</td><td>Metric (Europe) specifications</td></tr><tr><td>ASIA PACIFIC</td><td>Metric (Asia Pacific) specifications</td></tr></table>				Display	Description	JAPAN METRIC	Metric (Japan) specifications	INCH	Inch (North America) specifications	EUROPE METRIC	Metric (Europe) specifications	ASIA PACIFIC	Metric (Asia Pacific) specifications				
	Display	Description																
	JAPAN METRIC	Metric (Japan) specifications																
	INCH	Inch (North America) specifications																
	EUROPE METRIC	Metric (Europe) specifications																
ASIA PACIFIC	Metric (Asia Pacific) specifications																	
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</td><td>Switching between double and single counts</td><td>Single</td><td>Double</td><td>Double</td></tr><tr><td>255</td><td>Setting auto clear time</td><td>120 s</td><td>90 s</td><td>90 s</td></tr></table>				Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific	253	Switching between double and single counts	Single	Double	Double	255	Setting auto clear time	120 s	90 s	90 s
Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific														
253	Switching between double and single counts	Single	Double	Double														
255	Setting auto clear time	120 s	90 s	90 s														

Maintenance item No.	Description						
U253	<p>Switching between double and single counts</p> <p>Description Switches the count system for the total counter and other counters.</p> <p>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).</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select double or single count. The selected item is displayed in reverse.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>DOUBLE COUNT</td><td>Double count for A3/11" × 17" paper only</td></tr> <tr> <td>SINGLE COUNT</td><td>Single count for all size paper</td></tr> </table> <p>Initial setting: DOUBLE COUNT</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	DOUBLE COUNT	Double count for A3/11" × 17" paper only	SINGLE COUNT	Single count for all size paper
Display	Description						
DOUBLE COUNT	Double count for A3/11" × 17" paper only						
SINGLE COUNT	Single count for all size paper						
U254	<p>Turning auto start function on/off</p> <p>Description Selects if the auto start function is turned on.</p> <p>Purpose Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select either ON or OFF. The selected item is displayed in reverse.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ON</td><td>Auto start function on</td></tr> <tr> <td>OFF</td><td>Auto start function off</td></tr> </table> <p>Initial setting: ON</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	ON	Auto start function on	OFF	Auto start function off
Display	Description						
ON	Auto start function on						
OFF	Auto start function off						

Maintenance item No.	Description						
U255	<p>Setting auto clear time</p> <p>Description Sets the time to return to initial settings after copying is complete.</p> <p>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.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting 1. Change the setting using the cursor up/down keys.</p> <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> <p>The setting can be changed by 30 s per step. When set to 0, the auto clear function is cancelled.</p> <p>2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Description	Setting range	Initial setting	Auto clear time	0 to 270	90
Description	Setting range	Initial setting					
Auto clear time	0 to 270	90					
U256	<p>Turning auto preheat/energy saver function on/off</p> <p>Description Selects if the auto preheat/energy saver function is turned on. When set to ON, the time to enter preheat/energy saver mode can be changed in copy management mode.</p> <p>Purpose According to user request, to set the preheat time to save energy, or enable copying promptly without the recovery time from preheat mode.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select ON or OFF. The selected item is displayed in reverse.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON</td><td>Auto preheat/energy saver function on</td></tr><tr><td>OFF</td><td>Auto preheat/energy saver function off</td></tr></table> <p>Initial setting: ON</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. When the setting is changed from OFF to ON, the auto preheat time is set to the initial setting of 15 minutes.</p> <p>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.</p>	Display	Description	ON	Auto preheat/energy saver function on	OFF	Auto preheat/energy saver function off
Display	Description						
ON	Auto preheat/energy saver function on						
OFF	Auto preheat/energy saver function off						

Maintenance item No.	Description												
U258	<p>Switching copy operation at toner empty detection</p> <p>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.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting 1. Select single or continuous copying. The selected item is displayed in reverse.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>SINGLE</td><td>Enables only single copying.</td></tr><tr><td>CONTINUE</td><td>Enables single and continuous copying.</td></tr></table> <p>Initial setting: SINGLE</p> <p>2. Set the number of copies that can be made using the cursor up/down keys.</p> <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>5 to 200 (copies)</td><td>70</td></tr></table> <p>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.</p> <p>3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	SINGLE	Enables only single copying.	CONTINUE	Enables single and continuous copying.	Description	Setting range	Initial setting	Number of copies after toner empty detection	5 to 200 (copies)	70
Display	Description												
SINGLE	Enables only single copying.												
CONTINUE	Enables single and continuous copying.												
Description	Setting range	Initial setting											
Number of copies after toner empty detection	5 to 200 (copies)	70											
U260	<p>Changing the copy count timing</p> <p>Description Changes the copy count timing for the total counter and other counters.</p> <p>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.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select the copy count timing . The selected item is displayed in reverse.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>FEED</td><td>When secondary paper feed starts</td></tr><tr><td>EJECT</td><td>When the paper is ejected</td></tr></table> <p>Initial setting: EJECT</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	FEED	When secondary paper feed starts	EJECT	When the paper is ejected						
Display	Description												
FEED	When secondary paper feed starts												
EJECT	When the paper is ejected												

Maintenance item No.	Description												
U264	<p>Setting the display order of the date</p> <p>Description Selects year, month and day as the order of that appears on lists, etc.</p> <p>Purpose Set according to the user preference.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Press the start key. The screen for selecting an item is displayed. 2. Select the desired order.</p> <table><tr><th>Display</th><th>Setting</th></tr><tr><td>YEAR-MONTH-DATE</td><td>Year/Month/Day</td></tr><tr><td>MONTH-DATE-YEAR</td><td>Month/Day/Year</td></tr><tr><td>DATE-MONTH-YEAR</td><td>Day/Month/Year</td></tr></table> <p>Initial setting: "MONTH-DATE-YEAR" (for the inch specifications) "DATE-MONTH-YEAR" (for the metric specifications)</p> <p>3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Setting	YEAR-MONTH-DATE	Year/Month/Day	MONTH-DATE-YEAR	Month/Day/Year	DATE-MONTH-YEAR	Day/Month/Year				
Display	Setting												
YEAR-MONTH-DATE	Year/Month/Day												
MONTH-DATE-YEAR	Month/Day/Year												
DATE-MONTH-YEAR	Day/Month/Year												
U265	<p>Setting OEM purchaser code</p> <p>Description Sets the OEM purchaser code.</p> <p>Purpose Sets the code when replacing the main PCB and the like.</p> <p>Method Press the start key.</p> <p>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.</p> <p>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.</p>												
U274	<p>Setting the laser scanner unit type</p> <p>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.</p> <p>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.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>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.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>ADJUST DATA</td><td>Type of the laser scanner unit</td><td>0 to 3</td><td>2</td></tr><tr><td>LASER POWER</td><td>Laser scanner unit output power</td><td>0 to 1</td><td>0</td></tr></table> <p>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.</p> <p>3.Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	Setting range	Initial setting	ADJUST DATA	Type of the laser scanner unit	0 to 3	2	LASER POWER	Laser scanner unit output power	0 to 1	0
Display	Description	Setting range	Initial setting										
ADJUST DATA	Type of the laser scanner unit	0 to 3	2										
LASER POWER	Laser scanner unit output power	0 to 1	0										

Maintenance item No.	Description						
U329	<p>Default setting Auto rotation copy/Sort copy</p> <p>Description Sets the initial mode for the Auto rotation copy/Sort copy selected when auto clear is triggered or the reset key is pressed.</p> <p>Purpose To be set as required according to the user.</p> <p>Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be set.</p> <p>Setting Auto rotation copy 1. Select ON or OFF. Initial setting: ON 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Setting Sort copy 1. Select ON or OFF. Initial setting: ON 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>						
U330	<p>Setting the number of sheets to enter stacking mode during sort operation</p> <p>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).</p> <p>Purpose To be set as required according to the number of copies the user makes.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting 1. Set the number of sheets (0 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.</p> <p>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.</p>						
U331	<p>Switching the finisher eject section</p> <p>Description Sets whether or not copies made by copying from the original table are ejected face up to the auxiliary tray of the optional 3000-sheet finisher or booklet stitcher.</p> <p>Purpose Select ON to eject copies to the auxiliary tray regardless of the ejection section priority.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select FACE UP ON or FACE UP OFF. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>FACE UP ON</td><td>To eject copies to the auxiliary tray face up</td></tr> <tr> <td>FACE UP OFF</td><td>To eject copies to the eject section with the highest priority</td></tr> </tbody> </table> <p>Initial setting: OFF</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	FACE UP ON	To eject copies to the auxiliary tray face up	FACE UP OFF	To eject copies to the eject section with the highest priority
Display	Description						
FACE UP ON	To eject copies to the auxiliary tray face up						
FACE UP OFF	To eject copies to the eject section with the highest priority						

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Maintenance item No.

Description

U332

Setting the size conversion factor

Description

Sets the factor for converting each paper size into A4/11" × 8½". The black ratio is converted for the A4/11" × 8½" size using the factor set in this maintenance item. Values set are displayed in the user simulation.

Purpose

To set the factor to convert the black ratio of each paper size for A4/11" × 8½" size.

Method

1. Press the start key. The screen for selecting an item is displayed.

2. Select the paper size.

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

The size conversion factor can be set separately for the copier mode (COPY), the printer mode (PRI) and the fax mode (FAX) at the screen for setting the size conversion factor.

Metric models

Display	Description	Setting	Initial setting		
			COPY	PRI	FAX
A3	Size conversion factor for A3	0.0 to 3.0	2.0	2.0	2.0
B4	Size conversion factor for B4	0.0 to 3.0	1.5	1.5	1.5
A4	Size conversion factor for A4	0.0 to 3.0	1.0	1.0	1.0
B5	Size conversion factor for B5	0.0 to 3.0	0.7	0.7	0.7
A5	Size conversion factor for A5	0.0 to 3.0	0.5	0.5	0.5
B6	Size conversion factor for B6	0.0 to 3.0	0.4	0.4	0.4
FOLIO	Size conversion factor for folio	0.0 to 3.0	0.3	0.3	0.3
OTHER	Size conversion factor for non-standard sizes	0.0 to 3.0	1.0	1.0	1.0

Inch models

Display	Description	Setting	Initial setting		
			COPY	PRI	FAX
11 × 17	Size conversion factor for 11" × 17"	0.0 to 3.0	2.0	2.0	2.0
8.5 × 14	Size conversion factor for 8.5" × 14"	0.0 to 3.0	1.5	1.5	1.5
8.5 × 11	Size conversion factor for 8.5" × 11"	0.0 to 3.0	1.0	1.0	1.0
5.5 × 8.5	Size conversion factor for 5.5" × 8.5"	0.0 to 3.0	0.7	0.7	0.7
OTHER	Size conversion factor for non-standard sizes	0.0 to 3.0	0.5	0.5	0.5

4. Press the start key. The setting is set.

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.

U341

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.

Display	Description
FIRST	Upper drawer
SECOND	Lower drawer
THIRD	Optional upper drawer
FOURTH	Optional lower drawer
LCF	Optional large paper deck

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

Completion

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

Maintenance item No.	Description														
U342	<p>Setting the ejection restriction</p> <p>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.</p> <p>Purpose According to user request, sets or cancels restriction on the number of sheets.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select ON or OFF. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Sets restriction on the number of sheets</td></tr> <tr> <td>OFF</td><td>Cancels restriction on the number of sheets</td></tr> </tbody> </table> <p>Details of restriction (number of sheets to be ejected continuously after the start key is pressed)</p> <table border="1"> <thead> <tr> <th>Condition</th><th>Number of sheets</th></tr> </thead> <tbody> <tr> <td>When no optional ejection device is installed</td><td>250</td></tr> <tr> <td>When the job separator or duplex unit is installed</td><td>150</td></tr> <tr> <td>When the finisher is installed</td><td>100</td></tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Sets restriction on the number of sheets	OFF	Cancels restriction on the number of sheets	Condition	Number of sheets	When no optional ejection device is installed	250	When the job separator or duplex unit is installed	150	When the finisher is installed	100
Display	Description														
ON	Sets restriction on the number of sheets														
OFF	Cancels restriction on the number of sheets														
Condition	Number of sheets														
When no optional ejection device is installed	250														
When the job separator or duplex unit is installed	150														
When the finisher is installed	100														
U343	<p>Switching between duplex/simplex copy mode</p> <p>Description Switches the initial setting between duplex and simplex copy.</p> <p>Purpose To be set according to frequency of use: set to the more frequently used mode.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select ON or OFF. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Duplex copy</td></tr> <tr> <td>OFF</td><td>Simplex copy</td></tr> </tbody> </table> <p>Initial setting: OFF</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>	Display	Description	ON	Duplex copy	OFF	Simplex copy								
Display	Description														
ON	Duplex copy														
OFF	Simplex copy														

Maintenance item No.	Description								
U344	<p>Setting preheat/energy saver mode</p> <p>Description Changes the control for preheat/energy saver mode.</p> <p>Purpose According to user request, selects which has priority, the recovery time from preheat or energy saver.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select control mode. The selected item is displayed in reverse.</p> <table border="1"> <tr> <th>Display</th><th>Control in preheat mode</th></tr> <tr> <td>INSTANT READY</td><td>Without decreasing the fixing control temperature, the display on the operation panel is turned off.</td></tr> <tr> <td>ENERGY STAR</td><td>The fixing control temperature is set at 130°C. The copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.</td></tr> <tr> <td>E 2000</td><td>The fixing control temperature is decreased by 70°C.</td></tr> </table> <p>Initial setting: ENERGY STAR</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Control in preheat mode	INSTANT READY	Without decreasing the fixing control temperature, the display on the operation panel is turned off.	ENERGY STAR	The fixing control temperature is set at 130°C. The copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.	E 2000	The fixing control temperature is decreased by 70°C.
Display	Control in preheat mode								
INSTANT READY	Without decreasing the fixing control temperature, the display on the operation panel is turned off.								
ENERGY STAR	The fixing control temperature is set at 130°C. The copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.								
E 2000	The fixing control temperature is decreased by 70°C.								
U345	<p>Setting the value for maintenance due indication</p> <p>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.</p>								
U346	<p>Setting the sleep mode operation</p> <p>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.</p> <p>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.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select MODE0 or MODE1. The selected item is displayed in reverse.</p> <table border="1"> <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> <p>Initial setting: MODE0</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	MODE0	To enable finisher initialization	MODE1	To disable finisher initialization		
Display	Description								
MODE0	To enable finisher initialization								
MODE1	To disable finisher initialization								
U402	<p>Adjusting margins of image printing</p> <p>Adjustment See page 1-6-13.</p>								
U403	<p>Adjusting margins for scanning an original on the contact glass</p> <p>Adjustment See page 1-6-31.</p>								

Maintenance item No.	Description																									
U404	<p>Adjusting margins for scanning an original from the DF</p> <p>Description Adjusts margins for scanning the original from the DF.</p> <p>Purpose Used if margins are not correct when the optional DF is used.</p> <p>Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U402 → U403 → U404</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none">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><th>Change in value per step</th></tr><tr><td>A MARGIN</td><td>Left margin</td><td>0 to 10</td><td>2</td><td>0.5 mm</td></tr><tr><td>B MARGIN</td><td>Leading edge margin</td><td>0 to 10</td><td>3</td><td>0.5 mm</td></tr><tr><td>C MARGIN</td><td>Right margin</td><td>0 to 10</td><td>2</td><td>0.5 mm</td></tr><tr><td>D MARGIN</td><td>Trailing edge margin</td><td>0 to 10</td><td>2</td><td>0.5 mm</td></tr></table> <p>Increasing the setting makes the margin wider, and decreasing it makes the margin narrower.</p> <div><div>Ejection direction (reference)</div><div><div>DF left margin (2 ± 1.0 mm)</div><div>DF leading edge margin (3 ± 1.5 mm)</div><div>DF right margin (2 ± 1.0 mm)</div><div>DF trailing edge margin (2 ± 1.0 mm)</div></div></div> <p>Figure 1-4-7 Correct margin amount</p> <ol style="list-style-type: none">3. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	Change in value per step	A MARGIN	Left margin	0 to 10	2	0.5 mm	B MARGIN	Leading edge margin	0 to 10	3	0.5 mm	C MARGIN	Right margin	0 to 10	2	0.5 mm	D MARGIN	Trailing edge margin	0 to 10	2	0.5 mm
Display	Description	Setting range	Initial setting	Change in value per step																						
A MARGIN	Left margin	0 to 10	2	0.5 mm																						
B MARGIN	Leading edge margin	0 to 10	3	0.5 mm																						
C MARGIN	Right margin	0 to 10	2	0.5 mm																						
D MARGIN	Trailing edge margin	0 to 10	2	0.5 mm																						
U407	<p>Adjusting the leading edge registration for memory image printing</p> <p>Adjustment See page 1-6-11.</p>																									

Maintenance item No.	Description										
U500	<p>Setting the limit on data size for email transmission</p> <p>Description Sets the limit on the amount of data (number of originals) sent via email from the optional network scanner.</p> <p>Purpose To change the setting according to the network environment.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select the desired transmission capacity. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Setting</th></tr> </thead> <tbody> <tr> <td>LITTLE</td><td>512 K bytes</td></tr> <tr> <td>MEDIUM</td><td>51024 K bytes</td></tr> <tr> <td>LARGE</td><td>2048 K bytes</td></tr> <tr> <td>UNLIMITED</td><td>999 number-of-sheets restrictions</td></tr> </tbody> </table> <p>Initial setting: LITTLE</p> <p>2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Setting	LITTLE	512 K bytes	MEDIUM	51024 K bytes	LARGE	2048 K bytes	UNLIMITED	999 number-of-sheets restrictions
Display	Setting										
LITTLE	512 K bytes										
MEDIUM	51024 K bytes										
LARGE	2048 K bytes										
UNLIMITED	999 number-of-sheets restrictions										
U501	<p>Setting image area</p> <p>Description Implements the command to cut the area around the image when sending image data to the optional network scanner.</p> <p>Purpose To disable image cut.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select ON or OFF. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Setting</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Cuts the image area (6.5 mm)</td></tr> <tr> <td>OFF</td><td>Does NOT cut the image area</td></tr> </tbody> </table> <p>Initial setting: ON</p> <p>2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Setting	ON	Cuts the image area (6.5 mm)	OFF	Does NOT cut the image area				
Display	Setting										
ON	Cuts the image area (6.5 mm)										
OFF	Does NOT cut the image area										

Maintenance item No.	Description																				
U504	<p>Initializing the scanner NIC</p> <p>Description Initializing the optional scanner NIC to its factory default.</p> <p>Purpose To return to a setup at the time of factory shipments.</p> <p>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.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>																				
U505	<p>Setting Data Base Assistant</p> <p>Description Sets whether or not the database linkage setting is enabled if an optional network scanner is installed.</p> <p>Purpose According to user request, changes the setting.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select ON or OFF. The selected item is displayed in reverse.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON</td><td>Database linkage setting is enabled.</td></tr><tr><td>OFF</td><td>Database linkage setting is disabled.</td></tr></table> <p>Initial setting: ON</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	ON	Database linkage setting is enabled.	OFF	Database linkage setting is disabled.														
Display	Description																				
ON	Database linkage setting is enabled.																				
OFF	Database linkage setting is disabled.																				
U540	<p>Adjusting the auxiliary scanning magnification</p> <p>Description Changes the magnification ratio in the auxiliary scanning direction when an optional network scanner is used.</p> <p>Purpose When an optional network scanner is used, if stripes appear at regular intervals in the auxiliary scanning direction, this mode allows fine adjustment of the magnification ratio to suppress the stripes.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select the resolution. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>200dpi</td><td>Auxiliary scanning magnification at the time of resolution 200 dpi</td><td>-50 to +50</td><td>0</td></tr><tr><td>300dpi</td><td>Auxiliary scanning magnification at the time of resolution 300 dpi</td><td>-50 to +50</td><td>0</td></tr><tr><td>400dpi</td><td>Auxiliary scanning magnification at the time of resolution 400 dpi</td><td>-50 to +50</td><td>0</td></tr><tr><td>600dpi</td><td>Auxiliary scanning magnification at the time of resolution 600 dpi</td><td>-50 to +50</td><td>0</td></tr></table> <p>3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>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.</p>	Display	Description	Setting range	Initial setting	200dpi	Auxiliary scanning magnification at the time of resolution 200 dpi	-50 to +50	0	300dpi	Auxiliary scanning magnification at the time of resolution 300 dpi	-50 to +50	0	400dpi	Auxiliary scanning magnification at the time of resolution 400 dpi	-50 to +50	0	600dpi	Auxiliary scanning magnification at the time of resolution 600 dpi	-50 to +50	0
Display	Description	Setting range	Initial setting																		
200dpi	Auxiliary scanning magnification at the time of resolution 200 dpi	-50 to +50	0																		
300dpi	Auxiliary scanning magnification at the time of resolution 300 dpi	-50 to +50	0																		
400dpi	Auxiliary scanning magnification at the time of resolution 400 dpi	-50 to +50	0																		
600dpi	Auxiliary scanning magnification at the time of resolution 600 dpi	-50 to +50	0																		

Maintenance item No.	Description																
U901	<p>Checking/clearing copy counts by paper feed locations</p> <p>Description Displays or clears copy counts by paper feed locations.</p> <p>Purpose To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.</p> <p>Method</p> <ol style="list-style-type: none">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</td><td>Bypass tray</td></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 drawer 1</td></tr><tr><td>FORTH</td><td>Optional drawer 2</td></tr><tr><td>LCF</td><td>Optional large paper deck</td></tr><tr><td>DUPLEX</td><td>Optional duplex unit</td></tr></table> <p>When an optional paper feed device is not installed, the corresponding count is not displayed.</p> <p>Clearing</p> <ol style="list-style-type: none">1. Select the count to be cleared. The selected item is displayed in reverse. To clear the counts for all paper feed locations, press ALL on the touch panel.2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>	Display	Paper feed locations	BYPASS	Bypass tray	FIRST	Upper drawer	SECOND	Lower drawer	THIRD	Optional drawer 1	FORTH	Optional drawer 2	LCF	Optional large paper deck	DUPLEX	Optional duplex unit
Display	Paper feed locations																
BYPASS	Bypass tray																
FIRST	Upper drawer																
SECOND	Lower drawer																
THIRD	Optional drawer 1																
FORTH	Optional drawer 2																
LCF	Optional large paper deck																
DUPLEX	Optional duplex unit																
U902	<p>Checking/clearing finisher punch count</p> <p>Description Sets the punch limit and displays and clears the punch-hole scrap count when the optional finisher is attached.</p> <p>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.</p> <p>Start</p> <ol style="list-style-type: none">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>20000</td></tr><tr><td>PUNCH COUNT</td><td>Punch-hole scrap count (current number of punching times)</td><td>—</td><td>—</td></tr></table> <p>Setting the punch limit</p> <ol style="list-style-type: none">1. Change the setting using the numeric keys.2. Press the start key. The value is set. <p>Clearing</p> <ol style="list-style-type: none">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. <p>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.</p>	Display	Description	Setting range	Initial setting	PUNCH LIMIT	Punch limit (maximum number of punching times)	0 to 999000	20000	PUNCH COUNT	Punch-hole scrap count (current number of punching times)	—	—				
Display	Description	Setting range	Initial setting														
PUNCH LIMIT	Punch limit (maximum number of punching times)	0 to 999000	20000														
PUNCH COUNT	Punch-hole scrap count (current number of punching times)	—	—														

Maintenance item No.	Description
U903	<p>Checking/clearing the paper jam counts</p> <p>Description Displays or clears the jam counts by jam locations.</p> <p>Purpose To check the paper jam status. Also to clear the jam counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The jam count is displayed by jam codes. 2. Change the screen using the * or # keys. <p>Clearing</p> <ol style="list-style-type: none"> 1. Press the reset key. Jam counts cannot be cleared individually. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>
U904	<p>Checking/clearing the service call counts</p> <p>Description Displays or clears the service call code counts by types.</p> <p>Purpose To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The service call count is displayed by service call codes. 2. Change the screen using the * or # keys. <p>Clearing</p> <ol style="list-style-type: none"> 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. <p>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.</p>

Maintenance item No.	Description																		
U905	<p>Checking/clearing counts by optional devices</p> <p>Description Displays or clears the counts of the optional DF or finisher.</p> <p>Purpose To check the use of the DF and finisher. Also to clear the counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 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. <ul style="list-style-type: none"> • DF <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>CHANGE</td><td>Original replacement count</td></tr> <tr> <td>ADF</td><td>No. of single-sided originals that has passed through the DF in ADF mode</td></tr> <tr> <td>RADF</td><td>No. of double-sided originals that has passed through the DF in RADF mode</td></tr> </tbody> </table> • Finisher (SORTER) <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>CP CNT</td><td>No. of copies that has passed</td></tr> <tr> <td>STAPLE</td><td>Frequency the stapler has been activated</td></tr> <tr> <td>PUNCH</td><td>Frequency the punch has been activated</td></tr> <tr> <td>STACK</td><td>Frequency the stacker has been activated</td></tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> 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. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CHANGE	Original replacement count	ADF	No. of single-sided originals that has passed through the DF in ADF mode	RADF	No. of double-sided originals that has passed through the DF in RADF mode	Display	Description	CP CNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	PUNCH	Frequency the punch has been activated	STACK	Frequency the stacker has been activated
Display	Description																		
CHANGE	Original replacement count																		
ADF	No. of single-sided originals that has passed through the DF in ADF mode																		
RADF	No. of double-sided originals that has passed through the DF in RADF mode																		
Display	Description																		
CP CNT	No. of copies that has passed																		
STAPLE	Frequency the stapler has been activated																		
PUNCH	Frequency the punch has been activated																		
STACK	Frequency the stacker has been activated																		
U906	<p>Resetting partial operation control</p> <p>Description Resets the service call code for partial operation control.</p> <p>Purpose To be reset after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Press EXECUTE on the touch panel. 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. 																		


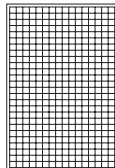


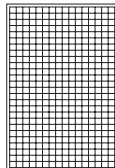


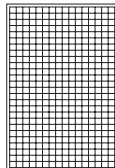

Maintenance item No.	Description						
U908	<p>Changing the total counter value</p> <p>Description Displays, clears and changes the total counter value.</p> <p>Purpose To check the total counter value.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>COUNT (PRINTER)</td><td>The total count value at the time of printer use</td></tr> <tr> <td>COUNT (FAX)</td><td>The total count value at the time of facsimile use</td></tr> </table> <p>Clearing 1. Select the count to be cleared. 2. Press the reset key. 3. Press the start key. The value is cleared. The screen for selecting a maintenance item No. is displayed.</p> <p>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.</p> <p>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.</p>	Display	Description	COUNT (PRINTER)	The total count value at the time of printer use	COUNT (FAX)	The total count value at the time of facsimile use
Display	Description						
COUNT (PRINTER)	The total count value at the time of printer use						
COUNT (FAX)	The total count value at the time of facsimile use						
U910	<p>Clearing the black ratio data</p> <p>Description Clears the accumulated black ratio data for A4 sheets.</p> <p>Purpose To clear data as required at times such as during maintenance service.</p> <p>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.</p> <p>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.</p>						
U911	<p>Checking/clearing copy counts by paper sizes</p> <p>Description Displays and clears the paper feed counts by paper sizes.</p> <p>Purpose To check or clear the counts after replacing consumable parts.</p> <p>Method Press the start key. The screen for the paper feed counts by paper size is displayed.</p> <p>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.</p> <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>						

Maintenance item No.	Description
U937	<p>Model name setting</p> <p>Description Sets the product name to be displayed on the printer status screen, etc. when installing a printer board (optional).</p> <p>Purpose To set the name if initialization is performed.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the **30 or **31. The selected item is displayed in reverse. Initial setting: **30 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>
U960	<p>Outputting the machine used circumstances list</p> <p>Description Outputs machine used circumstances list and clears the data.</p> <p>Purpose To check the machine operation situation. Also to clear the data.</p> <p>Method Press the start key.</p> <p>Outputting the list</p> <ol style="list-style-type: none"> 1. Select OUTPUT. 2. Press the start key to output the list. <p>Clearing</p> <ol style="list-style-type: none"> 1. Select COUNT CLEAR. 2. Press the start key to clear the count. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U968	<p>Shading plate switching setting</p> <p>Description Adjusts the reference value for shading correction in accordance with the new or old type of shading plate.</p> <p>Purpose To set the value when the shading plate is replaced.</p> <p>Method Press the start key.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Set the preset value in accordance with the new or old type of shading plate. New shading plate (part No.: 2BC12130): 1 Old shading plate (part No.: 35912200): 0 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>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.</p>

Maintenance item No.	Description						
U990	<p>Checking/clearing the time for the exposure lamp to light</p> <p>Description Displays, clears or changes the accumulated time for the exposure lamp to light.</p> <p>Purpose To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement.</p> <p>Method Press the start key. The accumulated time of illumination for the exposure lamp is displayed in minutes.</p> <p>Clearing</p> <ol style="list-style-type: none"> 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. <p>Setting</p> <ol style="list-style-type: none"> 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. <p>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.</p>						
U991	<p>Checking/clearing the scanner count</p> <p>Description Displays or clears the scanner operation count.</p> <p>Purpose To check the status of use of the scanner.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>TOTAL SCAN COUNT</td><td>Counts of scanner operation</td></tr> <tr> <td>NT SCAN COUNT</td><td>Counts of network scanner operation</td></tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the item to be cleared. 2. Press the reset key. 3. Press the start key. The count is cleared. The screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be changed. 2. Enter a six-digit count using the numeric key. 3. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>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.</p>	Display	Description	TOTAL SCAN COUNT	Counts of scanner operation	NT SCAN COUNT	Counts of network scanner operation
Display	Description						
TOTAL SCAN COUNT	Counts of scanner operation						
NT SCAN COUNT	Counts of network scanner operation						

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Maintenance item No.	Description						
U992	<p data-bbox="272 184 748 216">Checking or clearing the printer/fax count</p> <p data-bbox="272 220 407 247">Description</p> <p data-bbox="272 252 1425 306">Displays, clears or changes the print count of the printer or fax when the optional printer board or fax unit is installed.</p> <p data-bbox="272 317 370 344">Purpose</p> <p data-bbox="272 348 805 375">To check the frequency of use of the printer or fax.</p> <p data-bbox="272 386 358 413">Method</p> <p data-bbox="272 417 959 445">Press the start key. The screen for selecting an item is displayed.</p> <table data-bbox="315 447 1369 558"> <tr> <th data-bbox="321 451 691 489">Display</th><th data-bbox="691 451 1369 489">Description</th></tr> <tr> <td data-bbox="321 489 691 527">PRINTER COUNT</td><td data-bbox="691 489 1369 527">Print count of the printer</td></tr> <tr> <td data-bbox="321 527 691 558">FAX COUNT</td><td data-bbox="691 527 1369 558">Print count of the fax</td></tr> </table> <p data-bbox="272 569 370 596">Clearing</p> <ol data-bbox="289 600 1406 688" style="list-style-type: none"> 1. Select the count to be cleared. 2. Press the reset key. 3. Press the start key. The count is cleared. The screen for selecting a maintenance item No. is displayed. <p data-bbox="272 699 354 726">Setting</p> <ol data-bbox="289 730 984 840" style="list-style-type: none"> 1. Select the item to be changed. 2. Enter a six-digit count using the numeric keys. To clear the counts for both printer and fax, press the reset key. 3. Press the start key. The value is set. <p data-bbox="272 850 407 877">Completion</p> <p data-bbox="272 882 1192 909">Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	PRINTER COUNT	Print count of the printer	FAX COUNT	Print count of the fax
Display	Description						
PRINTER COUNT	Print count of the printer						
FAX COUNT	Print count of the fax						

Maintenance item No.	Description												
U993	<p>Outputting a VTC-PG pattern</p> <p>Description Selects and outputs a VTC-PG pattern created in the copier.</p> <p>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.</p> <p>Method</p> <ol style="list-style-type: none">1. Press the start key. The screen for selecting an item is displayed.2. Select the VTC-PG pattern to be output. <table><tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr><tr><td>PG1</td><td></td><td><ul style="list-style-type: none">• Center line adjustment</td></tr><tr><td>PG2</td><td></td><td><ul style="list-style-type: none">• Lateral squareness adjustment• Magnification adjustment</td></tr><tr><td>PG3</td><td></td><td>_____</td></tr></table> <ol style="list-style-type: none">3. Press the interrupt key. The copy mode screen is displayed.4. Press the start key. A VTC-PG pattern is output. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	PG pattern to be output	Purpose	PG1		<ul style="list-style-type: none">• Center line adjustment	PG2		<ul style="list-style-type: none">• Lateral squareness adjustment• Magnification adjustment	PG3		_____
Display	PG pattern to be output	Purpose											
PG1		<ul style="list-style-type: none">• Center line adjustment											
PG2		<ul style="list-style-type: none">• Lateral squareness adjustment• Magnification adjustment											
PG3		_____											

1-5-1 Paper misfeed detection

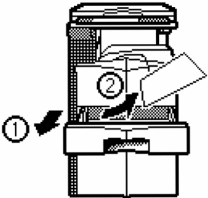
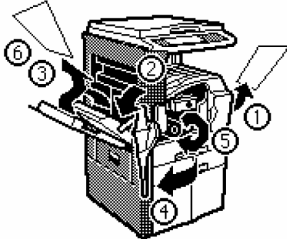
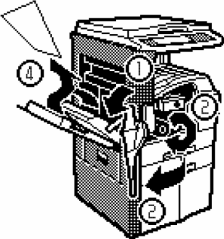
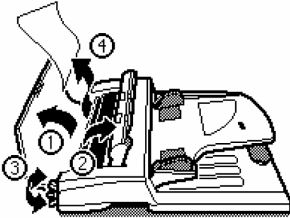
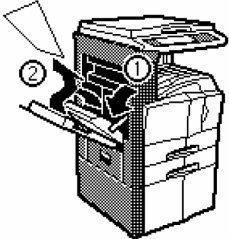
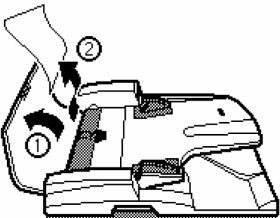
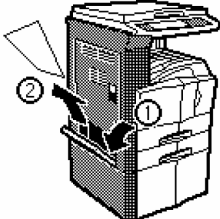
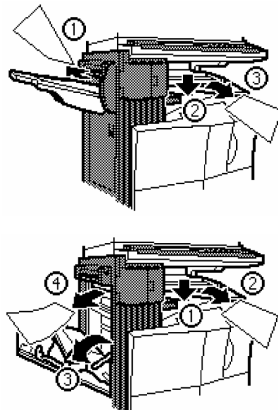
(1) Paper misfeed indication

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 1 or 2 off and on.

<ul style="list-style-type: none"> • Misfeed in drawer <p>Jam code 10 Jam code 12 Jam code 13 Jam code 15 Jam code 16 Jam code 17</p> 	<ul style="list-style-type: none"> • Misfeed in bypass <p>Jam code 14 Jam code 20 Jam code 23</p> 
<ul style="list-style-type: none"> • Misfeed inside conveying cover <p>Jam code 18 Jam code 21 Jam code 22</p> 	<ul style="list-style-type: none"> • Misfeed in SRDF* <p>Jam code 70 Jam code 71 Jam code 72 Jam code 73 Jam code 74 Jam code 75 Jam code 76</p> 
<ul style="list-style-type: none"> • Misfeed in conveying cover <p>Jam code 30 Jam code 35 Jam code 40 Jam code 50 Jam code 51 Jam code 52 Jam code 60 Jam code 61</p> 	<ul style="list-style-type: none"> • Misfeed in STDF* <p>Jam code 70 Jam code 71 Jam code 72 Jam code 73</p> 
<ul style="list-style-type: none"> • Misfeed in side cover <p>Jam code 19</p> 	<ul style="list-style-type: none"> • Misfeed in built-in finisher* <p>Jam code 81 Jam code 82 Jam code 83 Jam code 84</p> 

Jam code	Contents	See page
10	No paper feed from the upper drawer	P.1-5-4
11	No paper feed from the lower drawer	P.1-5-4
12	No paper feed from large paper deck*/paper feed desk* upper drawer	P.1-5-4
13	No paper feed from paper feed desk* lower drawer	P.1-5-4
14	No paper feed from bypass	P.1-5-5
15	Jam in large paper deck* horizontal paper conveying section	P.1-5-5
16	Jam in large paper deck* horizontal paper conveying section	P.1-5-5
17	Jam in large paper deck* horizontal paper conveying section	P.1-5-5
18	Misfeed in copier vertical paper conveying section	P.1-5-5
19	Misfeed in paper feed desk* vertical paper conveying section	P.1-5-6
20	Misfeed in bypass* vertical paper conveying section	P.1-5-6
21	Multiple sheets in copier paper feed section	P.1-5-6
22	Multiple sheets in copier vertical conveying section	P.1-5-8
23	Multiple sheets in bypass vertical conveying section	P.1-5-8
30	Misfeed in registration/transfer section	P.1-5-9
35	Secondary paper feed does not start	P.1-5-9
40	Misfeed in fixing section	P.1-5-9
50	Misfeed in eject section	P.1-5-10
51	Misfeed in job separator* eject section	P.1-5-10
52	Misfeed in feedshift section	P.1-5-11
53	Misfeed in switchback section (switchback unit*)	P.1-5-11
60	Duplex paper conveying section 1 (duplex unit*)	P.1-5-12
61	Duplex paper conveying section 2 (duplex unit*)	P.1-5-12
70	No original feed (SRDF*)	P.1-5-13
71	An original jam in the original feed/conveying section (SRDF*)	P.1-5-13
72	An original jam in the original feed section (SRDF*)	P.1-5-13
73	An original jam in the original conveying section (SRDF*)	P.1-5-14
74	An original jam remaining after retries (SRDF*)	P.1-5-14
75	An original jam in the switchback section 1 (SRDF*)	P.1-5-14
76	An original jam in the switchback section 2 (SRDF*)	P.1-5-15
81	Jam between the finisher and copier (built-in finisher*)	P.1-5-15
82	Intake jam (built-in finisher*)	P.1-5-15
83	Jam during paper conveying for batch ejection 1 (built-in finisher*)	P.1-5-15
84	Jam during paper conveying for batch ejection 2 (built-in finisher*)	P.1-5-15

*Optional.

(2) Paper misfeed detection conditions

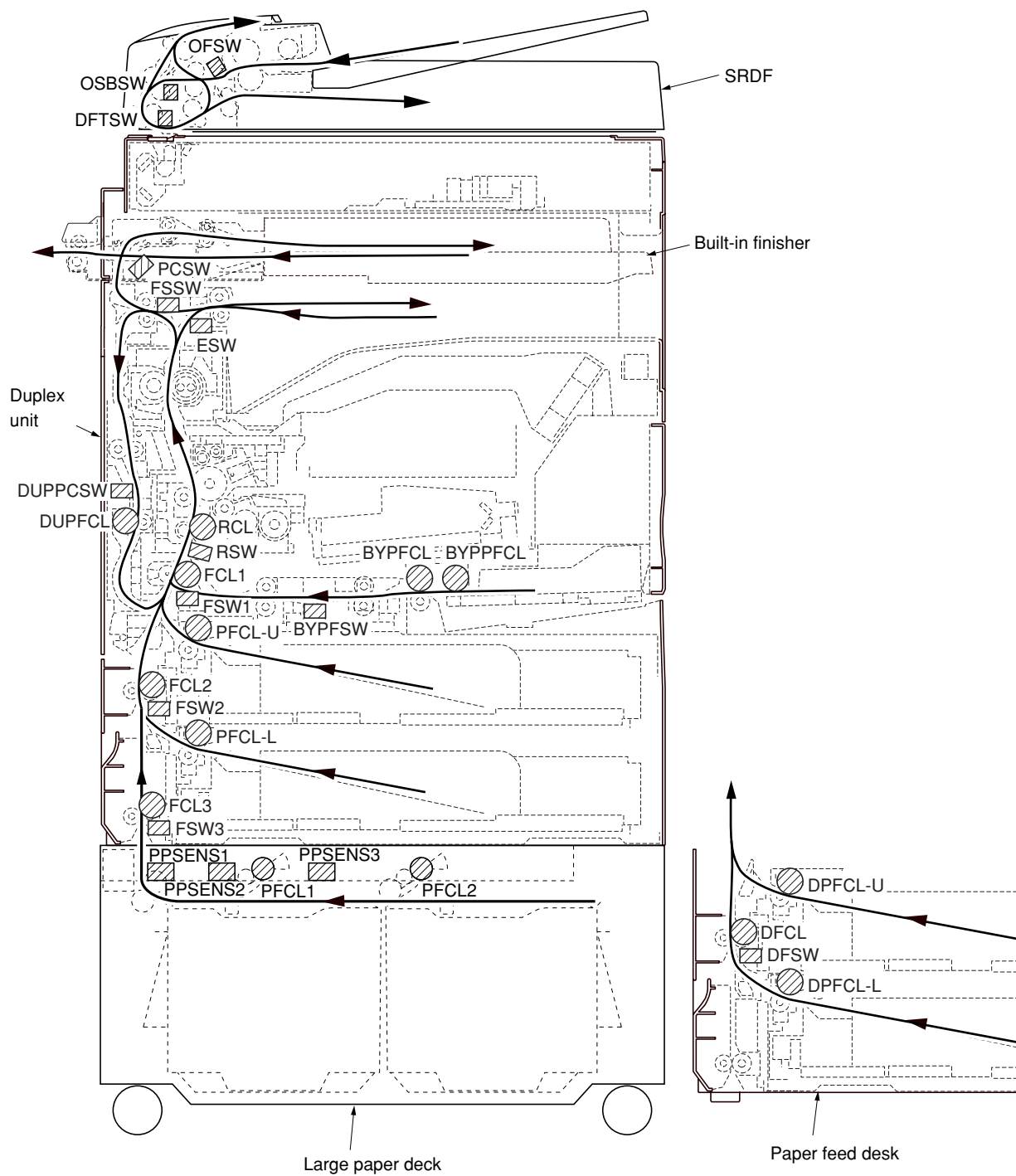
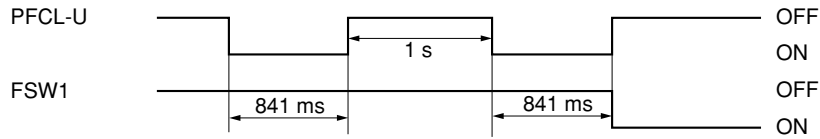


Figure 1-5-1

1. Paper feed section

- No paper feed from the upper drawer (jam code 10)

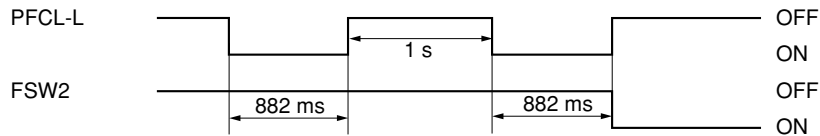
Feed switch 1 (FSW1) does not turn on within 841 ms of the upper paper feed clutch (PFCL-U) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within 841 ms.



Timing chart 1-5-1

- No paper feed from the lower drawer (jam code 11)

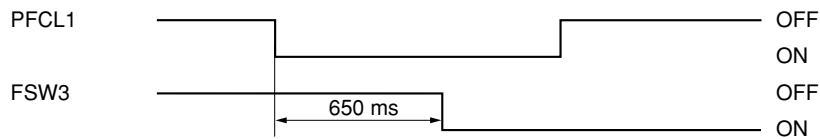
Feed switch 2 (FSW2) does not turn on within 882 ms of the lower paper feed clutch (PFCL-L) turning on; the clutch is then successively turned off for 1 s and turned back on, but the switch again fails to turn on within 882 ms.



Timing chart 1-5-2

- No paper feed from large paper deck* (jam code 12)

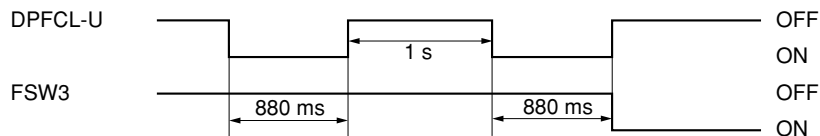
Feed switch 3 (FSW3) does not turn on within 650 ms of paper feed clutch 1 (PFCL1) turning on.



Timing chart 1-5-3

- No paper feed from paper feed desk* upper drawer (jam code 12)

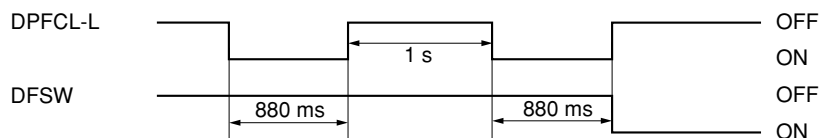
Feed switch 3 (FSW3) does not turn on within 880 ms of the desk upper paper feed clutch (DPFCL-U) turning on; the clutch is then successively held off for 1 s and turned back on, but the switch again fails to turn on within 880 ms.



Timing chart 1-5-4

- No paper feed from paper feed desk* lower drawer (jam code 13)

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.

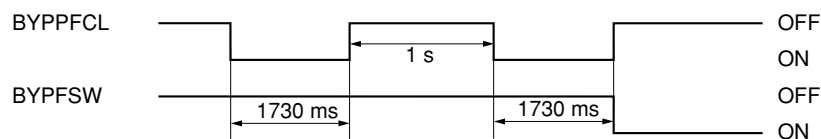


Timing chart 1-5-5

*Optional.

- No paper feed from bypass (jam code 14)

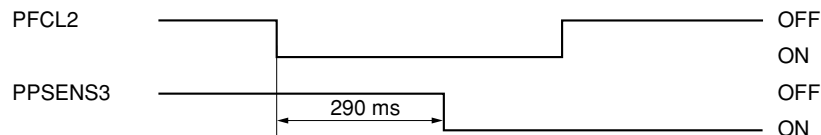
The bypass feed switch (BYPFSW) does not turn on within 1730 ms of the bypass paper feed clutch (BYPPFCL) turning on; the clutch is then successively held off for 1 s and turned back on, but the switch again fails to turn on within 1730 ms.



Timing chart 1-5-6

- Jam in large paper deck* horizontal paper conveying section (jam code 15)

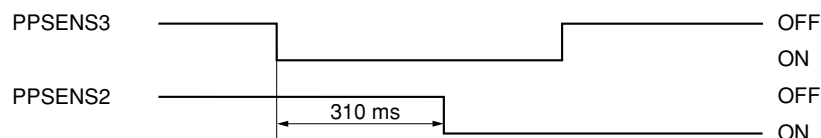
Paper path sensor 3 (PPSENS3) does not turn on within 290 ms of the paper feed clutch 2 (PFCL2) turning on.



Timing chart 1-5-7

- Jam in large paper deck* horizontal paper conveying section (jam code 16)

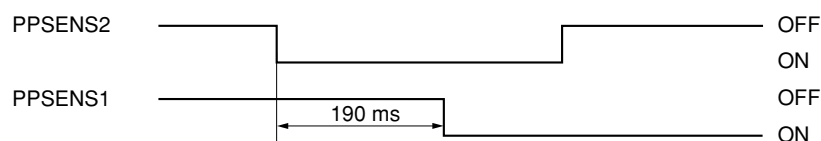
Paper path sensor 2 (PPSENS2) does not turn on within 310 ms of the paper path sensor 3 (PPSENS3) turning on.



Timing chart 1-5-8

- Jam in large paper deck* horizontal paper conveying section (jam code 17)

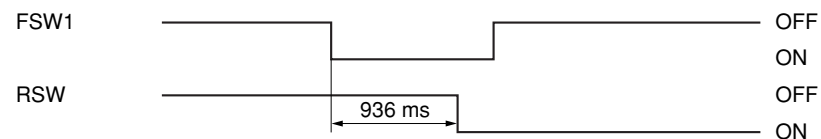
Paper path sensor 1 (PPSENS1) does not turn on within 190 ms of the paper path sensor 2 (PPSENS2) turning on.



Timing chart 1-5-9

- Misfeed in copier vertical paper conveying section (jam code 18)

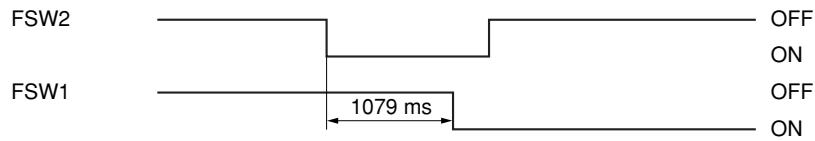
The registration switch (RSW) does not turn on within 936 ms of feed switch 1 (FSW1) turning on.



Timing chart 1-5-10

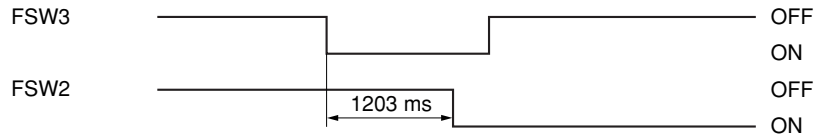
*Optional.

Feed switch 1 (FSW1) does not turn on within 1079 ms of feed switch 2 (FSW2) turning on.



Timing chart 1-5-11

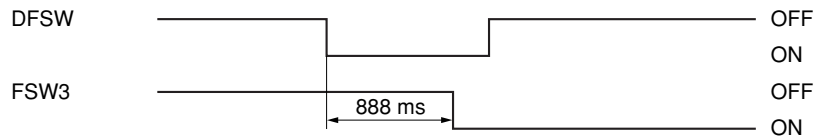
Feed switch 2 (FSW2) does not turn on within 1203 ms of feed switch 3 (FSW3) turning on.



Timing chart 1-5-12

- Misfeed in paper feed desk* vertical paper conveying section (jam code 19)

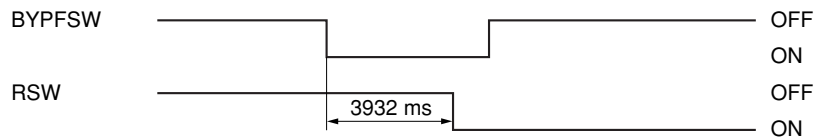
Feed switch 3 (FSW3) does not turn on within 888 ms of the desk feed switch (DFSW) turning on.



Timing chart 1-5-13

- Misfeed in bypass* vertical paper conveying section (jam code 20)

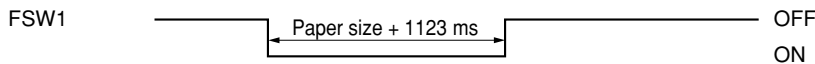
The registration switch (RSW) does not turn on within 3932 ms of the bypass feed switch (BYPFSW) turning on.



Timing chart 1-5-14

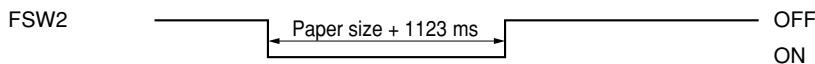
- Multiple sheets in copier paper feed section (jam code 21)

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.



Timing chart 1-5-15

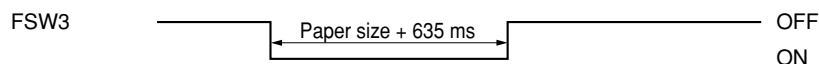
Feed switch 2 (FSW2) does not turn off within the time required to convey the length of the used paper size plus 1123 ms of turning on.



Timing chart 1-5-16

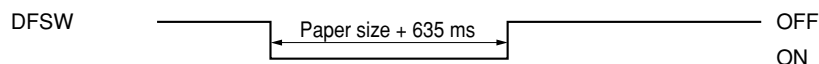
*Optional.

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.



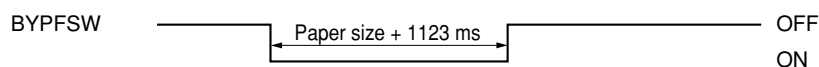
Timing chart 1-5-17

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.



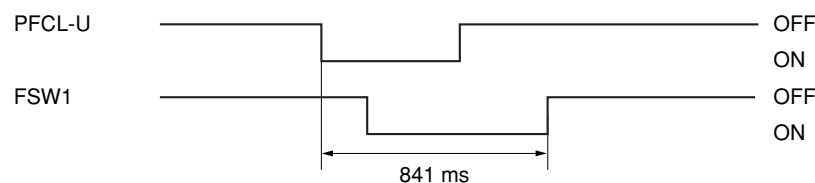
Timing chart 1-5-18

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.



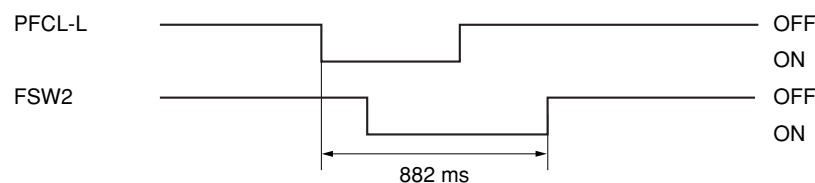
Timing chart 1-5-19

Feed switch 1 (FSW1) does not turn off within 841 ms of the upper paper feed clutch (PFCL-U) turning on.



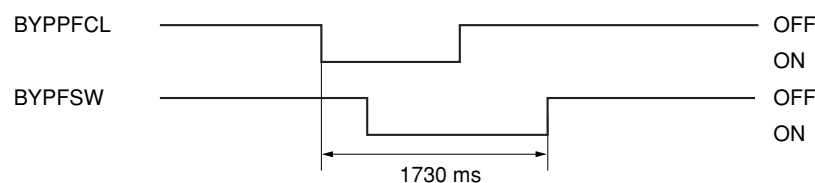
Timing chart 1-5-20

Feed switch 2 (FSW2) does not turn off within 882 ms of the lower paper feed clutch (PFCL-L) turning on.



Timing chart 1-5-21

The bypass feed switch (BYPFSW) does not turn off within 1730 ms of the bypass paper feed clutch (BYPPFCL) turning on.

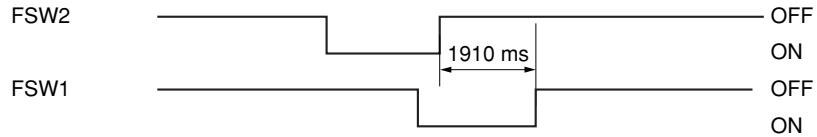


Timing chart 1-5-22

*Optional.

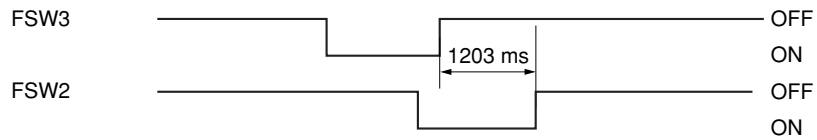
- Multiple sheets in copier vertical conveying section (jam code 22)

Feed switch 1 (FSW1) does not turn off within 1910 ms of feed switch 2 (FSW2) turning off.



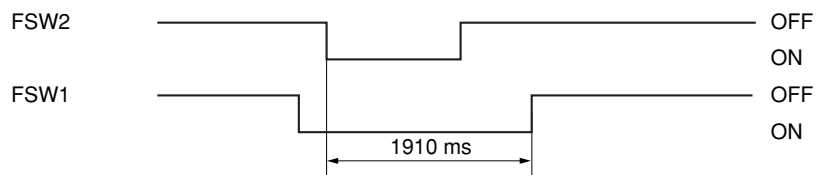
Timing chart 1-5-23

Feed switch 2 (FSW2) does not turn off within 1203 ms of feed switch 3 (FSW3) turning off.



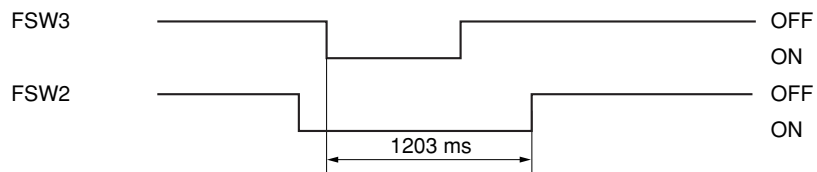
Timing chart 1-5-24

Feed switch 1 (FSW1) does not turn off within 1910 ms of feed switch 2 (FSW2) turning on.



Timing chart 1-5-25

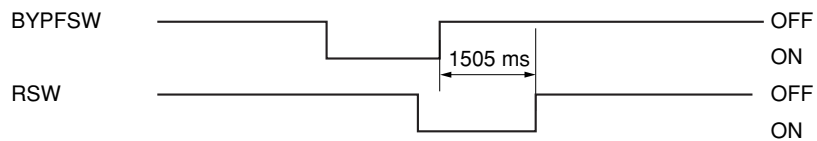
Feed switch 2 (FSW2) does not turn off within 1203 ms of feed switch 3 (FSW3) turning on.



Timing chart 1-5-26

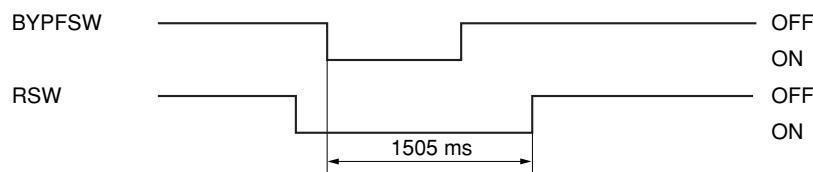
- Multiple sheets in bypass vertical conveying section (jam code 23)

The registration switch (RSW) does not turn off within 1510 ms of the bypass feed switch (BYPFSW) turning off.



Timing chart 1-5-27

The registration switch (RSW) does not turn off within 1505 ms of the bypass feed switch (BYPFSW) turning on.

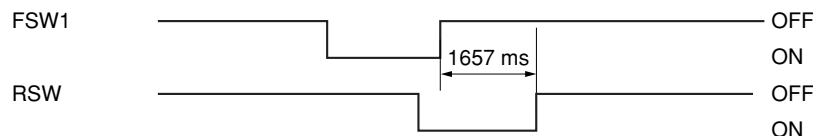


Timing chart 1-5-28

2. Paper conveying section

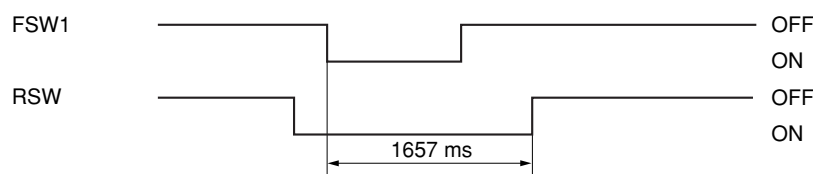
- Misfeed in registration/transfer section (jam code 30)

The registration switch (RSW) does not turn off within 1657 ms of feed switch 1 (FSW1) turning off.



Timing chart 1-5-29

The registration switch (RSW) does not turn off within 1657 ms of feed switch 1 (FSW1) turning on.



Timing chart 1-5-30

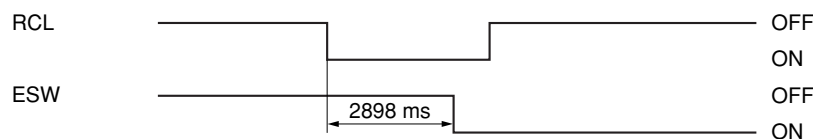
- Secondary paper feed does not start. (jam code 35)

Secondary paper feed does not start within 30 s of arrival of paper at the registration section.

3. Fixing section

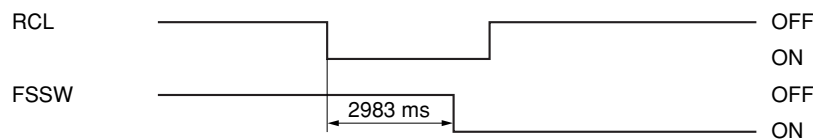
- Misfeed in fixing section (jam code 40)

The eject switch (ESW) does not turn on within 2898 ms of the registration clutch (RCL) turning on.



Timing chart 1-5-31

The feedshift switch (FSSW) does not turn on within 2983 ms of the registration clutch (RCL) turning on.

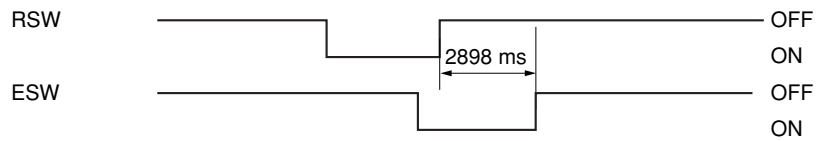


Timing chart 1-5-32

4. Eject section

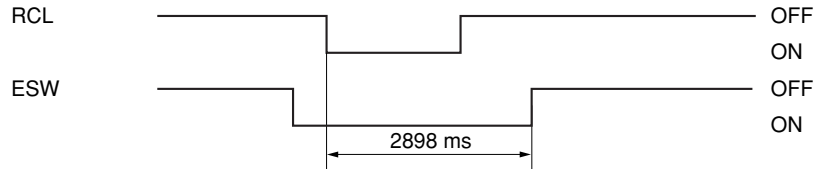
- Misfeed in eject section (jam code 50)

The eject switch (ESW) does not turn off within 2898 ms of the registration switch (RSW) turning off.



Timing chart 1-5-33

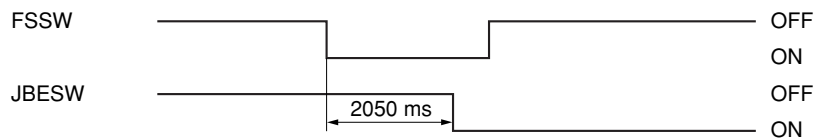
The eject switch (ESW) does not turn off within 2898 ms of the registration clutch (RCL) turning on.



Timing chart 1-5-34

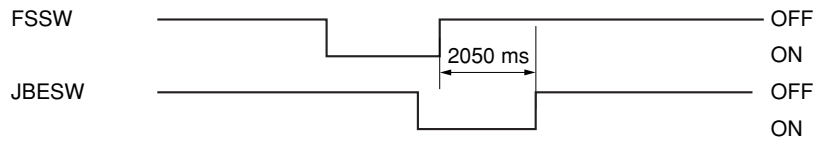
- Misfeed in job separator* eject section (jam code 51)

The job separator eject switch (JBESW) does not turn on within 2050 ms of the feedshift switch (FSSW) turning on.



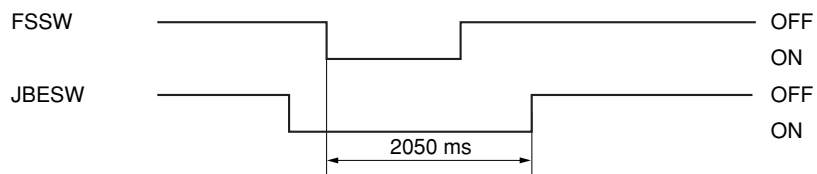
Timing chart 1-5-35

The job separator eject switch (JBESW) does not turn off within 2050 ms of the feedshift switch (FSSW) turning off.



Timing chart 1-5-36

The job separator eject switch (JBESW) does not turn off within 2050 ms of the feedshift switch (FSSW) turning on.



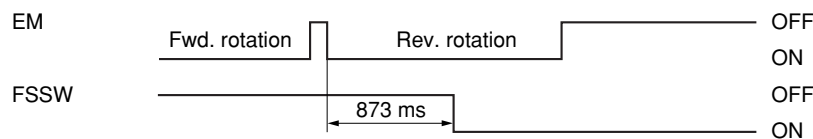
Timing chart 1-5-37

*Optional.

5. Feedshift section

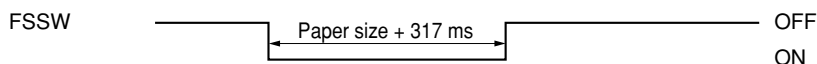
- Misfeed in feedshift section (jam code 52)

The feedshift switch (FSSW) does not turn on within 873 ms of the start of eject motor (EM) reverse rotation.



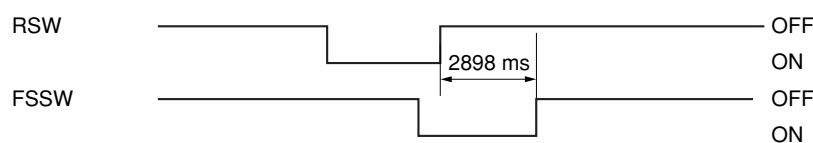
Timing chart 1-5-38

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.



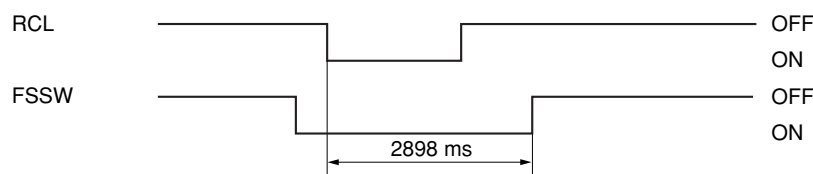
Timing chart 1-5-39

The feedshift switch (FSSW) does not turn off within 2898 ms of the registration switch (RSW) turning off.



Timing chart 1-5-40

The feedshift switch (FSSW) does not turn off within 2898 ms of the registration clutch (RCL) turning on.

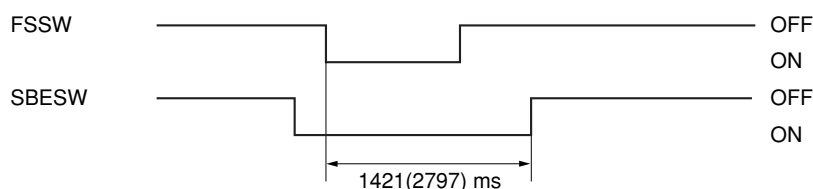


Timing chart 1-5-41

6. Switchback unit*

- Misfeed in switchback section (jam code 53)

The switchback eject switch (SBESW) does not turn off within 1421 ms (2797 ms) of the feedshift switch (FSSW) turning on.

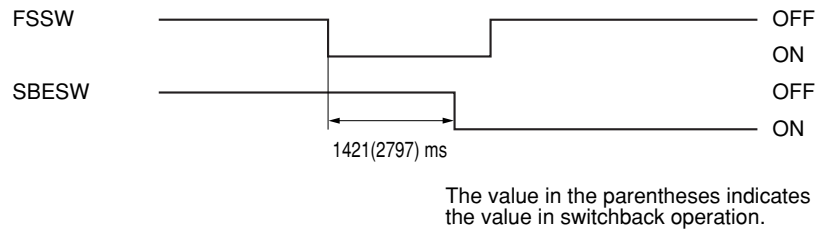


The value in the parentheses indicates the value in switchback operation.

Timing chart 1-5-42

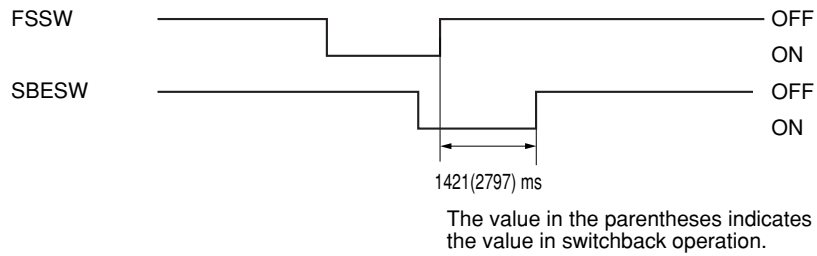
*Optional.

The switchback eject switch (SBESW) does not turn on within 1421 ms (2797 ms) of the feedshift switch (FSSW) turning on.



Timing chart 1-5-43

The switchback eject switch (SBESW) does not turn off within 1421 ms (2797 ms) of the feedshift switch (FSSW) turning off.

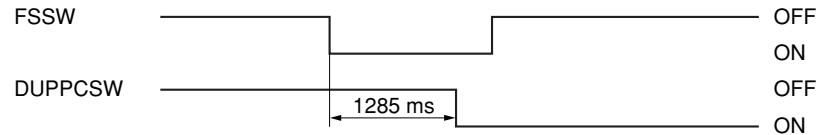


Timing chart 1-5-44

7. Duplex section*

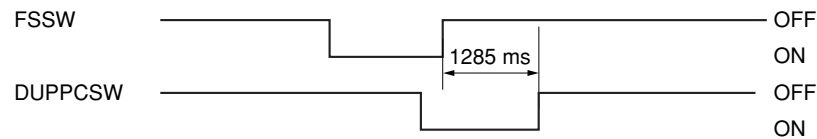
- Duplex paper conveying section 1 (jam code 60)

The duplex paper conveying switch (DUPPCSW) does not turn on within 1285 ms of the feedshift switch (FSSW) turning on.



Timing chart 1-5-45

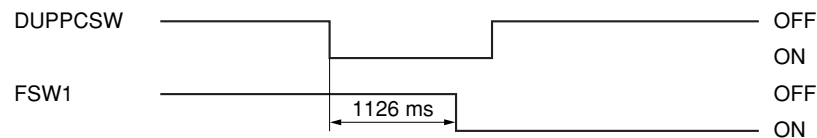
The duplex paper conveying switch (DUPPCSW) does not turn off within 1285 ms of the feedshift switch (FSSW) turning off.



Timing chart 1-5-46

- Duplex paper conveying section 2 (jam code 61)

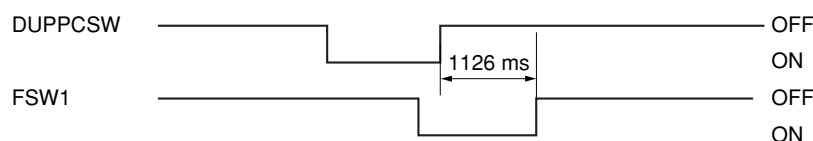
Feed switch 1 (FSW1) does not turn on within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning on.



Timing chart 1-5-47

*Optional.

Feed switch 1 (FSW1) does not turn off within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning off.



Timing chart 1-5-48

8. SRDF*

- No original feed (jam code 70)

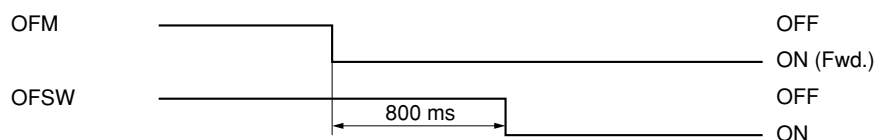
When the DF START signal is received, switches other than the original set switch (OSSW) and original size length switch (OSLSW) on the contact glass are on.

- No original feed (jam code 70)

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.

- No original feed (jam code 70)

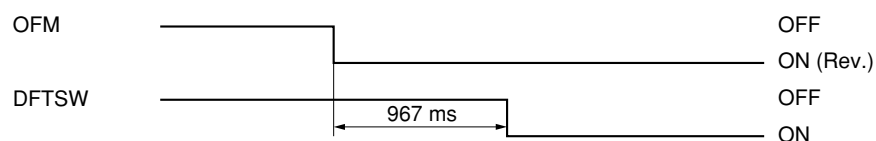
During the primary feed of the second or later original in the single-sided or double-sided original mode, the original feed switch (OFSW) does not turn on within 800 ms of the start of forward rotation of the original feed motor (OFM).



Timing chart 1-5-49

- An original jam in the original feed/conveying section (jam code 71)

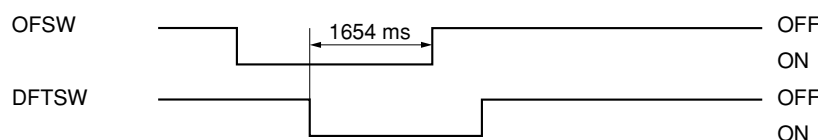
During the secondary original feed in the single-sided original mode, the DF timing switch (DFTSW) does not turn on within 967 ms of the start of reverse rotation of the original feed motor (OFM). Alternatively, during continuous original feed in single-sided original mode, the DF timing switch (DFTSW) does not turn on for the second time under the above conditions.



Timing chart 1-5-50

- An original jam in the original feed section (jam code 72)

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 DF timing switch (DFTSW) turning on.

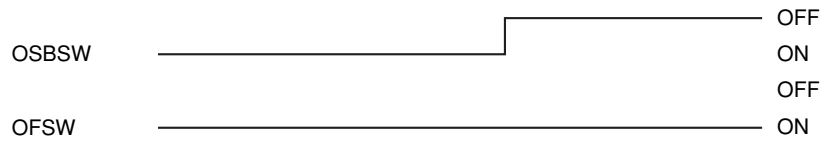


Timing chart 1-5-51

*Optional.

- An original jam in the original feed section (jam code 72)

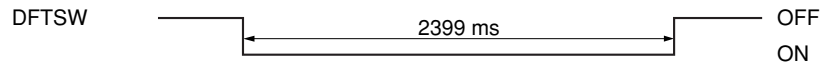
During original switchback operation in the double-sided original mode, the original feed switch (OFSW) remains on when the original switchback switch (OSBSW) turns off.



Timing chart 1-5-52

- An original jam in the original conveying section (jam code 73)

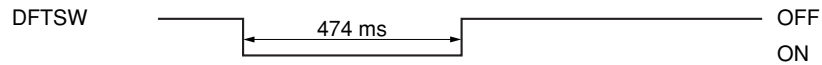
During the secondary original feed in the single-sided or double-sided original mode, the DF timing switch (DFTSW) does not turn off within 2399 ms of turning on.



Timing chart 1-5-53

- An original jam in the original conveying section (jam code 73)

In the single-sided or double-sided original mode, the DF timing switch (DFTSW) turns off within 474 ms of turning on.



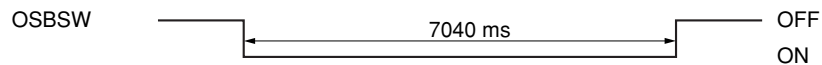
Timing chart 1-5-54

- An original jam remaining after retries (jam code 74)

In the single-sided or double-sided original mode, secondary original feed does not start after 5 retries.

- An original jam in the switchback section 1 (jam code 75)

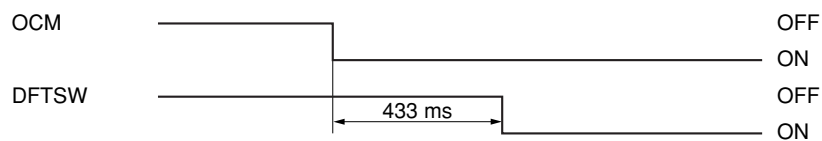
During the switchback operation of an original in the double-sided original mode, the original switchback switch (OSBSW) does not turn off within 7040 ms of turning on.



Timing chart 1-5-55

- An original jam in the switchback section 1 (jam code 75)

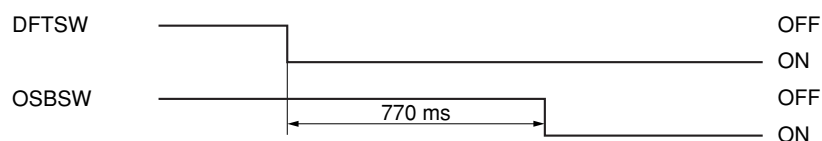
During the secondary original feed in the double-sided original mode, the DF timing switch (DFTSW) does not turn on within 433 ms of the original conveying motor (OCM) turning on.



Timing chart 1-5-56

- An original jam in the switchback section 2 (jam code 76)

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 DF timing switch (DFTSW) turning on.



Timing chart 1-5-57

- An original jam in the original switchback section 2 (jam code 76)

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 DF timing switch (DFTSW) off.

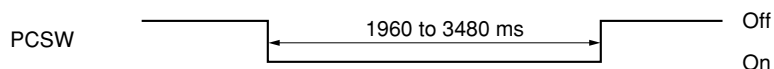
9. Built-in finisher*

- Jam between the finisher and copier (jam code 81)

The paper conveying switch does not turn on within 1550 ms of the signal requesting paper ejection is output from the copier.

- Intake jam (jam code 82)

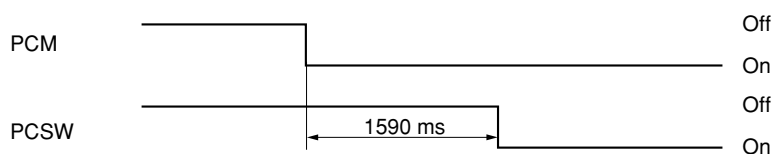
During paper intake from the copier, the paper conveying switch (PCSW) does not turn off within 1960 to 3480 ms (depending on paper size) of paper conveying switch (PCSW) turning on.



Timing chart 1-5-58

- Jam during paper conveying for batch ejection 1 (jam code 83)

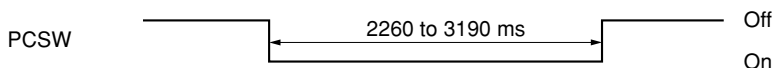
When ejection a stack of paper, the paper conveying switch (PCSW) does not turn on within 1590 ms of the paper conveying motor (PCM) turning on.



Timing chart 1-5-59

- Jam during paper conveying for batch ejection 2 (jam code 84)

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.



Timing chart 1-5-60

*Optional.

(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 main 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 1-5-53).

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 1-5-53).
(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.
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from paper feed desk* upper drawer). Jam code 12	Paper in the paper feed desk upper drawer is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the paper feed desk 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 feed desk* 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 feed desk* lower drawer). Jam code 13	Paper in the paper feed desk lower drawer is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the paper feed desk 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 1-5-54).

*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 feed desk* 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 1-5-53).
	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 1-5-53).
	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 1-5-54).
	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 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.
(18) A paper jam in the paper conveying section is indicated during copying Jam code 35	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 1-5-54).
(19) A paper jam in the fixing section is indicated during copying (jam in fixing section). Jam code 40	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 code 40	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 1-5-54).
(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 1-5-54).
	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 1-5-54).

*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 SRDF* 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 SRDF* is indicated during copying (a jam in the original feed/conveying section). Jam code 71	Defective DF timing switch.	Run maintenance item U244 and turn the DF 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 SRDF* is indicated during copying (a jam in the original feed section). Jam code 72	Defective DF timing switch.	Run maintenance item U244 and turn the DF 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 switch-back 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 SRDF* is indicated during copying (a jam in the original conveying section). Jam code 73	Defective DF timing switch.	Run maintenance item U244 and turn the DF 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 SRDF* is indicated during copying (a jam in the original switchback section 1). Jam code 75	Defective original switch-back 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 DF timing switch.	Run maintenance item U244 and turn the DF 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 SRDF* is indicated during copying (a jam in the original switchback section 2). Jam code 76	Defective original switch-back 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

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0030	Fax board* problem • Problems with data from fax board.	Defective fax board.	Replace the fax board and check for correct operation.
C0110	Backup memory data problem • Data in the specified area of the backup memory does not match the specified values.	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 C011 is displayed after re-setting the backup memory contents, replace the backup RAM.
C0210	Operation unit PCB communication problem • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connectors CN36, CN42 on the main PCB and CN1, CN2 and CN3 on the operation unit PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB or operation unit PCB.	Replace the main PCB or operation unit 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 CN43 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.
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 CN46 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 board* communication problem • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector CN44 on the main PCB and the connector on the memory PCB. Repair or replace if necessary.
		Defective main PCB or fax board.	Replace the main PCB or fax board and check for correct operation.
C0420	Large paper deck*/paper feed desk* 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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0440	Finisher* communication problem <ul style="list-style-type: none"> 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 CN4, CN5 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.
C0450	Mailbox* communication problem <ul style="list-style-type: none"> 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 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 <ul style="list-style-type: none"> 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 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.
C0600	DIMM problem The DIMM on the memory PCB does not operate correctly.	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.
C0610	Bitmap problem <ul style="list-style-type: none"> There is a problem with the data or address bus of the bitmap DRAM. 	Defective main PCB.	Replace the main PCB and check for correct operation.
C0620	Memory input interface problem Reading-in of an image does not complete within 10 s of the start of image transmission.	Defective main PCB.	Replace the main PCB and check for correct operation.
C0630	DMA problem <ul style="list-style-type: none"> 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
C1010	Upper lift motor problem <ul style="list-style-type: none"> 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 by turning off the upper lift motor for 200 ms and retrying twice. During copying, the upper lift limit switch does not turn on within 200 ms of the upper lift motor turning on. 	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 CN13-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 <ul style="list-style-type: none"> 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 by turning off the lower lift motor for 200 ms and retrying twice. During copying, the lower lift limit switch does not turn on within 200 ms of the lower lift motor turning on. 	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 CN13-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.
C1030	Desk upper lift motor problem <ul style="list-style-type: none"> When the upper drawer of the paper feed desk* is inserted, the desk upper lift limit switch does not turn on within 6 s of the desk upper lift motor turning on and the desk upper lift limit switch does not turn on by turning off the desk upper lift motor for 200 ms and retrying twice. During copying, the desk upper lift limit switch does not turn on within 200 ms of the desk upper lift motor turning on. 	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.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1030	Desk upper lift motor problem <ul style="list-style-type: none"> When the upper drawer of the paper feed desk* is inserted, the desk upper lift limit switch does not turn on within 6 s of the desk upper lift motor turning on and the desk upper lift limit switch does not turn on by turning off the desk upper lift motor for 200 ms and retrying twice. During copying, the desk upper lift limit switch does not turn on within 200 ms of the desk upper lift motor turning on. 	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 <ul style="list-style-type: none"> When the lower drawer of the paper feed desk* is inserted, the desk lower lift limit switch does not turn on within 6 s of the desk lower lift motor turning on and the desk lower lift limit switch does not turn on by turning off the desk lower lift motor for 200 ms and retrying twice. During copying, the desk lower lift limit switch does not turn on within 200 ms of the desk lower lift motor turning on. 	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 <ul style="list-style-type: none"> 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.
C1110	Paper deck motor 2* problem <ul style="list-style-type: none"> 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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
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 2 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.
C1160	Large paper deck*/paper feed desk* sequence problem	Operation start request is sent from the copier to the large paper deck/paper feed desk while paper feed is disabled.	Turn the power off and back on (reset request is sent from the copier to the large paper deck/paper feed desk to cancel operation start request).
		Paper feed request is sent from the copier to the large paper deck/paper feed desk before operation start request.	Turn the power off and back on (reset request is sent from the copier to the large paper deck/paper feed desk to cancel operation start request).

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1170	Large paper deck* (paper feed desk*) incorrect type problem	Deck/desk for the printer is installed.	Replace the deck/desk for the copier.
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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
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 CN37 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.
C3200	Exposure lamp problem • Check the CCD input value for the lighting status of the exposure lamp 100 ms after the exposure lamp is lit and the carriage is moved to the shading position. If the exposure lamp does not light, turn off the lamp. After 500 ms, light the lamp again and, a further 500 ms later, check the CCD input. The exposure lamp does not light after 5 retries.	Poor contact of the connector terminals.	Check the connection of connectors CN34 and CN37 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective exposure lamp.	Replace the exposure lamp or inverter PCB.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.
C3300	Optical system problem • After AGC, correct input is not obtained at CCD.	Poor contact of the connector terminals.	Check the connection of connector CN34 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.
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 CN2-1 on the main PCB. If not, replace the power source PCB.
		Defective main PCB.	Check if 24 V DC is output from CN8-10 on the main PCB. If not, replace the main PCB.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
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 CN2-1 on the main PCB. If not, replace the power source PCB.
		Defective main PCB.	Check if 24 V DC is output from CN8-10 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.
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 • After secondary stabilization, detected temperature of the fixing thermistor is lower than 100 °C/212 °F • When the fixing heater is turned on, the output voltage of terminal CN2-1 of the power supply PCB is lower than 0.2 V. • 7 s after the fixing heater is turned on, the output voltage of terminal CN2-1 of the power supply PCB is lower than 0.2 V. • When the output voltage of terminal CN 2-1 of the power supply PCB is checked every 45 s during continuous copying, the voltage becomes lower than 0.2 V. • When the fixing temperature becomes lower than 140 °C/284 °F during copying, the output voltage of terminal CN 2-1 of the power supply PCB is checked and the voltage is lower than 0.2 V.	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN10 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.
		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 (see page 1-6-38).
C6020	Abnormally high fixing unit thermistor temperature • The fixing thermistor detects temperature 240 °C/464 °F or higher.	Shorted fixing unit thermistor.	Measure the resistance. If it is 0 Ω, replace the fixing unit thermistor.
		Broken fixing unit heater control circuit on the power source PCB.	Replace the power source PCB.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6050	Abnormally low fixing unit thermistor temperature <ul style="list-style-type: none"> The fixing thermistor detects temperature lower than 100 °C/212 °F for 10 s. When fixing heater M is on, the temperature of the fixing thermistor is lower than 40 °C/104 °F and continues to drop for 24 s. (If the temperature in the copier is 10 °C/50 °F or less when power is turned on.) When fixing heater M is on, the temperature of the fixing thermistor is lower than 40 °C/104 °F and continues to drop for 14 s. (If the temperature in the copier is higher than 10 °C/50 °F when power is turned on.) 	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN10 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 $\infty \Omega$, 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.
C6410	Fixing unit connector insertion problem <ul style="list-style-type: none"> Absence of the fixing unit is detected continuously for 1500 ms while there is no error on the copier. 	Fixing unit connector inserted incorrectly.	Reinsert the fixing unit connector if necessary.
		Defective fixing unit connector.	Replace the fixing unit.
C6420	Broken fixing unit thermistor wire <ul style="list-style-type: none"> 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 CN10 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 $\infty \Omega$, replace the fixing unit thermistor.
C7300	Toner sensor problem <ul style="list-style-type: none"> 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. 	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 <ul style="list-style-type: none"> Absence of the image formation unit is detected continuously for 1500 ms while there is no error on the copier. 	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 <ul style="list-style-type: none"> Absence of the drum unit is detected continuously for 1500 ms while there is no error on the copier. 	Drum unit connector inserted incorrectly.	Reinsert the drum unit connector if necessary.
		Defective drum unit connector.	Replace the drum unit.
C7800	Broken external temperature thermistor wire <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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.
C8030	Finisher* paper conveying belt problem <ul style="list-style-type: none"> 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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8140	Finisher* tray elevation motor problem <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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.
C8180	Finisher* rear side registration motor problem <ul style="list-style-type: none"> 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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8190	Finisher* trailing edge registration motor problem <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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.
C8220	Finisher* rear stapler problem <ul style="list-style-type: none"> 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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
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.
C8400	Booklet stitcher* incorrect type problem	An incorrect type 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.
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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
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 <ul style="list-style-type: none"> 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 1-5-43

- (2) No image appears (entirely black).



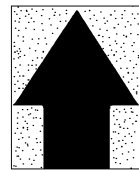
See page 1-5-44

- (3) Image is too light.



See page 1-5-45

- (4) Background is visible.



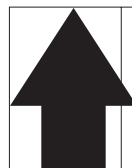
See page 1-5-45

- (5) A white line appears longitudinally.



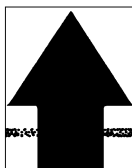
See page 1-5-45

- (6) A black line appears longitudinally.



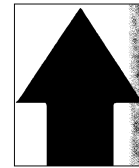
See page 1-5-46

- (7) A black line appears laterally.



See page 1-5-46

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



See page 1-5-46

- (9) Black dots appear on the image.



See page 1-5-47

- (10) Image is blurred.



See page 1-5-47

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



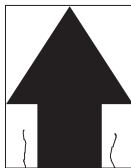
See page 1-5-47

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



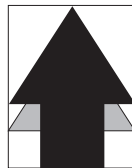
See page 1-5-48

- (13) Paper creases.



See page 1-5-48

- (14) Offset occurs.



See page 1-5-48

- (15) Image is partly missing.



See page 1-5-49

- (16) Fixing is poor.



See page 1-5-49

- (17) Image is out of focus.



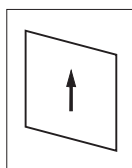
See page 1-5-49

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



See page 1-5-50

- (19) Image is not square.



See page 1-5-50

- (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 CN7-10 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 CN8-4 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 CN7-1 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 CN7-3 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 CN1-3 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 CN37-3 on the main PCB goes low when maintenance item U061 is run. If not, replace the main PCB.

- (3) Image is too light.



Causes

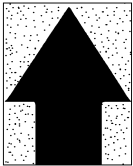
1. Insufficient toner.
2. Deteriorated toner.
3. The transfer voltage is not output properly.
4. Dirty main charger wire.

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.

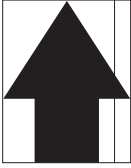
Causes

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.

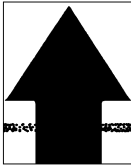


Causes

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.

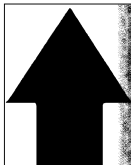


Causes

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.

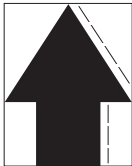


Causes

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.

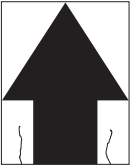


Causes

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.

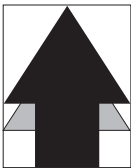


Causes

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.

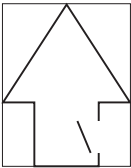


Causes

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.

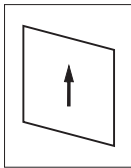


Causes

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 main 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 main switch.	Check for continuity across the contacts. If none, replace the main 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.
(2) The drive motor does not operate (C2000).	Defective power source PCB.	With AC present, check for 24 V DC at CN1-1 and 5 V DC at CN1-5 on the power source PCB. If none, replace the power source PCB.
	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 CN11-9 on the main PCB goes low. If not, replace the drive motor.
(3) The paper feed motor does not operate (C2500).	Defective main PCB.	Run maintenance item U030 and check if CN11-9 on the main PCB goes low. If not, replace the main PCB.
	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 CN11-10 on the main PCB goes low. If not, replace the paper feed motor.
(4) The eject motor does not operate.	Defective main PCB.	Run maintenance item U030 and check if CN11-10 on the main PCB goes low. If not, replace the main PCB.
	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 CN16-B11, CN16-B12, CN16-B13 and CN16-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 CN16-B11, CN16-B12, CN16-B13 and CN16-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 CN13-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 CN13-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) Cooling fan motor 8 does not operate.	Broken cooling fan motor 8 coil.	Check for continuity across the coil. If none, replace cooling fan motor 8.
	Poor contact in the cooling fan motor 8 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(16) Cooling fan motor 9 does not operate.	Broken cooling fan motor 9 coil.	Check for continuity across the coil. If none, replace cooling fan motor 9.
	Poor contact in the cooling fan motor 9 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
(17) 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 CN16-B1 on the main PCB goes low. If not, replace the main PCB.
(18) 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 CN16-B4 on the main PCB goes low. If not, replace the main PCB.
(19) 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 CN11-14 on the main PCB goes low. If not, replace the main PCB.

Problem	Causes	Check procedures/corrective measures
(20) 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 CN13-A12 on the main PCB goes low. If not, replace the main PCB.
(21) 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 CN13-A5 on the main PCB goes low. If not, replace the main PCB.
(22) 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 CN6-A9 on the main PCB goes low. If not, replace the main PCB.
(23) 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 CN6-A11 on the main PCB goes low. If not, replace the main PCB.
(24) 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 CN10-A2 on the main PCB goes low. If not, replace the main PCB.
(25) 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 CN16-A1 and CN16-A2 on the main PCB go low. If not, replace the main PCB.
(26) 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 CN9-B2 on the main PCB goes low. If not, replace the main PCB.

Problem	Causes	Check procedures/corrective measures
(27) 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 CN9-B7 on the main PCB is held low, replace the main PCB.
(28) 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 CN1-3 on the scanner drive PCB goes low. If not, replace the scanner drive PCB.
	Defective main PCB.	Run maintenance item U061 and check if CN37-3 on the main PCB goes low. If not, replace the main PCB.
(29) 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 CN1-3 on the scanner drive PCB are always low, replace the scanner drive PCB.
(30) 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.
(31) The fixing heater does not turn off.	Broken fixing unit thermistor wire.	Measure the resistance. If it is $\infty \Omega$, replace the fixing unit thermistor.
	Dirty sensor part of the fixing unit thermistor.	Check visually and clean the thermistor sensor parts.
(32) Main charging is not performed.	Broken main charger wire.	See page 1-5-44.
	Leaking main charger housing.	
	Poor contact in the high-voltage transformer PCB connector terminals.	
	Defective main PCB.	
	Defective high-voltage transformer PCB.	
(33) Transfer charging is not performed.	Poor contact in the high-voltage transformer PCB connector terminals.	See page 1-5-43.
	Defective main PCB.	
	Defective high-voltage transformer PCB.	

Problem	Causes	Check procedures/corrective measures
(34) No developing bias is output.	Defective main PCB.	See page 1-5-43.
	Defective high-voltage transformer PCB.	
(35) The original size is not detected.	Defective original detection switch.	If the level of CN5-2 on the scanner drive PCB does not change when the original detection switch is turned on and off, replace the original detection switch.
(36) 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.
(37) 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.
(38) 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 CN13-B12 on the main PCB goes low when the upper paper switch is turned on with 5 V DC present at CN13-B13 on the main PCB. If not, replace the upper paper switch.
(39) 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 CN13-B18 on the main PCB goes low when the upper paper switch is turned on with 5 V DC present at CN13-B19 on the main PCB. If not, replace the lower paper switch.
(40) 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 CN6-A6 on the main PCB goes low when the bypass paper switch is turned on with 5 V DC present at CN6-A5 on the main PCB. If not, replace the bypass paper switch.
(41) 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 CN13-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 CN12-3, CN12-4 and CN12-5 on the main PCB change alternately when the width guide in the upper drawer is moved. If not, replace the upper paper width switch.

Problem	Causes	Check procedures/corrective measures
(42) 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 CN13-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 CN12-9, CN12-10 and CN12-11 on the main PCB change alternately when the width guide in the lower drawer is moved. If not, replace the lower paper width switch.
(43) 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 CN6-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 CN6-A1, CN6-A2 and CN6-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.
(44) A paper jam in the paper feed, paper conveying or fixing section is indicated when the main 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.

Problem	Causes	Check procedures/corrective measures
(45) The message re- questing covers to be closed is dis- played when the front cover and con- veying cover are closed.	Poor contact in the con- nector terminals of safety switch 1 or 2.	Reinsert the connector. Also check for continuity within the con- nector 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.
(46) 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

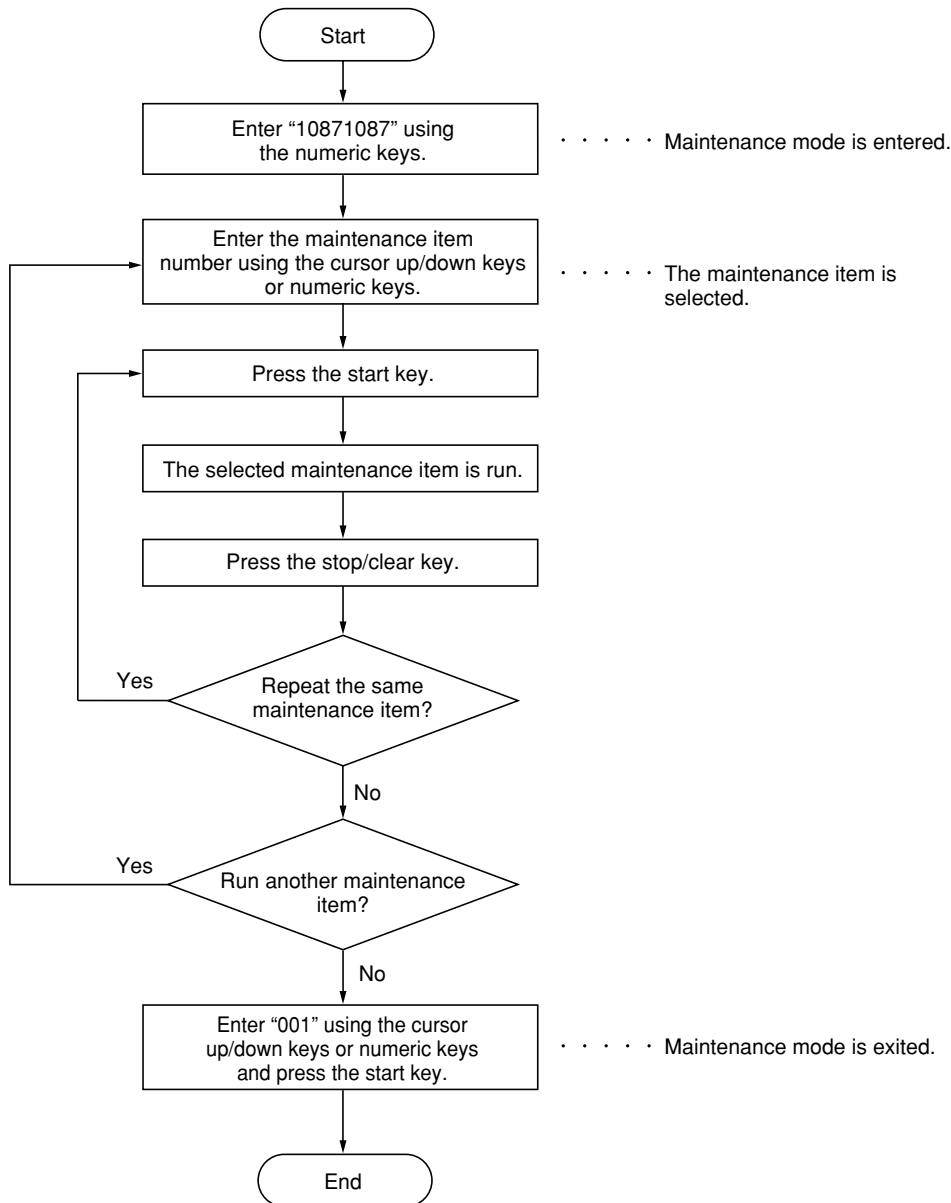
Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers or pulleys are dirty with paper powder: upper/lower forwarding pulleys, upper/lower paper feed pulleys, upper/lower separation pulleys, feed rollers, registration rollers, bypass 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 electro-magnetic clutches: upper/lower paper feed clutches, feed clutches 1/2/3, bypass paper feed clutch and bypass feed clutch.	See pages 1-5-53 and 54.
(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 1-5-54.
(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 1-5-52.
(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 1-5-54.

Problem	Causes/check procedures	Corrective measures
(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 main 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*
 - Fuke 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)

(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.

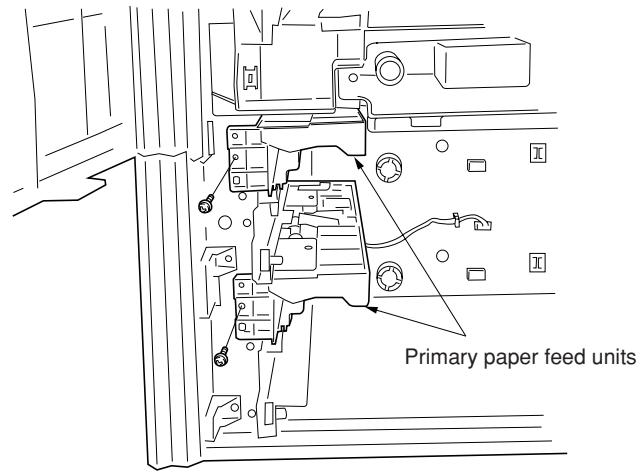


Figure 1-6-1

- 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.

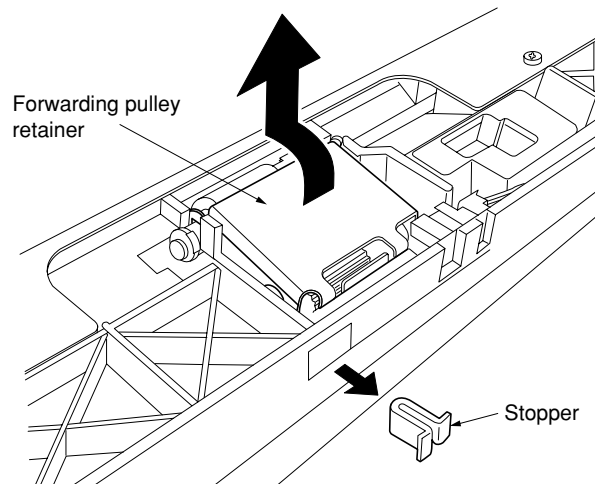


Figure 1-6-2

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

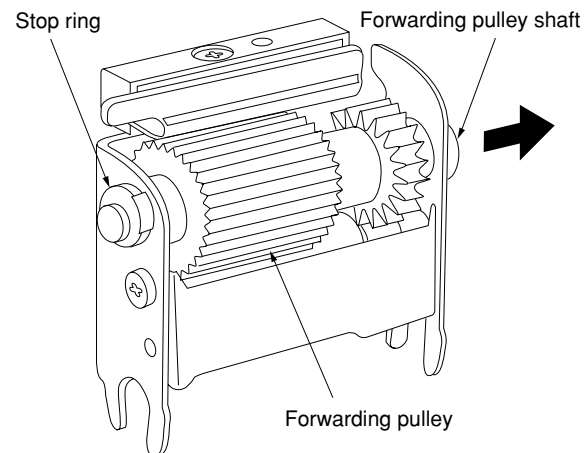


Figure 1-6-3

- 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.

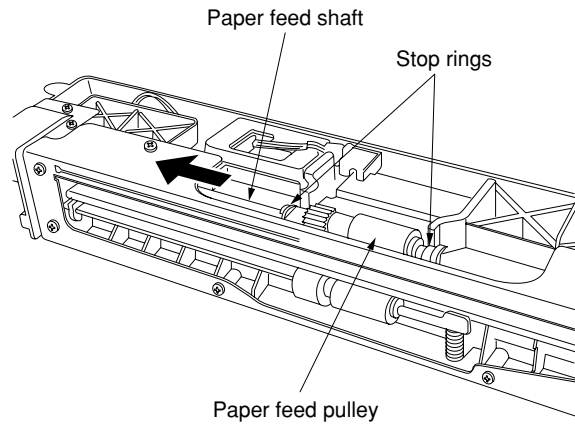


Figure 1-6-4

- 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.

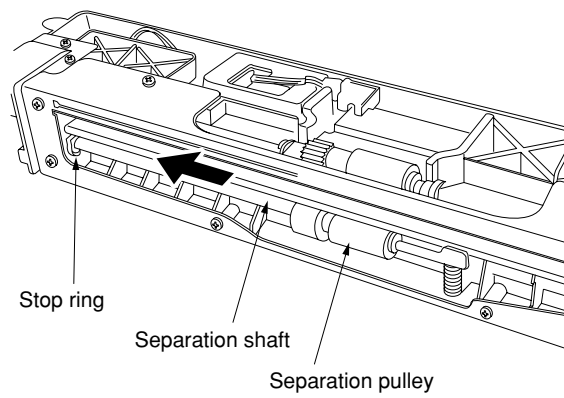


Figure 1-6-5

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.

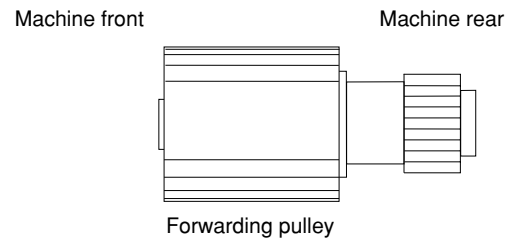


Figure 1-6-6

(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.

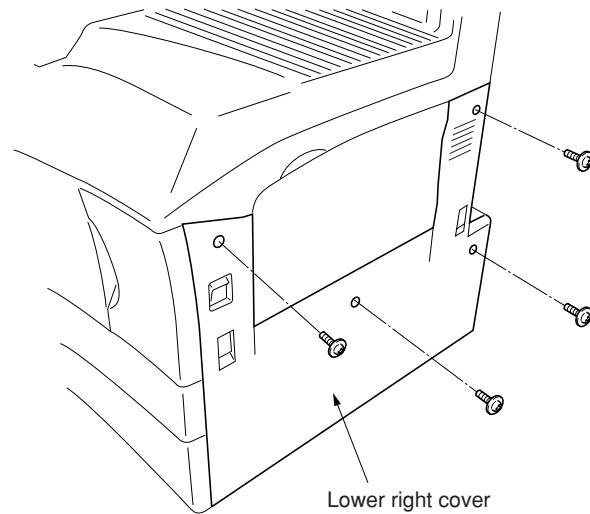


Figure 1-6-7

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

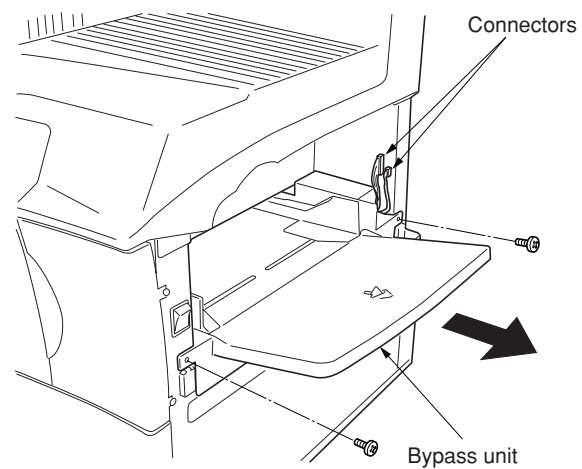


Figure 1-6-8

- 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.

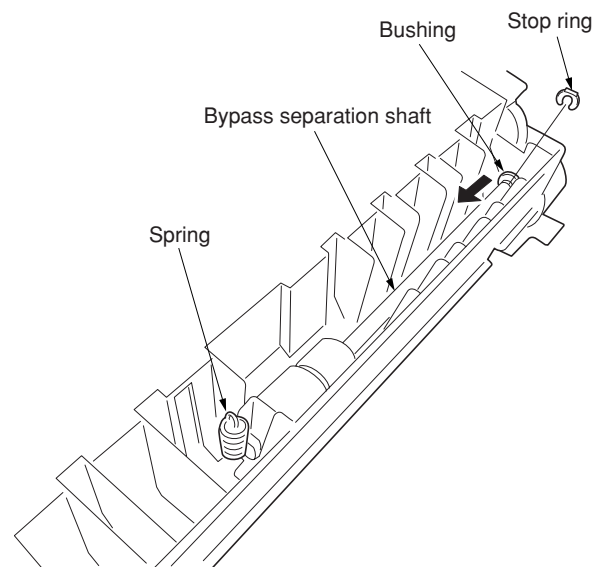


Figure 1-6-9

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.

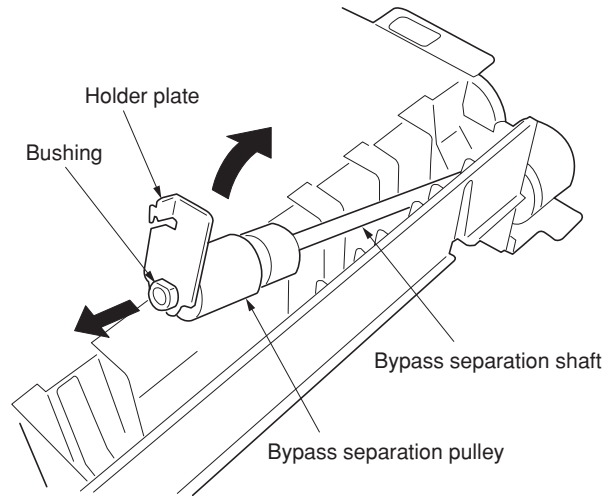


Figure 1-6-10

- 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.

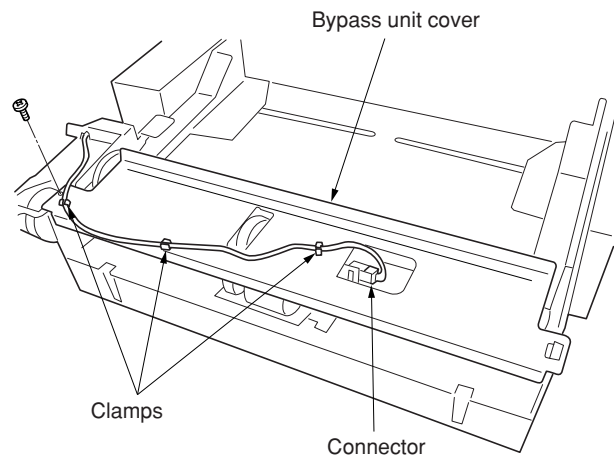


Figure 1-6-11

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

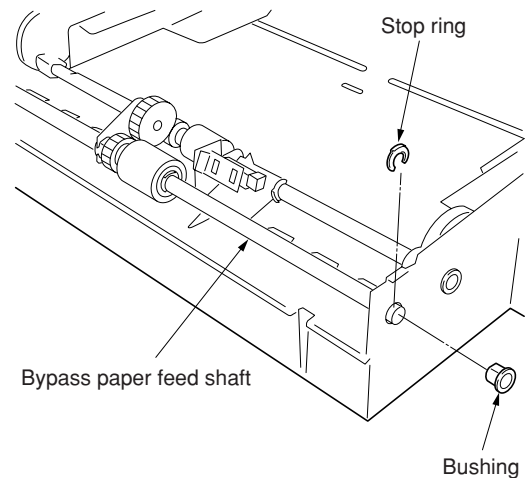


Figure 1-6-12

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.

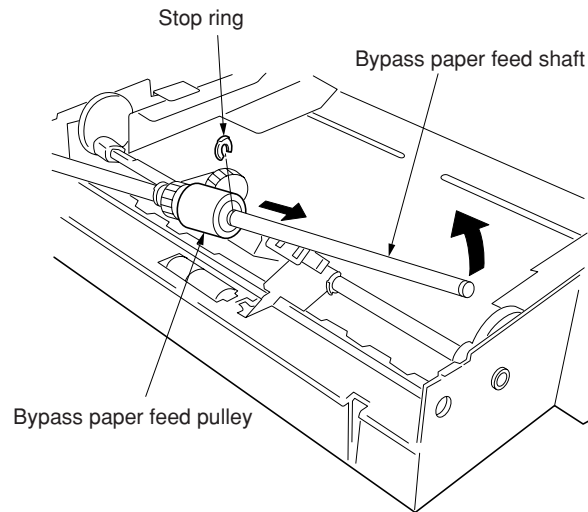


Figure 1-6-13

- 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.

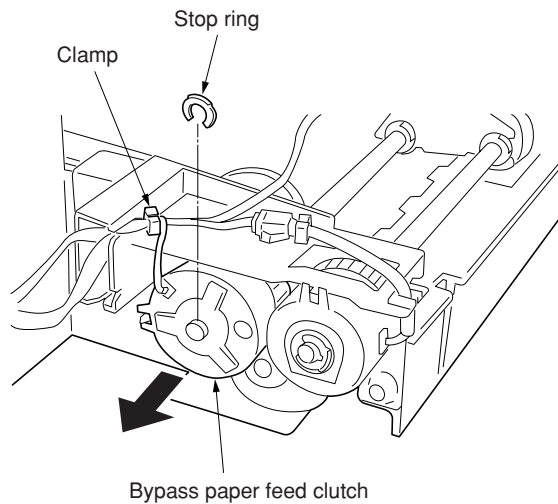


Figure 1-6-14

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.

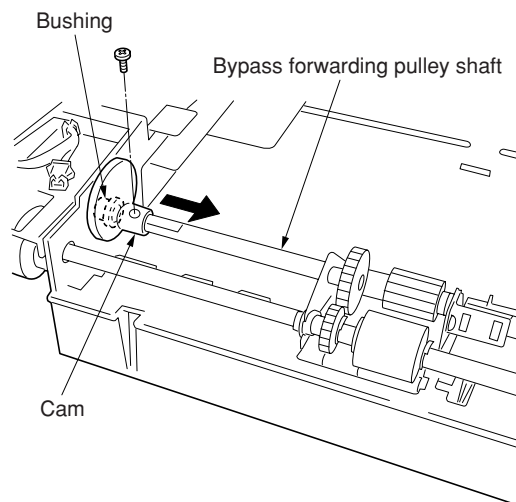


Figure 1-6-15

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

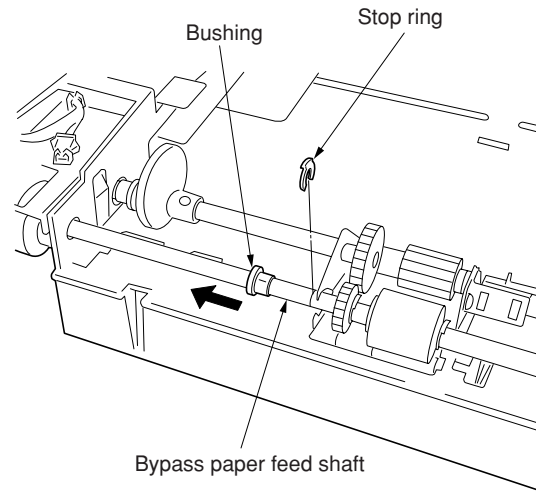


Figure 1-6-16

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.

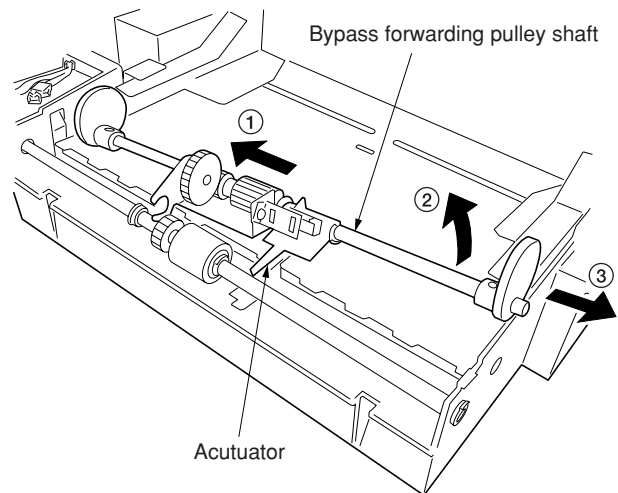


Figure 1-6-17

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

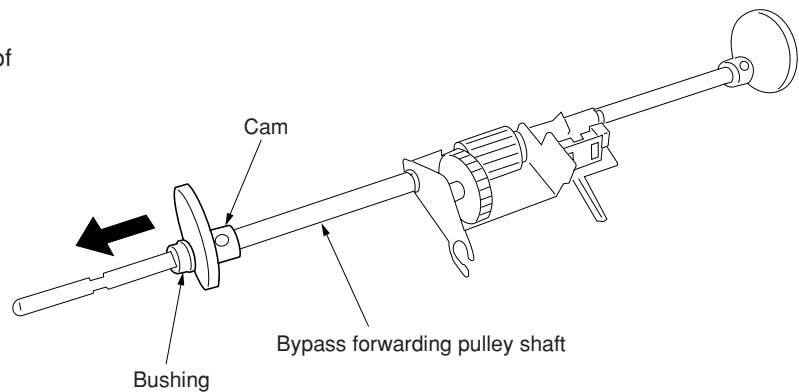


Figure 1-6-18

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.

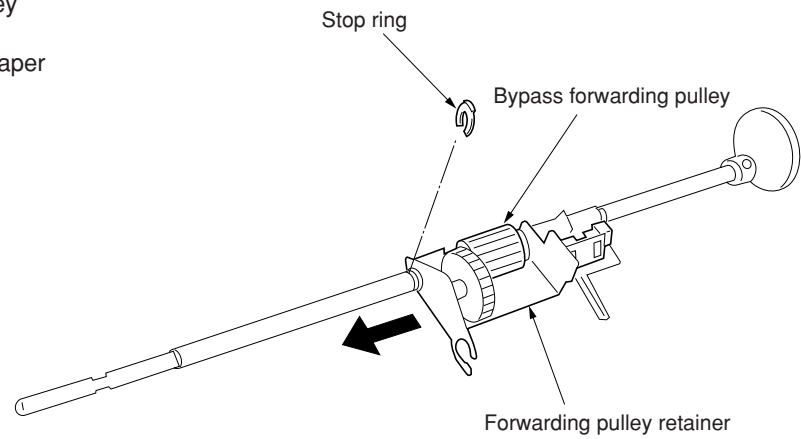


Figure 1-6-19

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.

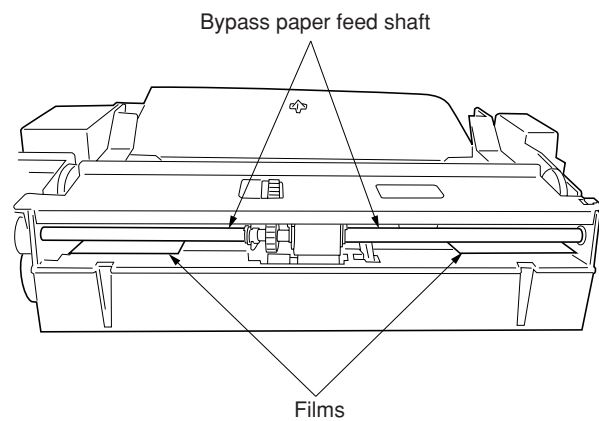


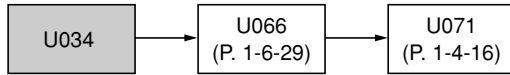
Figure 1-6-20

(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

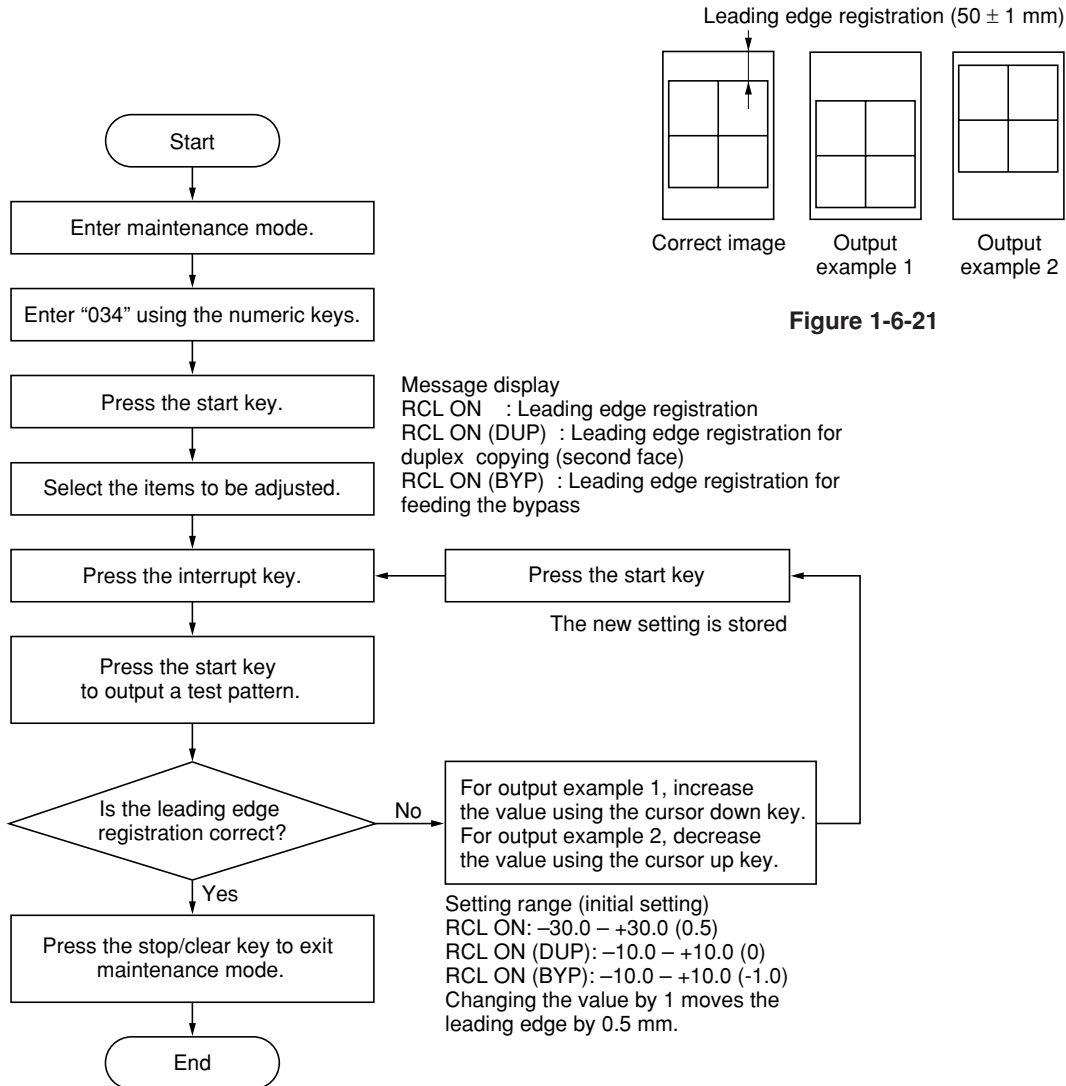
Make the following adjustment if there is a regular error between the leading edges of the copy image and original.



Caution:

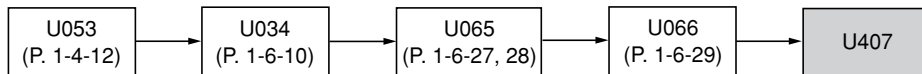
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure



(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

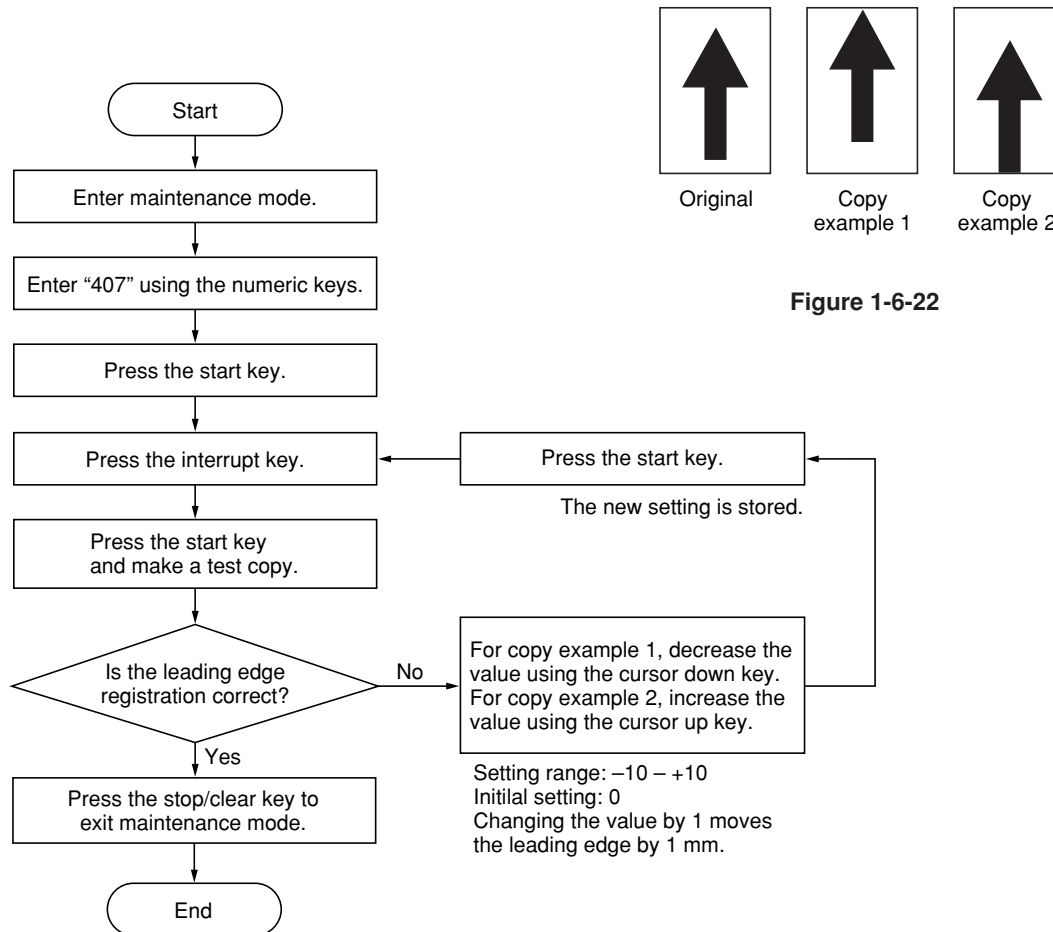
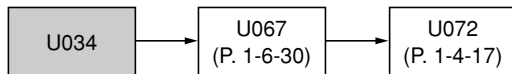


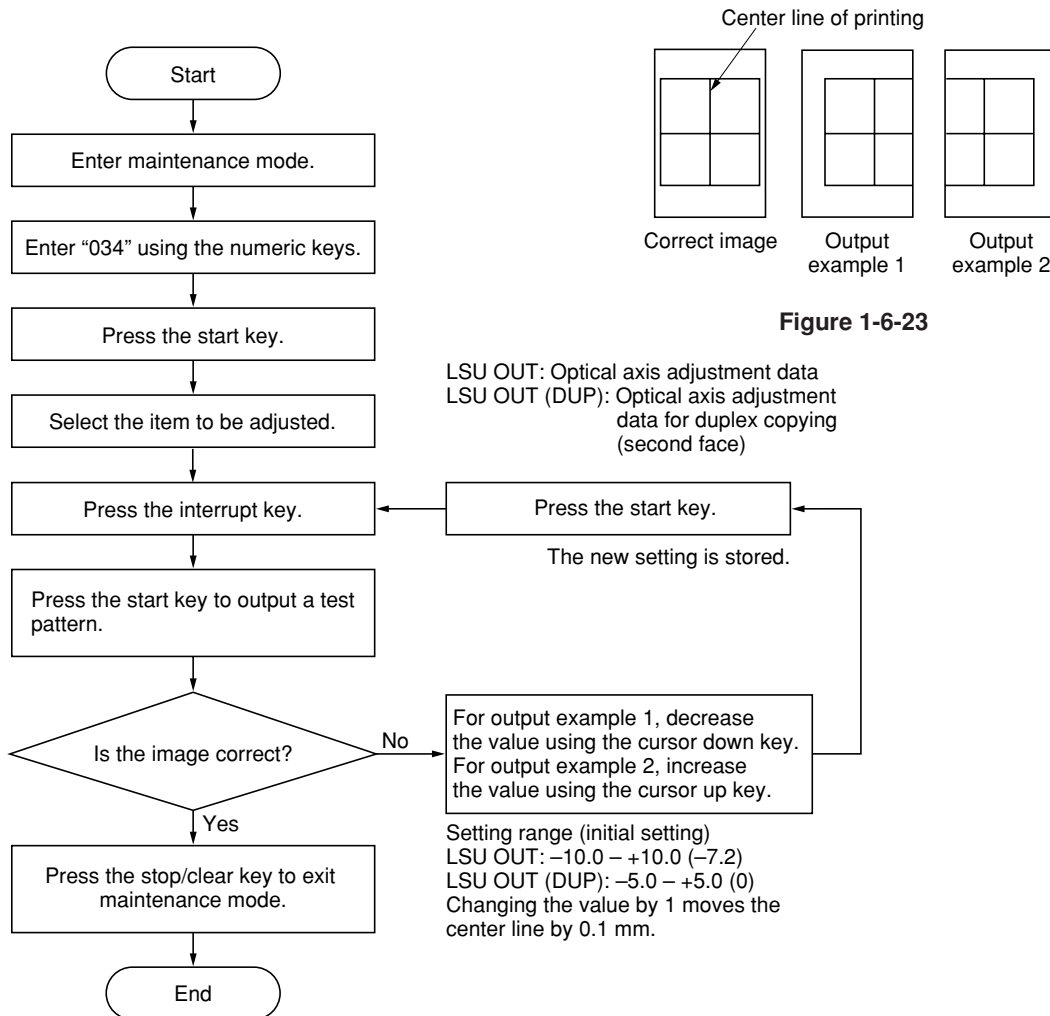
Figure 1-6-22

(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.

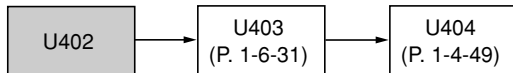
**Caution:**

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

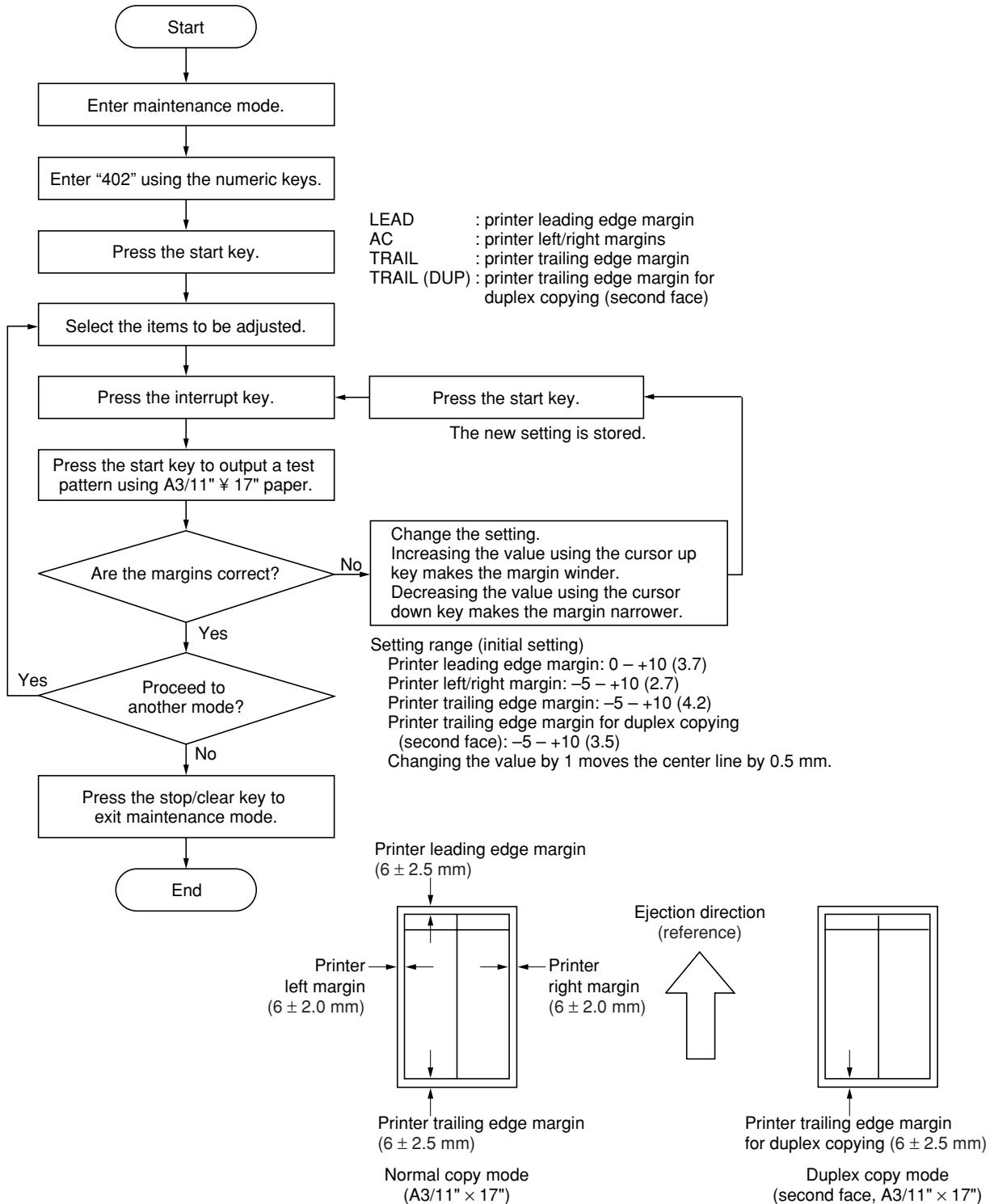
Procedure

(3-4) Adjusting the margins for printing

Make the following adjustment if the margins are not correct.

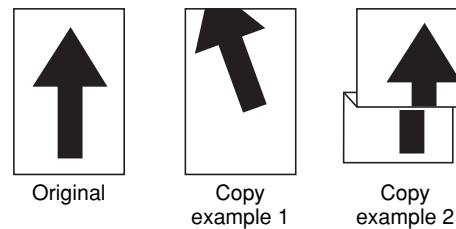
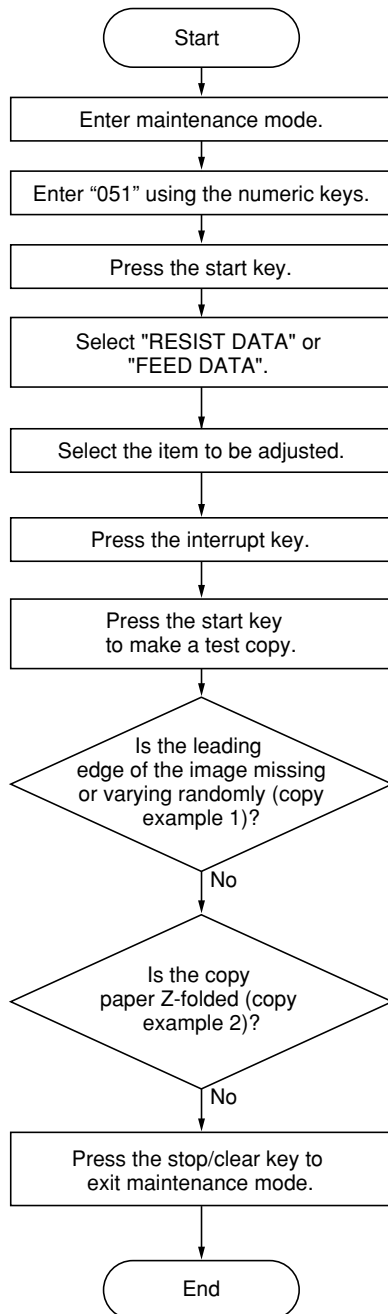
**Caution:**

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 (110)
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 DF.
2. Remove the upper right cover, upper front cover, upper rear cover and contact glass.

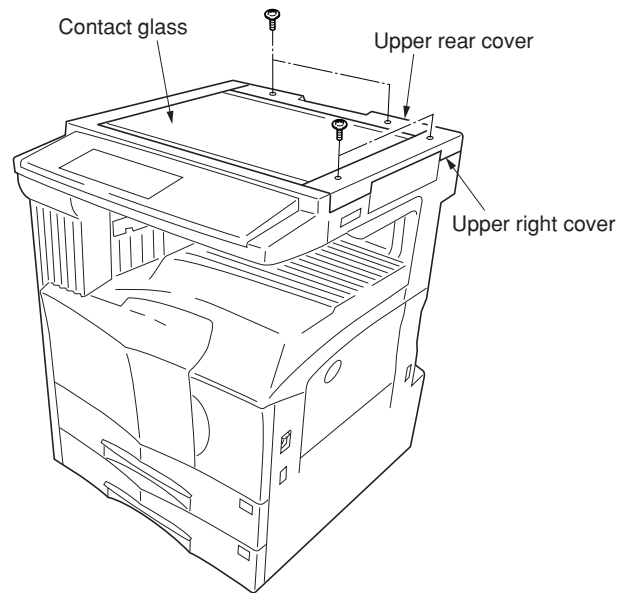


Figure 1-6-26

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.

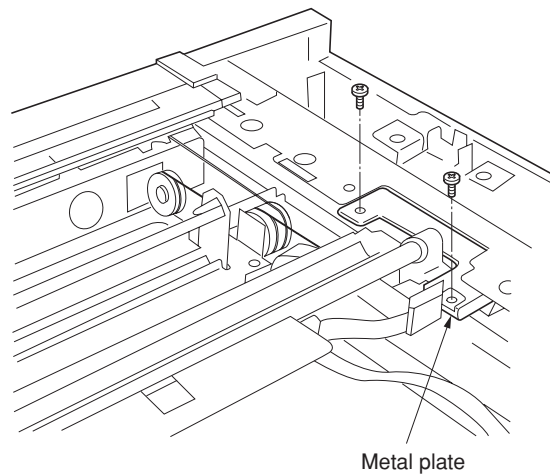


Figure 1-6-27

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.

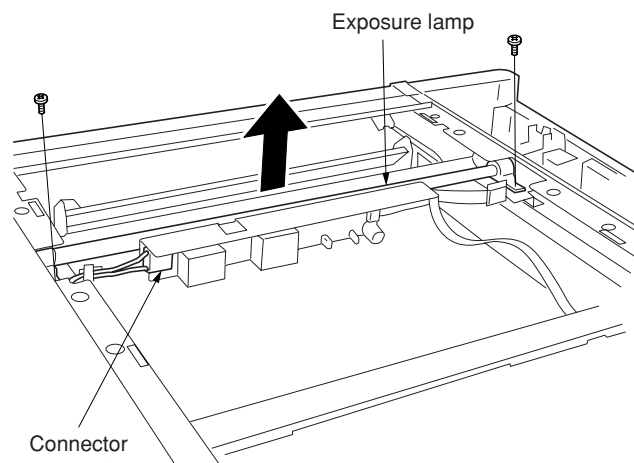


Figure 1-6-28

(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.

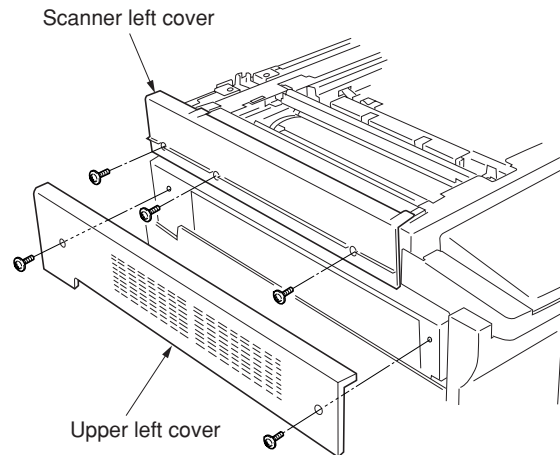


Figure 1-6-29

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

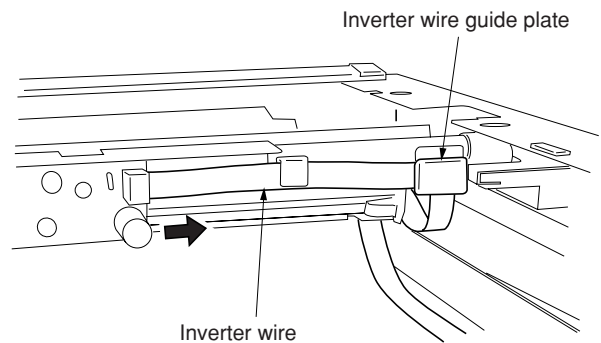


Figure 1-6-30

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

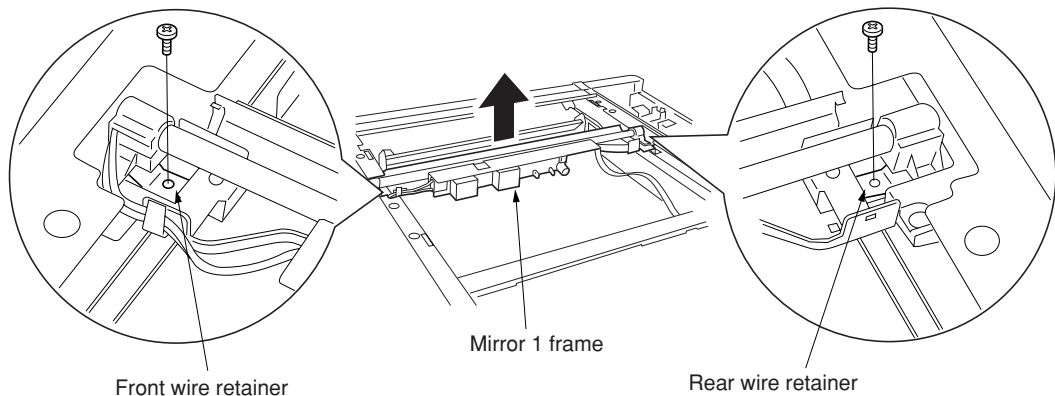


Figure 1-6-31

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.

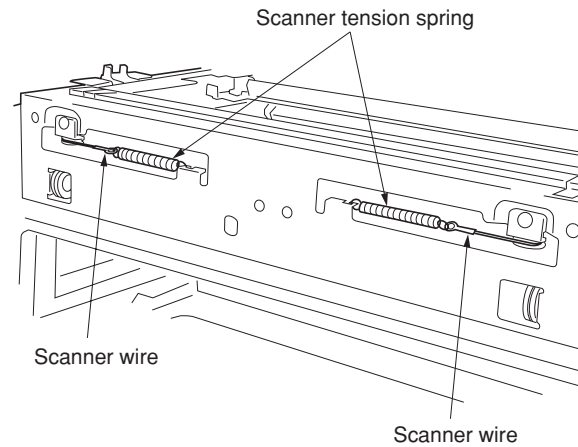


Figure 1-6-32

(2-2) Fitting 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.

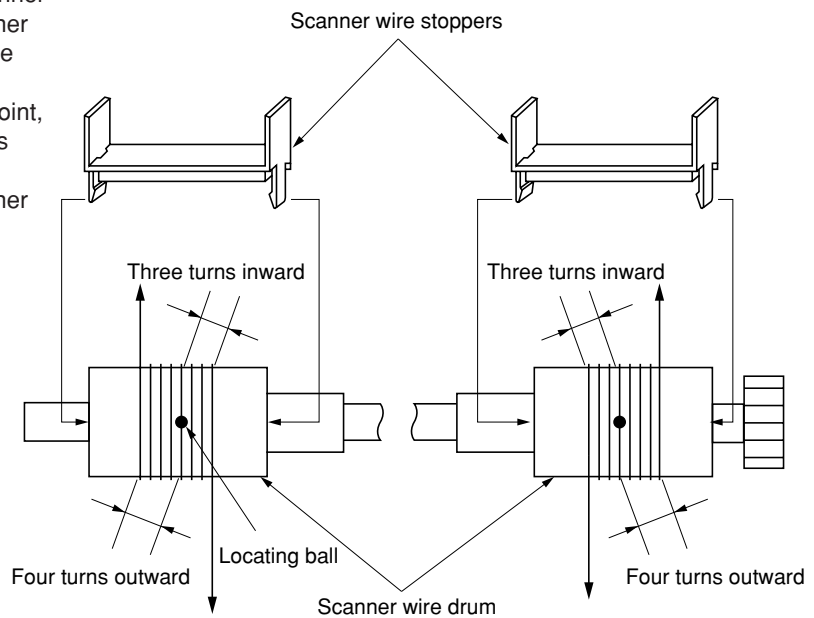


Figure 1-6-29

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.

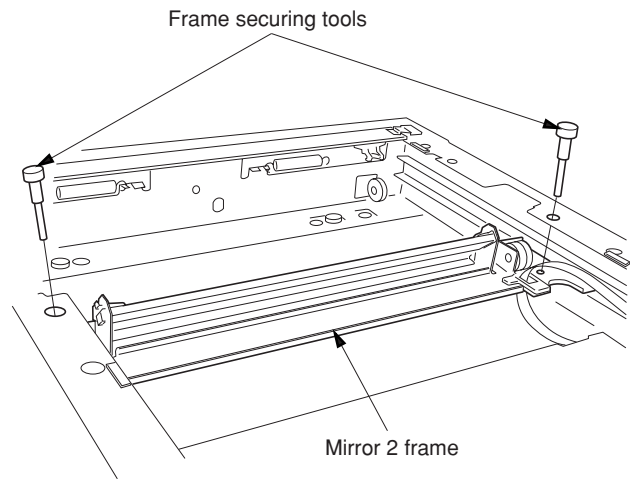


Figure 1-6-34

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

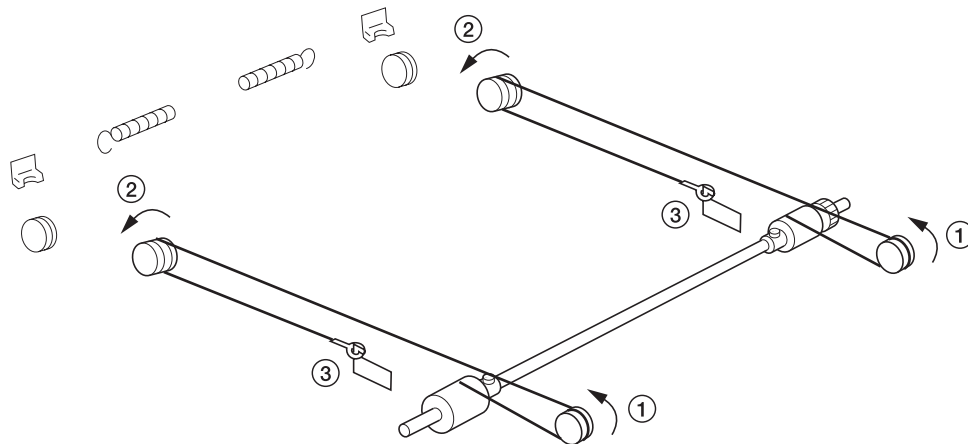


Figure 1-6-35

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

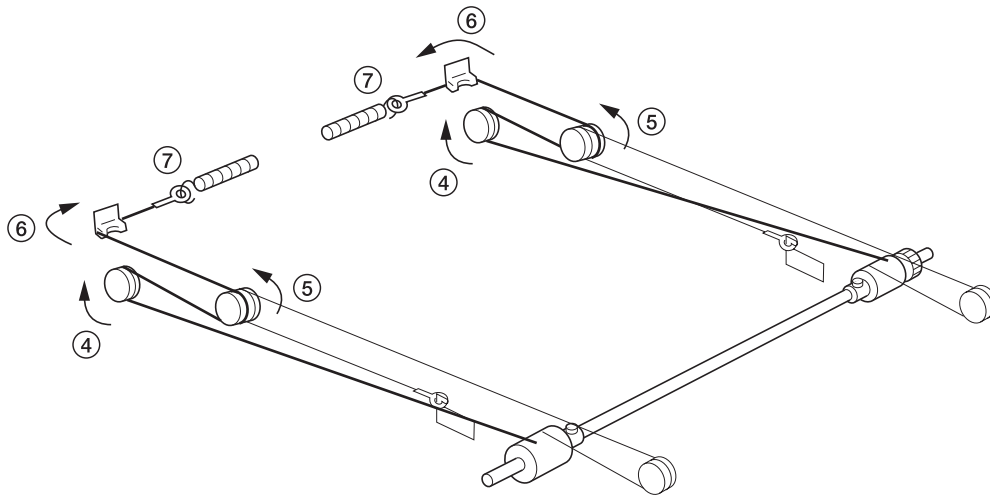


Figure 1-6-36

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.

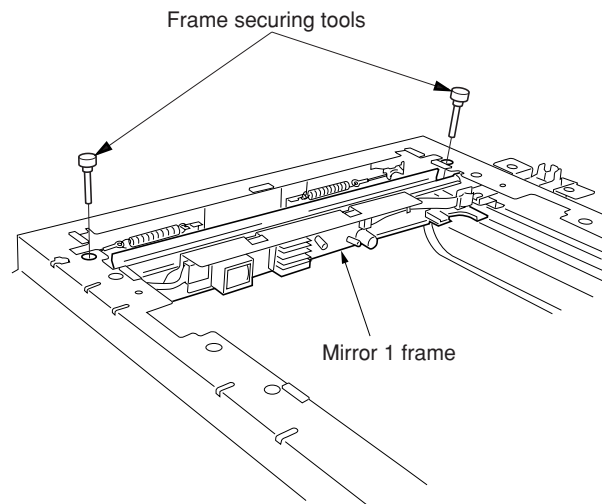


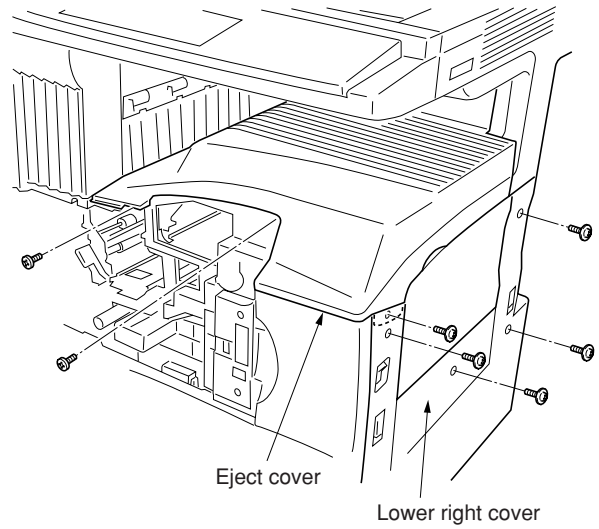
Figure 1-6-37

(3) Detaching and refitting the laser scanner unit

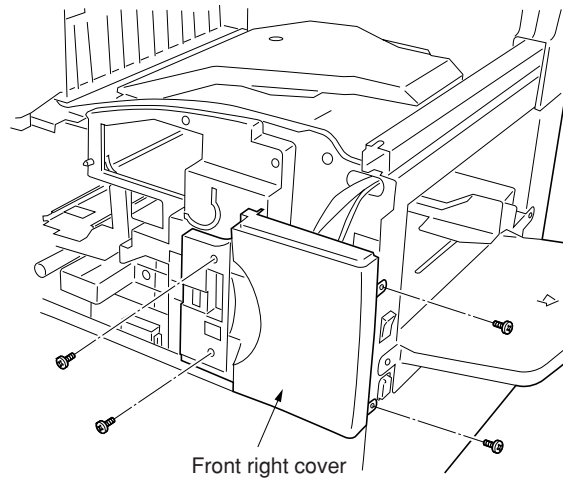
Take the following procedure when the laser scanner unit is to be checked or replaced.

Procedure

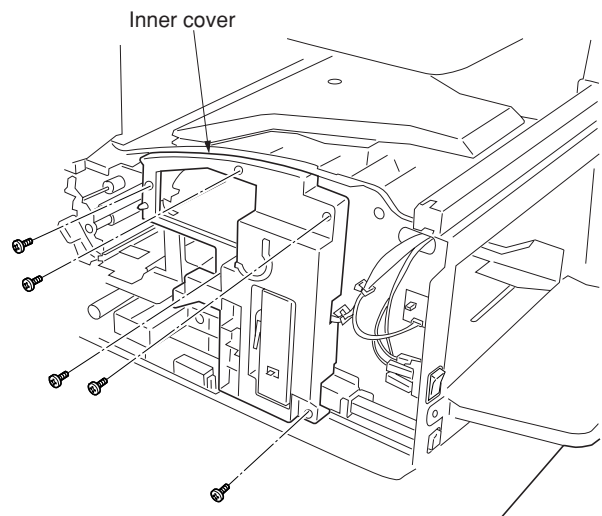
1. Remove the developing unit and drum unit (see pages 1-6-32 and 34).
2. Remove the four screws holding the lower right cover and then the cover.
Remove the three screws holding the eject cover and then the cover.

**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.

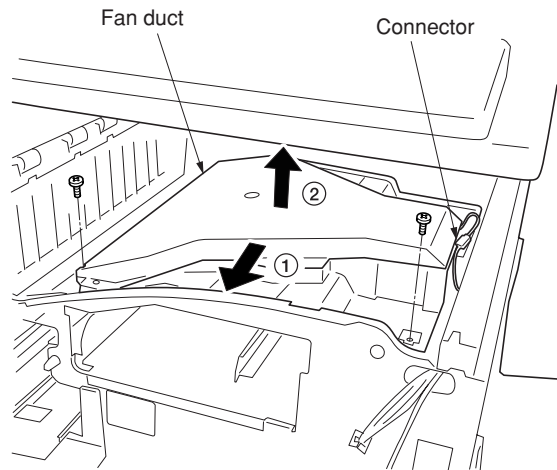


Figure 1-6-41

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

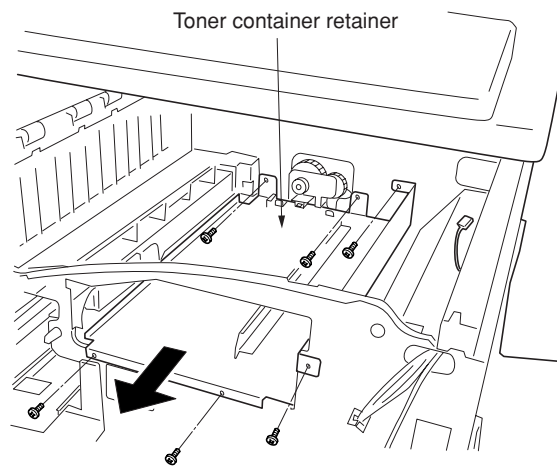


Figure 1-6-42

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.

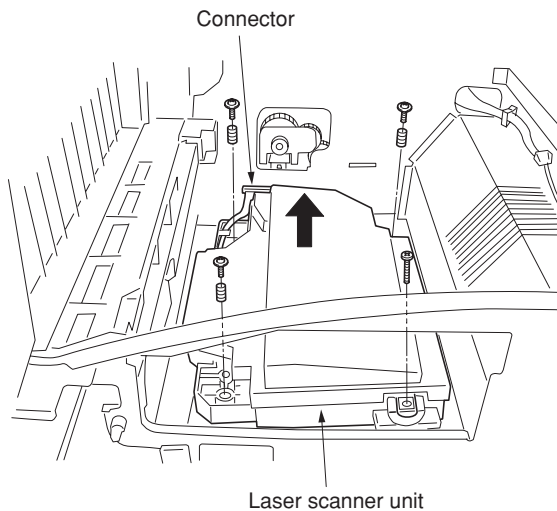


Figure 1-6-43

(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 LSU" (see page 1-6-25).

Procedure

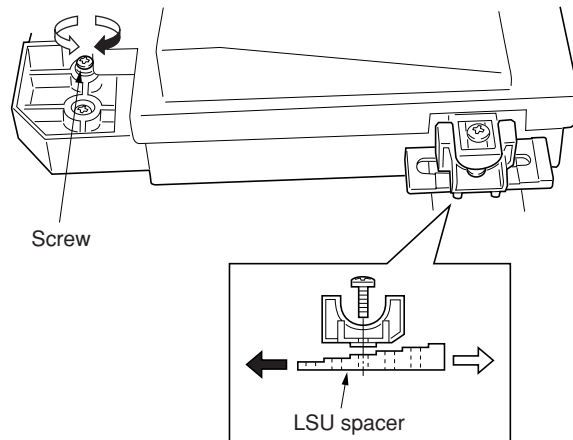
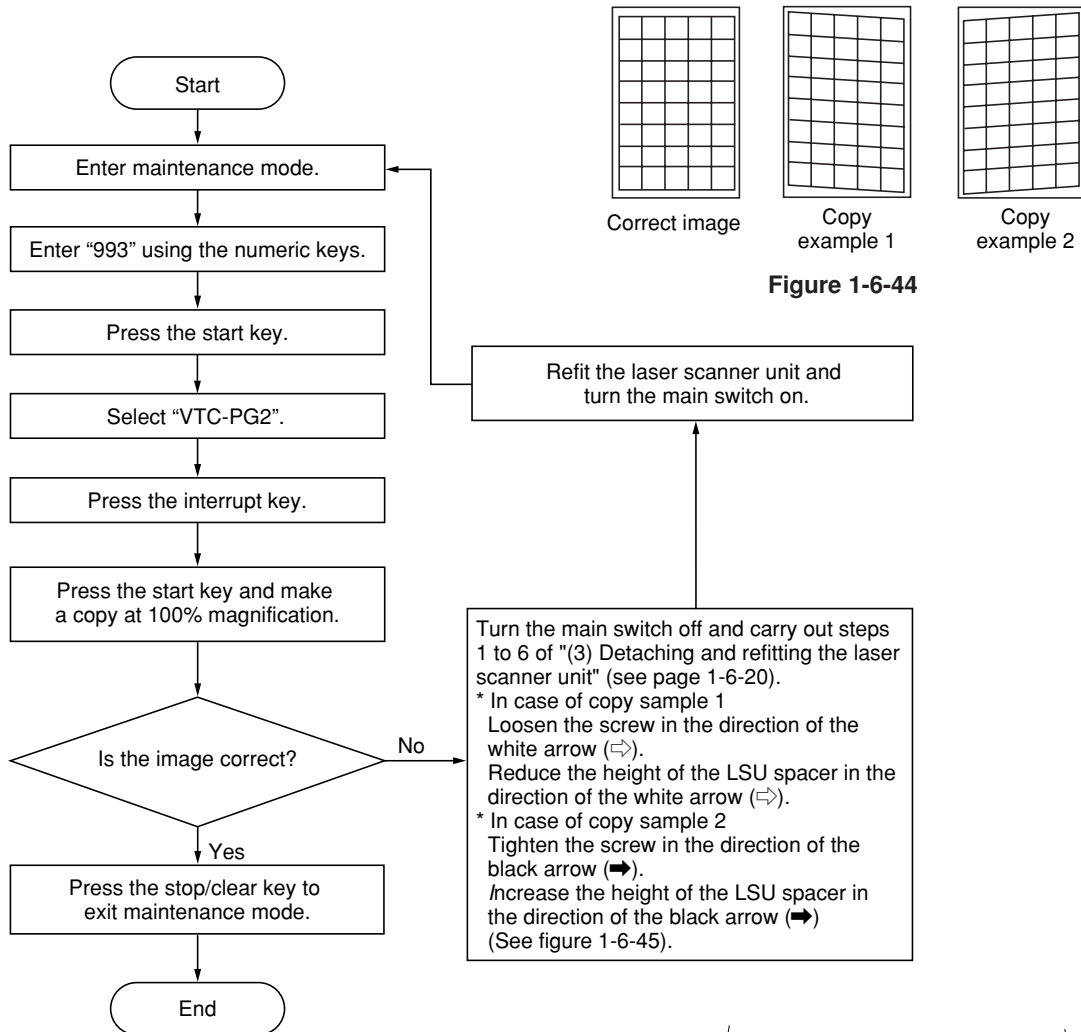


Figure 1-6-45

(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 CN34 on the main PCB.

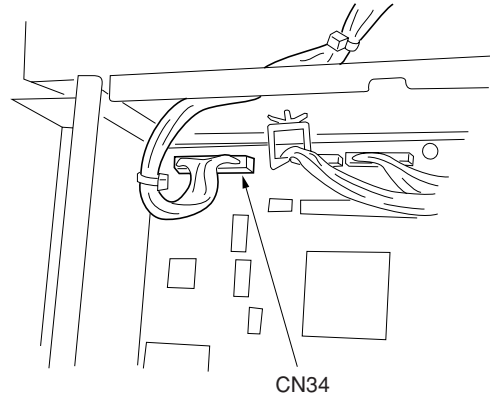


Figure 1-6-46

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

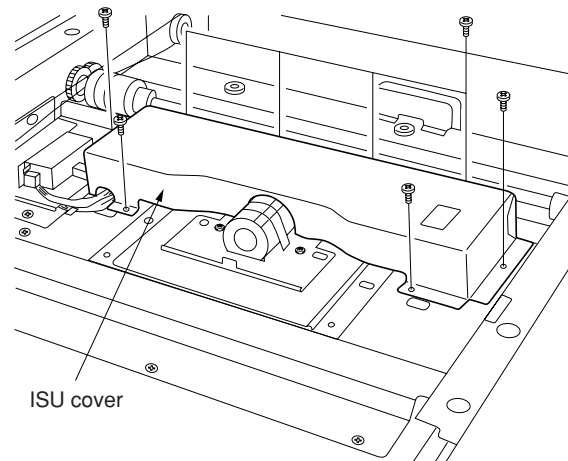


Figure 1-6-47

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.

Original size detection sensor retainer

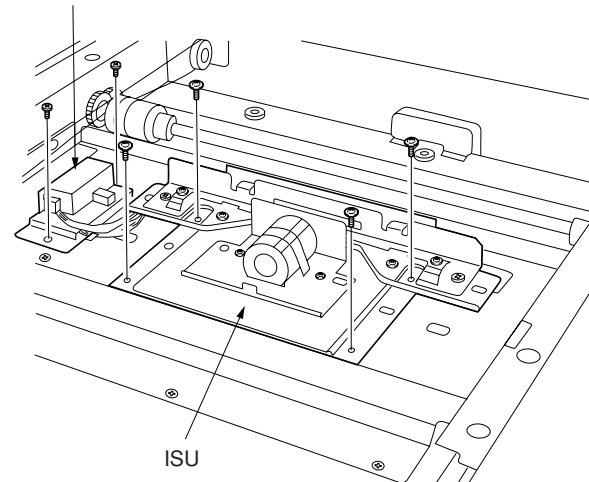


Figure 1-6-48

- 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.

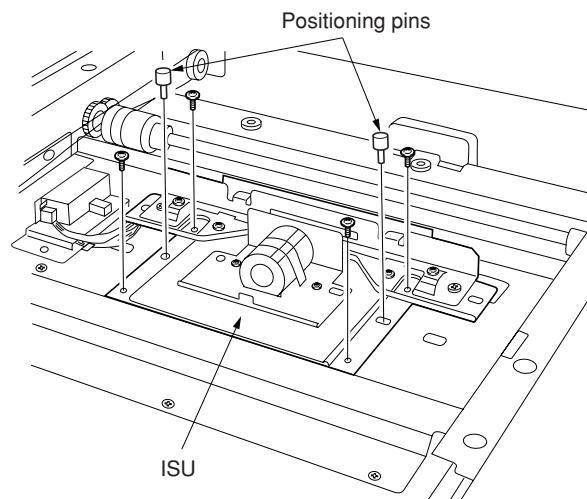


Figure 1-6-49

(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

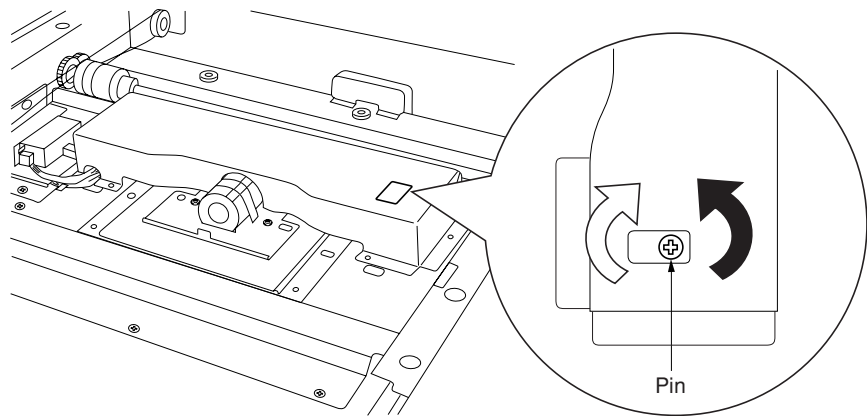
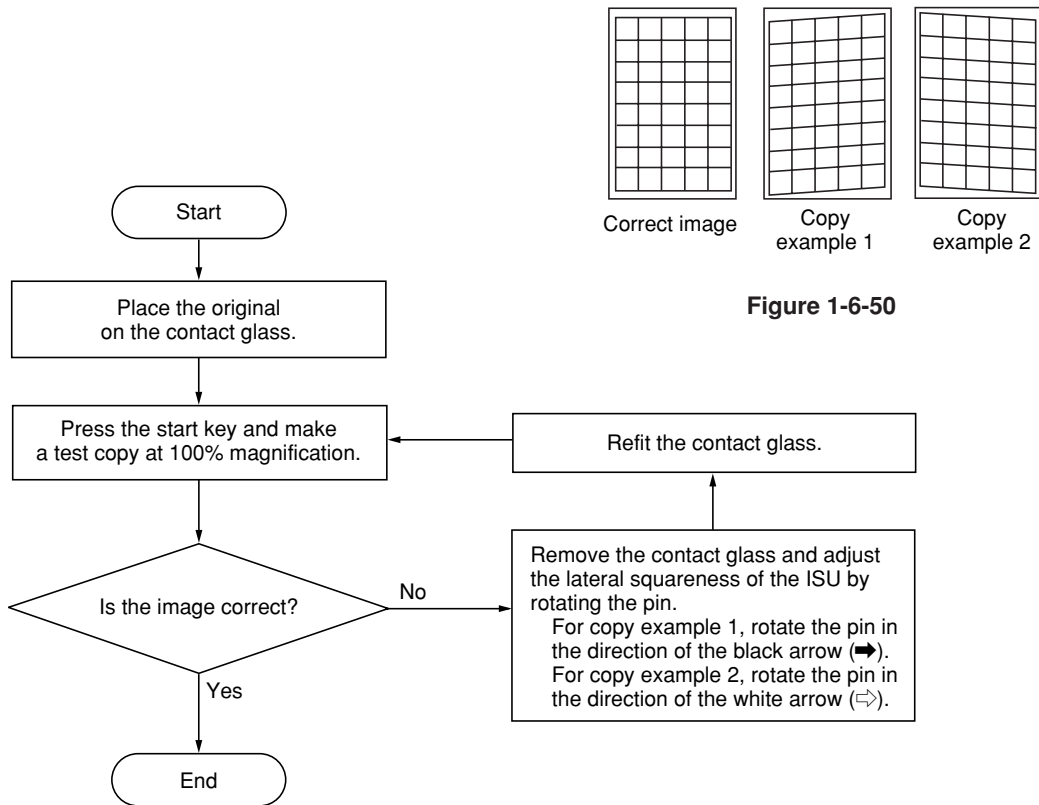


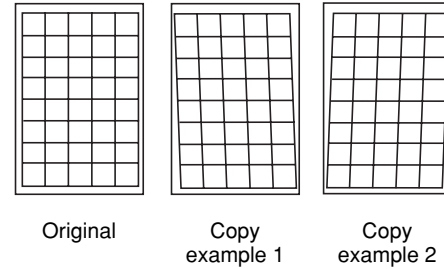
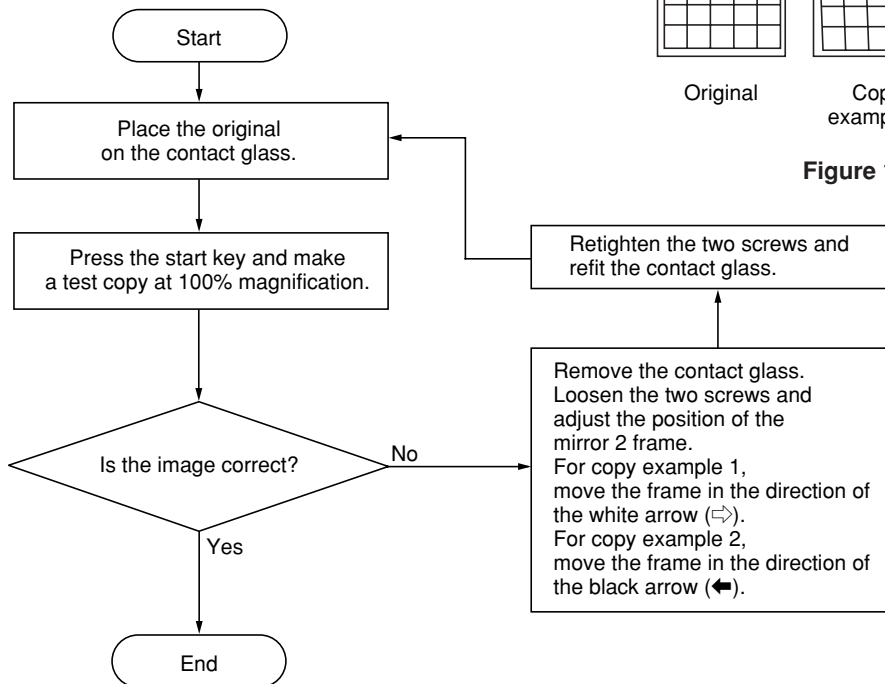
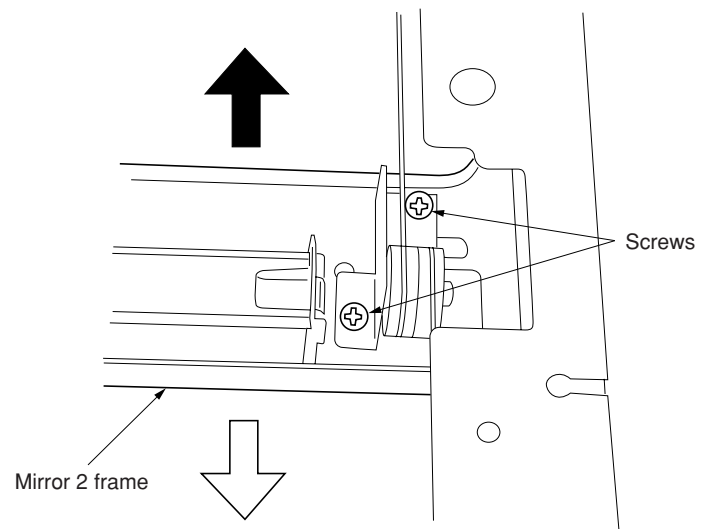
Figure 1-6-51

(7) Adjusting the longitudinal squareness (reference)

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

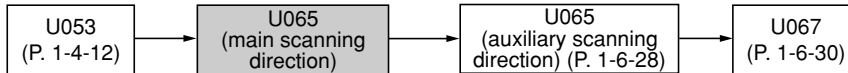
Caution:

- 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

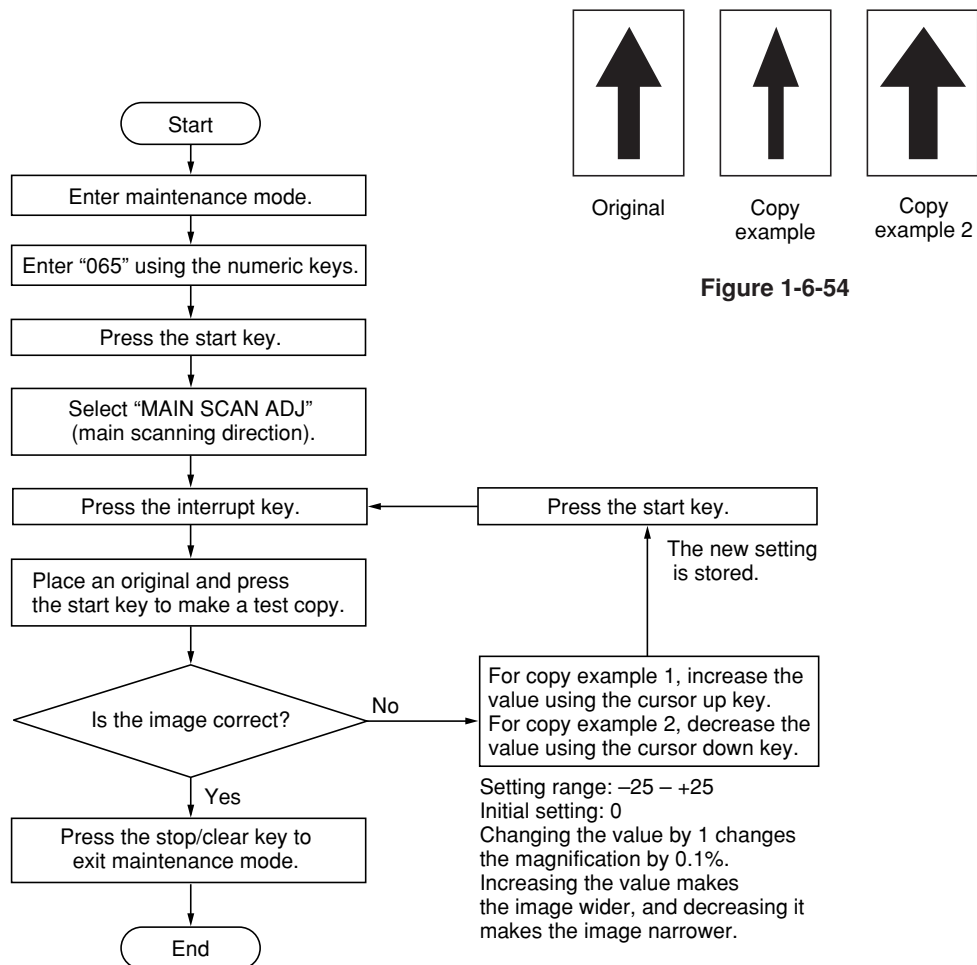
Perform the following adjustment if the magnification in the main scanning direction is not correct.



Caution:

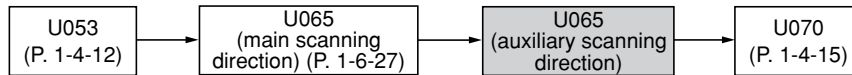
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode. Also, perform “(9) Adjusting magnification of the scanner in the auxiliary scanning direction” (page 1-6-28) and “(11) Adjusting the scanner center line” (page 1-6-30) after this adjustment.

Procedure

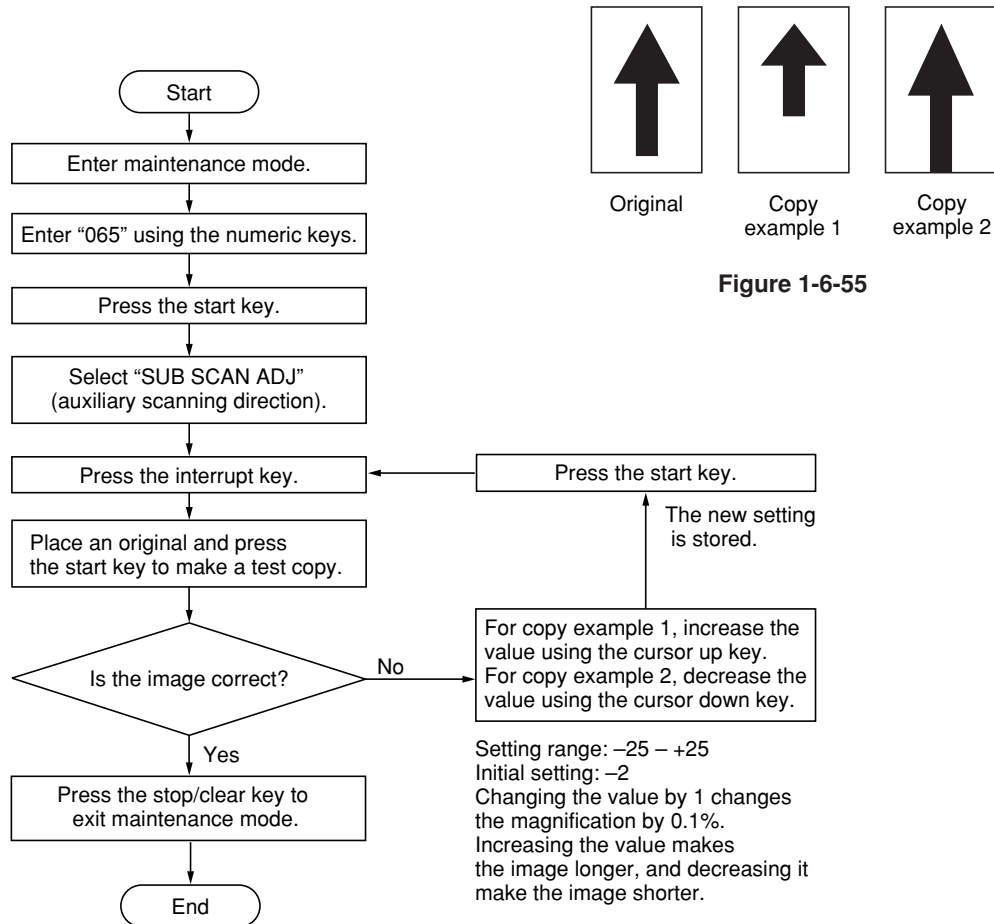


(9) Adjusting magnification of the scanner in the auxiliary scanning direction

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

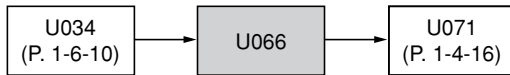
**Caution:**

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

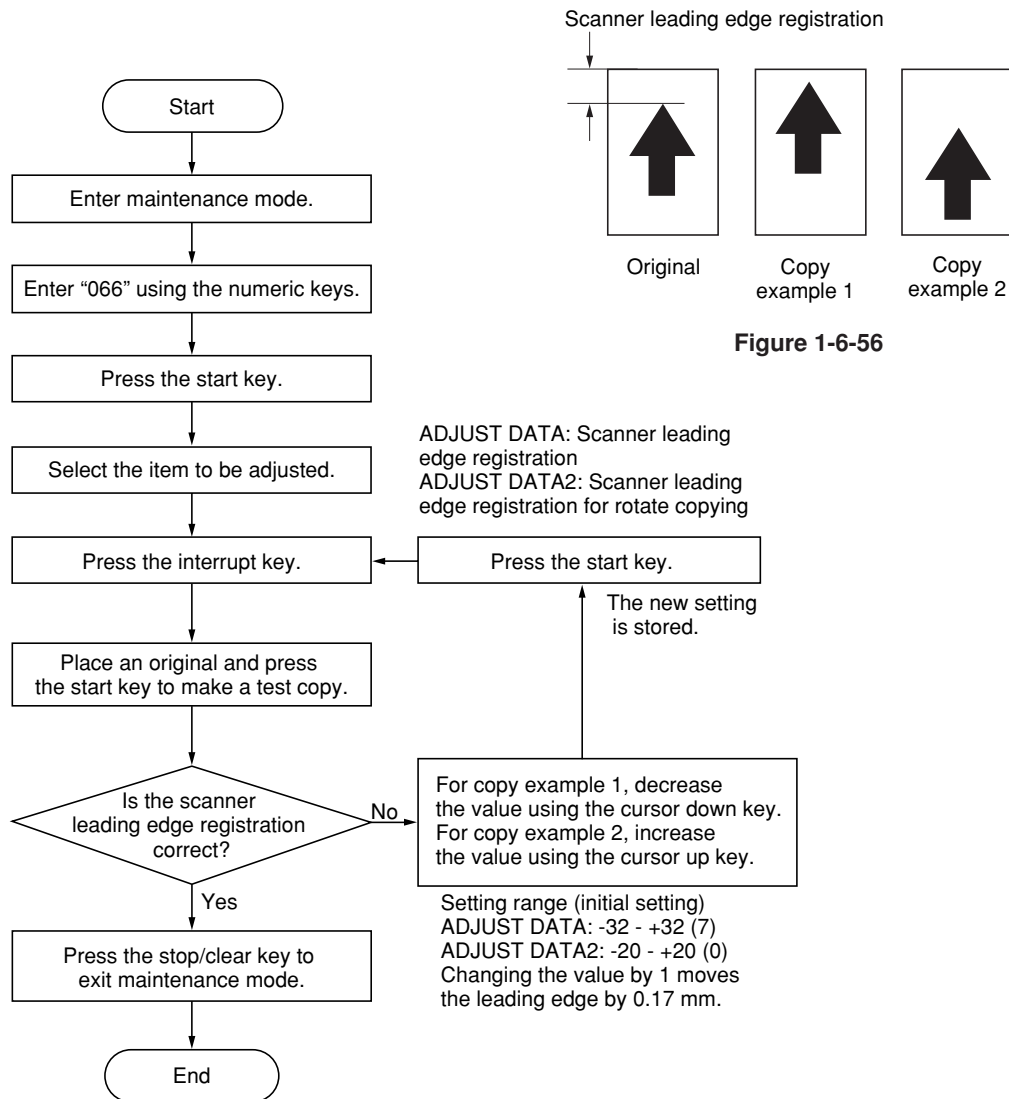
Procedure

(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.

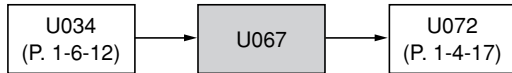
**Caution:**

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

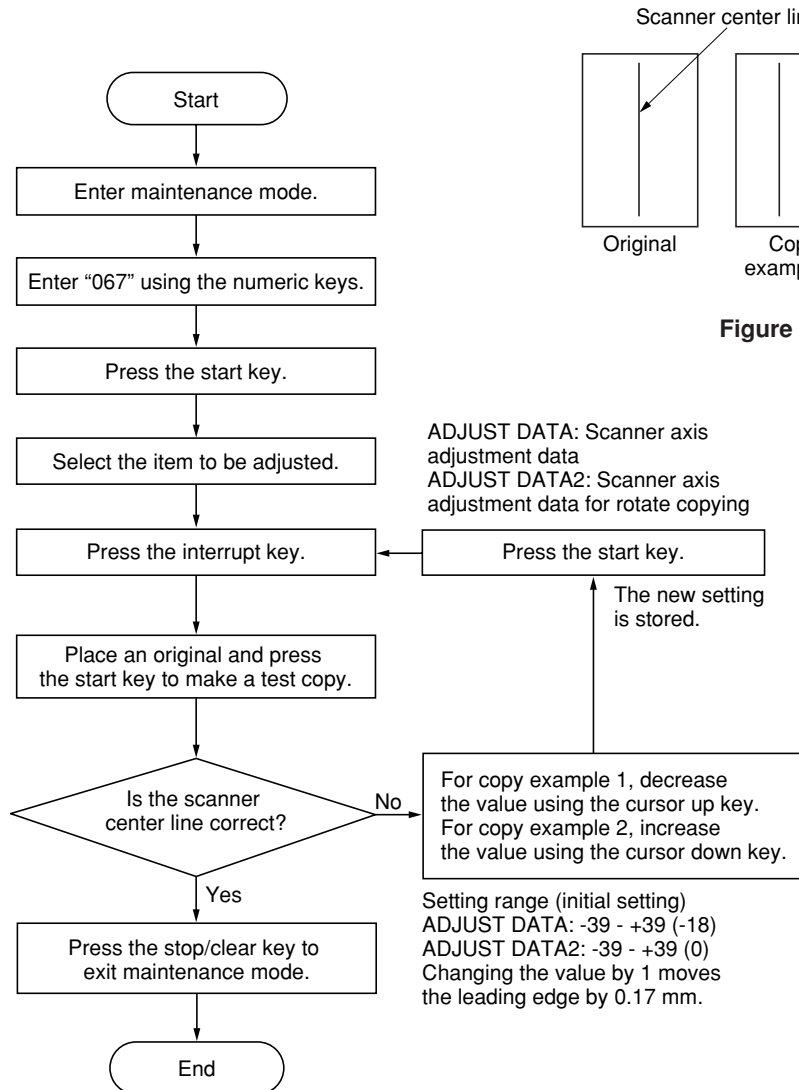
Procedure

(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.

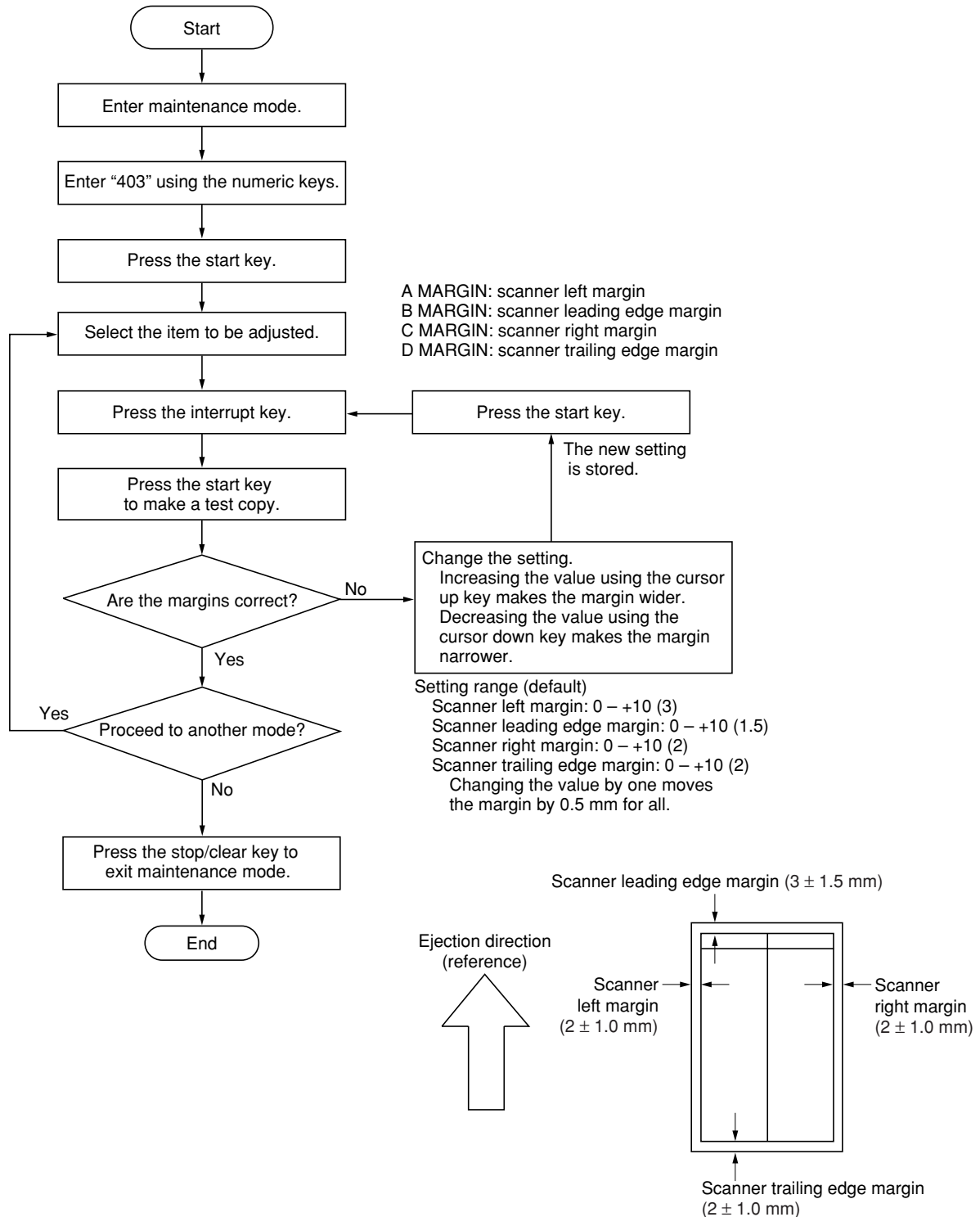
Procedure

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

Perform the following adjustment if the margins are not correct.

**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.

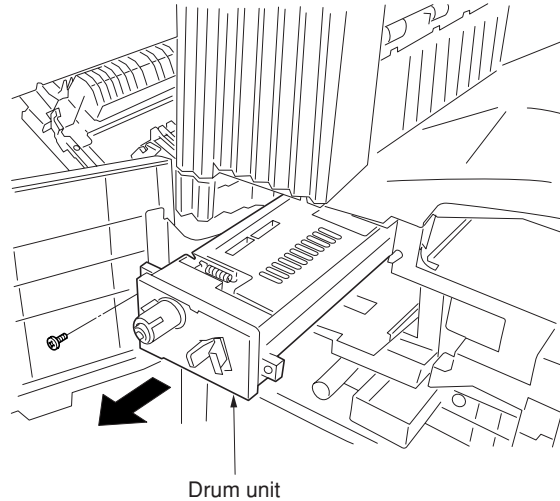


Figure 1-6-59

(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.

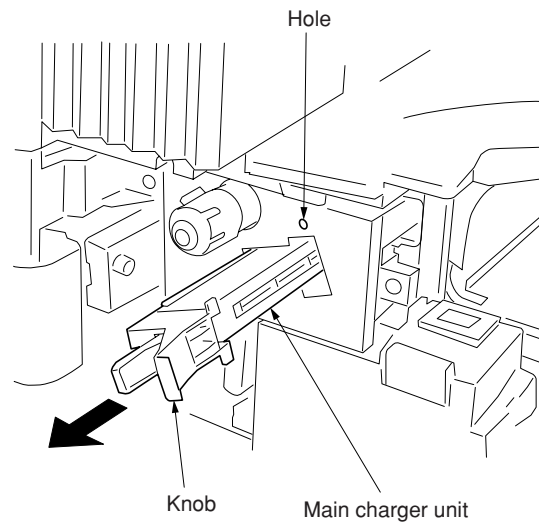


Figure 1-6-60

(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.

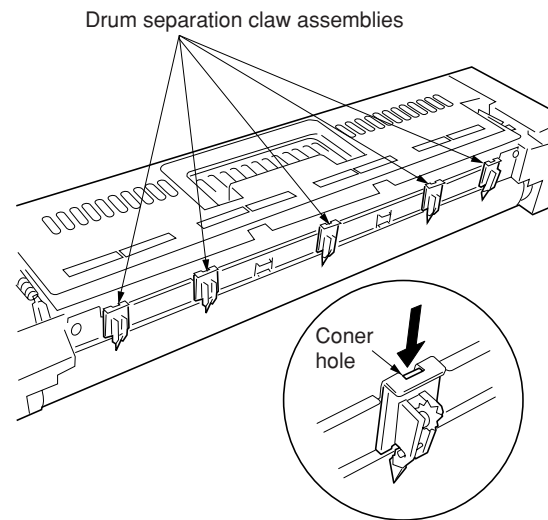


Figure 1-6-61

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.

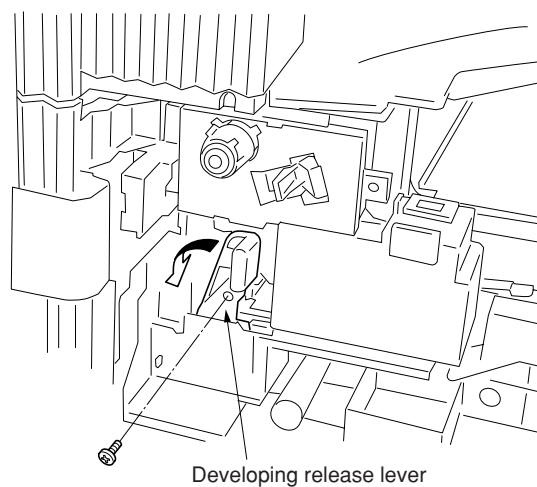


Figure 1-6-62

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

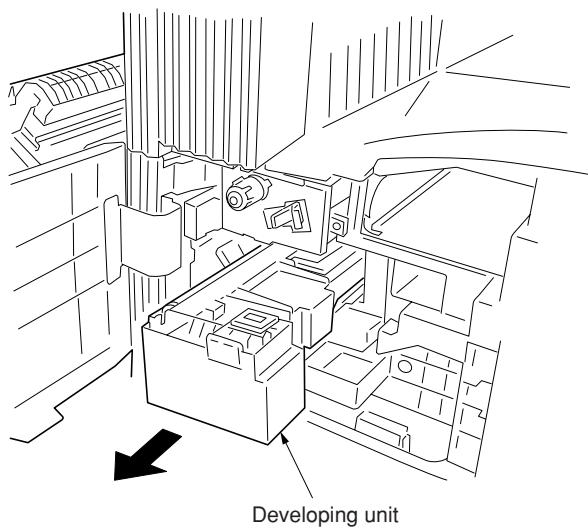


Figure 1-6-63

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.

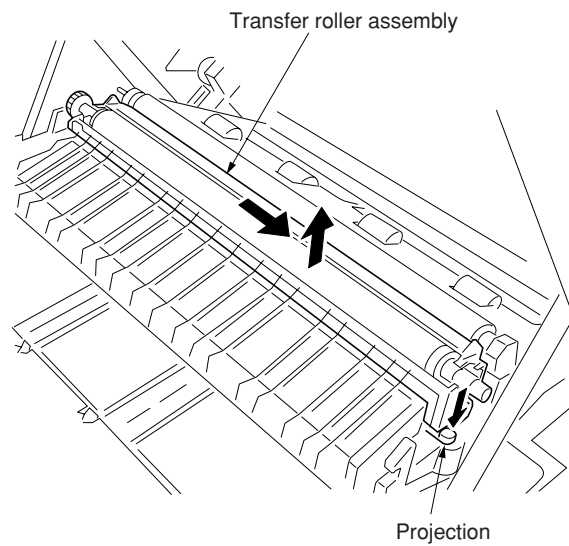


Figure 1-6-64

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.

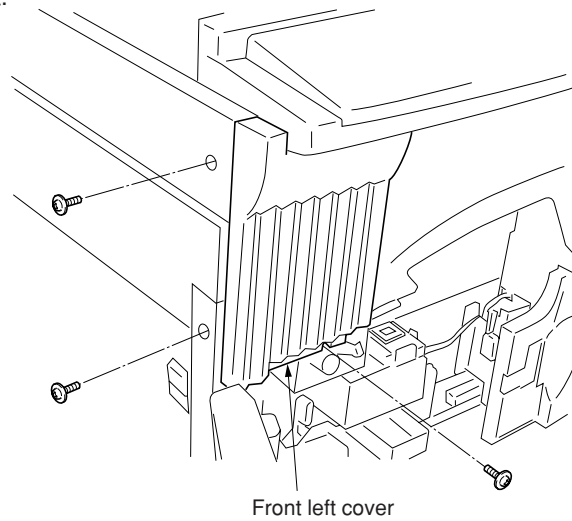


Figure 1-6-65

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.

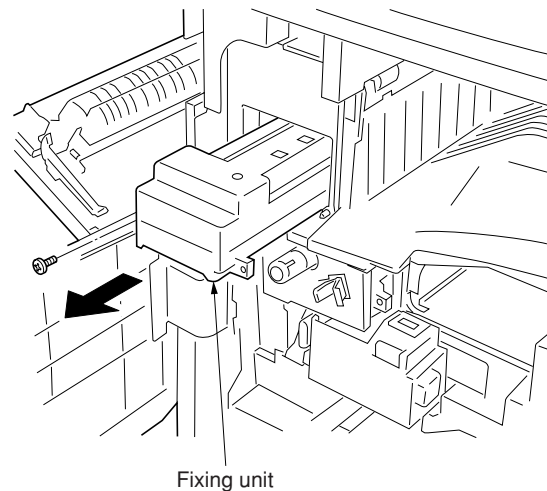


Figure 1-6-66

(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.

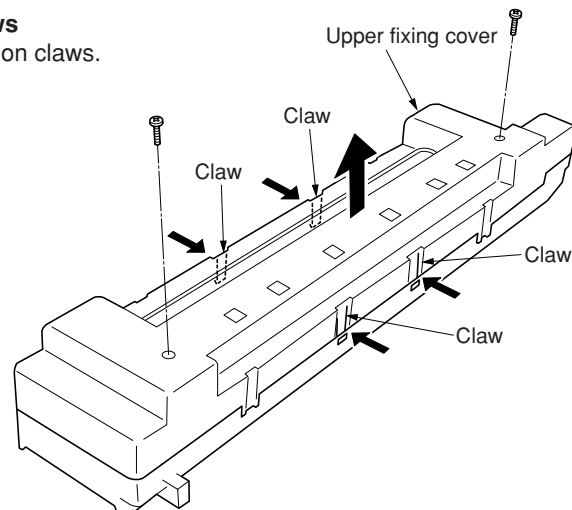


Figure 1-6-67

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.

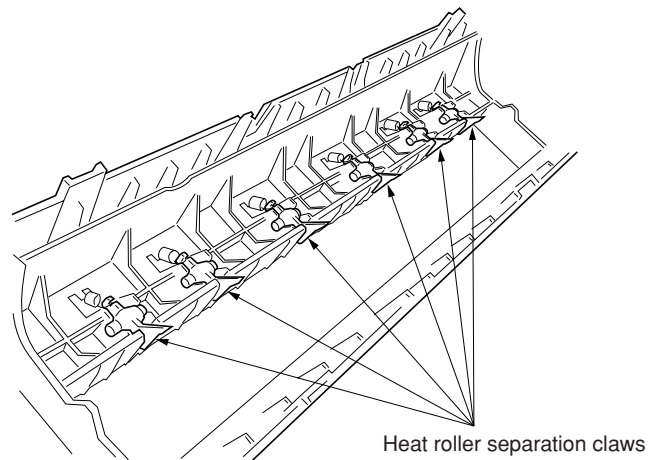


Figure 1-6-68

(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.

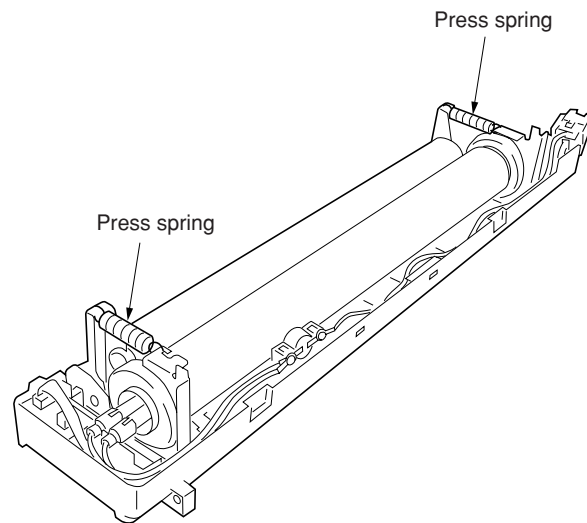


Figure 1-6-69

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.

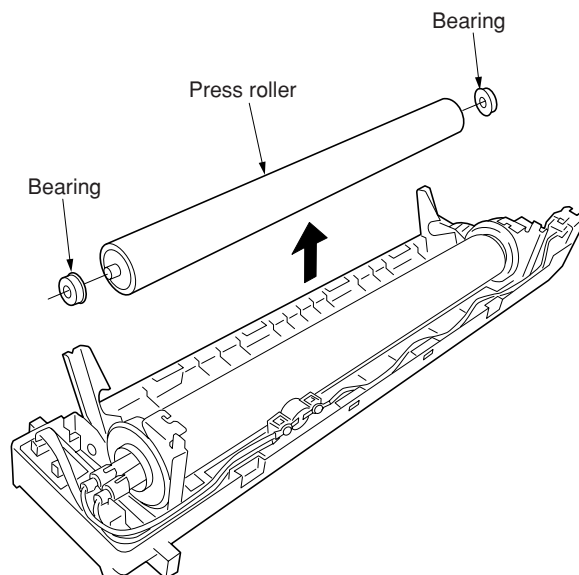


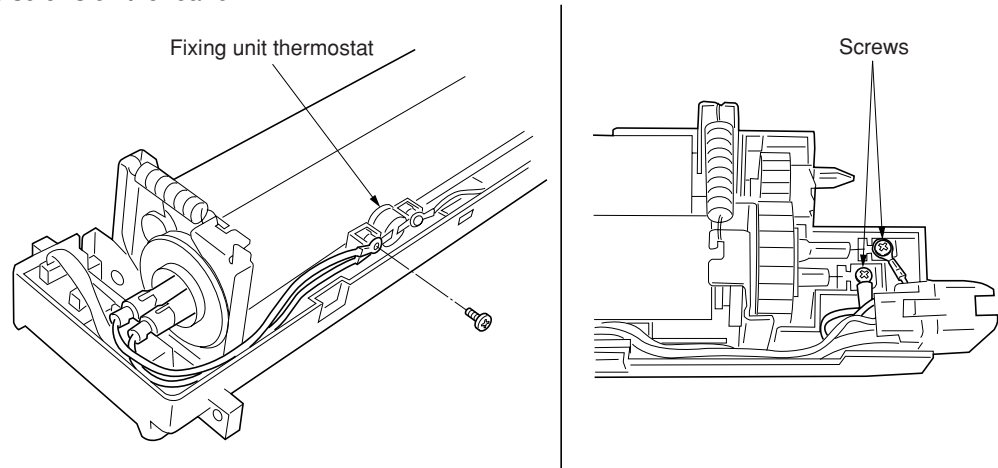
Figure 1-6-70

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

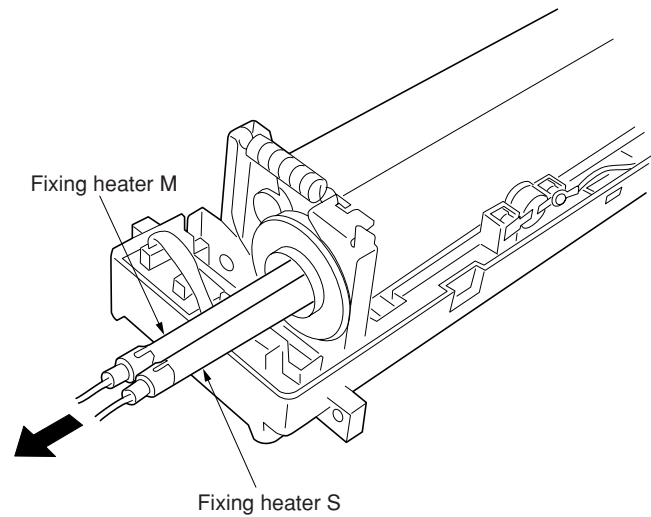
Follow the procedure below to replace the fixing heater M and S.

Procedure

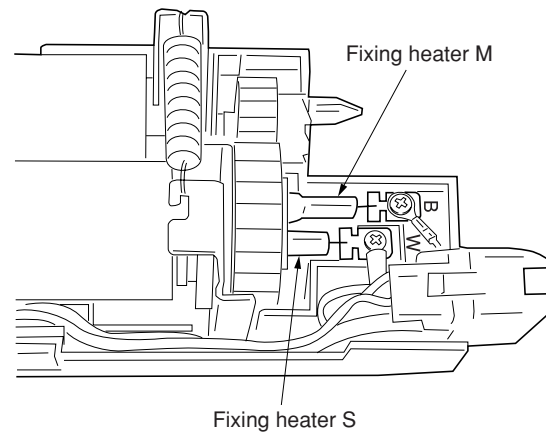
1. Remove the fixing unit (see page 1-6-36).
2. Remove the upper fixing cover (see page 1-6-36).
3. Remove the screw on the front of the fixing unit thermostat and two screws on the rear of the fixing unit.

**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.

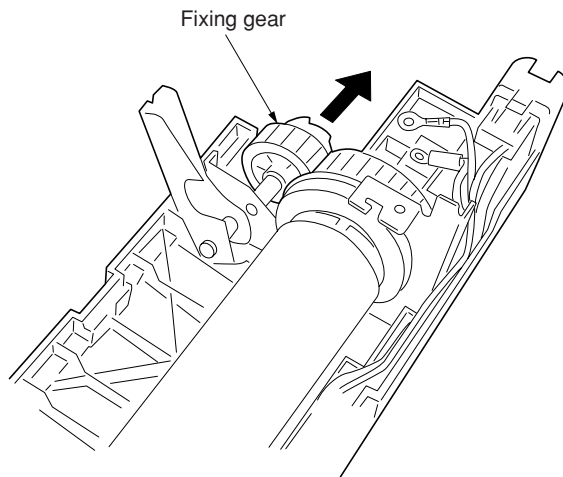
**Figure 1-6-73**

(5) Detaching and refitting the heat roller

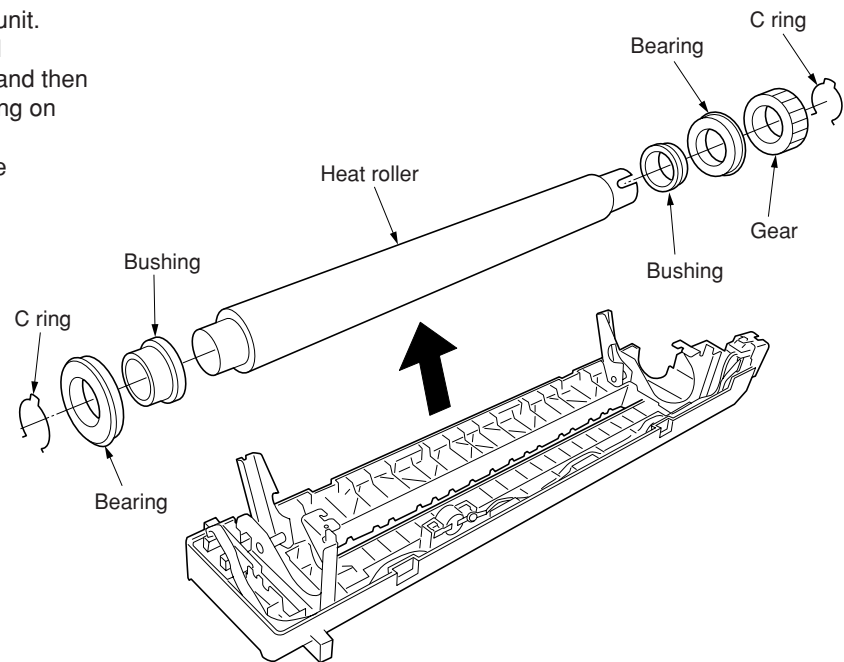
Follow the procedure below to replace the heat roller.

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

Follow the procedure below to replace the fixing unit thermistor.

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.

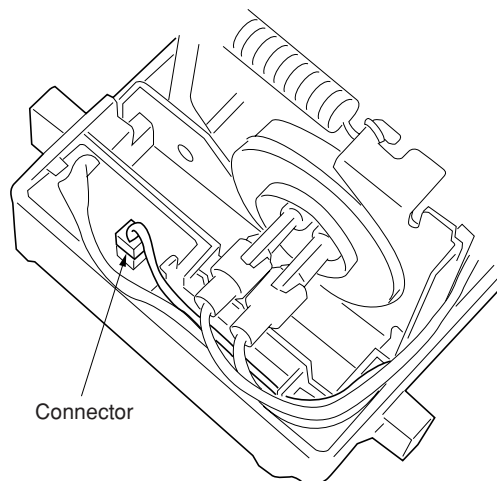


Figure 1-6-76

4. Remove the heat roller (see page 1-6-39).
5. Turn the fixing unit over and remove the screw to remove the fixing unit thermistor.

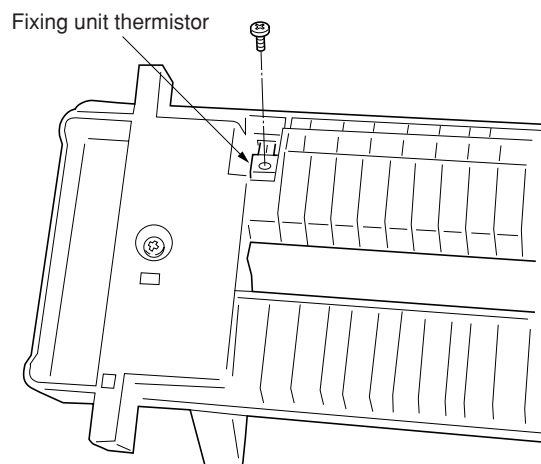


Figure 1-6-77

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.

(For formatting, insert a Compact Flash and select a drive.)

For a desktop computer, connect a Compact Flash card reader/writer to it. For a notebook computer, use a PC card adapter or a connection portion only for Compact Flash.

Procedure

1. Turn the main 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 main 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 main 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 main switch on.

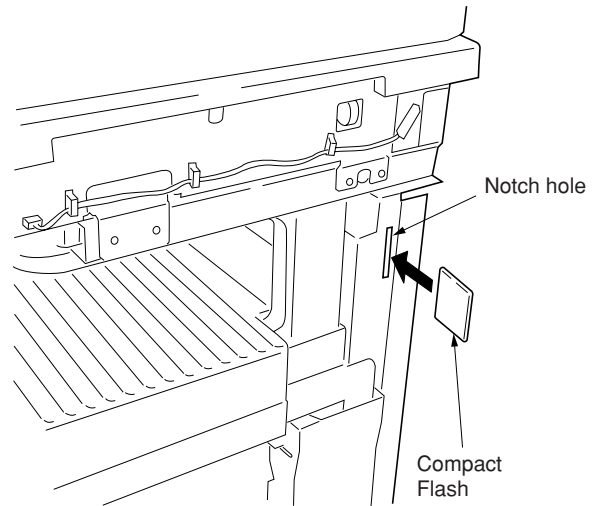


Figure 1-7-1

1-7-2 Replacing the backup ROM

Replacing the backup ROM requires the following tools:
ROM replacing tool

Procedure

1. Insert the claw of the ROM replacing tool into the groove of the backup ROM.
2. Press the ROM replacing tool from both the right and the left sides. The backup ROM is removed.
3. Replace the backup ROM.

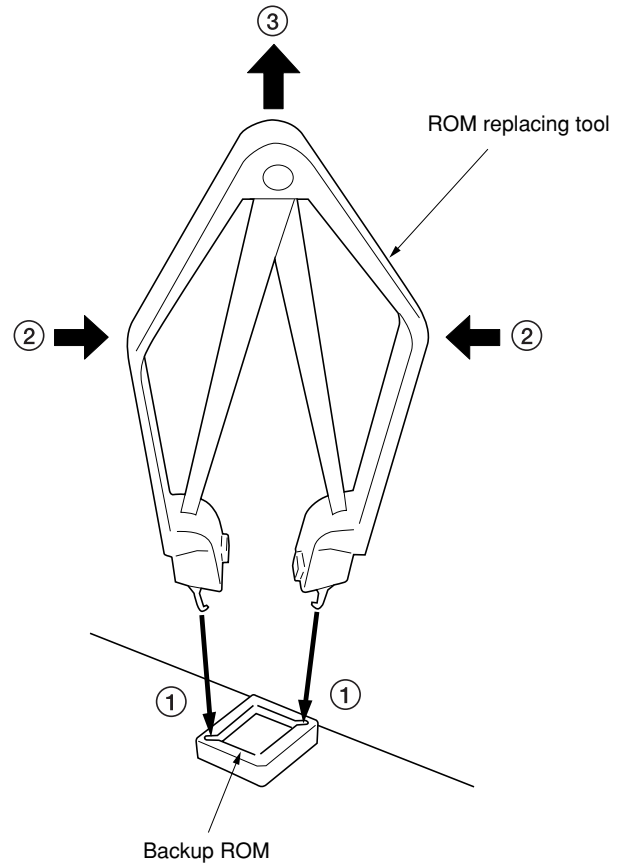


Figure 1-7-3

1-7-3 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

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.

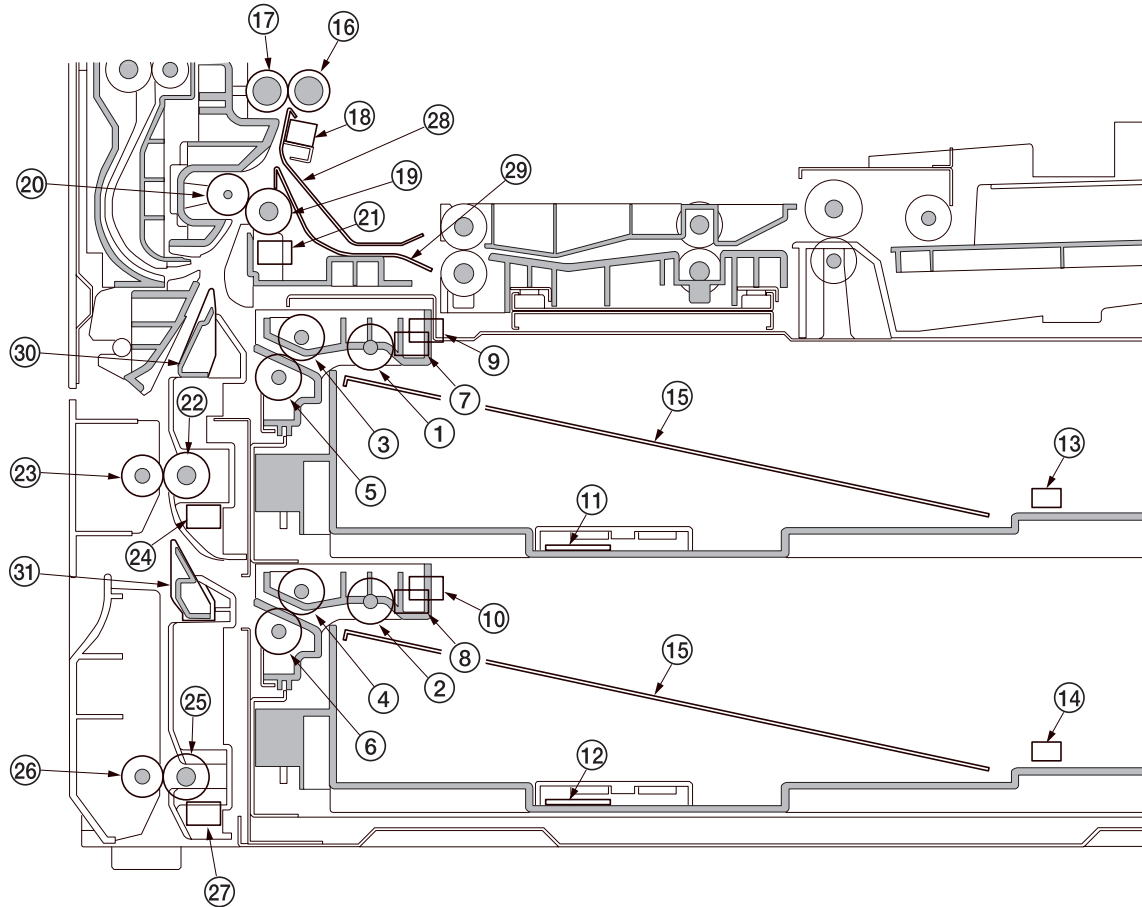


Figure 2-1-1 Paper feed from the upper and lower drawers

- | | |
|--------------------------------------|-------------------------------------|
| ① Upper forwarding pulley | ①⑦ Left registration roller |
| ② Lower forwarding pulley | ①⑧ Registration switch (RSW) |
| ③ Upper paper feed pulley | ①⑨ Feed roller 1 |
| ④ Lower paper feed pulley | ②⑩ Feed pulley |
| ⑤ Upper separation pulley | ②⑪ Feed switch 1 (FSW1) |
| ⑥ Lower separation pulley | ②⑫ Feed roller 2 |
| ⑦ Upper paper switch (PSW-U) | ②⑬ Feed pulley |
| ⑧ Lower paper switch (PSW-L) | ②⑭ Feed switch 2 (FSW2) |
| ⑨ Upper lift limit switch (LICSU-U) | ②⑮ Feed roller 3 |
| ⑩ Lower lift limit switch (LICSU-L) | ②⑯ Feed pulley |
| ⑪ Upper paper width switch (PWSU-U) | ②⑰ Feed switch 3 (FSW3) |
| ⑫ Lower paper width switch (PWSU-L) | ②⑱ Front registration guide |
| ⑬ Upper paper length switch (PLSU-U) | ②⑲ Paper conveying guide |
| ⑭ Lower paper length switch (PLSU-L) | ③⑩ Vertical paper conveying guide 1 |
| ⑮ Drawer lift | ③⑪ Vertical paper conveying guide 2 |
| ⑯ Right registration roller | |

The bypass table can 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.

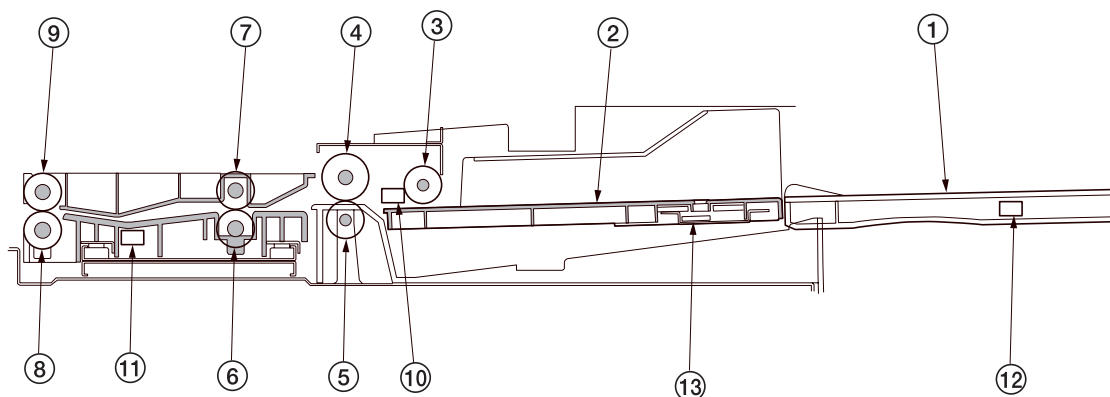


Figure 2-1-2 Paper feed from the bypass table

- 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)

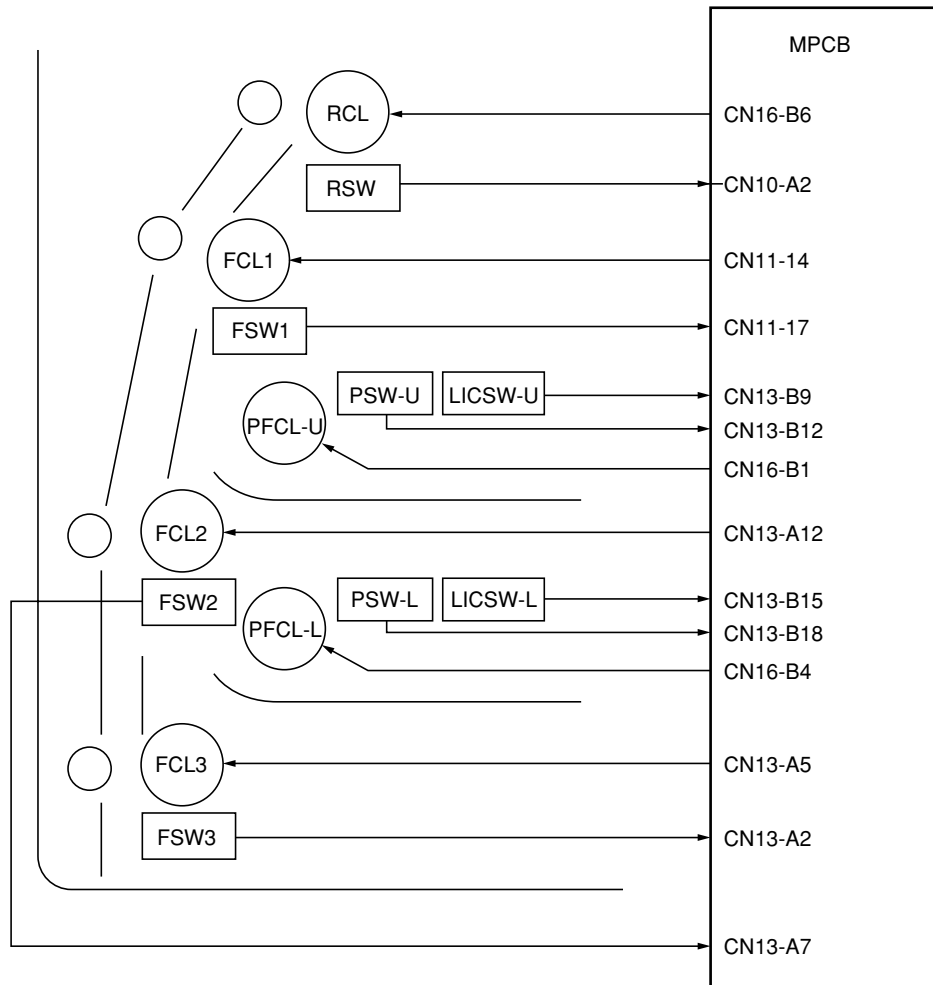


Figure 2-1-3 Paper feed section block diagram (upper and lower drawers)

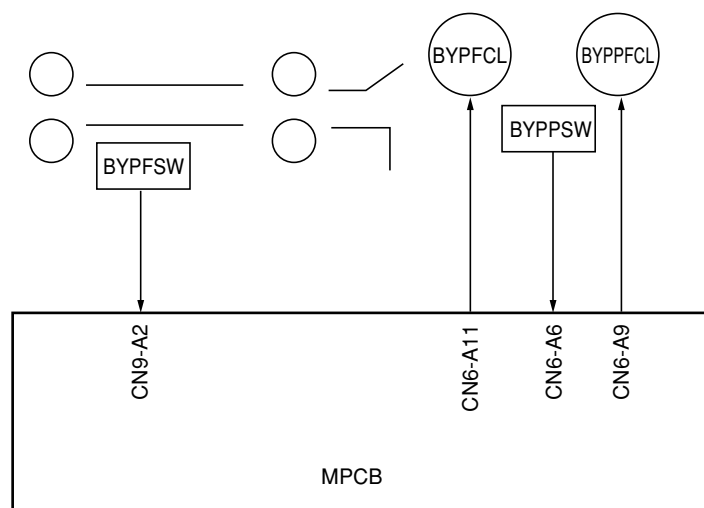
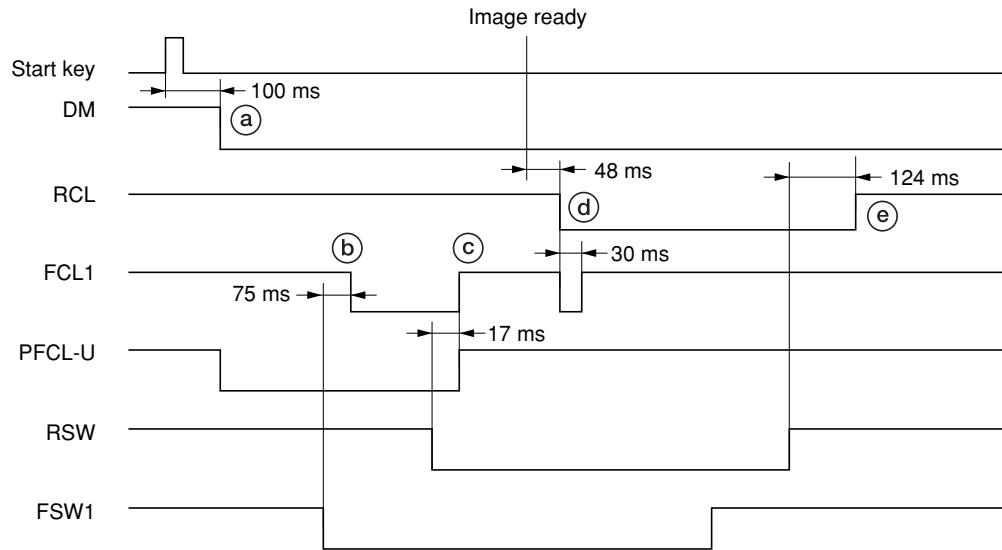
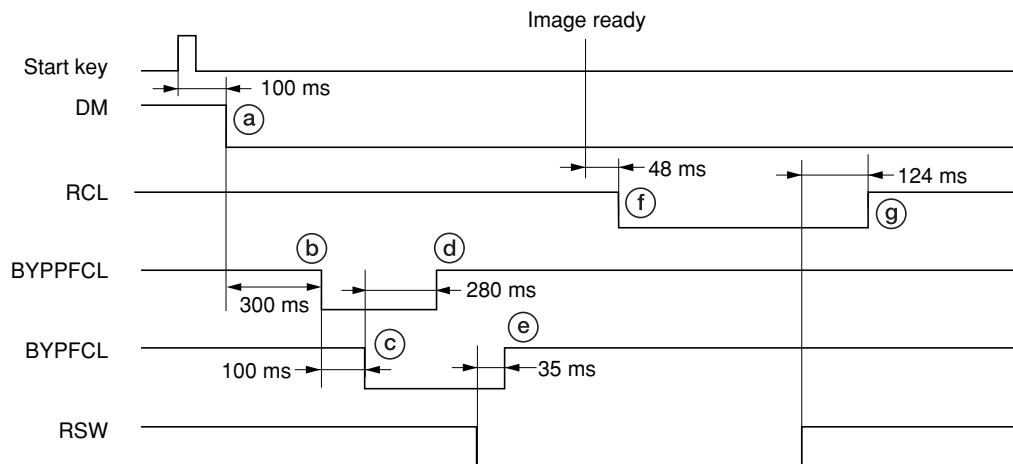


Figure 2-1-4 Paper feed section block diagram (bypass table)



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.
- Ⓒ: 17 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. At the same time, feed clutch 1 (FCL1) turns on for 30 ms.
- Ⓔ: 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.
- Ⓑ: 300 ms after the drive motor (DM) turns on, the bypass paper feed clutch (BYPPFCL) turns on.
- Ⓒ: 100 ms after the bypass paper feed clutch (BYPPFCL) turns on, the bypass feed clutch (BYPFCL) turns on.
- Ⓓ: 280 ms after the bypass feed clutch (BYPFCL) turns on, the bypass paper feed clutch (BYPPFCL) turns off.
- Ⓔ: 35 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 ($500\text{ }\mu\text{A}$) 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.

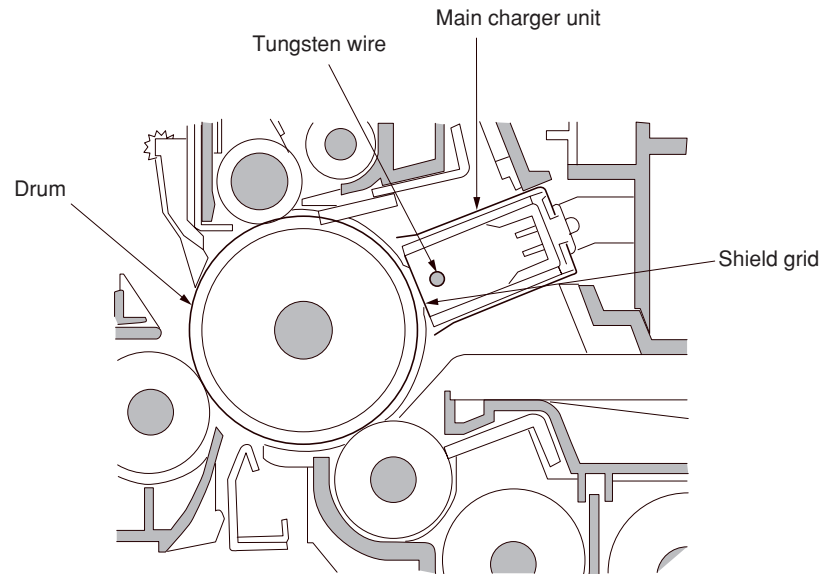


Figure 2-1-5 Main charging section

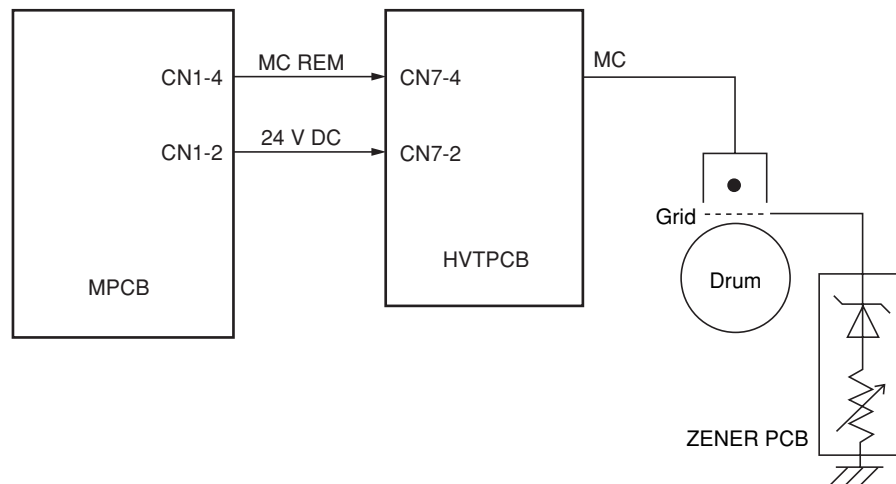
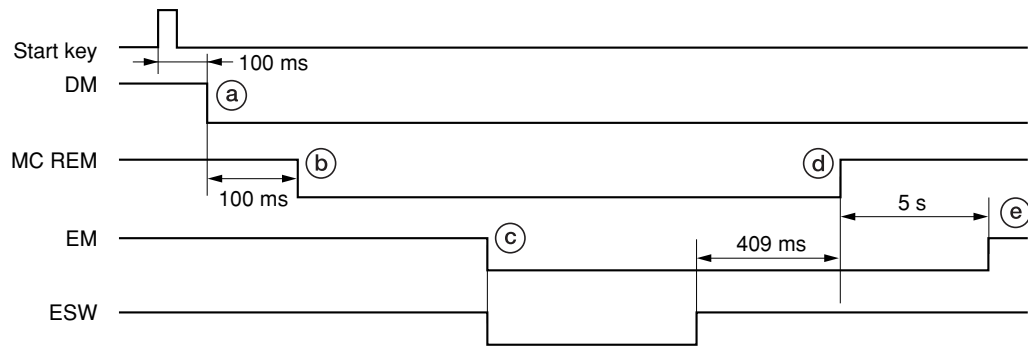


Figure 2-1-6 Main charging section block diagram



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.
- Ⓓ: 409 ms after the paper is ejected and the eject switch (ESW) turns off, main charging (MC REM) ends.
- Ⓔ: 5 s 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.

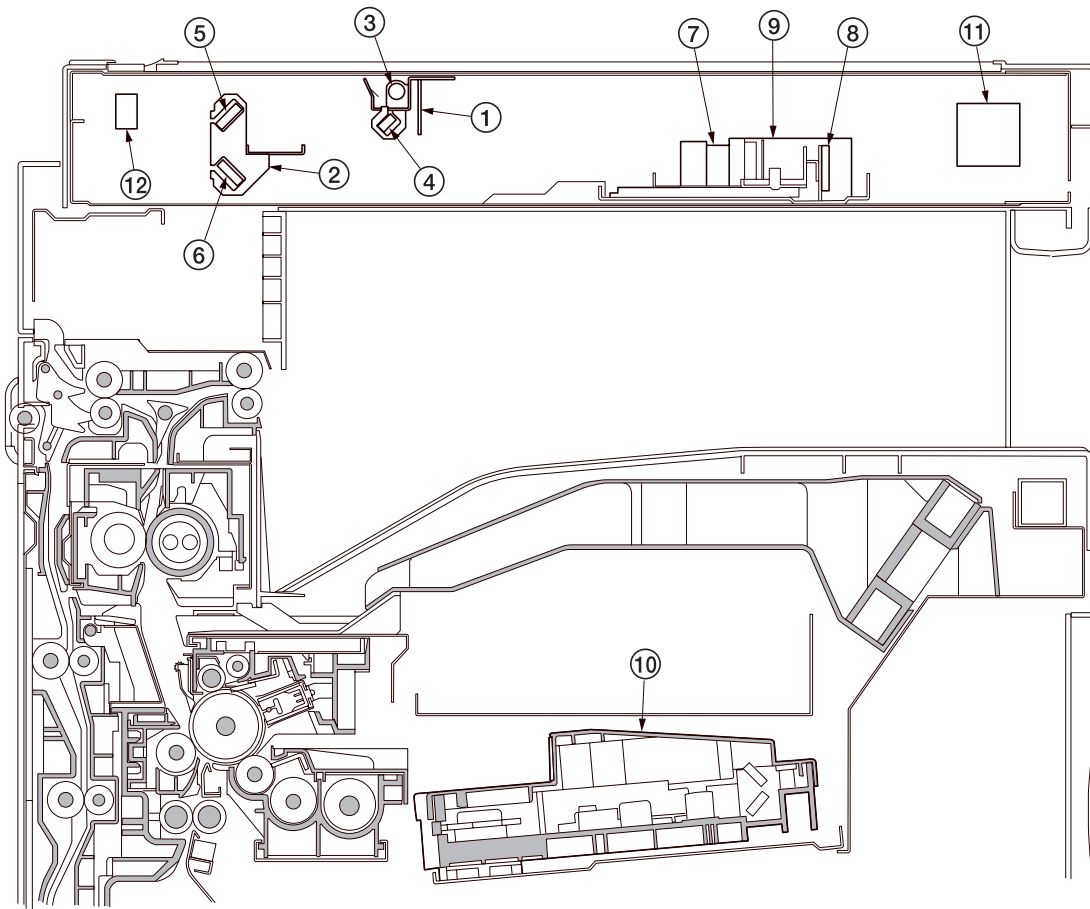


Figure 2-1-7 Optical section

- 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.

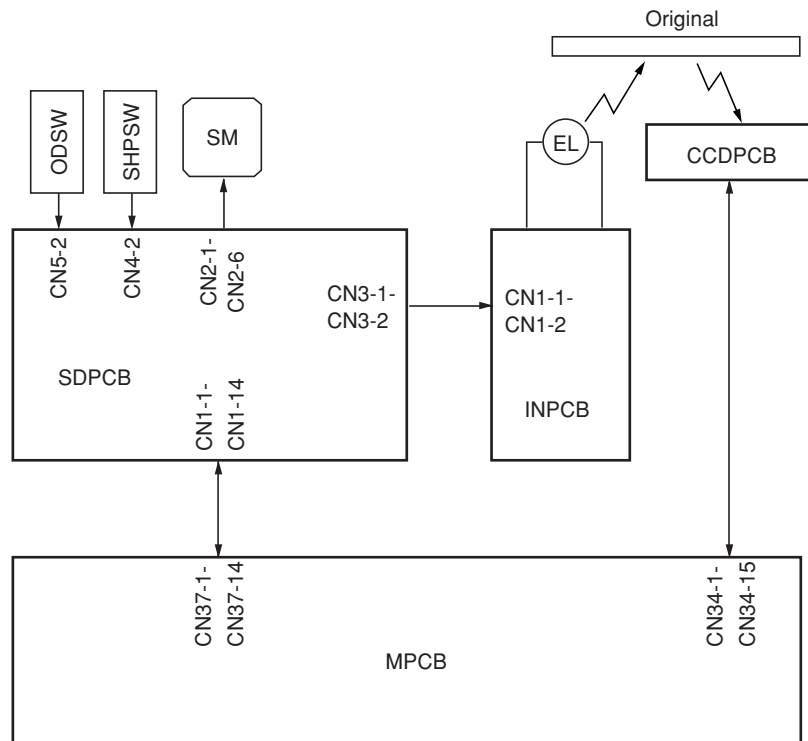
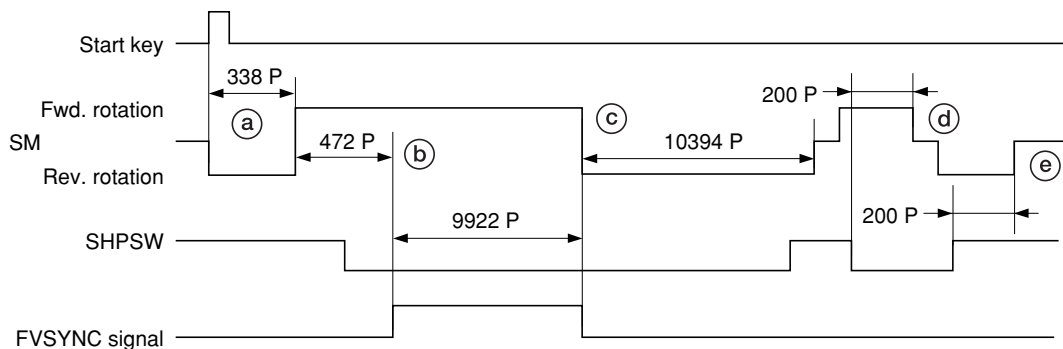


Figure 2-1-8 Optional section block diagram



Timing chart 2-1-4 Scanner operation

- (a): When the start key is pressed, the scanner motor (SM) reverses for 338 pulses and then rotates forward.
- (b): 472 pulses after the scanner motor (SM) starts rotating forward, the FVSYNC signal turns on for 9922 pulses for scanning.
- (c): The scanner motor (SM) reverses for 10394 pulses and then rotates forward.
- (d): 200 pulses after the scanner home position switch (SHPSW) turns on, the scanner motor (SM) reverses.
- (e): 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.

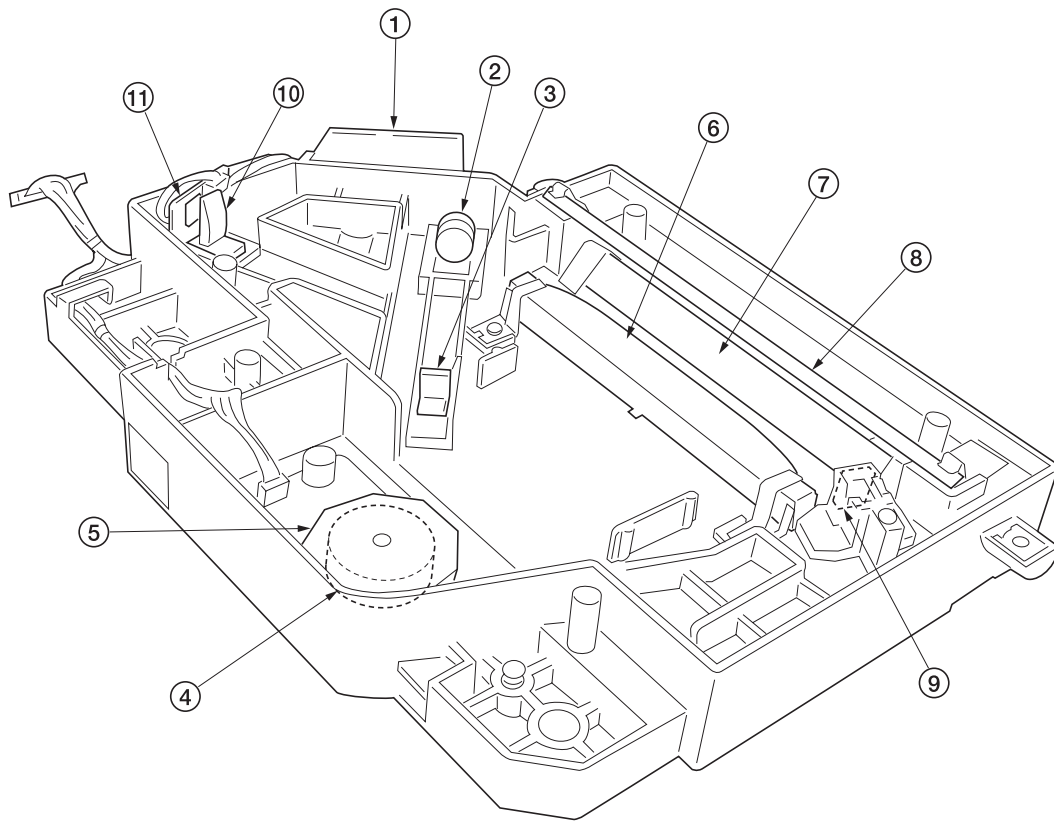


Figure 2-1-9 Laser scanner unit (1)

- ① Laser diode PCB (LDPCB)
- ② Collimator lens
- ③ Cylindrical lens
- ④ Polygon motor (PM)
- ⑤ Polygon mirror
- ⑥ $f\theta$ lens
- ⑦ Mirror
- ⑧ Mirror
- ⑨ BD sensor mirror
- ⑩ Cylindrical correcting lens
- ⑪ BD sensor

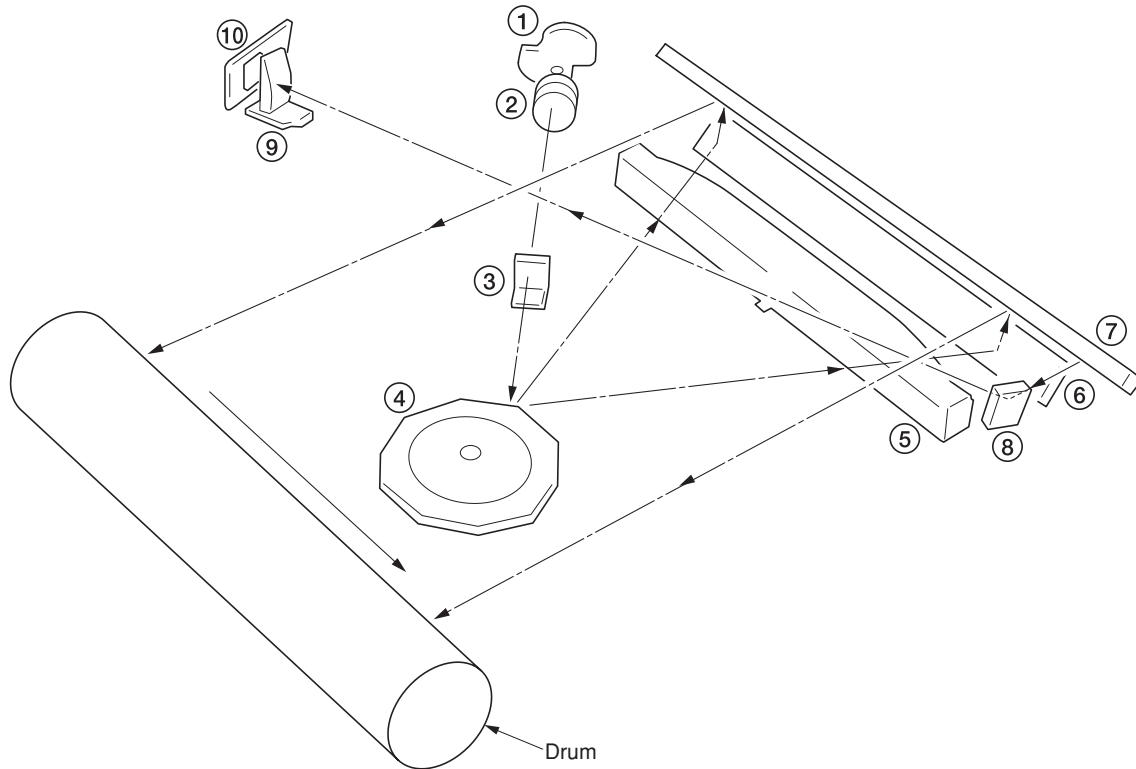


Figure 2-1-10 Laser scanner unit (2)

- 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.

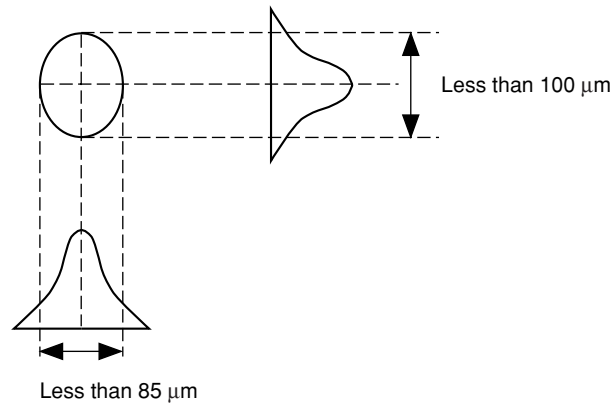


Figure 2-1-11

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.

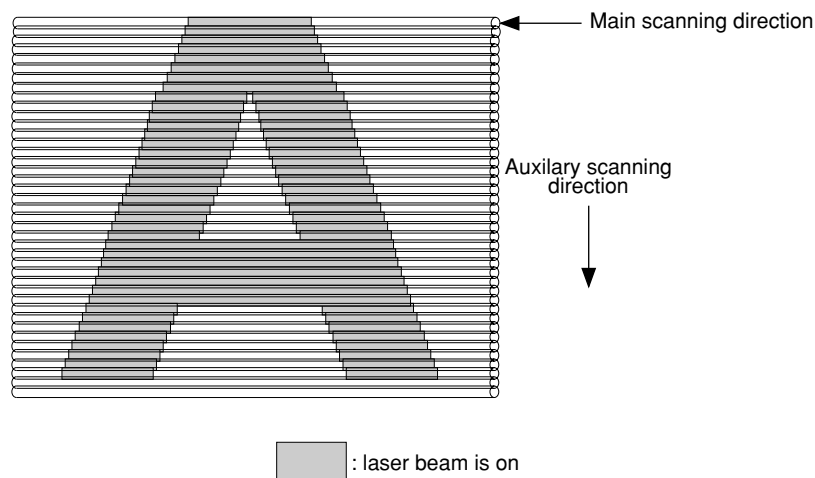


Figure 2-1-12

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.

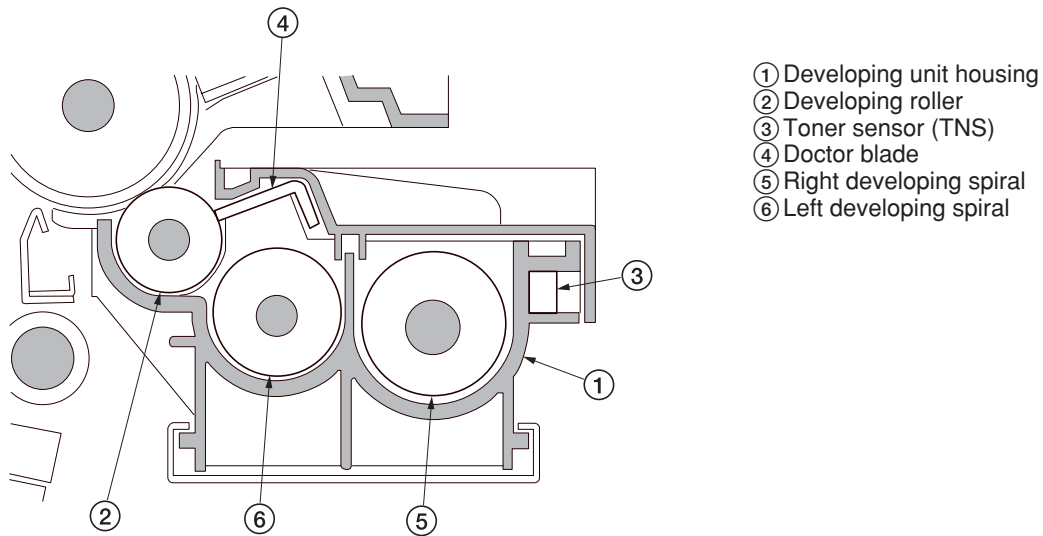


Figure 2-1-13 Developing section

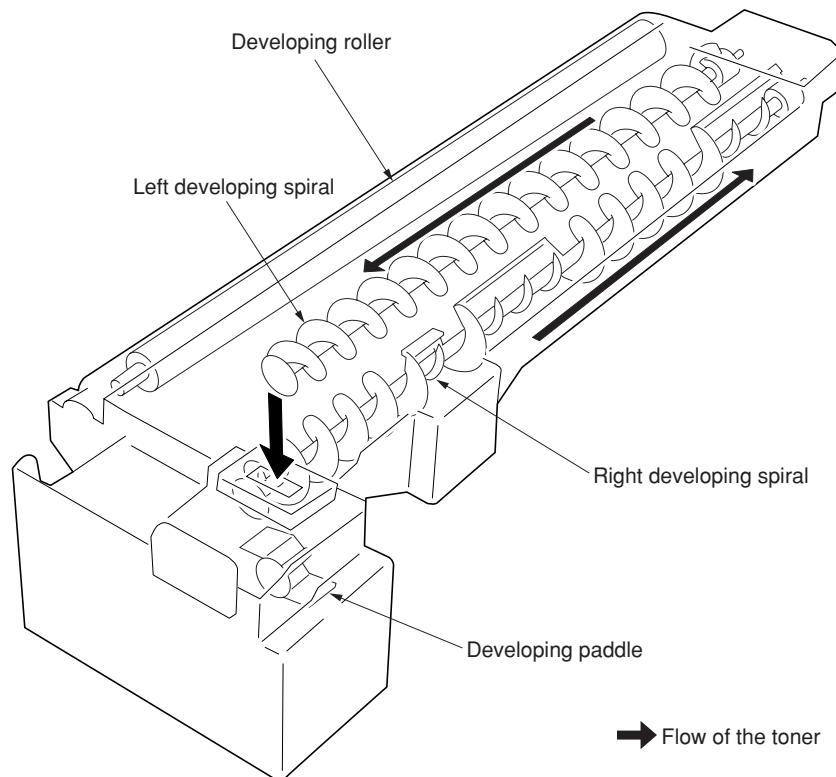


Figure 2-1-14 Flow of the toner

(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.

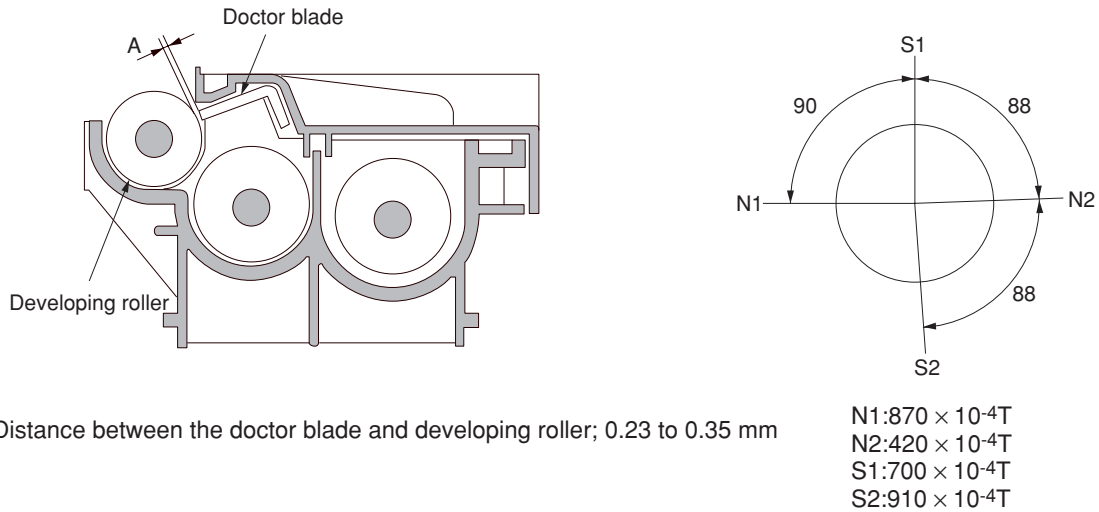


Figure 2-1-15 Forming a magnetic brush

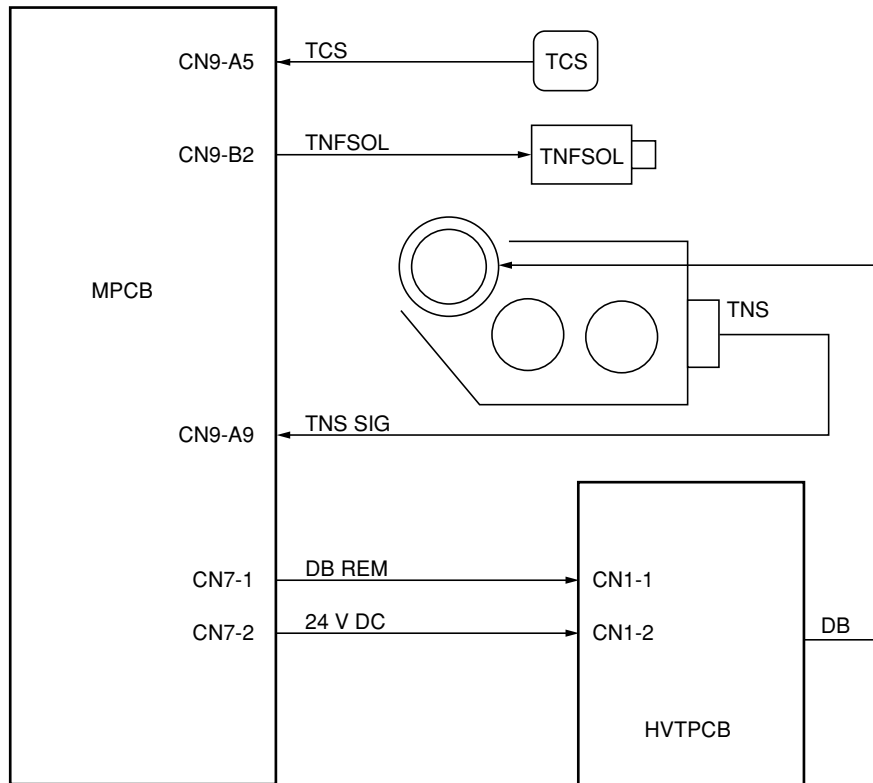


Figure 2-1-16 Developing section block diagram

(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).

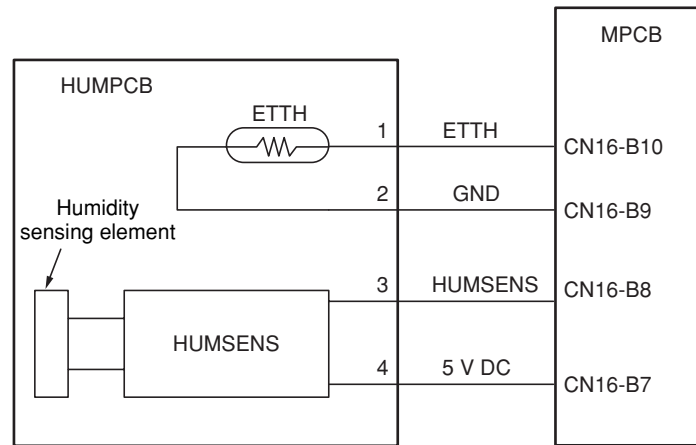


Figure 2-1-17 Absolute humidity computation block diagram

(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.

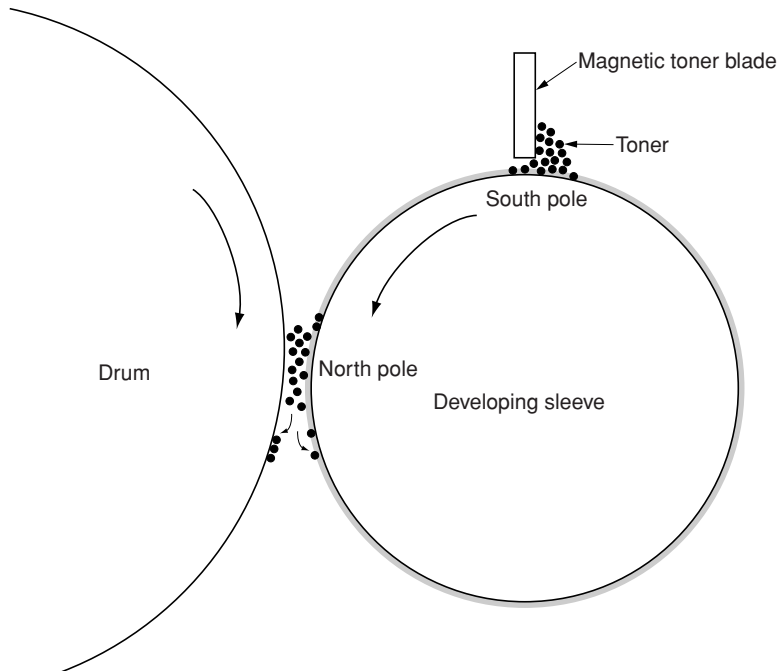


Figure 2-1-17-1 Single component developing system

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)

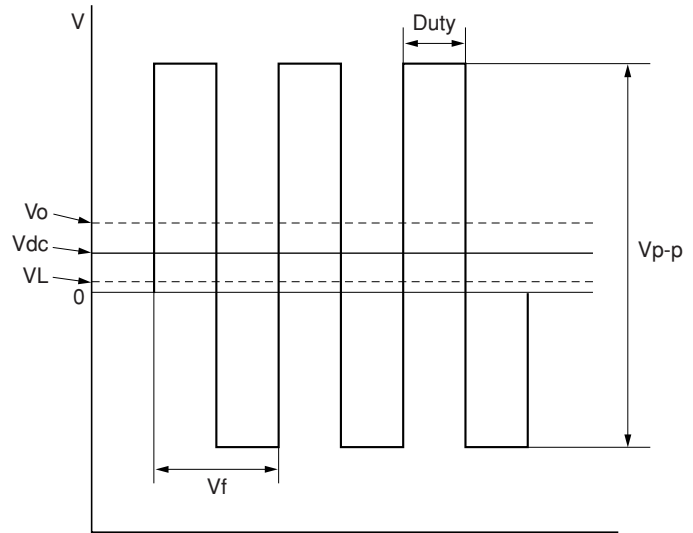


Figure 2-1-17-2 Developing bias waveform

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 ($100\text{ }\mu\text{A}$).

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 ($60\text{ or }10\text{ }\mu\text{A}$ depending on the paper).

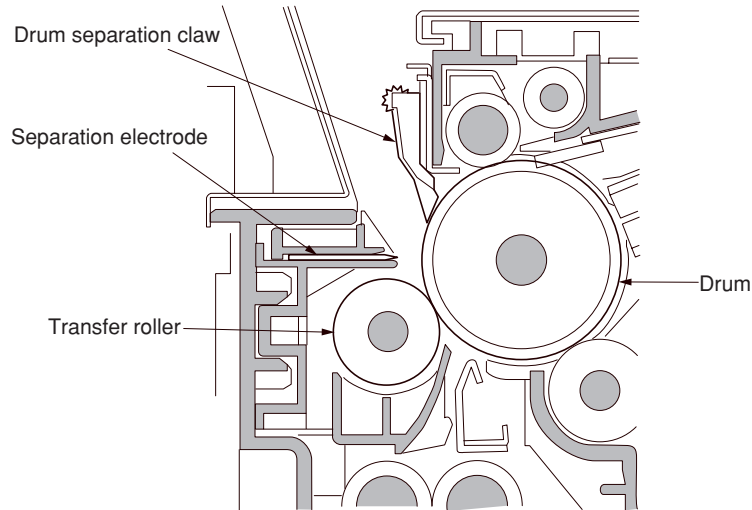


Figure 2-1-18 Transfer and separation sections

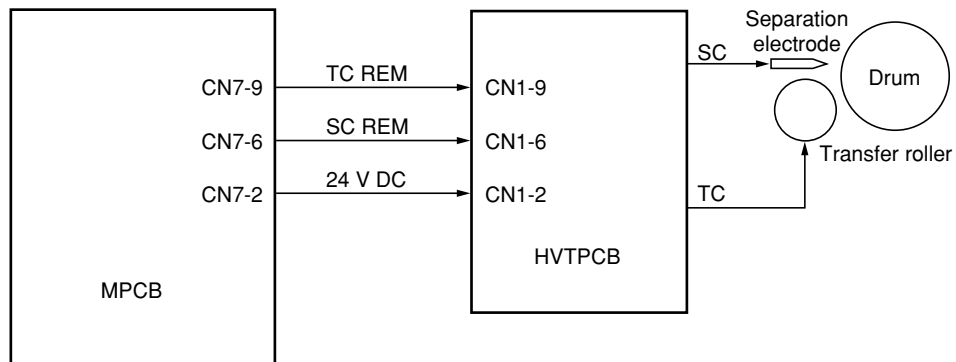
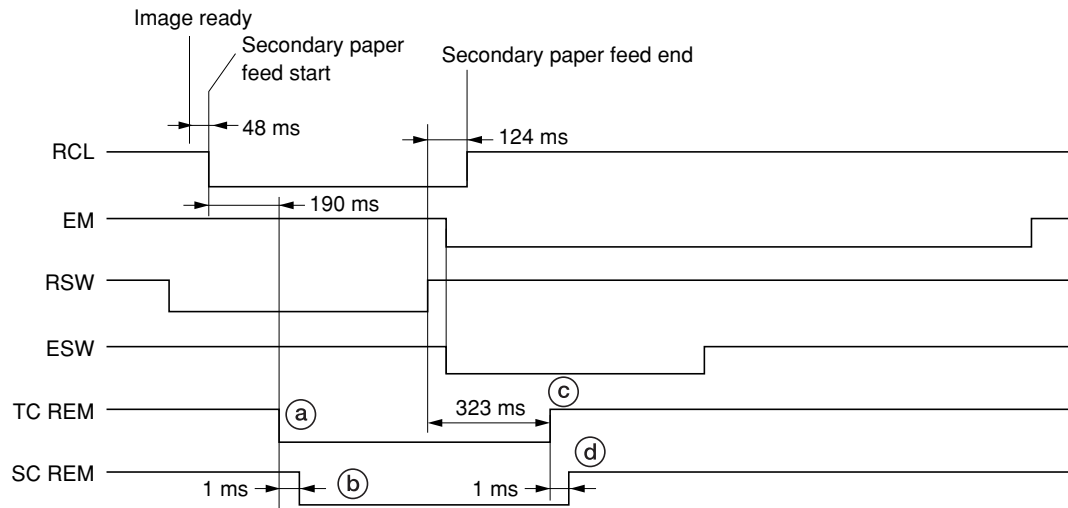


Figure 2-1-19 Transfer and separation sections block diagram



Timing chart 2-1-5 Transfer and separation sections operation

- Ⓐ: 190 ms after the registration clutch (RCL) turns on to start secondary paper feed, transfer charging (TC REM) starts.
- Ⓑ: 1 ms after transfer charging (TC REM) starts, 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.
- Ⓓ: 1 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).

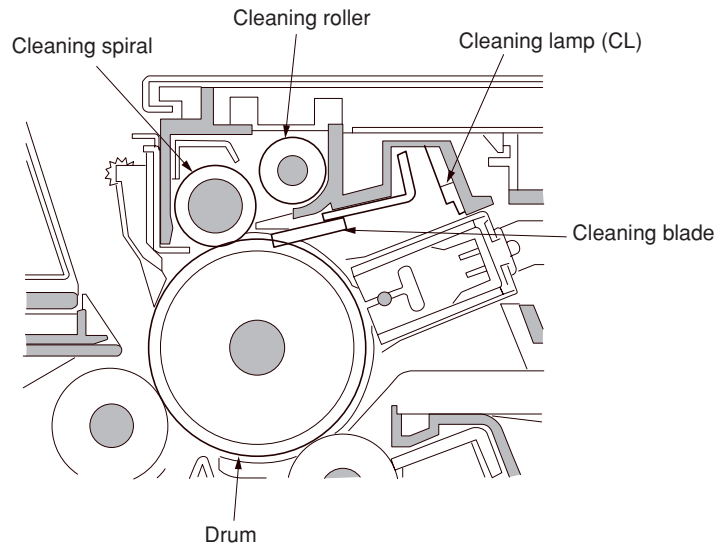


Figure 2-1-20 Cleaning and charge erasing sections

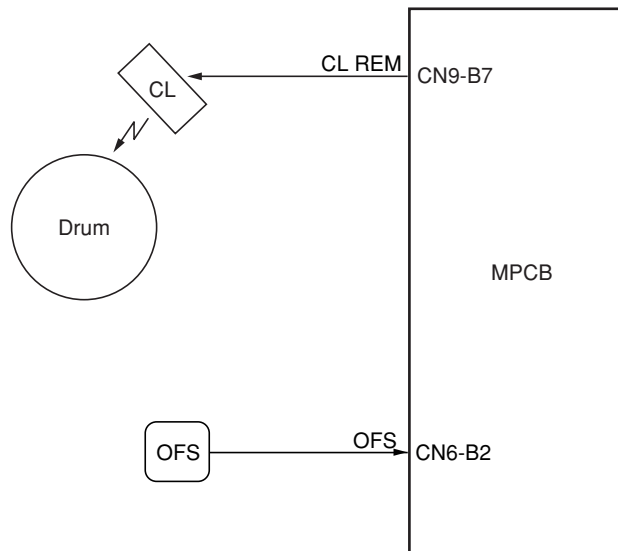


Figure 2-1-21 Cleaning and charge erasing sections block diagram

2-1-7 Fixing section

The fixing section consists of the parts shown in Figure 2-1-22. 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 (FTH) 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.

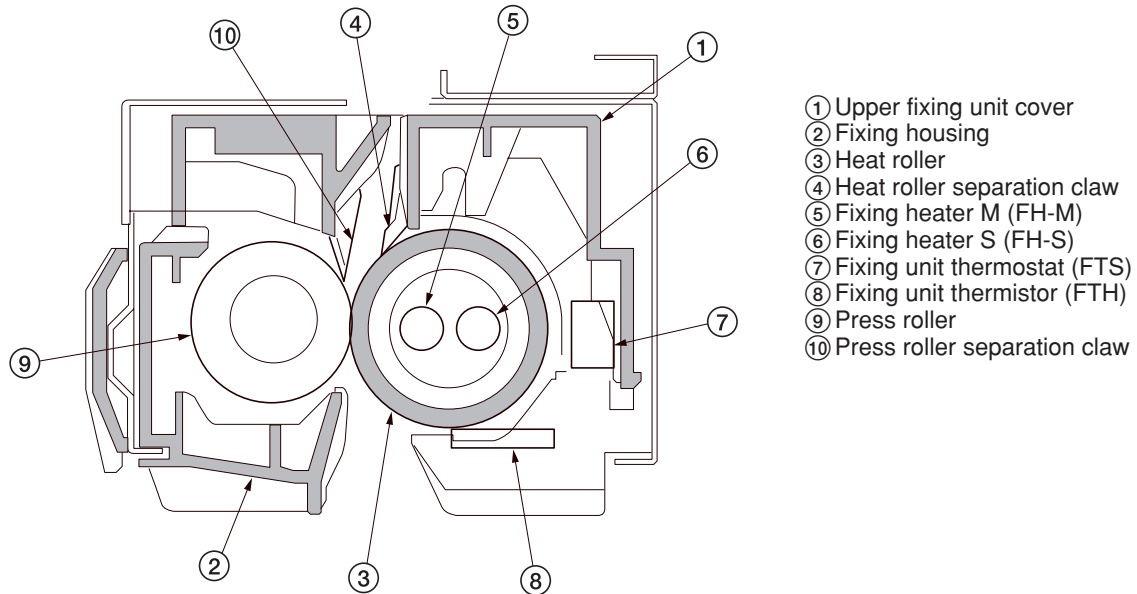


Figure 2-1-22 Fixing section

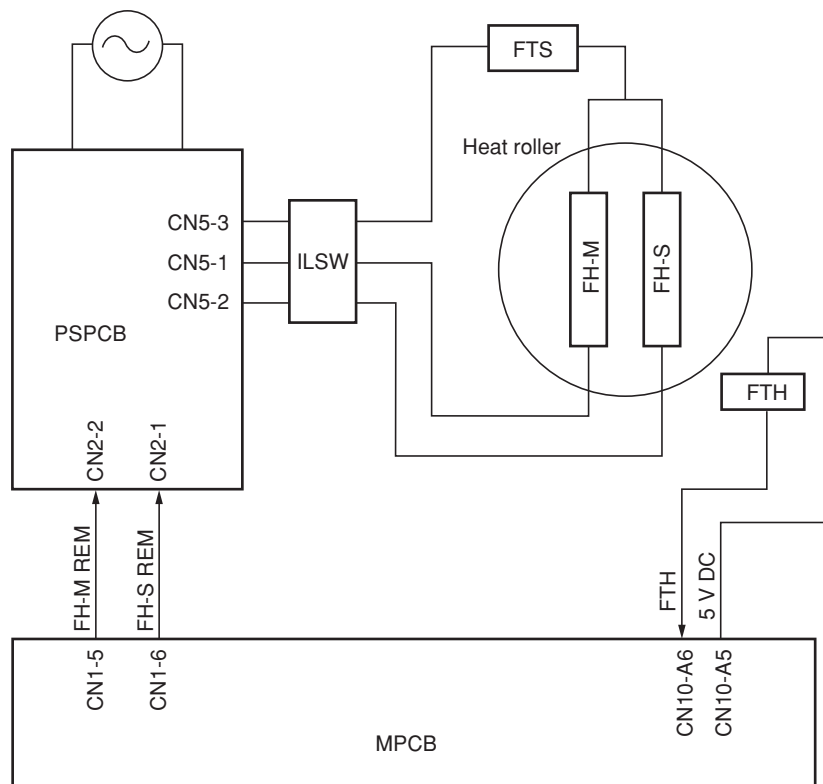
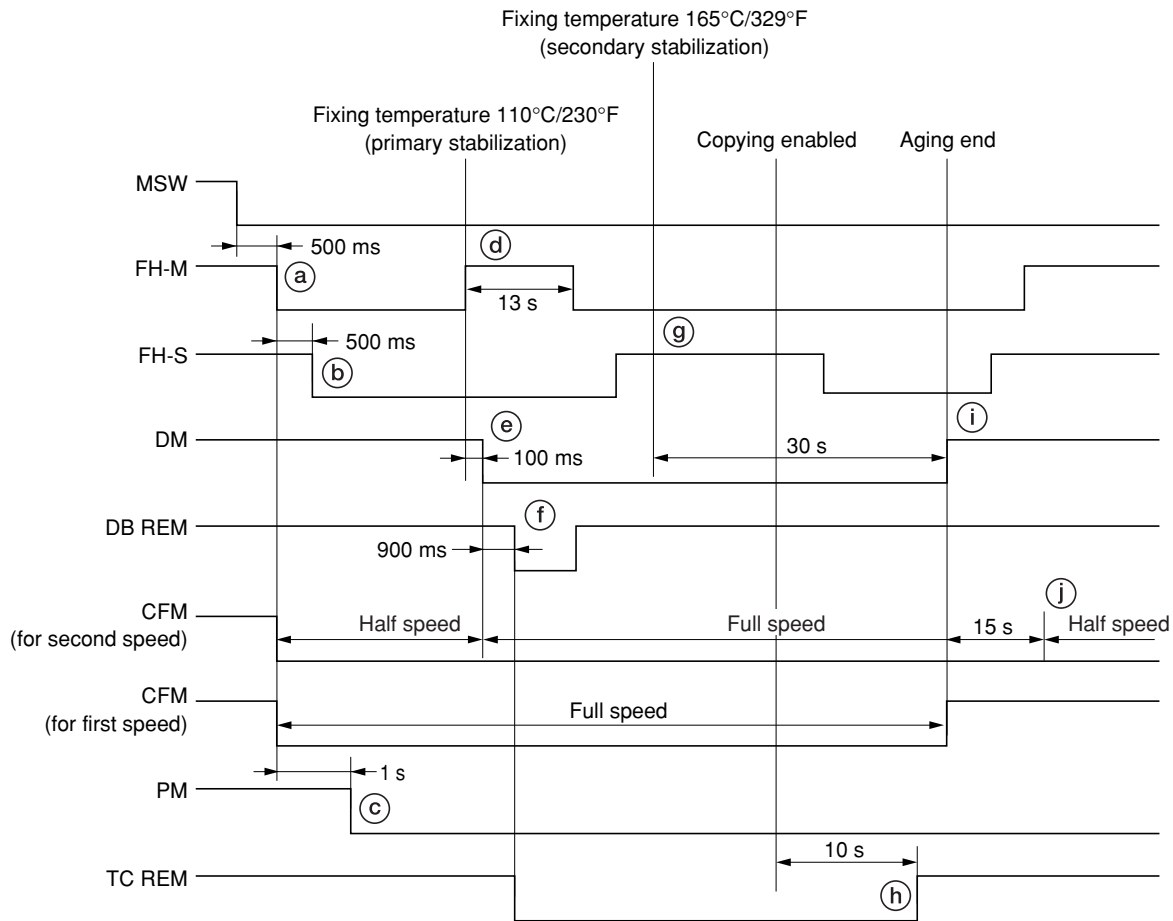


Figure 2-1-23 Fixing section block diagram



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.

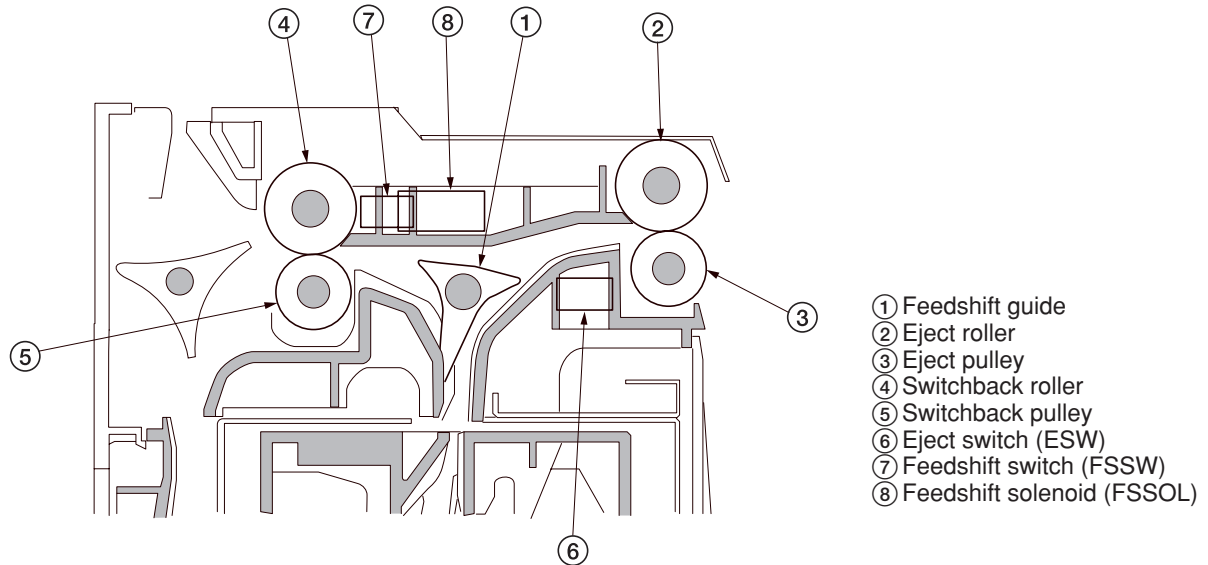


Figure 2-1-24 Eject and switchback sections

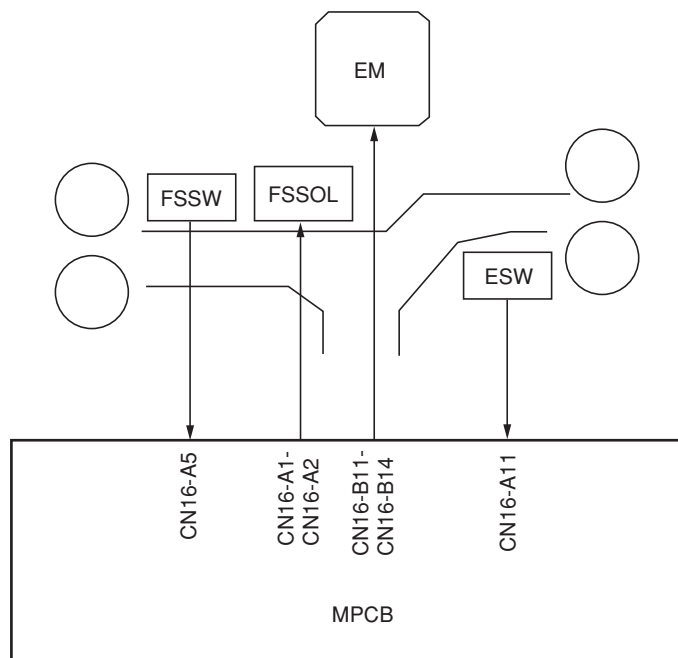
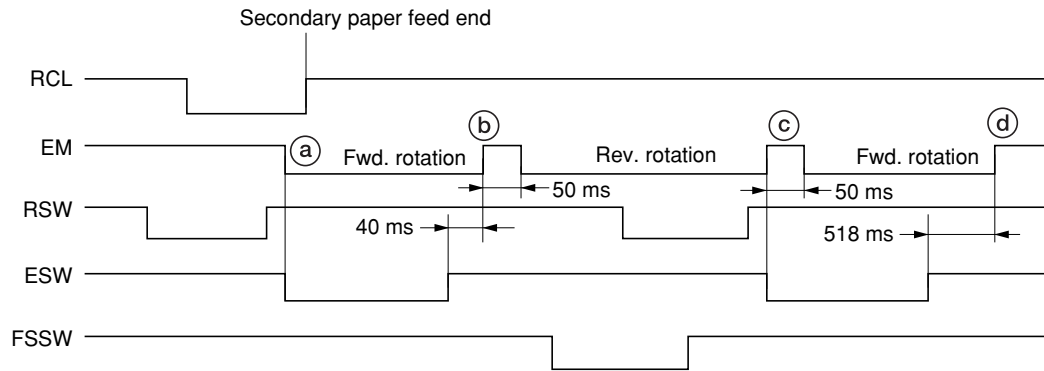


Figure 2-1-25 Eject and switchback sections block diagram



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.
- Ⓓ: 518 ms after passing of the trailing edge of the paper turns off the eject switch (ESW), the eject motor (EM) turns off.

2-2-1 Electrical parts layout

(1) PCBs

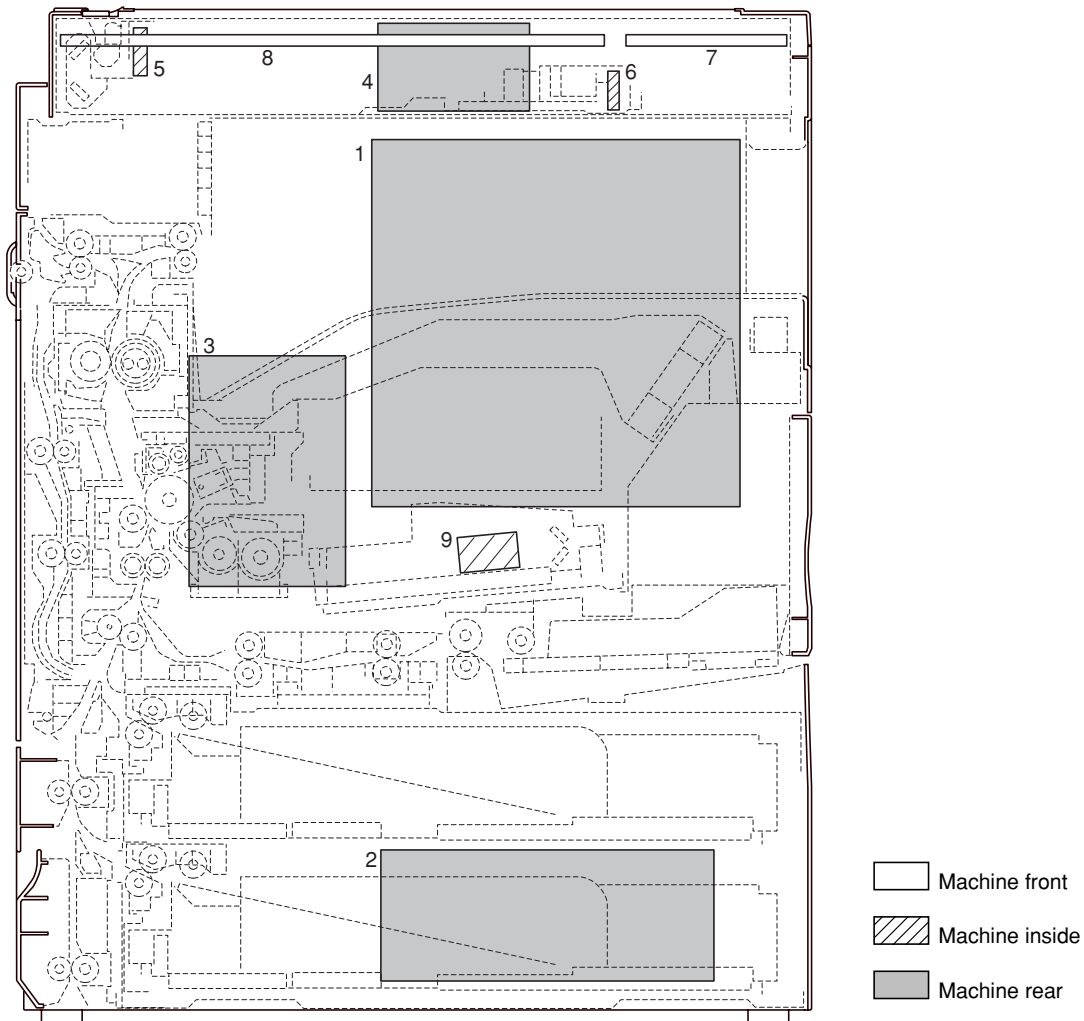


Figure 2-2-1 PCBs

- | | |
|--|--|
| 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. |

(2) Switches and sensors

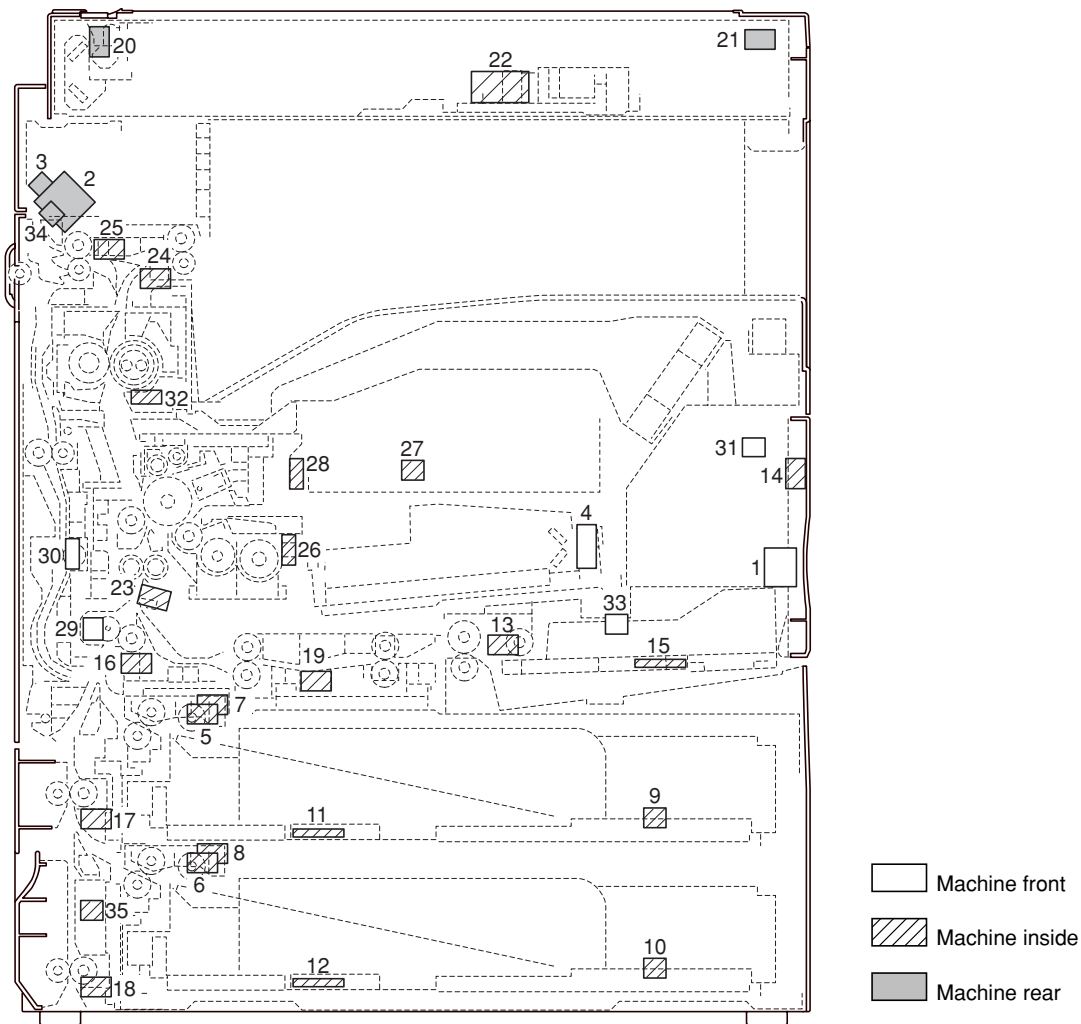
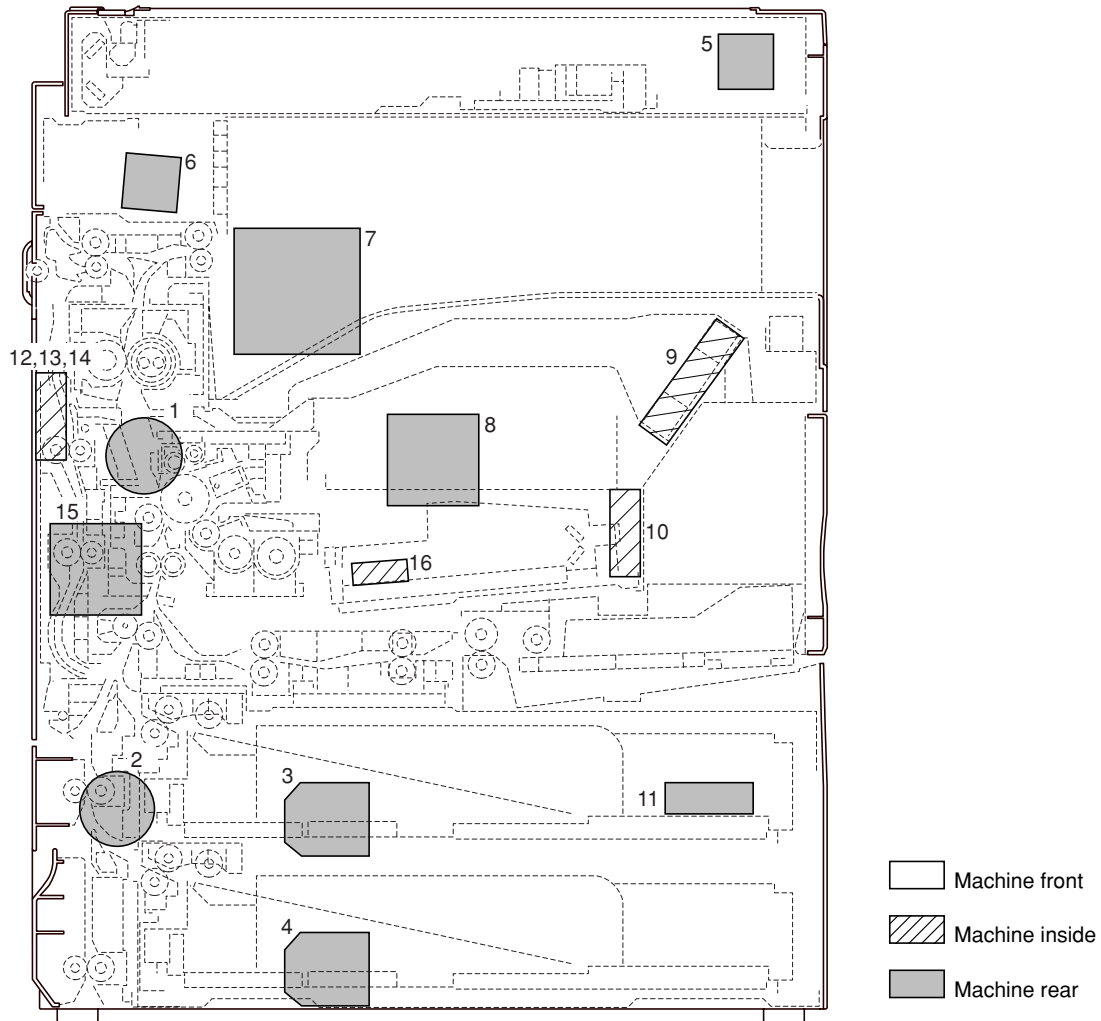


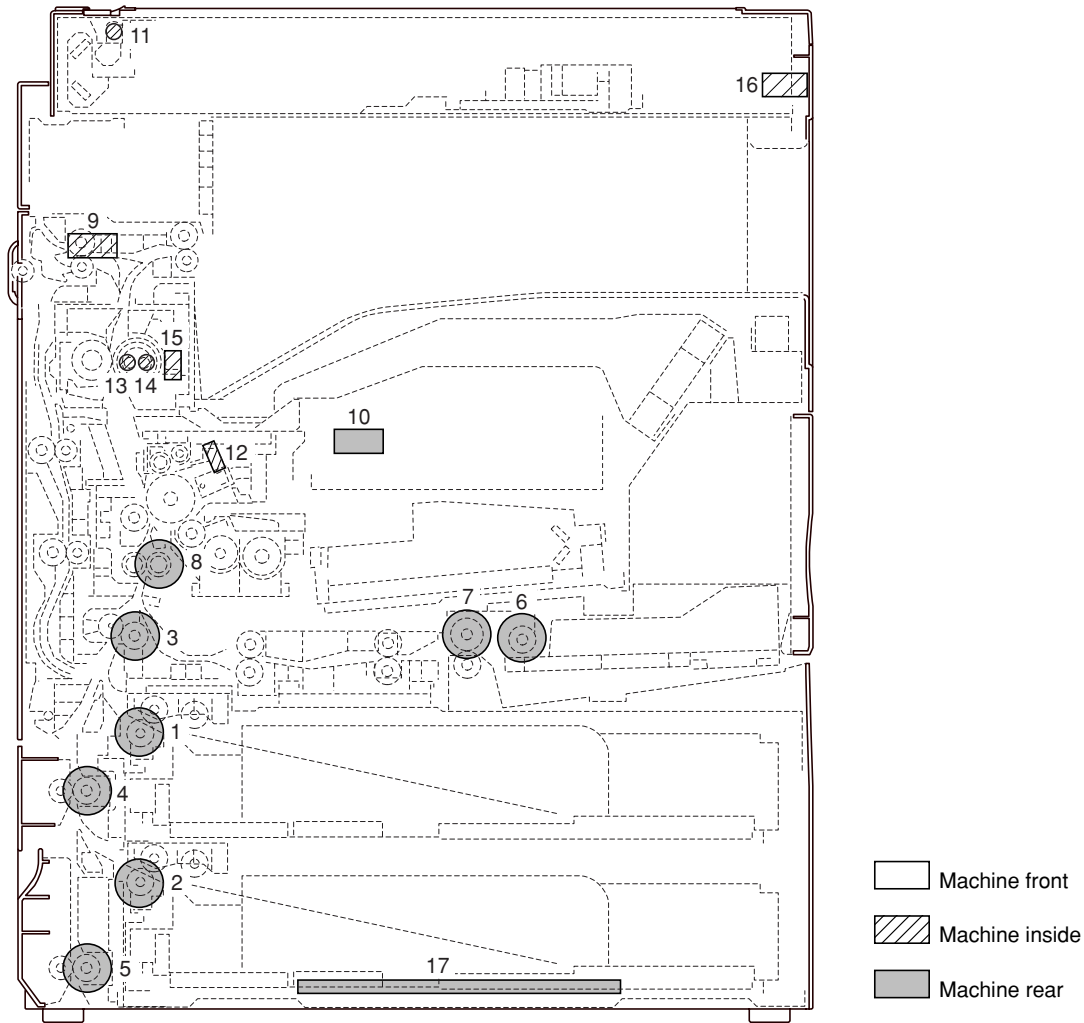
Figure 2-2-2 Switches and sensors

- | | |
|---|--|
| 1. Main switch (MSW) | 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 (PSW-U) | Detects the presence of paper in the upper drawer. |
| 6. Lower paper switch (PSW-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 (FTH) Detects the heat roller temperature.
33. Front cover switch (FRCSW) Detects the opening and closing of the front cover.
34. Conveying cover switch (CCSW) Detects the opening and closing of the conveying cover.
35. Side cover switch (SCSW) Detects the opening and closing of the side cover.

(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 (LSU). |
| 11. Cooling fan motor 5 (CFM5) | Cools the machine interior (around the power supply unit). |
| 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. Cooling fan motor 8 (CFM8) | Cools the machine interior and supports paper transfer for duplex copying. |
| 15. Cooling fan motor 9 (CFM9) | Cools the machine interior. |
| 16. 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. Feedshift solenoid (FSSOL) | Operates the feedshift guide. |
| 10. Toner feed solenoid (TNFSOL) | Replenishes toner. |
| 11. Exposure lamp (EL) | Exposes originals. |
| 12. Cleaning lamp (CL) | Removes residual charge from the drum surface. |
| 13. Fixing heater M (FH-M) | Heats the heat roller. |
| 14. Fixing heater S (FH-S) | Heats the heat roller. |
| 15. Fixing unit thermostat (FTS) | Prevents overheating in the fixing section. |
| 16. Total counter (TC) | Displays the total number of copies produced. |
| 17. Drawer heater (DH) | Dehumidifies the drawer section. |

2-3-1 Power source PCB

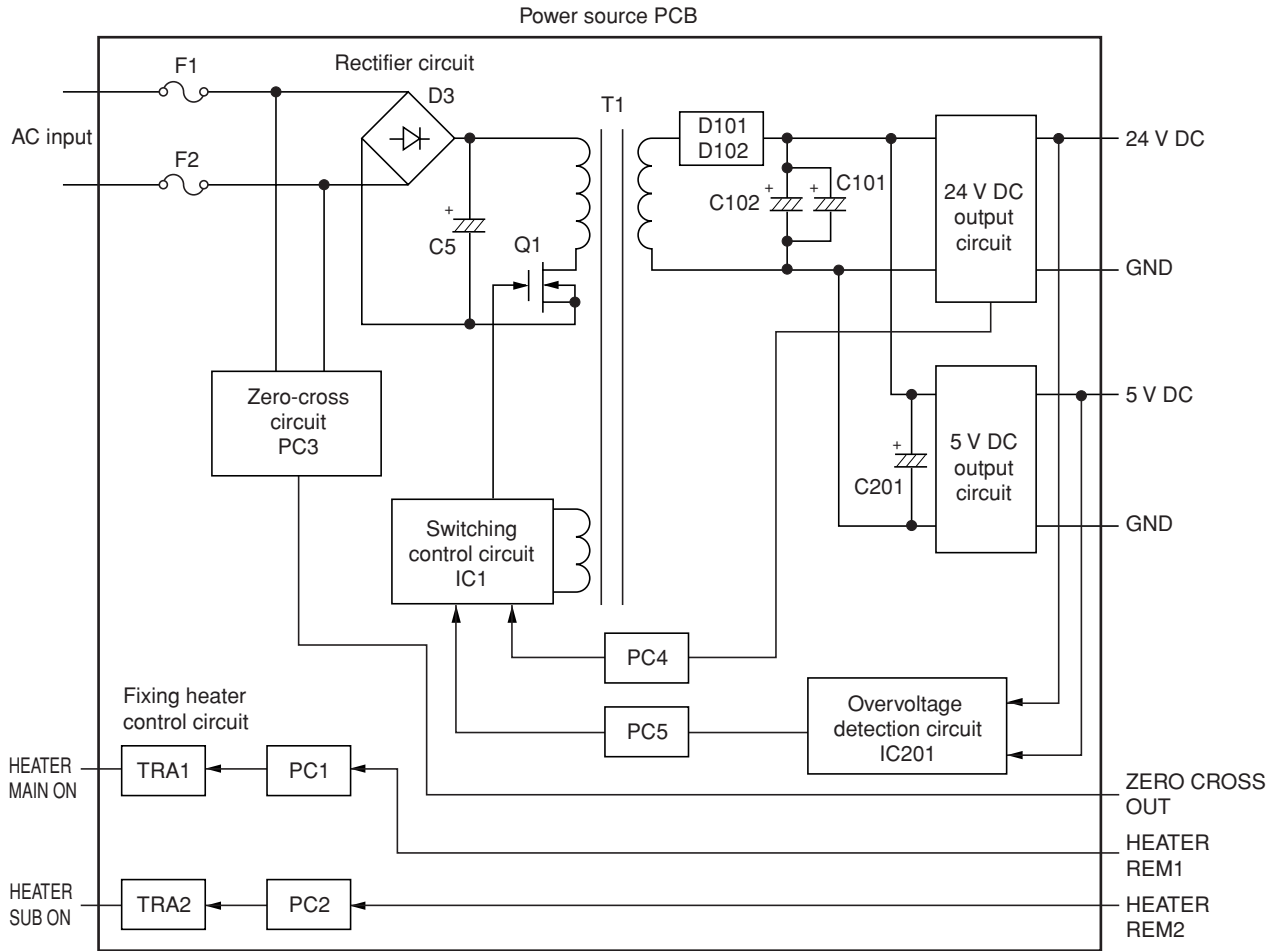


Figure 2-3-1 Power source PCB block diagram

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.

200V

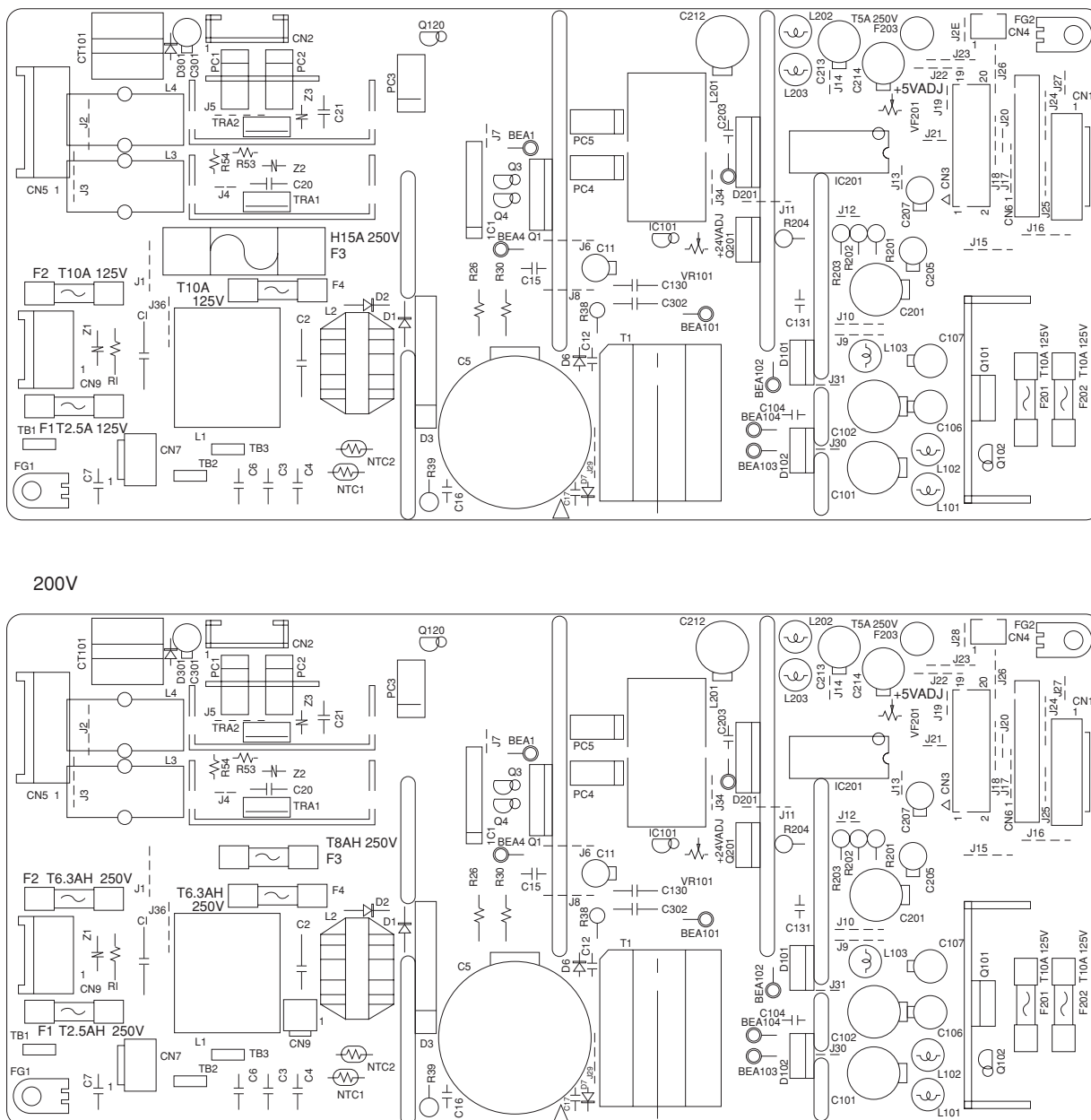


Figure 2-3-2 Power source PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
TB-1	TB-2	120V AC	120 V AC supply, input
TB-1	TB-2	220-240 V AC	220-240 V AC supply, input
1-1	1-2	24 V DC	24 V DC supply for SSW1, output
1-5	1-2	5 V DC	5 V DC supply for MPCB, output
1-6	1-2	24 V DC	24 V DC supply for MPCB, output
2-1	2-2	0 - 5 V DC	Heater current monitor signal, output
2-3	2-2	0/5 V DC	FH-S on/off, input
2-4	2-2	0/5 V DC	FH-M on/off, input
2-5	2-2	5 V DC	5 V DC supply from MPCB, input
2-6	2-2	0/5 V DC (pulse)	Zero-cross signal, input
2-7	2-2	0/5 V DC	CFM5 remote signal, input
2-8	2-2	0/5 V DC	SLEEP signal, input
3-1	3-5	24 V DC	24 V DC supply for finisher*, output
3-2	3-6	24 V DC	24 V DC supply for finisher*, output
3-3	3-7	24 V DC	24 V DC supply for finisher*, output
3-4	3-8	24 V DC	24 V DC supply for finisher*, output
3-9	3-10	5 V DC	5 V DC supply for finisher*, output
3-11	3-12	5 V DC	5 V DC supply for large paper deck*/paper feed desk*, output
3-14	3-13	24 V DC	24 V DC supply for large paper deck*/paper feed desk*, output
3-15	3-18	24 V DC	24 V DC supply for mailbox*, output
3-16	3-19	24 V DC	24 V DC supply for mailbox*, output
3-17	3-20	5 V DC	5 V DC supply for mailbox*, output
4-1	6-1	0/24 V DC	CFM5 on/off, output
4-2	6-1	24 V DC	24 V DC supply for CFM5, output
5-1	5-3	120/0 V AC	FH-M on/off, output
5-1	5-3	220-240/0 V AC	FH-M on/off, output
5-2	5-3	120/0 V AC	FH-S on/off, output
5-2	5-3	220-240/0 V AC	FH-S on/off, output
6-2	6-1	24 V DC	24 V DC supply for SDPCB, output
6-4	6-3	5 V DC	5 V DC supply for SDPCB, output
6-5	6-7	24 V DC	24 V DC supply for STDF*/SRDF*, output
6-6	6-8	24 V DC	24 V DC supply for STDF*/SRDF*, output
6-9	6-11	5 V DC	5 V DC supply for STDF*/SRDF*, output
6-10	6-12	5 V DC	5 V DC supply for STDF*/SRDF*, output
9-1	TB-2	120 V AC	120 V AC supply for MSW, output
9-1	TB-2	220-240 V AC	220-240 V AC supply for MSW, output

*Optional.

2-3-2 Main PCB

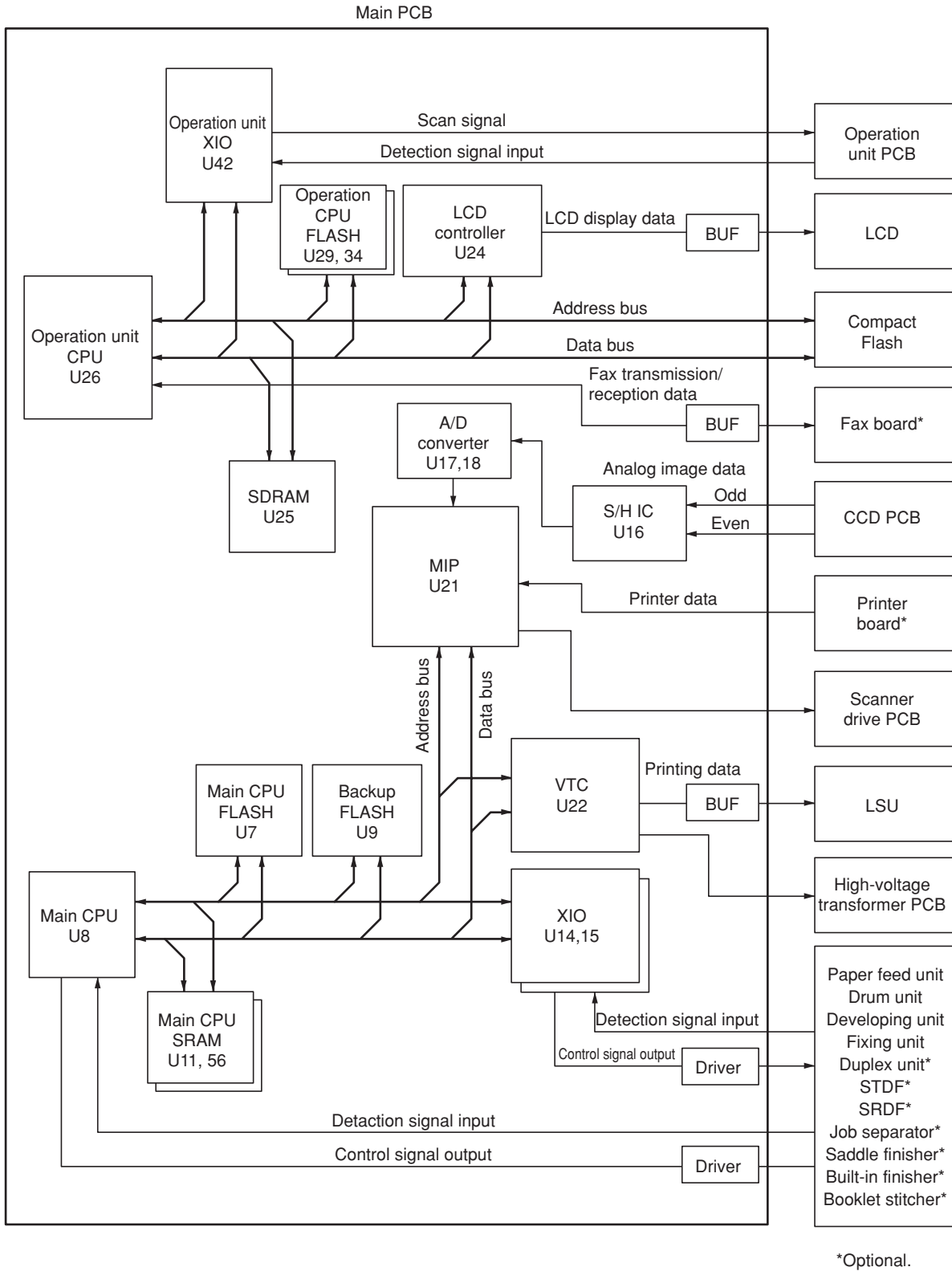


Figure 2-3-3 Main PCB block diagram

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 a 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.

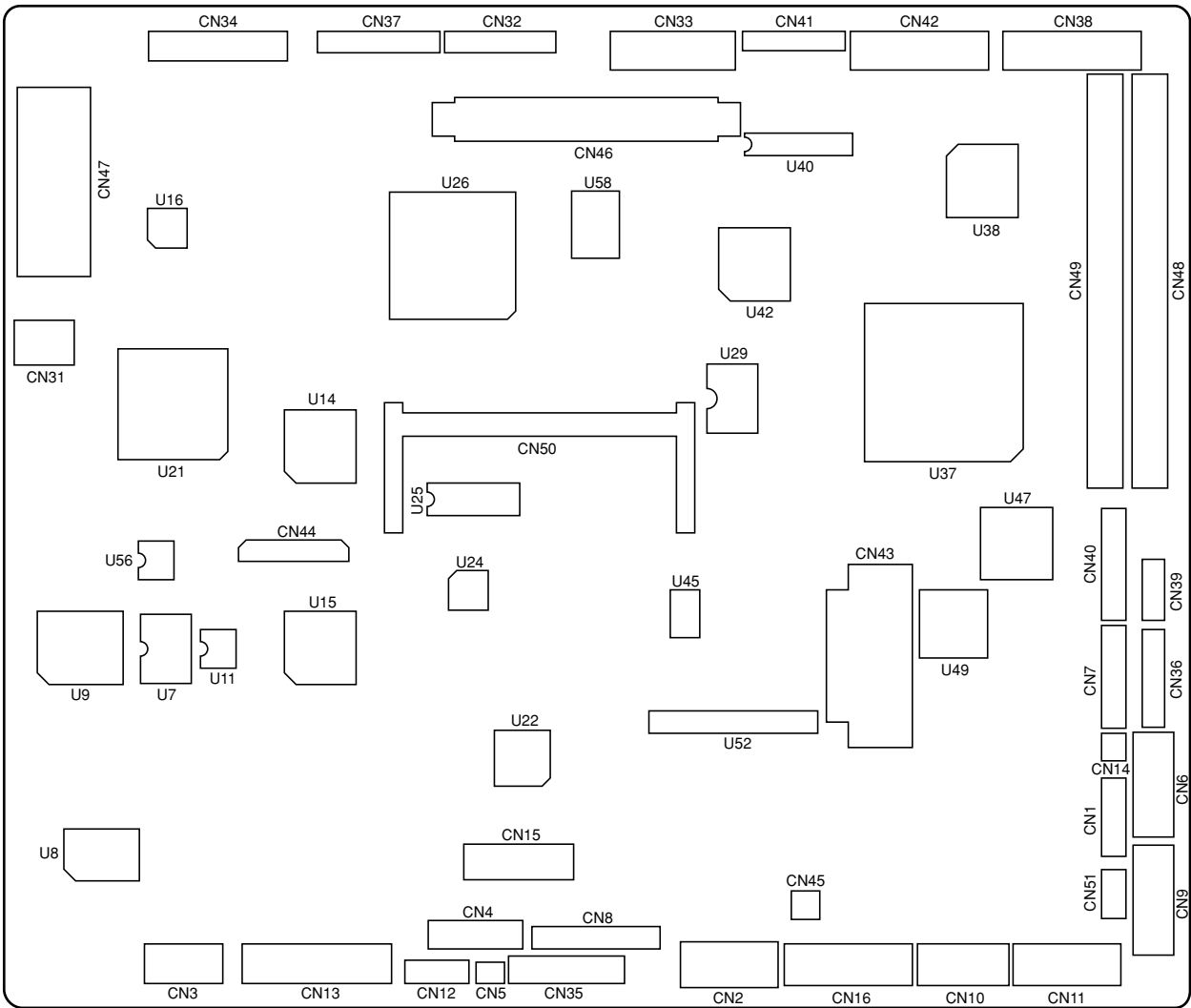


Figure 2-3-4 Main PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	1-7	0/5 V DC	SLEEP signal, output
1-2	1-7	0/5 V DC	CFM5 remote signal, output
1-3	1-7	0/5 V DC (pulse)	Zero-cross signal, input
1-4	1-7	5 V DC	5V DC supply for PSPCB, output
1-5	1-7	0/5 V DC	FH-M on/off, output
1-6	1-7	0/5 V DC	FH-S on/off, output
1-8	1-7	0 - 5 V DC	Heater current monitor signal, input
2-1	2-2	24 V DC	24 V DC supply from SSW2, input
2-5	2-2	5 V DC	5 V DC supply from PSPCB, input
2-6	2-2	24 V DC	24 V DC supply from PSPCB, input
3-A1	3-A2	0/5 V DC (pulse)	Serial signal for mailbox*, input
3-A3	3-A4	0/5 V DC (pulse)	Serial signal from mailbox*, output
3-A5	3-A4	0/5 V DC	Mailbox* connection signal, input
3-A6	3-A4	0/5 V DC	RESET signal for mailbox*, output
3-B1	3-B2	0/5 V DC (pulse)	Serial signal for large paper deck*/paper feed desk*, output
3-B3	3-B4	0/5 V DC (pulse)	Serial signal from large paper deck*/paper feed desk*, input
3-B5	3-B4	0/5 V DC	FSW on/off signal from large paper deck*/paper feed desk*, input
3-B6	3-B4	0/5 V DC	RESET signal for large paper deck*/paper feed desk*, output
4-1	4-2	0/5 V DC (pulse)	Serial signal from finisher*, input
4-3	4-4	0/5 V DC (pulse)	Serial signal for finisher*, output
5-1	4-4	0/5 V DC	RESET signal for finisher*, output
5-2	4-4	0/5 V DC	Finisher* connection signal, input
6-A1	6-A4	0/5 V DC	BYPPSW paper width detection signal, input
6-A2	6-A4	0/5 V DC	BYPPSW paper width detection signal, input
6-A3	6-A4	0/5 V DC	BYPPSW paper width detection signal, input
6-A5	6-A4	5 V DC	5 V DC supply for BYPPSW, output
6-A6	6-A4	0/5 V DC	BYPPSW on/off, input
6-A8	6-A7	24 V DC	24 V DC supply for BYPPFCL, output
6-A9	6-A7	0/24 V DC	BYPPFCL on/off, output
6-A10	6-A7	24 V DC	24 V DC supply for BYPFCL, output
6-A11	6-A7	0/24 V DC	BYPFCL on/off, output
6-B1	6-B3	5 V DC	5 V DC supply for OFS, output
6-B2	6-B3	0/5 V DC	OFS on/off, input
6-B4	6-B5	0/5 V DC	TDDSW on/off, input
6-B6	6-B7	0/5 V DC	FRCSW on/off, input
6-B8	6-B9	0/24V DC	CFM3 on/off, output
6-B10	6-B12	5 V DC	5 V DC supply for BYPPLSW, output
6-B11	6-B12	0/5 V DC	BYPPLSW on/off, input
7-1	7-3	0 - 5 V DC	Developing bias control voltage, output
7-2	7-3	24 V DC	24 V DC supply for HVT PCB, output
7-4	7-3	0/5 V DC	Main charging on/off, output
7-5	7-3	0/5 V DC (pulse)	Developing bias CLOCK signal, output
7-6	7-3	0/5 V DC	Separation charging on/off, output
7-7	7-3	0 - 5 V DC	Separation charging control voltage, output
7-8	7-3	0 - 5 V DC	Transfer charging control voltage, output
7-9	7-3	0 - 5 V DC	Transfer limit voltage, output
7-10	7-3	0/5 V DC	Transfer charging on/off, output
7-11	7-3	0/5 V DC	Transfer reverse bias remote signal, output
7-12	7-3	0/5 V DC	Transfer forward bias remote signal, output
7-13	7-3	0/5 V DC	Transfer current detection signal, input
7-14	7-3	0/5 V DC	Transfer current detection signal, input
8-1	8-7	5 V DC	5 V DC supply for LSU, output
8-2	8-7	0/5 V DC	LSU SAMPLE signal, output
8-3	8-7	0/5 V DC	LSU POWCONT signal, output
8-4	8-7	0/5 V DC	LSU LASER signal, output
8-5	8-7	0/5 V DC	LSU VIDEO + signal, output

*Optional.

Terminals (CN)		Voltage	Remarks
8-6	8-7	0/5 V DC	LSU VIDEO - signal, output
8-8	8-9	0/5 V DC	LSU PD signal, input
8-10	8-11	24 V DC	24 V DC supply for PM, output
8-12	8-11	0/24 V DC	PM SCAN signal, output
8-13	8-9	0/5 V DC	PM READY signal, input
8-14	8-11	0/5 V DC (pulse)	PM CLOCK signal, output
9-A2	9-A1	0/5 V DC	BYPFSW on/off, input
9-A3	9-A1	5 V DC	5 V DC supply for BYPFSW, output
9-A4	9-A6	5 V DC	5 V DC supply for TCS, output
9-A5	9-A6	0/5 V DC	TCS on/off, input
9-A8	9-A10	5 V DC	5 V DC supply for TNS, output
9-A9	9-A10	0/5 V DC	TNS on/off, input
9-A11	9-A10	0/5 V DC	Developing unit detection signal, input
9-A12	9-A10	0/5 V DC	Developing unit FUSE CUT signal, output
9-B2	9-B1	0/24 V DC	TNFSOL on/off, output
9-B3	9-B4	0/5 V DC	TCDSW on/off, input
9-B7	9-B6	0/5 V DC	CL on/off, output
9-B8	9-B6	0/5 V DC	Drum unit DATA signal, output
9-B9	9-B6	0/5 V DC	Drum unit CLOCK signal, output
9-B11	9-B10	0/5 V DC	Drum unit detection signal, input
9-B12	9-10	5 V DC	5 V DC supply for drum unit, output
10-A2	10-A1	0/5 V DC	RSW on/off, input
10-A3	10-A1	5 V DC	5 V DC supply for RSW, output
10-A5	10-A8	5 V DC	5 V DC supply for FTH, output
10-A6	10-A8	0 - 5 V DC	FTH detection voltage, input
10-A7	10-A8	0/5 V DC	FTH FUSE CUT signal, input
10-B1	10-B3	24 V DC	24 V DC supply for DUPFCL*, output
10-B2	10-B3	0/24 V DC	DUPFCL* on/off, output
10-B4	10-B3	0/5 V DC	DUPPCSW* on/off, input
10-B5	10-B3	5 V DC	5 V DC supply for DUPPCSW*, output
10-B7	10-B6	0/5 V DC	Duplex unit* connection signal, input
11-1	11-3	24 V DC	24 V DC supply for DM, output
11-2	11-4	24 V DC	24 V DC supply for PFM, output
11-5	11-7	5 V DC	24 V DC supply for DM, input
11-9	11-3	0/24 V DC	DM S/S signal, output
11-10	11-4	0/24 V DC	PFM S/S signal, output
11-11	11-3	0/24 V DC	DM L/D signal, input
11-12	11-4	0/24 V DC	PFM L/D signal, input
11-13	11-7	0/5 V DC (pulse)	DM CLOCK signal, output
11-14	11-4	0/24 V DC	FCL1 on/off, output
11-15	11-4	24 V DC	24 V DC supply for FCL1, output
11-17	11-16	0/5 V DC	FSW1 on/off, input
11-18	11-16	5 V DC	5 V DC supply for FSW, output
12-1	12-6	24 V DC	24 V DC supply for PWSW-U, output
12-2	12-6	24 V DC	24 V DC supply from PWSW-U, input
12-3	12-6	0/24 V DC	PWSW-U paper width detection signal, input
12-4	12-6	0/24 V DC	PWSW-U paper width detection signal, input
12-5	12-6	0/24 V DC	PWSW-U paper width detection signal, input
12-7	12-12	24 V DC	24 V DC supply for PWSW-L, output
12-8	12-12	24 V DC	24 V DC supply from PWSW-L, input
12-9	12-12	0/24 V DC	PWSW-L paper width detection signal, input
12-10	12-12	0/24 V DC	PWSW-L paper width detection signal, input
12-11	12-12	0/24 V DC	PWSW-L paper width detection signal, input
13-A2	13-A1	0/5 V DC	FSW3 on/off, input
13-A3	13-A1	5 V DC	5 V DC supply for FSW3, output
13-A4	13-A16	24 V DC	24 V DC supply for FCL3, output

*Optional.

Terminals (CN)		Voltage	Remarks
13-A5	13-A16	0/24 V DC	FCL3 on/off, output
13-A7	13-A6	0/5 V DC	FSW2 on/off, input
13-A8	13-A6	5 V DC	5 V DC supply for FSW2, output
13-A10	13-A9	0/5 V DC	SCSW on/off, input
13-A11	13-A16	24 V DC	24 V DC supply for FCL2, output
13-A12	13-A16	0/24 V DC	FCL2 on/off, output
13-A13	13-A14	0/5 V DC	LM-U paper level detection switch on/off, input
13-A15	13-A14	0/5 V DC	LM-U paper level detection switch on/off, input
13-A17	13-A16	0/24 V DC	LM-U on/off, output
13-A19	13-A18	0/5 V DC	PLSW-L on/off, inout
13-B2	13-B1	0/5 V DC	PLSW-U on/off, inout
13-B3	13-B4	0/5 V DC	LM-L paper level detection switch on/off, input
13-B5	13-B4	0/5 V DC	LM-L paper level detection switch on/off, input
13-B7	13-B6	0/24 V DC	LM-L on/off, output
13-B9	13-B8	0/5 V DC	LICSW-U on/off, input
13-B10	13-B8	5 V DC	5 V DC supply for LICSW-U, output
13-B12	13-B11	0/5 V DC	PSW-U on/off, input
13-B13	13-B11	5 V DC	5 V DC supply for PSW-U, output
13-B15	13-B14	0/5 V DC	LICSW-L on/off, input
13-B16	13-B14	5 V DC	5 V DC supply for LICSW-L, output
13-B18	13-B17	0/5 V DC	PSW-L on/off, input
13-B19	13-B17	5 V DC	5 V DC supply for PSW-L, output
16-A1	16-A14	0/24 V DC	FSSOL release signal, output
16-A2	16-A14	0/24 V DC	FSSOL acutuate signal, output
16-A3	16-A14	24 V DC	24 V DC supply for FSSOL, output
16-A5	16-A4	0/5 V DC	FSSW on/off, input
16-A6	16-A4	5 V DC	5 V DC supply for FSSW, input
16-A11	16-A10	0/5 V DC	ESW on/off, input
16-A12	16-A10	5 V DC	5 V DC supply for ESW, output
16-A13	16-A14	0/24 V DC	CFM1 on/off, output
16-A16	16-A15	0/5 V DC	CCSW on/off, input
16-B1	16-A14	0/24 V DC	PFCL-U on/off, output
16-B2	16-A14	24 V DC	24 V DC supply for PFCL-U, output
16-B3	16-A14	24 V DC	24 V DC supply for PFCL-L, output
16-B4	16-A14	0/24 V DC	PFCL-L on/off, output
16-B5	16-A14	24 V DC	24 V DC supply for RCL, output
16-B6	16-A14	0/24 V DC	RCL on/off, output
16-B7	16-B9	5 V DC	5 V DC supply for HUMSENS, output
16-B8	16-B9	0 - 5 V DC	HUMSENS detection voltage, input
16-B10	16-B9	0 - 5 V DC	ETTH detection voltage, input
16-B11	16-A14	0/24 V DC (pulse)	EM coil energization pulse, output (B)
16-B12	16-A14	0/24 V DC (pulse)	EM coil energization pulse, output (B)
16-B13	16-A14	0/24 V DC (pulse)	EM coil energization pulse, output (A)
16-B14	16-A14	0/24 V DC (pulse)	EM coil energization pulse, output (A)
16-B15	16-A14	24 V DC	24 V DC supply for CFM4, output
16-B16	16-A14	0/24 V DC	CFM4 on/off, output
31-1	2-2	24 V DC	24 V DC supply from MSW, input
31-2	2-2	0/5 V DC	MSW on/off, output
31-3	2-2	24 V DC	24 V DC supply for TC, output
31-4	2-2	0/5 V DC	TC count signal, output
31-8	31-7	0/5 V DC	Key counter* connection signal, input
31-9	2-2	24 V DC	24V DC supply for key counter*, output
31-10	2-2	0/5 V DC	Key counter* count signal, output
32-1	2-2	0/5 V DC	OFM* RET signal, output
32-2	2-2	0/5 V DC (pulse)	OFM* CLOCK signal, output
32-3	2-2	0/5 V DC	OFM* CWB signal, output

*Optional.

Terminals (CN)		Voltage	Remarks
32-4	2-2	0/5 V DC	OCM* ENABLE signal, output
32-5	2-2	0/5 V DC	OCM* RET signal, output
32-6	2-2	0/5 V DC (pulse)	OCM* CLOCK signal, output
32-7	2-2	0/5 V DC	OCM* CWB signal, output
32-8	2-2		OCM* current control voltage Vref, output
32-9	2-2	0/5 V DC	OCM* drive control signal M3, output
32-10	2-2	0/5 V DC	OCM* drive control signal M2, output
32-11	2-2	0/5 V DC	OCM* drive control signal M1, output
33-A2	2-2	0/5 V DC	OSBSW* on/off, input
33-A3	2-2	0/5 V DC	OFSW* on/off, input
33-A4	2-2	0/5 V DC	OSSW* on/off, input
33-A7	2-2	0/5 V DC	SRDF* connection signal, input
33-A8	2-2	0/5 V DC	OSWSW* on/off, input
33-A9	2-2	0/5 V DC	DFSSW2* on/off, input
33-A10	2-2	0/5 V DC	DFSSW1* on/off, input
33-A11	2-2	0/5 V DC	OSLSW* on/off, input
33-A12	2-2	0/5 V DC	DFTSW* on/off, input
33-B1	2-2	0/5 V DC	OSLED* (red) on/off, output
33-B2	2-2	0/5 V DC	OSLED* (green) on/off, output
33-B3	2-2	0/24 V DC	SBPSOL* release signal, output
33-B4	2-2	0/24 V DC	SBPSOL* actuate signal, output
33-B5	2-2	0/24 V DC	OFCL* on/off, output
33-B6	2-2	0/24 V DC	EFSSOL* on/off, output
33-B8	2-2	0/24 V DC	SBFSSOL* on/off, output
33-B9	2-2	0/24 V DC	OFSOL* release signal, output
33-B10	2-2	0/24 V DC	OFSOL* actuate signal, output
33-B11	2-2	0/5 V DC	OFM* ENABLE signal, input
33-B12	2-2	0/5 V DC	OFM* ENABLE signal, input
34-2	34-1	4.5 V DC (pulse)	CCDPCB ODD signal, input (analog)
34-4	34-3	4.5 V DC (pulse)	CCDPCB EVEN signal, input (analog)
34-5	34-7	12 V DC	12 V DC supply for CCDPCB, output
34-6	34-7	5 V DC	5 V DC supply for CCDPCB, output
34-8	34-9	0/5 V DC (pulse)	CCDPCB CLP signal, output
34-10	34-11	0/5 V DC (pulse)	CCDPCB SHIFT signal, output
34-12	34-11	0/5 V DC (pulse)	CCDPCB CLOCK + signal, output
34-13	34-11	0/5 V DC (pulse)	CCDPCB CLOCK - signal, output
34-14	34-11	0/5 V DC (pulse)	CCDPCB RS + signal, output
34-15	34-11	0/5 V DC (pulse)	CCDPCB RS - signal, output
35-1	35-3	0/5 V DC	JBESW* on/off, input
35-2	35-3	5 V DC	5 V DC supply for JBESW*, output
35-5	35-4	0/5 V DC	Job separator* connection signal, input
35-7	35-6	0/5 V DC	EPDSW* on/off, input
35-8	35-6	5 V DC	5 V DC supply for EPDSW*, output
35-9	35-4	0/5 V DC	LED (JOB)* on/off, output
35-10	35-4	5 V DC	5 V DC supply for LED (JOB)*, output
35-11	35-4	0/24 V DC	FSSOL (JOB)* release signal, output
35-12	35-4	0/24 V DC	FSSOL (JOB)* actuate signal, output
35-13	35-4	24 V DC	24 V DC supply for FSSOL (JOB)*, output
36-1	42-B4	0/5 V DC (pulse)	OPCB-L DIGLED6 signal, output
36-2	42-B4	0/5 V DC (pulse)	OPCB-L DIGLED5 signal, output
36-3	42-B4	0/5 V DC (pulse)	OPCB-L DIGLED4 signal, output
36-4	42-B4	0/5 V DC (pulse)	OPCB-L DIGLED3 signal, output
36-5	42-B4	0/5 V DC (pulse)	OPCB-L DIGLED2 signal, output
36-6	42-B4	0/5 V DC (pulse)	OPCB-L DIGLED1 signal, output
36-7	42-B4	0/5 V DC (pulse)	OPCB-L SCAN4 signal, output
36-8	42-B4	0/5 V DC (pulse)	OPCB-L SCAN3 signal, output

*Optional.

Terminals (CN)		Voltage	Remarks
36-9	42-B4	0/5 V DC (pulse)	OPCB-L SCAN2 signal, output
36-10	42-B4	0/5 V DC (pulse)	OPCB-L SCAN1 signal, output
36-11	42-B4	0/5 V DC	OPCB-L DIGKEY3 signal, input
36-12	42-B4	0/5 V DC	OPCB-L DIGKEY2 signal, input
36-13	42-B4	0/5 V DC	OPCB-L DIGKEY1 signal, input
37-2	37-1	0/5 V DC	SHPSW on/off, input
37-3	37-1	0/5 V DC	EL on/off, output
37-4	37-1	0/5 V DC	SM ENABLE signal, output
37-5	37-1	0/5 V DC	SM RET signal, output
37-6	37-1	0/5 V DC	SM CWB signal, output
37-7	37-1	0/5 V DC (pulse)	SM CLOCK signal, output
37-8	37-1	0/5 V DC	SM drive control signal M5, output
37-9	37-1	0/5 V DC	SM drive control signal M4, output
37-10	37-1	0/5 V DC	SM drive control signal M3, output
37-11	37-1	0/5 V DC	SM drive control signal M2, output
37-12	37-1	0/5 V DC	SM drive control signal M1, output
37-13	37-1		SM current control voltage Vref, output
37-14	37-1	0/5 V DC	ODSW on/off, input
37-16	37-15	0/5 V DC	OSDS on/off, input
37-17	37-15	5 V DC	5 V DC supply for OSDS, output
42-A1	42-B4	0/5 V DC	OPCB-L BUZZER signal, output
42-A2	42-B4	0/5 V DC (pulse)	Touch panel detection voltage X1, input
42-A3	42-B4	0/5 V DC (pulse)	Touch panel detection voltage Y1, input
42-A4	42-B4	0/5 V DC (pulse)	Touch panel detection voltage X2, output
42-A5	42-B4	0/5 V DC (pulse)	Touch panel detection voltage Y2, output
42-A6	42-B4	0/5 V DC (pulse)	LCD FRAME signal, output
42-A7	42-B4	0/5 V DC (pulse)	LCD LOAD signal, output
42-A8	42-B4	0/5 V DC (pulse)	LCD CP signal, output
42-A9	42-B4	GND	LCD VSS signal, output
42-A10	42-B4	5 V DC	LCD VDD signal, output
42-A11	42-B4	GND	LCD VSS signal, output
42-A12	42-B4	0/5 V DC	LCD DISPLAY signal, output
42-A13	42-B4	0/5 V DC (pulse)	LCD D0 data, output
42-A14	42-B4	0/5 V DC (pulse)	LCD D1 data, output
42-A15	42-B4	0/5 V DC (pulse)	LCD D2 data, output
42-A16	42-B4	0/5 V DC (pulse)	LCD D3 data, output
42-A17	42-B4	0/5 V DC (pulse)	LCD VEE signal, output
42-B2	42-B1	24 V DC	24 V DC supply for OPCB-R, output
42-B3	42-B4	0/5 V DC	OPCB-R LAMP OFF signal, output
42-B5	42-B4	5 V DC	5 V DC supply for OPCB-R, output
42-B6	42-B4	0/5 V DC (pulse)	OPCB-R DIGLED8 signal, output
42-B7	42-B4	0/5 V DC (pulse)	OPCB-R DIGLED7 signal, output
42-B8	42-B4	0/5 V DC (pulse)	OPCB-R SCAN8 signal, output
42-B9	42-B4	0/5 V DC (pulse)	OPCB-R SCAN7 signal, output
42-B10	42-B4	0/5 V DC (pulse)	OPCB-R SCAN6 signal, output
42-B11	42-B4	0/5 V DC (pulse)	OPCB-R SCAN5 signal, output
42-B12	42-B4	0/5 V DC	OPCB-R DIGKEY9 signal, input
42-B13	42-B4	0/5 V DC	OPCB-R DIGKEY8 signal, input
42-B14	42-B4	0/5 V DC	OPCB-R DIGKEY7 signal, input
42-B15	42-B4	0/5 V DC	OPCB-R DIGKEY6 signal, input
42-B16	42-B4	0/5 V DC	OPCB-R DIGKEY5 signal, input
42-B17	42-B4	0/5 V DC	OPCB-R DIGKEY4 signal, input
43-A1	43-A2	5/0 V DC (pulse)	Printer board* PRINTN signal, output
43-A3	43-A2	5/0 V DC (pulse)	Printer board* SI signal, output
43-A4	43-A2	5/0 V DC (pulse)	Printer board* SCLK signal, input
43-A5	43-A2	5/0 V DC (pulse)	Printer board* SBSY signal, output

*Optional.

Terminals (CN)		Voltage	Remarks
43-A6	43-A2	5/0 V DC (pulse)	Printer board* SO signal, input
43-A7	43-A2	5/0 V DC (pulse)	Printer board* RESET signal, output
43-A8	43-A2	5/0 V DC (pulse)	Printer board* PDOOUT signal, output
43-A10	43-A2	5/0 V DC (pulse)	Printer board* VDATAP signal, input
43-A12	43-A2	5/0 V DC (pulse)	Printer board* VDATAN signal, input
43-A14	43-A2	5/0 V DC (pulse)	Printer board* FPCLKsignal, output
43-A15	43-A2	5/0 V DC (pulse)	Printer board* FPDAT signal, input
43-A17	43-A2	5/0 V DC (pulse)	Printer board* VDATA signal, input
43-B1	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B2	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B3	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B4	43-A2	5/0 V DC (pulse)	Printer board* SDIR signal, output
43-B5	43-A2	5/0 V DC (pulse)	Printer board* ESGIR signal, output
43-B6	43-A2	5/0 V DC (pulse)	Printer board* VDFON signal, output
43-B7	43-A2	5/0 V DC (pulse)	Printer board* VSREQN signal, output
43-B12	43-A2	5/0 V DC (pulse)	Printer board* FPDIR signal, output
43-B13	43-A2	5/0 V DC (pulse)	Printer board* FPPOWER signal, output
43-B15	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B16	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B17	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B18	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B19	43-A2	5 V DC	Printer board* 5 V DC supply, output
43-B20	43-A2	5 V DC	Printer board* 5 V DC supply, output
44-1	44-2	3.3 V DC	Fax board* 3.3 V DC supply, output
44-3	44-4	5/0 V DC (pulse)	Fax board* FPVCLK signal, output
44-5	44-6	5/0 V DC (pulse)	Fax board* FVCLK signal, input
44-7	44-8	5/0 V DC (pulse)	Fax board* FMRE signal, input
44-9	44-10	5/0 V DC (pulse)	Fax board* /FPVD signal, input
44-11	44-12	5/0 V DC (pulse)	Fax board* /FPHSYNC signal, output
44-13	44-14	5/0 V DC (pulse)	Fax board* /FPVSYNC signal, output
44-15	44-16	5/0 V DC (pulse)	Fax board* /FOVSYNC signal, output
44-17	44-18	5/0 V DC (pulse)	Fax board* /FOHSTHIN signal, output
44-19	44-20	5/0 V DC (pulse)	Fax board* FMIPOUTO signal, output
44-21	44-22	5/0 V DC (pulse)	Fax board* FMREOUT signal, output
44-23	44-24	5/0 V DC (pulse)	Fax board* FFOCLK signal, output
44-25	44-26	5/0 V DC (pulse)	Fax board* /MMISTS signal, output
44-27	44-28	Analog	Fax board* FMMI_TXD2 signal, output
44-29	44-30	Analog	Fax board* FMMI_RXD2 signal, input
44-31	44-30	5/0 V DC (pulse)	Fax board* /FAXRESET signal, output
44-32	44-30	5/0 V DC (pulse)	Fax board* /FAXREADY signal, input
44-33	44-30	5/0 V DC (pulse)	Fax board* /PREQ signal, input
44-34	44-30	5/0 V DC (pulse)	Fax board* /SREQ signal, input
44-35	44-30	5/0 V DC (pulse)	Fax board* /SETFAX signal, input
44-36	44-30	5/0 V DC (pulse)	Fax board* /MAINSTS signal, output
44-38	44-37	Analog	Fax board* FMAIN_TXD0 signal, output
44-40	44-39	Analog	Fax board* FMAIN_RXD0 signal, input

2-3-3 Operation unit PCB

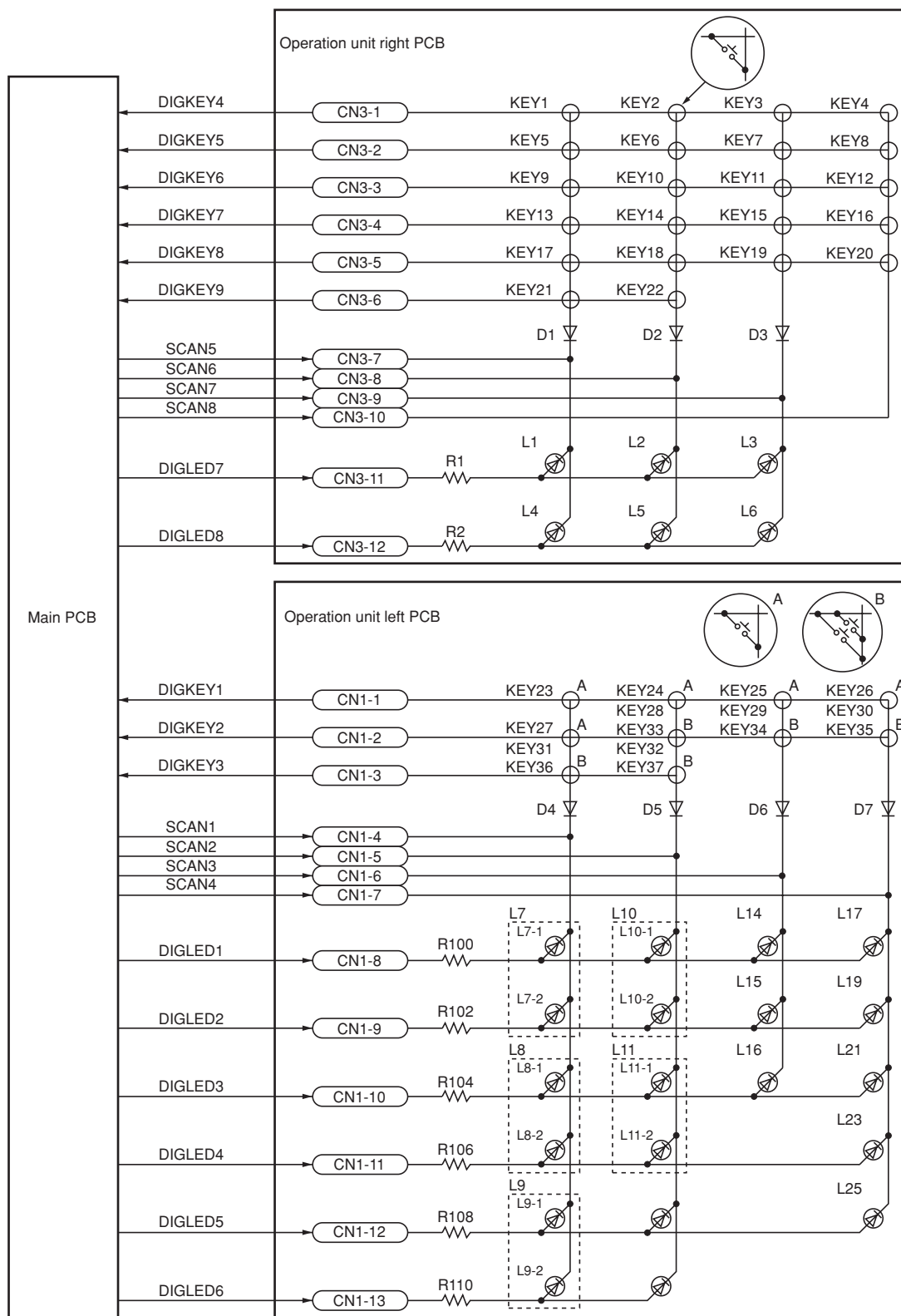


Figure 2-3-5 Operation unit PCB block diagram

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.

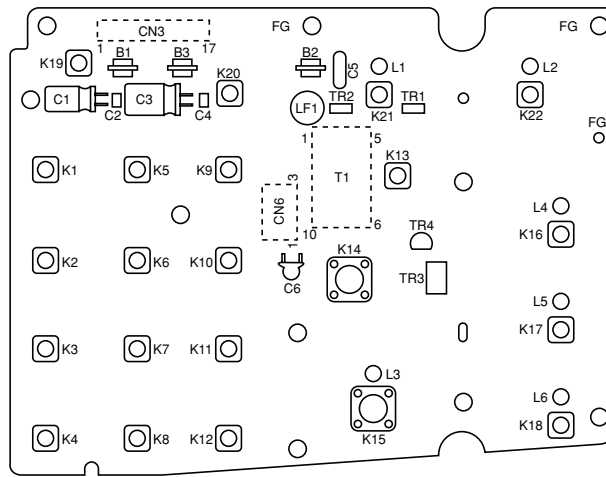


Figure 2-3-6 Operation unit right PCB silk-screen diagram

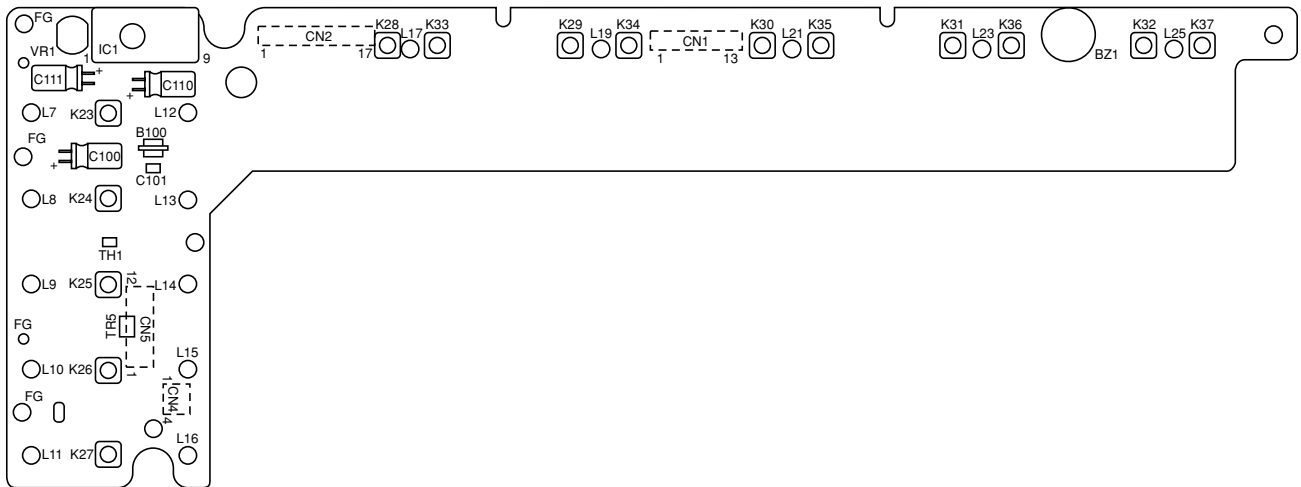


Figure 2-3-7 Operation unit left PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	3-14	0/5 V DC	OPCB-L DIGKEY1 signal, output
1-2	3-14	0/5 V DC	OPCB-L DIGKEY2 signal, output
1-3	3-14	0/5 V DC	OPCB-L DIGKEY3 signal, output
1-4	3-14	0/5 V DC (pulse)	OPCB-L SCAN1 signal, input
1-5	3-14	0/5 V DC (pulse)	OPCB-L SCAN2 signal, input
1-6	3-14	0/5 V DC (pulse)	OPCB-L SCAN3 signal, input
1-7	3-14	0/5 V DC (pulse)	OPCB-L SCAN4 signal, input
1-8	3-14	0/5 V DC (pulse)	OPCB-L DIGLED1 signal, input
1-9	3-14	0/5 V DC (pulse)	OPCB-L DIGLED2 signal, input
1-10	3-14	0/5 V DC (pulse)	OPCB-L DIGLED3 signal, input
1-11	3-14	0/5 V DC (pulse)	OPCB-L DIGLED4 signal, input
1-12	3-14	0/5 V DC (pulse)	OPCB-L DIGLED5 signal, input
1-13	3-14	0/5 V DC (pulse)	OPCB-L DIGLED6 signal, input
2-1	3-14	0/5 V DC	LCD VEE signal, input
2-2	3-14	0/5 V DC (pulse)	LCD D3 data, input
2-3	3-14	0/5 V DC (pulse)	LCD D2 data, input
2-4	3-14	0/5 V DC (pulse)	LCD D1 data, input
2-5	3-14	0/5 V DC (pulse)	LCD D0 data, input
2-6	3-14	0/5 V DC	LCD DISPLAY signal, input
2-7	3-14	GND	LCD VSS signal, input
2-8	3-14	5 V DC	LCD VDD signal, input
2-9	3-14	GND	LCD VSS signal, input
2-10	3-14	0/5 V DC (pulse)	LCD CP signal, input
2-11	3-14	0/5 V DC (pulse)	LCD LOAD signal, input
2-12	3-14	0/5 V DC (pulse)	LCD FRAME signal, input
2-13	3-14	0/5 V DC (pulse)	Touch panel detection voltage Y2, input
2-14	3-14	0/5 V DC (pulse)	Touch panel detection voltage X2, input
2-15	3-14	0/5 V DC (pulse)	Touch panel detection voltage Y1, output
2-16	3-14	0/5 V DC (pulse)	Touch panel detection voltage X1, output
2-17	3-14	0/5 V DC (pulse)	OPCB-L BUZZER signal, input
3-1	3-14	0/5 V DC	OPCB-R DIGKEY4 signal, output
3-2	3-14	0/5 V DC	OPCB-R DIGKEY5 signal, output
3-3	3-14	0/5 V DC	OPCB-R DIGKEY6 signal, output
3-4	3-14	0/5 V DC	OPCB-R DIGKEY7 signal, output
3-5	3-14	0/5 V DC	OPCB-R DIGKEY8 signal, output
3-6	3-14	0/5 V DC	OPCB-R DIGKEY9 signal, output
3-7	3-14	0/5 V DC (pulse)	OPCB-R SCAN5 signal, input
3-8	3-14	0/5 V DC (pulse)	OPCB-R SCAN6 signal, input
3-9	3-14	0/5 V DC (pulse)	OPCB-R SCAN7 signal, input
3-10	3-14	0/5 V DC (pulse)	OPCB-R SCAN8 signal, input
3-11	3-14	0/5 V DC (pulse)	OPCB-R DIGLED7 signal, input
3-12	3-14	0/5 V DC (pulse)	OPCB-R DIGLED8 signal, input
3-13	3-14	5 V DC	5 V DC supply for OPCB-R, input
3-15	3-14	0/5 V DC	OPCB-R LAMP OFF signal, input
3-16	3-17	24 V DC	24 V DC supply for OPCB-R, input
4-1	3-14	0/5 V DC (pulse)	Touch panel detection voltage Y2, output
4-2	3-14	0/5 V DC (pulse)	Touch panel detection voltage X2, output
4-3	3-14	0/5 V DC (pulse)	Touch panel detection voltage Y1, input
4-4	3-14	0/5 V DC (pulse)	Touch panel detection voltage X1, input
5-1	3-14	0/5 V DC (pulse)	LCD FRAME signal, output
5-2	3-14	0/5 V DC (pulse)	LCD LOAD signal, output
5-3	3-14	0/5 V DC (pulse)	LCD CP signal, output
5-4	3-14	GND	LCD VSS signal, output
5-5	3-14	5 V DC	LCD VDD signal, output
5-6	3-14	GND	LCD VSS signal, output
5-7	3-14	Analog	LCD control signal, output

Terminals (CN)		Voltage	Remarks
5-8	3-14	0/5 V DC	LCD DISPLAY signal, output
5-9	3-14	0/5 V DC (pulse)	LCD D0 data, output
5-10	3-14	0/5 V DC (pulse)	LCD D1 data, output
5-11	3-14	0/5 V DC (pulse)	LCD D2 data, output
5-12	3-14	0/5 V DC (pulse)	LCD D3 data, output
6-1	3-14	Analog	LCD BACK LIGHT control signal, output
6-3	3-14	GND	LCD BACK LIGHT control signal, output

2-3-4 Scanner drive PCB

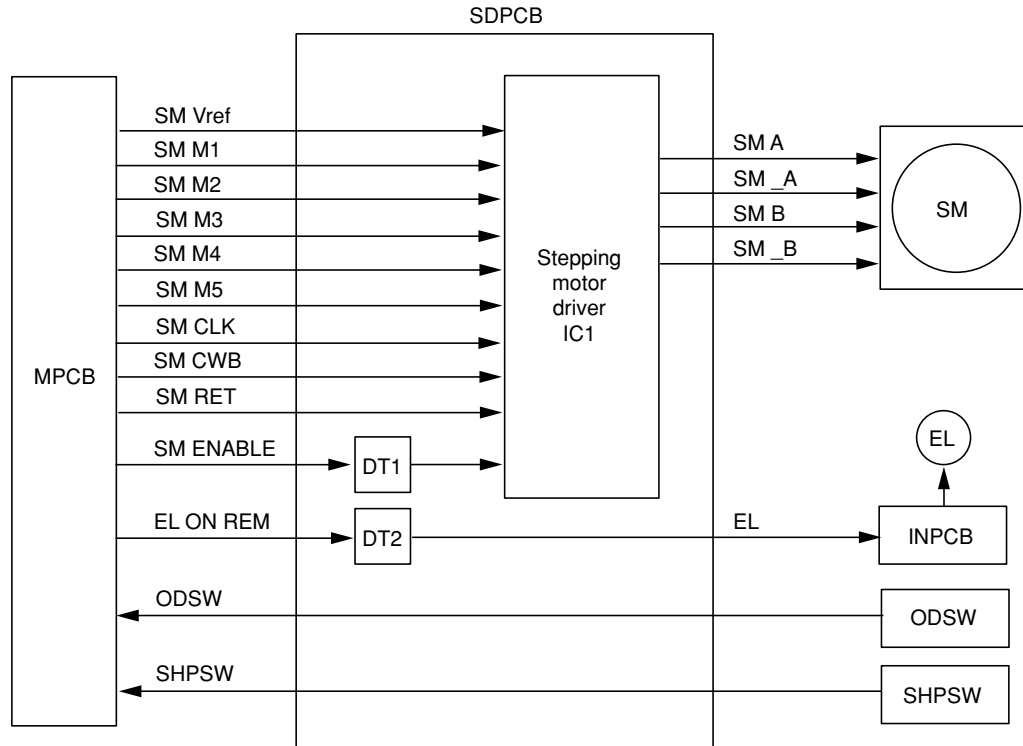


Figure 2-3-8 Scanner drive PCB block diagram

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).

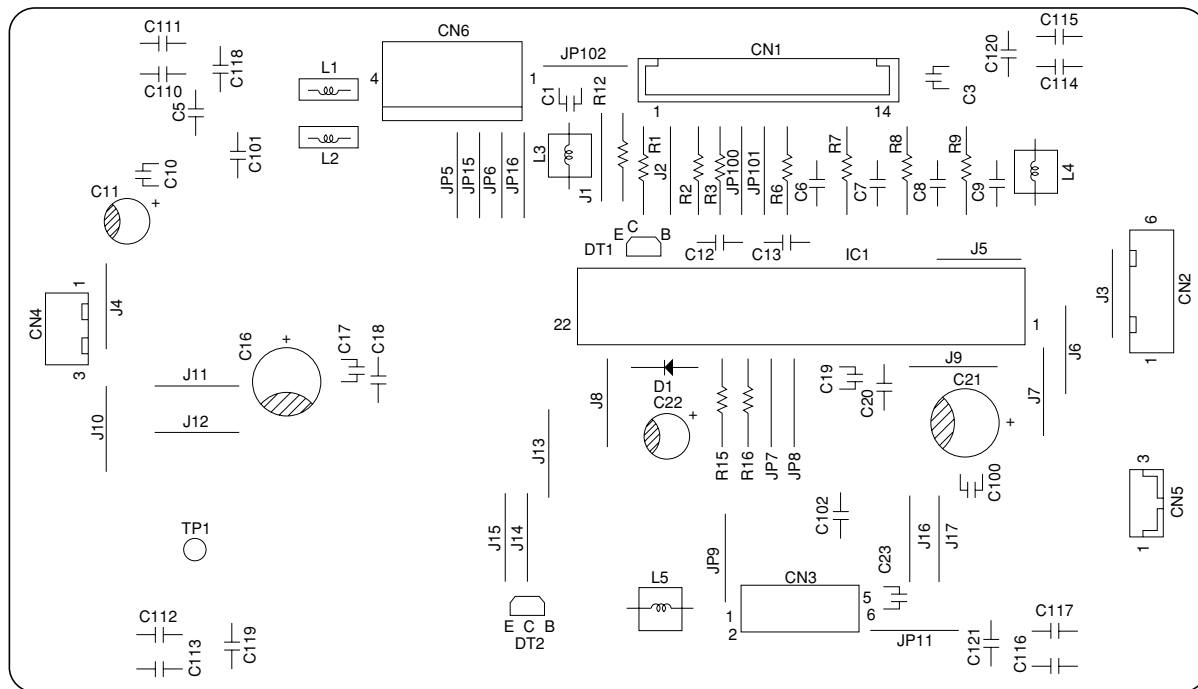
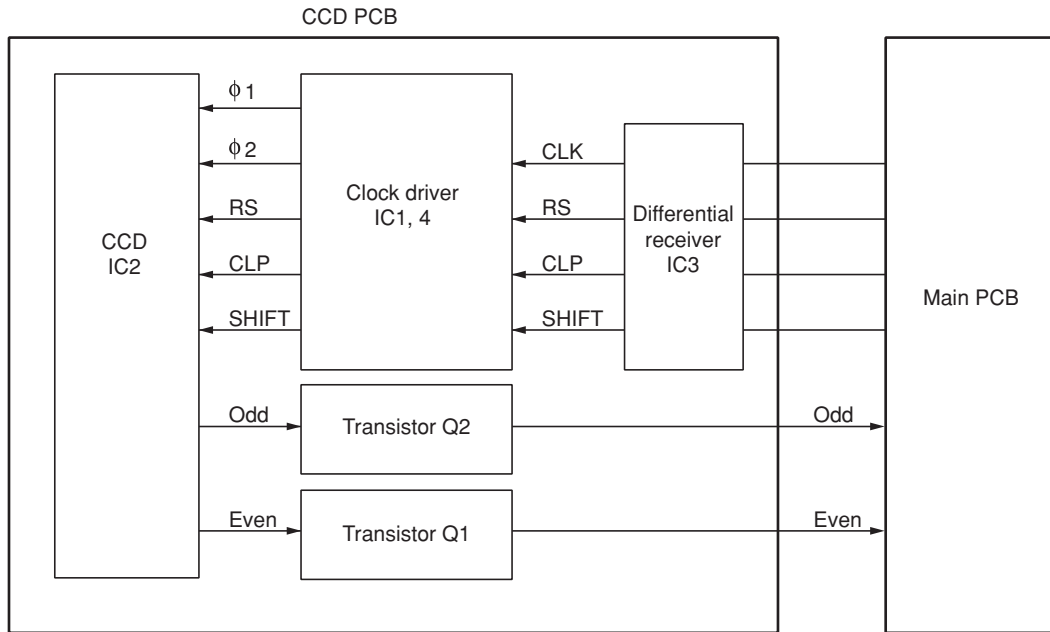


Figure 2-3-9 Scanner drive motor PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-2	1-1	0/5 V DC	SHPSW on/off, output
1-3	1-1	0/5 V DC	EL on/off, input
1-4	1-1	0/5 V DC	SM ENABLE signal, input
1-5	1-1	0/5 V DC	SM RET signal, input
1-6	1-1	0/5 V DC	SM CWB signal, input
1-7	1-1	0/5 V DC (pulse)	SM CLOCK signal, input
1-8	1-1	0/5 V DC	SM drive control voltage M5, input
1-9	1-1	0/5 V DC	SM drive control voltage M4, input
1-10	1-1	0/5 V DC	SM drive control voltage M3, input
1-11	1-1	0/5 V DC	SM drive control voltage M2, input
1-12	1-1	0/5 V DC	SM drive control voltage M1, input
1-13	1-1		SM current control voltage Vref, input
1-14	1-1	0/5 V DC	ODSW on/off, input
2-1	3-6	0/24 V DC (pulse)	SM coil energization pulse, output (_B)
2-2	3-6	24 V DC	24 V DC supply for SM, output
2-3	3-6	0/24 V DC (pulse)	SM coil energization pulse, output (B)
2-4	3-6	0/24 V DC (pulse)	SM coil energization pulse, output (A)
2-5	3-6	24 V DC	24 V DC supply for SM, output
2-6	3-6	0/24 V DC (pulse)	SM coil energization pulse, output (_A)
3-1	3-5	0/5 V DC	EL on/off, output
3-2	3-5	0/5 V DC	EL on/off, output
3-3	3-5	24 V DC	24 V DC supply for INPCB, output
3-4	3-5	24 V DC	24 V DC supply for INPCB, output
4-1	4-3	5 V DC	5 V DC supply for SHPSW, output
4-2	4-3	0/5 V DC	SHPSW on/off, output
5-1	5-3	5 V DC	5 V DC supply for ODSW, output
5-2	5-3	0/5 V DC	ODSW on/off, output
6-2	6-1	24 V DC	24 V DC supply from PSPCB, input
6-4	6-3	5 V DC	5 V DC supply from PSPCB, input

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).

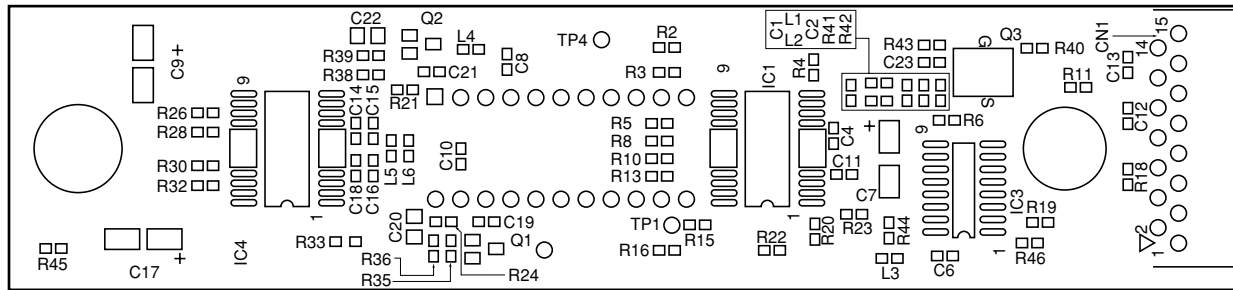
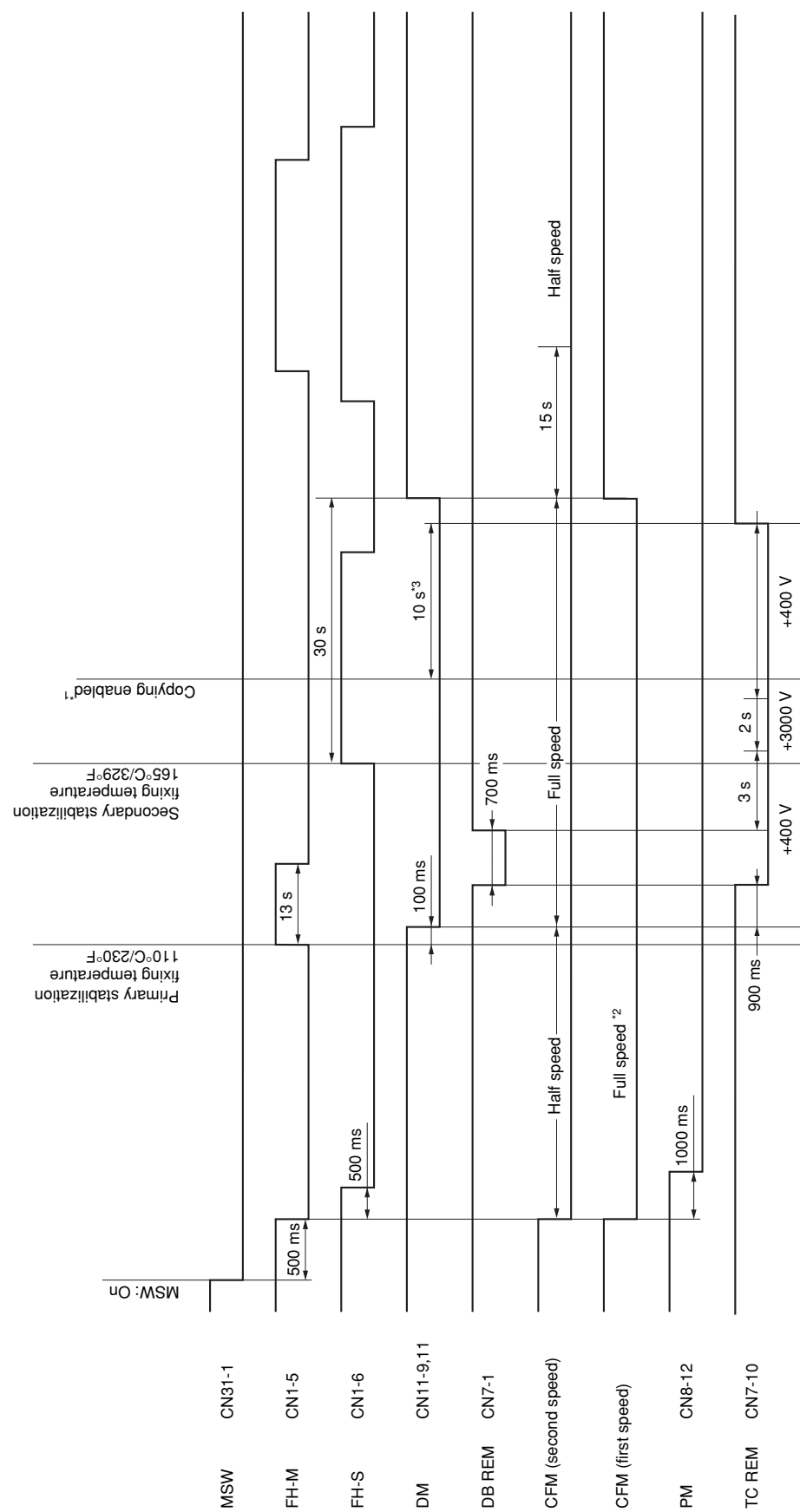


Figure 2-3-11 CCD PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	1-5	0/5 V DC (pulse)	CCDPCB RS – signal, input
1-2	1-5	0/5 V DC (pulse)	CCDPCB RS + signal, input
1-3	1-5	0/5 V DC (pulse)	CCDPCB CLOCK – signal, input
1-4	1-5	0/5 V DC (pulse)	CCDPCB CLOCK + signal, input
1-6	1-5	0/5 V DC (pulse)	CCDPCB SHIFT signal, input
1-8	1-7	0/5 V DC (pulse)	CCDPCB CLP signal, input
1-10	1-9	5 V DC	5 V DC supply from CCDPCB, input
1-11	1-9	12 V DC	12 V DC supply from CCDPCB, input
1-12	1-13	4.5 V DC (pulse)	CCDPCB EVEN signal, output (analog)
1-14	1-15	4.5 V DC (pulse)	CCDPCB ODD signal, output (analog)

Timing chart No. 1 From the main switch turned on to machine stabilization



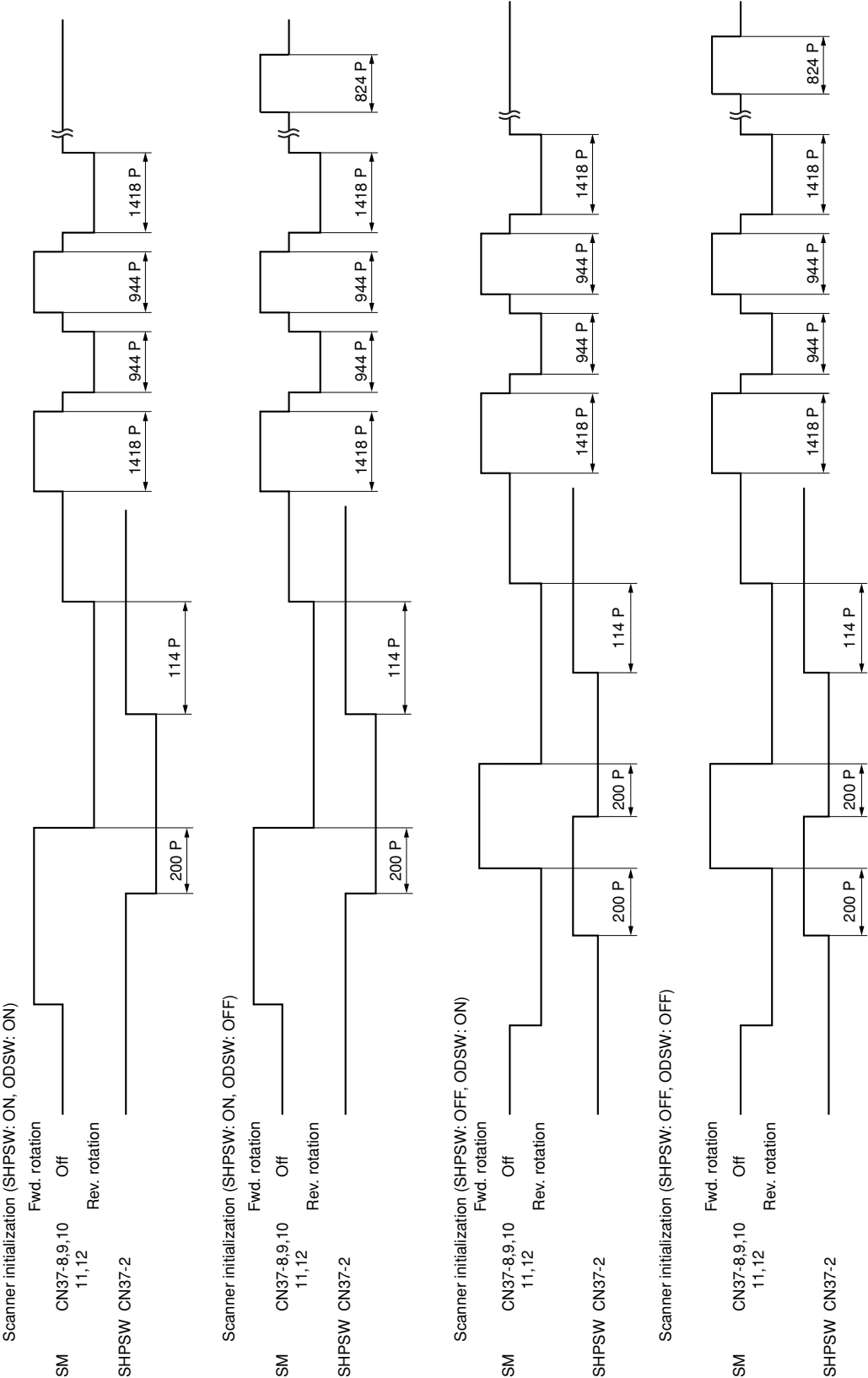
*1: Copying is enabled as follows:

1. When fixing temperature at the main switch turning on is 100°C/212°F or lower
Absolute humidity is 15 g/m³ 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/m³ or higher.

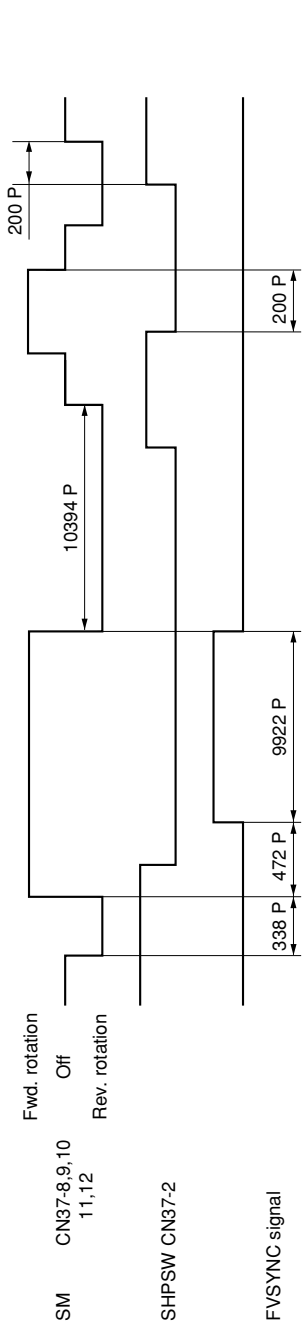
*3: 60 s when the fixing temperature at main switch turning on is 100°C/212°F or lower, and the absolute humidity is 15 g/m³ or higher.

Timing chart No. 2 Scanner initialization

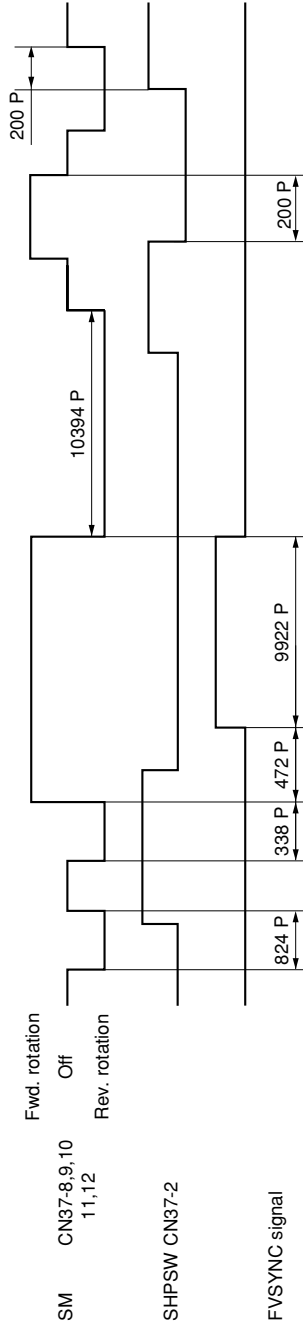


Timing chart No.3 Original scanning operation

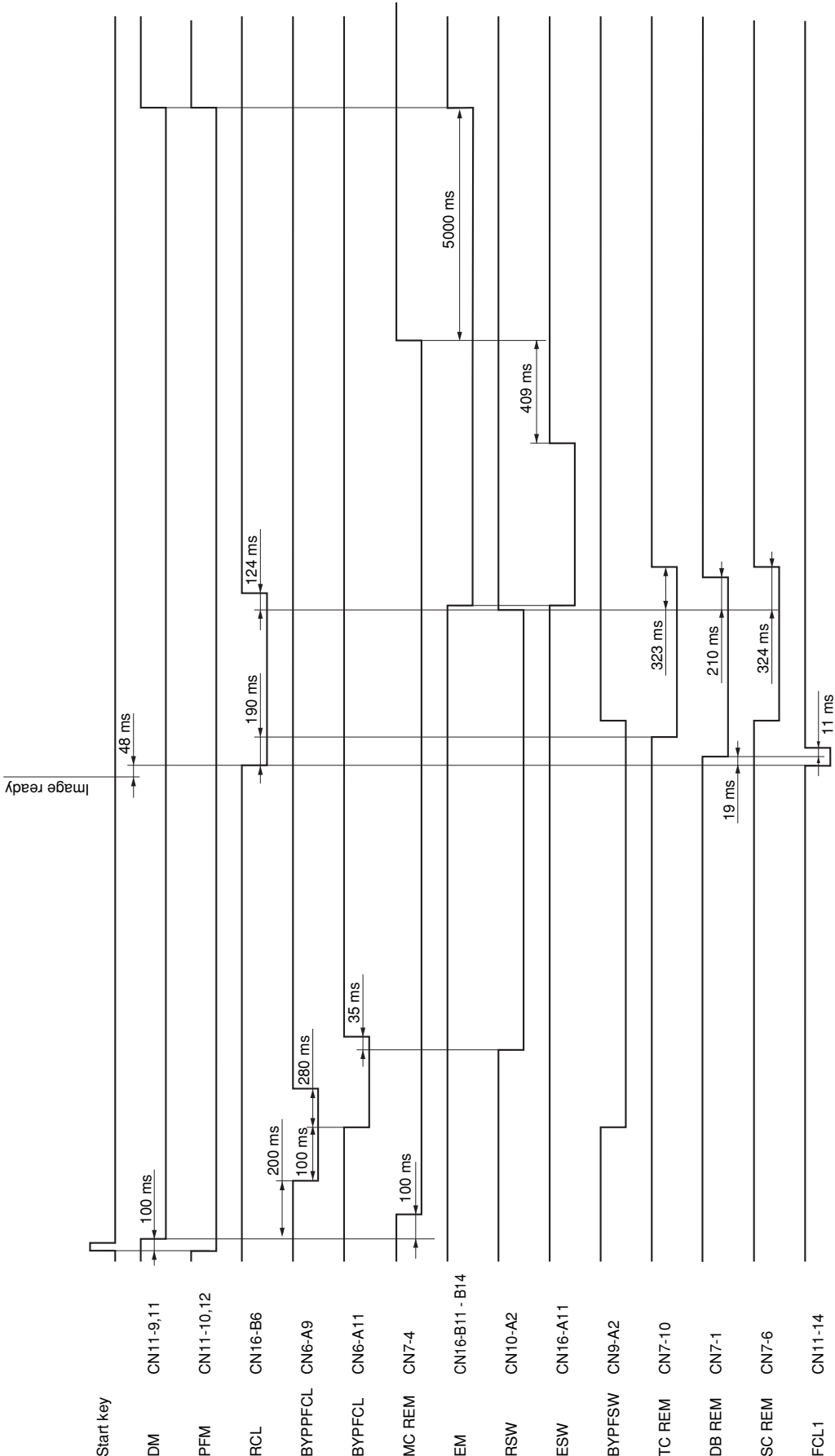
Scanning an A3/11" × 17" original, magnification ratio 100% (ODSW: ON)



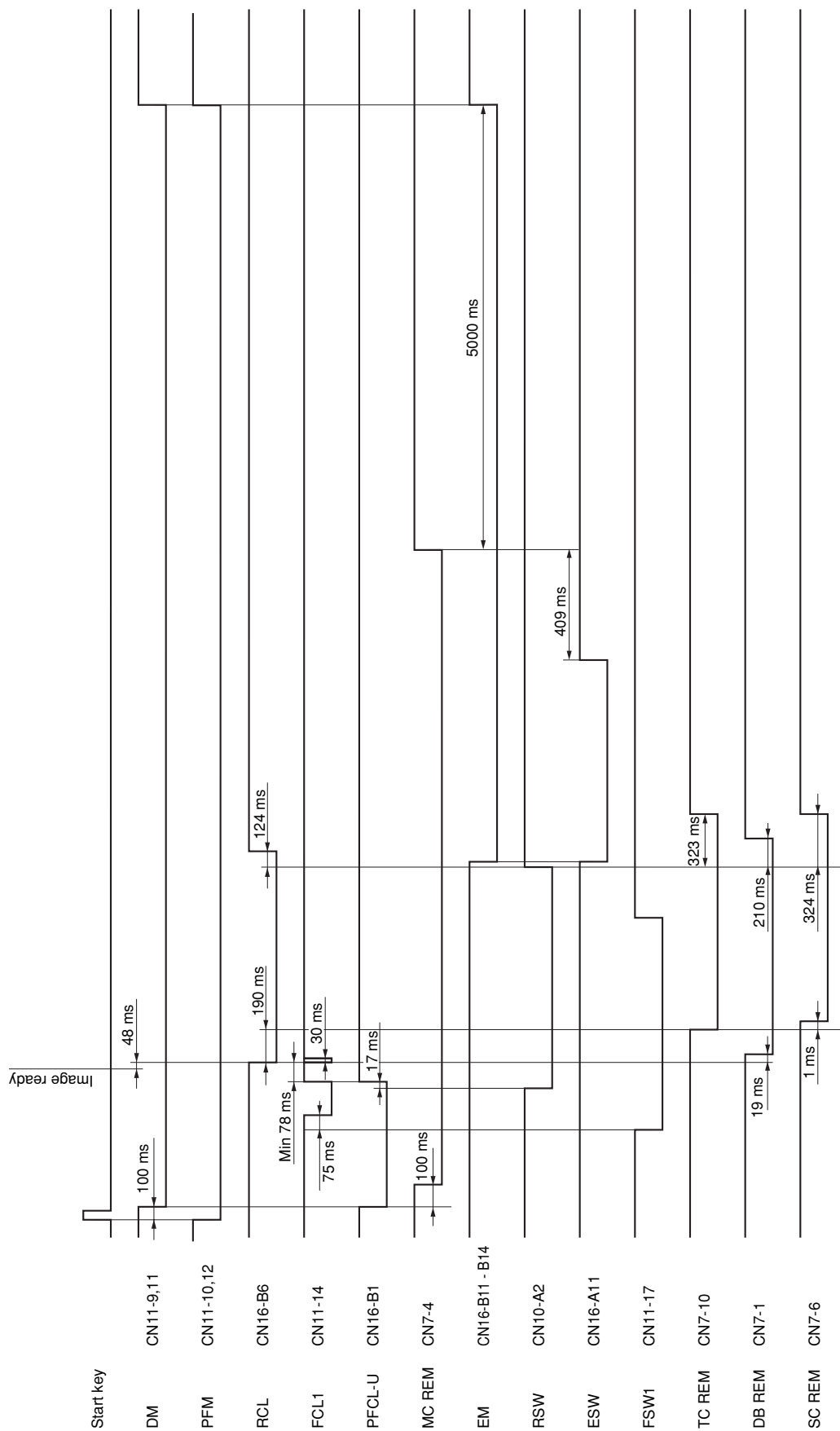
Scanning an A3/11" × 17" original, magnification ratio 100% (ODSW: OFF)



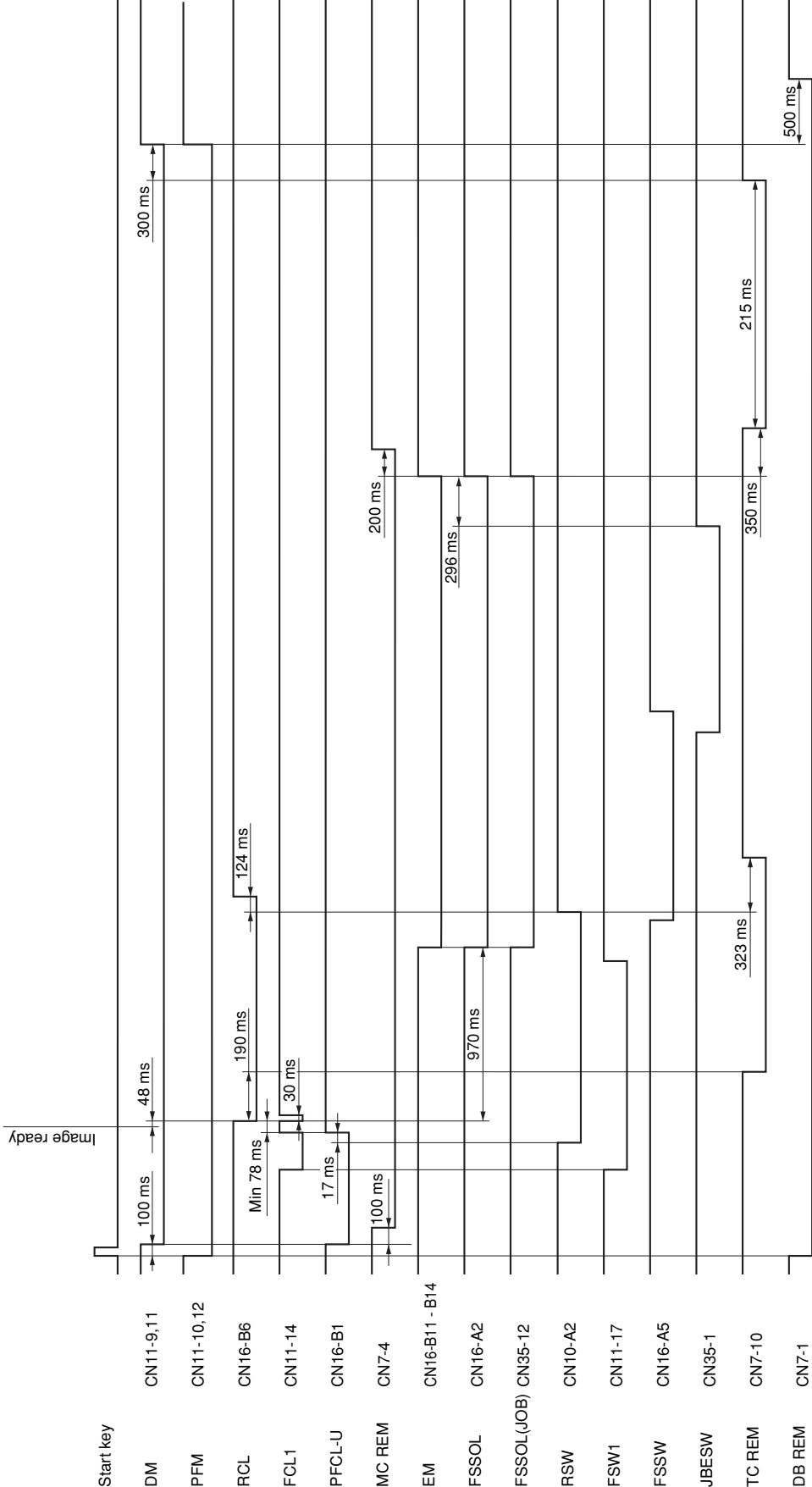
Timing chart No. 4 Copying an A3/11"x17" original onto an A5R/5 1/2"x8 1/2" copy paper from the bypass table, magnification ratio 25%, manual copy density control



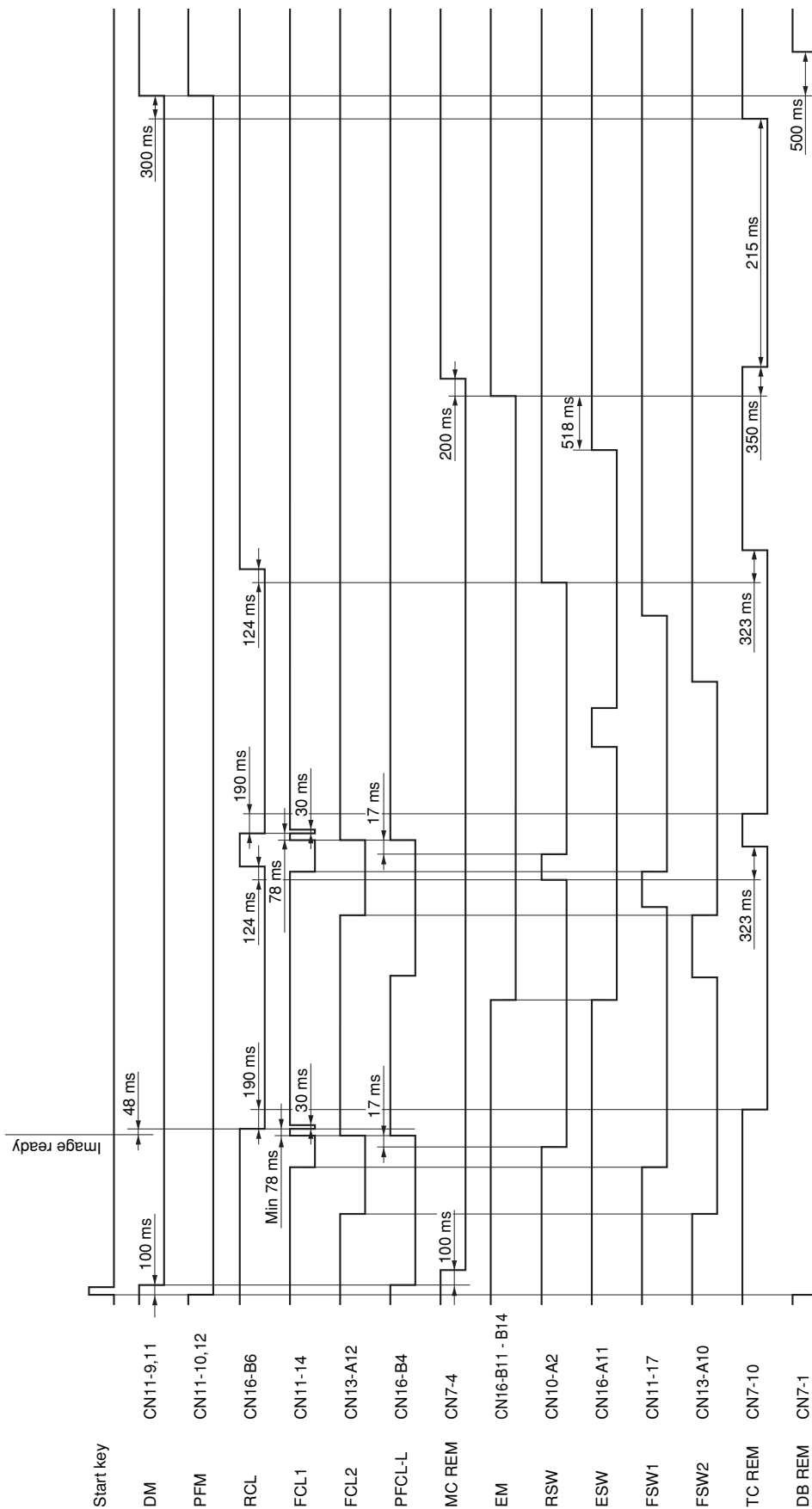
Timing chart No. 5 Copying an A4/11"x8¹/₂" original onto an A4/11"x8¹/₂" copy paper from the copier upper drawer, magnification ratio 100%, auto copy density control



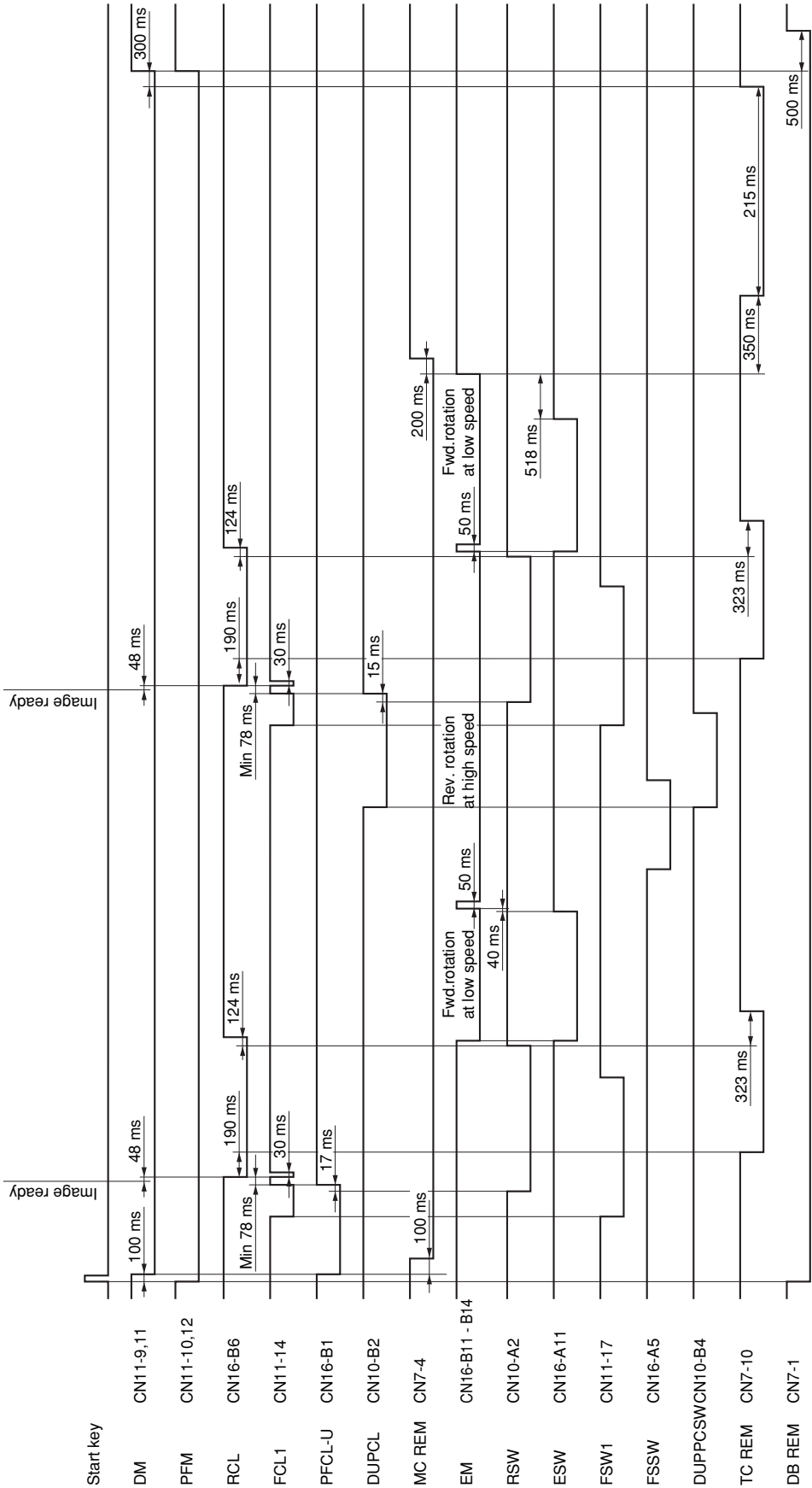
Timing chart No. 6 Copying an A4/11"x8 1/2" original onto an A4/11"x8 1/2" copy paper from the copier upper drawer, magnification ratio 100%, auto copy density control, ejection to the job separator



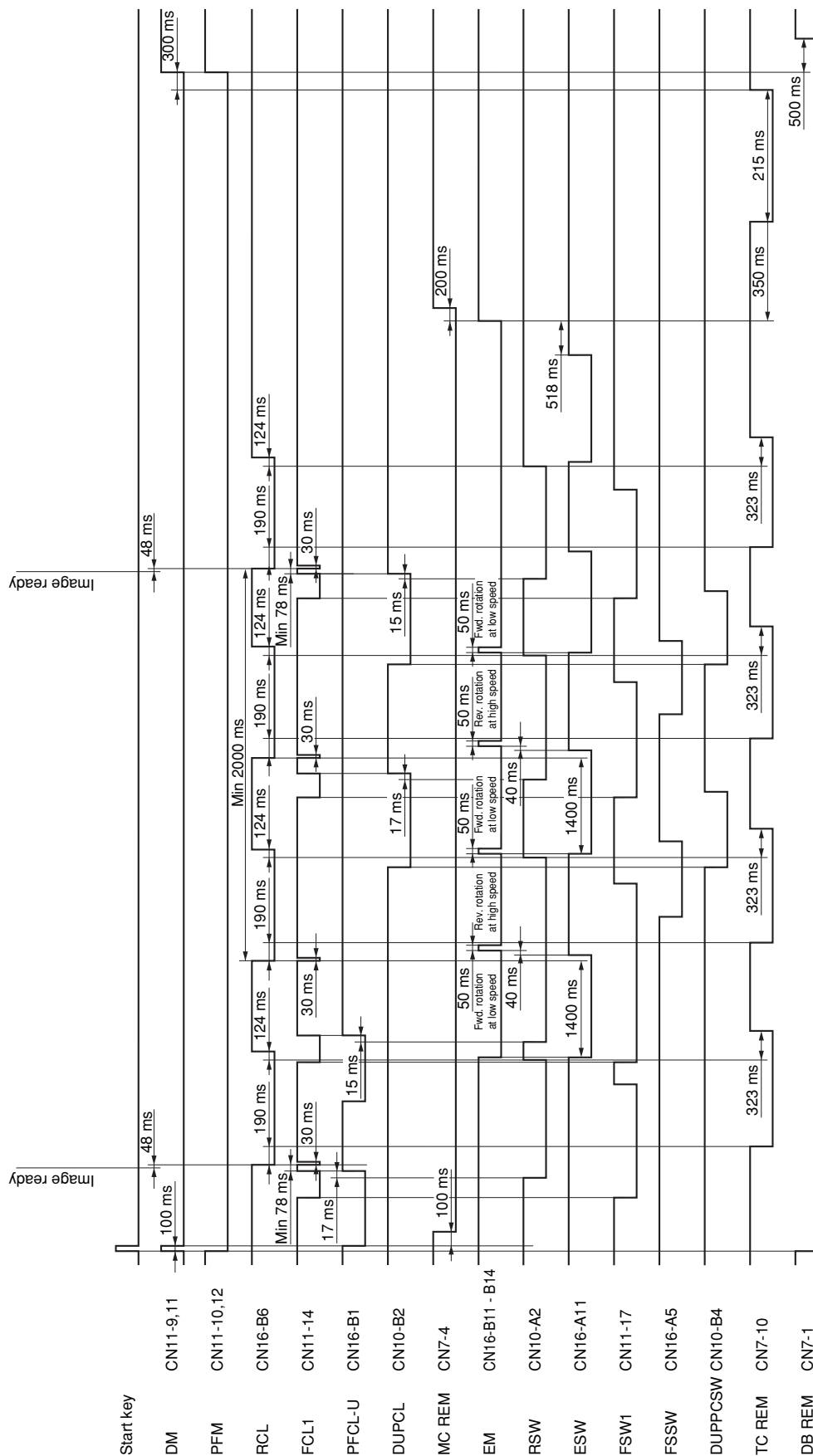
Timing chart No. 7 Continuous copying of an A5R/5¹/₂"x8¹/₂" original onto two sheets of A3/11"x17" copy paper from the copier lower drawer, magnification ratio 400%, manual copy density control



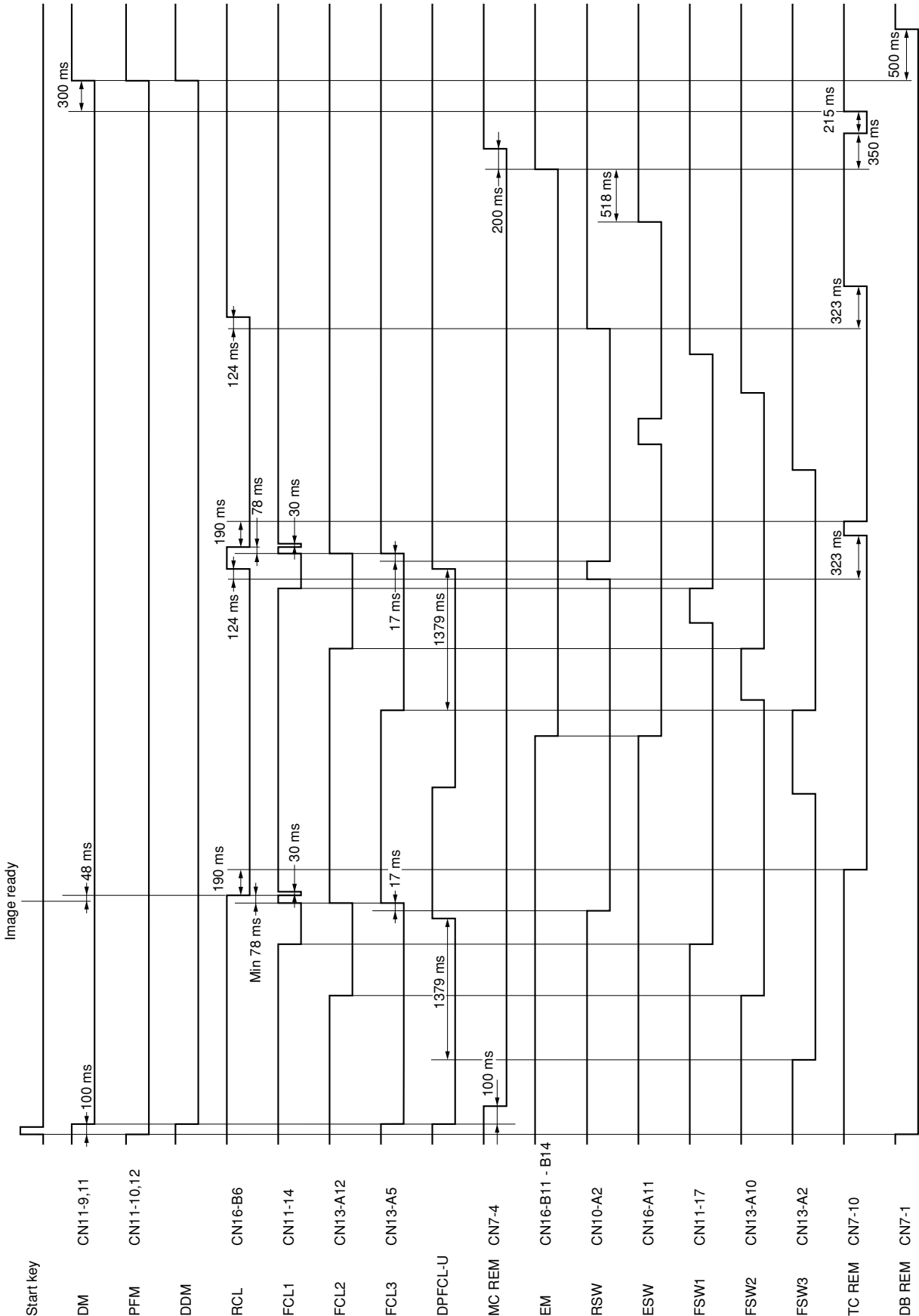
Timing chart No. 8 Duplex copying of an A3/11"x17" book original onto one duplex A4/11"x8 1/2" copy from the copier upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 9 Continuous, duplex copying of two single-sided A4/11"x8¹/₂" originals onto two duplex A4/11"x8¹/₂" copies from the copier upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 10 Continuous copying an A3/11"x17" original onto two sheets of A3/11"x17" copy paper from the paper feed desk upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 11 Copying an A4/11"x8¹/₂" original onto an A4/11"x8¹/₂" copy paper from the paper feed desk lower drawer, magnification ratio 100%, manual copy density control

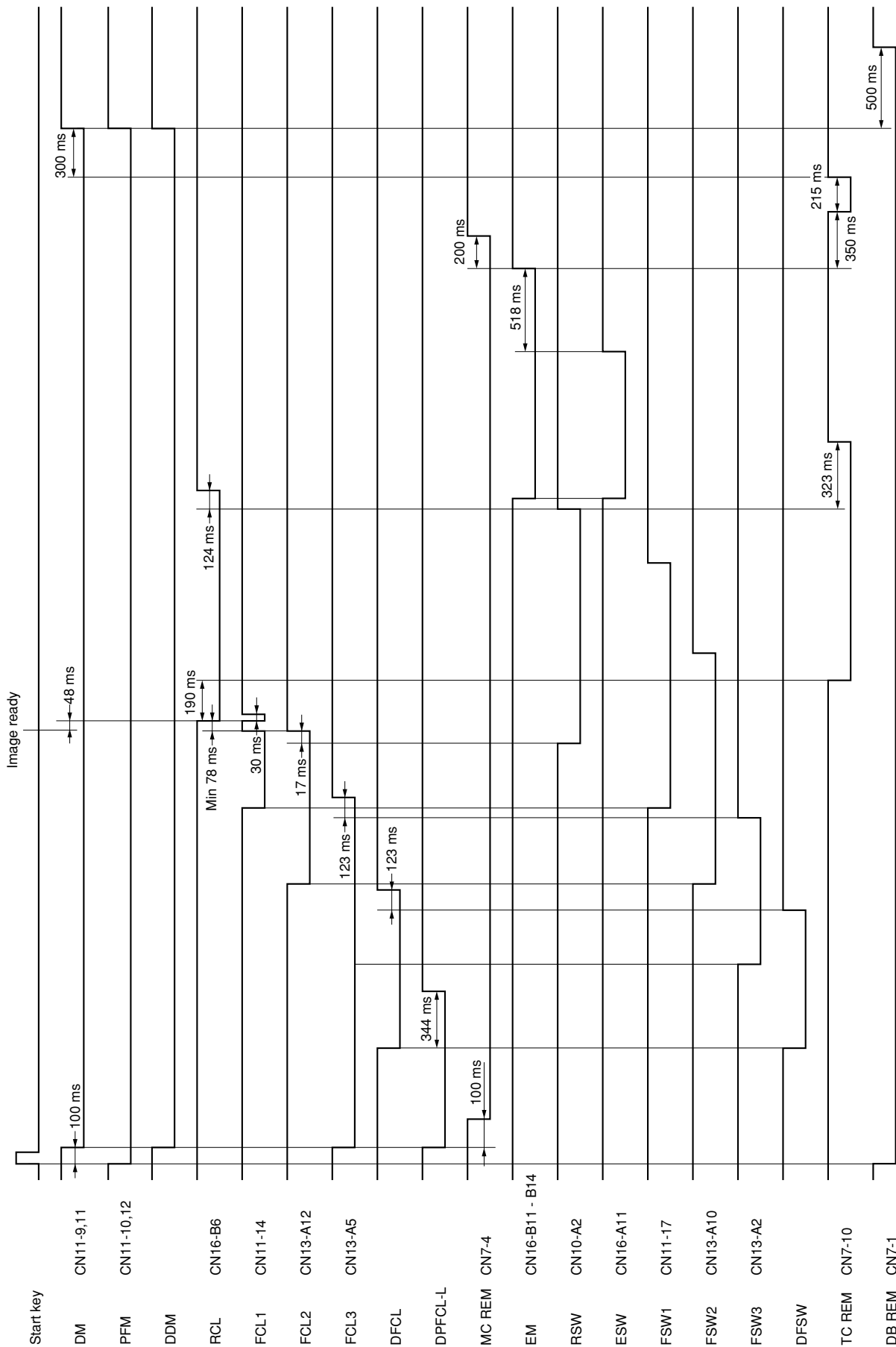
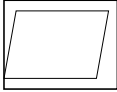
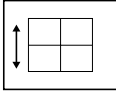
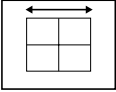
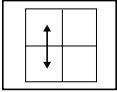
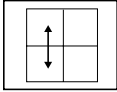
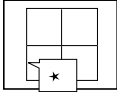
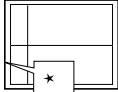
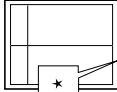
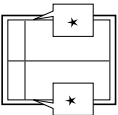
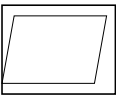
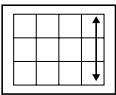
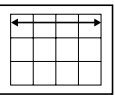
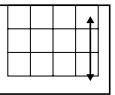
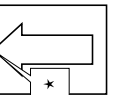
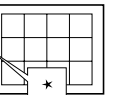
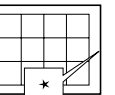


Chart of image adjustment procedures

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	1-4-12	
③	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Drive motor speed adjustment	U053	MAIN MOTOR	U053 test pattern	1-4-12	
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	AC	U402 test pattern	1-6-13	
⑩	Adjusting the lateral squareness (scanning adjustment)		Adjusting the position of the LSU (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 DF.
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 1-4-15	U065: For copying an original placed on the contact glass. U070: For copying originals from the DF.
⑬	Adjusting the center line (scanning adjustment)		Adjusting the original scan data (image adjustment)	U067 U072	ADJUST DATA ADJUST DATA	Test chart	1-6-30 1-4-17	U067: For copying an original placed on the contact glass. U072: For copying originals from the DF.
⑭	Adjusting the leading edge registration (scanning adjustment)		Original scan start timing	U066 U071	ADJUST DATA LEAD EDGE ADJ	Test chart	1-6-29 1-4-16	U066: For copying an original placed on the contact glass. U071: For copying originals from the DF.
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 1-4-49	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.
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 1-4-49	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.

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	AC MARGIN AC MARGIN	Test chart	1-6-31 1-4-49	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.

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: $\pm 0.8\%$ Using SRDF: $\pm 1.5\%$
Enlargement/reduction	Copier: $\pm 1.0\%$ Using SRDF: $\pm 1.5\%$
Lateral squareness (copier mode)	Copier: ± 1.5 mm/375 mm Using SRDF: ± 2.5 mm/375 mm
Lateral squareness (printer mode)	± 1.0 mm/375 mm
Margins (copier mode)	A: $2.0^{+2.0}_{-1.9}$ mm B: 3.0 ± 2.5 mm C: $2.0^{+2.0}_{-1.9}$ mm D: 3.0 ± 2.5 mm
Margins (printer mode)	A: 6.0 ± 2.0 mm B: 6.0 ± 2.5 mm C: 6.0 ± 2.0 mm D: 6.0 ± 2.5 mm
Leading edge registration	Drawer: ± 2.5 mm Bypass: ± 2.5 mm
Skewed paper feed (left-right difference)	Duplex copying: ± 2.5 mm Drawer: 1.5 mm or less Bypass: 1.5 mm or less
Lateral image shifting	Duplex copying: 2.0 mm or less Drawer: ± 2.0 mm or less Bypass: ± 2.0 mm or less
Curling	Duplex copying: ± 3.0 mm or less 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 forwarding pulley	PULLEY, LEADING FEED	2AR07240	4	6
Bypass paper feed pulley	UPPER PULLEY, BYPASS	61706770	10	29
Bypass separation pulley	PULLEY, SEPARATION	2AR07230	10	20
Bypass forwarding pulley	PULLEY, LEADING FEED	2AR07240	10	34
Bypass feed roller 1	ROLLER2 BYPASSFEED	2BL06540	11	11
Bypass feed roller 2	ROLLER4 BYPASSFEED	2BL06560	11	12
Left registration roller	ROLLER REGIST L	2BL16021	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	2BL27420	5	32
Contact glass	CONTACT GLASS	35912010	9	46
Slit glass	CONTACT GLASS, ADF	2AV12250	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	35927290	9	53
Transfer roller unit	TR-700 TRANSFER ASS'Y	5PLPXHLAPKX	7	25
Developing unit	DEVELOPER ASS'Y	2BJ93010	13	1
Drum unit	DRUM ASS'Y	2BJ93020	15	1
Main charger unit	MC ASS'Y	2BL93090	15	48
Fixing unit	FIXING ASS'Y 120	2BJ93040	14	-
	FIXING ASS'Y 230	2BJ93050	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 B	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	Every service	Replace.	1-6-3
	Upper/lower separation pulley	Replace	Every service	Replace.	1-6-3
	Upper/lower forwarding pulley	Replace	Every service	Replace.	1-6-3
	Bypass paper feed pulley	Replace	Every service	Replace.	1-6-5
	Bypass separation pulley	Replace	Every service	Replace.	1-6-5
	Bypass forwarding pulley	Replace	Every service	Replace.	1-6-5
	Bypass feed roller 1	Clean	Every service	Clean with alcohol or a dry cloth.	
	Bypass feed roller 2	Clean	Every service	Clean with alcohol or a dry cloth.	
	Left registration roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Right registration roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Feed pulley	Clean	Every service	Clean with alcohol or a dry cloth.	
	Feed roller 1	Clean	Every service	Clean with alcohol or a dry cloth.	
	Feed roller 2	Clean	Every service	Clean with alcohol or a dry cloth.	
	Feed roller 3	Clean	Every service	Clean with alcohol or a dry cloth.	
	Registration switch	Clean	Every service	Clean with a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Optical section	Slit glass	Clean	Every service	Clean with alcohol and then a dry cloth.	
	Contact glass	Clean	Every service	Clean with alcohol and then a dry cloth.	
	Mirror 1	Clean	Every service	Clean with alcohol and then a dry cloth only if vertical black lines appear on the copy image.	
	Mirror 2 and mirror 3	Clean	Every service	Clean with alcohol and then a dry cloth only if vertical black lines appear on the copy image.	
	Lens	Clean	Every service	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Reflector	Clean	Every service	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Exposure lamp	Clean or replace	Every service	Replace if an image problem occurs.	
	Optical rail	Grease	Every service	Check noise and shifting and then apply scanner rail grease PG671.	
	Original size detection sensor	Clean	Every service	Clean the sensor emitter and receiver with alcohol or a dry cloth only if there is a problem.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Transfer/separation section	Transfer roller unit	Replace	Every service	Replace.	1-6-35



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Developing section	Developing unit	Replace	Every service	Replace.	1-6-34



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Main charging/drum section	Drum unit	Replace	Every service	Replace.	1-6-32



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Fixing section	Fixing unit	Replace	Every service	Replace.	1-6-36
	Press roller separation claw	Check, replace and clean	Every service	Check and replace if it is deformed. Clean with alcohol after feeding 500,000 sheets.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Eject section	Eject roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject pulley	Clean	Every service	Clean with alcohol or a dry cloth.	
	Switchback roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Switchback pulley	Clean	Every service	Clean with alcohol or a dry cloth.	



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		

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

Facsimile System

Name used in service manual	Name used in installation guide	Part No.
Fax board	Fax board	3CM01020
Auxiliary power source PCB (100 V)	Auxiliary power source PCB (100 V)	3CM01030
Auxiliary power source PCB (200 V)	Auxiliary power source PCB (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
NCU retainer	NCU retainer	3CM26010
Auxiliary power source retainer	Auxiliary power source retainer	3CM26020
Fax cable	Fax cable	3CM27010
Fax-PCB-Power cable	Fax-PCB-Power cable	3CM27040
NCU board (N.A.)	NCU board (N.A.)	3CM01030
NCU board (CTR)	NCU board (CTR)	3CM01040
NCU board (EUG)	NCU board (EUG)	3CM01050
NCU cable	NCU cable	2AW27020
Battery pack	Battery pack	2AW27070
Speaker	Speaker	35427120
Modular connector cable (120 V only)	"B" Modular connector cable (120 V only)	76727300
M3 × 06 chrome binding screw	+TP-A chrome binding screw M3 × 06	B4103060
Upper-sheet	Upper-sheet	3CM26030
Lower-sheet	Lower-sheet	3CM26040

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 connector cable (120 V only)	"B" Modular connector 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.
RTC board	RTC board	3CS01010
Scanner board	Scanner board	3B301010
CD-ROM (scanner)	CD-ROM (scanner)	3B327010
CD-ROM (document processing)	CD-ROM (document processing)	3BJ27060

Duplex unit

Name used in service manual	Name used in installation guide	Part No.
Nut plate	Nut plate	2BL07120
M3 × 10 bronze binding screw	M3 × 10 bronze binding screw	B1303100

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



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1-1-1 Specifications

Type	Enclosed
Paper	Plain paper: 75 – 80 g/m ² Special paper: colored paper
Paper sizes	A3 – A5R, folio/11" × 17" – 5 ¹ / ₂ " × 8 ¹ / ₂ "
Power source	Electrically connected to the copier
Weight	Approximately 4.8 kg/10.56 lbs

3CX

1-1-2 Part names

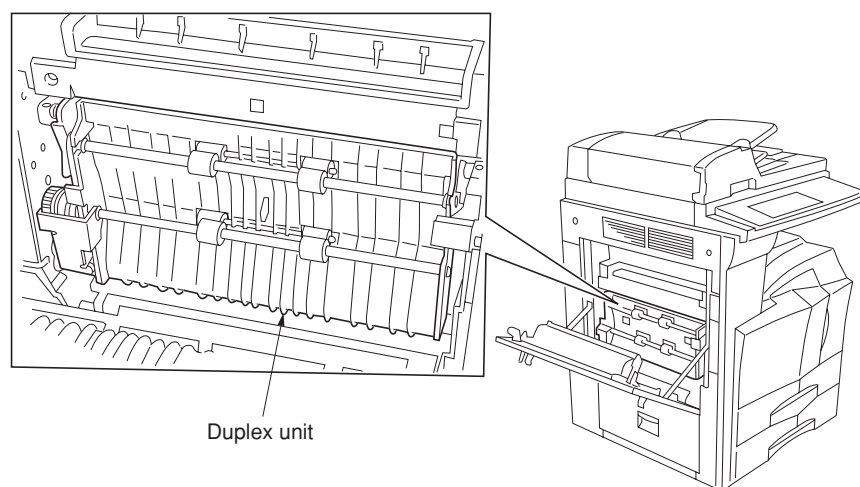


Figure 1-1-1

1-1-3 Machine cross section

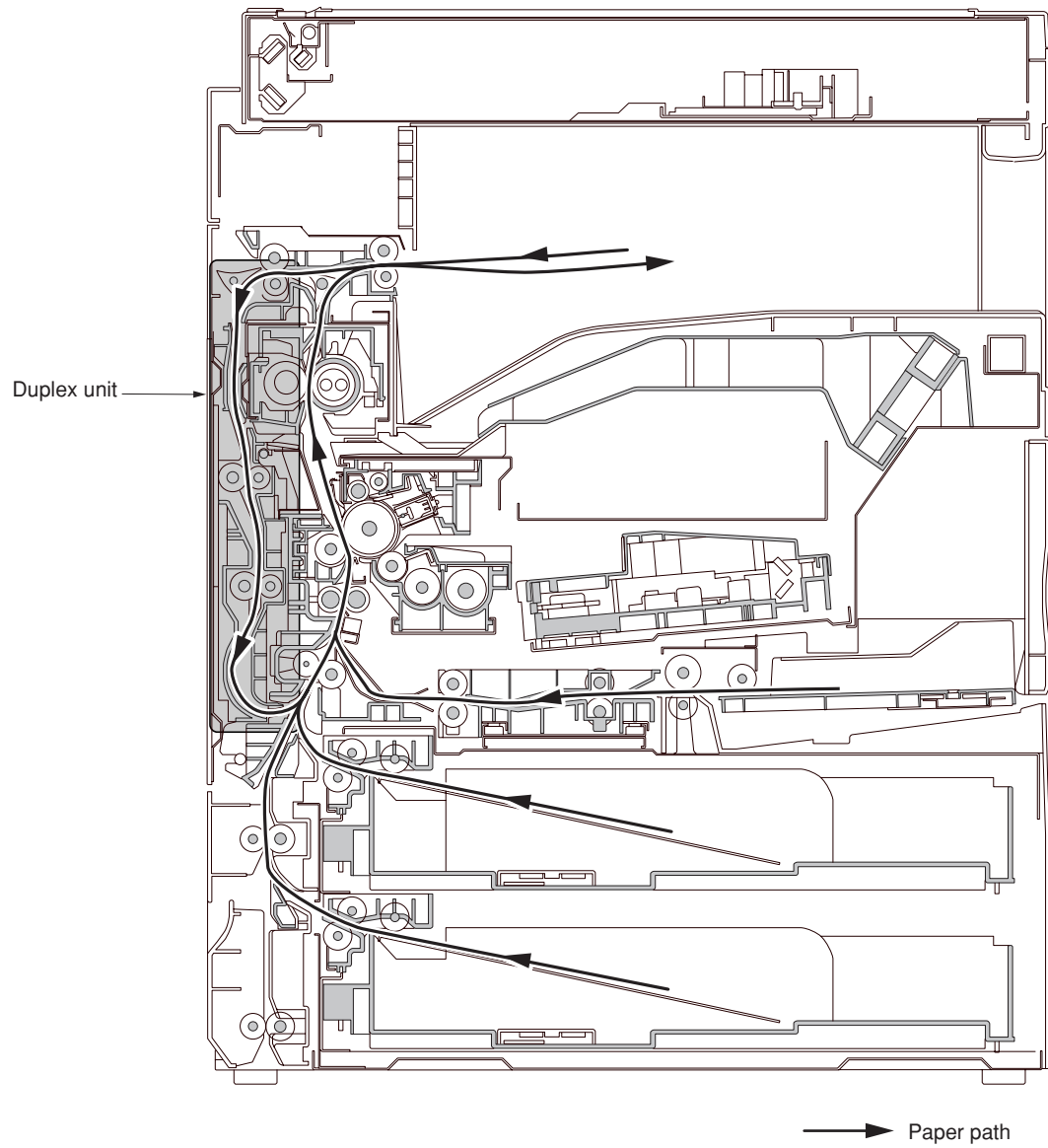


Figure 1-1-2

1-1-4 Drive system

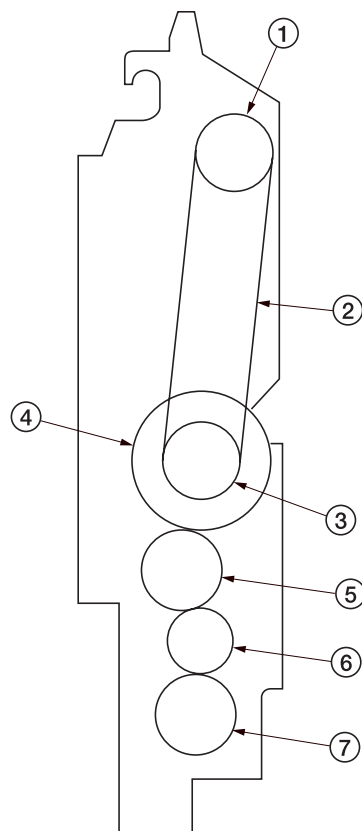


Figure 1-1-3

- 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 Unpacking

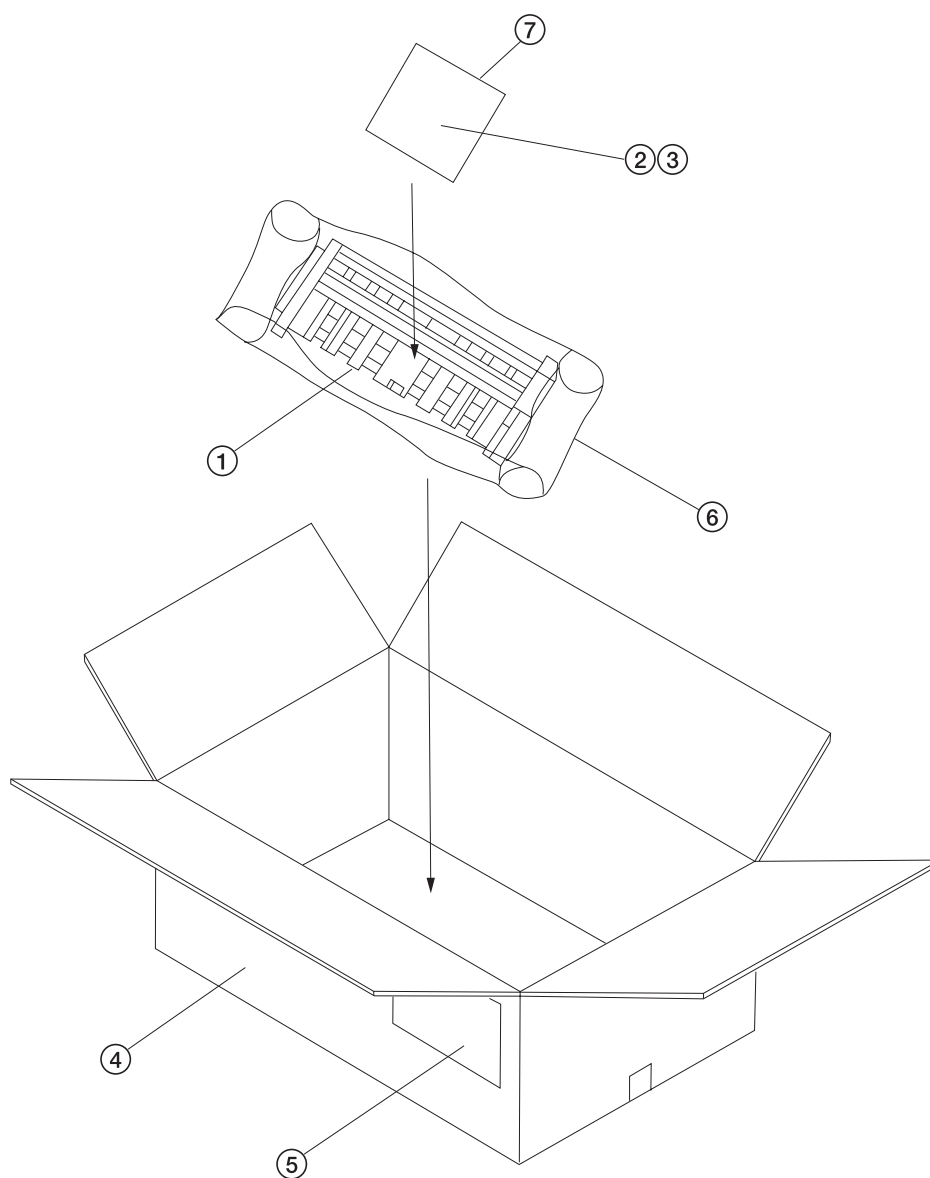


Figure 1-2-1 Unpacking

- ① Duplex unit
- ② Nut plate
- ③ M3 × 10 bronze binding screws
- ④ Outer case
- ⑤ Bar-code label
- ⑥ Air-padded bag
- ⑦ Plastic bag

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When paper jams, the machine immediately stops operation and the occurrence of a paper jam is indicated on the copier operation panel.

To remove the jammed paper, open the conveying cover.

To reset the paper misfeed detection, open and close the conveying cover to turn safty switch 2 off and on.

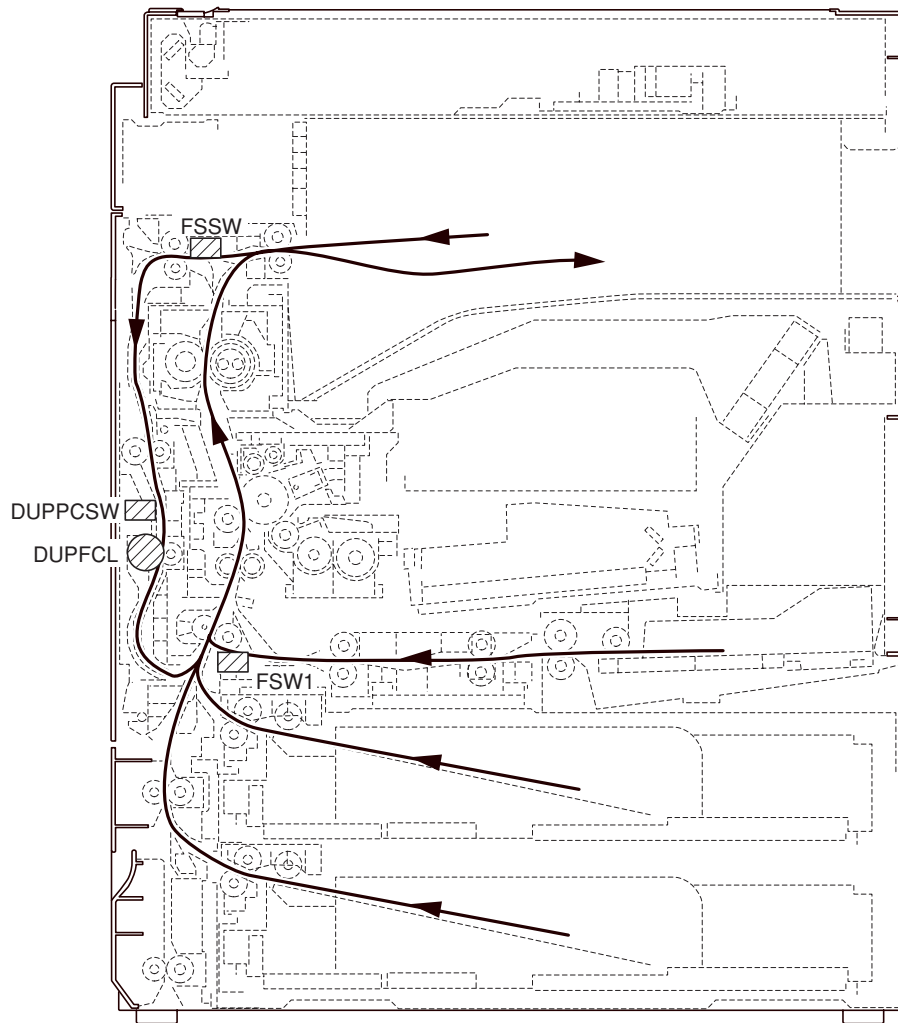
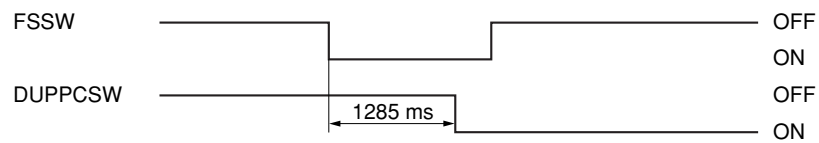


Figure 1-3-1 Paper misfeed detection

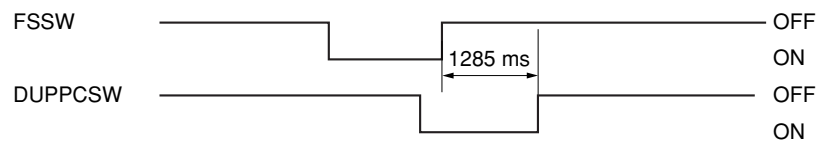
(2) Paper misfeed detection condition

• Duplex paper conveying section 1 (jam code 60)

The duplex paper conveying switch (DUPPCSW) does not turn on within 1285 ms of the feedshift switch (FSSW) turning on.

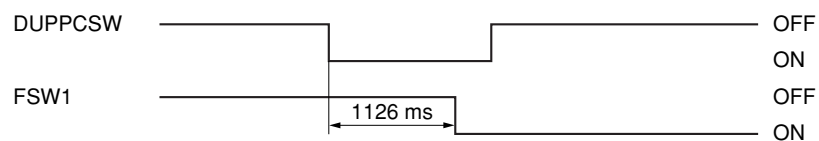
**Timing chart 1-3-1**

The duplex paper conveying switch (DUPPCSW) does not turn off within 1285 ms of the feedshift switch (FSSW) turning off.

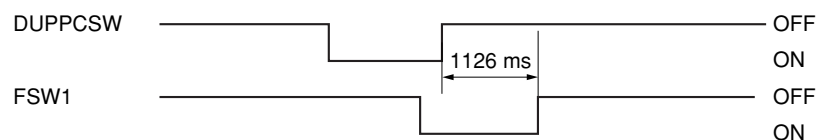
**Timing chart 1-3-2**

• Duplex paper conveying section 2 (jam code 61)

Feed switch 1 (FSW1) does not turn on within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning on.

**Timing chart 1-3-3**

Feed switch 1 (FSW1) does not turn off within 1126 ms of the duplex paper conveying switch (DUPPCSW) turning off.

**Timing chart 1-3-4**

(3) Paper misfeeds

Problem	Causes	Check procedures/corrective measures
(1) Paper jams in the duplex unit when the main switch is turned on.	A piece of paper torn from copy paper is caught around duplex paper conveying switch.	Remove any found.
	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.
(2) Paper jams in the duplex unit during copying (jam in duplex paper conveying section 1).	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.
(3) Paper jams in the duplex unit during copying (jam in duplex paper conveying section 2).	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.

1-3-2 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) 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 CN10-B2 on the copier main PCB goes low. If not, replace the main PCB.

1-3-3 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) 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.
(2) Abnormal noise is heard.	Check if the rollers and gears operate smoothly.	Grease the bushings and gears.

1-4-1 Precautions for assembly and disassembly

(1) Precautions

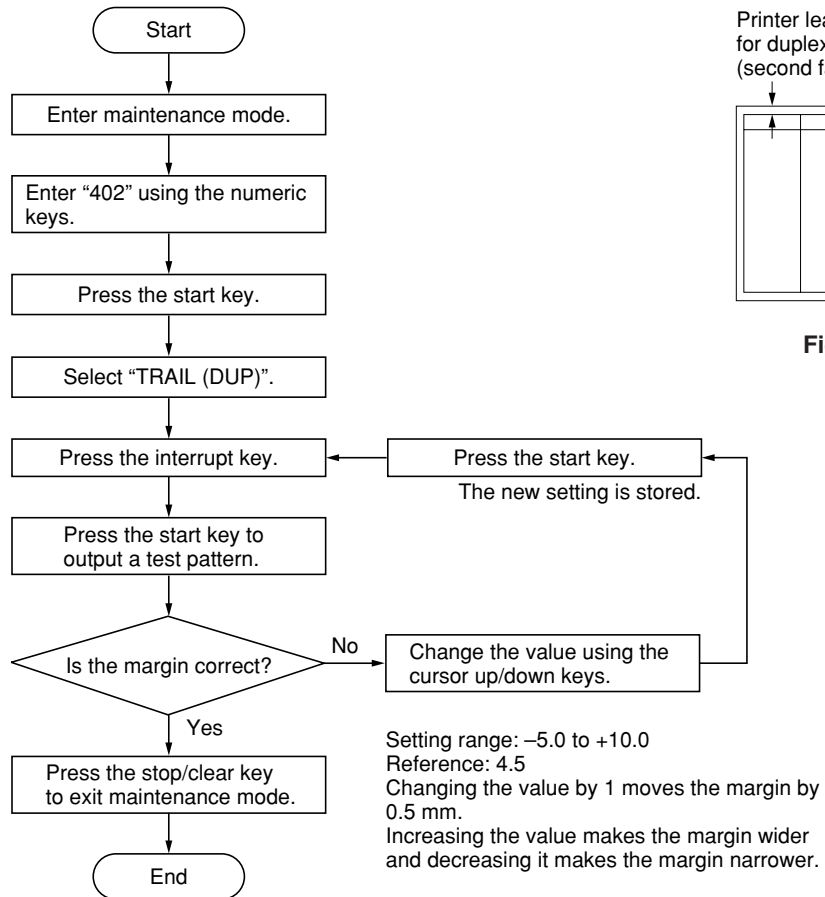
- Be sure to turn the main switch off and disconnect the power plug before starting disassembly.
 - When handling PCBs, do not touch connectors with bare hands or damage the board.
 - Do not touch any PCB containing ICs with bare hands or any object prone to static charge.
 - Use the following testers 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)

1-4-2 Procedure for assembly and disassembly

(1) Adjusting the margin for printing

Perform the following adjustment if the printer leading edge margin for duplex copying (second face) is not correct.

Procedure



(2) Adjusting the amount of slack at the registration roller

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

Procedure

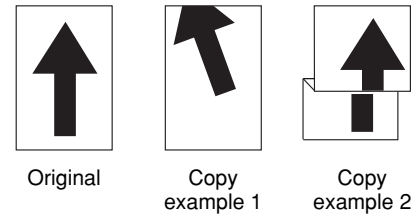
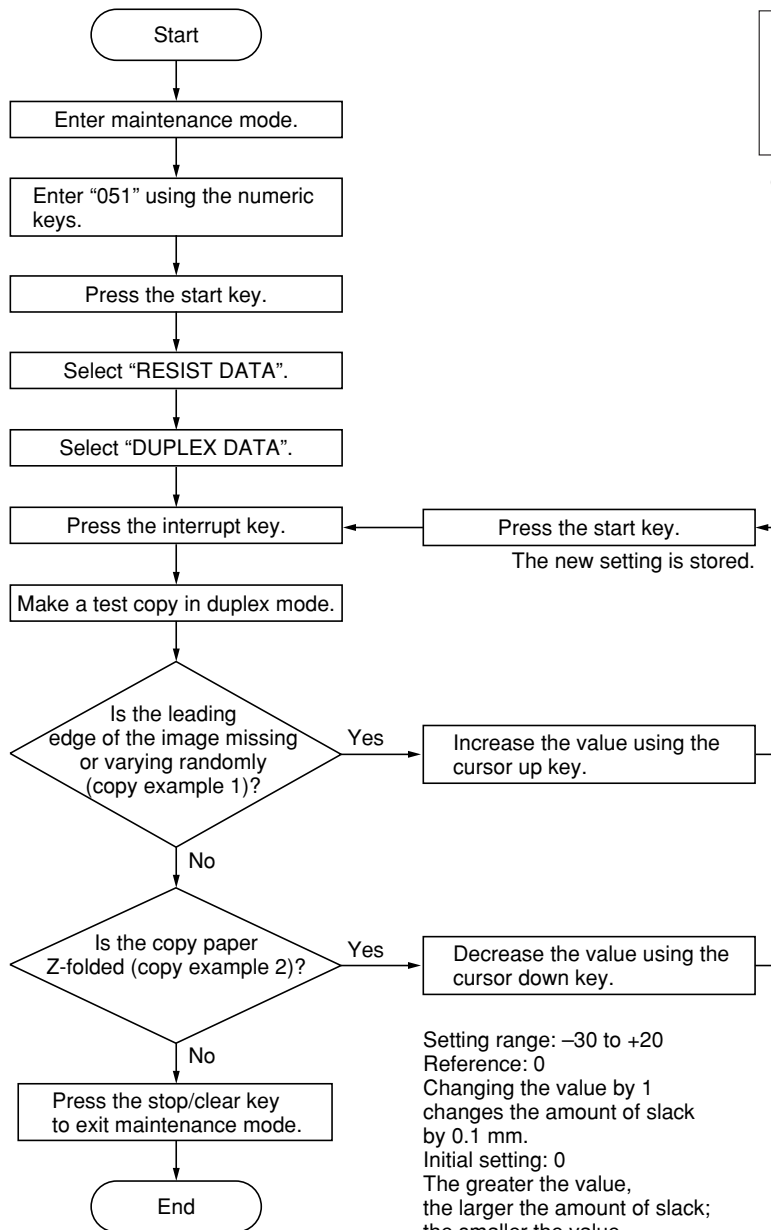


Figure 1-4-2

Setting range: -30 to +20
 Reference: 0
 Changing the value by 1 changes the amount of slack by 0.1 mm.
 Initial setting: 0
 The greater the value, the larger the amount of slack;
 the smaller the value, the smaller the amount of slack

(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 copying using the duplex unit.

Procedure

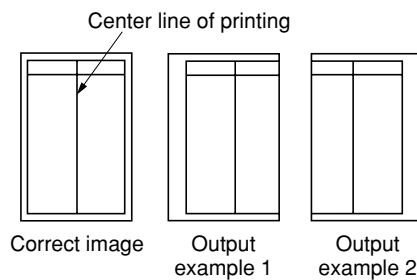
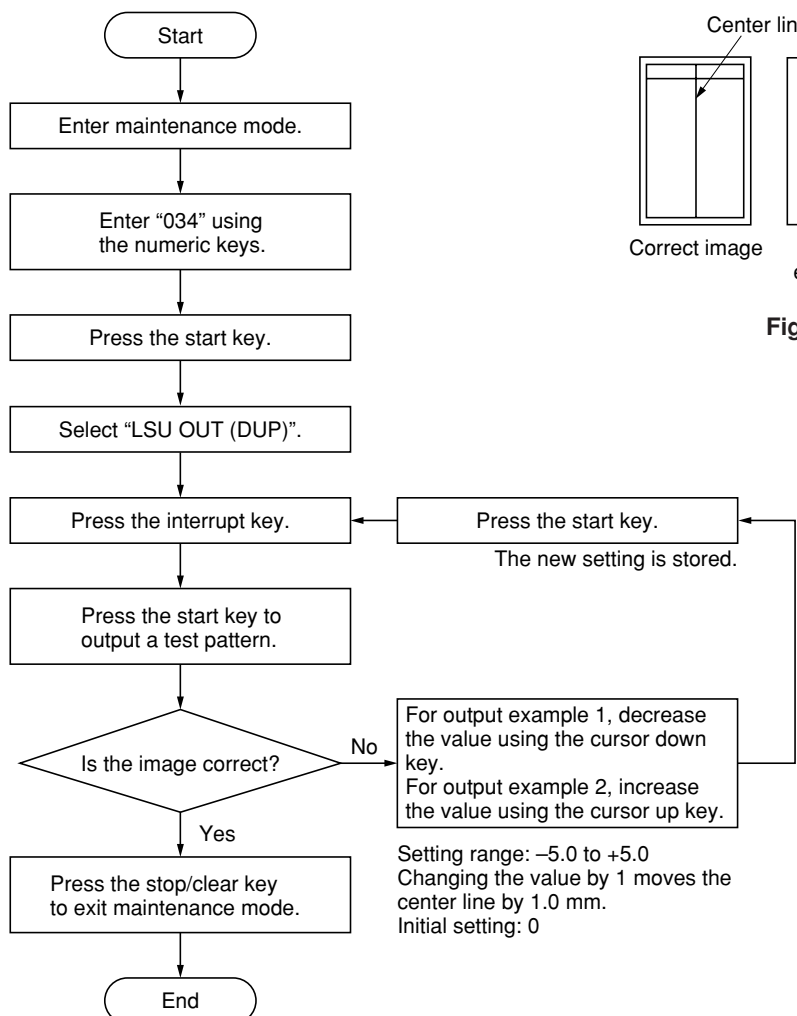


Figure 1-4-3

2-1-1 Construction of each section

The duplex unit consists of the components shown in Figure 2-1-1. 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 unit. The paper is then conveyed to the copier paper feed section by the upper and lower duplex feed rollers.

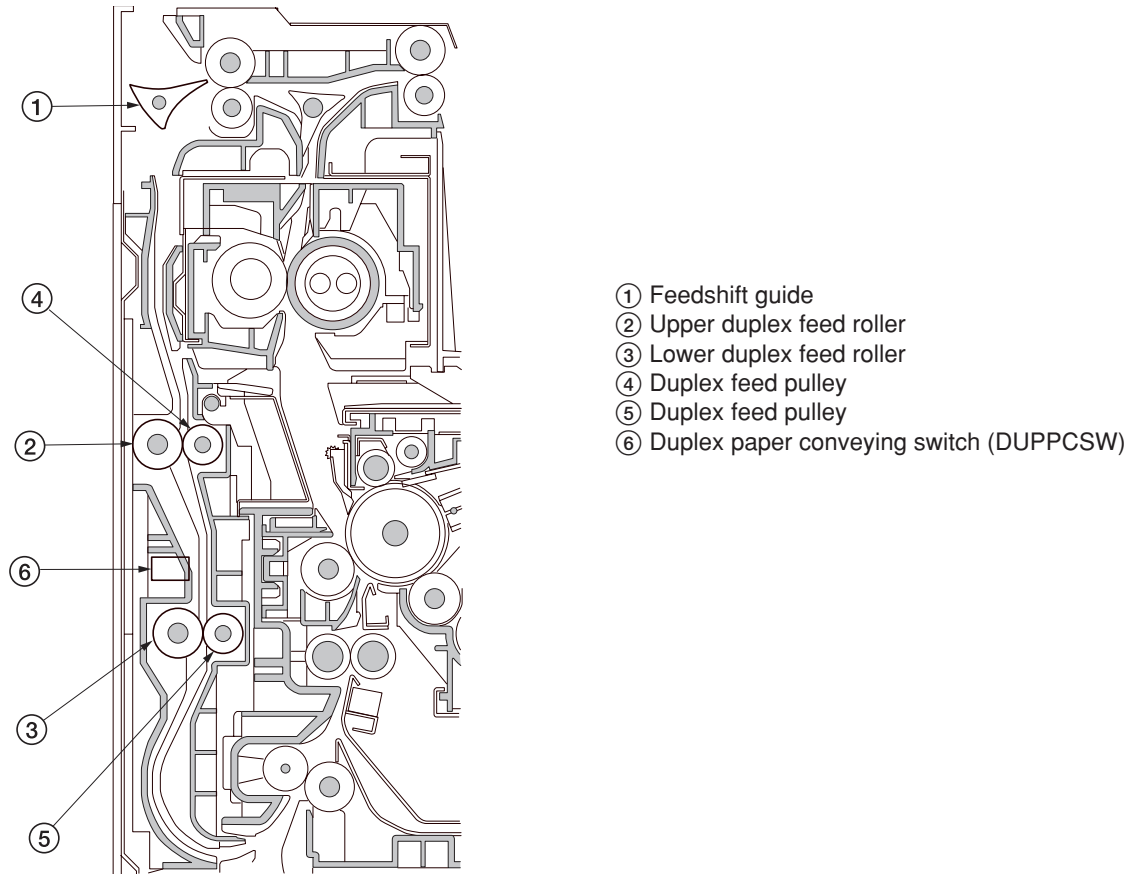


Figure 2-1-1 Duplex unit

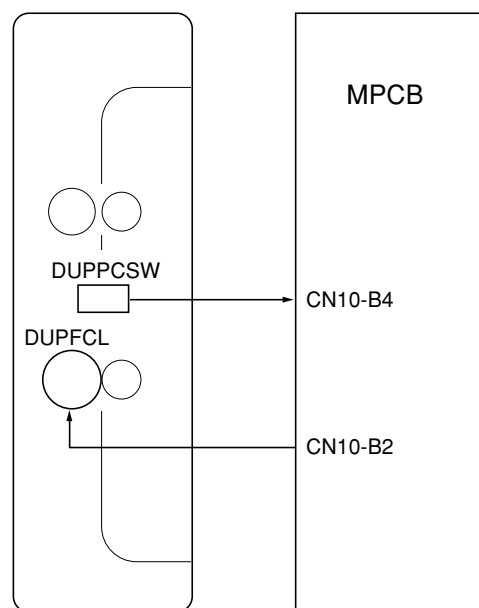
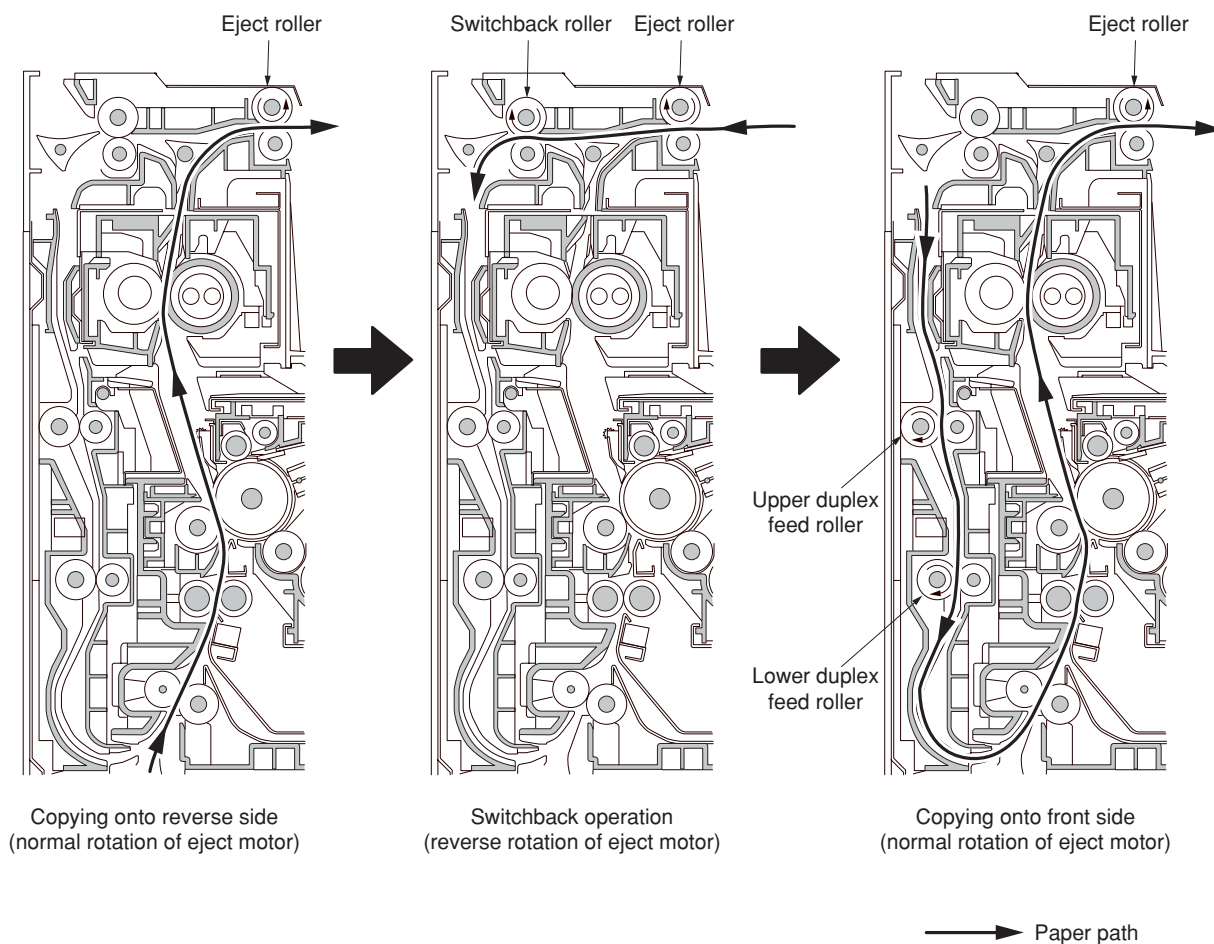


Figure 2-1-2 Duplex unit block diagram

(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 normal 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 unit via the eject roller and the switchback roller. Paper that has been conveyed to the duplex unit 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 2-1-3**

2-2-1 Electrical parts layout

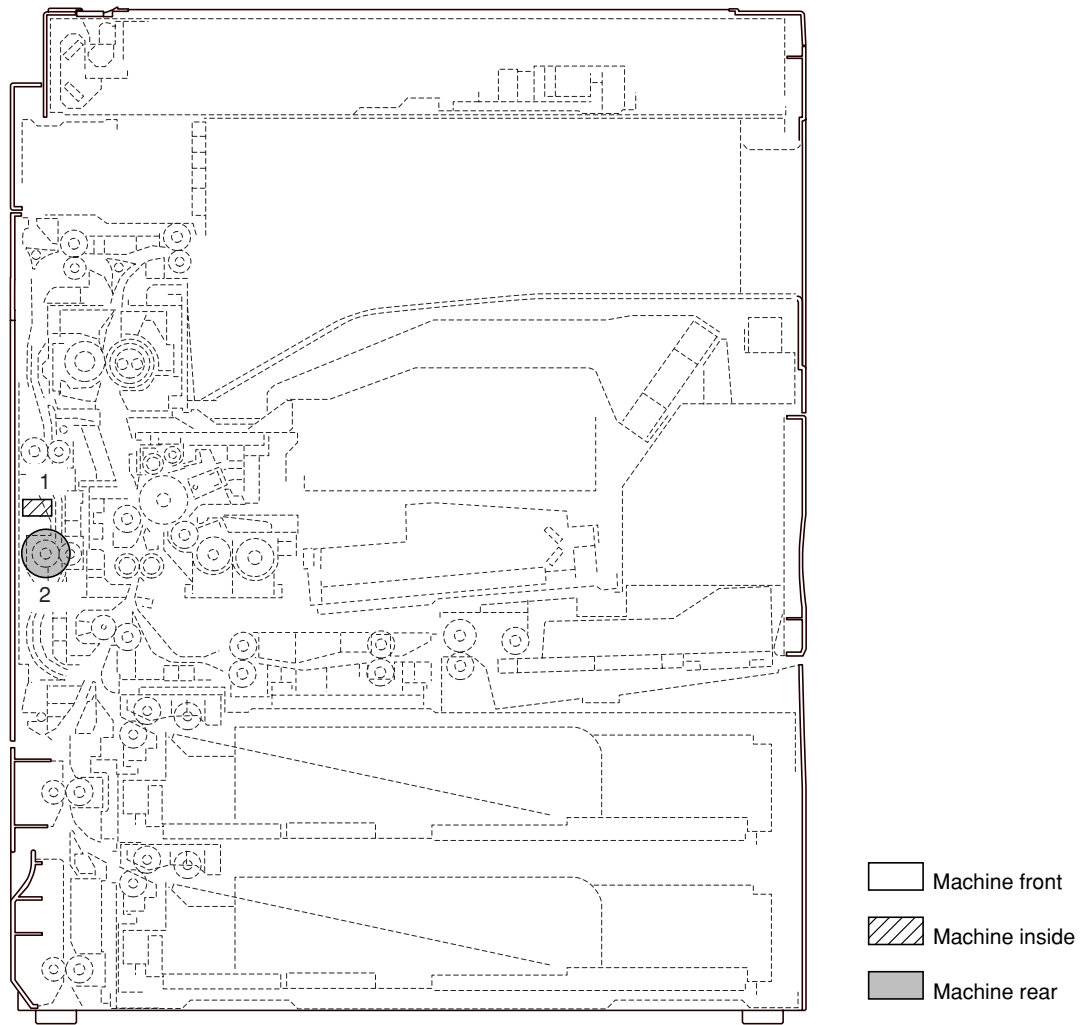


Figure 2-2-1 Duplex unit

1. Duplex paper conveying switch (DUPPCSW) Detects a paper jam in the duplex unit.
2. Duplex paper feed clutch (DUPFCL) Controls the drive of the duplex feed roller.

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper conveying section	Upper duplex feed roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Lower duplex feed roller	Clean	Every service	Clean with alcohol or a dry cloth.	

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(3) The pickup solenoid does not operate.	1-3-7
(4) The front side registration motor does not operate.	1-3-7
(5) The rear side registration motor does not operate.	1-3-7
(6) The trailing edge registration motor does not operate.	1-3-7
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1-1-1 Specifications

Type	Built-in
Number of trays	1 (intermediate tray)
Stapling limit	A4/11" × 8 ¹ / ₂ " or smaller: 30 sheets
	Other sizes than above: 20 sheets
Power source	Electrically connected to the copier
Weight	Approximately 11 kg/24.2 lbs

1-1-2 Part names

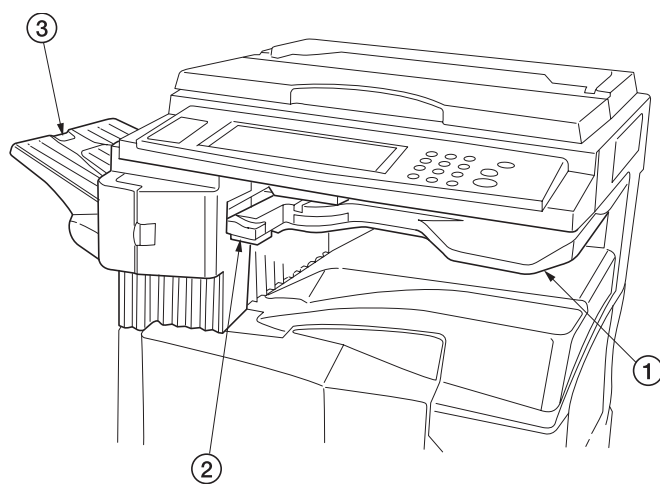


Figure 1-1-1

- ① Intermediate tray
- ② JAM release lever
- ③ Eject tray

1-1-3 Machine cross section

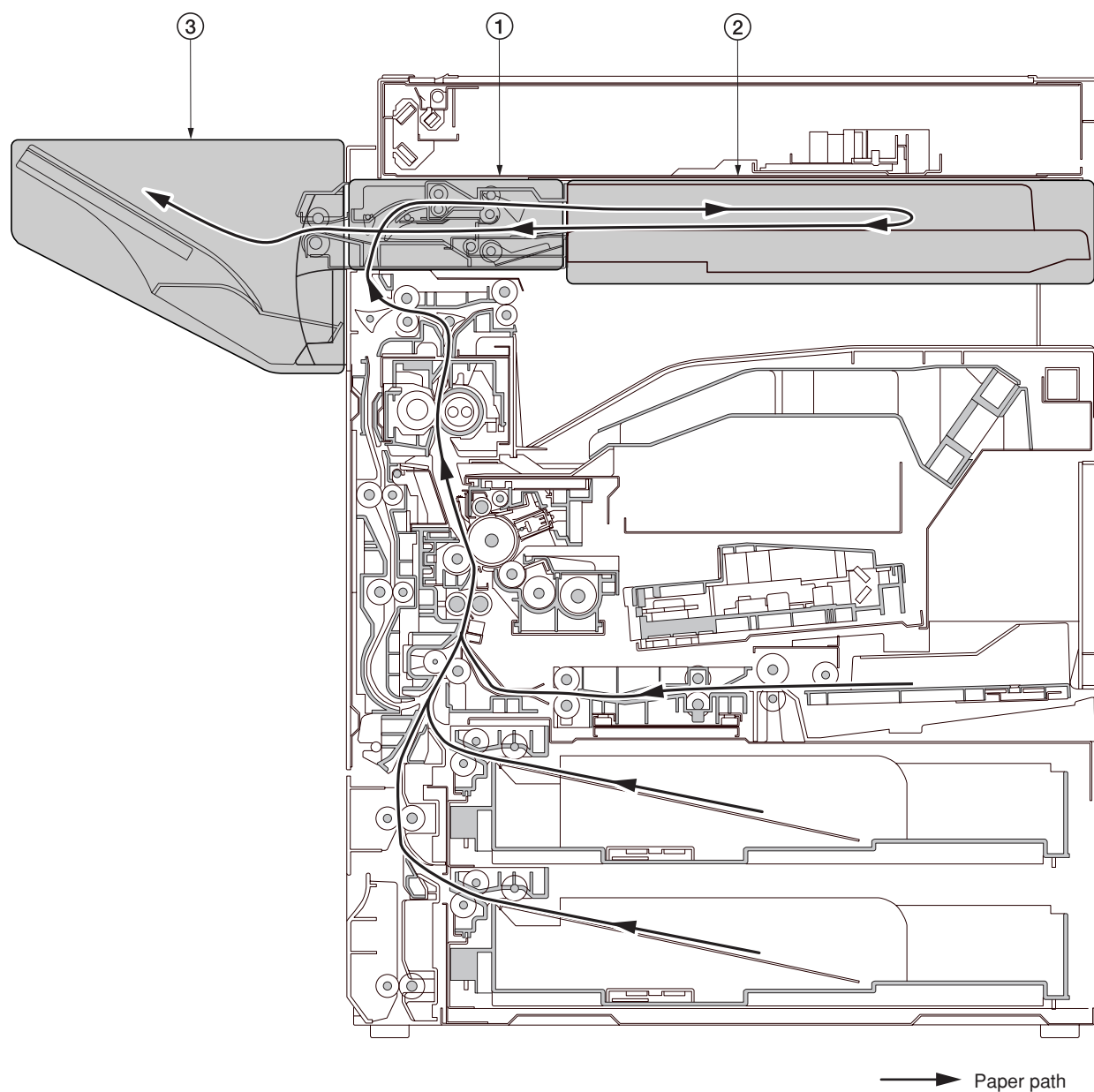


Figure 1-1-2 Machine cross section

- ① Paper conveying section
- ② Intermediate tray section
- ③ Eject section

1-1-4 Drive system

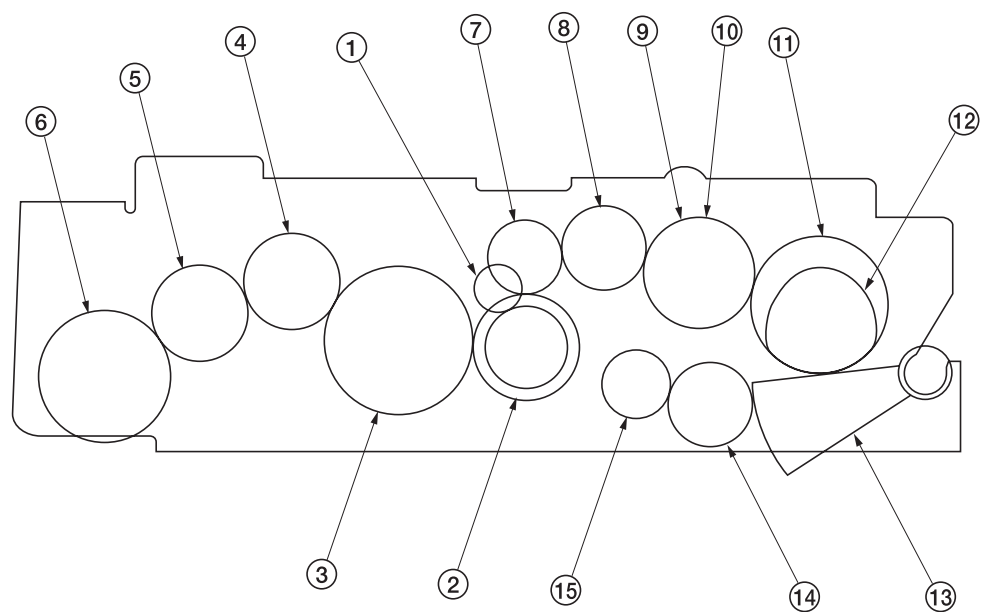


Figure 1-1-3

- | | |
|------------------------------|----------------|
| ① Paper conveying motor gear | ⑨ Central gear |
| ② Gear 31/20 | ⑩ Gear 21 |
| ③ Gear 28 | ⑪ Gear 26 |
| ④ Gear 18 | ⑫ Clutch cam |
| ⑤ Gear 18 | ⑬ Stopper gear |
| ⑥ Gear 25 | ⑭ Gear 32 |
| ⑦ Gear 14 | ⑮ Gear 26 |
| ⑧ Gear 16 | |

1-2-1 Unpacking

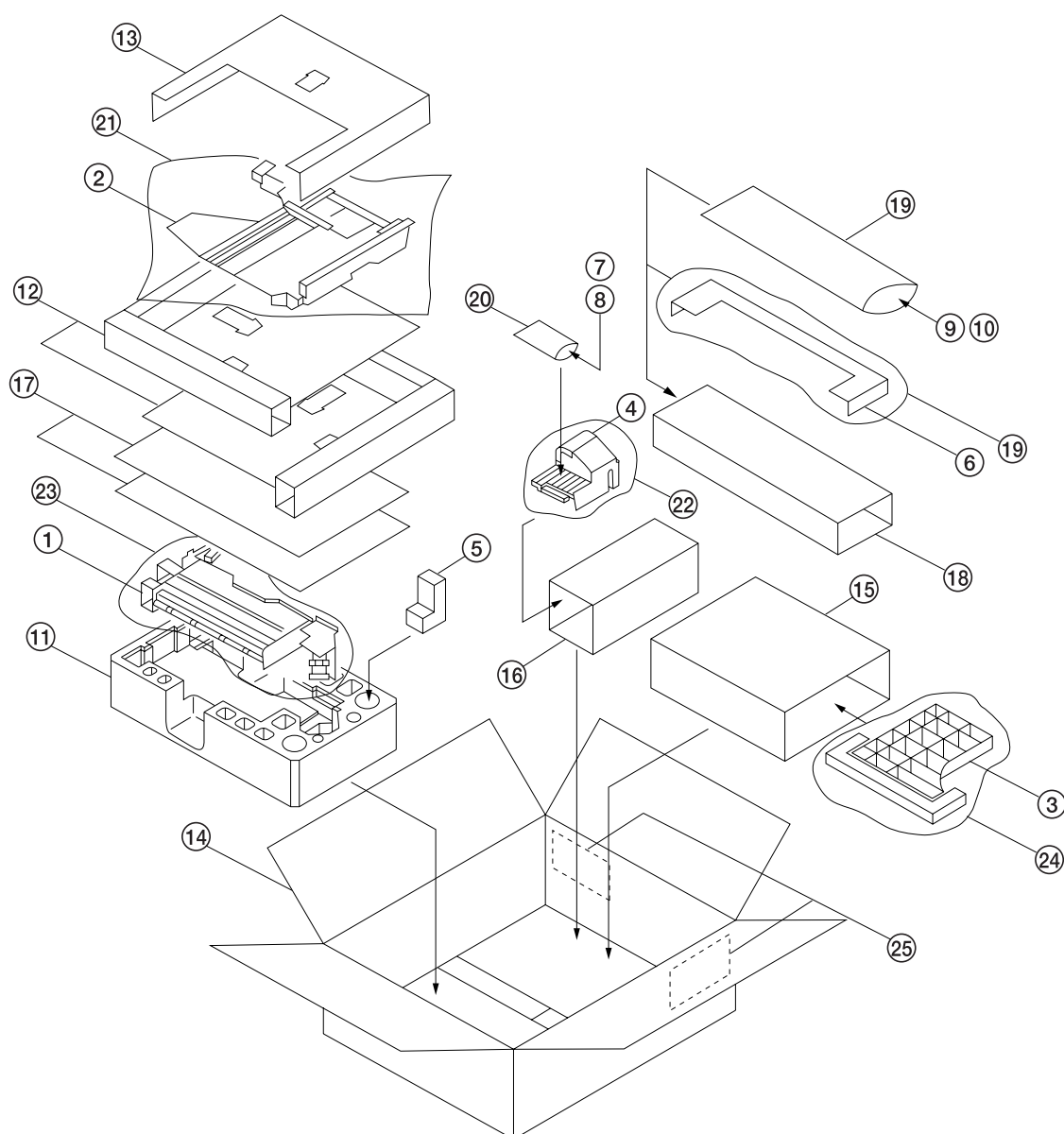


Figure 1-2-1 Unpacking

- | | |
|---|-------------------|
| ① Paper conveying unit | ⑭ Outer case |
| ② Intermediate tray unit | ⑮ Spacer 1 |
| ③ Eject tray | ⑯ Spacer 2 |
| ④ Stapler cover | ⑰ Spacer 3 |
| ⑤ Staple cartridge | ⑱ Spacer 4 |
| ⑥ Large eject cover | ⑲ Plastic bag |
| ⑦ Cross-head chrome TP-A screws M3 × 05 | ⑳ Plastic bag |
| ⑧ Cross-head bronze binding TP-A screws M3 × 05 | ㉑ Plastic sheet |
| ⑨ Front eject cover | ㉒ Plastic bag |
| ⑩ Rear eject cover | ㉓ Plastic bag |
| ⑪ Paper conveying unit pad | ㉔ Air-padded bag |
| ⑫ Upper intermediate tray pad | ㉕ Bar-code labels |
| ⑬ Lower intermediate tray pad | |

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When paper jams, the machine immediately stops operation and the occurrence of a paper jam is indicated on the copier operation panel.

To remove the jammed paper, lower the intermediate tray.

To reset the paper misfeed detection, detach and refit the intermediate tray to turn the tray open/close switch off and on.

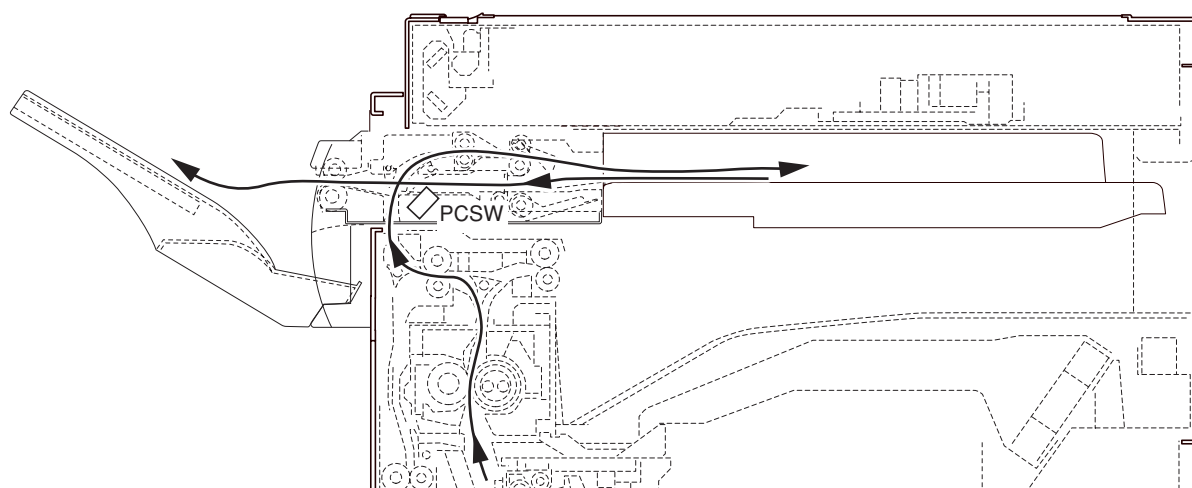


Figure 1-3-1 Paper misfeed detection

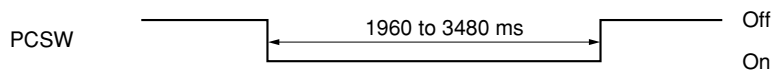
(2) Paper misfeed detection condition

- Jam between the finisher and copier (jam code 81)

The paper conveying switch does not turn on within 1550 ms of the signal requesting paper ejection is output from the copier.

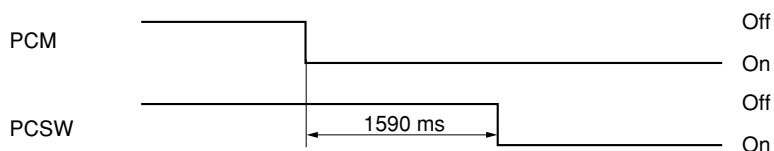
- Intake jam (jam code 82)

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.

**Timing chart 1-3-1**

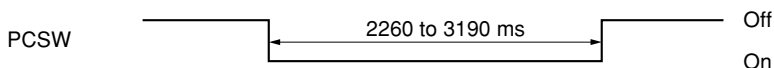
- Jam during paper conveying for batch ejection 1 (jam code 83)

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.

**Timing chart 1-3-2**

- Jam during paper conveying for batch ejection 2 (jam code 84)

When ejection a stack of paper, the paper conveying switch (PCSW) does not turn off within 2260 to 3190 ms (depending on the paper size) of the paper conveying motor (PCM) turning on.

**Timing chart 1-3-3**

(3) Paper misfeeds

Problem	Causes	Check procedures/corrective measures
(1) Paper jams in the finisher when the main switch is turned on.	A piece of paper torn from copy paper is caught around the paper conveying switch.	Remove any found.
	Defective paper conveying switch.	With 5 V DC present at CN4-9 on the main PCB, check if CN4-10 on the main PCB remains low when the paper conveying switch is turned on and off. If it does, replace the paper conveying switch.
(2) Paper jams in the finisher during copying (intake jam). Jam code 82	Defective paper conveying switch.	With 5 V DC present at CN4-9 on the main PCB, check if CN4-10 on the 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.
(3) Paper jams in the 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 main PCB, check if CN4-10 on the 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.
(4) Paper jams in the 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 main PCB, check if CN4-10 on the 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.

1-3-2 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 0440 and 8220, 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 the tray open/close switch or copier safety switch 1 or 2 off and back on.

(2) Self-diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedure/corrective measures
C0440	Finisher communication problem An error code from the side deck is detected eight times in succession. No communication: there is no reply after 3 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 CN4, CN5 on the copier main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB 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 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.
C8180	Finisher rear side registration motor problem 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.

Code	Contents	Remarks	
		Causes	Check procedure/corrective measures
C8180	Finisher rear side registration motor problem 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.	Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8190	Finisher trailing edge registration motor problem 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.

Code	Contents	Remarks	
		Causes	Check procedure/corrective measures
C8220	Finisher rear stapler problem 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.

1-3-3 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The paper conveying motor does not operate.	Broken paper conveying motor coil.	Check for continuity across the coil. If none, replace the paper conveying motor.
	Poor contact of the paper conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if a motor drive coil energization signal is output at CN9-9, CN9-10, CN9-11 and CN9-12 on the finisher main PCB. If not, replace the finisher main PCB.
(2) The feedshift solenoid does not operate.	Broken feedshift solenoid coil.	Check for continuity across the coil. If none, replace the feedshift solenoid.
	Poor contact of the feedshift solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if CN4-2 and CN4-4 on the finisher main PCB go low. If not, replace the finisher main PCB.
(3) The pickup solenoid does not operate.	Broken pickup solenoid coil.	Check for continuity across the coil. If none, replace the pickup solenoid.
	Poor contact of the pickup solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if CN4-7 on the finisher main PCB goes low. If not, replace the finisher main PCB.
(4) The front side registration motor does not operate.	Broken front side registration motor coil.	Check for continuity across the coil. If none, replace the front side registration motor.
	Poor contact of the front side registration motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if a motor drive coil energization signal is output at CN5-1, CN5-3, CN5-4 and CN5-5 on the finisher main PCB. If not, replace the finisher main PCB.
(5) The rear side registration motor does not operate.	Broken rear side registration motor coil.	Check for continuity across the coil. If none, replace the rear side registration motor.
	Poor contact of the rear side registration motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if a motor drive coil energization signal is output at CN5-6, CN5-8, CN5-9 and CN5-10 on the finisher main PCB. If not, replace the finisher main PCB.
(6) The trailing edge registration motor does not operate.	Broken trailing edge registration motor coil.	Check for continuity across the coil. If none, replace the trailing edge registration motor.
	Poor contact of the trailing edge registration motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if a motor drive coil energization signal is output at CN6-1, CN6-2, CN6-3 and CN6-4 on the finisher main PCB. If not, replace the finisher main PCB.

Problem	Causes	Check procedures/corrective measures
(7) The cooling fan motor does not operate.	Broken cooling fan motor coil.	Check for continuity across the coil. If none, replace the cooling fan motor.
	Poor contact of the cooling fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PCB.	Check if CN4-6 on the finisher main PCB goes low. If not, replace the finisher main PCB.

1-3-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) Paper jams.	Check if the contact between the feedshift roller and feedshift pulley is correct.	Check and remedy.
	Check if the contact between the feedshift roller and press roller is correct.	Check and remedy.
	Check if the contact between the eject roller and eject pulley is correct.	Check and remedy.
(2) Abnormal noise is heard.	Check if the rollers and gears operate smoothly.	Grease the bushings and gears.

1-4-1 Precautions for assembly and disassembly

(1) Precautions

- Be sure to turn the main 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 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)

(2) Adjusting the positions of the front side registration cursor, rear side registration cursor and trailing edge registration cursor (reference)

Perform the following adjustment if paper registration is poor or stapling is made outside the specified area.

Procedure

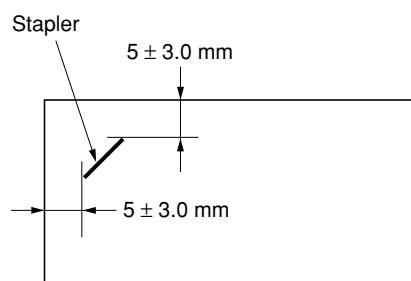
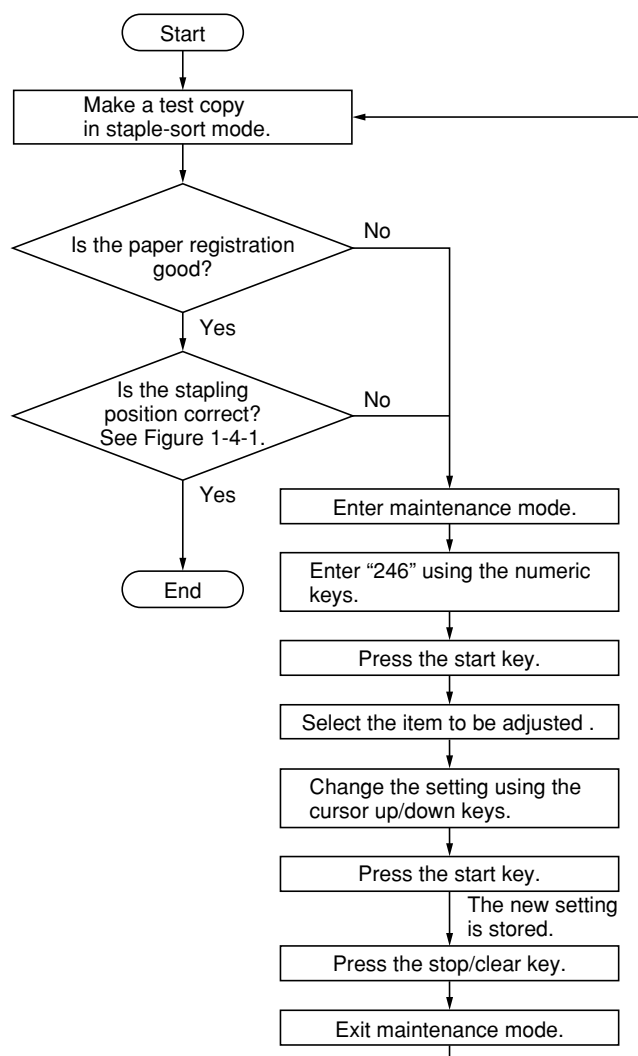


Figure 1-4-1 Stapling position

ADJUST FRONT JOGGER: Stop position of the front side registration cursor
 ADJUST REAR JOGGER: Stop position of the rear side registration cursor
 ADJUST END JOGGER: Stop position of the trailing edge registration cursor

Setting range: 0 to 8
 Reference: 4
 Changing the value by 1 changes the position by 0.5 mm.
 Increasing the value moves the front or rear side registration cursor or trailing edge registration cursor outward (➡); decreasing the value moves each cursor inward (⇐). See Figure 1-4-2.

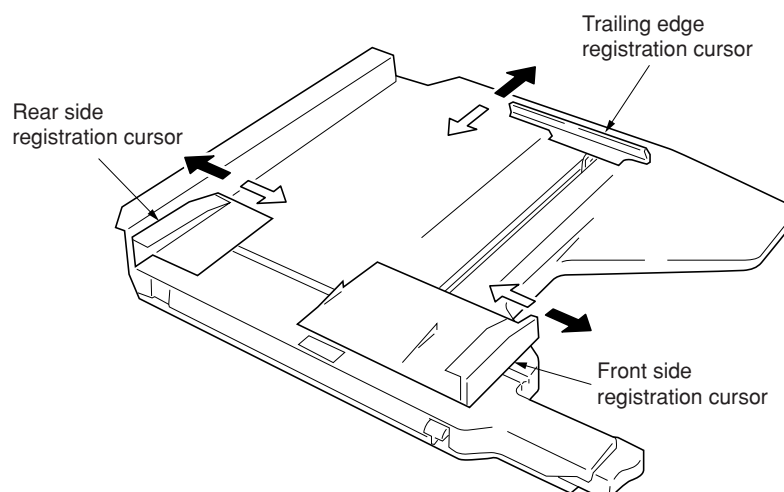


Figure 1-4-2

(3) Cleaning the stapler

During periodic maintenance, remove all the staples remaining inside the machine due to failure of stapling.

Procedure

1. Open the front and conveying covers of the copier.
2. Remove the staple cartridge.
3. Remove the four screws securing the stapler cover and then the cover.
4. Remove the staples attracted to the magnet on the inside of the stapler cover.
5. Refit all the removed parts.

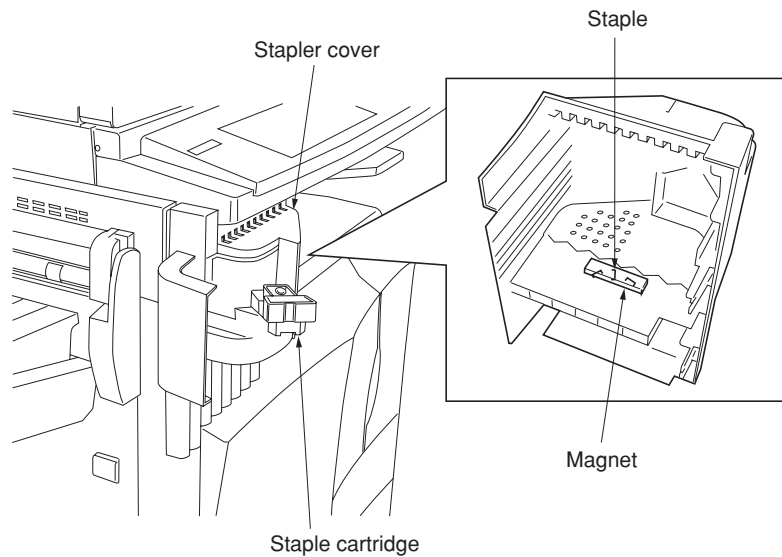


Figure 1-4-3

(4) Adjusting the pressure of curl eliminator mechanism

Increase the pressure of the curl eliminator mechanism to reduce upward curling of paper stacked on the intermediate tray if a paper jam occurs when batch ejection is performed because of strong upward curling.

Procedure

1. Remove the paper conveying unit from the copier.
2. Loosen the two screws from the front and rear curl eliminator pressure adjusting plates respectively and then remove the plates.
3. Refit the all removed parts.

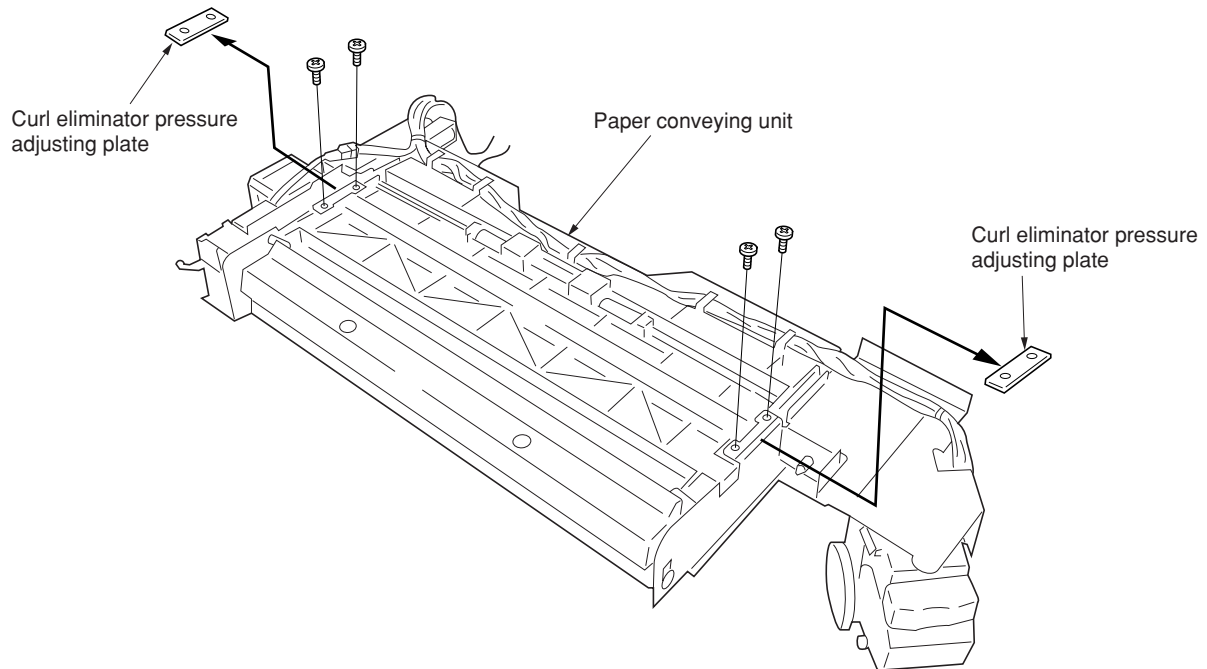


Figure 1-4-4

2-1-1 Construction of each section

The paper conveying section consists of the components shown in Figure 2-1-1. It switches the path for the paper conveyed from the copier in sort mode. Also the paper conveying section contains a curl eliminator mechanism, which reduces curling of paper with curl eliminator rollers.

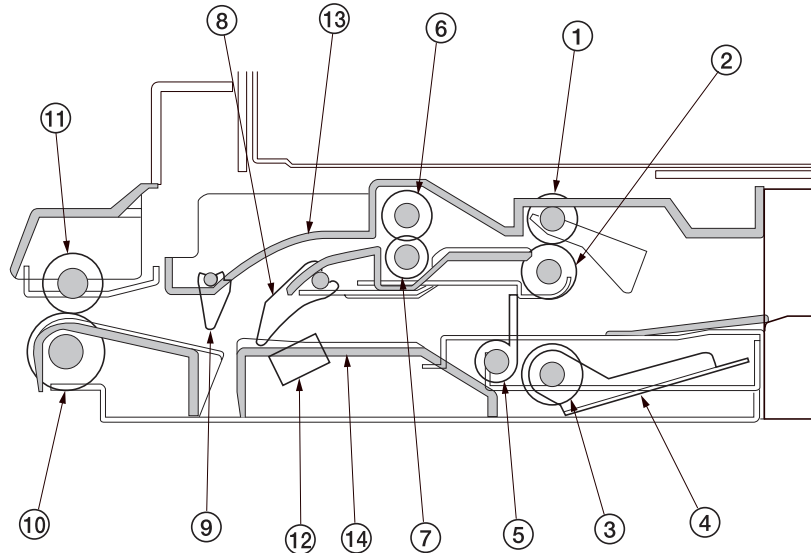


Figure 2-1-1 Paper conveying section

- | | |
|--------------------------------|---------------------------------|
| ① Feedshift pulley | ⑧ Feedshift claw |
| ② Feedshift roller | ⑨ Small feedshift claw |
| ③ Press roller | ⑩ Eject roller |
| ④ Press roller lift | ⑪ Eject pulley |
| ⑤ Stopper | ⑫ Paper conveying switch (PCSW) |
| ⑥ Upper curl eliminator roller | ⑬ Upper guide plate |
| ⑦ Lower curl eliminator roller | ⑭ Lower guide plate |

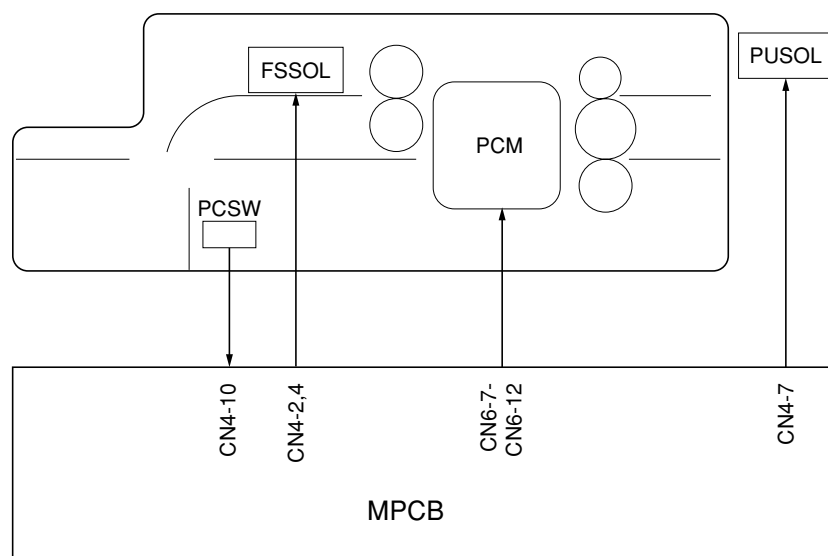


Figure 2-1-2 Paper conveying section block diagram

(1) Paper conveying operation in sort mode

When a copy is made in the sort mode, the feedshift solenoid (FSSOL) turns on and the feedshift guide of the copier operates to switch the paper path to the paper conveying unit. After curling of the conveyed paper is eliminated by the curl eliminator rollers, the paper is conveyed to the intermediate tray by the feedshift roller. When the trailing edge registration cursor of the intermediate tray shifts the paper stocked in the intermediate tray to the stopper, the pickup solenoid (PUSOL) turns on to lift the press roller and release the stopper. The stack of paper on the intermediate tray is ejected to the eject tray by the feedshift roller and eject roller.

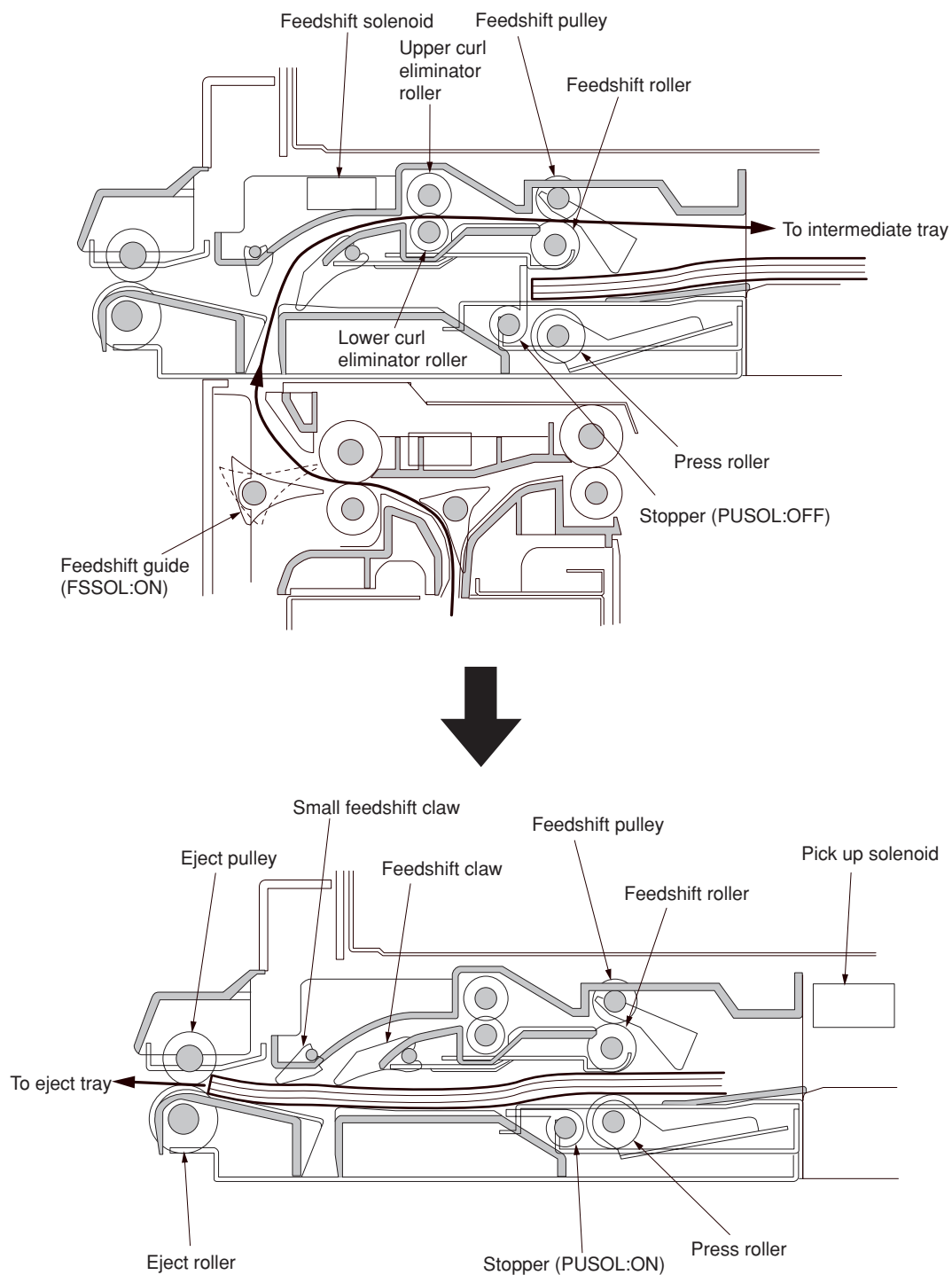


Figure 2-1-3

2-1-2 Intermediate tray section

The intermediate tray section consists of the components shown in Figure 2-1-4. It stores and evens up the paper conveyed from the paper conveying section and returns the stack of paper to the paper conveying section.

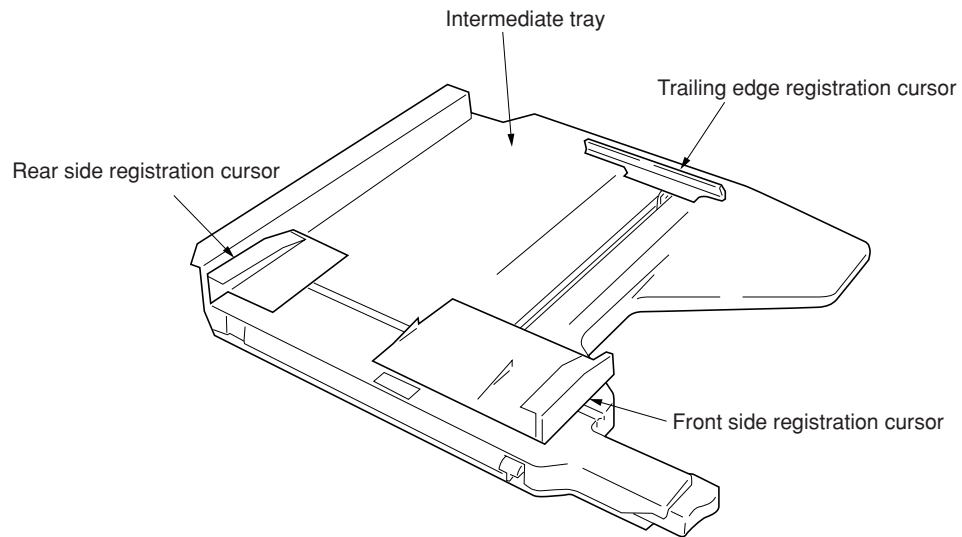


Figure 2-1-4 Intermediate tray section

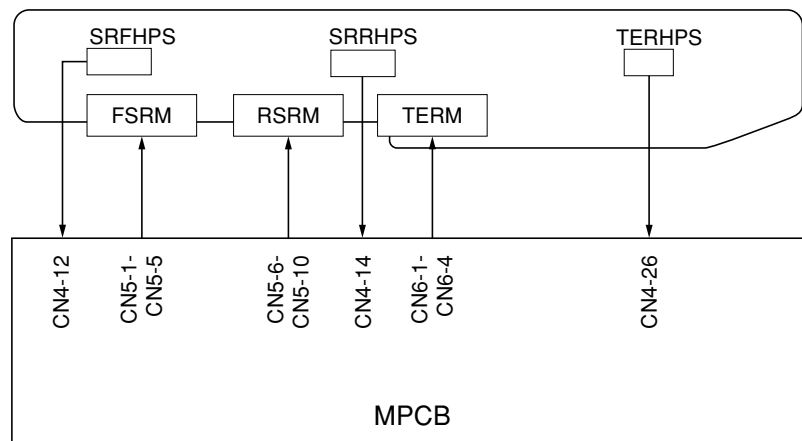


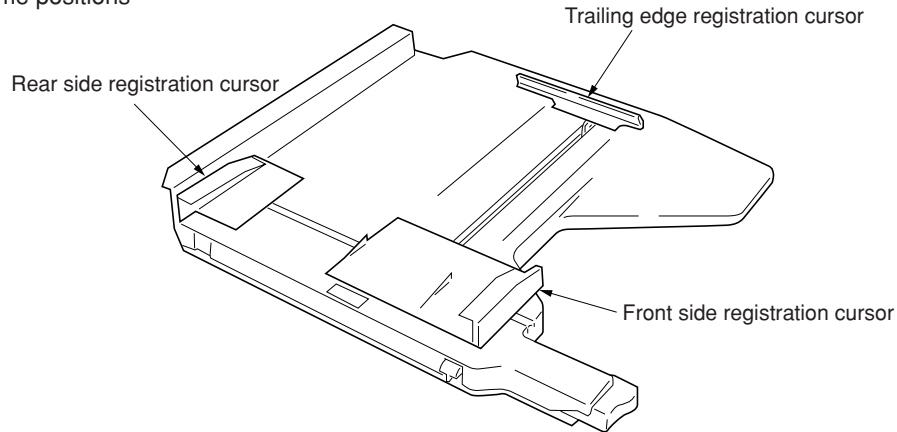
Figure 2-1-5 Intermediate tray section block diagram

(1) Paper registration on the intermediate tray

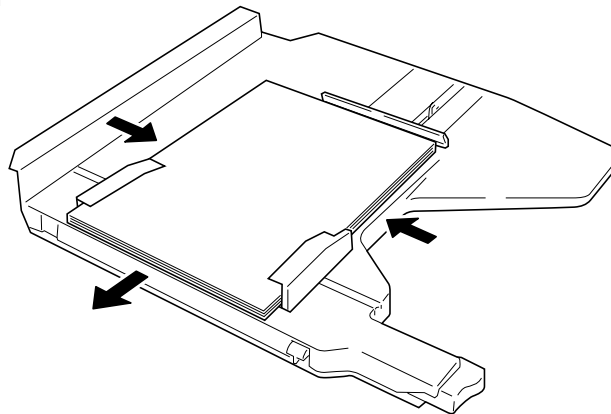
In sort mode, the front and rear side registration cursors move to the size of the paper used to even up the sides of the stack of paper and the trailing edge registration cursor shifts the paper to the paper conveying section.

In staple-sort mode, the front and rear side registration cursors even up the sides of the stack of paper and shift the stack toward the machine front, and then the trailing edge registration cursor shifts the stack to the stapling position.

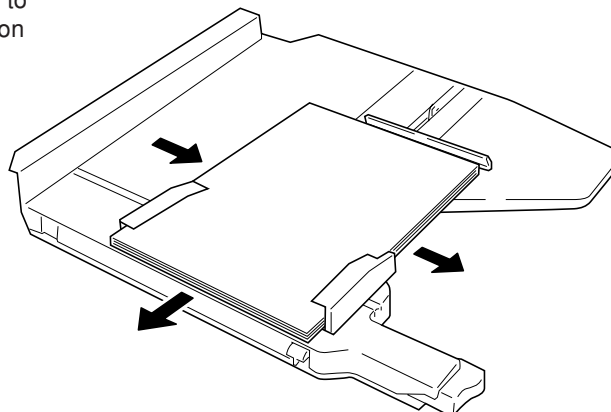
Home positions



Paper registration



Shifting the paper to the stapling position

**Figure 2-1-6**

2-1-3 Stapler section

In staple-sort mode, paper stocked on the intermediate tray is stapled by the stapler. The stapler motor (STM) drives the stapler cam via the stapler drive gear to staple paper.

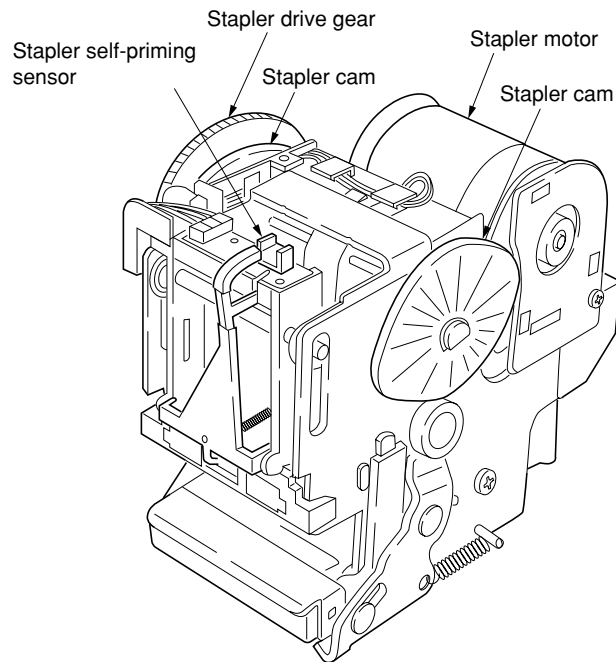


Figure 2-1-7 Stapler section

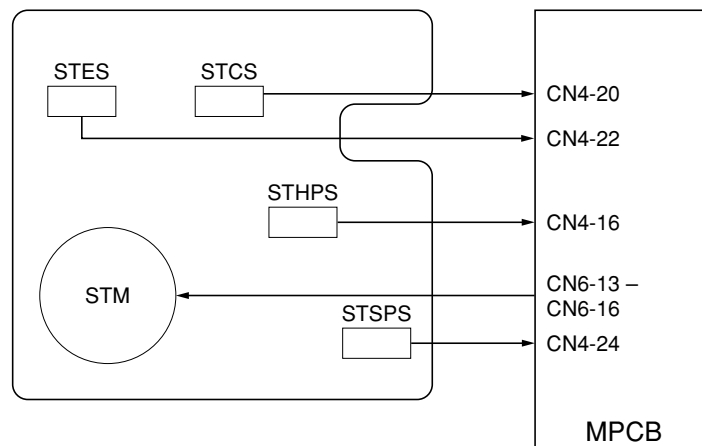


Figure 2-1-8 Stapler section block diagram

2-2-1 Electrical parts layout

(1) Paper conveying section

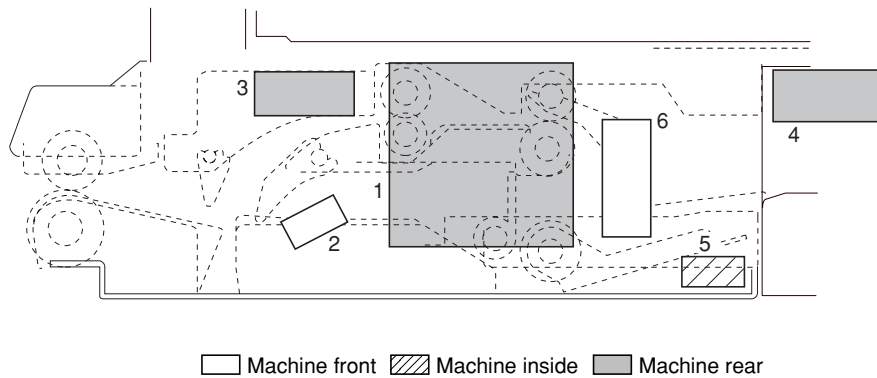
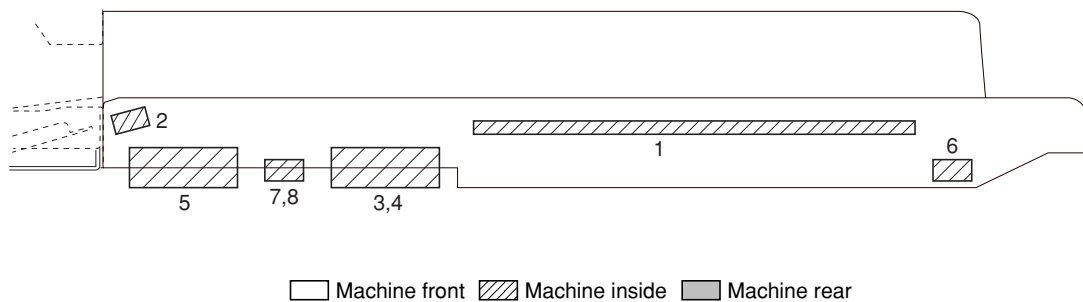
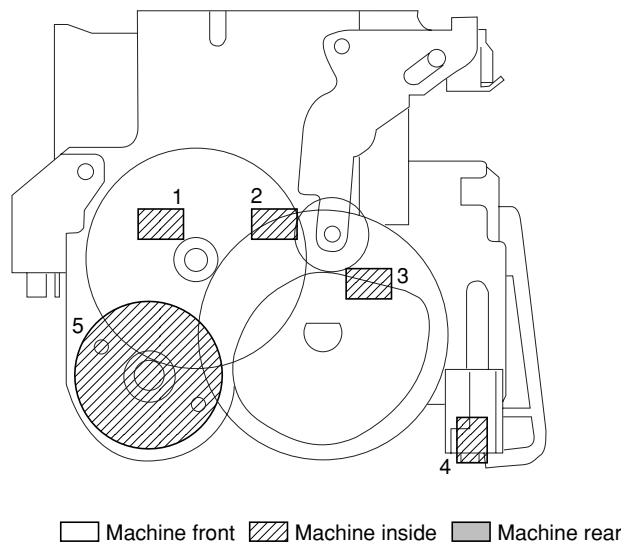


Figure 2-2-1 Paper conveying section

- | | | |
|-----------------------------------|-------|---|
| 1. Paper conveying motor (PCM) | | Drives the paper conveying section. |
| 2. Paper conveying switch (PCSW) | | Detects a paper jam in the finisher. |
| 3. Feedshift solenoid (FSSOL) | | Operates the feedshift guide of the copier. |
| 4. Pickup solenoid (PUSOL) | | Operates the press roller. |
| 5. Tray open/close switch (TOCSW) | | Detects if the intermediate tray is opened or closed. |
| 6. Cooling fan motor (CFM) | | Cools the stapler section. |

(2) Intermediate tray section**Figure 2-2-2 Intermediate tray section**

- | | |
|---|---|
| 1. Main PCB (MPCB) | Controls electrical components. |
| 2. Intermediate tray sensor (ITS) | Detects the presence of paper on the intermediate tray. |
| 3. Trailing edge registration motor (TERM) | Drives the trailing edge registration cursor. |
| 4. Front side registration motor (FSRM) | Drives the front side registration cursor. |
| 5. Rear side registration motor (RSRM) | Drives the rear side registration cursor. |
| 6. Trailing edge registration home position sensor (TERHPS) | Detects the trailing edge registration cursor in the home position. |
| 7. Side registration front home position sensor (SRFHPS) | Detects the front side registration cursor in the home position. |
| 8. Side registration rear home position sensor (SRRHPS) | Detects the rear side registration cursor in the home position. |

(3) Stapler section**Figure 2-2-3 Stapler section**

1. Stapler empty sensor (STES) Detects the presence of staples.
2. Staple cartridge sensor (STCS) Detects the presence of the staple cartridge.
3. Stapler home position sensor (STHPS) Detects the stapler in the home position.
4. Stapler self-priming sensor (STSPS) Detects the pre-stapling state of the stapler.
5. Stapler motor (STM) Drives the stapler.

2-3-1 Main PCB

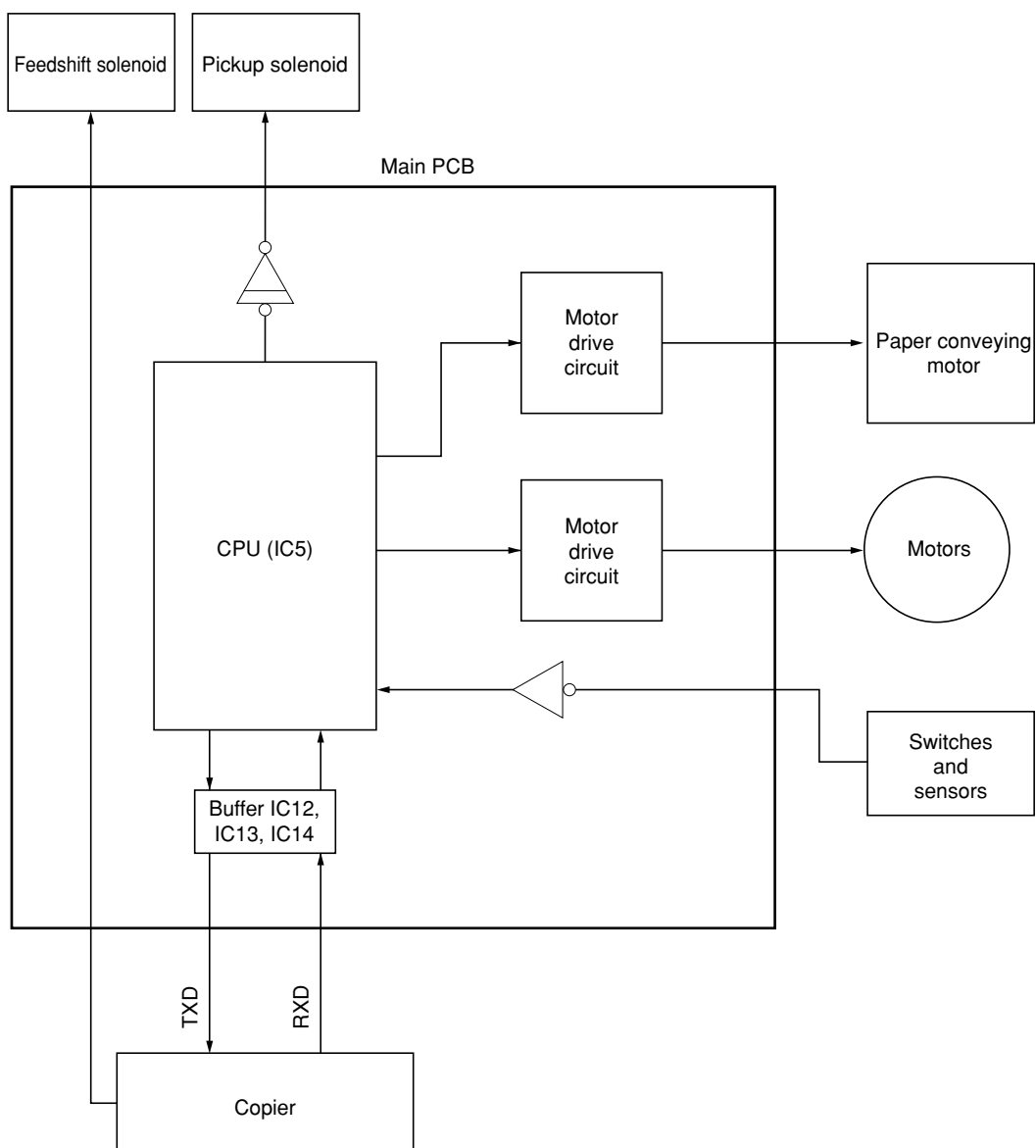


Figure 2-3-1 Main PCB block diagram

The main PCB (MPCB) consists mainly of the CPU IC5 and motor drive circuit. The CPU IC5 detects the condition of the switches and sensors and controls the motors and solenoids by serially communicating with the copier. The feedshift solenoid (FSSOL) operates with the control signals from the copier.

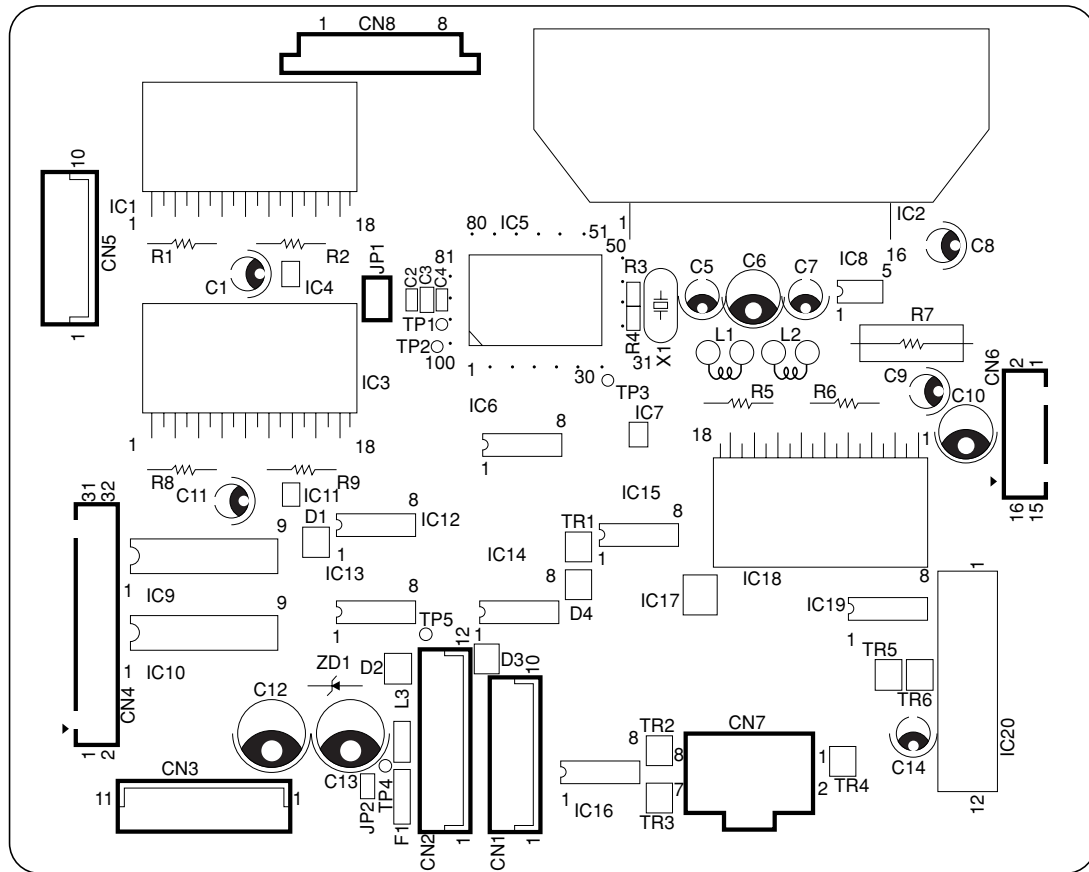


Figure 2-3-2 Main PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
2-1	2-3	0/5 V DC	RESET signal, input
2-2	2-3	0/5 V DC	Finisher SET signal, input
2-4	2-5	0/5 V DC (pulse)	Serial signal TXD, input
2-6	2-7	0/5 V DC (pulse)	Serial signal RXD, output
2-8	2-7	5 V DC	5 V DC supply, input
2-11	2-9	24 V DC	24 V DC supply, input
2-12	2-10	24 V DC	24 V DC supply, input
3-7	3-4	0/24 V DC	FSSOL release signal, input
3-8	3-4	0/24 V DC	FSSOL latch-on signal, input
3-9	3-4	24 V DC	24 V DC supply for FSSOL, input
4-1	4-29	24 V DC	24 V DC supply for FSSOL, output
4-2	4-29	0/24 V DC	FSSOL latch-on signal, output
4-3	4-29	24 V DC	24 V DC supply for CFM, output
4-4	4-29	0/24 V DC	FSSOL release signal, output
4-5	4-29	24 V DC	24 V DC supply for PUSOL, output
4-6	4-29	0/24 V DC	CFM on/off signal, output
4-7	4-29	0/24 V DC	PUSOL on/off, output
4-9	4-29	5 V DC	5 V DC supply for PCSW, output
4-10	4-29	0/5 V DC	PCSW on/off, input
4-11	4-23	5 V DC	5 V DC supply for SRFHPS, output
4-12	4-23	0/5 V DC	SRFHPS on/off, input
4-13	4-25	5 V DC	5 V DC supply for SRRHPS, output
4-14	4-25	0/5 V DC	SRRHPS on/off, input
4-15	4-27	5 V DC	5 V DC supply for stapler, output
4-16	4-27	0/5 V DC	STHPS on/off, input
4-17	4-21	5 V DC	5 V DC supply for ITS, output
4-18	4-21	0/5 V DC	ITS on/off, input
4-19	4-28	5 V DC	5 V DC supply for TERHPS, output
4-20	4-27	0/5 V DC	STCS on/off, input
4-22	4-27	0/5 V DC	STES on/off, input
4-24	4-27	0/5 V DC	STSPS on/off, input
4-26	4-28	0/5 V DC	TERHPS on/off, input
5-1	2-9	0/24 V DC (pulse)	FSRM motor coil energization pulse, output (A)
5-2	2-9	24 V DC	24 V DC supply for FSRM, output
5-3	2-9	0/24 V DC (pulse)	FSRM motor coil energization pulse, output (\bar{B})
5-4	2-9	0/24 V DC (pulse)	FSRM motor coil energization pulse, output (B)
5-5	2-9	0/24 V DC (pulse)	FSRM motor coil energization pulse, output (\bar{A})
5-6	2-9	0/24 V DC (pulse)	RSRM motor coil energization pulse, output (A)
5-7	2-9	24 V DC	24 V DC supply for RSRM, output
5-8	2-9	0/24 V DC (pulse)	RSRM motor coil energization pulse, output (\bar{B})
5-9	2-9	0/24 V DC (pulse)	RSRM motor coil energization pulse, output (B)
5-10	2-9	0/24 V DC (pulse)	RSRM motor coil energization pulse, output (\bar{A})
6-1	2-9	0/24 V DC (pulse)	TERM motor coil energization pulse, output (A)
6-2	2-9	0/24 V DC (pulse)	TERM motor coil energization pulse, output (\bar{B})
6-3	2-9	0/24 V DC (pulse)	TERM motor coil energization pulse, output (B)
6-4	2-9	0/24 V DC (pulse)	TERM motor coil energization pulse, output (\bar{A})
6-5	2-9	24 V DC	24 V DC supply for TERM, output
6-7	2-9	24 V DC	24 V DC supply for PCM, output
6-8	2-9	24 V DC	24 V DC supply for PCM, output
6-9	2-9	0/24 V DC (pulse)	PCM motor coil energization pulse, output (A)
6-10	2-9	0/24 V DC (pulse)	PCM motor coil energization pulse, output (\bar{A})
6-11	2-9	0/24 V DC (pulse)	PCM motor coil energization pulse, output (B)
6-12	2-9	0/24 V DC (pulse)	PCM motor coil energization pulse, output (\bar{B})
6-13	2-9	0/24 V DC	STM forward rotation drive signal (F), output
6-14	2-9	0/24 V DC	STM forward rotation drive signal (F), output
6-15	2-9	0/24 V DC	STM reverse rotation drive signal (R), output
6-16	2-9	0/24 V DC	STM reverse rotation drive signal (R), output

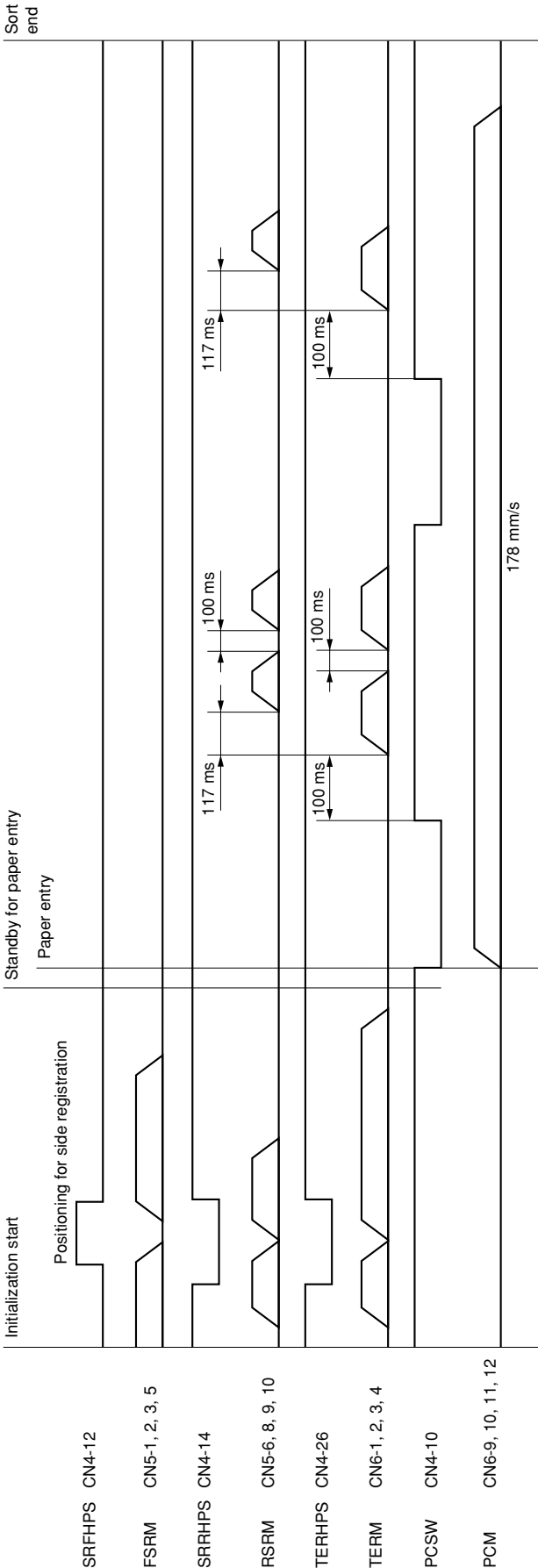
3B5

Terminals (CN)		Voltage	Remarks
7-3	2-9	24 V DC	24 V DC supply for LCSW, output
7-6	2-9	24/0 V DC	LCSW on/off, input

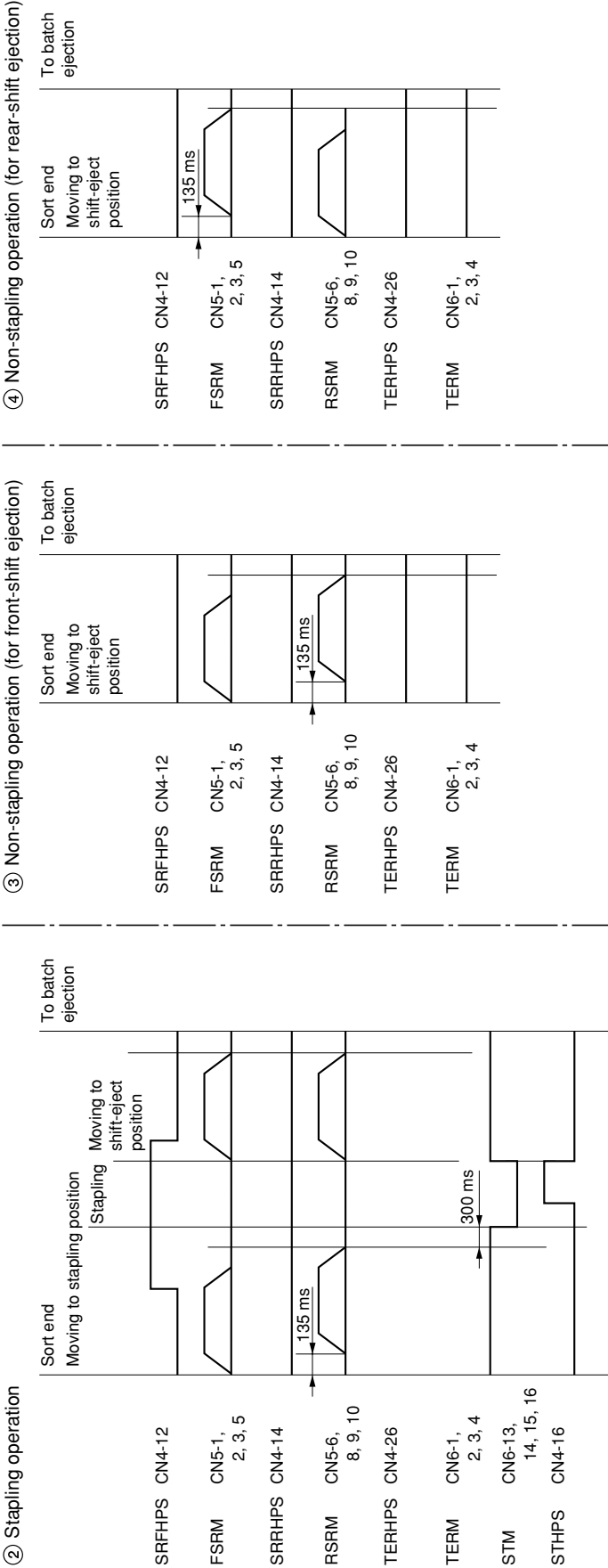
2-3-4

Timing chart No. 1

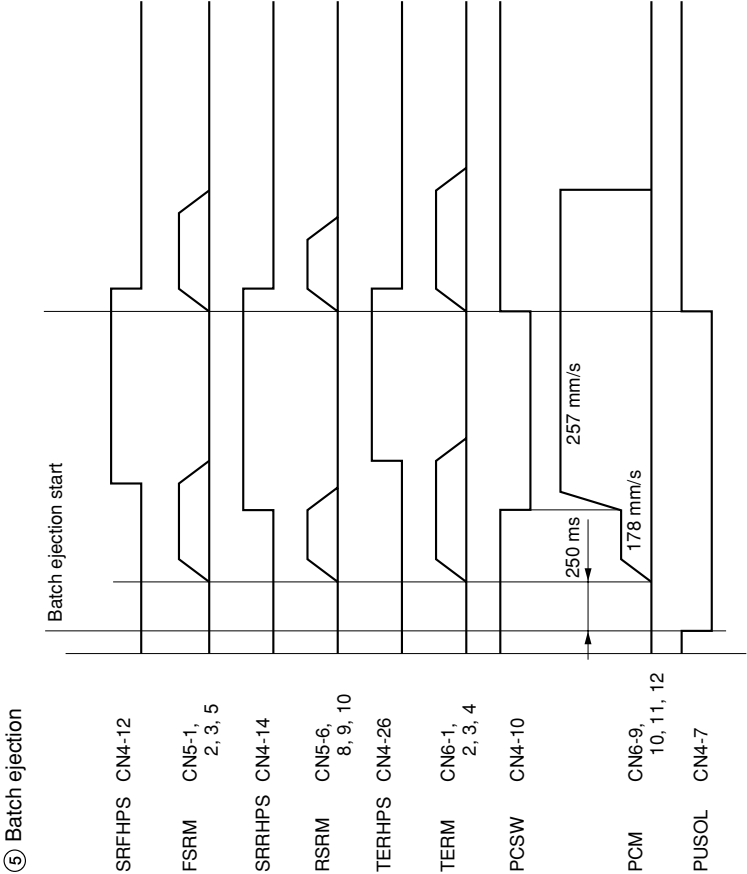
① Operation start



Timing chart No. 2



Timing chart No. 3

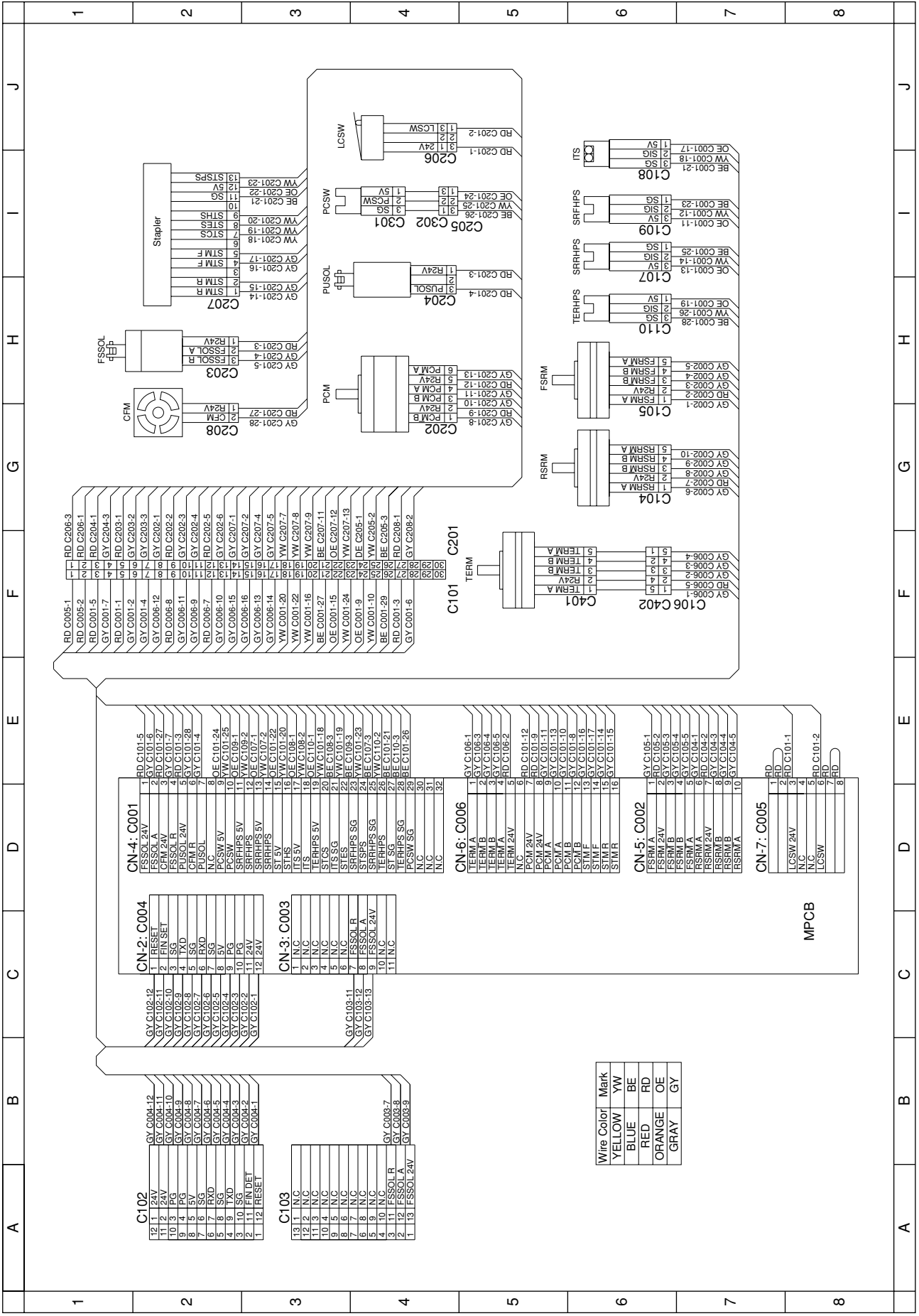


Periodic maintenance procedures

• Finisher

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Stapler section	Magnet	Clean	Every service	Remove the staples attracted to the magnet inside the stapler cover.	1-4-3

Wiring diagram



J-1402

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1-1-1 Specifications

Type	Enclosed
Tray capacity	100 sheets of 45 – 160 g/m ² paper
Paper	Plain paper: 75 – 80 g/m ² Special paper: colored paper
Paper sizes	A3 – A5R, folio/11" × 17" – 5 ¹ / ₂ " × 8 ¹ / ₂ "
Power source	Electrically connected to the copier
Weight	Approximately 1.0 kg/2.21 lbs

1-1-2 Part names

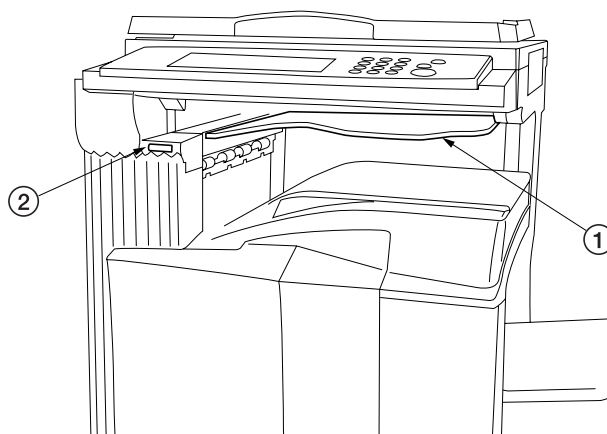
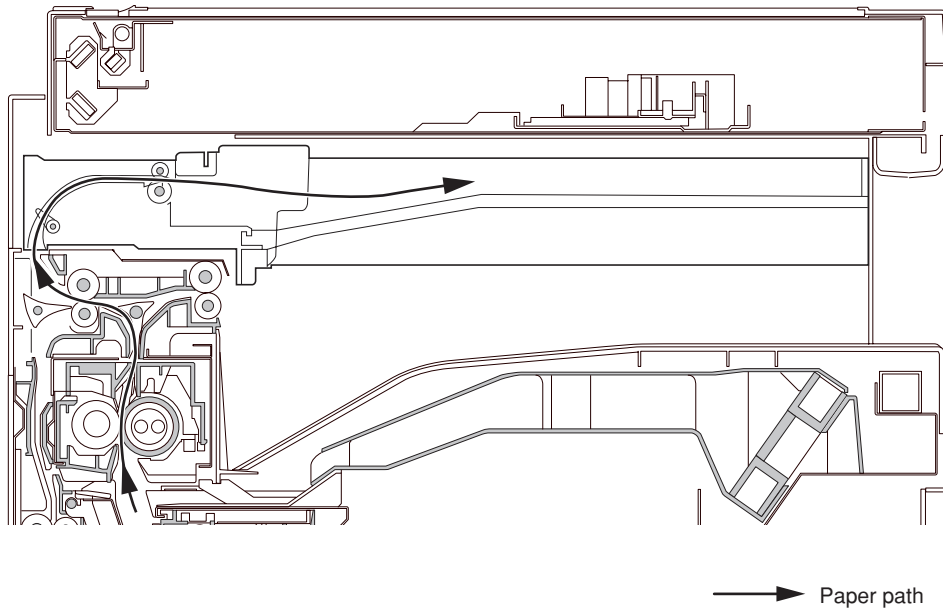


Figure 1-1-1

- ① Job separator tray
- ② LED

1-1-3 Machine cross section**Figure 1-1-2**

1-1-4 Drive system

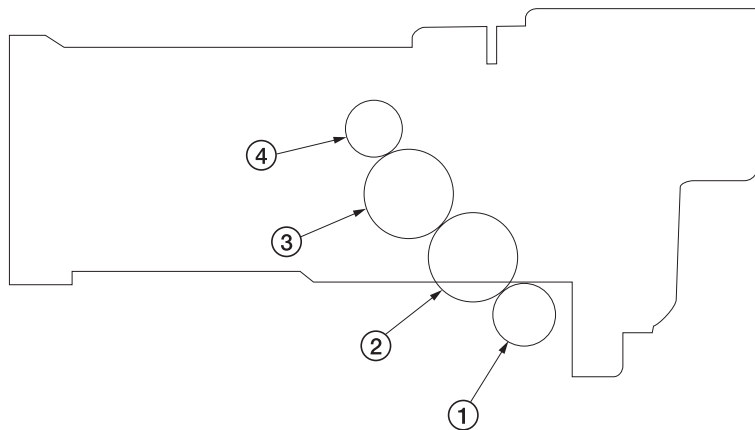


Figure 1-1-3

- ① Gear 20
- ② Gear 28
- ③ Gear 28
- ④ Eject roller gear

1-2-1 Unpacking

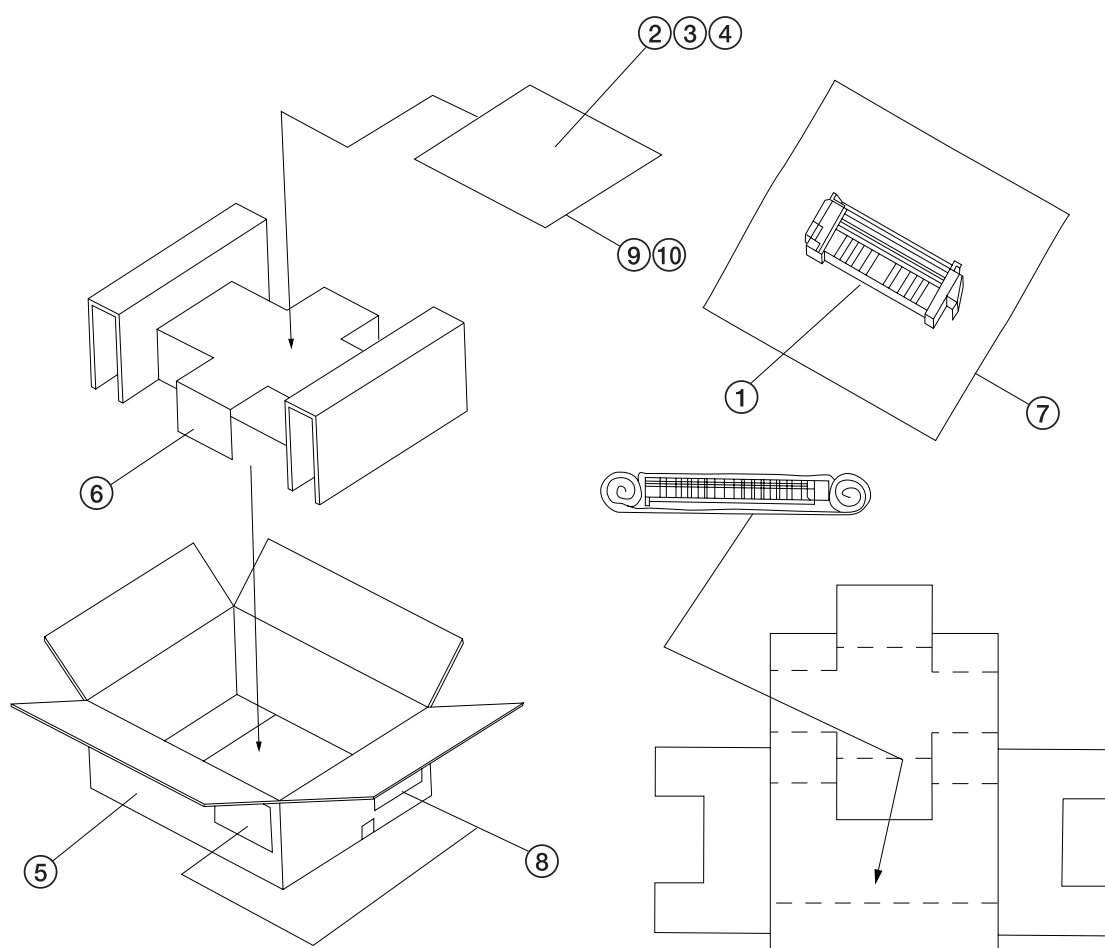


Figure 1-2-1 Unpacking

- ① Job separator
- ② Job separator tray
- ③ Pin
- ④ Cross-head bronze binding screws
BMV3 × 05
- ⑤ Outer case
- ⑥ Spacer
- ⑦ Air-padded bag
- ⑧ Bar-code labels
- ⑨ Plastic bag
- ⑩ Plastic bag

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When paper jams, the machine immediately stops operation and the occurrence of a paper jam is indicated on the copier operation panel.

To remove the jammed paper, open the copier conveying cover.

To reset the paper misfeed detection, open and close the copier conveying cover to turn safety switch 2 off and on.

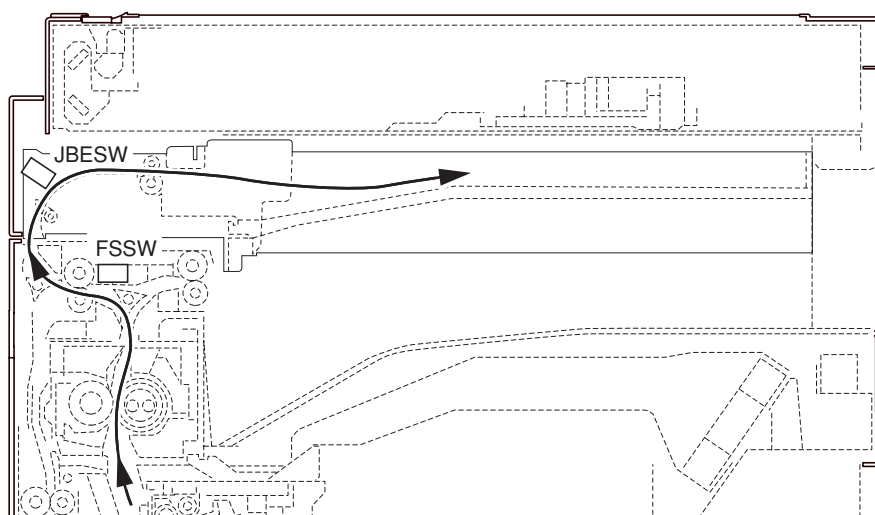
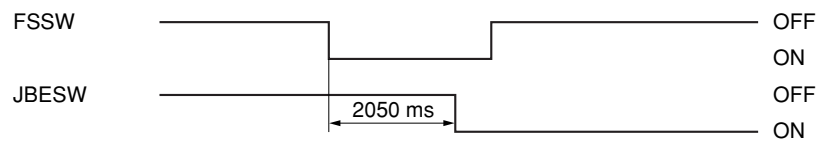


Figure 1-3-1 Paper misfeed detection

(2) Paper misfeed detection condition

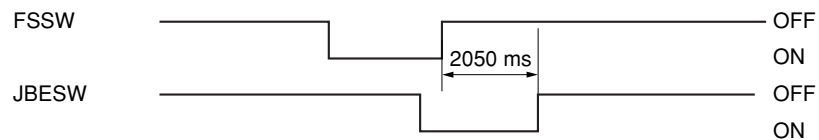
- Misfeed in job separator eject section (jam code 51)

The job separator eject switch (JBESW) does not turn on within 2050 ms of the feedshift switch (FSSW) turning on.



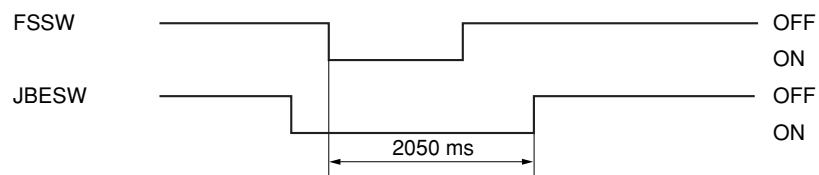
Timing chart 1-5-1

The job separator eject switch (JBESW) does not turn off within 2050 ms of the feedshift switch (FSSW) turning off.



Timing chart 1-5-2

The job separator eject switch (JBESW) does not turn off within 2050 ms of the feedshift switch (FSSW) turning on.



Timing chart 1-5-3

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) Paper jams when the main switch is turned on.	A piece of paper torn from copy paper is caught around the job separator eject switch.	Remove any found.
	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.
(2) Paper jams in the job separator during copying (jam in job separator eject section).	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.
	Check if the job eject pulley or job eject roller is deformed.	Check visually and replace the pulley if deformed.

1-3-2 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The feedshift solenoid does not operate.	Broken feedshift solenoid coil.	Check for continuity across the coil. If none, replace the feedshift solenoid.
	Poor contact of 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 CN35-11 and CN35-12 on the copier main PCB go low. If not, replace the main PCB.

1-3-3 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) Paper jams.	Check if the contact between the job eject pulley and job eject roller is correct.	Check and remedy.
(2) Abnormal noise is heard.	Check if the job eject pulley, job eject roller and gears operate smoothly.	Grease the bushings and gears.

2-1-1 Construction of each section

The job separator consists of the components shown in Figure 2-1-1. It switches the paper path to eject copied paper to the job separator tray.

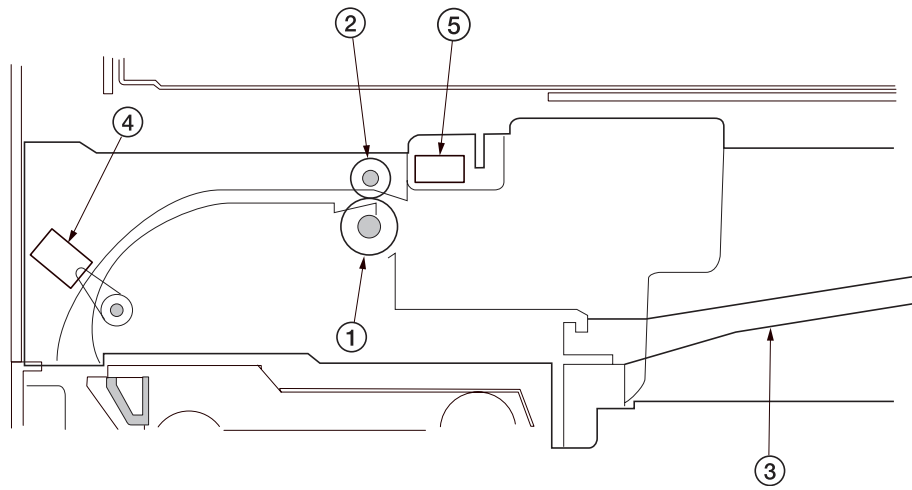


Figure 2-1-1 Job separator

- ① Job eject roller
- ② Job eject pulley
- ③ Job separator tray
- ④ Job separator eject switch (JBESW)
- ⑤ Ejected paper detection switch (EPDSW)

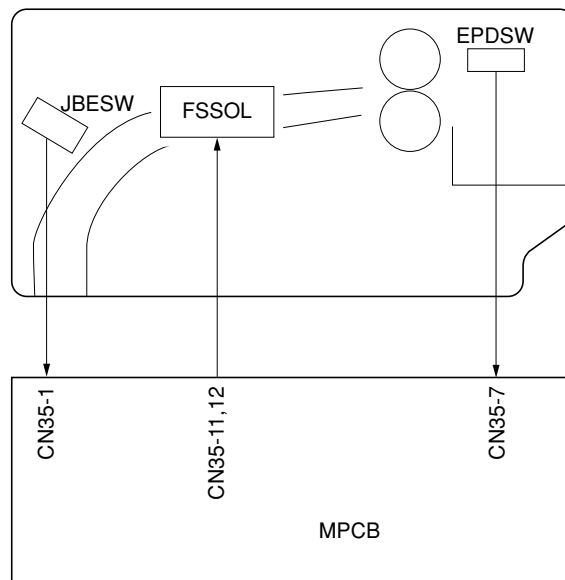
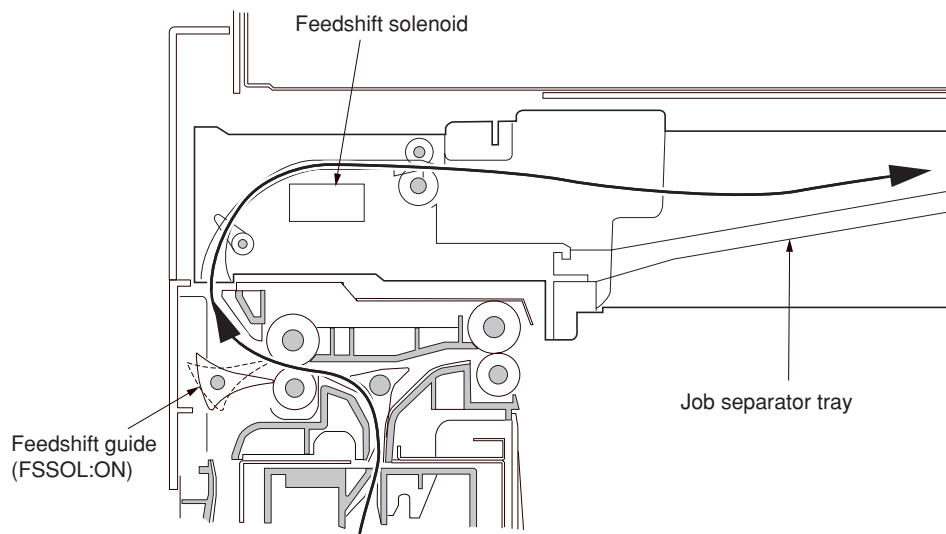


Figure 2-1-2 Job separator block diagram

(1) Switching the paper path

If the job separator is selected for the copy eject location, when a copy is made, the feedshift solenoid (FSSOL) turns on and the feedshift guide of the copier operates to switch the paper path to the job separator. The copied paper is conveyed to the job separator and then ejected to the job separator tray.

**Figure 2-1-3**

2-2-1 Electrical parts layout

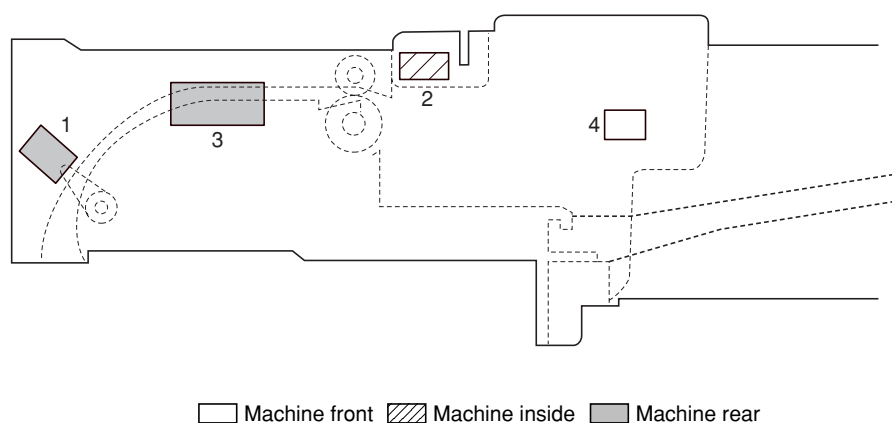


Figure 2-2-1

1. Job separator eject switch (JBESW) Detects a paper jam in the job separator.
2. Ejected paper detection switch (EPDSW) ... Detects the presence of paper on the job separator tray.
3. Feedshift solenoid (FSSOL) Operates the feedshift guide of the copier.
4. LED Indicates the presence of paper on the job separator tray.

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper conveying section	Job eject roller	Clean	Every service	Clean with alcohol or a dry cloth.	

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2-1 Mechanical construction

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2-2 Electrical Parts Layout

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2-4 Appendixes

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1-1-1 Specifications

Paper	Plain paper (75 – 80 g/m ²)
Paper size	A3 – A5R, folio, 11" × 17" – 5 ¹ / ₂ " × 8 ¹ / ₂ "
Capacity	550 x 2 sheets
Power source	Electrically connected to the copier.
Dimensions	585 (W) × 590 (D) × 315 (H) mm 23 ¹ / ₁₆ " (W) × 23 ¹ / ₄ " (D) × 12 ³ / ₈ " (H)
Weight	25 kg/55 lbs

3CC

1-1-2 Parts names

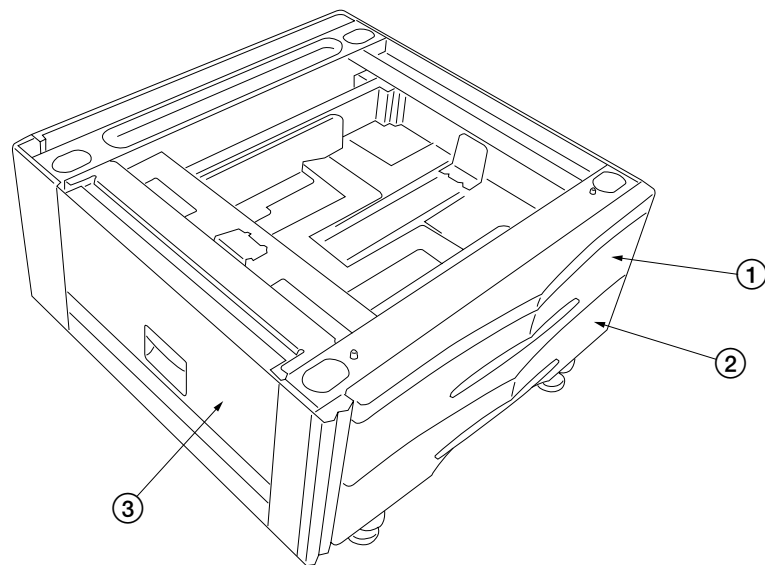
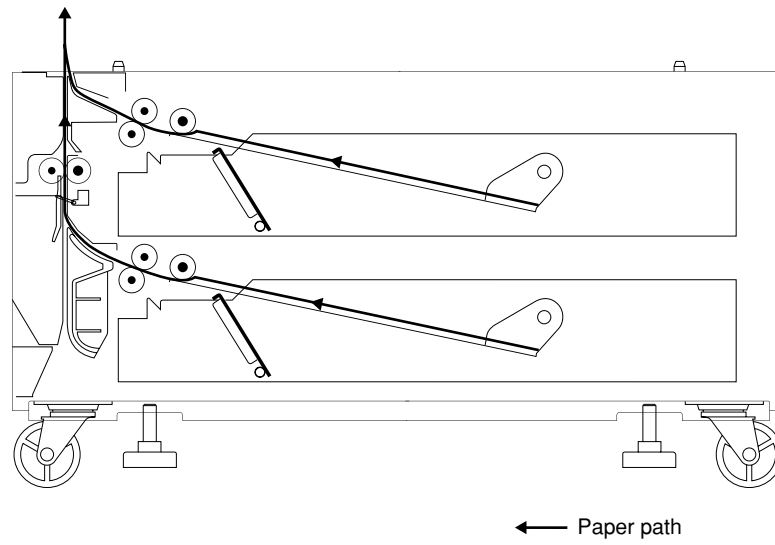


Figure 1-1-1

- ① Upper drawer
- ② Lower drawer
- ③ Desk left cover

1-1-3 Machine cross section**Figure 1-1-2 Machine cross section**

1-1-4 Drive system

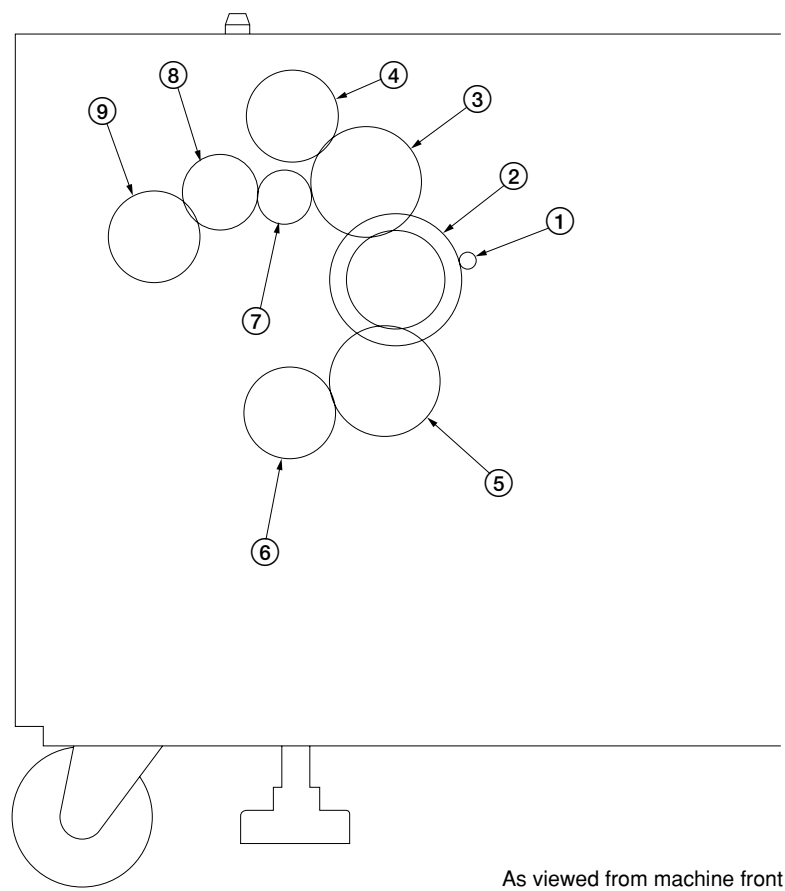


Figure 1-1-3 Drive system

- | | |
|-------------------------------------|-------------------------------------|
| ① Desk drive motor gear | ⑥ Desk lower paper feed clutch gear |
| ② Idle gear 67/34 | ⑦ Gear 20 |
| ③ Gear 41 | ⑧ Gear 26 |
| ④ Desk upper paper feed clutch gear | ⑨ Desk feed clutch gear |
| ⑤ Gear 41 | |

1-2-1 Unpacking

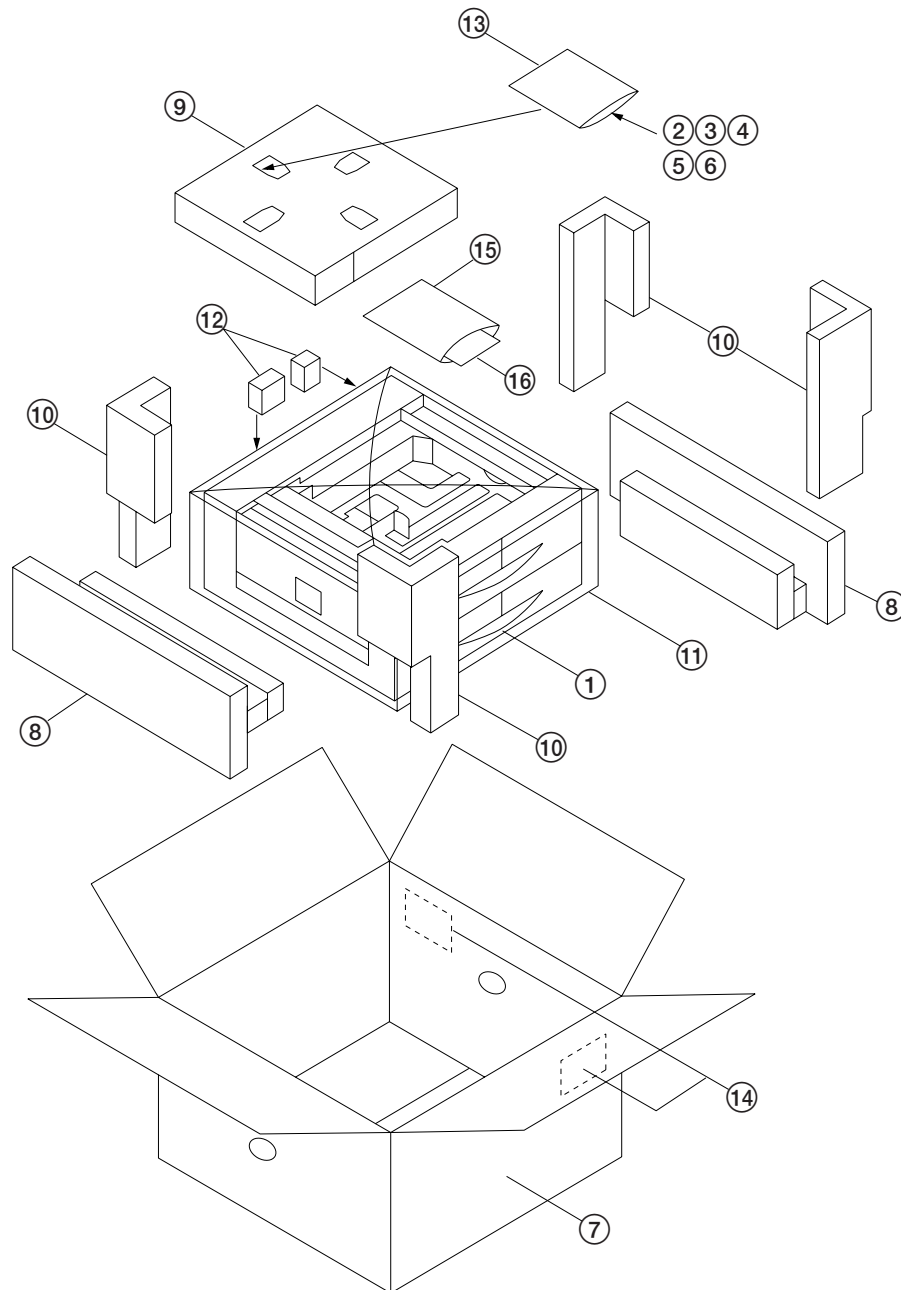


Figure 1-2-1

- | | |
|--|----------------------|
| ① Paper feed desk | ⑨ Upper pad |
| ② Retainer | ⑩ Stays |
| ③ Cross-head chromate binding screws,
CVM4 × 06 | ⑪ Machine cover |
| ④ Pins | ⑫ Rear spacer |
| ⑤ Stays | ⑬ Plastic bag |
| ⑥ Chrome TP screws, M4 × 10 | ⑭ Bar code label |
| ⑦ Outer case | ⑮ Plastic bag |
| ⑧ Bottom pads | ⑯ Installation guide |

1-2-2 Installing the desk dehumidifier (service part)

Desk dehumidifier installation requires the following parts:
Desk dehumidifier (P/N 33960020): for 220 – 240 V specifications only
Desk dehumidifier (P/N 34860030): for 120 V specifications only
Two (2) M4 × 8 S tight screws (P/N B3324080)

Procedure

1. Remove the upper and lower drawers.
2. Remove the three screws holding the desk rear cover and then the cover.
3. Pass the desk dehumidifier cable to the machine rear through the cable hole in the machine right.
4. Attach the desk dehumidifier using the two M4 × 8 S tight screws.

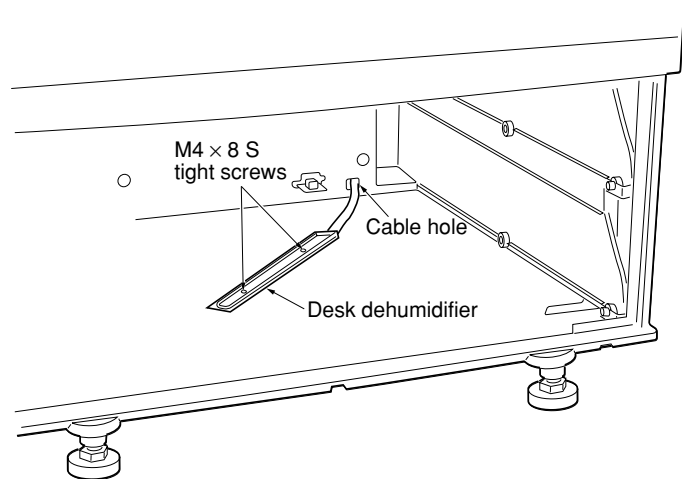


Figure 1-2-2

5. Insert the desk dehumidifier connector into the connector of the main harness.
6. Tidy up the desk dehumidifier cable using the wire saddle and route the cable while clipping the wire saddles into the holes in the rear frame.
7. Refit all removed parts.

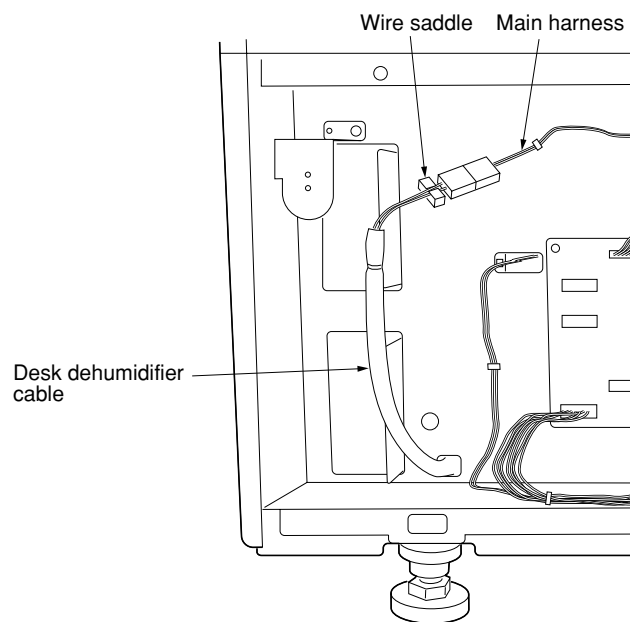


Figure 1-2-3

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper jam occurs, the machine immediately stops operation. The operation unit of the copier shows a jam message and the jam location.

To reset the paper misfeed detection, open and close the desk left cover to turn the desk safety switch off and on.

(2) Paper misfeed detection conditions

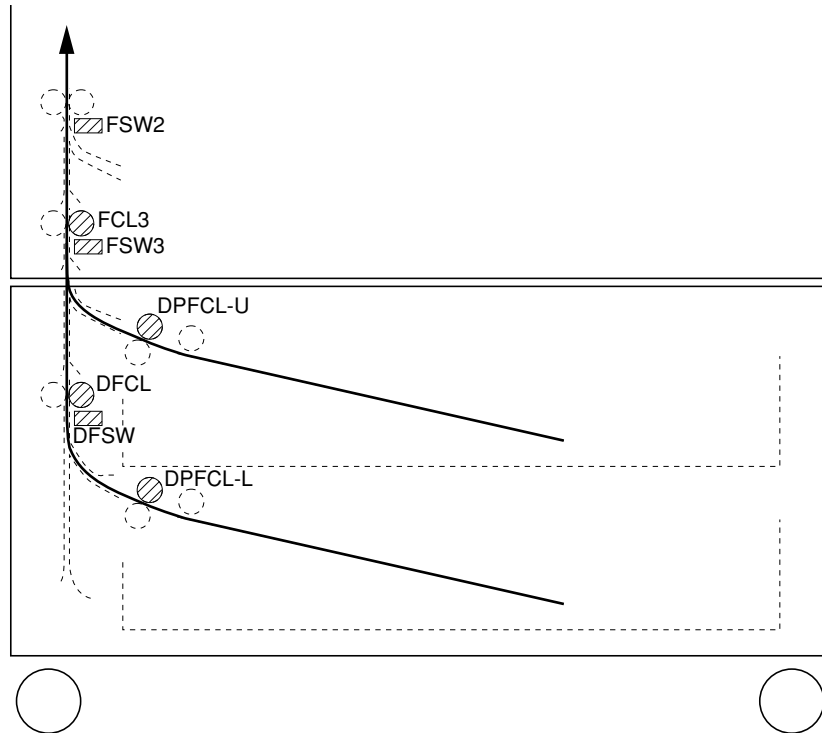
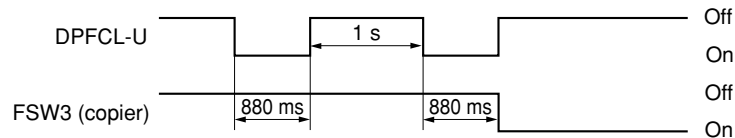


Figure 1-3-1 Paper feed desk

• No paper feed from desk upper drawer (jam code 12)

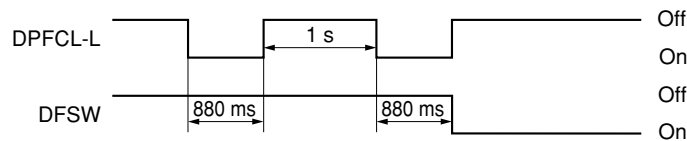
Feed switch 3 (FSW3) of the copier does not turn on within 880 ms of the desk upper paper feed clutch (DPFCL-U) turning on; the clutch is then held off for 1 s and turned back on, but the switch again fails to turn on within 880 ms of the retry.



Timing chart 1-3-1

• No paper feed from desk lower drawer (jam code 13)

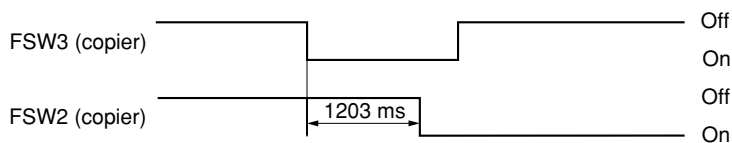
The desk feed switch (DFSW) does not turn on within 880 ms of the desk lower paper feed clutch (DPFCL-L) turning on; the clutch is then held off for 1 s and turned back on, but the switch again fails to turn on within 880 ms of the retry.



Timing chart 1-3-2

- Jam in copier vertical paper conveying section (jam code 18)

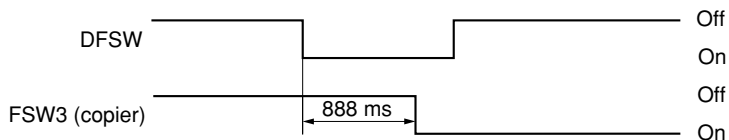
Feed switch 2 (FSW2) of the copier does not turn on within 1203 ms of feed switch 3 (FSW3) of the copier turning on.



Timing chart 1-3-3

- Jam in paper feed desk vertical paper conveying section (jam code 19)

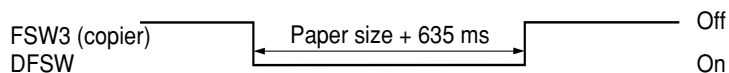
Feed switch 3 (FSW3) of the copier does not turn on within 888 ms of the desk feed switch (DFSW) turning on.



Timing chart 1-3-4

- Multiple sheets in paper feed section (jam code 21)

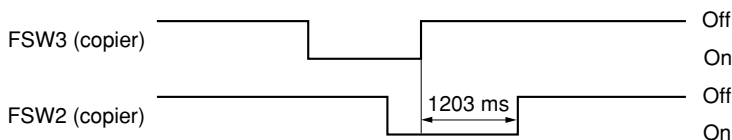
Feed switch 3 (FSW3) of the copier and the desk feed switch (DFSW) do not turn off within the time required to convey the length of the used paper size plus 635 ms of turning on.



Timing chart 1-3-5

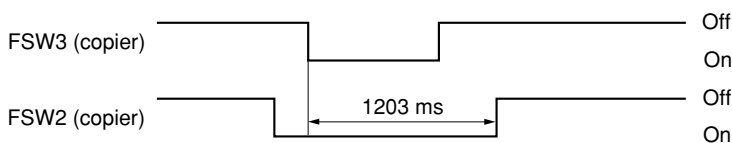
- Multiple sheets in vertical paper conveying section (jam code 22)

Feed switch 2 (FSW2) of the copier does not turn off within 1203 ms of feed switch 3 (FSW3) of the copier turning off.



Timing chart 1-3-6

Feed switch 2 (FSW2) of the copier does not turn off within 1203 ms of feed switch 3 (FSW3) of the copier turning on.



Timing chart 1-3-7

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed section is indicated during copying (no paper feed from desk upper drawer). Jam code 12	Paper in the desk upper drawer is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the desk upper drawer is deformed.	Check visually and replace any deformed pulleys.
	Broken copier feed switch 3 actuator.	Check visually and replace feed switch 3 if the actuator is broken.
	Defective copier 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 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 (see page 1-3-7).
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from desk lower drawer). Jam code 13	Paper in the desk lower drawer is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the desk lower drawer is deformed.	Check visually and replace any deformed pulleys.
	Broken desk feed switch actuator.	Check visually and replace the desk feed switch if the 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 goes low when the desk feed switch is turned on. If not, 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 (see page 1-3-7).
(3) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section). Jam code 18	Broken copier feed switch 2 actuator.	Check visually and replace feed switch 2 if the actuator is broken.
	Defective copier 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.

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (jam in paper desk vertical paper conveying section). Jam code 19	Broken copier feed switch 3 actuator.	Check visually and replace feed switch 3 if the actuator is broken.
	Defective copier 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 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 (see page 1-3-7).
	Check if the desk feed clutch malfunctions.	Run maintenance item U247 and select the desk feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the desk feed clutch.	Check (see page 1-3-7).
	Check if the desk feed rollers or pulleys are soiled with paper powder.	Check and clean with isopropyl alcohol if soiled.
(5) A paper jam in the paper feed section is indicated during copying (multiple sheets in paper feed section). Jam code 21	Check if the desk feed rollers or pulleys are soiled with paper powder.	Check and clean with isopropyl alcohol if soiled.
(6) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section). Jam code 22	Check if the copier feed rollers or pulleys are soiled with paper powder.	Check and clean with isopropyl alcohol if soiled.

1-3-2 Self-diagnosis

(1) Self-diagnostic function

When a problem is detected in the paper feed desk, copying is disabled and the problem displayed on the operation unit of the copier as a code consisting of "C" followed by a number between 0420 and 2600, indicating the nature of the problem. After removing the problem, the self-diagnostic function can be reset by turning the desk safety switch off and back on.

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0420	Communication problem An error code from the paper feed desk is detected eight times in succession. No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN3 on the copier main PCB and CN5 on the desk main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB and check for correct operation.
		Defective desk main PCB.	Replace the desk main PCB and check for correct operation.
C1030	Desk upper lift motor problem When the upper drawer of the paper feed desk is inserted, the desk upper lift limit switch does not turn on within 6 s of the desk upper lift motor turning on and the desk upper lift limit switch does not turn on by turning off the desk upper lift motor for 200 ms and retrying twice. During copying, the desk upper lift limit switch does not turn on within 200 ms of the desk upper lift motor turning on.	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.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1040	Desk lower lift motor problem When the lower drawer of the paper feed desk is inserted, the desk lower lift limit switch does not turn on within 6 s of the desk lower lift motor turning on and the desk lower lift limit switch does not turn on by turning off the desk lower lift motor for 200 ms and retrying twice. During copying, the desk lower lift limit switch does not turn on within 200 ms of the desk lower lift motor turning on.	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.
C1170	Paper feed desk incorrect type problem	Desk for the printer is installed.	Replace the desk for the copier.
C2600	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 desk drive motor PCB.	Replace the desk drive motor PCB and check for correct operation.
		Desk drive motor does not rotate correctly (the motor is over-loaded).	Check the gears and remedy if necessary.
		Poor contact in the desk drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.

1-3-3 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The paper feed desk does not operate when the copier print key is pressed.	Poor contact of the signal cable connector terminals between the paper feed desk and the copier.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk safety switch.	Check for continuity across the contacts. If none, replace the desk safety switch.
(2) The desk drive motor does not operate.	Poor contact of the desk drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Broken desk drive motor gear.	Check visually and replace the desk drive motor if necessary.
	Defective desk drive motor.	Check if the desk drive motor operates when CN4-6 on the desk main PCB goes low. If not, replace the desk drive motor.
	Defective desk main PCB.	Check if CN4-6 on the desk main PCB goes low when the desk drive motor is operated in maintenance item U247. If not, replace the desk main PCB.
(3) The desk upper paper feed clutch does not operate.	Broken desk upper paper feed clutch coil.	Check for continuity across the coil. If none, replace the desk upper paper feed clutch.
	Poor contact of the desk upper paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk main PCB.	Check if CN1-14 on the desk main PCB goes low when the desk upper paper feed clutch is operated in maintenance item U247. If not, replace the desk main PCB.
(4) The desk lower paper feed clutch does not operate.	Broken desk lower paper feed clutch coil.	Check for continuity across the coil. If none, replace the desk lower paper feed clutch.
	Poor contact of the desk lower paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk main PCB.	Check if CN1-13 on the desk main PCB goes low when the desk lower paper feed clutch is operated in maintenance item U247. If not, replace the desk main PCB.
(5) The desk feed clutch does not operate.	Broken desk feed clutch coil.	Check for continuity across the coil. If none, replace the desk feed clutch.
	Poor contact of the desk feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk main PCB.	Check if CN2-1 on the desk main PCB goes low when the desk feed clutch is operated in maintenance item U247. If not, replace the desk main PCB.

Problem	Causes	Check procedures/corrective measures
(6) The desk upper lift motor does not operate.	Broken desk upper lift motor coil.	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 main PCB.	Check if 24 V DC is output across CN2-5 (–) and CN2-6 (+) on the desk main PCB right after the desk upper drawer is installed. If not, replace the desk main PCB.
(7) The desk lower lift motor does not operate.	Broken desk lower lift motor coil.	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 main PCB.	Check if 24 V DC is output across CN2-3 (–) and CN2-4 (+) on the desk main PCB right after the desk lower drawer is installed. If not, replace the desk main PCB.
(8) The size of paper in the upper drawer is not displayed correctly.	Poor contact of the desk upper paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Poor contact of the desk upper paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk upper paper length switch.	Check if CN3-7 on the desk main PCB goes low when the desk upper paper length switch is turned on. If not, replace the desk upper paper length switch.
	Defective desk upper paper width switch.	Check for continuity between CN3-9 and CN3-1, CN3-2, and CN3-3 on the desk main PCB. If the continuity is unaffected by movement of the width guides in the upper drawer (i.e. either remains present or remains absent), then replace the desk upper paper width switch.
(9) The size of paper in the lower drawer is not displayed correctly.	Poor contact of the desk lower paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Poor contact of the desk lower paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk lower paper length switch.	Check if CN3-8 on the desk main PCB goes low when the desk lower paper length switch is turned on. If not, replace the desk lower paper length switch.
	Defective desk lower paper width switch.	Check for continuity between CN3-10 and CN3-4, CN3-5, and CN3-6 on the desk main PCB. If the continuity is unaffected by movement of the width guides in the lower drawer (i.e. either remains present or remains absent), then replace the desk lower paper width switch.

Problem	Causes	Check procedures/corrective measures
(10) The message requesting covers to be closed is displayed when the desk left cover is closed.	Poor contact of the desk safety switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective desk safety switch.	Check for continuity across the contacts. If there is no continuity when the desk safety switch is on, replace it.
(11) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

1-3-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No paper feed.	Check if the surfaces of the following rollers and pulleys are soiled with paper powder: forwarding pulley, paper feed pulley, separation pulley, desk feed roller and desk feed pulley.	Clean with isopropyl alcohol.
	Check if the paper feed pulley or separation pulley is deformed.	Replace (see page 1-4-2).
	Check if the forwarding pulley is deformed.	Replace (see page 1-4-2).
	Electrical problem with the following electromagnetic clutches: desk upper/lower paper feed clutches and desk feed clutch.	See pages 1-3-7.
(2) Skewed paper feed.	Width guide in the drawer installed incorrectly.	Check the width guide visually and remedy or replace if necessary.
	Deformed width guide in the drawer.	Check the width guide visually and remedy or replace if it is deformed.
(3) Multiple sheets of paper are fed at one time.	Check if the separation pulley is deformed.	Replace the separation pulley if it is worn (see page 1-4-2).
	Check if the paper is curled.	Change the paper.
(4) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Deformed guides along the paper conveying path.	Check visually and remedy or replace any deformed guides.
(5) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.
	Check if the desk upper and lower paper feed clutches and the desk feed clutch are installed correctly.	Remedy.

1-4-1 Precautions for assembly and disassembly

(1) Precautions

- Be sure to turn the main 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 PCBs containing ICs with bare hands or any object prone to static charge.
- Use the following testers when measuring voltages:
 - Hioki 3200
 - Sanwa MD-180C
 - Sanwa YX-360TR
 - Beckman TECH300
 - Beckman DM45
 - Beckman 330 (capable of measuring RMS values)
 - Beckman 3030 (capable of measuring RMS values)
 - Beckman DM850 (capable of measuring RMS values)
 - Fluke 8060A (capable of measuring RMS values)
 - Arlec DMM1050
 - Arlec YF1030C

1-4-2 Paper feed section

(1) Detaching and refitting the forwarding, paper feed and separation pulleys

Replace the forwarding, paper feed and separation pulleys as follows.

Procedure

• Removing the primary paper feed units

1. Remove the upper and lower drawers.
2. Remove the two screws holding the lower front cover and then the cover.
3. Remove the one screw from each of the primary paper feed units and then the units.

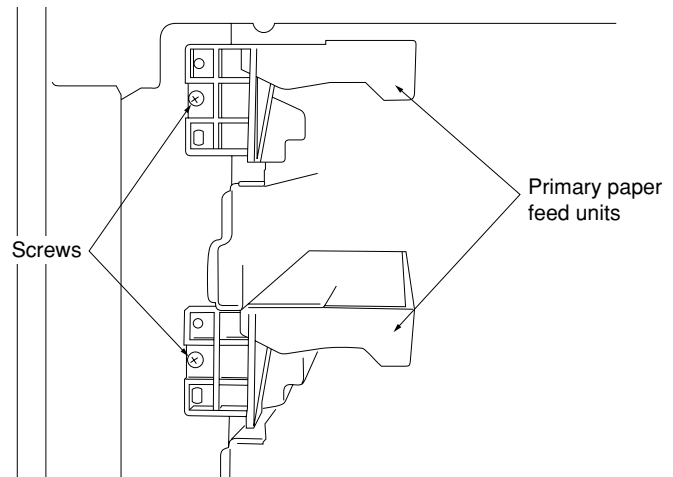


Figure 1-4-1 Detaching the primary paper feed units

• Removing the forwarding pulley

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

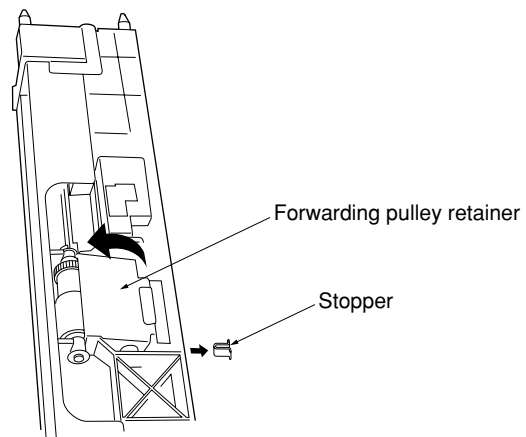


Figure 1-4-2 Detaching the forwarding pulley retainer

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

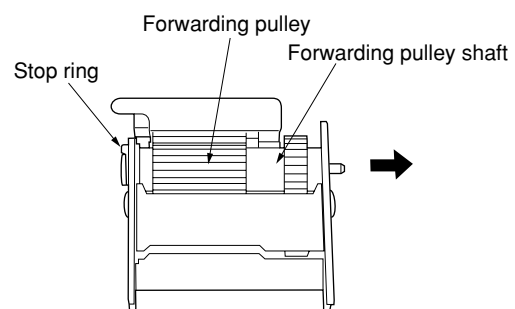


Figure 1-4-3 Detaching the forwarding pulley

• **Removing the paper feed pulley**

7. Remove the two stop rings.
8. 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 and gear.

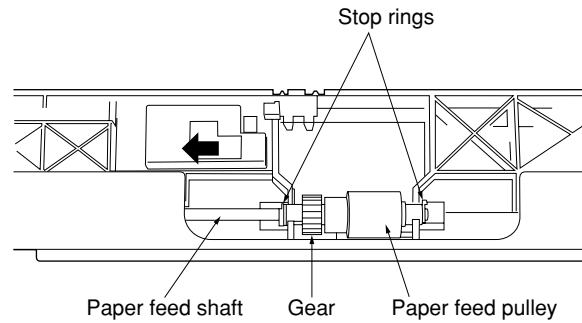


Figure 1-4-4 Detaching the paper feed pulley

• **Removing the separation pulley**

9. Remove the stop ring from the rear of the primary paper feed unit.
10. Pull the separation shaft toward the rear of the machine (in the direction of the arrow) and remove the separation pulley.
11. Replace the forwarding, paper feed and separation pulleys.
12. Refit all removed parts.

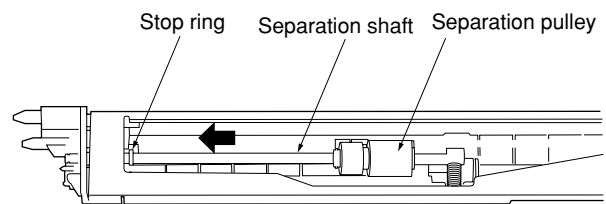


Figure 1-4-5 Detaching the separation pulley

Cautions:

- When fitting the forwarding pulley, orient it correctly as shown in Figure 1-4-6.
- When fitting the paper feed pulley and gear, keep the blue end of the paper feed pulley and the black end of the gear toward the machine rear.

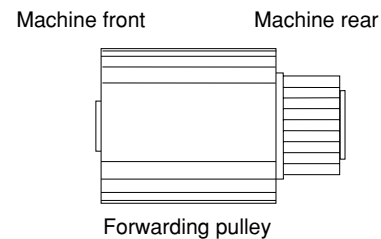


Figure 1-4-6

(2) Replacing the desk upper or lower paper width switches

Replace the desk upper or lower paper width switches as follows.

Caution:

After replacing a desk paper width switch, be sure to perform (4) Adjusting the position of the rack adjuster.

Procedure

1. Remove the drawer.
2. Remove the two screws and 8-pin socket from the rear of the drawer.
3. Detach the 8-pin desk paper width switch connector from the 8-pin socket.
4. Remove the three screws holding the rack adjuster.
5. While raising the drawer lift in the direction of the arrow, remove the rack adjuster.

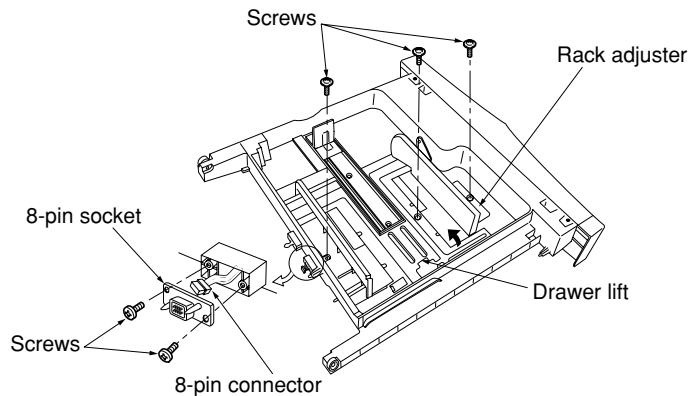


Figure 1-4-7 Detaching the rack adjuster

6. Remove the two screws from the back of the rack adjuster and then the desk paper width switch.

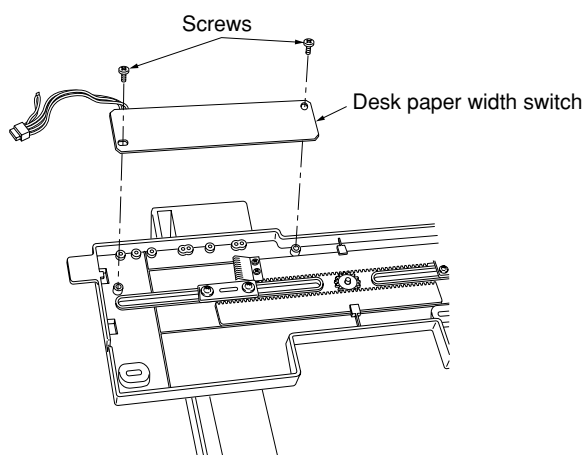


Figure 1-4-8 Detaching the desk paper width switch

7. Apply the specified grease to the printed surface of the new desk paper width switch (shaded area in the diagram) and fit the switch to the rack adjuster.
8. Refit all removed parts.

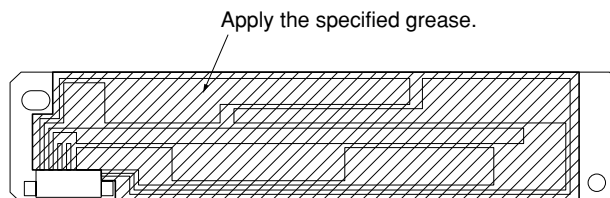


Figure 1-4-9 Desk paper width switch

(3) Replacing the desk feed, upper and lower paper feed clutches

Replace the desk feed, upper and lower paper feed clutches as follows.

Procedure

1. Remove the three screws holding the desk rear cover and then the cover.
2. Remove the cable from the retainer clamp.
3. Remove the three screws holding the retainer and then the retainer.
4. Remove the two screws holding the rear cover left retainer and then the retainer.

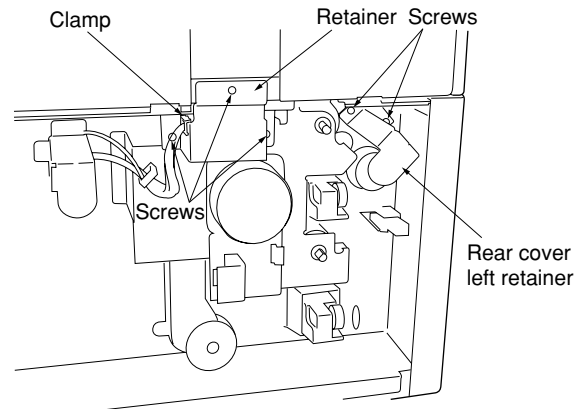


Figure 1-4-10

5. Remove the upper and lower stop rings and bearings from the desk upper and lower paper feed clutches.
6. Remove the stop ring from the desk feed clutch.

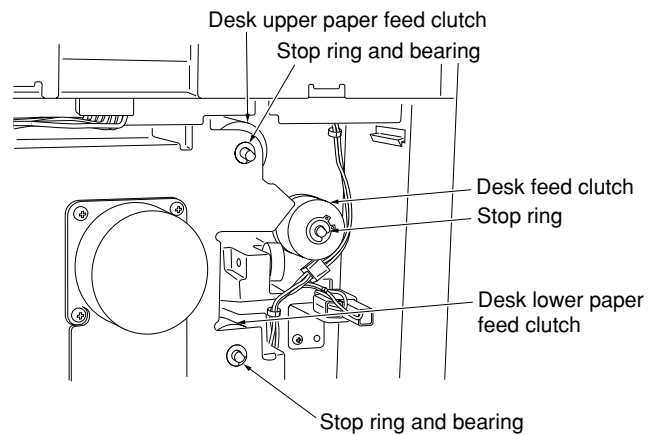


Figure 1-4-11

7. Remove the three screws holding the desk drive motor retainer and then the retainer.

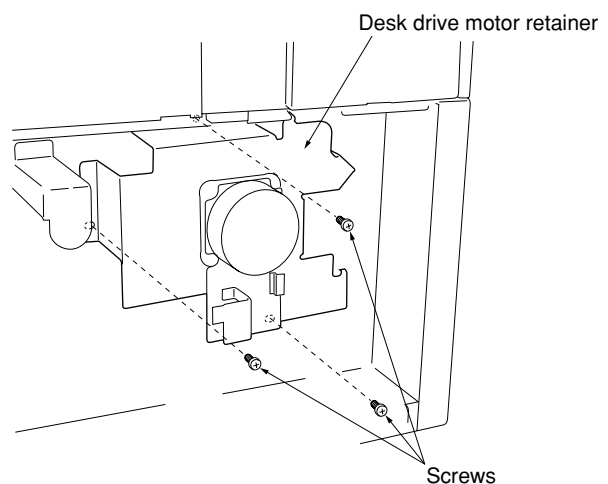


Figure 1-4-12 Detaching the desk drive motor retainer

3CC

8. Remove the connectors of the desk feed, upper and lower paper feed clutches and then the clutches.

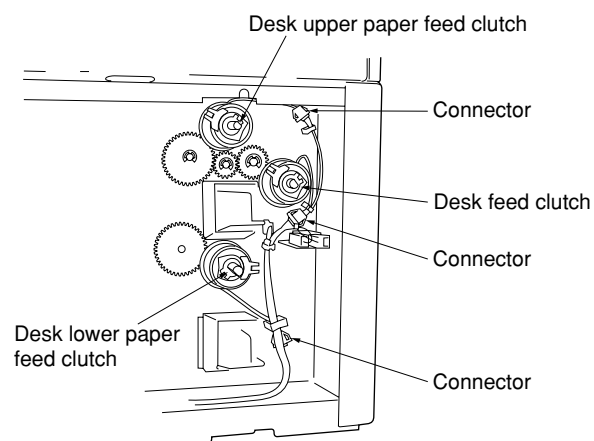


Figure 1-4-13 Detaching the desk feed, upper and lower paper feed clutches

9. Replace the clutches.
10. Refit all removed parts.

Caution:

When fitting the clutches, be sure to refit the whirl-stops.

(4) Adjusting the position of the rack adjuster

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

Procedure

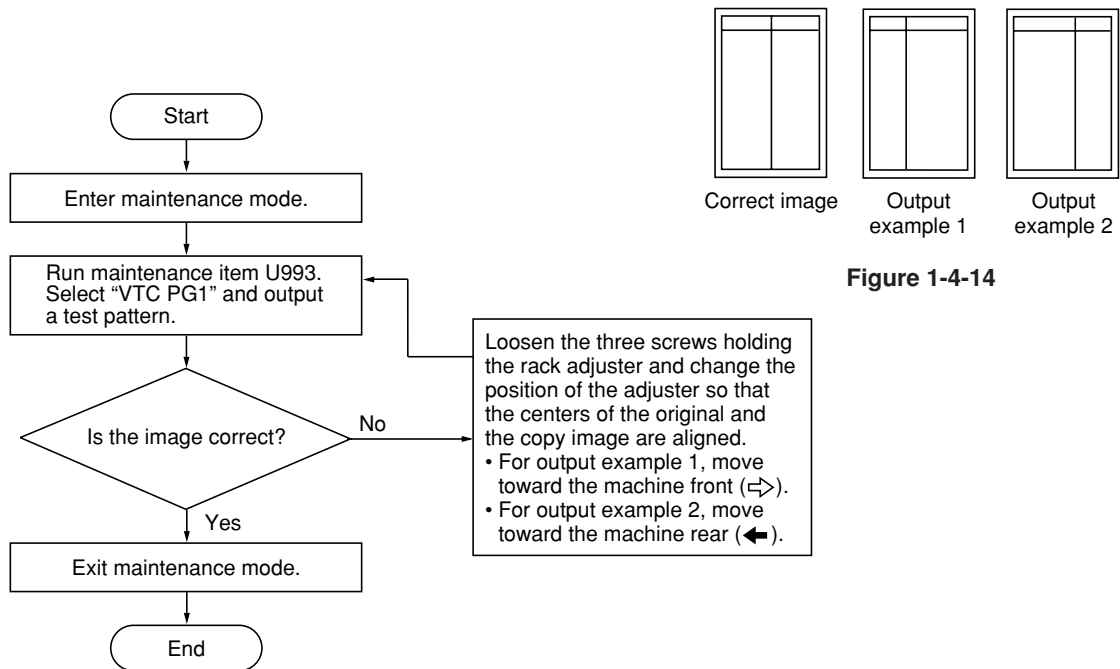


Figure 1-4-14

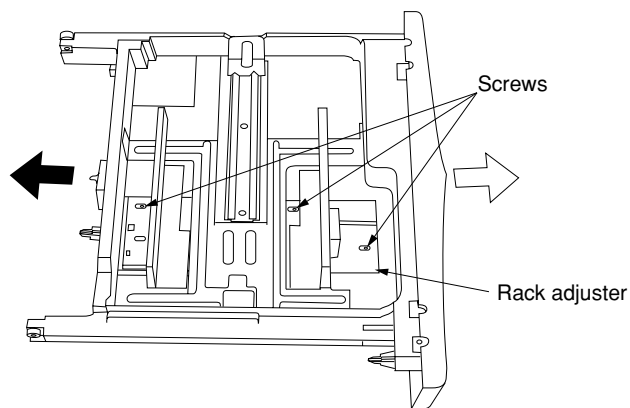
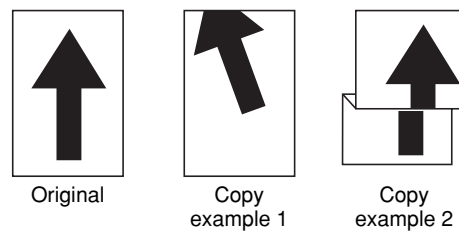
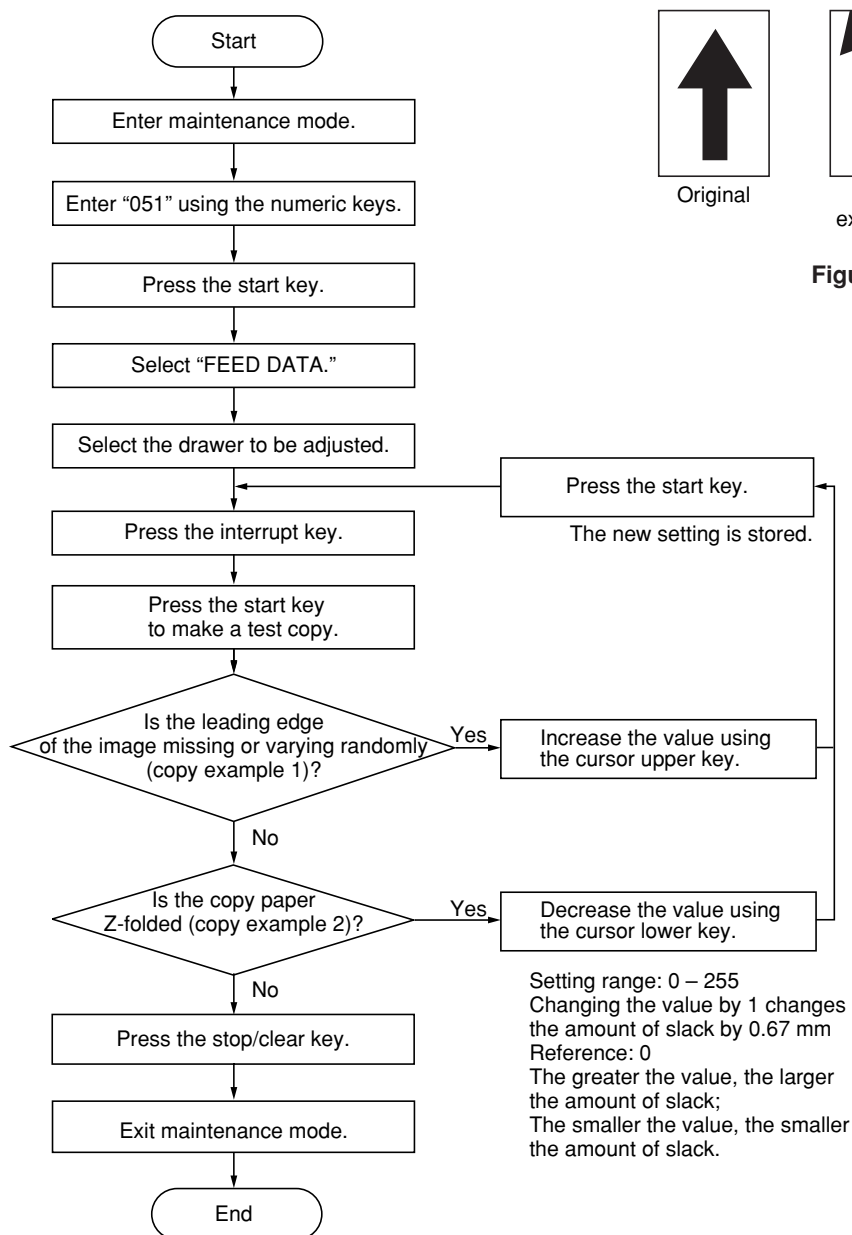


Figure 1-4-15 Adjusting the position of the rack adjuster

(5) Adjusting the amount of slack

Perform 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 1-4-16**

2-1-1 Mechanical construction

The paper feed desk feeds paper from either of its two drawers to the copier main body. When paper is fed from the lower drawer of the paper feed desk, the desk feed clutch (DFCL) is operated to rotate the desk feed roller and pulley to carry the paper into the copier main body.

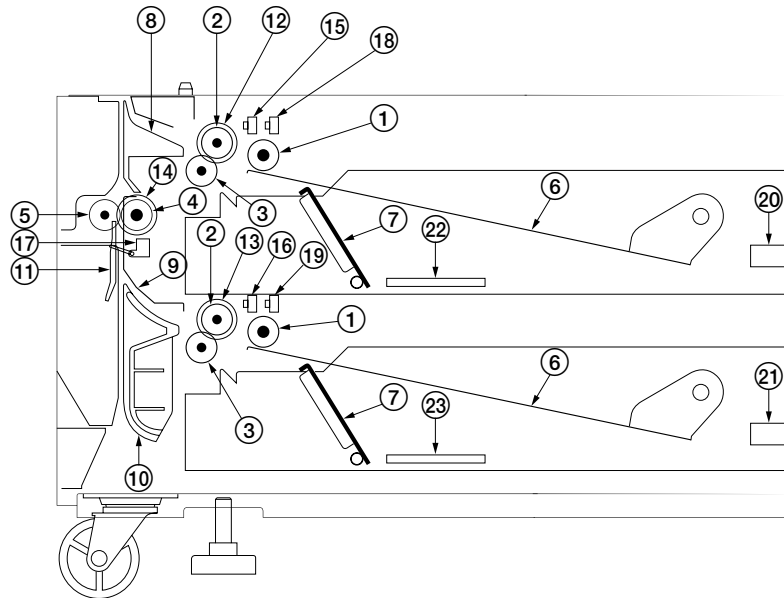


Figure 2-1-1 Paper feed desk

- | | |
|--|--|
| ① Forwarding pulley | ⑬ Desk lower paper feed clutch (DPFCL-L) |
| ② Paper feed pulley | ⑭ Desk feed clutch (DFCL) |
| ③ Separation pulley | ⑮ Desk upper paper switch (DPSW-U) |
| ④ Desk feed roller | ⑯ Desk lower paper switch (DPSW-L) |
| ⑤ Desk feed pulley | ⑰ Desk feed switch (DFSW) |
| ⑥ Drawer lift | ⑱ Desk upper lift limit switch (DLICSW-U) |
| ⑦ Lift operating plate | ⑲ Desk lower lift limit switch (DLICSW-L) |
| ⑧ Desk upper feed guide | ⑳ Desk upper paper length switch (DPLSW-U) |
| ⑨ Desk middle feed guide | ㉑ Desk lower paper length switch (DPLSW-L) |
| ⑩ Desk lower feed guide | ㉒ Desk upper paper width switch (DPWSW-U) |
| ⑪ Desk feed guide | ㉓ Desk lower paper width switch (DPWSW-L) |
| ⑫ Desk upper paper feed clutch (DPFCL-U) | |

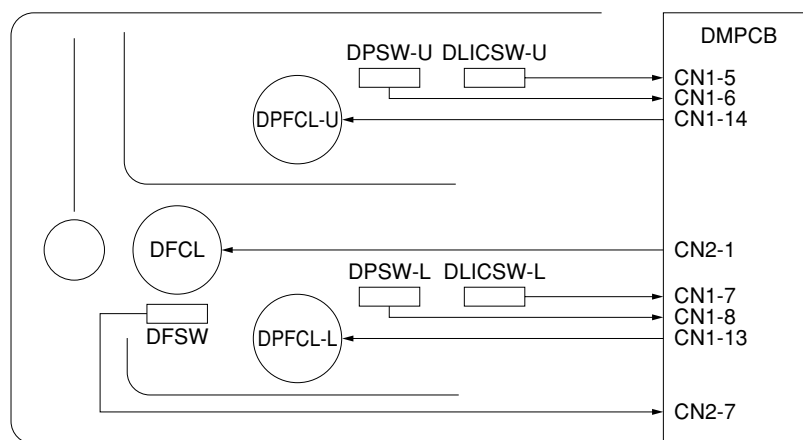
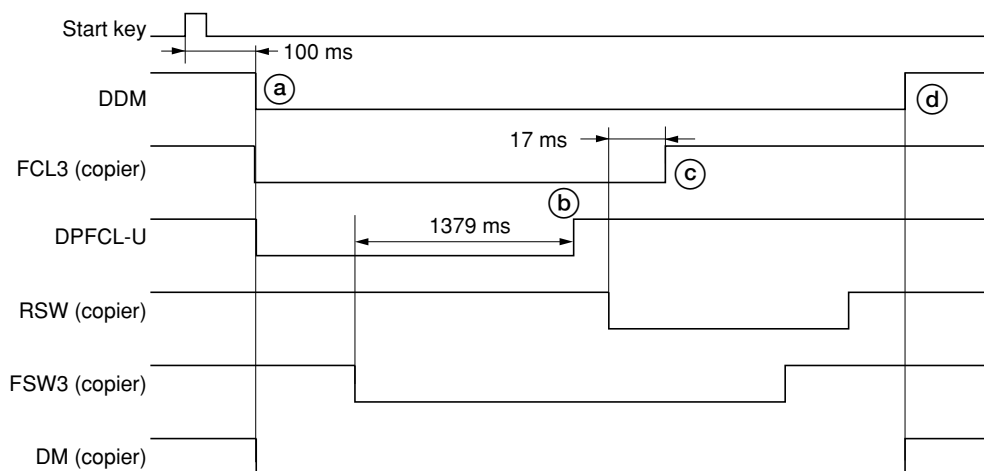


Figure 2-1-2 Paper feed desk block diagram

• Paper feed from the desk upper drawer

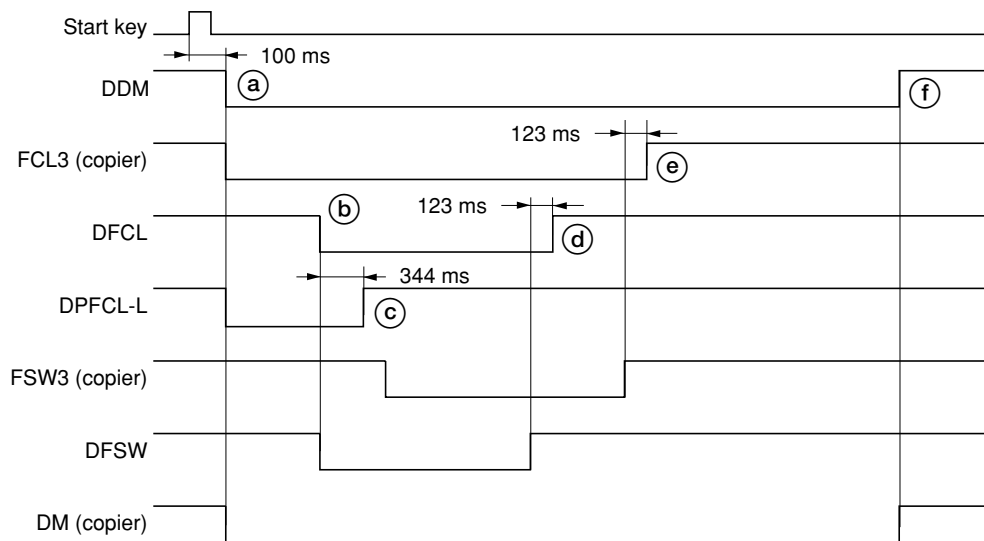


Automatic copy density control;
A3/11" × 17" paper; magnification of 100%

Timing chart 2-1-1 Paper feed from the desk upper drawer

- ① 100 ms after the start key is pressed, the desk drive motor (DDM) turns on at the same time as the drive motor (DM) turns on, starting the drive for the paper feed desk. The desk upper paper feed clutch (DPFCL-U) turns on to start rotating the forwarding pulley and paper feed pulley to start paper feed from the upper drawer.
- ② 1379 ms after the leading edge of the paper turns the feed switch 3 (FSW3) on, the desk upper paper feed clutch (DPFCL-U) turns off.
- ③ 17 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutch 3 (FCL3) turns off.
- ④ The desk drive motor (DDM) turns off at the same time as the drive motor (DM) turns off to stop the drive for the paper feed desk.

• Paper feed from the desk lower drawer



Manual copy density control;
A4/11" × 8¹/₂" paper; magnification of 100%

Timing chart 2-1-2 Paper feed from the desk lower drawer

- Ⓐ 100 ms after the start key is pressed, the desk drive motor (DDM) turns on at the same time as the drive motor (DM) turns on, starting the drive for the paper feed desk. The desk lower paper feed clutch (DPFCL-L) turns on to start rotating the forwarding pulley and paper feed pulley to start paper feed from the lower drawer.
- Ⓑ At the same time as the leading edge of the paper turns the desk feed switch (DFSW) on, the desk feed clutch (DFCL) turns on to rotate the desk feed roller to convey the paper to the copier.
- Ⓒ 344 ms after the desk feed switch (DFSW) turns on, the desk lower paper feed clutch (DPFCL-L) turns off.
- Ⓓ 123 ms after the trailing edge of the paper turns the desk feed switch (DFSW) off, the desk feed clutch (DFCL) turns off.
- Ⓔ 123 ms after the trailing edge of the paper turns feed switch 3 (FSW3) off, feed clutch 3 (FCL3) turns off.
- Ⓕ The desk drive motor (DDM) turns off at the same time as the drive motor (DM) turns off to stop the drive for the paper feed desk.

2-2-1 Electrical parts layout

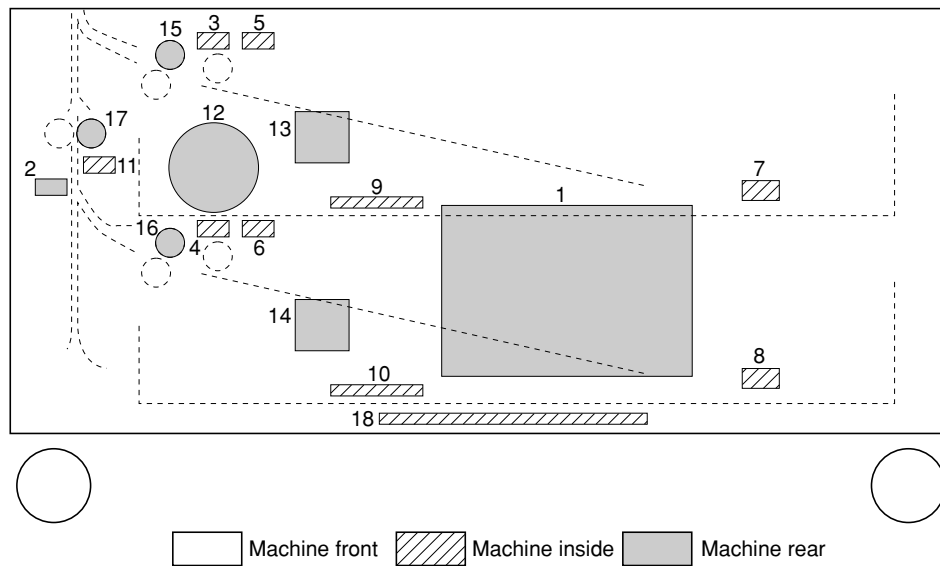


Figure 2-2-1 Layout of electrical parts

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Desk main PCB (DMPCB) 2. Desk safety switch (DSSW) 3. Desk upper paper switch (DPSW-U) 4. Desk lower paper switch (DPSW-L) 5. Desk upper lift limit switch (DLICSW-U) 6. Desk lower lift limit switch (DLICSW-L) 7. Desk upper paper length switch (DPLSW-U) 8. Desk lower paper length switch (DPLSW-L) 9. Desk upper paper width switch (DPWSW-U) 10. Desk lower paper width switch (DPWSW-L) 11. Desk feed switch (DFSW) 12. Desk drive motor (DDM) 13. Desk upper lift motor (DCLM-U) 14. Desk lower lift motor (DCLM-L) 15. Desk upper paper feed clutch (DPFCL-U) ... 16. Desk lower paper feed clutch (DPFCL-L) 17. Desk feed clutch (DFCL) 18. Desk dehumidifier* (DDH) | <p>Controls electrical parts.</p> <p>Breaks the safety circuit when the desk left cover is opened, and resets paper jam detection.</p> <p>Detects the presence of paper in the desk upper drawer.</p> <p>Detects the presence of paper in the desk lower drawer.</p> <p>Detects the desk upper drawer lift reaching the upper limit.</p> <p>Detects the desk lower drawer lift reaching the upper limit.</p> <p>Detects the length of paper in the desk upper drawer.</p> <p>Detects the length of paper in the desk lower drawer.</p> <p>Detects the width of paper in the desk upper drawer.</p> <p>Detects the width of paper in the desk lower drawer.</p> <p>Controls the desk lower paper feed clutch.</p> <p>Drives the paper feed desk.</p> <p>Drives the desk upper drawer lift.</p> <p>Drives the desk lower drawer lift.</p> <p>Primary paper feed from the desk upper drawer.</p> <p>Primary paper feed from the desk lower drawer.</p> <p>Conveys paper to the copier.</p> <p>Dehumidifies paper.</p> |
|--|--|

* Service part.

2-3-1 Desk main PCB

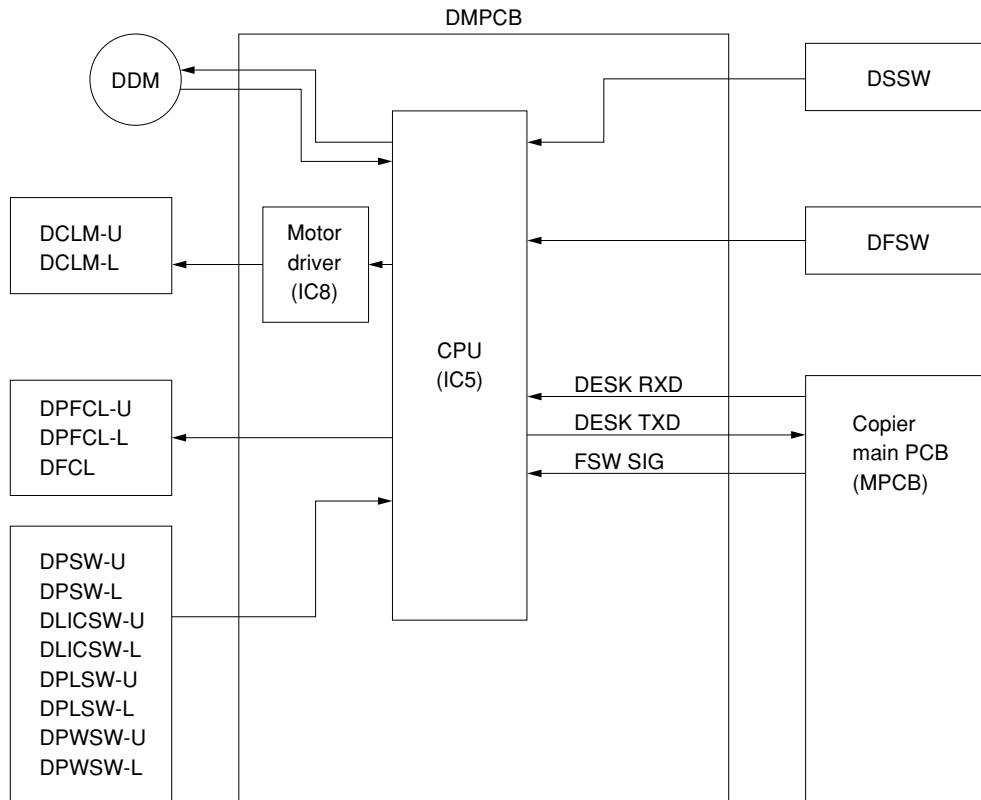


Figure 2-3-1 Desk main PCB block diagram

The desk main PCB (DMPCB) is controlled from the copier main PCB (MPCB) which controls the inputs from and outputs to the motors, clutches and switches on the paper feed desk through the CPU IC5 serially via two-way serial/parallel 8-bit data conversion.

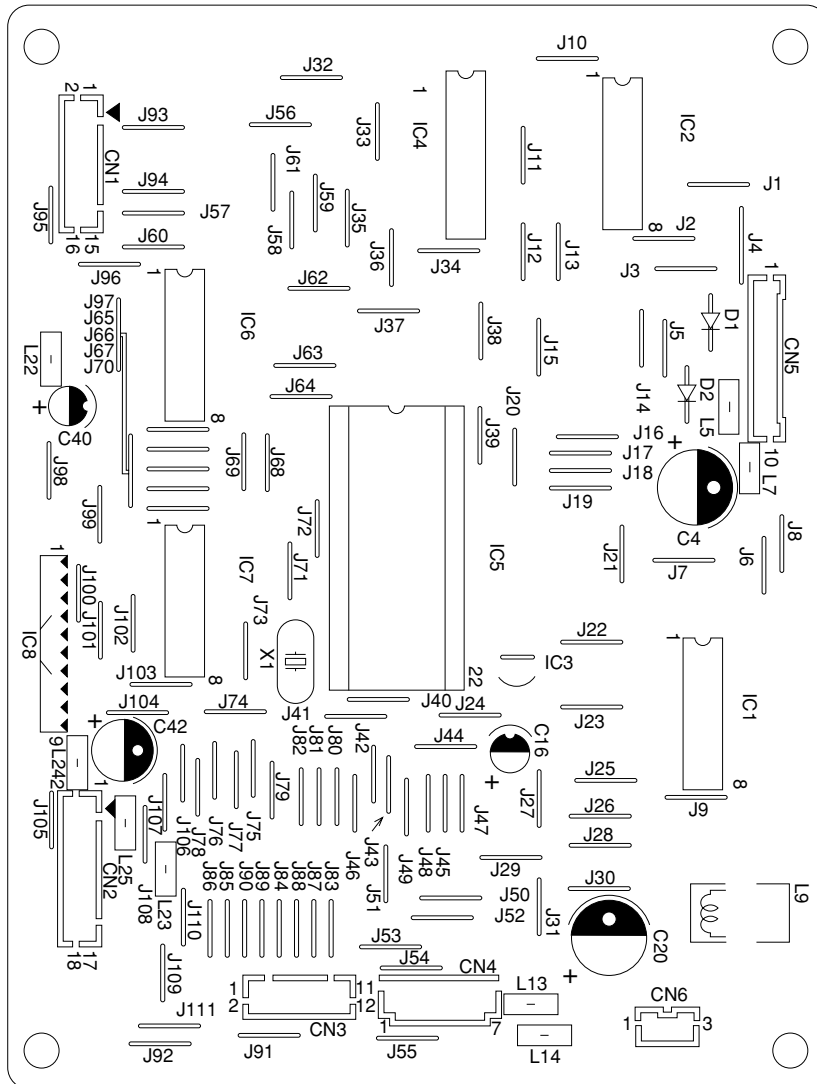
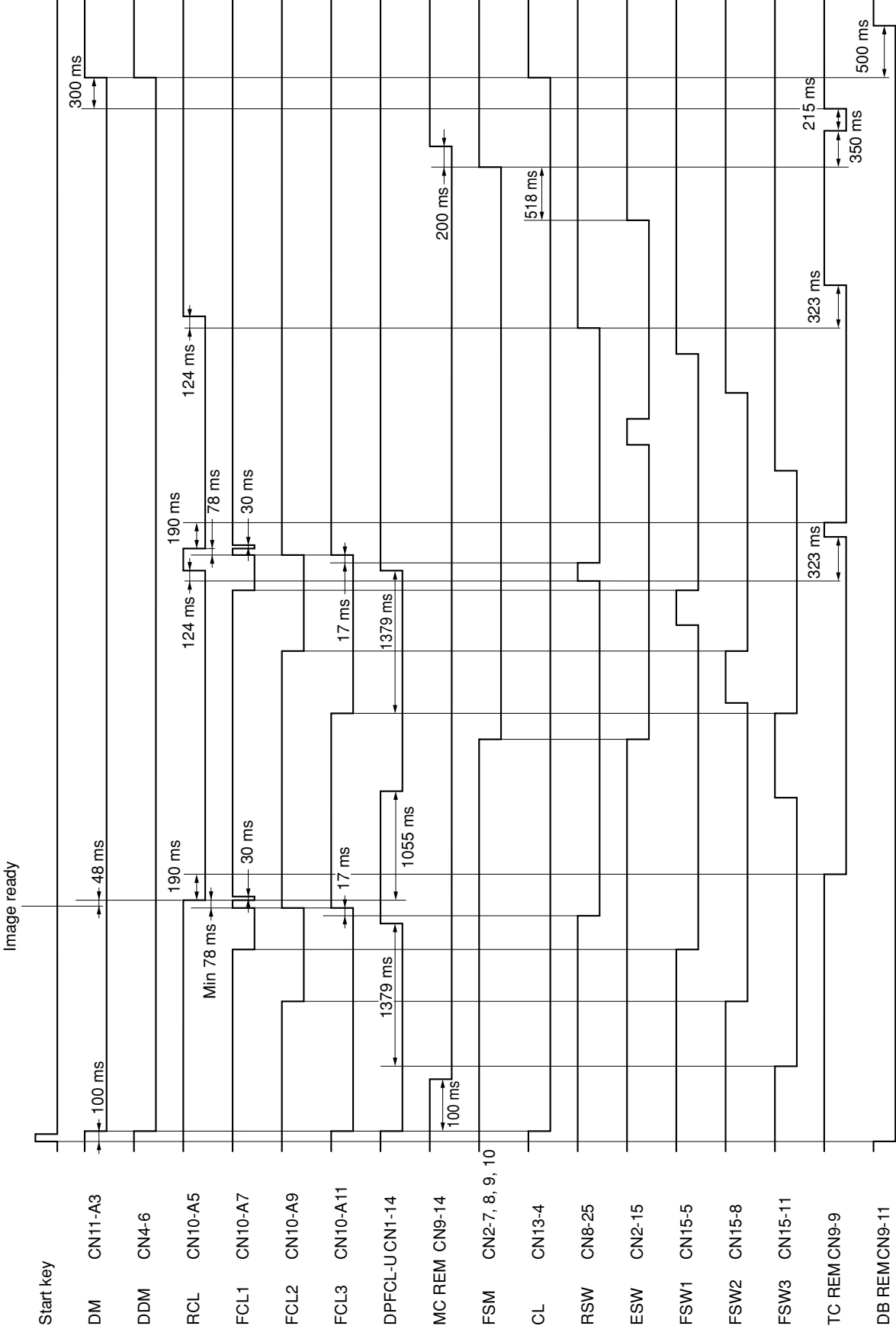


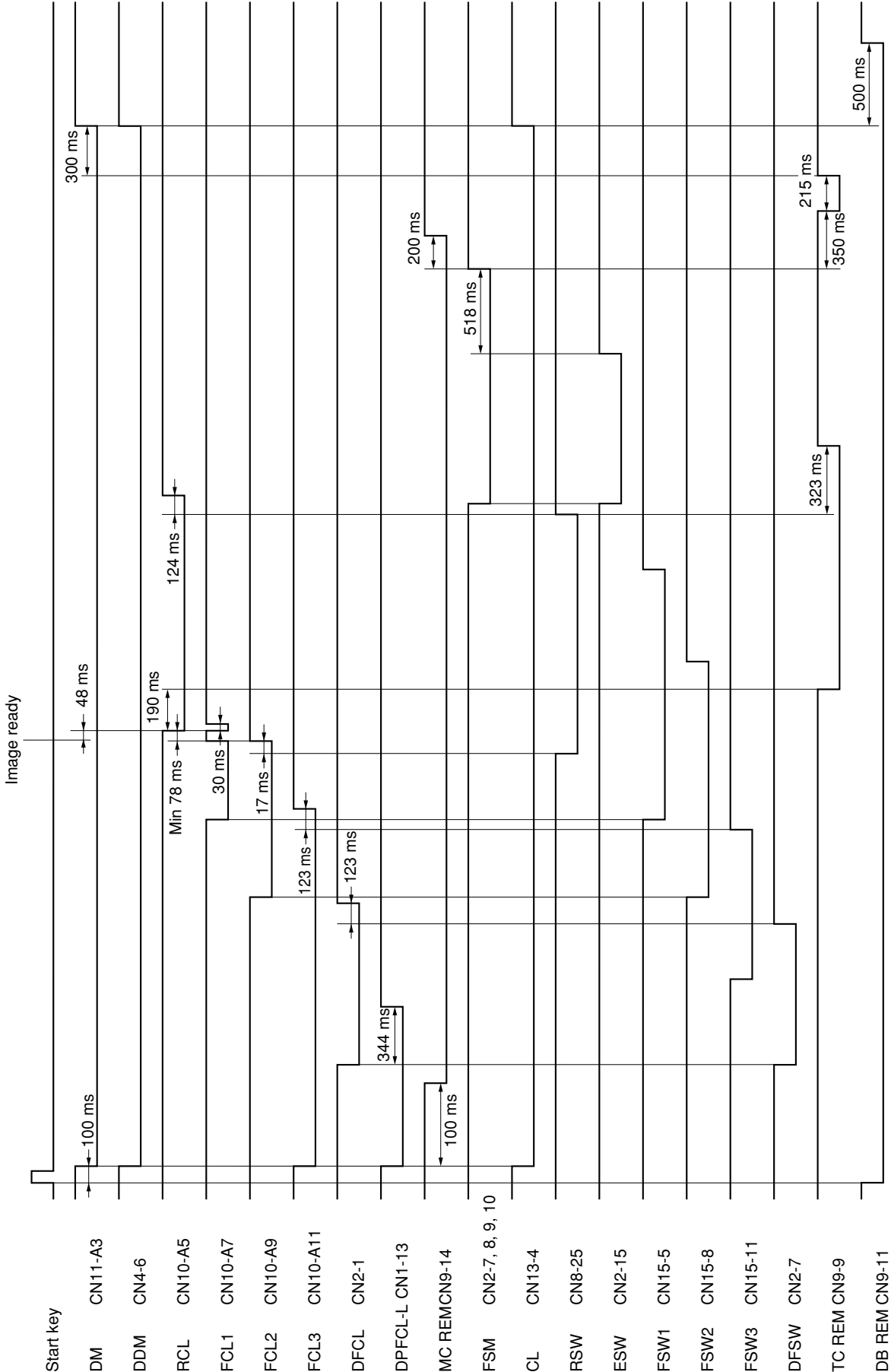
Figure 2-3-2

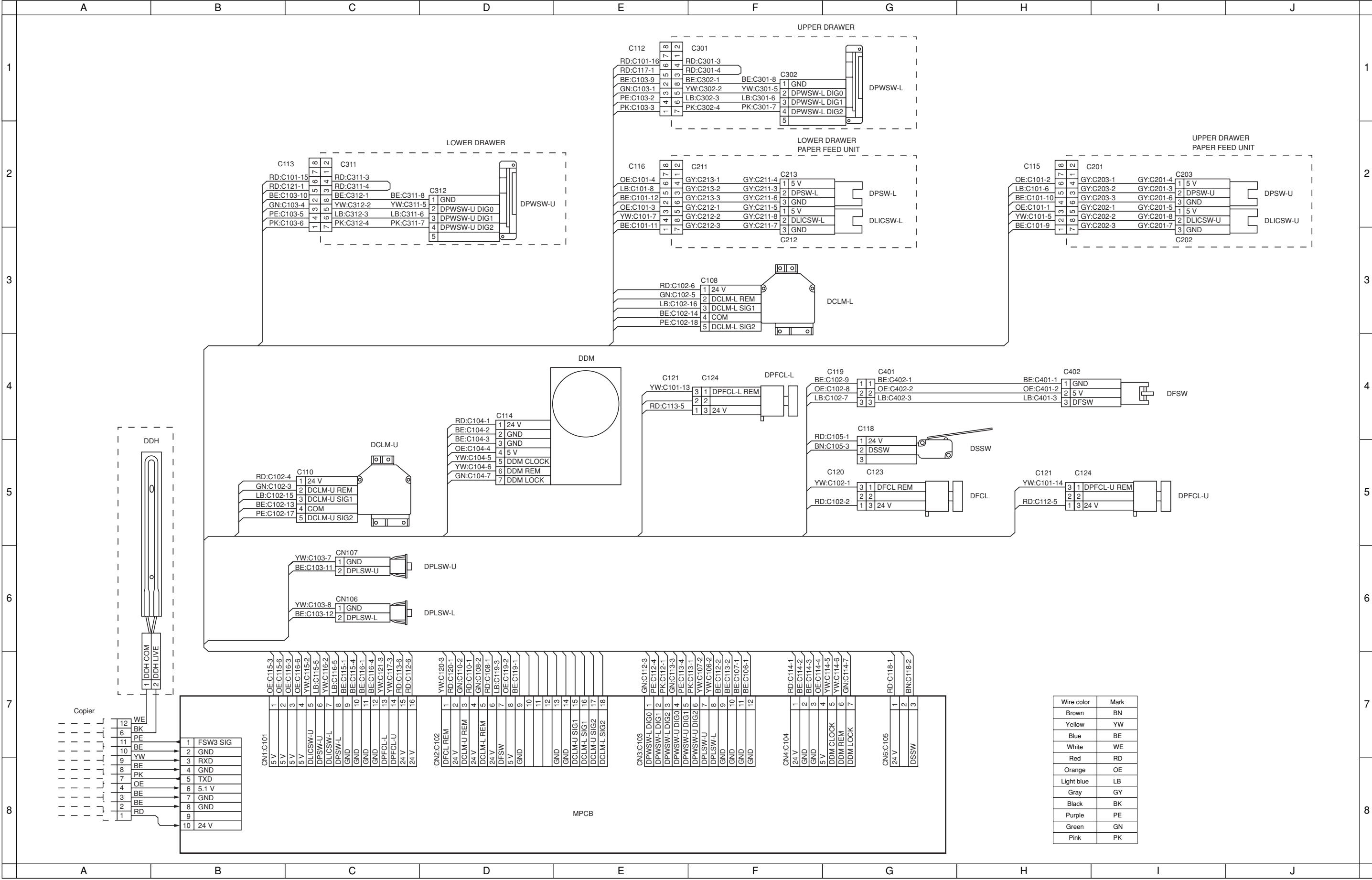
Terminals (CN)		Voltage	Remarks
1-1	1-9	5 V DC	5 V DC supply for DLICSW-U, output
1-2	1-10	5 V DC	5 V DC supply for DPSW-U, output
1-3	1-11	5 V DC	5 V DC supply for DLICSW-L, output
1-4	1-12	5 V DC	5 V DC supply for DPSW-L, output
1-5	1-9	5/0 V DC	DLICSW-U on/off, input
1-6	1-10	0/5 V DC	DPSW-U on/off, input
1-7	1-11	5/0 V DC	DLICSW-L on/off, input
1-8	1-12	0/5 V DC	DPSW-L on/off, input
1-13	5-8	0/24 V DC	DPFCL-L on/off, input
1-14	5-8	24 V DC	24 V DC supply for DPFCL-L, output
1-15	5-8	0/24 V DC	DPFCL-U on/off, input
1-16	5-8	24 V DC	24 V DC supply for DPFCL-U, output
2-1	5-8	0/24 V DC	DFCL on/off, input
2-2	5-8	24 V DC	24 V DC supply for DFCL, output
2-3	5-8	0/24 V DC	DCLM-L on/off, input
2-4	5-8	24 V DC	24 V DC supply for DCLM-L, output
2-5	5-8	0/24 V DC	DCLM-U on/off, input
2-6	5-8	24 V DC	24 V DC supply for DCLM-U, output
2-7	2-9	0/5 V DC	DFSW on/off, output
2-8	2-9	5 V DC	5 V DC supply for DFSW, output
2-15	2-13	0/5 V DC	Paper level detection switch on/off, input
2-16	2-14	0/5 V DC	Paper level detection switch on/off, input
2-17	2-13	0/5 V DC	Paper level detection switch on/off, input
2-18	2-14	0/5 V DC	Paper level detection switch on/off, input
3-1	3-9	0/5 V DC	DPWSW-U (DIG0) on/off, input
3-2	3-9	0/5 V DC	DPWSW-U (DIG1) on/off, input
3-3	3-9	0/5 V DC	DPWSW-U (DIG2) on/off, input
3-4	3-10	0/5 V DC	DPWSW-L (DIG0) on/off, input
3-5	3-10	0/5 V DC	DPWSW-L (DIG1) on/off, input
3-6	3-10	0/5 V DC	DPWSW-L (DIG2) on/off, input
3-7	3-11	0/5 V DC	DPLSW-U on/off, input
3-8	3-12	0/5 V DC	DPLSW-L on/off, input
4-1	4-2	24 V DC	24 V DC supply for DDM, output
4-4	4-3	5 V DC	5 V DC supply for DDM, output
4-5	4-2	0/5 V DC (pulse)	Clock signal to DDM, output
4-6	4-2	0/5 V DC	DDM on/off, output
4-7	4-2	0/5 V DC	LOCK signal to DDM, input
5-1	5-2	0/5 V DC	FSW3 on/off from the copier, input
5-3	5-2	0/5 V DC (pulse)	Serial communication signal to the copier, output
5-5	5-4	0/5 V DC (pulse)	Serial communication signal to the copier, input
5-6	5-7	5 V DC	5 V DC supply, input
5-10	5-8	24 V DC	24 V DC supply, input
6-1	5-8	24/0 V DC	DSSW on/off, input
6-3	5-8	24 V DC	24 V DC supply for DSSW, output

Timing chart No. 1 Continuous copying an A3/11" x 17" original onto two sheets of A3/11" x 17" copy paper from the paper feed desk upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 2 Copying an A4/11" × 8¹/₂" original onto an A4/11" × 8¹/₂" copy paper from the paper feed desk lower drawer, magnification ratio 100%, manual copy density control

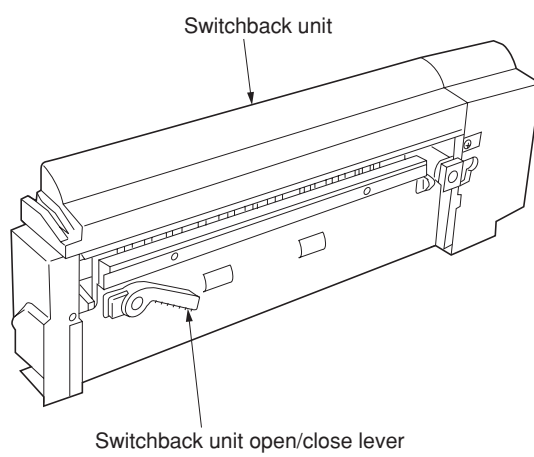




RA-1

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1-1-1 Part names**Figure 1-1-1**

1-1-2 Machine cross section

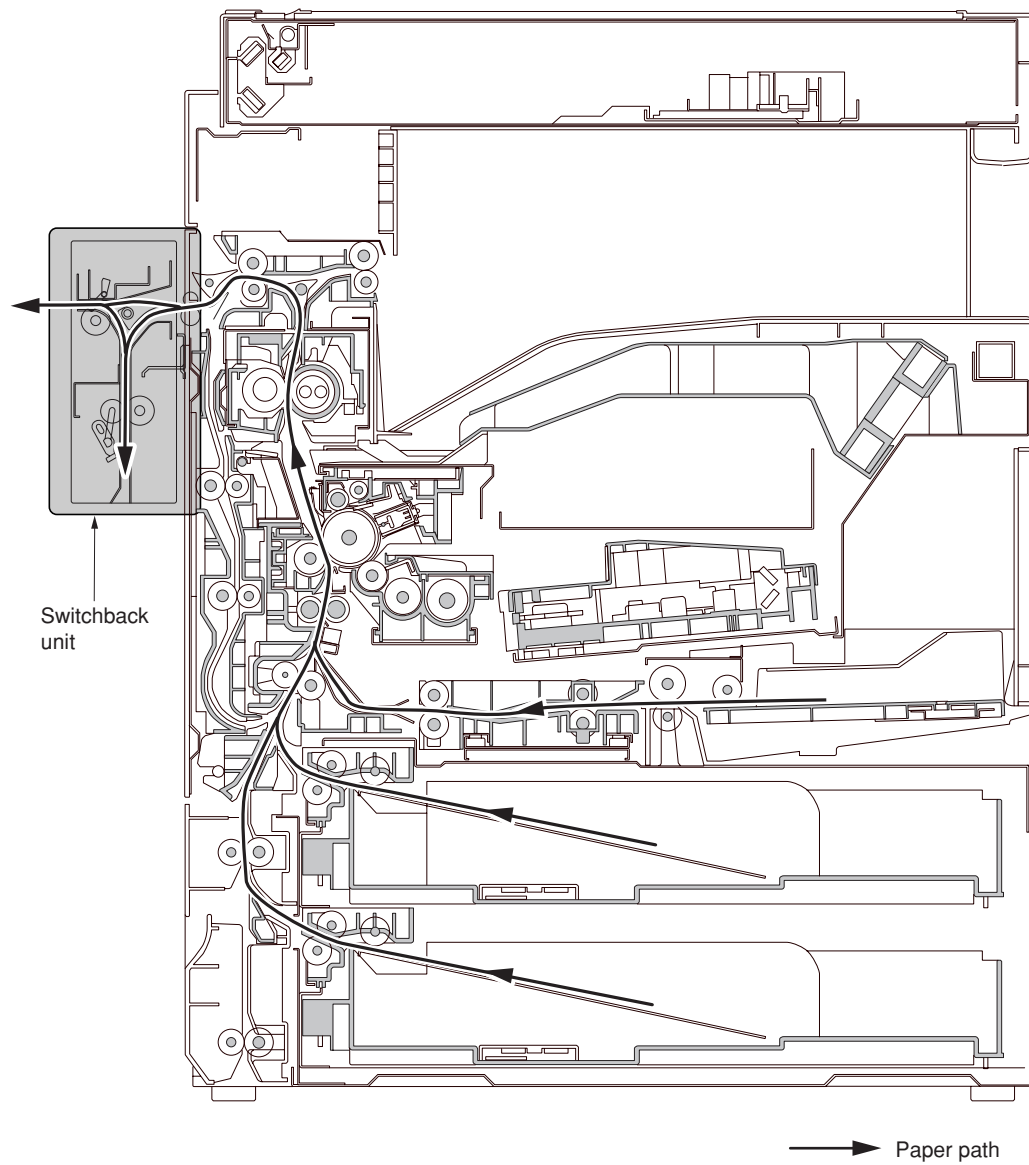


Figure 1-1-2

1-1-3 Drive system

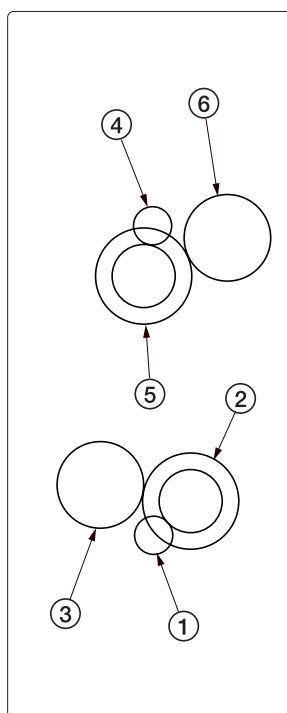


Figure 1-1-3

- ① Switchback motor gear
- ② Eject motor gear
- ③ Gear 23/31
- ④ Gear 21

1-2-1 Unpacking

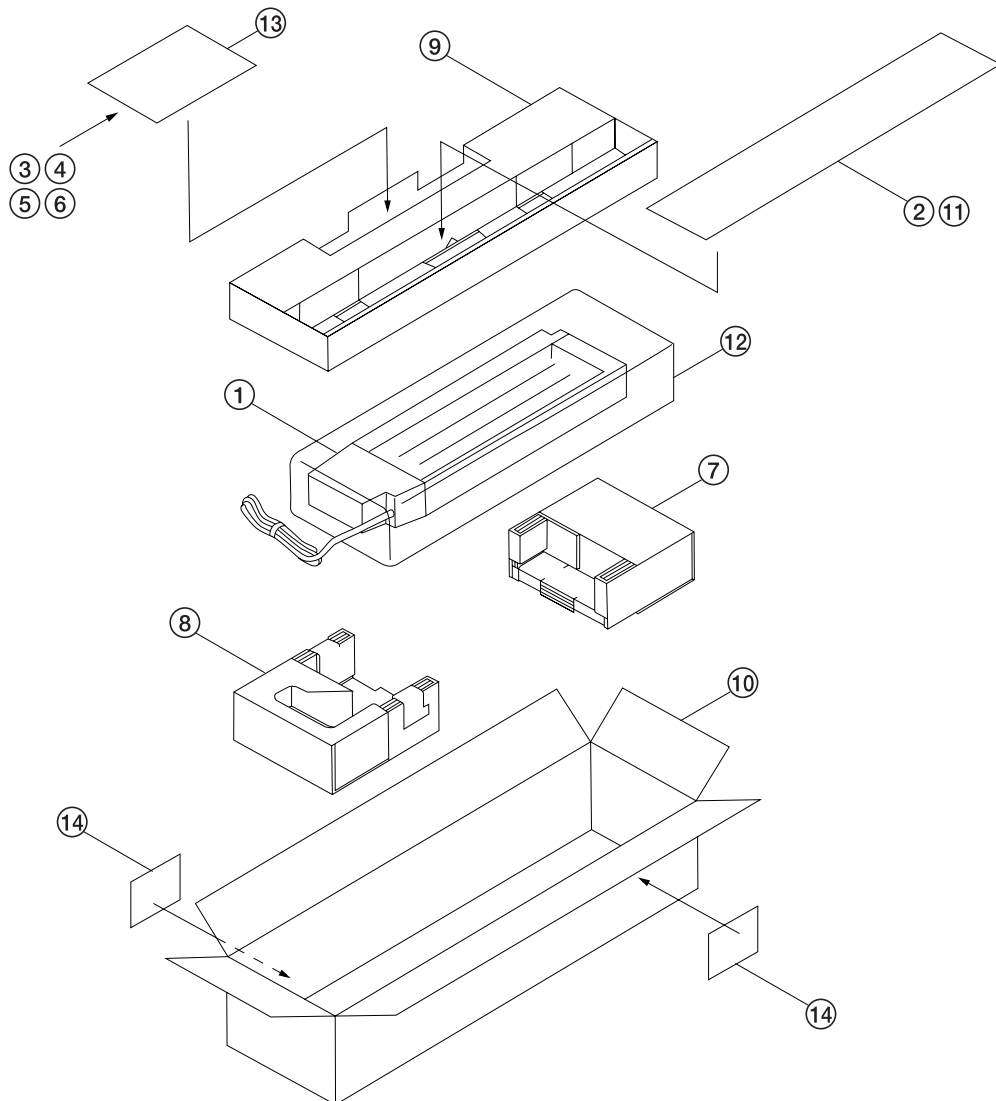


Figure 1-2-1 Unpacking

- | | |
|--------------------------|--------------------|
| ① Switchback unit | ⑧ Front bottom pad |
| ② Front cover | ⑨ Rear bottom pad |
| ③ Spacer | ⑩ Upper pad |
| ④ Binding screws M3 × 08 | ⑪ Outer case |
| ⑤ Binding screws M4 × 06 | ⑫ Plastic bag |
| ⑥ TP screws M4 × 12 | ⑬ Plastic bag |
| ⑦ TP screws M4 × 16 | ⑭ Bar-code labels |

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When paper jams, the machine immediately stops operation and the occurrence of a paper jam is indicated on the copier operation panel.

To remove the jammed paper, raise the switchback unit open/close lever and open the switchback unit.

To reset the paper misfeed detection, open and close the switchback unit to turn the switchback unit safety switch off and on.

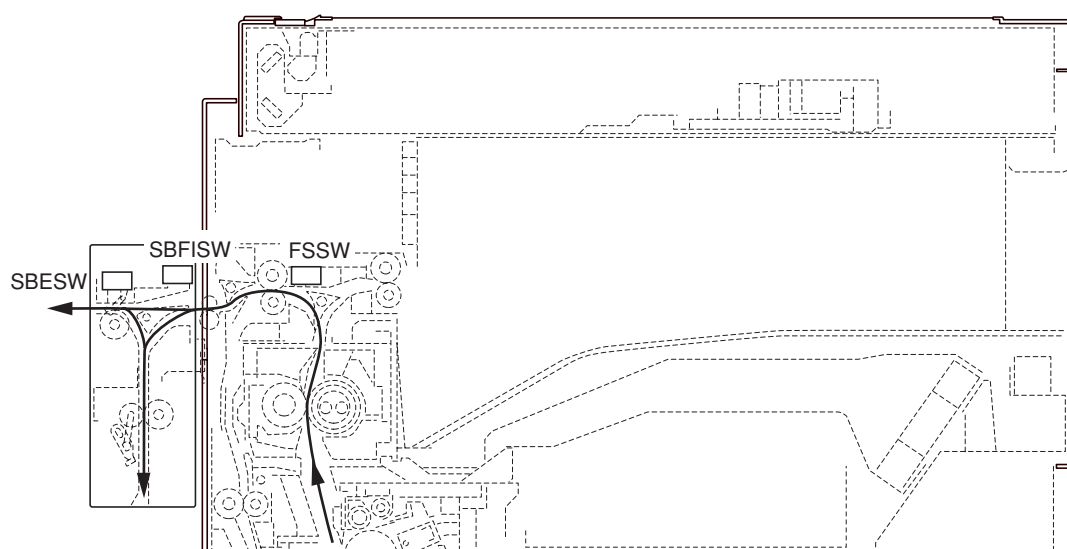
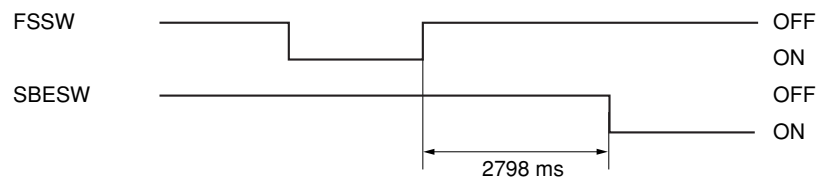


Figure 1-3-1 Paper misfeed detection

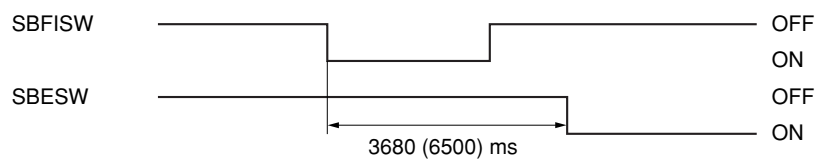
(2) Paper misfeed detection condition

- Misfeed in switchback section (jam code 53)

The switchback eject switch (SBESW) does not turn off within 2797 ms of the copier feedshift switch (FSSW) turning on.

**Timing chart 1-3-1**

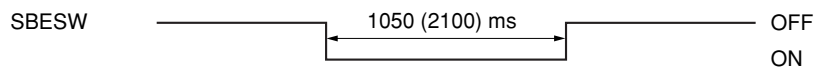
The switchback eject switch (SBESW) does not turn on within 3680 ms (6500 ms) of the switchback feed in switch (SBFISW) turning on.



Paper size: A4R/81/2"×11"
The value in the parentheses indicates
A3/11"×17"

Timing chart 1-3-2

The switchback eject switch (SBESW) does not turn off within 1050 ms (2100 ms) of turning on.



Paper size: A4R/81/2"×11"
The value in the parentheses indicates
A3/11"×17"

Timing chart 1-3-3

(3) Paper misfeeds

Problem	Causes	Check procedures/corrective measures
(1) Paper jams in the switchback unit when the main switch is turned on.	A piece of paper torn from copy paper is caught around the switchback eject switch and switchback feed in switch.	Remove any found.
	Defective switchback feed in switch.	With 5 V DC present at CN5-1 on the main PCB, check if CN5-3 on the main PCB remains high or low when the switchback feed in switch is turned on and off. If it does, replace the switchback feed in switch.
	Defective switchback eject switch.	With 5 V DC present at CN5-2 on the main PCB, check if CN5-4 on the main PCB remains high or low when the switchback eject switch is turned on and off. If it does, replace the switchback eject switch.
(2) Paper jams in the switchback section is indicated during copying (jam in switchback unit). Jam code 53	Broken switchback eject switch actuator.	Check visually and replace the switchback eject switch if its actuator is broken.
	Defective switchback feed in switch.	With 5 V DC present at CN5-1 on the main PCB, check if CN5-3 on the main PCB remains high or low when the switchback feed in switch is turned on and off. If it does, replace the switchback feed in switch.
	Defective switchback eject switch.	With 5 V DC present at CN5-2 on the main PCB, check if CN5-4 on the main PCB remains high or low when the switchback eject switch is turned on and off. If it does, replace the switchback eject switch.

1-3-2 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The switchback conveying motor does not operate.	Broken switchback conveying motor coil.	Check for continuity across the coil. If none, replace the switchback conveying motor.
	Poor contact of the switchback conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(2) The switchback eject motor does not operate.	Broken switchback eject motor coil.	Check for continuity across the coil. If none, replace the switchback eject motor.
	Poor contact of the switchback eject motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(3) The feedshift solenoid does not operate.	Broken feedshift solenoid coil.	Check for continuity across the coil. If none, replace the feedshift solenoid.
	Poor contact of the feedshift solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(4) The press solenoid does not operate.	Broken press solenoid coil.	Check for continuity across the coil. If none, replace the press solenoid.
	Poor contact of the press solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.

1-3-3 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) Paper jams.	Check if the contact between the switchback press pulley and switchback press roller is correct.	Check and remedy.
	Check if the contact between the switchback eject pulley and switchback eject roller is correct.	Check and remedy.
(2) Abnormal noise is heard.	Check if the switchback press pulley, switchback press roller and gears operate smoothly.	Grease the bushings and gears.
	Check if the switchback eject pulley, switchback eject roller and gears operate smoothly.	Grease the bushings and gears.

2-1-1 Construction of each section

The switchback unit consists of the parts shown in Figure 2-1-1 and performs switchback operation for switching the ejection side of paper when ejecting paper to the saddle finisher.

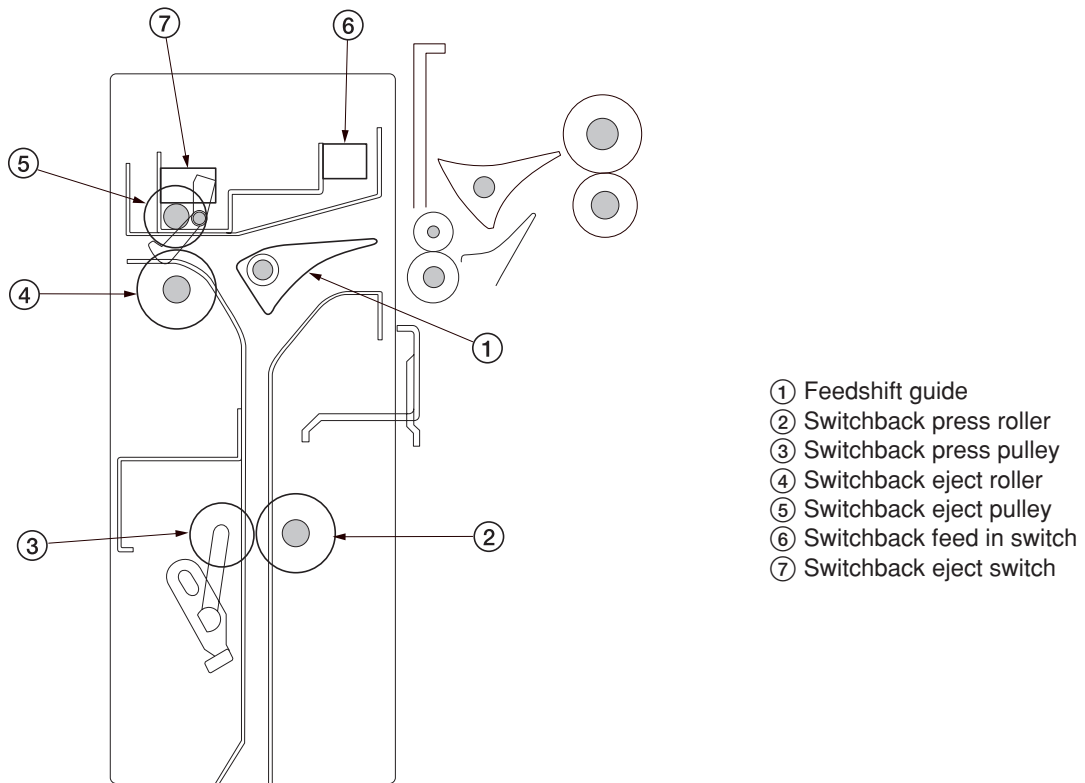


Figure 2-1-1 Switchback unit

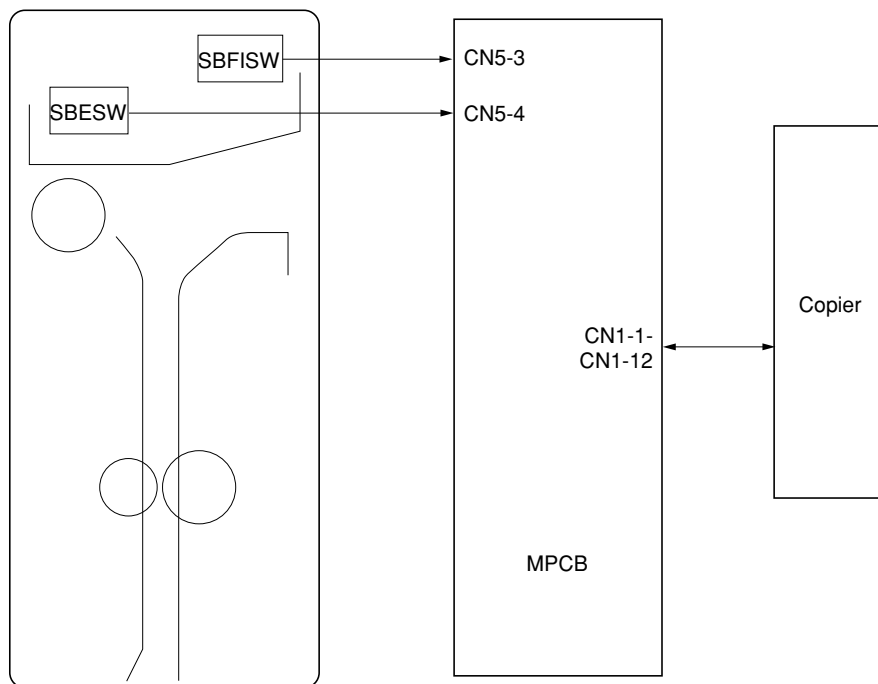


Figure 2-1-2 Switchback unit block diagram

(1) Paper switchback operation

Paper of which copying is complete is conveyed to the switchback unit and sent to the switchback section by the feedshift guide. In the switchback section, paper is conveyed by touching of the switchback press roller rotated by normal rotation of the switchback feed motor (SBFM), with the switchback press pulley activated by turning on the press solenoid (PRSOL). When a certain time (depending on the paper size) elapses, the switchback feed motor (SBFM) reverses the direction of rotation to reverse the rotation of the switchback press roller to switch the direction of paper conveyance.

Paper that has been switched back is conveyed to the saddle finisher by the switchback eject roller rotated by turning on the switchback eject motor (SBEM) and the switchback eject pulley. At this time, the second paper is conveyed to the switchback unit, the press solenoid (PRSOL) is turned off, the switchback press pulley separates from the switchback press roller, and the first paper and the second paper are interchanged in the switchback section.

(Depending on the copier model and the paper size, the press solenoid may not turn off and the switch press pulley may always touch the switchback press roller.)

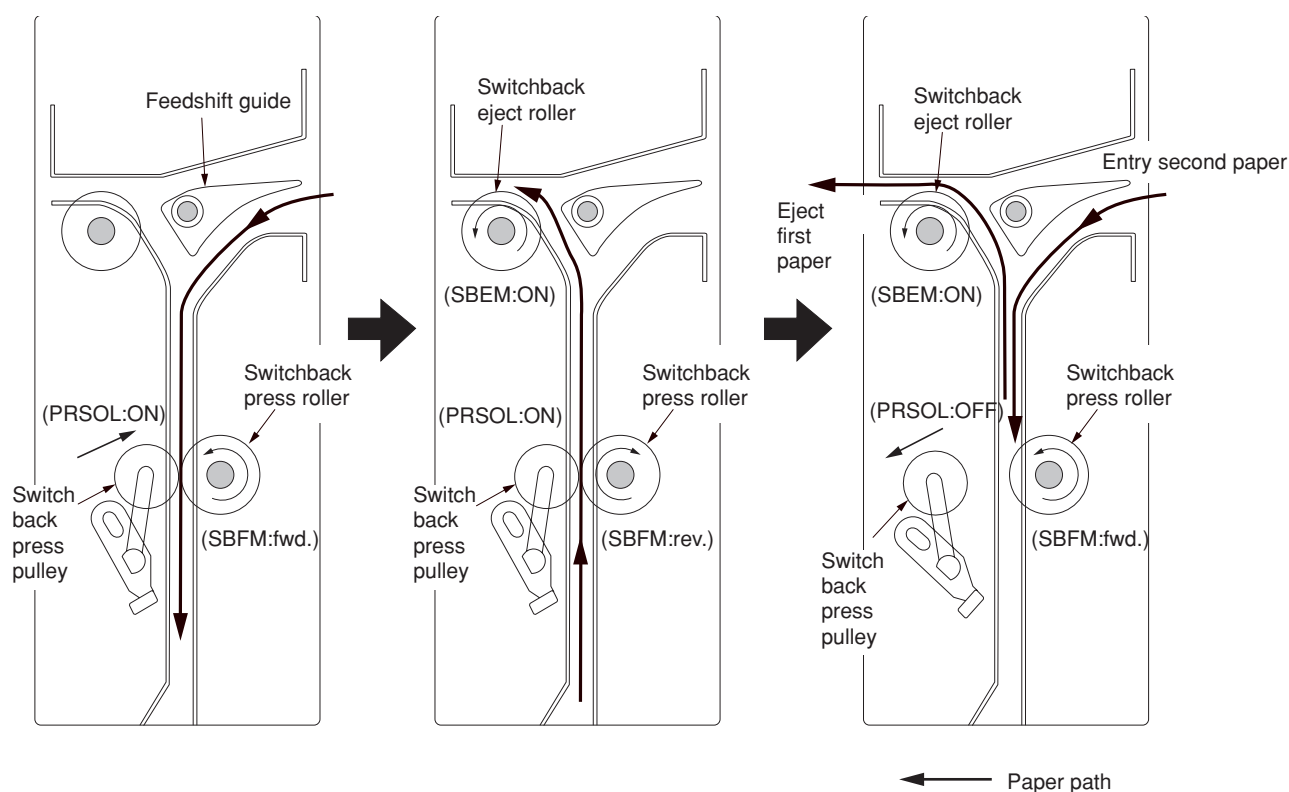


Figure 2-1-3

2-2-1 Electrical parts layout

(1) PCBs

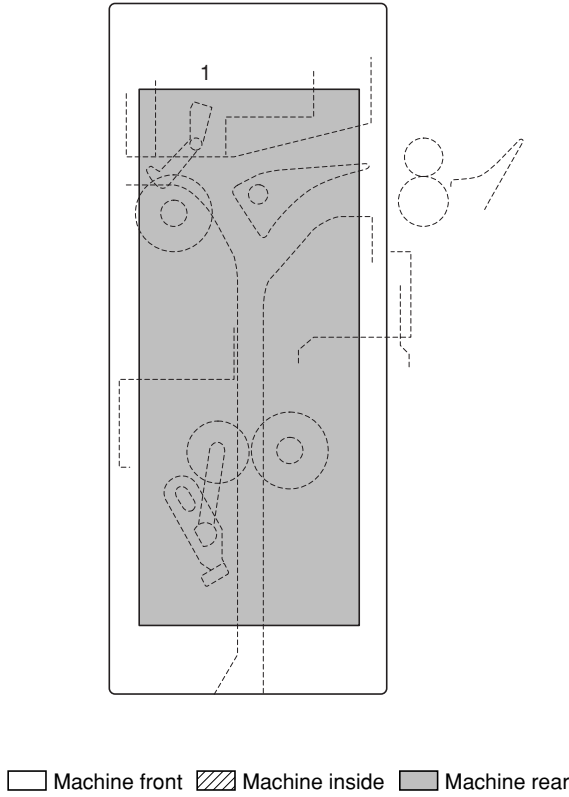
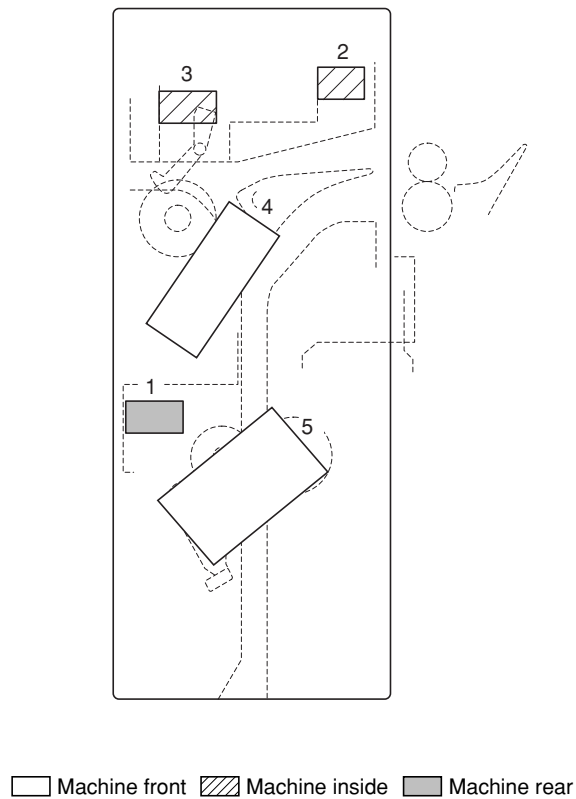
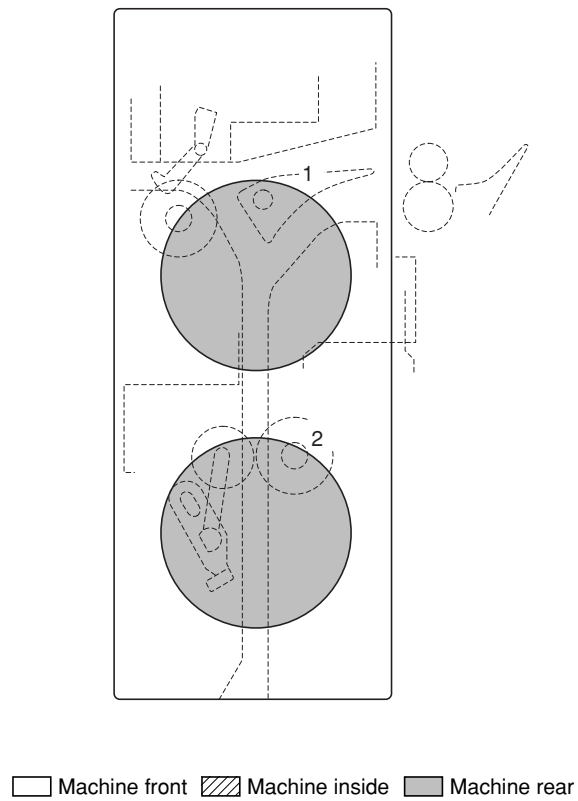


Figure 2-2-1 PCBs

- 1. Main PCB (MPCB) Controls the electrical components.

(2) Switches and solenoids**Figure 2-2-2 Switches and solenoids**

- | | |
|---|--|
| 1. Safty switch (SSW) | Breaks the safty circuit when the switchback unit is opened. |
| 2. Switchback feed in switch (SBFISW) | Detects the presence of paper in the switchback unit. |
| 3. Switchback eject switch (SBESW) | Detects a paper misfeed in the switchback unit. |
| 4. Feedshift solenoid (FSSOL) | Operates the feedshift guide. |
| 5. Press solenoid (PRSOL) | Operates the switchback press solenoid. |

(3) Motors**Figure 2-2-3 Motors**

1. Switchback eject motor (SBEM) Drives the switchback eject roller.
2. Switchback feed motor (SBFM) Drives the switchback press roller.

2-3-1 Main PCB

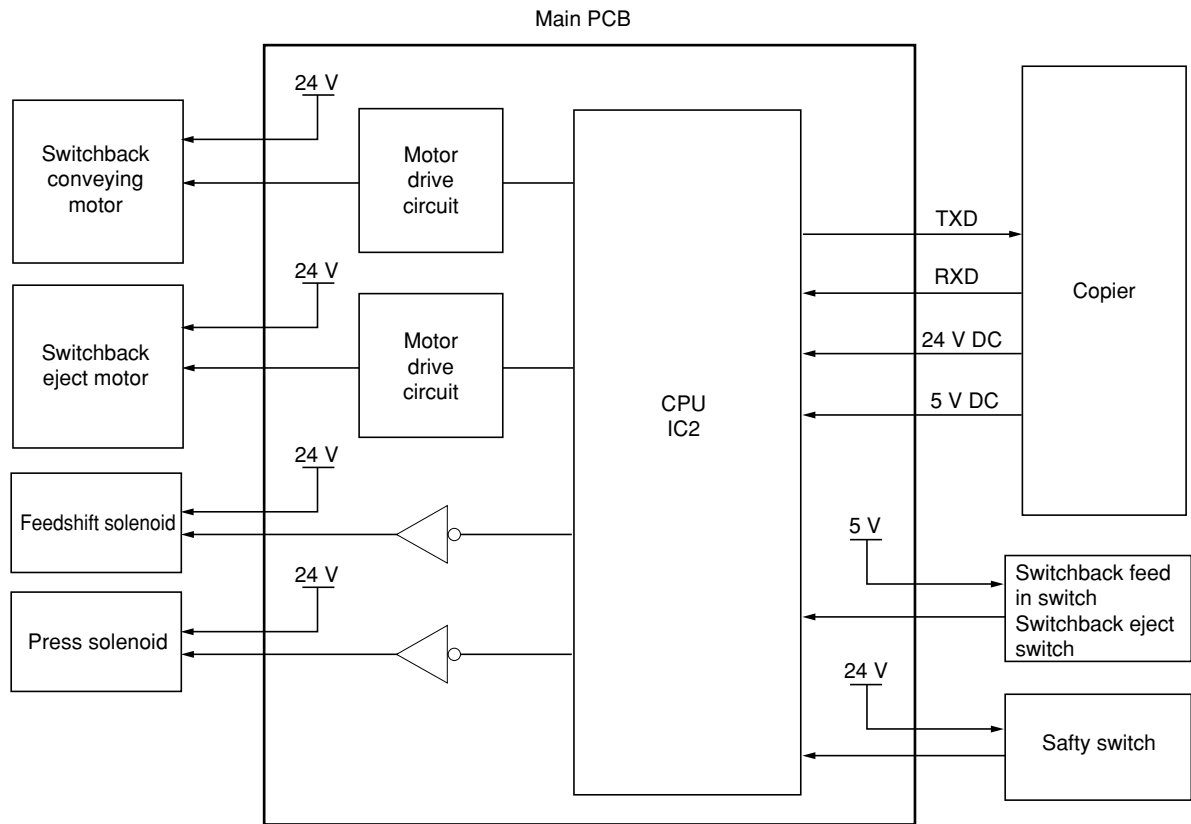


Figure 2-3-1 Main PCB block diagram

The main PCB (MPCB) consists mainly of the CPU IC2 and motor drive circuit. The CPU IC2 detects the condition of the switches and controls the motors and solenoids by serially communicating with the copier.

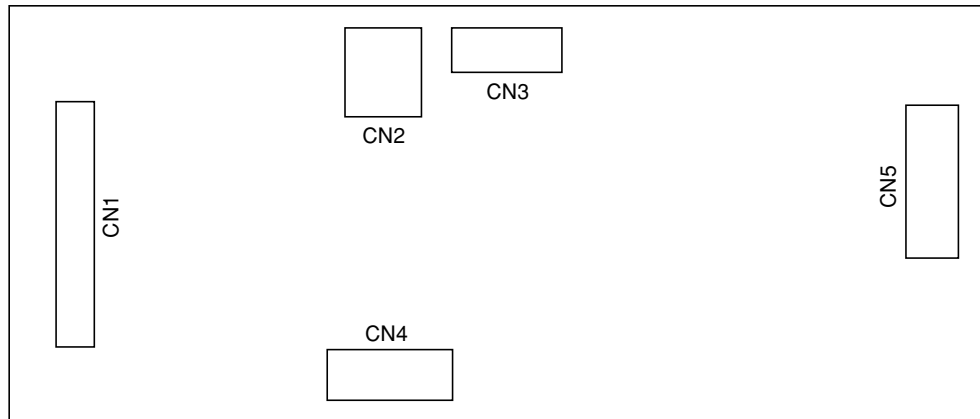
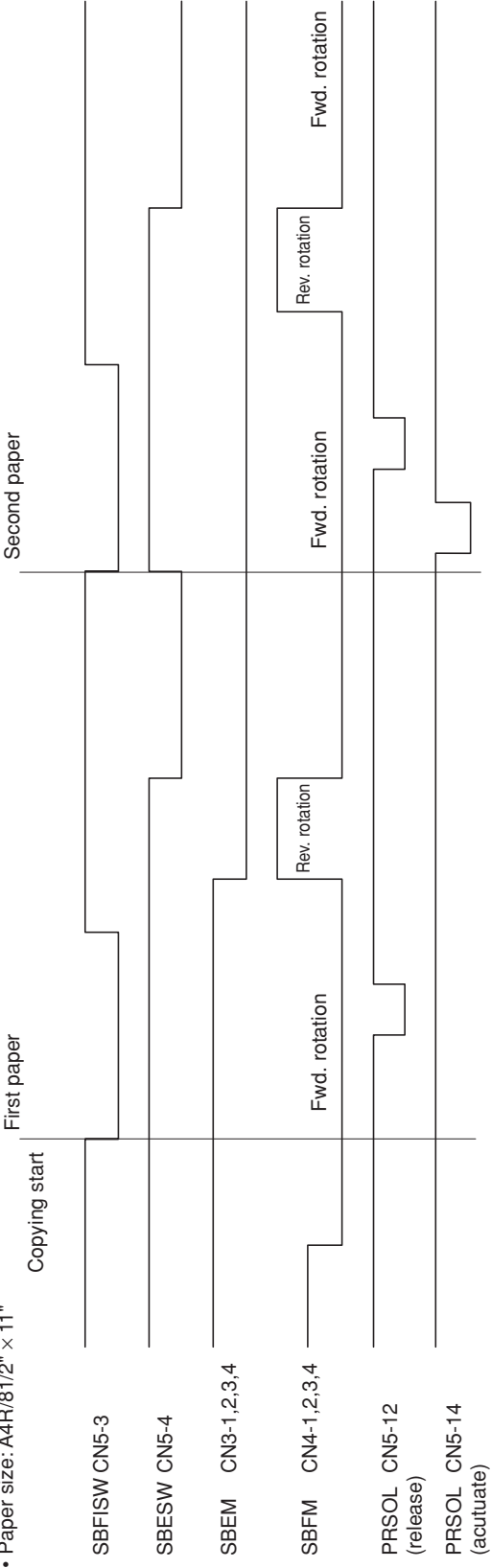


Figure 2-3-2 Main PCB silk-screen diagram

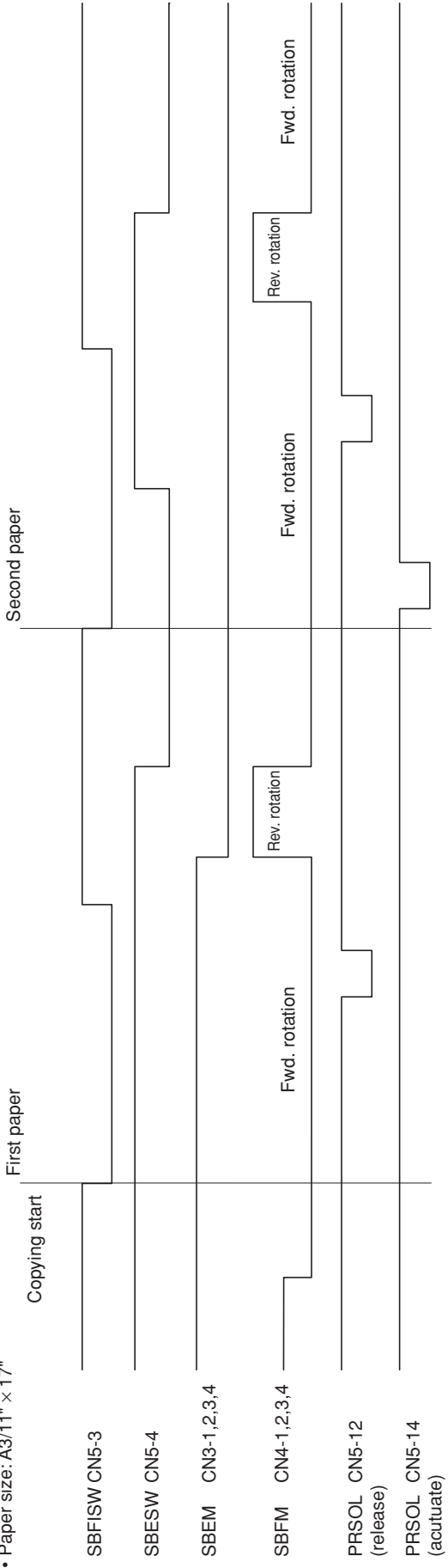
Terminals (CN)		Voltage	Remarks
1-1	1-3	24 V DC	24 V DC supply, input
1-2	1-4	24 V DC	24 V DC supply, input
1-6	1-5	5 V DC	5 V DC supply, input
1-7	1-8	0/5 V DC (pulse)	Serial signal TXD, output
1-9	1-10	0/5 V DC (pulse)	Serial signal RXD, input
1-11	1-5	0/5 V DC	RESET signal, input
1-12	1-5	0/5 V DC	Switchback unit SET signal, output
2-1	1-3	24 V DC	24 V DC supply for SSW, output
2-3	1-3	0/24 V DC	SSW on/off, input
3-1	1-3	0/24 V DC (pulse)	SBEM coil energization pulse, output (A)
3-2	1-3	0/24 V DC (pulse)	SBEM coil energization pulse, output (\bar{A})
3-3	1-3	0/24 V DC (pulse)	SBEM coil energization pulse, output (B)
3-4	1-3	0/24 V DC (pulse)	SBEM coil energization pulse, output (\bar{B})
3-5	1-3	24 V DC	24 V DC supply for SBEM, output
4-1	1-3	0/24 V DC (pulse)	SBFM coil energization pulse, output (A)
4-2	1-3	0/24 V DC (pulse)	SBFM coil energization pulse, output (\bar{A})
4-3	1-3	0/24 V DC (pulse)	SBFM coil energization pulse, output (B)
4-4	1-3	0/24 V DC (pulse)	SBFM coil energization pulse, output (\bar{B})
4-5	1-3	24 V DC	24 V DC supply for SBFM, output
5-1	5-5	5 V DC	5 V DC supply for SBFISW, output
5-2	5-6	5 V DC	5 V DC supply for SBESW, output
5-3	5-5	0/5 V DC	SBFISW on/off, input
5-4	5-6	0/5 V DC	SBESW on/off, input
5-9	1-3	24 V DC	24 V DC supply for FSSOL, output
5-10	1-3	0/24 V DC	FSSOL on/off signal, output
5-11	1-3	24 V DC	24 V DC supply for PRSOL, output
5-12	1-3	0/24 V DC	PRSOL acutuate signal, output
5-14	1-3	0/24 V DC	PRSOL release signal, output

Timing chart No. 1

• Paper size: A4R/81/2" × 11"

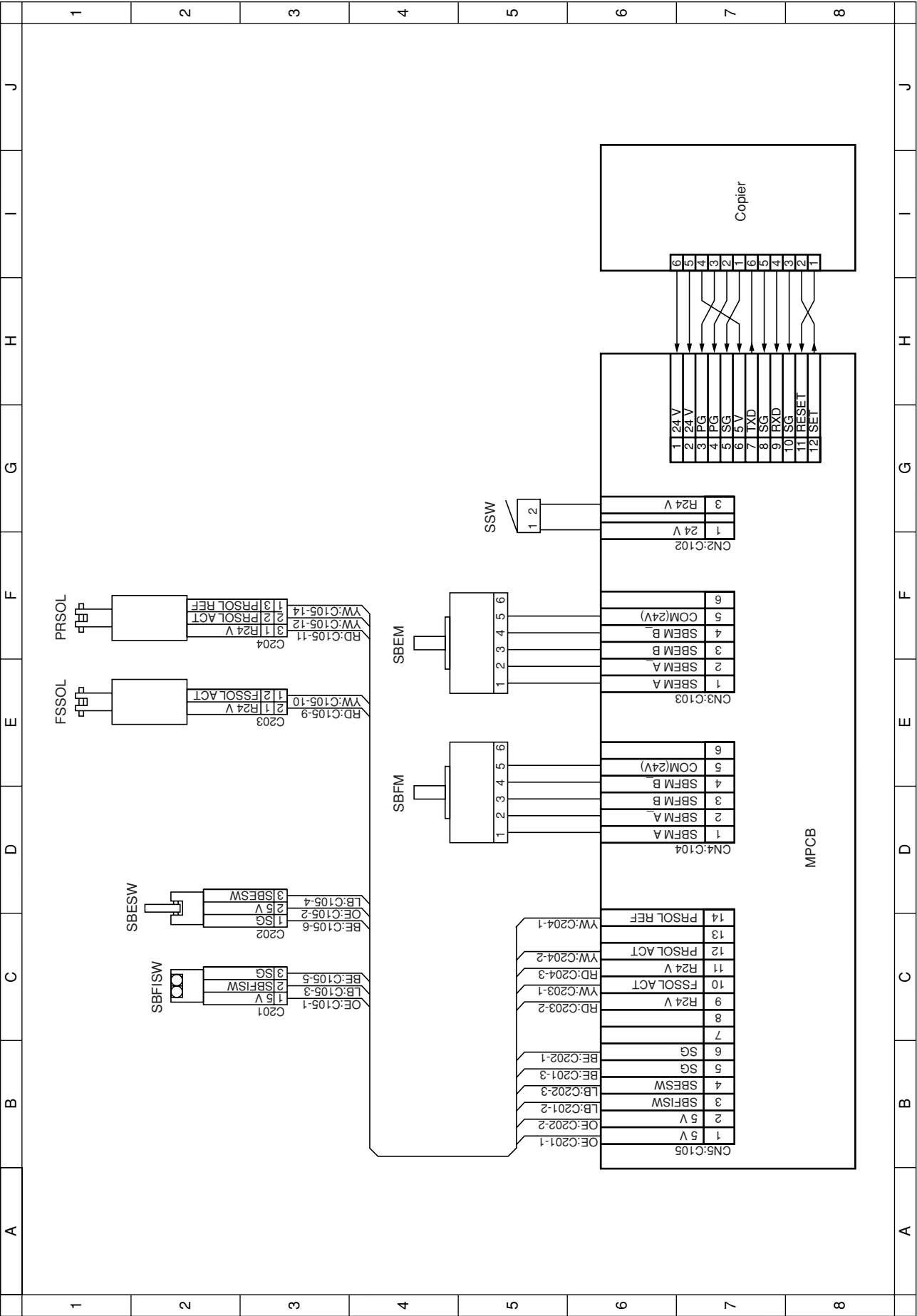


• Paper size: A3/11" × 17"



The timing of all the motors and the solenoids is controlled based on the ON edge of the switchback feed in switch (SBFISW) as the starting point.

Wiring diagram



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1-1-1 Specifications

Paper	Plain paper (75 – 80 g/m ²)
Paper size	A4, B5, 11" × 8 ¹ / ₂ "
Capacity	3000 sheets (1500 sheets × 2)
Power source	Electrically connected to the copier
Dimensions	585 (W) × 590 (D) × 315 (H) mm 23 ¹ / ₁₆ " (W) × 23 ¹ / ₄ " (D) × 12 ³ / ₈ " (H)
Weight	35 kg/77.2 lbs

1-1-2 Parts names

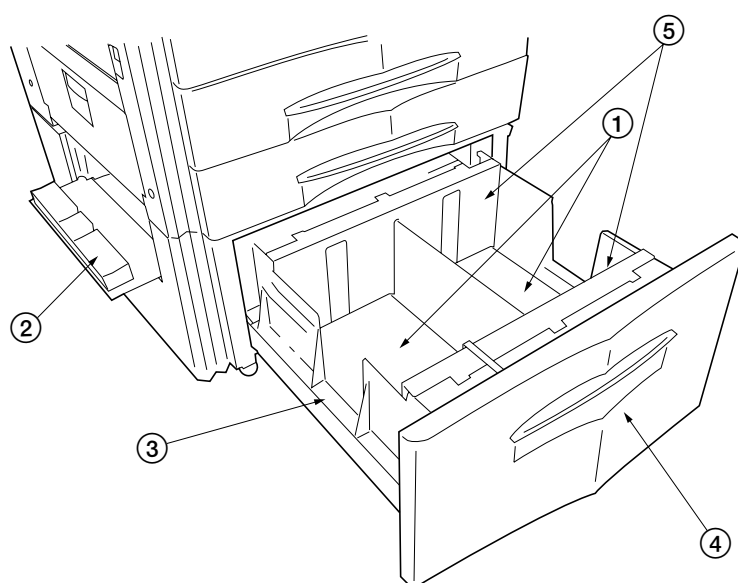
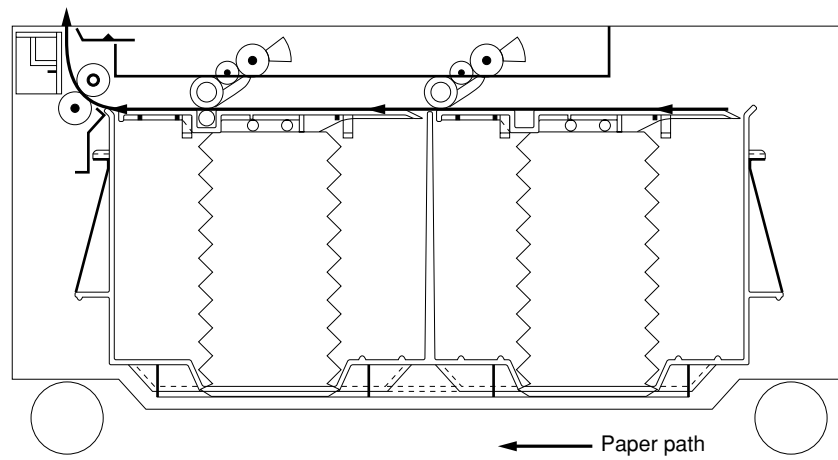
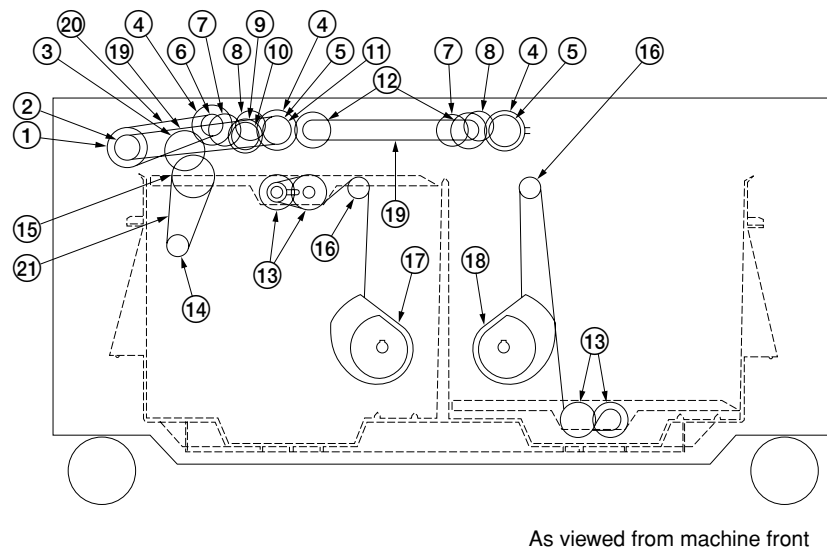


Figure 1-1-2 Parts names

- ① Lifts
- ② Deck side cover
- ③ Drawer
- ④ Deck front cover
- ⑤ Paper side guides

1-1-3 Machine cross section**Figure 1-1-3 Machine cross section**

1-1-4 Drive system



As viewed from machine front

Figure 1-1-4

- | | |
|-----------------------------|----------------------------|
| ① Pulley 2M-40 | ⑫ Pulley 14, gear 0.8-32 |
| ② Pulley S3M-16 | ⑬ Gear 1.0-24 |
| ③ Gear 0.8-35/1-20 | ⑭ Pulley S2M-18 |
| ④ Gear 2.6 | ⑮ Pulley 43, gear 20 |
| ⑤ Gear 0.8-23 | ⑯ Lift pulley |
| ⑥ Pulley 2M-18 | ⑰ Left lift belt assembly |
| ⑦ Pickup roller gear 0.8-23 | ⑱ Right lift belt assembly |
| ⑧ Gear 0.9-26 | ⑲ Belt S3M276 |
| ⑨ Gear 30 | ⑳ Belt 2M0950 |
| ⑩ Gear 0.8-24 | ㉑ Belt 2M0840 |
| ⑪ Pulley 3M-18 | |

1-2-1 Unpacking

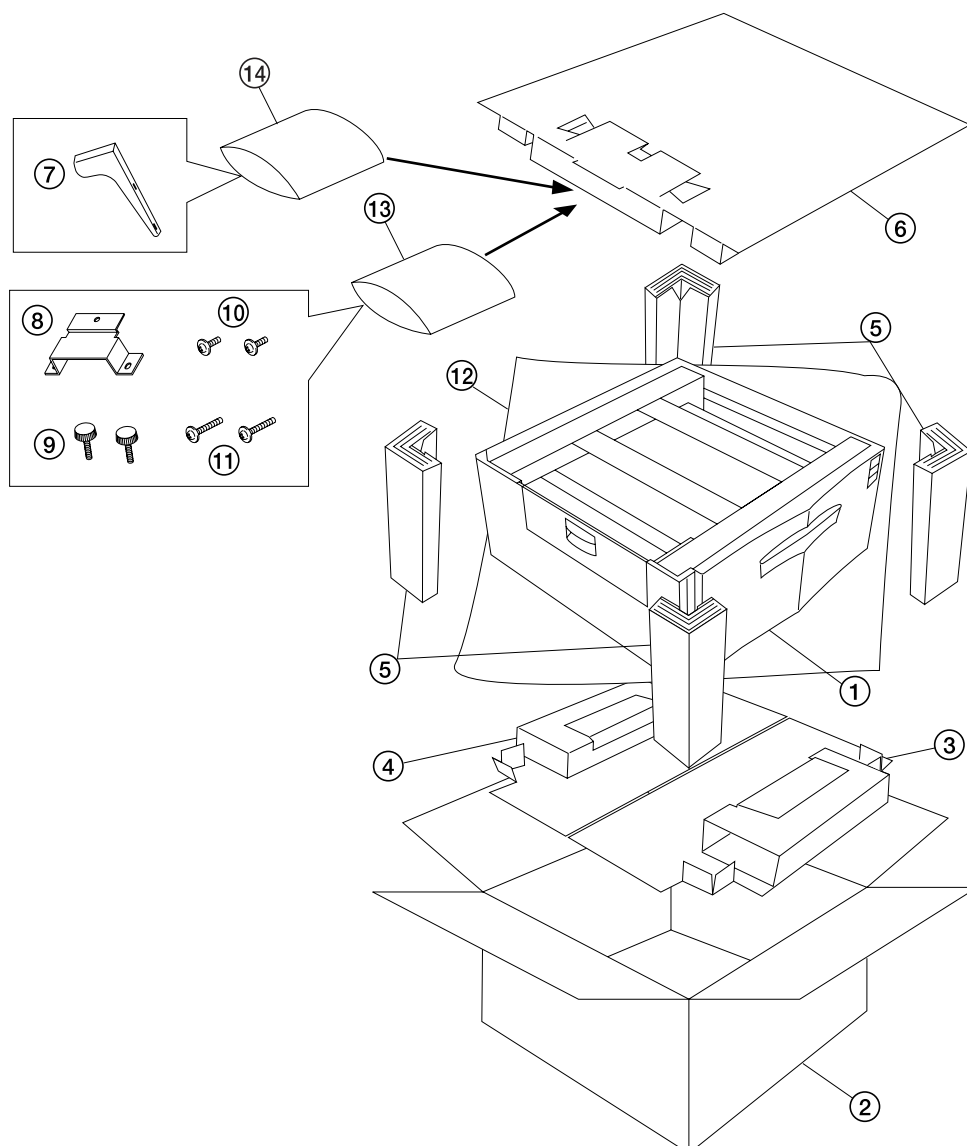


Figure 1-2-1

- | | |
|--------------------|--|
| ① Large paper deck | ⑧ Retainer |
| ② Outer case | ⑨ Pins |
| ③ Lower front pad | ⑩ Cross-head chromate binding screws,
CVM4 × 06 |
| ④ Lower rear pad | ⑪ Chrome TP screws, M4 × 16 |
| ⑤ Support | ⑫ Machine cover |
| ⑥ Upper pad | ⑬ Plastic bag |
| ⑦ Stay | ⑭ Plastic bag |

1-2-2 Installing the dehumidifier heaters (service part)

Dehumidifier heater installation requires the following parts:

Two (2) dehumidifier heaters (P/N 33960020): for 220 – 240 V specifications only

Two (2) dehumidifier heaters (P/N 34860030): for 120 V specifications only

Two (2) dehumidifier heater retainers (P/N 5A707690)

Six (6) M4 × 6 IT tap-tight (S-tight) screws (P/N 37611570)

Relay wire (P/N 5A707890)

Ten (10) wire saddles (P/N M2109000)

Procedure

1. Remove the two screws from each of the deck right cover and deck left cover and then the covers.
2. Remove the three screws holding the deck rear cover and then the cover.
3. Open the large paper deck.
4. Remove the two screws holding the deck paper conveying unit assembly and then the assembly.

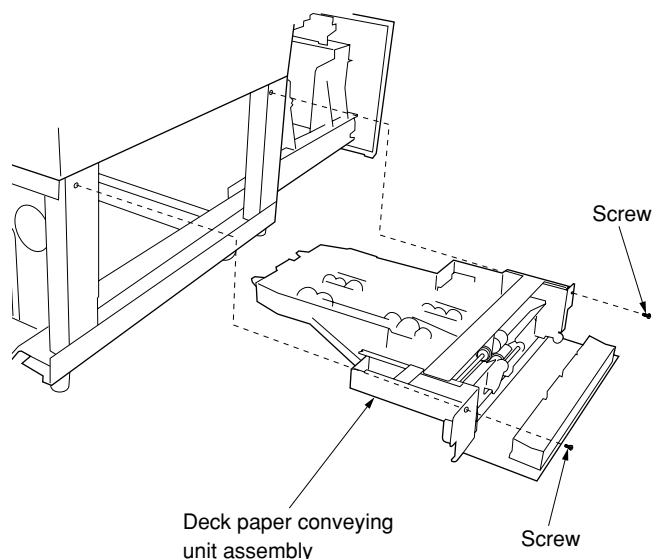


Figure 1-2-2

5. Fit the dehumidifier heaters to the dehumidifier heater retainers using the two screws and wire saddle for each.
6. Fit the dehumidifier heater retainers to the left and right of the large paper deck using one screw for each.

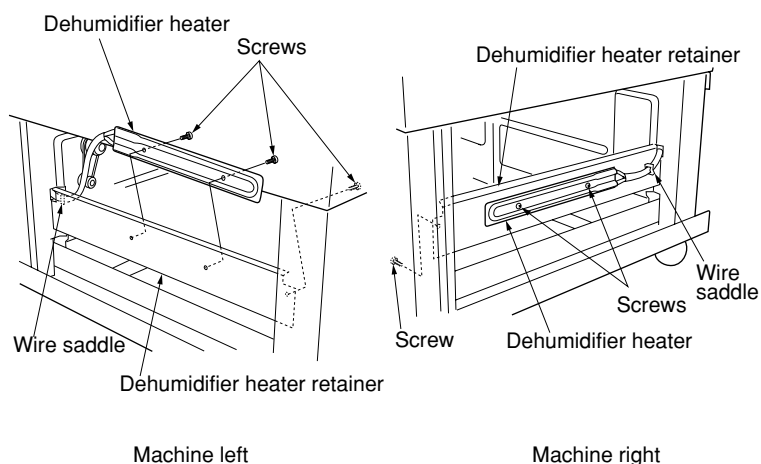


Figure 1-2-3

7. Pull the dehumidifier heater cable out to the machine rear through the cable hole.

8. Detach the open connector from the connector of the main harness on the machine rear.

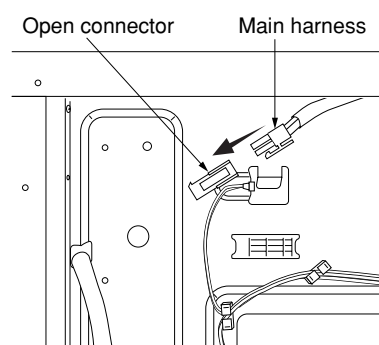


Figure 1-2-4

9. Insert the dehumidifier heater connectors into the relay wire connectors.
10. Insert the main harness connector into the relay wire connector.
11. Tidy up the dehumidifier heater cable and relay wire using the eight wire saddles and route the cable and wire while clipping the wire saddles into the holes in the rear frame.
12. Refit all removed parts.

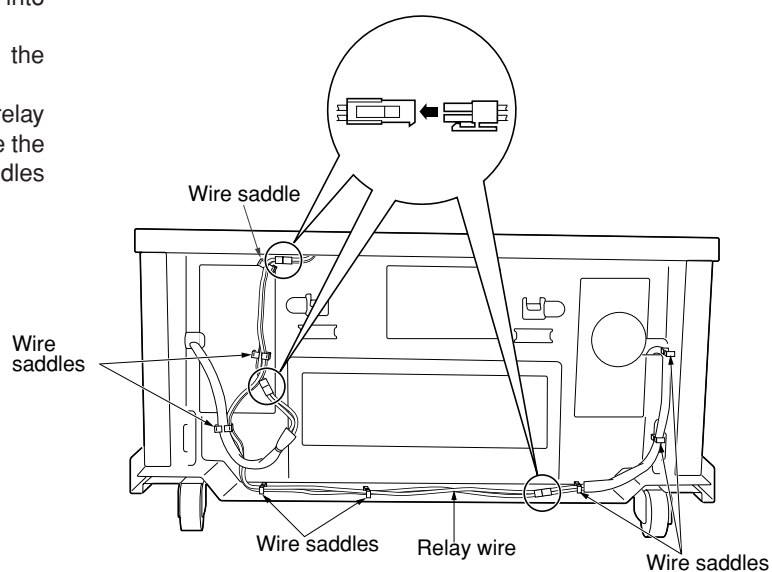


Figure 1-2-5

1-3-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper jam occurs, the machine immediately stops operation. The operation unit of the copier shows a jam message and the jam location.

To reset the paper misfeed detection, open and close the deck side cover or the large paper deck to turn the side cover switch or the deck open/closed safety switch off and on.

(2) Paper misfeed detection conditions

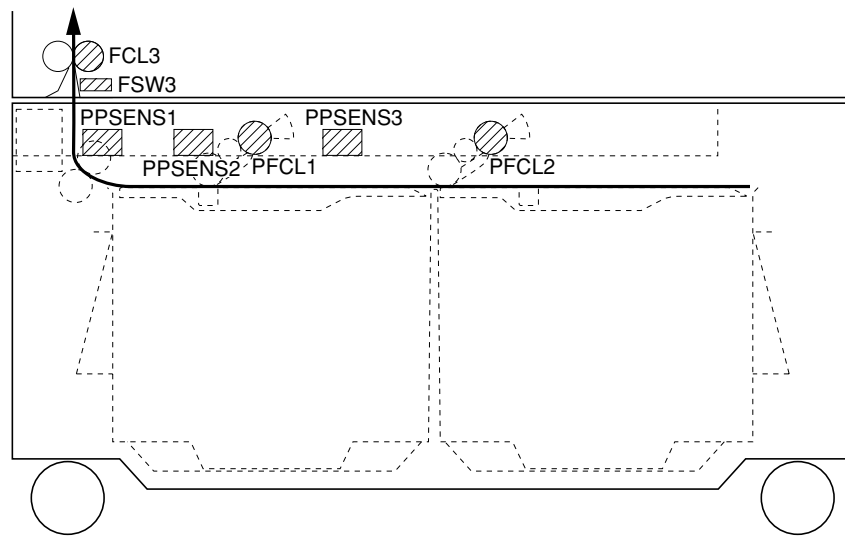
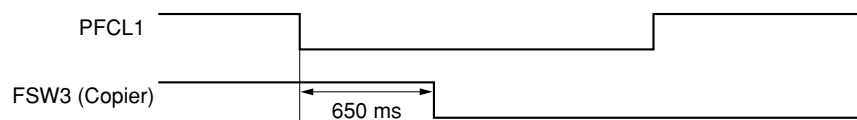


Figure 1-3-1 Large paper deck

- No paper feed from large paper deck (jam code 12)

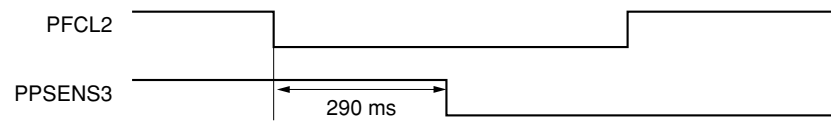
Feed switch 3 (FSW3) of the copier does not turn on within 650 ms of paper feed clutch 1 (PFCL1) turning on.



Timing chart 1-3-1

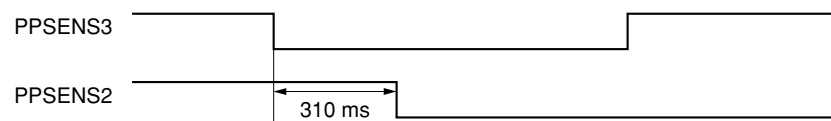
5FF

- Jam in large paper deck horizontal paper conveying section (jam code 15)
Paper path sensor 3 (PPSENS3) does not turn on within 290 ms of paper feed clutch 2 (PFCL2) turning on.



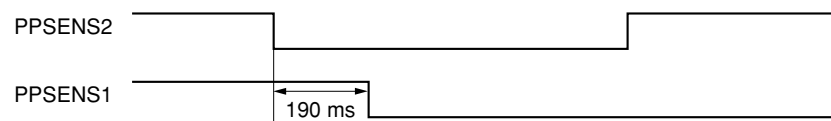
Timing chart 1-3-2

- Jam in large paper deck horizontal paper conveying section (jam code 16)
Paper path sensor 2 (PPSENS2) does not turn on within 310 ms of paper path sensor 3 (PPSENS3) turning on.



Timing chart 1-3-3

- Jam in large paper deck horizontal paper conveying section (jam code 17)
Paper path sensor 1 (PPSENS1) does not turn on within 190 ms of paper path sensor 2 (PPSENS2) turning on.



Timing chart 1-3-4

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed section is indicated during copying (no paper feed from large paper deck). Jam code 12	Paper is extremely curled.	Change the paper.
	Check if the upper or lower deck separation roller, paper feed roller 1 or 2 is deformed.	Check visually and replace any damaged rollers (see pages 1-4-2, 3).
	Broken copier feed switch 3 actuator.	Check visually and replace feed switch 3 if the 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. (see page 1-3-8, 9).
	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 (see page 1-3-9).
(2) A paper jam in the paper feed section is indicated during copying (multiple sheets in paper feed section).	Check if the upper or lower deck separation roller is soiled with paper powder.	Check and clean with isopropyl alcohol if soiled.
(3) 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 (see page 1-3-9).

Problem	Causes/check procedures	Corrective measures
(4) 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 (see page 1-3-8).
(5) 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 (see page 1-3-9).

1-3-2 Self-diagnosis

(1) Self-diagnostic function

When a problem is detected in the large paper deck, copying is disabled and the problem displayed on the operation unit of the copier as a code consisting of "C" followed by a number between 0420 and 2600, indicating the nature of the problem.

After removing the problem, the self-diagnostic function can be reset by turning the deck open/closed safety switch off and back on.

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0420	Communication problem Communication errors from the communication microcomputer on the copier main PCB: No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN3 on the copier main PCB and CN1 on the deck main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB and check for correct operation.
		Defective deck main PCB.	Replace the deck main PCB and check for correct operation.
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.
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 2 does not turn on within 30 s of paper deck motor 2 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.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1130	Deck left lift position problem Deck level switch 2 does not turn on within 30 s of paper deck motor 2 turning on.	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.
C1160	Sequence problem	Operation start request is sent from the copier to the large paper deck while paper feed is disabled.	Turn the power off and back on (reset request is sent from the copier to the large paper deck to cancel operation start request).
		Paper feed request is sent from the copier to the large paper deck before operation start request.	Turn the power off and back on (reset request is sent from the copier to the large paper deck to cancel operation start request).
C1170	Large paper deck incorrect type problem	Deck for the printer is installed.	Replace the deck for the copier.
C2600	Deck paper conveying 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.	Replace the deck conveying motor PCB and check for correct operation.
		Deck conveying motor does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
		Poor contact in the deck conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.

1-3-3 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The large paper deck does not operate when the copier main switch is turned on.	Incorrect connection with the copier.	Check the connector.
(2) The deck paper conveying motor does not operate.	Poor contact of the deck paper conveying motor connector terminals.	Check for continuity across the connector terminals. If none, replace them.
	The deck paper conveying motor drive system overloaded.	Check the drive system.
	Defective deck paper conveying motor.	Check if the deck paper conveying motor is operated in maintenance item U247 while the motor drive clock signal is present at CN2-2 on the deck main PCB. If not, replace the deck paper conveying motor.
	Defective deck main PCB.	Check if the motor drive clock signal is present at CN2-2 on the deck main PCB when the deck paper conveying motor is operated in maintenance item U247. If not, replace the deck main PCB.
(3) Paper deck motor 1 does not operate.	Poor contact of the paper deck motor 1 connector terminals.	Check for continuity across the connector terminals. If none, replace them.
	Broken paper deck motor 1 coil.	Check for continuity across the coil. If none, replace paper deck motor 1.
	Defective deck main PCB.	Check if CN7-13 on the deck main PCB goes low right after the drawer is installed. If not, replace the deck main PCB.
(4) Paper deck motor 2 does not operate.	Poor contact of the paper deck motor 2 connector terminals.	Check for continuity across the connector terminals. If none, replace them.
	Broken paper deck motor 2 coil.	Check for continuity across the coil. If none, replace paper deck motor 2.
	Defective deck main PCB.	Check if CN7-6 on the deck main PCB goes low right after the drawer is installed. If not, replace the deck main PCB.
(5) Paper feed clutch 1 does not operate.	Poor contact of the paper feed clutch 1 connector terminals.	Check for continuity across the connector terminals. If none, replace them.
	Broken paper feed clutch 1 coil.	Check for continuity across the coil. If none, replace paper feed clutch 1.
	Defective deck main PCB.	Check if CN4-3 on the deck main PCB goes low when paper feed clutch 1 is operated in maintenance item U247. If not, replace the deck main PCB.

Problem	Causes	Check procedures/corrective measures
(6) Paper feed clutch 2 does not operate.	Poor contact of the paper feed clutch 2 connector terminals.	Check for continuity across the connector terminals. If none, replace them.
	Broken paper feed clutch 2 coil.	Check for continuity across the coil. If none, replace paper feed clutch 2.
	Defective deck main PCB.	Check if CN4-1 on the deck main PCB goes low when paper feed clutch 2 is operated in maintenance item U247. If not, replace the deck main PCB.
(7) The paper conveying clutch does not operate.	Poor contact of the paper conveying clutch connector terminals.	Check for continuity across the connector terminals. If none, replace them.
	Broken paper conveying clutch coil.	Check for continuity across the coil. If none, replace the paper conveying clutch.
	Defective deck main PCB.	Check if CN4-5 on the deck main PCB goes low when the paper conveying clutch is operated in maintenance item U247. If not, replace the deck main PCB.

1-3-4 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the upper or lower deck separation roller is soiled with paper powder.	Clean with isopropyl alcohol.
	Check if deck paper feed roller 1 or 2 is soiled with paper powder.	Clean with isopropyl alcohol.
	Check if the upper or lower deck separation roller is worn or deformed.	Replace (see page 1-4-2).
	Check if deck paper feed roller 1 or 2 is worn or deformed.	Replace (see page 1-4-3).
	Check if paper feed clutch 1, 2 or the paper conveying clutch malfunctions.	Remedy or replace.
(2) Paper is fed askew.	Check if the upper or lower deck separation roller is worn or deformed.	Replace (see page 1-4-2).
	Check if deck paper feed roller 1 or 2 is worn or deformed.	Replace (see page 1-4-3).
	Check if the paper side guides are deformed.	Remedy or replace.
(3) Multiple sheets of paper are fed at one time.	Check if the paper is excessively curled.	Change the paper.
	Paper is not loaded correctly.	Correct.
	Check if the upper or lower deck separation roller is worn or deformed.	Replace (see page 1-4-2).
(4) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Check if the paper side guides are deformed.	Remedy or replace.
(5) Abnormal noise is heard.	Check if rollers and gears operate smoothly.	Grease the bushings and gears.
	Check for any abnormality with motors and clutches.	Replace.
	Check for any drive belt out of place.	Remedy if necessary.

1-4-1 Precautions for assembly and disassembly

(1) Precautions

- Be sure to turn the main 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 PCBs containing ICs with bare hands or any object prone to static charge.
- Use the following testers when measuring voltages:

Hioki 3200

Sanwa MD-180C

Sanwa YX-360TR

Beckman TECH300

Beckman DM45

Beckman 330 (capable of measuring RMS values)

Beckman 3030 (capable of measuring RMS values)

Beckman DM850 (capable of measuring RMS values)

Fluke 8060A (capable of measuring RMS values)

Arlec DMM1050

Arlec YF1030C

1-4-2 Paper feed section

(1) Detaching and refitting the upper and lower deck separation rollers

Clean or replace the upper and lower deck separation rollers as follows.

Procedure

1. Open the deck side cover.
2. Remove stop ring 1.
3. Remove the shaft.
4. Remove the lower deck separation roller assembly.
5. Remove stop ring 2 securing the lower deck separation roller and then the roller.
6. Remove stop ring 3 securing the upper deck separation roller and then the roller.
7. Clean or replace the upper and lower deck separation rollers.
8. Refit all removed parts.

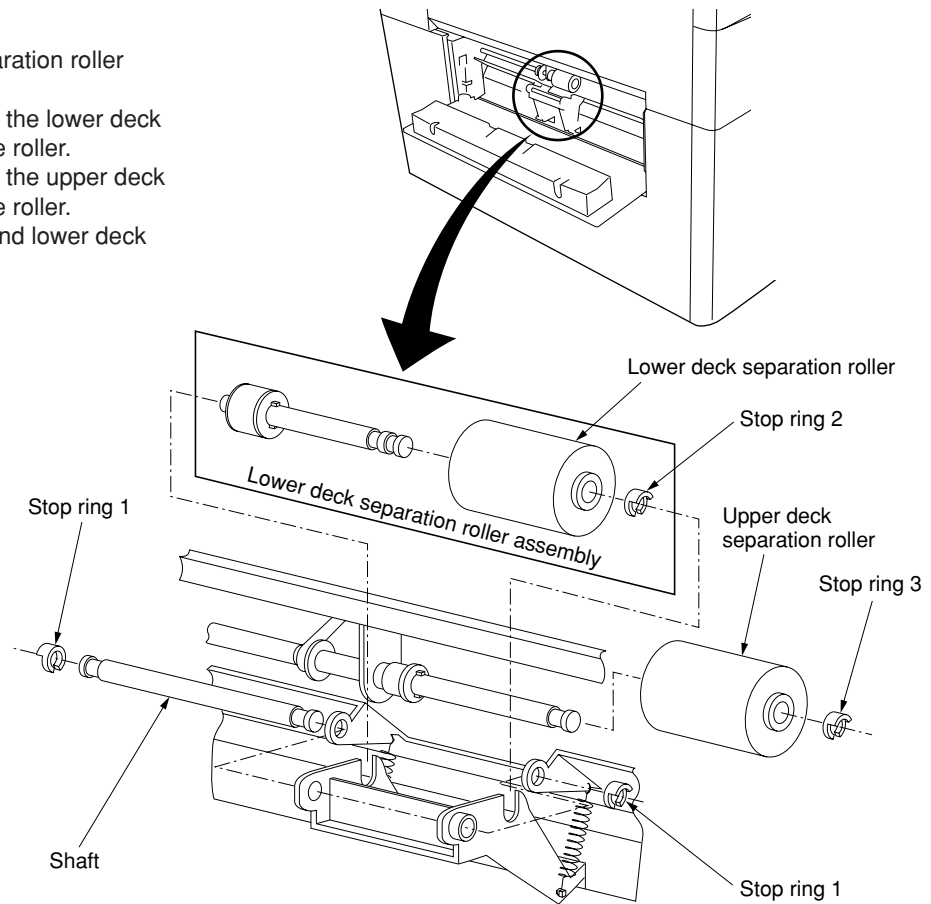


Figure 1-4-1 Detaching and refitting the upper and lower deck separation rollers

(2) Detaching and refitting the deck paper conveying unit assembly

Replace the desk upper or lower paper width switches as follows.

Procedure

1. Open the drawer.
2. Remove the left cover.
3. Remove the two screws holding the deck paper conveying unit assembly and then the assembly.

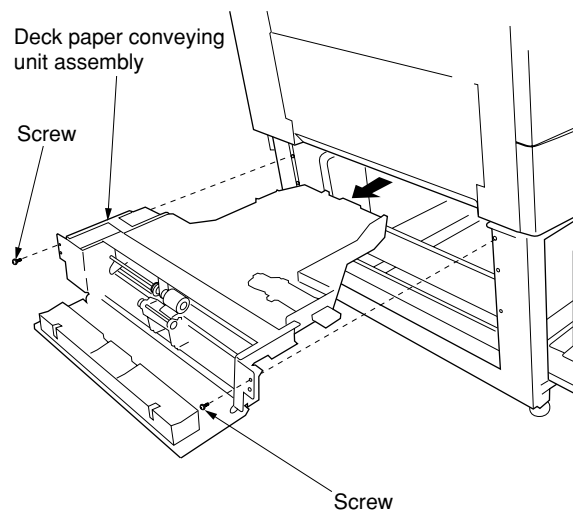


Figure 1-4-2 Detaching and refitting the deck paper conveying unit assembly

(3) Detaching and refitting deck paper feed rollers 1 and 2

Clean or replace paper feed rollers 1 and 2 as follows.

Procedure

1. Turn the deck paper conveying unit over.
2. Remove the stop ring while lifting the deck paper feed roller section.
3. Pull out the shifting shaft and then deck paper feed rollers 1 and 2.
4. Clean or replace deck paper feed rollers 1 and 2.
5. Refit all removed parts.

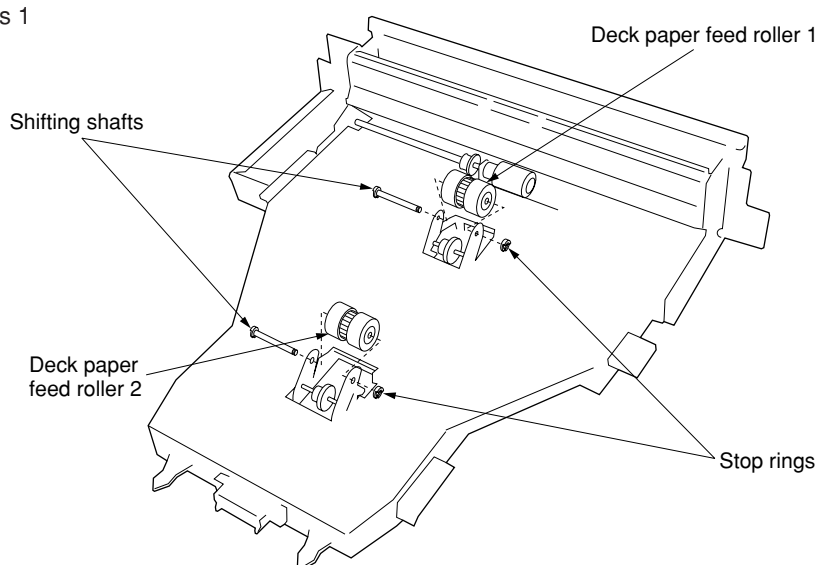


Figure 1-4-3 Detaching and refitting deck paper feed rollers 1 and 2

(4) Adjusting the position of the center adjuster (center line alignment)

Perform the following adjustment if the center lines of the copy image and the copy paper are misaligned.

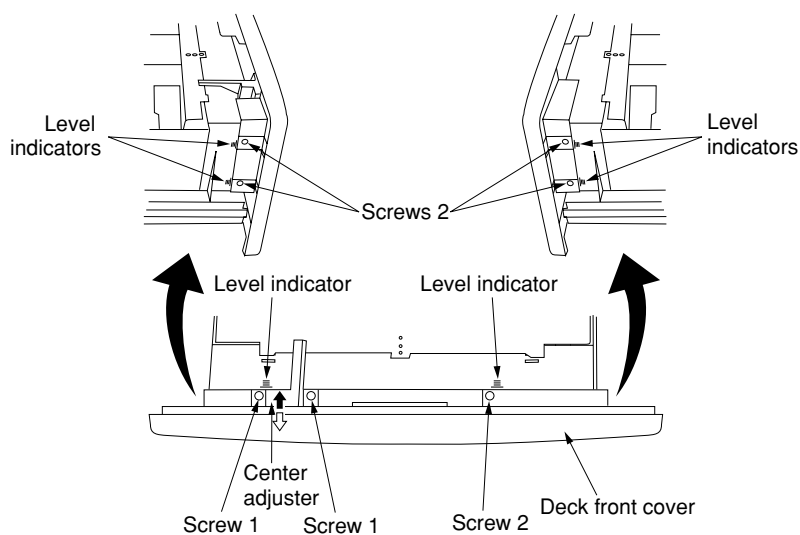
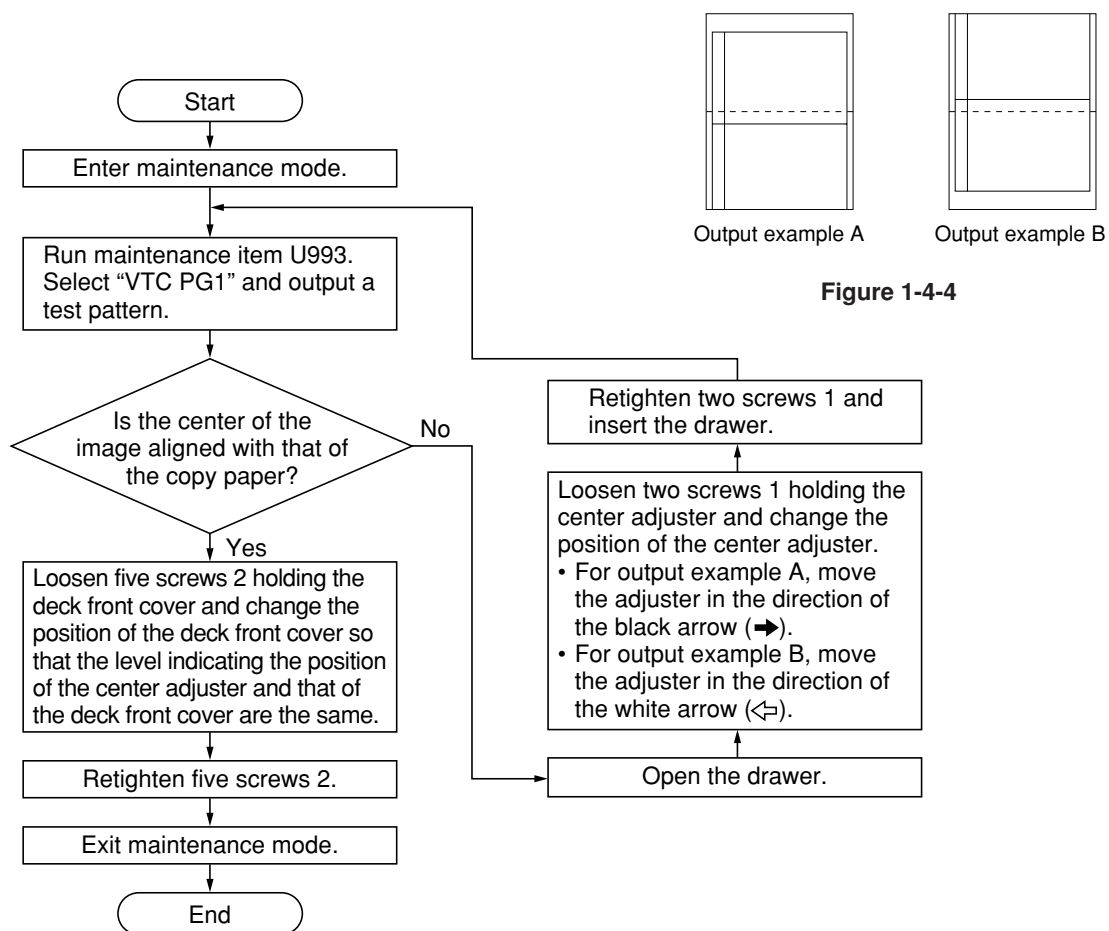
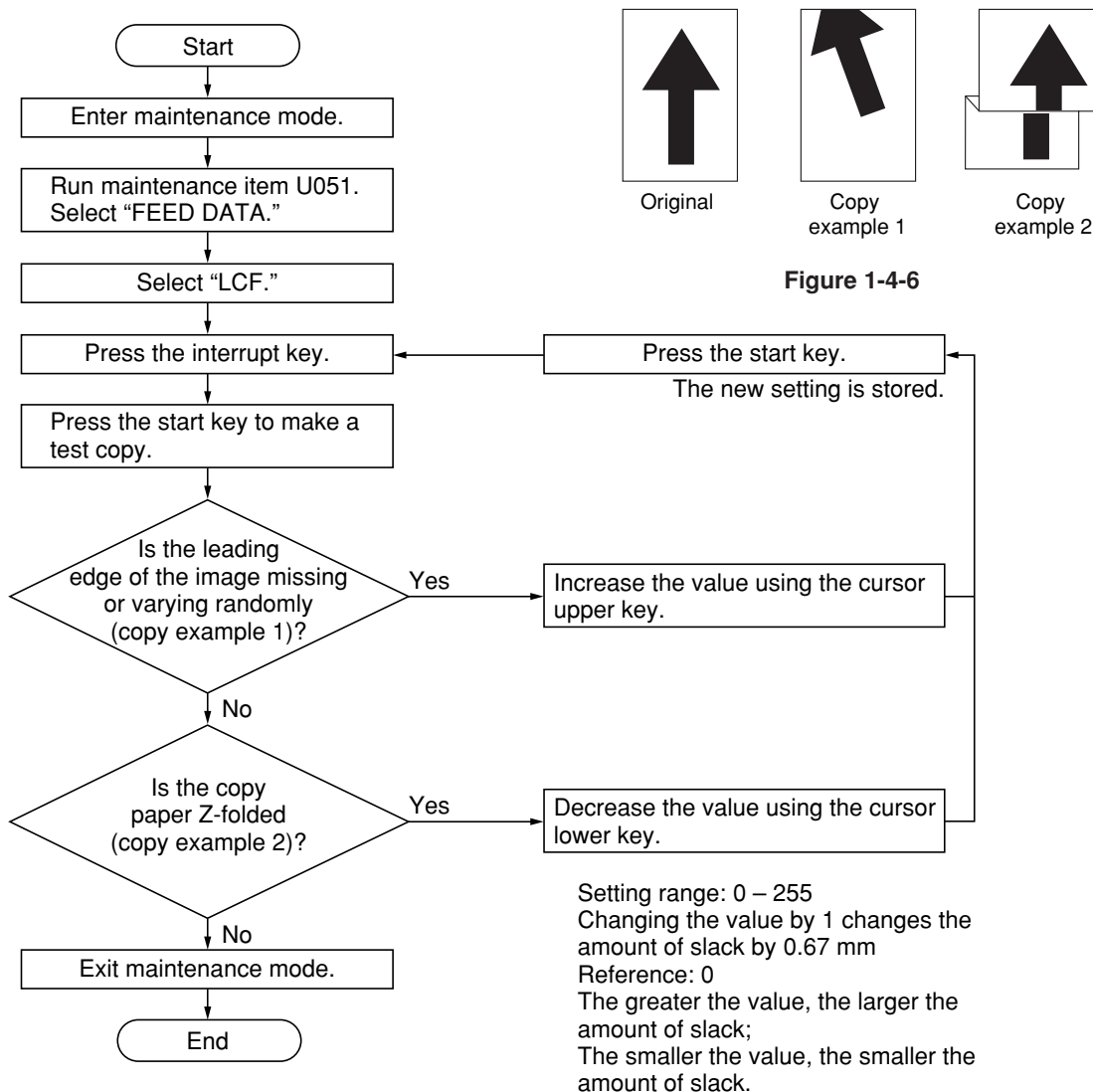
Procedure

Figure 1-4-5 Adjusting the position of the center adjuster

(5) Adjusting the amount of slack

Perform 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

2-1-1 Mechanical construction

The large paper deck consists mainly of the left and right cassettes and separation section. The left cassette paper feed section sends paper from the lift to the upper and lower deck separation rollers. When the left cassette becomes empty, the right cassette paper feed section conveys paper onto the lift of the left cassette. The upper and lower deck separation rollers in the separation section convey paper received from the left cassette paper feed section into the copier, preventing multiple sheets from being fed at one time.

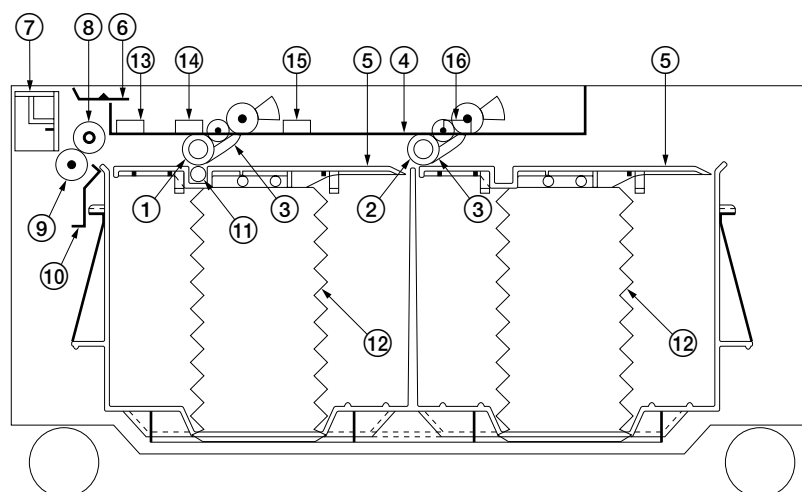


Figure 2-1-1 Mechanical construction

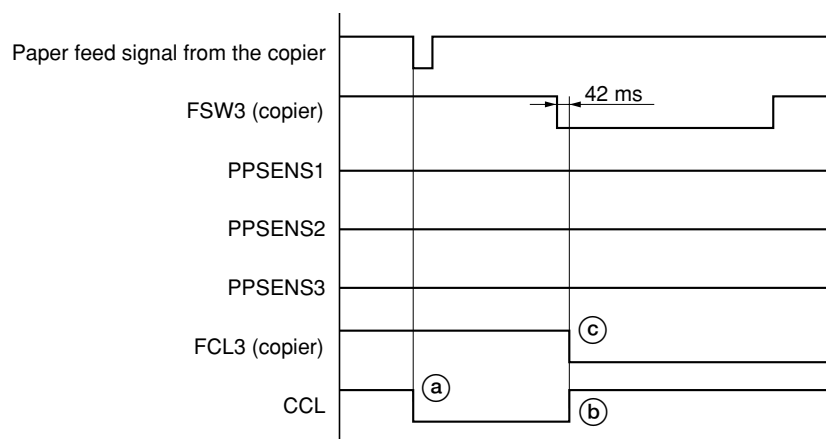
- | | |
|--------------------------------|---------------------------------|
| ① Deck paper feed roller 1 | ⑨ Lower deck separation roller |
| ② Deck paper feed roller 2 | ⑩ Paper guide D |
| ③ Pickup arm | ⑪ Guide pulley |
| ④ Paper conveying base | ⑫ Air damper |
| ⑤ Lift | ⑬ Paper path sensor 1 (PPSENS1) |
| ⑥ Paper guide U | ⑭ Paper path sensor 2 (PPSENS2) |
| ⑦ Deck side cover | ⑮ Paper path sensor 3 (PPSENS3) |
| ⑧ Upper deck separation roller | ⑯ Paper empty sensor (PESENS) |

• Left cassette paper feed

As the paper conveying clutch (CCL) turns on, the drive is transmitted to the upper and lower deck separation rollers, starting paper feed from the left cassette. The upper and lower deck separation rollers ensure that the paper is fed one sheet at a time and that it is fed into the copier correctly.

To prevent multiple sheets from being fed, there is a torque limiter on the lower deck separation roller.

- When the left cassette is empty, its lift serves as a guide for the paper being conveyed from the right cassette lift.



Timing chart 2-1-1 Left cassette paper feed

- Ⓐ At the same time as the paper feed signal from the copier turns on, the paper conveying clutch (CCL) turns on to start paper feed.
- Ⓑ 42 ms after the leading edge of the paper turns copier feed switch 3 (FSW3) on, the paper conveying clutch (CCL) turns off.
- Ⓒ 42 ms after copier feed switch 3 (FSW3) has turned on, copier feed clutch 3 (FCL3) turns on to feed the paper to complete paper feed from the left cassette.

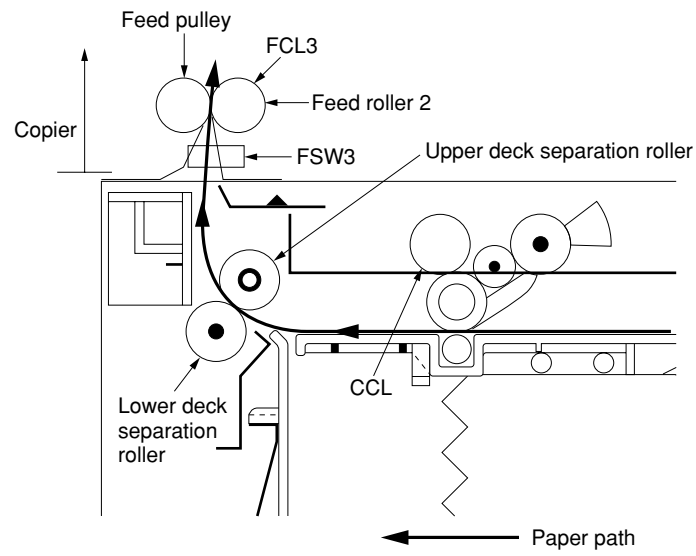


Figure 2-1-2 Left cassette paper feed section

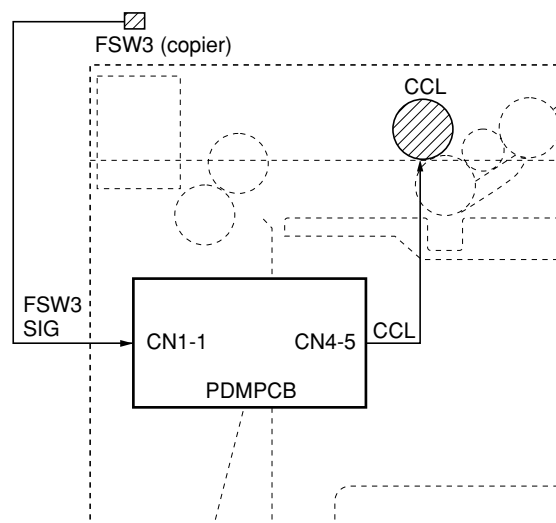
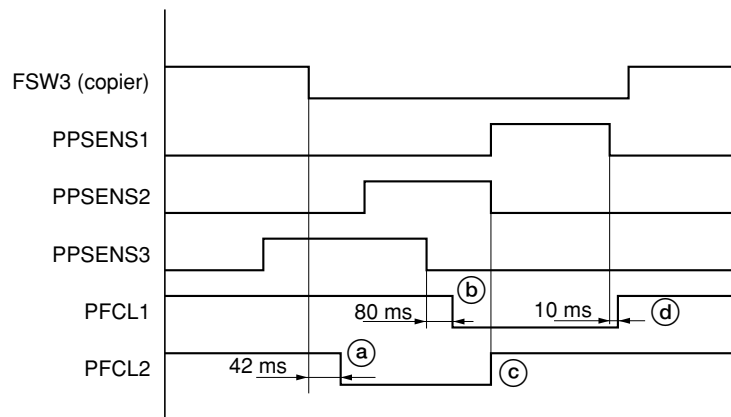


Figure 2-1-3 Left cassette paper feed section block diagram

• Right cassette paper feed

As the last sheet in the left cassette is fed, paper feed clutch 2 (PFCL2) and paper feed clutch 1 (PFCL1) turn on for paper feed from the right cassette. Deck paper feed rollers 1 and 2 start to rotate to convey paper from the right cassette onto the left cassette lift.



Timing chart 2-1-2 Right cassette paper feed

- Ⓐ 42 ms after the last paper from the left cassette has turned copier feed switch 3 (FSW3) on, paper feed clutch 2 (PFCL2) turns on to start paper feed.
- Ⓑ 80 ms after the leading edge of the paper from the right cassette has turned paper path sensor 3 (PPSENS3) on, paper feed clutch 1 (PFCL1) turns on.
- Ⓒ At the same time as the leading edge of the paper from the right cassette turns paper path sensor 2 (PPSENS2) on, paper feed clutch 2 (PFCL2) turns off.
- Ⓓ 10 ms after the leading edge of the paper from the right cassette turns paper path sensor 1 (PPSENS1) on, paper feed clutch 1 (PFCL1) turns off and paper stops in the left cassette to complete paper feed from the right cassette.

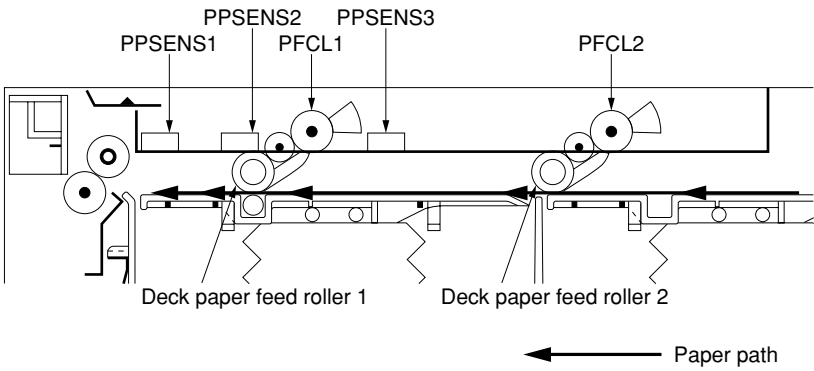


Figure 2-1-4 Right cassette paper feed section

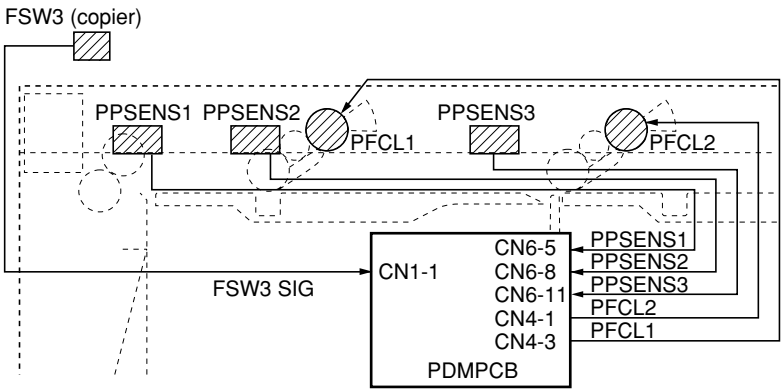


Figure 2-1-5 Right cassette paper feed section block diagram

• Raising and lowering the lifts

The following is a description of the right cassette lift operating mechanism. The left cassette lift operates in the same manner.

Paper deck motor 2 (PDM2) drives the right lift belt assembly that winches the belt up and hence raises the lift until it is stopped by deck level switch 2 (DLSW2).

When paper is loaded on the lift and the deck is closed, the lift is raised until deck level switch 2 (DLSW2) turns on.

When deck level switch 2 (DLSW2) is turned off as the paper on the lift is used, paper deck motor 2 (PDM2) starts to raise the lift until the switch turns on.

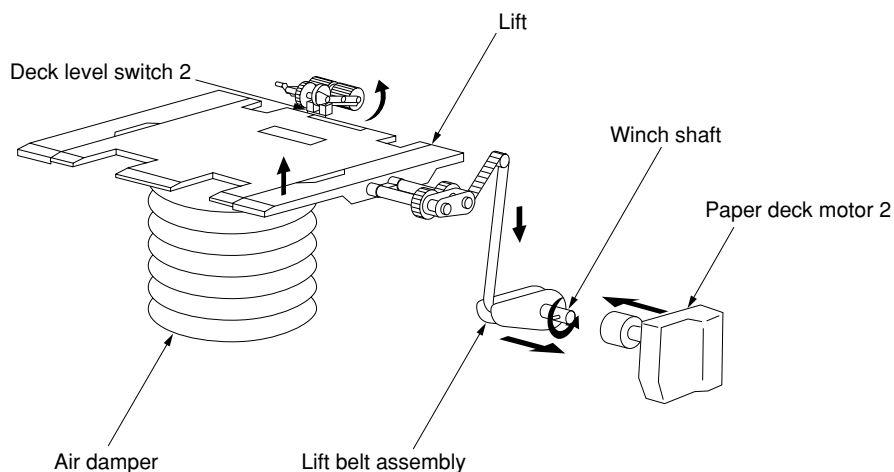


Figure 2-1-6 Raising and lowering the lift

When the deck is opened for removing a jammed paper or other purposes, the winch shaft is released from its holder on paper deck motor 2 (PDM2), allowing the lift to descend under its own weight. The air damper buffers the impact of the descending lift.

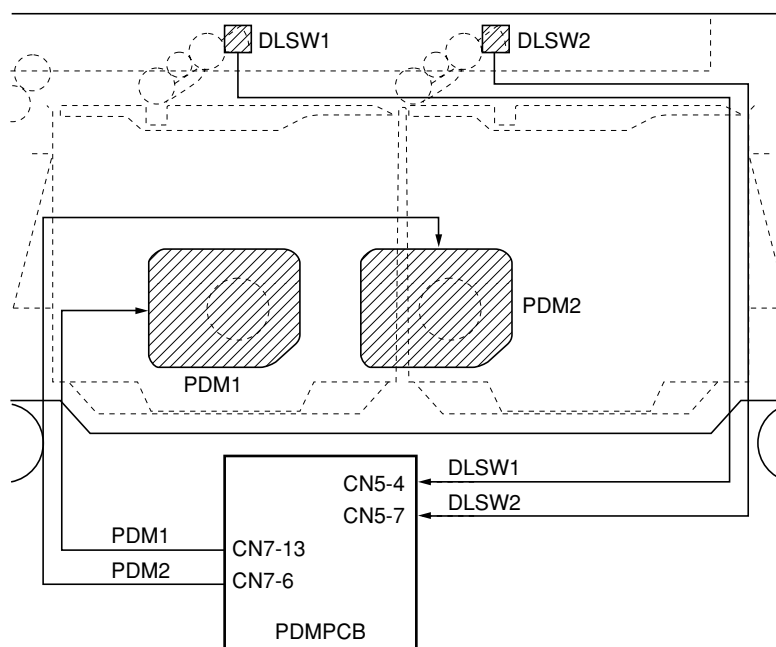


Figure 2-1-7 Lift block diagram

• Detecting the paper level

The lift rises as paper in the deck is used. When the remaining number of sheets in either right or left cassette reduces to around 100 to 250 sheets, the projection on the lift belt assembly pushes against the sensor lever which turns the relevant paper level detection sensor 1 or 2 (PLDSENS1/2) on.

When both paper level detection sensors 1 and 2 (PLDSENS1, 2) have turned on, the message “Low on paper.” is shown on the copier message display. This message is not shown when only one of them is on.

As more copies are made with the message on, paper path sensors 1, 2 and 3 (PPSENS1, 2, 3) or the paper empty sensor (PESENS) start to detect absence of paper, and the message “Place paper in deck.” is shown.

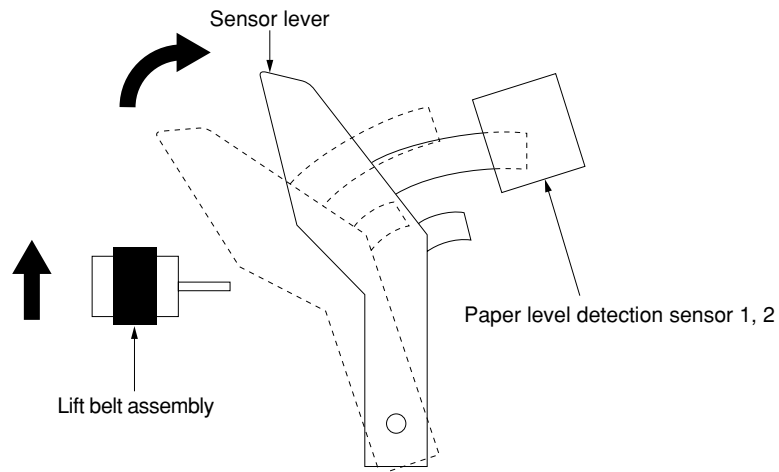


Figure 2-1-7 Detecting the paper level

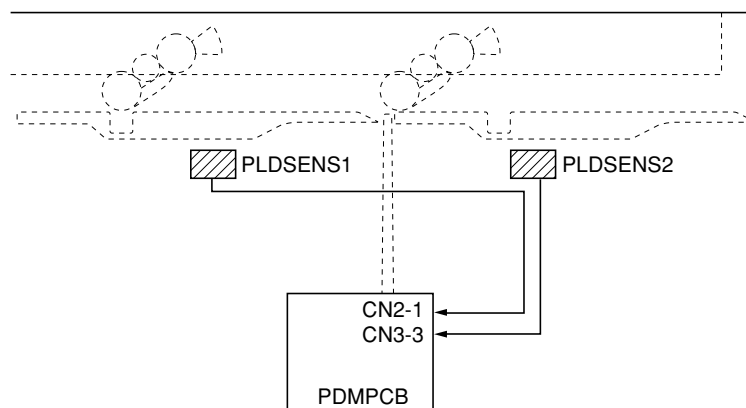


Figure 2-1-8 Paper level detection system block diagram

2-2-1 Electrical parts layout

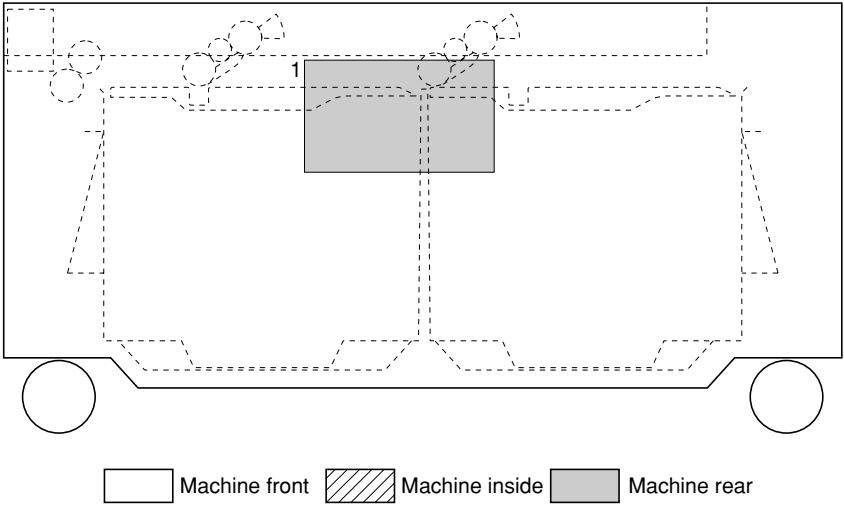


Figure 2-2-1 PCBs

- 1. Deck main PCB (PDMPCB) Controls electrical components and communications with the copier.

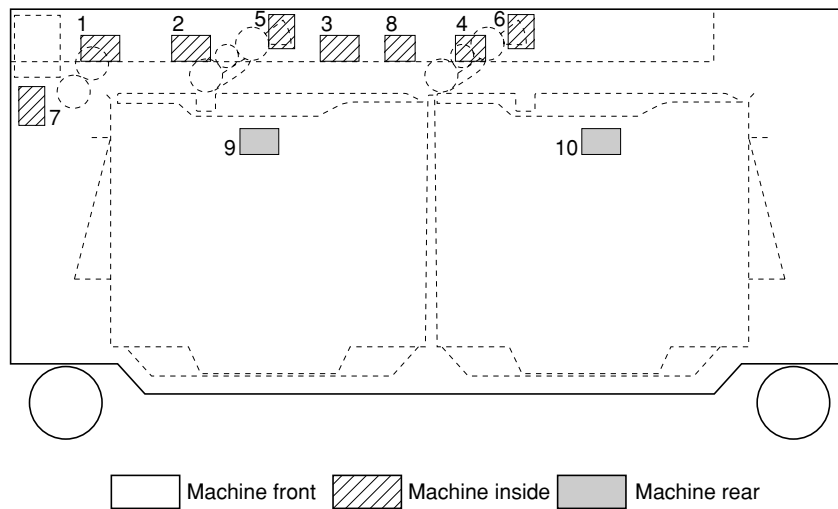


Figure 2-2-2 Switches and sensors

- | | |
|--|--|
| 1. Paper path sensor 1 (PPSENS1) | Detect paper jams and the absence of paper on the lifts. |
| 2. Paper path sensor 2 (PPSENS2) | Detect paper jams and the absence of paper on the lifts. |
| 3. Paper path sensor 3 (PPSENS3) | Detect paper jams and the absence of paper on the lifts. |
| 4. Paper empty sensor (PESENS) | Detects the absence of paper in the right cassette. |
| 5. Deck level switch 1 (DLSW1) | Detects the left cassette lift in the home position. |
| 6. Deck level switch 2 (DLSW2) | Detects the right cassette lift in the home position. |
| 7. Side cover switch (SCSW) | Detects if the deck side cover is open or closed. |
| 8. Deck open/closed safety switch (DOSSW) | Detects if the deck is open or closed. |
| 9. Paper level detection sensor 1 (PLDSENS1) | Detects the paper level in the left cassette. |
| 10. Paper level detection sensor 2 (PLDSENS2) | Detects the paper level in the right cassette. |

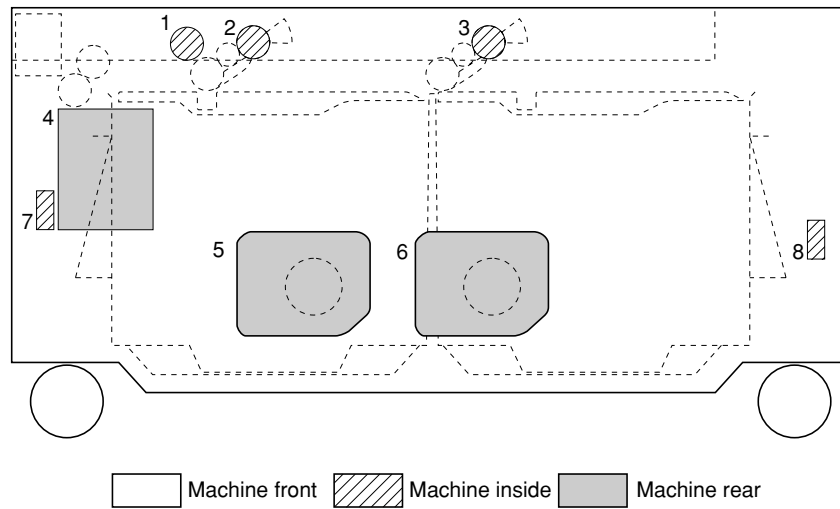


Figure 2-2-3 Other electrical components

1. Paper conveying clutch (CCL) Regulates drive transmission to the upper and lower deck separation rollers.
2. Paper feed clutch 1 (PFCL1) Regulates drive transmission to deck paper feed roller 1.
3. Paper feed clutch 2 (PFCL2) Regulates drive transmission to deck paper feed roller 2.
4. Deck paper conveying motor (CM) Drives the large paper deck.
5. Paper deck motor 1 (PDM1) Raises the left cassette lift.
6. Paper deck motor 2 (PDM2) Raises the right cassette lift.
7. Dehumidifier heater 1* (DH1) Dehumidifies paper in the left cassette.
8. Dehumidifier heater 2* (DH2) Dehumidifies paper in the right cassette.

* Service part.

2-3-1 Deck main PCB

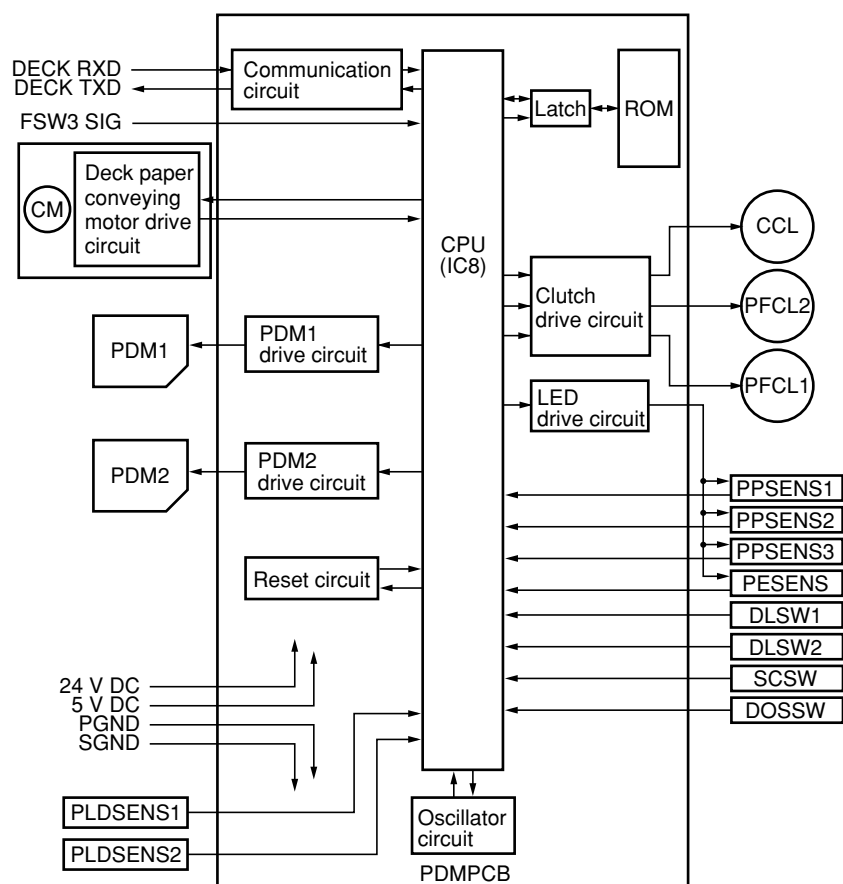


Figure 2-3-1 Deck main PCB block diagram

The deck main PCB (PDMPCB) consists of the CPU IC8, which serially communicates with the copier main PCB (MPCB); the deck paper conveying motor drive circuit; the paper deck motor drive circuits; the clutch drive circuit; the reset circuit; and the LED drive circuit. It controls the entire large paper deck.

(1) Paper deck motor drive circuits

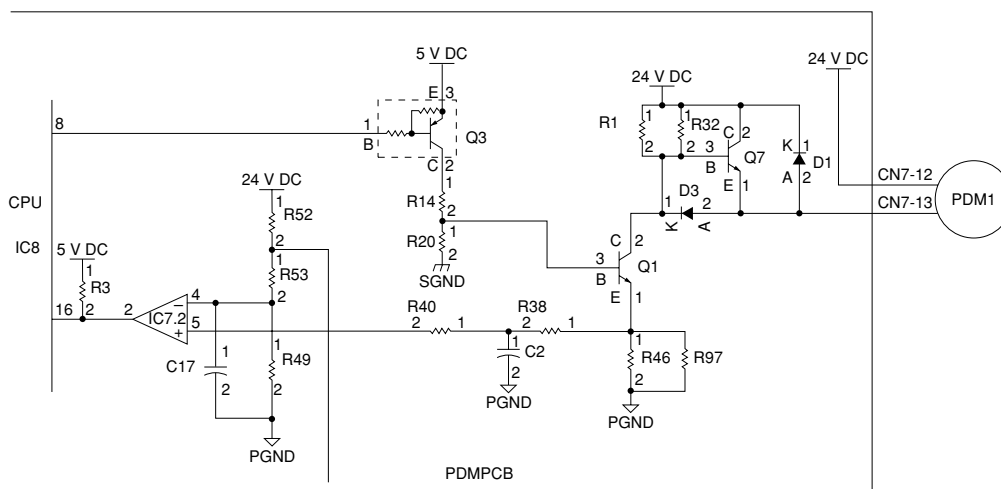


Figure 2-3-2 Paper deck motor 1 drive circuit

The following is a description of the paper deck motor 1 drive circuit. Paper deck motors 1 and 2 are identical.

When pin 8 of the CPU IC8 goes low, transistor Q1 is turned on causing paper deck motor 1 (PDM1) to rotate. When transistor Q1 is turned off, paper deck motor 1 (PDM1) stops. A brake circuit ensures the prompt stopping of the motor as follows.

When transistor Q1 turns off, transistor Q7 turns on, supplying 24 V DC to CN7-13 thereby preventing paper deck motor 1 (PDM1) from rotating further under momentum.

To prevent the cassette lift from being raised past its limit, an overcurrent lock detection circuit checks for the overcurrent that would occur when paper deck motor 1 (PDM1) locks. The current from paper deck motor 1 (PDM1) into transistor Q1 is converted to a voltage by resistor R46. This voltage is input to pin 5 of comparator IC7.2. If this voltage is higher than the reference at pin 4, 5 V DC is input to pin 16 of CPU IC8. If it is lower, 0 V is input to pin 16. Overcurrent of paper deck motor 1 (PDM1) causes the voltage at pin 5 of IC7.2 to become higher than that at pin 4. This generates 5 V DC at pin 16 of CPU IC8, which detects overcurrent. If overcurrent lasts more than 1 s, paper deck motor 1 (PDM1) failure is determined, and pin 8 of CPU IC8 outputs 5 V DC, turning paper deck motor 1 (PDM1) off.

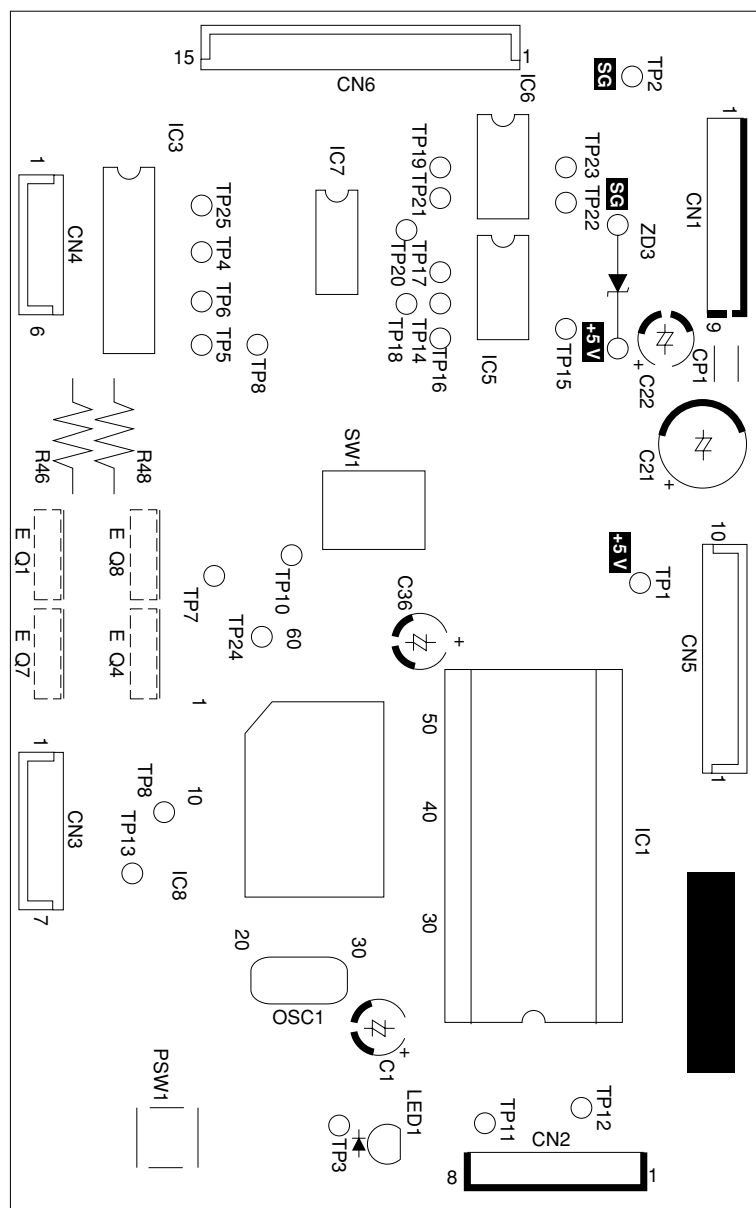
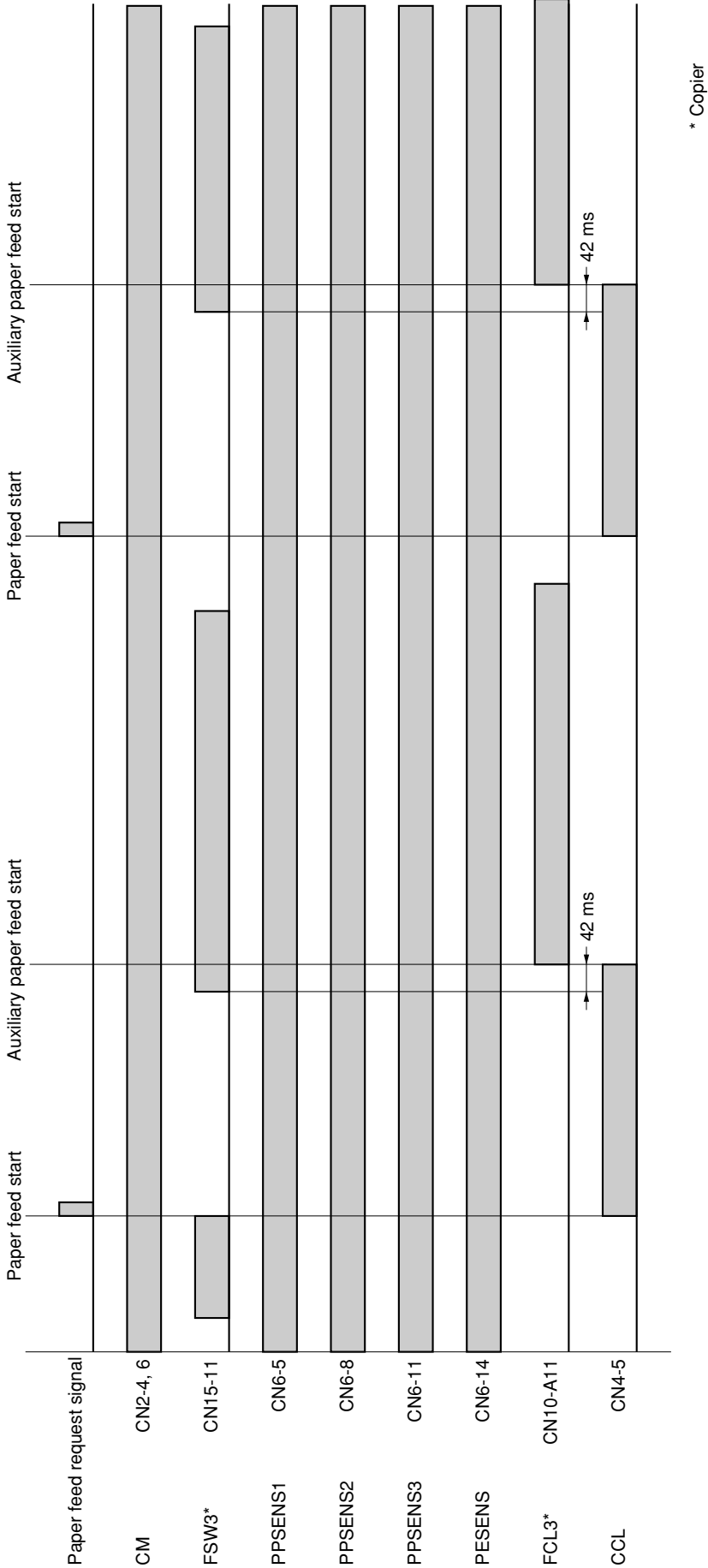


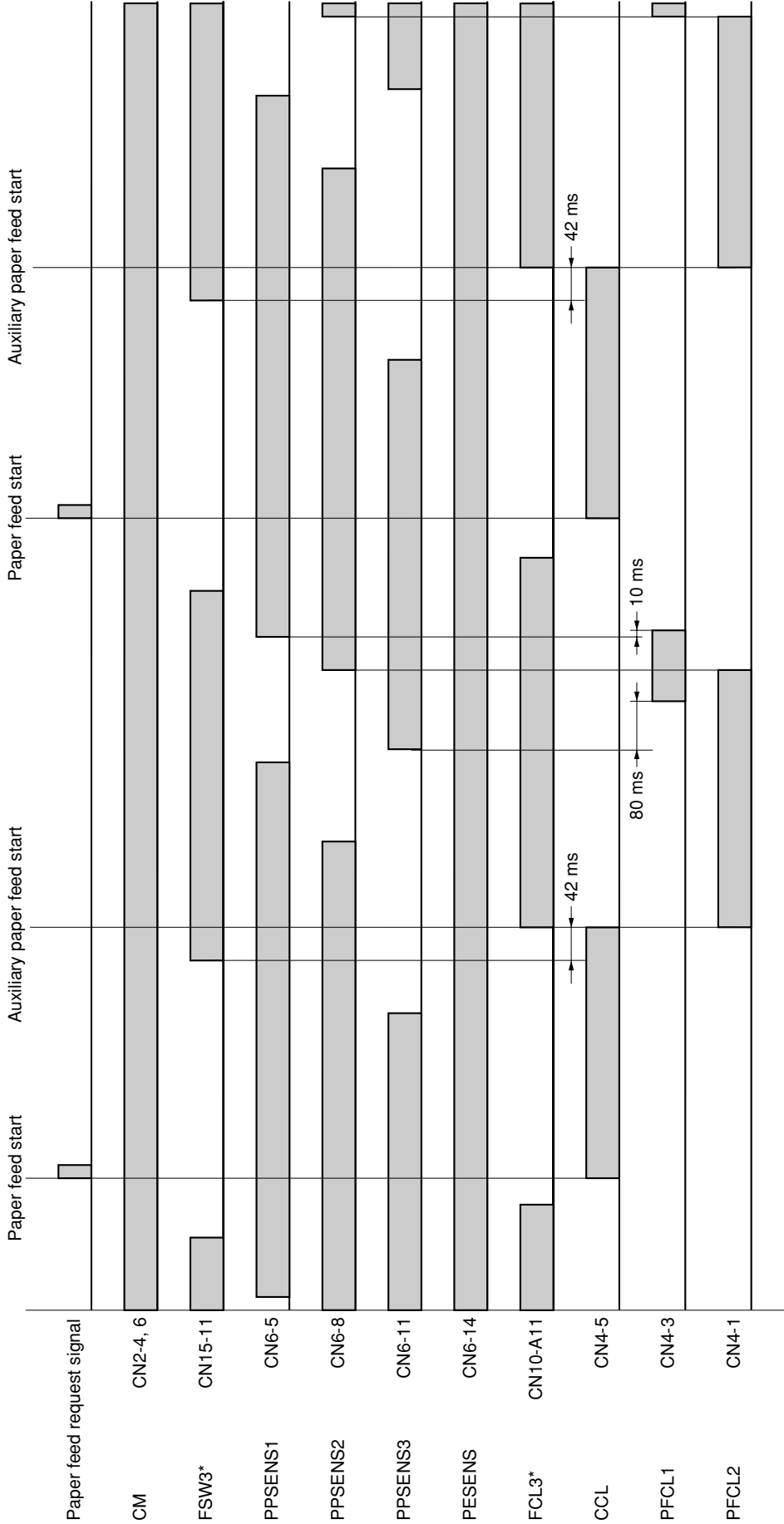
Figure 2-3-4

Terminals (CN)		Voltage	Remarks
1-1	1-2	0/5 V DC	FSW3 on/off from the copier, input
1-3	1-2	0/5 V DC (pulse)	Serial communication signal to the copier, input
1-5	1-4	0/5 V DC (pulse)	Serial communication signal to the copier, output
1-6	1-4	0/5 V DC	Reset signal from the copier, input
1-7	1-8	5 V DC	5 V DC supply, input
1-10	1-9	24 V DC	24 V DC supply, input
2-1	2-2	0/5 V DC	PLDSENS1 on/off, input
2-3	2-2	5 V DC	5 V DC supply for PLDSENS1, output
2-5	2-4	24 V DC	24 V DC supply for CM, output
2-6	2-4	0/24 V DC	CM on/off, output
2-7	2-4	0/5 V DC (pulse)	Lock signal to CM, output
3-1	3-2	5 V DC	5 V DC supply for PLDSENS1, output
3-3	3-2	0/5 V DC	PLDSENS2 on/off, input
4-1	2-4	0/24 V DC	PFCL2 on/off, output
4-2	2-4	24 V DC	24 V DC supply for PFCL2, output
4-3	2-4	0/24 V DC	PFCL1 on/off, output
4-4	2-4	24 V DC	24 V DC supply for PFCL1, output
4-5	2-4	0/24 V DC	CCL on/off, output
4-6	2-4	24 V DC	24 V DC supply for CCL, output
5-1	5-2	5/0 V DC	DOSW on/off, input
5-3	5-2	5 V DC	5 V DC supply for DOSW, output
5-4	5-5	0/5 V DC	DLSW1 on/off, input
5-6	5-5	5 V DC	5 V DC supply for DLSW1, output
5-7	5-8	0/5 V DC	DLSW2 on/off, input
5-9	5-8	5 V DC	5 V DC supply for DLSW2, output
6-1	6-2	5/0 V DC	SCSW on/off, input
6-3	6-2	5 V DC	5 V DC supply for SCSW, output
6-4	6-2	5/4 V DC (pulse)	Clock signal to PPSSENS1, output
6-5	6-2	5/0 V DC (pulse)/0 V	PPSENS1 on/off, input
6-6	6-2	5 V DC	5 V DC supply for PPSSENS1, output
6-7	6-2	5/4 V DC (pulse)	Clock signal to PPSSENS2, output
6-8	6-2	5/0 V DC (pulse)/0 V	PPSENS2 on/off, input
6-9	6-2	5 V DC	5 V DC supply for PPSSENS2, output
6-10	6-2	5/4 V DC (pulse)	Clock signal to PPSSENS3, output
6-11	6-2	5/0 V DC (pulse)/0 V	PPSENS3 on/off, input
6-12	6-2	5 V DC	5 V DC supply for PPSSENS3, output
6-13	6-2	5/4 V DC (pulse)/	Clock signal to PESENS, output
6-14	6-2	5/0 V DC (pulse)/0 V	PESENS on/off, input
6-15	6-2	5 V DC	5 V DC supply for PESENS, output
7-1	7-2	0/5 V DC	Paper level detection switch on/off, input
7-3	7-2	0/5 V DC	Paper level detection switch on/off, input
7-5	2-4	24 V DC	24 V DC supply for PDM2, output
7-6	2-4	0/24 V DC	PDM2 on/off, output
7-8	7-9	0/5 V DC	Paper level detection switch on/off, input
7-10	7-9	0/5 V DC	Paper level detection switch on/off, input
7-12	2-4	24 V DC	24 V DC supply for PDM1, output
7-13	2-4	0/24 V DC	PDM1 on/off, output

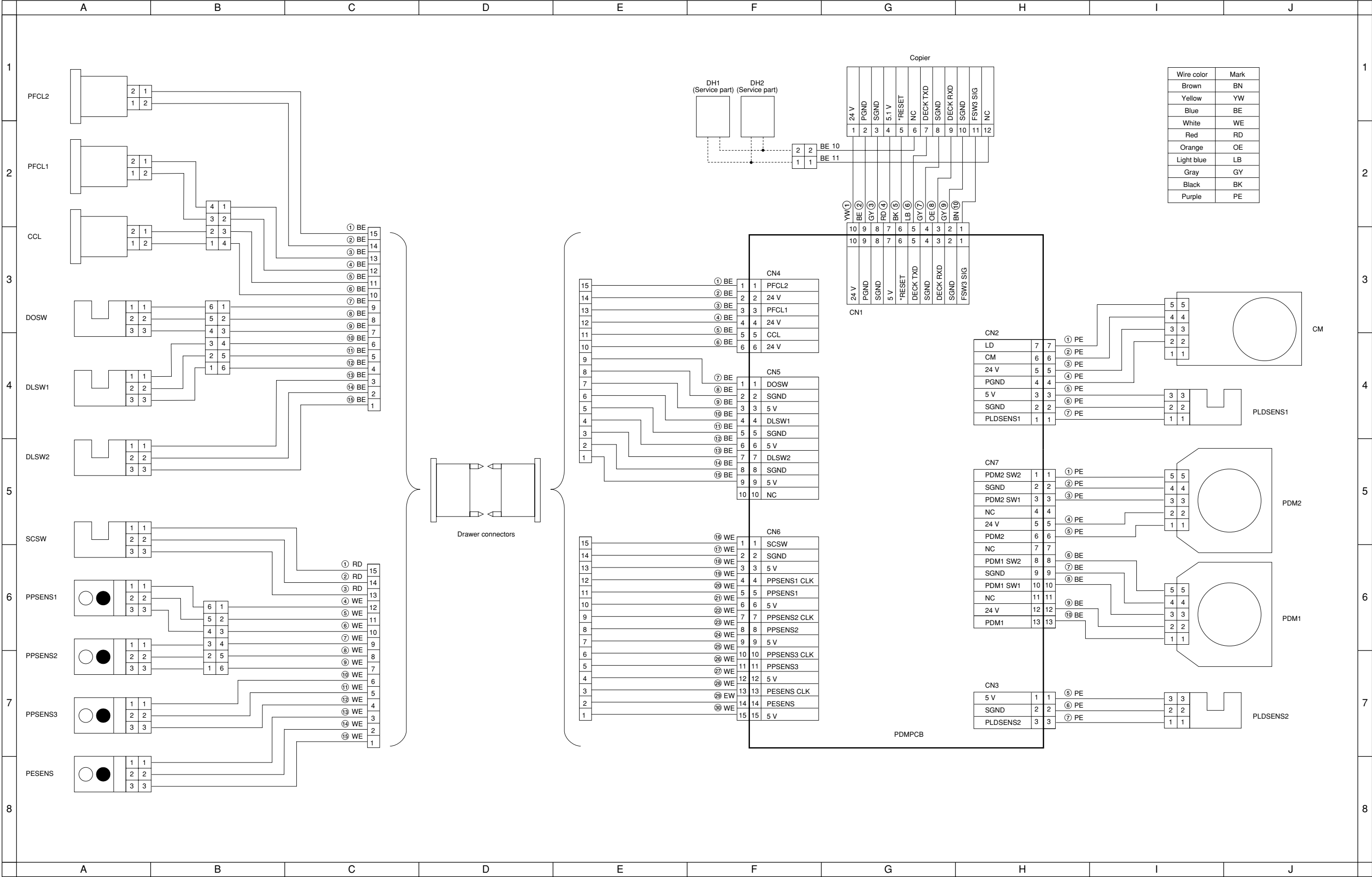
Timing chart No. 1 Paper feed from large paper deck left cassette



Timing chart No. 2 Paper feed from large paper deck right cassette



* Copier



Fax System (C)

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3CM

1-1-1 Specifications

Type	Optional Fax Kit
Compatibility	Group 3
Line Requirement	Subscription telephone line
Transmission Speed	Within 3 seconds (33600 bps, JBIG, ITU-T #1 chart)
Modem Speed	33600/31200/28800/26400/24000/21600/19200/16800/14400/12000/9600/ 7200/4800/2400 bps
Data Compression	JBIG/MMR/MR/MH
Error Correction	ECM
Maximum Document Dimensions	Width: 11" [297 mm] Length: 63" [1600 mm]
Automatic Document Feeder Capacity	RADF: Max. 100 pages, ADF: Max. 70 pages
Auxiliary Scanning Line Density	Horizontal x Vertical Normal (8 dots/mm x 3.85 lines/mm) Fine (8 dots/mm x 7.7 lines/mm) Super fine (8 dots/mm x 15.4 lines/mm) Ultra fine (16 dots/mm x 15.4 lines/mm)
Recording Resolution	600 dpi x 600 dpi
Grayscale	128 levels (Value differential diffusion)
Speed-Dial Keys	Max. 300 destinations
Broadcast Transmission	Max. 300 destinations
Polling Reception	Max. 300 locations
Installed Bitmap Memory	4 MB
Installed Imaging Memory	4 MB (including 1 MB of working memory)
Management Reports and Lists	Activity Report, Confirmation List, User Setting List, One-Touch Key List, Telephone Directory List, Program Dial List, Group Dial List, Encryption Key List, Restricted Access Report, Department List
Options	Memory (8 MB)

* Specifications are subject to change without notice.

Reception functions	Manual reception Automatic reception Fax/telephone auto selection TAD reception D.R.D. reception*1 Remote switching
Transmission functions	Abbreviated dialing (up to 300 numbers can be stored) One-touch dialing*2 Program dialing*2 Group dialing*2 Chain dialing*2 Redialing (manual/automatic) Dial confirmation
Communication functions	Direct feed transmission Memory transmission Direct reception Memory reception (F-coded confidential reception and relay broadcast reception)
Additional communication functions	Broadcast transmission (up to 300 numbers) Polling communication Encrypted communication (no compatibility with models before the facsimile kit for 23/31 cpm copier) Password check communication Memory fax forwarding Reserved transmission Timer transmission Interrupt transmission Short protocol ECM F-coded transmission F-coded confidential reception F-coded bulletin board communication F-coded relay broadcast
Supplementary communication functions	Printing out from F-coded confidential box Manual transmission Telephone directory Transmission destination display Tone transmission Memory back-up (60 min.*3) Entry into F-coded bulletin board Communication result display
Supplementary transmission functions	Batch transmission TTI transmission Bulletin board Rotation transmission Duplex transmission*4 Initial communication speed setting
Supplementary reception functions	Memory reception 2-in-1 reception Auto reduce reception Rotation reception Duplex reception*5 Recording paper setting (auto selection, fixed size or fixed cassette) During-reception copying Reception date and time recording

Reports	Activity report Transmission report Reception report Power failure report Delayed communication report Confirmation report User settings list Encryption key list Management report Department list Abbreviated dial list One-touch key list Telephone directory list Program dial list Group dial list
Others	Memory editing Remote diagnosis Department control for faxes

*1: For 120 V specifications only.

*2: To be registered under one-touch keys. Up to 300 one-touch keys can be used for one-touch dialing, program dialing, group dialing and chain dialing.

*3: When an optional add-on memory is installed.

*4: Available only when a duplex document processor is installed.

*5: Available only when a duplex unit is installed.

1-1-2 Parts names and their functions

(1) Copier

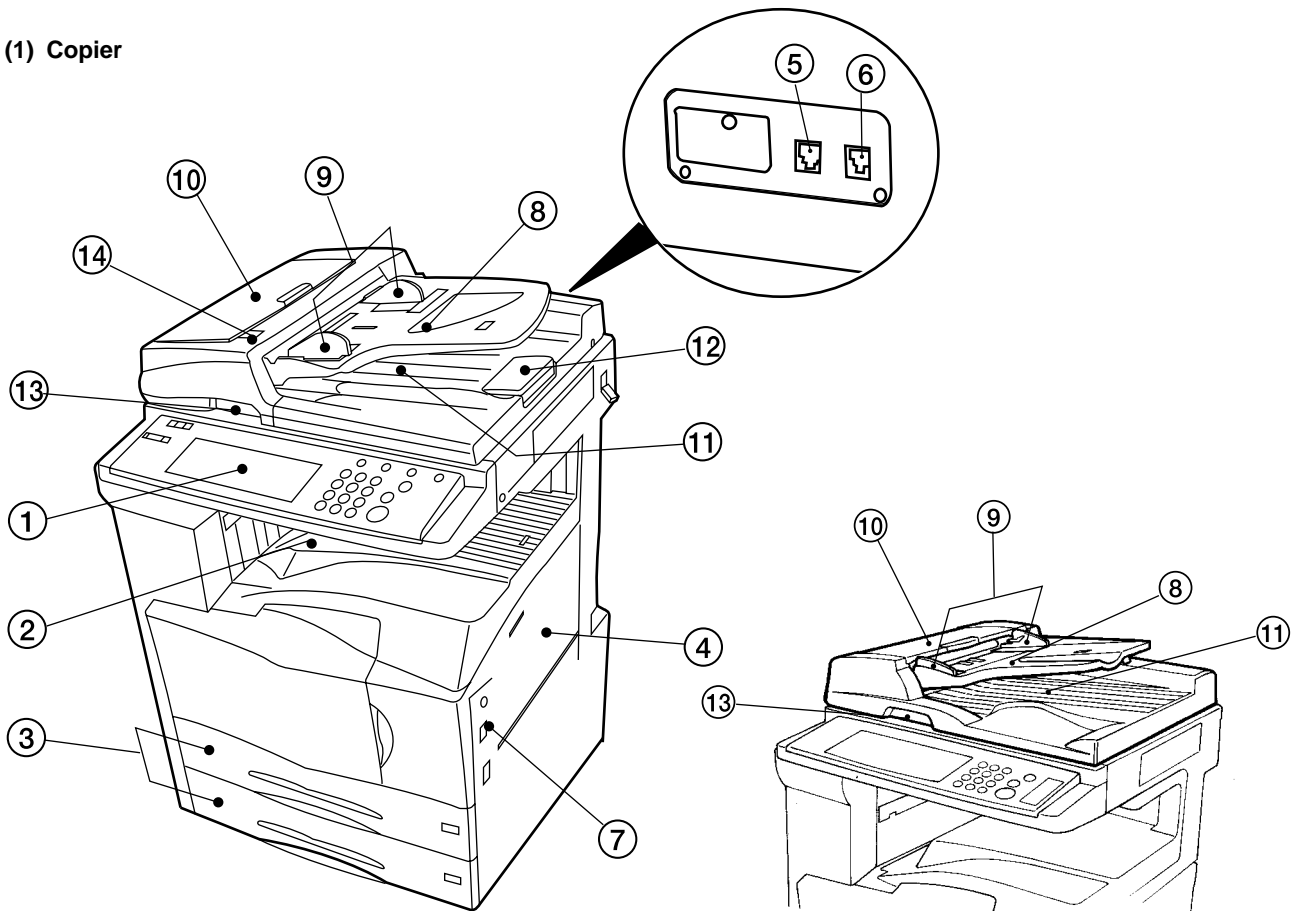


Figure 1-1-1

Figure 1-1-2

- | | |
|---|--|
| 1 Operation panel | Use the operation panel to perform the procedures required for fax communication. |
| 2 Fax storage section | Received documents are ejected and stored face-down in the fax storage section. Up to 250 sheets can be stored in this section at one time. |
| 3 Drawers | This fax machine comes standard with two drawers installed. Each drawer can hold up to 500 sheets of plain paper (60 g/m ² - 105 g/m ²). |
| 4 Multi-Bypass | Paper can be set in the Multi-Bypass as well. In order to use the Multi-Bypass, it is necessary to select "ON" under "Turning Manual Paper Feed ON/OFF". |
| 5 Telephone jack (T) | Use this jack to connect a separately purchased telephone to the fax. |
| 6 Line jack (L) | Use this jack to connect the fax to a telephone line using the modular cord. |
| 7 Main switch | Turn this switch ON () in order to perform fax and copy operations. The message display will light and operation will be possible. |
| <p>• Document Processor</p> <p>There are 2 optional document processors available for use with this machine: the document processors for feeding one-sided documents, and the duplex document processor for using both sides of 2-sided documents.</p> <p>* Both the document processor and duplex document processor can be used with the 25 copies per minute machine. However, only the duplex document processor can be used with the 35 copies per minute machine.</p> | |
| 8 Document table | Set the documents you want to transmit on this table. Up to 70 sheets of up to 11" x 8 1/2" [A4] size paper, or up to 50 sheets of 8 1/2" x 14" or 11" x 17" [A3 or Folio] size paper, can be set at one time. |
| 9 Document insert guides | Adjust these guides to match the width of the documents. |
| 10 Document processor reversing cover | Open this cover if a document jams. |
| 11 Document eject cover | Documents are ejected onto this cover after being scanned. |
| 12 Eject guide | Open this guide when transmitting documents of a large size such as 8 1/2" x 14" or 11" x 17" [A3 or Folio]. |
| 13 Document processor open/close lever ... | Operate this lever when opening and closing the document processor. |
| 14 Document set indicator | This indicator indicates the status of the documents set in the document processor. Documents are set properly when the indicator is lit green. |

(2) Operation panel

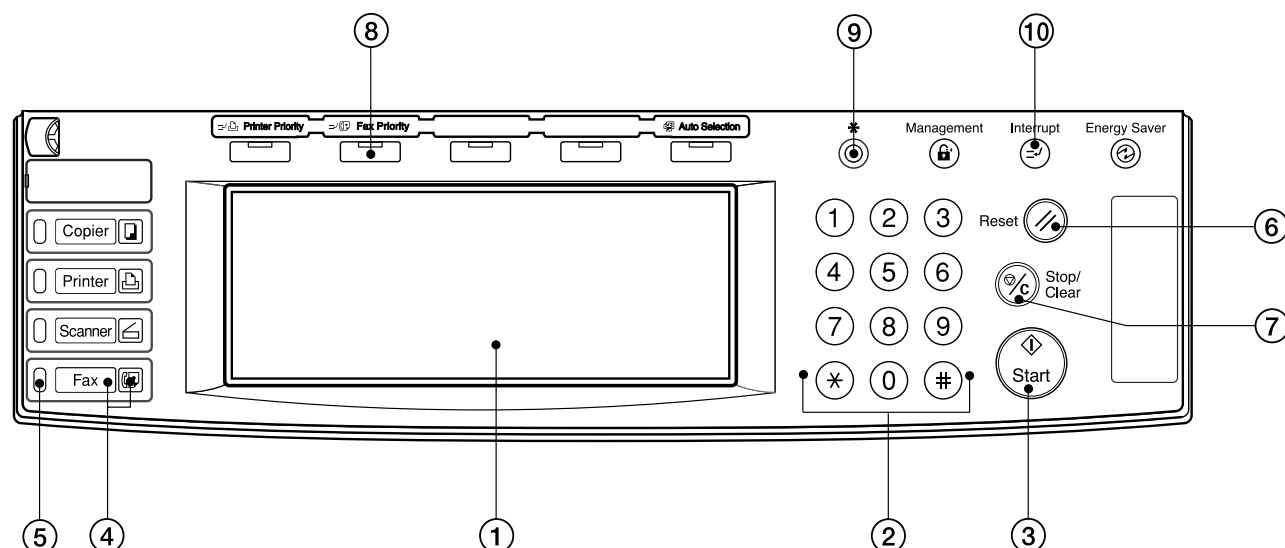


Figure 1-1-3

- 1 Touch panel Indicates operation procedures as well as trouble with the machine. Keys related to operational procedures which appear on the touch panel with their name displayed are indicated in this handbook within double quotation marks. In addition, you will be instructed to "touch" any keys which appear on the touch panel rather than "press" them. (Ex.: Touch the "xxx" key.)
- 2 Keypad Use the keypad to enter fax numbers, etc.
* Even if your telephone service is for pulse dialing, press the star (*) key and any key pressed on the keypad after that will transmit the related tone signal. (Inch version only)
- 3 Start key Press this key when you want to initiate a fax communication.
- 4 Fax key/Fax indicator Press this key when you want to switch between the Copy Operation and Fax Operation modes. The Fax indicator is lit when the machine is in the Fax Operation mode.
- 5 Fax data indicator When received documents or other data are being stored in memory, this indicator will flash and then light continuously.
- 6 Reset key Press this key when you want to cancel an operation in progress and have the touch panel return to the initial mode settings.
- 7 Stop/Clear key Press this key when you want to delete registered fax numbers or names, as well as when you want to stop an operation in progress.
- 8 Fax Priority key Press this key when you want to give priority to printing out a received fax during a copy operation.
- 9 Default key Press this key when you want to perform settings related to the various default modes for the fax functions of this machine.
- 10 Interrupt key/indicator lamp.. Press this key when you want to interrupt a fax reception in order to make copies. The indicator lamp in the Interrupt key will light when the machine is in the Interrupt mode.

(3) Basic fax screen on the touch panel

The initial screen that appears in the touch panel when you press the Fax key in any other mode in order to change to the Fax Operation mode is called the "basic fax screen". The following contains information on the basic keys which are displayed in this screen and their functions.

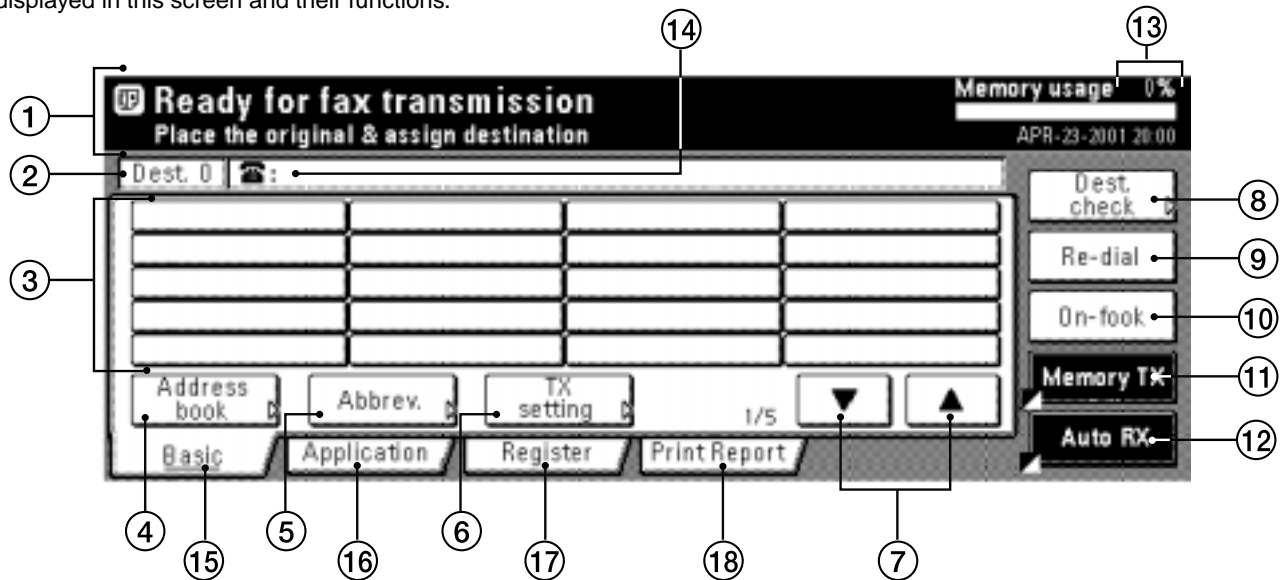


Figure 1-1-4

- | | | |
|----|---------------------------------------|---|
| 1 | Message display | Current status, the next step in a procedure and error messages are shown in the message display. |
| 2 | Number of destinations display | The number of destinations that you have chosen to dial to is shown in this area. |
| 3 | Speed-dial keys | Keys that you have registered to function as either a one-touch key, a group dial key (G), a program key (P) or a chain dial key (C) are displayed here. |
| 4 | "Address book" key | Touch this key when you want to use the address book. |
| 5 | "Abbrev." key | Touch this key when you want to use the abbreviated number that a destination number is registered under in order to dial that number. |
| 6 | "TX setting" key | Touch this key when you want to perform settings related to transmission conditions such as the size of the documents to be transmitted, the image quality of those documents, the contrast at which you want to send them and the time when they should be sent. Once you press this key, the TX Setting screen will appear. |
| 7 | "▲" and "▼" cursor keys | Use these keys when you want to display speed-dial keys other than those which are currently displayed. |
| 8 | "Dest. check" key | Touch this key when you have entered multiple destination fax numbers using speed-dial keys, etc., and you want to check the list of those numbers. |
| 9 | "Re-dial" key | Touch this key when you want to have the fax automatically redial the most recently dialed number |
| 10 | "On-hook" key | When a separately purchased telephone is connected to this fax machine and you touch this key, you can dial a destination number without having to pick up the receiver. |
| 11 | "Memory TX" / "Dir. Feed Tx" key .. | When you want to switch between the Memory Transmission mode ("Memory Tx") and the Direct Feed Transmission mode ("Dir. Feed Tx"). The mode will change each time you touch this key. |
| 12 | Reception mode select key | Touch this key when you want to select a different reception mode. The mode will change each time you touch this key. |
| 13 | Memory bar | Indicates the amount of data stored in memory. As documents are being stored, the bar will move towards "100%" indicating that the data stored in memory is increasing. Once it reaches "100%", no more documents can be stored in memory. |
| 14 | Fax number display | The number that you have entered to dial is displayed here. |
| 15 | "Basic" key | Touch this key when you want to return to the basic fax screen. |
| 16 | "Application" key | Touch this key when you want to use one of the various functions of this fax machine such as polling, etc. |
| 17 | "Register" ["Registration"] key | Touch this key when you want to perform one of the various registration procedures of this fax machine. |
| 18 | "Print Report" key | Touch this key when you want to print out one of the various reports or lists of this fax machine. |

1-1-3 Mechanical construction

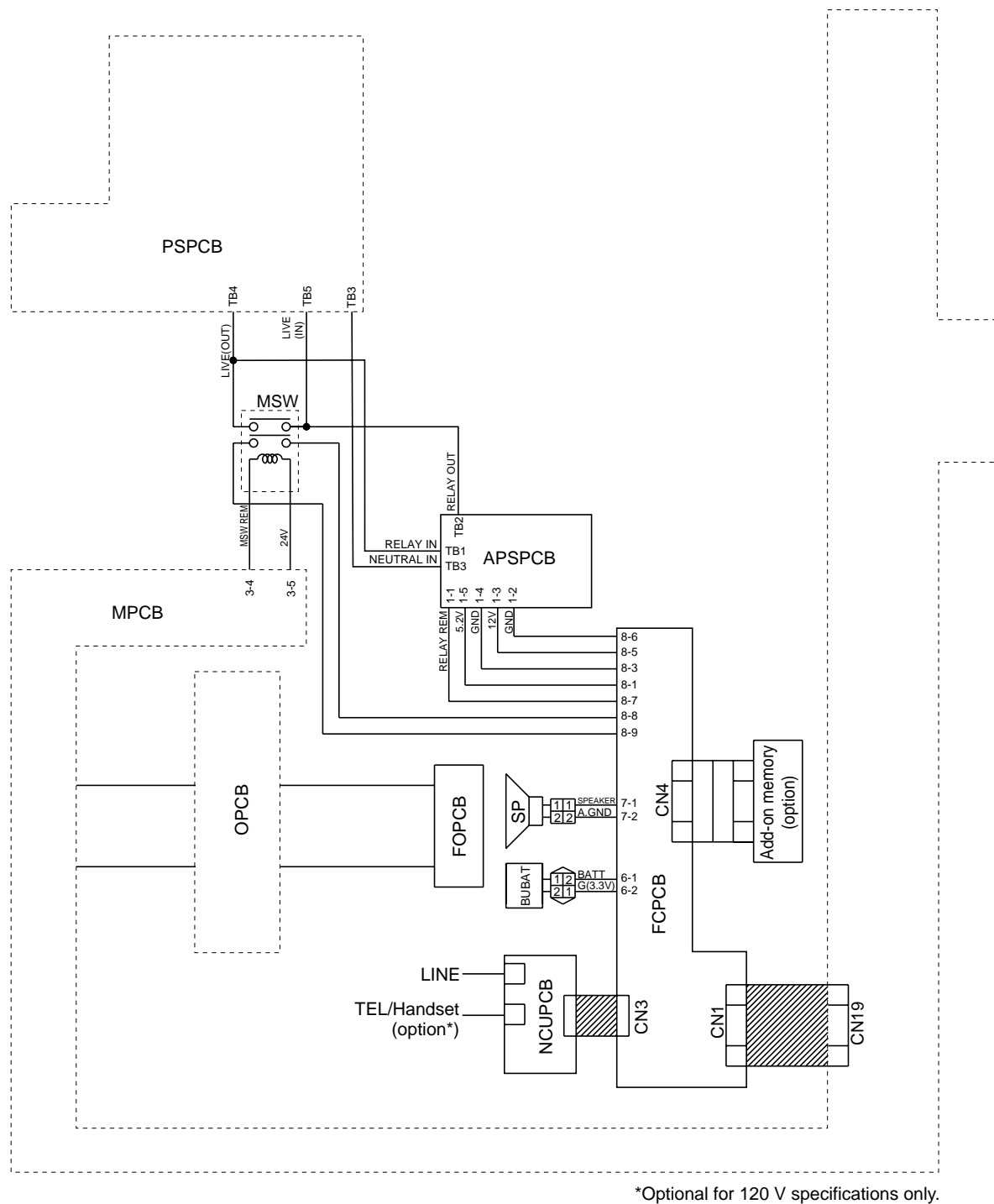


Figure 1-1-5

The fax system consists of the fax control PCB (FCPCB), NCU PCB (NCUPCB), auxiliary power source PCB (APSPCB), fax operation unit PCB (FOPCB), speaker (SP), backup battery (BUBAT) and optional add-on memory.

3CM

1-2-1 Setting and registering data

After setting up the machine, set or register the following data.

(1) Settings

- Setting the type of telephone line*¹
Select the setting (pulse or tone) according to the type of telephone line to be used.
- Setting the document size for scanning from the document feeder
Select the setting ("Standard size original" or "Long original") for scanning the original fed from the DF.
- Setting the paper feed selection mode
Select the paper feed mode ("Auto Selection mode", "Fixed Size mode" or "Fixed Cassette mode") for printing received fax or reports.
- Setting 2-in-1 reception
Select whether or not to output two successively-received A5/8¹/₂" × 5¹/₂" documents onto one A4R/8¹/₂" × 11" page.
- Setting the reception mode
Select an automatic reception mode (automatic fax reception, fax/telephone auto selection or D.R.D. reception*¹).
- Setting the memory fax forwarding
Select whether or not to perform memory fax forwarding.
- Setting report output condition
 - Select the output condition for the management report (output or not output by department).
 - Select the output condition for the activity report (output or not output after every 50 communications)
 - Select the output condition for the transmission report (output or not output after each transmission)
 - Select the output condition for the reception report (output or not output after each reception)
 - Select the output condition for the timer communication report (output or not output after each timer programming).
- Setting the TTI transmission
Select whether or not to add the transmit terminal identifier (TTI) to the transmitting document.
- Setting reception date and time recording
Select whether or not to record the date and time on received documents.
- Setting the password check communication
Select whether or not to perform password check communication.
- Setting the speaker volume
Set the volume of the speaker in the on-hook mode (4 levels).
- Setting the alarm buzzer volume
Set the volume of the alarm that sounds during events such as when an error occurs (3 levels).
- Setting the monitoring volume
Set the volume for the sounds from the speaker (4 levels).
- Setting the bulletin board
Select whether or not to use the bulletin board during polling transmission.
- Setting duplex reception*²
Select whether or not to print received documents on both sides of the paper.
- Setting the number of rings for automatic reception
Select the number of rings (1 to 15) that sound after call reception until fax data reception starts in the auto reception mode.
- Setting the number of rings for TAD reception
Set the number of rings (1 to 15) that sound after call reception until fax data reception starts in the TAD reception mode.
- Setting the number of rings for fax/telephone auto select mode*¹
Set the number of rings (0 to 15) that sound after call reception until fax data reception starts in the fax/telephone auto select mode.
- Setting remote diagnosis
Set to take advantage of our remote diagnosis system.
- Setting the dial confirmation
Set whether or not to display information such as destination names, with functions that use one-touch keys (one-touch dialing, group dialing and program dialing).
- Setting the default transmission mode
Select the transmission mode (memory transmission or direct feed transmission) to be used in the initial mode.

*1: For 120 V specifications only.

*2: When an optional duplex unit is installed.

(2) Registration

- Date and time
Set the current date and time.
- Self station information
Register the self telephone number, self station name and self station ID.
- One-touch dialing
Register destination fax (telephone) numbers and names under one-touch keys. Up to 300 entries can be registered.
- Abbreviated dialing
Register destination fax (telephone) numbers and names to desired abbreviated numbers (001 to 300). Up to 300 entries can be registered.
- Group dialing
Register multiple destination fax (telephone) numbers and names under a one-touch key for group dialing. Up to 300 entries can be registered.
- Program dialing
Register frequently used communication modes or fax numbers under one-touch keys. Up to 300 entries can be registered.
- Chain dialing
Register chain numbers and names under one-touch keys. Up to 300 entries can be registered.
- Remote switching number
Change the remote switching number, which is set to "55" at the factory, for receiving faxes using the telephone connected to the machine.
- Management password
Register a 4-digit password, which is set to "6482" at the factory, for encrypted communication.
- Cipher key password
Register a 16-digit cipher key password for encrypted communication.
- Encryption boxes
Register encryption boxes for receiving encrypted transmissions. Up to 20 boxes can be registered.
- Permit telephone numbers and IDs
Register the password (permit telephone number or ID) for password check communication.
- F-code confidential boxes
Register F-code confidential boxes for F-code based confidential communication. Up to 15 boxes can be registered.
- F-code relay boxes
Register F-code relay box for F-code based relay broadcast communication. Up to 15 boxes can be registered.
- Access codes
Register access codes for restricted access. Up to 50 codes can be registered.

1-2-2 Installing the optional add-on memory

Add-on memory installation on the fax control PCB assembly requires the following parts:
8 MB add-on memory (P/N: 2AW6001)

<Procedure>

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

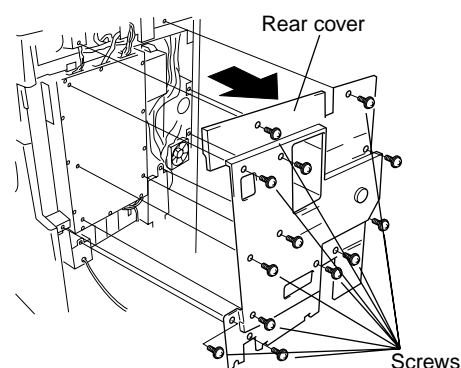


Figure 1-2-1

2. If the printing system is installed: Remove the 2 screws holding the printer system in place, and pull the printing system out of the controller box.

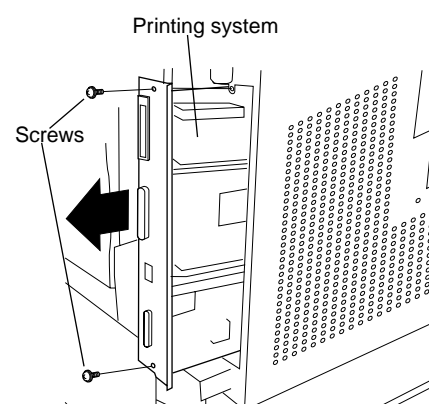


Figure 1-2-2

3. Remove 13 screws and take off the controller-box cover.

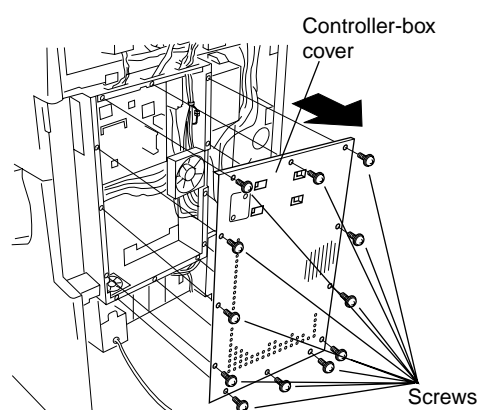


Figure 1-2-3

4. Insert the Memory module DIMM (8MB) at an angle into the memory slot on the fax board.
Important: The Memory module DIMM (8MB) must be installed onto the fax board. Please be sure that you do not install it onto the main PCB.

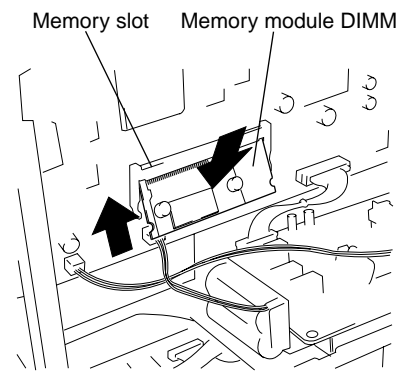


Figure 1-2-4

5. Push the free end of the module down toward the board.
6. Refit all removed parts.

1-3-1 Maintenance mode

(1) Maintenance mode item list

Section	Item No.	Maintenance item contents	Initial setting*
Fax	U600	Initializing all data	—
	U601	Initializing permanent data	—
	U602	Setting factory defaults	—
	U603	Setting the user registration data <ul style="list-style-type: none"> • Setting the self telephone number • Setting the type of telephone line • Setting the number of rings in the fax/telephone auto select mode • Setting remote diagnostic transmission 	— — — —
	U604	Clearing data <ul style="list-style-type: none"> • Clearing transmission history • Initializing the management password • Initializing the F-code confidential box ID • Initializes the F-code relay box ID • Initializes the encryption box ID 	— — — — —
	U605	Setting the system (operational) <ul style="list-style-type: none"> • Setting how to proceed if memory becomes full during memory transmission • Setting an alarm for when reception is completed • Selecting if auto reduction in the auxiliary direction is to be performed • Setting the addition of an image to the report • Setting the error report display format • Setting the line-monitoring period • Setting the one-shot detection time for remote switching • Setting the continuous detection time for remote switching • Setting the initial condition of fax image scanning quality 	— — — — — — — — —
	U606	Setting the system (operation unit and display) <ul style="list-style-type: none"> • Setting the conditions under which an error indicator turns off • Setting the date format • Setting if the image scanning quality in fax mode is initialized • Setting if the scanning density in fax mode is initialized • Setting whether to skip unregistered abbreviated numbers and one-touch key numbers on the list 	— — — — —
	U607	Setting the system (communication 1) <ul style="list-style-type: none"> • Setting the auto redialing interval • Setting the number of times of auto redialing • Setting the communication starting speed • Setting the reception speed • Setting the mode for remote switching • Setting the transmission intervals • Sets the loop current detection before dialing • Sets the DIS signal to 4 bytes 	— — — — — — — —
	U608	Setting transmission <ul style="list-style-type: none"> • Setting the method to process errors • Setting the number of times of DIS signal reception • Setting the reference for RTN signal output • Setting the waiting period to prevent echo problem at the sender • Setting the waiting period to prevent echo problem at the receiver • Setting ECM transmission • Setting ECM reception • Setting the criteria for receiving a TCF signal 1 • Setting the frequency of the CED signal 	— — — — — — — — —
	U609	Setting communication time <ul style="list-style-type: none"> • Setting the T0 time-out time • Setting the T1 time-out time • Setting the T2 time-out time • Setting the Ta time-out time • Setting the Tb1 time-out time • Setting the Tb2 time-out time • Setting the Tc time-out time • Setting the Td time-out time 	— — 69 30 20 80 60 —

Section	Item No.	Maintenance item contents	Initial setting
Fax	U610	Setting the modem output level • Setting the modem output level • Adjusting the modem output level	— —
	U611	G3 cable equalizer • Setting the G3 transmission cable equalizer • Setting the G3 reception cable equalizer	— —
	U612	Setting the modem detection level	—
	U613	Setting the DTMF output level • Setting the DTMF (high-frequency group) output level • Setting the DTMF (low-frequency group) output level	— —
	U614	Adjusting the DTMF output level • Adjusting the DTMF (high-frequency group) output level • Adjusting the DTMF (low-frequency group) output level	— —
	U615	Setting the NCU • Setting the connection to PBX/PSTN • Setting PSTN dial tone detection • Setting busy tone detection • Setting for a PBX	— — — —
	U616	Adjusting the ratio of make-to-break of dial pulses • Make time (10 PPS) • Make time (20 PPS)	— —
	U617	Outputting lists • Settings list • Action list • Monitor list • Own-status report • Protocol list • One-touch dialing ECM setting list	— — — — — —
	U650	Setting the system 1 • Setting the number of lines to be ignored when receiving a fax at 100% magnification • Setting the number of lines to be ignored when receiving a fax in the auto reduction mode • Setting the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode • Setting the recording width for inch specifications • Setting automatic printing of the protocol list	3 3 3 — —
	U651	Setting the system 2 • Setting the variation range in the auxiliary scanning direction for rotation reception • Setting the number of adjustment lines for automatic reduction • Setting the number of adjustment lines for automatic reduction when A4 paper is set • Setting the number of adjustment lines for automatic reduction when letter size paper is set	3 7 22 26
	U660	Setting the system (communication 2) • Setting the criteria for receiving a TCF signal 2 • Setting the short protocol transmission • Setting the reception of a short protocol transmission • Setting the CNG detection times in the fax/ telephone auto select mode • Turning ECM for one-touch dialing on/off	— — — — —
	U670	Setting the system (communication 3) • Setting if V.34 transmission is available • Setting the V.34 symbol speed (3429 Hz) • Setting the V.34 symbol speed (3200 Hz) • Setting the V.34 symbol speed (3000 Hz) • Setting the V.34 symbol speed (2800 Hz)	— — — — —
	U680	Displaying the fax board ROM version	—

Section	Item No.	Maintenance item contents	Initial setting
Fax	U881	Using the flash-memory jig • Saving data from SRAM into the jig • Writing data from the jig into RAM • Writing the boot program into the jig	—
	U894	Performing board test • Performing tests on SRAM and DRAM • Performing tests on optional memory	— —
Others	U992	Checking or clearing the printer/fax count	—

(2) Contents of maintenance mode items

Maintenance item No.	Description
U600	<p>Initializing all data</p> <p>Description Initializes software switches and all data in the SRAM on the fax control PCB, according to the destination and OEM.</p> <p>Purpose Used to initialize the fax control PCB.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for entering the destination code is displayed. Enter a destination code using the numeric keys (refer to the destination code list on page 1-3-5 for the destination code). <div data-bbox="345 564 678 659" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA COUNTRY CODE:000 </div> Press the start key. The screen for entering the OEM code is displayed. There is no operation necessary on this screen. <div data-bbox="345 739 678 833" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA OEM CODE:000 </div> Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key. After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed two seconds later. <div data-bbox="345 940 678 1035" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA COMPLETED 000 000 </div> <div data-bbox="345 1054 678 1148" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA COMPLETED V1.00 </div> <p>Caution If initialized with "000" (code for Japan) entered as the destination code, service call code C082 (fax control PCB problem) will be detected. Be sure to enter the correct destination code. If C082 (fax control PCB problem) is detected, press the COPY/FAX switching key to put the machine in the copy mode, open the front cover and then execute this maintenance item again to enter the correct destination code and initialize data.</p>

Maintenance item No.	Description																																																																								
U600 (cont.)	Destination code list <table><tr><th>Code</th><th>Destination</th><th>Code</th><th>Destination</th><th>Code</th><th>Destination</th></tr><tr><td>000</td><td>Japan</td><td>159</td><td>South Africa</td><td>253</td><td>Sweden</td></tr><tr><td>009</td><td>Australia</td><td>169</td><td>Thailand</td><td></td><td>France</td></tr><tr><td>080</td><td>Hong Kong</td><td>181</td><td>U.S.A.</td><td></td><td>Austria</td></tr><tr><td>084</td><td>Indonesia</td><td>242</td><td>South America</td><td></td><td>Switzerland</td></tr><tr><td>088</td><td>Israel</td><td>243</td><td>Saudi Arabia</td><td></td><td>Belgium</td></tr><tr><td>108</td><td>Malaysia</td><td>253</td><td>CTR21 (European nations)</td><td></td><td>Denmark</td></tr><tr><td>126</td><td>New Zealand</td><td></td><td>Italy</td><td></td><td>Finland</td></tr><tr><td>136</td><td>Peru</td><td></td><td>Germany</td><td></td><td>Portugal</td></tr><tr><td>137</td><td>Philippines</td><td></td><td>Spain</td><td></td><td>Ireland</td></tr><tr><td>152</td><td>Middle East</td><td></td><td>U.K.</td><td></td><td>Norway</td></tr><tr><td>156</td><td>Singapore</td><td></td><td>Netherlands</td><td>254</td><td>Taiwan</td></tr></table>	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
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156	Singapore		Netherlands	254	Taiwan																																																																				
U601	Initializing permanent data <p>Description Initializes software switches other than that for machine data on the fax control PCB according to the destination and OEM.</p> <p>Purpose Used to initialize the fax control PCB without changing user registration data and factory settings.</p> <p>Method</p> <ol style="list-style-type: none">Press the start key. The screen for entering the destination code is displayed. Enter a destination code using the numeric keys (refer to the destination code list on page 1-3-5 for the destination code).<div>INI. KEEP DATA COUNTRY CODE:000</div>Press the start key. The screen for entering the OEM code is displayed. There is no operation necessary on this screen.<div>INI. KEEP DATA OEM CODE:000</div>Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key.After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed two seconds later.<div>INI. KEEP DATA COMPLETED 000 000</div><div>INI. KEEP DATA COMPLETED V1.00</div> <p>Caution If initialized with "000" (code for Japan) entered as the destination code, service call code C082 (fax control PCB problem) will be detected. Be sure to enter the correct destination code. If C082 (fax control PCB problem) is detected, press the COPY/FAX switching key to put the machine in the copy mode, open the front cover and then execute this maintenance item again to enter the correct destination code and initialize data.</p>																																																																								

Maintenance item No.	Description
U602	<p data-bbox="303 189 570 216">Setting factory defaults</p> <p data-bbox="303 224 435 252">Description</p> <p data-bbox="303 254 1453 310">Initializes software switches other than that for machine data and the SRAM on the fax control PCB, according to the destination and OEM.</p> <p data-bbox="303 319 399 346">Purpose</p> <p data-bbox="303 348 917 375">Used to initialize the fax control PCB to the factory default.</p> <p data-bbox="303 384 388 411">Method</p> <ol data-bbox="310 413 1453 501" style="list-style-type: none">1. Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key.2. After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed two seconds later. <div data-bbox="347 506 678 600"><p data-bbox="362 520 618 583">INI. SHIP DATA COMPLETED 000 000</p></div> <div data-bbox="347 619 678 714"><p data-bbox="362 634 591 697">INI. SHIP DATA COMPLETED V1.00</p></div>

Maintenance item No.	Description																												
U603	<p>Setting the user registration data</p> <p>Description Makes user settings to enable the use of the copier as a fax.</p> <p>Purpose To be run after installation of the facsimile kit if necessary.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SELF TEL No.</td><td>Sets the self telephone number.</td></tr> <tr> <td>LINE TYPE</td><td>Sets the type of telephone line.</td></tr> <tr> <td>RINGS (F/T) #</td><td>Sets the number of rings in fax/telephone auto select mode.</td></tr> <tr> <td>REMOTE DIAG</td><td>Sets remote diagnostic transmission.</td></tr> </tbody> </table> <p>Setting the self telephone number</p> <ol style="list-style-type: none"> Enter the telephone number using the numeric keys. Up to 20 digits can be entered. To correct the entered telephone number or to delete the stored telephone number, reset by pressing the stop/clear key. Press the start key. To return to the screen for selecting an item, press the stop/clear key. The item-selection screen does not reappear until registration or deletion processing is completed. <p>Setting the type of telephone line</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: DTMF</td><td>DTMF</td></tr> <tr> <td>2: 10</td><td>10 PPS</td></tr> <tr> <td>3: 20</td><td>20 PPS</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the number of rings in the fax/telephone auto select mode</p> <p>Use this if the user wishes to adjust the number of rings that occur before the unit switches into fax receiving mode when fax/telephone auto-select is enabled.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of fax/telephone rings</td><td>0 to 15</td></tr> </tbody> </table> <p>If you set this to 0, the unit will start fax reception without any ringing.</p> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting remote diagnostic transmission</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to select if remote diagnostic transmission is to be enabled. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Remote diagnostic transmission is enabled.</td></tr> <tr> <td>2: OFF</td><td>Remote diagnostic transmission is disabled.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SELF TEL No.	Sets the self telephone number.	LINE TYPE	Sets the type of telephone line.	RINGS (F/T) #	Sets the number of rings in fax/telephone auto select mode.	REMOTE DIAG	Sets remote diagnostic transmission.	Display	Description	1: DTMF	DTMF	2: 10	10 PPS	3: 20	20 PPS	Description	Setting range	Number of fax/telephone rings	0 to 15	Display	Description	1: ON	Remote diagnostic transmission is enabled.	2: OFF	Remote diagnostic transmission is disabled.
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Maintenance item No.	Description																										
U604	<p>Clearing data</p> <p>Description Initializes data related to the fax transmission such as transmission history and IDs.</p> <p>Purpose Used to clear the transmission history or if an ID has been forgotten.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. Initialization processing starts. When processing is finished, the screen displays "COMPLETED". <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>COMM. REC</td><td>Clears the activity report, error list, action list, transmission history of each department as listed on the department control report, transmission history for displaying the transmission results, document number, timer program information, protocol list, and other transmission history such as image data, excluding items regarding the machine variation adjustment.</td></tr> <tr> <td>MANAGE PW</td><td>Initializes the management password.</td></tr> <tr> <td>F-CODE ID</td><td>Initializes the F-code confidential box ID.</td></tr> <tr> <td>F-CODE ID</td><td>Initializes the F-code relay box ID.</td></tr> <tr> <td>ENCRPT ID</td><td>Initializes the encryption box ID.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	COMM. REC	Clears the activity report, error list, action list, transmission history of each department as listed on the department control report, transmission history for displaying the transmission results, document number, timer program information, protocol list, and other transmission history such as image data, excluding items regarding the machine variation adjustment.	MANAGE PW	Initializes the management password.	F-CODE ID	Initializes the F-code confidential box ID.	F-CODE ID	Initializes the F-code relay box ID.	ENCRPT ID	Initializes the encryption box ID.														
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U605	<p>Setting the system (operational)</p> <p>Description Makes settings for fax transmission regarding operation.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MEM. FULL</td><td>Sets how to proceed if memory becomes full during memory transmission.</td></tr> <tr> <td>FIN. ALARM</td><td>Sets an alarm for when reception is completed.</td></tr> <tr> <td>AUTO REDU</td><td>Selects if auto reduction in the auxiliary direction is to be performed.</td></tr> <tr> <td>ADD IMAGE</td><td>Sets for the addition of an image to the report.</td></tr> <tr> <td>ERR. CODE</td><td>Sets the error report display format.</td></tr> <tr> <td>MONITOR</td><td>Sets the line-monitoring period.</td></tr> <tr> <td>TIME (ONE)</td><td>Sets the one-shot detection time for remote switching.</td></tr> <tr> <td>TIME (CON)</td><td>Sets the continuous detection time for remote switching.</td></tr> <tr> <td>RESOLUT</td><td>Sets the initial condition of fax image scanning quality.</td></tr> </tbody> </table> <p>Setting how to proceed if memory becomes full during memory transmission Used to select whether to send only stored data or to display an error indication and cancel transmission if memory becomes full during memory transmission.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: CONT</td><td>Whether to continue memory transmission or to clear the memory can be selected by the user.</td></tr> <tr> <td>2: STOP</td><td>Memory is forcibly cleared.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	MEM. FULL	Sets how to proceed if memory becomes full during memory transmission.	FIN. ALARM	Sets an alarm for when reception is completed.	AUTO REDU	Selects if auto reduction in the auxiliary direction is to be performed.	ADD IMAGE	Sets for the addition of an image to the report.	ERR. CODE	Sets the error report display format.	MONITOR	Sets the line-monitoring period.	TIME (ONE)	Sets the one-shot detection time for remote switching.	TIME (CON)	Sets the continuous detection time for remote switching.	RESOLUT	Sets the initial condition of fax image scanning quality.	Display	Description	1: CONT	Whether to continue memory transmission or to clear the memory can be selected by the user.	2: STOP	Memory is forcibly cleared.
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U605 (cont.)	<p>Setting an alarm for when reception is completed</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>An alarm rings.</td></tr> <tr> <td>2: OFF</td><td>An alarm does not ring.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Selecting if auto reduction in the auxiliary direction is to be performed</p> <p>Sets whether to receive a long document by automatically reducing it in the auxiliary direction or at 100% magnification.</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Auto reduction is performed if the received document is longer than the fax paper.</td></tr> <tr> <td>2: OFF</td><td>Auto reduction is not performed.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the addition of an image to the report</p> <p>Selects if an image is to be added to the transmission report.</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Image added.</td></tr> <tr> <td>2: OFF</td><td>Image not added.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the error report display format</p> <p>Selects the format of the transmission report when a transmission error occurs.</p> <p>1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: WORDS</td><td>Records an error message (BUSY, OK, ERROR or STOP).</td></tr> <tr> <td>2: CODE</td><td>Records a six-digit error code.</td></tr> <tr> <td>3: MIX</td><td>Records either an error message or code.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the line-monitoring period</p> <p>Sets the period to monitor the line. By monitoring a transmission from the start to the end, it can be checked whether the transmission was correct or not.</p> <p>1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: END</td><td>Until transmission is completed.</td></tr> <tr> <td>2: DIS</td><td>After dialing is completed until reception of a DIS signal.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the one-shot detection time for remote switching</p> <p>Sets the detection time when one-shot detection is selected for remote switching. (This setting item will be displayed, but the setting made is ineffective.)</p> <p>1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>One-shot detection time for remote switching</td><td>0 to 255 ms</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p>	Display	Description	1: ON	An alarm rings.	2: OFF	An alarm does not ring.	Display	Description	1: ON	Auto reduction is performed if the received document is longer than the fax paper.	2: OFF	Auto reduction is not performed.	Display	Description	1: ON	Image added.	2: OFF	Image not added.	Display	Description	1: WORDS	Records an error message (BUSY, OK, ERROR or STOP).	2: CODE	Records a six-digit error code.	3: MIX	Records either an error message or code.	Display	Description	1: END	Until transmission is completed.	2: DIS	After dialing is completed until reception of a DIS signal.	Description	Setting range	One-shot detection time for remote switching	0 to 255 ms
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U605 (cont.)	<p>Setting the continuous detection time for remote switching Sets the detection time when continuous detection is selected for remote switching. (This setting item will be displayed, but the setting made is ineffective.)</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Continuous detection time for remote switching</td><td>0 to 255 ms</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the initial condition of fax image scanning quality Set to the resolution that is most frequently used by the user.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: S</td><td>Standard</td></tr> <tr> <td>2: F</td><td>Fine</td></tr> <tr> <td>3: SF</td><td>Super fine</td></tr> <tr> <td>4: UF</td><td>Ultra fine</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Continuous detection time for remote switching	0 to 255 ms	Display	Description	1: S	Standard	2: F	Fine	3: SF	Super fine	4: UF	Ultra fine												
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U606	<p>Setting the system (operation unit and display)</p> <p>Description Makes settings for fax transmission regarding the operation unit and display.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. Note: Since this model does not provide LED error indicators, this setting has no affect on actual operation. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ALARM LED OFF</td><td>Sets the conditions under which an error indicator turns off.</td></tr> <tr> <td>DATE PATTERN</td><td>Sets the date format.</td></tr> <tr> <td>RESO. LOCK</td><td>Sets if the image scanning quality in fax mode is initialized.</td></tr> <tr> <td>DENS. LOCK</td><td>Sets if the scanning density in fax mode is initialized.</td></tr> <tr> <td>REPORT SKIP</td><td>Sets whether to skip unregistered abbreviated numbers and one-touch key numbers on the list.</td></tr> </tbody> </table> <p>Setting the conditions under which an error indicator turns off</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: RESET</td><td>An error indicator turns off only when the reset key is pressed.</td></tr> <tr> <td>2: COMM</td><td>An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the date format Selects the date format on the respective reports and sender's information record.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Order</th></tr> </thead> <tbody> <tr> <td>1: YMD</td><td>Year/month/day</td></tr> <tr> <td>2: MDY</td><td>Month/day/year</td></tr> <tr> <td>3: DMY</td><td>Day/month/year</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	ALARM LED OFF	Sets the conditions under which an error indicator turns off.	DATE PATTERN	Sets the date format.	RESO. LOCK	Sets if the image scanning quality in fax mode is initialized.	DENS. LOCK	Sets if the scanning density in fax mode is initialized.	REPORT SKIP	Sets whether to skip unregistered abbreviated numbers and one-touch key numbers on the list.	Display	Description	1: RESET	An error indicator turns off only when the reset key is pressed.	2: COMM	An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.	Display	Order	1: YMD	Year/month/day	2: MDY	Month/day/year	3: DMY	Day/month/year
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Maintenance item No.	Description																		
U606 (cont.)	<p>Setting if the image scanning quality in fax mode is initialized Sets if the resolution is to be initialized when fax operation is complete.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Resolution is initialized.</td></tr> <tr> <td>2: OFF</td><td>Resolution is not initialized.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting if the scanning density in fax mode is initialized Sets if the scanning density is initialized when fax operation is complete.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Density is initialized.</td></tr> <tr> <td>2: OFF</td><td>Density is not initialized.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting whether to skip unregistered abbreviated numbers and one-touch key numbers on the list Sets whether to skip unregistered abbreviated numbers and one-touch key numbers on the list.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Unregistered numbers are skipped.</td></tr> <tr> <td>2: OFF</td><td>Unregistered numbers are not skipped.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: ON	Resolution is initialized.	2: OFF	Resolution is not initialized.	Display	Description	1: ON	Density is initialized.	2: OFF	Density is not initialized.	Display	Description	1: ON	Unregistered numbers are skipped.	2: OFF	Unregistered numbers are not skipped.
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U607	<p>Setting the system (communication 1)</p> <p>Description Makes settings for fax transmission regarding the communication.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>INTERVAL</td><td>Sets the auto redialing interval.</td></tr> <tr> <td>TIMES</td><td>Sets the number of times of auto redialing.</td></tr> <tr> <td>TX SPEED</td><td>Sets the communication starting speed.</td></tr> <tr> <td>RX SPEED</td><td>Sets the reception speed.</td></tr> <tr> <td>REMOTE</td><td>Sets the mode for remote switching.</td></tr> <tr> <td>CALL INT</td><td>Sets the transmission intervals.</td></tr> <tr> <td>DC LOOP</td><td>Sets the loop current detection before dialing.</td></tr> <tr> <td>DIS 4BYTE</td><td>Sets the DIS signal to 4 bytes.</td></tr> </tbody> </table> <p>Setting the auto redialing interval Change the setting to prevent the following problems: fax transmission is not possible due to too short redial interval, or fax transmission takes too much time to complete due to too long redial interval.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Redialing interval</td><td>1 to 9 min.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the number of times of auto redialing</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of redialing</td><td>0 to 9</td></tr> </tbody> </table> <p>When set to 0, no redialing is performed.</p> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the communication starting speed Sets the initial communication speed when starting transmission. When the destination unit has V.34 capability, V.34 is selected for transmission, regardless of this setting.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 144</td><td>V.17, 14400 bps</td></tr> <tr> <td>2: 96</td><td>V.17, 9600 bps</td></tr> <tr> <td>3: 48</td><td>V.27ter, 4800 bps</td></tr> <tr> <td>4: 24</td><td>V.27ter, 2400 bps</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the reception speed Sets the reception speed that the sender is informed of using the DIS or NSF signal. When the destination unit has V.34 capability, V.34 is selected, regardless of the setting.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 144</td><td>V.17, V.33, V.29, V.27ter</td></tr> <tr> <td>2: 96</td><td>V.29, V.27ter</td></tr> <tr> <td>3: 48</td><td>V.27ter</td></tr> <tr> <td>4: 24</td><td>V.27ter (fallback only)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	INTERVAL	Sets the auto redialing interval.	TIMES	Sets the number of times of auto redialing.	TX SPEED	Sets the communication starting speed.	RX SPEED	Sets the reception speed.	REMOTE	Sets the mode for remote switching.	CALL INT	Sets the transmission intervals.	DC LOOP	Sets the loop current detection before dialing.	DIS 4BYTE	Sets the DIS signal to 4 bytes.	Description	Setting range	Redialing interval	1 to 9 min.	Description	Setting range	Number of redialing	0 to 9	Display	Description	1: 144	V.17, 14400 bps	2: 96	V.17, 9600 bps	3: 48	V.27ter, 4800 bps	4: 24	V.27ter, 2400 bps	Display	Description	1: 144	V.17, V.33, V.29, V.27ter	2: 96	V.29, V.27ter	3: 48	V.27ter	4: 24	V.27ter (fallback only)
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U607 (cont.)	<p>Setting the mode for remote switching Sets the signal detection method for remote switching. Be sure to change the setting according to the type of telephone connected to the machine.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ONE</td><td>One-shot detection</td></tr> <tr> <td>2: CONT</td><td>Continuous detection</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the transmission intervals Sets the minimum time required for connection to the line for the next transmission after the previous transmission was completed. Change the setting if transmission problems occur during multi-transmission, such as broadcasting and polling transmission, or reserved transmission.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 10</td><td>10 s</td></tr> <tr> <td>2: 30</td><td>30 s</td></tr> <tr> <td>3: 70</td><td>70 s</td></tr> <tr> <td>4: 120</td><td>120 s</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the loop current detection before dialing Sets if the loop current detection is performed before dialing.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Performs loop current detection before dialing.</td></tr> <tr> <td>2: OFF</td><td>Does not perform loop current detection before dialing.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the DIS signal to 4 bytes Sets if bit 33 and later bits of the DIS/DTC signal are sent.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Bit 33 and later bits of the DIS/DTC signal are not sent.</td></tr> <tr> <td>2: OFF</td><td>Bit 33 and later bits of the DIS/DTC signal are sent.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: ONE	One-shot detection	2: CONT	Continuous detection	Display	Description	1: 10	10 s	2: 30	30 s	3: 70	70 s	4: 120	120 s	Display	Description	1: ON	Performs loop current detection before dialing.	2: OFF	Does not perform loop current detection before dialing.	Display	Description	1: ON	Bit 33 and later bits of the DIS/DTC signal are not sent.	2: OFF	Bit 33 and later bits of the DIS/DTC signal are sent.
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U608	<p>Setting transmission</p> <p>Description Makes settings regarding fax transmission.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ERROR</td><td>Sets the method to process errors.</td></tr> <tr> <td>DIS-2 RES</td><td>Sets the number of times of DIS signal reception.</td></tr> <tr> <td>RTN CHECK</td><td>Sets the reference for RTN signal output.</td></tr> <tr> <td>TX ECHO</td><td>Sets the waiting period to prevent echo problems at the sender.</td></tr> <tr> <td>RX ECHO</td><td>Sets the waiting period to prevent echo problems at the receiver.</td></tr> <tr> <td>ECM TX</td><td>Sets ECM transmission.</td></tr> <tr> <td>ECM RX</td><td>Sets ECM reception.</td></tr> <tr> <td>TCF CHECK</td><td>Sets the criteria for receiving a TCF signal 1.</td></tr> <tr> <td>CED FREQ.</td><td>Sets the frequency of the CED signal.</td></tr> </tbody> </table> <p>Setting the method to process errors Selects if transmission is to be treated as an error if an RTN or PIN signal is received. If it is treated as an error, an alarm sounds and a transmission report is output.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: OK</td><td>Transmission is not treated as an error.</td></tr> <tr> <td>2: ERROR</td><td>Transmission is treated as an error.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the number of times of DIS signal reception Sets the number of times to receive the DIS signal to once or twice. Used as one of the correction measures for transmission errors and other problems.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ONCE</td><td>Responds to the first signal.</td></tr> <tr> <td>2: TWICE</td><td>Responds to the second signal.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the reference for RTN signal output Sets the error line rate as the reference for RTN signal output. If transmission errors occur frequently due to the quality of the line, they can be reduced by lowering this setting.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 5</td><td>Error line rate of 5%</td></tr> <tr> <td>2: 10</td><td>Error line rate of 10%</td></tr> <tr> <td>3: 15</td><td>Error line rate of 15%</td></tr> <tr> <td>4: 20</td><td>Error line rate of 20%</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	ERROR	Sets the method to process errors.	DIS-2 RES	Sets the number of times of DIS signal reception.	RTN CHECK	Sets the reference for RTN signal output.	TX ECHO	Sets the waiting period to prevent echo problems at the sender.	RX ECHO	Sets the waiting period to prevent echo problems at the receiver.	ECM TX	Sets ECM transmission.	ECM RX	Sets ECM reception.	TCF CHECK	Sets the criteria for receiving a TCF signal 1.	CED FREQ.	Sets the frequency of the CED signal.	Display	Description	1: OK	Transmission is not treated as an error.	2: ERROR	Transmission is treated as an error.	Display	Description	1: ONCE	Responds to the first signal.	2: TWICE	Responds to the second signal.	Display	Description	1: 5	Error line rate of 5%	2: 10	Error line rate of 10%	3: 15	Error line rate of 15%	4: 20	Error line rate of 20%
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Maintenance item No.	Description																												
U608 (cont.)	<p>Setting the waiting period to prevent echo problems at the sender Sets the period before a DCS signal is sent after a DIS signal is received. Used when problems occur due to echoes at the sender.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 500</td><td>Sends a DCS 500 ms after receiving a DIS.</td></tr> <tr> <td>2: 300</td><td>Sends a DCS 300 ms after receiving a DIS.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the waiting period to prevent echo problems at the receiver Sets the period before an NSF, CSI or DIS signal is sent after a CED signal is received. Used when problems occur due to echoes at the receiver.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 500</td><td>Sends an NSF, CSI or DIS 500 ms after receiving a CED.</td></tr> <tr> <td>2: 75</td><td>Sends an NSF, CSI or DIS 75 ms after receiving a CED.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting ECM transmission To be set to OFF when reduction of transmission costs is of higher priority than image quality.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM transmission is enabled.</td></tr> <tr> <td>2: OFF</td><td>ECM transmission is disabled.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting ECM reception To be set to OFF when reduction of transmission costs is of higher priority than image quality.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM reception is enabled.</td></tr> <tr> <td>2: OFF</td><td>ECM reception is disabled.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the criteria for receiving a TCF signal 1 Sets the maximum number of error bytes judged acceptable when receiving a TCF signal. Used as a measure to ease transmission conditions if transmission errors occur.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of allowed error bytes when detecting TCF</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	1: 500	Sends a DCS 500 ms after receiving a DIS.	2: 300	Sends a DCS 300 ms after receiving a DIS.	Display	Description	1: 500	Sends an NSF, CSI or DIS 500 ms after receiving a CED.	2: 75	Sends an NSF, CSI or DIS 75 ms after receiving a CED.	Display	Description	1: ON	ECM transmission is enabled.	2: OFF	ECM transmission is disabled.	Display	Description	1: ON	ECM reception is enabled.	2: OFF	ECM reception is disabled.	Description	Setting range	Number of allowed error bytes when detecting TCF	0 to 255
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Maintenance item No.	Description																										
U608 (cont.)	<p>Setting the frequency of the CED signal Sets the frequency of the CED signal. Used as one of the measures to improve transmission performance for international communications.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the frequency. <table border="1"> <thead> <tr> <th>Display</th><th>Frequency of the CED signal</th></tr> </thead> <tbody> <tr> <td>1: 2100</td><td>2100 Hz</td></tr> <tr> <td>2: 1100</td><td>1100 Hz</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Frequency of the CED signal	1: 2100	2100 Hz	2: 1100	1100 Hz																				
Display	Frequency of the CED signal																										
1: 2100	2100 Hz																										
2: 1100	1100 Hz																										
U609	<p>Setting communication time</p> <p>Description Sets the time-out time for fax transmission.</p> <p>Purpose Used mainly to improve transmission performance for international communications.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>T0</td><td>Sets the T0 time-out time.</td></tr> <tr> <td>T1</td><td>Sets the T1 time-out time.</td></tr> <tr> <td>T2</td><td>Sets the T2 time-out time.</td></tr> <tr> <td>Ta</td><td>Sets the Ta time-out time.</td></tr> <tr> <td>Tb1</td><td>Sets the Tb1 time-out time.</td></tr> <tr> <td>Tb2</td><td>Sets the Tb2 time-out time.</td></tr> <tr> <td>Tc</td><td>Sets the Tc time-out time.</td></tr> <tr> <td>Td</td><td>Sets the Td time-out time.</td></tr> </tbody> </table> <p>Setting the T0 time-out time Sets the time before detecting a DIS signal after a dialing signal is sent. Depending on the quality of the exchange, or when the auto select function is selected at the destination unit, a line can be disconnected. Change the setting to prevent this problem.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>T0 time-out time</td><td>30 to 90 s</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the T1 time-out time Sets the time before receiving the correct signal after call reception. No change is necessary for this maintenance item.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>T1 time-out time</td><td>30 to 90 s</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	T0	Sets the T0 time-out time.	T1	Sets the T1 time-out time.	T2	Sets the T2 time-out time.	Ta	Sets the Ta time-out time.	Tb1	Sets the Tb1 time-out time.	Tb2	Sets the Tb2 time-out time.	Tc	Sets the Tc time-out time.	Td	Sets the Td time-out time.	Description	Setting range	T0 time-out time	30 to 90 s	Description	Setting range	T1 time-out time	30 to 90 s
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T1 time-out time	30 to 90 s																										

Maintenance item No.	Description																														
U609 (cont.)	<p>Setting the T2 time-out time</p> <p>The T2 time-out time decides the following.</p> <ul style="list-style-type: none">• From CFR signal output to image data reception• From image data reception to the next signal reception• In ECM, from RNR signal detection to the next signal reception <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>T2 time-out time</td><td>1 to 255</td><td>69</td><td>100 ms</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the Ta time-out time</p> <p>In the fax/telephone auto select mode, sets the time to continue ringing an operator through the connected telephone after receiving a call as a fax machine (see figure 1-3-1). A fax signal is received within the Ta set time, or the fax mode is selected automatically when the time elapses. In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.</p> <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Ta time-out time</td><td>1 to 255 s</td><td>30</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key. <div><p>The diagram illustrates the timing sequence for fax reception. It starts with 'Ring detection'. After a period, 'Line connection as a fax machine' occurs. Following this, 'Ring back tone send start' happens. The time between 'Line connection as a fax machine' and 'Ring back tone send start' is labeled 'Tb1'. The time between 'Ring back tone send start' and 'Rings' is labeled 'Tb2'. The time between 'Rings' and 'Start of fax reception' is labeled 'Ta'.</p></div> <p>Figure 1-3-1 Ta/Tb1/Tb2 time-out time</p> <p>Setting the Tb1 time-out time</p> <p>In the fax/telephone auto select mode, sets the time to start sending the ring back tone after receiving a call as a fax machine (see figure 1-3-1). In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.</p> <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Tb1 time-out time</td><td>1 to 255</td><td>20</td><td>100 ms</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the Tb2 time-out time</p> <p>In the fax/telephone auto select mode, sets the time to start ringing an operator through the connected telephone after receiving a call as a fax machine (see figure 1-3-1). In the fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.</p> <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Tb2 time-out time</td><td>1 to 255</td><td>80</td><td>100 ms</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Change in value per step	T2 time-out time	1 to 255	69	100 ms	Description	Setting range	Initial setting	Ta time-out time	1 to 255 s	30	Description	Setting range	Initial setting	Change in value per step	Tb1 time-out time	1 to 255	20	100 ms	Description	Setting range	Initial setting	Change in value per step	Tb2 time-out time	1 to 255	80	100 ms
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Tb2 time-out time	1 to 255	80	100 ms																												

Maintenance item No.	Description										
U609 (cont.)	<p>Setting the Tc time-out time</p> <p>In the TAD mode, set the time to check if there are any triggers for shifting to fax reception after a connected telephone receives a call. Only the telephone function is available if shifting is not made within the set Tc time. In the TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Tc time-out time</td><td>1 to 255 s</td><td>60</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the Td time-out time</p> <p>Sets the length of the time required to determine silent status (fax), one of the triggers for Tc time check. In the TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. Be sure not to set it too short; otherwise, the mode may be shifted to fax while the unit is being used as a telephone.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>Td time-out time</td><td>1 to 255 s</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Tc time-out time	1 to 255 s	60	Description	Setting range	Td time-out time	1 to 255 s
Description	Setting range	Initial setting									
Tc time-out time	1 to 255 s	60									
Description	Setting range										
Td time-out time	1 to 255 s										

Maintenance item No.	Description																														
U610	<p>Setting the modem output level</p> <p>Description Sets the modem output level.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SGL LEVEL MODEM</td><td>Sets the modem output level.</td></tr> <tr> <td>SGL OUTPUT ADJ</td><td>Adjusts the modem output level.</td></tr> </tbody> </table> <p>Setting the modem output level To be set when installing the machine in order to adapt to the line characteristics.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Modem output level</td><td>4 to 12</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Adjusting the modem output level No change is necessary from the factory default.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Setting</th><th>Output level</th></tr> </thead> <tbody> <tr><td>12</td><td>1.0 dBm</td></tr> <tr><td>11</td><td>0.75 dBm</td></tr> <tr><td>10</td><td>0.5 dBm</td></tr> <tr><td>9</td><td>0.25 dBm</td></tr> <tr><td>8</td><td>0 dBm</td></tr> <tr><td>7</td><td>-0.25 dBm</td></tr> <tr><td>6</td><td>-0.5 dBm</td></tr> <tr><td>5</td><td>-0.75 dBm</td></tr> <tr><td>4</td><td>-1.0 dBm</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SGL LEVEL MODEM	Sets the modem output level.	SGL OUTPUT ADJ	Adjusts the modem output level.	Description	Setting range	Modem output level	4 to 12	Setting	Output level	12	1.0 dBm	11	0.75 dBm	10	0.5 dBm	9	0.25 dBm	8	0 dBm	7	-0.25 dBm	6	-0.5 dBm	5	-0.75 dBm	4	-1.0 dBm
Display	Description																														
SGL LEVEL MODEM	Sets the modem output level.																														
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9	0.25 dBm																														
8	0 dBm																														
7	-0.25 dBm																														
6	-0.5 dBm																														
5	-0.75 dBm																														
4	-1.0 dBm																														

Maintenance item No.	Description																										
U611	<p>G3 cable equalizer</p> <p>Description Sets the G3 cable equalizer.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1" data-bbox="347 411 1073 512"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>REG. G3 TX EQR</td><td>Sets the G3 transmission cable equalizer.</td></tr> <tr> <td>REG. G3 RX EQR</td><td>Sets the G3 reception cable equalizer.</td></tr> </tbody> </table> <p>Setting the G3 transmission cable equalizer Perform the following adjustment to make the equalizer compatible with the line characteristics.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1" data-bbox="347 623 906 785"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 0</td><td>0 km</td></tr> <tr> <td>2: 18</td><td>1.8 km</td></tr> <tr> <td>3: 36</td><td>3.6 km</td></tr> <tr> <td>4: 72</td><td>7.2 km</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the G3 reception cable equalizer Perform the following adjustment to make the equalizer compatible with the line characteristics.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1" data-bbox="347 953 906 1115"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 0</td><td>0 km</td></tr> <tr> <td>2: 18</td><td>1.8 km</td></tr> <tr> <td>3: 36</td><td>3.6 km</td></tr> <tr> <td>4: 72</td><td>7.2 km</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	REG. G3 TX EQR	Sets the G3 transmission cable equalizer.	REG. G3 RX EQR	Sets the G3 reception cable equalizer.	Display	Description	1: 0	0 km	2: 18	1.8 km	3: 36	3.6 km	4: 72	7.2 km	Display	Description	1: 0	0 km	2: 18	1.8 km	3: 36	3.6 km	4: 72	7.2 km
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1: 0	0 km																										
2: 18	1.8 km																										
3: 36	3.6 km																										
4: 72	7.2 km																										
Display	Description																										
1: 0	0 km																										
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3: 36	3.6 km																										
4: 72	7.2 km																										

Maintenance item No.	Description										
U612	<p>Setting the modem detection level</p> <p>Description Sets the modem detection level.</p> <p>Purpose Used to improve the transmission performance when a low quality line is used.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting 1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 33</td><td>–33 dBm</td></tr> <tr> <td>2: 38</td><td>–38 dBm</td></tr> <tr> <td>3: 43</td><td>–43 dBm</td></tr> <tr> <td>4: 47</td><td>–47 dBm</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: 33	–33 dBm	2: 38	–38 dBm	3: 43	–43 dBm	4: 47	–47 dBm
Display	Description										
1: 33	–33 dBm										
2: 38	–38 dBm										
3: 43	–43 dBm										
4: 47	–47 dBm										
U613	<p>Setting the DTMF output level</p> <p>Description Sets the DTMF output level of a push-button dial telephone.</p> <p>Purpose Used if problems occur when sending a signal with a push-button dial telephone.</p> <p>Start 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>DTMF TX LEVEL (H)</td><td>Sets the DTMF (high-frequency group) output level.</td></tr> <tr> <td>DTMF TX LEVEL (L)</td><td>Sets the DTMF (low-frequency group) output level.</td></tr> </tbody> </table> <p>Setting 1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>DTMF (high-/low-frequency group) output level</td><td>0 to 255</td></tr> </tbody> </table> <p>E.g.: When set to 8, the DTMF output level is –8 dBm.</p> <p>2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	DTMF TX LEVEL (H)	Sets the DTMF (high-frequency group) output level.	DTMF TX LEVEL (L)	Sets the DTMF (low-frequency group) output level.	Description	Setting range	DTMF (high-/low-frequency group) output level	0 to 255
Display	Description										
DTMF TX LEVEL (H)	Sets the DTMF (high-frequency group) output level.										
DTMF TX LEVEL (L)	Sets the DTMF (low-frequency group) output level.										
Description	Setting range										
DTMF (high-/low-frequency group) output level	0 to 255										

Maintenance item No.	Description																										
U614	<p>Adjusting the DTMF output level</p> <p>Description Adjusts the DTMF output level of a push-button dial telephone.</p> <p>Purpose No change is necessary from the factory default.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SGL LVL DTMF (H)</td><td>Adjusts the DTMF (high-frequency group) output level.</td></tr> <tr> <td>SGL LVL DTMF (L)</td><td>Adjusts the DTMF (low-frequency group) output level.</td></tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Setting</th><th>DTMF (high-/low-frequency group) output level</th></tr> </thead> <tbody> <tr><td>12</td><td>2.0 dBm</td></tr> <tr><td>11</td><td>1.5 dBm</td></tr> <tr><td>10</td><td>1.0 dBm</td></tr> <tr><td>9</td><td>0.5 dBm</td></tr> <tr><td>8</td><td>0 dBm</td></tr> <tr><td>7</td><td>−0.5 dBm</td></tr> <tr><td>6</td><td>−1.0 dBm</td></tr> <tr><td>5</td><td>−1.5 dBm</td></tr> <tr><td>4</td><td>−2.0 dBm</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SGL LVL DTMF (H)	Adjusts the DTMF (high-frequency group) output level.	SGL LVL DTMF (L)	Adjusts the DTMF (low-frequency group) output level.	Setting	DTMF (high-/low-frequency group) output level	12	2.0 dBm	11	1.5 dBm	10	1.0 dBm	9	0.5 dBm	8	0 dBm	7	−0.5 dBm	6	−1.0 dBm	5	−1.5 dBm	4	−2.0 dBm
Display	Description																										
SGL LVL DTMF (H)	Adjusts the DTMF (high-frequency group) output level.																										
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12	2.0 dBm																										
11	1.5 dBm																										
10	1.0 dBm																										
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8	0 dBm																										
7	−0.5 dBm																										
6	−1.0 dBm																										
5	−1.5 dBm																										
4	−2.0 dBm																										

Maintenance item No.	Description																												
U615	<p>Setting the NCU</p> <p>Description Makes setting regarding the network control unit (NCU).</p> <p>Purpose To be set when installing the facsimile kit.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1" data-bbox="316 474 1026 638"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>EXCHANGE</td><td>Sets the connection to PBX/PSTN.</td></tr> <tr> <td>DIAL TONE</td><td>Sets PSTN dial tone detection.</td></tr> <tr> <td>BUSY TONE</td><td>Sets busy tone detection.</td></tr> <tr> <td>PBX SETTING</td><td>Setting for a PBX.</td></tr> </tbody> </table> <p>Setting the connection to PBX/PSTN Selects if a fax is to be connected to either a PBX or public switched telephone network.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1" data-bbox="316 737 1045 846"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: PSTN</td><td>Connected to the public switched telephone network.</td></tr> <tr> <td>2: PBX</td><td>Connected to a PBX.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting PSTN dial tone detection Selects if the dial tone is detected to check the telephone is off the hook when a fax is connected to a public switched telephone network.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1" data-bbox="316 1041 1026 1150"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Detects the dial tone.</td></tr> <tr> <td>2: OFF</td><td>Does not detect the dial tone.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting busy tone detection When a fax signal is sent, sets whether the line is disconnected immediately after a busy tone is detected, or the busy tone is not detected and the line remains connected until T0 time-out time. Fax transmission may fail due to incorrect busy tone detection. When set to 2, this problem may be prevented. However, the line is not disconnected within the T0 time-out time even if the destination line is busy.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1" data-bbox="316 1402 1026 1512"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Detects busy tone.</td></tr> <tr> <td>2: OFF</td><td>Does not detect busy tone.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	EXCHANGE	Sets the connection to PBX/PSTN.	DIAL TONE	Sets PSTN dial tone detection.	BUSY TONE	Sets busy tone detection.	PBX SETTING	Setting for a PBX.	Display	Description	1: PSTN	Connected to the public switched telephone network.	2: PBX	Connected to a PBX.	Display	Description	1: ON	Detects the dial tone.	2: OFF	Does not detect the dial tone.	Display	Description	1: ON	Detects busy tone.	2: OFF	Does not detect busy tone.
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Display	Description																												
1: ON	Detects busy tone.																												
2: OFF	Does not detect busy tone.																												

Maintenance item No.	Description												
U615 (cont.)	<p>Setting for a PBX Selects the mode to connect an outside call when connected to a PBX. According to the type of the PBX connected, select the mode to connect an outside call.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: EARTH</td><td>Earth mode</td></tr> <tr> <td>2: FLS</td><td>Flashing mode</td></tr> <tr> <td>3: LOOP</td><td>Code number mode</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: EARTH	Earth mode	2: FLS	Flashing mode	3: LOOP	Code number mode				
Display	Description												
1: EARTH	Earth mode												
2: FLS	Flashing mode												
3: LOOP	Code number mode												
U616	<p>Adjusting the ratio of make-to-break of dial pulses</p> <p>Description Adjusts the ratio of make-to-break (ratio of make in pulse cycles) of dial pulses.</p> <p>Purpose Change the setting if dial pulse transmission problems occur. Note that 20 PPS is for Japanese specifications only and no setting is necessary for other specifications.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MAKE TIME (10 PPS)</td><td>Make time (10 PPS)</td></tr> <tr> <td>MAKE TIME (20 PPS)</td><td>Make time (20 PPS)</td></tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Make time in the pulse cycle (10 PPS)</td><td>1 to 99 (ms)</td></tr> <tr> <td>Make time in the pulse cycle (20 PPS)</td><td>1 to 49 (ms)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAKE TIME (10 PPS)	Make time (10 PPS)	MAKE TIME (20 PPS)	Make time (20 PPS)	Description	Setting range	Make time in the pulse cycle (10 PPS)	1 to 99 (ms)	Make time in the pulse cycle (20 PPS)	1 to 49 (ms)
Display	Description												
MAKE TIME (10 PPS)	Make time (10 PPS)												
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Description	Setting range												
Make time in the pulse cycle (10 PPS)	1 to 99 (ms)												
Make time in the pulse cycle (20 PPS)	1 to 49 (ms)												

Maintenance item No.	Description														
U617	<p>Outputting lists</p> <p>Description Outputs a list of data regarding fax transmissions.</p> <p>Purpose Used to check conditions of use, settings and transmission procedures of the fax.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate list selection. The selected list is output. <table border="1" data-bbox="318 485 1250 831"> <thead> <tr> <th data-bbox="318 485 615 525">Display</th><th data-bbox="615 485 1250 525">Description</th></tr> </thead> <tbody> <tr> <td data-bbox="318 525 615 583">SETTING LIST</td><td data-bbox="615 525 1250 583">Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.</td></tr> <tr> <td data-bbox="318 583 615 642">ACTION LIST</td><td data-bbox="615 583 1250 642">Outputs a list of error history, transmission line details and other information.</td></tr> <tr> <td data-bbox="318 642 615 701">MONITOR LIST</td><td data-bbox="615 642 1250 701">Outputs a list of transmission speeds, resolutions, minimum transmission time and other information.</td></tr> <tr> <td data-bbox="318 701 615 760">SELF ST RPT</td><td data-bbox="615 701 1250 760">Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.</td></tr> <tr> <td data-bbox="318 760 615 819">PROTOCOL LIST</td><td data-bbox="615 760 1250 819">Outputs a list of transmission procedures.</td></tr> <tr> <td data-bbox="318 819 615 877">1-T. ECM</td><td data-bbox="615 819 1250 877">Outputs a list of ECM settings for one-touch dialing.</td></tr> </tbody> </table>	Display	Description	SETTING LIST	Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.	ACTION LIST	Outputs a list of error history, transmission line details and other information.	MONITOR LIST	Outputs a list of transmission speeds, resolutions, minimum transmission time and other information.	SELF ST RPT	Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.	PROTOCOL LIST	Outputs a list of transmission procedures.	1-T. ECM	Outputs a list of ECM settings for one-touch dialing.
Display	Description														
SETTING LIST	Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.														
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PROTOCOL LIST	Outputs a list of transmission procedures.														
1-T. ECM	Outputs a list of ECM settings for one-touch dialing.														

Maintenance item No.	Description																												
U650	<p>Setting the system 1</p> <p>Description Makes settings for fax reception regarding the sizes of the fax paper and received images and automatic printing of the protocol list.</p> <p>Start</p> <p>1. Press the start key. The screen for selecting an item is displayed.</p> <p>2. Press the appropriate item. The screen for the selected item appears.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>CUT LINE (100%)</td><td>Sets the number of lines to be ignored when receiving a fax at 100% magnification.</td></tr><tr><td>CUT LINE (AUTO)</td><td>Sets the number of lines to be ignored when receiving a fax in the auto reduction mode.</td></tr><tr><td>CUT LINE (A4)</td><td>Sets the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode.</td></tr><tr><td>RX WIDTH 11"</td><td>Sets the recording width for inch specifications.</td></tr><tr><td>PROTOCOL PRT</td><td>Sets the automatic printing of the protocol list.</td></tr></table> <p>Setting the number of lines to be ignored when receiving a fax at 100% magnification Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when recording the data at 100% magnification. If the number of excess lines is below the setting, those lines are ignored. If over the setting, they are recorded on the next page.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving at 100%</td><td>0 to 22</td><td>3</td><td>6 lines</td></tr></table> <p>Increase the setting if a blank second page is received, and decrease it if the received image does not include the entire transmitted data.</p> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the number of lines to be ignored when receiving a fax in the auto reduction mode Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in the auto reduction mode. If the number of excess lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving in the auto reduction mode</td><td>0 to 22</td><td>3</td><td>6 lines</td></tr></table> <p>Increase the setting if a page received in the reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include all transmitted data.</p> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p>	Display	Description	CUT LINE (100%)	Sets the number of lines to be ignored when receiving a fax at 100% magnification.	CUT LINE (AUTO)	Sets the number of lines to be ignored when receiving a fax in the auto reduction mode.	CUT LINE (A4)	Sets the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode.	RX WIDTH 11"	Sets the recording width for inch specifications.	PROTOCOL PRT	Sets the automatic printing of the protocol list.	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving at 100%	0 to 22	3	6 lines	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving in the auto reduction mode	0 to 22	3	6 lines
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Description	Setting range	Initial setting	Change in value per step																										
Number of lines to be ignored when receiving in the auto reduction mode	0 to 22	3	6 lines																										

Maintenance item No.	Description																						
U650 (cont.)	<p>Setting the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode</p> <p>Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in the auto reduction mode onto A4R or letter-size paper under the conditions below. If the number of excess lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page.</p> <ul style="list-style-type: none">• With A4R present and folio absent in the drawers• With letter-size paper present and legal-size paper absent in the drawers <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode</td><td>0 to 22</td><td>3</td><td>6 lines</td></tr></table> <p>Increase the setting if a page received in the reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include all transmitted data.</p> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the recording width for inch specifications</p> <p>Sets the maximum recording width and processing method when 11" width fax paper is loaded on an inch-specification machine.</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: 11 × 17</td><td>Communicates to the destination unit 11" width as A3 width and records at 100% magnifications.</td></tr><tr><td>2: B4</td><td>Communicates to the destination unit 11" width as B4 width.</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the automatic printing of the protocol list</p> <p>Sets if the protocol list is automatically printed out.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: OFF</td><td>The protocol list is not printed out automatically.</td></tr><tr><td>2: ERROR</td><td>The protocol list is automatically printed out after communication only if a communication error occurs.</td></tr><tr><td>3: ON</td><td>The protocol list is automatically printed out after communication.</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode	0 to 22	3	6 lines	Display	Description	1: 11 × 17	Communicates to the destination unit 11" width as A3 width and records at 100% magnifications.	2: B4	Communicates to the destination unit 11" width as B4 width.	Display	Description	1: OFF	The protocol list is not printed out automatically.	2: ERROR	The protocol list is automatically printed out after communication only if a communication error occurs.	3: ON	The protocol list is automatically printed out after communication.
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Maintenance item No.

Description

U651

Setting the system 2

Description

Sets the variation range in rotation reception and the number of adjustment lines for automatic reduction.

Start

1. Press the start key. The screen for selecting an item is displayed.

2. Press the appropriate item.

The screen for the selected item appears.

Display	Description
ROTAT. RX ERR	Sets the variation range in the auxiliary scanning direction for rotation reception.
ADJ LINES	Sets the number of adjustment lines for automatic reduction.
ADJ LINES (A4)	Sets the number of adjustment lines for automatic reduction when A4 paper is set.
ADJ LINES (LT)	Sets the number of adjustment lines for automatic reduction when letter size paper is set.

Setting the variations range in rotation reception

Sets the maximum number of lines to be ignored when the received data exceeds the acceptable number of lines in the rotation reception mode. If the number of excessive lines is smaller than the set value, those lines are ignored and rotation reception is performed; if it is larger than the set value, rotation reception is not performed.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of variation lines in the auxiliary scanning direction	0 to 255	3

Even if rotation reception fails, it can be enabled by increasing this value, however, some parts of the received image may not be printed.

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 number of adjustment lines for automatic reduction

Sets the number of adjustment lines for automatic reduction.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction	0 to 22	7

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 number of adjustment lines for automatic reduction when A4 paper is set

Sets the number of adjustment lines for automatic reduction when A4 paper is set.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction when A4 paper is set	0 to 22	22

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 number of adjustment lines for automatic reduction when letter size paper is set

Sets the number of adjustment lines for automatic reduction when letter size paper is set.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction when letter size paper is set	0 to 26	26

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 selecting a maintenance item No. is displayed.

Maintenance item No.	Description																														
U660	<p>Setting the system (communication 2)</p> <p>Description Makes settings for fax transmission regarding the communication.</p> <p>Purpose To reduce transmission errors when a low quality line is used.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>TCF CHECK 2</td><td>Sets the criteria for receiving a TCF signal 2.</td></tr> <tr> <td>SHORT PROTOCOL TX</td><td>Sets the short protocol transmission.</td></tr> <tr> <td>SHORT PROTOCOL RX</td><td>Sets the reception of short protocol transmission.</td></tr> <tr> <td>NUMBER of CNG (F/T)</td><td>Sets the CNG detection times in the fax/telephone auto select mode.</td></tr> <tr> <td>1TOUCH ECM</td><td>Turns ECM for one-touch dialing on/off.</td></tr> </tbody> </table> <p>Setting the criteria for receiving a TCF signal 2 Sets the signal checking time as a criterion for a received TCF signal.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric key to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: LONG</td><td>Checks for 1.0 s.</td></tr> <tr> <td>2: SHORT</td><td>Checks for 0.8 s.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the short protocol transmission Sets if short protocol transmission is performed.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Short protocol transmission is performed.</td></tr> <tr> <td>2: OFF</td><td>Short protocol transmission is not performed.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the reception of a short protocol transmission Selects whether to receive or ignore transmission using short protocol. If a short protocol transmission is received when an auto switching device is attached to the machine, communication problems, including auto switching inability, sometimes occur. Change the setting to ignore short protocol transmission to prevent such problems.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Receives short protocol transmission.</td></tr> <tr> <td>2: OFF</td><td>Ignores short protocol transmission.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	TCF CHECK 2	Sets the criteria for receiving a TCF signal 2.	SHORT PROTOCOL TX	Sets the short protocol transmission.	SHORT PROTOCOL RX	Sets the reception of short protocol transmission.	NUMBER of CNG (F/T)	Sets the CNG detection times in the fax/telephone auto select mode.	1TOUCH ECM	Turns ECM for one-touch dialing on/off.	Display	Description	1: LONG	Checks for 1.0 s.	2: SHORT	Checks for 0.8 s.	Display	Description	1: ON	Short protocol transmission is performed.	2: OFF	Short protocol transmission is not performed.	Display	Description	1: ON	Receives short protocol transmission.	2: OFF	Ignores short protocol transmission.
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Maintenance item No.	Description												
U660 (cont.)	<p>Setting the CNG detection times in the fax/telephone auto select mode Sets the CNG detection times in the fax/telephone auto select mode.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1" data-bbox="347 277 1057 384"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 1 TIME</td><td>Detects CNG once.</td></tr> <tr> <td>2: 2 TIMES</td><td>Detects CNG twice.</td></tr> </tbody> </table> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting ECM for each one-touch key Turns ECM on/off for each one-touch key.</p> <ol style="list-style-type: none"> Enter a registered two-digit one-touch key number and press the start key. Enter 1 or 2 using the numeric keys to change the setting. <table border="1" data-bbox="347 577 1208 684"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM communication is performed for all one-touch keys.</td></tr> <tr> <td>2: OFF</td><td>Disables the ECM for one-touch keys.</td></tr> </tbody> </table> Press the start key. The value is set. The screen for entering a one-touch key number is displayed. To return to the screen for selecting an item, press the stop/clear key at the screen for entering a one-touch key number. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: 1 TIME	Detects CNG once.	2: 2 TIMES	Detects CNG twice.	Display	Description	1: ON	ECM communication is performed for all one-touch keys.	2: OFF	Disables the ECM for one-touch keys.
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
Maintenance item No.	Description																																								
U670	<p>Setting the system (communication 3)</p> <p>Description Makes settings for fax transmission regarding the communication.</p> <p>Purpose To reduce transmission errors when a low quality line is used.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate list selection. The selected list is output. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>V.34 MODEM</td><td>Enables or disables V.34 communication.</td></tr> <tr> <td>V.34-3429Hz</td><td>Sets the V.34 symbol speed (3429 Hz).</td></tr> <tr> <td>V.34-3200Hz</td><td>Sets the V.34 symbol speed (3200 Hz).</td></tr> <tr> <td>V.34-3000Hz</td><td>Sets the V.34 symbol speed (3000 Hz).</td></tr> <tr> <td>V.34-2800 Hz</td><td>Sets the V.34 symbol speed (2800 Hz).</td></tr> </tbody> </table> <p>Enabling/disabling V.34 communication Sets whether V.34 communication is enabled/disabled for transmission and reception.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 communication is enabled for both transmission and reception.</td></tr> <tr> <td>2: TX</td><td>V.34 communication is enabled for transmission only.</td></tr> <tr> <td>3: RX</td><td>V.34 communication is enabled for reception only.</td></tr> <tr> <td>4: OFF</td><td>V.34 communication is disabled for both transmission and reception.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the V.34 symbol speed (3429 Hz) Sets if the V.34 symbol speed 3429 Hz is used.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 3429 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 3429 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the V.34 symbol speed (3200 Hz) Sets if the V.34 symbol speed 3200 Hz is used.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 3200 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 3200 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the V.34 symbol speed (3000 Hz) Sets if the V.34 symbol speed 3000 Hz is used.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 3000 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 3000 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	V.34 MODEM	Enables or disables V.34 communication.	V.34-3429Hz	Sets the V.34 symbol speed (3429 Hz).	V.34-3200Hz	Sets the V.34 symbol speed (3200 Hz).	V.34-3000Hz	Sets the V.34 symbol speed (3000 Hz).	V.34-2800 Hz	Sets the V.34 symbol speed (2800 Hz).	Display	Description	1: ON	V.34 communication is enabled for both transmission and reception.	2: TX	V.34 communication is enabled for transmission only.	3: RX	V.34 communication is enabled for reception only.	4: OFF	V.34 communication is disabled for both transmission and reception.	Display	Description	1: ON	V.34 symbol speed 3429 Hz is used.	2: OFF	V.34 symbol speed 3429 Hz is not used.	Display	Description	1: ON	V.34 symbol speed 3200 Hz is used.	2: OFF	V.34 symbol speed 3200 Hz is not used.	Display	Description	1: ON	V.34 symbol speed 3000 Hz is used.	2: OFF	V.34 symbol speed 3000 Hz is not used.
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Maintenance item No.	Description						
U670 (cont.)	<p>Setting the V.34 symbol speed (2800 Hz) Sets if the V.34 symbol speed 2800 Hz is used.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1" data-bbox="347 279 1057 384"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 2800 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 2800 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: ON	V.34 symbol speed 2800 Hz is used.	2: OFF	V.34 symbol speed 2800 Hz is not used.
Display	Description						
1: ON	V.34 symbol speed 2800 Hz is used.						
2: OFF	V.34 symbol speed 2800 Hz is not used.						
U680	<p>Displaying the fax board ROM version Note: On Japanese domestic models, this also displays the font ROM version.</p> <p>Description Displays the version of the ROM on the fax control PCB.</p> <p>Purpose Used to check the version of the ROM on the fax control PCB.</p> <p>Method 1. Press the start key. The version of the ROM on the fax control PCB is displayed.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description											
U881	<p>Using the flash-memory jig.</p> <p>Description Moves data or program code between the flash-memory jig and the machine's SRAM.</p> <p>Purpose When replacing the fax control PCB, use this procedure to save SRAM data from the old PCB and load it into the new PCB.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The item-selection screen appears. 2. Press the appropriate item. The screen for the selected item appears. <table border="1" data-bbox="318 533 1021 724"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>UPLOAD TO JIG:ALL</td><td>Saves all SRAM data into the jig.</td></tr> <tr> <td>DOWNLOAD FROM JIG: All</td><td>Loads all data saved in the jig into the machine's SRAM.</td></tr> <tr> <td>WRITE BOOT PROGRAM</td><td>Loads the boot program into the jig.</td></tr> <tr> <td>UPLOAD TO JIG:DIAL</td><td rowspan="2">Currently not effective (as of May 2001). Display only.</td></tr> <tr> <td>DOWNLOAD FROM JIG: DIAL</td></tr> </tbody> </table> <p>Saving SRAM data into the jig Saves SRAM data into the jig.</p> <div data-bbox="318 852 649 947" style="border: 1px solid black; padding: 5px; text-align: center;"> DOWNLOAD FROM JIG? </div> <ol style="list-style-type: none"> 1. Press the start key. The data is saved into the jig, and the screen indicates the result. <ul style="list-style-type: none"> • If the operation was successful: <div data-bbox="318 1052 649 1146" style="border: 1px solid black; padding: 5px; text-align: center;"> DOWNLOAD FROM JIG OK </div> • If the operation failed: <div data-bbox="318 1245 649 1339" style="border: 1px solid black; padding: 5px; text-align: center;"> DOWNLOAD FROM JIG NG XXX </div> <div data-bbox="695 1262 1373 1320" style="margin-left: 20px;"> where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881," below. </div> <p data-bbox="329 1367 1419 1425" style="margin-left: 20px;">If these error code explanations are on the same page, then "below". If on the next page, then "on the next page". If on some other page, then "on page XX".>></p> 2. Press the stop key. 3. Turn the power off. 	Display	Description	UPLOAD TO JIG:ALL	Saves all SRAM data into the jig.	DOWNLOAD FROM JIG: All	Loads all data saved in the jig into the machine's SRAM.	WRITE BOOT PROGRAM	Loads the boot program into the jig.	UPLOAD TO JIG:DIAL	Currently not effective (as of May 2001). Display only.	DOWNLOAD FROM JIG: DIAL
Display	Description											
UPLOAD TO JIG:ALL	Saves all SRAM data into the jig.											
DOWNLOAD FROM JIG: All	Loads all data saved in the jig into the machine's SRAM.											
WRITE BOOT PROGRAM	Loads the boot program into the jig.											
UPLOAD TO JIG:DIAL	Currently not effective (as of May 2001). Display only.											
DOWNLOAD FROM JIG: DIAL												

Maintenance item No.	Description
U881	<p>Writing data from the flash-memory jig into SRAM Writes the data from the jig into the machine's SRAM.</p> <div data-bbox="345 279 678 373" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> UPLOAD TO JIG? </div> <p>1. Press the start key. The data write is executed, and the screen displays the result.</p> <ul style="list-style-type: none"> • If the write operation was successful: <div data-bbox="345 493 678 588" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> UPLOAD TO JIG OK </div> <ul style="list-style-type: none"> • If the write operation failed: <div data-bbox="345 678 678 772" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> UPLOAD TO JIG NG XXX </div> <p style="margin-left: 400px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881," below.</p> <p>2. Press the stop key. 3. Turn the power off.</p> <p>Writing the boot program into the jig Writes the boot program into the flash memory in the jig.</p> <p>1. When this item is pressed, the machine writes the boot program into the jig's flash memory, and the screen displays the result.</p> <ul style="list-style-type: none"> • If the write operation was successful: <div data-bbox="345 1077 678 1171" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> WRITE BOOT PRG. OK </div> <ul style="list-style-type: none"> • If the write operation failed: <div data-bbox="345 1262 678 1356" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> WRITE BOOT PRG. NG XXX </div> <p style="margin-left: 400px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881," below.</p> <p>2. Press the stop key. 3. Turn the power off.</p>

Maintenance item No.	Description																										
U881	<p data-bbox="269 184 634 216">Error Codes for Operation U881</p> <table border="1" data-bbox="285 262 1417 858"> <thead> <tr> <th data-bbox="285 262 435 300">Code</th><th data-bbox="435 262 1417 300">Meaning</th></tr> </thead> <tbody> <tr> <td data-bbox="285 300 435 338">001</td><td data-bbox="435 300 1417 338">Jig not present.</td></tr> <tr> <td data-bbox="285 338 435 375">002</td><td data-bbox="435 338 1417 375">No CF card.</td></tr> <tr> <td data-bbox="285 375 435 413">003</td><td data-bbox="435 375 1417 413">No data in CF card.</td></tr> <tr> <td data-bbox="285 413 435 480">004</td><td data-bbox="435 413 1417 480">CF data is incompatible. (This error occurs if you change the file name and attempt to load the data into a different machine model.)</td></tr> <tr> <td data-bbox="285 480 435 518">005</td><td data-bbox="435 480 1417 518">Bad CF data (Checksum error)</td></tr> <tr> <td data-bbox="285 518 435 556">006</td><td data-bbox="435 518 1417 556">CF read error</td></tr> <tr> <td data-bbox="285 556 435 594">007</td><td data-bbox="435 556 1417 594">CF write error</td></tr> <tr> <td data-bbox="285 594 435 632">008</td><td data-bbox="435 594 1417 632"></td></tr> <tr> <td data-bbox="285 632 435 720">009</td><td data-bbox="435 632 1417 720">No data is jig's flash memory // Incompatible data in jig's flash memory (SRAM data has not yet been saved // Attempt was made to load data into a different model.)</td></tr> <tr> <td data-bbox="285 720 435 787">010</td><td data-bbox="435 720 1417 787">Jig flash-memory read error (Following SRAM read, flash-memory data failed to match SRAM data.)</td></tr> <tr> <td data-bbox="285 787 435 825">011</td><td data-bbox="435 787 1417 825">Jig flash-memory write error</td></tr> <tr> <td data-bbox="285 825 435 858">012</td><td data-bbox="435 825 1417 858">Other error</td></tr> </tbody> </table>	Code	Meaning	001	Jig not present.	002	No CF card.	003	No data in CF card.	004	CF data is incompatible. (This error occurs if you change the file name and attempt to load the data into a different machine model.)	005	Bad CF data (Checksum error)	006	CF read error	007	CF write error	008		009	No data is jig's flash memory // Incompatible data in jig's flash memory (SRAM data has not yet been saved // Attempt was made to load data into a different model.)	010	Jig flash-memory read error (Following SRAM read, flash-memory data failed to match SRAM data.)	011	Jig flash-memory write error	012	Other error
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Maintenance item No.	Description
U881	<p>Data and Program Upload/Download Flows [Conceptual Drawings]</p> <ul style="list-style-type: none"> • Saving Stored Data into Jig (Maintenance Mode) <ul style="list-style-type: none"> • With CF • Without CF • Loading Saved Data (Maintenance Mode) <ul style="list-style-type: none"> • With CF • Without CF <p>Legend:</p> <ul style="list-style-type: none">  : Transmitted data  : Boot program  : Data flow <p>Flow Diagrams:</p> <p>1. Saving Stored Data into Jig (Maintenance Mode)</p> <p>• With CF: Start : Fax board. The Fax board contains Data (Transmitted data) and Fax software/Jig boot (Boot program). Data flows from the Fax board to the Jig's Flash Boot/Data section. The Jig's CF section contains Program and Data (Transmitted data).</p> <p>• Without CF: Start : Fax board. The Fax board contains Data (Transmitted data) and Fax software/Jig boot (Boot program). Data flows from the Fax board to the Jig's Flash Boot/Data section. The Jig's Data section contains Transmitted data.</p> <p>2. Loading Saved Data (Maintenance Mode)</p> <p>• With CF: Start : Fax board. The Fax board contains Data (Transmitted data) and Fax software/Jig boot (Boot program). Data flows from the Jig's CF section (Program and Data) to the Fax board's Data section. The Jig's Flash Boot/Data section contains Transmitted data.</p> <p>• Without CF: Start : Fax board. The Fax board contains Data (Transmitted data) and Fax software/Jig boot (Boot program). Data flows from the Jig's Data section to the Fax board's Data section. The Jig's Flash Boot/Data section contains Transmitted data.</p>

Maintenance item No.	Description
U881	<div><div><div><div><div>Start : Fax board</div><div>Fax board</div><div><div>Data</div><div>Fax software</div><div>Jig boot</div></div></div></div><div><div>Jig</div><div><div>Flash Boot</div><div>Data</div></div><div><div>CF</div><div>Program</div><div>Data</div></div></div></div><div><div><div>Transmitted data</div><div>Boot program</div><div>Data flow</div></div></div><div><div><div>Start : Fax board</div><div>Fax board</div><div><div>Data</div><div>Fax software</div></div></div><div><div>Jig</div><div><div>Flash Boot</div><div>Data</div></div><div><div>CF</div><div>Program</div><div>Data</div></div></div><div><div><div>Transmitted data</div><div>Boot program</div><div>Data flow</div></div></div></div></div>

Maintenance item No.	Description						
U894	<p>Performing board test</p> <p>Description Performs tests on the SRAM, DRAM (image memory, bitmap memory) and optional memory on the fax control PCB.</p> <p>Purpose Used to check if reading and writing are performed correctly in respective installed memories.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The test executes. <table border="1" data-bbox="347 506 1057 611"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>BOARD MEMORY</td><td>Performs tests on SRAM and DRAM.</td></tr> <tr> <td>BOARD OP. MEM</td><td>Performs tests on optional memory.</td></tr> </tbody> </table> <p>Performing tests on SRAM and DRAM</p> <ol style="list-style-type: none"> 1. Press the start key. The screen displays the test results as follows. <ul style="list-style-type: none"> • When the test result is OK: <div data-bbox="347 711 680 806" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> TEST MEMORY OK </div> • If the test result is NG: <div data-bbox="347 846 680 940" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> TEST MEMORY NG DRAM IMG 0x***** </div> <div data-bbox="690 888 846 915" style="margin-left: 10px;">*****: address</div> <p>DRAM IMG: DRAM (image memory) error DRAM B.M: DRAM (bitmap memory) error SRAM: SRAM error</p> <p>To return to the screen for selecting an item, press the stop/clear key.</p> <p>Performing tests on optional memory</p> <ol style="list-style-type: none"> 1. Press the start key. The screen displays the test results as follows. <ul style="list-style-type: none"> • When the test result is OK: <div data-bbox="347 1224 680 1318" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> TEST OPTION MEMORY OK </div> • If the test result is NG: <div data-bbox="347 1358 680 1453" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> TEST OPTION MEMORY NG DRAM B.M 0x***** </div> <div data-bbox="690 1400 849 1428" style="margin-left: 10px;">*****: address</div> • If the test result is NG (memory is not installed): <div data-bbox="347 1493 680 1587" style="border: 1px solid black; padding: 5px; margin: 5px 0;"> TEST OPTION MEMORY NG DRAM B.M </div> <p>To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion If the test result is OK, press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed. If the test result is NG, reset by turning the main switch off and on.</p>	Display	Description	BOARD MEMORY	Performs tests on SRAM and DRAM.	BOARD OP. MEM	Performs tests on optional memory.
Display	Description						
BOARD MEMORY	Performs tests on SRAM and DRAM.						
BOARD OP. MEM	Performs tests on optional memory.						

Maintenance item No.	Description
U992	<p data-bbox="272 186 748 216">Checking or clearing the printer/fax count</p> <p data-bbox="272 222 407 249">Description</p> <p data-bbox="272 254 1422 308">Displays, clears or changes the print count of the printer or fax when the printer board or facsimile kit is installed.</p> <p data-bbox="272 317 370 344">Purpose</p> <p data-bbox="272 348 795 375">To check the condition of use of the printer or fax.</p> <p data-bbox="272 384 358 411">Method</p> <p data-bbox="272 415 984 443">Press the start key. The print count of the printer or fax is displayed.</p> <p data-bbox="272 451 354 478">Setting</p> <ol data-bbox="280 483 1422 596" style="list-style-type: none">1. Press the appropriate item.2. Enter a six-digit numerical value using the numeric keys. To clear both of the printer and fax counts, press the reset key.3. Press the start key. The count is set. <p data-bbox="272 604 407 632">Completion</p> <p data-bbox="272 636 1182 663">Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

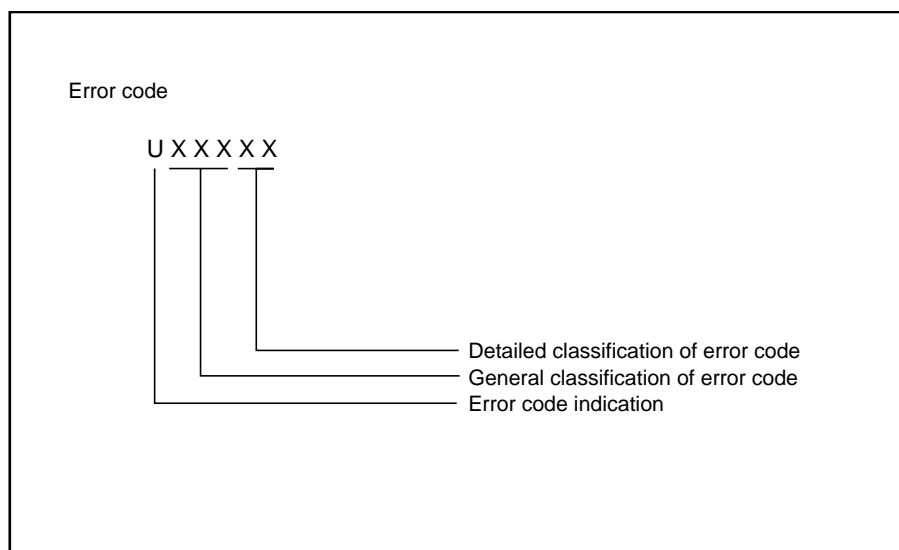
3CM

1-4-1 Error codes

(1) Error code

Error codes are listed on the communication reports, activity report, etc. The codes consist of an error code indication "U" followed by a 5-digit number. (Error codes for V34 communication errors start with an "E" indication, followed by five digits.)

The upper three of the five digits indicate general classification of the error and its cause, while the lower two indicate the detailed classification. Items for which detailed classification is not necessary have "00" as the last two digits.



(2) Table of general classification

Error code	Description
U00000	No response or busy after the set number of redials.
U00100	Transmission was interrupted by a press of the stop/clear key.
U00200	Reception was interrupted by a press of the stop/clear key.
U00300	Recording paper on the destination unit has run out during transmission.
U004XX	A connection was made but interrupted during handshake with the receiver unit (refer to page 1-4-4 "U004XX error code table").
U00500	Multiple communication was interrupted and call was not made on destination units after interruption.
U006XX	Communication was interrupted because of a machine problem (refer to page 1-4-4 "U006XX error code table").
U00700	Communication was interrupted because of a problem in the destination unit.
U008XX	A page transmission error occurred in G3 mode (refer to page 1-4-5 "U008XX error code table").
U009XX	A page reception error occurred in G3 mode (refer to page 1-4-5 "U009XX error code table").
U010XX	Transmission in G3 mode was interrupted by a signal error (refer to page 1-4-6 "U010XX error code table").
U011XX	Reception in G3 mode was interrupted by a signal error (refer to page 1-4-8 "U011XX error code table").
U012XX	Not used.
U013XX	Not used.
U01400	An invalid one-touch key was specified during communication.
U01500	A communication error occurred when calling in V.8 mode.
U01600	A communication error occurred when called in V.8 mode.
U017XX	A communication error occurred before starting T.30 protocol during transmission in V.34 mode (refer to page 1-4-10 "U017XX error code table").
U018XX	A communication error occurred before starting T.30 protocol during reception in V.34 mode (refer to page 1-4-10 "U018XX error code table").
U02200	F-code based relay broadcast transmission failed because the data registered in the F-code relay box was deleted.
U02400	An interoffice F-code based relay transmission was interrupted because of a mismatch in the specified relay box number.
U03000	No document was present in the destination unit when polling reception started.
U03200	In interoffice F-code based bulletin board reception, data was not stored in the box specified by the destination unit.
U03300	In polling reception from a unit of our make, operation was interrupted due to a mismatch in permit ID or telephone number. Or, in interoffice F-code based bulletin board reception, operation was interrupted due to a mismatch in permit ID or telephone number.
U03400	Polling reception was interrupted because of a mismatch in individual numbers (destination unit is either of our make or by another manufacturer).
U03500	In interoffice F-code based bulletin board reception, the specified F-code confidential box number was not registered in the destination unit.
U03600	An interoffice F-code based bulletin board reception was interrupted because of a mismatch in the specified F-code confidential box number.
U03700	Interoffice F-code based bulletin board reception failed because the destination unit had no F-code based bulletin board transmission capability, or data was not stored in any F-code confidential box in the destination unit.
U04000	In interoffice F-code based transmission mode, the specified F-code box number was not registered in the destination unit.
U04100	F-code based transmission failed because the destination unit had no F-code based reception capability.

Error code	Description
U04200	In encrypted transmission, the specified encryption box was not registered in the destination unit.
U04300	Encrypted transmission failed because the destination unit had no encrypted communication capability.
U044XX	Communication was interrupted because of an encryption key error during encrypted transmission (refer to page 1-4-10 "U044XX error code table").
U04500	Encrypted reception was interrupted because of a mismatch in encryption keys.
U05100	Password check transmission was interrupted because the permit ID did not agree.
U05200	Password check reception was interrupted because the permit ID did not agree.
U05300	Destination unit in password check reception mode did not receive data because the permit ID did not agree.
U09000	G3 communication was attempted but failed because the destination unit was a G2 machine.
U12000	In F-code based relay reception, memory overflowed.
U14000	In F-code based confidential reception, memory overflowed.
U14100	In interoffice F-code based transmission, memory overflowed in the destination unit.
U19000	Memory overflowed during memory reception.
U19100	Memory overflowed in the destination unit during transmission.
U19200	Memory transmission failed because a decoding error occurred.
U19300	Transmission failed because an error occurred during JBIG encoding.
U19400	Reception failed because an error occurred during JBIG decoding.

(2-1) U004XX error code table: interrupted phase B

Error code	Description
U00420	A relay request was received from the host center but interrupted because of a mismatch in permit ID or telephone number.
U00421	F-code based relay reception was interrupted because of a mismatch in the specified F-code relay box number.
U00430	A polling request was received but interrupted because of a mismatch in permit ID in the transmitting unit. Or, F-code based bulletin board transmission request was received but interrupted because of a mismatch in permit ID in the transmitting unit.
U00431	An F-code based bulletin board transmission was interrupted because the specified F-code confidential box was not registered.
U00432	An F-code based bulletin board transmission was interrupted because of a mismatch in F-code confidential box numbers.
U00433	F-code based bulletin board transmission request was received but data was not present in the F-code confidential box.
U00435	F-code based bulletin board transmission request was received but interrupted because the specified F-code confidential box was being accessed.
U00440	F-code based confidential reception or F-code based relay reception was interrupted because the specified F-code box was not registered.
U00450	The destination unit in password check transmission mode interrupted transmission because of a mismatch in permit ID.
U00460	Encrypted reception was interrupted because the specified encryption box number was not registered.
U00462	Encrypted reception was interrupted because the encryption key for the specified encryption box was not registered.

(2-2) U006XX error code table: Problems with the unit

Error code	Description
U00600	The SRDF cover is open.
U00601	Document jam or the document length exceeds the maximum.
U00602	Image scanning section problem.
U00603	No document feed.
U00604	Document length exceeded the limit of the bitmap memory capacity.
U00610	Recording section cover is open.
U00655	CTS was not activated after RTS due to a modem error.
U00656	Data was not transmitted after CTS was activated due to a modem error.
U00670	Power was cut off during communication.
U00677	There was no file to transmit in the memory transmission mode.
U00690	System error.

(2-3) U008XX error code table: Page transmission error

Error code	Description
U00800	A page transmission error occurred because of reception of a RTN or PIN signal.
U00810	A page transmission error reoccurred after retry of transmission in the ECM mode.

(2-4) U009XX error code table: Page reception error

Error code	Description
U00900	An RTN or PIN signal was transmitted because of a page reception error.
U00910	A page reception error remained after retry of transmission in the ECM mode.

(2-5) U010XX error code table: G3 transmission

Error code	Description
U01000	An FTT signal was received for a set number of times after TCF signal transmission at 2400 bps. Or, an RTN signal was received in response to a Q signal (excluding EOP) after transmission at 2400 bps.
U01001	Function of the unit differs from that indicated by a DIS signal.
U01010	No relevant signal was received after transmission of a DNL (MPS or EOM) signal, and the preset number of command retransfers was exceeded (between units of our make).
U01011	No relevant signal was received after transmission of a DCS, TCF signal, and the preset number of command retransfers was exceeded.
U01012	No relevant signal was received after transmission of an NSS1, NSS2 (TCF) signal, and the preset number of command retransfers was exceeded (between units of our make).
U01013	No relevant signal was received after transmission of an NSS3, TCF signal, and the preset number of command retransfers was exceeded (between units of our make).
U01014	No relevant signal was received after transmission of an MPS signal, and the preset number of command retransfers was exceeded.
U01015	No relevant signal was received after transmission of an EOM signal, and the preset number of command retransfers was exceeded.
U01016	An MCF signal was received but no DIS signal was received after transmission of an EOM signal, and T1 timeout was detected.
U01017	No relevant signal was received after transmission of an EOP signal, and the preset number of command retransfers was exceeded.
U01018	No relevant signal was received after transmission of a PRI-EOP signal, and the preset number of command retransfers was exceeded.
U01019	No relevant signal was received after transmission of a CNC signal, and the preset number of command retransfers was exceeded (between units of our make).
U01020	No relevant signal was received after transmission of a CTC signal, and the preset number of command retransfers was exceeded (ECM).
U01021	No relevant signal was received after transmission of an EOR.Q signal, and the preset number of command retransfers was exceeded (ECM).
U01022	No relevant signal was received after transmission of an RR signal, and the preset number of command retransfers was exceeded (ECM).
U01023	No relevant signal was received after transmission of a PSS.NULL signal, and the preset number of command retransfers was exceeded (ECM).
U01024	No relevant signal was received after transmission of a PSS.MPS signal, and the preset number of command retransfers was exceeded (ECM).
U01025	No relevant signal was received after transmission of a PPS.EOM signal, and the preset number of command retransfers was exceeded (ECM).
U01026	No relevant signal was received after transmission of a PPS.EOP signal, and the preset number of command retransfers was exceeded (ECM).
U01027	No relevant signal was received after transmission of a PPS.PRI-EOP signal, and the preset number of command retransfers was exceeded (ECM).
U01028	T5 timeout was detected during ECM transmission (ECM).
U01040	A DCN or other inappropriate signal was received during standby for DIS signal reception.
U01041	A DCN signal was received after transmission of a DNL (MPS or EOM) signal (between units of our make).
U01042	A DCN signal was received after transmission of a DCS, TCF signal.
U01043	A DCN signal was received after transmission of an NSS1, NSS2 (TCF) signal (between units of our make).
U01044	A DCN signal was received after transmission of an NSS3, TCF signal (between units of our make).

Error code	Description
U01045	A DCN or other inappropriate signal was received after transmission of an MPS signal.
U01046	A DCN or other inappropriate signal was received after transmission of an EOM signal.
U01047	A DCN or other inappropriate signal was received after transmission of an EOP signal.
U01048	A DCN signal was received after transmission of a PRI-EOP signal.
U01049	A DCN signal was received after transmission of a CNC signal (between units of our make).
U01050	A DCN signal was received after transmission of a CTC signal (ECM).
U01051	A DCN signal was received after transmission of an EOR.Q signal (ECM).
U01052	A DCN signal was received after transmission of an RR signal (ECM).
U01053	A DCN signal was received after transmission of a PPS.NULL signal (ECM).
U01054	A DCN signal was received after transmission of a PPS.MPS signal (ECM).
U01055	A DCN signal was received after transmission of a PPS.EOM signal (ECM).
U01056	A DCN signal was received after transmission of a PPS.EOP signal (ECM).
U01057	A DCN signal was received after transmission of a PPS.PRI-EOP signal (ECM).
U01070	Polarity reversal was detected during handshake.
U01071	Polarity reversal was detected during message transmission.
U01072	A break in loop current was detected during transmission.
U01073	During reverse polling in V.34 mode at the receiver unit, a CM signal was not detected when transmitting after reception.
U01080	A PIP signal was received after transmission of a PPS.NULL signal.
U01091	During transmission in V.34 mode, communication was interrupted because a PPR signal was received over 10 times even after reducing the communication speed to the minimum with the symbol speed maintained at the level of connection.
U01092	During transmission in V.34 mode, communication was interrupted because of an impossible combination of the symbol speed and communication speed.

(2-6) U011XX error code table: G3 reception

Error code	Description
U01100	Function of the unit differs from that indicated by a DCS signal.
U01101	Function of the unit (excl. communication mode select) differs from that indicated by an NSS signal.
U01102	A DTC (NSC) signal was received when no transmission data was in the unit.
U01110	No response after transmission of a DIS signal.
U01111	No response after transmission of a DTC (NSC) signal.
U01112	No training reception after reception of a DCS or NSS signal.
U01113	No response after transmission of an FTT signal.
U01114	No message reception after transmission of a CFR signal.
U01115	No message reception after transmission of an MCF signal.
U01116	No message reception after transmission of a PPR signal.
U01117	No message reception after transmission of a CTR signal.
U01118	No message reception after transmission of an ERR signal.
U01119	No further signals were received after reception of a message.
U01120	No response after transmission of an MCF signal.
U01121	No response after transmission of an RTP signal.
U01122	No response after transmission of an RTN signal.
U01123	No response after transmission of a PIP signal.
U01124	No response after transmission of a PIN signal.
U01125	No response after transmission of a CNS signal (between units of our make).
U01126	No response after transmission of a PPR signal (ECM).
U01127	No response after transmission of an ERR signal (ECM).
U01128	No response after transmission of an RNR signal (ECM).
U01129	No response after transmission of an SPA signal (short protocol).
U01140	A DCN signal was received after transmission of a DIS signal.
U01141	A DCN signal was received after transmission of a DTC signal.
U01142	A DCN signal was received after transmission of a DCS or NSS signal.
U01143	A DCN signal was received after transmission of an FTT signal.
U01144	A DCN signal was received after transmission of a CFR signal.
U01145	A DCN signal was received after reception of a message.
U01146	A DCN signal was received after transmission of an MCF signal (interoffice communication after reception of an MPS, EOM signal or confidential interoffice communication).
U01147	A DCN signal was received after transmission of an RTP signal.
U01148	A DCN signal was received after transmission of an RTN signal.
U01149	A DCN signal was received after transmission of a PIP signal.
U01150	A DCN signal was received after transmission of a PIN signal.
U01151	A DCN signal was received after transmission of a PPR signal (ECM).
U01152	A DCN signal was received after transmission of a CTR signal (ECM).
U01153	A DCN signal was received after transmission of an ERR signal (ECM).
U01154	A DCN signal was received after transmission of an RNR signal (ECM).
U01155	A DCN signal was received after transmission of an SPA signal (short protocol).
U01160	During message reception, transmission time exceeded the maximum transmission time per line.
U01161	Number of error lines exceeded limits during message reception.
U01162	A break in loop current was detected during message reception.
U01163	Polarity reversal was detected during message reception.
U01164	One page length exceeded the specified length during message reception.
U01170	A decoding error occurred during MMR message reception.
U01172	During reverse polling in V.34 mode at the transmitting unit, a JM signal was not detected after transmission of a CM signal when receiving after transmission.

Error code	Description
U01191	Communication was interrupted because an error occurred during an image data reception sequence in the V.34 mode.
U01199	A DIS signal with different FIF was received after transmission of a DIS signal.

(2-7) U017XX error code table: V.34 transmission

Error code	Description
U01700	A communication error occurred in phase 2 (line probing).
U01720	A communication error occurred in phase 4 (modem parameter exchange).
U01721	Operation was interrupted due to the absence of a common communication speed between units.

U01700: A communication error that occurs at the transmitting unit in the period after transmission of INFO0 before entering phase 3 (primary channel equivalent device training). For example, INFO0/A/Abar (B/Bbar, for polling transmission)/INFOh was not detected.

U01720: A communication error that occurs at the transmitting unit in the period after initiating the control channel before entering the T.30 process. For example, PPh/ALT/MPh/E was not detected.

U01721: In the absence of a common communication speed between units (including when an impossible combination of communication speed and symbol speed occurs) after MPh exchange; 1) a DCN signal was received from the destination unit, and the line was cut; or 2) a DIS (NSF, CSI) signal was received from the destination unit and, in response to the signal, the unit transmitted a DCN signal, and the line was cut.

(2-8) U018XX error code table: V.34 reception

Error code	Description
U01800	A communication error occurred in phase 2 (line probing).
U01810	A communication error occurred in phase 3 (primary channel equivalent device training).
U01820	A communication error occurred in phase 4 (modem parameter exchange).
U01821	Operation was interrupted due to the absence of a common communication speed between units.

U01800: A communication error that occurs at the receiver unit in the period after transmission of INFO0 before entering phase 3 (primary channel equivalent device training). For example, INFO0/B/Bbar (A/Abar, for polling reception)/probing tone was not detected.

U01810: A communication error that occurs at the receiver unit in phase 3 (primary channel equivalent device training). For example, S/Sbar/PP/TRN was not detected.

U01820: A communication error that occurs at the receiver unit in the period after initiating the control channel before entering the T.30 process. For example, PPh/ALT/MPh/E was not detected.

U01821: In the absence of a common communication speed between units (including when an impossible combination of communication speed and symbol speed occurs) after MPh exchange, a DCN signal was transmitted to the destination unit and the line was cut.

(2-9) U044XX error code table: Encrypted transmission

Error code	Description
U04400	Encrypted transmission was interrupted because encryption keys did not agree.
U04401	Calling failed during encrypted transmission because the encryption key was not registered.

1-5-1 Self-diagnosis

(1) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C003	Fax control PCB system problem <ul style="list-style-type: none"> Processing with the fax software was disabled due to a hardware or software problem. 	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C013	Fax control PCB software switch checksum error <ul style="list-style-type: none"> A checksum error occurred with the software switch value stored in the flash ROM on the fax control PCB. 	Defective SRAM on the fax control PCB.	Replace the fax control PCB and check for correct operation.
C028	Communication problem between the operation unit PCB and fax control PCB <ul style="list-style-type: none"> The operation unit PCB did not receive any key request command from the fax control PCB within 1 minute of the status change signal turning on. Then, after resetting the fax machine, the operation unit PCB again did not receive any key request command from the fax control PCB while the status change signal was held on for 1 minute. Abnormal data was received 5 times in succession in response to the command from the fax control PCB. An erroneous FAX READY signal continued for 3 seconds and, after resetting the fax machine, an erroneous FAX READY signal continued for 3 seconds again. 	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C082	Fax control PCB CG ROM checksum error <ul style="list-style-type: none"> A checksum error occurred with the CG ROM data in the flash ROM on the fax control PCB. 	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C083	Flash ROM program area checksum error <ul style="list-style-type: none"> A checksum error occurred with the program in the flash ROM on the fax control PCB. 	Defective SRAM on the fax control PCB.	Replace the fax control PCB and check for correct operation.

3CM

1-6-1 Updating the firmware

(1) Updating the firmware on the fax control PCB (FLASH ROM)

Perform the steps below when updating the firmware in the Flash ROM on the fax control PCB.

Firmware updating requires the following tools:

Flash tool assembly (P/N 3596801*)

Control ROM IC1 (P/N 3CM6802*)

Control ROM IC2 (P/N 3CM6806*)

Caution:

- Turn the main switch off and disconnect the power plug from the wall outlet before disconnecting or inserting connectors.

<Procedure>

1. Turn the main switch off and disconnect the power plug from the wall outlet.
2. Remove the two screws holding the rear cover and then the cover.
3. Remove the five screws holding the fax shield cover and then the cover.
4. Fit control ROM IC1 and control ROM IC2 to the flash tool assembly.

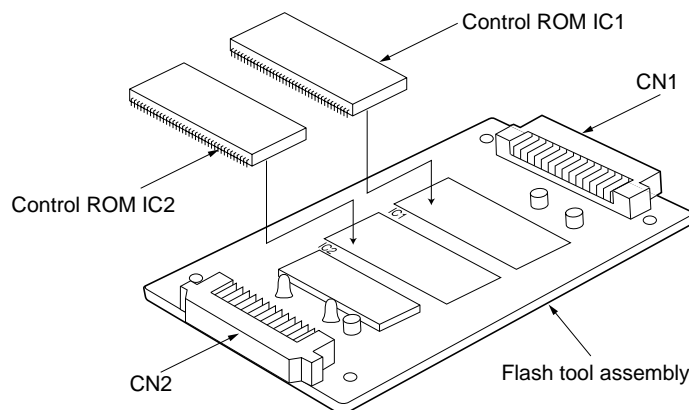


Figure 1-6-1

5. Insert connector CN1 (the one furthest from the LEDs) on the flash tool assembly into connector CN5 on the fax control PCB.

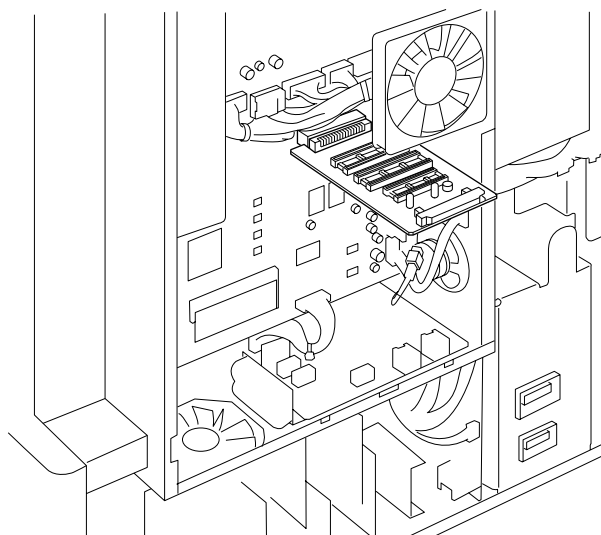


Figure 1-6-2

6. Connect the power plug into the wall outlet. Upgrading of control ROM IC1 and 2 starts and LED on the flash tool assembly flashes for 30 seconds. The LED remains on when upgrading is complete.
7. Disconnect the power plug from the wall outlet.
8. Remove the flash tool assembly from the fax control PCB.
9. Refit the fax controller box cover and rear cover.

(2) Updating the firmware on the fax control PCB (Compact Flash card)

To carry out a FLASH ROM firmware update of the fax control PCB, follow the steps below.

This firmware update requires the following tools:

CF jig (P/N 3CM6803*)

Compact Flash card (Products manufactured by SANDISK are recommended.)

Caution:

- Turn the main power switch off and disconnect the power plug from the wall outlet before disconnecting or inserting connectors.
- When writing data to Compact Flash card from a computer, be sure to format it in advance.
(For formatting, insert a Compact Flash card and select a drive.)
- For a desktop computer, connect a Compact Flash card reader/writer to it. For a notebook computer, use a PC card adapter or a connection portion only for Compact Flash card.

<Procedure>

1. Check the current ROM version using maintenance mode U680.
2. Turn the main switch off and disconnect the power plug from the wall outlet.
3. Remove the rear cover and the control-box cover. (Refer to“(1) Updating the firmware on the fax control PCB (Flash ROM)”, Steps 1 to 3, above.)
4. If you are using a new CF jig, continue as follows to write the boot program into the jig's flash boot. If your CF jig already has the boot program in its flash boot, jump ahead to step 13.
5. Insert a Compact Flash card containing the boot program into the CF jig. Be sure that the card fits in smoothly along the left and right guides. (Trying to force the card in incorrectly may cause electrical contacts to break.)
6. Set dip-switch bit SW012 on the jig to “MEMORY”.

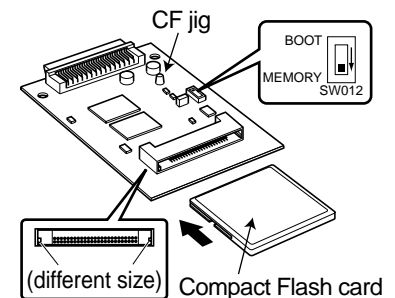


Figure 1-6-3

7. Connect CN1 on the CF jig to CN5 on the fax control PCB.
8. Plug the machine's power plug back into the wall outlet, and turn the main switch on.
9. Run maintenance mode U881 (“Load program to jig”) to write the boot program into the jig. (See page 1-3-36.)
10. When loading terminates normally, disconnect the power plug from the wall outlet again.
11. Disconnect the CF jig from the fax control PCB.
12. Remove the Compact Flash card from the CF jig.
13. Insert a Compact Flash card containing the firmware into the CF jig. Again, be sure that the card fits in smoothly along the left and right guides. (Trying to force the card may cause contacts to break.)
14. Set dip-switch bit SW012 on the jig to “BOOT”. 15. Connect CN1 on the CF jig to CN5 on the fax control PCB.

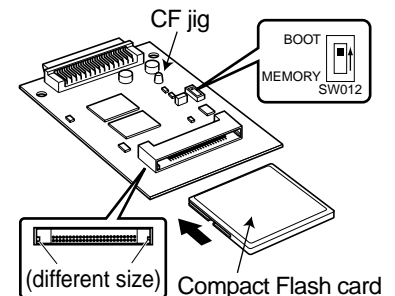


Figure 1-6-4

15. Connect CN1 on the CF jig to CN5 on the fax control PCB.

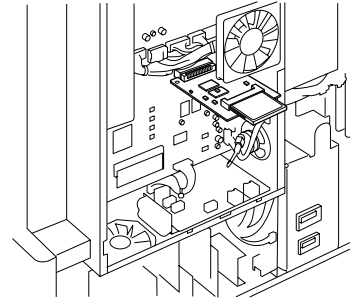


Figure 1-6-5

16. Plug the power plug back into the wall outlet, and turn the main switch on.
ROM upgrading begins automatically. The LED on the CF jig flashes while upgrading is in progress (for about 30 seconds), then comes on solid to indicate that upgrading is finished.
17. Turn the main switch off, and disconnect the power plug from the wall outlet.
18. Disconnect the CF jig from the fax control PCB.
19. Reattach the control-box cover and rear cover.
20. Plug the power plug back into the wall outlet, and turn the main switch back on.
21. Check the ROM version again using maintenance mode U680.

2-1-1 Electrical parts layout

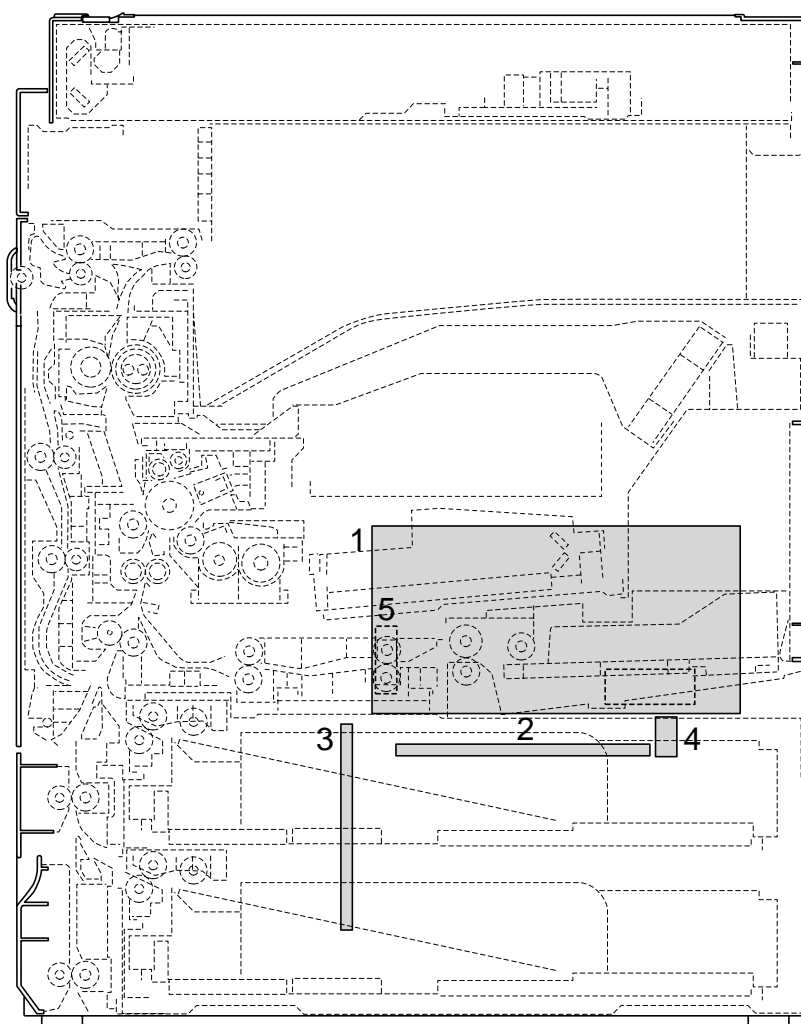


Figure 2-1-1

- | | |
|--|--|
| 1. Fax control PCB (FCPCB) | Modulates, demodulates, compresses, decompresses and smoothes out image data, and converts resolution of image data. |
| • Add-on memory* | Expands memory capacity for image data and bitmap conversion. |
| 2. NCU PCB (NCUPCB) | Controls connection to the telephone line. |
| 3. Fax operation unit PCB (FOPCB) | Consists of fax operation keys and display LEDs. |
| 4. Auxiliary power source PCB (APSPCB) | Converts an AC input to generate 5.2 V DC and 12 V DC. |
| 5. Backup battery (BUBAT) | Saves stored image when a power-down occur. |
| 6. Speaker (SP) | Outputs buzzer, monitoring and speaker sounds. |
- * Optional.

3CM

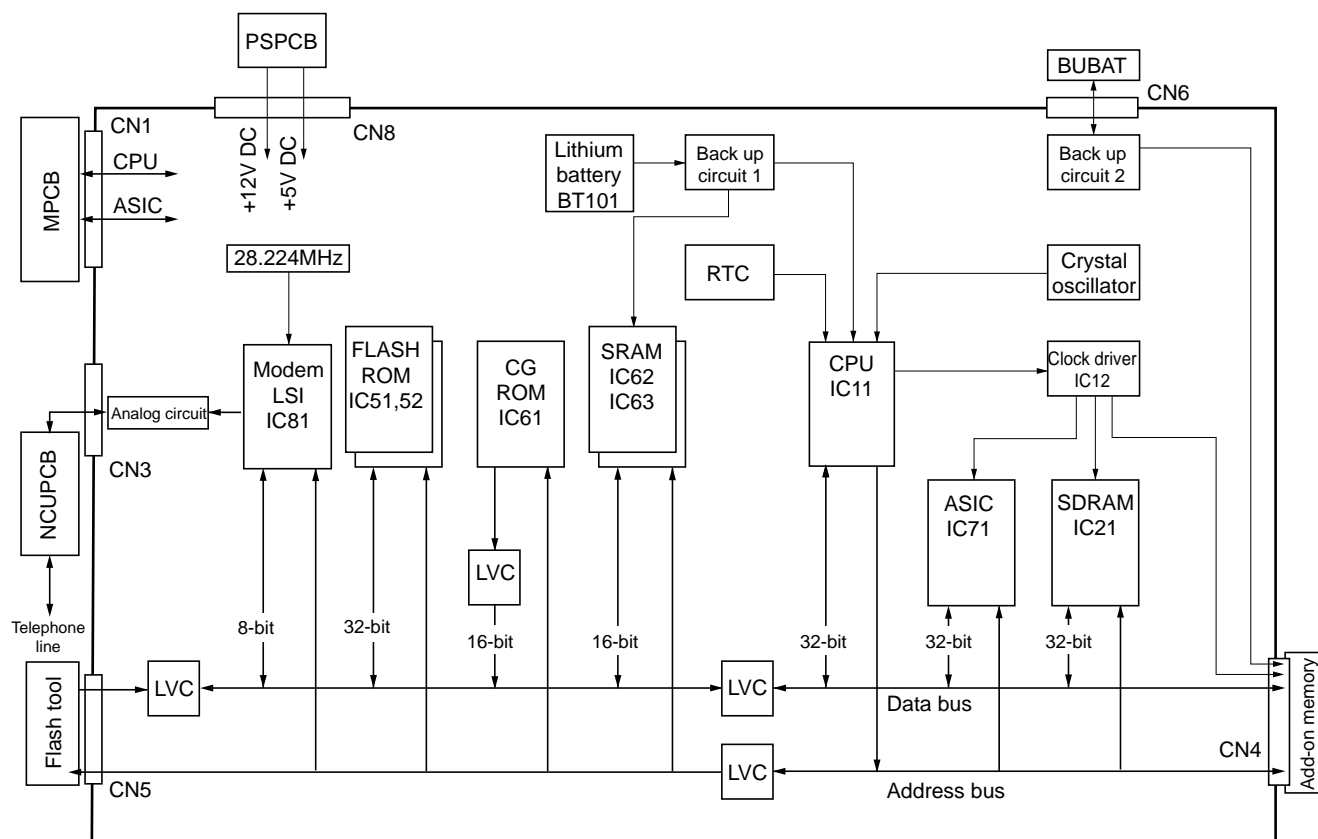


Figure 2-2-1 Fax control PCB block diagram

The fax control PCB (FCPCB) controls the overall fax operation.

To transmit a fax, image data scanned by the optical section of the copier is processed by the main PCB (MPCB) and then sent to the fax control PCB (FCPCB). Received image data is first stored in the bitmap area of the SDRAM IC21 page by page and compressed using the MH, MR or MMR method. The data is then stored in the image memory area of the SDRAM IC21 and sent to the modem LSI IC81 to be modulated from digital signal to analog signal before it is sent to the telephone line via the NCU PCB (NCUPCB).

To receive a fax, analog image data received from the telephone line via the NCU PCB (NCUPCB) is sent to the modem LSI IC81 and, after demodulation into digital signals, stored in the image memory area of the SDRAM IC21. The image data is then decompressed and converted into the bitmap area of the SDRAM IC21 page by page and sent to the ASIC IC71 for resolution conversion and smoothing, and is passed to the main PCB (MPCB) as print image data.

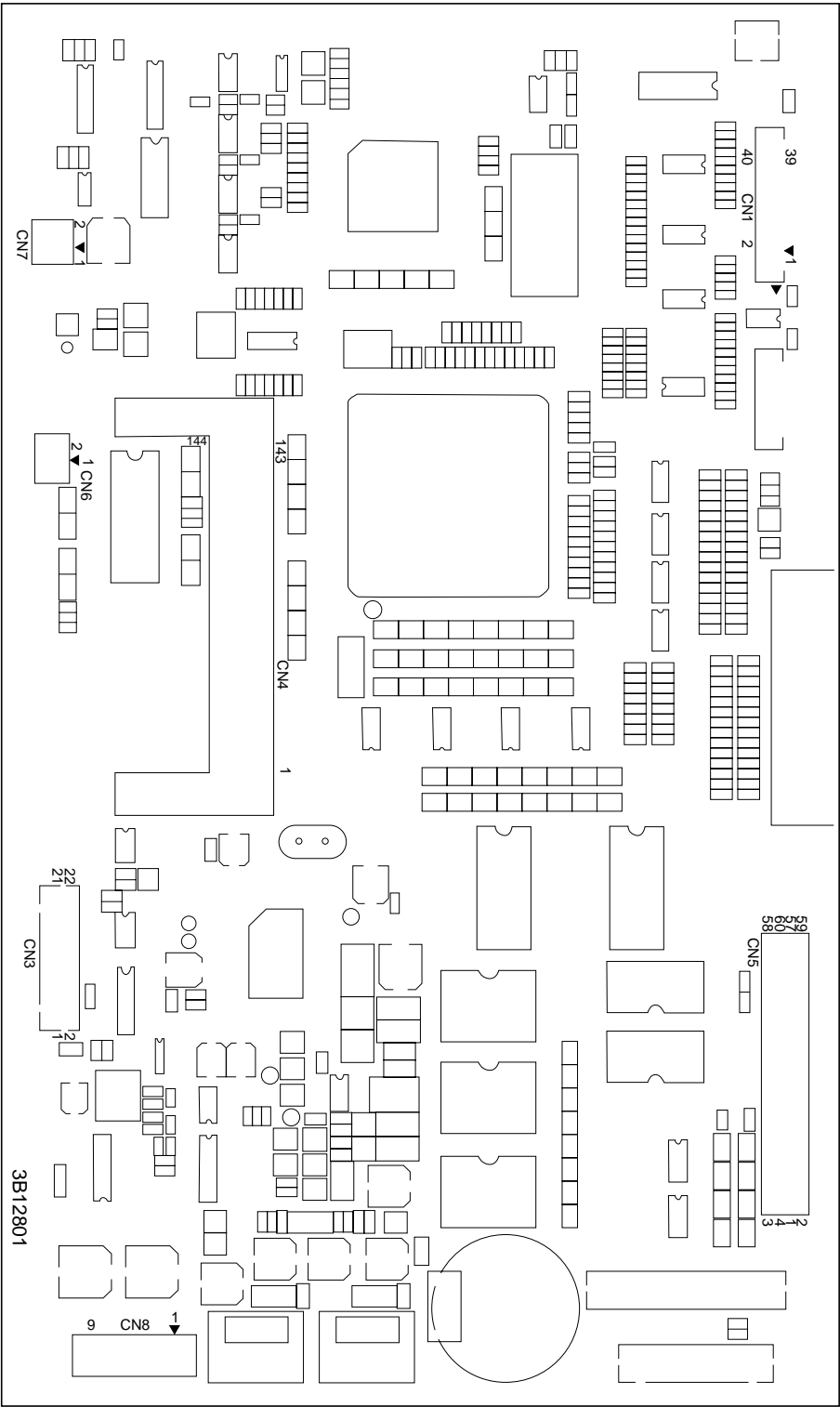


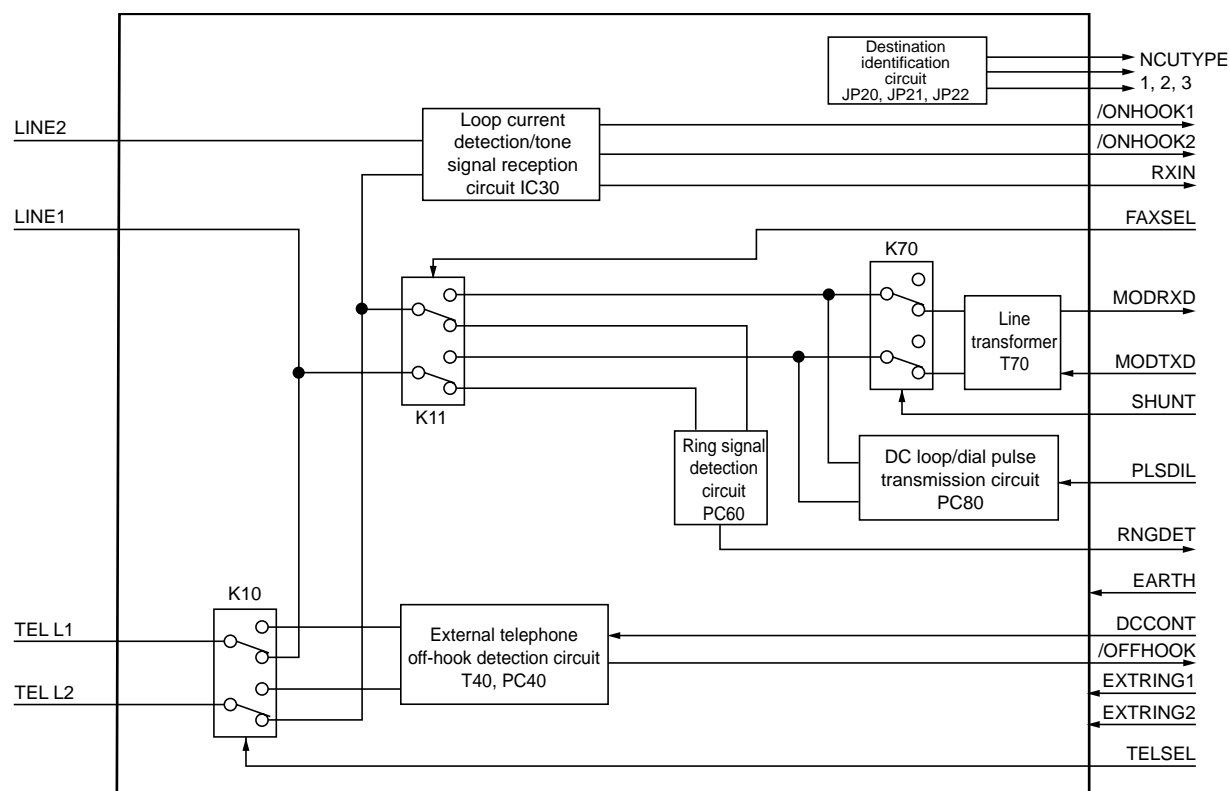
Figure 2-2-2 Fax control PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	1-2	3.3/0 V DC (pulse)	3.3 V DC supply detection signal, input
1-3	1-4	3.3/0 V DC (pulse)	FPVCLK signal, input
1-5	1-6	3.3/0 V DC (pulse)	FVCLK signal, output
1-7	1-8	3.3/0 V DC (pulse)	FMRE signal, output
1-9	1-10	3.3/0 V DC (pulse)	FPVD signal, output
1-11	1-12	3.3/0 V DC (pulse)	FPHSYNC signal, input
1-13	1-14	3.3/0 V DC (pulse)	FPVSYNC signal, input
1-15	1-16	3.3/0 V DC (pulse)	FOVSYNC signal, input
1-17	1-18	3.3/0 V DC (pulse)	FOHSTHIN signal, input
1-19	1-20	3.3/0 V DC (pulse)	FMIPOUT0 signal, input
1-21	1-22	3.3/0 V DC (pulse)	FMREOUT signal, input
1-23	1-24	3.3/0 V DC (pulse)	FFOCLK signal, input
1-25	1-26	3.3/0 V DC (pulse)	MMISTS signal, input
1-27	1-28	3.3/0 V DC (pulse)	FMML_TXD2 signal, input
1-29	1-30	5/0 V DC (pulse)	FMML_RXD2 signal, output
1-31	1-30	3.3/0 V DC (pulse)	FAXRESET signal, input
1-32	1-30	5/0 V DC (pulse)	FAXREADY signal, output
1-33	1-30	5/0 V DC (pulse)	PREQ signal, output
1-34	1-30	5/0 V DC (pulse)	SREQ signal, output
1-36	1-37	3.3/0 V DC (pulse)	MAINSTS signal, input
1-38	1-39	3.3/0 V DC (pulse)	FMAIN_TXD0 signal, input
1-40	1-39	5/0 V DC (pulse)	FMAIN_RXD0 signal, output
3-1	3-2	12 V DC	12 V DC supply, output
3-3	3-4	5 V DC	5 V DC supply, output
3-5	3-4	3.3/0 V DC (pulse)	EXTRING1 signal, output
3-6	3-4	3.3/0 V DC (pulse)	EXTRING2 signal, output
3-7	3-4	3.3/0 V DC (pulse)	KMUTE signal, output
3-8	3-4	3.3/0 V DC (pulse)	SHUNT signal, output
3-10	3-4	3.3/0 V DC (pulse)	EARTH signal, output
3-11	3-4	3.3/0 V DC (pulse)	TELSEL signal, output
3-12	3-4	3.3/0 V DC (pulse)	FAXSEL signal, output
3-13	3-4	3.3/0 V DC (pulse)	NCUTYPE2 signal, input
3-14	3-4	3.3/0 V DC (pulse)	NCUTYPE3 signal, input
3-15	3-4	3.3/0 V DC (pulse)	OFFHOOK signal, input
3-16	3-4	3.3/0 V DC (pulse)	NCUTYPE1 signal, input
3-17	3-4	5/0 V DC (pulse)	ONHOOK1 signal, input
3-18	3-4	5/0 V DC (pulse)	ONHOOK2 signal, input
3-19	3-4	3.3/0 V DC (pulse)	RINGDET signal, input
3-20	3-2	Analog	MODTXD signal, output
3-21	3-2	Analog	RXIN signal, input
3-22	3-2	Analog	MODRXD signal, input
4-61	4-71, 73, 75	3.3/0 V DC (pulse)	OPTYPE1 signal, input
4-63	4-71, 73, 75	3.3/0 V DC (pulse)	OPTYPE2 signal, input
4-65, 67, 69	4-71, 73, 75	3.3 V DC	3.3 V DC supply, input
4-74	4-71, 73, 75	3.3/0 V DC (pulse)	DB (23) signal, input/output
4-76	4-71, 73, 75	3.3/0 V DC (pulse)	DB (21) signal, input/output
4-77	4-71, 73, 75	3.3/0 V DC (pulse)	DB (22) signal, input/output
4-78	4-71, 73, 75	3.3/0 V DC (pulse)	DB (19) signal, input/output
4-79	4-71, 73, 75	3.3/0 V DC (pulse)	DB (20) signal, input/output
4-80	4-71, 73, 75	3.3/0 V DC (pulse)	DB (17) signal, input/output
4-81	4-71, 73, 75	3.3/0 V DC (pulse)	DB (18) signal, input/output
4-82	4-109, 113	3.3/0 V DC (pulse)	DQM2 signal, output
4-83	4-71, 73, 75	3.3/0 V DC (pulse)	DB (16) signal, input/output
4-84	4-71, 73, 75	3.3/0 V DC (pulse)	AB (3) signal, output
4-85	4-71, 73, 75	3.3/0 V DC (pulse)	AB (4) signal, output
4-86	4-71, 73, 75	3.3/0 V DC (pulse)	AB (12) signal, output

Terminals (CN)		Voltage	Remarks
4-87	4-71, 73, 75	3.3/0 V DC (pulse)	AB (2) signal, output
4-88	4-71, 73, 75	3.3/0 V DC (pulse)	AB (14) signal, output
4-89	4-71, 73, 75	3.3/0 V DC (pulse)	AB (13) signal, output
4-90	4-71, 73, 75	3.3/0 V DC (pulse)	DB (25) signal, input/output
4-91	4-71, 73, 75	3.3/0 V DC (pulse)	DB (24) signal, input/output
4-92	4-71, 73, 75	3.3/0 V DC (pulse)	DB (27) signal, input/output
4-93	4-71, 73, 75	3.3/0 V DC (pulse)	DB (26) signal, input/output
4-94	4-71, 73, 75	3.3/0 V DC (pulse)	DB (29) signal, input/output
4-95	4-71, 73, 75	3.3/0 V DC (pulse)	DB (28) signal, input/output
4-96	4-71, 73, 75	3.3/0 V DC (pulse)	DB (31) signal, input/output
4-97	4-71, 73, 75	3.3/0 V DC (pulse)	DB (30) signal, input/output
4-98	4-71, 73, 75	3.3/0 V DC (pulse)	AB (5) signal, output
4-99	4-109, 113	3.3/0 V DC (pulse)	DQM3 signal, output
4-100	4-71, 73, 75	3.3/0 V DC (pulse)	AB (7) signal, output
4-101	4-71, 73, 75	3.3/0 V DC (pulse)	AB (6) signal, output
4-102	4-71, 73, 75	3.3/0 V DC (pulse)	AB (9) signal, output
4-103	4-71, 73, 75	3.3/0 V DC (pulse)	AB (8) signal, output
4-104	4-71, 73, 75	3.3/0 V DC (pulse)	AB (11) signal, output
4-105	4-71, 73, 75	3.3/0 V DC (pulse)	AB (10) signal, output
4-106	4-109, 113	3.3/0 V DC (pulse)	_CS signal, output
4-107	4-109, 113	3.3/0 V DC (pulse)	CKE signal, output
4-108	4-109, 113	3.3/0 V DC (pulse)	_RAS signal, output
4-110	4-109, 113	3.3/0 V DC (pulse)	_CAS signal, output
4-111	4-109, 113	3.3/0 V DC (pulse)	CLK signal, output
4-112	4-109, 113	3.3/0 V DC (pulse)	RD/_WE signal, output
4-114	4-109, 113	3.3/0 V DC (pulse)	DQM1 signal, output
4-115	4-71, 73, 75	3.3/0 V DC (pulse)	DB (8) signal, input/output
4-116	4-71, 73, 75	3.3/0 V DC (pulse)	DB (9) signal, input/output
4-117	4-71, 73, 75	3.3/0 V DC (pulse)	DB (10) signal, input/output
4-118	4-71, 73, 75	3.3/0 V DC (pulse)	DB (11) signal, input/output
4-119	4-71, 73, 75	3.3/0 V DC (pulse)	DB (12) signal, input/output
4-120	4-71, 73, 75	3.3/0 V DC (pulse)	DB (13) signal, input/output
4-121	4-71, 73, 75	3.3/0 V DC (pulse)	DB (14) signal, input/output
4-122	4-71, 73, 75	3.3/0 V DC (pulse)	DB (15) signal, input/output
4-123	4-109, 113	3.3/0 V DC (pulse)	DQM0 signal, output
4-124	4-71, 73, 75	3.3/0 V DC (pulse)	DB (7) signal, input/output
4-125	4-71, 73, 75	3.3/0 V DC (pulse)	DB (6) signal, input/output
4-126	4-71, 73, 75	3.3/0 V DC (pulse)	DB (5) signal, input/output
4-127	4-71, 73, 75	3.3/0 V DC (pulse)	DB (4) signal, input/output
4-128	4-71, 73, 75	3.3/0 V DC (pulse)	DB (3) signal, input/output
4-129	4-71, 73, 75	3.3/0 V DC (pulse)	DB (2) signal, input/output
4-130	4-71, 73, 75	3.3/0 V DC (pulse)	DB (1) signal, input/output
4-131	4-71, 73, 75	3.3/0 V DC (pulse)	DB (0) signal, input/output
4-139, 141, 143	4-133, 135, 137	3.3 V DC	3.3 V DC supply, output
6-1	6-2	3 V DC	BUBAT backup power supply, input
7-1	7-2	Analog	SP alarm, output
8-1, 2	8-3, 4	5 V DC	5 V DC supply, input
8-5	8-6	+12 V DC	+12 V DC supply, input
8-7	8-3, 4	5/0 V DC (pulse)	MRY signal, output
8-8	8-9	3.3/0 V DC (pulse)	MSW signal, input

2-2-2 NCU PCB

120 V specifications



220 - 240 V specifications

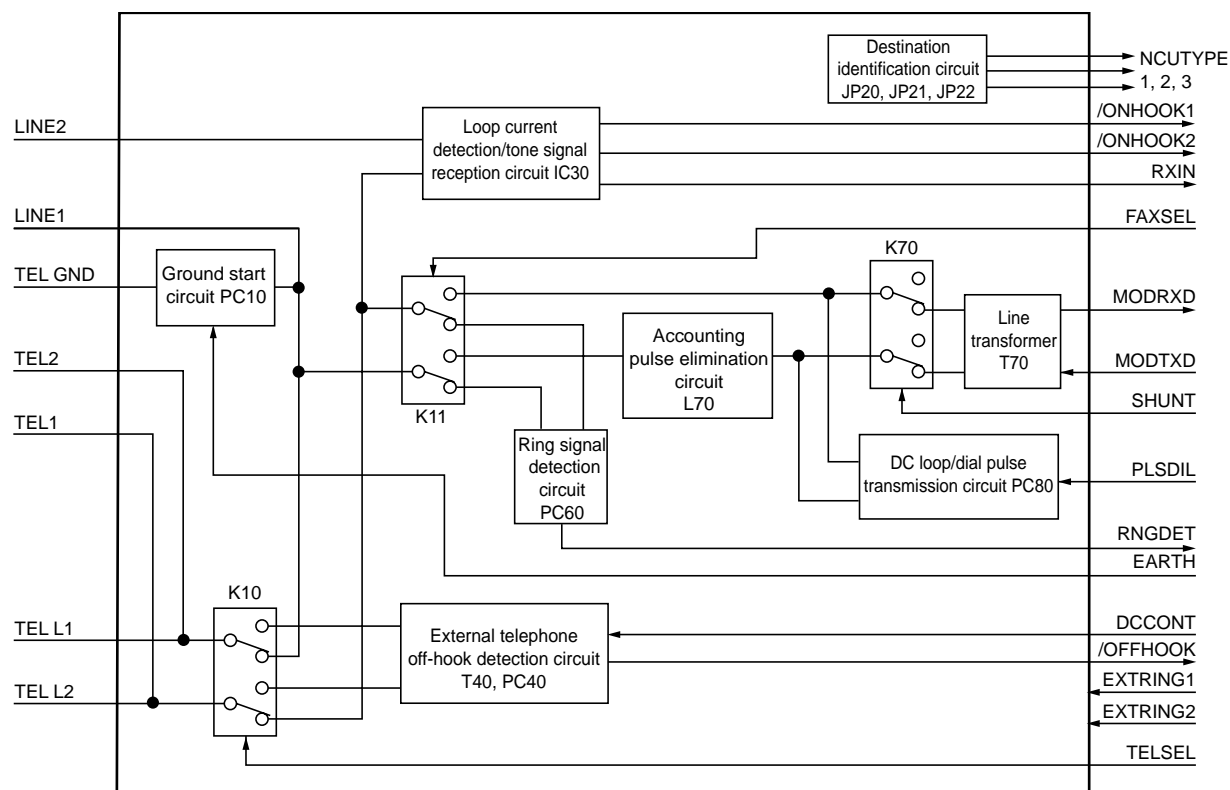


Figure 2-2-3 NCU PCB block diagram

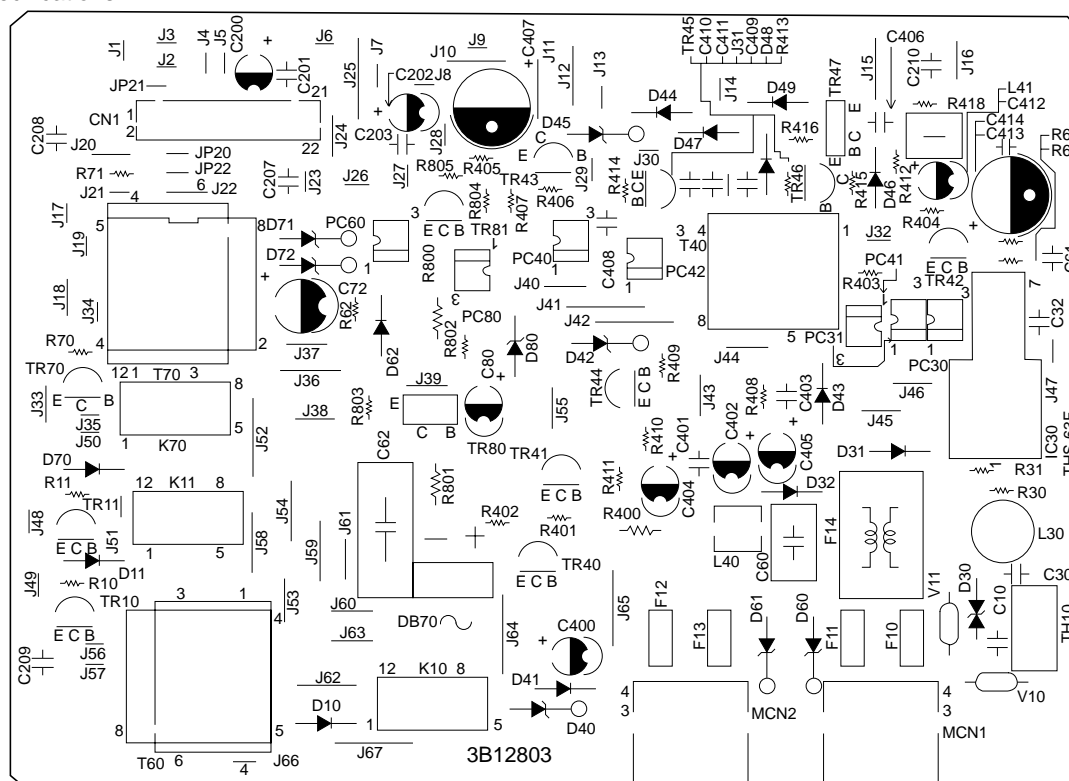
The NCU PCB (NCUPCB) mainly controls the connection to the telephone line. It consists of the circuits shown in the block diagram.

The loop current detection/tone signal reception circuit IC30 detects the DC loop current formed at the DC loop/dial pulse transmission circuit PC80 to determine the status of the telephone line. It also receives tone (DTMF) signals during remote control. The ring signal detection circuit PC60 detects the ring signals from the telephone line to determine call reception. The DC loop/dial pulse transmission circuit PC80 turns on and off the DC loop formed in the telephone line to send out dial pulses (selection signals). The external telephone off-hook detection circuit (T40 and PC40) detects the off-hook state of the telephone connected or the handset*¹. The destination identification circuit (JP20, JP21 and JP22) is used by the fax control PCB (FCPCB) to identify the destination of the NCU PCB (NCUPCB). The accounting pulse elimination circuit L70 removes signals representing the communication charge information (accounting pulses) before they reach the modem when telephone line is used.*² This is because accounting pulses obstruct fax communications. The ground start circuit PC10 requests an outside connection to the private branch exchange (PBX) when calling via the PBX.*²

*1: Optional for 120 V specifications only.

*2: For 220 - 240 V specifications only.

120 V specifications



220 - 240 V specifications

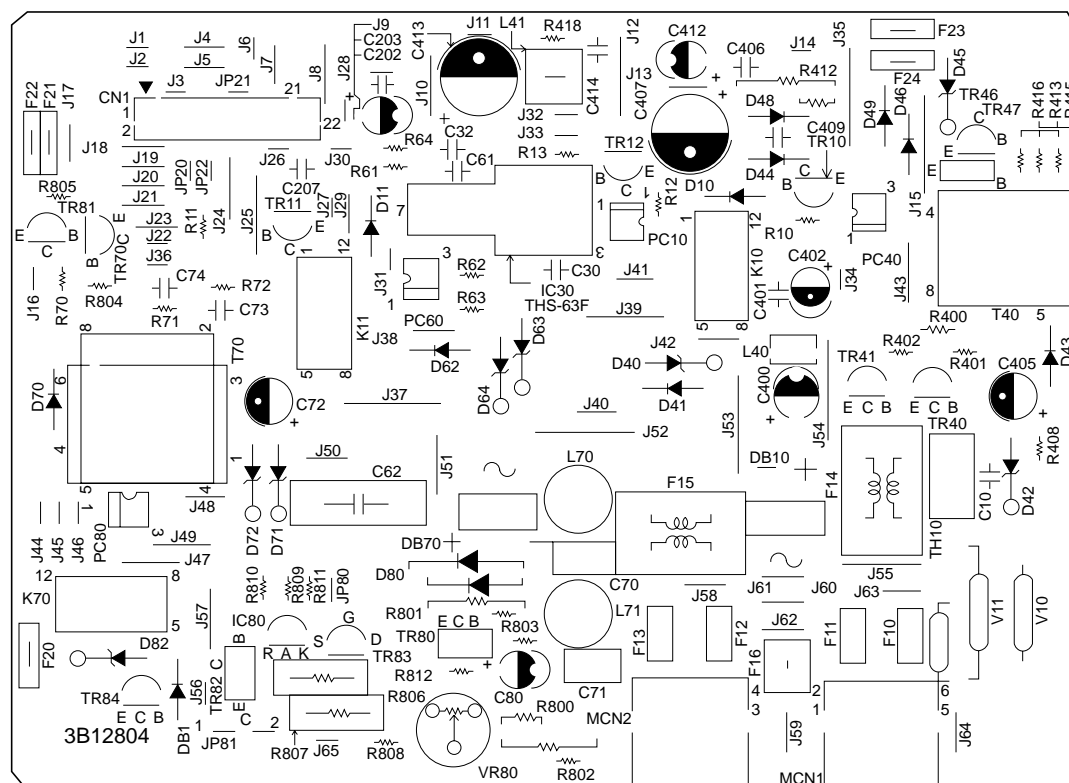


Figure 2-2-4 NUC PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	1-22	Analog	RXIN signal, output
1-2	1-22	Analog	MODRXD signal, output
1-3	1-20	3.3/0 V DC (pulse)	RNGDET signal, output
1-4	1-22	Analog	MODTXD signal, input
1-5	1-20	5/0 V DC (pulse)	ONHOOK1 signal, output
1-6	1-20	5/0 V DC (pulse)	ONHOOK2 signal, output
1-7	1-20	3.3/0 V DC (pulse)	OFFHOOK signal, output
1-9	1-20	3.3/0 V DC (pulse)	NCUTYPE2 signal, output
1-10	1-20	3.3/0 V DC (pulse)	NCUTYPE3 signal, output*
1-11	1-20	3.3/0 V DC (pulse)	TELSEL signal, input
1-12	1-20	3.3/0 V DC (pulse)	FAXSEL signal, input
1-13	1-20	3.3/0 V DC (pulse)	PLSDIL signal, input
1-14	1-20	3.3/0 V DC (pulse)	EARTH signal, input*
1-15	1-20	3.3/0 V DC (pulse)	DCCONT signal, input
1-16	1-20	3.3/0 V DC (pulse)	SHUNT signal, input
1-19	1-20	5 V DC	5 V DC supply, input
1-21	1-22	12 V DC	12 V DC supply, input

*For 220-240 V specifications.

2-2-3 Auxiliary power source PCB

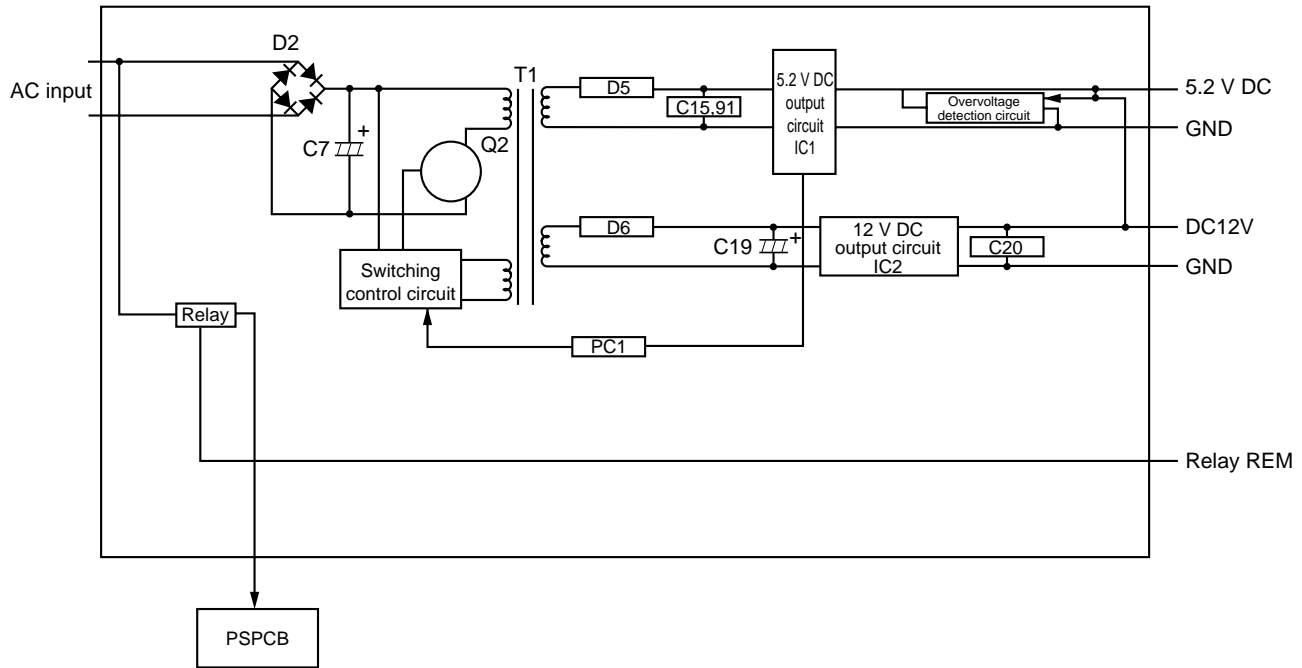


Figure 2-2-4 Auxiliary power source PCB block diagram

The auxiliary power source PCB (APSPCB) is a switching regulator that converts an AC input to generate 5.2 V DC and 12 V DC. It consists of a switching control circuit, 5.2 V DC output circuit and 12 V DC output circuit.

The rectifier circuit rectifies the full-wave of the AC input using the diode bridge D2. The smoothing capacitor C7 smoothes out the pulsed current from the diode bridge.

The switching control circuit turns on/off the power MOSFET Q2 with the voltage induced in the controlling coil of the transformer T1 to switch the current induced in the primary coil of the transformer T1.

The 5.2 V DC output circuit smoothes out the voltage from the current induced in the secondary coil of the transformer T1 via the diode D5 and smoothing capacitors C15 and C91, and outputs a stable 5.2 V DC using the shunt regulator IC1. The output status of the 5.2 V DC is fed back to the switching control circuit via the photo-coupler PC1. Based on the feedback, the switching control circuit changes the duty cycle of the pulse that turns power MOSFET Q2 on/off in order to adjust the 5.2 V DC.

The 12 V DC output circuit smoothes out voltage from the current induced in the secondary coil of the transformer T1 via the diode D6 and smoothing capacitor C19, and generates a stable 12 V DC using the 3-pin regulator IC2.

The relay turns on/off the AC supply to the power source PCB (PSPCB) based on the remote signal from the fax control PCB (FCPCB).

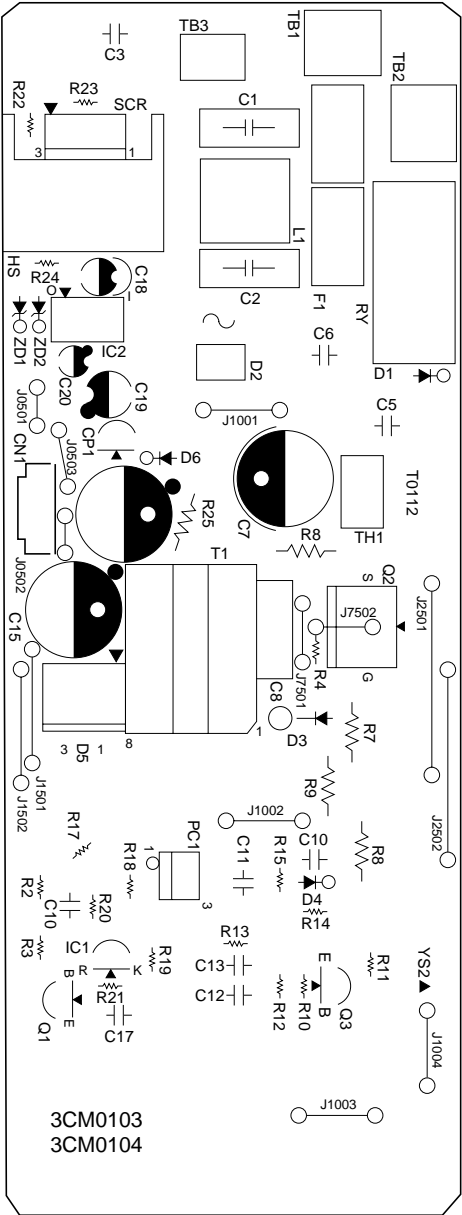


Figure 2-2-5 Auxiliary power source PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-3	1-2	12 V DC	12 V DC supply, output
1-5	1-4	5 V DC	5 V DC supply, output


Fax System (F)


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.
- Advise 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.



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1-1-1 Specifications

Type	Optional Fax Kit
Compatibility	Group 3
Line Requirement	Subscription telephone line
Transmission Speed	Within 3 seconds (33600 bps, JBIG, ITU-T #1 chart)
Modem Speed	33600/31200/28800/26400/24000/21600/19200/16800/14400/12000/9600/ 7200/4800/2400 bps
Data Compression	JBIG/MMR/MR/MH
Error Correction	ECM
Maximum Document Dimensions	Width: 11" [297 mm] Length: 63" [1600 mm]
Automatic Document Feeder Capacity	Duplex document processor: Max. 100 pages, document processor: Max. 70 pages
Auxiliary Scanning Line Density	Horizontal × Vertical Normal (8 dots/mm × 3.85 lines/mm) Fine (8 dots/mm × 7.7 lines/mm) Super fine (8 dots/mm × 15.4 lines/mm) Ultra fine (16 dots/mm × 15.4 lines/mm)
Recording Resolution	600 dpi × 600 dpi
Grayscale	128 levels (Value differential diffusion)
Speed-Dial Keys	Max. 600 destinations
Broadcast Transmission	Max. 300 destinations
Polling Reception	Max. 300 locations
Installed Bitmap Memory	4 MB
Installed Imaging Memory	4 MB (including 1 MB of working memory)
Management Reports and Lists	Activity Report, Confirmation List, User Setting List, One-Touch Key List, Telephone Directory List, Program Dial List, Group Dial List, Encryption Key List, Restricted Access Report, Department List
Options	Memory module DIMM (8 MB)
Functions	See pages 1-1-2 to 1-1-3.

Reception functions	Manual reception Automatic reception Fax/telephone auto selection TAD reception D.R.D. reception* ¹ Remote switching
Transmission functions	One-touch dialing* ² Program dialing* ² Group dialing* ² Chain dialing* ² Redialing (manual/automatic) Dial confirmation
Communication functions	Direct feed transmission Memory transmission Direct reception Memory reception (F-coded confidential reception and relay broadcast reception)
Additional communication functions	Broadcast transmission (up to 300 numbers) Polling communication Encrypted communication Password check communication Memory fax forwarding Reserved transmission Timer transmission Interrupt transmission Short protocol ECM F-coded transmission F-coded confidential reception F-coded bulletin board communication F-coded relay broadcast
Supplementary communication functions	Printing out from F-coded confidential box Manual transmission Telephone directory Transmission destination display Tone transmission Memory back-up (60 min.* ³) Entry into F-coded bulletin board Communication result display
Supplementary transmission functions	Batch transmission TTI transmission Bulletin board Rotation transmission Duplex transmission* ⁴ Initial communication speed setting
Supplementary reception functions	Memory reception 2-in-1 reception Auto reduce reception Rotation reception Duplex reception* ⁵ Recording paper setting (auto selection, fixed size or fixed cassette) During-reception copying Reception date and time recording

Reports	Activity report Transmission report Reception report Power failure report Delayed communication report Confirmation report User settings list Encryption key list Management report Department list One-touch key list Telephone directory list Program dial list Group dial list F-code confidential box list F-code relay box list Encryption box list Network fax setting list* ⁶
Others	Memory editing Remote diagnosis Department control for faxes Network fax functions* ⁶

*1: For 120 V specifications only.

*2: To be registered under one-touch keys. Up to 600 one-touch keys can be used for one-touch dialing, program dialing, group dialing and chain dialing.

*3: When the optional memory module DIMM is installed.

*4: Available only when the duplex document processor is installed.

*5: Available only when the duplex unit is installed.

*5: When the printer/scanner kit is installed.

1-1-2 Parts names and their functions

(1) Main body

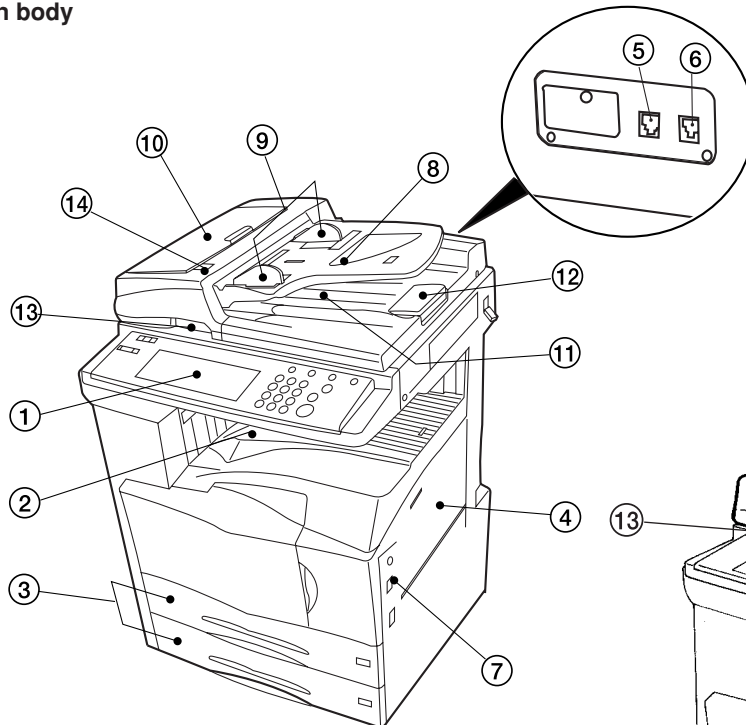


Figure 1-1-1

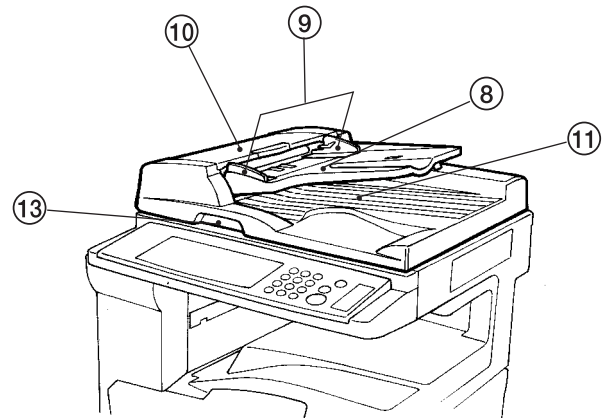


Figure 1-1-2

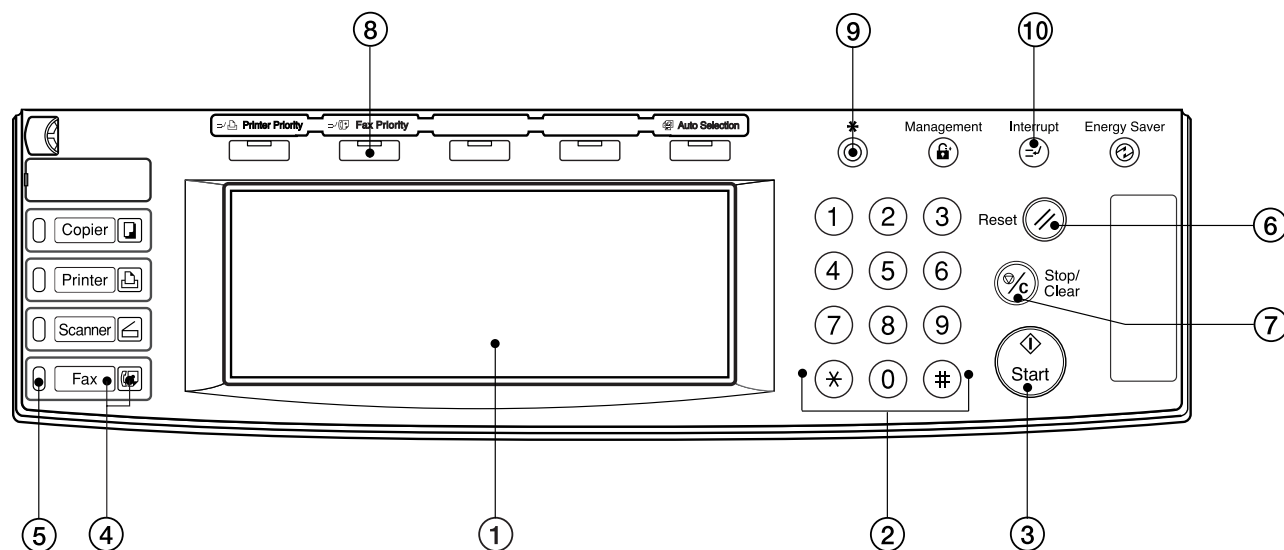
- | | | |
|---|---------------------------|---|
| 1 | Operation panel | Use the operation panel to perform the procedures required for fax communication. |
| 2 | Fax storage section | Received documents are ejected and stored face-down in the fax storage section. Up to 250 sheets can be stored in this section at one time. |
| 3 | Drawers | This fax machine comes standard with two drawers installed. Each drawer can hold up to 500 sheets of plain paper (60 g/m ² - 105 g/m ²). |
| 4 | Multi-Bypass | Paper can be set in the Multi-Bypass as well. In order to use the Multi-Bypass, it is necessary to select "ON" under "Turning Manual Paper Feed ON/OFF". |
| 5 | Telephone jack (T) | Use this jack to connect a separately purchased telephone to the fax. |
| 6 | Line jack (L) | Use this jack to connect the fax to a telephone line using the modular cord. |
| 7 | Main switch | Turn this switch ON () in order to perform fax and copy operations. The message display will light and operation will be possible. |

• Document Processor

There are 2 optional document processors available for use with this machine: the document processors for feeding one-sided documents, and the duplex document processor for using both sides of 2-sided documents.

* Both the document processor and duplex document processor can be used with the 25 copies per minute machine. However, only the duplex document processor can be used with the 35/40 copies per minute machine.

- | | | |
|----|--|---|
| 8 | Document table | Set the documents to transmit on the table. Up to 100 sheets of up to 11" × 8 1/2" [A4] size paper, or up to 70 sheets of 8 1/2" × 14" or 11" × 17" [A3 or Folio] size paper, can be set at one time when installing the duplex document processor. Up to 70 sheets of up to 11" × 8 1/2" [A4] size paper, or up to 50 sheets of 8 1/2" × 14" or 11" × 17" [A3 or Folio] size paper, can be set at one time when installing the document processor. |
| 9 | Document insert guides | Adjust these guides to match the width of the documents. |
| 10 | Document processor reversing cover | Open this cover if a document jams. |
| 11 | Document eject cover | Documents are ejected onto this cover after being scanned. |
| 12 | Eject guide | Open this guide when transmitting documents of a large size such as 8 1/2" × 14" or 11" × 17" [A3 or Folio]. |
| 13 | Document processor open/close lever ... | Operate this lever when opening and closing the document processor. |
| 14 | Document set indicator | This indicator indicates the status of the documents set in the document processor. Documents are set properly when the indicator is lit green. |

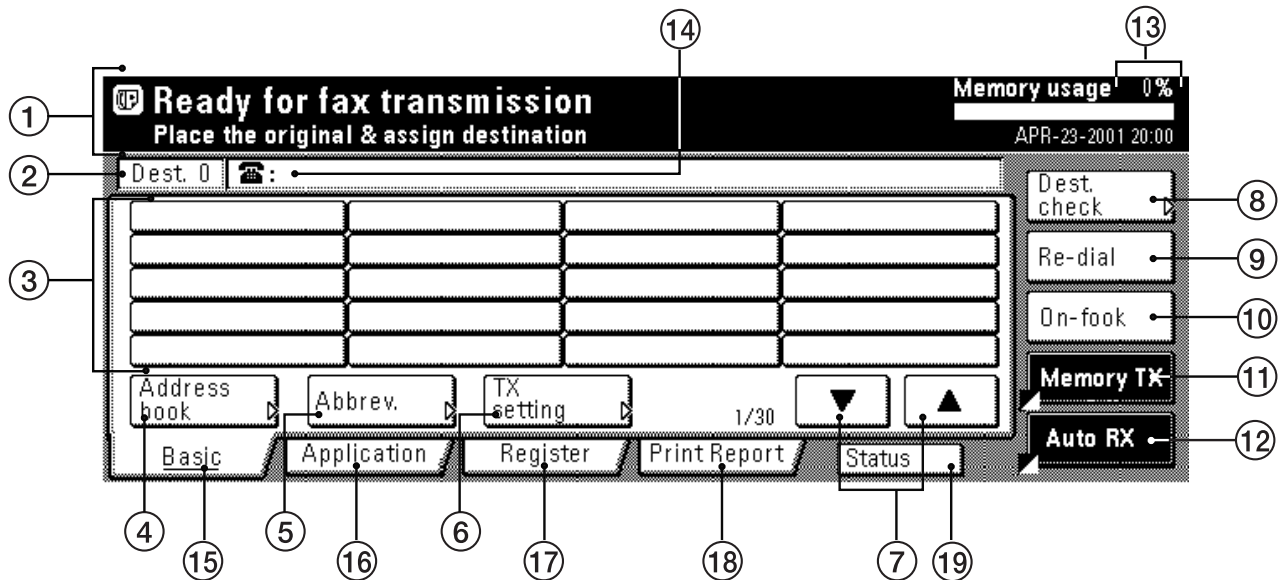
(2) Operation panel**Figure 1-1-3**

- 1 Touch panel Indicates operation procedures as well as trouble with the machine. Keys related to operational procedures which appear on the touch panel with their name displayed are indicated in this handbook within double quotation marks. In addition, you will be instructed to "touch" any keys which appear on the touch panel rather than "press" them. (Ex.: Touch the "xxx" key.)
- 2 Keypad Use the keypad to enter fax numbers, etc.
* Even if your telephone service is for pulse dialing, press the star (*) key and any key pressed on the keypad after that will transmit the related tone signal. (Inch version only)
- 3 Start key Press this key when you want to initiate a fax communication.
- 4 Fax key/Fax indicator Press this key when you want to switch between the Copy Operation and Fax Operation modes. The Fax indicator is lit when the machine is in the Fax Operation mode.
- 5 Fax data indicator This indicator blinks during a fax communication. When received documents or other data are being stored in memory, this indicator will flash and then light continuously.
- 6 Reset key Press this key when you want to cancel an operation in progress and have the touch panel return to the initial mode settings.
- 7 Stop/Clear key Press this key when you want to delete registered fax numbers or names, as well as when you want to stop an operation in progress.
- 8 Fax Priority key Press this key when you want to give priority to printing out a received fax during a copy operation.
- 9 Default key Press this key when you want to perform settings related to the various default modes for the fax functions of this machine.
- 10 Interrupt key/indicator lamp .. Press this key when you want to interrupt a fax reception in order to make copies. The indicator lamp in the Interrupt key will light when the machine is in the Interrupt mode.

(3) Basic fax screen on the touch panel

The initial screen that appears in the touch panel when you press the Fax key in any other mode in order to change to the Fax Operation mode is called the “basic fax screen”. The following contains information on the basic keys which are displayed in this screen and their functions.

Inch



Metric

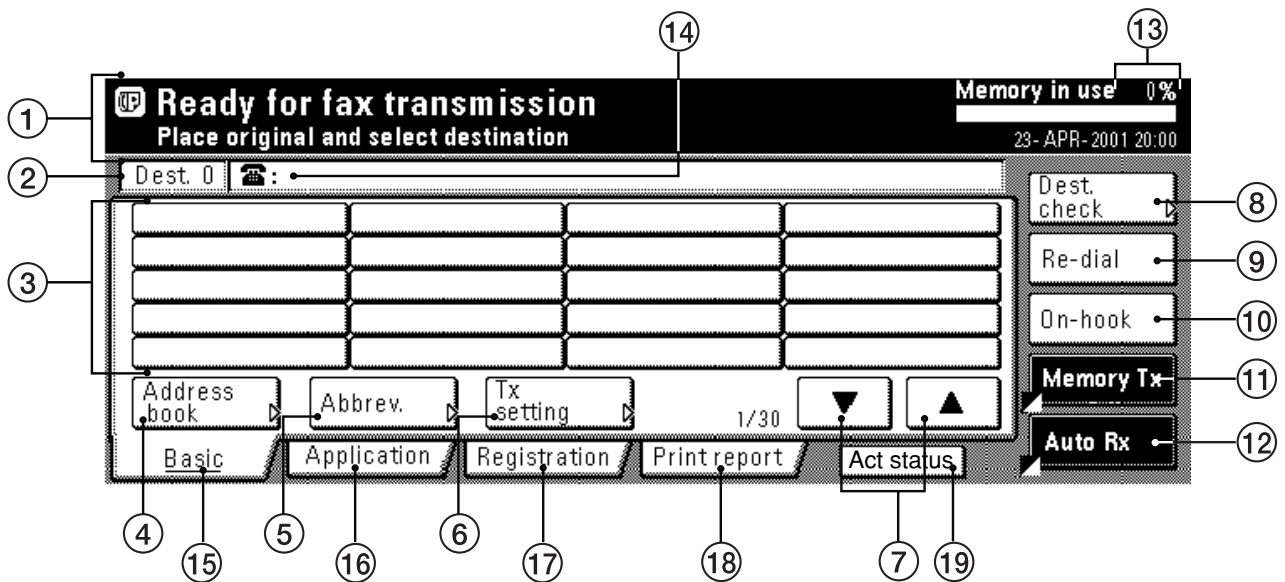


Figure 1-1-4

- 1 Message display Current status, the next step in a procedure and error messages are shown in the message display.
- 2 Number of destinations display The number of destinations that you have chosen to dial to is shown in this area.
- 3 Speed-dial keys Keys that you have registered to function as either a one-touch key, a group dial key (G), a program key (P) or a chain dial key (C) are displayed here.
- 4 "Address book" key Touch this key when you want to use the address book.
- 5 "Abbrev." key Touch this key when you want to use the abbreviated number that a destination number is registered under in order to dial that number.
- 6 "TX setting" key Touch this key when you want to perform settings related to transmission conditions such as the size of the documents to be transmitted, the image quality of those documents, the contrast at which you want to send them and the time when they should be sent. Once you press this key, the TX Setting screen will appear.
- 7 "▲" and "▼" cursor keys Use these keys when you want to display speed-dial keys other than those which are currently displayed.
- 8 "Dest. check" key Touch this key when you have entered multiple destination fax numbers using speed-dial keys, etc., and you want to check the list of those numbers.
- 9 "Re-dial" key Touch this key when you want to have the fax automatically redial the most recently dialed number
- 10 "On-hook" key When a separately purchased telephone is connected to this fax machine and you touch this key, you can dial a destination number without having to pick up the receiver.
- 11 "Memory TX" / "Dir. Feed Tx" key .. When you want to switch between the Memory Transmission mode ("Memory Tx") and the Direct Feed Transmission mode ("Dir. Feed Tx"). The mode will change each time you touch this key.
- 12 Reception mode select key Touch this key when you want to select a different reception mode. The display will change to the reception mode selection screen where you can select the desired reception mode by touching the "Auto RX", "Manual RX" or "Answering Machine" key, as appropriate.
- 13 Memory bar Indicates the amount of data stored in memory. As documents are being stored, the bar will move towards "100%" indicating that the data stored in memory is increasing. Once it reaches "100%", no more documents can be stored in memory.
- 14 Fax number display The number that you have entered to dial is displayed here.
- 15 "Basic" key Touch this key when you want to return to the basic fax screen.
- 16 "Application" key Touch this key when you want to use one of the various functions of this fax machine such as polling, etc.
- 17 "Register" ["Registration"] key Touch this key when you want to perform one of the various registration procedures of this fax machine.
- 18 "Print Report" key Touch this key when you want to print out one of the various reports or lists of this fax machine.
- 19 "Status" ["Act status"] key This key is displayed during a transmission, reception or printout. Touch this key when you want to verify the contents of the operation.

1-1-3 Mechanical construction

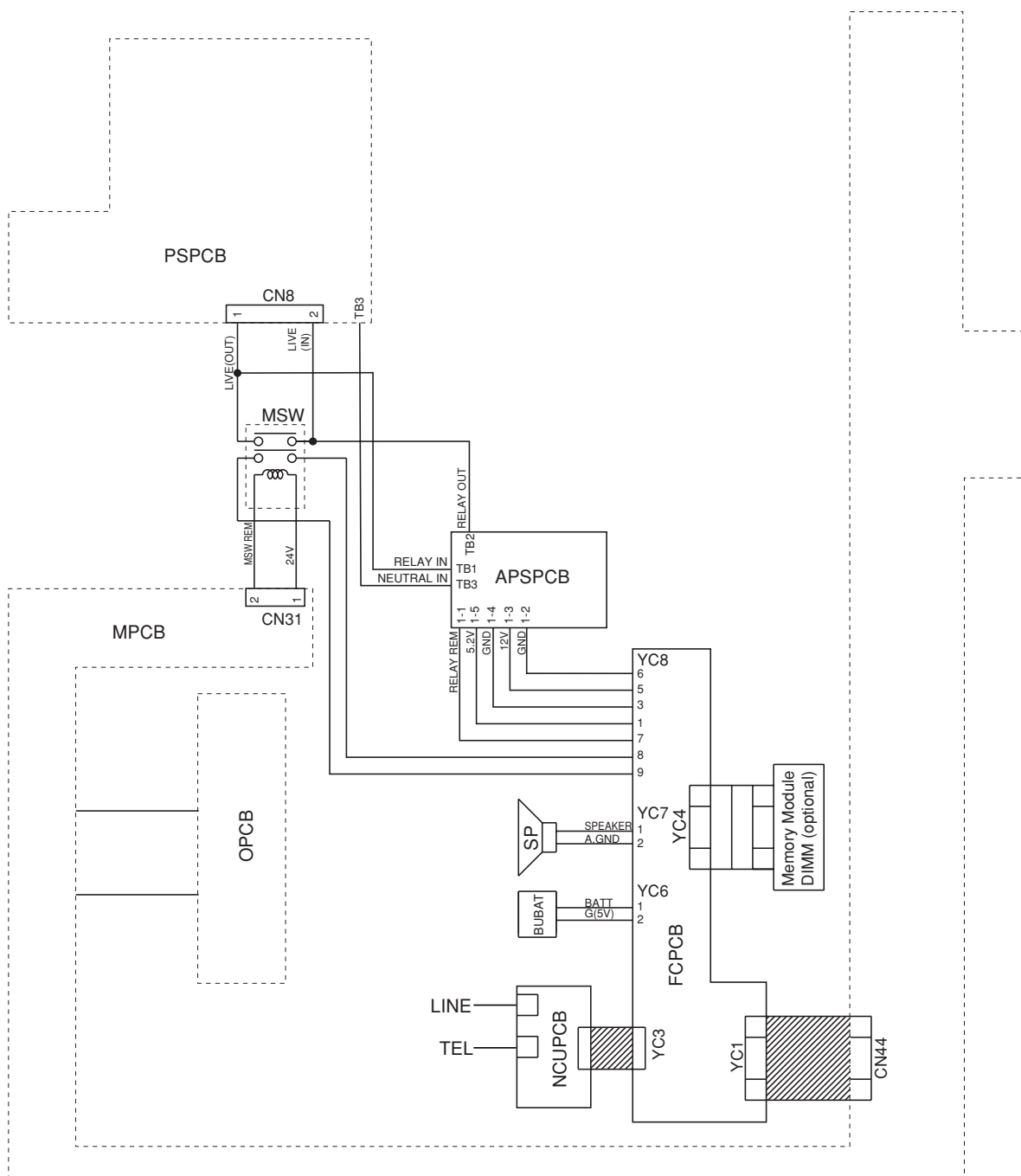


Figure 1-1-5

The fax system consists of the fax control PCB (FCPCB), NCU PCB (NCUPCB), auxiliary power source PCB (APSPCB), speaker (SP), backup battery (BUBAT) and optional memory module DIMM.

1-2-1 Unpacking and installation

(1) Unpacking and installation

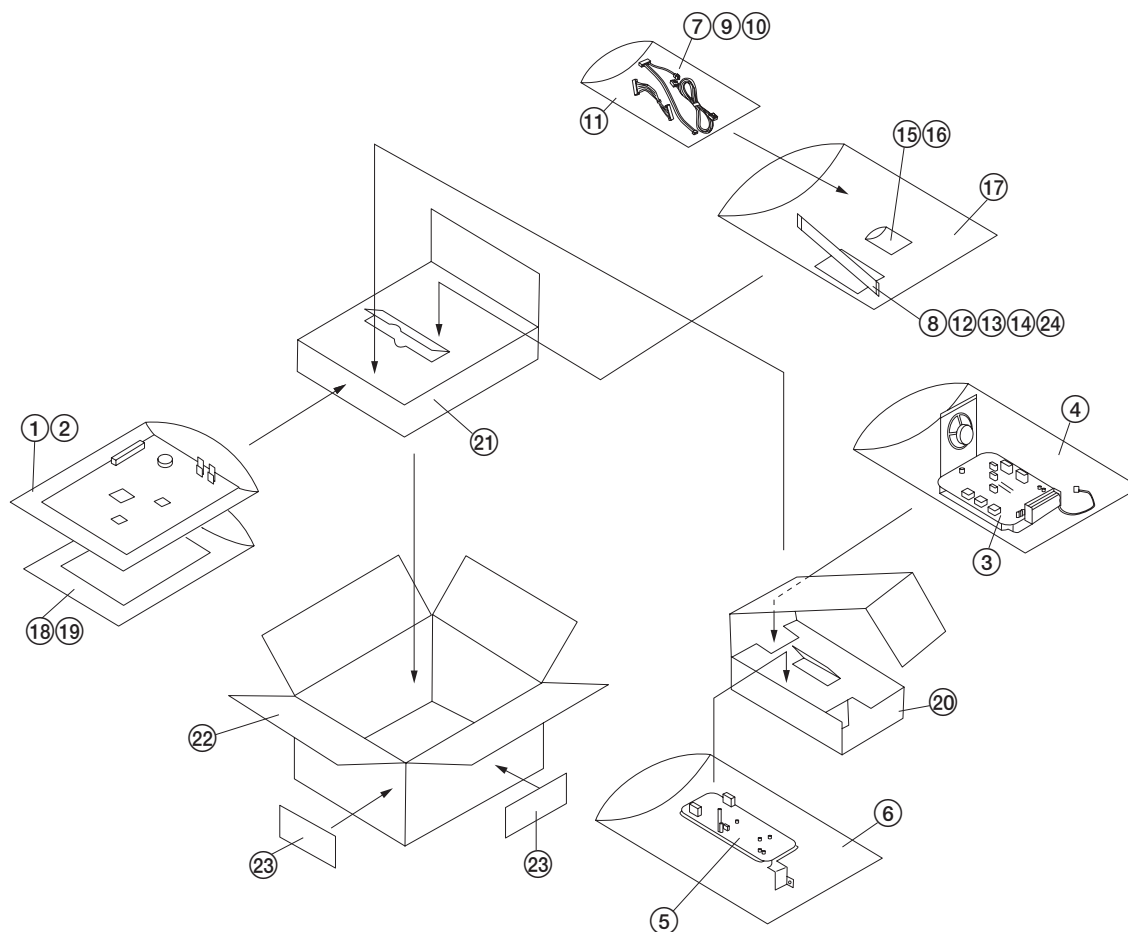


Figure 1-2-1 Unpacking

- | | |
|---------------------------------------|-------------------------------------|
| ① Fax control PCB | ⑭ IC line label* |
| ② Antistatic air-padded bag | ⑮ TP-A chrome binding screw M3 × 06 |
| ③ NCU board assembly | ⑯ Plastic bag |
| ④ Antistatic air-padded bag | ⑰ Plastic bag |
| ⑤ Auxiliary power source PCB assembly | ⑱ Operation guide |
| ⑥ Antistatic air-padded bag | ⑲ Plastic bag |
| ⑦ NCU cable | ⑳ Upper spacer |
| ⑧ FCC68 label* | ㉑ Bottom spacer |
| ⑨ FAX-PCB-Power cable | ㉒ Outer case |
| ⑩ "B" modular connector cable* | ㉓ Barcode labels |
| ⑪ Plastic bag | ㉔ Fax-kit label sheet |
| ⑫ NW-FAX CD-ROM | |
| ⑬ Fax cable | |

*For 120 V specifications only.

Turn the machine's main switch to OFF and unplug the copier from the power supply before starting this procedure.

<Procedure>

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

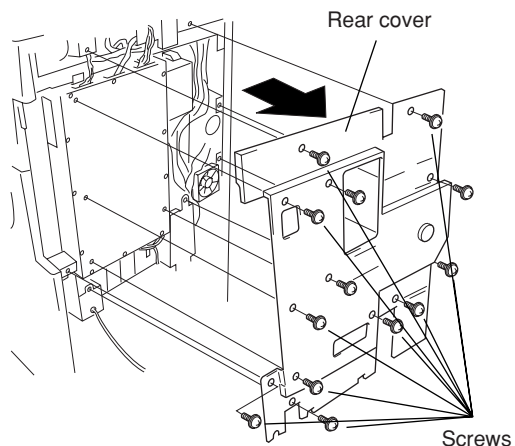


Figure 1-2-2

2. If the printing system is installed, remove the 2 screws and pull the printing system out of the controller box.

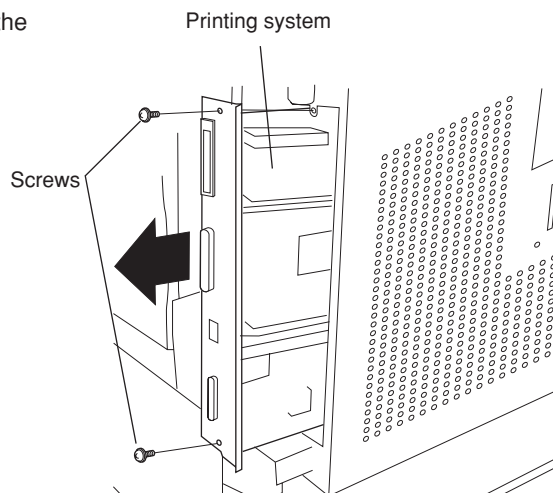


Figure 1-2-3

3. Remove 13 screws and take off the controller-box cover.

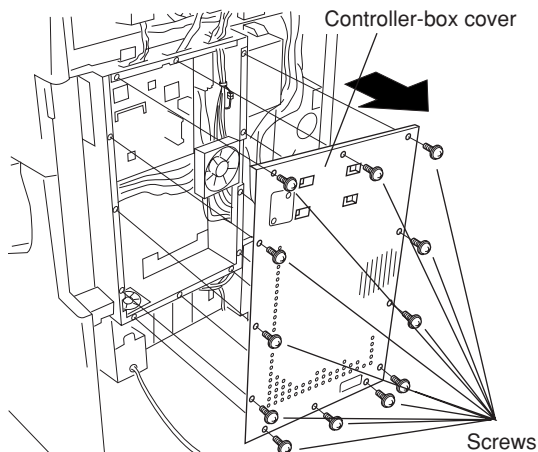


Figure 1-2-4

4. Move the shielding cover out of the way to the left, and fasten the fax control PCB into place using four M3 × 06 chrome binding screws.

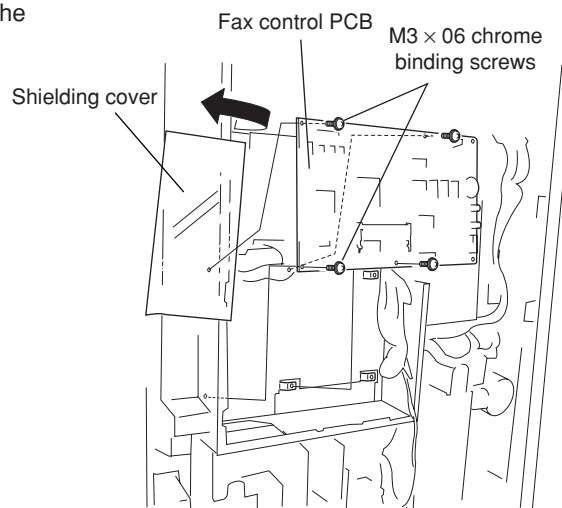


Figure 1-2-5

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

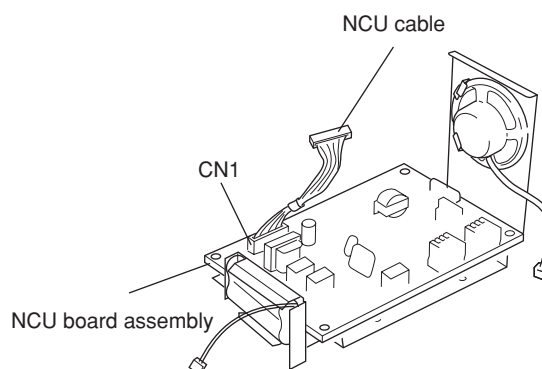


Figure 1-2-6

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 control PCB, as follows:
 - Speaker 2-pin connector → YC7
 - NCU cable connector → YC3
 - Battery connector → YC6

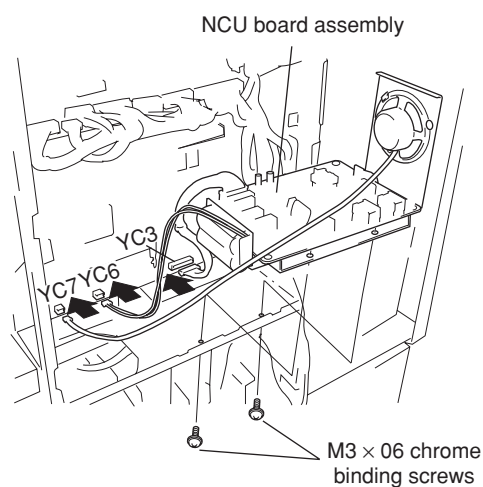


Figure 1-2-7

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.

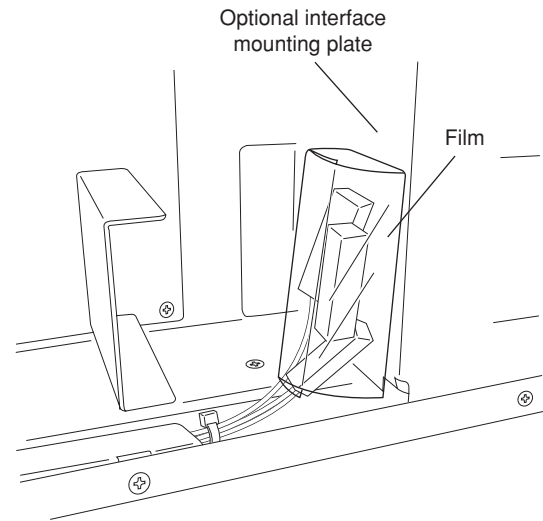


Figure 1-2-8

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

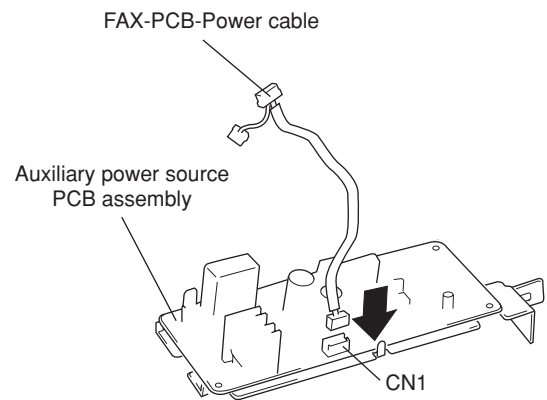


Figure 1-2-9

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

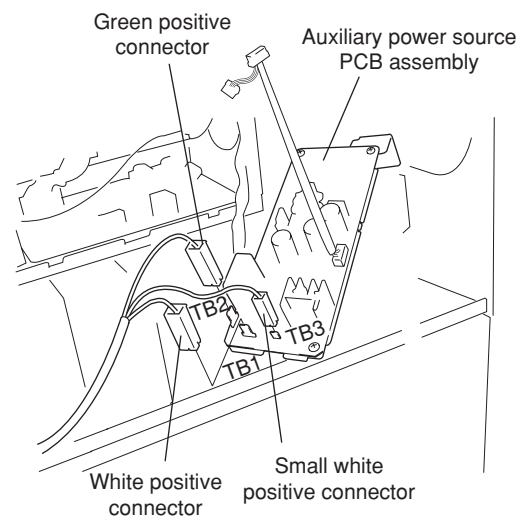


Figure 1-2-10

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.

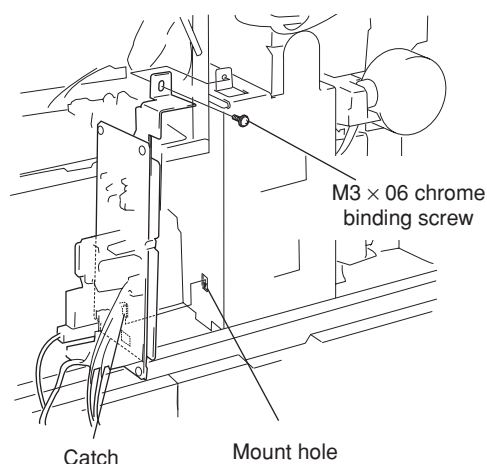


Figure 1-2-11

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 control PCB.
13. Connect the 2-pin connector to the 2-pin connector with green cable.

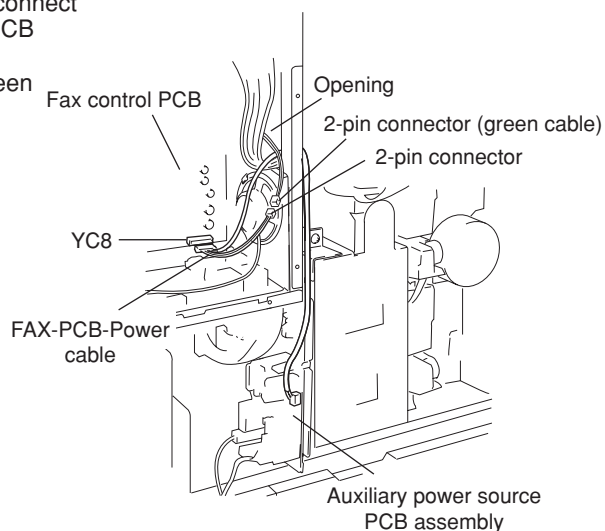


Figure 1-2-12

14. Unlock YC1 on the fax control PCB 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 CN44 on the main PCB. (Pull the CN44 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.
17. Refit the controller-box cover.

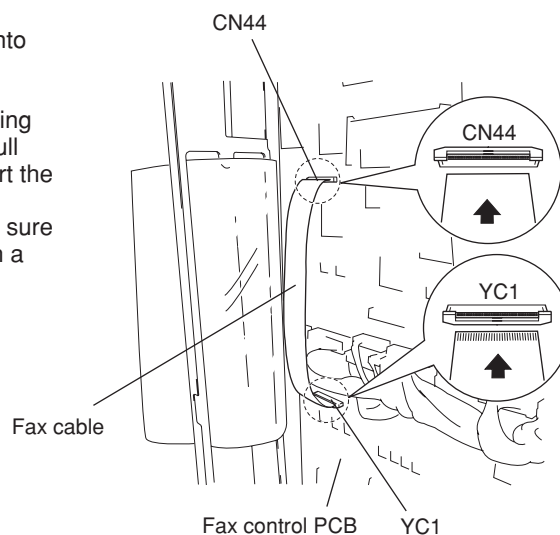


Figure 1-2-13

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

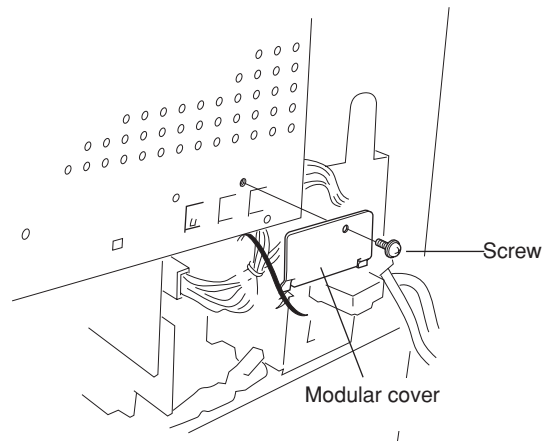


Figure 1-2-14

19. Hang the modular cover onto the holes on the controller-box cover, and fasten it into place with 1 screw.
20. If the printing system was installed, refit the printing system into the controller box.
21. Refit the rear cover.

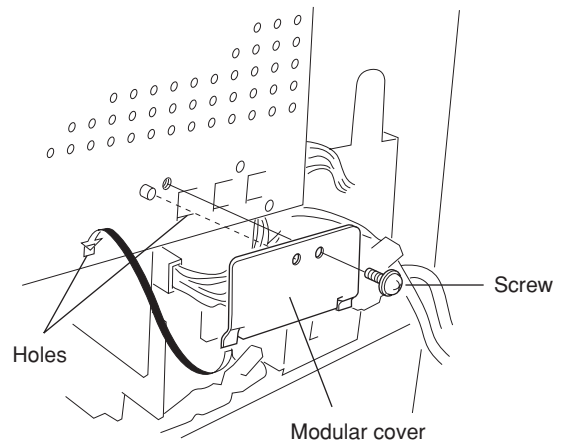


Figure 1-2-15

120 V specifications only

22. Adhere the IC line label and FCC68 label to the rear cover at the locations indicated in the diagram.

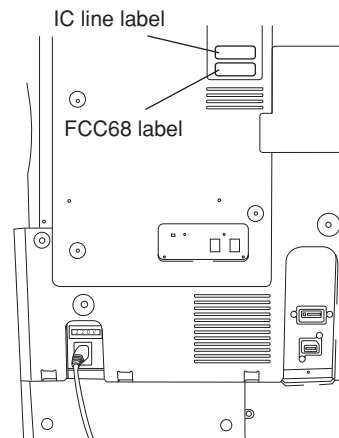


Figure 1-2-16

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

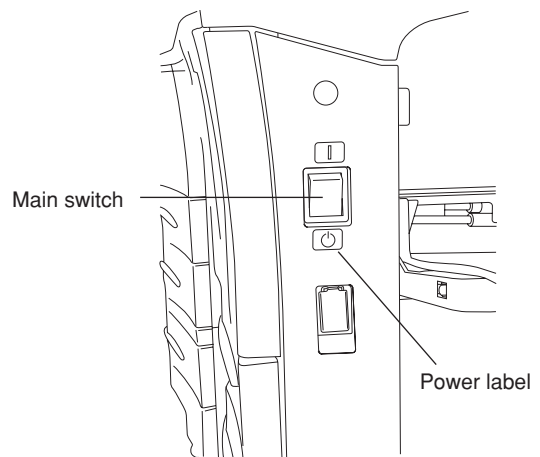


Figure 1-2-17

24. Take the alphabet labels from the fax-kit 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.

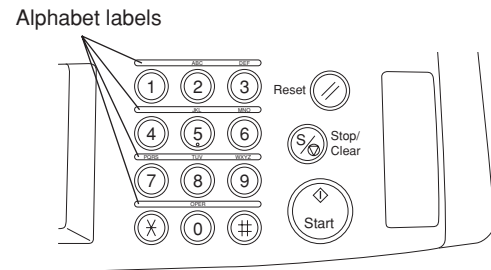


Figure 1-2-18

25. Connect the telephone circuit to the L terminal by inserting the modular connector cable into the line terminal (L).
- Important: On 120 V specifications, use the included "B" modular connector cable to make the connection.

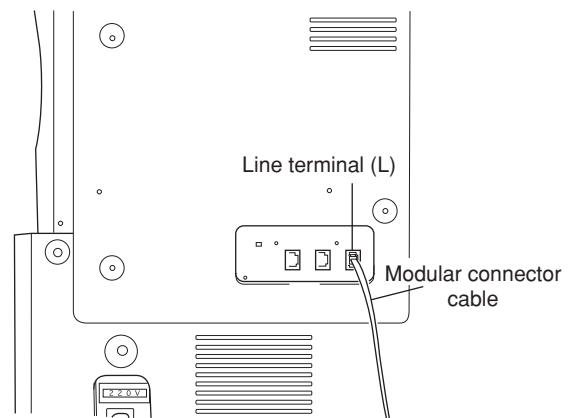


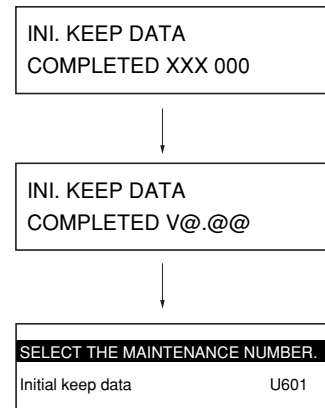
Figure 1-2-19

Initialization procedure after installation of facsimile system

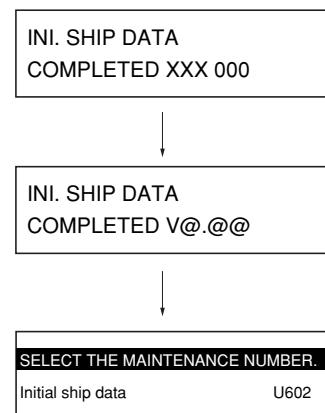
1. Insert the machine power plug to the wall outlet and turn the main switch on.
 2. Run maintenance item U601.
 3. Enter a destination code using the numeric keys (refer to the destination code list) and then press the start key.
- * Enter a destination code with three digits.

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.
6. Press the cursor key to change the display to maintenance item U602.

**Figure 1-2-20**

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 1-2-21**

1-2-2 Setting and registering data

After setting up the machine, set or register the following data.

(1) Settings

- Setting the type of telephone line*¹
Select the setting (pulse or tone) according to the type of telephone line to be used.
- Setting the TTI transmission
Select whether or not to add the transmit terminal identifier (TTI) to the transmitting document.
- Setting report output condition
 - Select the output condition for the management report (output or not output by department).
 - Select the output condition for the activity report (output or not output after every 50 communications)
 - Select the output condition for the transmission report (output or not output after each transmission)
 - Select the output condition for the reception report (output or not output after each reception)
 - Select the output condition for the timer communication report (output or not output after each timer programming).
 - Select the output condition for the network fax transmission report.*²
- Setting the password check communication
Select whether or not to perform password check communication.
- Setting the memory fax forwarding
Select whether or not to perform memory fax forwarding.
- Setting the bulletin board
Select whether or not to use the bulletin board during polling transmission.
- Setting the number of rings for automatic reception
Select the number of rings (1 to 15) that sound after call reception until fax data reception starts in the auto reception mode.
- Setting the number of rings for TAD reception
Set the number of rings (1 to 15) that sound after call reception until fax data reception starts in the TAD reception mode.
- Setting the number of rings for fax/telephone auto select mode*¹
Set the number of rings (0 to 15) that sound after call reception until fax data reception starts in the fax/telephone auto select mode.
- Setting the speaker volume
Set the volume of the speaker in the on-hook mode (4 levels).
- Setting the alarm buzzer volume
Set the volume of the alarm that sounds during events such as when an error occurs (3 levels).
- Setting the monitoring volume
Set the volume for the sounds from the speaker (4 levels).
- Setting the document size for scanning from the document processor
Select the setting ("Standard size original" or "Long original") for scanning the original fed from the document processor.
- Setting the default transmission mode
Select the transmission mode (memory transmission or direct feed transmission) to be used in the initial mode.
- Setting the reception mode
Select an automatic reception mode (automatic fax reception, fax/telephone auto selection or D.R.D. reception*¹).
- Setting reception date and time recording
Select whether or not to record the date and time on received documents.
- Setting the paper feed selection mode
Select the paper feed mode ("Auto Selection mode", "Fixed Size mode" or "Fixed Cassette mode") for printing received fax or reports.
- Setting the manual paper feed
Select whether or not to use the multi-bypass to feed paper for printing received faxes.
- Setting 2-in-1 reception
Select whether or not to output two successively-received A5/8¹/₂" × 5¹/₂" documents onto one A4R/8¹/₂" × 11" page.
- Setting duplex reception*³
Select whether or not to print received documents on both sides of the paper.
- Setting the network fax reception*²
Set to perform network fax reception.
- Setting for saving the documents for transmission*²
Select whether or not to save the transmitted documents on the server computer.
- Setting the file type*²
Select the file type in which the documents for transmission, or of received documents, will be saved in the server computer.
- Setting remote diagnosis
Set to take advantage of our remote diagnosis system.
- Setting the restricted access
Turn the restricted access on or off.

*1: For 120 V specifications only.

*2: When the printer/scanner kit is installed.

*3: When the duplex unit is installed.

(2) Registration

- Date and time
Set the current date and time.
- Self station information
Register the self telephone number, self station name and self station ID.
- One-touch dialing
Register destination fax (telephone) numbers and names under one-touch keys. Up to 600 entries can be registered.
- Group dialing
Register multiple destination fax (telephone) numbers and names under a one-touch key for group dialing. Up to 50 entries can be registered as group dial keys or program keys.
- Program dialing
Register frequently used communication modes or fax numbers under one-touch keys. Up to 50 entries can be registered as program dial keys or group keys.
- Chain dialing
Register chain numbers and names under one-touch keys.
- F-code confidential boxes
Register F-code confidential boxes for F-code based confidential communication. Up to 100 boxes can be registered.
- F-code relay boxes
Register F-code relay box for F-code based relay broadcast communication. Up to 15 boxes can be registered.
- Encryption boxes
Register encryption boxes for receiving encrypted transmissions. Up to 15 boxes can be registered.
- Permit telephone numbers and IDs
Register the password (permit telephone number or ID) for password check communication.
- Fax forwarding
Register the destination and designated hours for fax forwarding.
- Remote switching number
Change the remote switching number, which is set to "55" at the factory, for receiving faxes using the telephone connected to the machine.
- Remote test ID
Register the designated remote test ID for remote diagnosis.
- Management password
Register a 4-digit password, which is set to "6482" at the factory, for encrypted communication.
- Access codes
Register access codes for restricted access. Up to 50 codes can be registered.
- Cipher key password
Register a 16-digit cipher key password for encrypted communication.
- File name (transmission/reception)*
Register the default file name when documents which have been transmitted or received using the network fax functions are saved in the designated folder.
- IP address / Host name*
Register the IP address or host name of the server computer in which documents which have been received using the network fax functions are saved.
- Administrator's e-mail address*
Register the e-mail address of the computer to be notified in case of an error, as well as where to send Transmission and Reception Reports.
- Save folder number*
Register the number of the folder in which documents which have been transmitted or received using the network fax functions will be saved.

*When the printer/scanner kit is installed.

1-2-3 Installing the optional memory module DIMM

Memory module DIMM installation on the fax control PCB requires the following parts:
8 MB memory module DIMM (P/N: 2AW6001)

<Procedure>

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

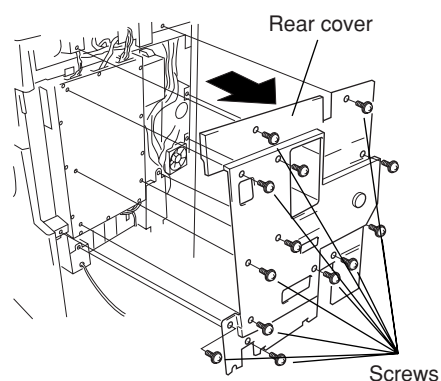


Figure 1-2-22

2. If the printing system is installed, remove the 2 screws and pull the printing system out of the controller box.

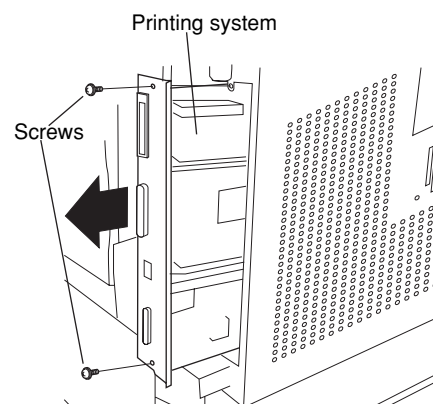


Figure 1-2-23

3. Remove 13 screws and take off the controller-box cover.

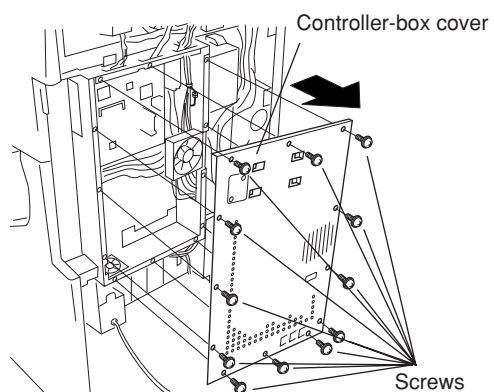


Figure 1-2-24

4. Insert the memory module DIMM (8MB) at an angle into the memory slot on the fax control PCB.
Important: The memory module DIMM (8MB) must be installed onto the fax control PCB. Please be sure that you do not install it onto the main PCB.

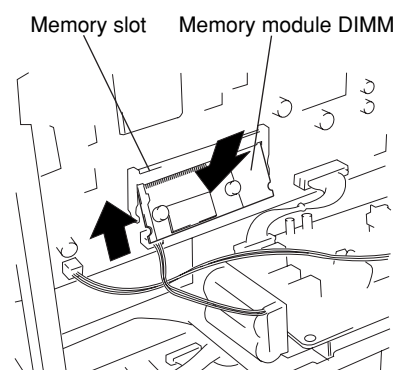


Figure 1-2-25

5. Push the free end of the module down toward the fax control PCB.
6. Refit all removed parts.

1-3-1 Maintenance mode

(1) Maintenance mode item list

Section	Item No.	Maintenance item contents	Initial setting*
Fax	U600	Initializing all data	—
	U601	Initializing permanent data	—
	U602	Setting factory defaults	—
	U603	Setting the user registration data <ul style="list-style-type: none"> • Setting the self telephone number • Setting the type of telephone line • Setting the number of rings in the fax/telephone auto select mode • Setting remote diagnostic transmission 	— — — —
	U604	Clearing data <ul style="list-style-type: none"> • Clearing transmission history • Initializing the management password • Initializing the F-code confidential box ID • Initializes the F-code relay box ID • Initializes the encryption box ID 	— — — — —
	U605	Setting the system (operational) <ul style="list-style-type: none"> • Setting how to proceed if memory becomes full during memory transmission • Setting an alarm for when reception is completed • Selecting if auto reduction in the auxiliary direction is to be performed • Setting the addition of an image to the report • Setting the error report display format • Setting the line-monitoring period • Setting the one-shot detection time for remote switching • Setting the continuous detection time for remote switching • Setting the initial condition of fax image scanning quality 	— — — — — — — — —
	U606	Setting the system (operation unit and display) <ul style="list-style-type: none"> • Setting the conditions under which an error indicator turns off • Setting the date format • Setting if the image scanning quality in fax mode is initialized • Setting if the scanning density in fax mode is initialized • Setting whether to skip unregistered abbreviated numbers and one-touch key numbers on the list • Setting the used port entry in the activity report 	— — — — — —
	U607	Setting the system (communication 1) <ul style="list-style-type: none"> • Setting the auto redialing interval • Setting the number of times of auto redialing • Setting the communication starting speed • Setting the reception speed • Setting the mode for remote switching • Setting the transmission intervals • Sets the loop current detection before dialing • Sets the DIS signal to 4 bytes 	— — — — — — — —
	U608	Setting transmission <ul style="list-style-type: none"> • Setting the method to process errors • Setting the number of times of DIS signal reception • Setting the reference for RTN signal output • Setting the waiting period to prevent echo problem at the sender • Setting the waiting period to prevent echo problem at the receiver • Setting ECM transmission • Setting ECM reception • Setting the criteria for receiving a TCF signal 1 • Setting the frequency of the CED signal 	— — — — — — — — —
	U609	Setting communication time <ul style="list-style-type: none"> • Setting the T0 time-out time • Setting the T1 time-out time • Setting the T2 time-out time • Setting the Ta time-out time • Setting the Tb1 time-out time • Setting the Tb2 time-out time • Setting the Tc time-out time • Setting the Td time-out time 	— — 69 30 20 80 60 —

Section	Item No.	Maintenance item contents	Initial setting
Fax	U610	Setting the modem output level • Setting the modem output level • Adjusting the modem output level	— —
	U611	G3 cable equalizer • Setting the G3 transmission cable equalizer • Setting the G3 reception cable equalizer	— —
	U612	Setting the modem detection level	—
	U613	Setting the DTMF output level • Setting the DTMF (high-frequency group) output level • Setting the DTMF (low-frequency group) output level	— —
	U614	Adjusting the DTMF output level • Adjusting the DTMF (high-frequency group) output level • Adjusting the DTMF (low-frequency group) output level	— —
	U615	Setting the NCU • Setting the connection to PBX/PSTN • Setting PSTN dial tone detection • Setting busy tone detection • Setting for a PBX	— — — —
	U616	Adjusting the ratio of make-to-break of dial pulses • Make time (10 PPS) • Make time (20 PPS)	— —
	U617	Outputting lists • Settings list • Action list • Own-status report • Protocol list • One-touch dialing ECM setting list	— — — — —
	U650	Setting the system 1 • Setting the number of lines to be ignored when receiving a fax at 100% magnification • Setting the number of lines to be ignored when receiving a fax in the auto reduction mode • Setting the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode • Setting the recording width for inch specifications • Setting automatic printing of the protocol list	3 3 3 — —
	U651	Setting the system 2 • Setting the variation range in the auxiliary scanning direction for rotation reception • Setting the number of adjustment lines for automatic reduction • Setting the number of adjustment lines for automatic reduction when A4 paper is set • Setting the number of adjustment lines for automatic reduction when letter size paper is set	3 7 22 26
	U660	Setting the system (communication 2) • Setting the criteria for receiving a TCF signal 2 • Setting the short protocol transmission • Setting the reception of a short protocol transmission • Setting the CNG detection times in the fax/ telephone auto select mode • Turning ECM for one-touch dialing on/off	— — — — —
	U670	Setting the system (communication 3) • Setting if V.34 transmission is available • Setting the V.34 symbol speed (3429 Hz) • Setting the V.34 symbol speed (3200 Hz) • Setting the V.34 symbol speed (3000 Hz) • Setting the V.34 symbol speed (2800 Hz)	— — — — —
	U680	Displaying the fax board ROM version	—

Section	Item No.	Maintenance item contents	Initial setting
Fax	U881	Using the flash-memory jig <ul style="list-style-type: none"> • Saving data from SRAM into the jig • Writing data from the jig into RAM • Writing the boot program into the jig • Reading one-touch/abbreviated dial information • Writing one-touch/abbreviated dial information 	— — — — —
	U882	Setting the software switches	—
	U894	Performing board test <ul style="list-style-type: none"> • Performing tests on SRAM and DRAM • Performing tests on optional memory 	— —
	U898	Setting the ports for maintenance mode	—
Others	U992	Checking or clearing the printer/fax count	—

(2) Contents of maintenance mode items

Maintenance item No.	Description
U600	<p>Initializing all data</p> <p>Description Initializes software switches and all data in the SRAM on the fax control PCB, according to the destination and OEM.</p> <p>Purpose Used to initialize the fax control PCB.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for entering the destination code is displayed. Enter a destination code using the numeric keys (refer to the destination code list on page 1-3-5 for the destination code). <div data-bbox="345 564 678 659" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA COUNTRY CODE:000 </div> Press the start key. The screen for entering the OEM code is displayed. There is no operation necessary on this screen. <div data-bbox="345 739 678 833" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA OEM CODE:000 </div> Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key. After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed two seconds later. <div data-bbox="345 940 678 1035" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA COMPLETED 000 000 </div> <div data-bbox="345 1054 678 1148" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> INI. ALL DATA COMPLETED V1.00 </div> <p>Caution If initialized with "000" (code for Japan) entered as the destination code, service call code C0820 (fax control PCB problem) will be detected. Be sure to enter the correct destination code. If C0820 (fax control PCB problem) is detected, press the COPY key to put the machine in the copy mode, open the front cover and then execute this maintenance item again to enter the correct destination code and initialize data.</p>

Maintenance item No.	Description																																																																							
U600 (cont.)	Destination code list																																																																							
	<table><tr><th>Code</th><th>Destination</th><th>Code</th><th>Destination</th><th>Code</th><th>Destination</th></tr><tr><td>000</td><td>Japan</td><td>159</td><td>South Africa</td><td>253</td><td>Sweden</td></tr><tr><td>009</td><td>Australia</td><td>169</td><td>Thailand</td><td></td><td>France</td></tr><tr><td>080</td><td>Hong Kong</td><td>181</td><td>U.S.A.</td><td></td><td>Austria</td></tr><tr><td>084</td><td>Indonesia</td><td>242</td><td>South America</td><td></td><td>Switzerland</td></tr><tr><td>088</td><td>Israel</td><td>243</td><td>Saudi Arabia</td><td></td><td>Belgium</td></tr><tr><td>108</td><td>Malaysia</td><td>253</td><td>CTR21 (European nations)</td><td></td><td>Denmark</td></tr><tr><td>126</td><td>New Zealand</td><td></td><td>Italy</td><td></td><td>Finland</td></tr><tr><td>136</td><td>Peru</td><td></td><td>Germany</td><td></td><td>Portugal</td></tr><tr><td>137</td><td>Philippines</td><td></td><td>Spain</td><td></td><td>Ireland</td></tr><tr><td>152</td><td>Middle East</td><td></td><td>U.K.</td><td></td><td>Norway</td></tr><tr><td>156</td><td>Singapore</td><td></td><td>Netherlands</td><td>254</td><td>Taiwan</td></tr></table>	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
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156	Singapore		Netherlands	254	Taiwan																																																																			
U601	Initializing permanent data Description Initializes software switches other than that for machine data on the fax control PCB according to the destination and OEM. Purpose Used to initialize the fax control PCB without changing user registration data and factory settings. Method <ol style="list-style-type: none">Press the start key. The screen for entering the destination code is displayed. Enter a destination code using the numeric keys (refer to the destination code list on page 1-3-5 for the destination code).<div><div>INI. KEEP DATA</div><div>COUNTRY CODE:000</div></div>Press the start key. The screen for entering the OEM code is displayed. There is no operation necessary on this screen.<div><div>INI. KEEP DATA</div><div>OEM CODE:000</div></div>Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key.After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed two seconds later.<div><div>INI. KEEP DATA</div><div>COMPLETED 000 000</div></div><div><div>INI. KEEP DATA</div><div>COMPLETED V1.00</div></div> Caution If initialized with "000" (code for Japan) entered as the destination code, service call code C0820 (fax control PCB problem) will be detected. Be sure to enter the correct destination code. If C0820 (fax control PCB problem) is detected, press the COPY key to put the machine in the copy mode, open the front cover and then execute this maintenance item again to enter the correct destination code and initialize data.																																																																							

Maintenance item No.	Description
U602	<p data-bbox="303 191 570 216">Setting factory defaults</p> <p data-bbox="303 226 435 252">Description</p> <p data-bbox="303 258 1451 310">Initializes software switches other than that for machine data and the SRAM on the fax control PCB, according to the destination and OEM.</p> <p data-bbox="303 321 399 346">Purpose</p> <p data-bbox="303 352 915 378">Used to initialize the fax control PCB to the factory default.</p> <p data-bbox="303 388 388 413">Method</p> <ol data-bbox="310 420 1451 504" style="list-style-type: none">1. Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key.2. After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed two seconds later. <div data-bbox="347 506 678 600"><p data-bbox="362 525 618 585">INI. SHIP DATA COMPLETED 000 000</p></div> <div data-bbox="347 621 678 716"><p data-bbox="362 640 591 701">INI. SHIP DATA COMPLETED V1.00</p></div>

Maintenance item No.	Description																												
U603	<p>Setting the user registration data</p> <p>Description Makes user settings to enable the use of the copier as a fax.</p> <p>Purpose To be run after installation of the facsimile kit if necessary.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SELF TEL No.</td><td>Sets the self telephone number.</td></tr> <tr> <td>LINE TYPE</td><td>Sets the type of telephone line.</td></tr> <tr> <td>RINGS (F/T) #</td><td>Sets the number of rings in fax/telephone auto select mode.</td></tr> <tr> <td>REMOTE DIAG</td><td>Sets remote diagnostic transmission.</td></tr> </tbody> </table> <p>Setting the self telephone number</p> <ol style="list-style-type: none"> Enter the telephone number using the numeric keys. Up to 20 digits can be entered. To correct the entered telephone number or to delete the stored telephone number, reset by pressing the stop/clear key. Press the start key. To return to the screen for selecting an item, press the stop/clear key. The item-selection screen does not reappear until registration or deletion processing is completed. <p>Setting the type of telephone line</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: DTMF</td><td>DTMF</td></tr> <tr> <td>2: 10</td><td>10 PPS</td></tr> <tr> <td>3: 20</td><td>20 PPS</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the number of rings in the fax/telephone auto select mode</p> <p>Use this if the user wishes to adjust the number of rings that occur before the unit switches into fax receiving mode when fax/telephone auto-select is enabled.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of fax/telephone rings</td><td>0 to 15</td></tr> </tbody> </table> <p>If you set this to 0, the unit will start fax reception without any ringing.</p> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting remote diagnostic transmission</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to select if remote diagnostic transmission is to be enabled. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Remote diagnostic transmission is enabled.</td></tr> <tr> <td>2: OFF</td><td>Remote diagnostic transmission is disabled.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SELF TEL No.	Sets the self telephone number.	LINE TYPE	Sets the type of telephone line.	RINGS (F/T) #	Sets the number of rings in fax/telephone auto select mode.	REMOTE DIAG	Sets remote diagnostic transmission.	Display	Description	1: DTMF	DTMF	2: 10	10 PPS	3: 20	20 PPS	Description	Setting range	Number of fax/telephone rings	0 to 15	Display	Description	1: ON	Remote diagnostic transmission is enabled.	2: OFF	Remote diagnostic transmission is disabled.
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Maintenance item No.	Description																										
U604	<p>Clearing data</p> <p>Description Initializes data related to the fax transmission such as transmission history and IDs.</p> <p>Purpose Used to clear the transmission history or if an ID has been forgotten.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. Initialization processing starts. When processing is finished, the screen displays "COMPLETED". <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>COMM. REC</td><td>Clears the activity report, error list, action list, transmission history of each department as listed on the department control report, transmission history for displaying the transmission results, document number, timer program information, protocol list, and other transmission history such as image data, excluding items regarding the machine variation adjustment.</td></tr> <tr> <td>MANAGE PW</td><td>Initializes the management password.</td></tr> <tr> <td>F-CODE ID</td><td>Initializes the F-code confidential box ID.</td></tr> <tr> <td>F-CODE ID</td><td>Initializes the F-code relay box ID.</td></tr> <tr> <td>ENCRPT ID</td><td>Initializes the encryption box ID.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	COMM. REC	Clears the activity report, error list, action list, transmission history of each department as listed on the department control report, transmission history for displaying the transmission results, document number, timer program information, protocol list, and other transmission history such as image data, excluding items regarding the machine variation adjustment.	MANAGE PW	Initializes the management password.	F-CODE ID	Initializes the F-code confidential box ID.	F-CODE ID	Initializes the F-code relay box ID.	ENCRPT ID	Initializes the encryption box ID.														
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U605	<p>Setting the system (operational)</p> <p>Description Makes settings for fax transmission regarding operation.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MEM. FULL</td><td>Sets how to proceed if memory becomes full during memory transmission.</td></tr> <tr> <td>FIN. ALARM</td><td>Sets an alarm for when reception is completed.</td></tr> <tr> <td>AUTO REDU</td><td>Selects if auto reduction in the auxiliary direction is to be performed.</td></tr> <tr> <td>ADD IMAGE</td><td>Sets for the addition of an image to the report.</td></tr> <tr> <td>ERR. CODE</td><td>Sets the error report display format.</td></tr> <tr> <td>MONITOR</td><td>Sets the line-monitoring period.</td></tr> <tr> <td>TIME (ONE)</td><td>Sets the one-shot detection time for remote switching.</td></tr> <tr> <td>TIME (CON)</td><td>Sets the continuous detection time for remote switching.</td></tr> <tr> <td>RESOLUT</td><td>Sets the initial condition of fax image scanning quality.</td></tr> </tbody> </table> <p>Setting how to proceed if memory becomes full during memory transmission Used to select whether to send only stored data or to display an error indication and cancel transmission if memory becomes full during memory transmission.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: CONT</td><td>Whether to continue memory transmission or to clear the memory can be selected by the user.</td></tr> <tr> <td>2: STOP</td><td>Memory is forcibly cleared.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	MEM. FULL	Sets how to proceed if memory becomes full during memory transmission.	FIN. ALARM	Sets an alarm for when reception is completed.	AUTO REDU	Selects if auto reduction in the auxiliary direction is to be performed.	ADD IMAGE	Sets for the addition of an image to the report.	ERR. CODE	Sets the error report display format.	MONITOR	Sets the line-monitoring period.	TIME (ONE)	Sets the one-shot detection time for remote switching.	TIME (CON)	Sets the continuous detection time for remote switching.	RESOLUT	Sets the initial condition of fax image scanning quality.	Display	Description	1: CONT	Whether to continue memory transmission or to clear the memory can be selected by the user.	2: STOP	Memory is forcibly cleared.
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U605 (cont.)	<p>Setting an alarm for when reception is completed</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>An alarm rings.</td></tr> <tr> <td>2: OFF</td><td>An alarm does not ring.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Selecting if auto reduction in the auxiliary direction is to be performed</p> <p>Sets whether to receive a long document by automatically reducing it in the auxiliary direction or at 100% magnification.</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Auto reduction is performed if the received document is longer than the fax paper.</td></tr> <tr> <td>2: OFF</td><td>Auto reduction is not performed.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the addition of an image to the report</p> <p>Selects if an image is to be added to the transmission report.</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Image added.</td></tr> <tr> <td>2: OFF</td><td>Image not added.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the error report display format</p> <p>Selects the format of the transmission report when a transmission error occurs.</p> <p>1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: WORDS</td><td>Records an error message (BUSY, OK, ERROR or STOP).</td></tr> <tr> <td>2: CODE</td><td>Records a six-digit error code.</td></tr> <tr> <td>3: MIX</td><td>Records either an error message or code.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the line-monitoring period</p> <p>Sets the period to monitor the line. By monitoring a transmission from the start to the end, it can be checked whether the transmission was correct or not.</p> <p>1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: END</td><td>Until transmission is completed.</td></tr> <tr> <td>2: DIS</td><td>After dialing is completed until reception of a DIS signal.</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the one-shot detection time for remote switching</p> <p>Sets the detection time when one-shot detection is selected for remote switching. (This setting item will be displayed, but the setting made is ineffective.)</p> <p>1. Change the setting using the numeric keys.</p> <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>One-shot detection time for remote switching</td><td>0 to 255 (× 5 : ms)</td></tr> </tbody> </table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p>	Display	Description	1: ON	An alarm rings.	2: OFF	An alarm does not ring.	Display	Description	1: ON	Auto reduction is performed if the received document is longer than the fax paper.	2: OFF	Auto reduction is not performed.	Display	Description	1: ON	Image added.	2: OFF	Image not added.	Display	Description	1: WORDS	Records an error message (BUSY, OK, ERROR or STOP).	2: CODE	Records a six-digit error code.	3: MIX	Records either an error message or code.	Display	Description	1: END	Until transmission is completed.	2: DIS	After dialing is completed until reception of a DIS signal.	Description	Setting range	One-shot detection time for remote switching	0 to 255 (× 5 : ms)
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Maintenance item No.	Description																				
U605 (cont.)	<p>Setting the continuous detection time for remote switching Sets the detection time when continuous detection is selected for remote switching. (This setting item will be displayed, but the setting made is ineffective.)</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Continuous detection time for remote switching</td><td>0 to 255 (× 5 : ms)</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the initial condition of fax image scanning quality Set to the resolution that is most frequently used by the user.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: S</td><td>Standard</td></tr> <tr> <td>2: F</td><td>Fine</td></tr> <tr> <td>3: SF</td><td>Super fine</td></tr> <tr> <td>4: UF</td><td>Ultra fine</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Continuous detection time for remote switching	0 to 255 (× 5 : ms)	Display	Description	1: S	Standard	2: F	Fine	3: SF	Super fine	4: UF	Ultra fine						
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U606	<p>Setting the system (operation unit and display)</p> <p>Description Makes settings for fax transmission regarding the operation unit and display.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Note: Since this model does not provide LED error indicators, this setting has no affect on actual operation. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ALARM LED OFF</td><td>Sets the conditions under which an error indicator turns off.</td></tr> <tr> <td>DATE PATTERN</td><td>Sets the date format.</td></tr> <tr> <td>RESO. LOCK</td><td>Sets if the image scanning quality in fax mode is initialized.</td></tr> <tr> <td>DENS. LOCK</td><td>Sets if the scanning density in fax mode is initialized.</td></tr> <tr> <td>REPORT SKIP</td><td>Sets whether to skip unregistered abbreviated numbers and one-touch key numbers on the list.</td></tr> <tr> <td>REPORT ADD PORT</td><td>Sets used port entry in the activity report.</td></tr> </tbody> </table> <p>Setting the conditions under which an error indicator turns off</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: RESET</td><td>An error indicator turns off only when the reset key is pressed.</td></tr> <tr> <td>2: COMM</td><td>An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	ALARM LED OFF	Sets the conditions under which an error indicator turns off.	DATE PATTERN	Sets the date format.	RESO. LOCK	Sets if the image scanning quality in fax mode is initialized.	DENS. LOCK	Sets if the scanning density in fax mode is initialized.	REPORT SKIP	Sets whether to skip unregistered abbreviated numbers and one-touch key numbers on the list.	REPORT ADD PORT	Sets used port entry in the activity report.	Display	Description	1: RESET	An error indicator turns off only when the reset key is pressed.	2: COMM	An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.
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Maintenance item No.	Description																																
U606 (cont.)	<p>Setting the date format Selects the date format on the respective reports and sender's information record.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Order</th></tr> </thead> <tbody> <tr> <td>1: YMD</td><td>Year/month/day</td></tr> <tr> <td>2: MDY</td><td>Month/day/year</td></tr> <tr> <td>3: DMY</td><td>Day/month/year</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting if the image scanning quality in fax mode is initialized Sets if the resolution is to be initialized when fax operation is complete.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Resolution is initialized.</td></tr> <tr> <td>2: OFF</td><td>Resolution is not initialized.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting if the scanning density in fax mode is initialized Sets if the scanning density is initialized when fax operation is complete.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Density is initialized.</td></tr> <tr> <td>2: OFF</td><td>Density is not initialized.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting whether to skip unregistered abbreviated numbers and one-touch key numbers on the list Sets whether to skip unregistered abbreviated numbers and one-touch key numbers on the list.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Unregistered numbers are skipped.</td></tr> <tr> <td>2: OFF</td><td>Unregistered numbers are not skipped.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting port entry in the activity report Sets whether to enter used port in the activity report. (This setting need not be changed particularly.)</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Port is entered.</td></tr> <tr> <td>2: OFF</td><td>Port is not entered.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Order	1: YMD	Year/month/day	2: MDY	Month/day/year	3: DMY	Day/month/year	Display	Description	1: ON	Resolution is initialized.	2: OFF	Resolution is not initialized.	Display	Description	1: ON	Density is initialized.	2: OFF	Density is not initialized.	Display	Description	1: ON	Unregistered numbers are skipped.	2: OFF	Unregistered numbers are not skipped.	Display	Description	1: ON	Port is entered.	2: OFF	Port is not entered.
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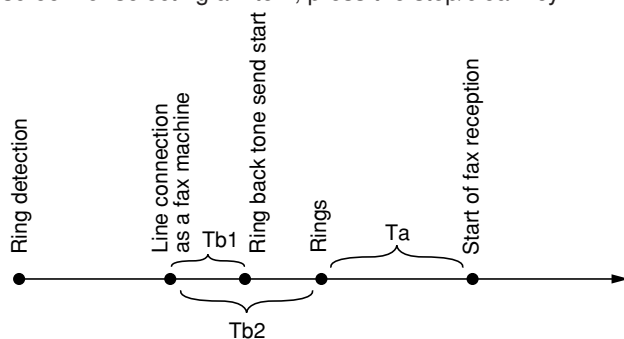
Maintenance item No.	Description																																														
U607	<p>Setting the system (communication 1)</p> <p>Description Makes settings for fax transmission regarding the communication.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>INTERVAL</td><td>Sets the auto redialing interval.</td></tr> <tr> <td>TIMES</td><td>Sets the number of times of auto redialing.</td></tr> <tr> <td>TX SPEED</td><td>Sets the communication starting speed.</td></tr> <tr> <td>RX SPEED</td><td>Sets the reception speed.</td></tr> <tr> <td>REMOTE</td><td>Sets the mode for remote switching.</td></tr> <tr> <td>CALL INT</td><td>Sets the transmission intervals.</td></tr> <tr> <td>DC LOOP</td><td>Sets the loop current detection before dialing.</td></tr> <tr> <td>DIS 4BYTE</td><td>Sets the DIS signal to 4 bytes.</td></tr> </tbody> </table> <p>Setting the auto redialing interval Change the setting to prevent the following problems: fax transmission is not possible due to too short redial interval, or fax transmission takes too much time to complete due to too long redial interval.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Redialing interval</td><td>1 to 9 (min.)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the number of times of auto redialing</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of redialing</td><td>0 to 9</td></tr> </tbody> </table> <p>When set to 0, no redialing is performed.</p> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the communication starting speed Sets the initial communication speed when starting transmission. When the destination unit has V.34 capability, V.34 is selected for transmission, regardless of this setting.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 144</td><td>V.17, 14400 bps</td></tr> <tr> <td>2: 96</td><td>V.17, 9600 bps</td></tr> <tr> <td>3: 48</td><td>V.27ter, 4800 bps</td></tr> <tr> <td>4: 24</td><td>V.27ter, 2400 bps</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the reception speed Sets the reception speed that the sender is informed of using the DIS or NSF signal. When the destination unit has V.34 capability, V.34 is selected, regardless of the setting.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 144</td><td>V.17, V.33, V.29, V.27ter</td></tr> <tr> <td>2: 96</td><td>V.29, V.27ter</td></tr> <tr> <td>3: 48</td><td>V.27ter</td></tr> <tr> <td>4: 24</td><td>V.27ter (fallback only)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	INTERVAL	Sets the auto redialing interval.	TIMES	Sets the number of times of auto redialing.	TX SPEED	Sets the communication starting speed.	RX SPEED	Sets the reception speed.	REMOTE	Sets the mode for remote switching.	CALL INT	Sets the transmission intervals.	DC LOOP	Sets the loop current detection before dialing.	DIS 4BYTE	Sets the DIS signal to 4 bytes.	Description	Setting range	Redialing interval	1 to 9 (min.)	Description	Setting range	Number of redialing	0 to 9	Display	Description	1: 144	V.17, 14400 bps	2: 96	V.17, 9600 bps	3: 48	V.27ter, 4800 bps	4: 24	V.27ter, 2400 bps	Display	Description	1: 144	V.17, V.33, V.29, V.27ter	2: 96	V.29, V.27ter	3: 48	V.27ter	4: 24	V.27ter (fallback only)
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U607 (cont.)	<p>Setting the mode for remote switching Sets the signal detection method for remote switching. Be sure to change the setting according to the type of telephone connected to the machine.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ONE</td><td>One-shot detection</td></tr> <tr> <td>2: CONT</td><td>Continuous detection</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the transmission intervals Sets the minimum time required for connection to the line for the next transmission after the previous transmission was completed. Change the setting if transmission problems occur during multi-transmission, such as broadcasting and polling transmission, or reserved transmission.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 10</td><td>10 s</td></tr> <tr> <td>2: 30</td><td>30 s</td></tr> <tr> <td>3: 70</td><td>70 s</td></tr> <tr> <td>4: 120</td><td>120 s</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the loop current detection before dialing Sets if the loop current detection is performed before dialing.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Performs loop current detection before dialing.</td></tr> <tr> <td>2: OFF</td><td>Does not perform loop current detection before dialing.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the DIS signal to 4 bytes Sets if bit 33 and later bits of the DIS/DTC signal are sent.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Bit 33 and later bits of the DIS/DTC signal are not sent.</td></tr> <tr> <td>2: OFF</td><td>Bit 33 and later bits of the DIS/DTC signal are sent.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: ONE	One-shot detection	2: CONT	Continuous detection	Display	Description	1: 10	10 s	2: 30	30 s	3: 70	70 s	4: 120	120 s	Display	Description	1: ON	Performs loop current detection before dialing.	2: OFF	Does not perform loop current detection before dialing.	Display	Description	1: ON	Bit 33 and later bits of the DIS/DTC signal are not sent.	2: OFF	Bit 33 and later bits of the DIS/DTC signal are sent.
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U608	<p>Setting transmission</p> <p>Description Makes settings regarding fax transmission.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ERROR</td><td>Sets the method to process errors.</td></tr> <tr> <td>DIS-2 RES</td><td>Sets the number of times of DIS signal reception.</td></tr> <tr> <td>RTN CHECK</td><td>Sets the reference for RTN signal output.</td></tr> <tr> <td>TX ECHO</td><td>Sets the waiting period to prevent echo problems at the sender.</td></tr> <tr> <td>RX ECHO</td><td>Sets the waiting period to prevent echo problems at the receiver.</td></tr> <tr> <td>ECM TX</td><td>Sets ECM transmission.</td></tr> <tr> <td>ECM RX</td><td>Sets ECM reception.</td></tr> <tr> <td>TCF CHECK</td><td>Sets the criteria for receiving a TCF signal 1.</td></tr> <tr> <td>CED FREQ.</td><td>Sets the frequency of the CED signal.</td></tr> </tbody> </table> <p>Setting the method to process errors Selects if transmission is to be treated as an error if an RTN or PIN signal is received. If it is treated as an error, an alarm sounds and a transmission report is output.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: OK</td><td>Transmission is not treated as an error.</td></tr> <tr> <td>2: ERROR</td><td>Transmission is treated as an error.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the number of times of DIS signal reception Sets the number of times to receive the DIS signal to once or twice. Used as one of the correction measures for transmission errors and other problems.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ONCE</td><td>Responds to the first signal.</td></tr> <tr> <td>2: TWICE</td><td>Responds to the second signal.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the reference for RTN signal output Sets the error line rate as the reference for RTN signal output. If transmission errors occur frequently due to the quality of the line, they can be reduced by lowering this setting.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 5</td><td>Error line rate of 5%</td></tr> <tr> <td>2: 10</td><td>Error line rate of 10%</td></tr> <tr> <td>3: 15</td><td>Error line rate of 15%</td></tr> <tr> <td>4: 20</td><td>Error line rate of 20%</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	ERROR	Sets the method to process errors.	DIS-2 RES	Sets the number of times of DIS signal reception.	RTN CHECK	Sets the reference for RTN signal output.	TX ECHO	Sets the waiting period to prevent echo problems at the sender.	RX ECHO	Sets the waiting period to prevent echo problems at the receiver.	ECM TX	Sets ECM transmission.	ECM RX	Sets ECM reception.	TCF CHECK	Sets the criteria for receiving a TCF signal 1.	CED FREQ.	Sets the frequency of the CED signal.	Display	Description	1: OK	Transmission is not treated as an error.	2: ERROR	Transmission is treated as an error.	Display	Description	1: ONCE	Responds to the first signal.	2: TWICE	Responds to the second signal.	Display	Description	1: 5	Error line rate of 5%	2: 10	Error line rate of 10%	3: 15	Error line rate of 15%	4: 20	Error line rate of 20%
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4: 20	Error line rate of 20%																																										

Maintenance item No.	Description																												
U608 (cont.)	<p>Setting the waiting period to prevent echo problems at the sender Sets the period before a DCS signal is sent after a DIS signal is received. Used when problems occur due to echoes at the sender.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 500</td><td>Sends a DCS 500 ms after receiving a DIS.</td></tr> <tr> <td>2: 300</td><td>Sends a DCS 300 ms after receiving a DIS.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the waiting period to prevent echo problems at the receiver Sets the period before an NSF, CSI or DIS signal is sent after a CED signal is received. Used when problems occur due to echoes at the receiver.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 500</td><td>Sends an NSF, CSI or DIS 500 ms after receiving a CED.</td></tr> <tr> <td>2: 75</td><td>Sends an NSF, CSI or DIS 75 ms after receiving a CED.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting ECM transmission To be set to OFF when reduction of transmission costs is of higher priority than image quality.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM transmission is enabled.</td></tr> <tr> <td>2: OFF</td><td>ECM transmission is disabled.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting ECM reception To be set to OFF when reduction of transmission costs is of higher priority than image quality.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM reception is enabled.</td></tr> <tr> <td>2: OFF</td><td>ECM reception is disabled.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the criteria for receiving a TCF signal 1 Sets the maximum number of error bytes judged acceptable when receiving a TCF signal. Used as a measure to ease transmission conditions if transmission errors occur.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of allowed error bytes when detecting TCF</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	1: 500	Sends a DCS 500 ms after receiving a DIS.	2: 300	Sends a DCS 300 ms after receiving a DIS.	Display	Description	1: 500	Sends an NSF, CSI or DIS 500 ms after receiving a CED.	2: 75	Sends an NSF, CSI or DIS 75 ms after receiving a CED.	Display	Description	1: ON	ECM transmission is enabled.	2: OFF	ECM transmission is disabled.	Display	Description	1: ON	ECM reception is enabled.	2: OFF	ECM reception is disabled.	Description	Setting range	Number of allowed error bytes when detecting TCF	0 to 255
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2: OFF	ECM reception is disabled.																												
Description	Setting range																												
Number of allowed error bytes when detecting TCF	0 to 255																												

Maintenance item No.	Description																										
U608 (cont.)	<p>Setting the frequency of the CED signal Sets the frequency of the CED signal. Used as one of the measures to improve transmission performance for international communications.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the frequency. <table border="1"> <thead> <tr> <th>Display</th><th>Frequency of the CED signal</th></tr> </thead> <tbody> <tr> <td>1: 2100</td><td>2100 Hz</td></tr> <tr> <td>2: 1100</td><td>1100 Hz</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Frequency of the CED signal	1: 2100	2100 Hz	2: 1100	1100 Hz																				
Display	Frequency of the CED signal																										
1: 2100	2100 Hz																										
2: 1100	1100 Hz																										
U609	<p>Setting communication time</p> <p>Description Sets the time-out time for fax transmission.</p> <p>Purpose Used mainly to improve transmission performance for international communications.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>T0</td><td>Sets the T0 time-out time.</td></tr> <tr> <td>T1</td><td>Sets the T1 time-out time.</td></tr> <tr> <td>T2</td><td>Sets the T2 time-out time.</td></tr> <tr> <td>Ta</td><td>Sets the Ta time-out time.</td></tr> <tr> <td>Tb1</td><td>Sets the Tb1 time-out time.</td></tr> <tr> <td>Tb2</td><td>Sets the Tb2 time-out time.</td></tr> <tr> <td>Tc</td><td>Sets the Tc time-out time.</td></tr> <tr> <td>Td</td><td>Sets the Td time-out time.</td></tr> </tbody> </table> <p>Setting the T0 time-out time Sets the time before detecting a CED or DIS signal after a dialing signal is sent. Depending on the quality of the exchange, or when the auto select function is selected at the destination unit, a line can be disconnected. Change the setting to prevent this problem.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>T0 time-out time</td><td>30 to 90 s</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the T1 time-out time Sets the time before receiving the correct signal after call reception. No change is necessary for this maintenance item.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>T1 time-out time</td><td>30 to 90 s</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	T0	Sets the T0 time-out time.	T1	Sets the T1 time-out time.	T2	Sets the T2 time-out time.	Ta	Sets the Ta time-out time.	Tb1	Sets the Tb1 time-out time.	Tb2	Sets the Tb2 time-out time.	Tc	Sets the Tc time-out time.	Td	Sets the Td time-out time.	Description	Setting range	T0 time-out time	30 to 90 s	Description	Setting range	T1 time-out time	30 to 90 s
Display	Description																										
T0	Sets the T0 time-out time.																										
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Ta	Sets the Ta time-out time.																										
Tb1	Sets the Tb1 time-out time.																										
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Tc	Sets the Tc time-out time.																										
Td	Sets the Td time-out time.																										
Description	Setting range																										
T0 time-out time	30 to 90 s																										
Description	Setting range																										
T1 time-out time	30 to 90 s																										

Maintenance item No.	Description								
U609 (cont.)	Setting the T2 time-out time The T2 time-out time decides the following. <ul style="list-style-type: none">• From CFR signal output to image data reception• From image data reception to the next signal reception• In ECM, from RNR signal detection to the next signal reception <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>T2 time-out time</td><td>1 to 255</td><td>69</td><td>100 ms</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Change in value per step	T2 time-out time	1 to 255	69	100 ms
	Description	Setting range	Initial setting	Change in value per step					
	T2 time-out time	1 to 255	69	100 ms					
	Setting the Ta time-out time In the fax/telephone auto select mode, sets the time to continue ringing an operator through the connected telephone after receiving a call as a fax machine (see figure 1-3-1). A fax signal is received within the Ta set time, or the fax mode is selected automatically when the time elapses. In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Ta time-out time</td><td>1 to 255 s</td><td>30</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Ta time-out time	1 to 255 s	30		
	Description	Setting range	Initial setting						
	Ta time-out time	1 to 255 s	30						
									
	Figure 1-3-1 Ta/Tb1/Tb2 time-out time								
	Setting the Tb1 time-out time In the fax/telephone auto select mode, sets the time to start sending the ring back tone after receiving a call as a fax machine (see figure 1-3-1). In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Tb1 time-out time</td><td>1 to 255</td><td>20</td><td>100 ms</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Change in value per step	Tb1 time-out time	1 to 255	20	100 ms
	Description	Setting range	Initial setting	Change in value per step					
Tb1 time-out time	1 to 255	20	100 ms						
Setting the Tb2 time-out time In the fax/telephone auto select mode, sets the time to start ringing an operator through the connected telephone after receiving a call as a fax machine (see figure 1-3-1). In the fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. <ol style="list-style-type: none">1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Tb2 time-out time</td><td>1 to 255</td><td>80</td><td>100 ms</td></tr></table> <ol style="list-style-type: none">2. Press the start key. The value is set.3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Change in value per step	Tb2 time-out time	1 to 255	80	100 ms	
Description	Setting range	Initial setting	Change in value per step						
Tb2 time-out time	1 to 255	80	100 ms						

Maintenance item No.	Description										
U609 (cont.)	<p>Setting the Tc time-out time</p> <p>In the TAD mode, set the time to check if there are any triggers for shifting to fax reception after a connected telephone receives a call. Only the telephone function is available if shifting is not made within the set Tc time. In the TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Tc time-out time</td><td>1 to 255 s</td><td>60</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the Td time-out time</p> <p>Sets the length of the time required to determine silent status (fax), one of the triggers for Tc time check. In the TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. Be sure not to set it too short; otherwise, the mode may be shifted to fax while the unit is being used as a telephone.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>Td time-out time</td><td>1 to 255 s</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Tc time-out time	1 to 255 s	60	Description	Setting range	Td time-out time	1 to 255 s
Description	Setting range	Initial setting									
Tc time-out time	1 to 255 s	60									
Description	Setting range										
Td time-out time	1 to 255 s										

Maintenance item No.	Description																														
U610	<p>Setting the modem output level</p> <p>Description Sets the modem output level.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SGL LEVEL MODEM</td><td>Sets the modem output level.</td></tr> <tr> <td>SGL OUTPUT ADJ</td><td>Adjusts the modem output level.</td></tr> </tbody> </table> <p>Setting the modem output level To be set when installing the machine in order to adapt to the line characteristics.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Modem output level</td><td>0 to 15</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Adjusting the modem output level No change is necessary from the factory default.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Setting</th><th>Output level</th></tr> </thead> <tbody> <tr><td>12</td><td>1.0 dBm</td></tr> <tr><td>11</td><td>0.75 dBm</td></tr> <tr><td>10</td><td>0.5 dBm</td></tr> <tr><td>9</td><td>0.25 dBm</td></tr> <tr><td>8</td><td>0 dBm</td></tr> <tr><td>7</td><td>-0.25 dBm</td></tr> <tr><td>6</td><td>-0.5 dBm</td></tr> <tr><td>5</td><td>-0.75 dBm</td></tr> <tr><td>4</td><td>-1.0 dBm</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SGL LEVEL MODEM	Sets the modem output level.	SGL OUTPUT ADJ	Adjusts the modem output level.	Description	Setting range	Modem output level	0 to 15	Setting	Output level	12	1.0 dBm	11	0.75 dBm	10	0.5 dBm	9	0.25 dBm	8	0 dBm	7	-0.25 dBm	6	-0.5 dBm	5	-0.75 dBm	4	-1.0 dBm
Display	Description																														
SGL LEVEL MODEM	Sets the modem output level.																														
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10	0.5 dBm																														
9	0.25 dBm																														
8	0 dBm																														
7	-0.25 dBm																														
6	-0.5 dBm																														
5	-0.75 dBm																														
4	-1.0 dBm																														

Maintenance item No.	Description																										
U611	<p>G3 cable equalizer</p> <p>Description Sets the G3 cable equalizer.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>REG. G3 TX EQR</td><td>Sets the G3 transmission cable equalizer.</td></tr> <tr> <td>REG. G3 RX EQR</td><td>Sets the G3 reception cable equalizer.</td></tr> </tbody> </table> <p>Setting the G3 transmission cable equalizer Perform the following adjustment to make the equalizer compatible with the line characteristics.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 0</td><td>0 km</td></tr> <tr> <td>2: 18</td><td>1.8 km</td></tr> <tr> <td>3: 36</td><td>3.6 km</td></tr> <tr> <td>4: 72</td><td>7.2 km</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the G3 reception cable equalizer Perform the following adjustment to make the equalizer compatible with the line characteristics.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 0</td><td>0 km</td></tr> <tr> <td>2: 18</td><td>1.8 km</td></tr> <tr> <td>3: 36</td><td>3.6 km</td></tr> <tr> <td>4: 72</td><td>7.2 km</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	REG. G3 TX EQR	Sets the G3 transmission cable equalizer.	REG. G3 RX EQR	Sets the G3 reception cable equalizer.	Display	Description	1: 0	0 km	2: 18	1.8 km	3: 36	3.6 km	4: 72	7.2 km	Display	Description	1: 0	0 km	2: 18	1.8 km	3: 36	3.6 km	4: 72	7.2 km
Display	Description																										
REG. G3 TX EQR	Sets the G3 transmission cable equalizer.																										
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4: 72	7.2 km																										
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3: 36	3.6 km																										
4: 72	7.2 km																										

Maintenance item No.	Description										
U612	<p>Setting the modem detection level</p> <p>Description Sets the modem detection level.</p> <p>Purpose Used to improve the transmission performance when a low quality line is used.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 33</td><td>–33 dBm</td></tr> <tr> <td>2: 38</td><td>–38 dBm</td></tr> <tr> <td>3: 43</td><td>–43 dBm</td></tr> <tr> <td>4: 47</td><td>–47 dBm</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: 33	–33 dBm	2: 38	–38 dBm	3: 43	–43 dBm	4: 47	–47 dBm
Display	Description										
1: 33	–33 dBm										
2: 38	–38 dBm										
3: 43	–43 dBm										
4: 47	–47 dBm										
U613	<p>Setting the DTMF output level</p> <p>Description Sets the DTMF output level of a push-button dial telephone.</p> <p>Purpose Used if problems occur when sending a signal with a push-button dial telephone.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>DTMF TX LEVEL (H)</td><td>Sets the DTMF (high-frequency group) output level.</td></tr> <tr> <td>DTMF TX LEVEL (L)</td><td>Sets the DTMF (low-frequency group) output level.</td></tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>DTMF (high-/low-frequency group) output level</td><td>0 to 255</td></tr> </tbody> </table> <p>E.g.: When set to 8, the DTMF output level is –8 dBm.</p> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	DTMF TX LEVEL (H)	Sets the DTMF (high-frequency group) output level.	DTMF TX LEVEL (L)	Sets the DTMF (low-frequency group) output level.	Description	Setting range	DTMF (high-/low-frequency group) output level	0 to 255
Display	Description										
DTMF TX LEVEL (H)	Sets the DTMF (high-frequency group) output level.										
DTMF TX LEVEL (L)	Sets the DTMF (low-frequency group) output level.										
Description	Setting range										
DTMF (high-/low-frequency group) output level	0 to 255										

Maintenance item No.	Description																										
U614	<p>Adjusting the DTMF output level</p> <p>Description Adjusts the DTMF output level of a push-button dial telephone.</p> <p>Purpose No change is necessary from the factory default.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SGL LVL DTMF (H)</td><td>Adjusts the DTMF (high-frequency group) output level.</td></tr> <tr> <td>SGL LVL DTMF (L)</td><td>Adjusts the DTMF (low-frequency group) output level.</td></tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Setting</th><th>DTMF (high-/low-frequency group) output level</th></tr> </thead> <tbody> <tr><td>12</td><td>2.0 dBm</td></tr> <tr><td>11</td><td>1.5 dBm</td></tr> <tr><td>10</td><td>1.0 dBm</td></tr> <tr><td>9</td><td>0.5 dBm</td></tr> <tr><td>8</td><td>0 dBm</td></tr> <tr><td>7</td><td>-0.5 dBm</td></tr> <tr><td>6</td><td>-1.0 dBm</td></tr> <tr><td>5</td><td>-1.5 dBm</td></tr> <tr><td>4</td><td>-2.0 dBm</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SGL LVL DTMF (H)	Adjusts the DTMF (high-frequency group) output level.	SGL LVL DTMF (L)	Adjusts the DTMF (low-frequency group) output level.	Setting	DTMF (high-/low-frequency group) output level	12	2.0 dBm	11	1.5 dBm	10	1.0 dBm	9	0.5 dBm	8	0 dBm	7	-0.5 dBm	6	-1.0 dBm	5	-1.5 dBm	4	-2.0 dBm
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6	-1.0 dBm																										
5	-1.5 dBm																										
4	-2.0 dBm																										

Maintenance item No.	Description																												
U615	<p>Setting the NCU</p> <p>Description Makes setting regarding the network control unit (NCU).</p> <p>Purpose To be set when installing the facsimile kit.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>EXCHANGE</td><td>Sets the connection to PBX/PSTN.</td></tr> <tr> <td>DIAL TONE</td><td>Sets PSTN dial tone detection.</td></tr> <tr> <td>BUSY TONE</td><td>Sets busy tone detection.</td></tr> <tr> <td>PBX SETTING</td><td>Setting for a PBX.</td></tr> </tbody> </table> <p>Setting the connection to PBX/PSTN Selects if a fax is to be connected to either a PBX or public switched telephone network.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: PSTN</td><td>Connected to the public switched telephone network.</td></tr> <tr> <td>2: PBX</td><td>Connected to a PBX.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting PSTN dial tone detection Selects if the dial tone is detected to check the telephone is off the hook when a fax is connected to a public switched telephone network.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Detects the dial tone.</td></tr> <tr> <td>2: OFF</td><td>Does not detect the dial tone.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting busy tone detection When a fax signal is sent, sets whether the line is disconnected immediately after a busy tone is detected, or the busy tone is not detected and the line remains connected until T0 time-out time. Fax transmission may fail due to incorrect busy tone detection. When set to 2, this problem may be prevented. However, the line is not disconnected within the T0 time-out time even if the destination line is busy.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Detects busy tone.</td></tr> <tr> <td>2: OFF</td><td>Does not detect busy tone.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	EXCHANGE	Sets the connection to PBX/PSTN.	DIAL TONE	Sets PSTN dial tone detection.	BUSY TONE	Sets busy tone detection.	PBX SETTING	Setting for a PBX.	Display	Description	1: PSTN	Connected to the public switched telephone network.	2: PBX	Connected to a PBX.	Display	Description	1: ON	Detects the dial tone.	2: OFF	Does not detect the dial tone.	Display	Description	1: ON	Detects busy tone.	2: OFF	Does not detect busy tone.
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2: OFF	Does not detect busy tone.																												

Maintenance item No.	Description												
U615 (cont.)	<p>Setting for a PBX Selects the mode to connect an outside call when connected to a PBX. According to the type of the PBX connected, select the mode to connect an outside call.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: EARTH</td><td>Earth mode</td></tr> <tr> <td>2: FLS</td><td>Flashing mode</td></tr> <tr> <td>3: LOOP</td><td>Code number mode</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: EARTH	Earth mode	2: FLS	Flashing mode	3: LOOP	Code number mode				
Display	Description												
1: EARTH	Earth mode												
2: FLS	Flashing mode												
3: LOOP	Code number mode												
U616	<p>Adjusting the ratio of make-to-break of dial pulses</p> <p>Description Adjusts the ratio of make-to-break (ratio of make in pulse cycles) of dial pulses.</p> <p>Purpose Change the setting if dial pulse transmission problems occur. Note that 20 PPS is for Japanese specifications only and no setting is necessary for other specifications.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MAKE TIME (10 PPS)</td><td>Make time (10 PPS)</td></tr> <tr> <td>MAKE TIME (20 PPS)</td><td>Make time (20 PPS)</td></tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Make time in the pulse cycle (10 PPS)</td><td>1 to 99 (ms)</td></tr> <tr> <td>Make time in the pulse cycle (20 PPS)</td><td>1 to 49 (ms)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAKE TIME (10 PPS)	Make time (10 PPS)	MAKE TIME (20 PPS)	Make time (20 PPS)	Description	Setting range	Make time in the pulse cycle (10 PPS)	1 to 99 (ms)	Make time in the pulse cycle (20 PPS)	1 to 49 (ms)
Display	Description												
MAKE TIME (10 PPS)	Make time (10 PPS)												
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Description	Setting range												
Make time in the pulse cycle (10 PPS)	1 to 99 (ms)												
Make time in the pulse cycle (20 PPS)	1 to 49 (ms)												

Maintenance item No.	Description												
U617	<p>Outputting lists</p> <p>Description Outputs a list of data regarding fax transmissions.</p> <p>Purpose Used to check conditions of use, settings and transmission procedures of the fax.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate list selection. The selected list is output. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SETTING LIST</td><td>Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.</td></tr> <tr> <td>ACTION LIST</td><td>Outputs a list of error history, transmission line details and other information.</td></tr> <tr> <td>SELF ST RPT</td><td>Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.</td></tr> <tr> <td>PROTOCOL LIST</td><td>Outputs a list of transmission procedures.</td></tr> <tr> <td>1-T. ECM</td><td>Outputs a list of ECM settings for one-touch dialing.</td></tr> </tbody> </table>	Display	Description	SETTING LIST	Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.	ACTION LIST	Outputs a list of error history, transmission line details and other information.	SELF ST RPT	Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.	PROTOCOL LIST	Outputs a list of transmission procedures.	1-T. ECM	Outputs a list of ECM settings for one-touch dialing.
Display	Description												
SETTING LIST	Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.												
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PROTOCOL LIST	Outputs a list of transmission procedures.												
1-T. ECM	Outputs a list of ECM settings for one-touch dialing.												

Maintenance item No.	Description																												
U650	<p>Setting the system 1</p> <p>Description Makes settings for fax reception regarding the sizes of the fax paper and received images and automatic printing of the protocol list.</p> <p>Start</p> <p>1. Press the start key. The screen for selecting an item is displayed.</p> <p>2. Press the appropriate item. The screen for the selected item appears.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>CUT LINE (100%)</td><td>Sets the number of lines to be ignored when receiving a fax at 100% magnification.</td></tr><tr><td>CUT LINE (AUTO)</td><td>Sets the number of lines to be ignored when receiving a fax in the auto reduction mode.</td></tr><tr><td>CUT LINE (A4)</td><td>Sets the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode.</td></tr><tr><td>RX WIDTH 11"</td><td>Sets the recording width for inch specifications.</td></tr><tr><td>PROTOCOL PRT</td><td>Sets the automatic printing of the protocol list.</td></tr></table> <p>Setting the number of lines to be ignored when receiving a fax at 100% magnification Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when recording the data at 100% magnification. If the number of excess lines is below the setting, those lines are ignored. If over the setting, they are recorded on the next page.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving at 100%</td><td>0 to 22</td><td>3</td><td>16 lines</td></tr></table> <p>Increase the setting if a blank second page is received, and decrease it if the received image does not include the entire transmitted data.</p> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the number of lines to be ignored when receiving a fax in the auto reduction mode Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in the auto reduction mode. If the number of excess lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving in the auto reduction mode</td><td>0 to 22</td><td>3</td><td>16 lines</td></tr></table> <p>Increase the setting if a page received in the reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include all transmitted data.</p> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p>	Display	Description	CUT LINE (100%)	Sets the number of lines to be ignored when receiving a fax at 100% magnification.	CUT LINE (AUTO)	Sets the number of lines to be ignored when receiving a fax in the auto reduction mode.	CUT LINE (A4)	Sets the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode.	RX WIDTH 11"	Sets the recording width for inch specifications.	PROTOCOL PRT	Sets the automatic printing of the protocol list.	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving at 100%	0 to 22	3	16 lines	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving in the auto reduction mode	0 to 22	3	16 lines
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Maintenance item No.	Description																						
U650 (cont.)	<p>Setting the number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode</p> <p>Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in the auto reduction mode onto A4R or letter-size paper under the conditions below. If the number of excess lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page.</p> <ul style="list-style-type: none">• With A4R present and folio absent in the drawers• With letter-size paper present and legal-size paper absent in the drawers <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode</td><td>0 to 22</td><td>3</td><td>16 lines</td></tr></table> <p>Increase the setting if a page received in the reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include all transmitted data.</p> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the recording width for inch specifications</p> <p>Sets the maximum recording width and processing method when 11" width fax paper is loaded on an inch-specification machine.</p> <p>1. Enter 1 or 2 using the numeric keys to change the setting.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: 11 × 17</td><td>Communicates to the destination unit 11" width as A3 width and records at 100% magnifications.</td></tr><tr><td>2: B4</td><td>Communicates to the destination unit 11" width as B4 width.</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the automatic printing of the protocol list</p> <p>Sets if the protocol list is automatically printed out.</p> <p>1. Change the setting using the numeric keys.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: OFF</td><td>The protocol list is not printed out automatically.</td></tr><tr><td>2: ERROR</td><td>The protocol list is automatically printed out after communication only if a communication error occurs.</td></tr><tr><td>3: ON</td><td>The protocol list is automatically printed out after communication.</td></tr></table> <p>2. Press the start key. The value is set.</p> <p>3. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving a fax (A4R, letter) in the auto reduction mode	0 to 22	3	16 lines	Display	Description	1: 11 × 17	Communicates to the destination unit 11" width as A3 width and records at 100% magnifications.	2: B4	Communicates to the destination unit 11" width as B4 width.	Display	Description	1: OFF	The protocol list is not printed out automatically.	2: ERROR	The protocol list is automatically printed out after communication only if a communication error occurs.	3: ON	The protocol list is automatically printed out after communication.
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Maintenance item No.

U651

Description

Setting the system 2

Description

Sets the variation range in rotation reception and the number of adjustment lines for automatic reduction.

Start

1. Press the start key. The screen for selecting an item is displayed.

2. Press the appropriate item.

The screen for the selected item appears.

Display	Description
ROTAT. RX ERR	Sets the variation range in the auxiliary scanning direction for rotation reception.
ADJ LINES	Sets the number of adjustment lines for automatic reduction.
ADJ LINES (A4)	Sets the number of adjustment lines for automatic reduction when A4 paper is set.
ADJ LINES (LT)	Sets the number of adjustment lines for automatic reduction when letter size paper is set.

Setting the variations range in rotation reception

Sets the maximum number of lines to be ignored when the received data exceeds the acceptable number of lines in the rotation reception mode. If the number of excessive lines is smaller than the set value, those lines are ignored and rotation reception is performed; if it is larger than the set value, rotation reception is not performed.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of variation lines in the auxiliary scanning direction	0 to 255	3

Even if rotation reception fails, it can be enabled by increasing this value, however, some parts of the received image may not be printed.

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 number of adjustment lines for automatic reduction

Sets the number of adjustment lines for automatic reduction.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction	0 to 22	7

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 number of adjustment lines for automatic reduction when A4 paper is set

Sets the number of adjustment lines for automatic reduction when A4 paper is set.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction when A4 paper is set	0 to 22	22

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 number of adjustment lines for automatic reduction when letter size paper is set

Sets the number of adjustment lines for automatic reduction when letter size paper is set.

1. Change the setting using the numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction when letter size paper is set	0 to 26	26

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 selecting a maintenance item No. is displayed.

Maintenance item No.	Description																														
U660	<p>Setting the system (communication 2)</p> <p>Description Makes settings for fax transmission regarding the communication.</p> <p>Purpose To reduce transmission errors when a low quality line is used.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>TCF CHECK 2</td><td>Sets the criteria for receiving a TCF signal 2.</td></tr> <tr> <td>SHORT PROTOCOL TX</td><td>Sets the short protocol transmission.</td></tr> <tr> <td>SHORT PROTOCOL RX</td><td>Sets the reception of short protocol transmission.</td></tr> <tr> <td>NUMBER of CNG (F/T)</td><td>Sets the CNG detection times in the fax/telephone auto select mode.</td></tr> <tr> <td>1TOUCH ECM</td><td>Turns ECM for one-touch dialing on/off.</td></tr> </tbody> </table> <p>Setting the criteria for receiving a TCF signal 2 Sets the signal checking time as a criterion for a received TCF signal.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric key to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: LONG</td><td>Checks for 1.0 s.</td></tr> <tr> <td>2: SHORT</td><td>Checks for 0.8 s.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the short protocol transmission Sets if short protocol transmission is performed.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Short protocol transmission is performed.</td></tr> <tr> <td>2: OFF</td><td>Short protocol transmission is not performed.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the reception of a short protocol transmission Selects whether to receive or ignore transmission using short protocol. If a short protocol transmission is received when an auto switching device is attached to the machine, communication problems, including auto switching inability, sometimes occur. Change the setting to ignore short protocol transmission to prevent such problems.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Receives short protocol transmission.</td></tr> <tr> <td>2: OFF</td><td>Ignores short protocol transmission.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	TCF CHECK 2	Sets the criteria for receiving a TCF signal 2.	SHORT PROTOCOL TX	Sets the short protocol transmission.	SHORT PROTOCOL RX	Sets the reception of short protocol transmission.	NUMBER of CNG (F/T)	Sets the CNG detection times in the fax/telephone auto select mode.	1TOUCH ECM	Turns ECM for one-touch dialing on/off.	Display	Description	1: LONG	Checks for 1.0 s.	2: SHORT	Checks for 0.8 s.	Display	Description	1: ON	Short protocol transmission is performed.	2: OFF	Short protocol transmission is not performed.	Display	Description	1: ON	Receives short protocol transmission.	2: OFF	Ignores short protocol transmission.
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Maintenance item No.	Description												
U660 (cont.)	<p>Setting the CNG detection times in the fax/telephone auto select mode Sets the CNG detection times in the fax/telephone auto select mode.</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 1 TIME</td><td>Detects CNG once.</td></tr> <tr> <td>2: 2 TIMES</td><td>Detects CNG twice.</td></tr> </tbody> </table> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Setting ECM for each one-touch key Turns ECM on/off for each one-touch key.</p> <ol style="list-style-type: none"> Enter a registered two-digit one-touch key number and press the start key. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM communication is performed for all one-touch keys.</td></tr> <tr> <td>2: OFF</td><td>Disables the ECM for one-touch keys.</td></tr> </tbody> </table> Press the start key. The value is set. The screen for entering a one-touch key number is displayed. To return to the screen for selecting an item, press the stop/clear key at the screen for entering a one-touch key number. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: 1 TIME	Detects CNG once.	2: 2 TIMES	Detects CNG twice.	Display	Description	1: ON	ECM communication is performed for all one-touch keys.	2: OFF	Disables the ECM for one-touch keys.
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Maintenance item No.	Description																																								
U670	<p>Setting the system (communication 3)</p> <p>Description Makes settings for fax transmission regarding the communication.</p> <p>Purpose To reduce transmission errors when a low quality line is used.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>V.34 MODEM</td><td>Enables or disables V.34 communication.</td></tr> <tr> <td>V.34-3429Hz</td><td>Sets the V.34 symbol speed (3429 Hz).</td></tr> <tr> <td>V.34-3200Hz</td><td>Sets the V.34 symbol speed (3200 Hz).</td></tr> <tr> <td>V.34-3000Hz</td><td>Sets the V.34 symbol speed (3000 Hz).</td></tr> <tr> <td>V.34-2800 Hz</td><td>Sets the V.34 symbol speed (2800 Hz).</td></tr> </tbody> </table> <p>Enabling/disabling V.34 communication Sets whether V.34 communication is enabled/disabled for transmission and reception.</p> <ol style="list-style-type: none"> 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 communication is enabled for both transmission and reception.</td></tr> <tr> <td>2: TX</td><td>V.34 communication is enabled for transmission only.</td></tr> <tr> <td>3: RX</td><td>V.34 communication is enabled for reception only.</td></tr> <tr> <td>4: OFF</td><td>V.34 communication is disabled for both transmission and reception.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the V.34 symbol speed (3429 Hz) Sets if the V.34 symbol speed 3429 Hz is used.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 3429 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 3429 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the V.34 symbol speed (3200 Hz) Sets if the V.34 symbol speed 3200 Hz is used.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 3200 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 3200 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the V.34 symbol speed (3000 Hz) Sets if the V.34 symbol speed 3000 Hz is used.</p> <ol style="list-style-type: none"> 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 3000 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 3000 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	V.34 MODEM	Enables or disables V.34 communication.	V.34-3429Hz	Sets the V.34 symbol speed (3429 Hz).	V.34-3200Hz	Sets the V.34 symbol speed (3200 Hz).	V.34-3000Hz	Sets the V.34 symbol speed (3000 Hz).	V.34-2800 Hz	Sets the V.34 symbol speed (2800 Hz).	Display	Description	1: ON	V.34 communication is enabled for both transmission and reception.	2: TX	V.34 communication is enabled for transmission only.	3: RX	V.34 communication is enabled for reception only.	4: OFF	V.34 communication is disabled for both transmission and reception.	Display	Description	1: ON	V.34 symbol speed 3429 Hz is used.	2: OFF	V.34 symbol speed 3429 Hz is not used.	Display	Description	1: ON	V.34 symbol speed 3200 Hz is used.	2: OFF	V.34 symbol speed 3200 Hz is not used.	Display	Description	1: ON	V.34 symbol speed 3000 Hz is used.	2: OFF	V.34 symbol speed 3000 Hz is not used.
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


Maintenance item No.	Description						
U670 (cont.)	<p>Setting the V.34 symbol speed (2800 Hz) Sets if the V.34 symbol speed 2800 Hz is used.</p> <ol style="list-style-type: none"> Enter 1 or 2 using the numeric keys to change the setting. <table border="1" data-bbox="347 279 1057 384"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>V.34 symbol speed 2800 Hz is used.</td></tr> <tr> <td>2: OFF</td><td>V.34 symbol speed 2800 Hz is not used.</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	1: ON	V.34 symbol speed 2800 Hz is used.	2: OFF	V.34 symbol speed 2800 Hz is not used.
Display	Description						
1: ON	V.34 symbol speed 2800 Hz is used.						
2: OFF	V.34 symbol speed 2800 Hz is not used.						
U680	<p>Displaying the fax board ROM version</p> <p>Description Displays the version of the ROM on the fax control PCB.</p> <p>Purpose Used to check the version of the ROM on the fax control PCB.</p> <p>Method 1. Press the start key. The version of the ROM on the fax control PCB is displayed.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description												
U881	<p>Using the flash-memory jig</p> <p>Description Moves data or program code between the flash-memory jig and the machine's SRAM.</p> <p>Purpose When replacing the fax control PCB, use this procedure to save SRAM data from the old PCB and load it into the new PCB.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Press the appropriate item. The screen for the selected item appears. <table border="1" data-bbox="318 533 1170 737"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>UPLOAD TO JIG:ALL</td><td>Saves all SRAM data into the jig.</td></tr> <tr> <td>DOWNLOAD FROM JIG: All</td><td>Loads all data saved in the jig into the machine's SRAM.</td></tr> <tr> <td>WRITE BOOT PROGRAM</td><td>Loads the boot program into the jig.</td></tr> <tr> <td>UPLOAD TO JIG:DIAL</td><td>Reading one-touch/abbreviated dial information</td></tr> <tr> <td>DOWNLOAD FROM JIG: DIAL</td><td>Writing one-touch/abbreviated dial information</td></tr> </tbody> </table> <p>Saving SRAM data into the jig Saves SRAM data into the jig.</p> <div data-bbox="318 886 649 982" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> UPLOAD TO JIG? </div> <ol style="list-style-type: none"> 1. Press the start key. The data is saved into the jig, and the screen indicates the result. <ul style="list-style-type: none"> • If the operation was successful: <div data-bbox="318 1087 649 1184" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> UPLOAD TO JIG OK </div> • If the operation failed: <div data-bbox="318 1276 649 1373" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> UPLOAD TO JIG NG XXX </div> <p style="margin-left: 20px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881" on page 1-3-36.</p> 2. Press the stop/clear key. 3. Turn the power off. 	Display	Description	UPLOAD TO JIG:ALL	Saves all SRAM data into the jig.	DOWNLOAD FROM JIG: All	Loads all data saved in the jig into the machine's SRAM.	WRITE BOOT PROGRAM	Loads the boot program into the jig.	UPLOAD TO JIG:DIAL	Reading one-touch/abbreviated dial information	DOWNLOAD FROM JIG: DIAL	Writing one-touch/abbreviated dial information
Display	Description												
UPLOAD TO JIG:ALL	Saves all SRAM data into the jig.												
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UPLOAD TO JIG:DIAL	Reading one-touch/abbreviated dial information												
DOWNLOAD FROM JIG: DIAL	Writing one-touch/abbreviated dial information												

Maintenance item No.	Description
U881 (cont.)	<p>Writing data from the flash-memory jig into SRAM Writes the data from the jig into the machine's SRAM.</p> <div data-bbox="347 279 678 373" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> DOWNLOAD FROM JIG? </div> <ol style="list-style-type: none"> Press the start key. The data write is executed, and the screen displays the result. <ul style="list-style-type: none"> If the write operation was successful: <div data-bbox="347 493 678 588" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> DOWNLOAD FROM JIG OK </div> If the write operation failed: <div data-bbox="347 678 678 772" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> DOWNLOAD FROM JIG NG XXX </div> <p style="margin-left: 20px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881" on page 1-3-36.</p> Press the stop/clear key. Turn the power off. <p>Writing the boot program into the jig Writes the boot program into the flash memory in the jig.</p> <ol style="list-style-type: none"> When this item is pressed, the machine writes the boot program into the jig's flash memory, and the screen displays the result. <ul style="list-style-type: none"> If the write operation was successful: <div data-bbox="347 1077 678 1171" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> WRITE PROGRAM OK </div> If the write operation failed: <div data-bbox="347 1262 678 1356" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> WRITE PROGRAM NG XXX </div> <p style="margin-left: 20px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881" on page 1-3-36.</p> Press the stop/clear key. Turn the power off.

Maintenance item No.	Description
U881 (cont.)	<p>Reading one-touch/abbreviated dial information Reads one-touch/abbreviated dial information from the SRAM into the flash memory in the jig.</p> <div data-bbox="318 279 649 373" style="border: 1px solid black; padding: 5px; margin: 10px 0;">DIAL REG. TO JIG?</div> <ol style="list-style-type: none"> Press the start key. The data read from the SRAM into the flash memory in the jig is executed, and the screen displays the result. <ul style="list-style-type: none"> If the read operation was successful: <div data-bbox="318 525 649 619" style="border: 1px solid black; padding: 5px; margin: 10px 0;">DIAL REG. TO JIG OK</div> If the read operation failed: <div data-bbox="318 714 649 808" style="border: 1px solid black; padding: 5px; margin: 10px 0;">DIAL REG. TO JIG NG XXX</div> <div data-bbox="703 720 1382 779" style="margin-left: 20px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881" on page 1-3-36.</div> Press the stop/clear key. Turn the power off. <p>Writing one-touch/abbreviated dial information Writes one-touch/abbreviated dial information from the flash memory in the jig into the SRAM.</p> <div data-bbox="318 1050 649 1144" style="border: 1px solid black; padding: 5px; margin: 10px 0;">DIAL REG. FROM JIG?</div> <ol style="list-style-type: none"> Press the start key. The data write from the flash memory in the jig into the SRAM is executed, and the screen displays the result. <ul style="list-style-type: none"> If the write operation was successful: <div data-bbox="318 1295 649 1390" style="border: 1px solid black; padding: 5px; margin: 10px 0;">DIAL REG. FROM JIG OK</div> If the write operation failed: <div data-bbox="318 1484 649 1579" style="border: 1px solid black; padding: 5px; margin: 10px 0;">DIAL REG. FROM JIG NG XXX</div> <div data-bbox="703 1484 1382 1543" style="margin-left: 20px;">where XXX is the error code indicating the reason for the failure. See "Error Codes for Operation U881" on page 1-3-36.</div> Press the stop/clear key. Turn the power off.

Maintenance item No.	Description																								
U881 (cont.)	Error Codes for Operation U881 <table> <tr> <th>Code</th><th>Meaning</th></tr> <tr> <td>001</td><td>Jig not present.</td></tr> <tr> <td>002</td><td>No CF card.</td></tr> <tr> <td>003</td><td>No data in CF card.</td></tr> <tr> <td>004</td><td>CF data is incompatible. (This error occurs if you change the file name and attempt to load the data into a different machine model.)</td></tr> <tr> <td>005</td><td>Bad CF data (Checksum error)</td></tr> <tr> <td>006</td><td>CF read error</td></tr> <tr> <td>007</td><td>CF write error</td></tr> <tr> <td>008</td><td></td></tr> <tr> <td>009</td><td></td></tr> <tr> <td>010</td><td>Jig flash-memory read error (Following SRAM read, flash-memory data failed to match SRAM data.)</td></tr> <tr> <td>011</td><td>Jig flash-memory write error</td></tr> </table>	Code	Meaning	001	Jig not present.	002	No CF card.	003	No data in CF card.	004	CF data is incompatible. (This error occurs if you change the file name and attempt to load the data into a different machine model.)	005	Bad CF data (Checksum error)	006	CF read error	007	CF write error	008		009		010	Jig flash-memory read error (Following SRAM read, flash-memory data failed to match SRAM data.)	011	Jig flash-memory write error
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Maintenance item No.	Description
U881 (cont.)	<p>Data and Program Upload/Download Flows [Conceptual Drawings]</p> <ul style="list-style-type: none"> • Saving Stored Data into Jig (Maintenance Mode) <ul style="list-style-type: none"> • With CF • Without CF • Loading Saved Data (Maintenance Mode) <ul style="list-style-type: none"> • With CF • Without CF <p>Legend:</p> <ul style="list-style-type: none">  : Transmitted data  : Boot program  : Data flow <p>Flow Diagrams:</p> <p>1. Saving Stored Data into Jig (Maintenance Mode)</p> <p>• With CF: The process starts at the Fax board. Data is transmitted from the Fax board to the Jig. The Jig then transmits data to the CF (Compact Flash) card. The CF card contains a Program and Data. The Jig also contains Flash, Boot, and Data components.</p> <p>• Without CF: The process starts at the Fax board. Data is transmitted from the Fax board to the Jig. The Jig then transmits data to its own Data component. The Jig also contains Flash, Boot, and Data components.</p> <p>2. Loading Saved Data (Maintenance Mode)</p> <p>• With CF: The process starts at the Fax board. Data is transmitted from the CF card to the Jig. The Jig then transmits data to the Fax board. The CF card contains a Program and Data. The Jig also contains Flash, Boot, and Data components.</p> <p>• Without CF: The process starts at the Fax board. Data is transmitted from the Jig's Data component to the Fax board. The Jig also contains Flash, Boot, and Data components.</p>

Maintenance item No.	Description
U881 (cont.)	<div><div><div><div><div>Start : Fax board</div><div><div>Fax board</div><div><div>Data</div><div>Fax software</div><div>Jig boot</div></div></div></div><div><div>Jig</div><div><div>Flash Boot</div><div>Data</div></div><div><div>CF</div><div>Program</div><div>Data</div></div></div></div><div><div><div></div> : Transmitted data</div><div><div></div> : Boot program</div><div><div>--></div> : Data flow</div></div></div><div><div><div>• Writing the boot program (Maintenance Mode)</div><div><div><div>Start : Fax board</div><div><div>Fax board</div><div><div>Data</div><div>Fax software</div></div></div><div><div>Jig</div><div><div>Flash Boot</div><div>Data</div></div><div><div>CF</div><div>Program</div><div>Data</div></div></div></div><div><div><div></div> : Transmitted data</div><div><div></div> : Boot program</div><div><div>--></div> : Data flow</div></div></div></div></div></div>

Maintenance item No.	Description
U882	<p data-bbox="272 186 610 214">Setting the software switches</p> <p data-bbox="272 222 407 249">Description</p> <p data-bbox="272 252 930 279">Sets the software switches on the fax control PCB individually.</p> <p data-bbox="272 287 370 315">Purpose</p> <p data-bbox="272 317 1425 375">Use to change the setting when a problem such as split output of received originals occurs. Since the communication performance is largely affected, normally this setting need not be changed.</p> <p data-bbox="272 384 358 411">Method</p> <ol data-bbox="289 413 1357 527" style="list-style-type: none"><li data-bbox="289 413 518 441">1. Press the start key.<li data-bbox="289 443 1357 470">2. Enter the desired software switch number (3 digits) using the numeric keys and press the start key.<li data-bbox="289 472 984 499">3. Use numeric keys "7" to "0" to switch each bit between 0 and 1.<li data-bbox="289 501 688 527">4. Press the start key to set the value. <p data-bbox="272 535 407 562">Completion</p> <p data-bbox="272 564 1190 592">Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description		
U882 (cont.)	List of Software Switches of Which the Setting Can Be Changed		
	<System setting>		
	No.	Bit	Item
	10	0	One-touch name and telephone number display on the destination check screen
	14	5	Communication end buzzer after reception
	16	1	Ringer frequency detection method
	17	0	Top-bottom inversion in duplex reception
	19	7	F code check in NW-FAX reception
		6	Transfer of polling-received originals to PC
		5	Resolution in TIFF files
		4	Addition of telephone number in PC file name
	22	3	Automatic protocol list output at busy time
	23	21	Debug information report output format
	24	5	Recovery of transmission mode after end of fax operation
		3	Prohibition of split of standard size
		21	Declaration of reception size in automatic paper source selection for fax
		0	Declaration of reception size in setting "declaration based on the status of drawers"
	33	76543210	Number of adjustment lines in PDF files
	<Machine default>		
	No.	Bit	Item
	66	765	Selection of scanning density
	67	654	Selection of reception mode
	<Communication control procedure>		
	No.	Bit	Item
	101	2	Automatic reception level adjustment (V. 17)
		1	Automatic reception level adjustment (V. 29)
		0	Automatic reception level adjustment (V. 27ter)
	106	7654	Coding format in transmission
		3210	Coding format in reception
	107	5	33600 bps/V34
		4	31200 bps/V34
		3	28800 bps/V34
		2	26400 bps/V34
		1	24000 bps/V34
		0	21600 bps/V34
	108	7	19200 bps/V34
		6	16800 bps/V34
		5	14400 bps/V34
		4	12000 bps/V34
		3	9600 bps/V34
		2	7200 bps/V34
		1	4800 bps/V34
		0	2400 bps/V34
	111	3	FSK detection in V.8
	112	6	CNG transmission stop condition
		2	FIF length in transmission of more than 4 times of DIS/DTC signal
		0	Automatic reception level adjustment (V. 33)
	113	76543210	Adjustment width in automatic reception level adjustment

Maintenance item No.	Description																																				
U882 (cont.)	List of Software Switches of Which the Setting Can Be Changed																																				
	<Communication time setting>																																				
	<table><tr><th>No.</th><th>Bit</th><th>Item</th></tr><tr><td>123</td><td>76543210</td><td>T3 timeout setting</td></tr><tr><td>124</td><td>76543210</td><td>T4 timeout setting (automatic equipment)</td></tr><tr><td>125</td><td>76543210</td><td>T5 timeout setting</td></tr><tr><td>130</td><td>76543210</td><td>Time before transmission of CNG (1100 Hz) signal</td></tr><tr><td>133</td><td>76543210</td><td>T0 timeout setting (manual equipment)</td></tr><tr><td>134</td><td>7</td><td>Phase C timeout in ECM reception</td></tr><tr><td>136</td><td>76543210</td><td>Timeout 1 in countermeasures against echo</td></tr><tr><td>137</td><td>76543210</td><td>Timeout 2 in countermeasures against echo</td></tr><tr><td>138</td><td>76543210</td><td>Timeout for FSK detection start in V.8</td></tr></table>	No.	Bit	Item	123	76543210	T3 timeout setting	124	76543210	T4 timeout setting (automatic equipment)	125	76543210	T5 timeout setting	130	76543210	Time before transmission of CNG (1100 Hz) signal	133	76543210	T0 timeout setting (manual equipment)	134	7	Phase C timeout in ECM reception	136	76543210	Timeout 1 in countermeasures against echo	137	76543210	Timeout 2 in countermeasures against echo	138	76543210	Timeout for FSK detection start in V.8						
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	<Modem setting>																																				
	<table><tr><th>No.</th><th>Bit</th><th>Item</th></tr><tr><td>155</td><td>76543210</td><td>RTH offset (lower byte)</td></tr><tr><td>156</td><td>76543210</td><td>RTH offset (upper byte)</td></tr></table>	No.	Bit	Item	155	76543210	RTH offset (lower byte)	156	76543210	RTH offset (upper byte)																											
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	<table><tr><th>No.</th><th>Bit</th><th>Item</th></tr><tr><td>161</td><td>7654</td><td>Dial tone/busy tone detection pattern</td></tr><tr><td rowspan="2">162</td><td>7654</td><td>Busy tone detection pattern</td></tr><tr><td>1</td><td>Busy tone detection in automatic FAX/TEL switching</td></tr><tr><td>165</td><td>76543210</td><td>Access code registration for connection to PSTN</td></tr><tr><td>166</td><td>7654</td><td>FAX/TEL automatic switching ringback tone ON/OFF cycle</td></tr><tr><td>167</td><td>10</td><td>Pseudo-ringer duty ratio</td></tr></table>	No.	Bit	Item	161	7654	Dial tone/busy tone detection pattern	162	7654	Busy tone detection pattern	1	Busy tone detection in automatic FAX/TEL switching	165	76543210	Access code registration for connection to PSTN	166	7654	FAX/TEL automatic switching ringback tone ON/OFF cycle	167	10	Pseudo-ringer duty ratio																
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	<table><tr><th>No.</th><th>Bit</th><th>Item</th></tr><tr><td>174</td><td>76543210</td><td>DTMF signal transmission time</td></tr><tr><td>175</td><td>76543210</td><td>DTMF signal pause time</td></tr><tr><td>182</td><td>76543210</td><td>Ringer detection cycle (minimum)</td></tr><tr><td>183</td><td>76543210</td><td>Ringer detection cycle (maximum)</td></tr><tr><td>184</td><td>76543210</td><td>Ringer ON time detection</td></tr><tr><td>185</td><td>76543210</td><td>Ringer OFF time detection</td></tr><tr><td>186</td><td>76543210</td><td>Ringer OFF non-detection time</td></tr><tr><td>188</td><td>76543210</td><td>Dial tone detection time (continuous tone)</td></tr><tr><td>189</td><td>76543210</td><td>Allowable dial tone interruption time</td></tr><tr><td>192</td><td>76543210</td><td>Time for transmitting selection signal after closing the DC circuit</td></tr><tr><td>195</td><td>76543210</td><td>Ringer frequency detection invalid time</td></tr></table>	No.	Bit	Item	174	76543210	DTMF signal transmission time	175	76543210	DTMF signal pause time	182	76543210	Ringer detection cycle (minimum)	183	76543210	Ringer detection cycle (maximum)	184	76543210	Ringer ON time detection	185	76543210	Ringer OFF time detection	186	76543210	Ringer OFF non-detection time	188	76543210	Dial tone detection time (continuous tone)	189	76543210	Allowable dial tone interruption time	192	76543210	Time for transmitting selection signal after closing the DC circuit	195	76543210	Ringer frequency detection invalid time
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<table><tr><th>No.</th><th>Bit</th><th>Item</th></tr><tr><td>596</td><td>76543210</td><td>Experimental tone detector level judgment (for CNG only: THRESH L) lower part</td></tr><tr><td>597</td><td>76543210</td><td>Experimental tone detector level judgment (for CNG only: THRESH L) upper part</td></tr><tr><td>598</td><td>76543210</td><td>Experimental tone detector level judgment (for CNG only: THRESH U) lower part</td></tr><tr><td>599</td><td>76543210</td><td>Experimental tone detector level judgment (for CNG only: THRESH U) upper part</td></tr></table>	No.	Bit	Item	596	76543210	Experimental tone detector level judgment (for CNG only: THRESH L) lower part	597	76543210	Experimental tone detector level judgment (for CNG only: THRESH L) upper part	598	76543210	Experimental tone detector level judgment (for CNG only: THRESH U) lower part	599	76543210	Experimental tone detector level judgment (for CNG only: THRESH U) upper part																						
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Maintenance item No.	Description						
U894	<p>Performing board test</p> <p>Description Performs tests on the SRAM, DRAM (image memory, bitmap memory) and optional memory on the fax control PCB.</p> <p>Purpose Used to check if reading and writing are performed correctly in respective installed memories.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Press the appropriate item. The test executes. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>BOARD MEMORY</td><td>Performs tests on SRAM and DRAM.</td></tr> <tr> <td>BOARD OP. MEM</td><td>Performs tests on optional memory.</td></tr> </tbody> </table> <p>Performing tests on SRAM and DRAM</p> <ol style="list-style-type: none"> Press the start key. The screen displays the test results as follows. <ul style="list-style-type: none"> When the test result is OK: <div style="border: 1px solid black; padding: 5px; width: fit-content;">TEST MEMORY OK</div> If the test result is NG: <div style="border: 1px solid black; padding: 5px; width: fit-content;">TEST MEMORY NG DRAM IMG 0x*****</div> <div style="margin-left: 20px;">*****: address</div> <p>DRAM IMG: DRAM (image memory) error DRAM B.M: DRAM (bitmap memory) error SRAM: SRAM error</p> <p>To return to the screen for selecting an item, press the stop/clear key.</p> <p>Performing tests on optional memory</p> <ol style="list-style-type: none"> Press the start key. The screen displays the test results as follows. <ul style="list-style-type: none"> When the test result is OK: <div style="border: 1px solid black; padding: 5px; width: fit-content;">TEST OPTION MEMORY OK</div> If the test result is NG: <div style="border: 1px solid black; padding: 5px; width: fit-content;">TEST OPTION MEMORY NG DRAM B.M 0x*****</div> <div style="margin-left: 20px;">*****: address</div> If the test result is NG (memory is not installed): <div style="border: 1px solid black; padding: 5px; width: fit-content;">TEST OPTION MEMORY NG DRAM B.M</div> <p>To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion If the test result is OK, press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed. If the test result is NG, reset by turning the main switch off and on.</p>	Display	Description	BOARD MEMORY	Performs tests on SRAM and DRAM.	BOARD OP. MEM	Performs tests on optional memory.
Display	Description						
BOARD MEMORY	Performs tests on SRAM and DRAM.						
BOARD OP. MEM	Performs tests on optional memory.						

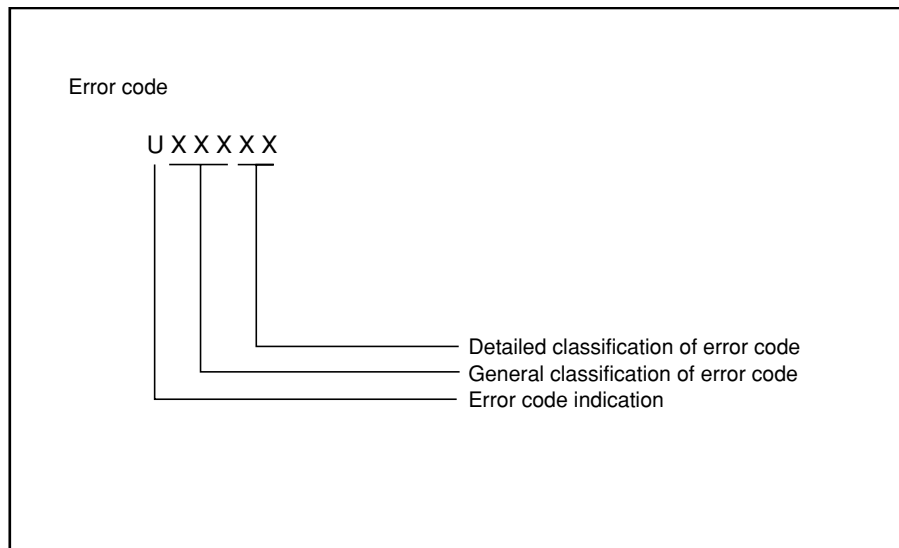
Maintenance item No.	Description
U898	<p>Setting the ports for maintenance mode</p> <p>Description Sets the ports targeted for the maintenance mode when a multi port (optional only in Japan) is installed. This mode need not be set particularly.</p>
U992	<p>Checking or clearing the printer/fax count</p> <p>Description Displays, clears or changes the print count of the printer or fax when the printer board or facsimile kit is installed.</p> <p>Purpose To check the condition of use of the printer or fax.</p> <p>Method Press the start key. The print count of the printer or fax is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Press the appropriate item. 2. Enter a six-digit numerical value using the numeric keys. To clear both of the printer and fax counts, press the reset key. 3. Press the start key. The count is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

1-4-1 Error codes

(1) Error code

Error codes are listed on the communication reports, activity report, etc. The codes consist of an error code indication “U” followed by a 5-digit number. (Error codes for V34 communication errors start with an “E” indication, followed by five digits.)

The upper three of the five digits indicate general classification of the error and its cause, while the lower two indicate the detailed classification. Items for which detailed classification is not necessary have “00” as the last two digits.



(2) Table of general classification

Error code	Description
U00000	No response or busy after the set number of redials.
U00100	Transmission was interrupted by a press of the stop/clear key.
U00200	Reception was interrupted by a press of the stop/clear key.
U00300	Recording paper on the destination unit has run out during transmission.
U004XX	A connection was made but interrupted during handshake with the receiver unit (refer to page 1-4-4 "U004XX error code table").
U00500	Multiple communication was interrupted and call was not made on destination units after interruption.
U006XX	Communication was interrupted because of a machine problem (refer to page 1-4-5 "U006XX error code table").
U00700	Communication was interrupted because of a problem in the destination unit.
U008XX	A page transmission error occurred in G3 mode (refer to page 1-4-5 "U008XX error code table").
U009XX	A page reception error occurred in G3 mode (refer to page 1-4-5 "U009XX error code table").
U010XX	Transmission in G3 mode was interrupted by a signal error (refer to page 1-4-6 "U010XX error code table").
U011XX	Reception in G3 mode was interrupted by a signal error (refer to page 1-4-8 "U011XX error code table").
U01400	An invalid one-touch key was specified during communication.
U01500	A communication error occurred when calling in V.8 mode.
U01600	A communication error occurred when called in V.8 mode.
U017XX	A communication error occurred before starting T.30 protocol during transmission in V.34 mode (refer to page 1-4-10 "U017XX error code table").
U018XX	A communication error occurred before starting T.30 protocol during reception in V.34 mode (refer to page 1-4-10 "U018XX error code table").
U02000	Relay broadcast was refused by a relay station because of a mismatch in permit ID number and permit telephone number when a relay command was issued.
U02100	A relay command failed because the destination unit (relay station) had no relay broadcast capability.
U02200	A relay command from a command station failed because a telephone number that was not registered in the relay station was specified. Or, relay broadcast was requested to a relay station but failed because a telephone number that was not registered in the relay station was specified. Or, F-code based relay broadcast transmission failed because the data registered in the F-code relay box was deleted.
U023XX	Receiving station information was not normally received in reception of a relay command (refer to page 1-4-10 "U023XX error code table").
U02400	An interoffice F-code based relay transmission was interrupted because of a mismatch in the specified relay box number.
U03000	No document was present in the destination unit when polling reception started.
U03100	In reverse polling, although no original was set in the destination unit, transmission was complete.
U03200	In confidential polling reception, data was not accumulated in the specified box in the destination unit. Or, in interoffice F-code based bulletin board reception, data was not stored in the box specified by the destination unit.
U03300	In polling reception from a unit of our make, operation was interrupted due to a mismatch in permit ID or telephone number. Or, in interoffice F-code based bulletin board reception, operation was interrupted due to a mismatch in permit ID or telephone number.
U03400	Polling reception was interrupted because of a mismatch in individual numbers (destination unit is either of our make or by another manufacturer).

Error code	Description
U03500	In confidential polling reception, the specified confidential box No. was not registered in the destination. Or, in interoffice F-code based bulletin board reception, the specified F-code confidential box number was not registered in the destination unit. Or, the destination was being accessed.
U03600	Confidential polling reception was interrupted because of a mismatch in specified confidential box No. Or, an interoffice F-code based bulletin board reception was interrupted because of a mismatch in the specified F-code confidential box number.
U03700	Confidential polling reception failed because the destination unit had no confidential polling transmission capability or data was not accumulated in any box in the destination unit. Or, interoffice F-code based bulletin board reception failed because the destination unit had no F-code based bulletin board transmission capability, or data was not stored in any F-code confidential box in the destination unit.
U04000	The confidential box specified for confidential transmission was not registered in the destination unit. Or, in interoffice F-code based transmission mode, the specified F-code box number was not registered in the destination unit. Or, the destination was being accessed.
U04100	Confidential transmission failed because the destination unit had no confidential capability. Or, F-code based transmission failed because the destination unit had no F-code based reception capability.
U04200	In encrypted transmission, the specified encryption box was not registered in the destination unit.
U04300	Encrypted transmission failed because the destination unit had no encrypted communication capability.
U044XX	Communication was interrupted because of an encryption key error during encrypted transmission (refer to page 1-4-10 "U044XX error code table").
U04500	Encrypted reception was interrupted because of a mismatch in encryption keys.
U05000	In transmission with a specified number, the set number of originals was different from the number of transmitted originals.
U05100	Password check transmission was interrupted because the permit ID did not agree.
U05200	Password check reception was interrupted because the permit ID did not agree.
U05300	Destination unit in password check reception mode did not receive data because the permit ID did not agree.
U09000	G3 communication was attempted but failed because the destination unit was a G2 machine.
U12000	Relay broadcast was requested from a command station but memory overflowed during reception. Or, in F-code based relay reception, memory overflowed.
U12100	Relay was commanded but memory overflowed in the destination unit (relay station).
U14000	Memory overflowed during confidential reception. Or, in F-code based confidential reception, memory overflowed.
U14100	Memory overflowed in the destination unit during confidential transmission. Or, in interoffice F-code based transmission, memory overflowed in the destination unit.
U19000	Memory overflowed during memory reception.
U19100	Memory overflowed in the destination unit during transmission.
U19200	Memory transmission failed because a decoding error occurred.
U19300	Transmission failed because an error occurred during JBIG encoding.
U19400	Reception failed because an error occurred during JBIG decoding.

(2-1) U004XX error code table: Interrupted phase B

Error code	Description
U00420	A relay request was received from the host center but interrupted because of a mismatch in permit ID or telephone number.
U00421	F-code based relay reception was interrupted because of a mismatch in the specified F-code relay box number.
U00430	Polling request (confidential or reverse) was received but interrupted because of a mismatch in permit number. Or, F-code based bulletin board transmission request was received but interrupted because of a mismatch in permit ID in the transmitting unit.
U00431	Confidential polling transmission was interrupted because the specified confidential box No. was not registered. Or, an F-code based bulletin board transmission was interrupted because the specified F-code confidential box was not registered.
U00432	Confidential polling transmission was interrupted because of a mismatch in confidential box ID number. Or, an F-code based bulletin board transmission was interrupted because of a mismatch in F-code confidential box numbers.
U00433	Confidential polling request was received but data was not present in the confidential box. Or, F-code based bulletin board transmission request was received but data was not present in the F-code confidential box.
U00434	Confidential polling request was received but interrupted because the specified confidential box No. was intended for encryption.
U00435	Confidential polling request was received but interrupted because the specified confidential box was being accessed. Or, F-code based bulletin board transmission request was received but interrupted because the specified F-code confidential box was being accessed.
U00440	Confidential reception was interrupted because the specified confidential box No. was not registered. Or, F-code based confidential reception or F-code based relay reception was interrupted because the specified F-code box was not registered. Or, F-code based confidential reception or F-code relay command reception was interrupted because the specified F-code box No. was being accessed.
U00441	Confidential reception was interrupted because the specified confidential box No. was intended for encryption.
U00450	The destination unit in password check transmission mode interrupted transmission because of a mismatch in permit ID.
U00460	Encrypted reception was interrupted because the specified encryption box number was not registered. Or, encrypted reception request was received but interrupted because the specified encryption box was being accessed.
U00462	Encrypted reception was interrupted because the encryption key for the specified encryption box was not registered.

(2-2) U006XX error code table: Problems with the unit

Error code	Description
U00600	The document processor cover is open.
U00601	Document jam or the document length exceeds the maximum.
U00602	Image scanning section problem.
U00603	No document feed.
U00604	Document length exceeded the limit of the bitmap memory capacity.
U00610	Recording section cover is open.
U00611	Recording paper JAM
U00613	Image writing section problem
U00614	Nearly empty of recording paper
U00615	Empty of recording paper
U00620	Copier fixing unit problem
U00622	Copier drive motor problem
U00655	CTS was not activated after RTS due to a modem error.
U00656	Data was not transmitted after CTS was activated due to a modem error.
U00670	Power was cut off during communication.
U00677	There was no file to transmit in the memory transmission mode.
U00690	System error.

(2-3) U008XX error code table: Page transmission error

Error code	Description
U00800	A page transmission error occurred because of reception of a RTN or PIN signal.
U00810	A page transmission error reoccurred after retry of transmission in the ECM mode.

(2-4) U009XX error code table: Page reception error

Error code	Description
U00900	An RTN or PIN signal was transmitted because of a page reception error.
U00910	A page reception error remained after retry of transmission in the ECM mode.

(2-5) U010XX error code table: G3 transmission

Error code	Description
U01000	An FTT signal was received for a set number of times after TCF signal transmission at 2400 bps. Or, an RTN signal was received in response to a Q signal (excluding EOP) after transmission at 2400 bps.
U01001	Function of the unit differs from that indicated by a DIS signal.
U01010	No relevant signal was received after transmission of a DNL (MPS or EOM) signal, and the preset number of command retransfers was exceeded (between units of our make).
U01011	No relevant signal was received after transmission of a DCS, TCF signal, and the preset number of command retransfers was exceeded.
U01012	No relevant signal was received after transmission of an NSS1, NSS2 (TCF) signal, and the preset number of command retransfers was exceeded (between units of our make).
U01013	No relevant signal was received after transmission of an NSS3, TCF signal, and the preset number of command retransfers was exceeded (between units of our make).
U01014	No relevant signal was received after transmission of an MPS signal, and the preset number of command retransfers was exceeded.
U01015	No relevant signal was received after transmission of an EOM signal, and the preset number of command retransfers was exceeded.
U01016	An MCF signal was received but no DIS signal was received after transmission of an EOM signal, and T1 timeout was detected.
U01017	No relevant signal was received after transmission of an EOP signal, and the preset number of command retransfers was exceeded.
U01018	No relevant signal was received after transmission of a PRI-EOP signal, and the preset number of command retransfers was exceeded.
U01019	No relevant signal was received after transmission of a CNC signal, and the preset number of command retransfers was exceeded (between units of our make).
U01020	No relevant signal was received after transmission of a CTC signal, and the preset number of command retransfers was exceeded (ECM).
U01021	No relevant signal was received after transmission of an EOR.Q signal, and the preset number of command retransfers was exceeded (ECM).
U01022	No relevant signal was received after transmission of an RR signal, and the preset number of command retransfers was exceeded (ECM).
U01023	No relevant signal was received after transmission of a PSS.NULL signal, and the preset number of command retransfers was exceeded (ECM).
U01024	No relevant signal was received after transmission of a PSS.MPS signal, and the preset number of command retransfers was exceeded (ECM).
U01025	No relevant signal was received after transmission of a PPS.EOM signal, and the preset number of command retransfers was exceeded (ECM).
U01026	No relevant signal was received after transmission of a PPS.EOP signal, and the preset number of command retransfers was exceeded (ECM).
U01027	No relevant signal was received after transmission of a PPS.PRI-EOP signal, and the preset number of command retransfers was exceeded (ECM).
U01028	T5 time-out was detected during ECM transmission (ECM).
U01040	A DCN or other inappropriate signal was received during standby for DIS signal reception.
U01041	A DCN signal was received after transmission of a DNL (MPS or EOM) signal (between units of our make).
U01042	A DCN signal was received after transmission of a DCS, TCF signal.
U01043	A DCN signal was received after transmission of an NSS1, NSS2 (TCF) signal (between units of our make).
U01044	A DCN signal was received after transmission of an NSS3, TCF signal (between units of our make).

Error code	Description
U01045	A DCN or other inappropriate signal was received after transmission of an MPS signal.
U01046	A DCN or other inappropriate signal was received after transmission of an EOM signal.
U01047	A DCN or other inappropriate signal was received after transmission of an EOP signal.
U01048	A DCN signal was received after transmission of a PRI-EOP signal.
U01049	A DCN signal was received after transmission of a CNC signal (between units of our make).
U01050	A DCN signal was received after transmission of a CTC signal (ECM).
U01051	A DCN signal was received after transmission of an EOR.Q signal (ECM).
U01052	A DCN signal was received after transmission of an RR signal (ECM).
U01053	A DCN signal was received after transmission of a PPS.NULL signal (ECM).
U01054	A DCN signal was received after transmission of a PPS.MPS signal (ECM).
U01055	A DCN signal was received after transmission of a PPS.EOM signal (ECM).
U01056	A DCN signal was received after transmission of a PPS.EOP signal (ECM).
U01057	A DCN signal was received after transmission of a PPS.PRI-EOP signal (ECM).
U01070	Polarity reversal was detected during handshake.
U01071	Polarity reversal was detected during message transmission.
U01072	A break in loop current was detected during transmission.
U01073	During reverse polling in V.34 mode at the receiver unit, a CM signal was not detected when transmitting after reception.
U01080	A PIP signal was received after transmission of a PPS.NULL signal.
U01091	During transmission in V.34 mode, communication was interrupted because a PPR signal was received over 10 times even after reducing the communication speed to the minimum with the symbol speed maintained at the level of connection.
U01092	During transmission in V.34 mode, communication was interrupted because of an impossible combination of the symbol speed and communication speed.

(2-6) U011XX error code table: G3 reception

Error code	Description
U01100	Function of the unit differs from that indicated by a DCS signal.
U01101	Function of the unit (excl. communication mode select) differs from that indicated by an NSS signal.
U01102	A DTC (NSC) signal was received when no transmission data was in the unit.
U01110	No response after transmission of a DIS signal.
U01111	No response after transmission of a DTC (NSC) signal.
U01112	No training reception after reception of a DCS or NSS signal.
U01113	No response after transmission of an FTT signal.
U01114	No message reception after transmission of a CFR signal.
U01115	No message reception after transmission of an MCF signal.
U01116	No message reception after transmission of a PPR signal.
U01117	No message reception after transmission of a CTR signal.
U01118	No message reception after transmission of an ERR signal.
U01119	No further signals were received after reception of a message.
U01120	No response after transmission of an MCF signal.
U01121	No response after transmission of an RTP signal.
U01122	No response after transmission of an RTN signal.
U01123	No response after transmission of a PIP signal.
U01124	No response after transmission of a PIN signal.
U01125	No response after transmission of a CNS signal (between units of our make).
U01126	No response after transmission of a PPR signal (ECM).
U01127	No response after transmission of an ERR signal (ECM).
U01128	No response after transmission of an RNR signal (ECM).
U01129	No response after transmission of an SPA signal (short protocol).
U01140	A DCN signal was received after transmission of a DIS signal.
U01141	A DCN signal was received after transmission of a DTC signal.
U01142	A DCN signal was received after transmission of a DCS or NSS signal.
U01143	A DCN signal was received after transmission of an FTT signal.
U01144	A DCN signal was received after transmission of a CFR signal.
U01145	A DCN signal was received after reception of a message.
U01146	A DCN signal was received after transmission of an MCF signal (interoffice communication after reception of an MPS, EOM signal or confidential interoffice communication).
U01147	A DCN signal was received after transmission of an RTP signal.
U01148	A DCN signal was received after transmission of an RTN signal.
U01149	A DCN signal was received after transmission of a PIP signal.
U01150	A DCN signal was received after transmission of a PIN signal.
U01151	A DCN signal was received after transmission of a PPR signal (ECM).
U01152	A DCN signal was received after transmission of a CTR signal (ECM).
U01153	A DCN signal was received after transmission of an ERR signal (ECM).
U01154	A DCN signal was received after transmission of an RNR signal (ECM).
U01155	A DCN signal was received after transmission of an SPA signal (short protocol).
U01160	During message reception, transmission time exceeded the maximum transmission time per line.
U01161	Number of error lines exceeded limits during message reception.
U01162	A break in loop current was detected during message reception.
U01163	Polarity reversal was detected during message reception.
U01164	One page length exceeded the specified length during message reception.
U01170	A decoding error occurred during MMR message reception.
U01172	During reverse polling in V.34 mode at the transmitting unit, a JM signal was not detected after transmission of a CM signal when receiving after transmission.

Error code	Description
U01191	Communication was interrupted because an error occurred during an image data reception sequence in the V.34 mode.
U01199	A DIS signal with different FIF was received after transmission of a DIS signal.

(2-7) U017XX error code table: V.34 transmission

Error code	Description
U01700	A communication error occurred in phase 2 (line probing).
U01720	A communication error occurred in phase 4 (modem parameter exchange).
U01721	Operation was interrupted due to the absence of a common communication speed between units.

U01700: A communication error that occurs at the transmitting unit in the period after transmission of INFO0 before entering phase 3 (primary channel equivalent device training). For example, INFO0/A/Abar (B/Bbar, for polling transmission)/INFOh was not detected.

U01720: A communication error that occurs at the transmitting unit in the period after initiating the control channel before entering the T.30 process. For example, PPh/ALT/MPh/E was not detected.

U01721: In the absence of a common communication speed between units (including when an impossible combination of communication speed and symbol speed occurs) after MPh exchange; 1) a DCN signal was received from the destination unit, and the line was cut; or 2) a DIS (NSF, CSI) signal was received from the destination unit and, in response to the signal, the unit transmitted a DCN signal, and the line was cut.

(2-8) U018XX error code table: V.34 reception

Error code	Description
U01800	A communication error occurred in phase 2 (line probing).
U01810	A communication error occurred in phase 3 (primary channel equivalent device training).
U01820	A communication error occurred in phase 4 (modem parameter exchange).
U01821	Operation was interrupted due to the absence of a common communication speed between units.

U01800: A communication error that occurs at the receiver unit in the period after transmission of INFO0 before entering phase 3 (primary channel equivalent device training). For example, INFO0/B/Bbar (A/Abar, for polling reception)/probing tone was not detected.

U01810: A communication error that occurs at the receiver unit in phase 3 (primary channel equivalent device training). For example, S/Sbar/PP/TRN was not detected.

U01820: A communication error that occurs at the receiver unit in the period after initiating the control channel before entering the T.30 process. For example, PPh/ALT/MPh/E was not detected.

U01821: In the absence of a common communication speed between units (including when an impossible combination of communication speed and symbol speed occurs) after MPh exchange, a DCN signal was transmitted to the destination unit and the line was cut.

(2-9) U023XX error code table: Relay command abnormal reception

Error code	Description
U02303	Timeout was detected before a correct DNL signal was received.
U02304	A signal other than MPS or EOM signal was received after a DNL signal was received.

(2-10) U044XX error code table: Encrypted transmission

Error code	Description
U04400	Encrypted transmission was interrupted because encryption keys did not agree.
U04401	Calling failed during encrypted transmission because the encryption key was not registered.

1-5-1 Self-diagnosis

(1) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0030	Fax control PCB system problem • Processing with the fax software was disabled due to a hardware or software problem.	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0070	Fax control PCB incompatibility detection problem* • Fax software is not compatible with MMI software.	MMI software version is earlier.	Check the version of MMI software and upgrade it to a version that accommodates the fax function.
C0130	Fax control PCB software switch checksum error • A checksum error occurred with the software switch value stored in the flash ROM on the fax control PCB.	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0280	Communication problem between the fax control PCB and main PCB • Communication between the fax control PCB and the main PCB of the machine cannot be performed normally.	Poor contact in the connector terminals.	Check the connection of connector YC1 on the fax control PCB and CN44 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective fax control PCB or main PCB.	Replace the fax control PCB or main PCB and check for correct operation.
C0820	Fax control PCB CG ROM checksum error • A checksum error occurred with the CG ROM data in the Flash ROM on the fax control PCB.	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0830	Flash ROM program area checksum error • A checksum error occurred with the program in the Flash ROM on the fax control PCB.	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0870	Fax control PCB to main PCB high-capacity data transfer problem* • High-capacity data transfer between the fax control PCB and the main PCB of the machine 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 YC1 on the fax control PCB and CN44 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective fax control PCB or main PCB.	Replace the fax control PCB or main PCB and check for correct operation.

*: When the printer/scanner kit is installed.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0880	Fax control PCB program archive problem* <ul style="list-style-type: none"> When power is turned on, the compressed program in the Flash ROM on the fax control PCB was not successfully decompressed. 	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.
C0890	Fax control PCB CG font archive problem* <ul style="list-style-type: none"> When power is turned on, the compressed CG font in the Flash ROM on the fax control PCB was not successfully decompressed. 	Defective fax control PCB.	Replace the fax control PCB and check for correct operation.

1-5-2 Troubleshooting

Contents	Remarks	
	Causes	Corrective measures
An error message is displayed on the computer screen while transmission is performed. "Network error has occurred."	A connection error of scanner NIC occurred while data was transmitted.	Connect the scanner NIC properly.
"Communication time out has occurred."	A network cable was disconnected while data was transmitted.	Connect the network cables of the computer and the machine properly.
"FAX connection has been cut."	Transmission failed because data amount (traffic) on the network was too large.	Retransmit after a while. Contact the network administrator for check.
"FAX connection could not be made for the following possible reasons: *The FAX main unit isn't turned on. *Network FAX address is wrong. *A fault has occurred at the FAX machine."	The fax system is not installed.	Install the fax system.
	Self diagnostic code C0280 occurred.	Check the connection of the flat cable.
	The fax software is not compatible with the NW-FAX functions.	Upgrade the software.
	The main PCB of the machine is not compatible with the NW-FAX functions.	Replace the main PCB.
	NIC is being initialized.	Retransmit after a while.
	Self diagnostic code of NIC occurred.	RTC memory is not mounted or connection is not proper. Check the connection.
	A network cable is disconnected.	Connect the network cables properly.
	The main switch is OFF.	Turn ON the main switch.
	The IP address or host name is not correct.	Check the IP address and host name registered in the FAX Driver and those registered in the scanner NIC.

Contents	Remarks	
	Causes	Corrective measures
"The FAX is in use."	Copying is being performed. Fax printing is being performed. Fax setting is being performed. Received originals are being transmitted. Remote diagnosis is being performed. Printing interrupt occurs during transmission. Network scanner is being used. Maintenance mode is being performed.	Retransmit after the cause described left is cleared.
"FAX memory is full."	Fax memory became full while transmission was performed.	Secure memory area. (Delete data in the memory.) Add memory. Retransmit with smaller resolution. Divide originals to be transmitted.
"The number of FAX transmission reservations has reached maximum."	NW-FAX transmission was tried when 50 items of fax transmission was reserved.	After a while (after the number of the reserved items is reduced), retransmit.
"The FAX cannot be used."	The main switch is OFF when reception into memory is set.	Turn on the main switch.
	Fax is being reset.	Retransmit after clearing reset.
"The job has been interrupted at the FAX operation panel."	The interrupt key was pressed while transmission was performed.	Retransmit after interrupt was cleared.
Mail notification related Transmission report is not delivered to clients.	NW-FAX transmission of report output in the fax initial setting is OFF or to be performed in a special condition.	If the setting is OFF, no report is returned regardless of fax communication result. If a special condition is set, a report is returned when a special event such as fax communication error or broadcast transmission occurs. If a transmission report is needed, turn the setting ON.
	A client mail address is not registered in the FAX Driver.	Register the client mail address in the FAX Driver initial setting.
	A client mail address registered in the FAX Driver is not correct.	Check the client mail address.

Contents	Remarks	
	Causes	Corrective measures
Mail notification related Transmission report is not delivered to clients.	The mail address of the fax administrator or the scanner administrator is not registered.	Register the mail address of the fax administrator or the scanner administrator.
	The IP address of mail server is not registered in the scanner initial setting.	Register the IP address and host name of mail server.
	The IP address or host name of mail server registered in the scanner initial setting is not correct.	Check the registered IP address and host name of mail server.
	Accounting of a client mail address is not performed.	Contact the administrator for check.
	The mail server is down.	Check the mail server.
	The client mail software has not started.	Start the mail software.
Activity report, restricted access report, power failure report or backup RAM error report is not delivered to the administrator.	NW-FAX reception is OFF in the fax initial setting.	Turn the NW-FAX reception setting ON.
	Scanner administrator mail address or fax administrator mail address is not registered.	Register the scanner administrator mail address or the fax administrator mail address.
	Scanner administrator mail address or fax administrator mail address is not correct.	Check the administrator mail address.
	The IP address or host name of mail server is not registered in the scanner initial setting.	Register the IP address and host name of mail server.

Contents	Remarks	
	Causes	Corrective measures
Activity report, restricted access report, power failure report or backup RAM error report is not delivered to the administrator.	The IP address or host name registered in the scanner initial setting is not correct.	Check the registered IP address and host name of mail server.
	Accounting of an administrator mail address is not performed in the mail server.	Contact the administrator for check.
	The mail server is down.	Check the mail server.
	The administrator mail software has not started.	Start the mail software.
Received originals are not stored. (including reception report)	NW-FAX reception setting is OFF.	Turn NW-FAX reception in the fax initial setting ON.
	The IP address or host name of storage destination computer is not correct.	Check the IP address and host name registered in the fax and those in the storage destination computer.
	The storage destination computer has not started.	Start the storage destination computer and start the Scanner File Utility.
	Transmission failed because data amount (traffic) on the network was too large.	Contact the network administrator for check.
	Copying is being performed. Fax printing is being performed. Fax setting is being performed. Received originals are being transmitted. Printing interrupt occurs during transmission. Network scanner is being used.	Perform automatic retransmission after the cause described left is cleared.

Contents	Remarks	
	Causes	Corrective measures
Received originals are not stored. (including reception report)	The Scanner File Utility of the storage destination computer has not started.	Start the storage destination computer and start the Scanner File Utility.
	The network cable is disconnected.	Connect the network cable properly.
	The reception folder number is not correct.	Use the reception folder number registered in fax the same as the folder number set in the Scanner File Utility.
	The hard disk drive in the storage destination computer is full.	Contact the administrator for check.
	The Scanner File Utility version does not match.	Upgrade the Scanner File Utility to Ver. 3.X or later.
	The reception report of report output in the fax initial setting is OFF or to be performed in a special condition.	If the setting is OFF, no report is transmitted regardless of fax communication result. If a special condition is set, a report is transmitted when a special event such as fax communication error occurs. If a reception report is needed, turn the setting ON.
Address book related When a CSV file is imported, leading "0" of fax numbers is deleted.	If a CSV file is edited with Excel, since fax numbers are processed as numerical values, leading "0" is automatically deleted.	Edit the CSV file with a text editor.
When a CSV file is imported, the first line is not imported.	The first line of CSV files is processed as header.	Input item names to indicate the description of each column in the first line of CSV files.
List items are not displayed.	The display width is changed by dragging column header in the list. If the display width is 0, the item is not displayed.	Select the position between the column header items and drag so that the item is displayed.
When an address is deleted, the group is deleted.	If all addresses of a group are deleted, the group is also deleted.	Delete the group. (Addresses of group member are not deleted.)

Contents	Remarks	
	Causes	Corrective measures
The address book cannot be started.	If the address book finishes abnormally because of any reason, the address book information may remain.	Restart the computer and start the address book.
The toolbar is not displayed.	If "Toolbar" in the "View" menu is Off, the toolbar is not displayed.	Turn the "Toolbar" setting of the "View" menu On.
Although the "Toolbar" setting in the "View" menu is On, the toolbar is not displayed .	The toolbar can be docked and placed outside the address book.	Check to see if the toolbar is placed outside the address book.

1-6-1 Updating the firmware

(1) Updating the firmware on the fax control PCB (Flash ROM)

Perform the steps below when updating the firmware in the Flash ROM on the fax control PCB.

Firmware updating requires the following tools:

Flash tool assembly (P/N 3596801*)

Control ROM IC1 (P/N 3DB6801*)

Control ROM IC2 (P/N 3DB6802*)

Control ROM IC3 (P/N 3DB6803*)

Control ROM IC4 (P/N 3DB6804*)

Caution:

- Turn the main switch off and disconnect the power plug from the wall outlet before disconnecting or inserting connectors.

<Procedure>

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

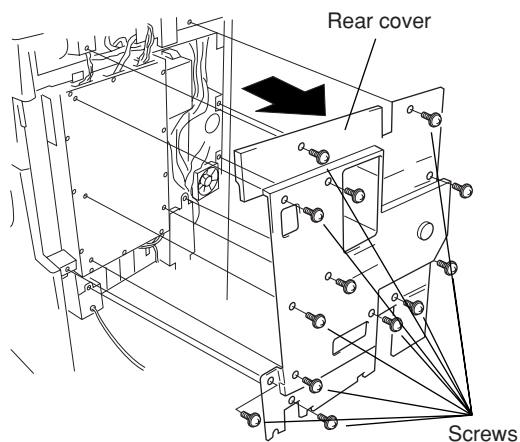


Figure 1-6-1

2. If the printing system is installed, remove the 2 screws and pull the printing system out of the controller box.

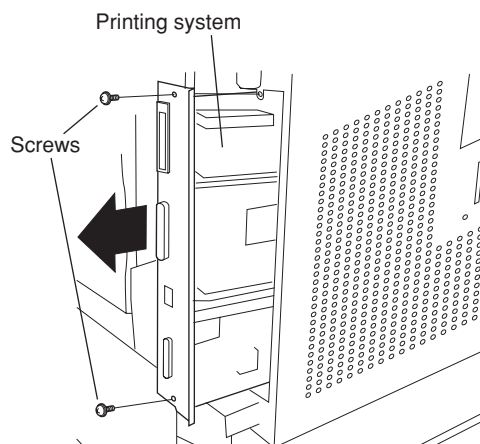


Figure 1-6-2

3. Remove 13 screws and take off the controller-box cover.

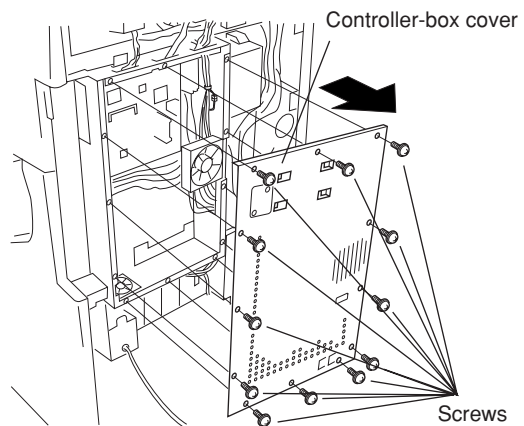


Figure 1-6-3

4. Fit control ROM IC1 and control ROM IC2 to the flash tool assembly.

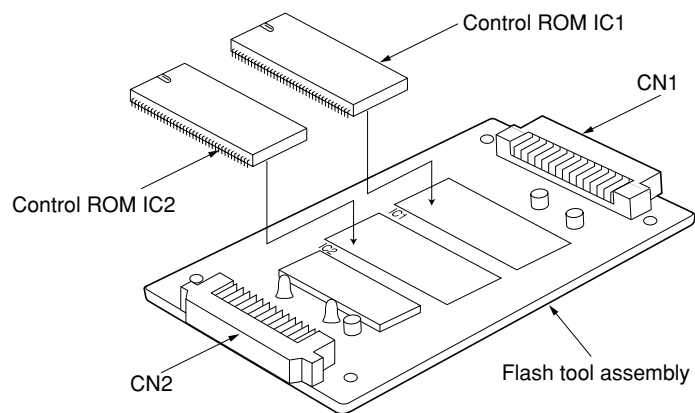


Figure 1-6-4

5. Insert connector CN1 (the one furthest from the LEDs) on the flash tool assembly into connector YC5 on the fax control PCB.

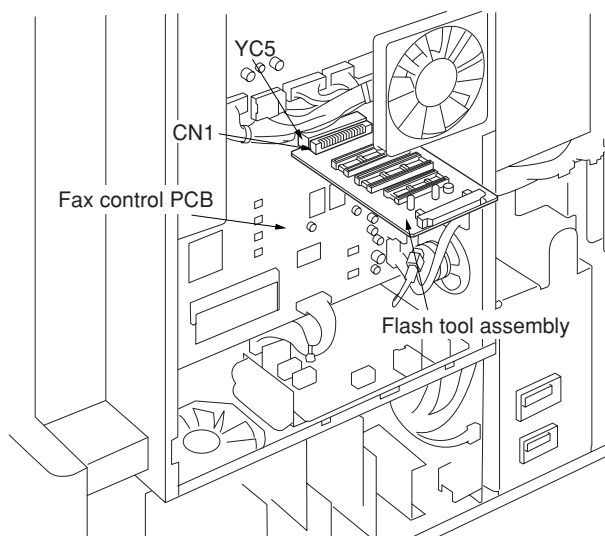


Figure 1-6-5

6. Connect the power plug into the wall outlet. Upgrading of control ROM IC1 and 2 starts and LED on the flash tool assembly flashes. The LED remains on when upgrading is complete.
7. Disconnect the power plug from the wall outlet.
8. Remove the flash tool assembly from the fax control PCB.
9. Remove control ROM IC1 and control ROM IC2 from the flash tool assembly, and then fit control ROM IC3 and control ROM IC4 to the flash tool assembly.
10. Insert connector CN1 (the one furthest from the LEDs) on the flash tool assembly into connector YC5 on the fax control PCB.
11. Connect the power plug into the wall outlet. Upgrading of control ROM IC3 and 4 starts and LED on the flash tool assembly flashes. The LED remains on when upgrading is complete.
12. Disconnect the power plug from the wall outlet.
13. Remove the flash tool assembly from the fax control PCB.
14. Refit the fax controller-box cover and rear cover.

(2) Updating the firmware on the fax control PCB (Compact Flash card)

To carry out a Flash ROM firmware update of the fax control PCB, follow the steps below.

This firmware update requires the following tools:

CF jig (P/N 3CM6803*)

Compact Flash card (Products manufactured by SANDISK are recommended.)

Caution:

- Turn the main power switch off and disconnect the power plug from the wall outlet before disconnecting or inserting connectors.
- When writing data to Compact Flash card from a computer, be sure to format it in advance.
(For formatting, insert a Compact Flash card and select a drive.)
- For a desktop computer, connect a Compact Flash card reader/writer to it. For a notebook computer, use a PC card adapter or a connection portion only for Compact Flash card.

<Procedure>

1. Check the current ROM version using maintenance item U680.
2. Turn the main switch off and disconnect the power plug from the wall outlet.
3. Remove the rear cover and the control-box cover.
(Refer to “(1) Updating the firmware on the fax control PCB (Flash ROM)”, Steps 1 to 3, above.)
4. Insert a Compact Flash card containing the boot program into the CF jig. Be sure that the card fits in smoothly along the left and right guides. (Trying to force the card in incorrectly may cause electrical contacts to break.)
5. Set dip-switch bit SW012 on the jig to “BOOT”.

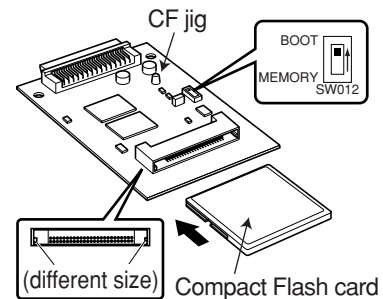


Figure 1-6-6

6. Connect CN1 on the CF jig to YC5 on the fax control PCB.

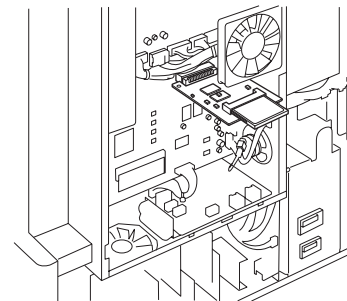


Figure 1-6-7

7. Plug the power plug back into the wall outlet, and turn the main switch on.
ROM upgrading begins automatically. The LED on the CF jig flashes while upgrading is in progress (for about 2 min.), then comes on solid to indicate that upgrading is finished.
8. Turn the main switch off, and disconnect the power plug from the wall outlet.
9. Disconnect the CF jig from the fax control PCB.
10. Reattach the control-box cover and rear cover.
11. Plug the power plug back into the wall outlet, and turn the main switch back on.
12. Check the ROM version again using maintenance item U680.

2-1-1 Electrical parts layout

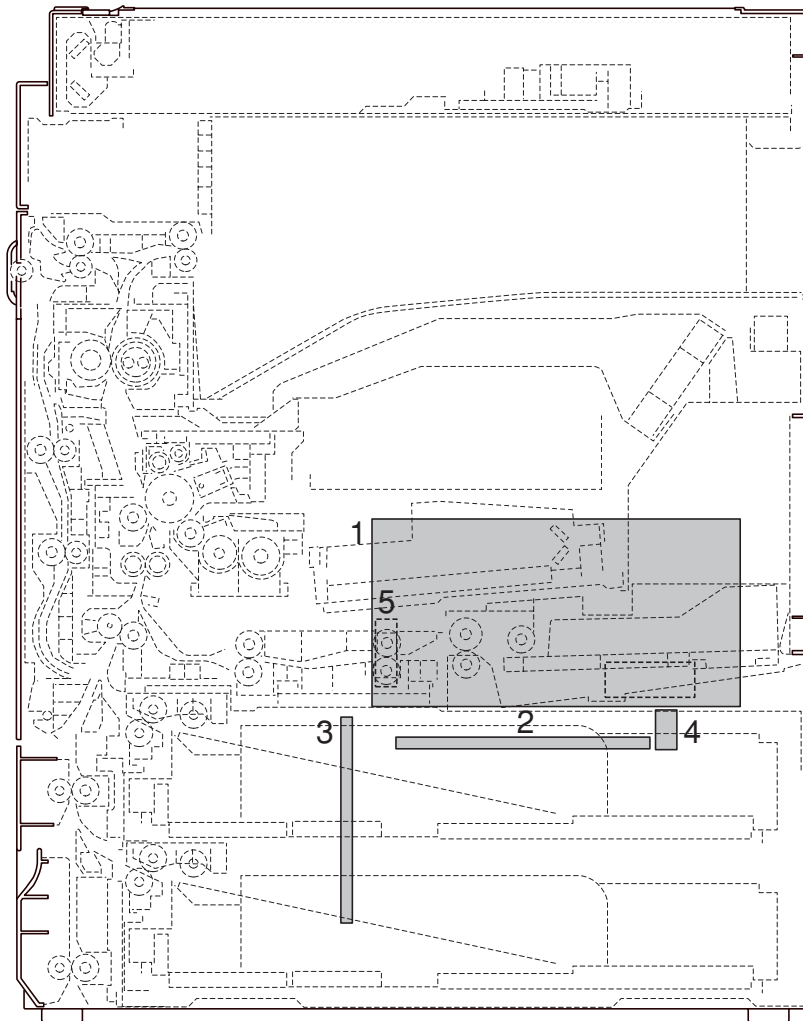


Figure 2-1-1

- | | |
|--|--|
| 1. Fax control PCB (FCPCB) | Modulates, demodulates, compresses, decompresses and smoothes out image data, and converts resolution of image data. |
| • Memory module DIMM* | Expands memory capacity for image data and bitmap conversion. |
| 2. NCU PCB (NCUPCB) | Controls connection to the telephone line. |
| 3. Auxiliary power source PCB (APSPCB) | Converts an AC input to generate 5.2 V DC and 12 V DC. |
| 4. Backup battery (BUBAT) | Saves stored image when a power-down occur. |
| 5. Speaker (SP) | Outputs buzzer, monitoring and speaker sounds. |
- * Optional.

2-2-1 Fax control PCB

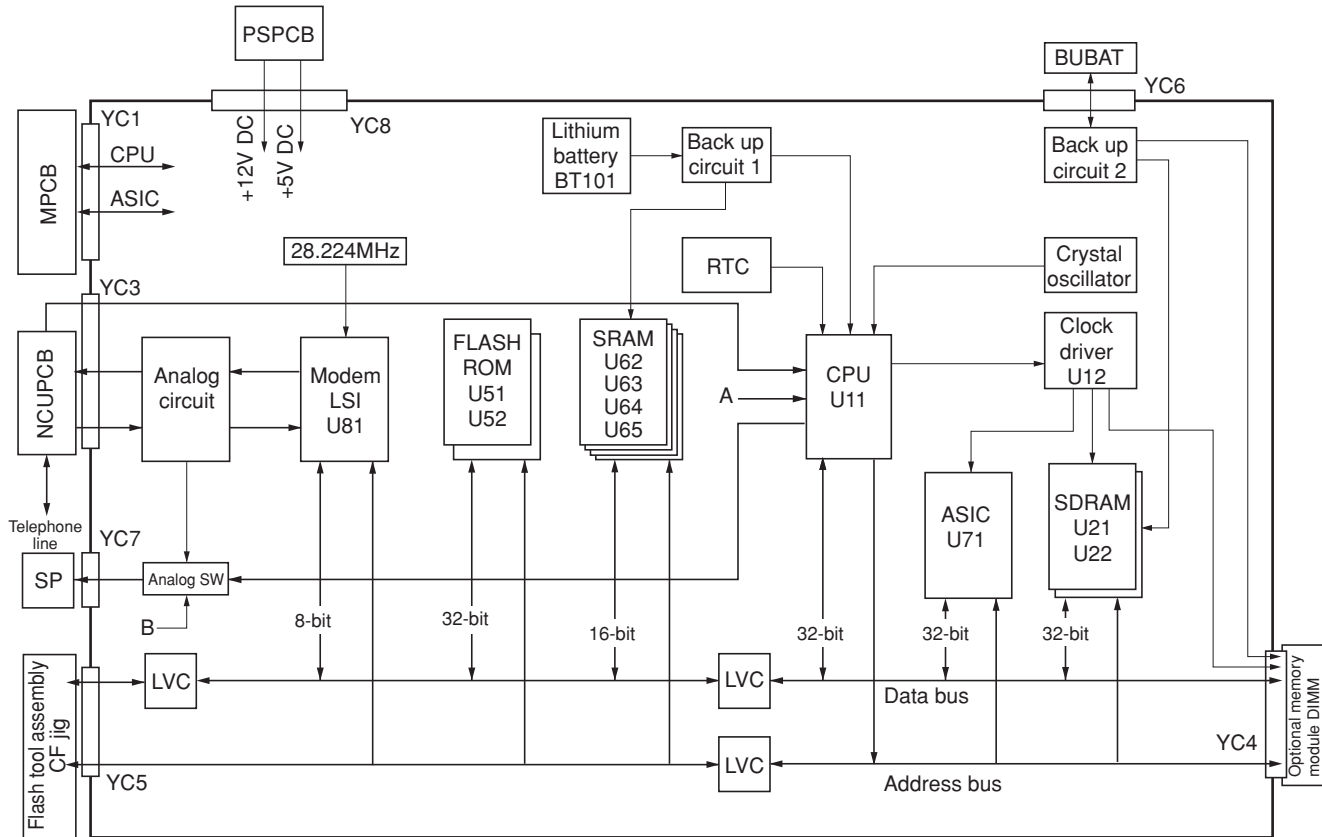


Figure 2-2-1 Fax control PCB block diagram

The fax control PCB (FCPCB) controls the overall fax operation.

To transmit a fax, image data scanned by the optical section of the copier is processed by the main PCB (MPCB) and then sent to the fax control PCB (FCPCB). Received image data is first stored in the bitmap area of the SDRAM U21/U22 page by page and compressed using the MH, MR, MMR or JBIG method. The data is then stored in the image memory area of the SDRAM U21/U22 and sent to the modem LSI U81 to be modulated from digital signal to analog signal before it is sent to the telephone line via the NCU PCB (NCUPCB).

To receive a fax, analog image data received from the telephone line via the NCU PCB (NCUPCB) is sent to the modem LSI U81 and, after demodulation into digital signals, stored in the image memory area of the SDRAM U21/U22. The image data is then decompressed and converted into the bitmap area of the SDRAM U21/U22 page by page and sent to the ASIC U71 for resolution conversion and smoothing, and is passed to the main PCB (MPCB) as print image data.

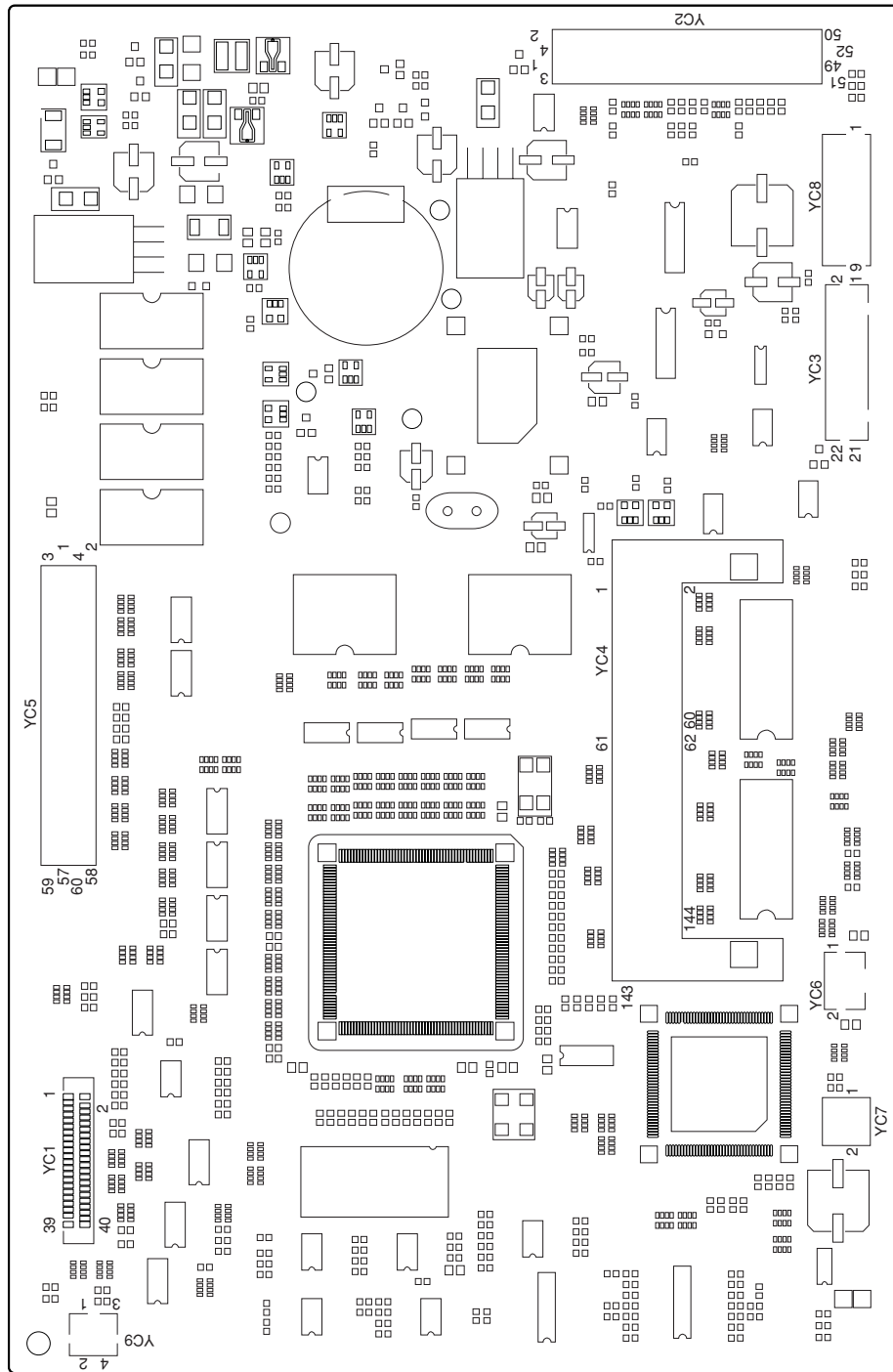


Figure 2-2-2 Fax control PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the main PCB.	1	+3.3V	I	3.3/0 V DC (pulse)	M3.3V signal
	2	GND	-	-	Ground
	3	FPVCLK	I	3.3/0 V DC (pulse)	FPVCLK signal
	4	GND	-	-	Ground
	5	FVCLK	O	3.3/0 V DC (pulse)	FVCLK signal
	6	GND	-	-	Ground
	7	FMRE	O	3.3/0 V DC (pulse)	FMRE signal
	8	GND	-	-	Ground
	9	_FPVD	O	3.3/0 V DC (pulse)	FPVD0 signal
	10	GND	-	-	Ground
	11	_FPHSYNC	I	3.3/0 V DC (pulse)	FPHSYNC0 signal
	12	GND	-	-	Ground
	13	_FPVSYNC	I	3.3/0 V DC (pulse)	FPVSYNC0 signal
	14	_FVSYNC	I	3.3/0 V DC (pulse)	FVSYNC0 signal
	15	FOVSYNC	I	3.3/0 V DC (pulse)	FOVSYNC signal
	16	GND	-	-	Ground
	17	_FOHSTHIN	I	3.3/0 V DC (pulse)	FOHSTHIN0 signal
	18	GND	-	-	Ground
	19	FMIPOUT0	I	3.3/0 V DC (pulse)	FMIPOUT0 signal
	20	GND	-	-	Ground
	21	FMREOUT	I	3.3/0 V DC (pulse)	FMREOUT signal
	22	GND	-	-	Ground
	23	FFOCLK	I	3.3/0 V DC (pulse)	FFOCLK signal
	24	GND	-	-	Ground
	25	_MMISTS	I	3.3/0 V DC (pulse)	_MMISTS signal
	26	GND	-	-	Ground
	27	FMMI_TXD2	I	3.3/0 V DC (pulse)	FMMI_TXD2 signal
	28	GND	-	-	Ground
	29	FMMI_RXD2	O	5/0 V DC (pulse)	FMMI_RXD2 signal
	30	GND	-	-	Ground
	31	_FAXRESET	I	3.3/0 V DC (pulse)	_FAXRESET1 and 2 signal
	32	_FAXREADY	O	5/0 V DC (pulse)	_FAXREADY signal
	33	_PREQ	O	5/0 V DC (pulse)	PREQ0 signal
	34	_SREQ	O	5/0 V DC (pulse)	SREQ0 signal
	35	_SETFAX	O	0 V	SETFAX signal
	36	_MAINSTS	I	3.3/0 V DC (pulse)	_MAINSTS signal
	37	GND	-	-	Ground
	38	FMAIN_TXD0	I	3.3/0 V DC (pulse)	FMAIN_TXD0 signal
	39	GND	-	-	Ground
	40	FMAIN_RXD0	O	5/0 V DC (pulse)	FMAIN_RXD0 signal
YC3 Connected to the NCU PCB.	1	+12V	O	12 V DC	DC supply
	2	A.G	-	-	Ground
	3	+5V	O	5 V DC	DC supply
	4	S.G	-	-	Ground
	5	EXTRING1	O	3.3/0 V DC (pulse)	RNG 16Hz
	6	EXTRING2	O	3.3/0 V DC (pulse)	RNG 20kHz
	7	KMUTE	O	3.3/0 V DC (pulse)	_KMUTE signal
	8	SHUNT	O	3.3/0 V DC (pulse)	_SHUNT signal
	9	PLSDIL	O	3.3/0 V DC (pulse)	_PLSDIL signal
	10	EARTH	O	3.3/0 V DC (pulse)	_EARTH signal
	11	TELSEL	O	3.3/0 V DC (pulse)	_TELSEL signal
	12	FAXSEL	O	3.3/0 V DC (pulse)	_FAXSEL signal
	13	NCUTYPE2	-	0 V	NCUTYPE2 signal
	14	NCUTYPE3	-	0 V	NCUTYPE3 signal
	15	_OFFHOOK	I	3.3/0 V DC	_INTOFFHOOK signal
	16	NCUTYPE1	-	0 V	NCUTYPE1 signal
	17	_ONHOOK1	I	5/0 V DC (pulse)	ONHOOK1 signal
	18	_ONHOOK2	I	5/0 V DC (pulse)	ONHOOK2 signal
	19	_RINGDET	I	3.3/0 V DC (pulse)	RINGDMOD/_RINGDET1 signals
	20	MODTXD	O	Analog	MODTXD signal
	21	RXIN	I	Analog	RXIN signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC3	22	MODRXD	I	Analog	MODTXD signal
Connected to the NCU PCB.					
YC4	61	OPTYPE1	I	3.3/0 V DC	OPTYPE1 signal
Connected to the memory module DIMM*.	63	OPTYPE2	I	3.3/0 V DC	OPTYPE2 signal
	65	+3.3V	O	3.3 V DC	DC supply
	67	+3.3V	O	3.3 V DC	DC supply
	69	+3.3V	O	3.3 V DC	DC supply
	71	GND	-	-	Ground
	73	GND	-	-	Ground
	74	DB23	I/O	3.3/0 V DC (pulse)	DB(23) signal
	75	GND	-	-	Ground
	76	DB21	I/O	3.3/0 V DC (pulse)	DB(21) signal
	77	DB22	I/O	3.3/0 V DC (pulse)	DB(22) signal
	78	DB19	I/O	3.3/0 V DC (pulse)	DB(19) signal
	79	DB20	I/O	3.3/0 V DC (pulse)	DB(20) signal
	80	DB17	I/O	3.3/0 V DC (pulse)	DB(17) signal
	81	DB18	I/O	3.3/0 V DC (pulse)	DB(18) signal
	82	_WE2/DQMUL	O	3.3/0 V DC (pulse)	_WE2/DQMUL signal
	83	DB16	I/O	3.3/0 V DC (pulse)	DB(16) signal
	84	AB3	O	3.3/0 V DC (pulse)	AB(3) signal
	85	AB4	O	3.3/0 V DC (pulse)	AB(4) signal
	86	AB12	O	3.3/0 V DC (pulse)	AB(12) signal
	87	AB2	O	3.3/0 V DC (pulse)	AB(2) signal
	88	AB14	O	3.3/0 V DC (pulse)	AB(14) signal
	89	AB13	O	3.3/0 V DC (pulse)	AB(13) signal
	90	DB25	I/O	3.3/0 V DC (pulse)	DB(25) signal
	91	DB24	I/O	3.3/0 V DC (pulse)	DB(24) signal
	92	DB27	I/O	3.3/0 V DC (pulse)	DB(27) signal
	93	DB26	I/O	3.3/0 V DC (pulse)	DB(26) signal
	94	DB29	I/O	3.3/0 V DC (pulse)	DB(29) signal
	95	DB28	I/O	3.3/0 V DC (pulse)	DB(28) signal
	96	DB31	I/O	3.3/0 V DC (pulse)	DB(31) signal
	97	DB30	I/O	3.3/0 V DC (pulse)	DB(30) signal
	98	AB5	O	3.3/0 V DC (pulse)	AB(5) signal
	99	_WE3/DQMUU	O	3.3/0 V DC (pulse)	_WE3/DQMUU signal
	100	AB7	O	3.3/0 V DC (pulse)	AB(7) signal
	101	AB6	O	3.3/0 V DC (pulse)	AB(6) signal
	102	AB9	O	3.3/0 V DC (pulse)	AB(9) signal
	103	AB8	O	3.3/0 V DC (pulse)	AB(8) signal
	104	AB11	O	3.3/0 V DC (pulse)	AB(11) signal
	105	AB10	O	3.3/0 V DC (pulse)	AB(10) signal
	106	_CS2SDOP	O	3.3/0 V DC (pulse)	_CS2SDOP signal
	107	CKE	O	3.3/0 V DC (pulse)	CKE signal
	108	_RAS3L	O	3.3/0 V DC (pulse)	_RAS3L signal
	109	GND	-	-	Ground
	110	_CASL	O	3.3/0 V DC (pulse)	_CASL signal
	111	CLKSDOP	O	3.3/0 V DC (pulse)	CLKSDOP signal
	112	RD/_WE	O	3.3/0 V DC (pulse)	RD/_WE signal
	113	GND	-	-	Ground
	114	_WE1/DQMLU	O	3.3/0 V DC (pulse)	_WE1/DQMLU signal
	115	DB8	I/O	3.3/0 V DC (pulse)	DB(8) signal
	116	DB9	I/O	3.3/0 V DC (pulse)	DB(9) signal
	117	DB10	I/O	3.3/0 V DC (pulse)	DB(10) signal
	118	DB11	I/O	3.3/0 V DC (pulse)	DB(11) signal
	119	DB12	I/O	3.3/0 V DC (pulse)	DB(12) signal
	120	DB13	I/O	3.3/0 V DC (pulse)	DB(13) signal
	121	DB14	I/O	3.3/0 V DC (pulse)	DB(14) signal

*: Optional

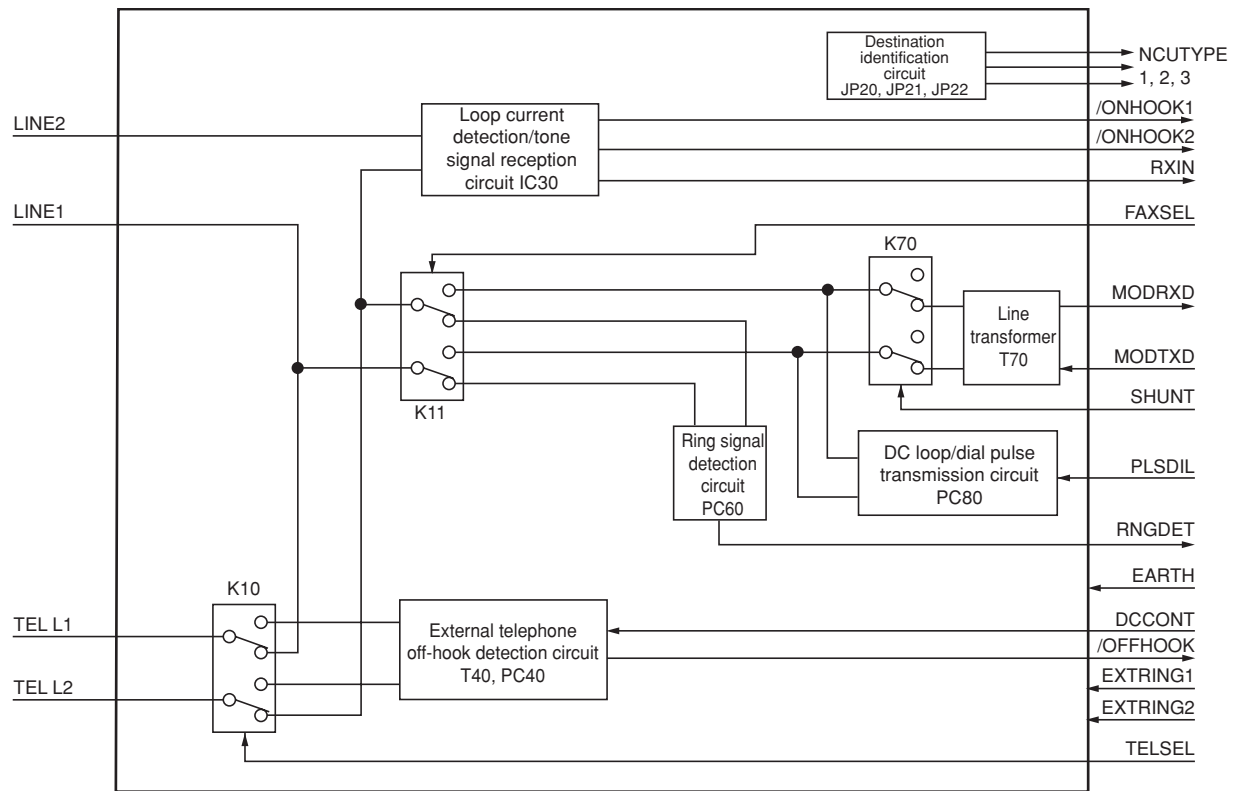
Connector	Pin No.	Signal	I/O	Voltage	Description
CN4 Connected to the memory module DIMM*.	122	DB15	I/O	3.3/0 V DC (pulse)	DB(15) signal
	123	_WE0/DQMLL	O	3.3/0 V DC (pulse)	_WE0/DQMLL signal
	124	DB7	I/O	3.3/0 V DC (pulse)	DB(7) signal
	125	DB6	I/O	3.3/0 V DC (pulse)	DB(6) signal
	126	DB5	I/O	3.3/0 V DC (pulse)	DB(5) signal
	127	DB4	I/O	3.3/0 V DC (pulse)	DB(4) signal
	128	DB3	I/O	3.3/0 V DC (pulse)	DB(3) signal
	129	DB2	I/O	3.3/0 V DC (pulse)	DB(2) signal
	130	DB1	I/O	3.3/0 V DC (pulse)	DB(1) signal
	131	DB0	I/O	3.3/0 V DC (pulse)	DB(0) signal
	133	GND	-	-	Ground
	135	GND	-	-	Ground
	137	GND	-	-	Ground
	139	+3.3V	O	3.3 V DC	DC supply
	141	+3.3V	O	3.3 V DC	DC supply
	143	+3.3V	O	3.3 V DC	DC supply
YC5 Connected to the flash tool assembly and CF jig.	1	+5V	O	5 V DC	DC supply
	2	+5V	O	5 V DC	DC supply
	3	+5V	O	5 V DC	DC supply
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	_JIGSET	I	3.3/0 V DC	_JIGSET signal
	8	_ENDLED	O	3.3/0 V DC (pulse)	_ENDLED signal
	9	+3.3V	O	3.3 V DC	DC supply
	10	JDB15	I/O	5 V DC (pulse)	DBB(15) signal
	11	JDB14	I/O	5 V DC (pulse)	DBB(14) signal
	12	JDB13	I/O	5 V DC (pulse)	DBB(13) signal
	13	JDB12	I/O	5 V DC (pulse)	DBB(12) signal
	14	JDB11	I/O	5 V DC (pulse)	DBB(11) signal
	15	JDB10	I/O	5 V DC (pulse)	DBB(10) signal
	16	JDB9	I/O	5 V DC (pulse)	DBB(9) signal
	17	JDB8	I/O	5 V DC (pulse)	DBB(8) signal
	18	JDB7	I/O	5 V DC (pulse)	DBB(7) signal
	19	JDB6	I/O	5 V DC (pulse)	DBB(6) signal
	20	JDB5	I/O	5 V DC (pulse)	DBB(5) signal
	21	JDB4	I/O	5 V DC (pulse)	DBB(4) signal
	22	JDB3	I/O	5 V DC (pulse)	DBB(3) signal
	23	JDB2	I/O	5 V DC (pulse)	DBB(2) signal
	24	JDB1	I/O	5 V DC (pulse)	DBB(1) signal
	25	JDB0	I/O	5 V DC (pulse)	DBB(0) signal
	26	+5V	O	5 V DC	DC supply
	27	+5V	O	5 V DC	DC supply
	28	GND	-	-	Ground
	29	GND	-	-	Ground
	30	GND	-	-	Ground
	31	+3.3V	O	3.3 V DC	DC supply
	32	_JIGRESET	O	3.3/0 V DC (pulse)	JIGRESET signal
	33	_JIGRD	O	3.3/0 V DC (pulse)	_JIGRD signal
	34	_JIGWE	O	3.3/0 V DC (pulse)	_WE0 signal
	35	_CSROM1	O	3.3/0 V DC (pulse)	_CSROM1 signal
	36	_CSROM2	O	3.3/0 V DC (pulse)	_CSROM2 signal
	37	_WAIT	I	3.3/0 V DC (pulse)	_WAIT signal
	38	JIGTYPE1	I	3.3/0 V DC	JIGTYPE1 signal
	39	JIGTYPE2	I	3.3/0 V DC	JIGTYPE2 signal
	40	JIGCONT1	O	3.3/0 V DC (pulse)	JIGCONT1 signal
	41	JIGCONT2	O	3.3/0 V DC (pulse)	JIGCONT2 signal
	42	_CPUWAIT	I	3.3/0 V DC (pulse)	_CPUWAIT signal
	43	JAB17	O	3.3/0 V DC (pulse)	ABB(18) signal
	44	JAB16	O	3.3/0 V DC (pulse)	ABB(17) signal
	45	JAB15	O	3.3/0 V DC (pulse)	ABB(16) signal

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
YC5 Connected to the flash tool assembly and CF jig.	46	JAB14	O	3.3/0 V DC (pulse)	ABB(15) signal
	47	JAB13	O	3.3/0 V DC (pulse)	ABB(14) signal
	48	JAB12	O	3.3/0 V DC (pulse)	ABB(13) signal
	49	JAB11	O	3.3/0 V DC (pulse)	ABB(12) signal
	50	JAB10	O	3.3/0 V DC (pulse)	ABB(11) signal
	51	JAB9	O	3.3/0 V DC (pulse)	ABB(10) signal
	52	JAB8	O	3.3/0 V DC (pulse)	ABB(9) signal
	53	JAB7	O	3.3/0 V DC (pulse)	ABB(8) signal
	54	JAB6	O	3.3/0 V DC (pulse)	ABB(7) signal
	55	JAB5	O	3.3/0 V DC (pulse)	ABB(6) signal
	56	JAB4	O	3.3/0 V DC (pulse)	ABB(5) signal
	57	JAB3	O	3.3/0 V DC (pulse)	ABB(4) signal
	58	JAB2	O	3.3/0 V DC (pulse)	ABB(3) signal
	59	JAB1	O	3.3/0 V DC (pulse)	ABB(2) signal
	60	JAB0	O	3.3/0 V DC (pulse)	ABB(1) signal
YC6 Connected to the backup battery.	1	+2.4V	I	2.4 V DC	BUBAT backup power supply
	2	GND	-	-	Ground
YC7 Connected to the speaker.	1	BEEP	O	Analog	SP alarm
	2	AGND	-	-	Ground (Analog)
YC8 Connected to the auxiliary power sourcePCB.	1	+5V	I	5 V DC	DC supply
	2	+5V	I	5 V DC	DC supply
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	+12V	I	12 V DC	DC supply
	6	AGND	-	-	Ground (Analog)
	7	_MRY	O	5/0 V DC (pulse)	_MRY signal
	8	_MSW	I	3.3/0 V DC (pulse)	_MSW signal

2-2-2 NCU PCB

120 V specifications



220 - 240 V specifications

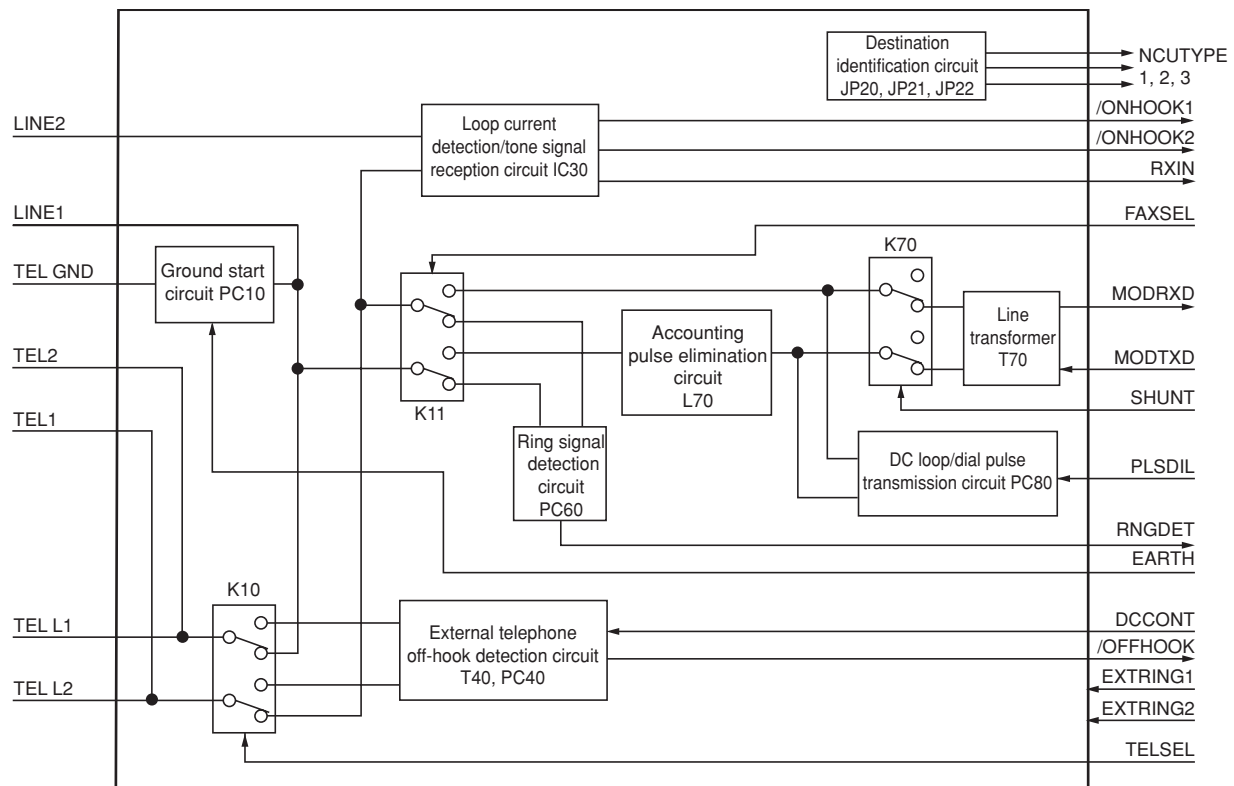


Figure 2-2-3 NCU PCB block diagram

The NCU PCB (NCUPCB) mainly controls the connection to the telephone line. It consists of the circuits shown in the block diagram.

The loop current detection/tone signal reception circuit IC30 detects the DC loop current formed at the DC loop/dial pulse transmission circuit PC80 to determine the status of the telephone line. It also receives tone (DTMF) signals during remote control. The ring signal detection circuit PC60 detects the ring signals from the telephone line to determine call reception. The DC loop/dial pulse transmission circuit PC80 turns on and off the DC loop formed in the telephone line to send out dial pulses (selection signals). The external telephone off-hook detection circuit (T40 and PC40) detects the off-hook state of the telephone connected. The destination identification circuit (JP20, JP21 and JP22) is used by the fax control PCB (FCPCB) to identify the destination of the NCU PCB (NCUPCB). The accounting pulse elimination circuit L70 removes signals representing the communication charge information (accounting pulses) before they reach the modem when telephone line is used.* This is because accounting pulses obstruct fax communications. The ground start circuit PC10 requests an outside connection to the private branch exchange (PBX) when calling via the PBX.*

*For 220 - 240 V specifications only.

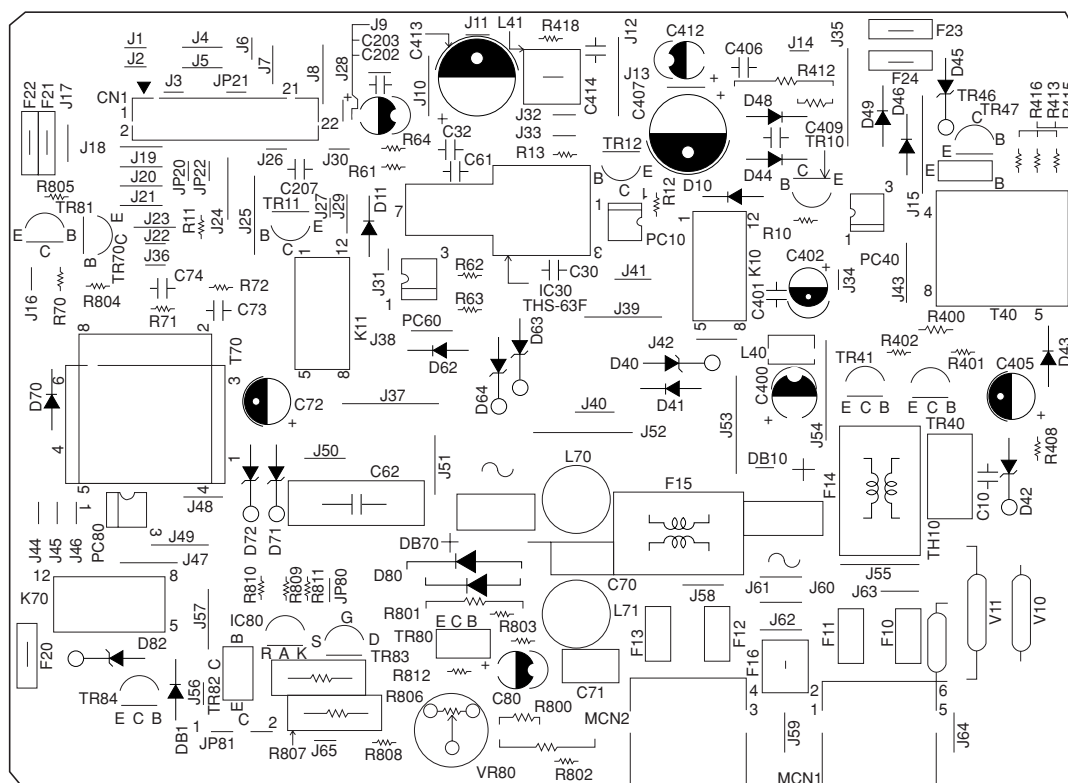


Figure 2-2-4 NUC PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1 Connected to the fax control PCB.	1	RXIN	O	Analog	RXIN signal
	2	MODRXD	O	Analog	MODRXD signal
	3	RNGDET	O	3.3/0 V DC (pulse)	RNGDET signal
	4	MODTXD	I	Analog	MODTXD signal
	5	ONHOOK1	O	5/0 V DC (pulse)	ONHOOK1 signal
	6	ONHOOK2	O	5/0 V DC (pulse)	ONHOOK2 signal
	7	OFFHOOK	O	3.3/0 V DC (pulse)	OFFHOOK signal
	8	N.C	-	-	Not used
	9	NCUTYPE2	O	0 V	NCUTYPE2 signal
	10	NCUTYPE3	O	0 V	NCUTYPE3 signal*
	11	TELSEL	I	3.3/0 V DC (pulse)	TELSEL signal
	12	FAXSEL	I	3.3/0 V DC (pulse)	FAXSEL signal
	13	PLSDIL	I	3.3/0 V DC (pulse)	PLSDIL signal
	14	EARTH	I	3.3/0 V DC (pulse)	EARTH signal*
	15	DCCONT	I	3.3/0 V DC (pulse)	DCCONT signal
	16	SHUNT	I	3.3/0 V DC (pulse)	SHUNT signal
	17	N.C	-	-	Not used
	18	N.C	-	-	Not used
	19	5V	I	5 V DC	DC supply
	20	GND	-	-	Ground
	21	12V	I	12 V DC	DC supply
	22	GND	-	-	Ground

*: For 220-240 V specifications.

2-2-3 Auxiliary power source PCB

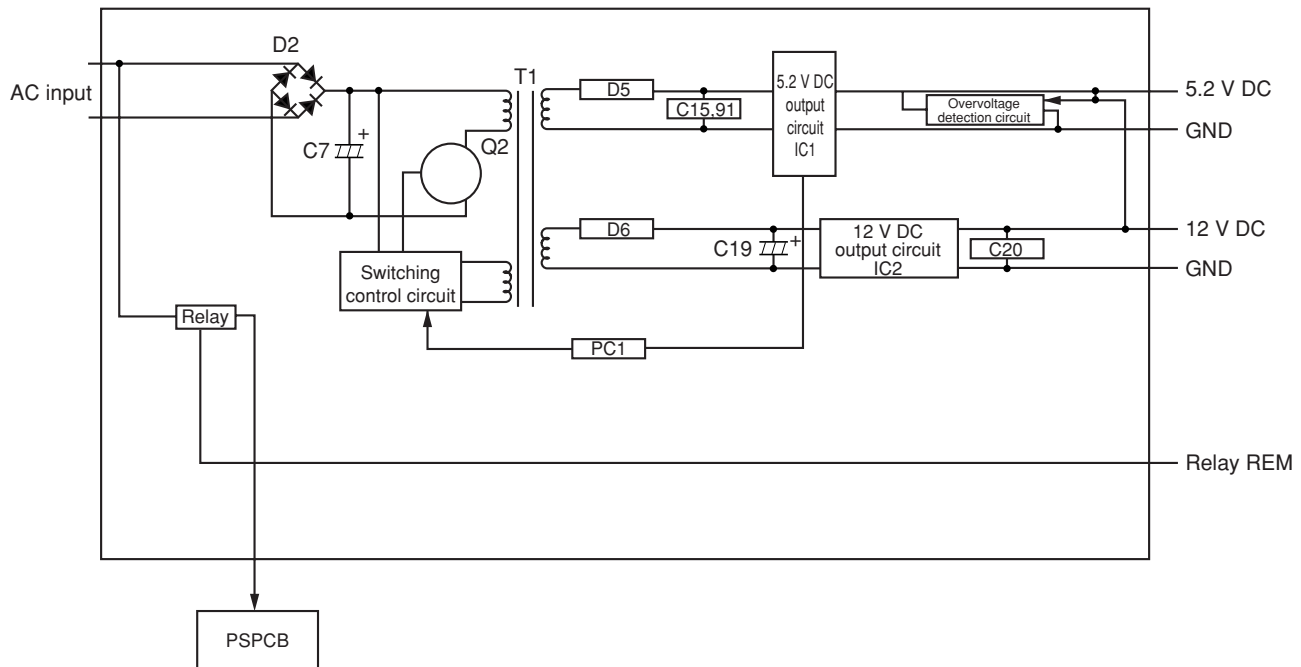


Figure 2-2-5 Auxiliary power source PCB block diagram

The auxiliary power source PCB (APSPCB) is a switching regulator that converts an AC input to generate 5.2 V DC and 12 V DC. It consists of a switching control circuit, 5.2 V DC output circuit and 12 V DC output circuit.

The rectifier circuit rectifies the full-wave of the AC input using the diode bridge D2. The smoothing capacitor C7 smooths out the pulsed current from the diode bridge.

The switching control circuit turns on/off the power MOSFET Q2 with the voltage induced in the controlling coil of the transformer T1 to switch the current induced in the primary coil of the transformer T1.

The 5.2 V DC output circuit smooths out the voltage from the current induced in the secondary coil of the transformer T1 via the diode D5 and smoothing capacitors C15 and C91, and outputs a stable 5.2 V DC using the shunt regulator IC1. The output status of the 5.2 V DC is fed back to the switching control circuit via the photo-coupler PC1. Based on the feedback, the switching control circuit changes the duty cycle of the pulse that turns power MOSFET Q2 on/off in order to adjust the 5.2 V DC.

The 12 V DC output circuit smooths out voltage from the current induced in the secondary coil of the transformer T1 via the diode D6 and smoothing capacitor C19, and generates a stable 12 V DC using the 3-pin regulator IC2.

The relay turns on/off the AC supply to the power source PCB (PSPCB) based on the remote signal from the fax control PCB (FCPCB).

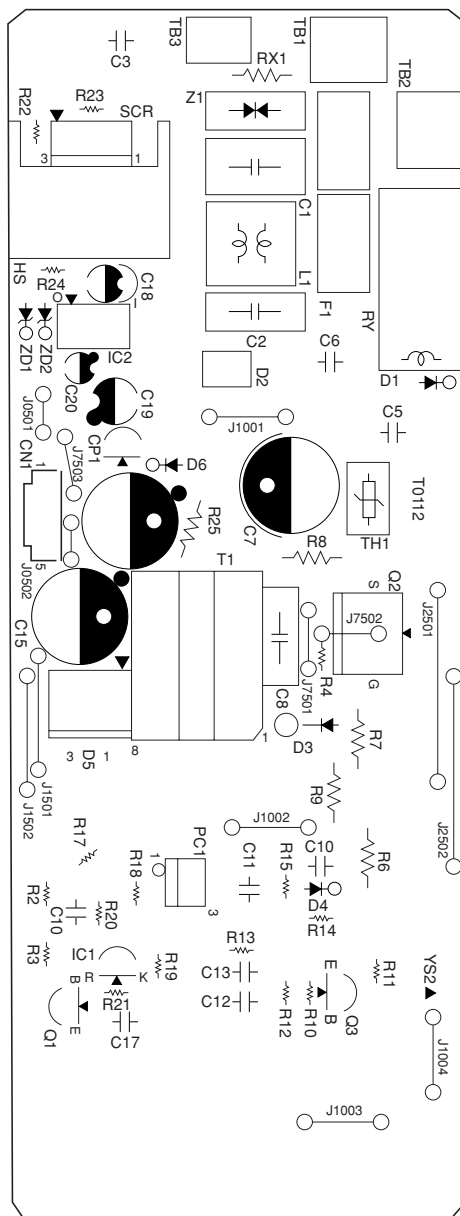


Figure 2-2-6 Auxiliary power source PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1	1	RY	I	-	RY signal
Connected to the fax control PCB.	2	GND	-	-	Ground
	3	12V	O	12 V DC	DC supply
	4	GND	-	-	Ground
	5	5.2V	O	5 V DC	DC supply

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