



KM-6230

SERVICE MANUAL

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CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

CAUTION

Double-pole/neutral fusing.





Safety precautions


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

Safety warnings and precautions


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

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

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

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

Symbols

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



General warning.



Warning of risk of electric shock.



Warning of high temperature.

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



General prohibited action.



Disassembly prohibited.

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



General action required.



Remove the power plug from the wall outlet.



Always ground the copier.

1. Installation Precautions

WARNING

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



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



CAUTION:

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



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



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



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



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



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



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













• 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

Copier

Type	Console
Copying system	Indirect electrostatic system
Originals	Sheets and books Maximum size: A3/11" × 17"
Original feed system	Fixed
Copy paper	Cassette and duplex unit: Plain paper (64 – 80 g/m ²) Bypass table: Plain paper (60 – 160 g/m ²) Special paper: Transparencies, tracing paper, colored paper and envelopes (only when used as a printer) Note: Use the bypass table for special paper.
Copying sizes	Maximum: A3/11" × 17" Minimum: A6R/5 ¹ / ₂ " × 8 ¹ / ₂ " During duplex copying Maximum: A3/11" × 17" Minimum: A5R/5 ¹ / ₂ " × 8 ¹ / ₂ "
Magnification ratios	Manual mode: 25 – 400%, 1% increments Auto copy mode: Fixed ratios Metric 1:1, 1:4.00/1:2.00/1:1.41/1:1.06/1:0.75/1:0.70/1:0.50/1:0.25 Inch 1:1, 1:4.00/1:2.00/1:1.29/1:1.21/1:0.78/1:0.64/1:0.50/1:0.25
100% magnification	Copier: ±0.8% SRDF: ±1.5%
Enlargement/reduction	Copier: ±1.0% SRDF: ±1.5%
Copy speed	At 100% magnification in memory copy mode: A4/11" × 8 ¹ / ₂ " : 62 copies/min. A4R/8 ¹ / ₂ " × 11" : 44 copies/min. A5R/5 ¹ / ₂ " × 8 ¹ / ₂ " : 62 copies/min. A3/11" × 17" : 32 copies/min. B4 (257 × 364 mm)/8 ¹ / ₂ " × 14" : 38 copies/min. B5: 62 copies/min. B5R: 50 copies/min. When the SRDF is used (at 100% magnification): A4/11" × 8 ¹ / ₂ " : 62 copies/min.
First copy time	3.6 s or less (A4/11" × 8 ¹ / ₂ ", 100% magnification, upper cassette, manual copy density control)
Warm-up time	360 s or less (room temperature 20°C/68°F, 65%RH) With preheat, switchable between 90 s and 30 s (room temperature 20°C/68°F, 65%RH)
Paper feed system	Automatic feed Capacity: Cassette (two cassettes): 550 sheets Large paper deck: 3000 sheets Manual feed Capacity: Bypass: 100 sheets
Multiple copying	1 – 999 copies
Photoconductor	a-Si (film thickness 30 μm, drum diameter 84 mm)
Charging system	Single positive corona charging, 900 μA
Recording system	Semiconductor laser
Developing system	Dry, reverse developing (double magnet roller) Developer: 2-component, ferrite carrier and N32T black toner Density control: Developer density detection Toner replenishing: Automatic from a toner hopper
Transfer system	Transfer belt, approximately 1.2 to 1.3 kV (rated current: 50 μA)
Separation system	Transfer belt and separation claws

Fixing system	Heat roller
	Heat source:
	Halogen heaters (main 970 W for 120 V models/1350 W for 230 V models, sub 270 W for 120V models/380 W for 230 V models)
	Control temperature: 185°C/365°F (at normal ambient temperature)
	Abnormally high temperature protection devices: 180°C/356°F thermostats
	Fixing pressure: 80 N
Charge erasing system	Exposure by cleaning lamp
Cleaning system	Cleaning blade
Scanning system	Flat bed scanning by CCD image sensor
Bitmap memory	64 MB (standard)
Image storage memory	8.5 GB (standard)
Resolution	600 × 600 dpi
Light source	Inert gas lamp (24 W)
Dimensions	685 (W) × 795 (D) × 1170 (H) mm
	26 ¹⁵ / ₁₆ " (W) × 31 ⁵ / ₁₆ " (D) × 46 ¹ / ₁₆ " (H)
Weight	220 kg/440 lbs
Floor requirements	1210 mm (W) × 795 (D) mm
	47 ⁵ / ₈ " (W) × 31 ⁵ / ₁₆ " (D)
Functions	(1) Self-diagnostics
	(2) Preheat
	(3) Automatic copy density control
	(4) Original size detection
	(5) Automatic paper selection
	(6) Auto selection mode
	(7) Automatic magnification selection
	(8) Enlargement/reduction copy
	(9) Fixed ratio selection
	(10) Size zoom mode
	(11) XY zoom mode
	(12) Photo mode
	(13) Duplex copy
	(14) Margin copy
	(15) Print page numbers function
	(16) Split copy
	(17) Border erasing
	(18) Sheet copy
	(19) Transparency backing sheet function
	(20) Presentation mode
	(21) Form overlay
	(22) Combine copy
	(23) Booklet copy mode
	(24) Booklet + cover copy
	(25) Sort copy
	(26) Invert copy
	(27) Mirror image mode
	(28) Program copy
	(29) Setting change mode
	(30) Job build mode
	(31) Job reservation function
	(32) Department control
	(33) Weekly timer
	(34) Language selection
Power source	120 V AC, 60 Hz, 13 A
	220 – 240 V AC, 50 Hz, 6.5 A (ave.), 8.5 A (max.)
Power consumption	1560 W (max.) for 120 V models
	2040 W (max.) for 230/240 V models
Options	Side deck, finisher, mailbox, key counter, key card (120 V models only), booklet stitcher, MMD host monitoring system, print/scan system and tandem copy kit.

SRDF

Original feed system	Automatic feed
Originals	Sheets
Original weights	Single-sided original mode: 35 – 160 g/m ² Double-sided original mode: 50 – 120 g/m ²
Original paper	Plain paper, thermal paper, art paper and colored paper
Original sizes	A3 – A5R, folio/11" × 17" – 5½" × 8½"
No. of originals	Up to 70 sheets (A3, B4, folio, 11" × 17", 8½" × 14") Up to 100 sheets (up to A4/11" × 8½") Up to 30 sheets in the auto selection mode Art or thermal paper must be fed individually.
Power source	Electrically connected to the copier

1-1-2 Parts names and their functions

(1) Copier

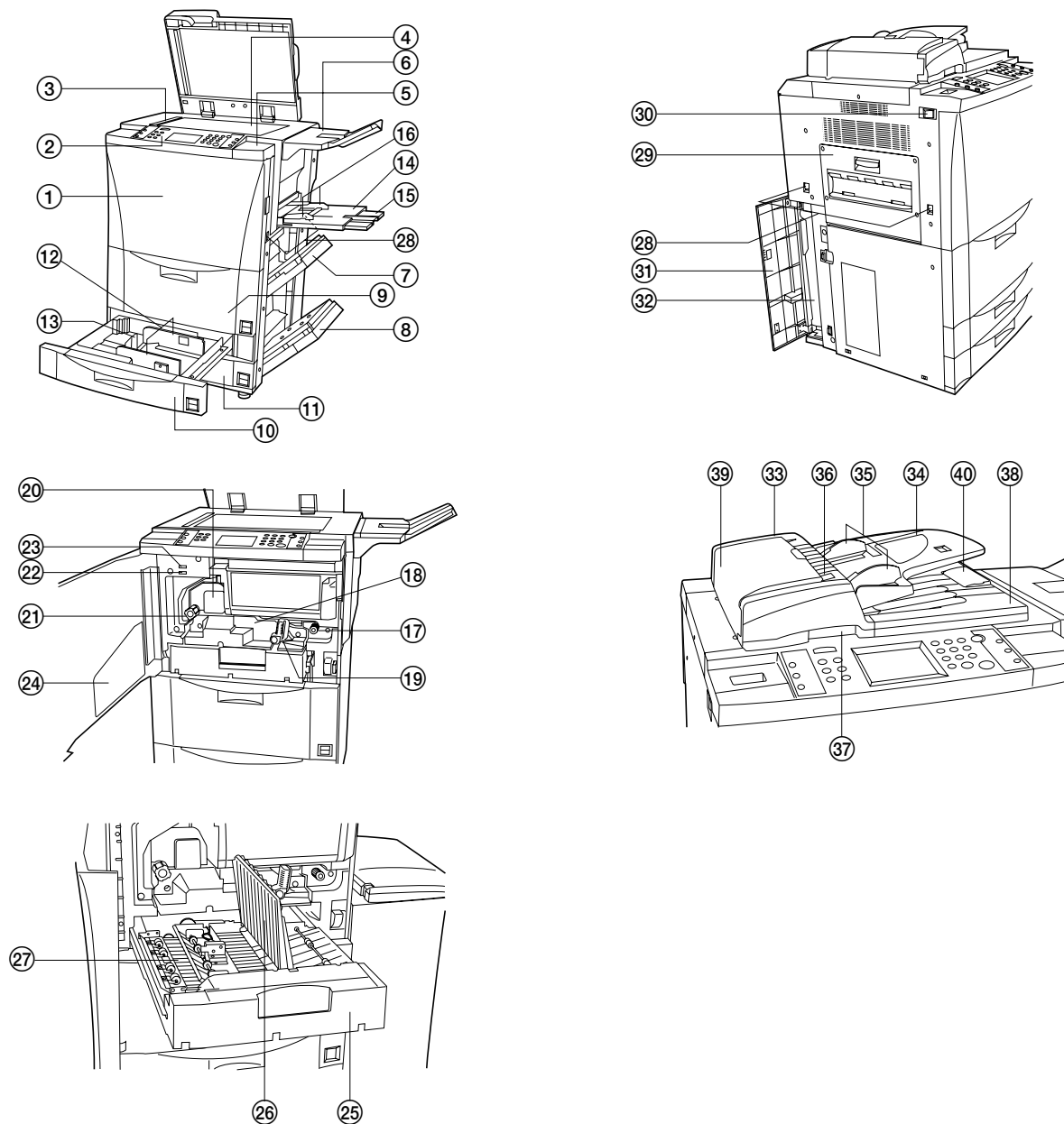
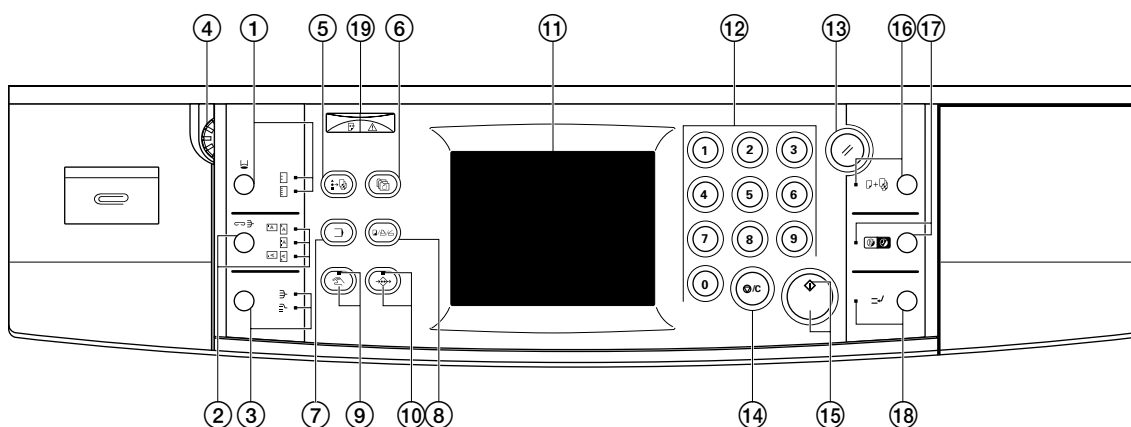


Figure 1-1-1

- | | | |
|---------------------------------|---|-------------------------------|
| ① Front cover | ⑭ Bypass table | ⑳ Re-feeding section |
| ② Operation panel | ⑮ Support guide | ㉑ Handles for transport |
| ③ Original size indicator lines | ⑯ Insert guides | ㉒ Ejection cover |
| ④ Contact glass | ⑰ Paper feed section knob | ㉓ Main switch |
| ⑤ Operation section right cover | ⑱ Paper conveying section | ㉔ Waste toner tank cover |
| ⑥ Original tray | ⑲ Paper conveying section release lever | ㉕ Waste toner tank |
| ⑦ Upper right cover | ㉚ Fixing unit | ㉖ SRDF |
| ⑧ Lower right cover | ㉛ Fixing knob | ㉗ Original table |
| ⑨ Large paper deck | ㉜ Total counter | ㉘ Original insert guides |
| ⑩ Upper cassette | ㉝ Scanner counter | ㉙ Original set indicator |
| ⑪ Lower cassette | ㉞ Instruction handbook holder | ㉚ DF opening/closing lever |
| ⑫ Width guide | ㉟ Duplex unit | ㉛ Original ejection cover |
| ⑬ Length guide | ㊱ Duplex cover | ㉜ DF original reversing cover |
| | | ㉝ Ejection guide |

(2) Operation panel

Metric



Inch

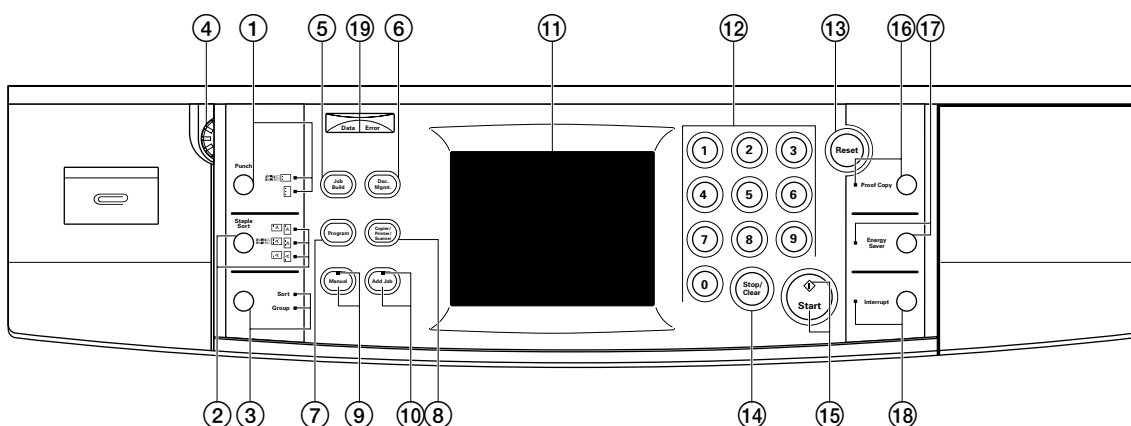


Figure 1-1-2

- | | |
|---------------------------------|--------------------------------|
| ① Punch mode key (indicator) | ⑪ Touch panel |
| ② Staple sort key (indicator) | ⑫ Numeric keys |
| ③ Sort mode key (indicator) | ⑬ Reset key |
| ④ Brightness adjustment control | ⑭ Stop/clear key |
| ⑤ Job build key | ⑮ Start key (indicator) |
| ⑥ Document management key | ⑯ Proof copy key (indicator) |
| ⑦ Program key | ⑰ Energy saver key (indicator) |
| ⑧ Copier/printer/scanner key | ⑱ Interrupt key |
| ⑨ Manual key (indicator) | ⑲ Data/error indicator |
| ⑩ Add job key (indicator) | |

1-1-3 Machine cross section

1-1

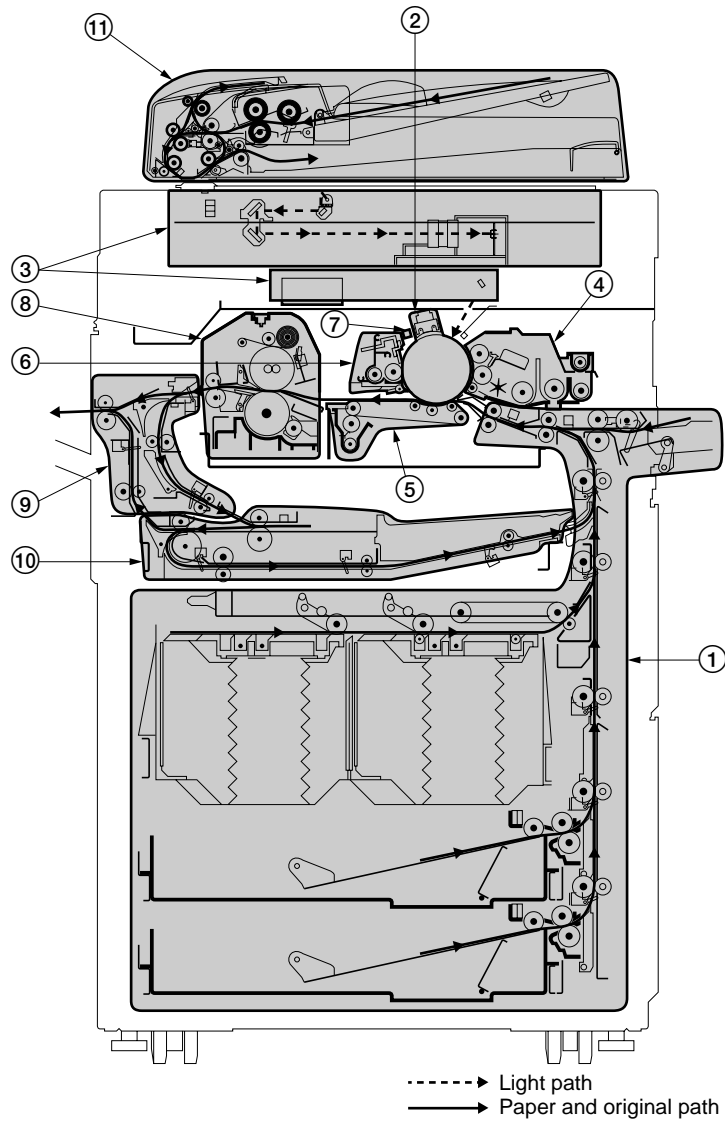


Figure 1-1-3 Machine cross section

- | | |
|--|-------------------------------|
| ① Paper feed section | ⑦ Charge erasing section |
| ② Main charging section | ⑧ Fixing section |
| ③ Optical section | ⑨ Feedshift and eject section |
| ④ Developing section | ⑩ Duplex section |
| ⑤ Transfer and paper conveying section | ⑪ SRDF |
| ⑥ Cleaning section | |

1-1-4 Drive system

(1) Drive system 1 (optical section)

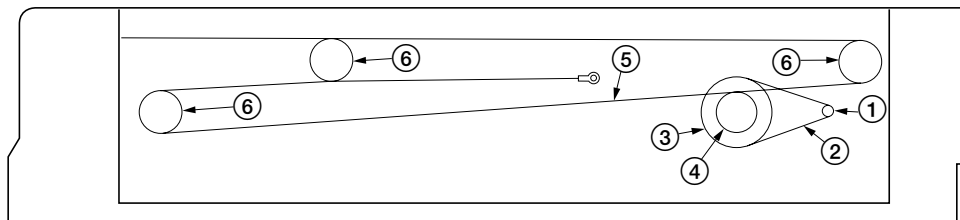


Figure 1-1-4

- ① Scanner motor pulley
- ② Scanner drive belt
- ③ Scanner drive pulley
- ④ Scanner wire drum
- ⑤ Scanner wire
- ⑥ Scanner wire pulley

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

1-1

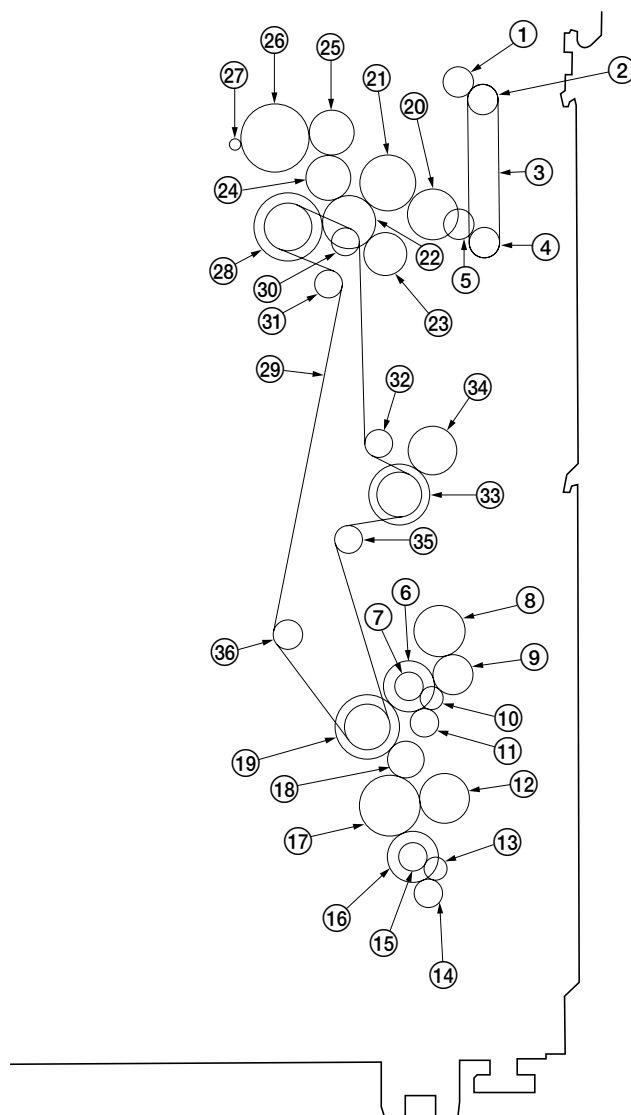


Figure 1-1-5

- | | |
|--------------------------------|-------------------------|
| ① Idle gear 20 | ⑲ Gear 42/32 |
| ② Feed gear 22/32 | ⑳ Feed clutch 2 gear |
| ③ Feed drive belt | ㉑ Gear 38T |
| ④ Feed gear 22/32 | ㉒ Gear 35 |
| ⑤ Idle gear 20 | ㉓ Gear 29 |
| ⑥ Upper paper feed clutch gear | ㉔ Idle gear 29 |
| ⑦ Idle sub gear 18 | ㉕ Idle gear 30 |
| ⑧ Feed clutch 4 gear | ㉖ Feed gear 55/45 |
| ⑨ Idle gear 26 | ㉗ Paper feed motor gear |
| ⑩ Paper feed gear 16 | ㉘ Gear 42/32 |
| ⑪ Toner roller gear | ㉙ Paper feed drive belt |
| ⑫ Feed clutch 5 gear | ㉚ Tension pulley 20 |
| ⑬ Paper feed gear 16 | ㉛ Tension pulley 20 |
| ⑭ Toner roller gear | ㉜ Tension pulley 20 |
| ⑮ Idle sub gear 18 | ㉝ Gear 42/32 |
| ⑯ Lower paper feed clutch gear | ㉞ Feed clutch 3 gear |
| ⑰ Idle gear 40 | ㉟ Tension pulley 20 |
| ⑱ Idle gear 24 | ㊱ Idle pulley 20 |

(3) Drive system 3 (image forming motor drive train)

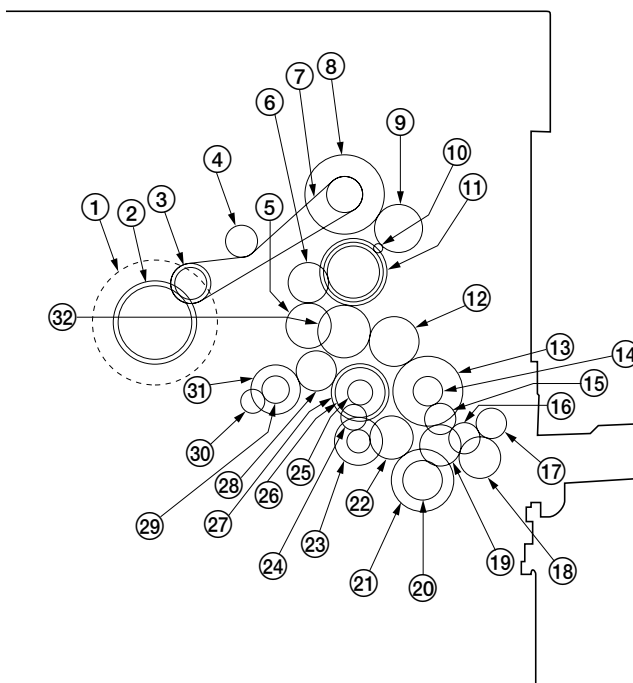


Figure 1-1-6

- | | | |
|----------------------------|----------------------------|-------------------------------|
| ① Drum | ⑫ Developing spiral gear | ②③ Idle gear 30/15 |
| ② Drum gear 60/54 | ⑬ Bypass clutch gear | ②④ Registration upper gear 16 |
| ③ Drum pulley 26/26 | ⑭ Gear 18 | ②⑤ Gear 18 |
| ④ Idle pulley | ⑮ Idle gear 20 | ②⑥ Feed clutch 1 gear |
| ⑤ Developing gear 30 | ⑯ Idle gear 20 | ②⑦ Paddle A gear |
| ⑥ Developing idle gear 27 | ⑰ Idle gear 20 | ②⑧ Idle gear 27 |
| ⑦ Drum drive belt | ⑱ Clutch gear 26 | ②⑨ Gear 18 |
| ⑧ Idle pulley 24/72 | ⑲ Clutch gear 26 | ③⑩ Registration upper gear 16 |
| ⑨ Drum idle gear 45 | ⑳ Clutch gear 26 | ③⑪ Registration clutch gear |
| ⑩ Image forming motor gear | ㉑ Bypass clutch gear | ③⑫ Fixing drive gear |
| ⑪ Gear 53/44/33 | ㉒ Paper feed pulley B gear | |

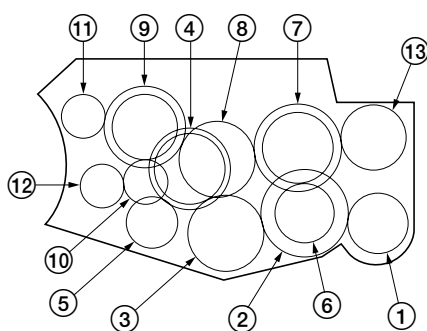


Figure 1-1-7 Developing section

- | | | |
|-------------------------------|------------------------------|------------------------------|
| ① Developing gear 27 | ⑥ Developing rear gear 25 | ⑪ Developing upper gear |
| ② Main unit mixing gear 35 | ⑦ Developing idle gear 27/36 | ⑫ Developing lower gear |
| ③ Toner gear 34 | ⑧ Developing joint gear | ⑬ Sub unit agitation gear 28 |
| ④ Paddle idle gear | ⑨ Developing idle gear | |
| ⑤ Developing left spiral gear | ⑩ Developing idle lower gear | |

(4) Drive system 4 (drive motor drive train)

1-1

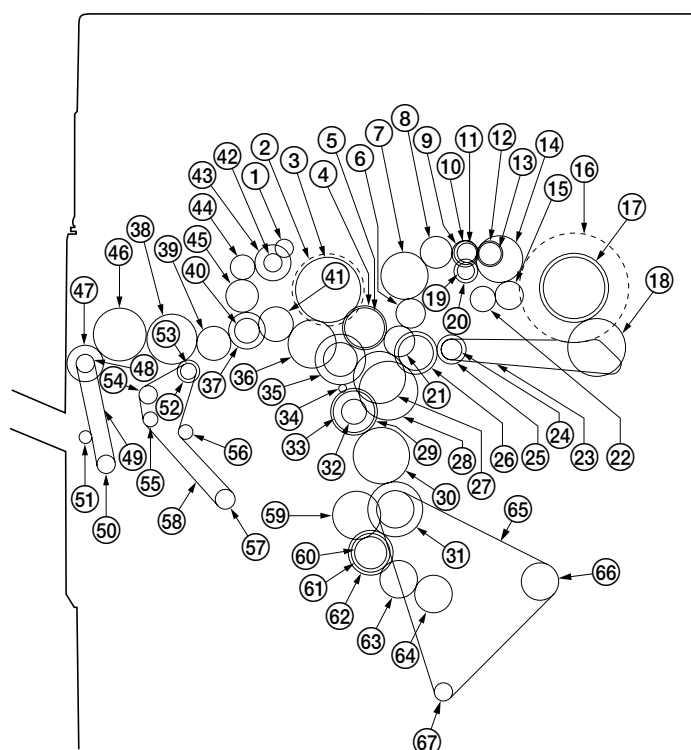
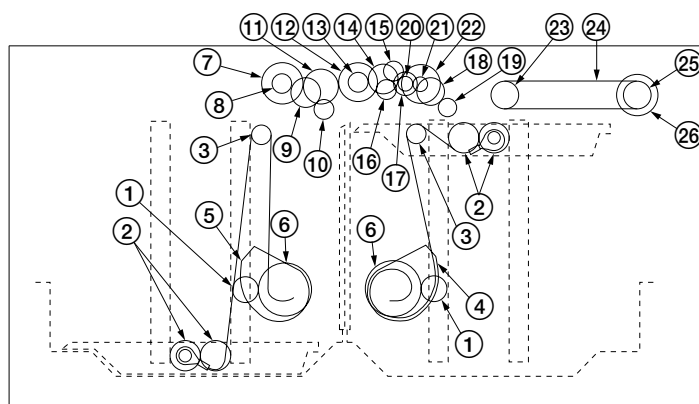
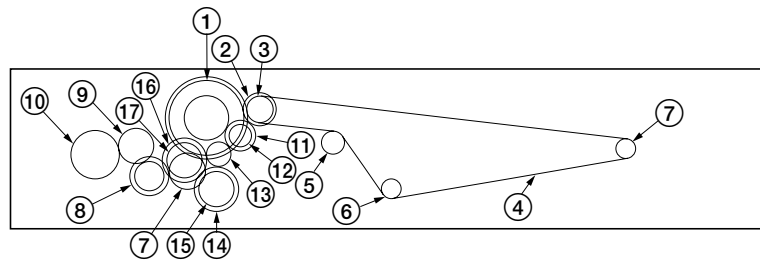


Figure 1-1-8

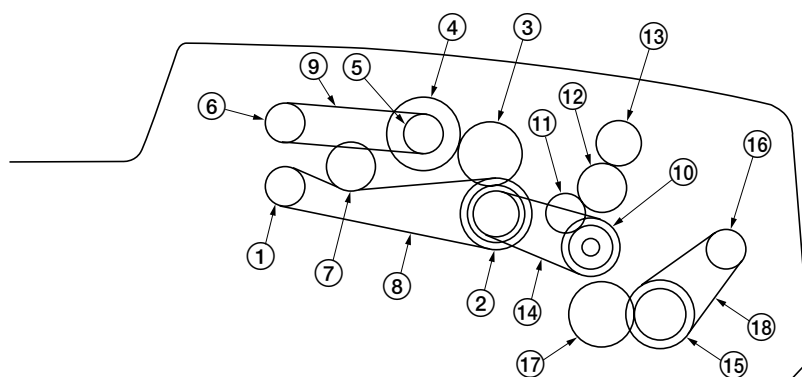
- | | | |
|---|-------------------------------|--------------------------------|
| ① Oil roller gear 16 | ②④ Transfer belt drive roller | ④⑦ Idle gear 28 |
| ② Heat roller | ②⑤ Idle gear 22 | ④⑧ Eject pulley 24 |
| ③ Heat roller gear | ②⑥ Fulcrum gear | ④⑨ Switchback drive belt |
| ④ Fixing joint gear 36 | ②⑦ Idle gear 40 | ④⑩ Forwarding pulley |
| ⑤ Developing joint gear | ②⑧ Developing drive gear 45 | ④⑪ Paper conveying belt pulley |
| ⑥ Idle gear 22 | ②⑨ Oil roller gear | ④⑫ SB gear 19 |
| ⑦ Fixing drive gear 36 | ②⑩ Duplex gear 44 | ④⑬ Feedshift pulley 22 |
| ⑧ Idle gear 25 | ②⑪ Idle pulley 31/42 | ④⑭ Pulley 16 |
| ⑨ Fixing idle gear 20T | ②⑫ Developing gear 20 | ④⑮ Pulley 20 |
| ⑩ Cleaning drive gear | ②⑬ Motor idle gear 45 | ④⑯ Paper conveying belt pulley |
| ⑪ Toner supply gear | ②⑭ Drive motor gear | ④⑰ Pulley 24 |
| ⑫ Feedshift gear 21 | ②⑮ Motor idle gear 56/25 | ④⑱ Duplex paper conveying belt |
| ⑬ Spiral roller gear 19 | ②⑯ Gear 38T | ④⑲ Idle gear 40 |
| ⑭ Blade thrust gear 36 | ②⑰ Fixing eject joint gear | ④⑳ SB gear 24 |
| ⑮ Oil supply roller gear 22 | ②⑱ Eject joint gear | ④㉑ Gear 32 |
| ⑯ Drum | ②㉑ Fixing eject joint gear | ④㉒ Gear 36 |
| ⑰ Drum gear 60/54 | ②㉒ Developing gear 20 | ④㉓ Idle gear 30 |
| ⑱ Transfer charger belt release clutch gear | ②㉓ Idle gear 28 | ④㉔ Gear 31 |
| ⑲ Toner supply gear | ②㉔ Oil roller gear 16 | ∞ Cleaning drive belt |
| ⑳ Loop gear 18 | ②㉕ Gear 30 | ④㉕ Pulley 36 |
| ㉑ Idle gear 22 | ②㉖ Gear 19 | ④㉖ Idle pulley 21 |
| ㉒ Agitation gear 20 | ②㉗ Fixing eject joint gear | |
| ㉓ Transfer belt | ②㉘ Idle gear 40 | |

(5) Drive system 5 (large paper deck)**Figure 1-1-9**

- | | |
|---|---|
| ① Pulse gear | ⑭ Gear 28 |
| ② Gear 1.0-24 | ⑮ Idle gear 19 |
| ③ Lift pulley | ⑯ Gear 20 |
| ④ Left lift belt assembly | ⑰ Gear 18 |
| ⑤ Right lift belt assembly | ⑱ Gear 24 |
| ⑥ Large paper deck lift motor gear | ⑲ Gear 18 |
| ⑦ Large paper deck paper feed clutch 2 gear | ⑳ Gear 14 |
| ⑧ Gear 18 | ㉑ Gear 14 |
| ⑨ Gear 24 | ㉒ Large paper deck paper feed clutch 1 gear |
| ⑩ Gear 18 | ㉓ Paper feed belt pulley |
| ⑪ Idle gear 31 | ㉔ Paper feed belt |
| ⑫ Gear 33 | ㉕ Paper feed belt pulley |
| ⑬ Gear 18 | ㉖ Large paper deck conveying clutch gear |

(6) Drive system 6 (duplex section)**1-1****Figure 1-1-10**

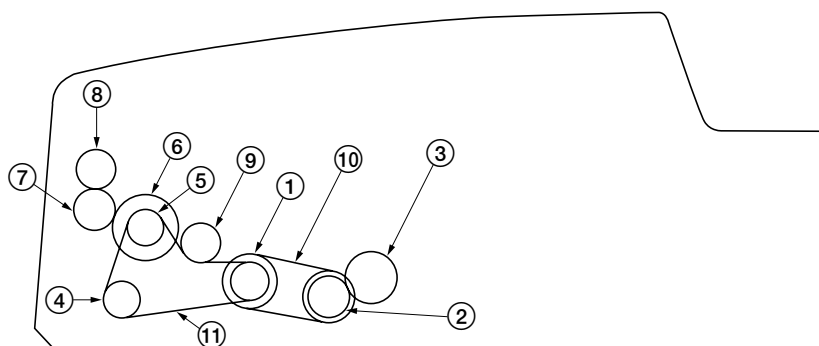
- | | |
|----------------------------------|---------------------------------|
| ① Duplex joint gear | ⑩ Front transfer drive gear |
| ② Clutch gear 26 | ⑪ Gear 22 |
| ③ Paper conveying pulley 40 | ⑫ Gear 18 |
| ④ Paper conveying drive belt | ⑬ Gear 17 |
| ⑤ Paper conveying tension pulley | ⑭ Gear 40 |
| ⑥ Paper conveying pulley 20 | ⑮ Duplex forwarding clutch gear |
| ⑦ Paper conveying pulley 20 | ⑯ Gear 40 |
| ⑧ Duplex registration gear 20/30 | ⑰ Duplex reversing clutch gear |
| ⑨ Clutch gear 26 | |

(7) Drive system 7 (SRDF)

As viewed from machine rear

Figure 1-1-11 SRDF (inside rear of machine)

- | | |
|------------------------------|-----------------------------------|
| ① Original feed motor pulley | ⑩ DF registration pulley 28/18 |
| ② Pulley 35/22/22 | ⑪ Idle gear 15 |
| ③ Idle gear 26 | ⑫ Idle gear 20 |
| ④ Original feed clutch gear | ⑬ Switchback gear 18 |
| ⑤ DF original feed pulley 18 | ⑭ DF registration drive belt |
| ⑥ DF forwarding pulley 18 | ⑮ Gear 22/35 |
| ⑦ Tension pulley | ⑯ Original conveying motor pulley |
| ⑧ Original feed drive belt | ⑰ Gear 28 |
| ⑨ DF forwarding belt | ⑱ Original conveying drive belt 1 |



As viewed from machine front

Figure 1-1-12 SRDF (inside front of machine)

- | | |
|---|--------------------------|
| ① Lower original conveying pulley 25/18 | ⑦ Joint gear 14 |
| ② Gear 18/25 | ⑧ JAM release gear 14 |
| ③ Eject gear 18 | ⑨ Tension pulley |
| ④ Middle original conveying pulley 18 | ⑩ Eject drive belt |
| ⑤ Upper original conveying pulley 18 | ⑪ Conveying drive belt 2 |
| ⑥ JAM release gear 24 | |

1-2-1 Drum

Note the following when handling or storing the drum.

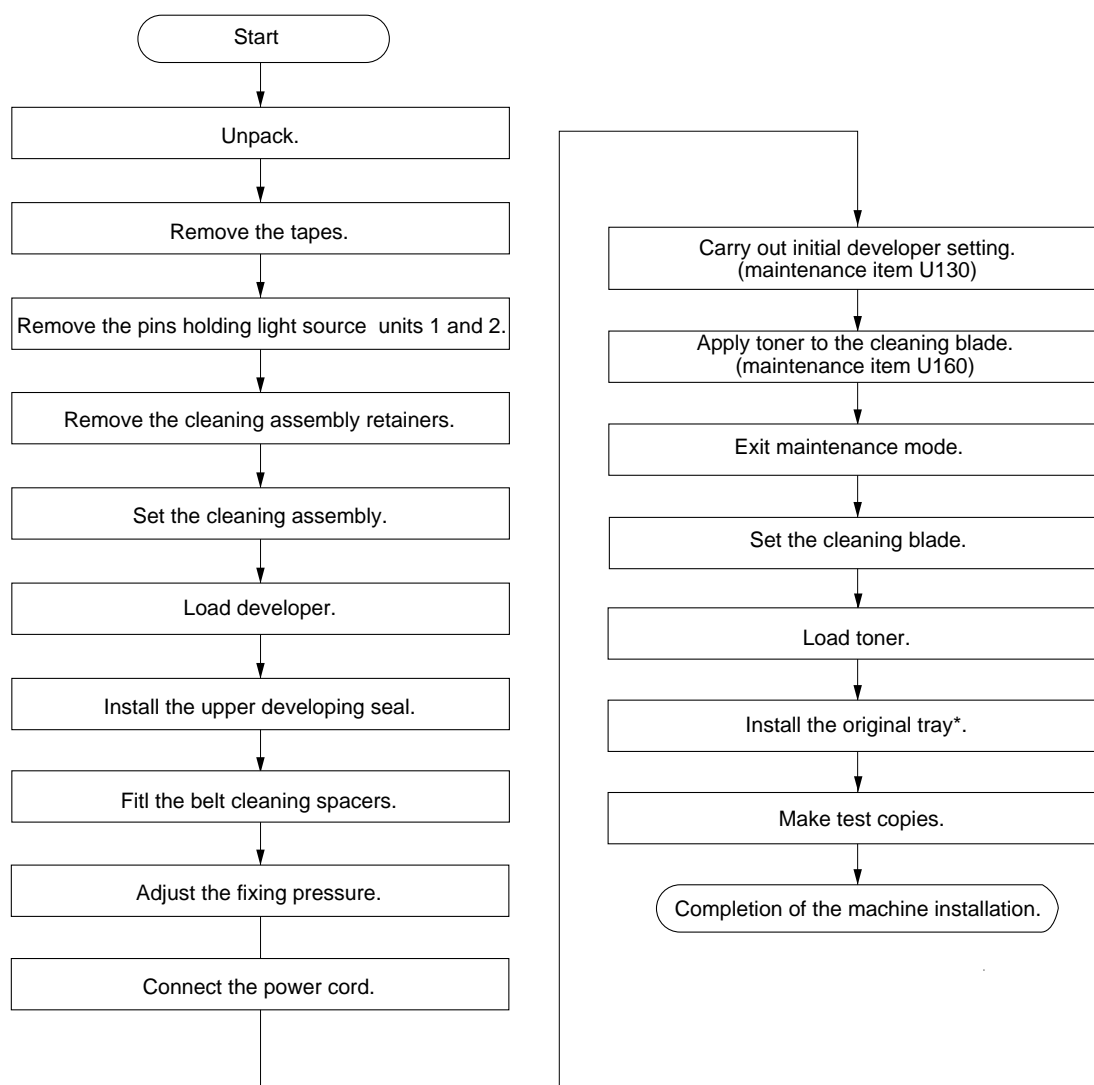
- When removing the image formation unit, never expose the drum surface to strong direct light.
- Keep the drum at an ambient temperature between $-20^{\circ}\text{C}/-4^{\circ}\text{F}$ and $40^{\circ}\text{C}/104^{\circ}\text{F}$ and at a relative humidity not higher than 85% RH. Avoid abrupt changes 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.
- If the machine is left open for more than 5 minutes for maintenance, remove the drum and store it in the drum storage bag (Part No. 78369020).

1-2-2 Developer and toner

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

1-3-1 Unpacking and installation

(1) Installation procedure



*For inch models only.

Unpack.

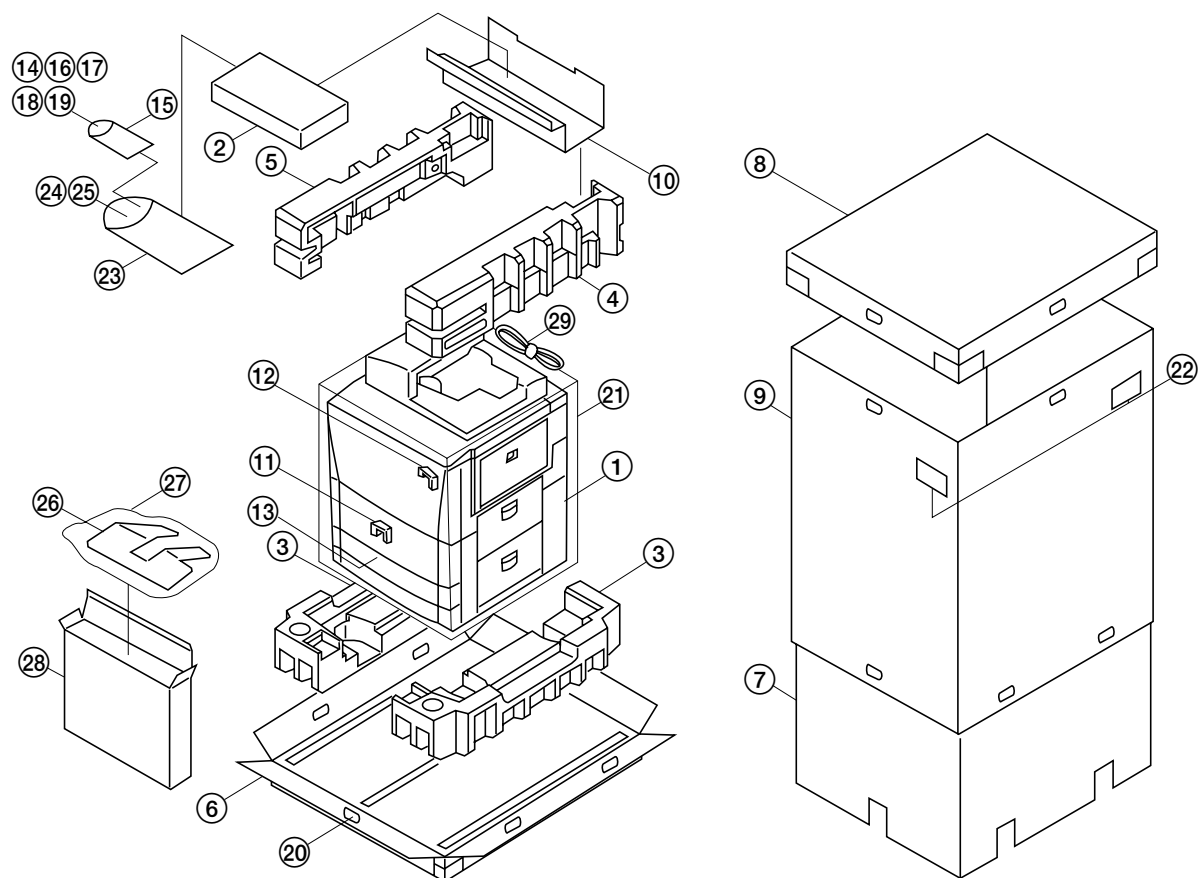


Figure 1-3-1 Unpacking

- | | |
|-------------------------|--------------------------------------|
| ① Copier | ①⑦ Indication label |
| ② Waste toner tanks | ①⑧ Cassette size labels |
| ③ Bottom pad | ①⑨ Screws (TP-A bronze, M4 × 10) |
| ④ Right-top pad | ②⑩ Hinge joints |
| ⑤ Left-top pad | ②⑪ Machine cover |
| ⑥ Skid | ②⑫ Bar code labels |
| ⑦ Inner frame | ②⑬ Plastic bag |
| ⑧ Top case | ②⑭ Instruction handbook |
| ⑨ Outer case | ②⑮ Business reply mail* ¹ |
| ⑩ Tank spacer | ②⑯ Original tray* ¹ |
| ⑪ Front transfer spacer | ②⑰ Plastic bag* ¹ |
| ⑫ Rear transfer spacer | ②⑱ Accessories case* ¹ |
| ⑬ Upper developing seal | ②⑲ Power code* ² |
| ⑭ Belt cleaning spacers | |
| ⑮ Plastic bag | |
| ⑯ Paper labels | |

*1: Inch models only.
 *2: Metric models only.

Remove the tapes.

1. Remove the tapes holding the SRDF.
 2. Remove the tape holding the front cover.
 3. Remove the tape holding the right cover.
 4. Remove the tapes holding the large paper deck and cassettes.
 5. Remove the tape holding the bypass table.
 6. Remove the tapes holding the power cord.*
- *Inch models only.

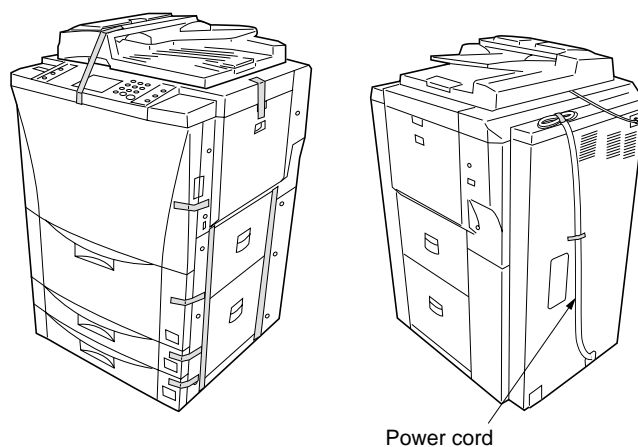


Figure 1-3-2

7. Draw out the upper cassette and remove the tapes holding the cassette lift and pull out the upper developing seal.

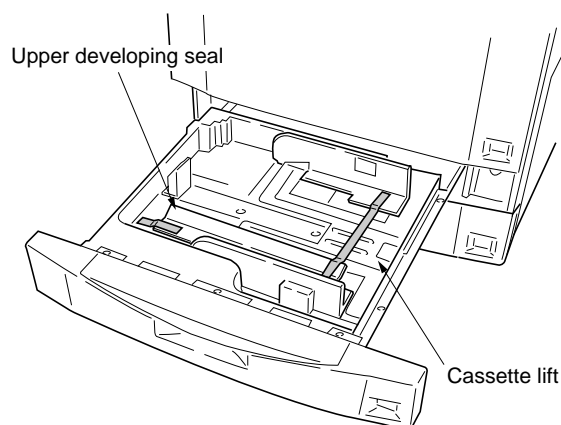


Figure 1-3-3

Remove the pins holding light source units 1 and 2.

1. Remove the tapes with the two pins holding light source unit 1 and the one pin holding light source unit 2 at the left side of the machine, and remove the each pin.

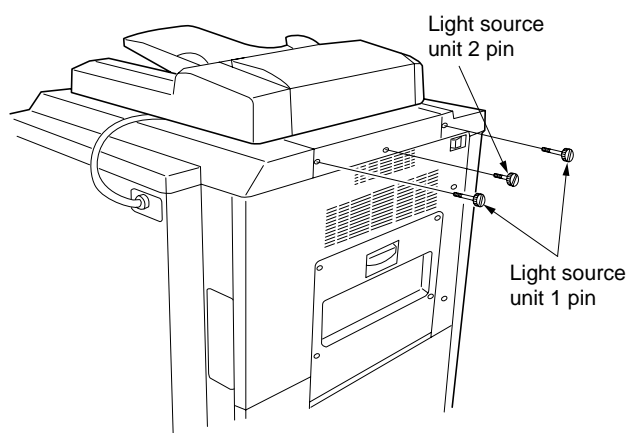


Figure 1-3-4

Remove the cleaning assembly retainers.

1. Open the front cover and remove the three screws holding the image forming unit. Tip the transfer section release lever, then pull out the image forming unit horizontally.
Caution: When pulling out the image forming unit, hold the both of the image forming unit firmly and do not touch the separation claws.

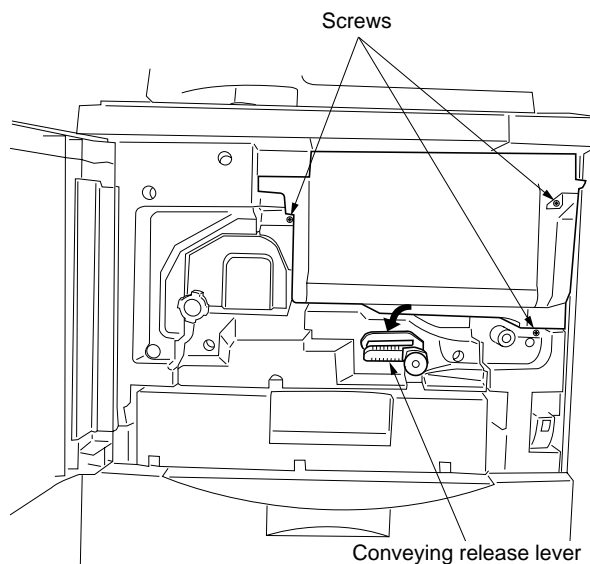


Figure 1-3-5

2. Remove the screw holding the cleaning assembly retainer (at the front side of the machine), then remove the cleaning assembly retainer. Remove the pin holding the cleaning assembly retainer (at the rear side of the machine), then remove the cleaning assembly retainer.

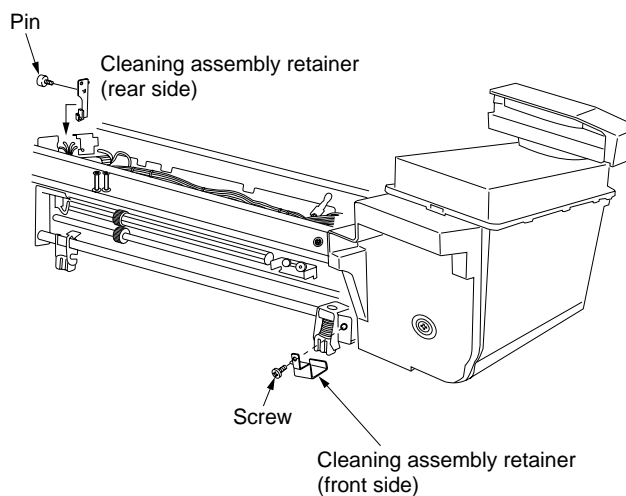


Figure 1-3-6

Set the cleaning assembly.

1. Turn the cleaning retaining levers in the direction of the arrow and set the cleaning retaining levers firmly.

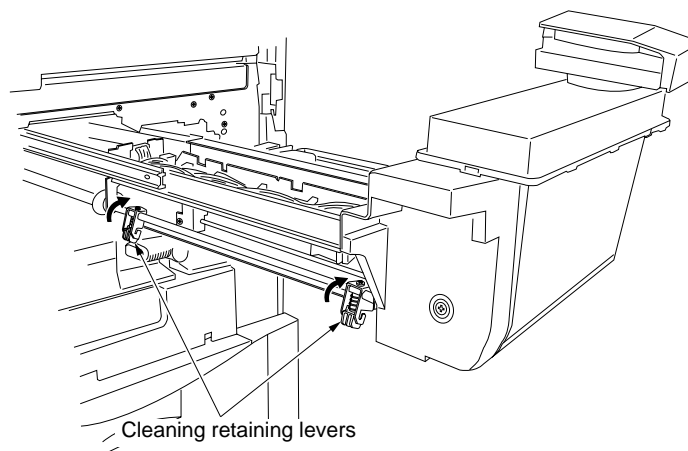


Figure 1-3-7

Load developer.

1. Lift the lock lever holding the developing assembly through 90 degrees and slide the lever on the top of the developing assembly in the direction of the arrow, then release the nozzle of the developing assembly from the toner hopper.
2. Remove the screw holding each of the front and rear developing assembly retainers and lift the levers for securing the developing assembly, and then disconnect the positive connector and 4-pin connector.

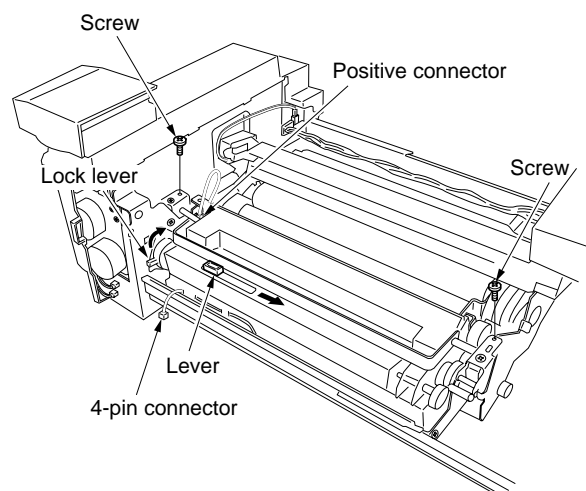


Figure 1-3-8

3. Hold the handle of the developing assembly and remove the assembly from the copier.

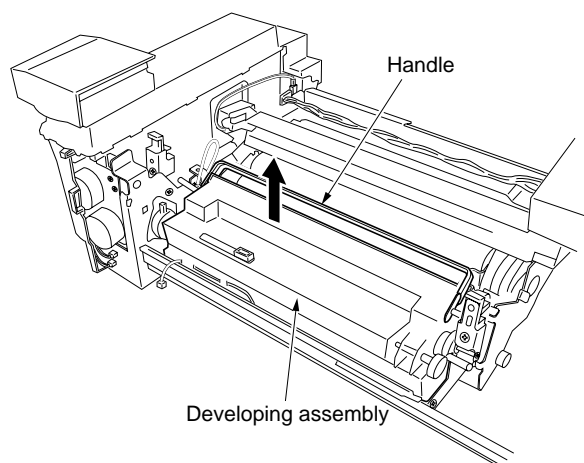


Figure 1-3-9

4. Remove the three screws and disengage the two hooks and then remove the upper developing cover.

Caution: Be sure to place the developing assembly on a level surface when loading developer.

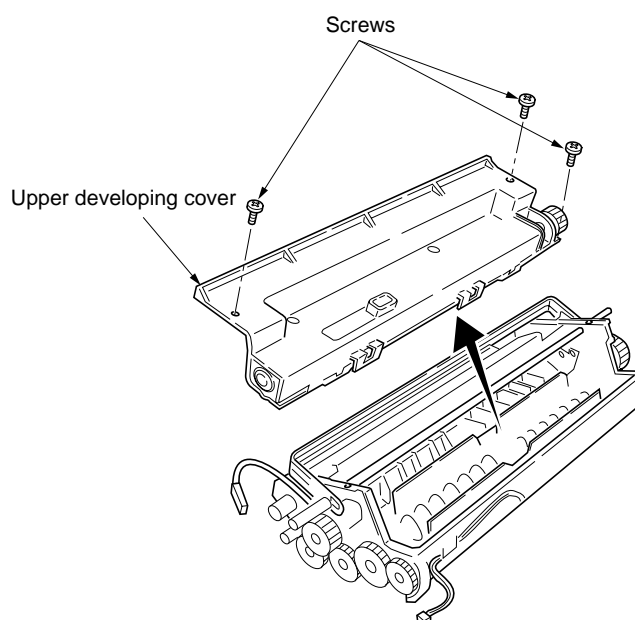


Figure 1-3-10

5. Shake the developer bottle well to agitate the developer.
6. While turning the developing gear (with the marked arrow) in the direction of the arrow, uniformly pour developer into the developing assembly.

Caution: Never turn the developing gear in the reverse direction.

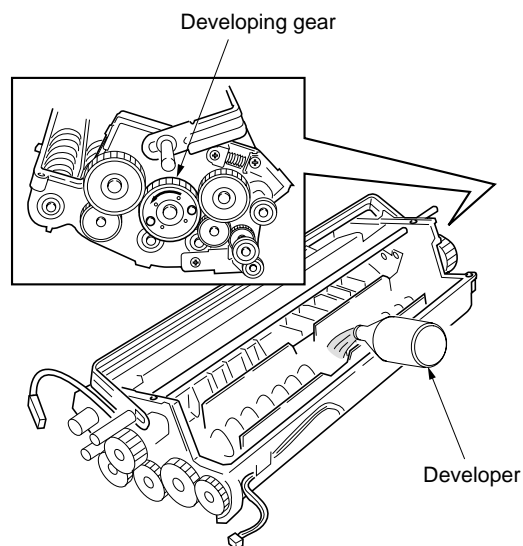


Figure 1-3-11

7. Refit the upper developing cover to the developing assembly.
 - When refitting the upper developing cover, be sure to insert the large and small hooks until they click into place and then secure with the three screws.

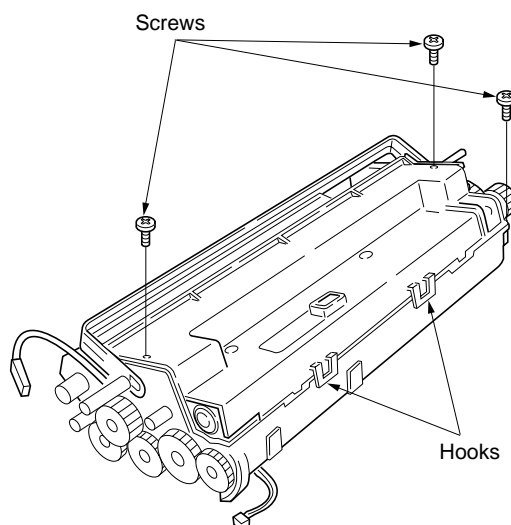


Figure 1-3-12

Install the upper developing seal.

1. Remove the two screws and fit the upper developing seal using the removed screws.
 - When fitting the upper developing seal, fit while holding it toward the drum.

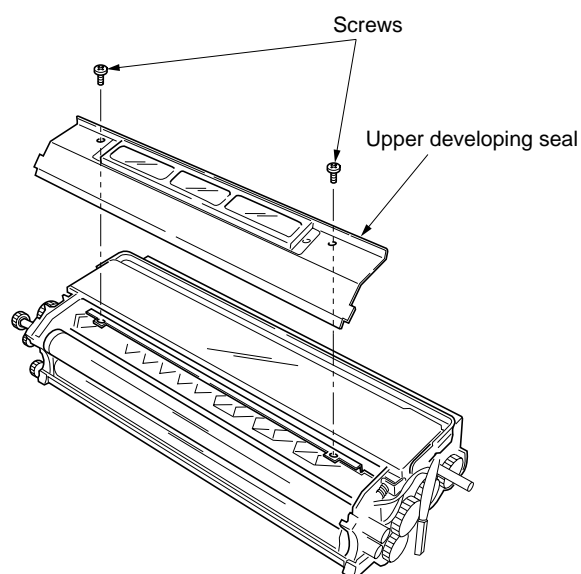


Figure 1-3-13

2. Insert the developing assembly back into the image forming unit and connect the positive connector and 4-pin connector.
3. Slide the lever on the top of the developing assembly in the direction of the arrow and lower the lock lever through 90 degrees to secure the nozzle of the developing assembly to the toner hopper.
4. Lower the levers for securing the developing assembly to lock the assembly.

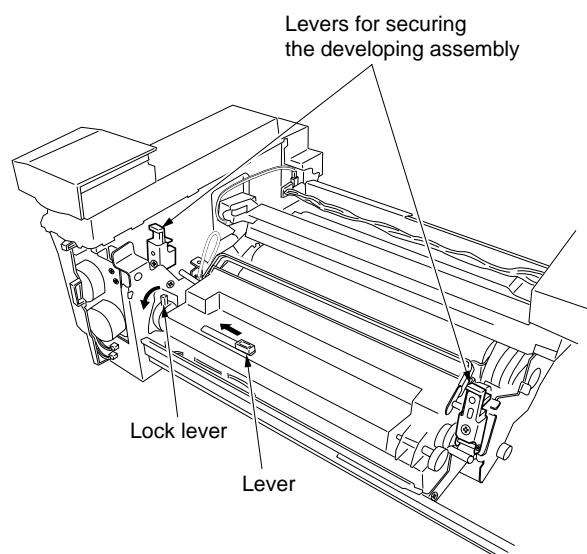


Figure 1-3-14

5. Insert the image forming unit into the copier.
 - Do not refit the three screws that were used originally to secure the image forming unit at this point.

Fit the belt cleaning spacers.

1. Remove the screw and draw the conveying section out laterally.

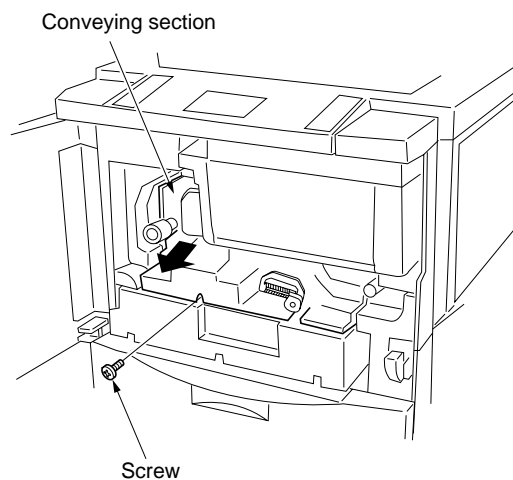


Figure 1-3-15

2. Remove the front and rear transfer spacers.

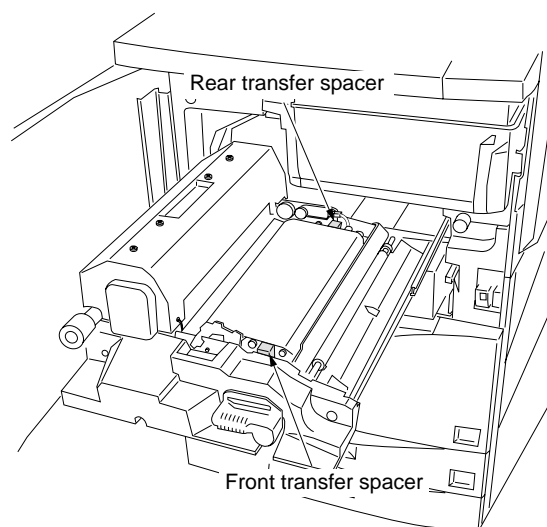


Figure 1-3-16

3. Remove the stop rings and bearing from the transfer charger belt shaft.

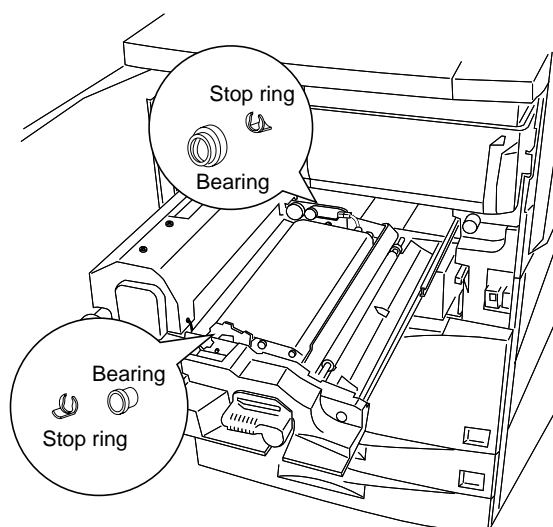


Figure 1-3-17

4. Disconnect the 1-pin connector on the white wire and the 1-pin connector on the green wire. Shift the transfer charger belt toward the left and remove by lifting it.
Caution: Never touch the transfer charger belt.

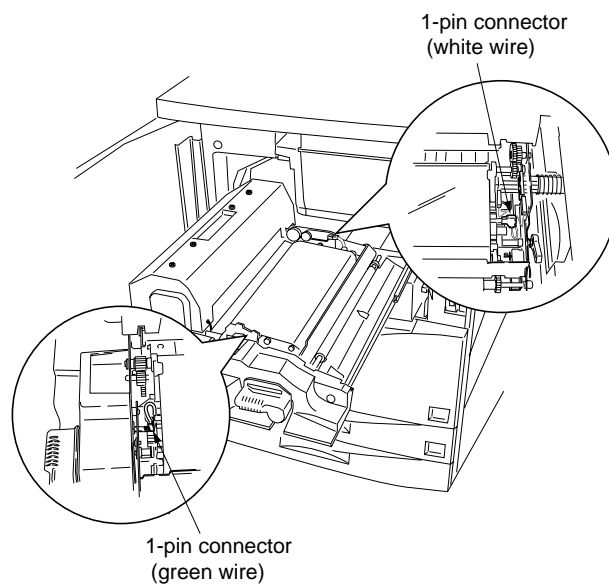


Figure 1-3-18

5. Remove the four screws and disconnect the 1-pin connector on a further green wire, and then remove the belt cleaning housing.

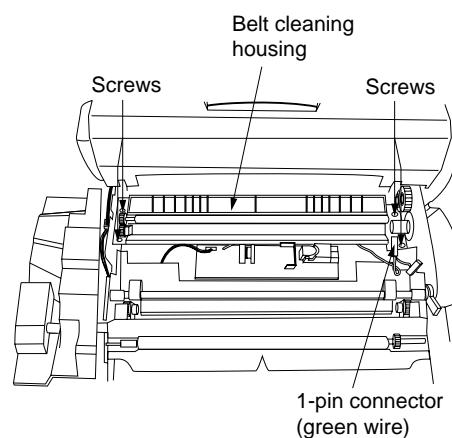


Figure 1-3-19

6. Fit the belt cleaning spacers as shown in the figure and fasten together with the belt cleaning housing with the four screws (M4 × 10 TP-A bronze screws).

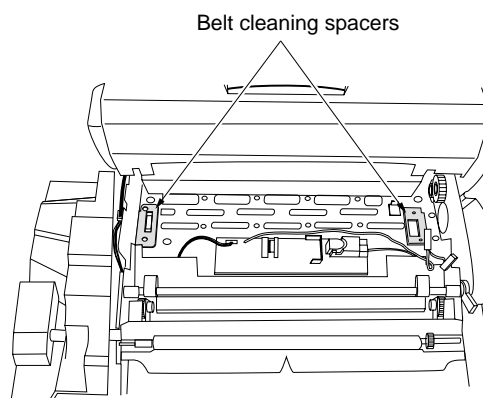


Figure 1-3-20

7. Connect the 1-pin connector on the green wire.
8. Refit the transfer charger belt.
 - Be sure to insert the grounding bearing into the grounding plate.

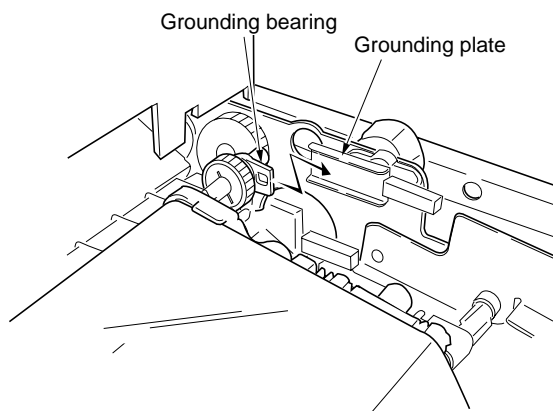


Figure 1-3-21

9. Connect the 1-pin connector on the green wire and the 1-pin connector on the white wire, and then fit the stop rings and bearings to the transfer charger belt shaft.

Adjust the fixing pressure.

1. Open the fixing eject cover.

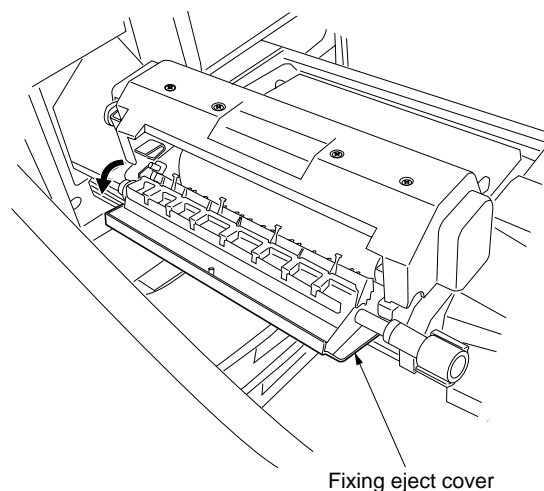


Figure 1-3-22

2. Turn the fixing pressure screws in the direction of the clockwise and tighten it, then adjust the fixing pressure.

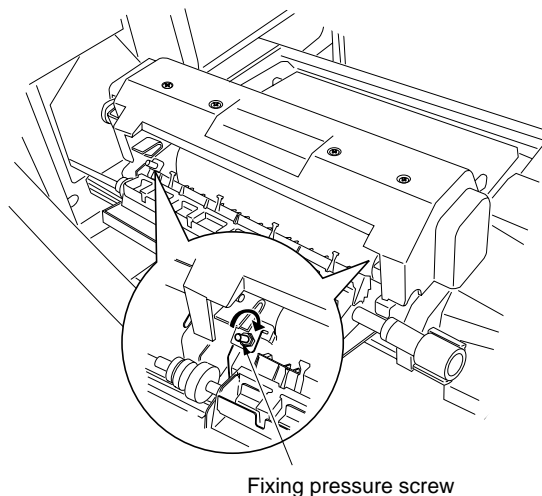


Figure 1-3-23

3. Close the fixing eject cover.
4. Push back the transfer section its original position and lift the transfer section release lever to the its original position, then fasten it.

Connect the power cord.

1. Connect the power cord to the machine.*
2. Insert the power plug into the wall outlet.

*For metric models only.

Carry out initial developer setting. (maintenance item U130)

1. Turn the main switch on with opening the front cover.
2. The machine starts warming up, after "Close the front cover" message is displayed, enter the maintenance mode by entering "10871087" using the numeric keys.
3. Enter "130" using the numeric keys and press the start key.
4. Close the front cover.
5. Press the start key to execute the maintenance item.
 - In approximately 2 minutes, the toner control level and toner sensor control voltage are automatically set and the settings displayed on the touch panel.

Display example
CONTROL: 125 (Toner sensor control voltage)
FIRST TARGET: 103 (Toner control reference voltage)
HUMID: 65 (Absolute humidity)
6. Press the stop/clear key.

Apply toner to the cleaning blade (maintenance item U160)

1. Enter "160" using the numeric keys and press the start key.
2. Press the start key to execute the maintenance item.
 - Toner is applied to the drum and then the drive stops automatically.

Exit maintenance mode.

1. Close and open the front cover.
2. Enter "001" using the numeric keys and press the start key.
 - The machine exits the simulation mode.

Set the cleaning blade.

1. Open the front cover and tip the conveying release lever, then pull out the image forming unit horizontally.

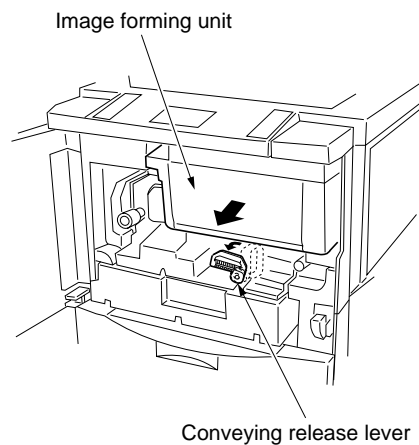


Figure 1-3-24

2. Check that the toner is applied to the drum and loosen the blade retaining screw at the left side of the image forming unit, then slide the blade release lever in the direction of the arrow.
 - The cleaning blade is set and the cleaning blade contacts with the drum.

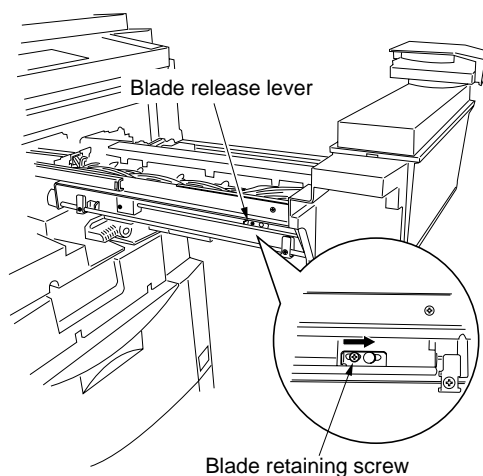


Figure 1-3-25

3. Refasten the blade retaining screw, then fasten the blade release lever.
4. Push back the image forming unit its original position and lift the conveying release lever up the its original position, and then fasten with the three screws fastened the image forming unit .

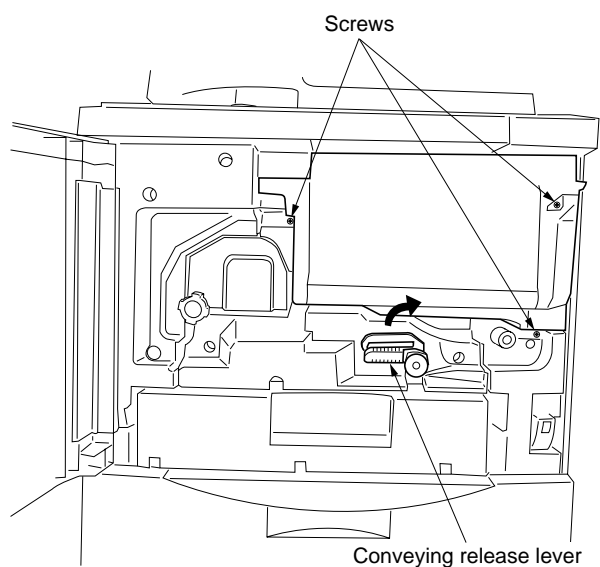
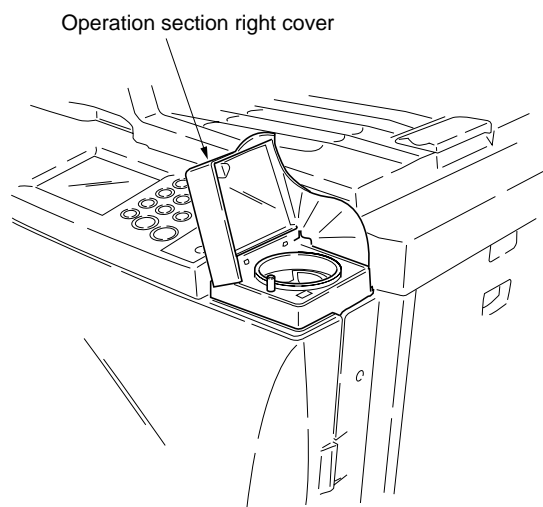


Figure 1-3-26

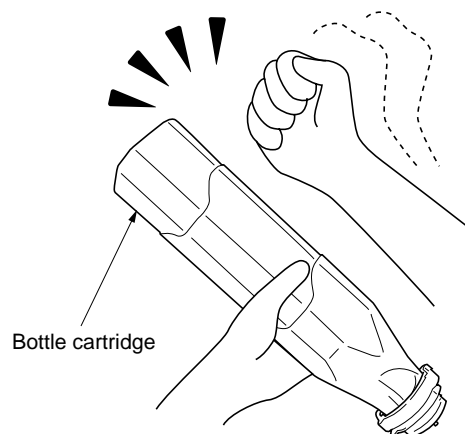
5. Close the front cover.

Load toner.

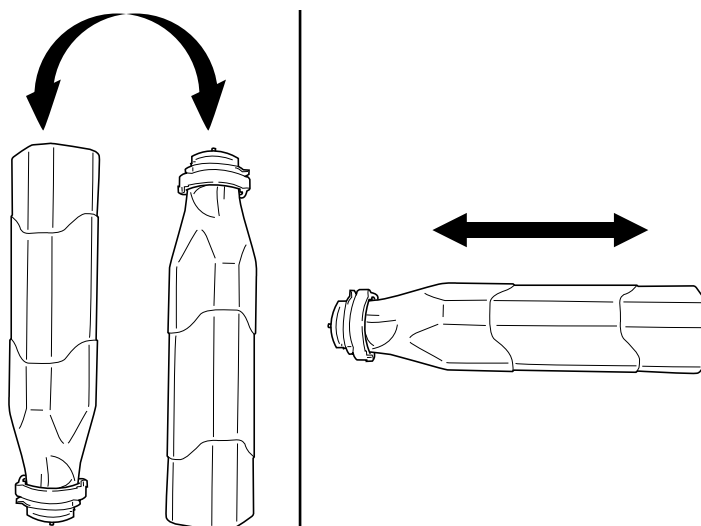
1. Open the operation section right cover.

**Figure 1-3-27**

2. Hold the new bottle cartridge with the cap facing down and tap the side of the cartridge ten times.

**Figure 1-3-28**

3. Shake the bottle cartridge vertically and horizontally ten times.

**Figure 1-3-29**

4. Fit the metal fitting of the bottle cartridge to the toner replenishing opening so that the ▲ marks on the cartridge and copier align. Turn the cartridge in the direction of the arrow until the ◆ mark on the cartridge and the ▲ mark on the copier align.

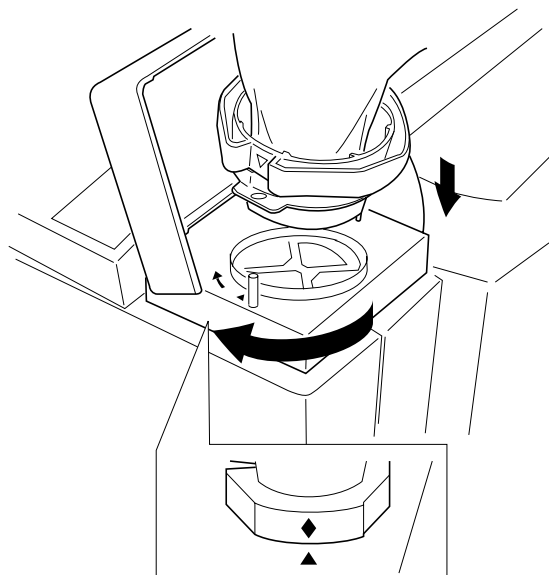


Figure 1-3-30

5. After sixty seconds, tap each side of the bottle cartridge 10 times to shake off all the remaining toner.

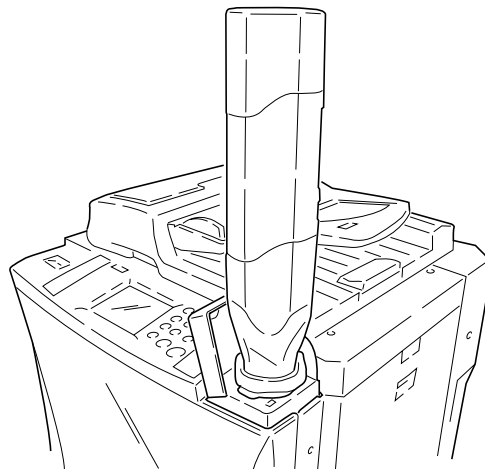


Figure 1-3-31

6. Turn the bottle cartridge to the initial position and remove from the toner replenishing opening.
7. Close the operation section right cover.

Install the original tray.*

1. Hook the grooves of the original tray to the pins (two) at the right side of the machine, then install the original tray to the machine.
- *Inch models only.

Make test copies.

1. Load paper in a cassette and make test copies.

Completion of machine installation.

1-3-2 Setting initial copy modes

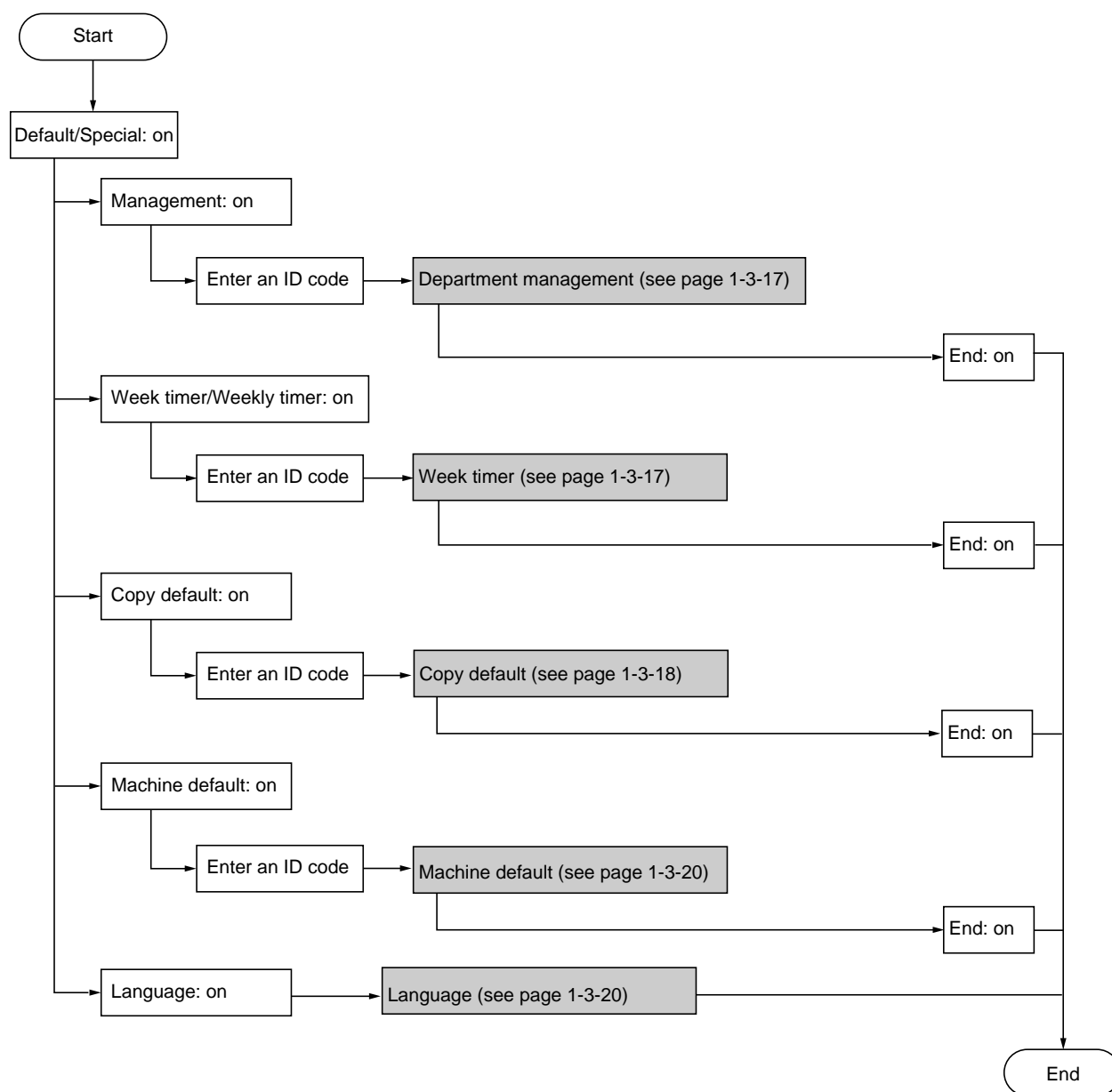
Factory settings are as follows:

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, 5
U260	Changing the copy count timing	EJECT
U263	Setting DF copy ejection orientation	Face down
U264	Setting date display order	Month-day-year (inch) Day-month-year (metric)
U330	Sets the number of copies for switching the copy eject tray in the finisher	100
U331	Switching the paper ejection mode	FACE UP
U333	Setting the number of digits of ID-code	7 digits (inch), 4 digits (metric)
U334	Setting the ejection method in the booklet stitcher	1 BIN
U340	Setting the job build mode	NOMAL
U343	Switching between duplex/simplex copy mode	Simplex copy
U344	Setting preheat/energy saver mode	Energy Star
U347	Setting auto drawer size detection	ON (inch), OFF (metric)
U348	Setting the copy density adjustment range	SPECIAL AREA
U350	Setting the ID-code error output	OFF
User settings	Exposure mode Exposure steps Auto exposure adjustment Manual exposure adjustment Default cassette Paper section Automatic cassette switching Special paper APS for special paper Auto shut off time Auto shut off ON/OFF Auto preheat time Copy limit Management copy change Custom border erase size Cassette for insert sheet Create shortcut Key sound Program key mode Zoom mode	Manual 7 steps 7 (center) 7 (center) Large paper deck Auto (APS) ON Not set OFF 90 min. ON 15 min. 999 copies 6200 60-94 mm (metric), 2 ³ / ₈ "-3 ¹¹ / ₁₆ " (inch) Upper cassette Not set ON Direct call (metric), Regular (inch) Standard zoom (metric) Size zoom (inch)

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, default settings and the settings for the timer function can be changed.

(1) Executing a copier management item



(2) Department management**Registering a new department code**

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

1. SET CODE: on
2. REGISTER: on
3. Enter a department code using the numeric keys:
7 digits for inch models and 4 digits for metric models.
4. REGISTER: on
5. Enter the limit using the numeric keys.
Setting range is 1000 to 999000 (in every 1000) copies. Set to 0 for unlimited copies.
6. REGISTER: on
7. END: on
8. END: on

Deleting a department code

1. SET CODE: on
2. DELETE: on
3. Select the department code to be deleted.
4. END: on
5. END: on

Altering the copy limit

1. SET CODE: on
2. CORRECTION: on
3. Select the department code to be altered.
4. Enter the limit of the number of copies using the numeric keys.
5. REGISTER: on
6. END: on
7. END: on

Clearing copy counts

1. SET CODE: on
2. CLEAR: on
3. YES: on
4. END: on

Viewing copy counts

1. REFERENCE: on
2. END: on

Printing a copy management report

1. Set A4/8 $\frac{1}{2}$ " \times 11" copy paper.
2. PRINT MANAGEMENT LIST: on

Turning copy management function on/off

1. Select ON or OFF.

(3) Week timer**Setting the time**

1. TIMER SET: on
2. Set the current day of the week, hour and minute by pressing +/- symbols (24-hour clock format).
3. ENTER: on

Programming the week timer

Set the on/off time for each day of the week.

1. WEEK TIMER: on
2. Select the day of the week to be set.
3. Select ON and set hours and minutes by pressing the +/- symbols.
4. Select OFF and set hours and minutes by pressing the +/- symbols.
5. ENTER: on
6. ENTER: on

Canceling the timer function

1. CANCEL: on
2. Select the day of week to be canceled.
3. ENTER: on

Turning the timer on/off

1. Select ON or OFF.

(4) Copy default**Exposure mode**

Selects auto or manual exposure to be given priority in initial mode.

1. Display EXPOSURE MODE using the Up/Down keys.
2. Select AUTO or MANUAL.

Output form

Sets the initial value of the sort mode when setting originals.

1. Display OUTPUT FORM using the Up/Down keys.
2. Select SORT:ON or SORT:OFF

Exposure steps

Sets the exposure steps in manual exposure mode.

1. Display EXPOSURE STEPS using the Up/Down keys.
2. Select 7 STEPS or 13 STEPS.

Paper selection

Set if the same sized paper as the original to be copied is automatically selected.

1. Display PAPER SELECTION using the Up/Down keys.
2. Select AUTO or MANUAL.

Toner economy mode

Sets the initial value of the toner economy mode at power on.

1. Display TONER ECONOMY using the Up/Down keys.
2. CHANGE: on
3. Select ON or OFF
4. END: on

Job programming

Selects whether all program numbers are selectable or program No. 1 is given priority.

1. Display JOB PROGRAMMING using the Up/Down keys.
2. Select REGULAR (for all program numbers) or OFF THE PLATEN (for program No. 1).

Auto exposure adjustment

Adjusts the exposure in auto density mode.

1. Display AUTO EXPOSURE ADJUSTMENT using the Up/Down keys.
2. CHANGE: on
3. Adjust the exposure by pressing DARKER or LIGHTER.
4. END: on

Default cassette

Set the cassette to be selected after the all clear/reset key is pressed.

1. Display DEFAULT DRAWER using the Up/Down keys.
2. CHANGE: on.
3. Select the default cassette.

Manual exposure adjustment.

Adjusts the exposure in manual density mode.

1. Display MANUAL EXPOSURE ADJUSTMENT using the Up/Down keys.
2. CHANGE: on
3. Adjust the exposure by pressing DARKER or LIGHTER.
Setting is available for text, text and photo (mixed) and photo modes.
4. END: on

Zoom mode

Selects fixed or standard magnifications in reduction/enlargement mode.

1. Display ZOOM MODE using the Up/Down keys.
2. Select SIZE ZOOM or STANDARD ZOOM.

Copy quality

Sets the image quality to be selected in initial mode.

1. Display QUALITY using the Up/Down keys.
2. Select MIXED, TEXT or PHOTO.

Copy limit

Sets the limit of the number of copies for multiple copying.

1. Display COPY LIMIT using the Up/Down keys.
2. CHANGE: on
3. Enter the number of copies up to 999 using the numeric keys.
4. CHANGE: on

Custom size for border erase

Sets the custom size for border erase copying.

1. Display CUSTOM BORDER ERASE SIZE using the Up/Down keys.
2. CHANGE: on
3. Set the paper width by pressing the upper +/- symbols. Setting is available between 94 mm/311/16" and 214mm/87/16" in 8 mm/5/16" steps.
4. Set the paper length by pressing the lower +/- symbols. Setting is available between 60 mm/23/8" and 296 mm/115/8" in 4 mm/2/16".
5. END: on

Front and back page margin

Sets if individual margin settings for front and back page are available.

1. Display F & BP. MARGIN using the Up/Down keys.
2. Select ON or OFF.

Cassette for insert sheet

1. Display DRAWER FOR INSERT SHEET using the Up/Down keys.
2. CHANGE: on
3. Select the paper feed location.

Cassette cover sheet/stitch

Selects the cassette to be used for setting cover sheets in the stitching mode.

1. Display DRAWER FOR COVER SHEET (BINDING) using the Up/Down keys.
2. CHANGE: on
3. Select a cassette.

Rotate sort

Sets if rotate sort is available in sort copy mode. Setting is not available when the finisher is installed.

1. Display ROTATE SORT using the Up/Down keys.
2. Select ON or OFF.

Modify Copy

Sets if modify copy is available.

1. Display MODIFY COPY using the Up/Down keys.
2. Select ON or OFF.

Create shortcut

Registers frequently used function keys, and displays them on the basic screen.

1. Display CREATE SHORTCUT #1 or CREATE SHORTCUT #2 using the Up/Down keys.
2. CHANGE: on
3. Select a function.

Create user choice #1-#5

Moves frequently used function keys to the basic screen for selecting a function.

1. Display one of CREATE USER CHOICE/Customize GUI #1 to #5 using the Up/Down keys.
2. CHANGE: ON
3. Select the function to be moved.

(5) Machine default**Un-fixed size from bypass**

Sets if non-standard size paper is available when the paper is fed from the bypass table.

1. Display UN-FIXED SIZE FROM BYPASS using the Up/Down keys.
2. Select ON or OFF.

Auto cassette switching

Sets if the auto cassette switching function is available.

1. Display AUTOMATIC DRAWER SWITCHING using the Up/Down keys.
2. Select ON or OFF.

Cassette paper size

Changes the paper size for the cassettes displayed on the basic screen.

1. Display DRAWER PAPER SIZE for the cassette to be changed using the Up/Down keys.
2. CHANGE: ON
3. Select paper size.

Special paper

Selects the cassette for special paper.

1. Display SPECIAL PAPER using the Up/Down keys.
2. CHANGE: ON
3. Select the cassette. To cancel, select the same cassette again.
4. End: ON

APS for special paper

Sets if auto paper selection is available for the paper feed location with the special paper.

1. Display APS FOR SPECIAL PAPER using the Up/Down keys.
2. Select ON or OFF.

Key sound

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

1. Display KEY SOUND using the Up/Down keys.
2. Select ON or OFF.

Auto preheat time

Sets the auto preheat time.

1. Display AUTO PREHEAT TIME using the Up/Down keys.
2. Set the time by pressing the +/- symbols. Setting is available between 5 and 45 min. in 5 min. steps

Auto shutoff time

Sets the auto shutoff time.

1. Display AUTO SHUT-OFF TIME using the Up/Down keys.
2. Set the time by pressing the +/- symbols. Setting is available between 15 and 240 min. in 15 min. steps.

Management code change

Changes the management code to be used.

1. Display MANAGEMENT CODE CHANGE using the Up/Down keys.
2. CHANGE: ON.
3. Enter the code using the numeric keys.
4. CHANGE: ON

Auto shutoff

Sets if the auto shutoff function is available.

1. Display AUTO SHUT-OFF using the Up/Down keys.
2. Select ON or OFF.

(6) Language

Switches the language to be displayed on the key touch panel.

1. Press on the language to be displayed.
 - Available languages are English, German, French, Italian and Spanish for metric models, and English, French and Spanish for inch models.

1-3-4 Installing the finisher (option)

<Procedure>

1. Fit the retainer to the mount and secure with four screws (M4 × 06 TP-A chrome screws) while positioning the screws at the centers of the slots.

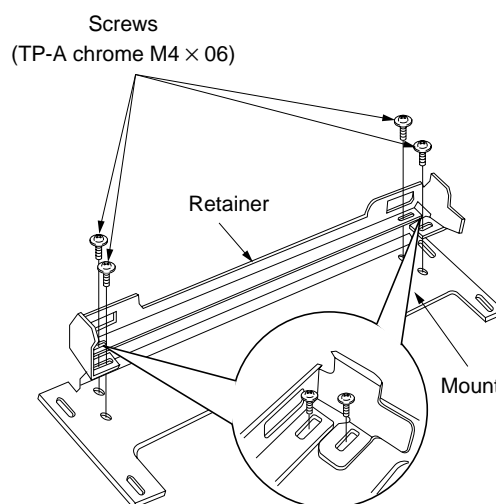


Figure 1-3-32

2. Fit the entry support guide to the ejection cover with two screws (M4 × 08 tap-tight binding screws).

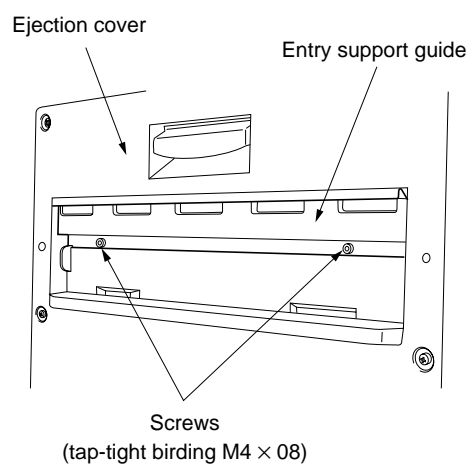


Figure 1-3-33

3. Remove the two screws on the bottom of the ejection cover.

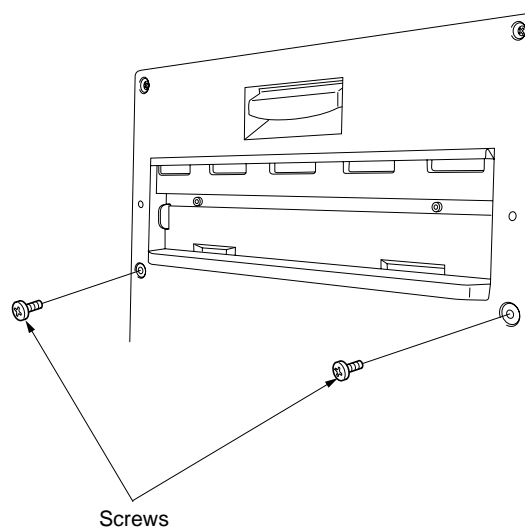


Figure 1-3-34

4. Fit the parts assembled in step 1 to the ejection cover with the two screws removed in step 3 and two screws (M4 × 14 TP-A chrome screws) such that the screws are positioned at the bottom of the slots.

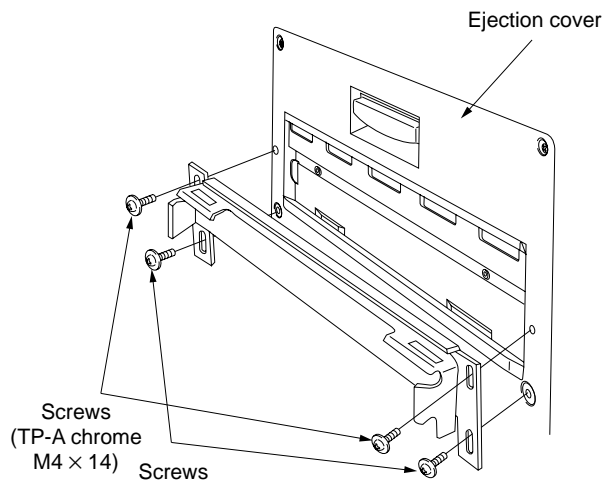


Figure 1-3-35

5. Remove the pin securing the rail unit.
6. Remove the waste toner tank, and then remove the tapes securing the solenoid and the feedshift guide.

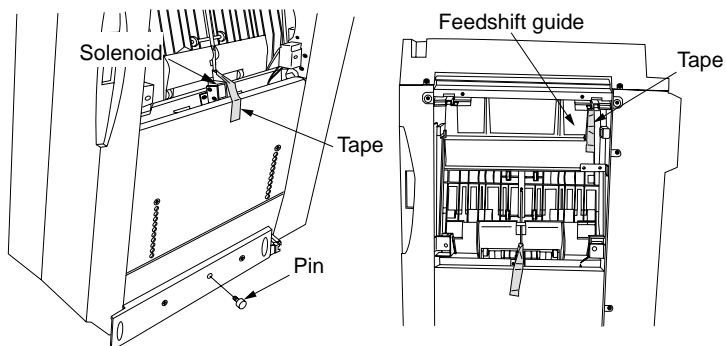


Figure 1-3-36

7. Remove the two screws securing the lower left cover of the copier.

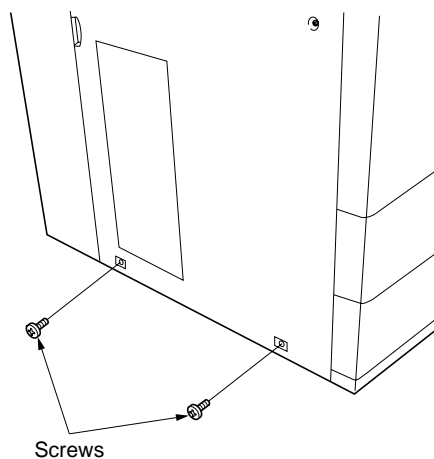


Figure 1-3-37

8. Draw out the rail unit from the finisher and fit to the copier with the two screws removed in step 7.

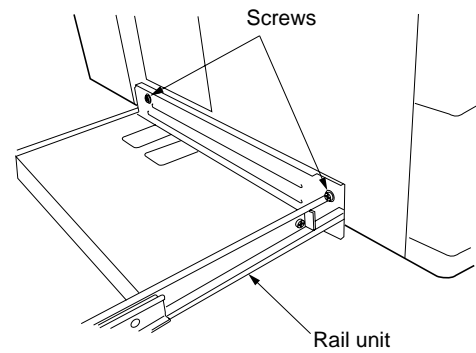


Figure 1-3-38

9. Open the front cover and remove the pin securing the intermediate tray unit, and then draw the intermediate tray out.

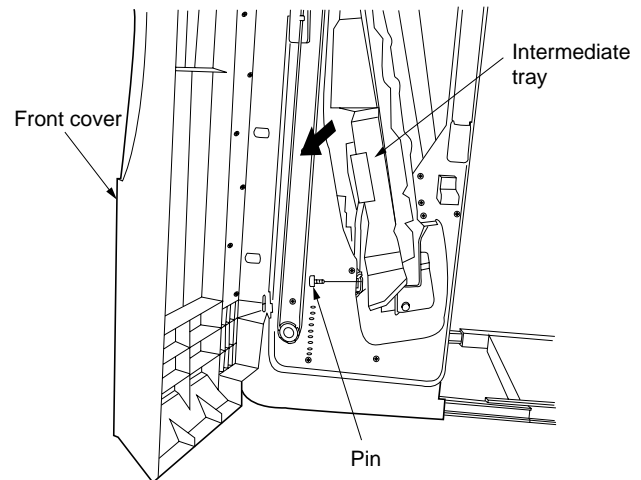


Figure 1-3-39

10. Remove the pin securing the stapler unit at the bottom of the intermediate tray. Lift the stapler unit in the direction of the arrow and fit the two stapler cartridges.

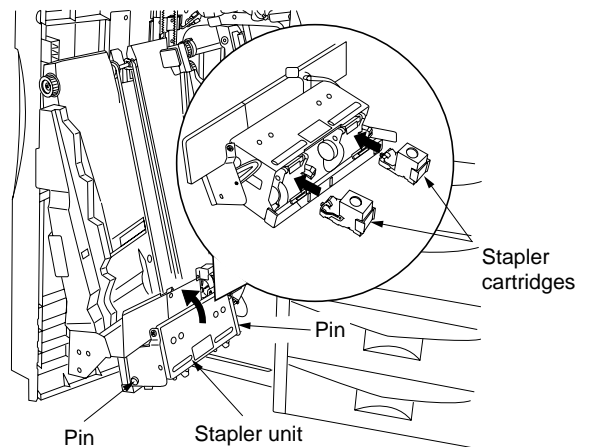


Figure 1-3-40

2A0

11. Lift the stapler unit further and then lower it to the original position.
12. Push the intermediate tray back in and close the front cover.

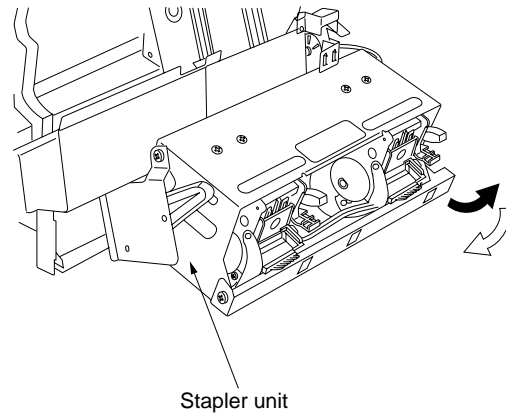


Figure 1-3-41

13. Fit the sort tray with the two fixing guide pins and two hexagonal cap nuts.

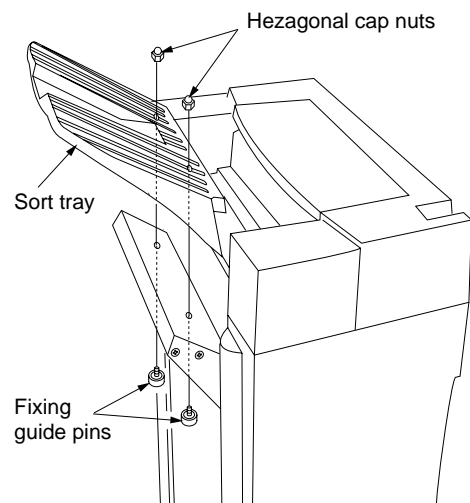


Figure 1-3-42

14. Insert the non-sort tray vertically and then swing down into position.

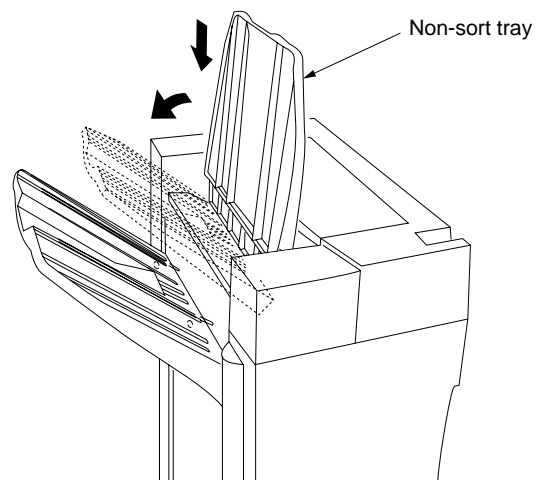


Figure 1-3-43

15. Connect the signal cable for the finisher to the connector on the copier.
16. Insert the copier power plug into the wall outlet and turn the main switch on.
17. Check that the center of each cassette is correct and then make a test copy in punch mode by feeding paper from the bypass table.
18. Measure the discrepancy L (mm) of the center of the punch holes.
19. Loosen the four screws (M4 × 06 TP-A chrome screws) securing the retainers and shift the retainers by the measured amount L and retighten the screws.
 - If the punch hole is displaced to the front, shift the retainers toward the rear.
 - If the punch hole is displaced to the rear, shift the retainers toward the front.

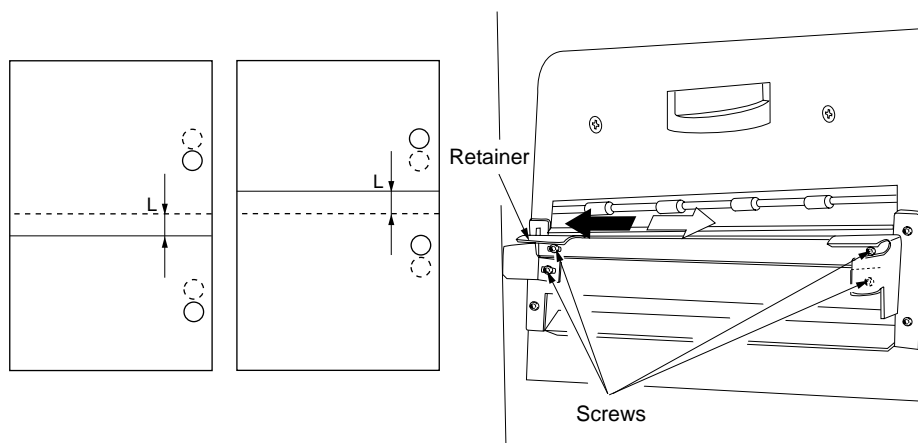


Figure 1-3-44

After adjusting the center of the punch holes, if the joints of the retainers and the finisher do not engage correctly due to friction, adjust the position of the retainers as follows:

20. Remove the two screws securing the rail unit and then remove the rail unit from the copier.
21. Remove the lower left cover from the copier and fit the rail unit directly to the retainers with the two screws for each.
22. Loosen the two screws on each of the front and rear retainers and adjust the engagement of the retainers by shifting them.
23. After adjustment, retighten the screws on the retainers and remove the two screws securing the rail unit and then the rail unit from the retainers.
24. Refit the lower left cover and secure the rail unit with the two screws.

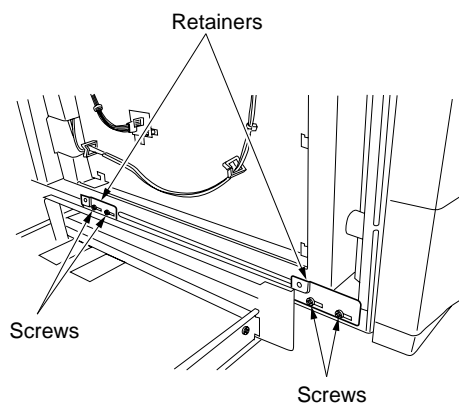


Figure 1-3-45

1-3-5 Installing the booklet stitcher (option)

<Procedure>

1. Remove the two screws securing the ejection cover and then secure the latch catch with four screws (M4 × 14 binding screws).

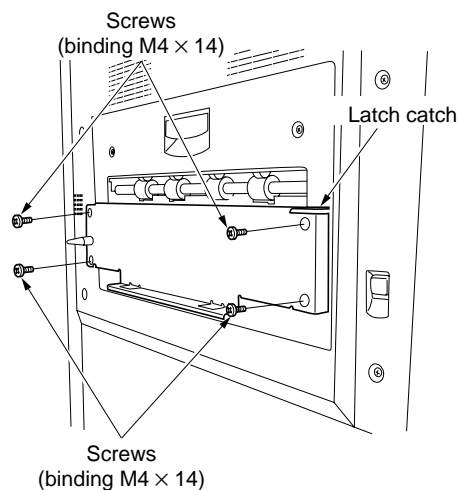


Figure 1-3-46

2. Insert the shaft of the joint spacer into the groove of the latch catch and secure the spacer with a screw (M6 × 06 screw).

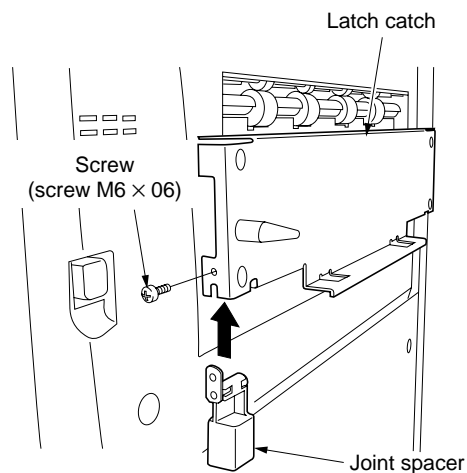


Figure 1-3-47

3. Insert the retainer into the rail unit guide while aligning it with the groove in the rail unit guide.
 - Make sure that the plate spring of the retainer fits into the groove and the edges of the rail unit guide fit between the pulleys on the reverse side of the retainer.

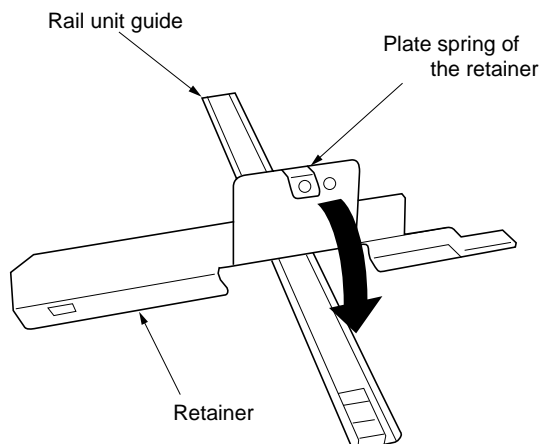


Figure 1-3-48

4. Orient the pulley of the rail unit guide toward the copier and fit a rail unit caster to each side of the retainer.

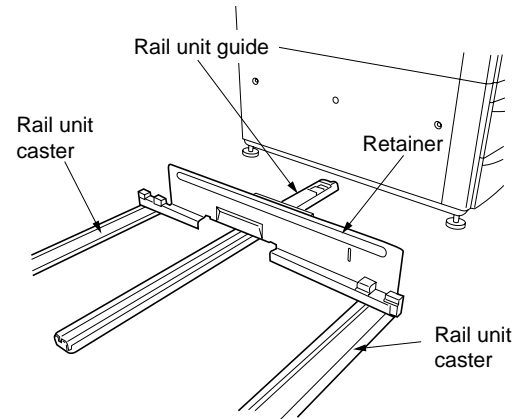


Figure 1-3-49

5. Remove the two screws securing the bottom of the lower left cover and slide the retainer in the direction of the arrow.
6. Secure the lower left cover with the two screws removed in step 5 so that the front and rear gaps between the floor and retainer are 10 mm.

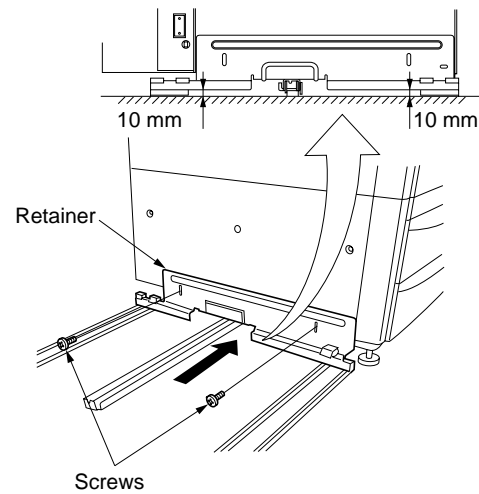


Figure 1-3-50

7. Loosen the two screws securing the fixing plate and lower the fixing plate to the floor.
8. Slide the rail unit guide toward the fixing plate and pass it to the back of the stitcher.

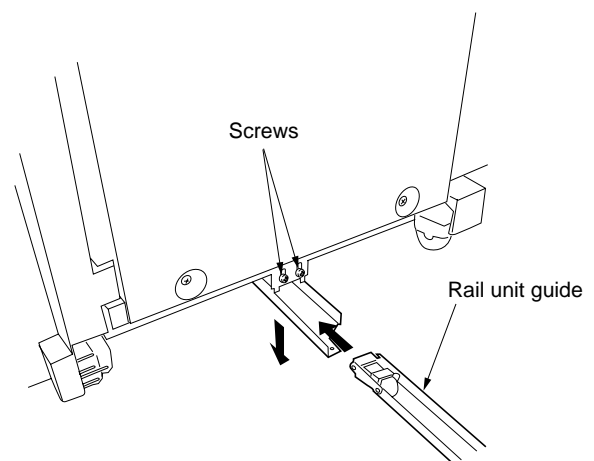


Figure 1-3-51

9. Secure the rail unit guide with a screw (M4 × 06 screw with lock) at the position where the round holes in it and the fixing plate coincide.

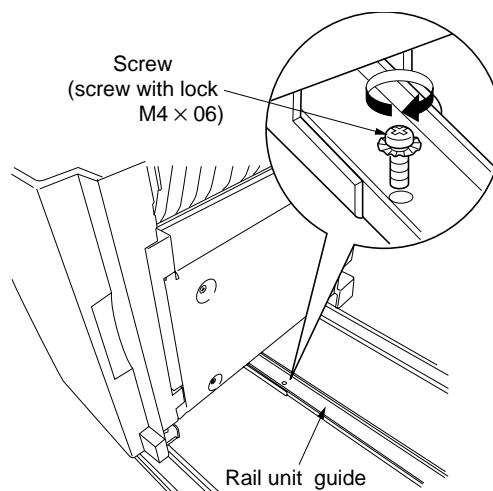


Figure 1-3-52

10. Tighten the two screws for the fixing plate at the position where the rail unit guide is horizontal.
Reference: Secure the fixing plate at a height of 8.0 mm from the floor.

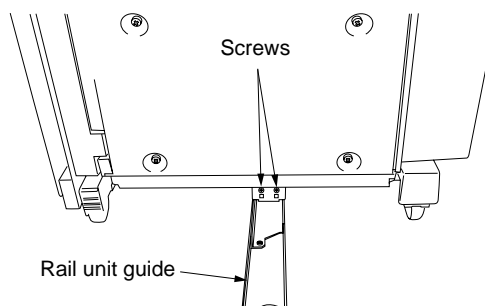
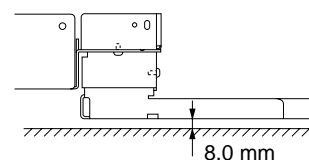


Figure 1-3-53

11. Insert the cover cap into the round hole.
12. Attach the indication label sheet to the upper front cover.

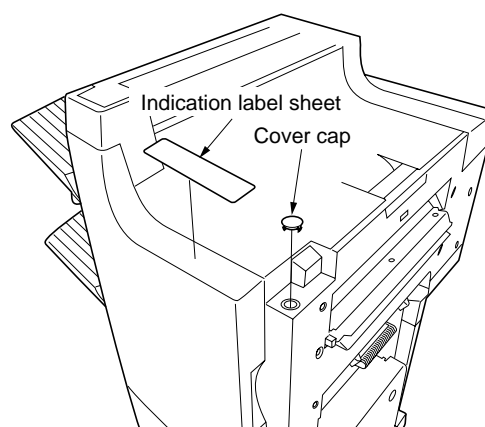


Figure 1-3-54

13. Connect the signal cable for the stitcher to the connector on the copier.

Installing the relay cable and IPC PCB

1. Remove the five screws securing the rear cover and then the cover.
2. Remove the fifteen screws securing the main PCB cover and then the cover.

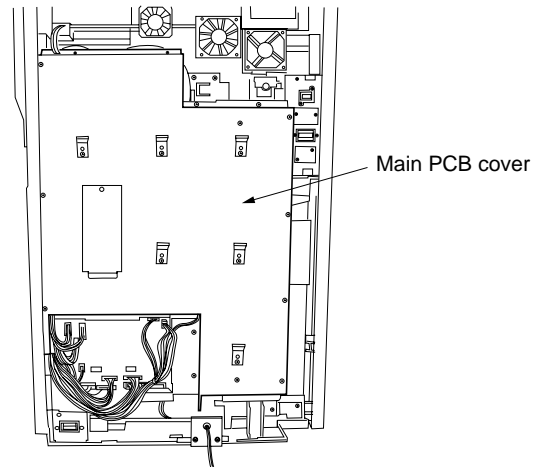


Figure 1-3-55

3. Insert the board support into the round hole in the main PCB shield.

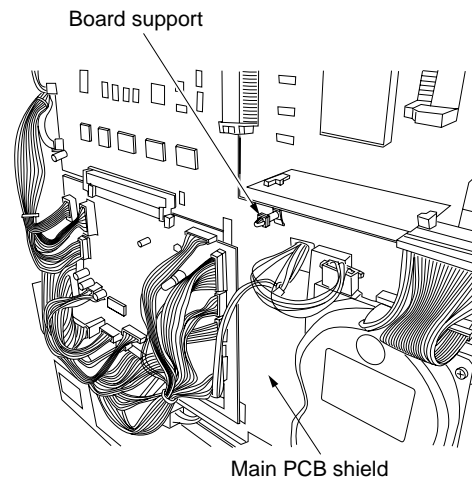


Figure 1-3-56

4. Connect the 10-pin connector of the relay cable to connector J2 on the IPC PCB.
5. Connect connector J1 of the IPC PCB to CN19 on the main PCB and locate the round hole in the IPC PCB over the board support to secure the IPC PCB in place.
6. Pass the relay cable through the slot in the main PCB shield.

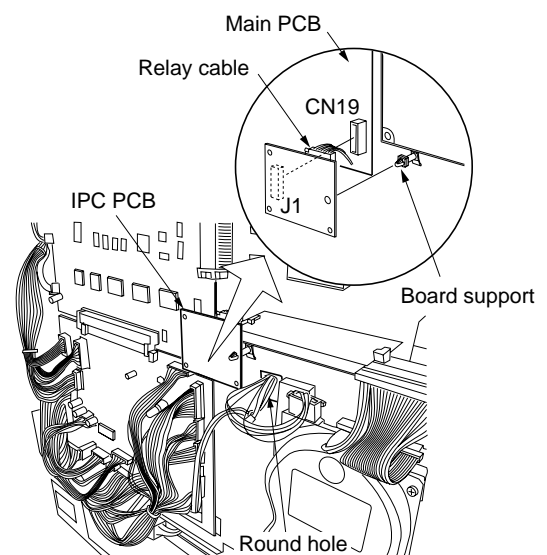


Figure 1-3-57

2A0

7. Remove the two screws securing the main PCB shield and open the main PCB shield.

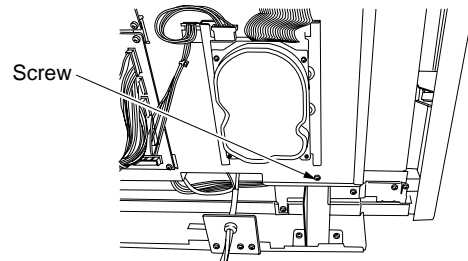
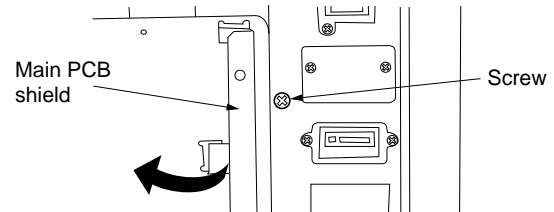


Figure 1-3-58

8. Detach the 6-pin connector of the main wiring.
9. Connect the detached main wiring 6-pin plug and receptacle to the 6-pin receptacle and plug of the relay cable respectively.

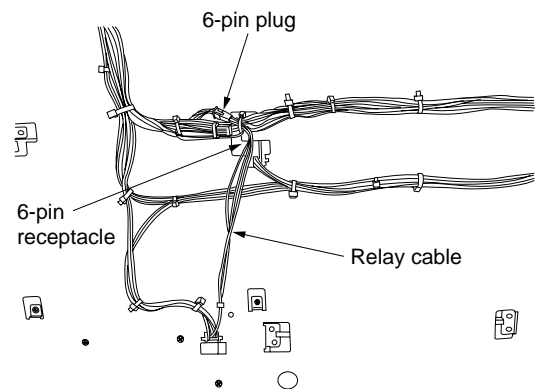


Figure 1-3-59

10. Secure the wiring of the relay cable with the two bands.

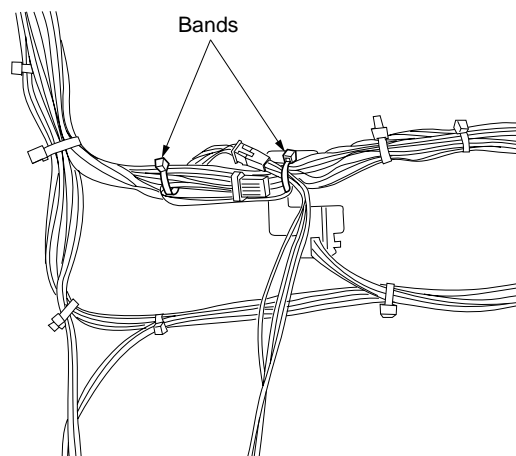


Figure 1-3-60

1-3-6 Installing the side deck (option)

<Procedure>

1. Remove the two screws from the support.

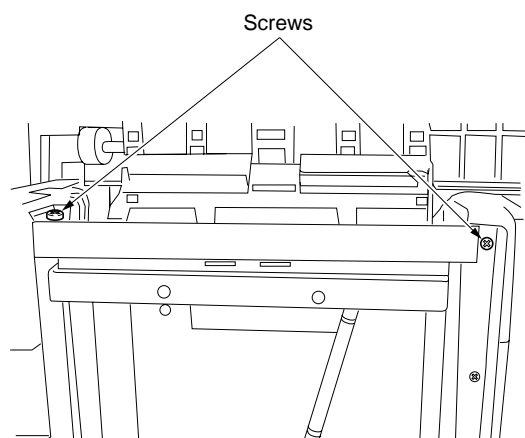


Figure 1-3-61

2. Cut out the three aperture plates on the upper right cover using nippers.

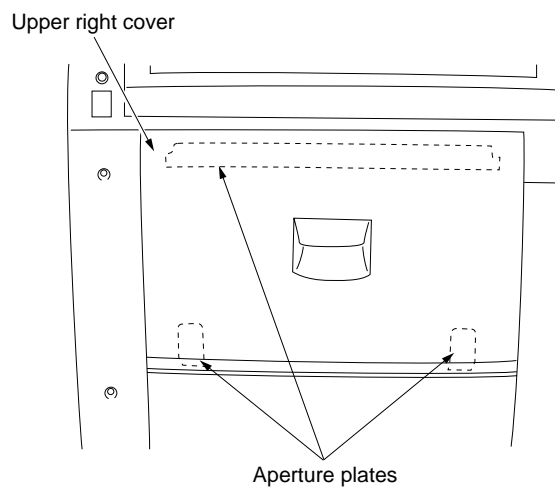


Figure 1-3-62

3. Insert the lower merge guide into the upper right cover. Open the upper right cover and secure the lower merge guide with two screws (M4 × 06 binding screws).

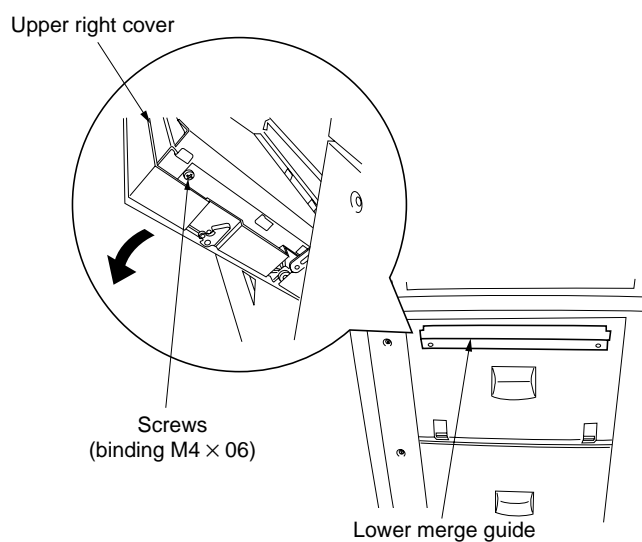


Figure 1-3-63

4. Close the upper right cover. While holding the lower merge guide downward, secure the guide with two screws (M4 × 08 TP-P tight screws).

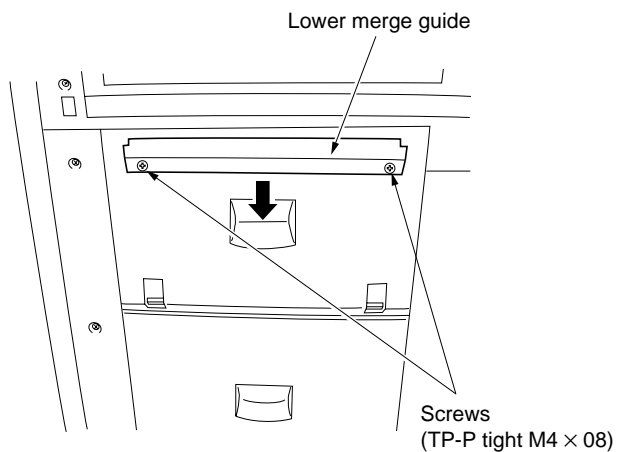


Figure 1-3-64

5. Open the upper right cover. Insert the upper merge guide into the cover from the inside and secure with two screws (M4 × 06 binding screws).

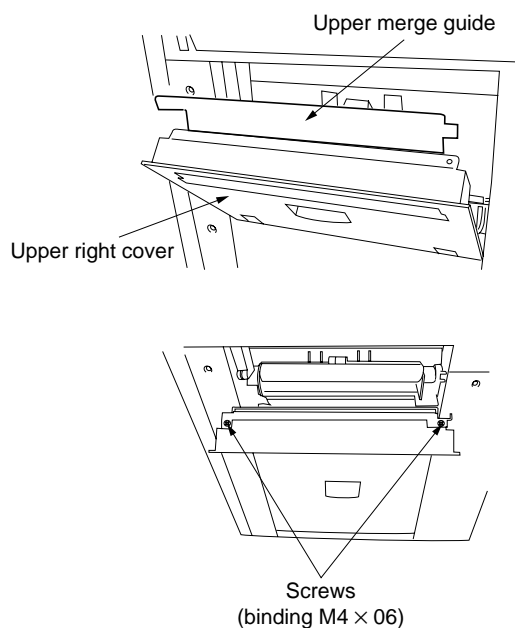


Figure 1-3-65

6. Close the upper right cover. While holding the upper merge guide upward, secure the guide with two screws (M4 × 08 TP-P tight screws).

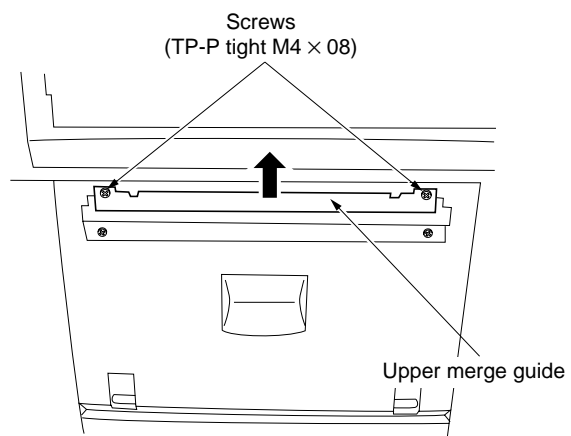


Figure 1-3-66

7. Remove the two screws from the lower rear right cover, the screw from the lower front right cover, and then remove the lower middle right cover.

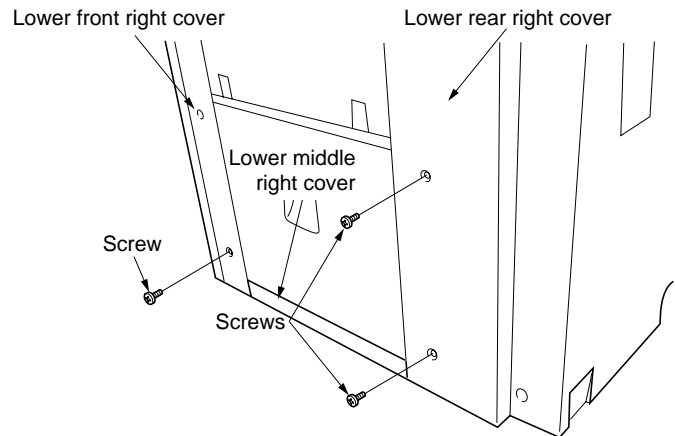


Figure 1-3-67

8. Refit the screws removed in step 7 to the lower rear right cover and lower front right cover.
9. Insert the folded part of the interlock switch into the slot in the lower rear right cover and secure with a screw (M4 × 12 flat-head screw).

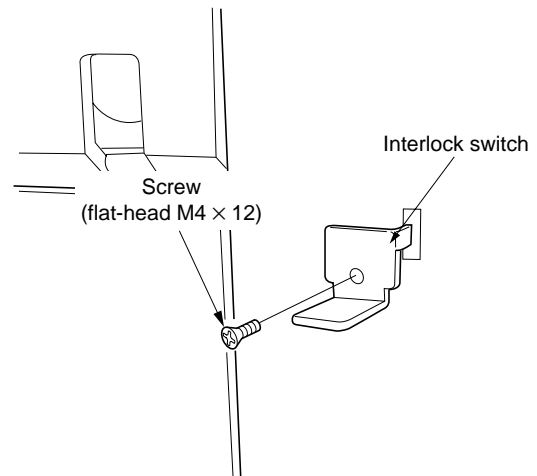


Figure 1-3-68

10. Pull out the rail retainer of the deck and insert it between the frame and the lower right cover.

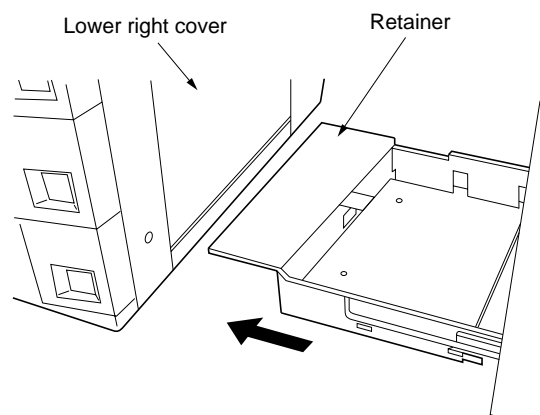


Figure 1-3-69

11. Open the lower vertical conveying cover and align the V-shaped groove of the retainer with the center of the scale located at the base. Then secure the retainer with two screws (M4 × 06 TP screws).

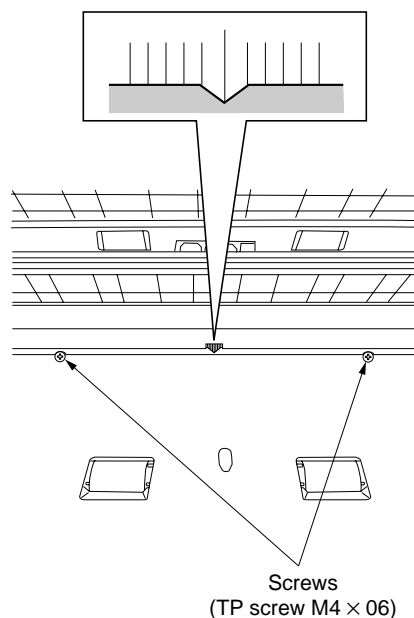


Figure 1-3-70

12. Connect the signal cable for the deck to the connector on the copier.
 13. Connect the power plug to the wall outlet and turn the main switch on.
 14. Press the right down switch to descend the lift until it reaches lower limit.
 15. Load paper in the side deck.
 16. Run maintenance item U034 (Adjusting the print start timing) and make a test copy.
 17. Measure the discrepancy L (mm) between the center of the test copy and the optical axis. If L is 1.0 mm or above, loosen the two screws of the retainer and move the V-shaped groove on the retainer by the measured amount L and retighten the screws.
- If the line is shifted to the front (㉑), move the V-shaped groove of the retainer toward the front.
 - If the line is shifted to the rear (㉒), move the V-shaped groove of the retainer toward the rear.

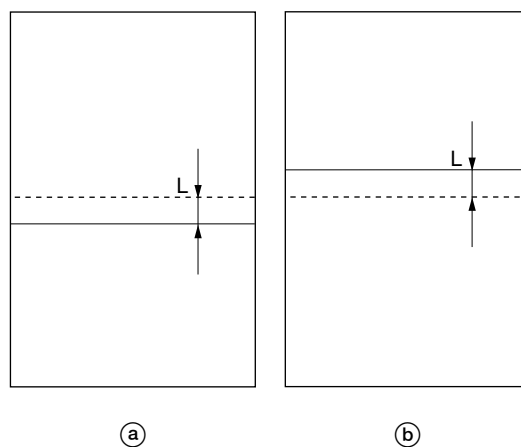


Figure 1-3-71

1-3-7 Installing the key counter (option)

Key counter installation requires the following parts:

Key counter set (P/N 2A369700)

Contents of the set:

- Key counter cover (P/N 2A360010)
- Key counter retainer (P/N 66060030)
- Key counter cover retainer (P/N 66060021)
- Key counter mount (P/N 66060040)
- Key counter 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 × 6 chrome TP-A screw (P/N B4104060)
- 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 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.

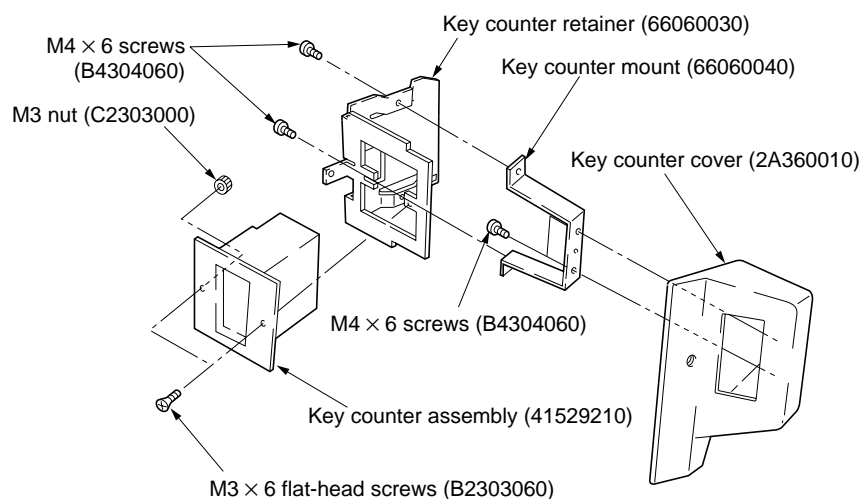


Figure 1-3-72

3. Remove the four screws and detach the middle right cover from the machine.
4. Cut out the aperture plate on the middle right cover using nippers.

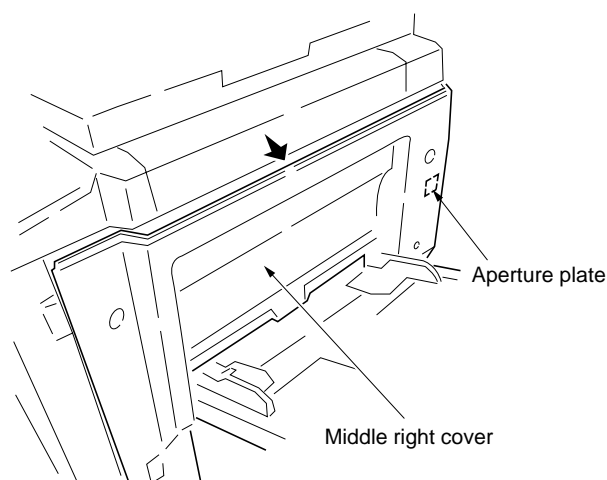


Figure 1-3-73

5. Pass the 4-pin connector of the key counter through the apertures in the key counter cover retainer and middle right cover, and insert into the 4-pin connector inside the machine.
6. Seat the projection of the key counter cover retainer in the aperture in the middle right cover, and fasten them both to the machine using the two screws.
7. Refit the screw to the machine of the middle right cover.
8. Fit the key counter cover with the key counter assembly inserted to the key counter cover retainer on the machine.

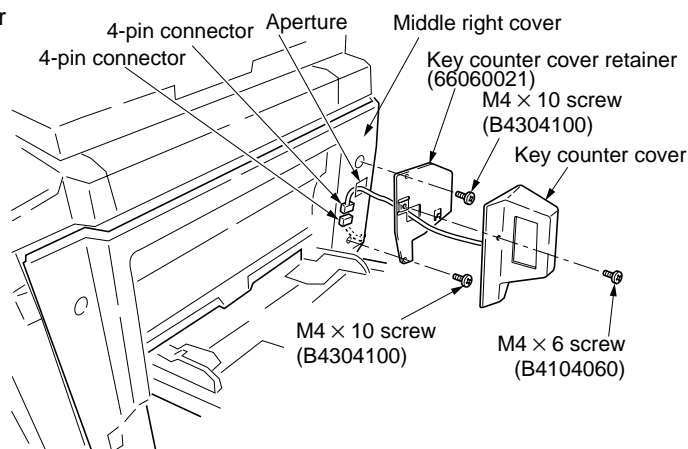


Figure 1-3-74

9. Insert the key counter into the key counter assembly.
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 when the key counter is pulled out.
14. Check that the counter counts up as copies are made.

1-3-8 Installing the cassette heater (option)

<Procedure>

1. Remove the five screws holding the rear cover and then the cover.
2. Remove the two screws securing the main PCB shield and open the main PCB shield.
3. Remove the four screws holding the large paper deck and then the deck.

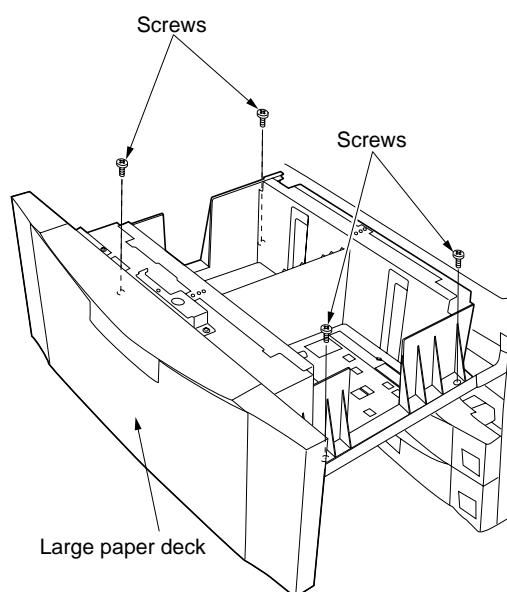


Figure 1-3-75

4. Pull the upper and lower cassettes out.
5. Fit the cassette heater using the tapes and then pass the wires through the clearance under the machine rear and let them out.

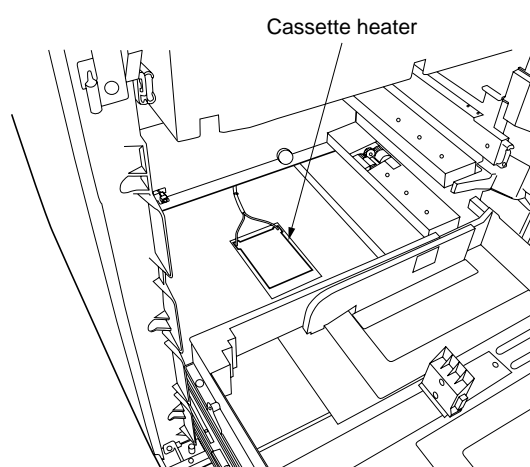


Figure 1-3-76

6. Remove the open connector from the 2-pin connector of the machine, and insert the 2-pin connector of the cassette heater into the 2-pin connector of the machine.
7. Secure the wires using the clamp.
8. Refit all the removed parts.

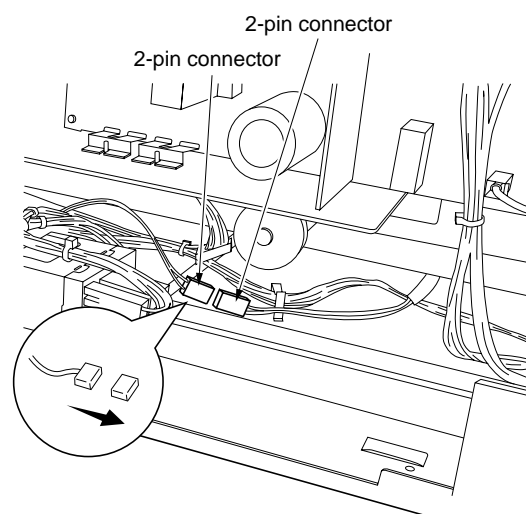


Figure 1-3-77

1-3-9 Installing the MMD host monitoring system device (option)

<Procedure>

1. Remove the two screws holding the signal cable cover and then the cover.

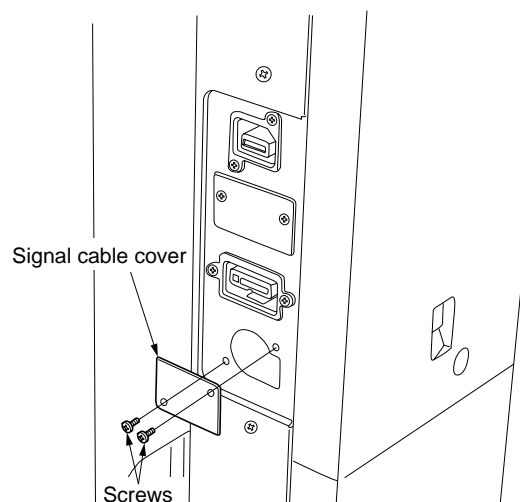


Figure 1-3-78

2. Remove the five screws securing the rear cover and then the cover.
3. Remove the two screws securing the main PCB shield and open the main PCB shield.
4. Pull the 10-pin connector out of the machine, remove the jumper.

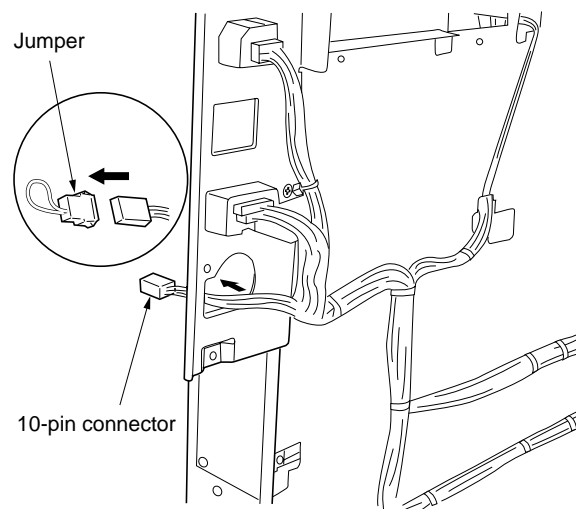


Figure 1-3-79

5. Close the main PCB shield and refit the main PCB shield with the two screws.
6. Refit the rear cover with the five screws.
7. Insert the 10-pin connector of the machine into the 10-pin connector of the signal cable. Secure the signal cable using the two screws removed in step 1.

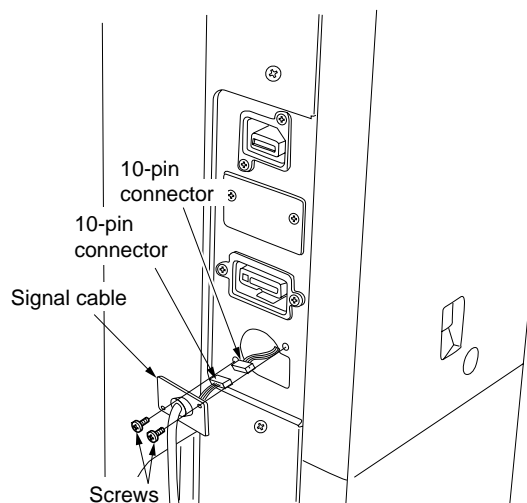


Figure 1-3-80

8. Fit the MMD host monitoring system device to the rear cover using the two bronze binding tap-tight screws M3 × 16.
9. Insert the connector of the signal cable into the connector of the MMD host monitoring system device, and tighten the two screws on the signal cable.

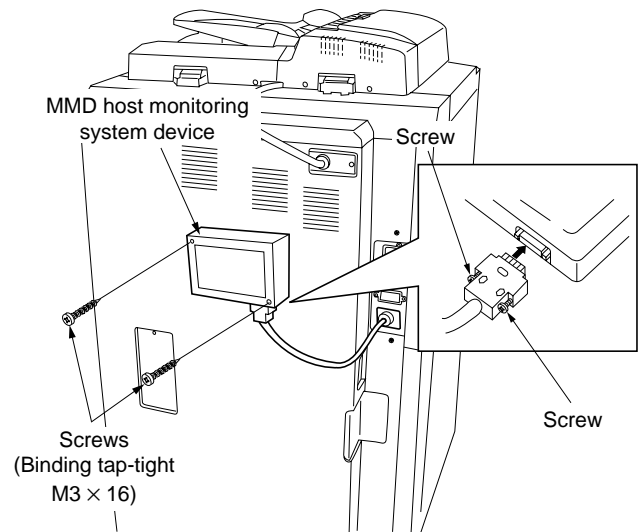


Figure 1-3-81

10. Insert one connector of the modular connector cable into the "LINE" jack on the MMD host monitoring system device and the other into a telephone jack.

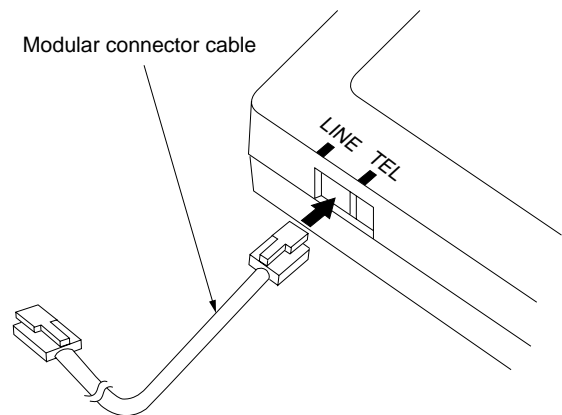
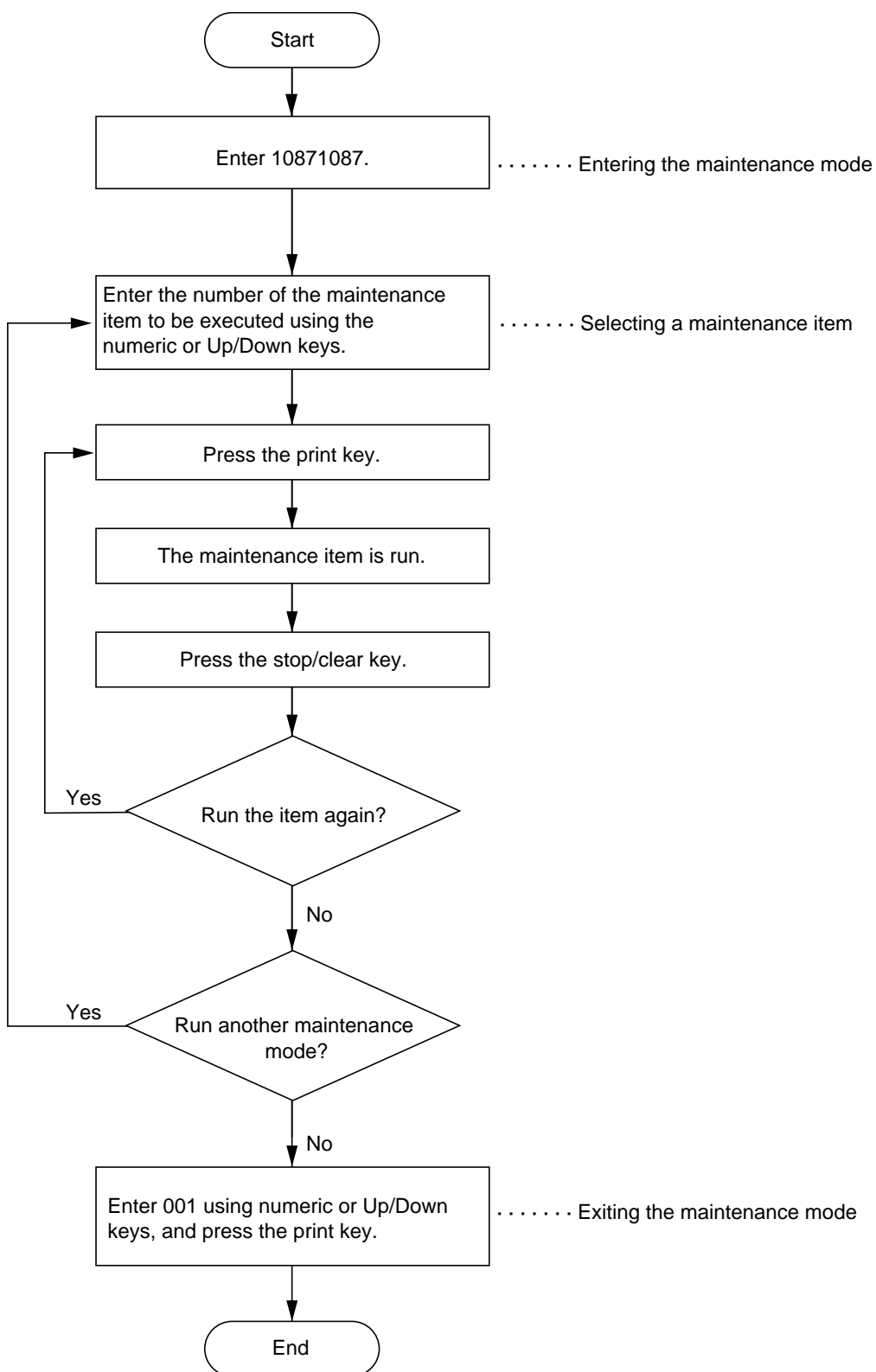


Figure 1-3-82

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



• Data setting

Data is changed by pressing the Up/Down keys, and the new data is set by pressing the start key. In a maintenance item where multiple items can be changed, the item to be changed is selected by pressing on it on the touch panel.

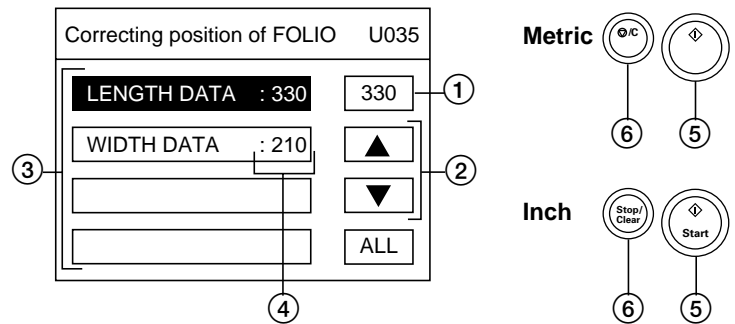


Figure 1-4-1

- ① Adjustment window Displays the data to be set.
② Up/Down keys Changes the setting.
③ Items Displays the selected item in reverse.
④ Current setting Displays the previously set data by pressing the start key.
⑤ Start key Sets the changed setting.
⑥ Stop/clear key Cancels the change.
⑦ All key Used to clear all data, such as when resetting a counter.

• Operation execution

The specified operations and auto adjustments are performed by pressing the start key. In a maintenance item where multiple operations can be performed, the item to be executed is selected by pressing on it on the touch panel.

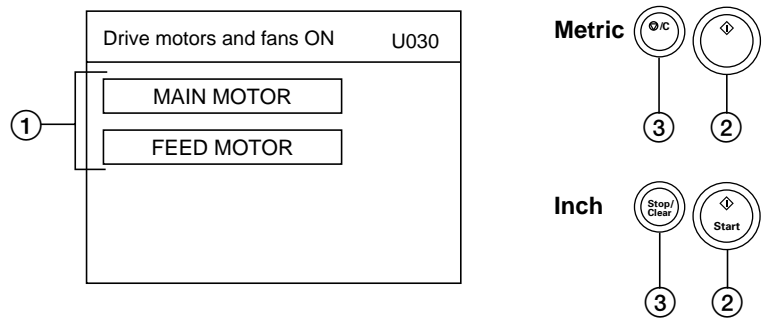


Figure 1-4-2

- ① Items Displays the selected item in reverse.
② Start key Starts operation.
③ Stop/clear key Stops operation.

• Interrupt copy mode

Outputting a test copy or VTC pattern is required in some maintenance items. Such an output is enabled by pressing the interrupt key to enter interrupt copy mode.

However, since this function is restricted depending on maintenance items, only outputting may be enabled, or a test copy even from an original may not be as good as that made in normal copy mode.

To return the screen from interrupt copy mode to maintenance mode, press the interrupt key again.

(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	—
	U008	Outputting and setting the machine information	—
	U019	Displaying the ROM version	—
Initialization	U020	Initializing all data	—
	U021	Initializing memories	—
	U022	Initializing backup data	—
	U024	Formatting the HDD	—
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 leading edge registration Adjusting leading edge registration (second face) Adjusting the center line of image printing	0 0 0
	U035	Setting folio size Length Width	330 210
	U036	Setting envelope size Length Width	242 162
	U037	Checking fan motor operation Optical section fan motor Cooling fan motor Fixing unit fan motor Main charger fan motor LSU fan motor Duplex fan motor Eject fan motor Blow fan motors 1 and 2	— — — — — — — — —
	U050	Setting the switchback drive Setting duplex forwarding clutch-off timing Setting duplex forwarding clutch-off timing (for 11" × 17" copy paper) Setting duplex reversing clutch-on timing Setting duplex reversing clutch-off timing	100 75 50 120
	U051	Adjusting the amount of slack in the paper before registration Cassette feed Bypass feed Duplex feed	+10 -10 +10
	U053	Performing fine adjustment of the motor speed Drive motor/paper conveying motor	5/5
Optical	U060	Adjusting the scanner input properties Text/text and photo/photo mode	12
	U061	Turning the exposure lamp on	—
	U063	Adjusting the shading position	0
	U065	Adjusting the scanner magnification Main scanning direction/auxiliary scanning direction	0/0
	U066	Adjusting the scanner leading edge registration	-2
	U067	Adjusting the scanner center line	-2
	U070	Adjusting the DF magnification	-10

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Optical	U071	Adjusting the DF scanning timing Adjusting the DF leading edge registration Adjusting the DF trailing edge registration	10 — 15
	U072	Adjusting the DF center line Center line for the simplex copy mode Center line for the front face in duplex copy mode Center line for the reverse face in duplex copy mode	— 8 8 7
	U073	Checking scanner operation	—
	U074	Adjusting the DF automatically	—
	U080	Adjusting exposure in toner economy mode	— 6
	U088	Setting the input filter (moiré reduction mode)	OFF
	U089	Outputting a PG pattern	—
	U091	Checking shading	—
	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient Text/text and photo/photo mode	0
	U099	Checking and setting the original size detection sensor	170/50/0/0
High voltage	U100	Setting the surface potential	160
	U101	Setting high voltages Transfer voltage	150/150
	U102	Setting the cleaning interval for the transfer charger	3
	U110	Checking/clearing the drum count	0
	U111	Checking/clearing the drum drive time	—
Developing	U130	Initial setting for the developer	—
	U131	Setting the toner sensor control voltage	128
	U132	Replenishing toner forcibly	—
	U135	Checking toner motor operation	—
	U136	Turning the toner level detection function on/off	ON
	U137	Checking the toner level detection sensor	—
	U155	Displaying the toner sensor output	—
	U156	Changing the toner control level Toner control level Toner empty level Toner control reference voltage for initial developer setting	128 30 102
	U157	Checking/clearing the developing drive time	0
Fixing and cleaning	U158	Checking/clearing the developing count	0
	U160	Applying toner to the cleaning blade	—
	U161	Setting the fixing control temperature Normal stabilization control temperature Primary stabilization temperature Secondary stabilization temperature Aging time after secondary stabilization	185 165 185 90
	U162	Stabilizing fixing forcibly	—
	U194	Setting the fixing web drive	30
	U196	Turning the fixing heater on	—
	U198	Setting the fixing phase control	ON (inch) OFF (metric)
Operation panel and support equipment	U200	Turning all LEDs on	—
	U201	Initializing the touch panel	—
	U202	Setting the MMD host monitoring system	—
	U203	Operating DF separately	—
	U204	Setting the presence or absence of a key card or key counter	OFF
	U206	Setting the presence or absence of the coin vender	OFF

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Operation panel and support equipment	U208	Setting the deck lift operation	Side
	U209	Setting date and time	—
	U238	Checking the operation of the mailbox solenoids and motors	—
	U239	Checking the mailbox switches	—
	U240	Checking the operation of the finisher	—
	U241	Checking the finisher switches	—
	U243	Checking the operation of the DF motors, clutches and solenoids	—
	U244	Checking the DF switches	—
	U245	Checking messages	—
	U247	Checking the operation of the side deck	—
	U248	Setting the paper eject device • Adjustment of the amount of slack in the paper in punch mode • Punch limit • Punch-hole scrap count • Booklet sticher stapling position adjustment • Mailbox operation check	0 75000 0 0 1
Mode setting	U250	Setting the maintenance cycle	300
	U251	Checking/clearing the maintenance count	0
	U252	Setting the destination	INCH
	U253	Switching between double and single counts	Double
	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 Number of copies after turning off of the toner level sensor before indicating toner empty Copy operation after toner empty detection	1000 Single, 5
	U260	Changing the copy count timing	EJECT
	U263	Setting DF copy ejection orientation	Face down
	U264	Setting date display order	Month-day-year (inch) Day-month-year (metric)
	U265	Setting OEM purchaser code	0
	U266	Setting the number of days after which to automatically delete documents	7
	U330	Sets the number of copies for switching the copy eject tray in the finisher	100
	U331	Switching the paper ejection mode	Face Up
	U332	Setting the size conversion factor	—
	U333	Setting the number of digits of ID-code	7 dignits (inch) 4 dignits (metric)
	U334	Setting the ejection method in the booklet sticher	1 BIN
	U335	Setting the drum heater control	ON 1
	U336	Setting the HDD type	0
	U337	Setting the paper size for the side deck	—
	U338	Setting the transmission capacity limit for e-mail	Little
	U340	Setting the job build mode	NOMAL
	U343	Switching between duplex/simplex copy mode	OFF
	U344	Setting preheat/energy saver mode	enagy star
	U345	Setting the value for maintenance due indication	0
	U347	Setting auto cassette size detection	ON (inch) OFF (metric)
	U348	Setting the copy density adjustment range	Special Area
	U350	Setting the ID-code error output	OFF

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Mode setting	U402	Adjusting margins in image printing	23/30/28/40/44
	U403	Adjusting margins for reading an original on the contact glass	4/6/6/6
	U404	Adjusting margins for DF original reading	4/8/4/6
	U407	Adjusting the printing timing for the original on the contact glass	0
Others	U901	Checking/clearing copy counts by paper feed locations	0
	U903	Checking/clearing the paper jam counts	0/0
	U904	Checking/clearing the service call counts	0/0
	U905	Checking/clearing counts by optional devices	0/0
	U906	Resetting partial operation control	—
	U907	Checking and resetting the count value on each ejection location	0/0/0
	U908	Checking the count value of the electronic counter	0
	U909	Checking/clearing the fixing web count	0
	U910	Clearing the black ratio data	—
	U911	Checking/clearing copy counts by paper sizes	0
	U990	Checking/clearing the time for the exposure lamp to light	0
	U991	Checking/clearing the scanner count	0
	U992	Checking/clearing the printer count	0

* 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 modes, and paper jam and service call occurrences.</p> <p>Purpose To check the current setting of the maintenance modes, or paper jam or service call occurrences.</p> <p>Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance modes to reenter the settings after initialization or replacement.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. 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"> Press the start key or the interrupt key. The interrupt copy mode is entered and a list is output. When A4/11" × 8½" 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 return 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>								
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 digit) using the numeric keys. To enter symbols such as hyphens and parentheses, select as required from the symbols displayed on the touch panel as shown below. To move the cursor, press either of the arrows in the bottom row. <table border="1"> <tbody> <tr> <td>*</td><td>#</td></tr> <tr> <td>(</td><td>)</td></tr> <tr> <td>—</td><td>(Space)</td></tr> <tr> <td>←</td><td>→</td></tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The phone number is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit the maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	*	#	()	—	(Space)	←	→
*	#								
()								
—	(Space)								
←	→								

Maintenance item No.	Description						
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 ① Enter the last six digits of the machine number using the numeric key. Do not enter the first two digits, 3 and 7. ② Press the start key. The machine number is set.</p> <p>Completion To exit the maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						
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 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.</p> <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 SRDF operate (continuous operation).</td></tr> </tbody> </table> <p> 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 modes • 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 key </p> <p> ⑤ To control the paper feed pulley, remove all the paper in the cassettes, or the cassettes. 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> <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 SRDF operate (continuous operation).
Display	Operation						
PPC	Only the copier operates.						
PPC + DF	Both the copier and SRDF operate (continuous operation).						

Maintenance item No.	Description										
U008	<p>Outputting and setting the machine information</p> <p>Description Outputs the machine information report and sets the machine installation date.</p> <p>Purpose To save the data of the machine installation date and total counter value when installing the machine.</p> <p>Start Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <tr> <th>Display</th><th>Operation</th></tr> <tr> <td>OUT PUT</td><td>Outputs the machine information report.</td></tr> <tr> <td>SET UP</td><td>Sets the machine installation date.</td></tr> </table> <p>Method to output the machine information report</p> <ol style="list-style-type: none"> ① Select the item for outputting the machine information report. ② Press the start key to output the report. <p>Method to set the machine installation date</p> <ol style="list-style-type: none"> ① Select the item for setting the machine installation date. ② Press the start key to save the data of the installation date and total counter value at the time of installation. ③ Press the stop/clear key to return to the screen for selecting an item. <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	OUT PUT	Outputs the machine information report.	SET UP	Sets the machine installation date.				
Display	Operation										
OUT PUT	Outputs the machine information report.										
SET UP	Sets the machine installation date.										
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</p> <ol style="list-style-type: none"> ① Press the start key. The last six digits of the part number indicating the ROM version are displayed. <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>MAIN</td><td>Main-Engine ROM</td></tr> <tr> <td>MMI</td><td>Scanner MMI</td></tr> <tr> <td>FONT</td><td>Font ROM</td></tr> <tr> <td>MEM1</td><td>Memory copy ROM IC</td></tr> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN	Main-Engine ROM	MMI	Scanner MMI	FONT	Font ROM	MEM1	Memory copy ROM IC
Display	Description										
MAIN	Main-Engine ROM										
MMI	Scanner MMI										
FONT	Font ROM										
MEM1	Memory copy ROM IC										
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 USA models are set. <p>When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on.</p> <p>Completion To exit the maintenance mode without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>										

Maintenance item No.	Description
U021	<p>Initializing memories</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 code detection and modes. 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. <p>When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on.</p> <p>Completion To exit the maintenance mode without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U022	<p>Initializing backup data</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. EXECUTE is displayed. 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 and U991) is initialized. <p>Completion To exit the maintenance mode, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U024	<p>Formatting the HDD</p> <p>Description Formats the HDD.</p> <p>Purpose Used to initialize the HDD when it is replaced in the field.</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. The initialization of the HDD starts. The progress of the initialization is indicated in percentage (0 to 100%). <p>When initialization is complete, the result is displayed.</p> ④ Press the stop/clear key. The screen for selecting a maintenance item No. is displayed. <p>Completion To exit the maintenance mode without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

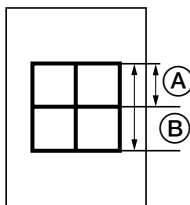
Maintenance item No.	Description																																
U030	<p>Checking motor operation</p> <p>Description Drives each motor.</p> <p>Purpose To check the operation of each motor.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. 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>MAIN MOTOR</td><td>The drive motor operates and developing bias is applied. The paper conveying motor operates.</td></tr> <tr> <td>FEED MOTOR</td><td>The paper feed motor operates.</td></tr> </tbody> </table> <ol style="list-style-type: none"> 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	MAIN MOTOR	The drive motor operates and developing bias is applied. The paper conveying motor operates.	FEED MOTOR	The paper feed motor operates.																										
Display	Operation																																
MAIN MOTOR	The drive motor operates and developing bias is applied. The paper conveying motor operates.																																
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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"> Press the start key. A list of the switches, the on-off status of which can be checked, are displayed. 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>FEEDA SW</td><td>Paper feed switch 1 (PFSW1)</td></tr> <tr><td>FEEDB SW</td><td>Paper feed switch 2 (PFSW2)</td></tr> <tr><td>FEEDC SW</td><td>Paper feed switch 3 (PFSW3)</td></tr> <tr><td>FEEDD SW</td><td>Paper feed switch 4 (PFSW4)</td></tr> <tr><td>FEEDE SW</td><td>Paper feed switch 5 (PFSW5)</td></tr> <tr><td>FEED SW</td><td>Feed switch (FSW)</td></tr> <tr><td>R SW</td><td>Registration switch (RSW)</td></tr> <tr><td>EJE SW</td><td>Eject switch (ESW)</td></tr> <tr><td>BRA SW</td><td>Feedshift switch (FSSW)</td></tr> <tr><td>REV SW</td><td>Switchback eject switch (SBESW)</td></tr> <tr><td>BRA3 SW</td><td>Duplex feedshift switch (DUPFSSW)</td></tr> <tr><td>DUP PESW</td><td>Duplex jam detection switch (DUPJSW)</td></tr> <tr><td>DUP1 SW</td><td>Duplex paper conveying switch 1 (DUPPCSW1)</td></tr> <tr><td>DUP2 SW</td><td>Duplex paper conveying switch 2 (DUPPCSW2)</td></tr> <tr><td>DUP3 SW</td><td>Duplex eject switch (DUPESW)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	FEEDA SW	Paper feed switch 1 (PFSW1)	FEEDB SW	Paper feed switch 2 (PFSW2)	FEEDC SW	Paper feed switch 3 (PFSW3)	FEEDD SW	Paper feed switch 4 (PFSW4)	FEEDE SW	Paper feed switch 5 (PFSW5)	FEED SW	Feed switch (FSW)	R SW	Registration switch (RSW)	EJE SW	Eject switch (ESW)	BRA SW	Feedshift switch (FSSW)	REV SW	Switchback eject switch (SBESW)	BRA3 SW	Duplex feedshift switch (DUPFSSW)	DUP PESW	Duplex jam detection switch (DUPJSW)	DUP1 SW	Duplex paper conveying switch 1 (DUPPCSW1)	DUP2 SW	Duplex paper conveying switch 2 (DUPPCSW2)	DUP3 SW	Duplex eject switch (DUPESW)
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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>SB FEED</td><td>Bypass paper feed clutch (BYPPFCL)</td></tr> <tr> <td>SB LIFT</td><td>Bypass lift clutch (BYPLCL)</td></tr> <tr> <td>PF D</td><td>Upper paper feed clutch (PFCL-U)</td></tr> <tr> <td>PF E</td><td>Lower paper feed clutch (PFCL-L)</td></tr> <tr> <td>LCF BCL</td><td>Large paper deck conveying clutch (LPDCCL)</td></tr> <tr> <td>LCF P1CL</td><td>Large paper deck paper feed clutch 1 (LPDPFCL1)</td></tr> <tr> <td>LCF P2CL</td><td>Large paper deck paper feed clutch 2 (LPDPFCL2)</td></tr> <tr> <td>FEED B</td><td>Feed clutch 2 (FCL2)</td></tr> <tr> <td>FEED C</td><td>Feed clutch 3 (FCL3)</td></tr> <tr> <td>FEED D</td><td>Feed clutch 4 (FCL4)</td></tr> <tr> <td>FEED E</td><td>Feed clutch 5 (FCL5)</td></tr> <tr> <td>FEED</td><td>Feed clutch 1 (FCL1)</td></tr> </tbody> </table> <div style="text-align: center; margin: 10px 0;">   </div> <table border="1"> <thead> <tr> <th>Display</th><th>Clutches</th></tr> </thead> <tbody> <tr> <td>REGIST</td><td>Registration clutch (RCL)</td></tr> <tr> <td>DUP FWD</td><td>Duplex forwarding clutch (DUPFWDCL)</td></tr> <tr> <td>DUP REV</td><td>Duplex reversing clutch (DUPREVCL)</td></tr> <tr> <td>TC BELT</td><td>Transfer charger belt release clutch (TCBRCL)</td></tr> </tbody> </table> <ol style="list-style-type: none"> ③ To turn each clutch on while a motor is driving, press the interrupt key before selecting the clutch. The drive motor, paper feed motor and paper conveying motor turn on, and the selected clutch remains on until the selected item is pressed. If the upper or lower paper feed clutch is turned on while a motor is driving, paper is conveyed by the rotation of the paper feed pulley, resulting in a paper jam. Be sure to remove the paper cassettes before turning either of these clutches on. ④ To stop the motor drive, press the interrupt copy key. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Clutches	SB FEED	Bypass paper feed clutch (BYPPFCL)	SB LIFT	Bypass lift clutch (BYPLCL)	PF D	Upper paper feed clutch (PFCL-U)	PF E	Lower paper feed clutch (PFCL-L)	LCF BCL	Large paper deck conveying clutch (LPDCCL)	LCF P1CL	Large paper deck paper feed clutch 1 (LPDPFCL1)	LCF P2CL	Large paper deck paper feed clutch 2 (LPDPFCL2)	FEED B	Feed clutch 2 (FCL2)	FEED C	Feed clutch 3 (FCL3)	FEED D	Feed clutch 4 (FCL4)	FEED E	Feed clutch 5 (FCL5)	FEED	Feed clutch 1 (FCL1)	Display	Clutches	REGIST	Registration clutch (RCL)	DUP FWD	Duplex forwarding clutch (DUPFWDCL)	DUP REV	Duplex reversing clutch (DUPREVCL)	TC BELT	Transfer charger belt release clutch (TCBRCL)
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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. 																																				

Maintenance item No.	Description														
U033	<table><tr><th>Display</th><th>Solenoids</th></tr><tr><td>BRANCH</td><td>Feedshift solenoid (FSSOL)</td></tr><tr><td>DUP FS</td><td>Duplex eject switching solenoid (DUPESSOL)</td></tr><tr><td>DUP PR</td><td>Duplex pressure release solenoid (DUPPRSOL)</td></tr><tr><td>FIX WEB</td><td>Fixing web solenoid (FWEBSOL)</td></tr><tr><td colspan="2">-----</td></tr><tr><td>MSW OFF</td><td>The main switch turns off.</td></tr></table> <p>MSW OFF is selected when the operation of the main switch is checked in auto shutoff mode.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Solenoids	BRANCH	Feedshift solenoid (FSSOL)	DUP FS	Duplex eject switching solenoid (DUPESSOL)	DUP PR	Duplex pressure release solenoid (DUPPRSOL)	FIX WEB	Fixing web solenoid (FWEBSOL)	-----		MSW OFF	The main switch turns off.
Display	Solenoids														
BRANCH	Feedshift solenoid (FSSOL)														
DUP FS	Duplex eject switching solenoid (DUPESSOL)														
DUP PR	Duplex pressure release solenoid (DUPPRSOL)														
FIX WEB	Fixing web solenoid (FWEBSOL)														

MSW OFF	The main switch turns off.														
U034	<p>Adjusting the print start timing</p> <p>Adjustment See pages 1-6-17 and 19.</p>														
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> <p>① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window.</p> <p>② Change the setting using the Up/Down keys.</p> <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>220 to 220 mm</td><td>210</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	Setting	Setting range	Initial setting	LENGTH DATA	Length	330 to 356 mm	330	WIDTH DATA	Width	220 to 220 mm	210		
Display	Setting	Setting range	Initial setting												
LENGTH DATA	Length	330 to 356 mm	330												
WIDTH DATA	Width	220 to 220 mm	210												
U036	<p>Setting envelope size</p> <p>Description Changes the image area for printing onto an envelope when the optional printer unit is installed.</p> <p>Purpose To prevent the image at the trailing edge, or right or left side of the paper from not being printed by setting the actual size of the envelop used.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window.</p> <p>② Change the setting using the Up/Down keys.</p> <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>162 to 242 mm</td><td>242</td></tr><tr><td>WIDTH DATA</td><td>Width</td><td>98 to 162 mm</td><td>162</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	Setting	Setting range	Initial setting	LENGTH DATA	Length	162 to 242 mm	242	WIDTH DATA	Width	98 to 162 mm	162		
Display	Setting	Setting range	Initial setting												
LENGTH DATA	Length	162 to 242 mm	242												
WIDTH DATA	Width	98 to 162 mm	162												

Maintenance item No.	Description																		
U037	<p>Checking fan motor operation</p> <p>Description Energizes fan motors to turn them on.</p> <p>Purpose To check the operation of each fan motor.</p> <p>Method ① Press the start key. The screen for selecting an item is displayed. ② Select the fan motor to be driven. The selected fan motor is displayed in reverse, and operation starts.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Fan motor</th></tr> </thead> <tbody> <tr> <td>SCANNER</td><td>Optical section fan motor</td></tr> <tr> <td>COOL</td><td>Cooling fan motor</td></tr> <tr> <td>FIXING</td><td>Fixing unit fan motor</td></tr> <tr> <td>MC.</td><td>Main charger fan motor</td></tr> <tr> <td>LSU</td><td>LSU fan motor</td></tr> <tr> <td>DUPLEX</td><td>Duplex fan motor</td></tr> <tr> <td>EJECT</td><td>Eject fan motor</td></tr> <tr> <td>BLOW</td><td>Blow fan motors 1 and 2</td></tr> </tbody> </table> <p>③ To stop operation, press the stop/clear key.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Fan motor	SCANNER	Optical section fan motor	COOL	Cooling fan motor	FIXING	Fixing unit fan motor	MC.	Main charger fan motor	LSU	LSU fan motor	DUPLEX	Duplex fan motor	EJECT	Eject fan motor	BLOW	Blow fan motors 1 and 2
Display	Fan motor																		
SCANNER	Optical section fan motor																		
COOL	Cooling fan motor																		
FIXING	Fixing unit fan motor																		
MC.	Main charger fan motor																		
LSU	LSU fan motor																		
DUPLEX	Duplex fan motor																		
EJECT	Eject fan motor																		
BLOW	Blow fan motors 1 and 2																		
U050	<p>Setting the switchback drive</p> <p>Adjustment See page 1-6-68.</p>																		
U051	<p>Adjusting the amount of slack in the paper before registration</p> <p>Adjustment See page 1-6-21.</p>																		

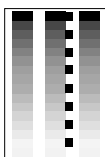
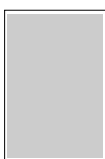
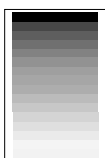
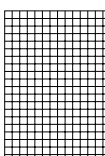
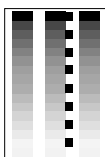
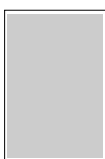
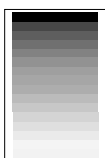
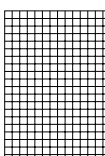
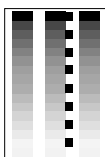
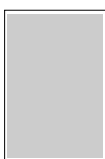
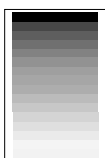
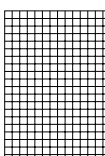
Maintenance item No.	Description												
U053	<p>Performing fine adjustment of the motor speed</p> <p>Description Performs fine adjustment of the speeds of the drive motor and paper conveying motor.</p> <p>Purpose Used to adjust the speed of the respective motors when the magnification in the auxiliary scanning direction is not correct after the motor is replaced.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window.</p> <p>② Change the setting using the Up/Down keys.</p> <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>5</td></tr><tr><td>CONV MOTOR</td><td>Paper conveying motor speed adjustment</td><td>0 to 14</td><td>5</td></tr></table> <p>Increasing the setting makes the motor speed faster and the image longer, and decreasing it makes the speed slower and the image shorter.</p> <p>When the speed of a motor is changed, that of the other motor will also change to the same value.</p> <p>③ Press the start key. The value is set.</p> <p>Interrupt copy mode While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode.</p> <p>Correct values for an A3/11" x 17" output are:</p> <p>Ⓐ = 150 mm</p> <p>Ⓑ = 300 mm</p> <div></div> <p>Figure 1-4-3</p> <p>Adjustment</p> <p>① Output an A3/11" x 17" VTC pattern in interrupt mode.</p> <p>② Measure Ⓐ and Ⓑ on the VTC pattern (Figure 1-4-3), and perform the following adjustments if they are different from the correct sizes:</p> <p>Ⓐ: Drive motor adjustment</p> <p>Ⓑ: Paper conveying motor adjustment</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	MAIN MOTOR	Drive motor speed adjustment	0 to 14	5	CONV MOTOR	Paper conveying motor speed adjustment	0 to 14	5
Display	Description	Setting range	Initial setting										
MAIN MOTOR	Drive motor speed adjustment	0 to 14	5										
CONV MOTOR	Paper conveying motor speed adjustment	0 to 14	5										

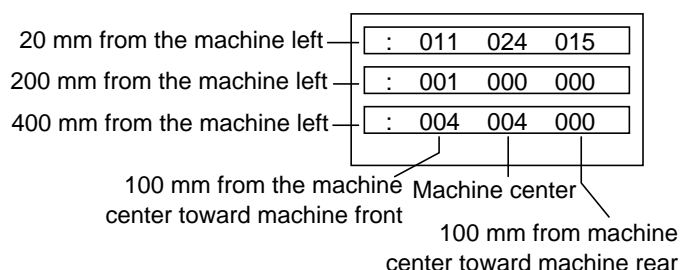
Maintenance item No.	Description								
U060	<p>Adjusting the scanner input properties</p> <p>Description Adjusts the image scanning density in text, text and photo, or photo mode.</p> <p>Purpose Used when the entire image appears too dark or light in the specified mode.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Change the setting using the Up/Down keys.</p> <table><tr><th>Display</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>IN γ adj:00</td><td>1 to 23</td><td>12</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. The screen for selecting a maintenance item No. is displayed.</p> <p>Supplement 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)• Auto and manual exposure set in the copy default item of the copier management mode	Display	Setting range	Initial setting	IN γ adj:00	1 to 23	12		
Display	Setting range	Initial setting							
IN γ adj:00	1 to 23	12							
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 selecting an item 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>								
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 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>-8 to +2</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. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Shading position	-8 to +2	0	0.17 mm
Description	Setting range	Initial setting	Change in value per step						
Shading position	-8 to +2	0	0.17 mm						

Maintenance item No.	Description																																												
U065	Adjusting the scanner magnification Adjustment See pages 1-6-35 and 36.																																												
U066	Adjusting the scanner leading edge registration Adjustment See page 1-6-38.																																												
U067	Adjusting the scanner center line Adjustment See page 1-6-37.																																												
U070	Adjusting the DF magnification Adjustment See page 1-6-70.																																												
U071	Adjusting the DF scanning timing Adjustment See pages 1-6-72 and 73.																																												
U072	Adjusting the DF center line Adjustment See page 1-6-71.																																												
U073	Checking scanner operation Description Simulates the scanner operation under arbitrary conditions. Purpose To check scanner operation. Method ① Press the start key. The screen for selecting an item is displayed. ② Select the item to be changed. The selected item is displayed in reverse. ③ Change the setting using the Up/Down keys. <table border="1"><thead><tr><th>Display</th><th>Operating conditions</th><th>Setting range</th></tr></thead><tbody><tr><td>ZOOM</td><td>ZOOM Magnification</td><td>25 to 400%</td></tr><tr><td>SIZE</td><td>Original size</td><td>See below.</td></tr><tr><td>LAMP</td><td>LAMP on and off of the exposure lamp</td><td>0 (off) or 1 (on)</td></tr></tbody></table> <p>Original sizes for each setting in SIZE</p> <table border="1"><thead><tr><th>Setting</th><th>Original size</th><th>Setting</th><th>Original size</th></tr></thead><tbody><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>18</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></tbody></table> ④ Press the start key. Scanning starts under the selected conditions. ⑤ To stop operation, press the stop/clear key. Completion Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.	Display	Operating conditions	Setting range	ZOOM	ZOOM Magnification	25 to 400%	SIZE	Original size	See below.	LAMP	LAMP on and off of the exposure lamp	0 (off) or 1 (on)	Setting	Original size	Setting	Original size	8	A4	42	A5R	9	B5	47	Folio	18	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																																											
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41	B5R	58	5½" × 8½"																																										

Maintenance item No.	Description																								
U074	<p>Adjusting the DF automatically</p> <p>Description Makes auto adjustments for the DF scanning section given below using the specified original.</p> <ul style="list-style-type: none"> • Adjusting the DF magnification (U070) • Adjusting the DF scanning timing (U071) • Adjusting the DF center line (U072) • Adjusting margins for DF original reading (U404) <p>When this maintenance item is performed, the settings in U070, U071, U072 and U404 are also changed.</p> <p>Purpose Used to make auto adjustments for the DF scanning section.</p> <p>Method</p> <ol style="list-style-type: none"> ① Place the specified original (P/N:2AC68241) on the DF. ② Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>CONVEY SPEED</td><td>DF magnification in the auxiliary scanning direction</td></tr> <tr> <td>LEAD EDGE ADJ</td><td>DF leading edge registration</td></tr> <tr> <td>TRAIL EDGE ADJ</td><td>DF trailing edge registration</td></tr> <tr> <td>ADJUST DATA</td><td>DF original center line</td></tr> <tr> <td> DATA (simplex)</td><td></td></tr> <tr> <td> DATA (duplex, front)</td><td></td></tr> <tr> <td> DATA (duplex, back)</td><td></td></tr> <tr> <td>DF A MARGIN.</td><td>DF scanning margin (A side)</td></tr> <tr> <td>DF B MARGIN.</td><td>DF scanning margin (B side)</td></tr> <tr> <td>DF C MARGIN.</td><td>DF scanning margin (C side)</td></tr> <tr> <td>DF D MARGIN.</td><td>DF scanning margin (D side)</td></tr> </tbody> </table> <p>If a problem occurs during auto adjustment, 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 is displayed.</p> <p>If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.</p>	Display	Description	CONVEY SPEED	DF magnification in the auxiliary scanning direction	LEAD EDGE ADJ	DF leading edge registration	TRAIL EDGE ADJ	DF trailing edge registration	ADJUST DATA	DF original center line	DATA (simplex)		DATA (duplex, front)		DATA (duplex, back)		DF A MARGIN.	DF scanning margin (A side)	DF B MARGIN.	DF scanning margin (B side)	DF C MARGIN.	DF scanning margin (C side)	DF D MARGIN.	DF scanning margin (D side)
Display	Description																								
CONVEY SPEED	DF magnification in the auxiliary scanning direction																								
LEAD EDGE ADJ	DF leading edge registration																								
TRAIL EDGE ADJ	DF trailing edge registration																								
ADJUST DATA	DF original center line																								
DATA (simplex)																									
DATA (duplex, front)																									
DATA (duplex, back)																									
DF A MARGIN.	DF scanning margin (A side)																								
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DF C MARGIN.	DF scanning margin (C side)																								
DF D MARGIN.	DF scanning margin (D side)																								

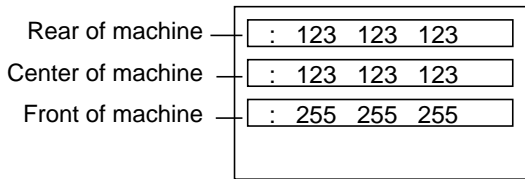
Maintenance item No.	Description						
U080	<p>Adjusting exposure in toner economy mode</p> <p>Description Adjusts the image density in the eco-print mode.</p> <p>Purpose To increase or decrease the image density in the eco-print mode.</p> <p>Method Press the start key. The screen for execution is displayed.</p> <p>Setting ① Adjust the preset value using the Up/Down keys.</p> <p>* Since this value is related to the automatic exposure adjustment in the copy initial setting mode, ensure that the exposure step of the automatic exposure is at the center before adjusting.</p> <table><tr><th>Display</th><th>Setting range</th><th>Initial value</th></tr><tr><td>Exposure in toner economy mode</td><td>-12 to 0</td><td>-6</td></tr></table> <p>② Press the start key. The setting is set, and the screen for maintenance item No. is displayed.</p> <p>Completion Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Setting range	Initial value	Exposure in toner economy mode	-12 to 0	-6
Display	Setting range	Initial value					
Exposure in toner economy mode	-12 to 0	-6					
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</p> <p>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 the maintenance mode 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						

Maintenance item No.	Description																					
U089	<p>Outputting a PG pattern</p> <p>Description Selects and outputs the 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 PG pattern.</p> <p>Method</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select the PG pattern to be output.</p> <table><tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr><tr><td>GRAYSCALE</td><td></td><td>To check the laser scanner unit engine output characteristics.</td></tr><tr><td>MONO-LEVEL</td><td></td><td>To check the drum quality.</td></tr><tr><td>256-LEVEL</td><td></td><td>To check resolution reproducibility in printing.</td></tr><tr><td>1 DOT-LINE</td><td></td><td>To check fine line reproducibility. To adjust the position of the laser scanner unit (lateral squareness)</td></tr></table> <p>③ To change the output conditions for MONO-LEVEL, change the setting using The Up/Down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Output conditions for MONO-LEVEL</td><td>0 to 255</td><td>0</td></tr></table> <p>Increasing the setting makes the density higher, and decreasing it makes the density lower. Entirely white paper is output when the setting is 0, and entirely black paper is output when it is 255.</p> <p>④ Press the interrupt key. The screen for copy mode is displayed.</p> <p>⑤ Press the start key. A PG pattern is output.</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	PG pattern to be output	Purpose	GRAYSCALE		To check the laser scanner unit engine output characteristics.	MONO-LEVEL		To check the drum quality.	256-LEVEL		To check resolution reproducibility in printing.	1 DOT-LINE		To check fine line reproducibility. To adjust the position of the laser scanner unit (lateral squareness)	Description	Setting range	Initial setting	Output conditions for MONO-LEVEL	0 to 255	0
Display	PG pattern to be output	Purpose																				
GRAYSCALE		To check the laser scanner unit engine output characteristics.																				
MONO-LEVEL		To check the drum quality.																				
256-LEVEL		To check resolution reproducibility in printing.																				
1 DOT-LINE		To check fine line reproducibility. To adjust the position of the laser scanner unit (lateral squareness)																				
Description	Setting range	Initial setting																				
Output conditions for MONO-LEVEL	0 to 255	0																				

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 on the touch panel.</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.</p> <p>Also to check the causes for a white or black line appearing longitudinally.</p> <p>Method</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select the item to be operated. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Operation</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> <p>③ Press the start key. Operation starts.</p> <p>Scanning is performed under the selected conditions and the result is displayed.</p> <p>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.</p> <p>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).</p> <p>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.</p>  <p>Figure 1-4-4</p> <p>④ Press the stop/clear key. The screen for selecting an item is displayed.</p> <p>Completion Press the stop/clear key. The screen for entering a maintenance item is displayed.</p>	Display	Operation	SHD BEFORE	Performs scanning before shading and displays the result.	SHD AFTER	Performs scanning after shading and displays the result.
Display	Operation						
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 magnification in the main scanning direction (U065) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) • Adjusting margins for reading an original on the contact glass (U403) <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: 2AC68241) 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"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SCAN CENTER ADJ</td><td>Scanner center line</td></tr> <tr> <td>MAIN SCAN ADJ</td><td>Scanner magnification in the main scanning direction</td></tr> <tr> <td>SCAN TIMING ADJ</td><td>Scanner leading registration</td></tr> <tr> <td>SUB SCAN ADJ</td><td>Scanner magnification in the auxiliary direction</td></tr> <tr> <td>SCAN A MARGIN</td><td>Scanner reading margin (A side)</td></tr> <tr> <td>SCAN B MARGIN</td><td>Scanner reading margin (B side)</td></tr> <tr> <td>SCAN C MARGIN</td><td>Scanner reading margin (C side)</td></tr> <tr> <td>SCAN D MARGIN</td><td>Scanner reading margin (D side)</td></tr> </tbody> </table> <p>If a problem occurs during auto adjustment, 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 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 ADJ	Scanner center line	MAIN SCAN ADJ	Scanner magnification in the main scanning direction	SCAN TIMING ADJ	Scanner leading registration	SUB SCAN ADJ	Scanner magnification in the auxiliary direction	SCAN A MARGIN	Scanner reading margin (A side)	SCAN B MARGIN	Scanner reading margin (B side)	SCAN C MARGIN	Scanner reading margin (C side)	SCAN D MARGIN	Scanner reading margin (D side)
Display	Description																		
SCAN CENTER ADJ	Scanner center line																		
MAIN SCAN ADJ	Scanner magnification in the main scanning direction																		
SCAN TIMING ADJ	Scanner leading registration																		
SUB SCAN ADJ	Scanner magnification in the auxiliary direction																		
SCAN A MARGIN	Scanner reading margin (A side)																		
SCAN B MARGIN	Scanner reading margin (B side)																		
SCAN C MARGIN	Scanner reading margin (C side)																		
SCAN D MARGIN	Scanner reading margin (D side)																		

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).</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 ① Press the start key. The screen for selecting an item is displayed. ② Select the image mode to be adjusted. The screen for the selected item is displayed.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>TEXT</td><td>Density in text mode</td></tr><tr><td>MIXED</td><td>Density in text and photo mode</td></tr><tr><td>PHOTO</td><td>Density in photo mode</td></tr></table> <p>Setting ① Select the item to be adjusted. The selected item is displayed in reverse and the current setting is displayed in the adjustment window. ② Adjust the setting using the Up/Down keys.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DARKER</td><td>Change in density when manual density is set dark</td><td>0 to 3</td><td>0</td></tr><tr><td>LIGHTER</td><td>Change in density when manual density is set light</td><td>0 to 3</td><td>0</td></tr></table> <p>Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.</p> <p>Figure 1-4-5 Exposure density gradient</p> <p>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> <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	TEXT	Density in text mode	MIXED	Density in text and photo mode	PHOTO	Density in photo mode	Display	Description	Setting range	Initial setting	DARKER	Change in density when manual density is set dark	0 to 3	0	LIGHTER	Change in density when manual density is set light	0 to 3	0
Display	Description																				
TEXT	Density in text mode																				
MIXED	Density in text and photo mode																				
PHOTO	Density in photo mode																				
Display	Description	Setting range	Initial setting																		
DARKER	Change in density when manual density is set dark	0 to 3	0																		
LIGHTER	Change in density when manual density is set light	0 to 3	0																		

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. <p>* The screen for executing each item is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <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> </tbody> </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 style="text-align: center;">  </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 border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>LEVEL</td><td>Detection sensor threshold value</td></tr> <tr> <td>WAIT TIME</td><td>Original size judgment time*</td></tr> <tr> <td>ORIGINAL AREA</td><td>Original size detection position display (mm)</td></tr> <tr> <td>SIZE</td><td>Detected original size display</td></tr> </tbody> </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 Up/Down keys. <p>* A larger value increases the sensor sensitivity, and a smaller value decreases it.</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>Method to set the original size judgment time</p> <ol style="list-style-type: none"> ① Adjust the preset value using the Up/Down keys. <p>* A larger value increases the original size judgment time, and a smaller value decreases it.</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 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	LEVEL	Detection sensor threshold value	WAIT TIME	Original size judgment time*	ORIGINAL AREA	Original size detection position display (mm)	SIZE	Detected original size display
Display	Description																		
DATA	Displaying detection sensor transmission data																		
B/W LEVEL	Setting detection sensor threshold value																		
	Setting original size judgment time																		
Display	Description																		
LEVEL	Detection sensor threshold value																		
WAIT TIME	Original size judgment time*																		
ORIGINAL AREA	Original size detection position display (mm)																		
SIZE	Detected original size display																		

Maintenance item No.	Description																
U100	<p>Setting the surface potential</p> <p>Description Changes the surface potential by changing the grid control voltage. Also performs main charging.</p> <p>Purpose To set the surface potential or check main charging. Also used when reentering data after replacing the backup RAM or initializing the set data.</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>DSP DATA</td><td>Changing the grid control voltage</td></tr><tr><td>MC ON</td><td>Turning the main charger on</td></tr><tr><td>MC ON/OFF</td><td>Turning the main charger on and off</td></tr><tr><td>LASER ON/OFF</td><td>Turning the main charger on and the laser scanner unit on and off</td></tr></table> <p>Method for main charger output</p> <p>① Select the main charger output on the screen for selecting an item: select one from MC ON, MC ON/OFF or LASER ON/OFF on the touch panel. The selected operation starts.</p> <p>② To stop operation, press the stop/clear key.</p> <p>Setting the grid control voltage</p> <p>① Press the DSP DATA on the touch panel of the screen for selecting an item.</p> <p>② Change the setting using the Up/Down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Grid control voltage</td><td>77 to 230</td><td>160</td></tr></table> <p>Increasing the setting makes the surface potential higher, and decreasing it makes the potential lower. Change in value per step: approximately 3.6 V</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 selecting an item when main charger output stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	DSP DATA	Changing the grid control voltage	MC ON	Turning the main charger on	MC ON/OFF	Turning the main charger on and off	LASER ON/OFF	Turning the main charger on and the laser scanner unit on and off	Description	Setting range	Initial setting	Grid control voltage	77 to 230	160
Display	Description																
DSP DATA	Changing the grid control voltage																
MC ON	Turning the main charger on																
MC ON/OFF	Turning the main charger on and off																
LASER ON/OFF	Turning the main charger on and the laser scanner unit on and off																
Description	Setting range	Initial setting															
Grid control voltage	77 to 230	160															

Maintenance item No.	Description																				
U101	<p>Setting high voltages</p> <p>Description Changes the transfer voltage by changing the transfer control voltage. Also checks the transfer output voltage.</p> <p>Purpose To check and change high voltages other than the main charger voltage.</p> <p>Start</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select an item to be set or checked. The screen for the selected item is displayed.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>TC SET</td><td>Setting and checking the transfer voltage</td></tr></table> <p>Setting the developing bias</p> <p>① Select the item to be adjusted. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window.</p> <p>② Change the setting using the Up/Down keys.</p> <table><tr><th>Display</th><th>Operation</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>CONT DATA</td><td>Transfer output voltage for simplex copying (onto paper from the cassette)</td><td>0 to 255</td><td>150</td></tr><tr><td>CONT DATA2</td><td>Transfer output voltage for duplex copying (onto the second face)</td><td>0 to 255</td><td>150</td></tr><tr><td>TC ON</td><td>Outputting the transfer voltage</td><td>—</td><td>—</td></tr></table> <p>Increasing the setting makes the transfer voltage higher, and decreasing it makes the voltage lower.</p> <p>Press the TC ON on the touch panel. The currently set transfer voltage is output. To stop the transfer voltage output, press the stop/clear key.</p> <p>③ Press the start key. The value is set.</p> <p>④ To return to the screen for selecting in item, press the stop/clear key.</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. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	TC SET	Setting and checking the transfer voltage	Display	Operation	Setting range	Initial setting	CONT DATA	Transfer output voltage for simplex copying (onto paper from the cassette)	0 to 255	150	CONT DATA2	Transfer output voltage for duplex copying (onto the second face)	0 to 255	150	TC ON	Outputting the transfer voltage	—	—
Display	Description																				
TC SET	Setting and checking the transfer voltage																				
Display	Operation	Setting range	Initial setting																		
CONT DATA	Transfer output voltage for simplex copying (onto paper from the cassette)	0 to 255	150																		
CONT DATA2	Transfer output voltage for duplex copying (onto the second face)	0 to 255	150																		
TC ON	Outputting the transfer voltage	—	—																		
U102	<p>Setting the cleaning interval for the charger</p> <p>Description Executes a cleaning operation for the charger and changes the intervals at which the charger is cleaned.</p> <p>Purpose To check the cleaning operation for the charger. Also to change the intervals for the operation. Making the intervals longer decreases the stand-by time when starting copying.</p> <p>Method</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② To execute the cleaning operation, press TEST RUN. The cleaning operation for the transfer charger is executed once.</p> <p>Setting</p> <p>① Change the setting using the 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>Charger cleaning operation intervals</td><td>0 to 20</td><td>3</td><td>1000 copies</td></tr></table> <p>When set to 3, the charger is cleaned every 3000 copies (3 by 1000) counted after the main switch is turned on. When set to 0, the charger is not cleaned.</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	Charger cleaning operation intervals	0 to 20	3	1000 copies												
Description	Setting range	Initial setting	Change in value per step																		
Charger cleaning operation intervals	0 to 20	3	1000 copies																		

Maintenance item No.	Description								
U110	<p>Checking/clearing the drum count</p> <p>Description Displays the drum counts for checking or clearing 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 CLEAR 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> <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 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>								
U130	<p>Initial setting for the developer</p> <p>Description Automatically sets the toner sensor control voltage and toner control level for the installed developer.</p> <p>Purpose To set the initial settings for the developer when installing the machine or replacing the developer.</p> <p>Method ① Press the start key. The screen for executing is displayed. ② Press the start key. The initial settings for the developer is set, and the result is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>CONTROL</td><td>Toner sensor control voltage</td></tr> <tr> <td>FIRST TARGET</td><td>Toner control reference voltage</td></tr> <tr> <td>HUMID</td><td>Absolute humidity</td></tr> </tbody> </table> <p>The toner sensor output value is displayed on the right side of the screen.</p> <p>Supplement The following data is also renewed or cleared by performing this maintenance item:</p> <ul style="list-style-type: none"> • Renewing the toner sensor control voltage (U131) • Renewing the toner control reference voltage (U156) • Clearing the developing drive time (U157) • Clearing the developing count (U158) • Resetting the toner feed start level and toner empty detection <p>Completion After initial setting is complete, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CONTROL	Toner sensor control voltage	FIRST TARGET	Toner control reference voltage	HUMID	Absolute humidity
Display	Description								
CONTROL	Toner sensor control voltage								
FIRST TARGET	Toner control reference voltage								
HUMID	Absolute humidity								

Maintenance item No.	Description								
U131	<p>Setting the toner sensor control voltage</p> <p>Description Displays or changes the toner sensor control voltage automatically set in maintenance item U130.</p> <p>Purpose To check the automatically set toner sensor control voltage. Also to change the toner density if an image is too dark or light.</p> <p>Method Press the start key. The current setting for the toner sensor control voltage is displayed.</p> <p>Setting ① Change the setting using the Up/Down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Toner sensor control voltage</td><td>0 to 255</td><td>128</td></tr></table> <p>Increasing the setting makes the density higher, and decreasing it makes the density lower. Increasing the setting too high may result in toner scattering.</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 is displayed.</p>	Description	Setting range	Initial setting	Toner sensor control voltage	0 to 255	128		
Description	Setting range	Initial setting							
Toner sensor control voltage	0 to 255	128							
U132	<p>Replenishing toner forcibly</p> <p>Description Replenishes toner forcibly until the toner sensor output value reaches the toner control level.</p> <p>Purpose Used when the toner empty is detected frequently.</p> <p>Method ① Press the start key. The screen for executing is displayed. ② Press the start key. Operation starts, and the current data is displayed.</p> <p>Toner is replenished until the toner sensor output value reaches the toner control level. To stop operation, press the start/clear key.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>TARGET (NOW)</td><td>Current toner control level</td></tr><tr><td>CONTROL (NOW)</td><td>Current toner sensor control voltage</td></tr><tr><td>HUMID</td><td>Absolute humidity</td></tr></table> <p>The current toner sensor output value is displayed on the right side of the screen.</p> <p>Completion Press the stop/clear key when toner replenishment stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	TARGET (NOW)	Current toner control level	CONTROL (NOW)	Current toner sensor control voltage	HUMID	Absolute humidity
Display	Description								
TARGET (NOW)	Current toner control level								
CONTROL (NOW)	Current toner sensor control voltage								
HUMID	Absolute humidity								
U135	<p>Checking toner motor operation</p> <p>Description Drives the toner feed motor or toner agitation motor.</p> <p>Purpose To check the operation of the toner feed motor or toner agitation motor.</p> <p>Caution Note that driving either of the motors unnecessarily long may cause a toner jam, resulting in machine lockup. Be sure to drive each motor for just several seconds.</p> <p>Method ① Press the start key. The screen for selecting an item is displayed. ② Select the motor to be driven. The selected motor is displayed in reverse, and operation starts.</p> <table><tr><th>Description</th><th>Operation</th></tr><tr><td>MOTOR 1</td><td>Toner feed motor drive</td></tr><tr><td>MOTOR 2</td><td>Toner agitation motor drive</td></tr></table> <p>③ To stop operation, press the stop clear key.</p> <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Description	Operation	MOTOR 1	Toner feed motor drive	MOTOR 2	Toner agitation motor drive		
Description	Operation								
MOTOR 1	Toner feed motor drive								
MOTOR 2	Toner agitation motor drive								

Maintenance item No.	Description								
U136	<p>Turning the toner level detection function on/off</p> <p>Description Turning the control based on the toner level sensor output on/off.</p> <p>Purpose To enable copying using the toner in the developing section after the toner level in the toner hopper decreases, by turning the control function off</p> <p>Method Press the start key.</p> <p>Setting ① Press ON or OFF to change the operation.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Controls based on the detection by the toner sensor detection sensor.</td></tr> <tr> <td>OFF</td><td>Ignores the detection by the toner level detection sensor.</td></tr> </tbody> </table> <p>Initial setting: ON</p> <p>② Press the start key. The setting is set , and the screen for entering 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 No. is displayed.</p>	Display	Description	ON	Controls based on the detection by the toner sensor detection sensor.	OFF	Ignores the detection by the toner level detection sensor.		
Display	Description								
ON	Controls based on the detection by the toner sensor detection sensor.								
OFF	Ignores the detection by the toner level detection sensor.								
U137	<p>Checking the toner level detection sensor</p> <p>Description Displays the detection status of the toner level detection sensor and toner hopper lockup detection sensor.</p> <p>Purpose To check the toner level in the toner hopper.</p> <p>Method ① Press the start key. The detected status of the sensor is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>TE SW</td><td>Toner level detection sensor (toner level in the toner hopper)</td></tr> </tbody> </table> <p>When there is toner or if the sensor connector is disconnected, on is detected , and the corresponding display is displayed in reverse.</p> <p>Completion Press the stop clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	TE SW	Toner level detection sensor (toner level in the toner hopper)				
Display	Description								
TE SW	Toner level detection sensor (toner level in the toner hopper)								
U155	<p>Displaying the toner sensor output</p> <p>Description Displays the toner sensor output value , and related data.</p> <p>Purpose To check the toner sensor output value.</p> <p>Method ① Press the start key. The screen for executing is displayed. ② Press the start key. The current data is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>TARGET (NOW)</td><td>Current toner control level (corrected value for humidity and drive time)</td></tr> <tr> <td>CONTROL (NOW)</td><td>Current toner sensor control voltage</td></tr> <tr> <td>HUMID</td><td>Absolute humidity</td></tr> </tbody> </table> <p>The current toner sensor output value is displayed on the right side of the screen.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	TARGET (NOW)	Current toner control level (corrected value for humidity and drive time)	CONTROL (NOW)	Current toner sensor control voltage	HUMID	Absolute humidity
Display	Description								
TARGET (NOW)	Current toner control level (corrected value for humidity and drive time)								
CONTROL (NOW)	Current toner sensor control voltage								
HUMID	Absolute humidity								

Maintenance item No.	Description																										
U156	<p>Changing the toner control level</p> <p>Description Changes the toner control reference voltage set in maintenance item U130 or the toner control level or the toner empty level to be determined by the difference from the toner control level. The setting for this maintenance item does not need to be changed.</p> <p>Purpose To check the toner feed start level and toner empty level.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>TARGET</td><td>Toner control level</td></tr><tr><td>EMPTY</td><td>Difference between the toner control level and toner empty level</td></tr><tr><td>FIRST TARGET</td><td>Toner control reference voltage for initial developer setting</td></tr></table> <p>Setting for the toner control level</p> <p>① Press TARGET.</p> <p>② Change the setting using the Up/Down key.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Toner control level</td><td>0 to 255</td><td>128</td></tr></table> <p>Increasing the setting makes the toner density lower.</p> <p>③ Press the start key. The value is set.</p> <p>Setting for the toner empty level</p> <p>① Press EMPTY.</p> <p>② Change the setting using the Up/Down key.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Difference between the toner control level and the toner empty level</td><td>0 to 255</td><td>30</td></tr></table> <p>Increasing the setting makes the toner empty level higher: the toner density is lower when the toner empty is detected.</p> <p>③ Press the start key. The value is set.</p> <p>Setting for the toner control reference voltage</p> <p>① Press FIRST TARGET.</p> <p>② Change the setting using the Up/Down key.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Toner control reference voltage</td><td>0 to 255</td><td>102</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 maintenance item No. is displayed.</p>	Display	Description	TARGET	Toner control level	EMPTY	Difference between the toner control level and toner empty level	FIRST TARGET	Toner control reference voltage for initial developer setting	Description	Setting range	Initial setting	Toner control level	0 to 255	128	Description	Setting range	Initial setting	Difference between the toner control level and the toner empty level	0 to 255	30	Description	Setting range	Initial setting	Toner control reference voltage	0 to 255	102
Display	Description																										
TARGET	Toner control level																										
EMPTY	Difference between the toner control level and toner empty level																										
FIRST TARGET	Toner control reference voltage for initial developer setting																										
Description	Setting range	Initial setting																									
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Description	Setting range	Initial setting																									
Difference between the toner control level and the toner empty level	0 to 255	30																									
Description	Setting range	Initial setting																									
Toner control reference voltage	0 to 255	102																									

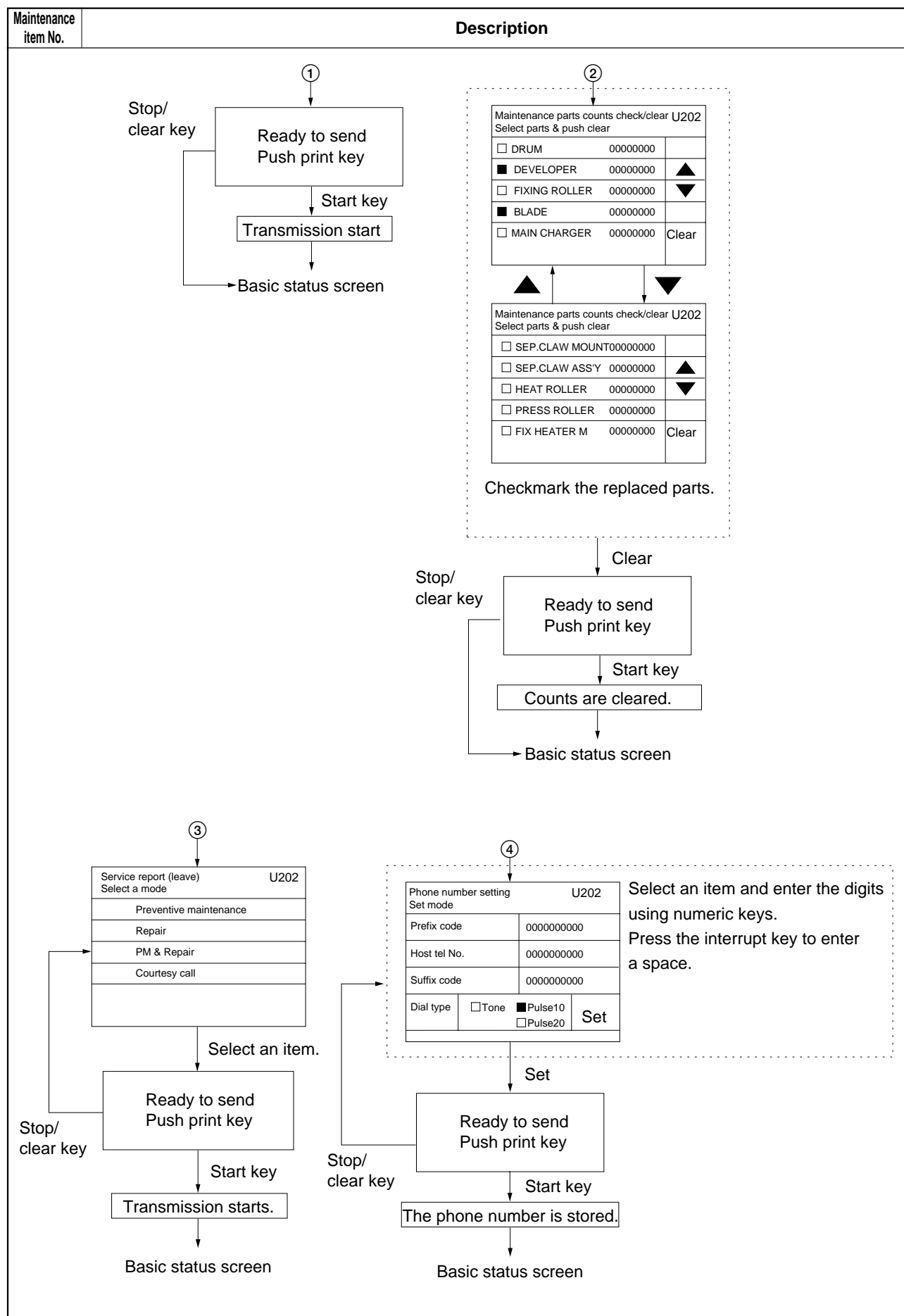
Maintenance item No.	Description
U157	<p>Checking/clearing the developing drive time</p> <p>Description Checks or clears the developing drive time, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.</p> <p>Purpose To check the developing drive time after replacing the developer.</p> <p>Method Press the start key. The developing drive time is displayed in minutes.</p> <p>Clearing ① Press CLEAR on the touch panel. ② Press the start key. The count is set, 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 No. is displayed.</p> <p>Completion To exit the maintenance mode without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U158	<p>Checking/clearing the developing count</p> <p>Description Checks or clears the developing count, 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 developer.</p> <p>Method Press the start key. The developing count is displayed.</p> <p>Clearing ① Press CLEAR on the touch panel. ② Press the start key. The count is set, 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 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>
U160	<p>Applying toner to the cleaning blade</p> <p>Description Applies toner to the cleaning blade.</p> <p>Purpose To apply toner to the drum to coat the cleaning blade. To be executed when replacing or cleaning the cleaning blade or the drum.</p> <p>Method ① Press the start key. The screen for executing is displayed. ② Press the start key. Operation starts. When the operation is complete, the screen for selecting a maintenance item No. is displayed after open and close the front cover.</p> <p>Completion To exit this maintenance item without performing operation, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

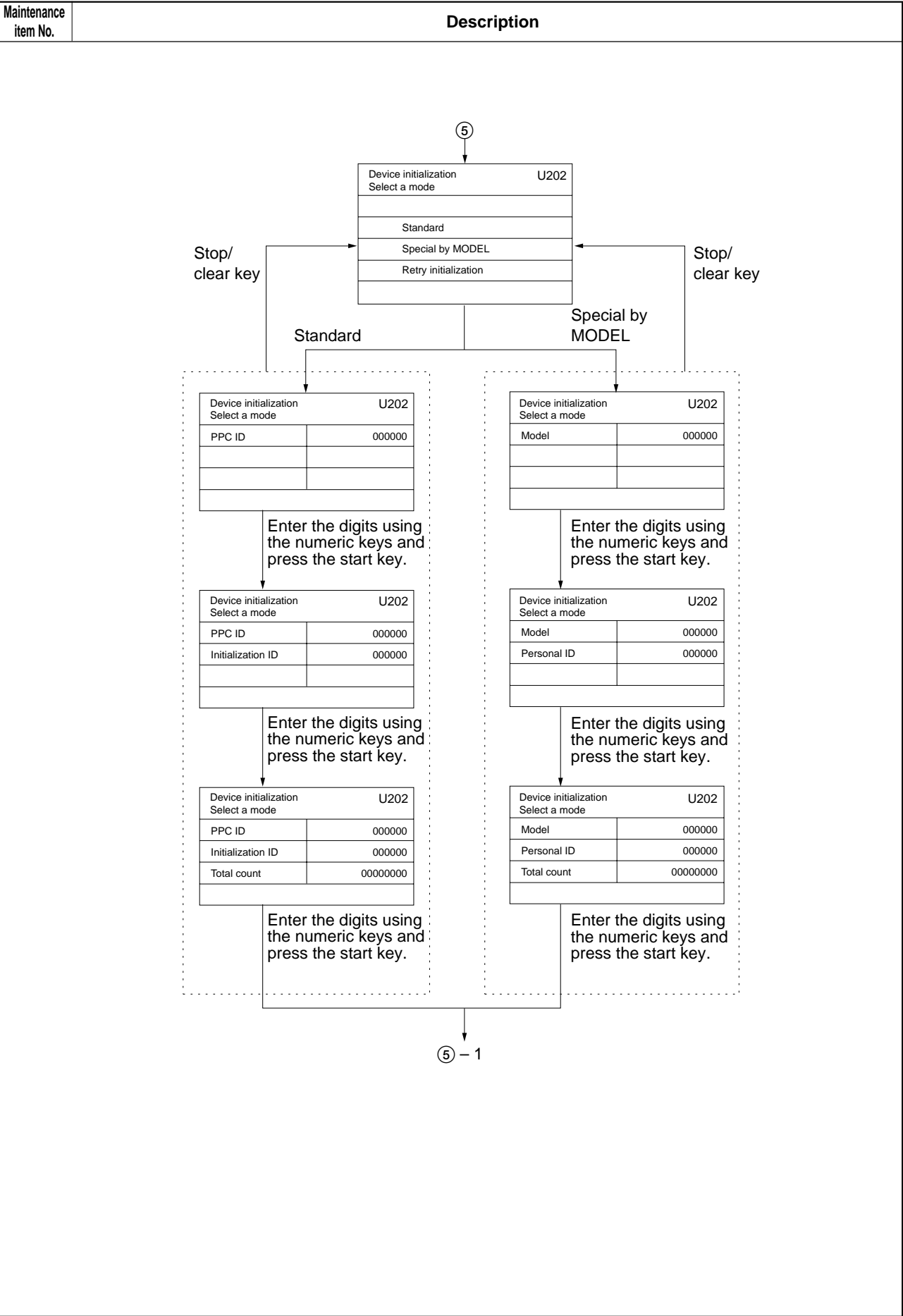
Maintenance item No.	Description																				
U161	<p>Setting the fixing control temperature</p> <p>Description Changes the fixing control temperature.</p> <p>Purpose Normally no change is necessary. However, can be used to prevent curled or creased paper, or solve a fixing problem on thick paper. Also used to output a test pattern for measuring fixing pressure.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window.</p> <p>② Change the setting using the Up/Down key.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>CONTROL TEMP</td><td>Normal stabilization fixing temperature</td><td>170 to 200 (°C)</td><td>185</td></tr><tr><td>FIRST TEMP</td><td>Primary stabilization fixing temperature</td><td>140 to 200 (°C)</td><td>165</td></tr><tr><td>SECOND TEMP</td><td>Secondary stabilization fixing temperature</td><td>170 to 200 (°C)</td><td>185</td></tr><tr><td>RUNNING TIME</td><td>Aging time after secondary stabilization</td><td>0 to 180 (s)</td><td>90</td></tr></table> <p>The respective temperatures are to be set such that CONTROL TEMP ≥ SECOND ≥ TEMPFIRST TEMP.</p> <p>③ Press the start key. The value is set.</p> <p>Completion Press the stop/clear key. The screen for selecting maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	CONTROL TEMP	Normal stabilization fixing temperature	170 to 200 (°C)	185	FIRST TEMP	Primary stabilization fixing temperature	140 to 200 (°C)	165	SECOND TEMP	Secondary stabilization fixing temperature	170 to 200 (°C)	185	RUNNING TIME	Aging time after secondary stabilization	0 to 180 (s)	90
Display	Description	Setting range	Initial setting																		
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RUNNING TIME	Aging time after secondary stabilization	0 to 180 (s)	90																		
U162	<p>Stabilizing fixing forcibly</p> <p>Description Stops the stabilization fixing drive forcibly, regardless of fixing temperature.</p> <p>Purpose 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. 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 To exit this maintenance item without executing forced fixing stabilization, press the stop clear key.</p>																				

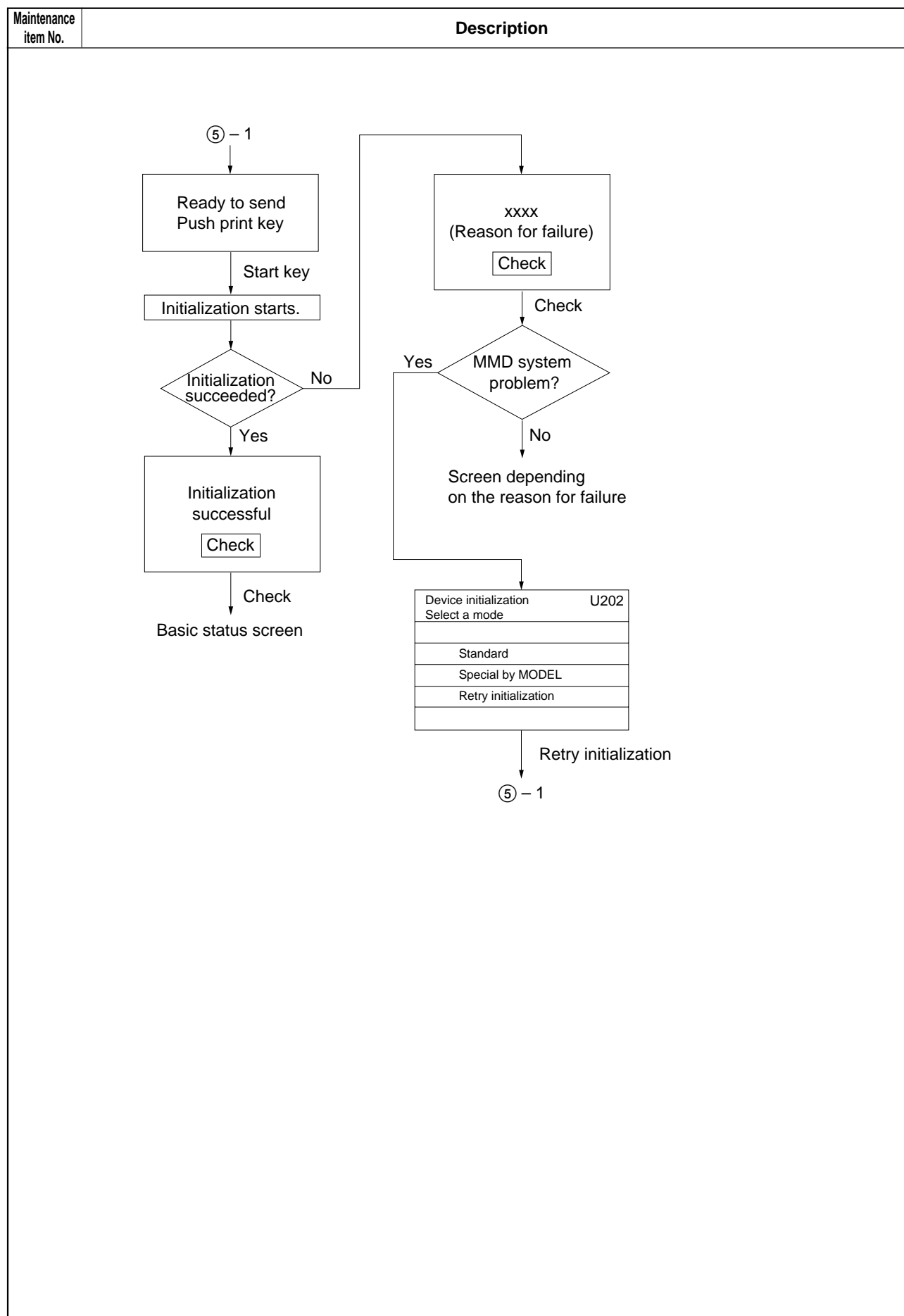
Maintenance item No.	Description						
U194	<p>Setting the fixing web drive</p> <p>Description Sets the interval (number of copies) for turning on the fixing web solenoid.</p> <p>Purpose To be executed when the cleaning felt becomes extremely soiled.</p> <p>Method ① Press the start key. The screen for executing is displayed. ② Input numbers using Up/Down keys (setting range is 1 to 40). Initial setting:30 ③ Press the start key. The setting is set.</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>						
U196	<p>Turning the fixing heater on</p> <p>Description Turns the fixing heater on.</p> <p>Purpose To check fixing heaters M or S.</p> <p>Method ① Press the start key. The screen for selecting an item is displayed. ② Select the heater to be turned on. The selected heater turns on for 3 s and then turns off.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MAIN</td><td>Fixing heater M (H1)</td></tr> <tr> <td>SUB</td><td>Fixing heater S (H2)</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 (H1)	SUB	Fixing heater S (H2)
Display	Description						
MAIN	Fixing heater M (H1)						
SUB	Fixing heater S (H2)						

Maintenance item No.	Description						
U198	<p>Setting the fixing phase control</p> <p>Description Sets the use of fixing phase control to reduce electrical noise generated by the copier.</p> <p>Purpose Normally no change is necessary. If electrical noise generated by the copier causes flickering of the lights around the copier, select fixing phase control to reduces the noise.</p> <p>Method Press the start key.</p> <p>Setting ① Press ON or OFF to change operation.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Fixing phase control present</td></tr> <tr> <td>OFF</td><td>Fixing phase control absent</td></tr> </tbody> </table> <p>Initial setting: ON for metric and OFF for inch models</p> <p>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>	Display	Description	ON	Fixing phase control present	OFF	Fixing phase control absent
Display	Description						
ON	Fixing phase control present						
OFF	Fixing phase control absent						
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.</p> <p>Completion Press the stop/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance mode 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 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> <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>						

Maintenance item No.	Description												
U202	<p>Setting the MMD host monitoring system</p> <p>Description Initializes or operates the MMD host monitoring system.</p> <p>Purpose Used when setting up the machine or during regular maintenance or repair.</p> <p>Method ① Press the start key. The basic status screen is displayed. ② Operates the device following the instructions on the touch panel.</p> <p>Completion Press the stop/clear key on the basic screen. The screen for selecting a maintenance item No. is displayed.</p> <div> <p>[Basic status]</p> <table border="1"> <thead> <tr> <th>Maintenance item No. select screen</th><th>U202</th></tr> </thead> <tbody> <tr> <td>Technician arrive</td><td>①</td></tr> <tr> <td>Maintenance count clear</td><td>②</td></tr> <tr> <td>Service report (leave)</td><td>③</td></tr> <tr> <td>Phone number setting</td><td>④</td></tr> <tr> <td>Device initialization</td><td>⑤</td></tr> </tbody> </table> <p>Stop/clear key</p> </div> <ul style="list-style-type: none"> • To initialize the MMD host monitoring system, run the following modes in order: <ul style="list-style-type: none"> • Phone number setting ④ • Device initialization ⑤ • During regular maintenance or service <ul style="list-style-type: none"> • Technician arrive ① • Maintenance count clear ② • Service report (leave) ③ 	Maintenance item No. select screen	U202	Technician arrive	①	Maintenance count clear	②	Service report (leave)	③	Phone number setting	④	Device initialization	⑤
Maintenance item No. select screen	U202												
Technician arrive	①												
Maintenance count clear	②												
Service report (leave)	③												
Phone number setting	④												
Device initialization	⑤												











Maintenance item No.	Description										
U203	<p>Operating DF separately</p> <p>Description Simulates the original conveying operation separately in the SRDF.</p> <p>Purpose To check the SRDF.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the start key. The screen for selecting an item is displayed. ② Set the magnification to between 25 and 200% using the Up/Down keys. ③ Place an original in the SRDF if running this simulation with paper. ④ Select the item to be operated. The selected item is displayed in reverse and operation starts. <table border="1"> <thead> <tr> <th>Display</th><th>Operation</th></tr> </thead> <tbody> <tr> <td>ADF MODE</td><td>With paper, single-sided original</td></tr> <tr> <td>RADF MODE</td><td>With paper, double-sided original</td></tr> <tr> <td>ADF MODE (NON-PAPER)</td><td>Without paper, single-sided original (continuous operation)</td></tr> <tr> <td>RADF MODE (NON-PAPER)</td><td>Without paper, double-sided original (continuous operation)</td></tr> </tbody> </table> <p>⑤ To stop continuous operation, press the stop/clear key.</p> <p>Completion Press the stop/clear key when the operation stops. The screen for selecting the maintenance item No. is displayed.</p>	Display	Operation	ADF MODE	With paper, single-sided original	RADF MODE	With paper, double-sided original	ADF MODE (NON-PAPER)	Without paper, single-sided original (continuous operation)	RADF MODE (NON-PAPER)	Without paper, double-sided original (continuous operation)
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ADF MODE	With paper, single-sided original										
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ADF MODE (NON-PAPER)	Without paper, single-sided original (continuous operation)										
RADF MODE (NON-PAPER)	Without paper, double-sided original (continuous operation)										
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 A key card is not available for metric models. The setting for the HECON key card, which is supported by inch-specification machines, is not necessary in this maintenance item.</p> <p>Method Press the start key.</p> <p>Setting</p> <ol style="list-style-type: none"> ① Select the optional counter to be installed. The selected counter is displayed in reverse. Pressing the reversed item again resets the selection. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <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> </tbody> </table> <p>② Press the start key. 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	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.										
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>										

Maintenance item No.	Description																
U208	<p>Setting the deck lift operation</p> <p>Description Sets the operation of the side deck lift motor for when paper in the optional side deck is exhausted.</p> <p>Purpose To be set according to the paper loading method.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting the paper loading method</p> <p>① Select the method to load paper at the screen for selecting an item.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Side Feed</td><td>Load paper through the right cover.</td></tr> <tr> <td>Upper Feed</td><td>Load paper through the upper cover.</td></tr> </tbody> </table> <p>Initial setting: Side Feed</p> <p>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>	Display	Description	Side Feed	Load paper through the right cover.	Upper Feed	Load paper through the upper cover.										
Display	Description																
Side Feed	Load paper through the right cover.																
Upper Feed	Load paper through the upper cover.																
U209	<p>Setting date and time</p> <p>Description Sets the real time clock.</p> <p>Purpose To set the date and time after initializing data.</p> <p>Method</p> <p>① Press the start key. The screen for executing is displayed. The current setting for the year is displayed.</p> <p>② Set the year (last two digits of the year) using the numeric or Up/Down keys and press the start key. For years 2000 to 2009, enter only the last digit. The current setting for the month is displayed.</p> <p>③ Set the month using the numeric or Up/Down keys and press the start key. The current setting for the date is displayed.</p> <p>④ Set the date using the numeric or Up/Down keys and press the start key. The current setting for the day of the week is displayed.</p> <p>⑤ Set the day of the week using the numeric or Up/Down keys and press the start key. The current time setting for hours is displayed.</p> <table border="1"> <thead> <tr> <th>Setting</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1</td><td>Monday</td></tr> <tr> <td>2</td><td>Tuesday</td></tr> <tr> <td>3</td><td>Wednesday</td></tr> <tr> <td>4</td><td>Thursday</td></tr> <tr> <td>5</td><td>Friday</td></tr> <tr> <td>6</td><td>Saturday</td></tr> <tr> <td>7</td><td>Sunday</td></tr> </tbody> </table> <p>⑥ Set the time (hours, 0 to 23) using the numeric or Up/Down keys and press the start key. The current time setting for minutes is displayed.</p> <p>⑦ Set the minutes using the numeric or Up/Down keys and press the start key. Setting is complete, and the screen for selecting a maintenance item No. is displayed.</p> <p>Supplement To return to the last screen, press the stop/clear key while setting.</p> <p>Completion To stop this maintenance item without changing the current setting, press the stop/clear key at the screen for the year setting. The screen for selecting a maintenance item No. is displayed.</p>	Setting	Description	1	Monday	2	Tuesday	3	Wednesday	4	Thursday	5	Friday	6	Saturday	7	Sunday
Setting	Description																
1	Monday																
2	Tuesday																
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Maintenance item No.	Description																				
U238	<p>Checking the operation of the mailbox solenoids and motors</p> <p>Description Turns the optional mailbox solenoids or motors.</p> <p>Purpose To check the operation of the optional mailbox solenoids and motors.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Select the item to be operated. The selected item is displayed in reverse, and operation starts. Operation stops when the selected item is pressed. <table border="1"> <thead> <tr> <th>Display</th><th>Solenoids and motors</th></tr> </thead> <tbody> <tr> <td>F MOT</td><td>Paper conveying motor (PCM)</td></tr> <tr> <td>SOL B</td><td>Feedshift solenoid 1 (FSSOL1)</td></tr> <tr> <td>SOL 1</td><td>Mail tray feedshift solenoid 1 (MTFSSOL1)</td></tr> <tr> <td>SOL 2</td><td>Mail tray feedshift solenoid 2 (MTFSSOL2)</td></tr> <tr> <td>SOL 3</td><td>Mail tray feedshift solenoid 3 (MTFSSOL3)</td></tr> <tr> <td>SOL 4</td><td>Mail tray feedshift solenoid 4 (MTFSSOL4)</td></tr> <tr> <td>SOL 5</td><td>Mail tray feedshift solenoid 5 (MTFSSOL5)</td></tr> <tr> <td>SOL 6</td><td>Mail tray feedshift solenoid 6 (MTFSSOL6)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Solenoids and motors	F MOT	Paper conveying motor (PCM)	SOL B	Feedshift solenoid 1 (FSSOL1)	SOL 1	Mail tray feedshift solenoid 1 (MTFSSOL1)	SOL 2	Mail tray feedshift solenoid 2 (MTFSSOL2)	SOL 3	Mail tray feedshift solenoid 3 (MTFSSOL3)	SOL 4	Mail tray feedshift solenoid 4 (MTFSSOL4)	SOL 5	Mail tray feedshift solenoid 5 (MTFSSOL5)	SOL 6	Mail tray feedshift solenoid 6 (MTFSSOL6)		
Display	Solenoids and motors																				
F MOT	Paper conveying motor (PCM)																				
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SOL 4	Mail tray feedshift solenoid 4 (MTFSSOL4)																				
SOL 5	Mail tray feedshift solenoid 5 (MTFSSOL5)																				
SOL 6	Mail tray feedshift solenoid 6 (MTFSSOL6)																				
U239	<p>Checking the mailbox switches</p> <p>Description Displays the status of the respective switches on the optional mailbox</p> <p>Purpose To check if respective switches on the optional mailbox operate correctly.</p> <p>Start</p> <ol style="list-style-type: none"> Press the start key. Turn the respective switches on manually. The on-status of a switch is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Switches</th></tr> </thead> <tbody> <tr> <td>OVF 1</td><td>Mail tray overflow switch 1 (MTOFSW1)</td></tr> <tr> <td>OVF 2</td><td>Mail tray overflow switch 2 (MTOFSW2)</td></tr> <tr> <td>OVF 3</td><td>Mail tray overflow switch 3 (MTOFSW3)</td></tr> <tr> <td>OVF 4</td><td>Mail tray overflow switch 4 (MTOFSW4)</td></tr> <tr> <td>OVF 5</td><td>Mail tray overflow switch 5 (MTOFSW5)</td></tr> <tr> <td>OVF 6</td><td>Mail tray overflow switch 6 (MTOFSW6)</td></tr> <tr> <td>OVF 7</td><td>Mail tray overflow switch 7 (MTOFSW7)</td></tr> <tr> <td>FEED</td><td>Mailbox paper entry switch (MBPESW)</td></tr> <tr> <td>EJECT</td><td>Mail tray eject sensor (MTES)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	OVF 1	Mail tray overflow switch 1 (MTOFSW1)	OVF 2	Mail tray overflow switch 2 (MTOFSW2)	OVF 3	Mail tray overflow switch 3 (MTOFSW3)	OVF 4	Mail tray overflow switch 4 (MTOFSW4)	OVF 5	Mail tray overflow switch 5 (MTOFSW5)	OVF 6	Mail tray overflow switch 6 (MTOFSW6)	OVF 7	Mail tray overflow switch 7 (MTOFSW7)	FEED	Mailbox paper entry switch (MBPESW)	EJECT	Mail tray eject sensor (MTES)
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FEED	Mailbox paper entry switch (MBPESW)																				
EJECT	Mail tray eject sensor (MTES)																				

Maintenance item No.	Description																																														
U240	<p>Checking the operation of the Finisher</p> <p>Description Turns the optional finisher clutches or solenoids.</p> <p>Purpose To check the operation of the optional finisher clutches and solenoids.</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. The screen for executing each item is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>CL, SOL TEST</td><td>Checks operation of clutches and motors.</td></tr> <tr> <td>JOGGER TEST</td><td>Checks jogging and stapling operations.</td></tr> </tbody> </table> <p>Method to check the operation of clutches and motors</p> <ol style="list-style-type: none"> ① Select the item to be operated. The selected item is displayed in reverse, and the motor or solenoid turns on for 0.5 s. <table border="1"> <thead> <tr> <th>Display</th><th>Clutches and solenoids</th></tr> </thead> <tbody> <tr> <td>HBCL</td><td>Paper conveying belt clutch (PCBCL)</td></tr> <tr> <td>PYSL</td><td>Paper shift solenoid (PSSOL)</td></tr> <tr> <td>PSL1</td><td>Paddle solenoid 1 (PDSOL1)</td></tr> <tr> <td>PSL2</td><td>Paddle solenoid 2 (PDSOL2)</td></tr> <tr> <td>PSL3</td><td>Paddle solenoid 3 (PDSOL3)</td></tr> <tr> <td>BSL1</td><td>Feedshift solenoid 1 (FSSOL1)</td></tr> <tr> <td>BSL2</td><td>Feedshift solenoid 2 (FSSOL2)</td></tr> <tr> <td>PCL</td><td>Paddle clutch (PDCL)</td></tr> <tr> <td>PNSL OFF</td><td>Paper shift solenoid (PSSOL) OFF</td></tr> <tr> <td>PNSL ON</td><td>Paper shift solenoid (PSSOL) ON</td></tr> <tr> <td>PNCL</td><td>Punch clutch (PCL)</td></tr> <tr> <td>KYSL</td><td>Trailing edge press solenoid (TEPSOL)</td></tr> </tbody> </table> <div style="text-align: center;">   </div> <table border="1"> <thead> <tr> <th>Display</th><th>Clutches and solenoids</th></tr> </thead> <tbody> <tr> <td>PCSL</td><td>Pressure switching solenoid (PSWSOL)</td></tr> <tr> <td>DCSL</td><td>Drive switching solenoid (DSSOL)</td></tr> <tr> <td>PGSL</td><td>Paper entry guide solenoid (PEGSOL)</td></tr> </tbody> </table> <ol style="list-style-type: none"> ② To turn each clutch or solenoid on while the motor is driving, press the interrupt key before selecting the clutch or solenoid. The drive motor turns on, and the selected clutch or solenoid remains on until the selected item is pressed again. ③ To stop the motor drive, press the interrupt key. ④ To return to the screen for selecting an item, press the stop/clear key after the motor stops. <p>Method to check the jogging and the stapling</p> <ol style="list-style-type: none"> ① Select the item to be operated. ② To turn each clutch or solenoid on while the motor is driving, press the interrupt key before selecting the clutch or solenoid. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>JOGGER</td><td>Operation of jogging</td></tr> <tr> <td>STAPLE</td><td>Operation of stapling</td></tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CL, SOL TEST	Checks operation of clutches and motors.	JOGGER TEST	Checks jogging and stapling operations.	Display	Clutches and solenoids	HBCL	Paper conveying belt clutch (PCBCL)	PYSL	Paper shift solenoid (PSSOL)	PSL1	Paddle solenoid 1 (PDSOL1)	PSL2	Paddle solenoid 2 (PDSOL2)	PSL3	Paddle solenoid 3 (PDSOL3)	BSL1	Feedshift solenoid 1 (FSSOL1)	BSL2	Feedshift solenoid 2 (FSSOL2)	PCL	Paddle clutch (PDCL)	PNSL OFF	Paper shift solenoid (PSSOL) OFF	PNSL ON	Paper shift solenoid (PSSOL) ON	PNCL	Punch clutch (PCL)	KYSL	Trailing edge press solenoid (TEPSOL)	Display	Clutches and solenoids	PCSL	Pressure switching solenoid (PSWSOL)	DCSL	Drive switching solenoid (DSSOL)	PGSL	Paper entry guide solenoid (PEGSOL)	Display	Description	JOGGER	Operation of jogging	STAPLE	Operation of stapling
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JOGGER TEST	Checks jogging and stapling operations.																																														
Display	Clutches and solenoids																																														
HBCL	Paper conveying belt clutch (PCBCL)																																														
PYSL	Paper shift solenoid (PSSOL)																																														
PSL1	Paddle solenoid 1 (PDSOL1)																																														
PSL2	Paddle solenoid 2 (PDSOL2)																																														
PSL3	Paddle solenoid 3 (PDSOL3)																																														
BSL1	Feedshift solenoid 1 (FSSOL1)																																														
BSL2	Feedshift solenoid 2 (FSSOL2)																																														
PCL	Paddle clutch (PDCL)																																														
PNSL OFF	Paper shift solenoid (PSSOL) OFF																																														
PNSL ON	Paper shift solenoid (PSSOL) ON																																														
PNCL	Punch clutch (PCL)																																														
KYSL	Trailing edge press solenoid (TEPSOL)																																														
Display	Clutches and solenoids																																														
PCSL	Pressure switching solenoid (PSWSOL)																																														
DCSL	Drive switching solenoid (DSSOL)																																														
PGSL	Paper entry guide solenoid (PEGSOL)																																														
Display	Description																																														
JOGGER	Operation of jogging																																														
STAPLE	Operation of stapling																																														


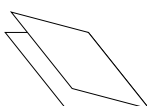
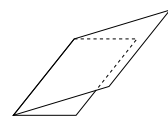
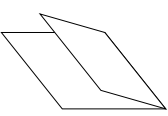
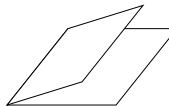
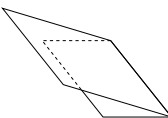

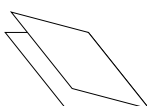
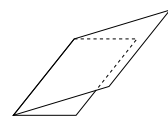
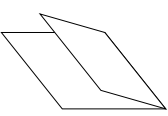
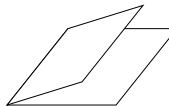
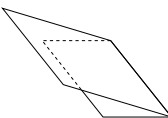

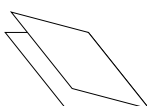
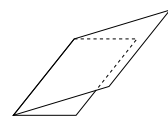
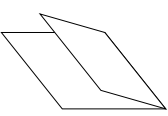
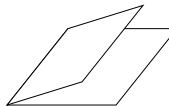
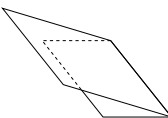
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U241	<p>Checking the finisher switches</p> <p>Description Displays the status of the respective switches on the optional finisher.</p> <p>Purpose To check if respective switches on the optional finisher operate correctly.</p> <p>Start</p> <ol style="list-style-type: none"> ① Press the start key. ② Turn the respective switches on manually. The on-status of a switch is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Swithes</th></tr> </thead> <tbody> <tr> <td>KOS</td><td>Trailing edge press detection sensor (TEPDS)</td></tr> <tr> <td>PS 3</td><td>Eject switch (ESW)</td></tr> <tr> <td>FJHS</td><td>Front jogger home position sensor (FJHPS)</td></tr> <tr> <td>PS 2</td><td>Internal tray wheel sensor (ITWS)</td></tr> <tr> <td>DS</td><td>Front cover switch (FCSW)</td></tr> <tr> <td>SS</td><td>Joint switch (JSW)</td></tr> <tr> <td>RJHS</td><td>Rear jogger home position sensor (RJHPS)</td></tr> <tr> <td>FSES</td><td>Front stapler empty sensor (STES)</td></tr> <tr> <td>FSPS</td><td>Front stapler self-priming sensor (STSPS)</td></tr> <tr> <td>RSES</td><td>Rear stapler empty sensor (STES)</td></tr> <tr> <td>RSPS</td><td>Rear stapler self-priming sensor (STSPS)</td></tr> <tr> <td>US</td><td>Upper cover switch (UCSW)</td></tr> </tbody> </table> <div style="text-align: center;">   </div> <table border="1"> <thead> <tr> <th>Display</th><th>Swithes</th></tr> </thead> <tbody> <tr> <td>FSTHS</td><td>Front stapler home position sensor (STHPS)</td></tr> <tr> <td>RSTHS</td><td>Rear stapler home position sensor (STHPS)</td></tr> <tr> <td>FCES</td><td>Front stapler cortridge sensor (STCS)</td></tr> <tr> <td>RCES</td><td>Rear stapler cartridge sensor (STCS)</td></tr> <tr> <td>SKS 1</td><td>Tray stock sensor A (TSSA)</td></tr> <tr> <td>PS 1</td><td>Paper entry sensor (PES)</td></tr> <tr> <td>HBH S</td><td>Paper conveying belt home position sensor (PCBHPS)</td></tr> <tr> <td>SKS 2</td><td>Tray stock sensor B (TSSB)</td></tr> <tr> <td>PS 4</td><td>Tray midpoint sensor (TMS)</td></tr> <tr> <td>SKS 4</td><td>Tray lower limit sensor (TLLS)</td></tr> <tr> <td>PKS</td><td>Scrap hole-punch sensor (PDTS)</td></tr> <tr> <td>SKS 3</td><td>Tray upper limit sensor (TULS)</td></tr> </tbody> </table> <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Swithes	KOS	Trailing edge press detection sensor (TEPDS)	PS 3	Eject switch (ESW)	FJHS	Front jogger home position sensor (FJHPS)	PS 2	Internal tray wheel sensor (ITWS)	DS	Front cover switch (FCSW)	SS	Joint switch (JSW)	RJHS	Rear jogger home position sensor (RJHPS)	FSES	Front stapler empty sensor (STES)	FSPS	Front stapler self-priming sensor (STSPS)	RSES	Rear stapler empty sensor (STES)	RSPS	Rear stapler self-priming sensor (STSPS)	US	Upper cover switch (UCSW)	Display	Swithes	FSTHS	Front stapler home position sensor (STHPS)	RSTHS	Rear stapler home position sensor (STHPS)	FCES	Front stapler cortridge sensor (STCS)	RCES	Rear stapler cartridge sensor (STCS)	SKS 1	Tray stock sensor A (TSSA)	PS 1	Paper entry sensor (PES)	HBH S	Paper conveying belt home position sensor (PCBHPS)	SKS 2	Tray stock sensor B (TSSB)	PS 4	Tray midpoint sensor (TMS)	SKS 4	Tray lower limit sensor (TLLS)	PKS	Scrap hole-punch sensor (PDTS)	SKS 3	Tray upper limit sensor (TULS)
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Maintenance item No.	Description																								
U243	<p>Checking the operation of the DF motors, clutches and solenoids</p> <p>Description Turns the SRDF motors, clutches or solenoids on.</p> <p>Purpose To check the operation of the SRDF motors, clutches and solenoids.</p> <p>Method</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select the item to be operated. The selected item is displayed in reverse, and operation starts.</p> <table><tr><th>Display</th><th>Motors, clutches and solenoids</th><th>Operation</th></tr><tr><td>F MOTOR</td><td>Original feed motor (OFM)</td><td>In operation</td></tr><tr><td>C MOTOR</td><td>Original paper conveying motor (OCM)</td><td>In operation</td></tr><tr><td>FEED CL</td><td>Original feed clutch (OFCL)</td><td>On for 0.5 s</td></tr><tr><td>EJ JCT SL</td><td>Eject feedshift solenoid (EFSSOL)</td><td>On for 0.5 s</td></tr><tr><td>REV JCT SL</td><td>Switchback feedshift solenoid (SBFSSOL)</td><td>On for 0.5 s</td></tr><tr><td>FEED SL</td><td>Original feed solenoid (OFSOL)</td><td>On and off</td></tr><tr><td>REVPRS SL</td><td>Switchback pressure solenoid (SBPSOL)</td><td>On and off</td></tr></table> <p>③ To turn each motor off, press the stop/clear key.</p> <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motors, clutches and solenoids	Operation	F MOTOR	Original feed motor (OFM)	In operation	C MOTOR	Original paper conveying motor (OCM)	In operation	FEED CL	Original feed clutch (OFCL)	On for 0.5 s	EJ JCT SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s	REV JCT SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s	FEED SL	Original feed solenoid (OFSOL)	On and off	REVPRS SL	Switchback pressure solenoid (SBPSOL)	On and off
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U244	<p>Checking the DF switches</p> <p>Description Displays the status of the respective switches on the SRDF.</p> <p>Purpose To check if respective switches on the SRDF operate correctly.</p> <p>Start</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select the type of switches (SW or VR) to be checked. The screen for executing is displayed.</p> <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> <p>① Turn the respective switches on and off manually to check the status.</p> <p>If the on-status of a switch is detected, the corresponding switch is displayed in reverse.</p> <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> <p>② To return to the screen for selecting an item, press the stop/clear key.</p> <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.</p> <p>As shown on the next page, the detected original width is displayed as a numerical value with the decimals omitted.</p>	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)						
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Maintenance item No.	Description						
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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 ① Press the start key. ② Change the screen using the Up/Down keys to display each message one at a time.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>												
U247	<p>Checking the operation of the side deck motors and clutches</p> <p>Description Turns on motors and clutches of the optional side deck.</p> <p>Purpose To check the operation of motors and clutches of the optional side desk devices.</p> <p>Start ① Press the start key. The screen for selecting an item is displayed.</p> <p>Method ① Press the item to be operated. The selected item is displayed in reverse and operation starts.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Motors and solenoids</th></tr> </thead> <tbody> <tr> <td>SDECK MOT</td><td>Side deck drive motor (SDDM)</td></tr> <tr> <td>SDECK FAN</td><td>Separation fan motor (SFM) and Suction fan motor (IFM)</td></tr> <tr> <td>SDECK LIFT</td><td>Side deck lift motor (SDLM)</td></tr> <tr> <td>SDECK CVCL</td><td>Side deck paper conveying clutch (SDCCL)</td></tr> <tr> <td>LDECK FDCL</td><td>Side deck paper feed clutch (SDPFCL)</td></tr> </tbody> </table> <p>To stop the side deck lift motor, press the stop/clear key.</p> <p>If this maintenance item is executed with the upper cover of the side deck open, detection of the upper limit is not possible and thus the side deck lift motor overruns.</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	Motors and solenoids	SDECK MOT	Side deck drive motor (SDDM)	SDECK FAN	Separation fan motor (SFM) and Suction fan motor (IFM)	SDECK LIFT	Side deck lift motor (SDLM)	SDECK CVCL	Side deck paper conveying clutch (SDCCL)	LDECK FDCL	Side deck paper feed clutch (SDPFCL)
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SDECK MOT	Side deck drive motor (SDDM)												
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SDECK LIFT	Side deck lift motor (SDLM)												
SDECK CVCL	Side deck paper conveying clutch (SDCCL)												
LDECK FDCL	Side deck paper feed clutch (SDPFCL)												
U248	<p>Setting the paper eject device</p> <p>Description Adjusts the amount of slack in the paper for the optional finisher in punch mode when it is attached. Also sets the punch limit and displays and clears the punch-hole scrap count. Check the operation of the mail box when the optional mail box is attached. Adjusts the booklet stapling position for each paper size when the optional booklet stitcher is attached.</p> <p>Purpose</p> <ul style="list-style-type: none"> • Adjustment of the amount of slack in the paper in punch mode 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. • Punch limit setting Sets the punch limit to notify the user of the time to collect punch-hole scrap. • Punch-hole scrap count display (clearing) 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. • Booklet stapling position adjustment Adjusts the booklet stapling position in the stitching mode if the position is not proper. • Mailbox operation check Check the operation after installing the mailbox. 												

Maintenance item No.	Description																												
U248	<p>Start</p> <p>Press the start key. The screen for selecting an item is displayed.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>PUNCH TIMING</td><td>Adjustment of the amount of slack in the paper in punch mode</td></tr><tr><td>PUNCH LIMIT</td><td>Punch limit/punch-hole scrap count</td></tr><tr><td>SADDLE ADJUST</td><td>Booklet stapling position adjustment</td></tr><tr><td>MAIL BOX TEST</td><td>Mailbox operation check</td></tr></table> <p>Setting the amount of slack in the paper</p> <p>① Select PUNCH TIMING on the screen for selecting an item.</p> <p>② Change the setting using the Up/Down keys.</p> <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. Changing the value by 1 changes the amount of slack by 1.25 mm.</p> <p>③ Press the start key. The value is set.</p> <p>④ To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the punch limit or displaying the punch-hole scrap count</p> <p>① Select PUNCH LIMIT on the screen for selecting an item.</p> <p>② Select the item to be set.</p> <p>③ Change the setting using the numeric keys or the Up/Down keys.</p> <p>To clear the punch-hole scrap count, press the all clear/reset key.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>PUNCH LIMIT</td><td>Punch limit (maximum number of punching times)</td><td>0 to 999000</td><td>75000</td></tr><tr><td>PUNCH CNT</td><td>Punch-hole scrap count (current number of punching times)</td><td>0 to 999999</td><td>—</td></tr></table> <p>PUNCH LIMIT can be changed in increments of 1000 times.</p> <p>When the punch-hole scrap count reaches the punch limit, "Check punch waste tank." is displayed on the touch panel.</p> <p>④ Press the start key. The value is set.</p> <p>⑤ To return to the screen for selecting an item, press the stop/clear key.</p>	Display	Description	PUNCH TIMING	Adjustment of the amount of slack in the paper in punch mode	PUNCH LIMIT	Punch limit/punch-hole scrap count	SADDLE ADJUST	Booklet stapling position adjustment	MAIL BOX TEST	Mailbox operation check	Description	Setting range	Initial setting	Amount of slack in the paper	-15 to +15	0	Display	Description	Setting range	Initial setting	PUNCH LIMIT	Punch limit (maximum number of punching times)	0 to 999000	75000	PUNCH CNT	Punch-hole scrap count (current number of punching times)	0 to 999999	—
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PUNCH CNT	Punch-hole scrap count (current number of punching times)	0 to 999999	—																										

Maintenance item No.	Description																																
U248	<p>Setting the booklet stapling position</p> <p>① Select SADDLE ADJUST on the screen for selecting an item.</p> <p>② Select the size to be set.</p> <p>③ Adjust the preset value using the Up/Down keys.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Chang in value per step</th></tr><tr><td>A4R</td><td>Adjustment of booklet stapling position for A4R 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</td><td>Adjustment of booklet stapling position for A3R size</td><td>-125 to +125</td><td>0</td><td>0.25 mm</td></tr></table> <table><tr><th>Left stapling</th><th>Right stapling</th><th>Adjustment method</th></tr><tr><td></td><td></td><td>Proper</td></tr><tr><td> Upper side is longer.</td><td> Lower side is longer.</td><td>Increase the preset value.</td></tr><tr><td> Lower side is longer.</td><td> Upper side is longer.</td><td>Decrease the preset value.</td></tr></table> <p>④ Press the start key. The value is set.</p> <p>⑤ To return to the screen for selecting an item, press the stop/clear key.</p> <p>Method to check the operation of mailbox</p> <p>① Select MAILBOX TEST on the screen for selecting an item.</p> <p>② Select the eject bin using Up/Down keys (setting range is 1 to 7). Initial setting: 1</p> <p>③ Press the interrupt key. The screen for copy mode is displayed.</p> <p>④ Press the start key to make test copies.</p> <p>⑤ To return to the screen for selecting an item, press the stop/clear key after press the interrupt 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	Setting range	Initial setting	Chang in value per step	A4R	Adjustment of booklet stapling position for A4R 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	Adjustment of booklet stapling position for A3R size	-125 to +125	0	0.25 mm	Left stapling	Right stapling	Adjustment method			Proper	 Upper side is longer.	 Lower side is longer.	Increase the preset value.	 Lower side is longer.	 Upper side is longer.	Decrease the preset value.
Display	Description	Setting range	Initial setting	Chang in value per step																													
A4R	Adjustment of booklet stapling position for A4R 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	Adjustment of booklet stapling position for A3R size	-125 to +125	0	0.25 mm																													
Left stapling	Right stapling	Adjustment method																															
		Proper																															
 Upper side is longer.	 Lower side is longer.	Increase the preset value.																															
 Lower side is longer.	 Upper side is longer.	Decrease the preset value.																															

Maintenance item No.	Description								
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: Maintenance cycle (number of copies) = setting × 1000</p> <p>Setting ① Change the setting using the 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>Maintenance cycle</td><td>0 to 600</td><td>300</td><td>1000 (copies)</td></tr></table> <p>For example, when set to 120, the maintenance cycle is set to 120000. Pressing the Up key when set to 600 rolls over the setting to 0.</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 an item is displayed.</p>	Description	Setting range	Initial setting	Change in value per step	Maintenance cycle	0 to 600	300	1000 (copies)
Description	Setting range	Initial setting	Change in value per step						
Maintenance cycle	0 to 600	300	1000 (copies)						
U251	<p>Checking/clearing the maintenance count</p> <p>Description Displays, clears and changes the maintenance count.</p> <p>Purpose To check the maintenance count. Also to clear the count during maintenance service.</p> <p>Method Press the start key. The maintenance count is displayed.</p> <p>Clearing ① Press CLEAR on the touch panel. ② Press the start key. The count is set, and the screen for selecting a maintenance item is displayed.</p> <p>Setting ① Enter a six-digit count using the numeric key. 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 count, press the stop/clear key. The screen for entering a maintenance item No. is displayed.</p>								

Maintenance item No.	Description																																								
U252	<p>Setting the destination</p> <p>Description Switches the operations and screens of machines according to the respective destinations.</p> <p>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.</p> <p>Method Press the start key. The screen for entering an item is displayed.</p> <p>Setting ① Select the destination. The selected item is displayed in reverse.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>JAPAN METRIC</td><td>Metric (Japan) models</td></tr><tr><td>INCH</td><td>Inch models</td></tr><tr><td>EUROPE METRIC</td><td>Metric (Europe) models</td></tr><tr><td>ASIA PACIFIC</td><td>Metric (Asia Pacific) models</td></tr></table> <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 count, press the stop/clear key. The screen for entering a maintenance item No. is displayed.</p> <p>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.</p> <p>• Initial setting according to the destinations</p> <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>198</td><td>Setting the fixing phase control</td><td>ON</td><td>OFF</td><td>ON</td></tr><tr><td>253</td><td>Switching between double and single counts</td><td>SINGLE COUNT</td><td>DOUBLE COUNT</td><td>DOUBLE COUNT</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><tr><td>347</td><td>Setting auto cassette size detection</td><td>ON</td><td>ON</td><td>OFF</td></tr><tr><td>348</td><td>Setting copy density adjustment range</td><td>NORMAL</td><td>SPECIAL AREA</td><td>SPECIAL AREA</td></tr></table>	Display	Description	JAPAN METRIC	Metric (Japan) models	INCH	Inch models	EUROPE METRIC	Metric (Europe) models	ASIA PACIFIC	Metric (Asia Pacific) models	Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific	198	Setting the fixing phase control	ON	OFF	ON	253	Switching between double and single counts	SINGLE COUNT	DOUBLE COUNT	DOUBLE COUNT	255	Setting auto clear time	120 s	90 s	90 s	347	Setting auto cassette size detection	ON	ON	OFF	348	Setting copy density adjustment range	NORMAL	SPECIAL AREA	SPECIAL AREA
Display	Description																																								
JAPAN METRIC	Metric (Japan) models																																								
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Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific																																					
198	Setting the fixing phase control	ON	OFF	ON																																					
253	Switching between double and single counts	SINGLE COUNT	DOUBLE COUNT	DOUBLE COUNT																																					
255	Setting auto clear time	120 s	90 s	90 s																																					
347	Setting auto cassette size detection	ON	ON	OFF																																					
348	Setting copy density adjustment range	NORMAL	SPECIAL AREA	SPECIAL AREA																																					

Maintenance item No.	Description						
U253	<p>Switching between double and single counts</p> <p>Description Switches the count system for the total count and other counts.</p> <p>Purpose According to user (copy service provider) request, select if A3/11" x 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.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>DOUBLE COUNT</td><td>Double count for A3/11" x 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 value is set, and the screen for selecting an 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 an maintenance item No. is displayed.</p>	Display	Description	DOUBLE COUNT	Double count for A3/11" x 17" paper only	SINGLE COUNT	Single count for all size paper
Display	Description						
DOUBLE COUNT	Double count for A3/11" x 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 entering 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. 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 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 value is set. Current settings are displayed.</p> <p>Setting ① Change the setting using the Up/Down key.</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. Pressing the Up key when set to 270 rolls over the setting to 0.</p> <p>When set to 0, the auto clear function is cancelled.</p> <p>② Press the start key. The value is set. 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 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 setting is set. 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. The screen for selecting a maintenance item is displayed.</p> <p>When change from OFF to ON, the initial value of 15 min. is set.</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>Start</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select an item. The screen for executing each item is displayed.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>EMPTY COUNT</td><td>Number of copies to be made after turning off of the toner level sensor before indicating toner empty</td></tr><tr><td>EMPTY MODE</td><td>Copy operation after toner empty detection</td></tr></table> <p>Setting the number of copies after turning off of the toner level sensor before indicating toner empty</p> <p>① Set the number of copies that can be made using the Up/Down keys.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Number of copies after turning off of the toner level sensor before indicating toner empty</td><td>600 to 1000 (copies)</td><td>1000</td></tr></table> <p>The setting can be changed by 200 copies per step.</p> <p>② Press the start key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Setting the copy operation after toner empty detection</p> <p>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 MODE</td><td>Enables only single copying.</td></tr><tr><td>CONTINUE MODE</td><td>Enables single and continuous copying.</td></tr></table> <p>Initial setting: SINGLE MODE</p> <p>② Set the number of copies that can be made using the 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>0 to 200 (copies)</td><td>5</td></tr></table> <p>The setting can be changed by 5 copies per step.</p> <p>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 entering 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	EMPTY COUNT	Number of copies to be made after turning off of the toner level sensor before indicating toner empty	EMPTY MODE	Copy operation after toner empty detection	Description	Setting range	Initial setting	Number of copies after turning off of the toner level sensor before indicating toner empty	600 to 1000 (copies)	1000	Display	Description	SINGLE MODE	Enables only single copying.	CONTINUE MODE	Enables single and continuous copying.	Description	Setting range	Initial setting	Number of copies after toner empty detection	0 to 200 (copies)	5
Display	Description																								
EMPTY COUNT	Number of copies to be made after turning off of the toner level sensor before indicating toner empty																								
EMPTY MODE	Copy operation after toner empty detection																								
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CONTINUE MODE	Enables single and continuous copying.																								
Description	Setting range	Initial setting																							
Number of copies after toner empty detection	0 to 200 (copies)	5																							

Maintenance item No.	Description								
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.</p> <p>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.</p> <p>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.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>COUNT:FEED</td><td>When secondary paper feed starts.</td></tr> <tr> <td>COUNT:EJECT</td><td>When the paper is ejected.</td></tr> </tbody> </table> <p>Initial setting: EJECT</p> <p>② Press the start key. The setting is set , and the screen for entering 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	COUNT:FEED	When secondary paper feed starts.	COUNT:EJECT	When the paper is ejected.		
Display	Description								
COUNT:FEED	When secondary paper feed starts.								
COUNT:EJECT	When the paper is ejected.								
U263	<p>Setting DF copy ejection orientation</p> <p>Description Sets the copy paper ejection orientation in DF copying.</p> <p>Purpose To set face up ejection to eject the same order as the originals when using special papers such as tracing paper and film as copy medium.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select an ejection orientation.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>FACE-DOWN (NORMAL)</td><td>Face down ejection.</td></tr> <tr> <td>FACE-UP (SPEED)</td><td>Face up ejection with bitmap copy.</td></tr> <tr> <td>FACE-UP (MEMORY)</td><td>Face up ejection with memory copy.</td></tr> </tbody> </table> <p>Initial setting: Face down</p> <p>② Press the start key. The setting is set , and the screen for entering 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-DOWN (NORMAL)	Face down ejection.	FACE-UP (SPEED)	Face up ejection with bitmap copy.	FACE-UP (MEMORY)	Face up ejection with memory copy.
Display	Description								
FACE-DOWN (NORMAL)	Face down ejection.								
FACE-UP (SPEED)	Face up ejection with bitmap copy.								
FACE-UP (MEMORY)	Face up ejection with memory copy.								

Maintenance item No.	Description								
U264	<p>Setting date display order</p> <p>Description Sets the order of year, month, and day for output on a list and the like.</p> <p>Purpose Selects the order according to user request.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select the order of display.</p> <table><tr><th>Display</th><th>Description</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: inch: Month - day - year metric: Day - month - year</p> <p>② Press the start key. The setting is set , and the screen for entering 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	YEAR-MONTH-DATE	Year - month - day	MONTH-DATE-YEAR	Month - day - year	DATE-MONTH-YEAR	Day - month - year
Display	Description								
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 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>								
U266	<p>Setting the number of days after which to automatically delete documents</p> <p>Description Sets the number of days to save documents on the HDD before automatically deleting.</p> <p>Purpose To change the number of days to retain data that is saved within the auto-delete area of the HDD before automatically deleting.</p> <p>Method Press the start key.</p> <p>Setting ① Change the setting using Up/Down key.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial value</th></tr><tr><td>Number of days after which to automatically delete documents</td><td>0 to 7 (days)</td><td>7</td></tr></table> <p>When set to 0, data will not be deleted automatically.</p> <p>② Press the start key. The setting is set, and the screen for entering 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>	Description	Setting range	Initial value	Number of days after which to automatically delete documents	0 to 7 (days)	7		
Description	Setting range	Initial value							
Number of days after which to automatically delete documents	0 to 7 (days)	7							

Maintenance item No.	Description						
U330	<p>Sets the number of copies for switching the copy eject tray in the finisher</p> <p>Description Sets the number of copies at which the copy eject tray will switch from the sub tray to the main tray.</p> <p>Purpose Selects the value according to user request.</p> <p>Method Press the start key. The screen for adjustment is displayed.</p> <p>Setting ① Use the numeric keys or Up/Down keys to adjust the preset value.</p> <table><tr><th>Description</th><th>Setting range</th><th>Initial value</th></tr><tr><td>Number of copies to be ejected on the sub tray</td><td>1 to 100 (sheets)</td><td>100</td></tr></table> <p>The copy eject tray is switched from the sub tray to the main tray when the number of copies ejected to the sub tray exceeds the preset value.</p> <p>② Press the start key. The setting is set , and the screen for entering 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>	Description	Setting range	Initial value	Number of copies to be ejected on the sub tray	1 to 100 (sheets)	100
Description	Setting range	Initial value					
Number of copies to be ejected on the sub tray	1 to 100 (sheets)	100					
U331	<p>Switching the paper ejection mode</p> <p>Description Sets whether to eject copied sheets with the printed face facing up or down.</p> <p>Purpose To be set according to frequency of use:set to the more frequently used more..</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select the ejection mode.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>Face Up</td><td>Face-up ejection</td></tr><tr><td>Face Down</td><td>Face-down ejection</td></tr></table> <p>② Press the start key. The setting is set.</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	Face-up ejection	Face Down	Face-down ejection
Display	Description						
Face Up	Face-up ejection						
Face Down	Face-down ejection						

Maintenance item No.	Description																																																																																									
U332	<p>Setting the size conversion factor</p> <p>Description</p> <p>Sets the factor for converting each paper size into A4. The black ratio is converted for the A4 size using the factor set in this maintenance item. Values set are displayed in the user simulation.</p> <p>Purpose</p> <p>To set the factor to convert the black ratio of each paper size for A4 size.</p> <p>Method</p> <p>① Press the start key. The screen for selecting an item is displayed.</p> <p>② Select the paper size.</p> <p>③ Change the setting using Up/Down keys.</p> <p>The size conversion factor can be set separately for the copier mode (COPY) and the printer mode (PRI) at the screen for setting the size conversion factor.</p> <p>Metric models</p> <table><tr><th rowspan="2">Display</th><th rowspan="2">Description</th><th rowspan="2">Setting range</th><th colspan="2">Initial setting</th></tr><tr><th>COPY</th><th>PRI</th></tr><tr><td>A3</td><td>Size conversion factor for A3</td><td>0.0 to 3.0</td><td>2.0</td><td>2.0</td></tr><tr><td>B4</td><td>Size conversion factor for B4</td><td>0.0 to 3.0</td><td>1.5</td><td>1.5</td></tr><tr><td>A4</td><td>Size conversion factor for A4</td><td>0.0 to 3.0</td><td>1.0</td><td>1.0</td></tr><tr><td>B5</td><td>Size conversion factor for B5</td><td>0.0 to 3.0</td><td>0.7</td><td>0.7</td></tr><tr><td>A5</td><td>Size conversion factor for A5</td><td>0.0 to 3.0</td><td>0.5</td><td>0.5</td></tr><tr><td>B6</td><td>Size conversion factor for B6</td><td>0.0 to 3.0</td><td>0.4</td><td>0.4</td></tr><tr><td>A6</td><td>Size conversion factor for A6</td><td>0.0 to 3.0</td><td>0.3</td><td>0.3</td></tr><tr><td>POST</td><td>Size conversion factor for postcard</td><td>0.0 to 3.0</td><td>0.3</td><td>0.6</td></tr><tr><td>FOL</td><td>Size conversion factor for folio</td><td>0.0 to 3.0</td><td>1.0</td><td>1.0</td></tr><tr><td>ECT</td><td>Size conversion factor for non-standard sizes</td><td>0.0 to 3.0</td><td>1.0</td><td>1.0</td></tr></table> <p>Inch models</p> <table><tr><th rowspan="2">Display</th><th rowspan="2">Description</th><th rowspan="2">Setting range</th><th colspan="2">Initial setting</th></tr><tr><th>COPY</th><th>PRI</th></tr><tr><td>11 × 17</td><td>Size conversion factor for 11" × 17"</td><td>0.0 to 3.0</td><td>2.0</td><td>2.0</td></tr><tr><td>8.5 × 14</td><td>Size conversion factor for 8.5" × 14"</td><td>0.0 to 3.0</td><td>1.5</td><td>1.5</td></tr><tr><td>8.5 × 11</td><td>Size conversion factor for 8.5" × 11"</td><td>0.0 to 3.0</td><td>1.0</td><td>1.0</td></tr><tr><td>8.5 × 5.5</td><td>Size conversion factor for 8.5" × 5.5"</td><td>0.0 to 3.0</td><td>0.5</td><td>0.5</td></tr><tr><td>ECT</td><td>Size conversion factor for non-standard sizes</td><td>0.0 to 3.0</td><td>1.0</td><td>1.0</td></tr></table> <p>④ Press the start key. The setting is set.</p> <p>Completion</p> <p>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		COPY	PRI	A3	Size conversion factor for A3	0.0 to 3.0	2.0	2.0	B4	Size conversion factor for B4	0.0 to 3.0	1.5	1.5	A4	Size conversion factor for A4	0.0 to 3.0	1.0	1.0	B5	Size conversion factor for B5	0.0 to 3.0	0.7	0.7	A5	Size conversion factor for A5	0.0 to 3.0	0.5	0.5	B6	Size conversion factor for B6	0.0 to 3.0	0.4	0.4	A6	Size conversion factor for A6	0.0 to 3.0	0.3	0.3	POST	Size conversion factor for postcard	0.0 to 3.0	0.3	0.6	FOL	Size conversion factor for folio	0.0 to 3.0	1.0	1.0	ECT	Size conversion factor for non-standard sizes	0.0 to 3.0	1.0	1.0	Display	Description	Setting range	Initial setting		COPY	PRI	11 × 17	Size conversion factor for 11" × 17"	0.0 to 3.0	2.0	2.0	8.5 × 14	Size conversion factor for 8.5" × 14"	0.0 to 3.0	1.5	1.5	8.5 × 11	Size conversion factor for 8.5" × 11"	0.0 to 3.0	1.0	1.0	8.5 × 5.5	Size conversion factor for 8.5" × 5.5"	0.0 to 3.0	0.5	0.5	ECT	Size conversion factor for non-standard sizes	0.0 to 3.0	1.0	1.0
Display	Description				Setting range	Initial setting																																																																																				
		COPY	PRI																																																																																							
A3	Size conversion factor for A3	0.0 to 3.0	2.0	2.0																																																																																						
B4	Size conversion factor for B4	0.0 to 3.0	1.5	1.5																																																																																						
A4	Size conversion factor for A4	0.0 to 3.0	1.0	1.0																																																																																						
B5	Size conversion factor for B5	0.0 to 3.0	0.7	0.7																																																																																						
A5	Size conversion factor for A5	0.0 to 3.0	0.5	0.5																																																																																						
B6	Size conversion factor for B6	0.0 to 3.0	0.4	0.4																																																																																						
A6	Size conversion factor for A6	0.0 to 3.0	0.3	0.3																																																																																						
POST	Size conversion factor for postcard	0.0 to 3.0	0.3	0.6																																																																																						
FOL	Size conversion factor for folio	0.0 to 3.0	1.0	1.0																																																																																						
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8.5 × 5.5	Size conversion factor for 8.5" × 5.5"	0.0 to 3.0	0.5	0.5																																																																																						
ECT	Size conversion factor for non-standard sizes	0.0 to 3.0	1.0	1.0																																																																																						

Maintenance item No.	Description						
U333	<p>Setting the number of digits of ID-code</p> <p>Description Sets the number of digits of ID-code.</p> <p>Purpose Sets the number of digits according to user request.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select the number of digits.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>4 digits</td><td>The number of digits of ID-code is 4.</td></tr> <tr> <td>7 digits</td><td>The number of digits of ID-code is 7.</td></tr> </tbody> </table> <p>Initial setting: 4 digits for inch models 7 digits for metric models</p> <p>② Press the start key. The setting is set , and the screen for entering 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	4 digits	The number of digits of ID-code is 4.	7 digits	The number of digits of ID-code is 7.
Display	Description						
4 digits	The number of digits of ID-code is 4.						
7 digits	The number of digits of ID-code is 7.						
U334	<p>Setting the ejection method in the booklet stitcher</p> <p>Description Sets whether or not the eject bin in use is switched to the other bin when the bin in use in the booklet stitcher overflows.</p> <p>Purpose To be set to use a different bin for paper ejection without interrupting copying operation when the currently used bin overflows.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select an ejection method.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>2 BIN</td><td>The eject bin is switched when a bin overflows.</td></tr> <tr> <td>1 BIN</td><td>The eject bin is not switched even when a bin overflows.</td></tr> </tbody> </table> <p>Initial setting: 1 BIN</p> <p>② Press the start key. The setting is set , and the screen for entering 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	2 BIN	The eject bin is switched when a bin overflows.	1 BIN	The eject bin is not switched even when a bin overflows.
Display	Description						
2 BIN	The eject bin is switched when a bin overflows.						
1 BIN	The eject bin is not switched even when a bin overflows.						

Maintenance item No.	Description										
U335	<p>Setting the drum heater control</p> <p>Description</p> <p>Sets the controlling method for the drum heater.</p> <p>Purpose</p> <p>To change the controlling method for the drum heater according to the machine installation environment.</p> <p>Method</p> <p>Press the start key. The screen for selecting an item appears.</p> <p>Setting</p> <p>① Select the controlling method for the drum heater.</p> <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON 1</td><td>Turns on and off the drum heater under high temperature and high humidity conditions, except for when the front cover is open.</td></tr><tr><td>ON 2</td><td>Turns on and off the drum heater under high temperature and high humidity conditions.</td></tr><tr><td>ON 3</td><td>Always turns on and off the drum heater, except for when the front cover is open.</td></tr><tr><td>OFF</td><td>The drum heater is not turned on.</td></tr></table> <p>Initial setting: ON 1</p> <p>When the drum heater is turned on and off, diagnostic detection for a break or short circuit in the drum thermistor wire (C720 and C721) as well as a break in the drum heater wire (C722) will be performed.</p> <p>② Press the start key. The setting is set.</p> <p>Completion</p> <p>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 1	Turns on and off the drum heater under high temperature and high humidity conditions, except for when the front cover is open.	ON 2	Turns on and off the drum heater under high temperature and high humidity conditions.	ON 3	Always turns on and off the drum heater, except for when the front cover is open.	OFF	The drum heater is not turned on.
Display	Description										
ON 1	Turns on and off the drum heater under high temperature and high humidity conditions, except for when the front cover is open.										
ON 2	Turns on and off the drum heater under high temperature and high humidity conditions.										
ON 3	Always turns on and off the drum heater, except for when the front cover is open.										
OFF	The drum heater is not turned on.										
U336	<p>Setting the HDD type</p> <p>Description</p> <p>Sets the manufacturer and type of the HDD.</p> <p>Purpose</p> <p>To set data according to the manufacturer and type of the new HDD after replacement.</p> <p>Method</p> <p>① Press the start key. The screen for making a setting appears.</p> <p>② Change the setting using the Up/Down keys.</p> <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DATA</td><td>HDD type</td><td>0 to 255</td><td>0</td></tr></table> <p>Since the HDD type of all the recommended HDDs is 0, the setting for this maintenance item does not need to be changed.</p> <p>③ Press the start key. The value is set.</p> <p>Completion</p> <p>To exit this maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting an maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	DATA	HDD type	0 to 255	0		
Display	Description	Setting range	Initial setting								
DATA	HDD type	0 to 255	0								

Maintenance item No.	Description										
U337	Setting the paper size for the side deck Description Sets the paper size for the optional side deck. This maintenance item is applied to only Japanese specification machines, so no setting is necessary.										
U338	Setting the transmission capacity limit for e-mail Description Sets the limit for transmittable data amount (number of originals) for the e-mail capability of the scanner. Purpose To be set according to the network environment and needs of the user. Method Press the start key. The screen for selecting an item is displayed. Setting ① Select the transmission capacity. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Little</td><td>Small capacity</td></tr> <tr> <td>Medium</td><td>Medium capacity</td></tr> <tr> <td>Large</td><td>Large capacity</td></tr> <tr> <td>Unlimited</td><td>Unlimited capacity</td></tr> </tbody> </table> Initial setting: Little ② Press the start key. The setting is set, and the screen for entering a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.	Display	Description	Little	Small capacity	Medium	Medium capacity	Large	Large capacity	Unlimited	Unlimited capacity
Display	Description										
Little	Small capacity										
Medium	Medium capacity										
Large	Large capacity										
Unlimited	Unlimited capacity										
U340	Setting the job build mode Description Switches between the multiple menu display and simple menu display for the job build function. Purpose To change the number of selection items for the job build function. Method Press the start key. The screen for selecting an item is displayed. Setting ① Select SIMPLE MODE or NOMAL MODE. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SIMPLE MODE</td><td>Selection from 3 items (simple menu)</td></tr> <tr> <td>NOMAL MODE</td><td>Selection from 9 items (multiple menu)</td></tr> </tbody> </table> Initial setting: NOMAL MODE ② Press the start key. The setting is set, and the screen for entering a maintenance item No. is displayed.	Display	Description	SIMPLE MODE	Selection from 3 items (simple menu)	NOMAL MODE	Selection from 9 items (multiple menu)				
Display	Description										
SIMPLE MODE	Selection from 3 items (simple menu)										
NOMAL MODE	Selection from 9 items (multiple menu)										

Maintenance item No.	Description										
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 ① Select ON or OFF.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ON</td><td>Duplex copy</td></tr> <tr> <td>OFF</td><td>Simplex copy</td></tr> </table> <p>Initial setting: OFF</p> <p>② Press the start key. The setting is set, and the screen for entering 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	ON	Duplex copy	OFF	Simplex copy				
Display	Description										
ON	Duplex copy										
OFF	Simplex copy										
U344	<p>Setting preheat/energy saver mode</p> <p>Description Changes the control mode for preheat/energy saver, and sets the silent mode (low noise mode).</p> <p>Purpose According to user request, selects which has priority, recovery time from preheat or energy saving. Also sets polygon motor noise elimination in preheat.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select control mode.</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 decreased by 20°C/68°F and the copier is forcibly stabilized 30 s after exiting preheat mode.</td></tr> <tr> <td>E 2000</td><td>The fixing control temperature is decreased by 25°C/77°F.</td></tr> <tr> <td>SILENT MDOE</td><td>ON: Polygon motor off/OFF: Normal</td></tr> </table> <p>Initial setting: Energy Star applied</p> <p>③ Press the start key. The setting is set, and the screen for entering 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	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 decreased by 20°C/68°F and the copier is forcibly stabilized 30 s after exiting preheat mode.	E 2000	The fixing control temperature is decreased by 25°C/77°F.	SILENT MDOE	ON: Polygon motor off/OFF: Normal
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 decreased by 20°C/68°F and the copier is forcibly stabilized 30 s after exiting preheat mode.										
E 2000	The fixing control temperature is decreased by 25°C/77°F.										
SILENT MDOE	ON: Polygon motor off/OFF: Normal										

Maintenance item No.	Description						
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.</p> <p>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.</p> <p>Purpose To change the time to display the maintenance due indication.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting ① Change the setting using the numeric or Up/Down keys.</p> <table border="1"> <tr> <th>Description</th><th>Setting range</th></tr> <tr> <td>Display period for the next maintenance (remaining count before the end of the maintenance cycle)</td><td>0 to 9999</td></tr> </table> <p>Initial setting: 0</p> <p>② Press the start key. The setting is set, and the screen for entering 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>	Description	Setting range	Display period for the next maintenance (remaining count before the end of the maintenance cycle)	0 to 9999		
Description	Setting range						
Display period for the next maintenance (remaining count before the end of the maintenance cycle)	0 to 9999						
U347	<p>Setting auto cassette size detection</p> <p>Description Turning the auto cassette size detection function on/off.</p> <p>Purpose To be used when turning the auto paper size (in the cassettes) detection off and making copies onto only the specified size paper.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select ON or OFF.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ON</td><td>Detects the paper sizes in the cassettes automatically.</td></tr> <tr> <td>OFF</td><td>Does not detect the paper sizes in the cassettes automatically.</td></tr> </table> <p>Initial setting: ON for inch and OFF for metric models</p> <p>② Press the start key. The setting is set, and the screen for entering 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	ON	Detects the paper sizes in the cassettes automatically.	OFF	Does not detect the paper sizes in the cassettes automatically.
Display	Description						
ON	Detects the paper sizes in the cassettes automatically.						
OFF	Does not detect the paper sizes in the cassettes automatically.						

Maintenance item No.	Description						
U348	<p>Setting the copy density adjustment range</p> <p>Description Selects the adjustment range for copy density from NORMAL and SPECIAL AREA (for wider range).</p> <p>Purpose To change the setting according to user request. When especially dark or light density is requested, set to SPECIAL AREA.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select the density range.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SPECIAL AREA</td><td>25 steps (enlargement mode)</td></tr> <tr> <td>NORMAL</td><td>13 steps</td></tr> </tbody> </table> <p>Initial setting: SPECIAL AREA</p> <p>② Press the start key. The setting is set, and the screen for entering 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	SPECIAL AREA	25 steps (enlargement mode)	NORMAL	13 steps
Display	Description						
SPECIAL AREA	25 steps (enlargement mode)						
NORMAL	13 steps						
U350	<p>Setting the ID-code error output</p> <p>Description Sets whether or not an error report is output when an ID-code error occurs.</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 highlighted.</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Error report is output.</td></tr> <tr> <td>OFF</td><td>Error report is not output.</td></tr> </tbody> </table> <p>Initial setting: OFF</p> <p>② Press the start key. The setting is set, and the screen for entering 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	ON	Error report is output.	OFF	Error report is not output.
Display	Description						
ON	Error report is output.						
OFF	Error report is not output.						
U402	<p>Adjusting margins for image printing</p> <p>Adjustment See page 1-6-20.</p>						
U403	<p>Adjusting margins for reading an original on the contact glass</p> <p>Adjustment See page 1-6-39.</p>						
U404	<p>Adjusting margins for DF original reading</p> <p>Adjustment See page 1-6-74.</p>						
U407	<p>Adjusting the printing timing for the original on the contact glass</p> <p>Adjustment See page 1-6-18.</p>						

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 Up/Down keys. <table border="1"> <thead> <tr> <th>Display</th><th>Paper feed locations</th></tr> </thead> <tbody> <tr> <td>BYPASS</td><td>Bypass table</td></tr> <tr> <td>LCF</td><td>Large paper deck</td></tr> <tr> <td>CASS-C</td><td>Copier upper cassette</td></tr> <tr> <td>CASS-D</td><td>Copier lower cassette</td></tr> <tr> <td>DUPLEX</td><td>Duplex unit</td></tr> <tr> <td>S-DECK</td><td>Side deck</td></tr> </tbody> </table> <p>When an optional side deck 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 setting is set, and the screen for entering 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 is displayed.</p>	Display	Paper feed locations	BYPASS	Bypass table	LCF	Large paper deck	CASS-C	Copier upper cassette	CASS-D	Copier lower cassette	DUPLEX	Duplex unit	S-DECK	Side deck
Display	Paper feed locations														
BYPASS	Bypass table														
LCF	Large paper deck														
CASS-C	Copier upper cassette														
CASS-D	Copier lower cassette														
DUPLEX	Duplex unit														
S-DECK	Side deck														
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>Start 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>COUNT</td><td>Displaying or clearing the jam counts</td></tr> <tr> <td>TOTAL COUNT</td><td>Displaying the total jam counts</td></tr> </tbody> </table> <p>Method to display/clear the jam counts</p> <ol style="list-style-type: none"> ① Press COUNT. The jam count is displayed by jam codes. ② Change the screen using the Up/Down keys. Press ALL on the touch panel, and press the start key. The count is cleared, and the screen for selecting an item is displayed. <p>Method to display the total jam counts</p> <ol style="list-style-type: none"> ① Press TOTAL COUNT. The total jam count is displayed by jam codes. ② Changes the screen using the Up/Down keys. The total jam count cannot be cleared. Press the stop/clear key, and the screen for selecting an item 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 is displayed.</p>	Display	Description	COUNT	Displaying or clearing the jam counts	TOTAL COUNT	Displaying the total jam counts								
Display	Description														
COUNT	Displaying or clearing the jam counts														
TOTAL COUNT	Displaying the total jam counts														

Maintenance item No.	Description																				
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>Start 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>COUNT</td><td>Displaying or clearing the service call counts</td></tr> <tr> <td>TOTAL COUNT</td><td>Displaying the total service call counts</td></tr> </tbody> </table> <p>Method to display/clear the service call counts</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 Up/Down keys. Press ALL on the touch panel, and press the start key. The count is cleared, and the screen for selecting an item is displayed. Service call counts cannot be cleared individually. <p>Method to display the total service call counts</p> <ol style="list-style-type: none"> ① Press TOTAL COUNT. The total service call count is displayed by service call codes. ② Changes the screen using the Up/Down keys. The total service call count cannot be cleared. Press the stop/clear key, and the screen for selecting an item 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 is displayed.</p>	Display	Description	COUNT	Displaying or clearing the service call counts	TOTAL COUNT	Displaying the total service call counts														
Display	Description																				
COUNT	Displaying or clearing the service call counts																				
TOTAL COUNT	Displaying the total service call counts																				
U905	<p>Checking/clearing counts by optional devices</p> <p>Description Displays or clears the counts by optional devices.</p> <p>Purpose To check the use of the SRDF, finisher and booklet stitcher. 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. The count of the selected device is displayed. <ul style="list-style-type: none"> • SRDF (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-side 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>COPY COUNT</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>STACKER</td><td>Frequency the stacker has been activated</td></tr> <tr> <td>SADDLE</td><td>Frequency the booklet stitcher 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 entering 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 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-side originals that has passed through the DF in RADF mode	Display	Description	COPY COUNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	PUNCH	Frequency the punch has been activated	STACKER	Frequency the stacker has been activated	SADDLE	Frequency the booklet stitcher 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-side originals that has passed through the DF in RADF mode																				
Display	Description																				
COPY COUNT	No. of copies that has passed																				
STAPLE	Frequency the stapler has been activated																				
PUNCH	Frequency the punch has been activated																				
STACKER	Frequency the stacker has been activated																				
SADDLE	Frequency the booklet stitcher has been activated																				

Maintenance item No.	Description								
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 cassettes or other sections below, and the related parts are serviced.</p> <p>The following sections can be the subject of the partial operation:</p> <ul style="list-style-type: none"> Large paper deck Copier cassettes HDD Scanner Side deck* Finisher* Mailbox* *option <p>Method</p> <ol style="list-style-type: none"> ① Press the start key. ② Press RESET 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 when the main switch is turned on. 								
U907	<p>Checking and resetting the count value on each ejection location</p> <p>Description Displays and resets the count value of ejected sheets on each ejection location.</p> <p>Purpose Checks the replacement period for maintenance parts. Also resets the count value after replacing the maintenance parts.</p> <p>Method Press the start key. * The count value on each ejection location is displayed</p> <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>STRAIGHT</td><td>Straight ejection count</td></tr> <tr> <td>SWITCH BACK</td><td>Reversed ejection count</td></tr> <tr> <td>AUTO DUPLEX</td><td>Duplex tray ejection count</td></tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> ① Select the item for which the count value is to be reset. <ul style="list-style-type: none"> * The selected item is highlighted. * To reset the count values for all ejection locations, press ALL on the touch panel. ② Press the start key. The count is cleared. <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	STRAIGHT	Straight ejection count	SWITCH BACK	Reversed ejection count	AUTO DUPLEX	Duplex tray ejection count
Display	Description								
STRAIGHT	Straight ejection count								
SWITCH BACK	Reversed ejection count								
AUTO DUPLEX	Duplex tray ejection count								

Maintenance item No.	Description				
U908	<p>Checking the count value of the electronic counter</p> <p>Description Displays the count value of the electronic counter.</p> <p>Purpose Checks the value for maintenance work.</p> <p>Method Press the start key. * The count value of the total counter is displayed.</p> <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>COUNT</td><td>Count value of electronic counter</td></tr> </table> <p>Clearing The count value cannot be changed or cleared.</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	COUNT	Count value of electronic counter
Display	Description				
COUNT	Count value of electronic counter				
U909	<p>Checking/clearing the fixing web count</p> <p>Description Displays and clears the count of the cleaning felt operation.</p> <p>Purpose To clear the fixing web counts after replacing the cleaning felt during maintenance or for other reasons.</p> <p>Method Press the start key. The fixing web count is displayed.</p> <p>Clearing ① Press CLEAR on the touch panel. ② Press the start key. The count is set, and the screen for selecting a maintenance item is displayed.</p> <p>Setting ① Enter a six-digit numerical value using the numeric keys. 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 count, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>				
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 RESET 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 clearing the data, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>				

Maintenance item No.	Description
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 ① Press the start key, and the screen for sthe paper feed counts by paper size is displayed. ② Select a paper size or ALL on the touch panel. ③ Press the start key. The count is cleared.</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>
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 ① Press CLEAR on the touch panel. ② Press the start key. The accumulated time is cleared, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the accumulated time, press the stop/clear key. The screen for selecting a maintenance item 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. Also used to clear the scanner count after replacing consumable parts in the scanner.</p> <p>Method Press the start key. The count of scanner operation is displayed. Each scan is counted as one regardless of the paper size.</p> <p>Clearing ① Press CLEAR on the touch panel. ② Press the start key. The count is cleared. 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>

Maintenance item No.	Description
U992	<p>Checking/clearing the printer count</p> <p>Description</p> <p>Displays, clears or changes the print count of the printer when the optional printer unit is installed.</p> <p>Purpose</p> <p>To check the frequency of use of the printer.</p> <p>Method</p> <p>Press the start key. The printer count is displayed.</p> <p>Clearing</p> <p>① Press CLEAR on the touch panel.</p> <p>② Press the start key. The count is set, and the screen for selecting a maintenance item is displayed.</p> <p>Setting</p> <p>① Enter a six-digit numerical value using the numeric keys.</p> <p>② Press the start key. The count is set, and the screen for selecting a maintenance item is displayed.</p> <p>Completion</p> <p>To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>

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 cassette, front cover, upper right cover or lower right cover. When paper is jammed in the SRDF, open the DF original reversing cover. To clear a jam in the feedshift and duplex sections, open the ejection cover or draw out the duplex unit.

Paper misfeed detection can be reset by opening and closing the respective covers to turn safety switch 1, 2, 3 or 4 off and on.

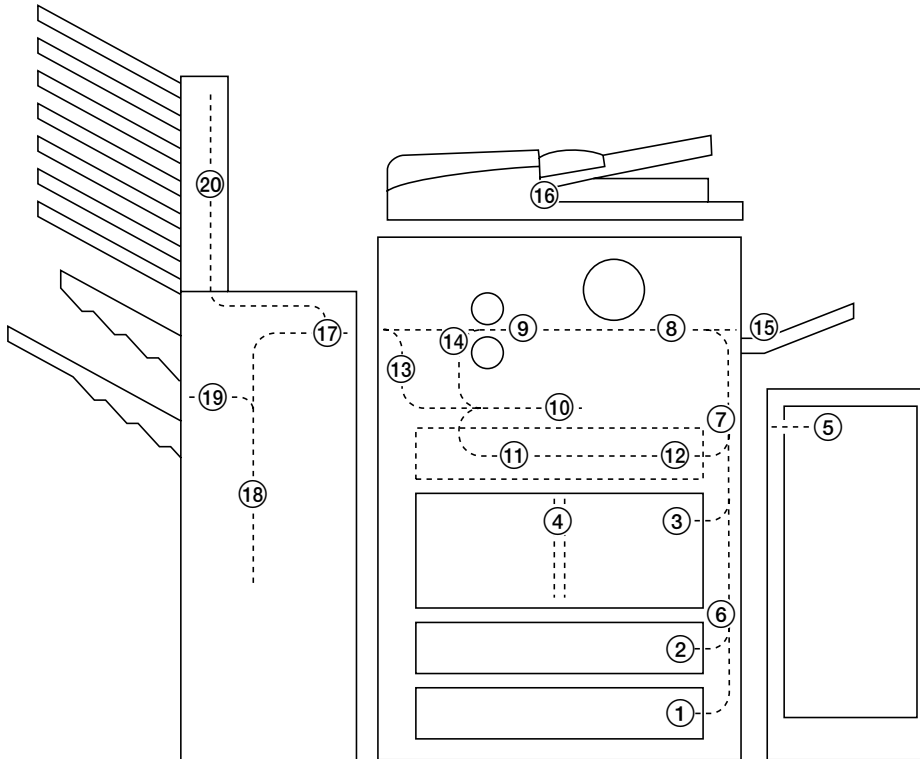
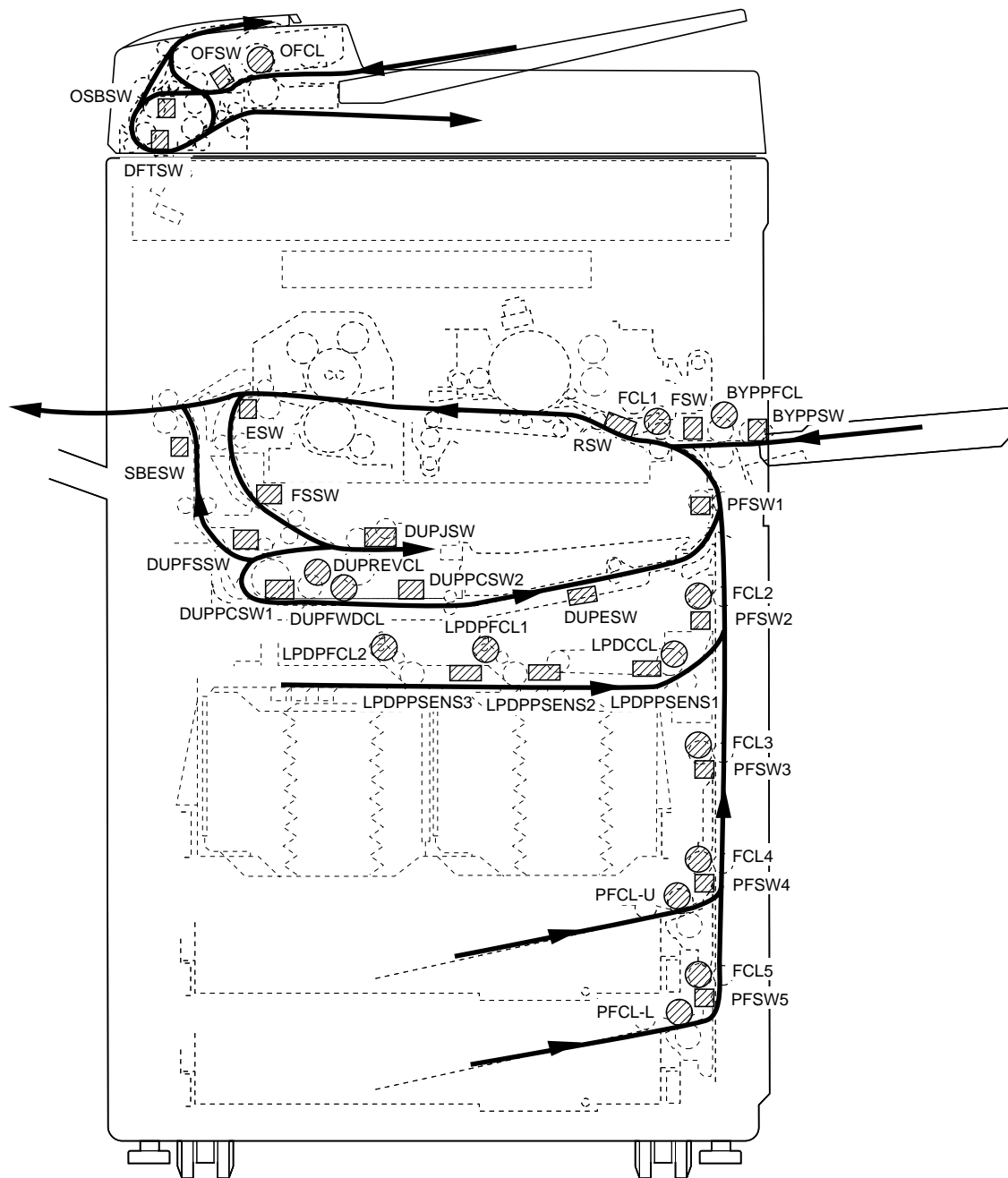


Figure 1-5-1

- | | |
|--------------------------------------|--|
| ① Lower cassette | ⑪ Duplex paper conveying section |
| ② Upper cassette | ⑫ Duplex eject section |
| ③ Large paper deck right cassette | ⑬ Reverse face eject section |
| ④ Large paper deck left cassette | ⑭ Eject and feedshift sections |
| ⑤ Side deck | ⑮ Bypass table |
| ⑥ Vertical paper conveying section | ⑯ SRDF |
| ⑦ Converging section | ⑰ Finisher paper entry section |
| ⑧ Registration and transfer sections | ⑱ Finisher internal tray paper conveying section |
| ⑨ Fixing section | ⑲ Finisher eject section |
| ⑩ Duplex tray | ⑳ Mailbox |

Jam code	Contents	See page
10	No paper feed from large paper deck	P.1-5-4
13	No paper feed from the upper cassette	P.1-5-4
14	No paper feed from the lower cassette	P.1-5-4
15	No paper feed from optional side deck	P.1-5-4
16	No paper feed from bypass	P.1-5-4
17	No paper feed from the large paper deck	P.1-5-5
18	No paper feed from the large paper deck	P.1-5-5
19	No paper feed from the large paper deck	P.1-5-5
20	Misfeed in copier vertical paper conveying section	P.1-5-5
21	Misfeed in copier vertical paper conveying section	P.1-5-5
22	Misfeed in copier vertical paper conveying section	P.1-5-6
23	Misfeed in copier vertical paper conveying section	P.1-5-6
24	Misfeed in copier vertical paper conveying section	P.1-5-6
25	Misfeed in copier vertical paper conveying section	P.1-5-6
26	Misfeed in converging section	P.1-5-6
27	Multiple sheets in copier vertical conveying section	P.1-5-6
28	Multiple sheets in copier vertical conveying section	P.1-5-7
29	Multiple sheets in copier vertical conveying section	P.1-5-7
30	Multiple sheets in copier vertical conveying section	P.1-5-7
31	Multiple sheets in copier vertical conveying section	P.1-5-7
32	Multiple sheets before registration section	P.1-5-7
33	Misfeed in registration/transfer section	P.1-5-7
40	Misfeed in fixing section	P.1-5-8
50	Misfeed in eject section	P.1-5-8
51	Misfeed in reverse face eject section	P.1-5-8
52	Misfeed in feedshift section	P.1-5-8
53	Misfeed in feedshift section	P.1-5-8
60	Misfeed in duplex tray	P.1-5-9
61	Duplex/eject switching section	P.1-5-9
62	Duplex/eject switching section	P.1-5-9
63	Misfeed in duplex paper conveying section	P.1-5-9
64	Misfeed in duplex paper conveying section	P.1-5-9
65	Misfeed in duplex paper conveying section	P.1-5-10
66	Misfeed in duplex paper conveying section	P.1-5-10
67	Misfeed in duplex eject section	P.1-5-10
68	Misfeed in duplex eject section	P.1-5-10
70	No original feed (SRDF)	P.1-5-10
71	An original jam in the original feed/conveying section (SRDF)	P.1-5-11
72	An original jam in the original feed section 2 (SRDF)	P.1-5-11
73	An original jam in the original conveying section (SRDF)	P.1-5-11
74	An original jam remaining after retries (SRDF)	P.1-5-11
75	An original jam in the switchback section 1 (SRDF)	P.1-5-12
76	An original jam in the switchback section 2 (SRDF)	P.1-5-12
81	Jam in paper entry section (finisher)	—
82	Jam in eject section of non-sort tray (finisher)	—
83	Jam in paper conveying section of internal tray (finisher)	—
84	Jam in eject section of sort tray (finisher)	—

(2) Paper misfeed detection conditions



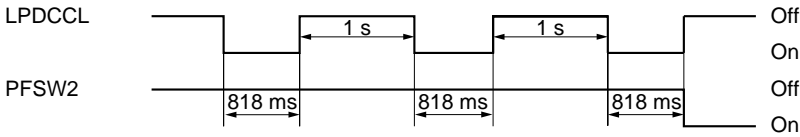
1-5

Figure 1-5-2

1. Paper feed section

- No paper feed from large paper deck (jam code 10)

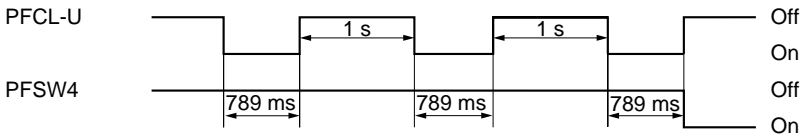
Paper feed switch 2 (PFSW2) does not turn on within 818 ms of the large paper deck conveying clutch (LPDCCL) turning on; the clutch is then successively held off for 1 s and turned back on twice, but the switch again fails to turn on within 818 ms.



Timing chart 1-5-1

- No paper feed from the upper cassette (jam code 13)

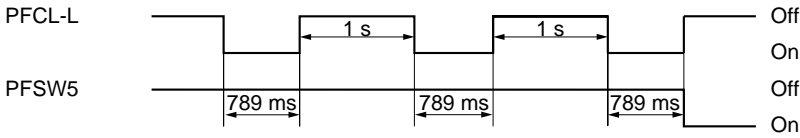
Paper feed switch 4 (PFSW4) does not turn on within 789 ms of the upper paper feed clutch (PFCL-U) turning on; the clutch is then successively turned off for 1 s and turned back on twice, but the switch again fails to turn on within 789 ms.



Timing chart 1-5-2

- No paper feed from the lower cassette (jam code 14)

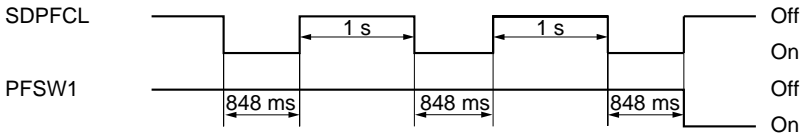
Paper feed switch 5 (PFSW5) does not turn on within 789 ms of the lower paper feed clutch (PFCL-L) turning on; the clutch is then successively turned off for 1 s and turned back on twice, but the switch again fails to turn on within 789 ms.



Timing chart 1-5-3

- No paper feed from optional side deck (jam code 15)

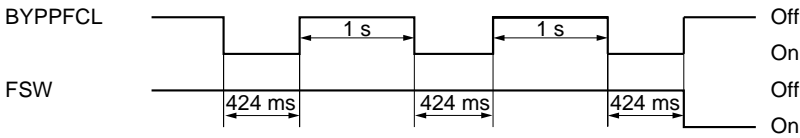
Paper feed switch 1 (PFSW1) does not turn on within 848 ms of the side deck paper feed clutch (SDPFCL) turning on; the clutch is then successively held off for 1 s and turned back on twice, but the switch again fails to turn on within 848 ms.



Timing chart 1-5-4

- No paper feed from bypass (jam code 16)

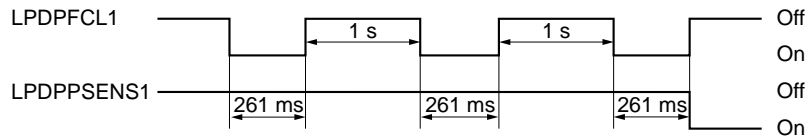
The feed switch (FSW) does not turn on within 424 ms of the bypass paper feed clutch (BYPPFCL) turning on; the clutch is then successively held off for 1 s and turned back on twice, but the switch again fails to turn on within 424 ms.



Timing chart 1-5-5

- No paper feed from the large paper deck (jam code 17)

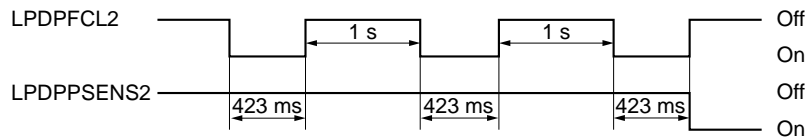
Large paper deck paper path sensor 1 (LPDPPSENS1) does not turn on within 261 ms of large paper deck paper feed clutch 1 (LPDPFCL1) turning on; the clutch is then successively held off for 1 s and turned back on twice, but the sensor again fails to turn on within 261 ms.



Timing chart 1-5-6

- No paper feed from the large paper deck (jam code 18)

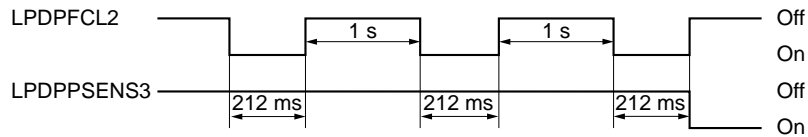
Large paper deck paper path sensor 2 (LPDPPSENS2) does not turn on within 423 ms of large paper deck paper feed clutch 2 (LPDPFCL2) turning on; the clutch is then successively held off for 1 s and turned back on twice, but the sensor again fails to turn on within 423 ms.



Timing chart 1-5-7

- No paper feed from the large paper deck (jam code 19)

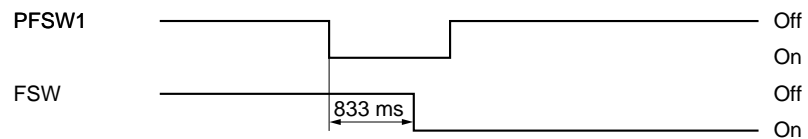
Large paper deck paper path sensor 3 (LPDPPSENS3) does not turn on within 212 ms of large paper deck paper feed clutch 2 (LPDPFCL2) turning on; the clutch is then successively held off for 1 s and turned back on twice, but the sensor again fails to turn on within 212 ms.



Timing chart 1-5-8

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

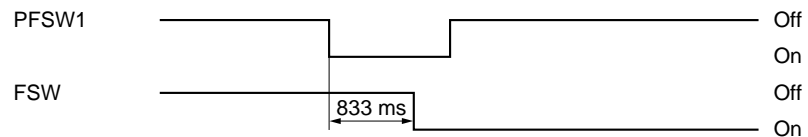
The feed switch (FSW) does not turn on within 833 ms of paper feed switch 1 (PFSW1) turning on (when paper is fed from a cassette).



Timing chart 1-5-9

- Misfeed in copier vertical paper conveying section (jam code 21)

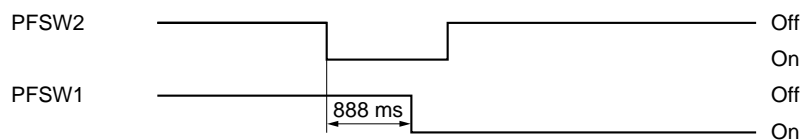
The feed switch (FSW) does not turn on within 833 ms of paper feed switch 1 (PFSW1) turning on (when paper is fed from the duplex unit).



Timing chart 1-5-10

- Misfeed in copier vertical paper conveying section (jam code 22)

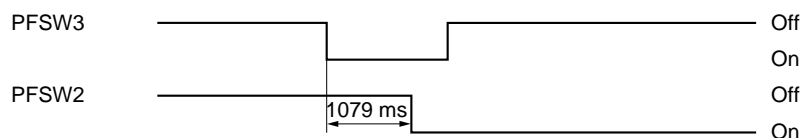
Paper feed switch 1 (PFSW1) does not turn on within 888 ms of paper feed switch 2 (PFSW2) turning on.



Timing chart 1-5-11

- Misfeed in copier vertical paper conveying section (jam code 23)

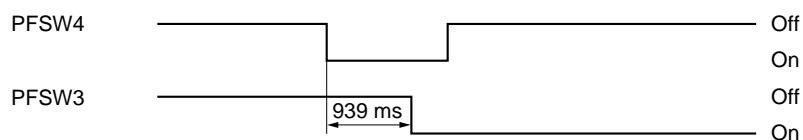
Paper feed switch 2 (PFSW2) does not turn on within 1079 ms of paper feed switch 3 (PFSW3) turning on.



Timing chart 1-5-12

- Misfeed in copier vertical paper conveying section (jam code 24)

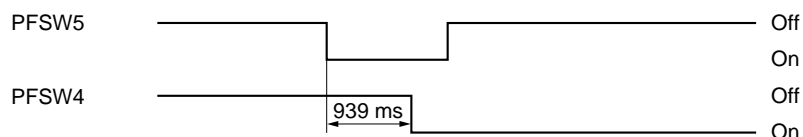
Paper feed switch 3 (PFSW3) does not turn on within 939 ms of paper feed switch 4 (PFSW4) turning on.



Timing chart 1-5-13

- Misfeed in copier vertical paper conveying section (jam code 25)

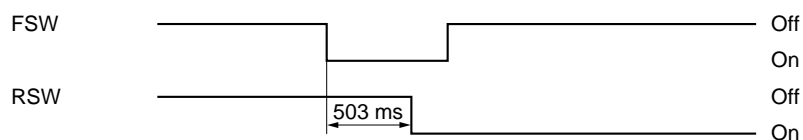
Paper feed switch 4 (PFSW4) does not turn on within 939 ms of paper feed switch 5 (PFSW5) turning on.



Timing chart 1-5-14

- Misfeed in converging section (jam code 26)

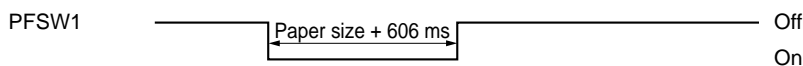
The registration switch (RSW) does not turn on within 503 ms of the feed switch (FSW) turning on.



Timing chart 1-5-15

- Multiple sheets in copier vertical conveying section (jam code 27)

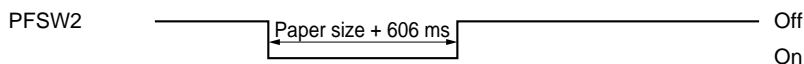
Paper feed switch 1 (PFSW1) does not turn off within the time required to convey the length of the used paper size plus 606 ms of turning on.



Timing chart 1-5-16

- Multiple sheets in copier vertical conveying section (jam code 28)

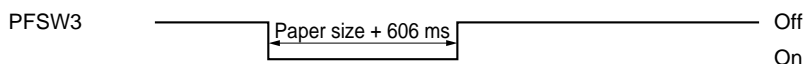
Paper feed switch 2 (PFSW2) does not turn off within the time required to convey the length of the used paper size plus 606 ms of turning on.



Timing chart 1-5-17

- Multiple sheets in copier vertical conveying section (jam code 29)

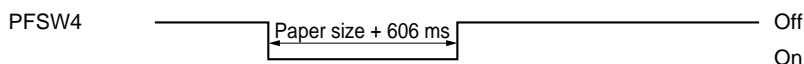
Paper feed switch 3 (PFSW3) does not turn off within the time required to convey the length of the used paper size plus 606 ms of turning on.



Timing chart 1-5-18

- Multiple sheets in copier vertical conveying section (jam code 30)

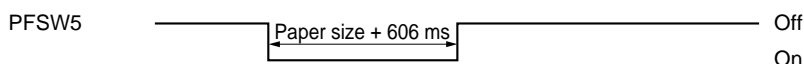
Paper feed switch 4 (PFSW4) does not turn off within the time required to convey the length of the used paper size plus 606 ms of turning on.



Timing chart 1-5-19

- Multiple sheets in copier vertical conveying section (jam code 31)

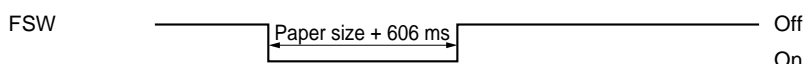
Paper feed switch 5 (PFSW5) does not turn off within the time required to convey the length of the used paper size plus 606 ms of turning on.



Timing chart 1-5-20

- Multiple sheets before registration section (jam code 32)

The feed switch (FSW) does not turn off within the time required to convey the length of the used paper size plus 606 ms of turning on.

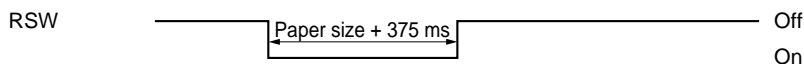


Timing chart 1-5-21

2. Paper conveying section

- Misfeed in registration/transfer section (jam code 33)

The registration switch (RSW) does not turn off within the time required to convey the length of the used paper size plus 375 ms of turning on.

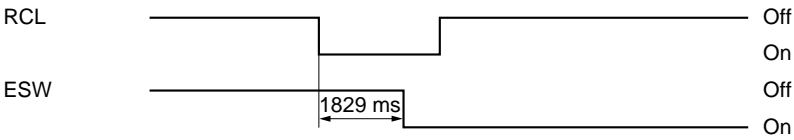


Timing chart 1-5-22

3. Fixing section

- Misfeed in fixing section (jam code 40)

The eject switch (ESW) does not turn on within 1829 ms of the registration clutch (RCL) turning on.

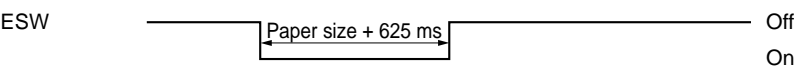


Timing chart 1-5-23

4. Eject section

- Misfeed in eject section (jam code 50)

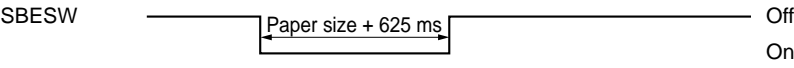
The eject switch (ESW) does not turn off within the time required to convey the length of the used paper size plus 625 ms of turning on.



Timing chart 1-5-24

- Misfeed in reverse face eject section (jam code 51)

The switchback eject switch (SBESW) does not turn off within the time required to convey the length of the used paper size plus 625 ms of turning on.

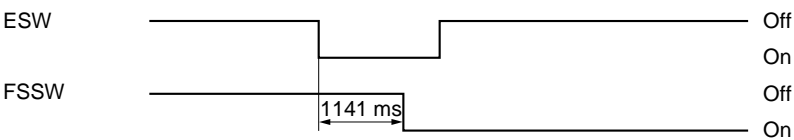


Timing chart 1-5-25

5. Feedshift section

- Misfeed in feedshift section (jam code 52)

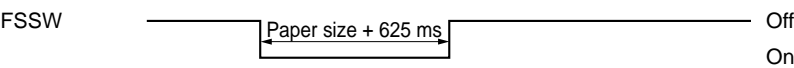
The feedshift switch (FSSW) does not turn on within 1141 ms of the eject switch (ESW) turning on.



Timing chart 1-5-26

- Misfeed in feedshift section (jam code 53)

The feedshift switch (FSSW) does not turn off within the time required to convey the length of the used paper size plus 625 ms of turning on.

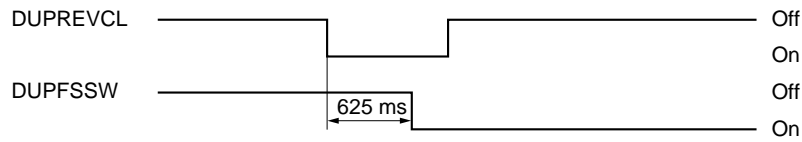


Timing chart 1-5-27

6. Duplex section

- Misfeed in duplex tray (jam code 60)

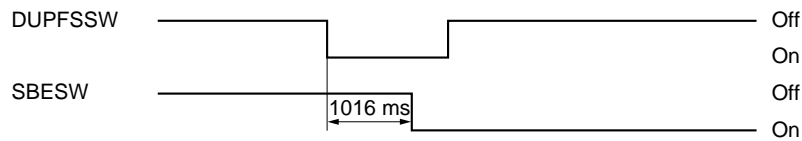
The duplex feedshift switch (DUPFSSW) does not turn on within 625 ms of the duplex reversing clutch (DUPREVCL) turning on.



Timing chart 1-5-28

- Duplex/eject switching section (jam code 61)

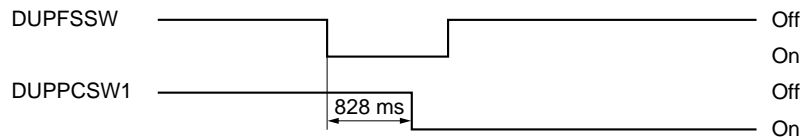
The switchback eject switch (SBESW) does not turn on within 1016 ms of the duplex feedshift switch (DUPFSSW) turning on.



Timing chart 1-5-29

- Duplex/eject switching section (jam code 62)

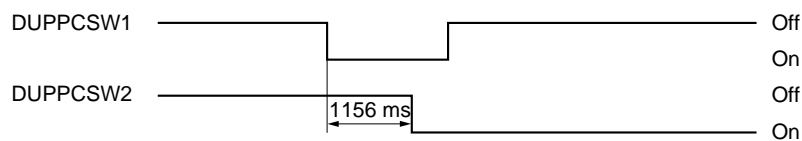
Duplex paper conveying switch 1 (DUPPCSW1) does not turn on within 828 ms of the duplex feedshift switch (DUPFSSW) turning on.



Timing chart 1-5-30

- Misfeed in duplex paper conveying section (jam code 63)

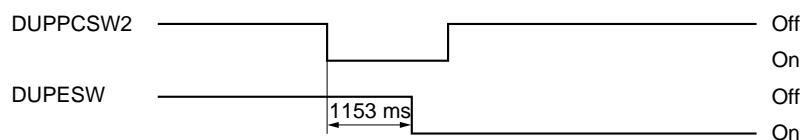
Duplex paper conveying switch 2 (DUPPCSW2) does not turn on within 1156 ms of duplex paper conveying switch 1 (DUPPCSW1) turning on.



Timing chart 1-5-31

- Misfeed in duplex paper conveying section (jam code 64)

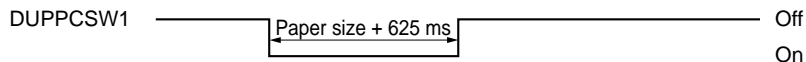
The duplex eject switch (DUPESW) does not turn on within 1153 ms of duplex paper conveying switch 2 (DUPPCSW2) turning on.



Timing chart 1-5-32

- Misfeed in duplex paper conveying section (jam code 65)

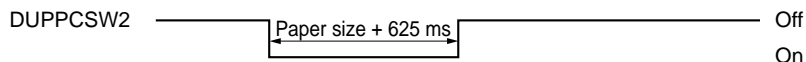
Duplex paper conveying switch 1 (DUPPCSW1) does not turn off within the time required to convey the length of the used paper size plus 625 ms of turning on.



Timing chart 1-5-33

- Misfeed in duplex paper conveying section (jam code 66)

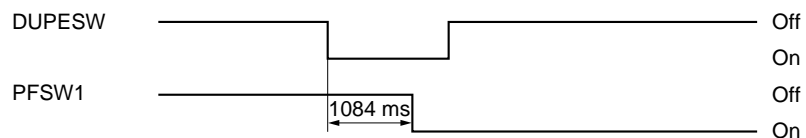
Duplex paper conveying switch 2 (DUPPCSW2) does not turn off within the time required to convey the length of the used paper size plus 625 ms of turning on.



Timing chart 1-5-34

- Misfeed in duplex eject section (jam code 67)

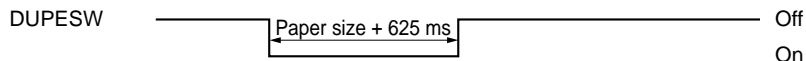
Paper feed switch 1 (PFSW1) does not turn on within 1084 ms of the duplex eject switch (DUPESW) turning on.



Timing chart 1-5-35

- Misfeed in duplex eject section (jam code 68)

The duplex eject switch (DUPESW) does not turn off within the time required to convey the length of the used paper size plus 625 ms of turning on.



Timing chart 1-5-36

7. SRDF

- No original feed (jam code 70)

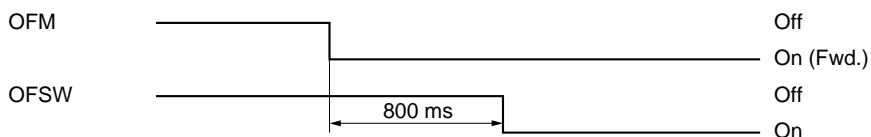
When the DF START signal is received, switches other than the original set switch (OSSW) and original size length switch (OSLSW) on the contact glass are on.

- 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)

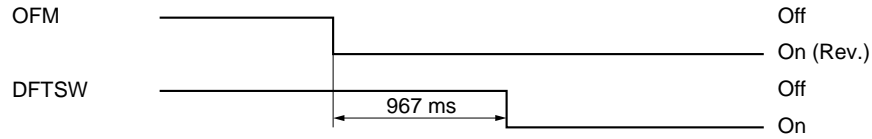
During the primary feed of the second or later original in the single-sided or double-sided original mode, the original feed switch (OFSW) does not turn on within 800 ms of the start of forward rotation of the original feed motor (OFM).



Timing chart 1-5-37

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

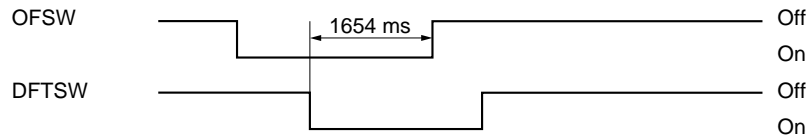
During the secondary original feed in the single-sided original mode, the DF timing switch (DFTSW) does not turn on within 967 ms of the start of reverse rotation of the original feed motor (OFM). Alternatively, during continuous original feed in single-sided original mode, the DF timing switch (DFTSW)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



Timing chart 1-5-38

- An original jam in the original feed section 2 (jam code 72)

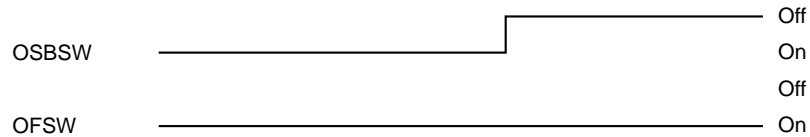
During the secondary original feed in the single-sided original mode, the original feed switch (OFSW) does not turn off within 1654 ms of the DF timing switch (DFTSW) turning on.



Timing chart 1-5-39

- An original jam in the original feed section 2 (jam code 72)

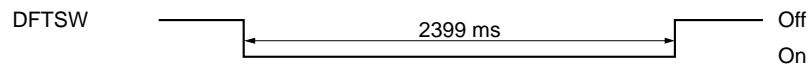
During original switchback operation in the double-sided original mode, the original feed switch (OFSW) remains on when the original switchback switch (OSBSW) turns off.



Timing chart 1-5-40

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

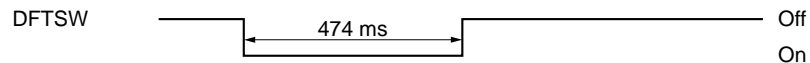
During the secondary original feed in the single-sided or double-sided original mode, the DF timing switch (DFTSW) does not turn off within 2399 ms of turning on.



Timing chart 1-5-41

- 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.

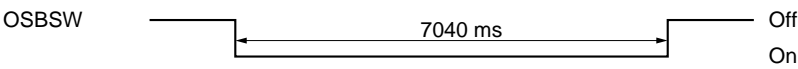


Timing chart 1-5-42

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

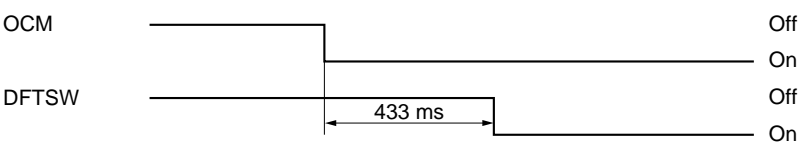
In the single-sided or double-sided original mode, secondary original feed does not start after 5 retries.

- 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.



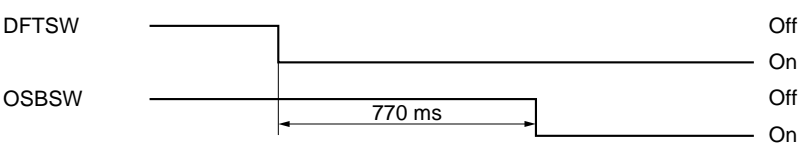
Timing chart 1-5-43

- 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 1-5-44

- 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 1-5-45

- 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.

(3) Paper misfeeds

• Copier

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 paper feed switch 1/2/3/4/5, the feed switch, registration switch or eject switch.	Check visually and remove it, if any.
	Defective paper feed switch 1.	With 5 V DC present at CN12-6 on the engine PCB, check if CN12-5 on the engine PCB remains low when paper feed switch 1 is turned on and off. If it does, replace paper feed switch 1.
	Defective paper feed switch 2.	With 5 V DC present at CN20-A12 on the engine PCB, check if CN20-A11 on the engine PCB remains low when paper feed switch 2 is turned on and off. If it does, replace paper feed switch 2.
	Defective paper feed switch 3.	With 5 V DC present at CN20-A9 on the engine PCB, check if CN20-A8 on the engine PCB remains low when paper feed switch 3 is turned on and off. If it does, replace paper feed switch 3.
	Defective paper feed switch 4.	With 5 V DC present at CN20-A6 on the engine PCB, check if CN20-A5 on the engine PCB remains low when paper feed switch 4 is turned on and off. If it does, replace paper feed switch 4.
	Defective paper feed switch 5.	With 5 V DC present at CN20-A3 on the engine PCB, check if CN20-A2 on the engine PCB remains low when paper feed switch 5 is turned on and off. If it does, replace paper feed switch 5.
	Defective feed switch.	With 5 V DC present at CN20-B10 on the engine PCB, check if CN20-B8 on the engine PCB remains low when the feed switch is turned on and off. If it does, replace the feed switch.
	Defective registration switch.	With 5 V DC present at CN3-25 on the engine PCB, check if CN3-28 on the engine PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Defective eject switch.	With 5 V DC present at CN4-8 on the engine PCB, check if CN4-12 on the engine PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch.
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier large paper deck).	Paper in the large paper deck is extremely curled.	Change the paper.
	Broken paper feed switch 2 actuator.	Check visually and replace paper feed switch 2 if its actuator is broken.
	Defective paper feed switch 2.	With 5 V DC present at CN20-A12 on the engine PCB, check if CN20-A11 on the engine PCB goes low when paper feed switch 2 is turned on. If not, replace paper feed switch 2.
	Check if the large paper deck conveying clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the large paper deck conveying clutch.	Check (see page 1-5-50).

Problem	Causes/check procedures	Corrective measures
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier large paper deck).	Check if the large paper deck paper feed clutch 1/2 malfunctions.	Check and repair if necessary.
	Electrical problem with the large paper deck paper feed clutch 1/2.	Check (see page 1-5-51).
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from copier upper cassette).	Paper in the upper cassette is extremely curled.	Change the paper.
	Check if the upper paper feed pulley, lower paper feed pulley or upper forwarding pulley of the upper cassette are deformed.	Check visually and replace any deformed pulleys.
	Broken paper feed switch 4 actuator.	Check visually and replace paper feed switch 4 if its actuator is broken.
	Defective paper feed switch 4.	With 5 V DC present at CN20-A6 on the engine PCB, check if CN20-A5 on the engine PCB goes low when paper feed switch 4 is turned on. If not, replace paper feed switch 4.
	Check if the upper paper feed clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the upper paper feed clutch.	Check (see page 1-5-49).
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from copier lower cassette).	Paper in the lower cassette is extremely curled.	Change the paper.
	Check if the upper paper feed pulley, lower paper feed pulley or upper forwarding pulley of the lower cassette are deformed.	Check visually and replace any deformed pulleys.
	Broken paper feed switch 5 actuator.	Check visually and replace paper feed switch 5 if its actuator is broken.
	Defective paper feed switch 5.	With 5 V DC present at CN20-A3 on the engine PCB, check if CN20-A2 on the engine PCB goes low when paper feed switch 5 is turned on. If not, replace paper feed switch 5.
	Check if the lower paper feed clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the lower paper feed clutch.	Check (see page 1-5-50).
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from optional side deck).	Check if the side deck paper feed clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the side deck paper feed clutch.	Check.

Problem	Causes/check procedures	Corrective measures
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from bypass).	Paper on the bypass table is extremely curled.	Change the paper.
	Check if the forwarding pulley, upper or lower paper feed pulleys of the bypass are deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch actuator.	Check visually and replace the feed switch if its actuator is broken.
	Defective feed switch.	With 5 V DC present at CN20-B10 on the engine PCB, check if CN20-B8 on the engine PCB goes low when the feed switch is turned on. If not, replace the feed switch.
	Check if the bypass paper feed clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the bypass paper feed clutch.	Check (see page 1-5-50).
(7) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section).	Broken feed switch actuator.	Check visually and replace the feed switch if its actuator is broken.
	Defective feed switch.	With 5 V DC present at CN20-B10 on the engine PCB, check if CN20-B8 on the engine PCB goes low when the feed switch is turned on. If not, replace the feed switch.
	Broken paper feed switch 1 actuator.	Check visually and replace paper feed switch 1 if its actuator is broken.
	Defective paper feed switch 1.	With 5 V DC present at CN12-6 on the engine PCB, check if CN12-5 on the engine PCB goes low when paper feed switch 1 is turned on. If not, replace paper feed switch 1.
	Broken paper feed switch 2 actuator.	Check visually and replace paper feed switch 2 if its actuator is broken.
	Defective paper feed switch 2.	With 5 V DC present at CN20-A12 on the engine PCB, check if CN20-A11 on the engine PCB goes low when paper feed switch 2 is turned on. If not, replace paper feed switch 2.
	Broken paper feed switch 3 actuator.	Check visually and replace paper feed switch 3 if its actuator is broken.
	Defective paper feed switch 3.	With 5 V DC present at CN20-A9 on the engine PCB, check if CN20-A8 on the engine PCB goes low when paper feed switch 3 is turned on. If not, replace paper feed switch 3.
	Broken paper feed switch 4 actuator.	Check visually and replace paper feed switch 4 if its actuator is broken.
	Defective paper feed switch 4.	With 5 V DC present at CN20-A6 on the engine PCB, check if CN20-A5 on the engine PCB goes low when paper feed switch 4 is turned on. If not, replace paper feed switch 4.
	Broken paper feed switch 5 actuator.	Check visually and replace paper feed switch 5 if its actuator is broken.
	Defective paper feed switch 5.	With 5 V DC present at CN20-A3 on the engine PCB, check if CN20-A2 on the engine PCB goes low when paper feed switch 5 is turned on. If not, replace paper feed switch 5.

Problem	Causes/check procedures	Corrective measures
(7) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section).	Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B, C and D do not contact each other.	Check visually and remedy if necessary.
	Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B, C and D are deformed.	Repair or replace if necessary.
(8) A paper jam in the paper feed section is indicated during copying (jam in converging section).	Defective registration switch.	With 5 V DC present at CN3-25 on the engine PCB, check if CN3-28 on the engine PCB goes low when the registration switch is turned on. If not, replace the registration switch.
(9) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section).	Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B, C and D do not contact each other.	Check visually and remedy if necessary.
	Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B, C and D are deformed.	Repair or replace if necessary.
	Deformed guides along the paper conveying path.	Repair or replace if necessary.
(10) A paper jam in the paper feed section is indicated during copying (multiple sheets before registration section).	Deformed guides along the paper conveying path.	Repair or replace if necessary.
	Defective feed switch.	With 5 V DC present at CN20-B10 on the engine PCB, check if CN20-B8 on the engine PCB goes low when the feed switch is turned on. If not, replace the feed switch.
(11) A paper jam in the paper conveying section is indicated during copying (jam in registration/transfer section).	Check if the registration clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-49).
	Check if the upper and lower registration rollers contact each other.	Check visually and remedy if necessary.
	Check if the upper and lower feed rollers contact each other.	Check visually and remedy if necessary.
(12) A paper jam in the fixing section is indicated during copying (jam in fixing section).	Check if the registration clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-49).
	Check if the upper and lower registration rollers contact each other.	Check visually and remedy if necessary.

Problem	Causes/check procedures	Corrective measures
(12) A paper jam in the fixing section is indicated during copying (jam in fixing section).	Check if the upper and lower feed rollers contact each other.	Check visually and remedy if necessary.
	Check if the fixing unit front guide is deformed.	Repair or replace if necessary.
	Check if the press roller is extremely dirty or deformed.	Clean or replace if necessary.
	Check if the heat roller separation claws are dirty or deformed.	Clean or replace if necessary.
	Check if the heat roller and its separation claws contact each other.	Remedy if the separation claw springs are out of place.
	Broken eject switch actuator.	Check visually and replace the eject switch if its actuator is broken.
	Defective eject switch.	With 5 V DC present at CN4-8 on the engine PCB, check if CN4-12 on the engine PCB goes low when the eject switch is turned on. If not, replace the eject switch.
(13) A paper jam in the eject section is indicated during copying (jam in eject section).	Check if the eject roller and eject pulley contact each other.	Check visually and remedy if necessary.
	Broken eject switch actuator.	Check visually and replace the eject switch if its actuator is broken.
	Defective eject switch.	With 5 V DC present at CN4-8 on the engine PCB, check if CN4-12 on the engine PCB goes low when the eject switch is turned on. If not, replace the eject switch.
(14) A paper jam in the eject section is indicated during copying (jam in switchback eject section).	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 CN3-A2 on the engine PCB, check if CN3-A1 on the engine PCB remains low when the switchback eject switch is turned on and off. If it does, replace the switchback eject switch.
	Check if the left or right switchback feed roller is deformed.	Check visually and replace any deformed rollers.
	Check if the right middle or left switchback eject guide is deformed.	Repair or replace if necessary.
(15) A paper jam in the feedshift section is indicated during copying (jam in feedshift section).	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	With 5 V DC present at CN4-7 on the engine PCB, check if CN4-11 on the engine PCB goes low when the feedshift switch is turned on. If not, replace the feedshift switch.
	Electrical problem with the feedshift solenoid.	Check (see page 1-5-51).
	Deformed lower feedshift guide.	Repair or replace if necessary.

Problem	Causes/check procedures	Corrective measures
(15) A paper jam in the feedshift section is indicated during copying (jam in feedshift section).	Check if the left and right feedshift rollers contact each other.	Check visually and remedy if necessary.
(16) A paper jam in the duplex section is indicated during copying (jam in duplex tray section).	Broken duplex feedsift switch actuator.	Check visually and replace the duplex feedsift switch if its actuator is broken.
	Defective duplex paper conveying switch.	With 5 V DC present at CN17-5 on the engine PCB, check if CN19-3 on the engine PCB goes low when the duplex feedsift switch is turned on. If not, replace the duplex feedsift switch.
(17) A paper jam in the duplex section is indicated during copying (jam in duplex/eject switching section).	Check if the duplex eject switching solenoid malfunctions.	Check and repair if necessary.
	Electrical problem with the duplex eject switching solenoid.	Check (see page 1-5-51).
	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 CN4-13 on the engine PCB, check if CN4-14 on the engine PCB goes low when the switchback eject switch is turned on. If not, replace the switchback eject switch.
	Broken duplex paper conveying switch 1 actuator.	Check visually and replace the duplex paper conveying switch 1 if its actuator is broken.
	Defective duplex paper conveying switch 1.	With 5 V DC present at CN17-5 on the engine PCB, check if CN19-4 on the engine PCB goes low when the duplex paper conveying switch 1 is turned on. If not, replace the duplex paper conveying switch 1.
(18) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section).	Broken duplex paper conveying switch 2 actuator.	Check visually and replace the duplex paper conveying switch 2 if its actuator is broken.
	Defective duplex paper conveying switch 2.	With 5 V DC present at CN17-5 on the engine PCB, check if CN19-5 on the engine PCB goes low when the duplex paper conveying switch 2 is turned on. If not, replace the duplex paper conveying switch 2.
	Broken duplex eject switch actuator.	Check visually and replace the duplex eject switch if its actuator is broken.
	Defective duplex eject switch.	With 5 V DC present at CN17-5 on the engine PCB, check if CN19-6 on the engine PCB goes low when the duplex eject switch is turned on. If not, replace the duplex eject switch.
	Check if upper and lower duplex registration rollers, upper and lower duplex paper conveying rollers and upper and lower duplex eject rollers contact each other correctly.	Check visually and remedy if necessary.

Problem	Causes/check procedures	Corrective measures
(18) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section).	Check if upper or lower duplex registration roller, upper and lower duplex paper conveying roller or upper and lower duplex eject roller are deformed.	Repair or replace if necessary.
(19) A paper jam in the duplex section is indicated during copying (jam in duplex eject section).	Broken paper feed switch 1 actuator.	Check visually and replace paper feed switch 1 if its actuator is broken.
	Defective paper feed switch 1.	With 5 V DC present at CN12-6 on the engine PCB, check if CN12-5 on the engine PCB goes low when paper feed switch 1 is turned on. If not, replace paper feed switch 1.
	Broken duplex eject switch actuator.	Check visually and replace the duplex eject switch if its actuator is broken.
	Defective duplex eject switch.	With 5 V DC present at CN17-5 on the engine PCB, check if CN19-6 on the engine PCB goes low when the duplex eject switch is turned on. If not, replace the duplex eject switch.

• SRDF

Problem	Causes/check procedures	Corrective measures
(1) An original jams when the main switch is turned on.	A piece of paper torn from an original is caught around the original feed switch.	Remove any found.
	Defective original feed switch.	With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 on the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch.
	A piece of paper torn from an original is caught around the original switch-back switch.	Remove any found.
	Defective original switch-back switch.	With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch.
	A piece of paper torn from an original is caught around the DF timing switch.	Remove any found.
	Defective DF timing switch.	With 5 V DC present at CN6-B13 on the DF driver PCB, check if CN6-B14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch.
(2) An original jams during continuous copying of multiple originals.	Defective original feed switch.	With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 on the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch.
	Check if the original feed motor or the original conveying motor malfunction.	Check and remedy.
(3) An original jams in the SRDF during copying (a jam in the original feed/conveying section).	Defective DF timing switch.	With 5 V DC present at CN6-B13 on the DF driver PCB, check if CN6-B14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch.
	Defective original feed switch.	With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 on the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch.
	Defective original switch-back switch.	With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch.
	Check if the original feed motor malfunctions.	Check and remedy.
	Check if the DF original feed pulley or the DF separation pulley is deformed.	Check visually and replace the deformed pulley.

Problem	Causes/check procedures	Corrective measures
(3) An original jams in the SRDF during copying (a jam in the original feed/conveying section).	Check if the DF registration roller or the DF registration pulley is deformed.	Check visually and replace the deformed pulley.
	Check if the lower original conveying roller or the front scanning pulley is deformed.	Check visually and replace the deformed pulley.
	Check if the original conveying motor malfunctions.	Check and remedy.
	Check if the middle original conveying roller and middle original conveying pulley contact each other correctly.	Check and remedy.
(4) An original jams in the SRDF during copying (a jam in the original switchback section).	Defective original switchback switch.	With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch.
	Defective DF timing switch.	With 5 V DC present at CN6-B13 on the DF driver PCB, check if CN6-B14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch.
	Check if the original feed motor malfunctions.	Check and remedy.
	Check if the original conveying motor malfunctions.	Check and remedy.
(5) Original jams frequently.	An original outside the specifications is used.	Use only originals conforming to the specifications.
	The DF forwarding pulleys, DF original feed pulley or DF switchback pulley is dirty with paper powder.	Clean with isopropyl alcohol.
	The DF original feed pulley and the DF separation pulley do not contact correctly.	Check and remedy.

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 001 and 850, 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, 2, 3 or 4 off and back on.



Figure 1-5-3 Service call code display

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C001	Memory PCB communication problem • Problems with data from memory PCB.	Defective memory PCB.	Replace memory PCB and check for correct operation.
C010	RAM/ROM problem • Read and write data does not match.	Defective main PCB.	Replace the main PCB and check for correct operation.
C011	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.
C021	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 CN12, CN13 on the main PCB and CN1, CN7 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.
C024	Printer board* communication problem • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector CN4 on the main PCB and the connector on the printer board. Repair or replace if necessary.
		Defective main PCB or printer board.	Replace the main PCB or printer board and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C026	Memory PCB communication problem <ul style="list-style-type: none"> There is no reply after five retries at transmitting. There is no reply after five retries at receiving. 	Poor contact in the connector terminals.	Check the connection of connector CN3 on the main PCB and the connector on memory PCB. Repair or replace if necessary.
		Defective main PCB or memory PCB.	Replace the main PCB or memory PCB and check for correct operation.
C032	Side deck* communication problem <ul style="list-style-type: none"> 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 connector CN9 on the main PCB and the connector CN3 on the side deck main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PCB.	Replace the engine PCB and check for correct operation.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective side deck main PCB.	Replace the side deck main PCB and check for correct operation.
C034	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 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 CN10 on the main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PCB.	Replace the engine PCB and check for correct operation.
		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.
C035	Mailbox* communication Problem <p>Communication errors from the communication microcomputer on the main PCB:</p> <p>No communication: there is no reply after 3 retries.</p> <p>Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.</p>	Poor contact in the connector terminals.	Check the connection of connectors CN10 on the main PCB and CN1 on the mailbox main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine PCB.	Replace the engine PCB and check for correct operation.
		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.
C037	Communication microcomputer problem <ul style="list-style-type: none"> A problem is detected with the communication microcomputer on the main PCB. 	Defective main PCB.	Replace the main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C038	Hard disk problem The hard disk cannot be accessed.	Poor contact in the connector terminals.	Check the connection of connectors CN3 on the main PCB and the connector on the memory PCB, and the continuity across the connector terminals. Repair or replace if necessary.
			Check the connection of connectors CN8 on the power source PCB and the hard disk connector, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective hard disk.	Replace the hard disk and check for correct operation.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C039	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 memory PCB correctly.
		Defective DIMM.	Replace the DIMM and check for correct operation.
C104	Optical system problem • After AGC, correct input is not obtained at CCD.	Insufficient exposure lamp luminosity.	Replace the exposure lamp or inverter PCB.
		Defective main PCB.	Replace the main PCB.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.
		CCD PCB output problem.	Replace the ISU.
C200	Image forming motor problem • LOCK ALM signal remains high for 1 s, 1 s after the drive motor has turned on.	Poor contact in the image forming motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective image forming motor rotation control circuit.	Replace the image forming 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.
C210	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.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C210	Drive motor problem <ul style="list-style-type: none"> LOCK ALM signal remains high for 1 s, 1 s after the drive motor has turned on. 	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.
C220	Paper feed motor problem <ul style="list-style-type: none"> 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.
C230	Large paper deck right lift motor problem When the large paper deck of the copier is closed, large paper deck level switch 1 does not turn on within 30 s of the large paper deck right lift motor turning on. During copying, large paper deck level switch 1 does not turn on within 200 ms of the large paper deck right lift motor turning on.	Broken gear or coupling of the large paper deck right lift motor.	Replace the large paper deck right lift motor.
		Defective large paper deck right lift motor.	Check for continuity across the coil. If none, replace the large paper deck right lift motor.
		Poor contact in the large paper deck right lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective large paper deck level switch 1.	Check if CN9-B3 on the engine PCB goes low when large paper deck level switch 1 is turned on. If not, replace large paper deck level switch 1.
		Poor contact in the large paper deck level switch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C231	Large paper deck left lift motor problem When the large paper deck of the copier is closed, large paper deck level switch 2 does not turn on within 30 s of the large paper deck left lift motor turning on. During copying, large paper deck level switch 2 does not turn on within 200 ms of the large paper deck left lift motor turning on.	Broken gear or coupling of the large paper deck left lift motor.	Replace the large paper deck left lift motor.
		Defective large paper deck left lift motor.	Check for continuity across the coil. If none, replace the large paper deck left lift motor.
		Poor contact in the large paper deck left lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C231	Large paper deck left lift motor problem When the large paper deck of the copier is closed, large paper deck level switch 2 does not turn on within 30 s of the large paper deck left lift motor turning on. During copying, large paper deck level switch 2 does not turn on within 200 ms of the large paper deck left lift motor turning on.	Defective large paper deck level switch 2.	Check if CN9-B6 on the engine PCB goes low when large paper deck level switch 2 is turned on. If not, replace large paper deck level switch 2.
		Poor contact in the large paper deck level switch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C242	Upper lift motor problem <ul style="list-style-type: none">When the upper cassette is inserted, the upper lift limit switch does not turn on within 4.5 s of the upper lift motor turning on.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 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 upper lift limit switch.	Check if CN8-9 on the engine PCB goes low when the upper lift limit switch is turned on. If not, replace the upper lift limit switch.
		Poor contact in the upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C243	Lower lift motor problem <ul style="list-style-type: none">When the lower cassette is inserted, the lower lift limit switch does not turn on within 4.5 s of the lower lift motor turning on.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 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 lower lift limit switch.	Check if CN8-10 on the engine PCB goes low when the lower lift limit switch is turned on. If not, replace the lower lift limit switch.
		Poor contact in the lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C310	Scanner carriage problem <ul style="list-style-type: none">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 CN14 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C310	Scanner carriage problem <ul style="list-style-type: none"> The home position is not correct when the power is turned on or at the start of copying using the bypass table. 	Defective scanner home position switch.	Replace the scanner home position switch.
		Defective main PCB or scanner motor PCB.	Replace the main PCB or scanner motor PCB and check for correct operation.
		Defective scanner motor.	Replace the scanner motor.
C400	Polygon motor synchronization problem <ul style="list-style-type: none"> The polygon motor does not reach the stable speed within 15 s of the polygon motor remote signal turning on. 	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.
		Defective power source PCB.	Check if 24 V DC is supplied to CN16-5 on the engine PCB. If not, replace the power source PCB.
		Defective engine PCB.	Check if 24 V DC is output from CN15-1 on the engine PCB. If not, replace the engine PCB.
C401	Polygon motor steady-state problem <ul style="list-style-type: none"> The polygon motor rotation is not stable for 600 ms after the polygon motor rotation has been stabilized. 	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.
		Defective power source PCB.	Check if 24 V DC is supplied to CN16-5 on the engine PCB. If not, replace the power source PCB.
		Defective engine PCB.	Check if 24 V DC is output from CN15-1 on the engine PCB. If not, replace the engine PCB.
C420	BD steady-state problem <ul style="list-style-type: none"> The VTC detects a BD error for 600 ms after the polygon motor rotation has been stabilized. 	Defective laser diode.	Replace the LSU.
		Defective polygon motor.	Replace the LSU.
		Defective main PCB.	Replace the main PCB.
C510	Main charger problem <ul style="list-style-type: none"> MC ALM signal is detected continuously for 400 ms when MC REM signal is turned on. 	Defective high-voltage transformer PCB.	Replace the high-voltage transformer PCB.
		Leakage during main charging.	Check and clean the main charger assembly.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C511	Transfer charger belt high-voltage problem <ul style="list-style-type: none"> TB ALM signal is detected continuously for 400 ms when TB REM signal is turned on. 	Defective transfer charger belt bias PCB.	Replace the high-voltage transformer PCB.
		Leakage during transfer charger belt.	Check and clean the transfer charger belt.
C550	Drum surface potential sensor problem 1 The sensor output is 0.5 V or less when MC REM signal is turned on.	Poor contact in the drum surface potential sensor connector terminals.	Check the connection of connector CN7 on the engine PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drum surface potential sensor.	Check if 24 V DC is output from CN7-8 on the engine PCB. If it is, replace the drum surface potential sensor.
		Defective engine PCB.	Check if 24 V DC is output from CN7-8 on the engine PCB. If not, replace the engine PCB.
		Defective power source PCB.	Check if 24 V DC is supplied to CN10-5 on the engine PCB. If not, replace the power source PCB.
C551	Drum surface potential sensor problem 2 The sensor output is 4.5 V or more when the MC REM signal is turned on.	Defective drum surface potential sensor.	Replace the drum surface potential sensor.
C560	Potential problem 1 Maximizing the grid output cannot set the potential.	Deteriorated main charger.	Check the main charger wire and replace it if necessary.
		Grid or main charger shield is dirty.	Clean the grid or main charger shield if necessary.
		Defective high voltage transformer PCB.	Replace the high voltage transformer PCB.
		Defective engine PCB.	Replace the engine PCB.
C561	Potential problem 2 Minimizing the grid output cannot set the potential.	Defective high voltage transformer PCB.	Replace the high voltage transformer PCB.
C610	Broken fixing heater wire <ul style="list-style-type: none"> The fixing temperature does not increase for 40 s after the fixing heaters have been turned on for warming up. The fixing temperature remains below 50°C/122°F for 10 s continuously after the fixing heaters have been turned on during stabilization. 	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN5-12 on the engine 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.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C610	Broken fixing heater wire <ul style="list-style-type: none"> The fixing temperature does not increase for 40 s after the fixing heaters have been turned on for warming up. The fixing temperature remains below 50°C/122°F for 10 s continuously after the fixing heaters have been turned on during stabilization. 	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.
C620	Abnormally low fixing unit thermistor temperature <ul style="list-style-type: none"> The fixing temperature remains below 120°C/248°F for 10 s. 	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN5-12 on the engine 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.
C630	Abnormally high fixing unit thermistor temperature <ul style="list-style-type: none"> The fixing temperature exceeds 230°C/446°F for 10 s. The fixing unit high temperature detection circuit on the engine PCB detects an abnormally high temperature. 	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.
C640	Zero-crossing signal problem <ul style="list-style-type: none"> The main PCB does not detect the zero-crossing signal (Z CROSS SIG) for the time specified below. At power-on: 3 s Others: 5 s 	Poor contact in the connector terminals.	Check the connection of connectors CN5-5 on the main PCB and CN2-7 on the power source PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective power source PCB.	Check if the zero-crossing signal is output from CN2-7 on the power source PCB. If not, replace the power source PCB.
		Defective main PCB.	Replace the main PCB if C640 is detected while CN2-7 on the power source PCB outputs the zero-crossing signal.
C650	Broken fixing unit thermistor wire 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 CN5-12 on the engine PCB and the continuity across the connector terminals. Repair or replace if necessary.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C650	Broken fixing unit thermistor wire The fixing temperature remains at 0°C/ 32°F for 30 s continuously when the fixing heater is on.	Broken fixing unit thermistor wire.	Measure the resistance. If it is $\infty \Omega$, replace the fixing unit thermistor.
C710	Toner sensor problem <ul style="list-style-type: none"> The sensor output voltage is outside the range of 0.5 to 4.5 V during copying or in maintenance item U130. The toner sensor control voltage cannot be set within the range in maintenance item U130. 	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.
		Developer problem.	Replace the developer.
C720	Broken drum thermistor wire The drum thermistor input voltage is 4.5 V or more when the front cover is closed.	Broken drum thermistor wire.	Measure the resistance. If it is $\infty \Omega$, replace the drum thermistor.
		Poor contact in the drum thermistor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C721	Shorted drum thermistor The drum thermistor input voltage is 1.2 V or less when the front cover is closed.	Broken drum thermistor wire.	Measure the resistance. If it is 0 Ω , replace the drum thermistor.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C722	Broken drum heater wire The drum temperature does not change within 5 minutes of the drum heater turning on.	Broken drum heater wire.	Check for continuity within the drum heater. If none, replace the drum heater.
		Poor contact in the drum heater connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective power source PCB.	Check if the drum heater turns on when CN16-9 on the engine PCB goes low. If not, replace the power source PCB.
C730	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.
C731	Short-circuited external temperature thermistor <ul style="list-style-type: none"> The input voltage is below 0.5 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.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C750	Toner hopper problem Toner level is not detected when toner empty is detected.	Defective toner level sensor.	Replace the toner level sensor.
		Poor contact in the toner level sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C801	Finisher* paper conveying motor problem • The paper conveying motor lockup signal is detected for 0.5 s or longer.	The paper conveying motor connector makes poor contact.	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.
C803	Finisher* paper conveying belt problem • 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.
C814	Finisher* tray elevation motor problem • The sort tray is not detected in the home position within 30 s of the start of the tray elevation motor rotation.	The tray elevation motor connector makes poor contact.	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.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C817	Finisher* front jogger motor problem <ul style="list-style-type: none"> While the front jogger is not detected in the home position, the front jogger home position sensor does not detect the jogger within 1.5 s of the start of front jogger motor clockwise rotation. After the front jogger is detected in the home position, the front jogger home position sensor still detects the jogger within 0.5 s of the start of front jogger motor counterclockwise rotation. 	The front jogger 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 jogger motor malfunctions.	Replace the front jogger motor and check for correct operation.
		The front jogger motor 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 jogger motor home position sensor malfunctions.	Replace the front jogger home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C818	Finisher* rear jogger motor problem <ul style="list-style-type: none"> While the rear jogger is not detected in the home position, the rear jogger home position sensor does not detect the jogger within 1.5 s of the start of rear jogger motor clockwise rotation. After the rear jogger is detected in the home position, the rear jogger home position sensor still detects the jogger within 0.5 s of the start of rear jogger motor counterclockwise rotation. 	The rear jogger 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 jogger motor malfunctions.	Replace the rear jogger motor and check for correct operation.
		The rear jogger motor 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 jogger motor home position sensor malfunctions.	Replace the rear jogger home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C821	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 0.2 s 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 0.6 s of the start of front stapler motor clockwise (reverse) rotation. 	The front stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front stapler malfunctions. a) The front stapler is blocked with a staple. b) The front stapler is broken.	a) Remove the front stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the front stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C822	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 0.2 s of the start of rear stapler motor counter-clockwise (forward) rotation. During initialization, the rear stapler home position sensor does not change state from non-detection to detection within 0.6 s 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 rear stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the rear stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C830	Booklet stitcher* shutter unit error	A shutter unit error is detected.	See the booklet stitcher service manual.
C831	Booklet stitcher* paper ejection motor problem	A problem is detected with the paper ejection motor.	See the booklet stitcher service manual.
C832	Booklet stitcher* elevation motor problem	A problem is detected with the elevation motor.	See the booklet stitcher service manual.
C833	Booklet stitcher* jog motor problem	A problem is detected with the jog motor.	See the booklet stitcher service manual.
C834	Booklet stitcher* staple motor problem	A problem is detected with the staple motor.	See the booklet stitcher service manual.
C835	Booklet stitcher* stapler unit shift motor problem	A problem is detected with the stapler unit shift motor.	See the booklet stitcher service manual.
C836	Booklet stitcher* stack level detection sensor problem	A problem is detected with the stack level detection sensor.	See the booklet stitcher service manual.
C837	Booklet stitcher* punch motor problem	A problem is detected with the punch motor.	See the booklet stitcher service manual.
C838	Booklet stitcher* punch shift motor problem	A problem is detected with the punch shift motor.	See the booklet stitcher service manual.
C839	Booklet stitcher* swing motor problem	A problem is detected with the swing motor.	See the booklet stitcher service manual.
C840	Booklet stitcher* backup RAM data problem	A backup RAM data error is detected.	See the booklet stitcher service manual.

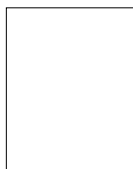
*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C841	Booklet stitcher* punch unit backup RAM data problem	An error is detected in the punch unit backup RAM data.	See the booklet stitcher service manual.
C842	Booklet stitcher* positioning plate motor problem	A problem is detected with the saddle positioning plate motor.	See the booklet stitcher service manual.
C843	Booklet stitcher* folding motor problem	A problem is detected with the saddle folding motor.	See the booklet stitcher service manual.
C844	Booklet stitcher* guide motor problem	A problem is detected with the saddle guide motor.	See the booklet stitcher service manual.
C845	Booklet stitcher* jog motor problem	A problem is detected with the saddle jog motor.	See the booklet stitcher service manual.
C846	Booklet stitcher* rear staple motor problem	A problem is detected with the saddle rear staple motor.	See the booklet stitcher service manual.
C847	Booklet stitcher* front staple motor problem	A problem is detected with the saddle front staple motor.	See the booklet stitcher service manual.
C848	Booklet stitcher* thrust motor problem	A problem is detected with the saddle thrust motor.	See the booklet stitcher service manual.
C849	Booklet stitcher* communication error	A communication error is detected in the saddle.	See the booklet stitcher service manual.
C850	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 (See the mailbox service manual). If there is any problem, 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).



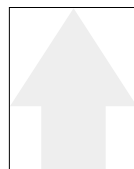
See page 1-5-37

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



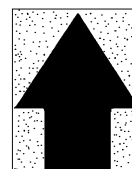
See page 1-5-37

- (3) Image is too light.



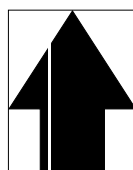
See page 1-5-38

- (4) Background is visible.



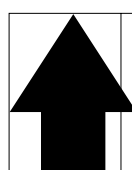
See page 1-5-38

- (5) A white line appears longitudinally.



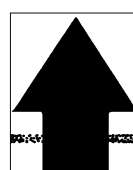
See page 1-5-38

- (6) A black line appears longitudinally.



See page 1-5-39

- (7) A black line appears laterally.



See page 1-5-39

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



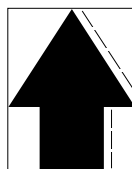
See page 1-5-39

- (9) Black dots appear on the image.



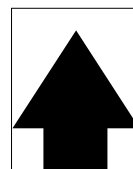
See page 1-5-40

- (10) Image is blurred.



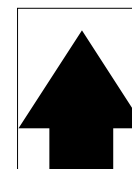
See page 1-5-40

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



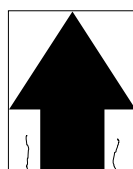
See page 1-5-40

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



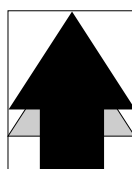
See page 1-5-41

- (13) Paper creases.



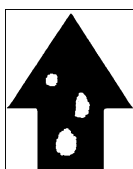
See page 1-5-41

- (14) Offset occurs.



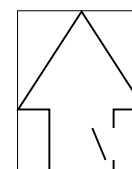
See page 1-5-41

- (15) Image is partly missing.



See page 1-5-42

- (16) Fixing is poor.



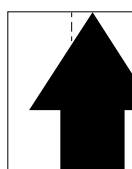
See page 1-5-42

- (17) Image is out of focus.



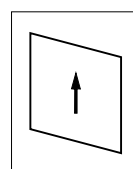
See page 1-5-42

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



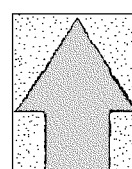
See page 1-5-42

- (19) Image is not square.



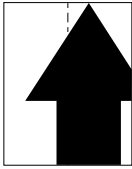
See page 1-5-43

- (20) Image contrast is low (carrier scattering).



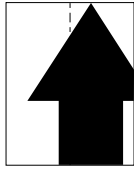
See page 1-5-43

(21) When the large paper deck is used, the center of the original image and that of the copy image do not align.



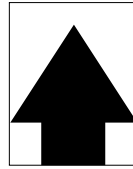
See page 1-5-43

(22) There is a regular error between the centers of the original and copy image when the SRDF is used.



See page 1-5-44

(23) There is a regular error between the leading edges of the original and copy image when the SRDF is used.



See page 1-5-44

- (1) No image appears
(entirely white).

Causes

1. No transfer charging.



Causes	Check procedures/corrective measures
1. No transfer charging.	
A. The connector terminals of the transfer charger belt bais 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 CN1-119 on the main PCB goes low when maintenance item U101 is run. If not, replace the main PCB.
C. Defective engine PCB.	Check if CN5-5 on the engine PCB goes low when CN1-119 on the main PCB is held low while maintenance item U101 is run. If not, replace the engine PCB.
D. Defective transfer charger belt bais PCB.	Check if transfer charging takes place when CN1-3 on the transfer charger belt bais PCB goes low while maintenance item U101 is run. If not, replace the transfer charger belt bais PCB.

1-5

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

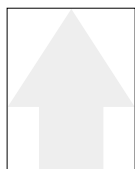
Causes

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 wire.
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 CN1-120 on the main PCB goes low when maintenance item U100 is run. If not, replace the main PCB.
E. Defective engine PCB.	Check if CN6-3 on the engine PCB goes low when CN1-120 on the main PCB is held low while maintenance item U100 is run. If not, replace the engine PCB.
F. Defective high-voltage transformer PCB.	Check if main charging takes place when CN1-7 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 CN1-5 and 1-6 on the inverter PCB go low while maintenance item U061 is run. If not, replace the inverter PCB.
C. Defective scanner control PCB.	Check if CN14-12 on the main PCB goes low when maintenance item U061 is run. If not, replace the main PCB.

- (3) Image is too light.



Causes

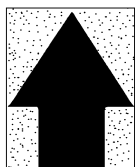
1. Insufficient toner.
2. Deteriorated developer.
3. Dirty or deteriorated drum.
4. Defective transfer charger belt bias PCB.

Causes	Check procedures/corrective measures
1. Insufficient toner.	If the display shows the message requesting toner replenishment, replace the cartridge.
2. Deteriorated developer.	Check the number of copies made with the current developer. If it has reached the specified limit, replace the developer.
3. Dirty or deteriorated drum.	Clean the drum or, if the maintenance level has been reached, replace the drum (see page 1-6-40).
4. Defective transfer charger belt bias PCB.	Check if transfer charging takes place when CN1-3 on the transfer charger belt bias PCB goes low while maintenance item U101 is run. If not, replace the transfer charger belt bias PCB.

- (4) Background is visible.

Causes

1. Deteriorated developer.

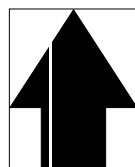


Causes	Check procedures/corrective measures
1. Deteriorated developer.	Check the number of copies made with the current developer. If it has reached the specified limit, replace the developer.

- (5) A white line appears longitudinally.

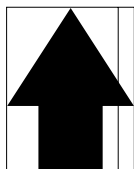
Causes

1. Foreign matter in the developing section.
2. Flawed drum.
3. Dirty shading plate.



Causes	Check procedures/corrective measures
1. Foreign matter in the developing section.	Check if the magnetic brush is formed uniformly. If not, replace the developer.
2. Flawed drum.	Replace the drum (see page 1-6-40).
3. Dirty shading plate.	Clean the shading plate.

- (6) A black line appears longitudinally.

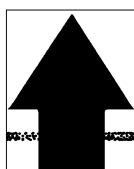


Causes

1. Dirty or flawed drum.
2. Deformed or worn cleaning blade.
3. Dirty scanner mirror.

Causes	Check procedures/corrective measures
1. Dirty or flawed drum.	Clean the drum or, if it is flawed, replace it (see page 1-6-40).
2. Deformed or worn cleaning blade.	Replace the cleaning blade (see page 1-6-52).
3. Dirty scanner mirror.	Clean the scanner mirror.

- (7) A black line appears laterally.

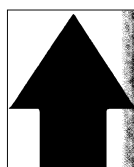


Causes

1. Flawed drum.
2. Dirty developing section.
3. Leaking main charger housing.

Causes	Check procedures/corrective measures
1. Flawed drum.	Replace the drum (see page 1-6-40).
2. Dirty developing section.	Clean any part contaminated with toner or carrier in the developing section.
3. Leaking main charger housing.	Clean the main charger wire, grid and shield.

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

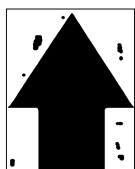


Causes

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.

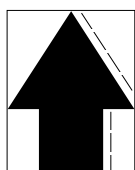


Causes

1. Dirty or flawed drum.
2. Dirty contact glass.
3. Deformed or worn cleaning blade.

Causes	Check procedures/corrective measures
1. Dirty or flawed drum.	Clean the drum or, if it is flawed, replace it (see page 1-6-40).
2. Dirty contact glass.	Clean the contact glass.
3. Deformed or worn cleaning blade.	Replace the cleaning blade (see page 1-6-52).

- (10) Image is blurred.

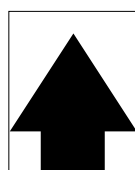


Causes

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

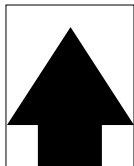
1. Misadjusted leading edge registration.

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

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

Causes

1. Registration clutch, bypass paper feed clutch or upper or lower paper feed clutch installed or operating incorrectly.

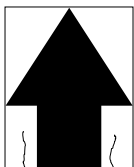


Causes	Check procedures/corrective measures
1. Registration clutch, bypass paper feed clutch or upper or lower paper feed clutch installed or operating incorrectly.	Check the installation position and operation of the registration clutch, bypass paper feed clutch and upper and lower paper feed clutches.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

- (13) Paper creases.

Causes

1. Paper curled.
2. Paper damp.
3. Defective pressure springs.

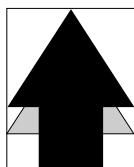


Causes	Check procedures/corrective measures
1. Paper curled.	Check the paper storage conditions.
2. Paper damp.	Check the paper storage conditions.
3. Defective pressure springs.	Replace the pressure springs.

- (14) Offset occurs.

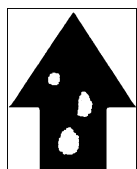
Causes

1. Defective cleaning blade.



Causes	Check procedures/corrective measures
1. Defective cleaning blade.	Replace the cleaning blade (see page 1-6-52).

(15) Image is partly missing.

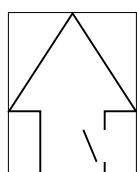


Causes

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.	Clean the drum.
4. Flawed drum.	Replace the drum (see page 1-6-40).

(16) Fixing is poor.



Causes

1. Wrong paper.
2. Defective pressure springs.
3. Flawed press roller.

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).

(17) Image is out of focus.

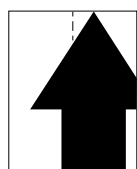


Causes

1. Defective image scanning unit.

Causes	Check procedures/corrective measures
1. Defective image scanning unit.	Replace the image scanning unit (see page 1-6-30).

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

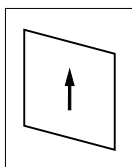


Causes

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

Causes	Check procedures/corrective measures
1. Misadjusted image center line.	Readjust the image center line (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.

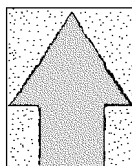


Causes

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 1-6-32).
2. Image scanning unit positioned incorrectly.	Adjust the installation position of the image scanning unit (see page 1-6-34).

(20) Image contrast is low (carrier scattering).

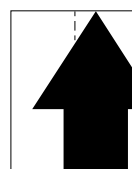


Causes

1. No developing bias output.

Causes	Check procedures/corrective measures
1. No developing bias output.	
A. Developing bias wire makes poor contact.	Check the developing bias wire. If there are any problems, replace it.
B. Defective main PCB.	Check if CN1-117 on the main PCB goes low when maintenance item U030 is run. If not, replace the main PCB.
C. Defective engine PCB.	Check if CN6-7 on the engine PCB goes low when maintenance item U030 is run. If not, replace the engine PCB.
D. Defective high-voltage transformer PCB.	Check if developing bias is output when there is no problem with the main PCB while maintenance item U030 is run. If not, replace the high-voltage transformer PCB.

(21) When the large paper deck is used, the center of the original image and that of the copy image do not align.

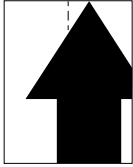


Causes

1. Center adjuster installed incorrectly.

Causes	Check procedures/corrective measures
1. Center adjuster installed incorrectly.	Adjust the installation position of the center adjuster (see page 1-6-16).

(22) There is a regular error between the centers of the original and copy image when the SRDF is used.

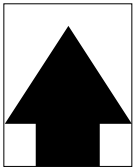


Causes

1. Misadjusted DF center line.

Causes	Check procedures/corrective measures
1. Misadjusted DF center line.	Readjust the DF center line (see page 1-6-71).

(23) There is a regular error between the leading edges of the original and copy image when the SRDF is used.



Causes

1. Misadjusted DF original scanning start position.

Causes	Check procedures/corrective measures
1. Misadjusted DF original scanning start position.	Readjust the DF original scanning start position (see page 1-6-72).



1-5-4 Electrical problems

• Copier

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, upper right, lower right and/or eject cover are/is not closed completely.	Check the front, upper right, lower right and eject covers.
	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, 2, 3 or 4.	Check for continuity across the contacts of each switch. If none, replace the switch.
(2) The image forming motor does not operate (C200).	Defective power source PCB.	With AC present, check for 5 V DC at CN8-1 on the power source PCB, 12 V DC at CN8-9 and 24 V DC at CN1-2. If none, replace the power source PCB.
	Poor contact in the image forming motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken image forming motor gear.	Check visually and replace the image forming motor if necessary.
	Defective image forming motor.	Run maintenance item U030 and check if the image forming motor operates when CN21-A3 on the engine PCB goes low. If not, replace the image forming motor.
(3) The drive motor does not operate (C210).	Defective engine PCB.	Run maintenance item U030 and check if CN21-A3 on the engine PCB goes low. If not, replace the engine 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 CN18-21 on the engine PCB goes low. If not, replace the drive motor.
(4) Paper feed motor does not operate (C220).	Defective engine PCB.	Run maintenance item U030 and check if CN18-21 on the engine PCB goes low. If not, replace the engine 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 CN21-B3 on the engine PCB goes low. If not, replace the paper feed motor.
(4) Paper feed motor does not operate (C220).	Defective engine PCB.	Run maintenance item U030 and check if CN21-B3 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(5) The scanner motor does not operate.	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.
	Defective scanner motor.	Run maintenance item U073 and check if the scanner motor operates when the motor drive coil energization pulse signals are output at CN2-1, CN2-3, CN2-4 and CN2-6 on the scanner motor PCB. If not, replace the scanner motor PCB.
	Defective scanner motor PCB.	Run maintenance item U073 and check if the scanner motor operates when CN1-8, CN1-9, CN1-10, CN1-11 and CN1-12 go low. If not, replace the scanner motor PCB.
(6) The duplex fan motor does not operate.	Broken duplex fan motor coil.	Check for continuity across the coil. If none, replace the duplex fan motor.
	Poor contact in the duplex fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN18-1 on the engine PCB goes low. If not, replace the engine PCB.
(7) The optical section motor does not operate.	Broken optical section fan motor coil.	Check for continuity across the coil. If none, replace the optical section fan motor.
	Poor contact in the optical section fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN18-3 on the engine PCB goes low. If not, replace the engine PCB.
(8) 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 in 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 engine PCB.	Run maintenance item U037 and check if CN2-2 on the engine PCB goes low. If not, replace the engine PCB.
(9) The fixing unit fan motor does not operate.	Broken fixing unit fan motor coil.	Check for continuity across the coil. If none, replace the fixing unit fan motor.
	Poor contact in the fixing unit fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN2-8 on the engine PCB goes low. If not, replace the engine PCB.
(10) LSU fan motor 1 does not operate.	Broken LSU fan motor 1 coil.	Check for continuity across the coil. If none, replace the LSU fan motor 1.
	Poor contact in the LSU fan motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN2-18 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(11) LSU fan motor 2 does not operate.	Broken LSU fan motor 2 coil.	Check for continuity across the coil. If none, replace the LSU fan motor 2.
	Poor contact in the LSU fan motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN2-11 on the engine PCB goes low. If not, replace the engine PCB.
(12) The main charger fan motor does not operate.	Broken main charger fan motor coil.	Check for continuity across the coil. If none, replace the main charger fan motor.
	Poor contact in the main charger fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN2-6 on the engine PCB goes low. If not, replace the engine PCB.
(13) The eject fan motor does not operate.	Broken eject fan motor coil.	Check for continuity across the coil. If none, replace the eject fan motor.
	Poor contact in the eject fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN4-6 on the engine PCB goes low. If not, replace the engine PCB.
(14) The upper lift motor does not operate (C242).	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 engine PCB.	Check if 24 V DC is output across CN13-B2 and CN13-B3 on the engine PCB right after the upper cassette is installed. If not, replace the engine PCB.
(15) The lower lift motor does not operate (C243).	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 engine PCB.	Check if 24 V DC is output across CN13-B4 and CN13-B5 on the engine PCB right after the lower cassette is installed. If not, replace the engine PCB.
(16) The large paper deck right lift motor does not operate (C230).	Broken large paper deck right lift motor coil.	Check for continuity across the coil. If none, replace the large paper deck right lift motor.
	Poor contact in the large paper deck right lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Check if 24 V DC is output across CN10-3 and CN10-4 on the engine PCB right after the large paper deck is installed. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(17) The large paper deck left lift motor does not operate (C231).	Broken large paper deck left lift motor coil.	Check for continuity across the coil. If none, replace the large paper deck left lift motor.
	Poor contact in the large paper deck left lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Check if 24 V DC is output across CN10-5 and CN10-6 on the engine PCB right after the large paper deck is installed. If not, replace the engine PCB.
(18) Blow fan motor 1 does not operate.	Broken blow fan motor 1 coil.	Check for continuity across the coil. If none, replace blow fan motor 1.
	Poor contact in the blow fan motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN18-7 on the engine PCB goes low. If not, replace the engine PCB.
(19) Blow fan motor 2 does not operate.	Broken blow fan motor 2 coil.	Check for continuity across the coil. If none, replace blow fan motor 2.
	Poor contact in the blow fan motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U037 and check if CN18-8 on the engine PCB goes low. If not, replace the engine PCB.
(20) The toner feed motor does not operate.	Broken toner feed motor coil.	Check for continuity across the coil. If none, replace the toner feed motor.
	Poor contact in the toner feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U135 and check if drive pulse signal is output across CN3-1 and CN3-2 on the engine PCB. If not, replace the engine PCB.
(21) The main charger cleaning motor does not operate.	Broken main charger cleaning motor coil.	Check for continuity across the coil. If none, replace the main charger cleaning motor.
	Poor contact in the main charger cleaning motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U102 and check if CN3-9 and CN3-10 on the engine PCB goes low. If not, replace the engine PCB.
(22) The toner agitation motor does not operate.	Broken toner agitation motor coil.	Check for continuity across the coil. If none, replace the toner agitation motor.
	Poor contact in the toner agitation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U135 and check if drive pulse signal is output across CN3-3 and CN3-4 on the engine PCB. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(23) 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 engine PCB.	Run maintenance item U032 and check if CN13-A8 on the engine PCB goes low. If not, replace the engine PCB.
(24) 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 engine PCB.	Run maintenance item U032 and check if CN13-A6 on the engine PCB goes low. If not, replace the engine PCB.
(25) 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 engine PCB.	Run maintenance item U032 and check if CN13-A4 on the engine PCB goes low. If not, replace the engine PCB.
(26) 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 engine PCB.	Run maintenance item U032 and check if CN13-A2 on the engine PCB goes low. If not, replace the engine PCB.
(27) Feed clutch 4 does not operate.	Broken feed clutch 4 coil.	Check for continuity across the coil. If none, replace feed clutch 4.
	Poor contact in feed clutch 4 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN13-B9 on the engine PCB goes low. If not, replace the engine PCB.
(28) Feed clutch 5 does not operate.	Broken feed clutch 5 coil.	Check for continuity across the coil. If none, replace feed clutch 5.
	Poor contact in feed clutch 5 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN13-B7 on the engine PCB goes low. If not, replace the engine PCB.
(29) 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 engine PCB.	Run maintenance item U032 and check if CN8-3 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(30) 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 engine PCB.	Run maintenance item U032 and check if CN8-4 on the engine PCB goes low. If not, replace the engine PCB.
(31) The bypass lift clutch does not operate.	Broken bypass lift clutch coil.	Check for continuity across the coil. If none, replace the bypass lift clutch.
	Poor contact in the bypass lift clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN12-4 on the engine PCB goes low. If not, replace the engine PCB.
(32) 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 engine PCB.	Run maintenance item U032 and check if CN12-2 on the engine PCB goes low. If not, replace the engine PCB.
(33) The duplex forwarding clutch does not operate.	Broken duplex forwarding clutch coil.	Check for continuity across the coil. If none, replace the duplex forwarding clutch.
	Poor contact in the duplex forwarding clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN19-11 on the engine PCB goes low. If not, replace the engine PCB.
(34) The duplex reversing clutch does not operate.	Broken duplex reversing clutch coil.	Check for continuity across the coil. If none, replace the duplex reversing clutch.
	Poor contact in the duplex reversing clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN19-12 on the engine PCB goes low. If not, replace the engine PCB.
(35) The large paper deck conveying clutch does not operate.	Broken large paper deck conveying clutch coil.	Check for continuity across the coil. If none, replace the large paper deck conveying clutch.
	Poor contact in the large paper deck conveying clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN18-5 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(36) Large paper deck paper feed clutch 1 does not operate.	Broken large paper deck paper feed clutch 1 coil.	Check for continuity across the coil. If none, replace large paper deck paper feed clutch 1.
	Poor contact in the large paper deck paper feed clutch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN9-B10 on the engine PCB goes low. If not, replace the engine PCB.
(37) Large paper deck paper feed clutch 2 does not operate.	Broken large paper deck paper feed clutch 2 coil.	Check for continuity across the coil. If none, replace large paper deck paper feed clutch 2.
	Poor contact in the large paper deck paper feed clutch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN9-B12 on the engine PCB goes low. If not, replace the engine PCB.
(38) The transfer charger belt release clutch does not operate.	Broken transfer charger belt release clutch coil.	Check for continuity across the coil. If none, replace the transfer charger belt release clutch.
	Poor contact in the transfer charger belt release clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-1 on the engine PCB goes low. If not, replace the engine PCB.
(39) The duplex eject switching solenoid does not operate.	Broken duplex eject switching solenoid coil.	Check for continuity across the coil. If none, replace the duplex eject switching solenoid.
	Poor contact in the duplex eject switching solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U033 and check if CN19-7 and CN19-8 on the engine PCB goes low. If not, replace the engine PCB.
(40) The duplex pressure release solenoid does not operate.	Broken duplex pressure release solenoid coil.	Check for continuity across the coil. If none, replace the duplex pressure release solenoid.
	Poor contact in the duplex pressure release solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U033 and check if CN19-9 and CN19-10 on the engine PCB goes low. If not, replace the engine PCB.
(41) 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 engine PCB.	Run maintenance item U033 and check if CN4-2 and CN4-4 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(42) The fixing web solenoid does not operate.	Broken fixing web solenoid coil.	Check for continuity across the coil. If none, replace the fixing web solenoid.
	Poor contact in the fixing web solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Run maintenance item U033 and check if CN5-8 on the engine PCB goes low. If not, replace the engine PCB.
(43) 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 engine PCB.	If the cleaning lamp turns on when CN3-6 on the engine PCB is held low, replace the engine PCB.
(44) 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.	If the exposure lamp turn on when CN2-1 and CN2-4 on the inverter PCB are held low, replace the inverter PCB.
	Defective scanner motor PCB.	If the exposure lamp turn on when CN3-1 and CN3-2 on the scanner motor PCB are held low, replace the scanner motor PCB.
(45) The exposure lamp does not turn off.	Defective inverter PCB.	If the exposure lamp does not turn off with CN2-1 and CN2-4 on the inverter PCB high, replace the inverter PCB.
	Defective scanner motor PCB.	If CN3-1 and CN3-2 on the scanner motor PCB are always low, replace the scanner motor PCB.
(46) Fixing heater M or S does not turn on (C610).	Broken wire in fixing heater M or S.	Check for continuity across each heater. If none, replace the heater (see page 1-6-59).
	Fixing unit thermostat triggered.	Check for continuity across thermostat. If none, remove the cause and replace the thermostat.
(47) Fixing heater M or S does not turn off.	Dirty sensor part of the fixing unit thermistor.	Check visually and clean the thermistor sensor parts.
	Defective engine PCB.	If fixing heater M/S stays on while CN15-7 and CN15-8 on the engine PCB go high, replace the engine PCB.
(48) Main charging is not performed (C510).	Broken main charger wire.	See page 1-5-37.
	Leaking main charger housing.	
	Poor contact in the high-voltage transformer PCB connector terminals.	
	Defective high-voltage transformer PCB.	
	Defective engine PCB.	
	Defective main PCB.	

Problem	Causes	Check procedures/corrective measures
(49) Transfer charging is not performed (C511).	Poor contact in the transfer charger belt bias PCB connector terminals.	See page 1-5-37.
	Defective high-voltage transformer PCB.	
	Defective engine PCB.	
	Defective main PCB.	
(50) No developing bias is output.	Poor contact in the developing bias wire.	Check the developing bias wire. If there is any problem, replace it.
	Poor contact in the high-voltage transformer PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective high-voltage transformer PCB.	Check if the developing bias is output when CN1-3 on the high-voltage transformer PCB goes low while maintenance item U030 is run. If not, replace the high-voltage transformer PCB.
	Defective engine PCB.	Check if CN6-7 on the engine PCB goes low during copying. If not, replace the engine PCB.
(51) The original size is not detected.	Defective original detection switch.	If the level of CN5-2 on the scanner motor PCB does not change when the original detection switch is turned on and off, replace the original detection switch.
(52) 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 sensors 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 or the scanner motor PCB.	Check if sensor operates correctly. If not, replace it or, if necessary, the scanner motor PCB.
(53) 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 main PCB.
(54) The message requesting paper to be loaded is shown when paper is present in the large paper deck.	Poor contact in the large paper deck paper empty sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective large paper deck paper empty sensor.	Check if CN9-A1 on the engine PCB goes low when the large paper deck paper emptysensor is turned on with 5 V DC present at CN9-A3 on the engine PCB. If not, replace the large paper deck paper emptysensor.
(55) The message requesting paper to be loaded is shown when paper is present in the upper cassette.	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 CN8-15 on the engine PCB goes low when the upper paper switch is turned on with 5 V DC present at CN8-11 on the engine PCB. If not, replace the upper paper switch.

Problem	Causes	Check procedures/corrective measures
(56) The message requesting paper to be loaded is shown when paper is present in the lower cassette.	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 CN8-16 on the engine PCB goes low when the lower paper switch is turned on with 5 V DC present at CN8-12 on the engine PCB. If not, replace the lower paper switch.
(57) The message requesting paper to be loaded is shown when paper is present on the bypass table.	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 CN20-B11 on the engine PCB goes low when the bypass paper switch is turned on with 5 V DC present at CN20-B13 on the engine PCB. If not, replace the bypass paper switch.
(58) The size of paper in the upper cassette is not displayed correctly.	Poor contact in the upper paper length switch* connector terminals (inch specs).	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective upper paper length switch* (inch specs).	Check if CN8-27 on the engine 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 (inch specs).	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective upper paper width switch* (inch specs).	Check if the levels of CN8-19, CN8-21 and CN8-23 on the engine PCB change alternately when the width guide in the upper cassette is moved. If not, replace the upper paper width switch.
	Incorrectly set cassette paper size in copier management mode (metric specs).	Check the cassette paper size and reset.
(59) The size of paper in the lower cassette is not displayed correctly.	Poor contact in the lower paper length switch* connector terminals (inch specs).	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper length switch* (inch specs).	Check if CN8-28 on the engine 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 (inch specs).	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper width switch* (inch specs).	Check if the levels of CN8-20, CN8-22 and CN8-24 on the engine PCB change alternately when the width guide in the lower cassette is moved. If not, replace the lower paper width switch.

* For inch specifications only.

Problem	Causes	Check procedures/corrective measures
(59) The size of paper in the lower cassette is not displayed correctly.	Incorrectly set cassette paper size in copier management mode (metric specs).	Check the cassette paper size and reset.
(60) The size of paper on the bypass table is not displayed 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 CN20-B2 on the engine 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 CN20-B5, CN20-B6 and CN20-B7 on the engine PCB change alternately when the insert guide on the bypass table is moved. If not, replace the bypass paper width switch.
(61) A paper jam in the paper feed, paper conveying or fixing section is indicated on the touch panel immediately after the main switch is turned on.	A piece of paper torn from copy paper is caught around paper feed switch 1/2/3/4/5, the feed switch, registration switch, feedshift switch or eject switch.	Check and remove if any.
	Defective paper feed switch 1.	With 5 V DC present at CN12-6 on the engine PCB, check if CN12-5 on the engine PCB remains low when paper feed switch 1 is turned on and off. If it does, replace paper feed switch 1.
	Defective paper feed switch 2.	With 5 V DC present at CN20-A12 on the engine PCB, check if CN20-A11 on the engine PCB remains low when paper feed switch 2 is turned on and off. If it does, replace paper feed switch 2.
	Defective paper feed switch 3.	With 5 V DC present at CN20-A9 on the engine PCB, check if CN20-A8 on the engine PCB remains low when paper feed switch 3 is turned on and off. If it does, replace paper feed switch 3.
	Defective paper feed switch 4.	With 5 V DC present at CN20-A6 on the engine PCB, check if CN20-A5 on the engine PCB remains low when paper feed switch 4 is turned on and off. If it does, replace paper feed switch 4.
	Defective paper feed switch 5.	With 5 V DC present at CN20-A3 on the engine PCB, check if CN20-A2 on the engine PCB remains low when paper feed switch 5 is turned on and off. If it does, replace paper feed switch 5.
	Defective feed switch.	With 5 V DC present at CN20-B10 on the engine PCB, check if CN20-B8 on the engine PCB remains low when feed switch is turned on and off. If it does, replace feed switch.
	Defective registration switch.	With 5 V DC present at CN3-25 on the engine PCB, check if CN3-28 on the engine PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.

Problem	Causes	Check procedures/corrective measures
(61) A paper jam in the paper feed, paper conveying or fixing section is indicated on the touch panel immediately after the main switch is turned on.	Defective feedshift switch.	With 5 V DC present at CN4-7 on the engine PCB, check if CN4-11 on the engine PCB remains low when the feedshift switch is turned on and off. If it does, replace the feedshift switch.
	Defective eject switch.	With 5 V DC present at CN4-8 on the engine PCB, check if CN4-12 on the engine PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch.
(62) The message requesting covers to be closed is displayed when the front, upper right, lower right and eject covers are closed.	Poor contact in the connector terminals of safety switch 1, 2, 3 or 4.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective safety switch 1, 2, 3 or 4.	Check for continuity across each switch. If there is no continuity when the switch is on, replace it.
(63) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

• SRDF

Problem	Causes	Check procedures/corrective measures
(1) The original feed motor does not operate.	Defective original feed motor coil.	Check for continuity across the coil. If none, replace the original feed motor.
	The connector terminals of the original feed motor make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB.	Check for continuity across the original feed motor coil and connector terminals. If good, replace the DF driver PCB.
(2) The original conveying motor does not operate.	Defective original conveying motor coil.	Check for continuity across the coil. If none, replace the original conveying motor.
	The connector terminals of the original conveying motor make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB	Check for continuity across the original conveying motor coil and connector terminals. If good, replace the DF driver PCB.
(3) The original feed solenoid does not operate.	Defective original feed solenoid coil.	Check for continuity across the coil. If none, replace the original feed solenoid.
	The connector terminals of the original feed solenoid make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB.	Check if the original feed solenoid operates when CN5-B13 or CN5-B12 on the DF driver PCB is low. If it does, replace the DF driver PCB.
(4) The switchback feedshift solenoid does not operate.	Defective switchback feedshift solenoid coil.	Check for continuity across the coil. If none, replace the switchback feedshift solenoid.
	The connector terminals of the switchback feedshift solenoid make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB.	Check if the switchback feedshift solenoid operates when CN5-B8 on the DF driver PCB is low. If it does, replace the DF driver PCB.
(5) The eject feedshift solenoid does not operate.	Defective eject feedshift solenoid coil.	Check for continuity across the coil. If none, replace the eject feedshift solenoid.
	The connector terminals of the eject feedshift solenoid make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB.	Check if the eject feedshift solenoid operates when CN5-A7 on the DF driver PCB is low. If it does, replace the DF driver PCB.
(6) The switchback pressure solenoid does not operate.	Defective switchback pressure solenoid coil.	Check for continuity across the coil. If none, replace the switchback pressure solenoid.
	The connector terminals of the switchback pressure solenoid make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB.	Check if the switchback pressure solenoid operates when CN5-A2 or CN5-A3 on the DF driver PCB is low. If it does, replace the DF driver PCB.

Problem	Causes	Check procedures/corrective measures
(7) The original feed clutch does not operate.	Defective original feed clutch coil.	Check for continuity across the coil. If none, replace the original feed clutch.
	The connector terminals of the original feed clutch make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF driver PCB.	Check if the original feed clutch operates when CN5-A5 on the DF driver PCB is low. If it does, replace the DF driver PCB.
(8) A message indicating cover open is displayed when the SRDF is closed correctly.	The connector terminals of DF safety switch 1 make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective DF safety switch 1.	Check for continuity across the contacts of the switch. If none when the switch is on, replace DF safety switch 1.
(9) An original jams when the main switch is turned on.	A piece of paper torn from an original is caught around the original feed switch.	Remove any found.
	Defective original feed switch.	With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 of the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch.
	A piece of paper torn from an original is caught around the original switchback switch.	Remove any found.
	Defective original switchback switch.	With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch.
	A piece of paper torn from an original is caught around the DF timing switch.	Remove any found.
	Defective DF timing switch.	With 5 V DC present at CN6-B13 on the DF driver PCB, check if CN6-B14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch.
	The surface facing the DF timing switch is soiled.	Check if the projection at the center of the conveying cover that is facing the DF timing switch is soiled with paper powder. If so, clean it.

1-5-5 Mechanical problems

• Copier

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: forwarding pulleys, upper/lower paper feed pulleys, upper/lower feed rollers, vertical paper conveying rollers A/B/C/D, feed pulleys, bypass forwarding roller and bypass upper/lower paper feed pulleys.	Clean with isopropyl alcohol.
	Check if the upper or lower paper feed pulley or forwarding pulley is deformed.	Check visually and replace any deformed pulleys (see page 1-6-3).
	Electrical problem with the following electromagnetic clutches: upper/lower paper feed clutches, feed clutches 1/2/3/4/5, large paper deck conveying clutch and bypass paper feed clutch.	See pages 1-5-49, 50.
(2) No secondary paper feed.	Check if the surfaces of the upper and lower registration rollers are dirty with paper powder.	Clean with isopropyl alcohol.
	Electrical problem with the registration clutch.	See page 1-5-49.
(3) Skewed paper feed.	Width guide in a cassette installed incorrectly.	Check the width guide visually and correct or replace if necessary.
	Deformed width guide in a cassette.	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 1-6-26).
	The scanner motor malfunctions.	See page 1-5-46.
(5) Multiple sheets of paper are fed at one time.	Check if the lower paper feed pulley is worn.	Replace the lower paper feed pulley if it is worn (see page 1-6-3).
	Check if the paper is curled.	Change the paper.
(6) No refeed.	Check if the surfaces of the following rollers are dirty with paper powder: duplex upper/lower registration rollers, duplex upper/lower conveying rollers and duplex upper/lower eject rollers.	Clean with isopropyl alcohol.
(7) 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 upper and lower registration rollers is correct.	Check visually and remedy if necessary.
	Check if the contact between the upper and lower feed rollers is correct.	Check visually and remedy if necessary.
	Check if the fixing unit upper or lower guide is deformed.	Repair or replace if necessary.

Problem	Causes/check procedures	Corrective measures
(7) Paper jams.	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 1-5-51.
	Check if the contact between the feedshift lower roller and feedshift pulley is correct.	Check visually and remedy if necessary.
(8) Toner drops on the paper conveying path.	Check if the developing unit is extremely dirty.	Clean the developing unit.
(9) 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 1/2/3/4/5, large paper deck conveying clutch and bypass paper feed clutch.	Correct.

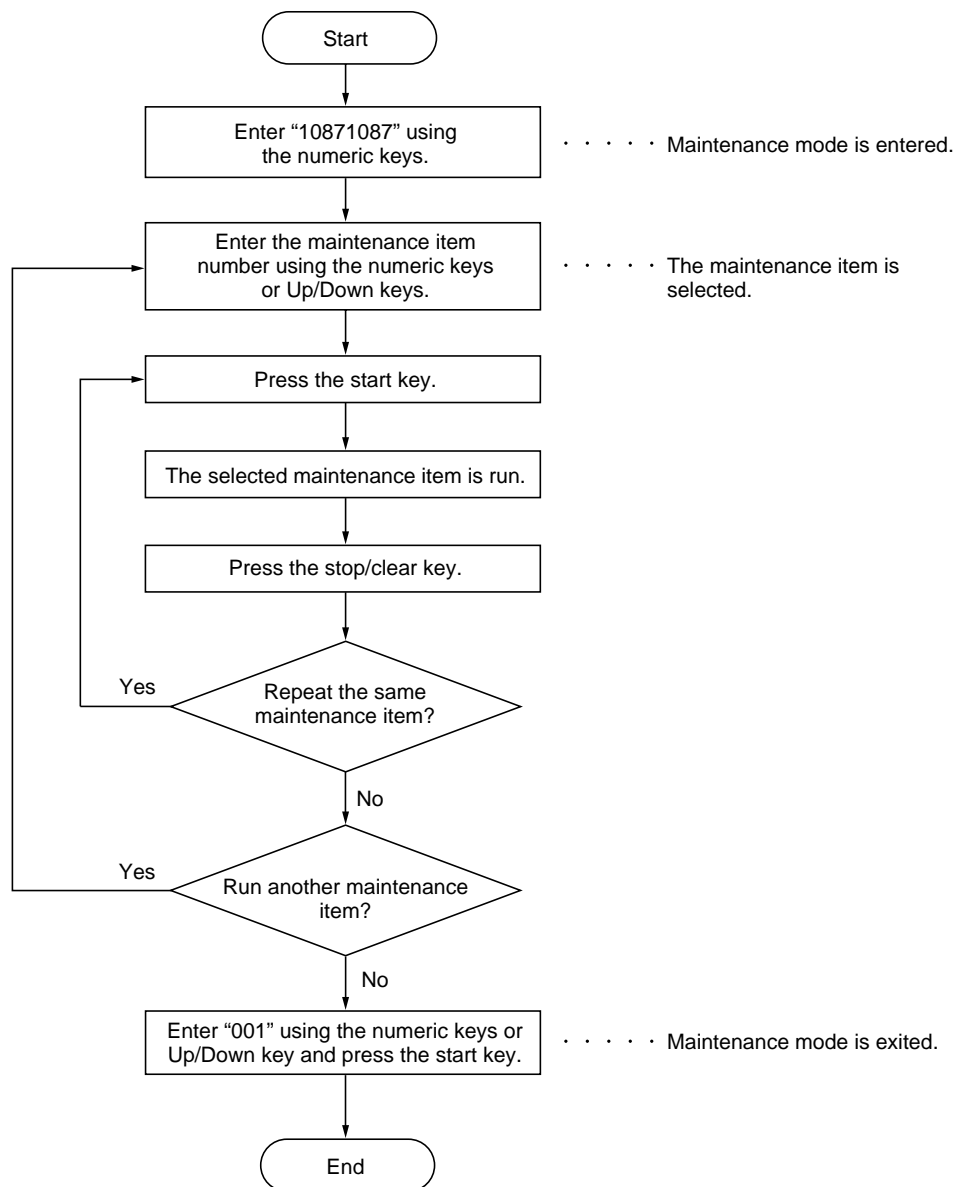
• SRDF

Problem	Causes/check procedures	Corrective measures
(1) No primary original feed.	The surfaces of the DF forwarding pulleys, DF original feed pulley or DF separation pulley are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	Check if the DF original feed pulley or the DF forwarding pulley is deformed.	If so, replace (see pages 1-6-69).
	Electrical problem with the following clutch or solenoid: • Original feed solenoid • Original feed clutch	See pages 1-5-57, 58.
(2) No secondary original feed.	The DF registration pulley and the DF registration roller do not contact each other correctly.	Check visually and remedy if necessary.
(3) Originals jam.	Originals outside the specifications are used.	Use only originals conforming to the specifications.
	The surfaces of the DF forwarding pulleys, DF original feed pulley or DF separation pulley are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	The DF original feed pulley and the DF separation pulley do not contact each other correctly.	Check visually and remedy if necessary.

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, upper and lower paper feed pulleys

Follow the procedure below to clean or replace the upper and lower paper feed pulleys.

Procedure

1. Remove the lower right inner cover.
2. Open the lower vertical conveying cover.
3. Remove the screw each and pull out the primary paper feed units (for upper cassette and lower cassette) as shown in the figure, then remove the primary paper feed units from the machine.

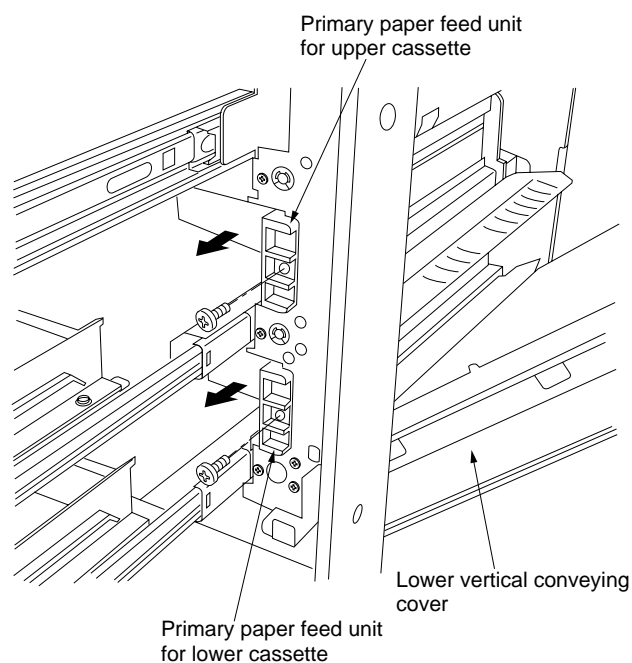


Figure 1-6-1

• Removing the forwarding pulley

4. Raise the forwarding pulley retainer in the directions of the arrows as shown in the figure, and remove it from the primary paper feed unit.

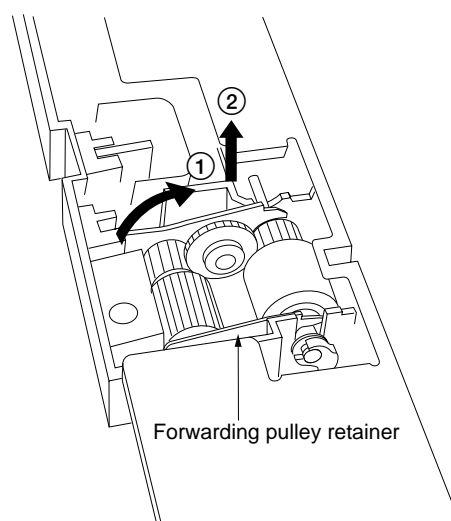


Figure 1-6-2

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

* When refitting the forwarding pulley, check that the joint section of the forwarding pulley (section indicated by round mark in the figure) is firmly geared with the joint section of the gear.

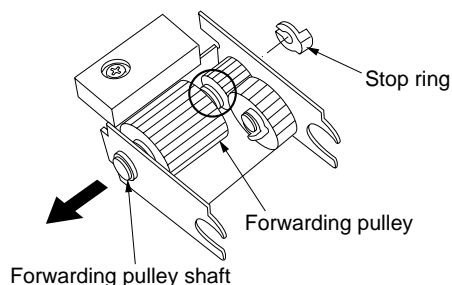


Figure 1-6-3

- Removing the upper paper feed pulley
6. Remove the eight screws, then remove upper paper feed housing reinforcement plate.

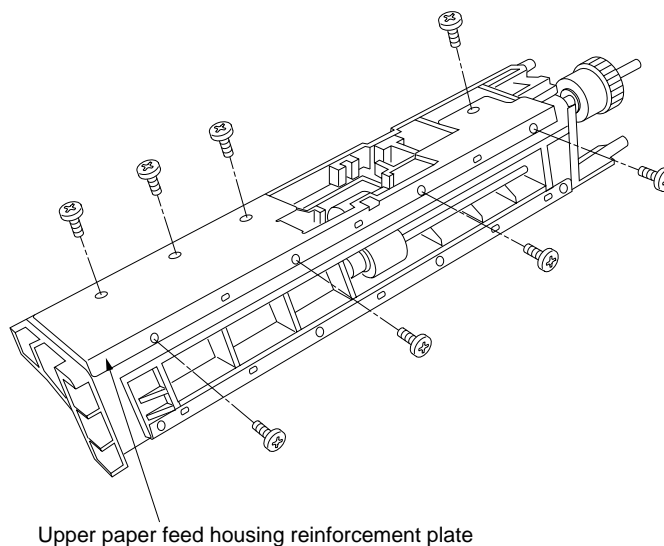


Figure 1-6-4

7. Free the wire of the paper feed clutch from the two hooks and groove of the upper paper feed housing.
8. Remove the stop ring, then remove the bushing.
9. Pull the upper paper feed shaft in the direction of the arrow, then remove the upper paper feed pulley as shown in the figure.

* When refitting, be careful about following points.

- Refit the upper paper feed pulley so that the one-way clutch is machine front.
- Refit the gear so that the one-way clutch (blue) is machine front.
- The stopper (section indicated by round mark in the figure) of the paper feed clutch must be firmly into the groove of the upper paper feed housing.

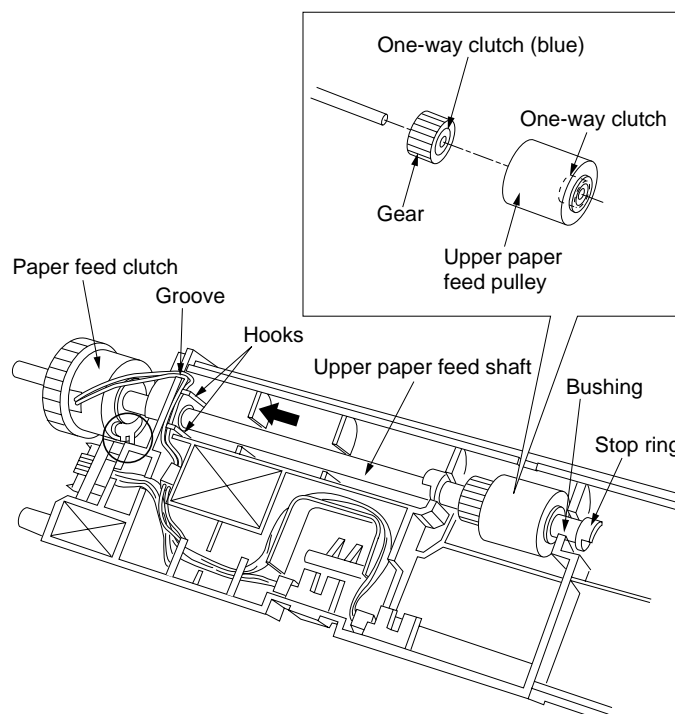
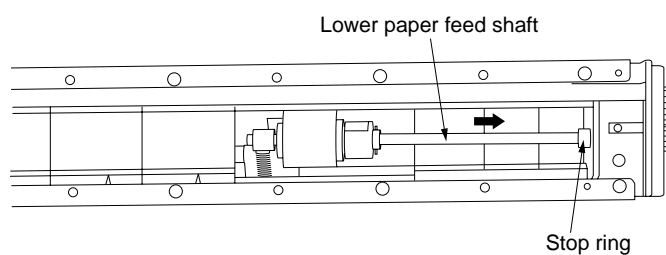
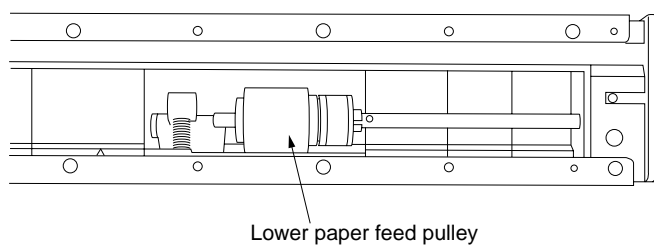


Figure 1-6-5

- Removing the lower paper feed pulley
10. Remove the stop ring on the rear of the primary paper feed unit.
 11. Pull the lower paper feed shaft in the direction of the arrow as shown in the figure.

**Figure 1-6-6**

12. Remove the lower paper feed pulley.
13. Refit all the removed parts.

**Figure 1-6-7**

(2) Detaching and refitting the bypass forwarding roller, bypass upper and lower paper feed pulleys

Follow the procedure below to clean or replace the bypass forwarding roller, bypass upper and lower paper feed pulleys.

(2-1) Detaching the bypass paper feed unit

Follow the procedure below to detach the bypass paper feed unit to perform disassembly.

Procedure

1. Remove the upper right cover.
 2. Disconnect the 7-pin connector and free the wire of the connector from the cord clamp.
 3. Remove the two screws, then remove the bypass table assembly as shown in the figure.
- * When refitting, be careful about following points.
- Run the wire of the connector through the part (indicated by the arrow (a) in the figure), rewind the wire to the cord clamp.
 - Check that the rail sections (sections indicated by round marks in the figure) at the bypass table assembly must be firmly into the bypass table mounts (machine front and rear).

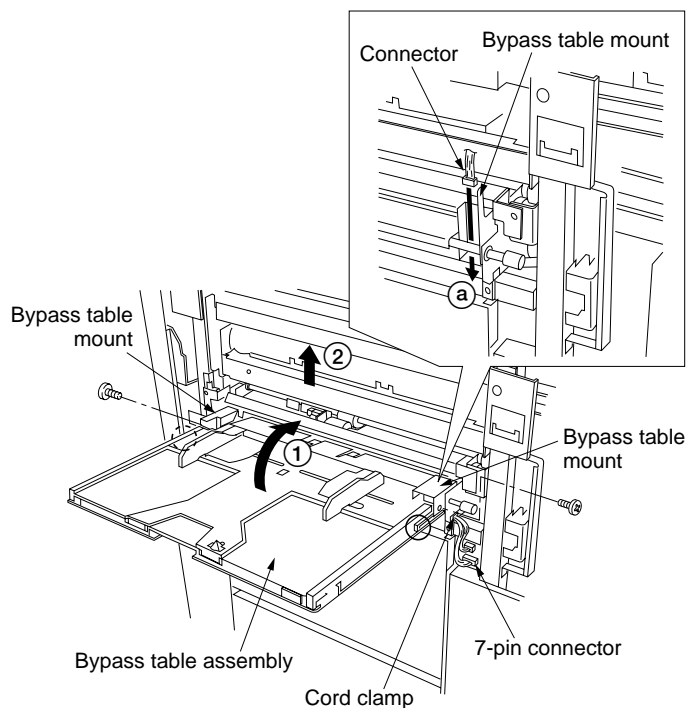


Figure 1-6-8

4. Disconnect the 6-pin connector and remove the four screws, then remove the bypass paper feed unit.

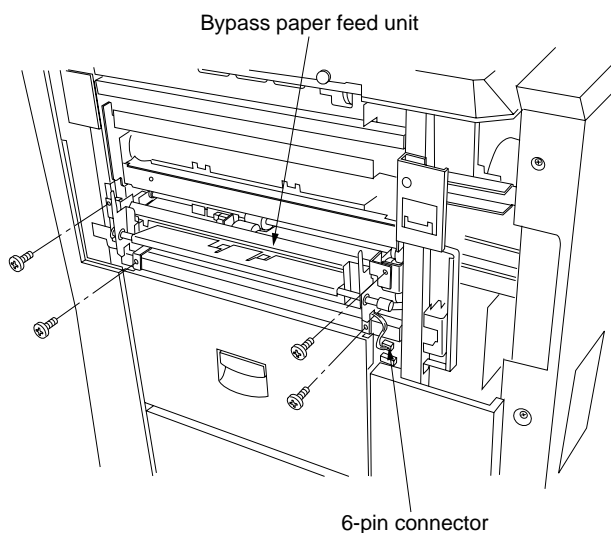


Figure 1-6-9

(2-2) Detaching the bypass forwarding roller

Procedure

1. Remove the bypass paper feed unit (see page 1-6-6).
2. Remove the E ring, then remove the gear, pin and bushing.
3. Remove the stop ring, then remove the bushing.
4. Remove the bypass forwarding roller from the bypass paper feed unit.
5. Refit all the removed parts.

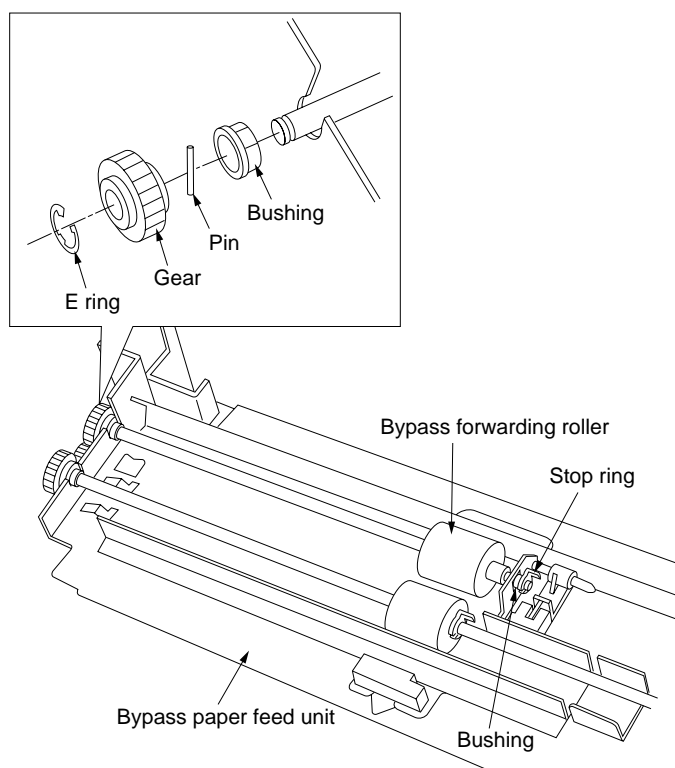


Figure 1-6-10

1-6

(2-3) Detaching the bypass upper paper feed pulley

Procedure

1. Remove the bypass paper feed unit (see page 1-6-6).
2. Remove the E ring, then remove the bushing.
3. Shift the bushing in the direction of the arrow (a), then remove the upper separation shaft from the bypass paper feed unit.
4. Remove the stop ring, then remove the bypass upper paper feed pulley from the upper separation shaft.
5. Refit all the removed parts.

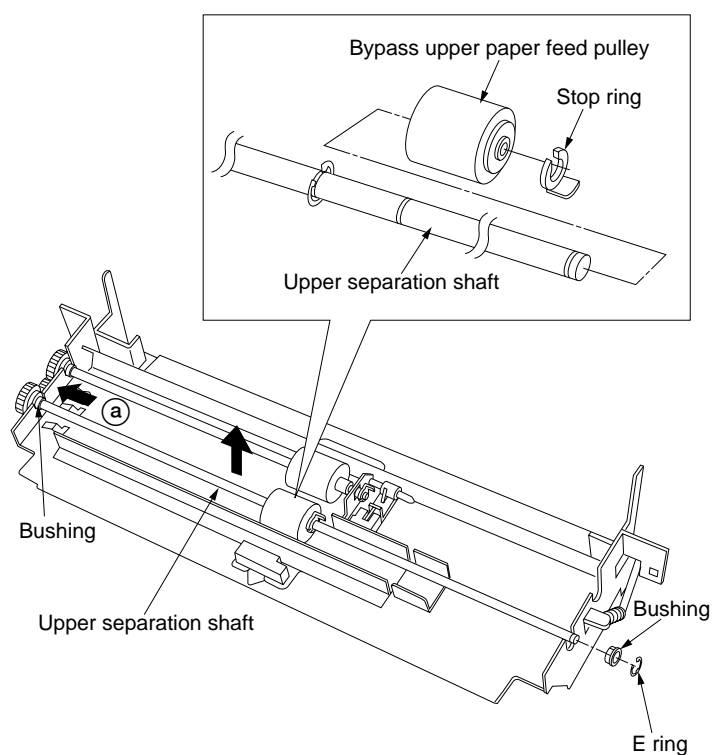
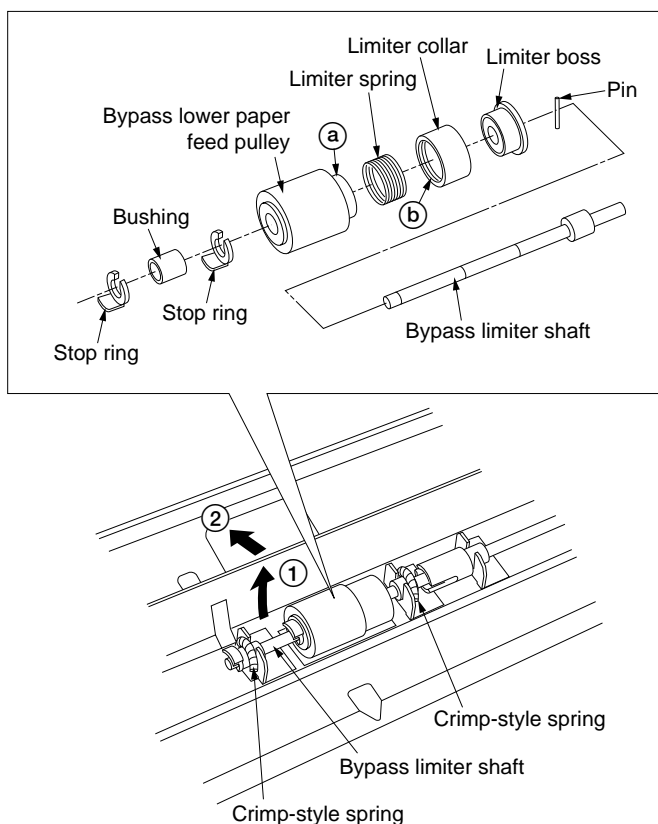


Figure 1-6-11

(2-4) Detaching the bypass lower paper feed pulley**Procedure**

1. Remove the bypass paper feed unit (see page 1-6-6).
2. Remove the left and right crimp-style springs, then remove the bypass limiter shaft from the bypass paper feed unit in the direction of the arrows as shown in the figure.
3. Remove the stop ring, then remove the bushing.
4. Remove the stop ring and remove the each parts as shown in the figure, then remove the bypass lower paper feed pulley.
- * When refitting, apply the specified grease to the part of the lower bypass paper feed pulley (Ⓐ indicated in the figure) and inside of the limiter collar (Ⓑ indicated in the figure).
5. Refit all the removed parts.

**Figure 1-6-12**

(3) Cleaning the paper feed belts

Follow the procedure below to clean the paper feed belts.

Procedure

1. Open the front cover.
2. Pull the large paper deck out.
3. Remove the four screws, then remove the duplex unit.

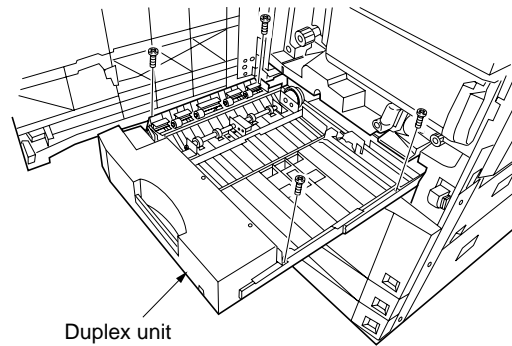


Figure 1-6-13

4. Remove the lower rear right cover.
5. Remove the two screws, then remove the vertical conveying mount.
6. Disengage the hook of the vertical conveying damper spring from the hole in the machine and remove the upper vertical conveying cover assembly.

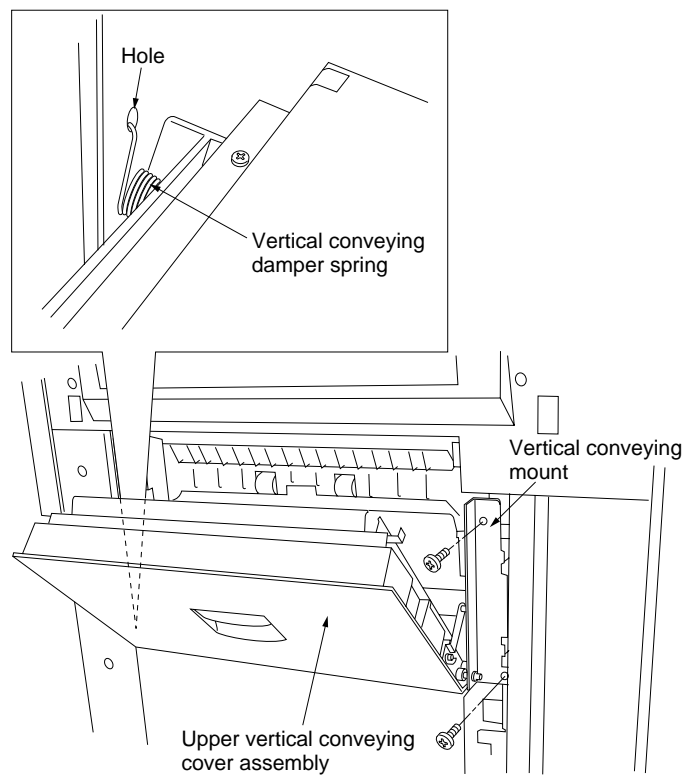


Figure 1-6-14

7. Disconnect the 13-pin connector and the 14-pin connector on the right side of the deck paper conveying unit, and then disconnect the 2-pin connector on the left side.
8. Remove the two screws, then pull the deck paper conveying unit in the direction of the arrow to remove it from the machine.

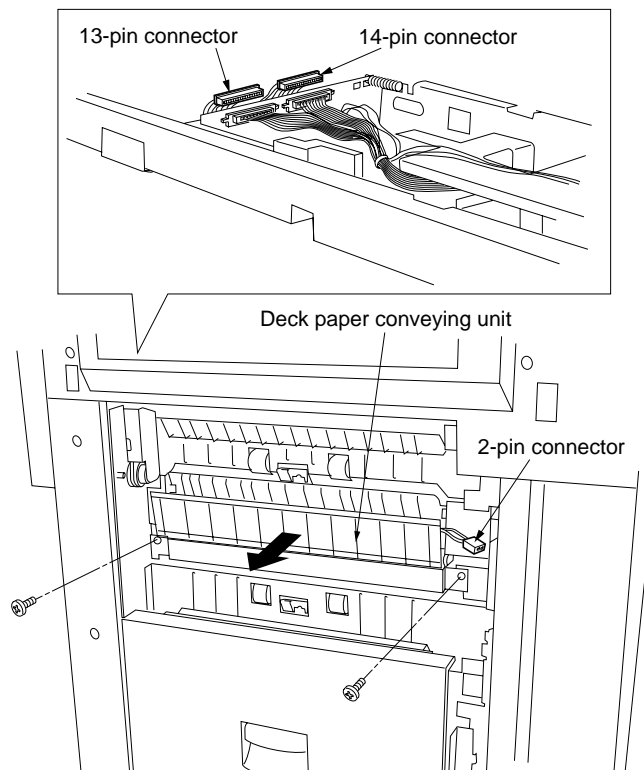


Figure 1-6-15

9. Clean the paper feed belts with alcohol.
10. Refit all the removed parts.

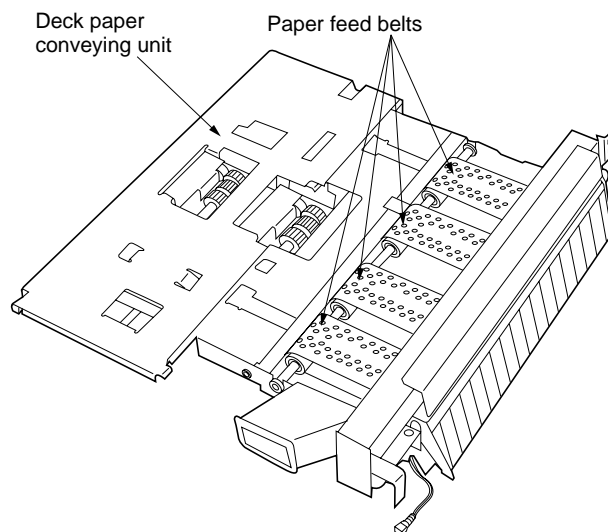


Figure 1-6-16

(4) Detaching and refitting the deck paper feed roller and deck paper conveying roller

Follow the procedure below to clean or replace the deck paper feed roller or deck paper conveying roller.

Procedure

1. Remove the deck paper conveying unit from the machine (see page 1-6-9).
2. While pressing down the pickup arm in the direction of the arrow, remove the two stop rings and two bushings.
3. Remove the rollers.
4. Refit all the removed parts.

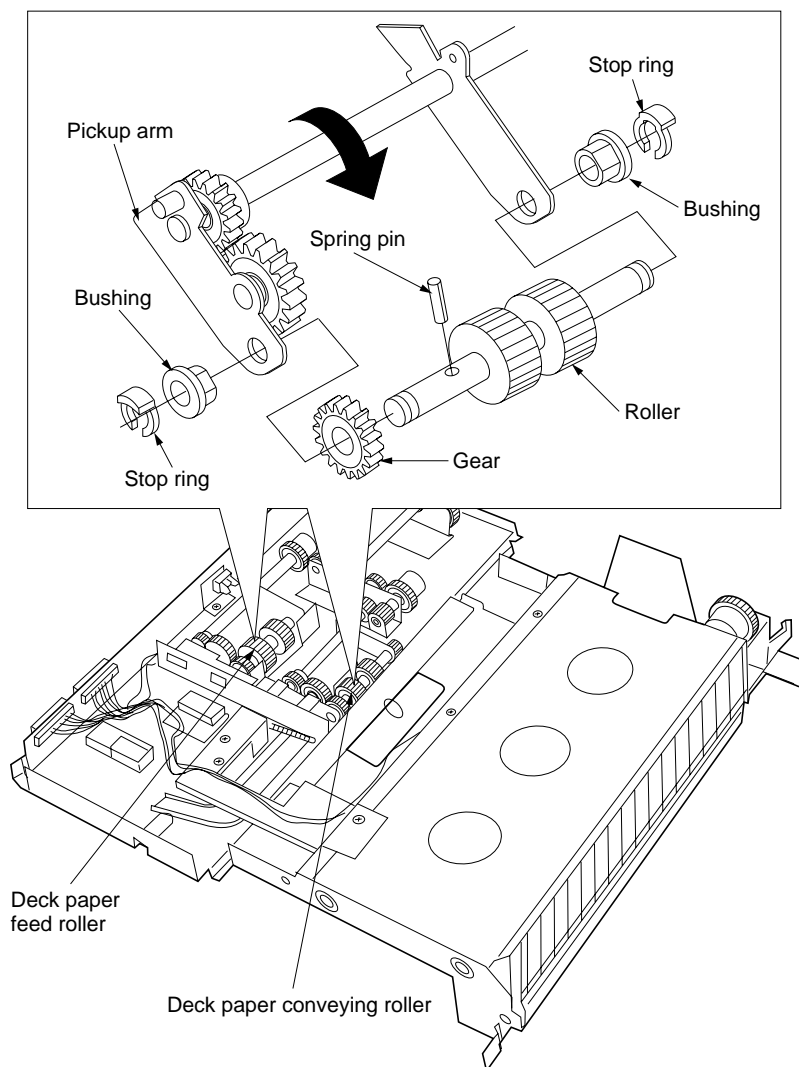


Figure 1-6-17

(5) Detaching and refitting the upper and lower paper width switches (for inch models only)

Follow the procedure below to check or replace the upper and lower paper width switches.

Caution:

After replacing a paper width switch, be sure to perform "(7-1) Adjusting the position of the rack adjuster" (see page 1-6-15).

Procedure

1. Remove the four screws, then remove the cassette from the machine.

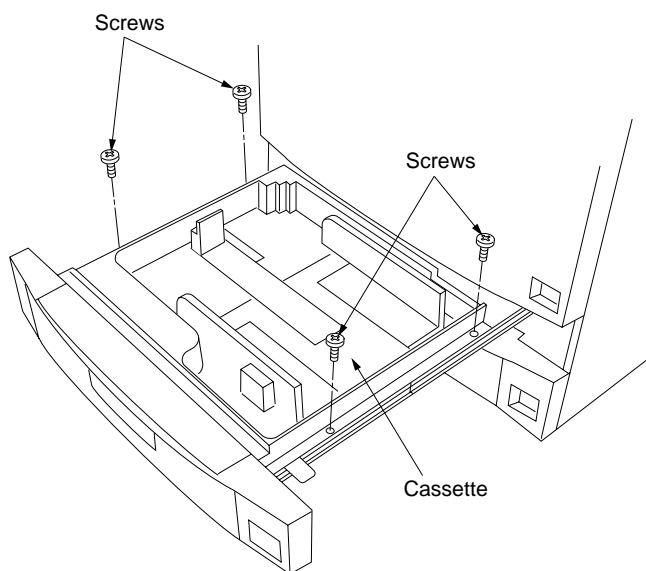


Figure 1-6-18

2. Remove the two screws and two spacers, then remove the 8-pin socket from the rear of the cassette.
3. Remove the 8-pin connector for the paper width switch from the 8-pin socket.
4. Remove the three screws holding the width adjustment lever.
5. While lifting the cassette lift in the direction of the arrow, then remove the width adjustment lever.

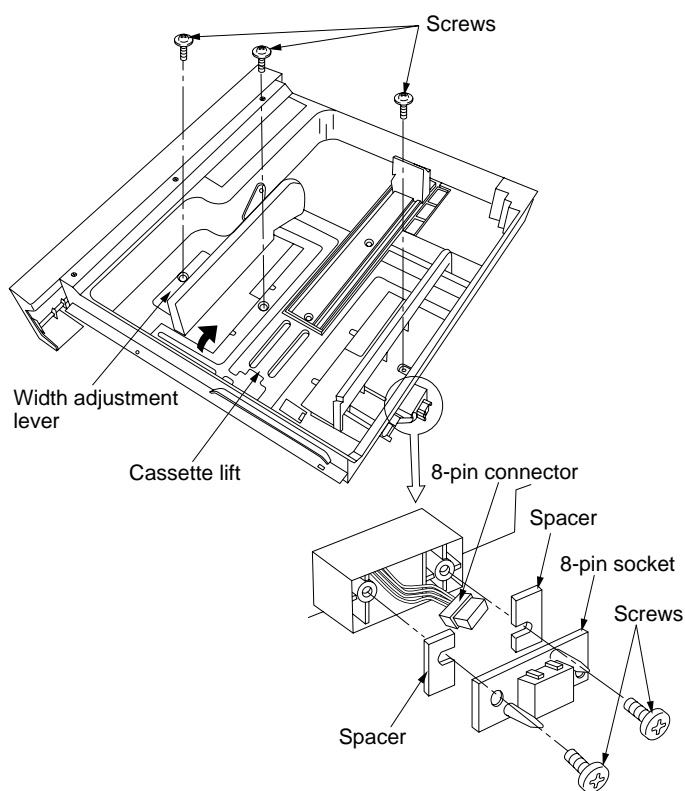


Figure 1-6-19

6. Remove the two screws on the back of the width adjustment lever, then remove the paper width switch.
- * When replacing, apply the specified grease to the printed surface of the new paper width switch (shaded area in the figure) and fit the switch to the width adjustment lever.

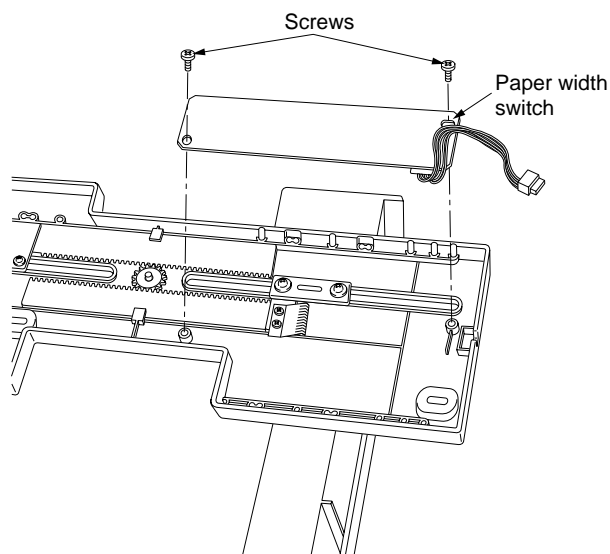


Figure 1-6-20

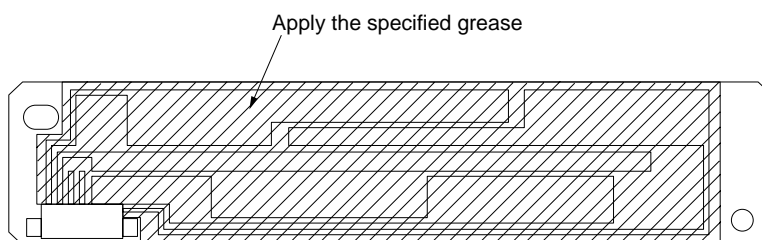


Figure 1-6-21

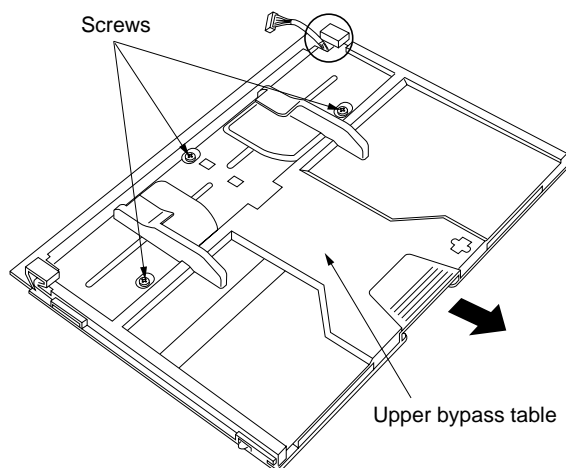
7. Refit all the removed parts.

(6) Detaching and refitting the bypass paper width switch

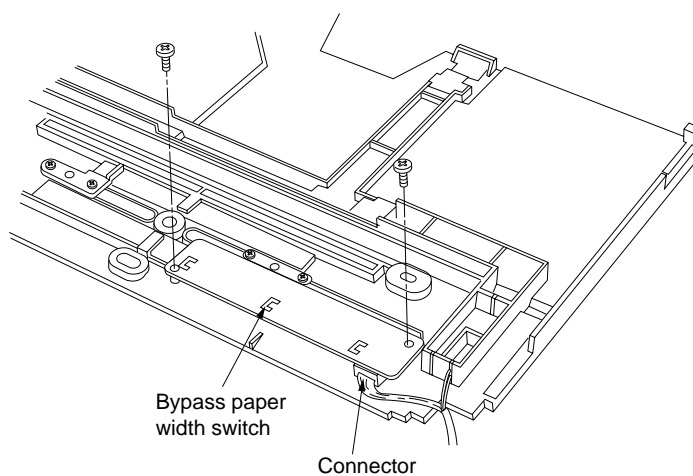
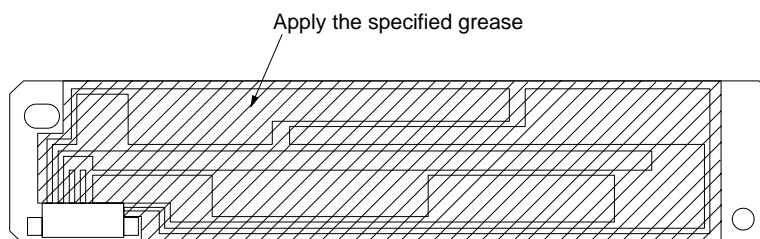
Follow the procedure below to check or replace the bypass paper width switch.

Procedure

1. Remove the bypass table assembly (see page 1-6-6).
2. Remove the three screws, then remove the upper bypass table.
- * When refitting, check that the wire of the connector must be run through the notch of the upper bypass table (section indicated by round mark in the figure).

**Figure 1-6-22**

3. Remove the two screws and disconnect the connector, then remove the bypass paper width switch.
- * When replacing, apply the specified grease to the printed surface of the new bypass paper width switch (shaded area in the figure) and fit the switch to the upper bypass table.

**Figure 1-6-23****Figure 1-6-24**

4. Refit all the removed parts.

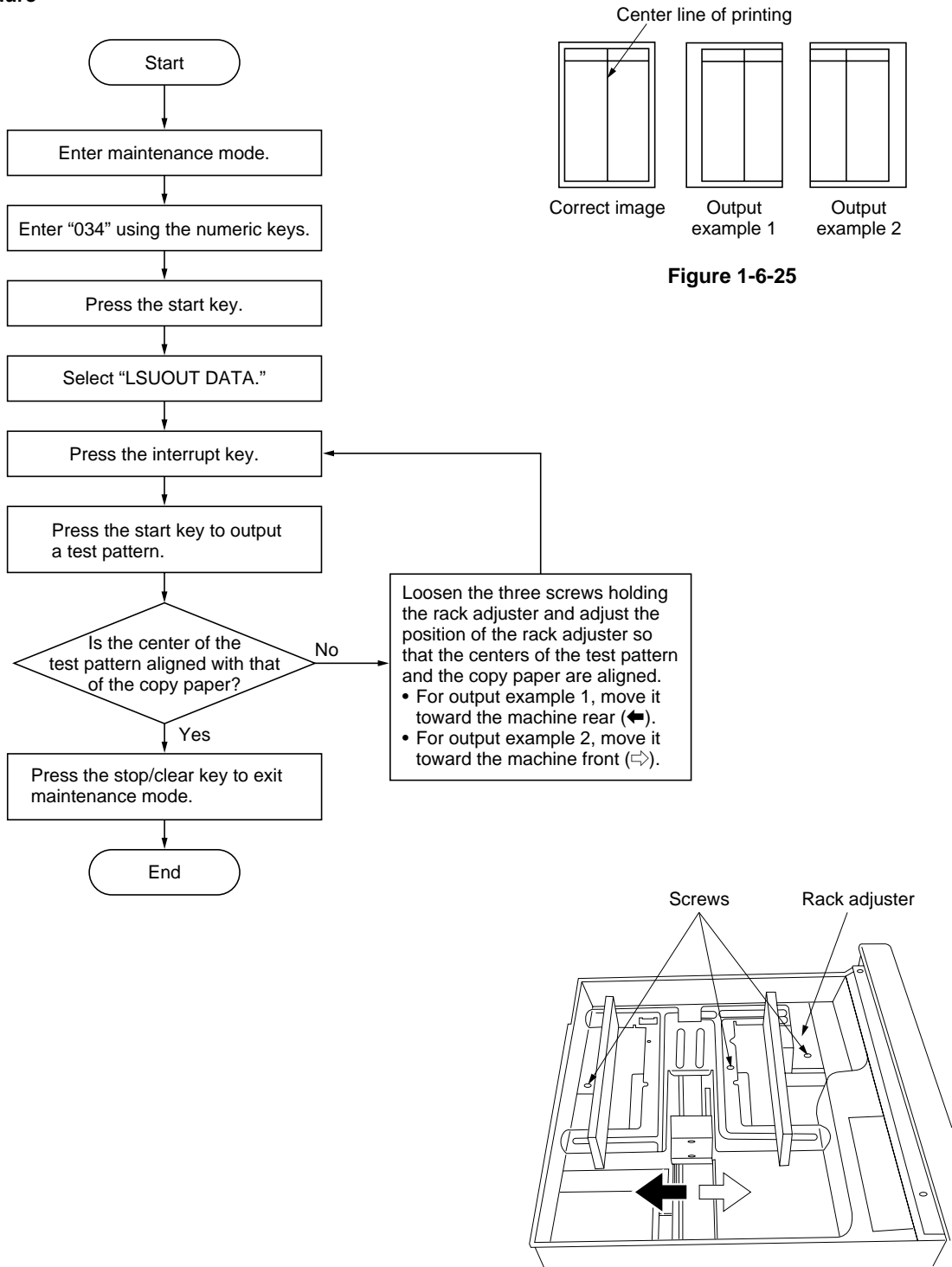
(7) Adjusting the center registration

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

(7-1) Adjusting the position of the rack adjuster

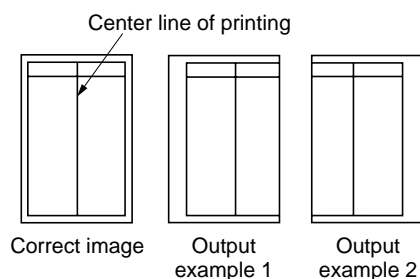
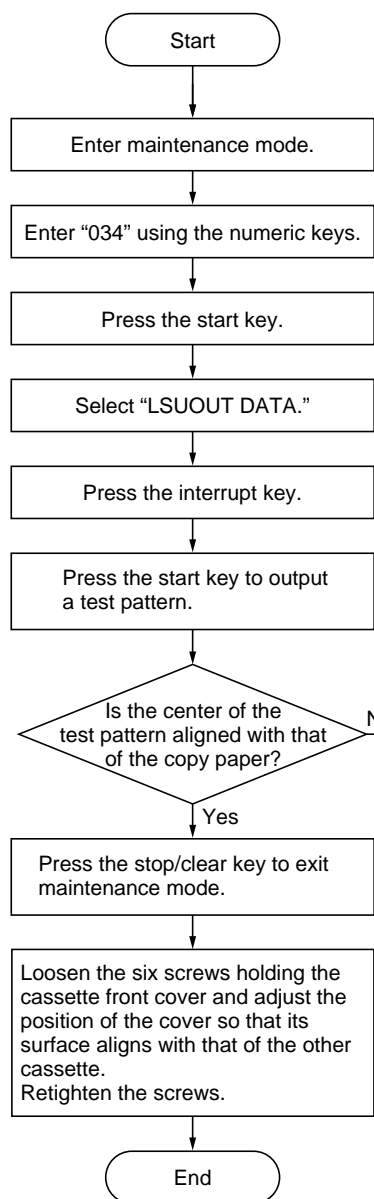
Perform the following adjustment if there is a regular error between the centers of the original and the copy image on the paper fed from a cassette.

Procedure



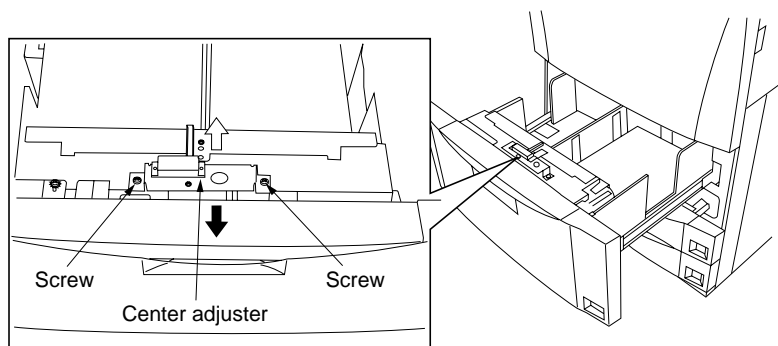
(7-2) Adjusting the position of the center adjuster

Perform the following adjustment if there is a regular error between the centers of the original and the copy image on the paper feed from a large paper deck.

Procedure**Figure 1-6-27**

Loosen the two screws holding the center adjuster and adjust the position of the center adjuster so that the centers of the test pattern and the copy paper are aligned.

- For output example 1, move it toward the machine front (←).
- For output example 2, move it toward the machine rear (→).

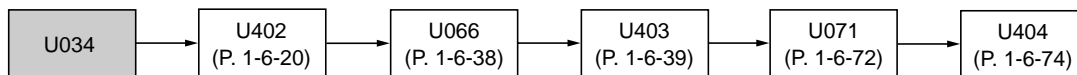
**Figure 1-6-28**

(8) Adjustment after roller and clutch replacement

Perform the following adjustment after refitting rollers and clutches.

(8-1) Adjusting the leading edge registration

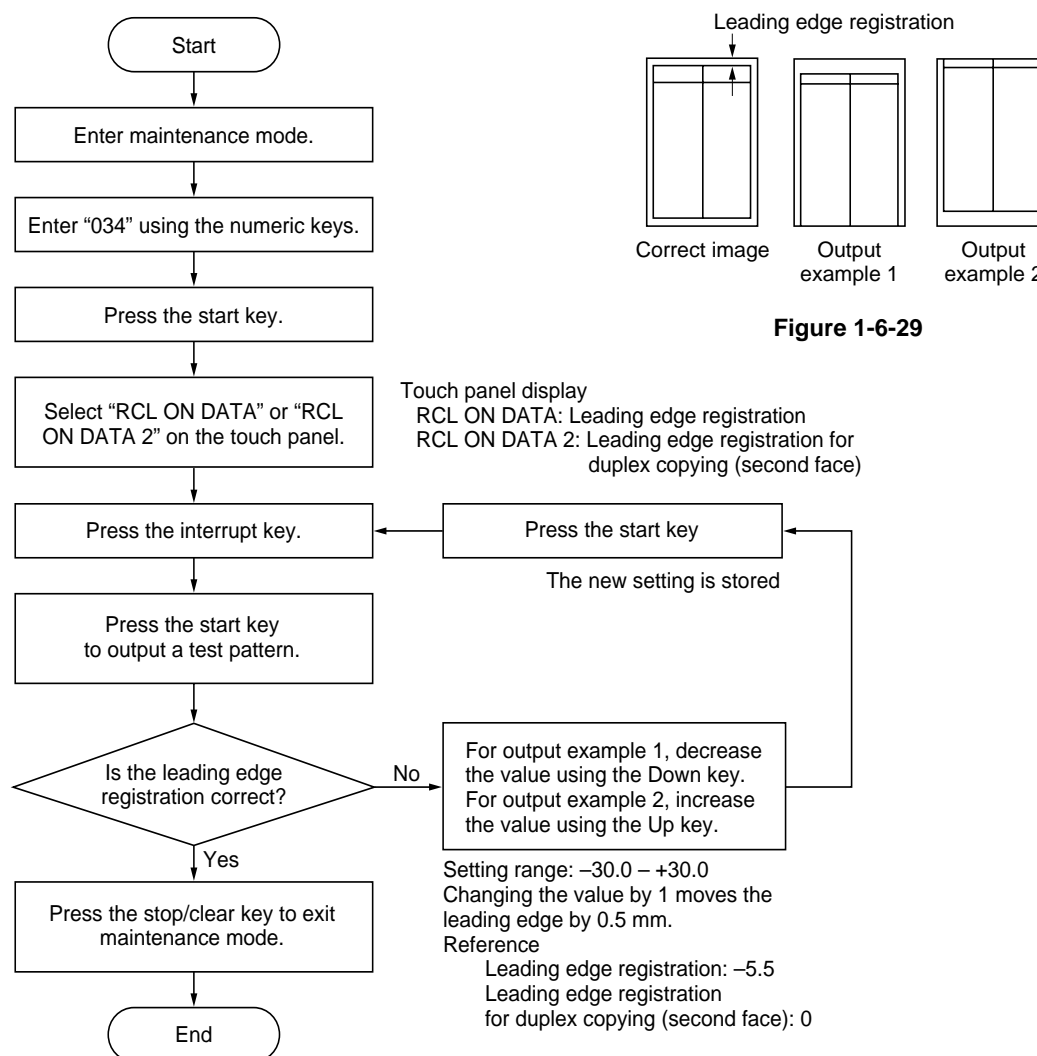
Make the following adjustment if there is a regular error between the leading edges of the copy image and original.



Caution:

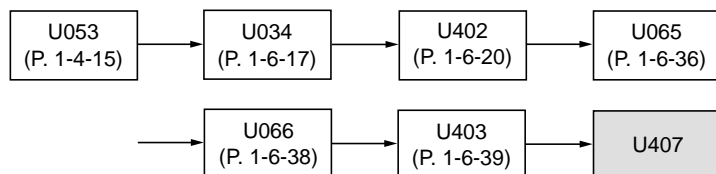
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure

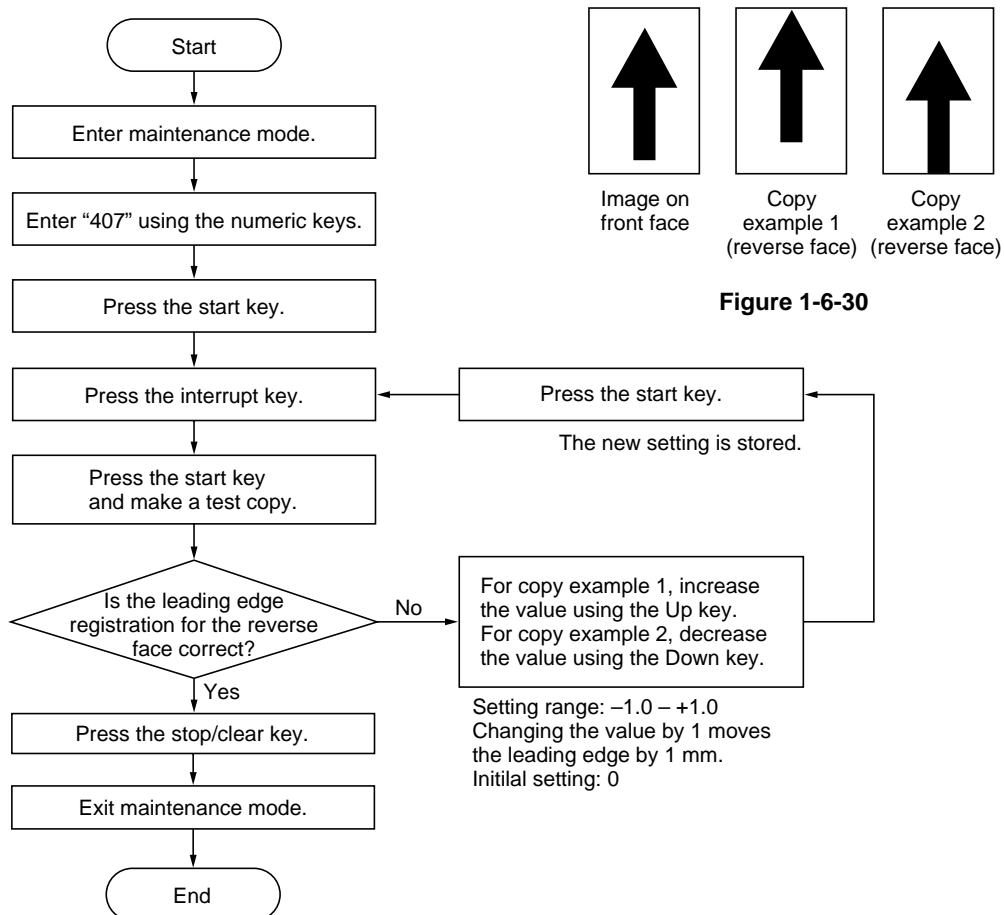


(8-2) Adjusting the leading edge registration for duplex switchback copying

Make the following adjustment if there is a regular error between the leading edge of the copy image on the front face and that on the reverse face during duplex switchback copying.

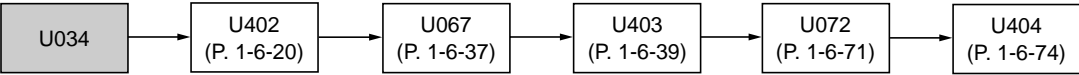
**Caution:**

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

Procedure

(8-3) Adjusting the center line of image printing

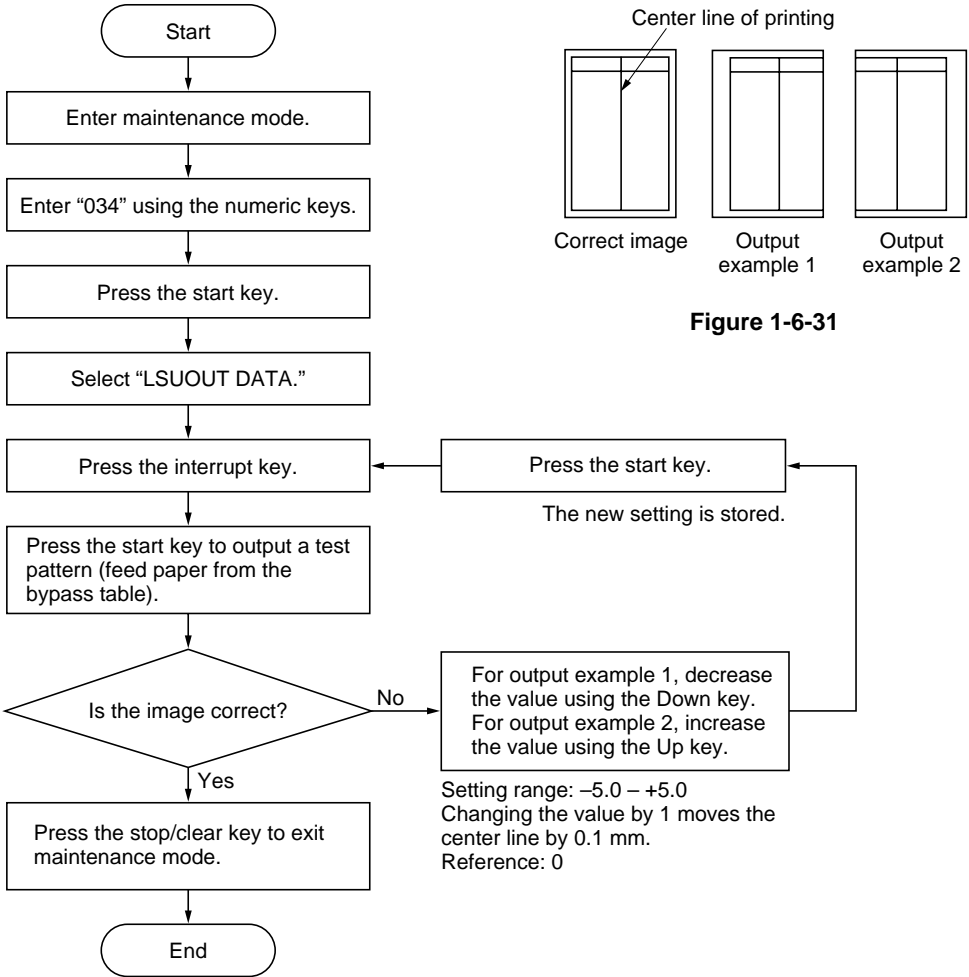
Make the following adjustment if there is a regular error between the center lines of the copy image and original when paper is fed from the drawer.



Caution:

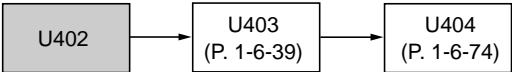
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure



(8-4) 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

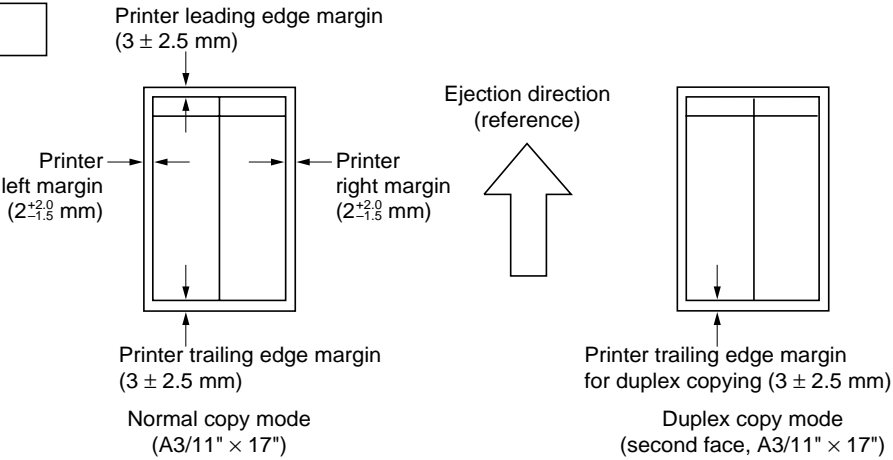
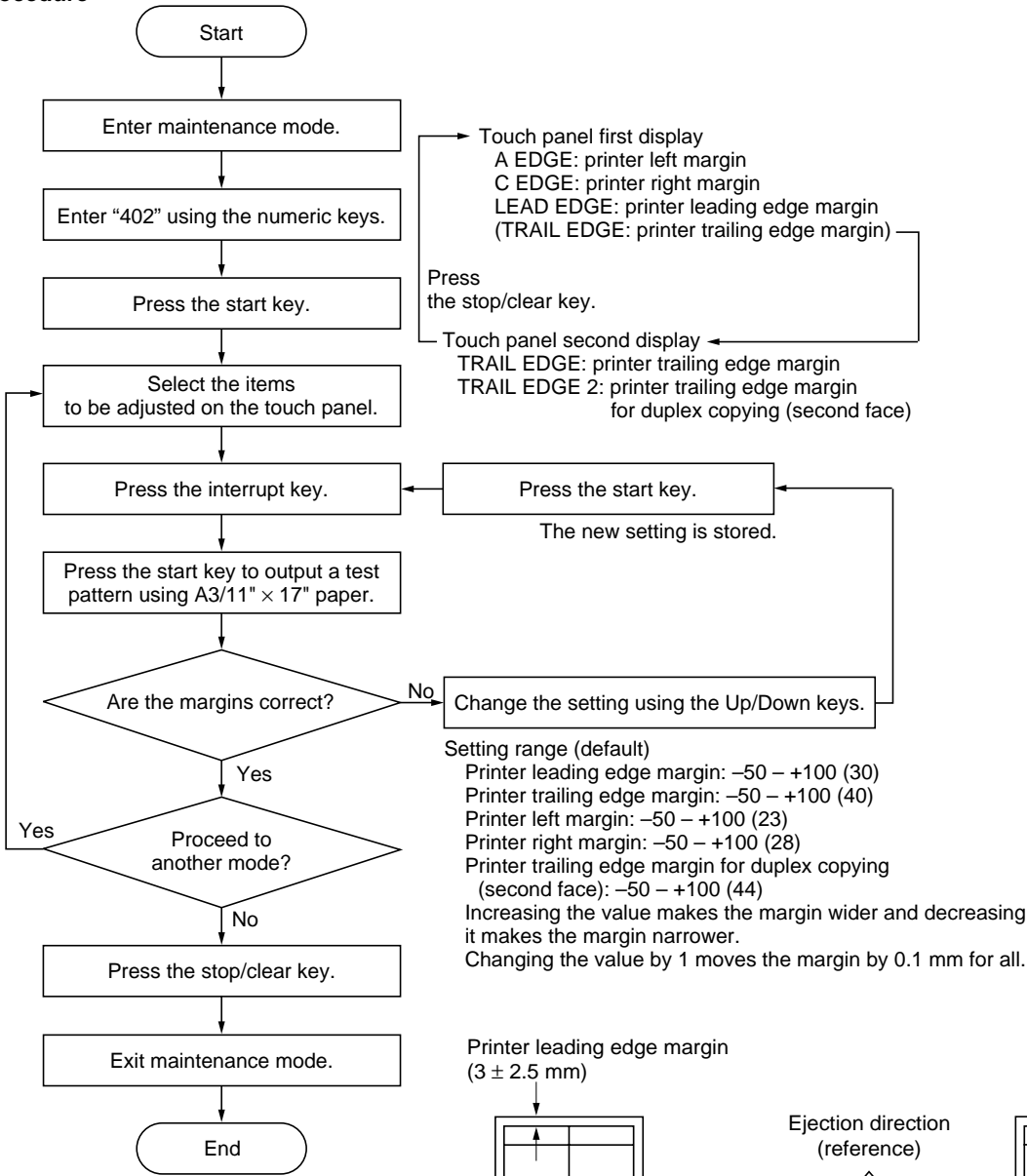
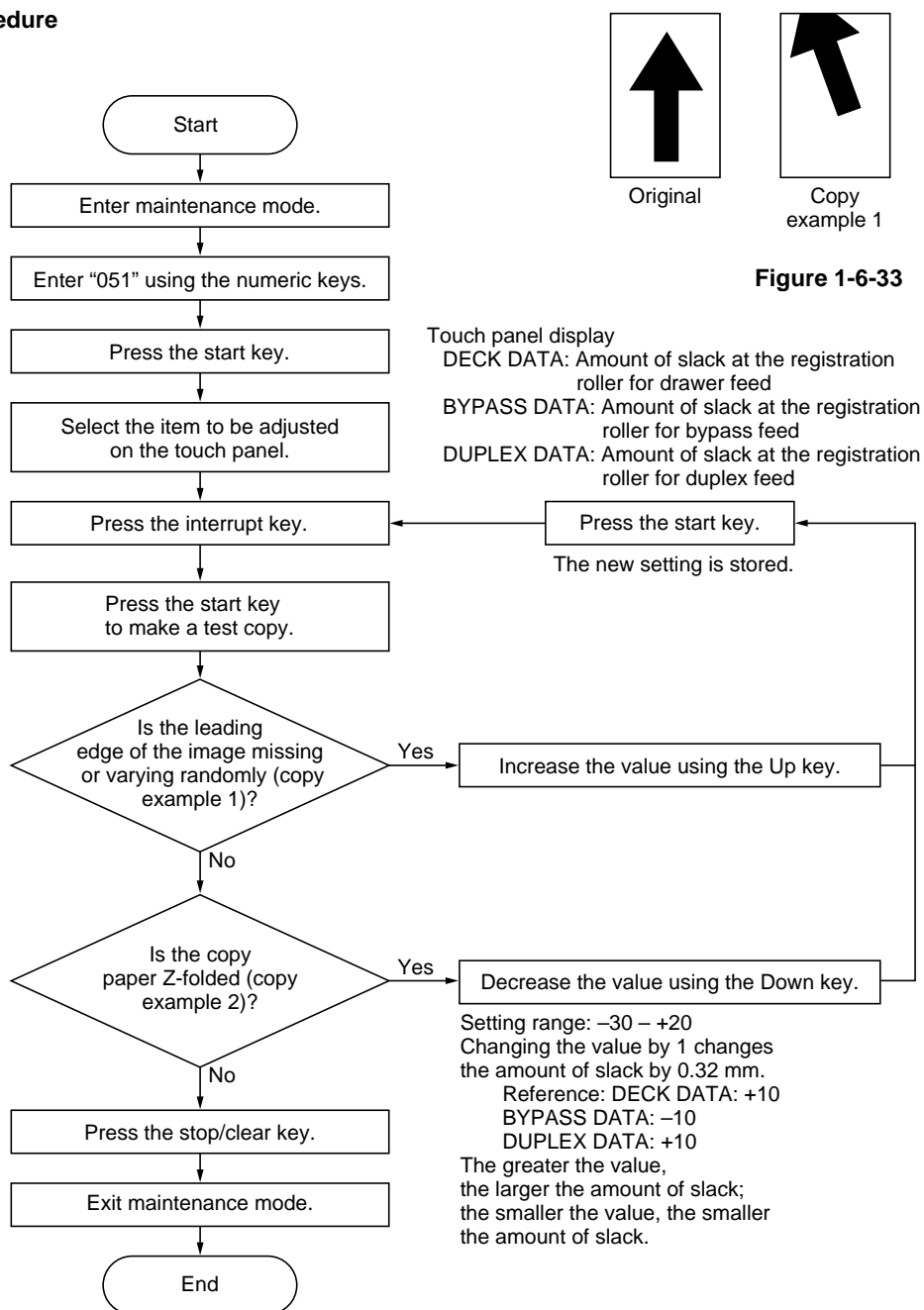


Figure 1-6-32

(8-5) Adjusting the amount of slack in the paper at the registration roller for drawer, bypass and duplex feeds

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

1-6-3 Main charging section

(1) Replacing the charger wire and charger grid assembly

Follow the procedure below when the charger wire or charger grid wire is broken or to be replaced.

Precautions

- Use the specified tungsten wire for the charger wire.
- The part of the wire wrapped around the charger spring must not protrude from the charger housing.
- The cut end of the charger wire must not protrude more than 2 mm from under the charger wire retainer pin.
- Use a clean, undamaged tungsten charger wire.
- Keep the charger wire taut by stretching the charger spring.
- Clean the main charger shield when replacing the charger wire.
- * Do not use organic solvents such as alcohol and thinner to clean the main charger shield.

Procedure

1. Pull out the image formation section (three screws) from the machine.
2. Disconnect the two 2-pin connectors for the main charger cleaning motor and cleaning lamp.
3. Loosen the retainer pin, then remove the main charger assembly as shown in the figure.

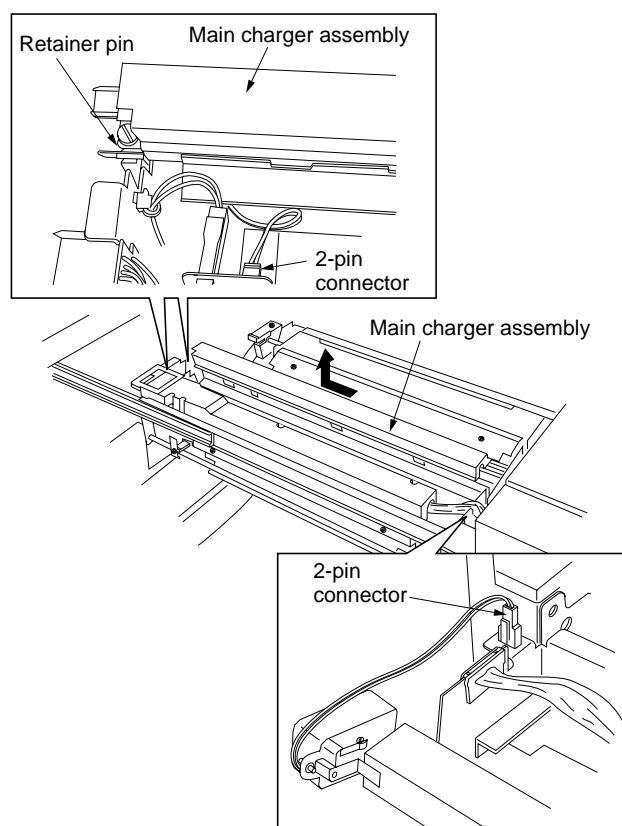


Figure 1-6-34

4. Remove the E ring holding the retainer pin. Remove the screw, then remove the charger grid assembly.
5. Remove the grid wire cleaning pad and charger wire cleaning pad (see page 1-6-24).

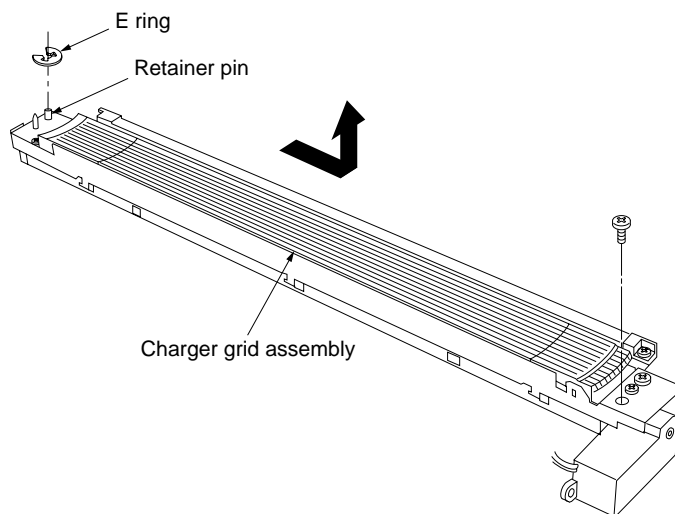


Figure 1-6-35

6. Remove the charger retainer pin and the charger spring, then remove the charger wire.
 7. Wind the new tungsten wire at 4 and 6 turns around one end of the charger spring and trim the end of the wire.
- * The length of the twists and the cut wire must be less than 2 mm.

8. Hook the other end of the charger spring onto the charger terminal of the main charger rear housing, then pass the wire through the notches of the main charger rear housing as shown in the figure.

9. Hook the charger wire on the pulley of the main charger front housing as shown in the figure.

10. Pass the wire through the notch of the main charger rear housing.

11. Pass the charger wire through the V cut part of the charger retainer pin.

12. Pull the charger wire so that the length of the charger spring is 14 and 16 mm, then insert the charger retainer pin into the projection of the main charger rear housing and fix the charger wire.

13. Cut off the excess wire under the charger retainer pin so less than 2 mm protrudes.

14. Refit all the removed parts.

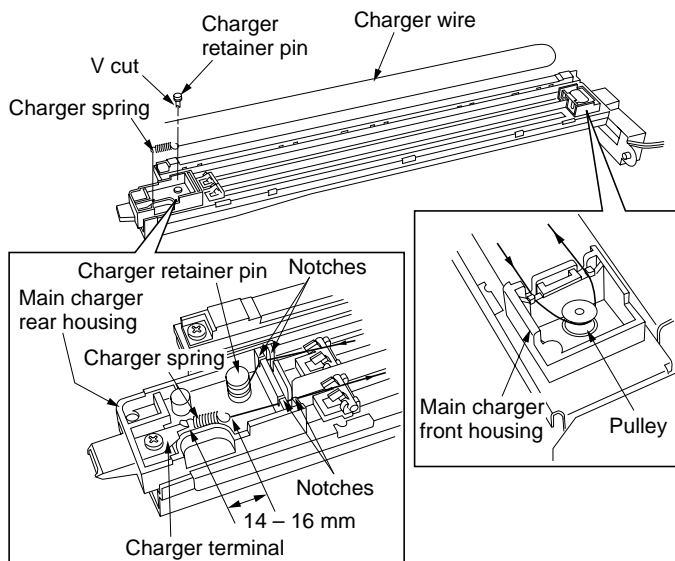


Figure 1-6-36

(2) Replacing the grid wire cleaning pad and charger wire cleaning pad

Follow the procedure below to replace the grid wire cleaning pad and charger wire cleaning pad.

Procedure

1. Remove the charger grid assembly (see page 1-6-22).
2. Open the hinge of the grid wire cleaning pad in the direction of the arrow ① to remove from pin, then remove the grid wire cleaning pad.
3. Remove the two claws each (sections indicated by round marks in the figure), then remove the charger wire cleaning pads.
4. Refit all the removed parts.

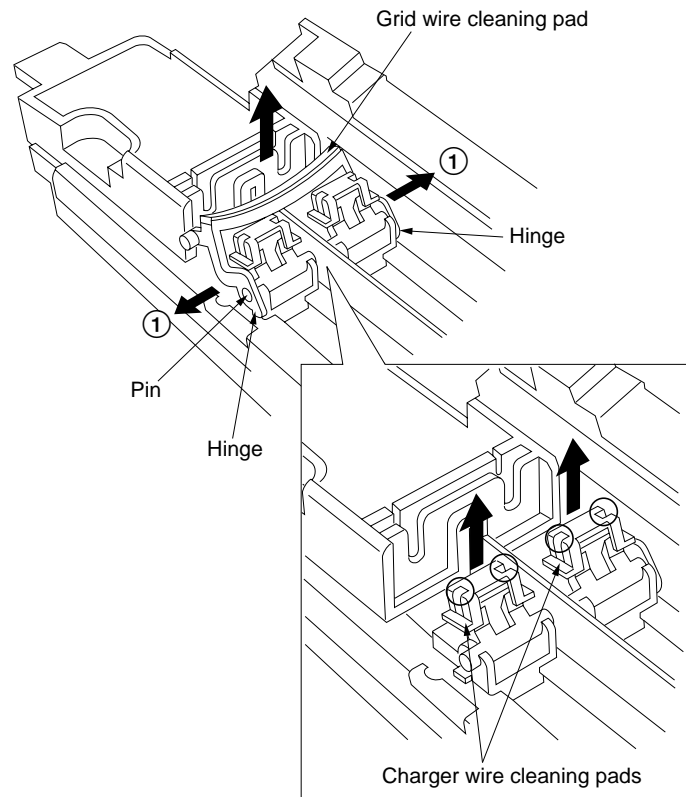


Figure 1-6-37

1-6-4 Optical section

(1) Detaching and refitting the exposure lamp

Clean or replace the exposure lamp as follows.

Procedure

1. Open the SRDF.
2. Remove the two screws holding the upper right cover and then the cover.
3. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
4. Move the scanner to the cutouts at the center of the machine.

Caution:

When moving the scanner, do not touch the exposure lamp nor inverter PCB.

5. Detach the exposure lamp 2-pin connector from the inverter PCB.
6. Remove the two screws holding the exposure lamp and then the lamp.
7. Clean or replace the exposure lamp.
8. Refit all removed parts.

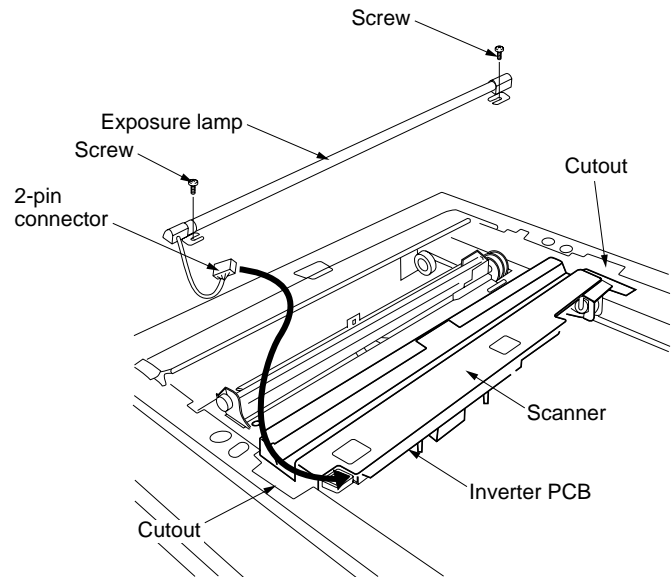


Figure 1-6-38 Detaching the exposure lamp

(2) Detaching and refitting the scanner wires

Take the following procedure when the scanner wires are broken or to be replaced.

- After replacing the scanner wires, proceed to “(6) Adjusting scanner image lateral squareness (reference)”.

(2-1) Detaching the scanner wires

Procedure

1. Remove the SRDF from the machine.
2. Remove the rear cover, upper rear cover and upper right cover.
3. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
4. Remove the upper left cover and slit glass.
5. Loosen the two screws securing the lamp wire and remove the wire from the inverter PCB.

Caution:

Remove the lamp wire completely from the machine.

6. Remove the front cover.
7. Remove the three screws holding the image formation section and then pull out the image formation section.
8. Remove the upper inner cover.
9. Remove the operation unit.
10. Remove the four screws holding the mirror 1 upper frame and then the frame.

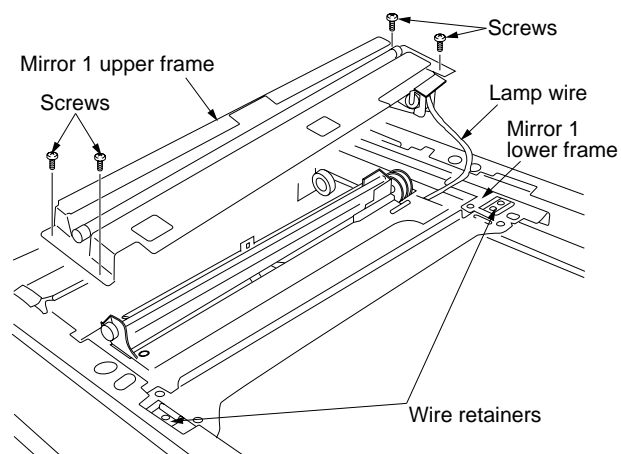


Figure 1-6-39 Detaching the mirror 1 upper frame

11. Remove the two screws from each of the wire retainers and then the retainers from the mirror 1 lower frame.
12. Remove the mirror 1 lower frame from the scanner unit.
13. Detach the round terminal of the scanner wire from the scanner wire spring on the left side of the scanner unit.
14. Remove the scanner wire.

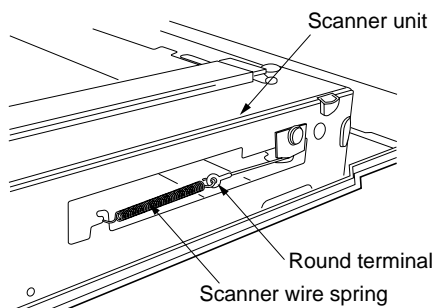


Figure 1-6-40 Detaching the scanner wire

(2-2) Refitting the scanner wires

Caution: When fitting the scanner wires, be sure to use those specified below.

Machine front: 2AC12170

Machine rear: 2AC12420 (black)

Refitting requires the following tool: Frame securing tool (P/N: 2AC68230)

Procedure

At the machine rear:

1. 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.
2. Secure the two frame securing tools at the machine front and rear using the two screws for each.
3. Hook the round terminal on one end of the scanner wire onto the left catch on the inside of the scanner unit. ①
4. Loop the scanner wire around the rear groove in the scanner wire pulley on the mirror 2 frame, winding from below to above. ②
5. Loop the scanner wire around the groove in the scanner wire pulley at the machine right, winding from above to below. ③

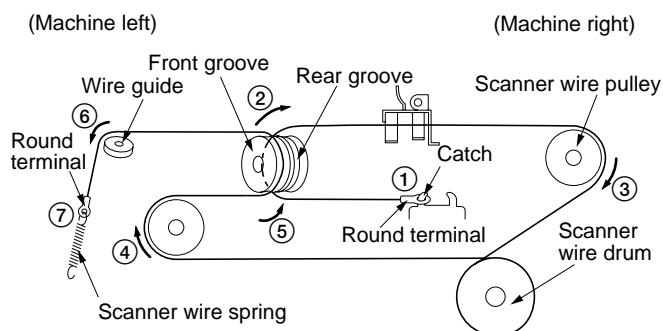


Figure 1-6-41 Refitting the scanner wires

6. Wind the scanner wire around the scanner wire drum four turns from the rear toward the hole in the drum.
7. Insert the locating ball on the scanner wire into the hole in the scanner wire drum.
8. Wind the scanner wire a further five turns from the locating ball toward the machine front.

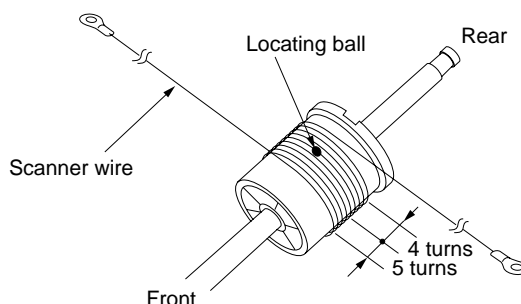


Figure 1-6-42 Winding the scanner wire

9. Loop the scanner wire around the groove in the scanner wire pulley at the machine left, winding from below to above. ④
10. Loop the scanner wire around the front groove in the scanner wire pulley on the mirror 2 frame, winding from below to above. ⑤
11. Run the scanner wire around the wire guide at the machine left. ⑥
12. Hook the round terminal onto the scanner wire spring. ⑦
13. Hook the other end of the scanner wire spring onto the catch at the machine left.
14. Repeat steps 2 to 13 for the scanner wire at the machine front.
15. Remove the two screws from each of the frame securing tools and then the tools.
16. Move the scanner from side to side to correctly locate the wire in position.

17. Loosen the two screws securing the mirror 2 frame.
18. Insert the mirror 1 lower frame into the scanner unit and seat it on the positioning holes.
19. Insert the two frame securing tools into the positioning holes in the front and rear of the scanner unit and determine the positions of the mirror 1 lower frame and mirror 2 frame.
20. While holding the scanner wire on the mirror 1 lower frame, secure the wire retainers at the front and rear of the mirror 1 lower frame using the two screws for each.
21. Retighten the two screws securing the mirror 2 frame.
22. Remove the two screws holding each of the two frame securing tools and then the tools.
23. Refit all removed parts.

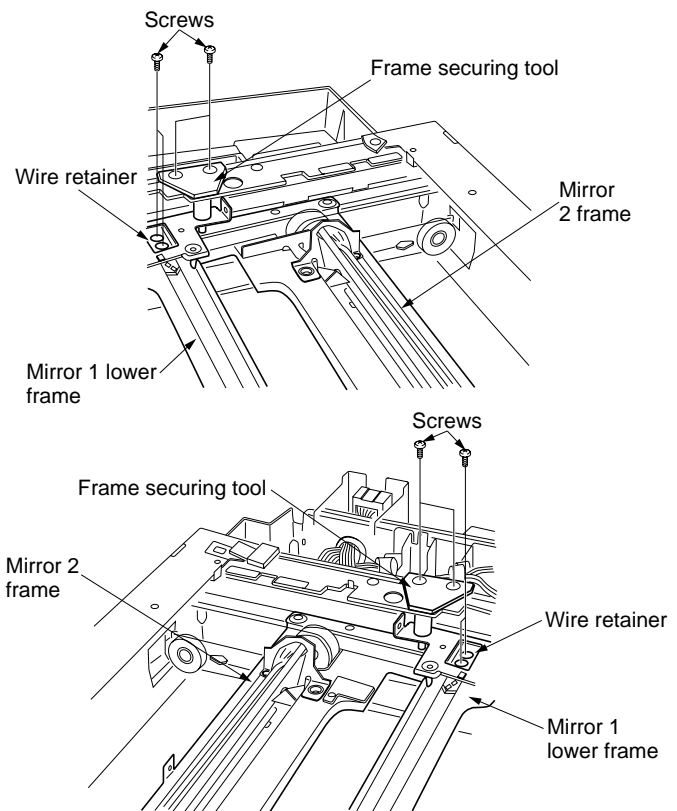


Figure 1-6-43 Securing the scanner wire

(3) Replacing the laser scanner unit

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

Caution:

After replacing the laser scanner unit, proceed to “(6) Adjusting scanner image lateral squareness (reference)”.

Procedure

1. Remove the SRDF, rear cover, upper rear cover, upper right cover and upper left cover.
2. Remove the front cover.
3. Remove the three screws holding the image formation section and then pull out the image formation section.
4. Remove the upper inner cover.
5. Remove the operation unit.
6. Remove the five clamps and two connectors at the front of the scanner unit.
7. Remove the five clamps and twelve connectors at the rear of the scanner unit.
8. Remove the screw holding the two grounding wires at the rear of the scanner unit and then the wires.
9. Remove the wires detached in steps 6, 7 and 8 from the scanner unit.
10. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
11. Remove the ISU and lower ISU covers, and detach the three connectors.
12. Remove the four screws with rubber mounts and then the scanner unit.

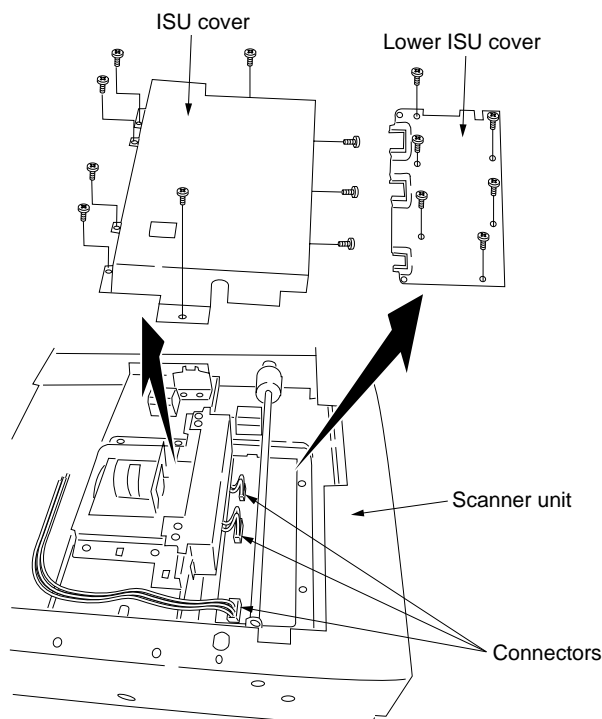


Figure 1-6-44 Detaching the scanner unit

13. Detach the three connectors.
14. Remove the two screws holding the LSU adjuster mount and then the mount.
15. Remove the three pins and replace the laser scanner unit.
16. Refit all the removed parts.

Caution:

When fitting the scanner unit, fit from directly above the machine to prevent deformation of the grounding point.

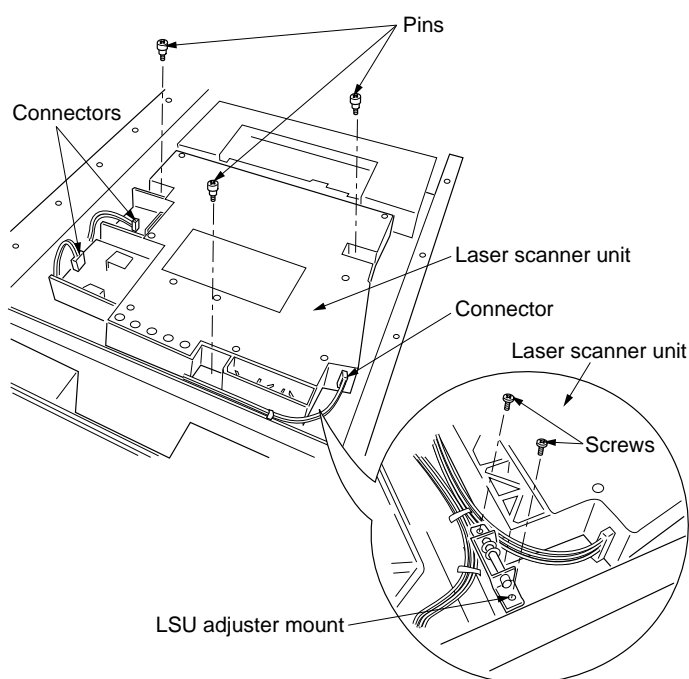


Figure 1-6-45 Replacing the laser scanner unit

(4) Replacing the ISU (reference)

Take the following procedure when the ISU is to be checked or replaced.

Caution: After fitting the ISU, proceed to “(6-2) Adjusting the position of the ISU”.

Procedure

1. Remove the upper right cover.
2. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
3. Remove the ISU and lower ISU covers, and detach the two connectors.
4. Remove the four screws holding the ISU and then the ISU.
5. Check or replace the ISU.

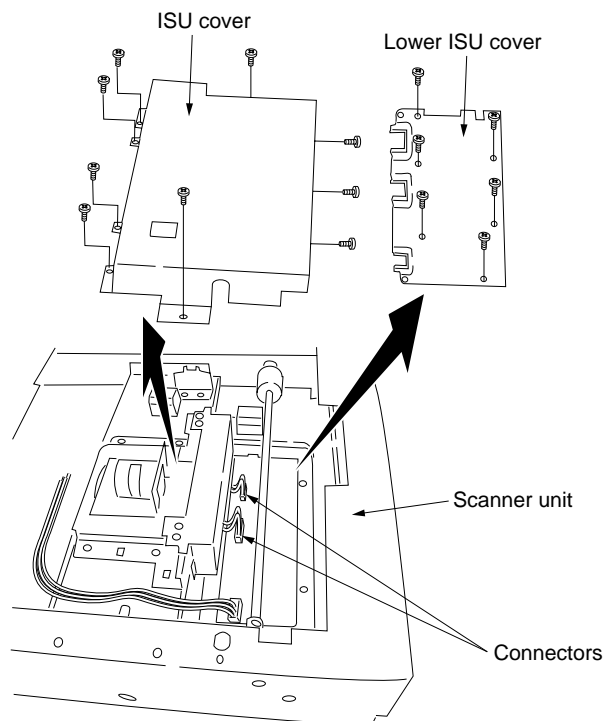


Figure 1-6-46

• Securing the ISU

ISU installation requires the following tools:

Two (2) positioning pins (P/N 18568120)

Procedure

1. Secure the ISU using the two positioning pins.
2. Refit the four screws.
3. Remove the two positioning pins.
4. Refit all the removed parts.

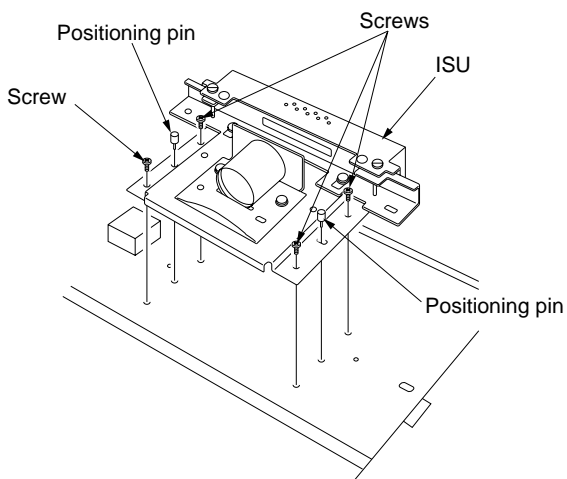


Figure 1-6-47

(5) Adjusting the longitudinal squareness (reference)

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

Caution:

- Before making the following adjustment, output a 1 DOT-LINE PG pattern in maintenance item U089 to use as the original for the adjustment.
- Adjust the amount of slack in the paper at the registration roller for drawer, bypass and duplex feeds (page 1-6-21) first. Check for the longitudinal squareness of the copy image, and if it is not obtained, perform the longitudinal squareness adjustment.

Procedure

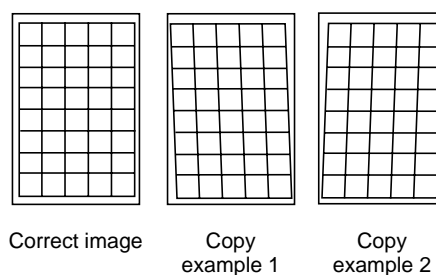
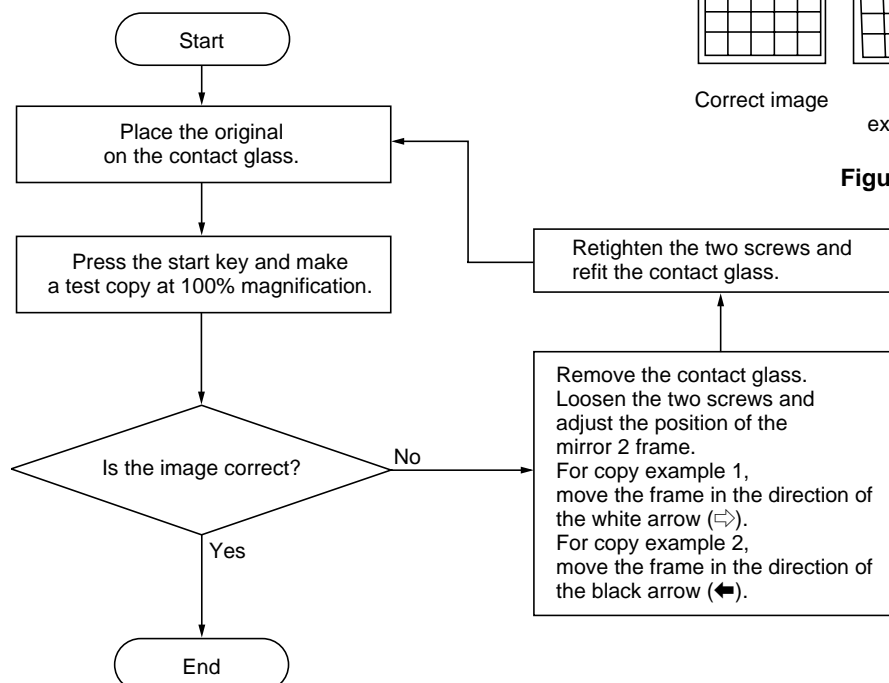


Figure 1-6-48

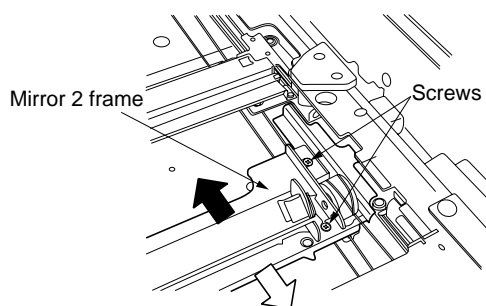


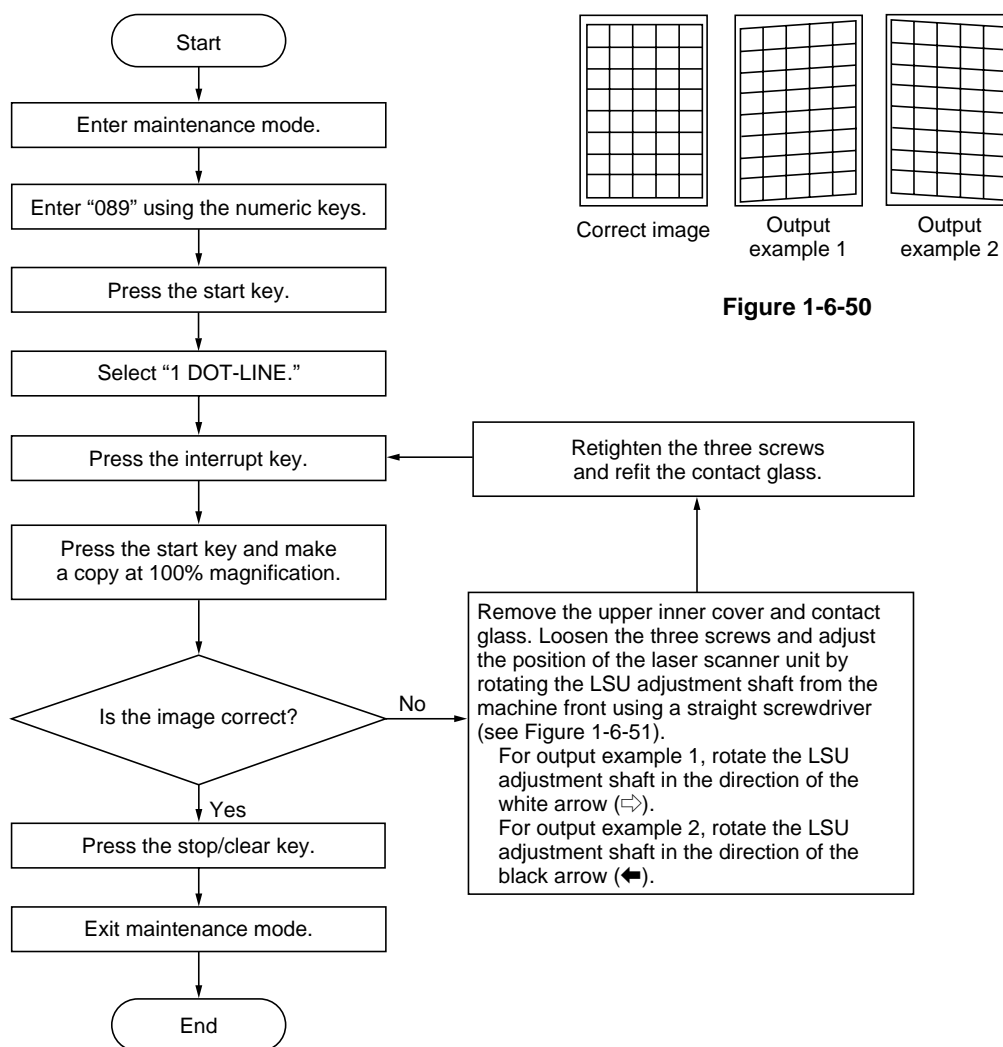
Figure 1-6-49 Adjusting the position of the mirror 2 frame

(6) Adjusting scanner image lateral squareness (reference)

Perform the following adjustment if the copy image is laterally skewed (lateral squareness not obtained).

Caution:

- Before making the following adjustment, open the front cover and remove the operation unit lower cover.
- Perform “(6-1) Adjusting the position of the laser scanner unit” first and check for lateral squareness of the copy image. If squareness is not obtained, perform “(6-2) Adjusting the position of ISU”.

(6-1) Adjusting the position of the laser scanner unit**Procedure****Figure 1-6-50**

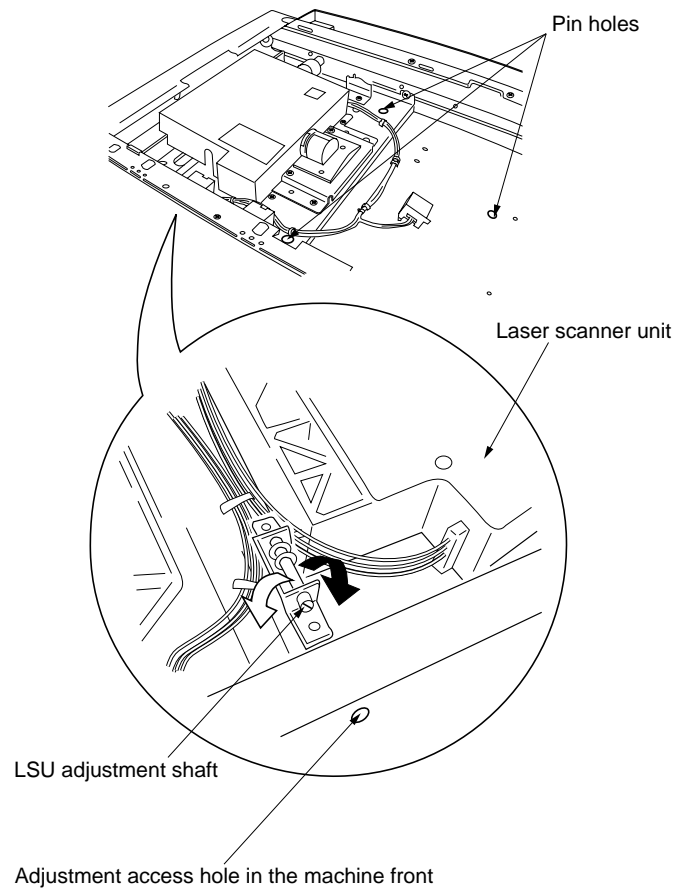
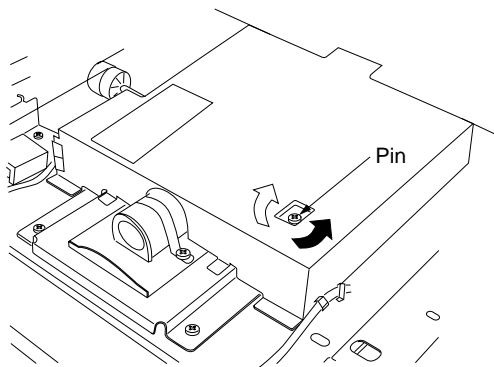
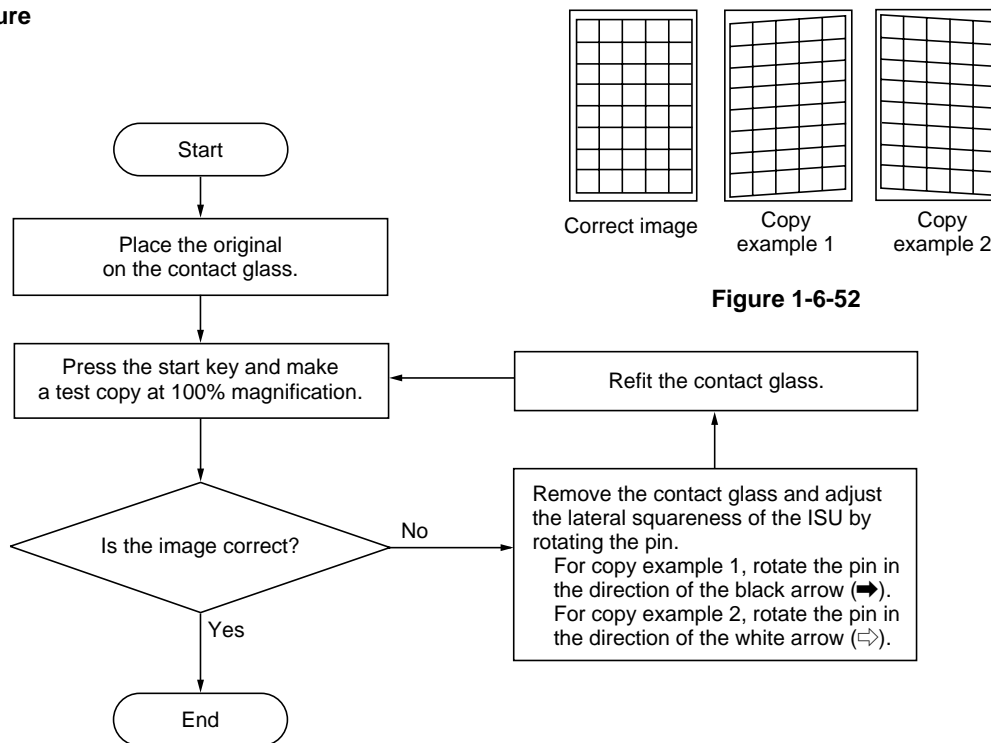


Figure 1-6-51 Adjusting the position of the laser scanner unit

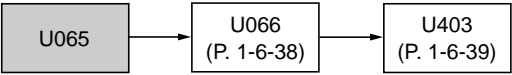
(6-2) Adjusting the position of the ISU**Caution:**

- Before making the following adjustment, output a 1 DOT-LINE PG pattern in maintenance item U089 to use as the original for the adjustment.
- Adjust the pin at the machine front only and never touch the one at the machine rear.

Procedure**Figure 1-6-53 Adjusting the position of the ISU**

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

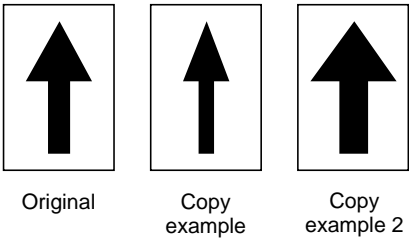
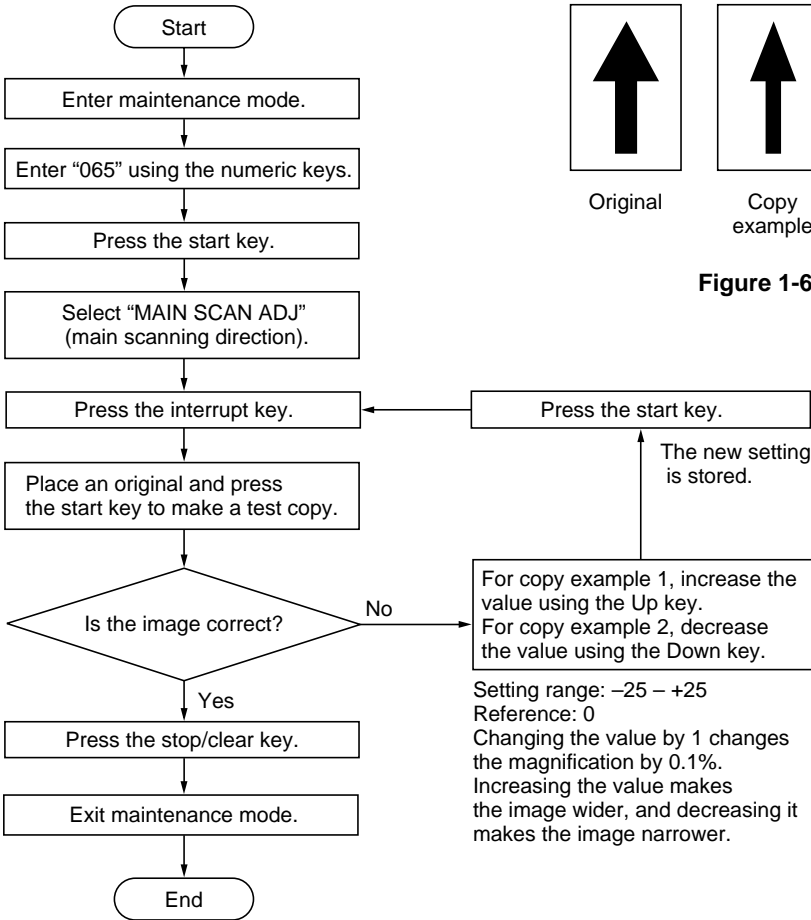
Perform the following adjustment if the magnification in the main scanning direction is not correct.



Caution:

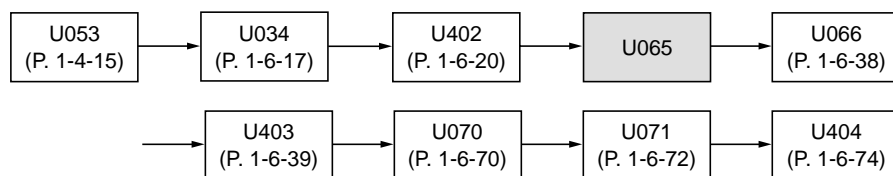
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure

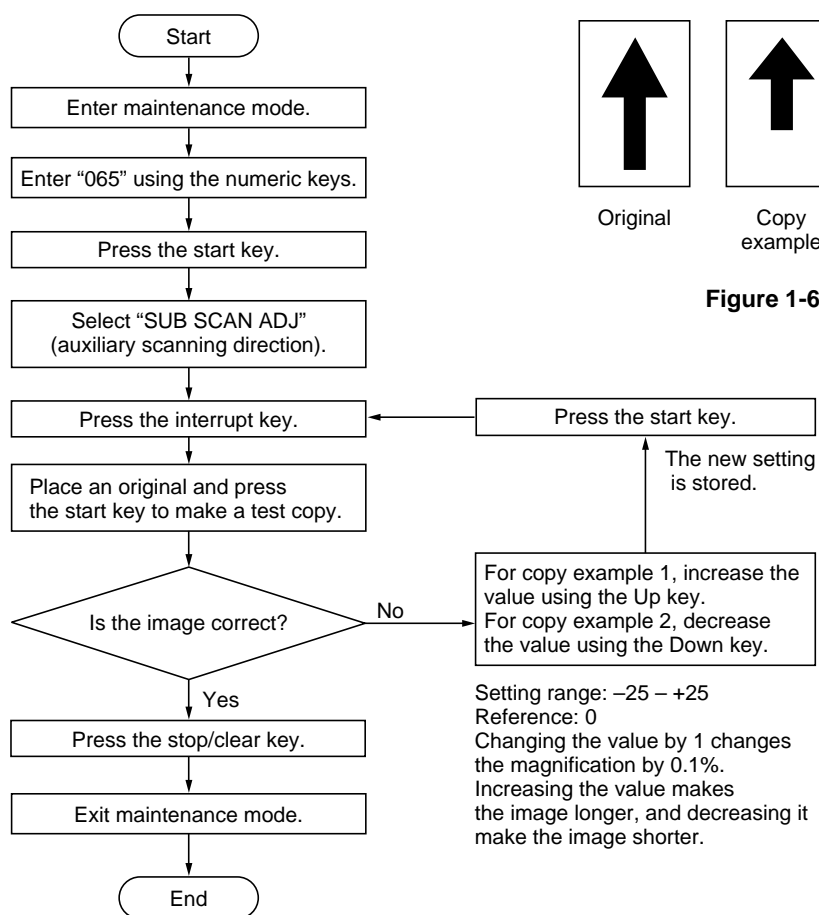


(8) Adjusting magnification of the scanner in the auxiliary scanning direction

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

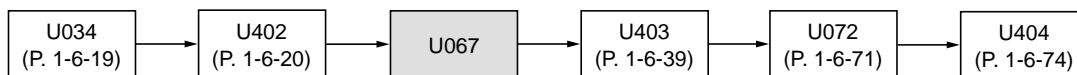
**Caution:**

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

Procedure

(9) Adjusting the scanner center line

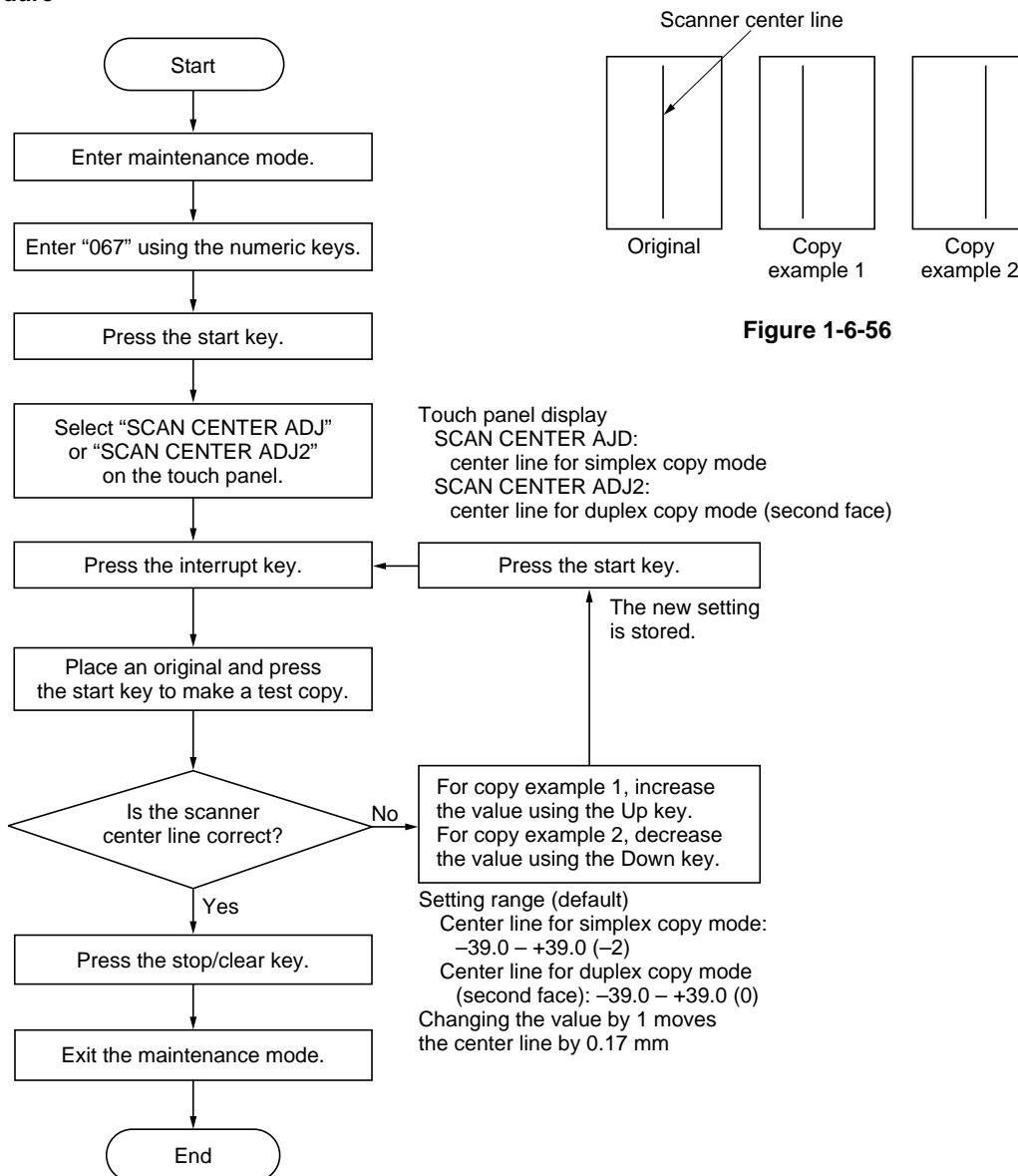
Perform the following adjustment if there is a regular error between the center lines of the copy image and original.



Caution:

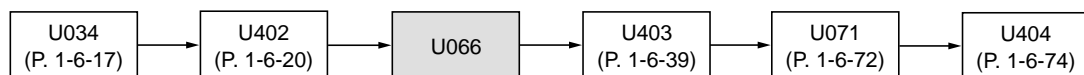
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure

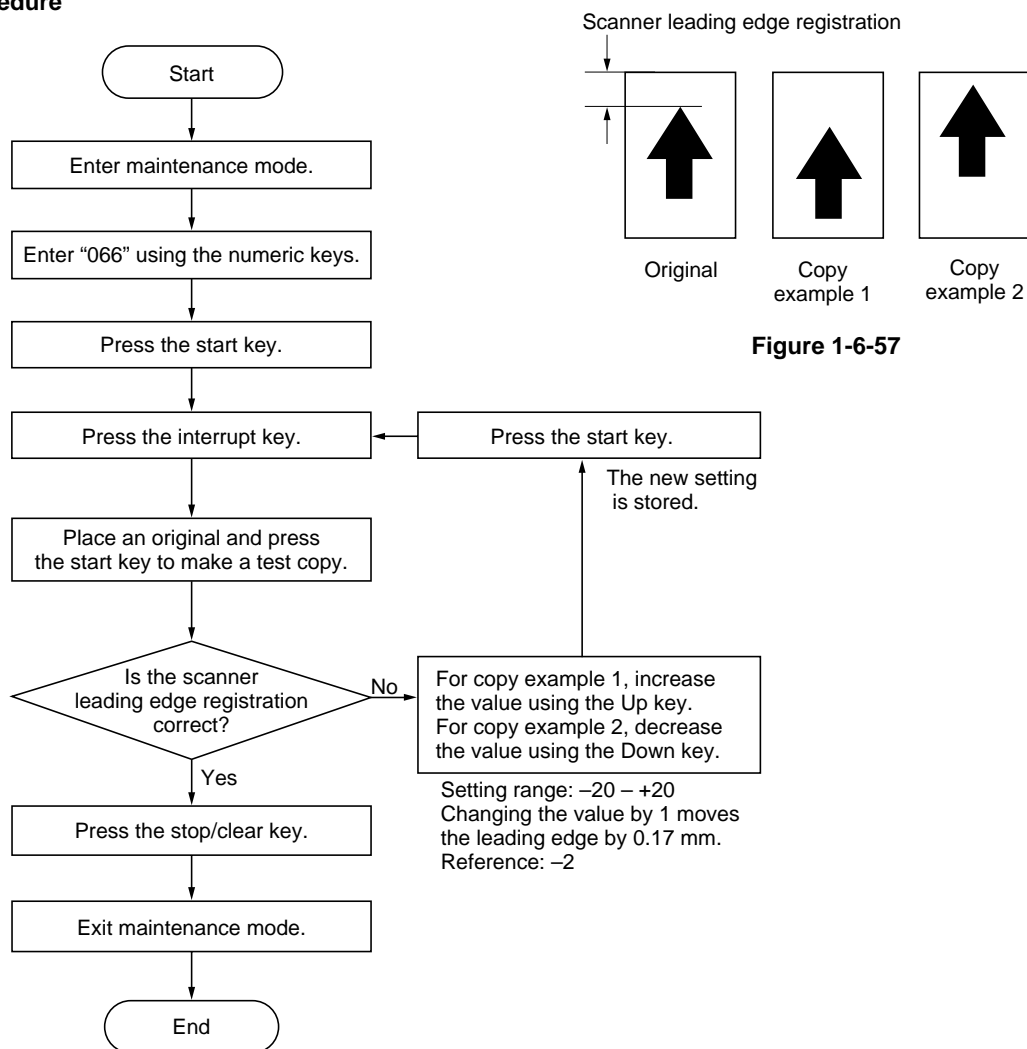


(10) Adjusting the scanner leading edge registration

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

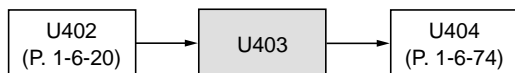
**Caution:**

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

Procedure

(11) Adjusting the 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

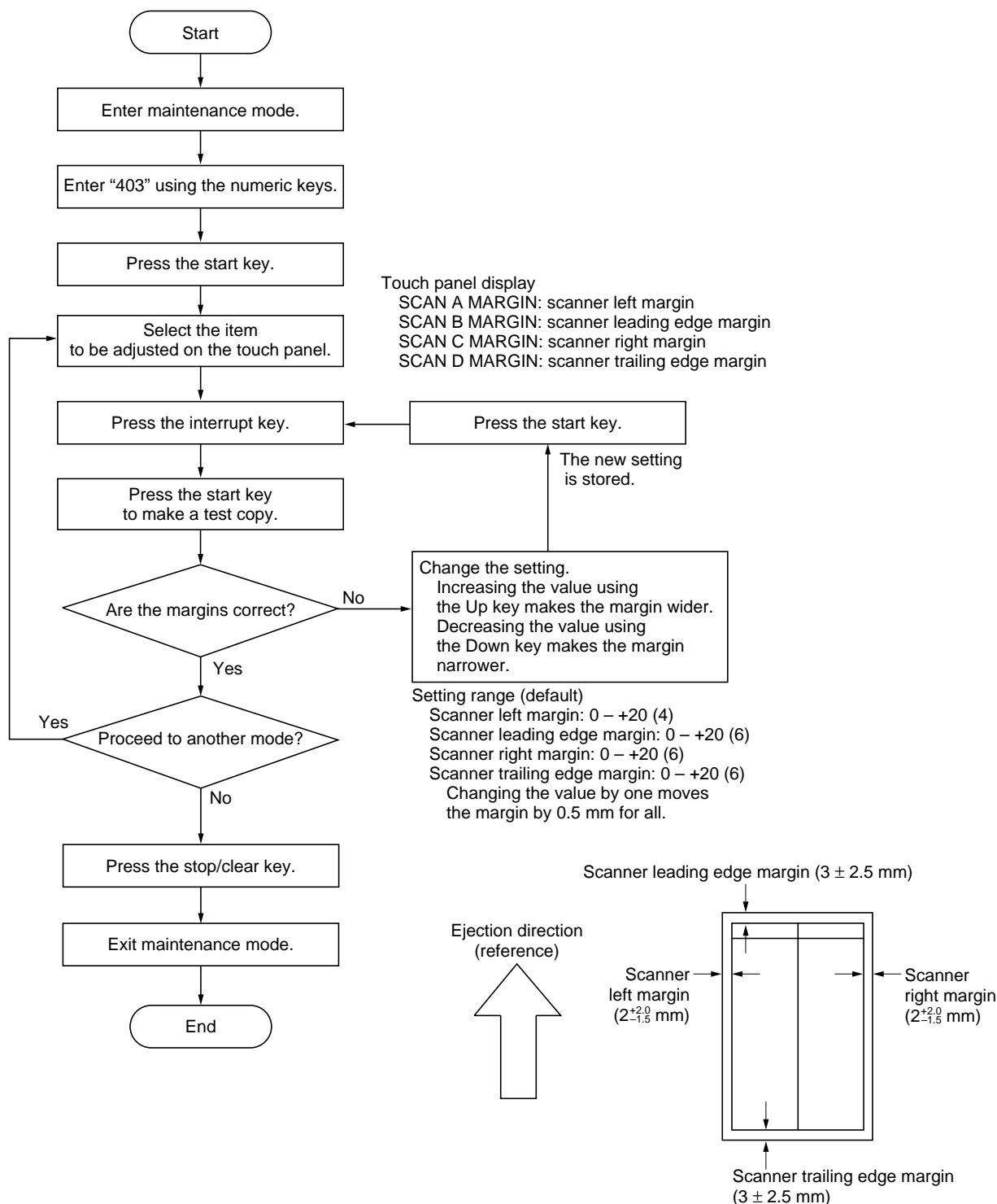


Figure 1-6-58

1-6-5 Drum section

(1) Detaching and refitting the drum and drum heater

Follow the procedure below to replace the drum and drum heater.

Cautions:

- Avoid direct sunlight and strong light when detaching and refitting the drum.
- Hold the drum at the ends and never touch the drum surface.
- After removing the drum, keep it in the drum case or storage bag to protect the surface from light.
- When cleaning drum, rub with a clean cloth.

Procedure

1. Remove the developing assembly and cleaning assembly.
2. Remove the main charger assembly (see page 1-6-22).
3. Loosen the retain5er pins each (front and rear) holding the drum stopper, then release the drum stoppers in the direction of the arrow.
4. Remove the drum assembly from the image formation section.

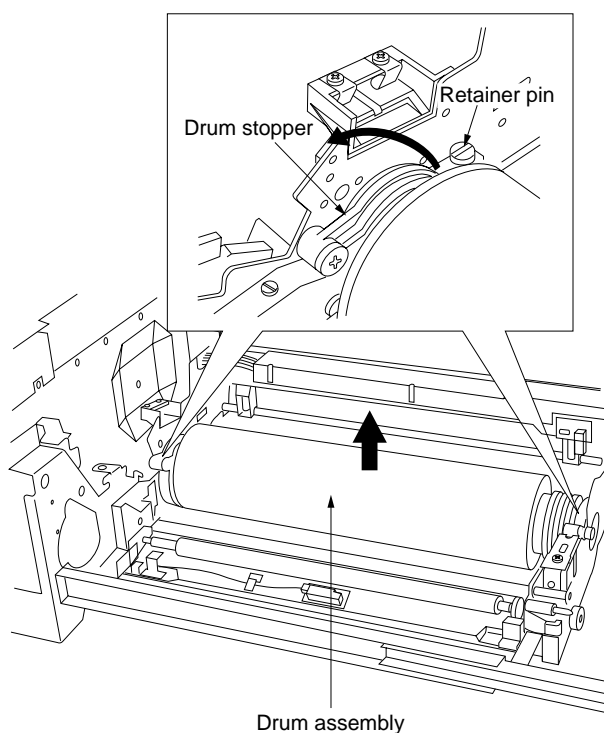


Figure 1-6-59

5. Remove the bearings from the drum assembly.

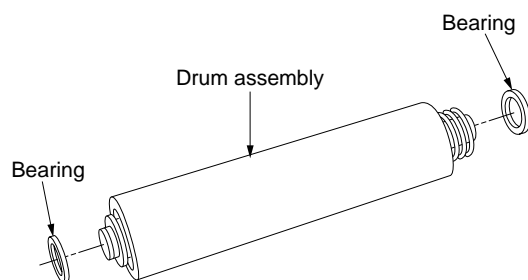


Figure 1-6-60

6. Remove the two retainer pins and two springs, then remove the front drum flange from the drum assembly slowly.
7. Disconnect the 1-pin connector, then remove the front drum flange.
8. Disconnect the 6-pin connector for the drum heater.

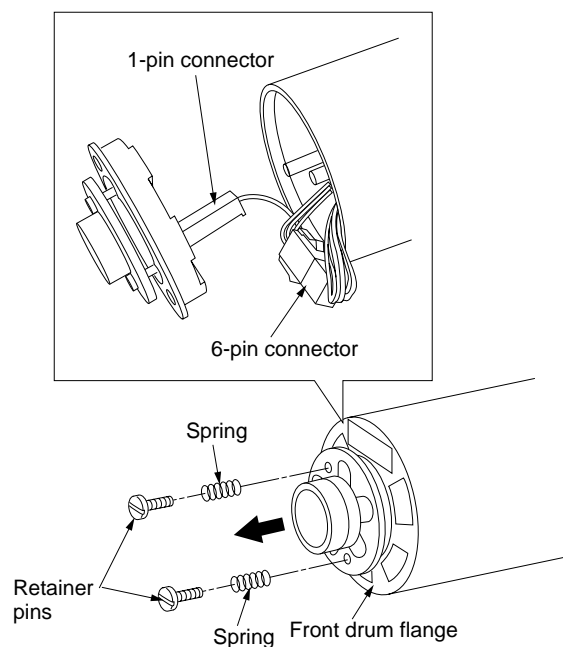


Figure 1-6-61

9. Pull the rear drum flange out together with the drum flange stay from the drum slowly.
10. Pull the drum heater out of the drum.
- * When refitting drum, refit the drum so that the label pasted inside drum is in the machine front.
11. Refit all the removed parts.

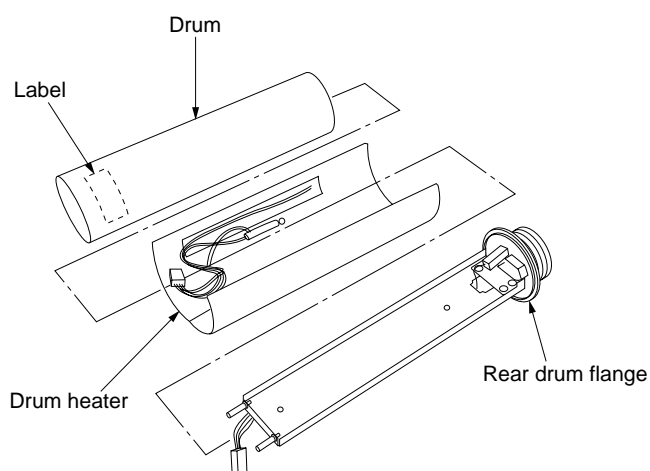


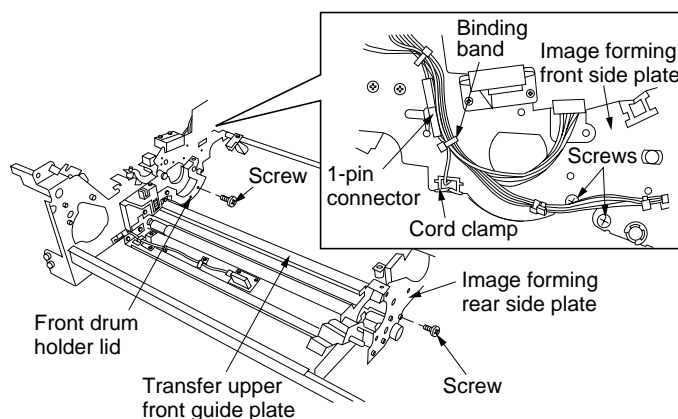
Figure 1-6-62

(2) Detaching and refitting the front and rear drum electrode wires

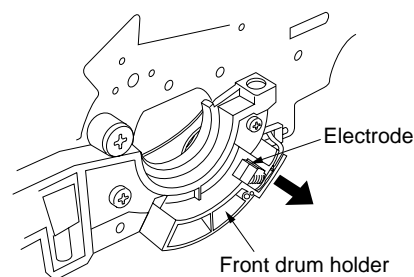
Follow the procedure below to check or replace the front and rear drum electrode wires.

Procedure

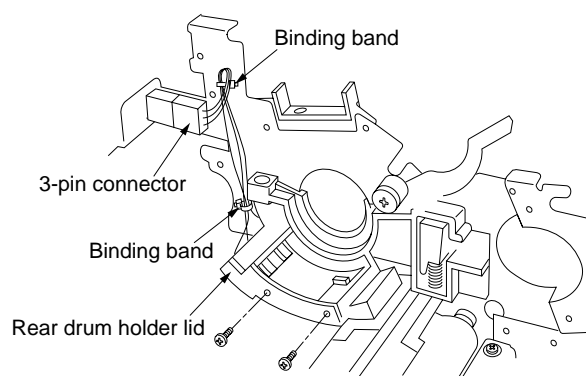
1. Remove the drum assembly (see page 1-6-40).
2. Remove the left and right image forming covers.
3. Remove the toner hopper assembly.
4. Remove the three screws (machine front: 2, machine rear: 1), then remove the upper front transfer guide from the image forming assembly.
5. Disconnect the 1-pin connector for the front drum electrode wire.
6. Cut off the binding band, then free the wire from the cord clamp.
- * When refitting, fasten the wire with binding band to its original position.
7. Remove the screw on the image forming rear side plate and the two screws on the image forming front side plate, then remove the transfer upper front guide plate.
8. Remove the screw on the front drum holder lid, then remove the front drum holder lid.

**Figure 1-6-63**

9. Remove the electrode for the front drum electrode wire from the front drum holder, then remove the front drum electrode wire.

**Figure 1-6-64**

10. Disconnect the 3-pin connector for the rear drum electrode wire.
11. Cut off the two binding bands.
- * When refitting, fasten the wire with binding bands to its original position.
12. Remove the two screws, then remove the rear drum holder lid.

**Figure 1-6-65**

13. Remove the electrode 1 (brown wire) for the rear drum electrode wire from the rear drum holder.
 14. Remove the electrode spacer.
 15. Remove the electrode 2 (blue wire) for the rear drum electrode wire from the rear drum holder.
 16. Remove the electrode 3 (black wire) for the rear drum electrode wire from the rear drum holder, then remove the rear drum electrode wire.
- * When refitting, be careful about following points.
- Be careful of the fitting position of the each electrode.
 - When refitting, run the wire of the electrode 3 through the groove (broken line indicated in the figure) between rear drum holder and rear image forming plate.
17. Refit all the removed parts.

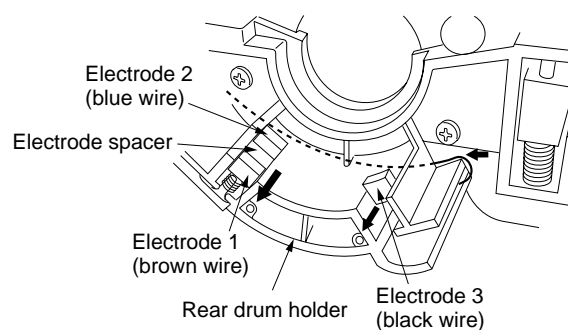


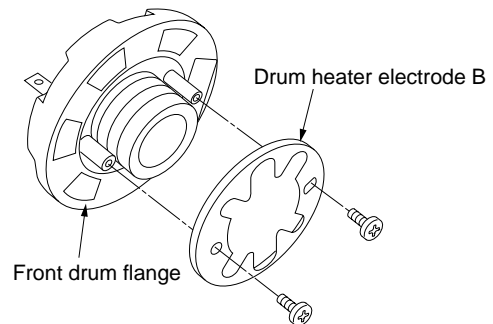
Figure 1-6-66

(3) Detaching and refitting the drum heater electrodes A and B

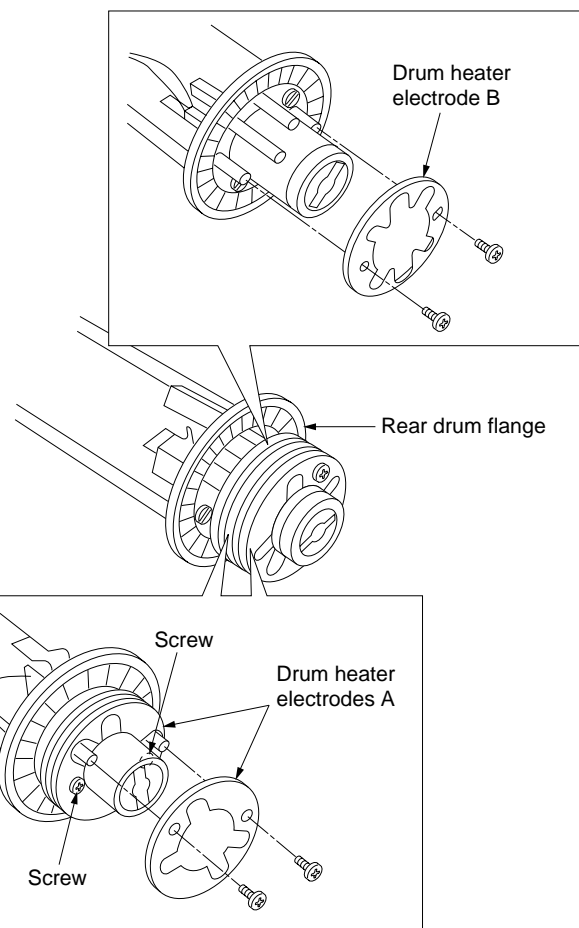
Follow the procedure below to replace the drum heater electrodes A and B.

Procedure

1. Remove the drum assembly (see page 1-6-40).
2. Remove the front drum flange from the drum assembly (see page 1-6-41).
3. Remove the two screws, then remove the drum heater electrode B.

**Figure 1-6-67**

4. Remove the rear drum flange from the drum assembly (see page 1-6-41).
5. Remove the two screws each, then remove the two drum heater electrodes A from the rear drum flange.
6. Remove the two screws, then remove the drum heater electrode B from the rear drum flange.
7. Refit all the removed parts.

**Figure 1-6-68**

1-6-6 Developing section

(1) Adjusting the position of the magnetic brush (developing roller) (reference)

Check or adjust if the image density is too dark or light.

* Before starting this adjustment, ensure that the correct amount of developer is present.

Procedure

1. Loosen the screw holding each of the upper and lower magnet roller adjusting plates.
2. Move the positions of the upper and lower magnet roller adjusting plates.
 - When the position of the upper or lower magnet roller adjusting plate is moved to the right or downward respectively:
The image density becomes darker (the position of the magnetic brush moves downward).
However, the image resolution becomes deteriorate.
 - When the position of the upper or lower magnet roller adjusting plate is moved to the left or upward respectively:
The image density becomes lighter (the position of the magnetic brush moves upward).
However, the faint of dark part for the original image occurs.
3. Refasten the screw holding each of the upper and lower magnet roller adjusting plates.
4. After adjustment, make a test copy to check for performance.

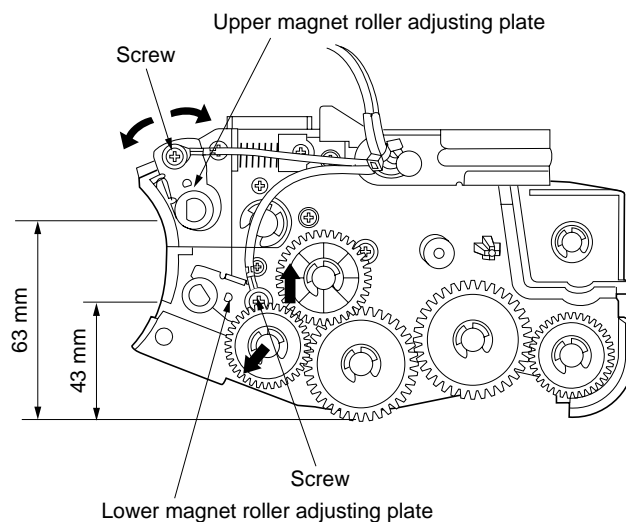


Figure 1-6-69

(2) Checking the position of the doctor blade (reference)

Follow the procedure below when carrier or background appears on the copy image.

Procedure

1. Remove the two screws, then remove the two lower developing covers from the developing housing.
2. Turn the developing joint gear in the direction of the arrow until the two slits in the developing paddle appear below.
3. Insert the thickness gauges into the two slits in the developing paddle and check whether the gap between the doctor blade and the upper developing roller is the prescribed value (the 0.75-mm gauge should enter the slits and the 0.8-mm gauge should not).

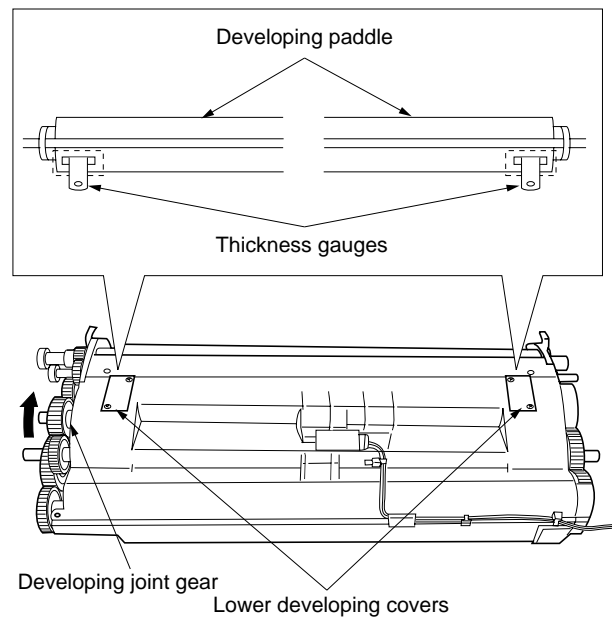


Figure 1-6-70

(3) Detaching and refitting the developing filter and the upper developing seal

Follow the procedure below to clean or replace the developing filter or the upper developing seal.

Procedure

1. Remove the two screws from the filter retainer, then remove the developing filter.
2. Remove the two screws, then remove the upper developing seal.
 - * When refitting, secure the seal while pushing it toward the drum (in the direction of the arrow).
3. Clean or replace the developing filter or upper developing seal.
4. Refit all the removed parts.

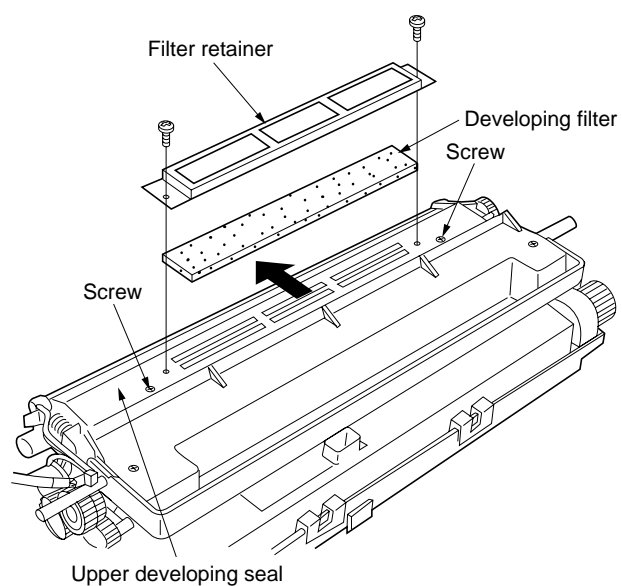


Figure 1-6-71

(4) Detaching and refitting the lower developing shaft and developing blade assembly

Follow the procedure below to clean or replace the lower developing shaft or developing blade assembly.

* Before detaching the lower developing shaft and the developing blade assembly, be sure to first remove the developer.

Procedure

1. Remove the E ring, then remove the lower developing roller lever and the lower developing roller spring.
2. Remove the E ring, then remove the lower developing idle gear.
3. Remove the screws, then remove the front lower developing roller bushing and the rear lower developing roller bushing.
4. Remove the lower developing shaft.

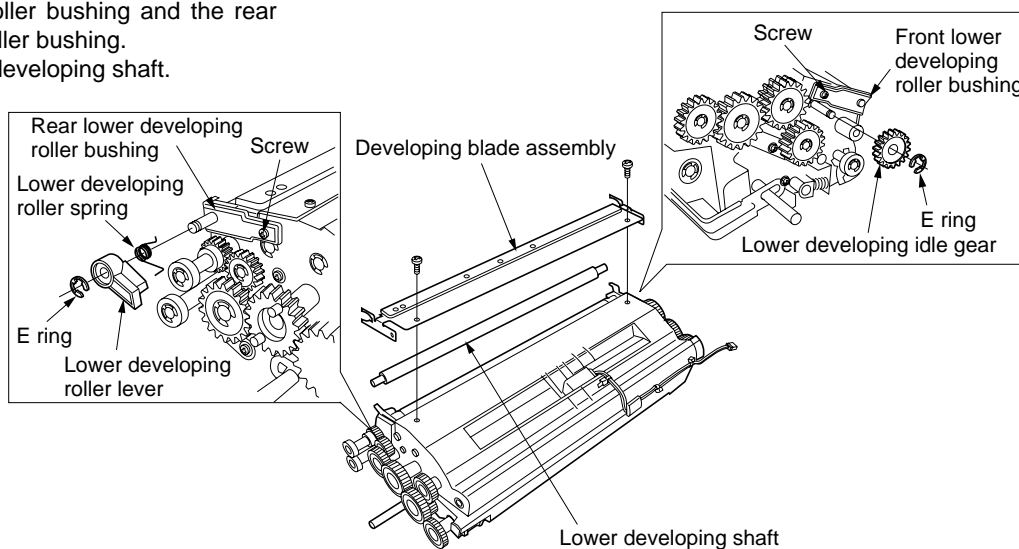


Figure 1-6-72

5. Remove the two screws, then remove the developing blade assembly.

* When refitting, first push away from the drum (①), then push toward the drum (②) and secure.

6. Clean or replace the lower developing shaft or the developing blade assembly.
7. Refit all the removed parts.

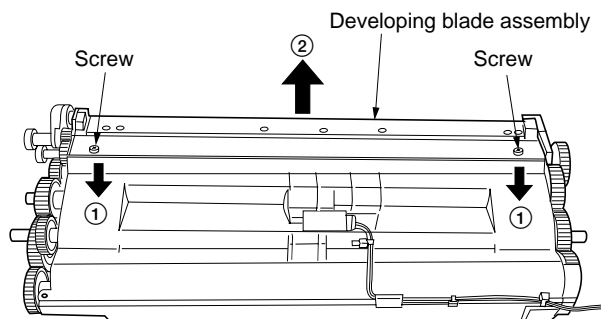


Figure 1-6-73

1-6-7 Transfer section

(1) Detaching and refitting the transfer charger belt

Follow the procedure below to clean or replace the transfer charger belt.

Cautions:

- When handling the transfer charger belt, hold the both end of the transfer charger belt (within 10 mm), do not touch the surface with bare hand.
- Be careful not so as to adhere grease on the surface of the transfer charger belt.

Procedure

1. Pull the transfer/fixing sections out of the machine.
2. Remove the stop ring, then remove the bushing at the machine front.
3. Remove the stop ring, then remove the bushing at the machine rear.
4. Disconnect the 1-pin connector, then remove the transfer belt unit from the machine.

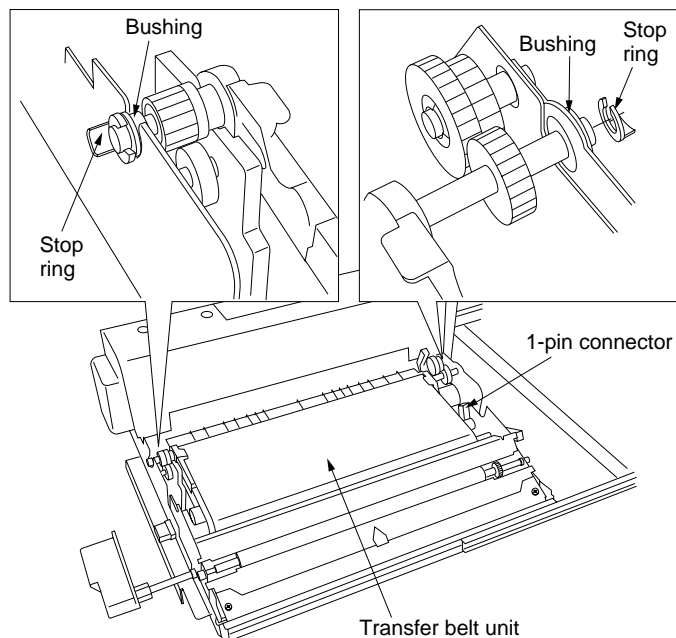


Figure 1-6-74

5. Remove the screw each, then rotate the front and rear turn frames in the direction of the arrow (a).
 6. Pull out the transfer charger belt in the direction of the arrow (b), then remove the transfer charger belt from the transfer belt unit.
- * When refitting the transfer charger belt, check that the transfer charger belt pass under the belt guide section of the front and rear turn frame.

After refitting, turn the belt drive roller and turn the transfer charger belt two or three times, check that the edge of the transfer charger belt runs on to the front/rear turn frame and the side plate section of the transfer charger belt unit. If so, rotate the transfer charger belt until the edge of the transfer charger belt does not run on.

7. Refit all the removed parts.

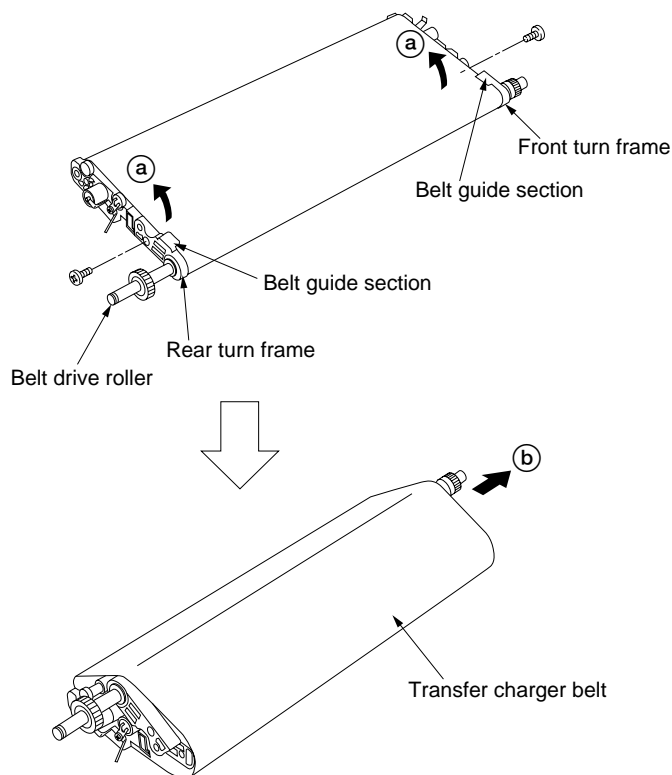


Figure 1-6-75

(2) Detaching and refitting the transfer roller

Follow the procedure below to clean or replace the transfer roller.

Procedure

1. Remove the transfer charger belt (see page 1-6-49).
2. Remove the two screws, then remove the transfer roller retainer.
3. Remove the transfer roller.
4. Remove the bearings from the end of the transfer roller.
5. Refit all the removed parts.

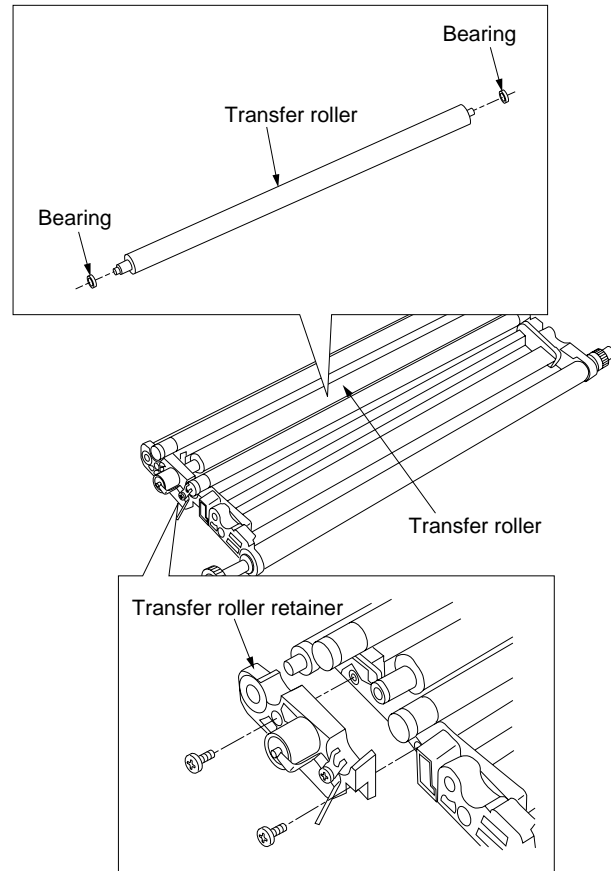


Figure 1-6-76

(3) Detaching and refitting the belt cleaning brush

Follow the procedure below to clean or replace the belt cleaning brush.

Procedure

1. Remove the transfer belt unit (see page 1-6-49).
2. Remove the four screws and 1-pin connector for the brush electrode, then remove the belt cleaning housing.

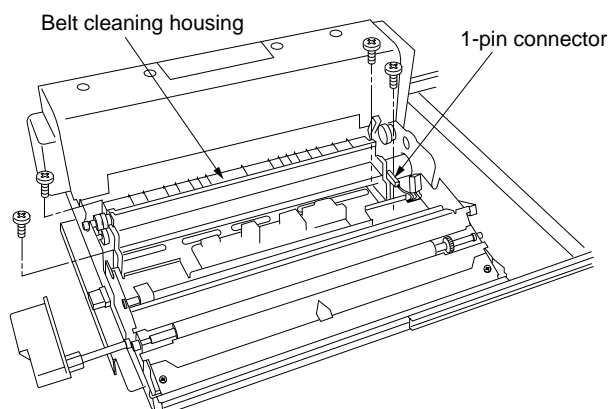


Figure 1-6-77

3. Remove the screw, then remove the brush electrode.
4. Remove the stop ring, then remove the bushing.

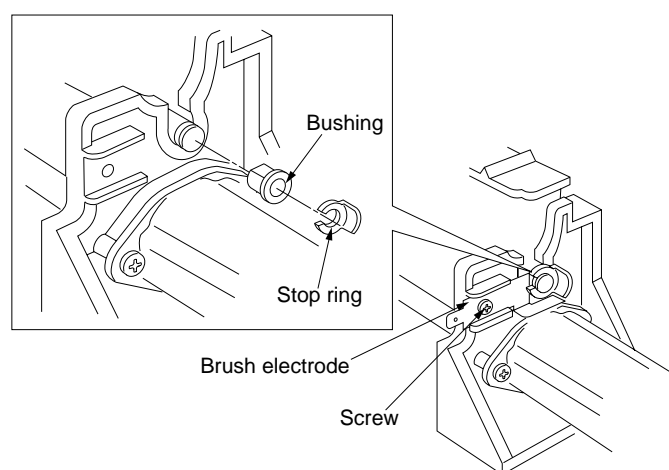


Figure 1-6-78

5. Shift the belt cleaning brush in the direction of the arrow (a) and remove the pin, then remove the gear and bushing.
6. Remove the belt cleaning brush from the belt cleaning housing.
7. Refit all the removed parts.

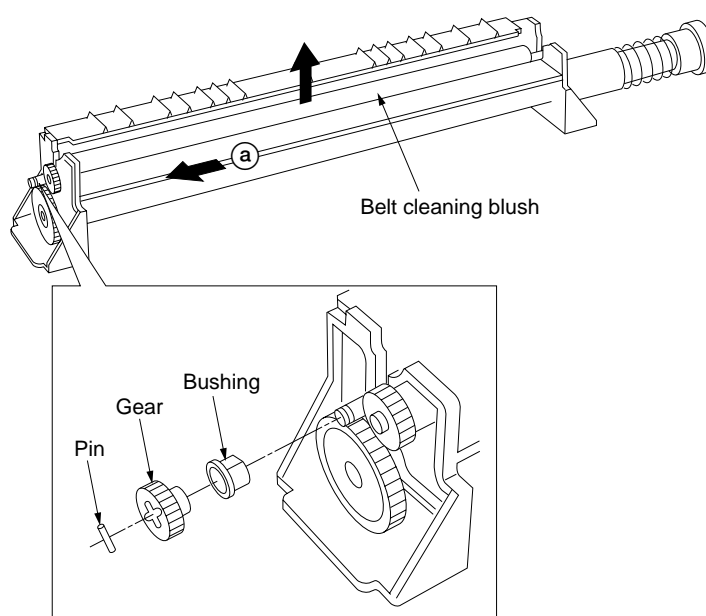


Figure 1-6-79

1-6-8 Cleaning section

(1) Detaching and refitting the cleaning blade

Follow the procedure below to replace the cleaning blade.

Procedure

1. Loosen the screw holding the blade release slide plate.
2. While lifting the cleaning blade weight up, slide the blade release slide plate in the direction of the arrow (a) and fix the cleaning blade to the release position.
3. Fasten the screw holding the blade release slide plate.

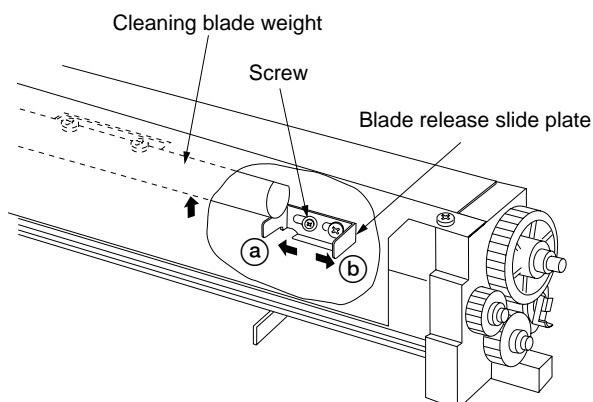


Figure 1-6-80

4. Remove the cleaning assembly from the machine.
5. Remove the two screws, then remove the upper cleaning cover and cleaning windbreak plate.

* When refitting, with pushing the upper cleaning cover all the way in the direction of the arrows to fasten.

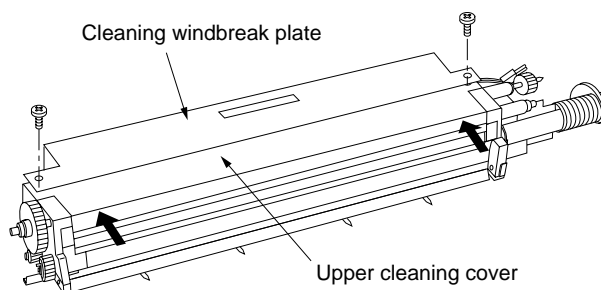


Figure 1-6-81

6. Remove the retainer pin, then remove the cleaning blade.

* When refitting, check that the both end of the cleaning blade is in contact with the side of the sponge (never run on to the sponge).

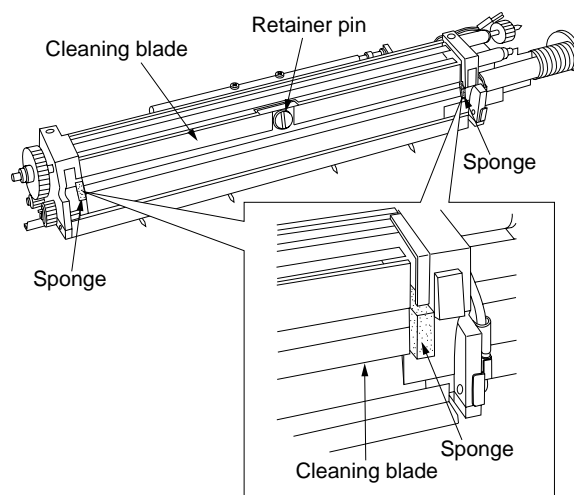


Figure 1-6-82

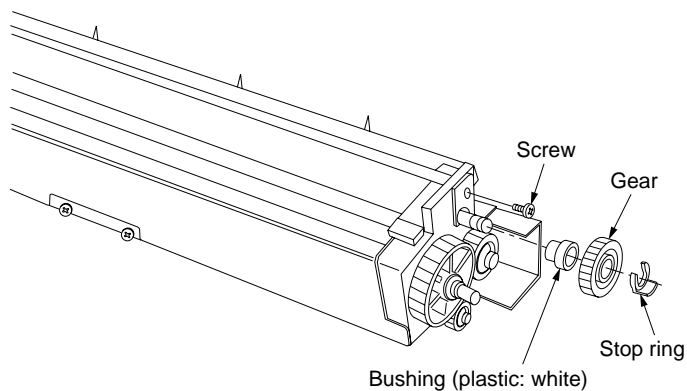
7. Replace the cleaning blade.
8. Refit all the removed parts.
9. Turn the main switch on and enter the maintenance mode.
10. Enter 160 (Applying toner to the cleaning blade) with the numeric keys.
11. Press the start key.
 - * The machine starts driving and the toner applies to the drum.
12. After the machine stops driving, open the front cover and pull out the image formation section, then loosen the screw holding the blade release slide plate.
13. Slide the blade release slide plate in the direction of the arrow (b), contact the cleaning blade to the drum (see Figure 1-6-80).
14. Fasten the screw holding the blade release slide plate.
15. Push back the image formation section and close the front cover.
 - * The machine starts driving and the applying toner to the cleaning blade starts.
16. After machine stops, exit the maintenance mode.

(2) Detaching and refitting the cleaning brush

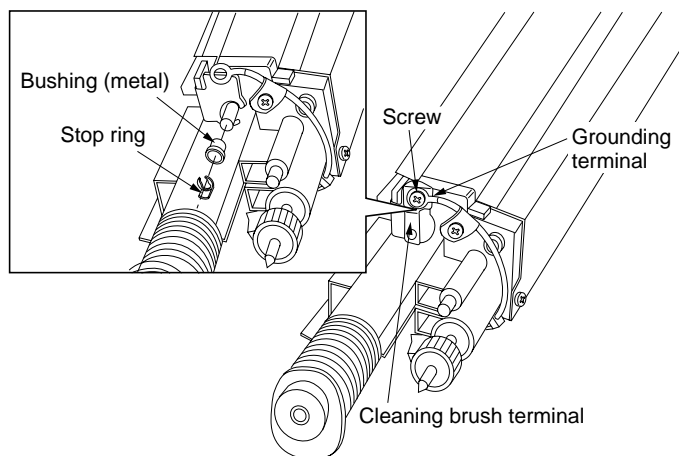
Follow the procedure below to clean or replace the cleaning brush.

Procedure

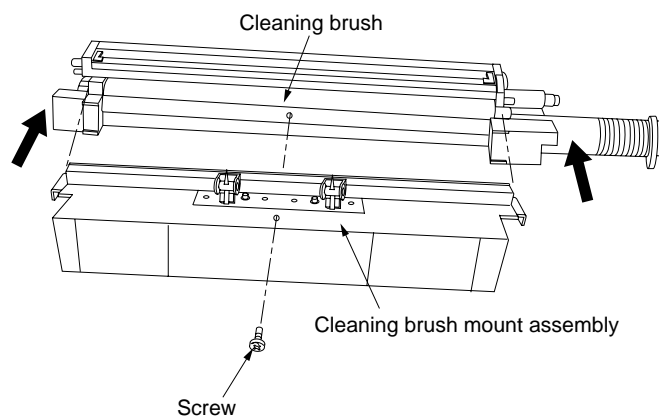
1. Remove the cleaning assembly from the machine.
2. Remove the stop ring, then remove the gear and bushing (plastic: white).
3. Remove the screw holding the cleaning brush mount assembly.

**Figure 1-6-83**

4. Remove the screw, then remove the grounding terminal and cleaning brush terminal.
5. Remove the stop ring, then remove the bushing (metal).

**Figure 1-6-84**

6. Remove the screw, then remove the cleaning brush mount assembly.
7. Remove the cleaning brush.
8. Refit all the removed parts.

**Figure 1-6-85**

(3) Detaching and refitting the cleaning brush mount

Follow the procedure below to replace the cleaning brush mount.

Procedure

1. Remove the cleaning brush mount assembly (see page 1-6-54).
2. Remove the separation claw assembly (see page 1-6-56).
3. Remove the four screws, then remove the lower cleaning base assembly from the cleaning brush mount.
4. Refit all the removed parts.

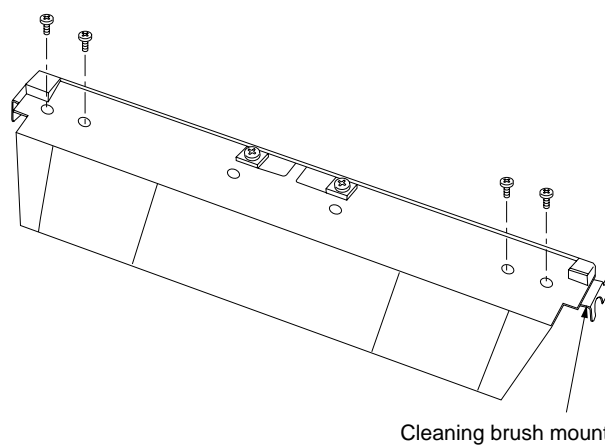


Figure 1-6-86

(4) Detaching and refitting the separation claw assembly

Follow the procedure below to replace the separation claw assembly.

Procedure

1. Remove the cleaning assembly from the machine.
2. Remove the two screws, then remove the separation claw assembly.
 - * When refitting, press the separation claw assembly in the direction of the arrow (away from the drum), and fasten the screws.
3. Refit all the removed parts.

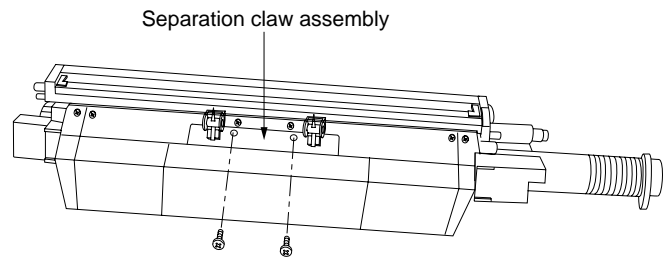


Figure 1-6-87

1-6-9 Fixing section

(1) Detaching and refitting the fixing unit thermostat

Follow the procedure below to check or replace the fixing unit thermostat.

Caution:

Use the specified thermostat for replacement. Do not substitute a simple wire or similar; otherwise, the copier will be seriously damaged.

Procedure

1. Pull the transfer/fixing sections out of the machine.
2. Remove the three retainer pins and screw, then remove the fixing cover.

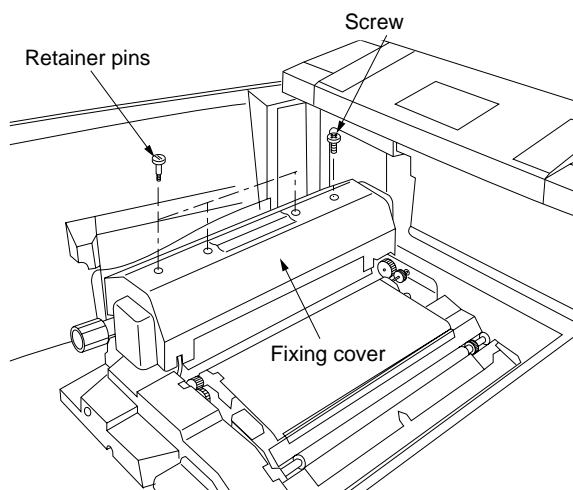


Figure 1-6-88

3. Disconnect the connectors for the fixing heater wire and fixing unit wire from the fixing unit thermostat.
- * When disconnecting the connector for the fixing unit wire, disconnect the connector while pressing the projection of the connector.
4. Remove the two screws, then remove the fixing unit thermostat.
5. Refit all the removed parts.

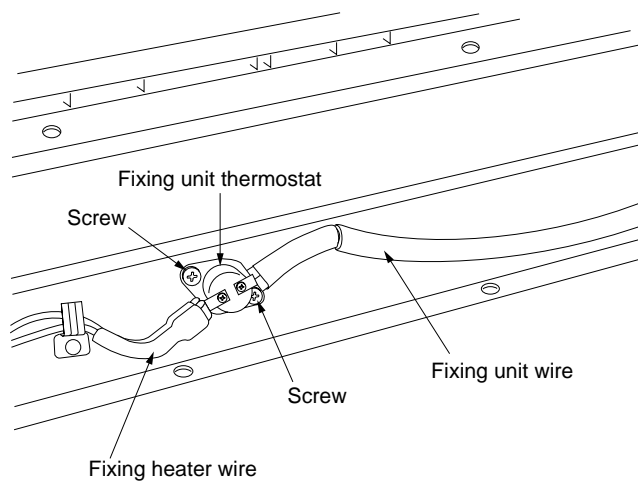


Figure 1-6-89

(2) Detaching and refitting the cleaning felt

Follow the procedure below to replace the cleaning felt.

Procedure

1. Remove the fixing cover (see page 1-6-57).
2. Remove the two screws, then remove the fixing cleaning stay.
3. Pull the two shafts of the cleaning felt toward the machine front, then remove the cleaning felt from the fixing assembly.
4. Fit a new cleaning felt while aligning the notch in the shaft (prior to winding on the cleaning felt) with the pin on the fixing cleaning drive shaft.
5. Turn the gear several times in the direction of the arrow to take up the slack in the cleaning felt.
6. Refit all the removed parts.
7. Turn the gear several more times in the direction of the arrow to take up the remaining slack in the cleaning felt.

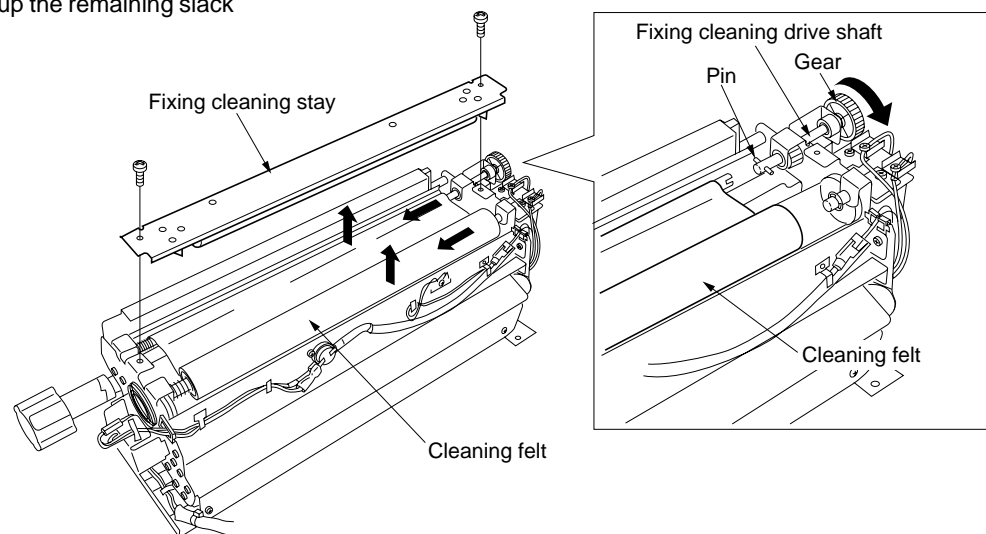


Figure 1-6-90

(3) Detaching and refitting the fixing heaters M and S

Follow the procedure below to check or replace the fixing heaters M and S.

Caution:

When replacing fixing heaters M and S, be sure to use the heaters rated as follows:

	Fixing heater M	Fixing heater S
120 V models	970 W	270 W
230/240 V models	1350 W	380 W

Procedure

1. Pull the fixing/conveying sections out of the machine.
 2. Disconnect the 7-pin connector for the fixing assembly.
 3. Release the two cord clamps, then free the wire for the 7-pin connector from the cord clamps.
 4. Open the fixing eject cover.
 5. Remove the four screws, then remove the fixing assembly.
- * When refitting the fixing assembly, be careful about following points.
- Check that the pins (broken line circles in the figure) of the fixing conveying unit must be firmly into the notches of the fixing side plate.
 - While passing the fixing assembly in the direction of the arrow (a) (machine front), after fasten the two screws of the machine front, fasten the two screws of the machine rear.

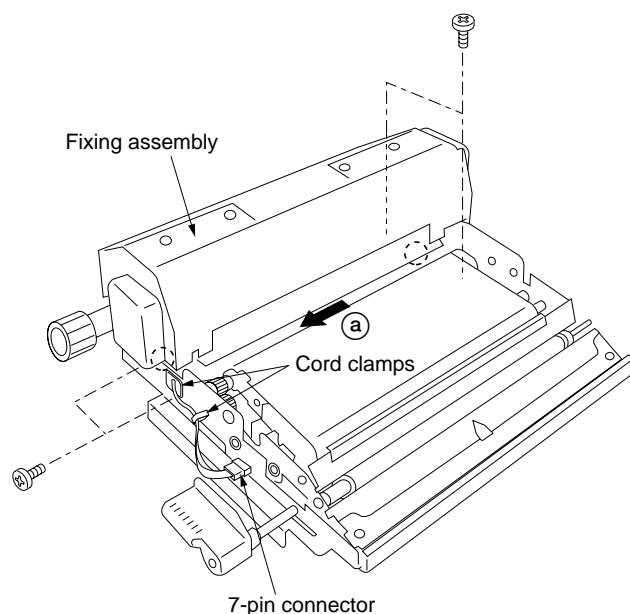


Figure 1-6-91

6. Remove the fixing cover (see page 1-6-57).
 7. Disconnect the connector for the fixing heater from the fixing unit thermostat.
 8. Release the cord clamp, then free the wire for the fixing heater from the cord clamp and two cord clamp sections of the fixing assembly.
 9. Remove the screw (M3), then remove the terminals for the fixing heater S and fixing unit wire.
 10. Remove the screw (M4), then remove the terminals for the fixing heater M and fixing unit wire.
- * When fastening the terminal of the fixing heater M, be sure to fasten the screw with pressing all the way to the machine left (in the direction of the arrow (b)).
11. Remove the screw, then remove the rear heater support plate.
 12. Pull the fixing heaters M and S out to the machine rear side (in the direction of the arrow (a)), then remove the fixing heaters M and S from the fixing assembly.
- * When refitting the fixing heaters M and S, place the fixing heater M on the right side and fixing heater S on the left side of the machine.

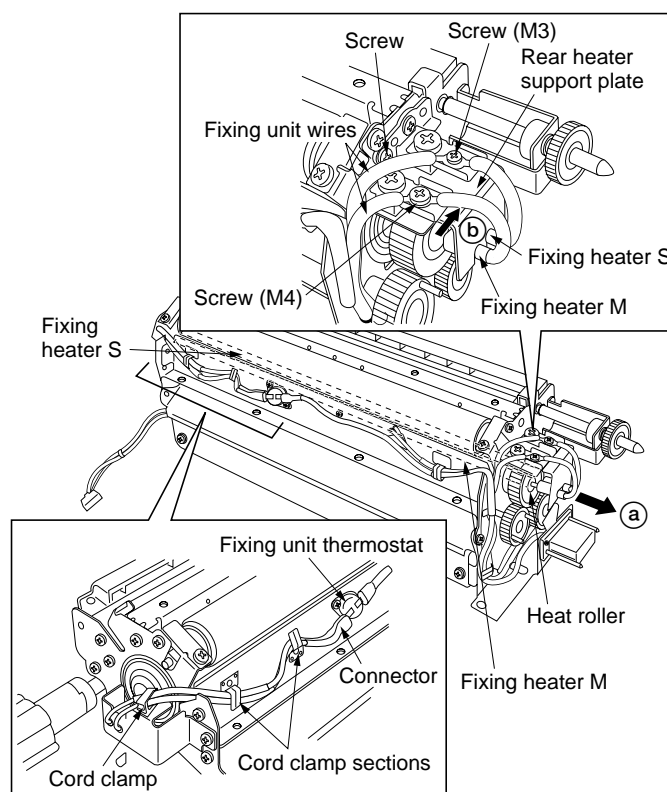


Figure 1-6-92

2A0

13. Disconnect the connector (male) for the fixing heater S from the connector (female) for fixing heater M.
14. Refit all the removed parts.

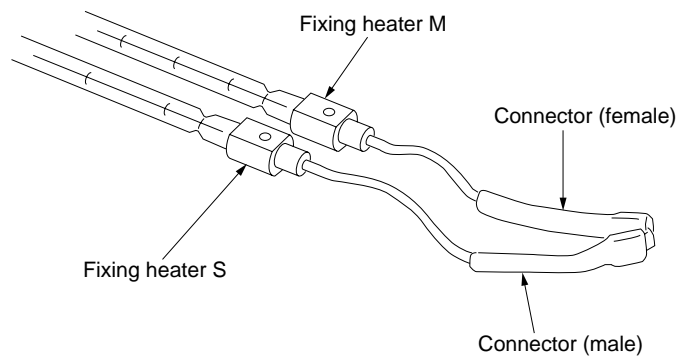


Figure 1-6-93

(4) Detaching and refitting the fixing unit thermistor

Follow the procedure below to check or replace the fixing unit thermistor.

Procedure

1. Remove the fixing assembly (see page 1-6-59).
2. Remove the fixing cover (see page 1-6-57).
3. Disconnect the connector for the fixing unit thermostat.
 - * When disconnecting the connector, remove while pressing the projection of the connector.
4. Disconnect the 2-pin connector for the fixing unit thermistor.
5. Free the wire for the fixing unit thermistor from the two cord clamp sections of the fixing assembly.
6. Remove the screw, then remove the fixing unit thermistor.
 - * When refitting the fixing thermistor, check that the projection on the fixing thermistor is firmly inserted into the notch in the fixing assembly and that the temperature detector face of the fixing thermistor is in contact with the heat roller.
7. Refit all the removed parts.

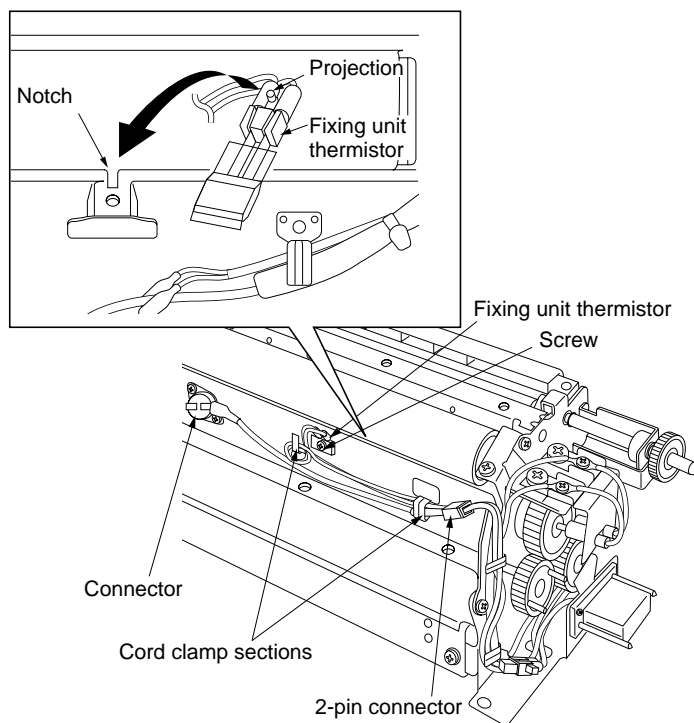


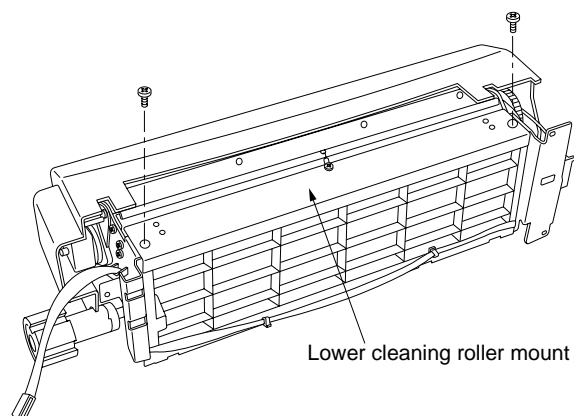
Figure 1-6-94

(5) Detaching and refitting the lower cleaning roller

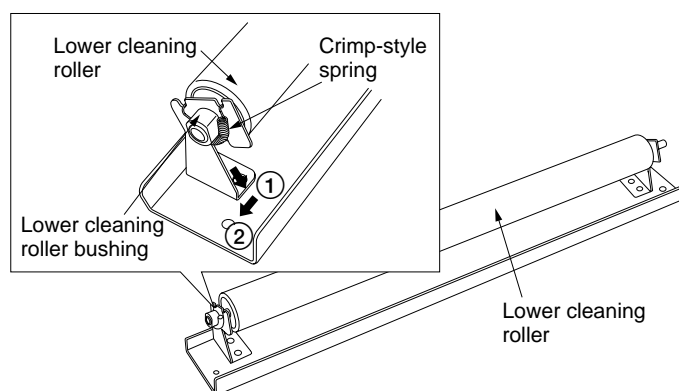
Follow the procedure below to replace the lower cleaning roller.

Procedure

1. Remove the fixing assembly (see page 1-6-59).
2. Remove the two screws, then remove the lower cleaning roller mount from the fixing assembly.

**Figure 1-6-95**

3. Remove the crimp-style spring and slide the lower cleaning roller bushing in the direction of the arrow ①, then remove the lower cleaning roller bushing from the lower cleaning roller.
4. Pull out the lower cleaning roller in the direction of the arrow ② and remove the lower cleaning roller from the bushing on the opposite side, then remove the lower cleaning roller.
5. Refit all the removed parts.

**Figure 1-6-96**

(6) Detaching and refitting the heat roller and press roller

Follow the procedure below to clean or replace the heat roller and press roller.

Procedure

1. Remove the fixing assembly from the machine (see page 1-6-59).
 2. Remove the fixing cover (see page 1-6-57).
 3. Remove the cleaning felt (see page 1-6-58).
 4. Remove fixing heaters M and S (see page 1-6-59).
 5. Remove the screw, then remove the fixing eject unit holder.
 6. Open the fixing eject cover, then remove the fixing eject cover from the fixing assembly as shown in the figure.
- * When refitting, the hinge of the fixing eject cover on the rear of the machine must be firmly into the gap between the groove of the fixing assembly and the rear fixing eject unit holder (section indicated by round mark in the figure).

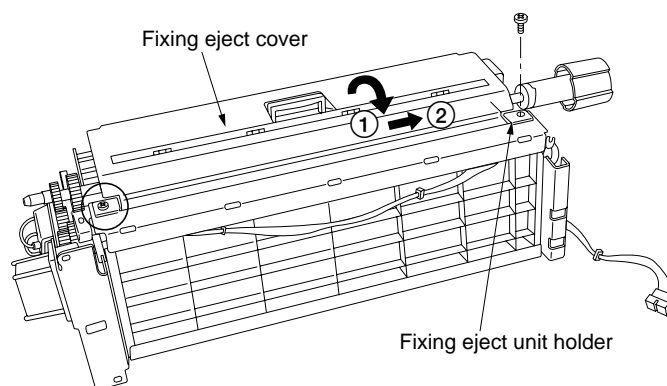


Figure 1-6-97

7. Remove the two screws, then open the fixing assembly.

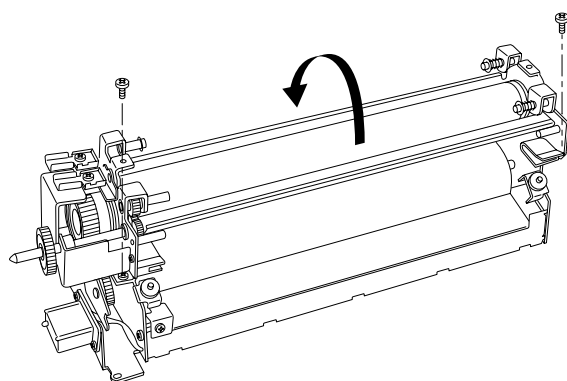


Figure 1-6-98

8. Remove the press roller from the fixing assembly.
9. Remove the C ring, then remove the bearing (machine front).
10. Remove the screw, then slide the heat roller gear in the direction of the arrow (a).
11. Slide the heat roller in the direction of the arrow ① and remove the heat roller from the bearing (machine rear).
12. Remove the heat roller from the fixing assembly as shown in the arrows ② and ③.
13. Refit all the removed parts.

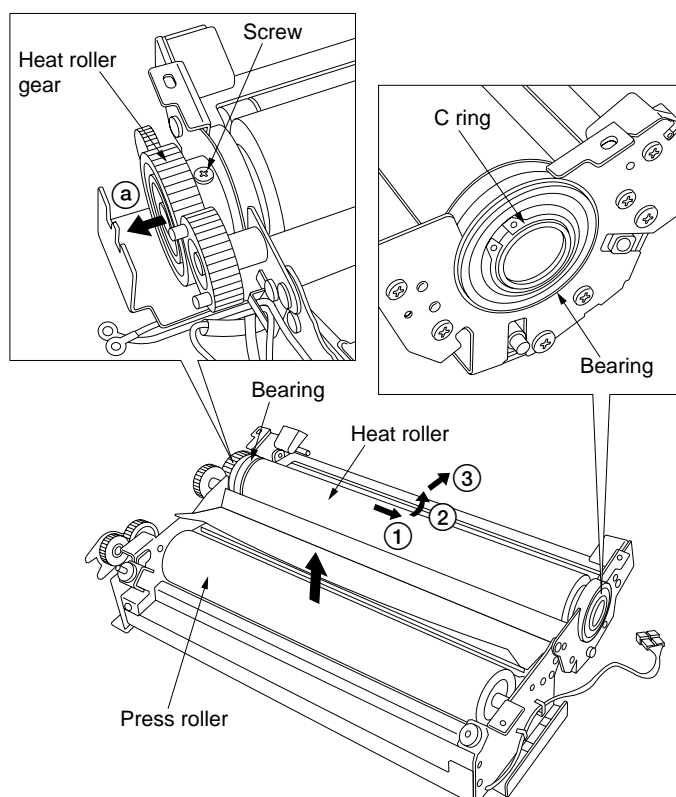


Figure 1-6-99

(7) Detaching and refitting the heat roller separation claw

Follow the procedure below to clean or replace the heat roller separation claw.

Procedure

1. Remove the fixing eject cover from the fixing assembly (see page 1-6-63).
2. Remove the four screws, then remove the heat roller separation claw holder.
3. Remove the heat roller separation claw spring each, then remove the seven heat roller separation claws.
4. Refit all the removed parts.

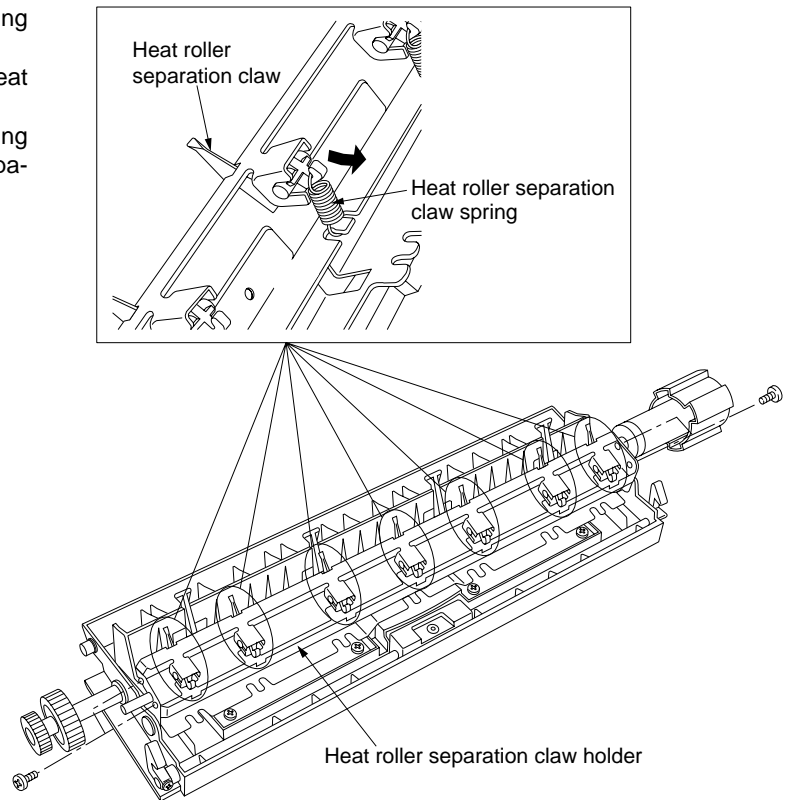


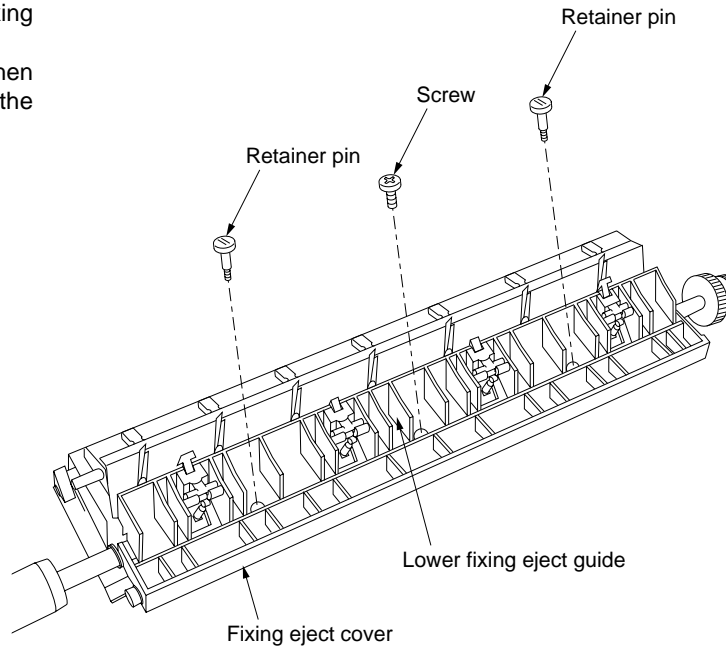
Figure 1-6-100

(8) Detaching and refitting the press roller separation claw

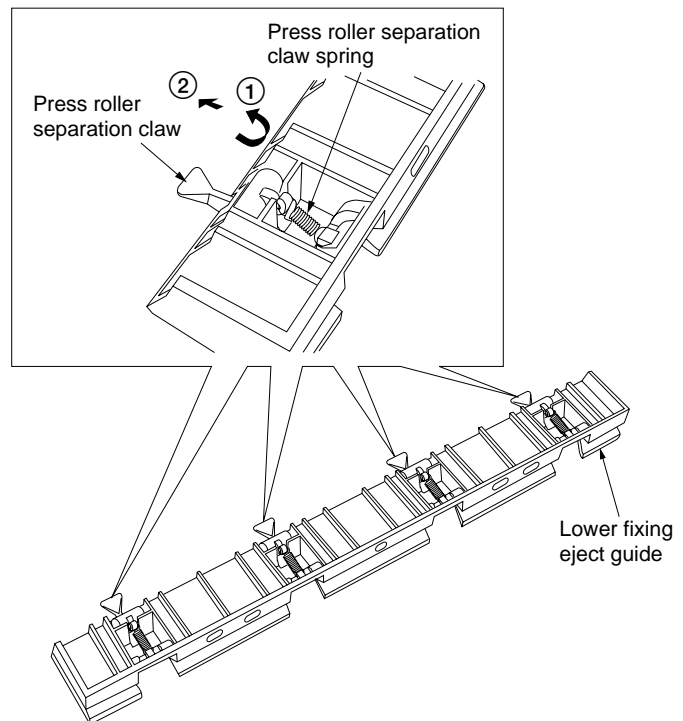
Follow the procedure below to clean or replace the press roller separation claw.

Procedure

1. Remove the fixing eject cover from the fixing assembly (see page 1-6-63).
2. Remove the two retainer pins and screw, then remove the lower fixing eject guide from the fixing eject cover.

**Figure 1-6-101**

3. Remove the press roller separation claw spring each, then remove the four press roller separation claws.
4. Refit all the removed parts.

**Figure 1-6-102**

1-6-10 Duplex section

(1) Cleaning the duplex switchback rollers

Follow the procedure below to clean the duplex switchback rollers.

Procedure

1. Open the front cover.
2. Remove the four screws, then remove the duplex unit.

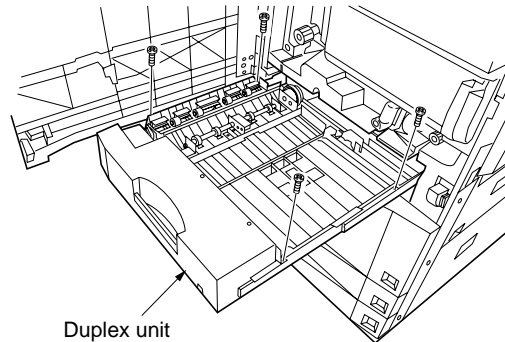


Figure 1-6-103

3. Remove the four screws, then remove the duplex cover.
4. Remove the stop ring, then remove the duplex joint gear.
5. Remove the two screws, then remove the duplex upper entry guide.

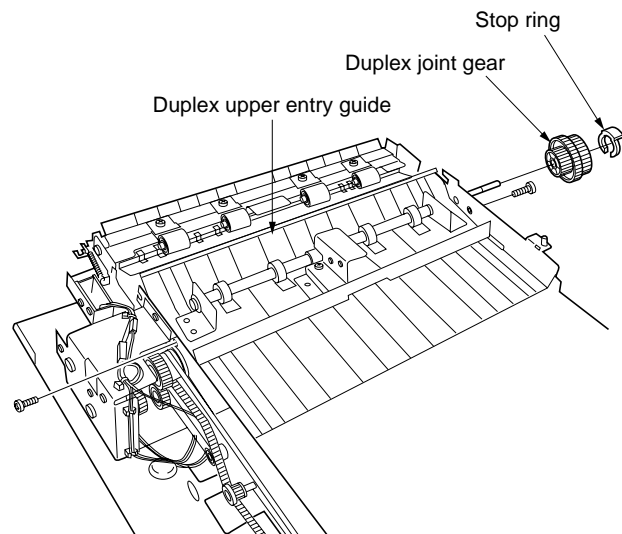


Figure 1-6-104

6. Clean the duplex switchback rollers.
7. Refit all the removed parts.

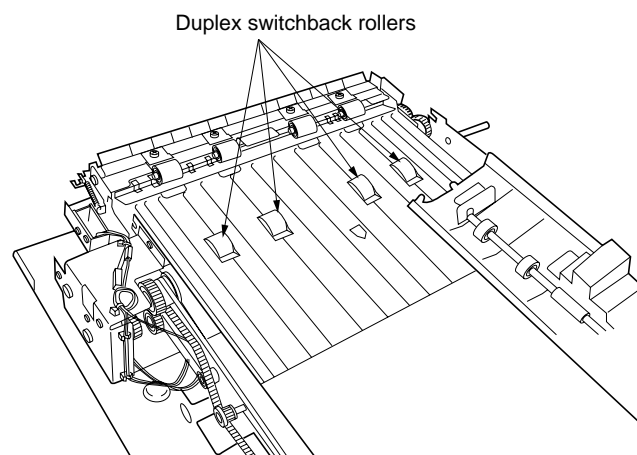


Figure 1-6-105

(2) Adjusting the position of the duplex eject switching solenoid

Follow the procedure below after replacing the duplex eject switching solenoid or if paper jams frequently in the duplex section (J62).

Procedure

1. Open the front cover and pull the duplex unit out.
2. Remove the four screws, then remove the duplex cover.
3. Loosen the screw securing the duplex eject switching solenoid.
4. Adjust the position of the duplex eject switching solenoid so that the gap between the switchback feedshift guide and the duplex refeed guide is between 2.5 and 3.0 mm when the plunger of the duplex eject switching solenoid is pushed (solenoid: on).
5. Tighten the screw of the duplex eject switching solenoid.
6. Refit all the removed parts.

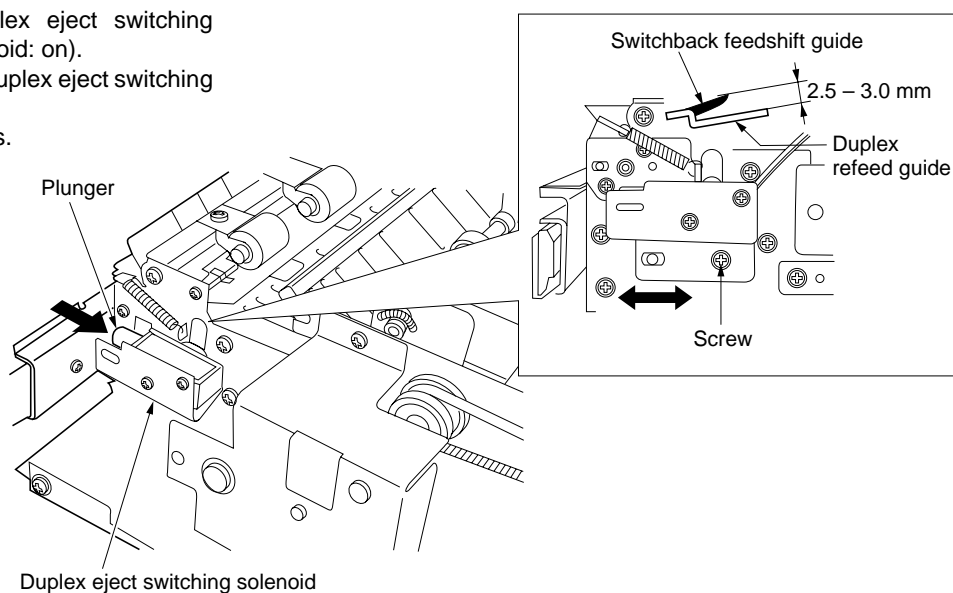


Figure 1-6-106

(3) Setting the switchback drive

Follow the procedure below if paper jams or the leading edge of paper is folded in the duplex section frequently during duplex copying.

Procedure

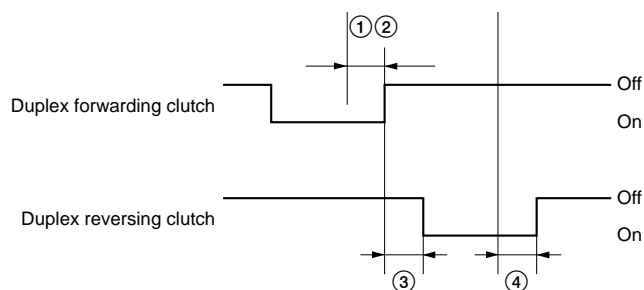
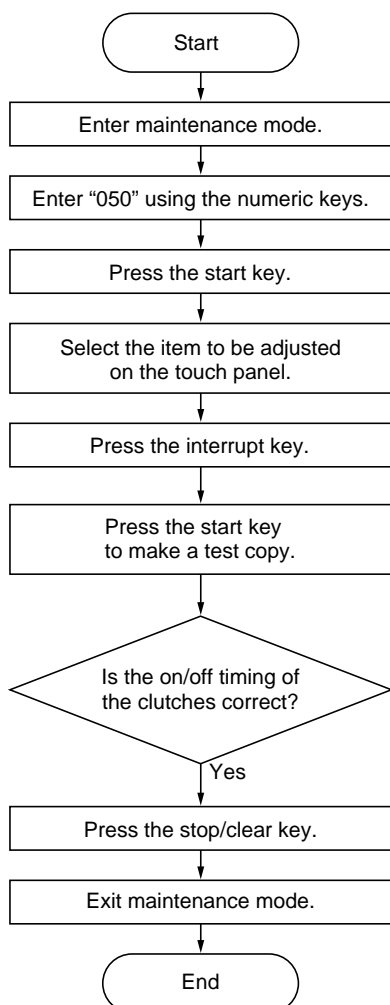


Figure 1-6-107

Touch panel display

- ① FWD CL OFF: Duplex forwarding clutch-off timing
- ② FWD CL OFF2: Duplex forwarding clutch-off timing (for 11" × 17" copy paper only)
- ③ DUP CL OFF: Duplex reversing clutch-on timing
- ④ REV CL OFF: Duplex reversing clutch-off timing

Press the start key.
The new setting is stored.

Setting range (default)

Duplex forwarding clutch-off timing: 0 – 254 (100)

Duplex forwarding clutch-off timing

(for 11" × 17" copy paper only): 0 – 254 (75)

Duplex reversing clutch-on timing: 0 – 254 (50)

Duplex reversing clutch-off timing: 0 – 254 (120)

Increasing the value makes the on/off timing of the clutch later, and decreasing it makes the timing earlier.

1-6-11 SRDF section

(1) Detaching and refitting the DF forwarding pulley and DF feed pulley

Follow the procedure below to clean or replace the DF forwarding pulley or DF feed pulley.

Procedure

1. Open the DF original reversing cover.
2. Remove the two screws, then remove the upper original feed cover.
 - Detaching the DF forwarding pulley
3. Remove the stop ring at the machine front, then remove the bushing.
4. Pull the forwarding shaft out, then remove the DF forwarding pulley.
 - Detaching the DF feed pulley
5. Release the front original feed shaft by pushing the joint toward the machine rear.
6. Remove the stop ring at the machine front, then remove the bushing.
7. Remove the stop ring at the machine rear, pull the front original feed shaft out, and then remove the DF feed pulley.
8. Clean or replace the DF forwarding pulley and the DF feed pulley.
9. Refit all the removed parts.

* When refitting the DF forwarding pulley and DF feed pulley, ensure that the notches in the pulleys are aligned with the projections on the one-way clutches.

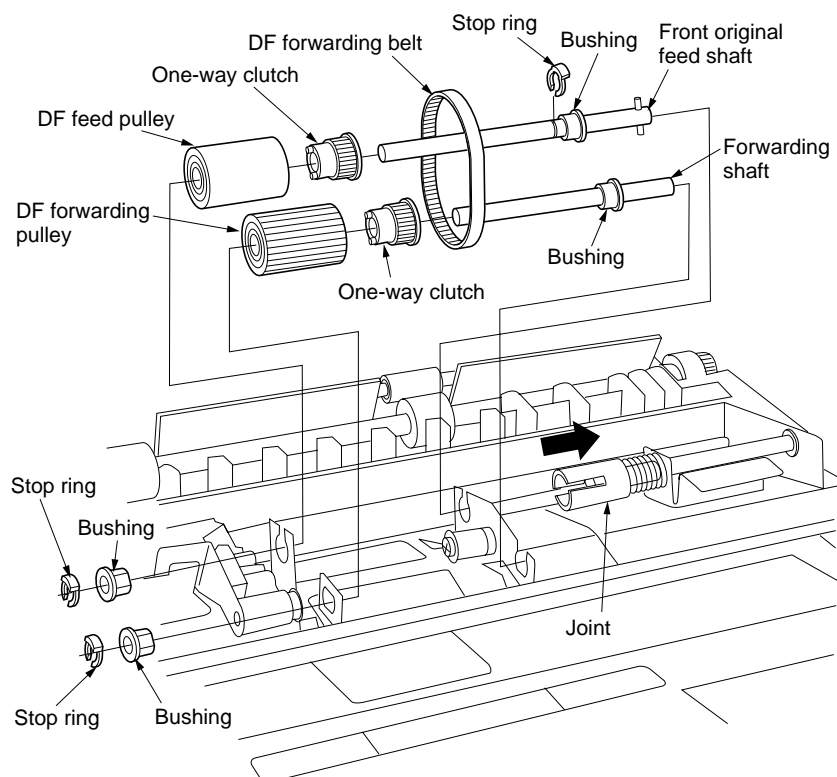
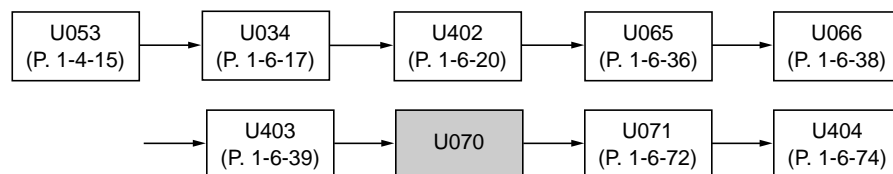


Figure 1-6-108

(2) Adjusting the DF magnification

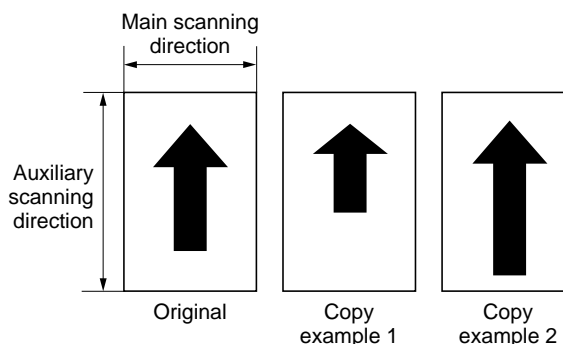
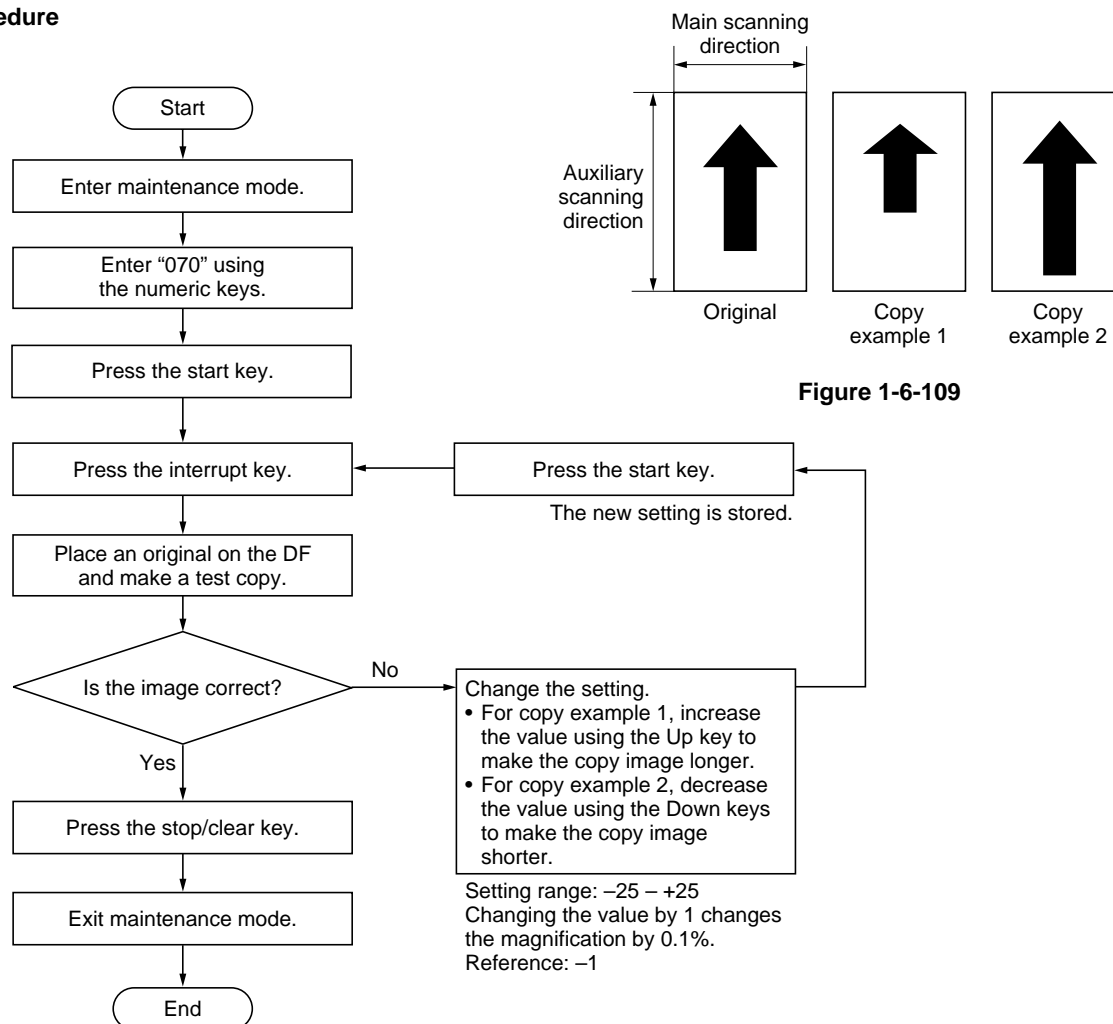
Adjust magnification in the auxiliary scanning direction if magnification is incorrect when the DF is used.



Caution:

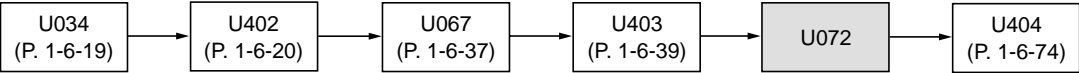
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure



(3) Adjusting the DF center line

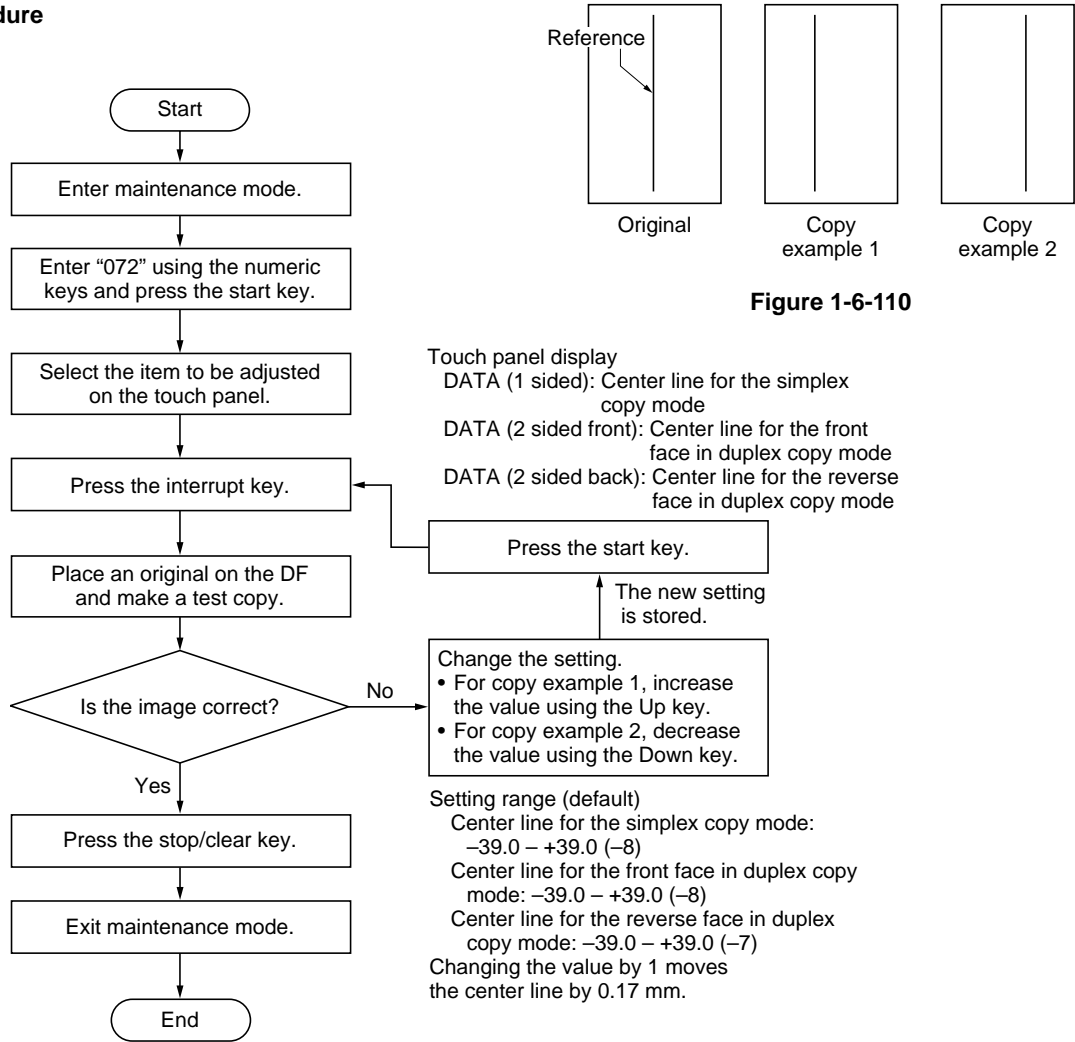
Perform the following adjustment if there is a regular error between the centers of the original and the copy image.



Caution:

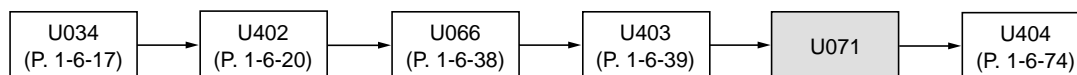
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure



(4) Adjusting the scanning start position when the DF is used

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



Caution:

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

(4-1) Adjusting the DF leading edge registration

Procedure

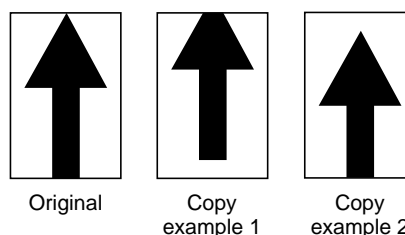
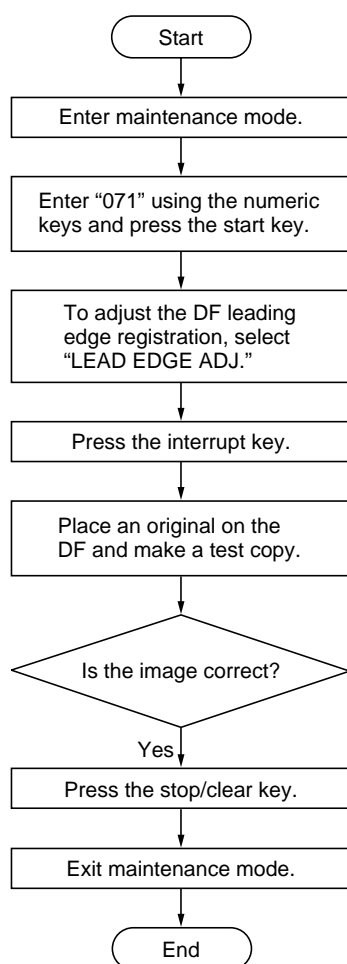
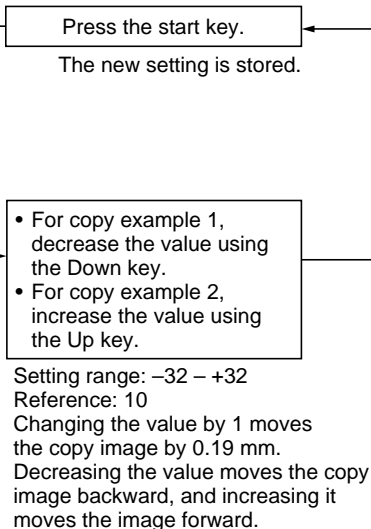
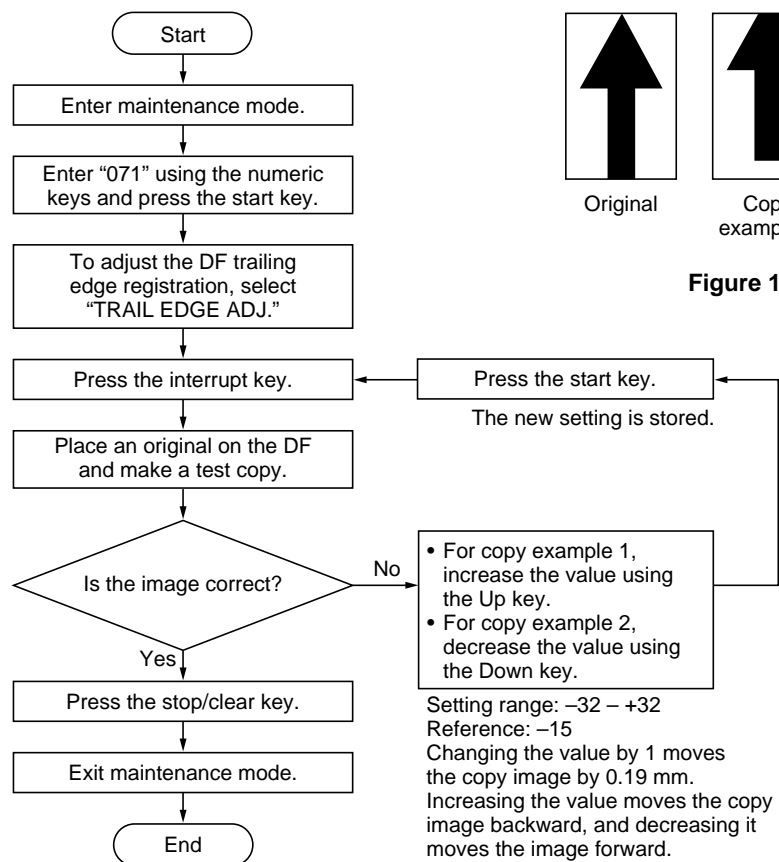


Figure 1-6-111



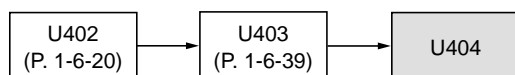
(4-2) Adjusting the DF trailing edge registration

Procedure

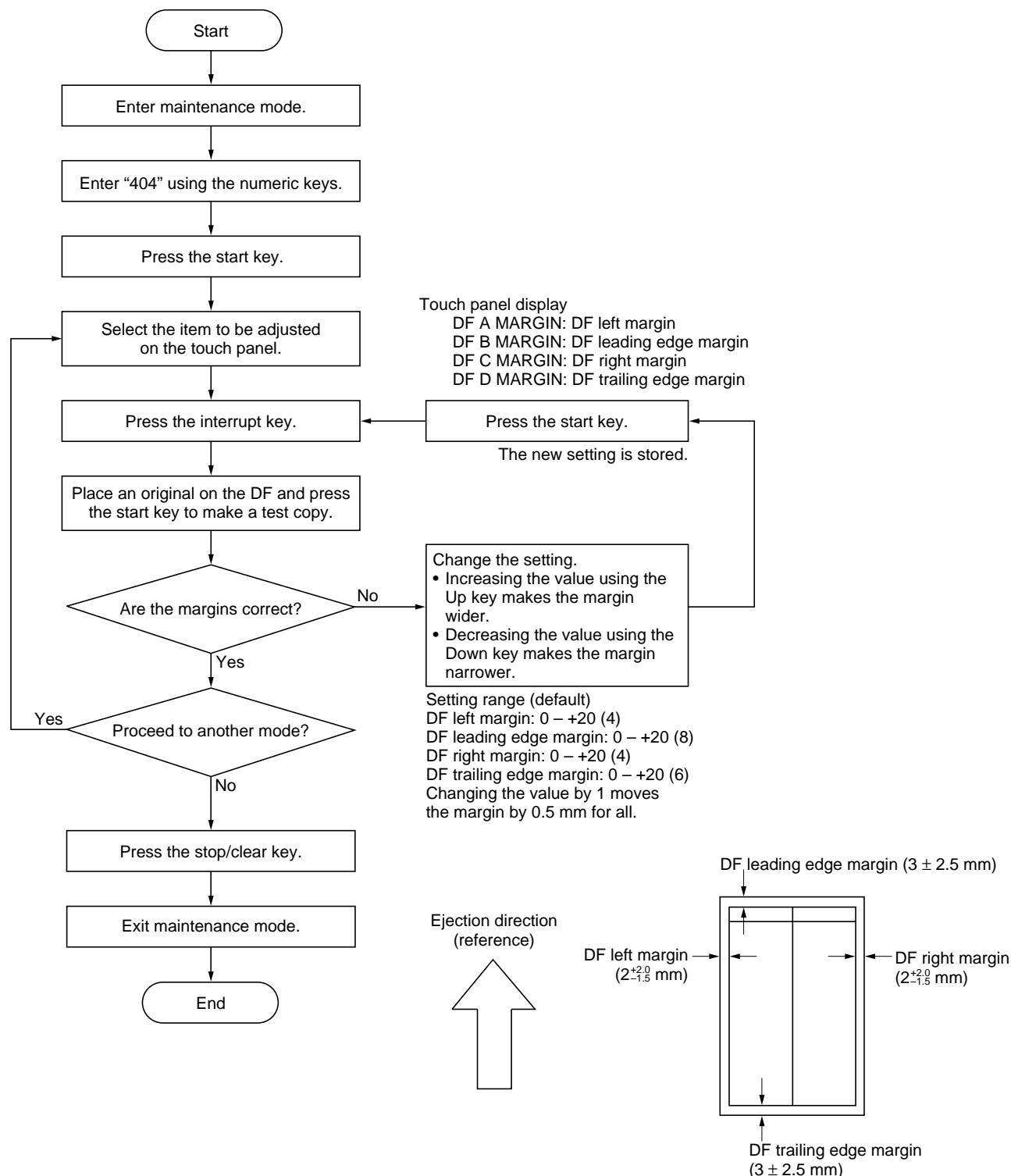


(5) Adjusting the margins for scanning the original from the DF

Perform the following adjustment if margins are not correct.

**Caution:**

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

Procedure**Figure 1-6-113**

1-6-12 Others

(1) Detaching and refitting the drum grounding plate spring

Follow the procedure below to clean or replace the drum grounding plate spring.

Procedure

1. Remove the rear cover.
2. Remove the two screws, then open the shield box assembly.

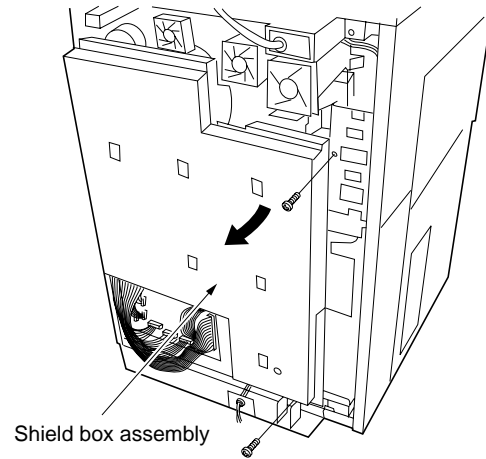


Figure 1-6-114

3. Remove the two screws, then remove the drum grounding plate spring.
4. Clean or replace the drum grounding plate spring.
- * When refitting the drum grounding plate spring, be sure to apply conductive grease to the surface that makes contact with the drum drive shaft.
5. Refit all the removed parts.

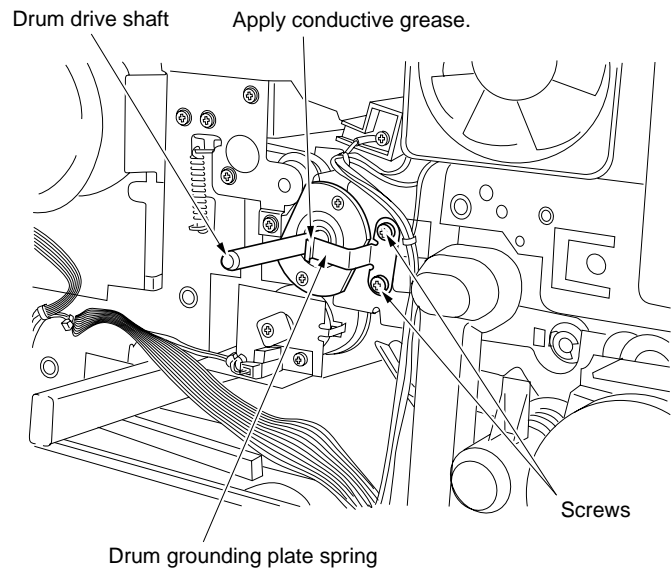


Figure 1-6-115

1-7-1 Replacing the main PCB

(1) Replacing the main PCB only

After replacing the main PCB, remove the backup RAM (IC68) from the old main PCB and fit it to the new main PCB to maintain the original setting data.

(2) Replacing the main PCB and backup RAM

When replacing the backup RAM along with the main PCB, perform the following steps.

Procedure

- Before removing the old backup RAM:
 1. Enter the maintenance mode.
 2. Execute maintenance item U000 to output a list of the current settings for maintenance items.
 3. Exit the maintenance mode.
 4. Turn the main switch off and disconnect the power plug.
 5. Replace the main PCB and backup RAM with the new ones.
- After installing the new backup RAM:
 6. Insert the power plug and turn the main switch on.
 7. Enter maintenance mode.
 8. Execute maintenance item U020.
 9. Execute maintenance item U252 and select the destination.
 10. Execute maintenance item U000 and output a list of the current settings for maintenance items.
 11. Compare the lists output in steps 2 and 10. If there are any differences, reenter the data in accordance with the values on the list output in step 2.
 12. Exit the maintenance mode.

1-7-2 Replacing the main PCB ROMs

When replacing the ROMs on the main PCB, perform the following steps.

Scanner-MMI ROM assembly (P/N 2A068040)

Main-engine ROM assembly (P/N 2A068030)

Font A ROM assembly (P/N 2A068050)

Font B ROM assembly (P/N 2A068060)

Procedure

1. Turn the main switch off and disconnect the power plug.
2. Remove the screw securing the main PCB ROM cover.
3. Replace IC63 (scanner-MMI ROM assembly), IC64 (font A ROM assembly or font B ROM assembly) and IC67 (main-engine ROM assembly).
4. Refit the main PCB ROM cover.
5. Insert the power plug and turn the main switch on.

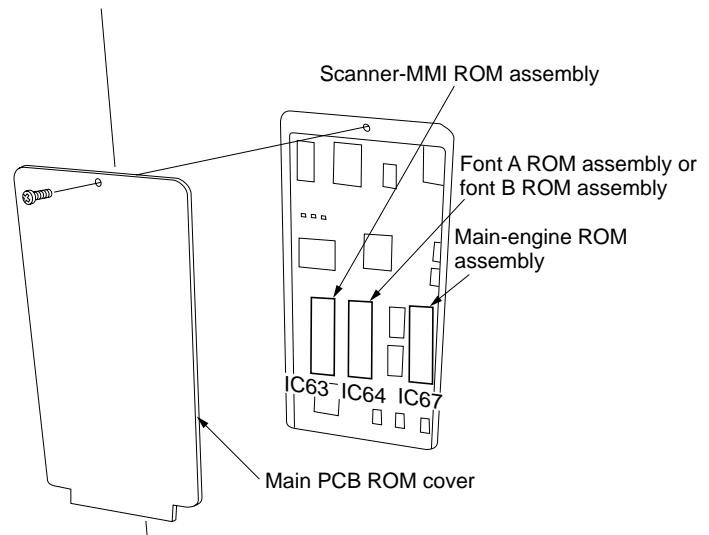


Figure 1-7-1 Replacing the main PCB ROMs

1-7-3 Adjustment-free variable resisters (VR)

The variable resistors listed below are set at the factory prior to shipping and should not be adjusted in the field.

- High-voltage transformer PCB: VR101, VR201, VR301, VR302, VR401, VR402, VR501
- Transfer charger belt bias PCB: VR101, VR201, VR202

2-1-1 Paper feed section

This copier is designed to feed paper either automatically from the large paper deck and two paper cassettes or manually from the bypass table.

The paper feed section consists of the primary paper feed and secondary paper feed subsections. Primary paper feed conveys paper from the upper or lower cassettes, large paper deck or bypass table to the upper and lower registration rollers, at which point secondary paper feed takes place and the paper travels to the transfer/conveying sections in sync with the image printing timing.

(1) Paper feed from the cassettes

Each cassette consists of the cassette lift driven by the paper cassette lift motor and other components (forwarding pulley, upper paper feed pulley, lower paper feed pulley etc.). Each cassette can hold up to 550 sheets of paper. Paper is fed out of the cassette by the rotation of the forwarding pulley, upper paper feed pulley and lower paper feed pulley.

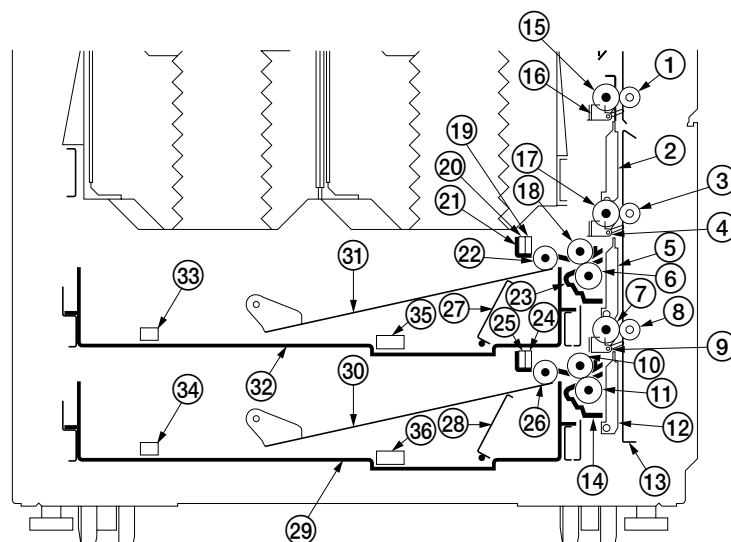


Figure 2-1-1 Paper feed section 1

- | | |
|-------------------------------------|---------------------------------------|
| ① Right feed pulley | ②① Upper paper feed housing |
| ② Confluence guide | ②② Forwarding pulley |
| ③ Right feed pulley | ②③ Lower paper feed housing |
| ④ Paper feed switch 4 (PFSW4) | ②④ Lower paper switch (PSW-L) |
| ⑤ Confluence guide | ②⑤ Lower lift limit switch (LICSW-L) |
| ⑥ Lower paper feed pulley | ②⑥ Forwarding pulley |
| ⑦ Vertical conveying roller D | ②⑦ Lift operating plate |
| ⑧ Right feed pulley | ②⑦ Lift operating plate |
| ⑨ Paper feed switch 5 (PFSW5) | ②⑨ Cassette |
| ⑩ Upper paper feed pulley | ③① Cassette lift |
| ⑪ Lower paper feed pulley | ③② Cassette |
| ⑫ Confluence guide | ③③ Upper paper length switch (PLSW-U) |
| ⑬ Lower vertical conveying guide | ③④ Lower paper length switch (PLSW-L) |
| ⑭ Lower paper feed housing | ③⑤ Upper paper width switch (PWSW-U)* |
| ⑮ Vertical conveying roller B | ③⑥ Lower paper width switch (PWSW-L)* |
| ⑯ Paper feed switch 3 (PFSW3) | |
| ⑰ Vertical conveying roller C | |
| ⑱ Upper paper feed pulley | |
| ⑲ Upper paper switch (PSW-U) | |
| ⑳ Upper lift limit switch (LICSW-U) | |

* For inch models only.

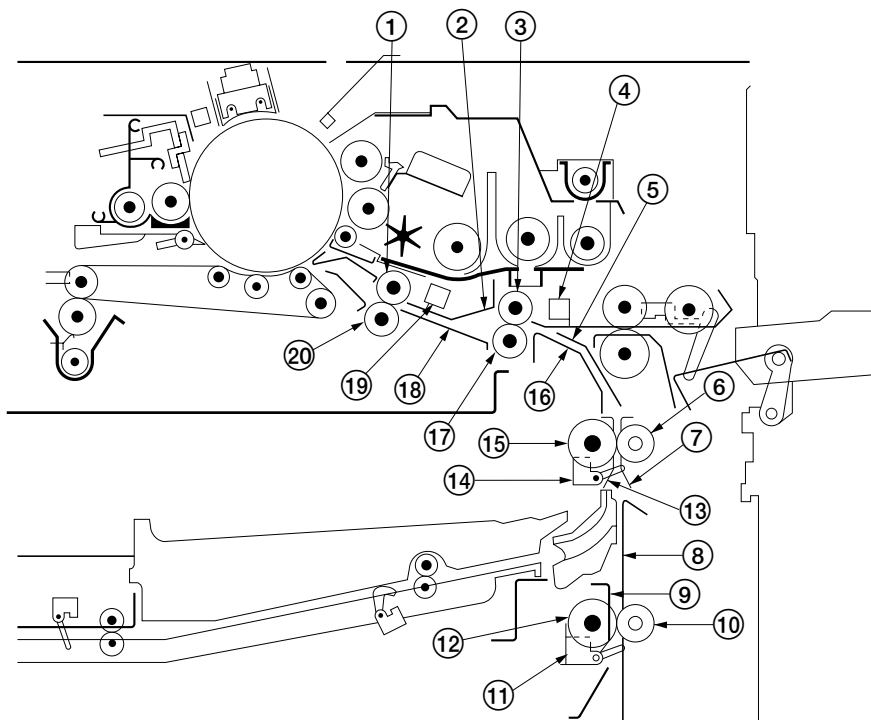


Figure 2-1-2 Paper feed section 2

- | | |
|----------------------------------|-------------------------------|
| ① Upper registration roller | ⑪ Paper feed switch 2 (PFSW2) |
| ② Upper registration guide | ⑫ Vertical conveying roller A |
| ③ Upper feed roller | ⑬ Lower left feed guide |
| ④ Feed switch (FSW) | ⑭ Paper feed switch 1 (PFSW1) |
| ⑤ Upper right feed guide | ⑮ Left feed roller |
| ⑥ Right feed pulley | ⑯ Upper left feed guide |
| ⑦ Lower right feed guide | ⑰ Lower feed roller |
| ⑧ Upper vertical conveying guide | ⑱ Lower registration guide |
| ⑨ Left vertical conveying guide | ⑲ Registration switch (RSW) |
| ⑩ Right feed pulley | ⑳ Lower registration roller |

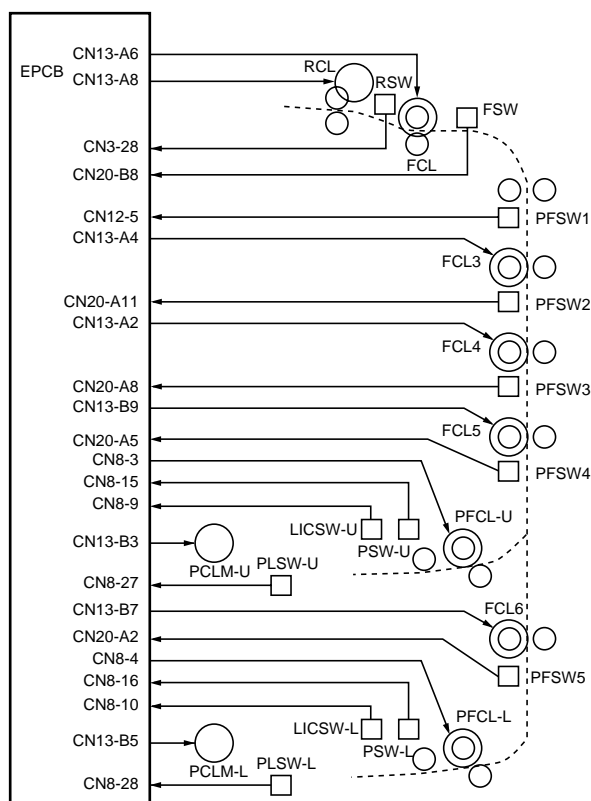
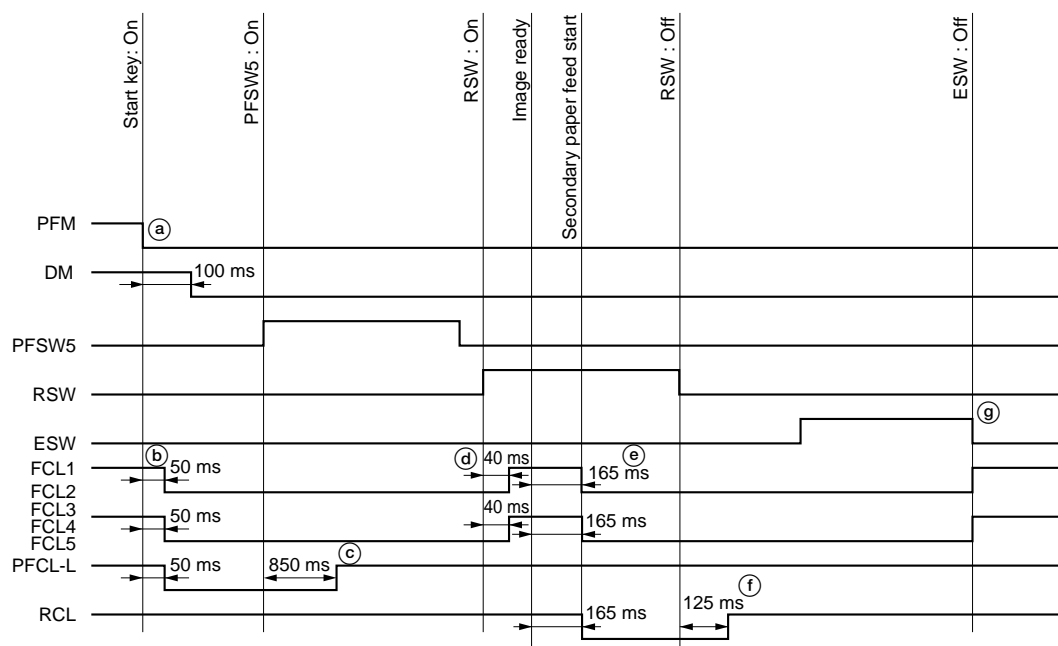


Figure 2-1-3 Paper feed section block diagram (cassette paper feed section)



Lower cassette, paper size A3/11" × 17"

Timing chart 2-1-1 Paper feed from the lower cassette

- Ⓐ When the start key is pressed, the paper feed motor (PFM) turns on and 100 ms later the drive motor (DM) turns on, thereby starting machine drive.
- Ⓑ 50 ms after the start of machine drive, feed clutch 1 (FCL1), feed clutch 2 (FCL2), feed clutch 3 (FCL3), feed clutch 4 (FCL4), feed clutch 5 (FCL5) and lower paper feed clutch (PFCL-L) turn on and the forwarding pulley and upper and lower paper feed pulleys of the lower cassette rotate to start primary paper feed.
- Ⓒ 850 ms after the leading edge of the paper turns paper feed switch 5 (PFSW5) on, the lower paper feed clutch (PFCL-L) turns off and the forwarding pulley and upper and lower paper feed pulleys of the lower cassette stop rotating.
- Ⓓ 40 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutch 1 (FCL1), feed clutch 2 (FCL2), feed clutch 3 (FCL3), feed clutch 4 (FCL4) and feed clutch 5 (FCL5) turn off to complete the primary paper feed.
- Ⓔ 165 ms after the image ready signal turns on, registration clutch (RCL), feed clutch 1 (FCL1), feed clutch 2 (FCL2), feed clutch 3 (FCL3), feed clutch 4 (FCL4) and feed clutch 5 (FCL5) turn on to start secondary paper feed.
- Ⓕ 125 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off to complete the secondary paper feed.
- Ⓖ When the trailing edge of the paper turns the eject switch (ESW) off, feed clutch 1 (FCL1), feed clutch 2 (FCL2), feed clutch 3 (FCL3), feed clutch 4 (FCL4) and feed clutch 5 (FCL5) turn off.

(2) Paper feed from the large paper deck

The large paper deck consists of the right and left cassettes and separation section. Paper is fed from the right cassette by controlling currents of air. The top sheet of the paper loaded on the lift is floated by blow fan motor 1 (BFM1) and then induced onto the paper conveying belt by blow fan motor 2 (BFM2). The paper thus attracted to the paper feed belts is then sent to the paper feed belt pulley and deck paper conveying pulley by the drive of the belts. When the right cassette becomes empty, the left cassette primary paper feed section conveys paper onto the lift of the right cassette. The paper feed belt pulley and deck paper conveying pulley in the separation section convey paper fed from the right cassette primary paper feed section into the secondary paper feed section, preventing multiple sheets from being fed at one time.

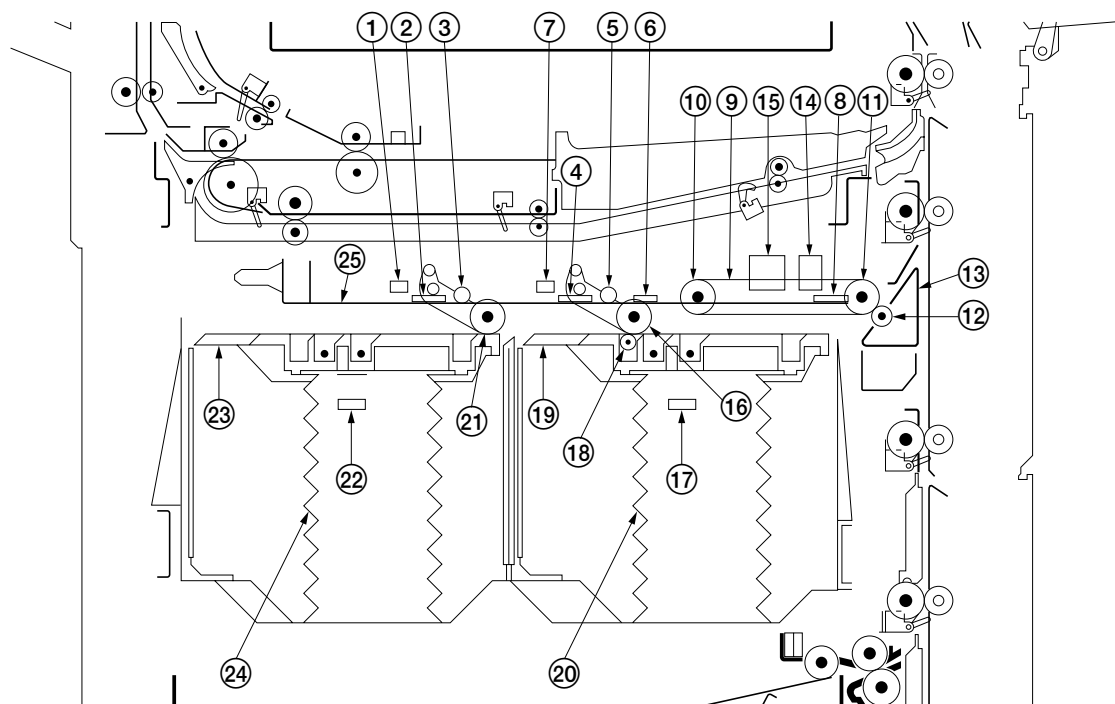


Figure 2-1-4 Large paper deck section

- | | |
|---|---|
| ① Large paper deck level switch 2 (LPDLSW2) | ⑬ Lower paper conveying guide |
| ② Large paper deck paper empty sensor (LPDPESENS) | ⑭ Blow fan motor 1 (BFM1) |
| ③ Pickup arm | ⑮ Blow fan motor 2 (BFM2) |
| ④ Large paper deck paper path sensor 3 (LPDPPSENS3) | ⑯ Deck paper conveying roller |
| ⑤ Pickup arm | ⑰ Large paper deck paper level detection sensor 1 (LPDPLDSENS1) |
| ⑥ Large paper deck paper path sensor 2 (LPDPPSENS2) | ⑱ Guide pulley |
| ⑦ Large paper deck level switch 1 (LPDLSW1) | ⑲ Lift |
| ⑧ Large paper deck paper path sensor 1 (LPDPPSENS1) | ⑳ Air damper |
| ⑨ Paper feed belt | ㉑ Deck paper feed roller |
| ⑩ Paper feed belt pulley | ㉒ Large paper deck paper level detection sensor 2 (LPDPLDSENS2) |
| ⑪ Paper feed belt pulley | ㉓ Lift |
| ⑫ Deck paper conveying pulley | ㉔ Air damper |
| | ㉕ Paper conveying base |

(2-1) Right cassette paper feed

As the large paper deck conveying clutch (LPDCCL) turns on, the drive of the paper feed motor (PFM) is transmitted to the paper feed belt, paper feed belt pulley and deck paper conveying pulley, starting paper feed from the right cassette. The paper feed belt pulley and deck paper conveying pulley ensure that the paper is fed one sheet at a time. Also, when the right cassette is empty, its lift serves as a guide for the paper being conveyed from the left cassette lift.

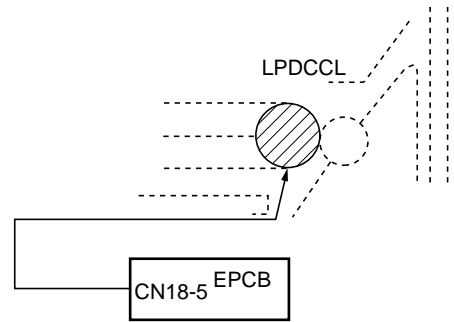
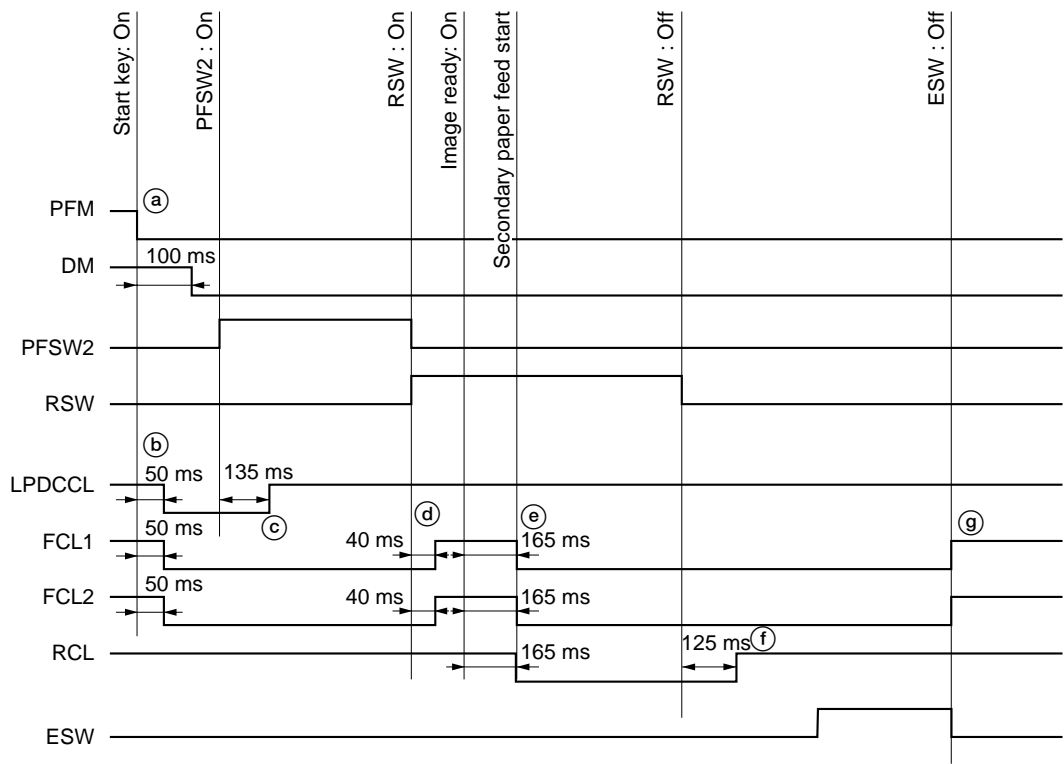


Figure 2-1-5 Right cassette block diagram



Large paper deck right cassette, paper size A4/8¹/₂" × 11"

Timing chart 2-1-2 Right cassette paper feed

- Ⓐ When the start key is pressed, the paper feed motor (PFM) turns on and 100 ms later the drive motor (DM) turns on, thereby starting machine drive.
- Ⓑ 50 ms after the start of machine drive, the large paper deck conveying clutch (LPDCCL), feed clutch 1 (FCL1) and feed clutch 2 (FCL2) turn on. The turning on of the large paper deck conveying clutch (LPDCCL) triggers the drive of the paper feed belt pulley and paper feed belts and primary paper feed starts.
- Ⓒ 135 ms after the leading edge of the paper turns paper feed switch 2 (PFSW2) on, the large paper deck conveying clutch (LPDCCL) turns off and the drive of the paper feed belt pulley and paper feed belts stops.
- Ⓓ 40 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutch 1 (FCL1) and feed clutch 2 (FCL2) turn off to complete the primary paper feed.
- Ⓔ 165 ms after the image ready signal turns on, the registration clutch (RCL), feed clutch 1 (FCL1) and feed clutch 2 (FCL2) turn on to start secondary paper feed.
- Ⓕ 125 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off to complete the secondary paper feed.
- Ⓖ When the trailing edge of the paper turns the eject switch (ESW) off, feed clutch 1 (FCL1) and feed clutch 2 (FCL2) turn off.

(2-2) Left cassette paper feed

As the last sheet in the right cassette is fed, large paper deck paper feed clutch 2 (LPDPFCL2) and large paper deck paper feed clutch 1 (LPDPFCL1) turn on, transmitting the drive of the paper feed motor (PFM) to the deck paper feed roller and deck paper conveying roller. Receiving the drive of the paper feed motor (PFM), the deck paper feed roller and deck paper conveying roller start to rotate to convey paper from the left cassette onto the right cassette lift.

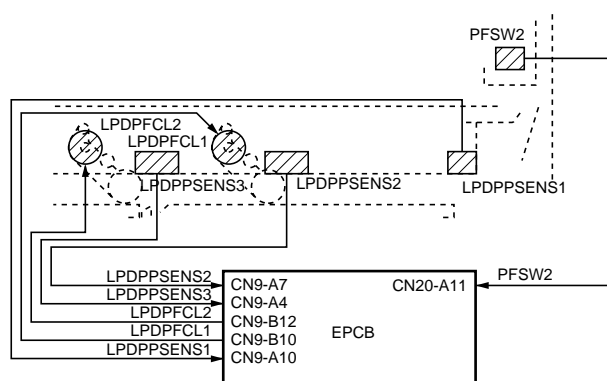
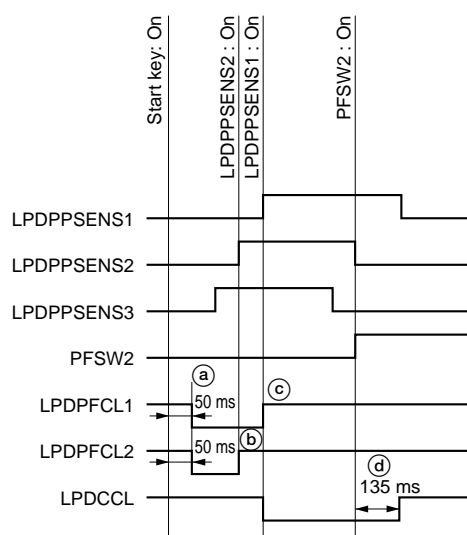


Figure 2-1-6 Left cassette block diagram



Timing chart 2-1-3 Left cassette paper feed

- ① 50 ms after the start key is pressed, large paper deck paper feed clutch 1 (LPDPFCL1) and large paper deck paper feed clutch 2 (LPDPFCL2) turn on, and the deck paper feed roller and deck paper conveying roller start to rotate to convey paper to the right cassette.
- ② When the leading edge of the paper turns large paper deck paper path sensor 2 (LPDPPSENS2) on, large paper deck paper feed clutch 2 (LPDPFCL2) turns off.
- ③ When the leading edge of the paper turns large paper deck paper path sensor 1 (LPDPPSENS1) on, large paper deck paper feed clutch 1 (LPDPFCL1) turns off and the large paper deck conveying clutch (LPDCCL) turns on. The turning on of the large paper deck conveying clutch (LPDCCL) triggers the drive of paper feed belt pulley and paper feed belts and primary paper feed starts.
- ④ 135 ms after the leading edge of the paper turns paper feed switch 2 (PFSW2) on, the large paper deck conveying clutch (LPDCCL) turns off and the drive of the paper feed belt pulley and paper feed belts stops.

(2-3) Raising and lowering the lifts

*The mechanism of operating the lifts is same for the right and left lifts, so only the right side is explained here.

The large paper deck right lift motor (LPDLM-R) drives the right lift belt assembly that winches the belt up and hence raises the lift until it is stopped by the large paper deck level switch 1 (LPDLSW1).

When paper is loaded on the lift and the deck is closed, the lift is raised until the large paper deck level switch 1 (LPDLSW1) comes on.

When large paper deck level switch 1 (LPDLSW1) is turned off as the paper on the lift is used, the large paper deck right lift motor (LPDLM-R) starts to raise the lift until the switch turns on.

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

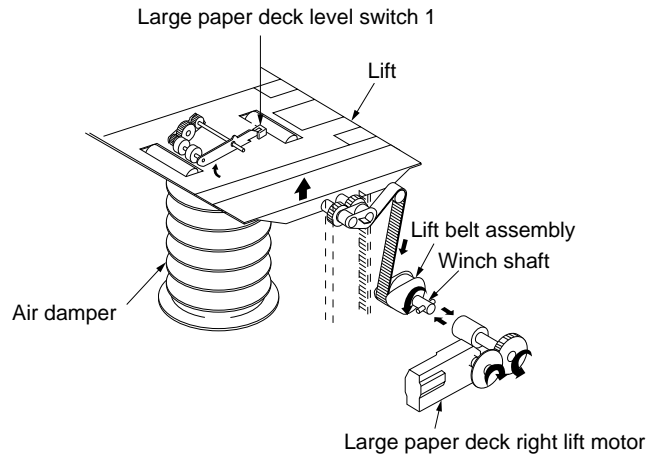


Figure 2-1-7 Raising and lowering the lift

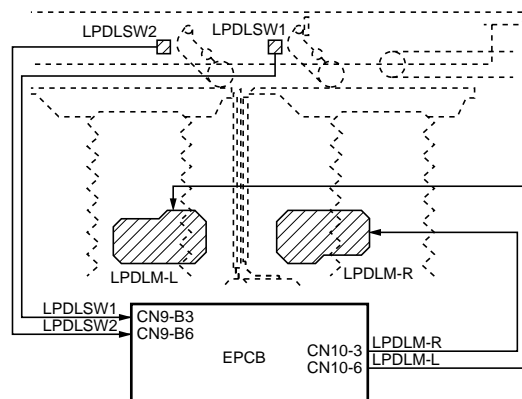


Figure 2-1-8 Lift block diagram

(2-4) Detecting the paper level

The lift rises as paper in the large paper 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 large paper deck paper level detection sensor 1 or 2 (LPDPLDSENS1/2) on.

When both the large paper deck paper level detection sensors 1 and 2 (LPDPLDSENS1/2) have turned on, the message indicating paper is getting low is shown on the message display. This message is not shown when only one of them is on.

As more copies are made with the message on, large paper deck paper path sensors 1, 2 and 3 (LPDPPSENS1, 2, 3) and the large paper deck paper empty sensor (LPDPESENS) start to detect exhaustion of paper, and the message on the message display changes to that requesting paper to be loaded.

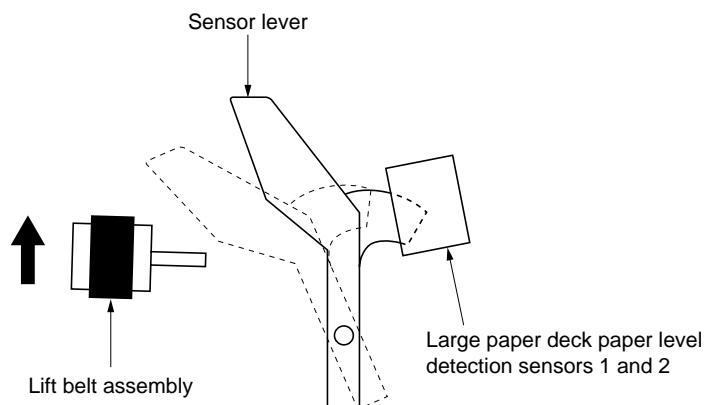


Figure 2-1-9 Detecting the paper level

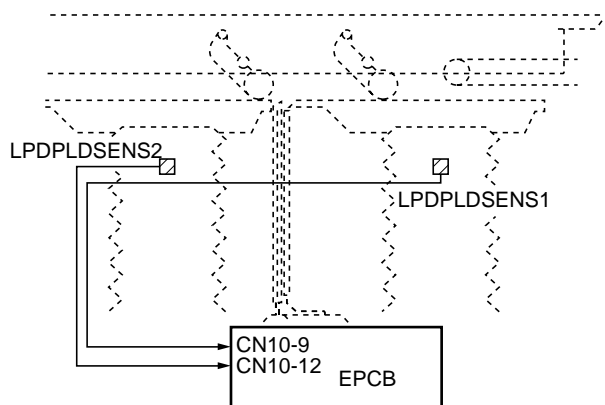


Figure 2-1-10 Paper level detection system block diagram

(3) Paper feed from the bypass table

The bypass table can be hold up to 100 sheets of paper at one time.

When the start key is pressed, the bypass lift clutch (BYPLCL) turns on and the bypass lift guide operates. The paper placed on the bypass table comes into contact with the bypass forwarding pulley, is primary paper fed by the rotating of the bypass forwarding roller and is conveyed to the bypass upper and lower paper feed pulleys.

Also during paper feed, the bypass lower paper feed pulley prevents multiple sheets from being fed at one time by the torque limiter.

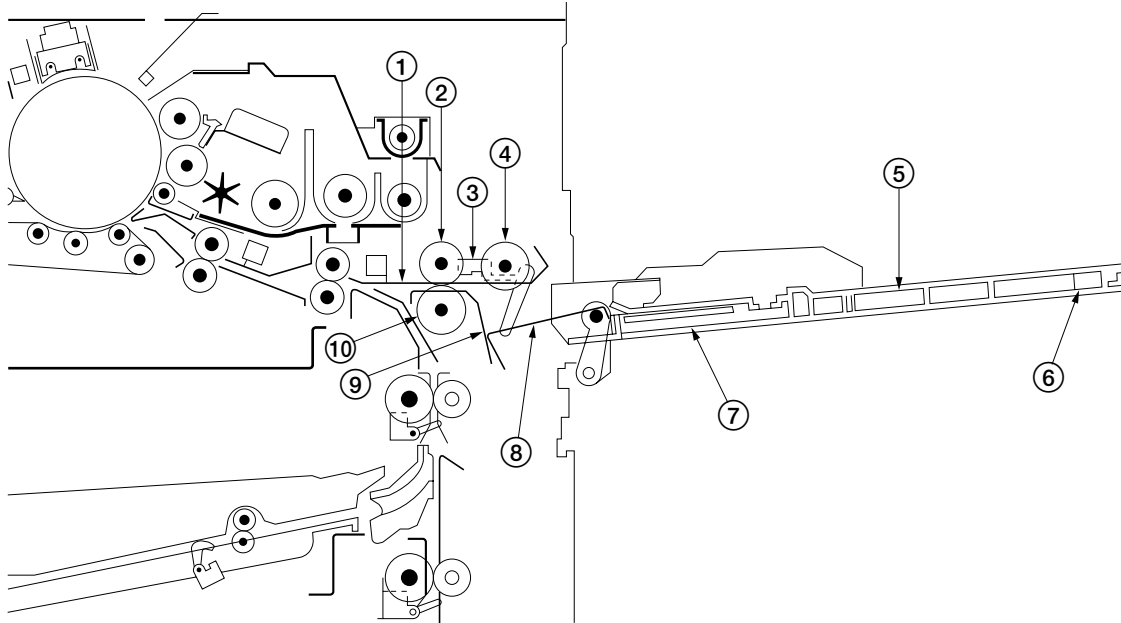


Figure 2-1-11 Bypass paper feed section

- ① Upper bypass guide
- ② Bypass upper paper feed pulley
- ③ Bypass paper switch (BYPPSW)
- ④ Bypass forwarding roller
- ⑤ Bypass table
- ⑥ Bypass paper length switch (BYPPLSW)
- ⑦ Bypass paper width switch (BYPPWSW)
- ⑧ Bypass lift guide
- ⑨ Lower bypass guide
- ⑩ Bypass lower paper feed pulley

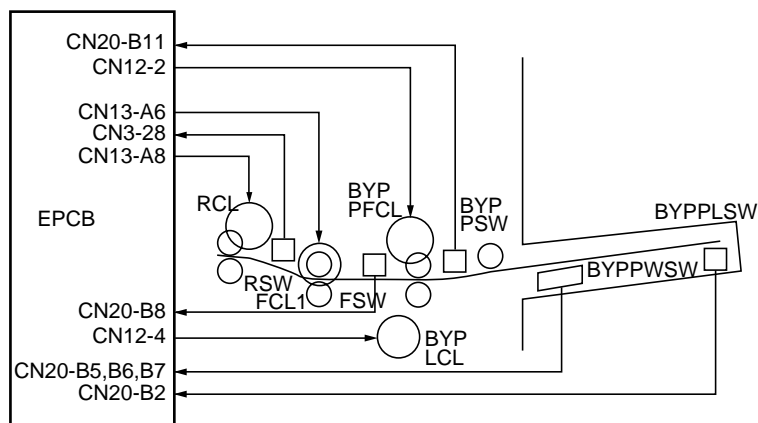
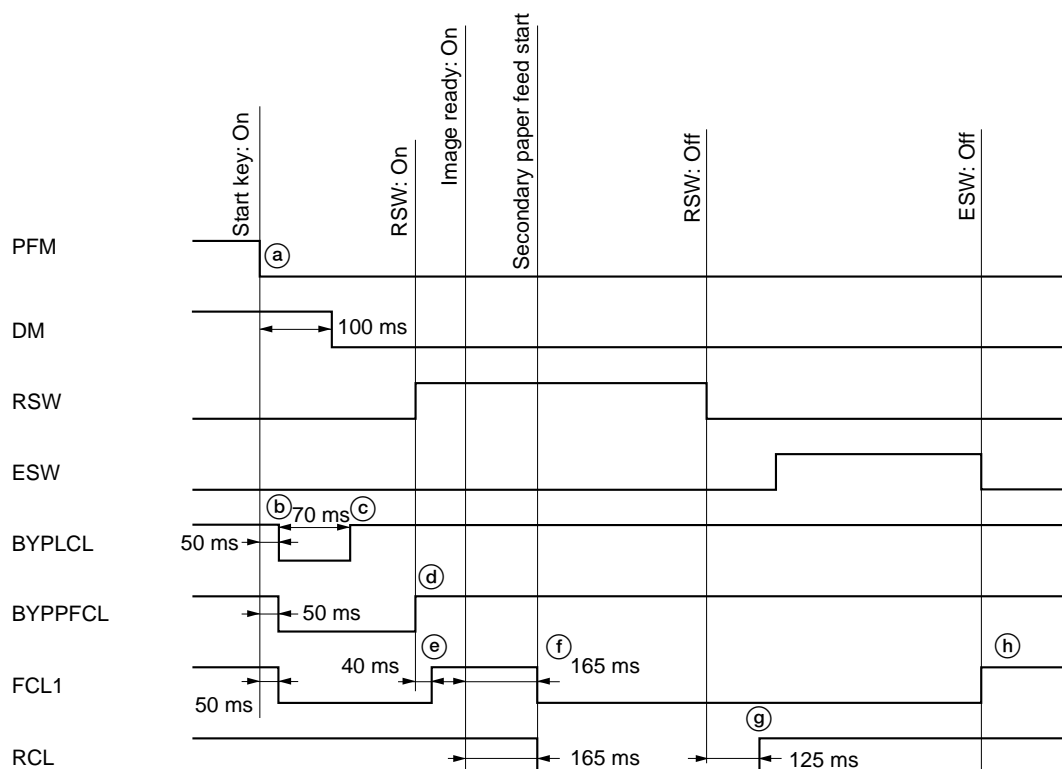


Figure 2-1-12 Bypass paper feed section block diagram



Paper size A4R/8 1/2" × 11"

Timing chart 2-1-4 Paper feed from the bypass table

- (a) When the start key is pressed, the paper feed motor (PFM) turns on and 100 ms later the drive motor (DM) turns on, thereby starting machine drive.
- (b) 50 ms after the machine drive starts, the bypass lift clutch (BYPLCL), bypass paper feed clutch (BYPPFCL) and feed clutch 1 (FCL1) turn on. The turning on of the bypass lift clutch (BYPLCL) raises the bypass lift guide and the paper placed on the bypass table makes contact with the bypass forwarding roller. When the bypass paper feed clutch (BYPPFCL) and feed clutch 1 (FCL1) turn on, the bypass forwarding roller, bypass upper paper feed pulley and bypass lower paper feed pulley rotate to start primary paper feed.
- (c) 70 ms after the bypass lift clutch (BYPLCL) turns on, the clutch turns off, lowering the bypass lift guide to the standby position.
- (d) When the leading edge of the paper turns the registration switch (RSW) on, the bypass paper feed clutch (BYPPFCL) turns off.
- (e) 40 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutch 1 (FCL1) turns off, completing the primary paper feed.
- (f) 165 ms after the image ready signal turns on, the registration clutch (RCL) and feed clutch 1 (FCL1) turn on to start secondary paper feed.
- (g) 125 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off, completing the secondary paper feed.
- (h) When the trailing edge of the paper turns the eject switch (ESW) off, feed clutch 1 (FCL1) turns off.

2-1-2 Main charging section

The main charging section consists of the main charger assembly, drum and drum surface potential sensor (DSPSENS) and so on. The drum is electrically charged uniformly by means of a grid to form a latent image on the surface. The drum surface potential sensor (DSPSENS) reads the drum surface potential and corrects surface potential. The main charger assembly has the main charger cleaning motor (MCCM), main charger cleaning pad for automatic cleaning of the charger wire. The drum heater (DH)* inside the drum is turned on and off based on changes in ambient temperature and humidity to stabilize the image quality.

*Optional.

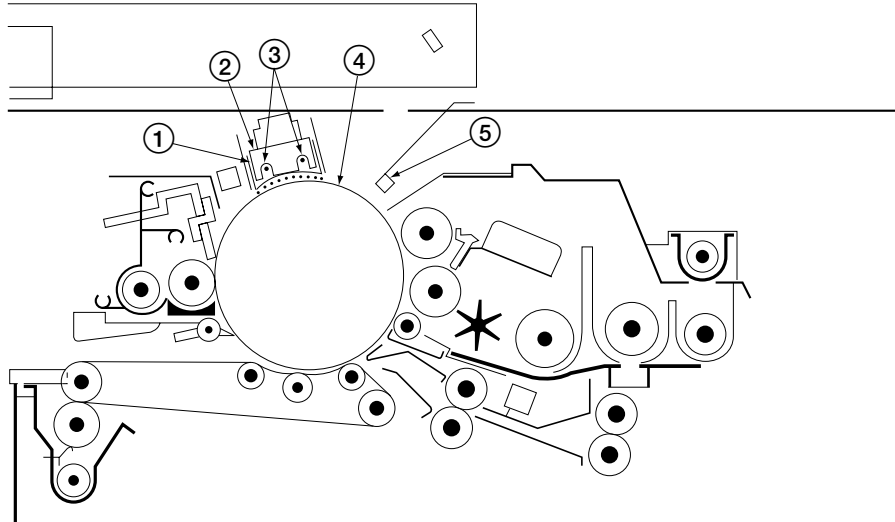


Figure 2-1-13 Main charging section

- ① Charger grid assembly
- ② Main charger housing
- ③ Main charger wire (Tungsten wire)
- ④ Drum
- ⑤ Drum surface potential sensor (DSPSENS)

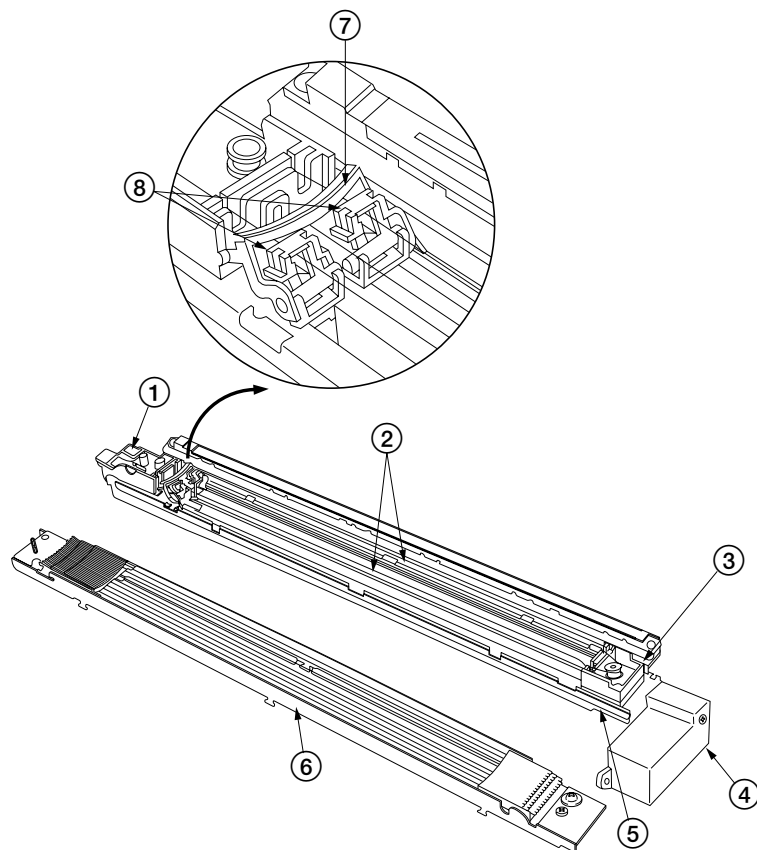


Figure 2-1-14 Main charger assembly

- ① Main charger rear housing
- ② Main charger (Tungsten wire)
- ③ Main charger front housing
- ④ Main charger cleaning motor (MCCM)
- ⑤ Main charger base
- ⑥ Charger grid assembly
- ⑦ Grid cleaning pad
- ⑧ Main charger cleaning pads

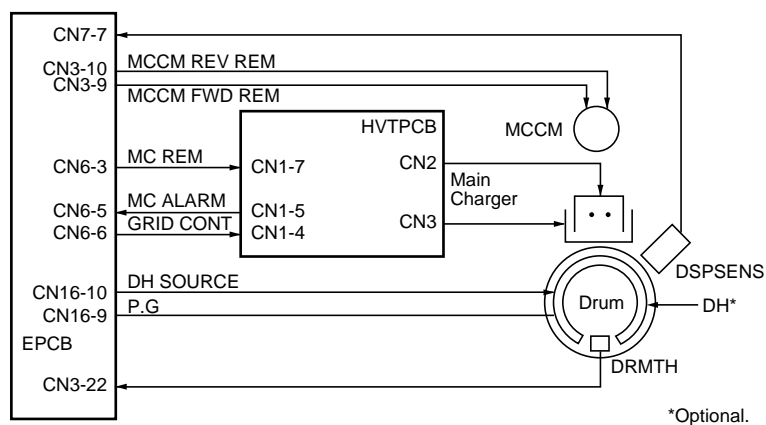
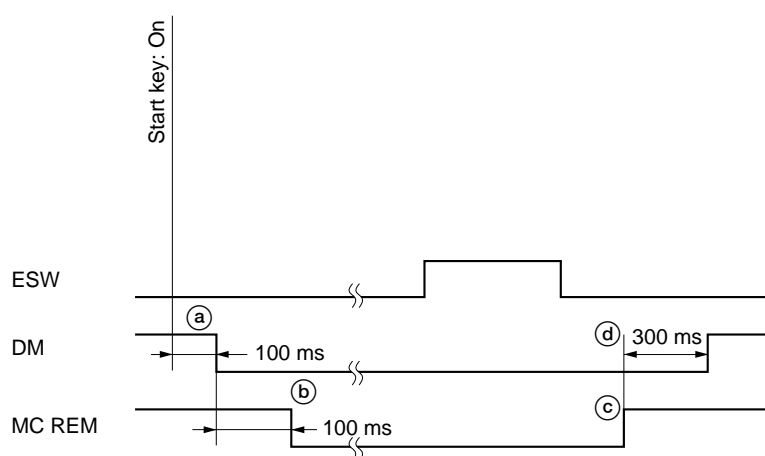


Figure 2-1-15 Main charging section block diagram



Timing chart 2-1-5 Main charging

- (a) 100 ms after the start key is pressed, the drive motor (DM) turns on to start machine drive.
- (b) 100 ms after the drive motor (DM) turns on, the MC REM signal turns on, high voltage is applied to the main charger from the high voltage transformer PCB (HVTPCB) and main charging starts.
- (c) The MC REM signal turns off and main charging ends.
- (d) 300 ms after the end of main charging (MC REM), the drive motor (DM) 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.

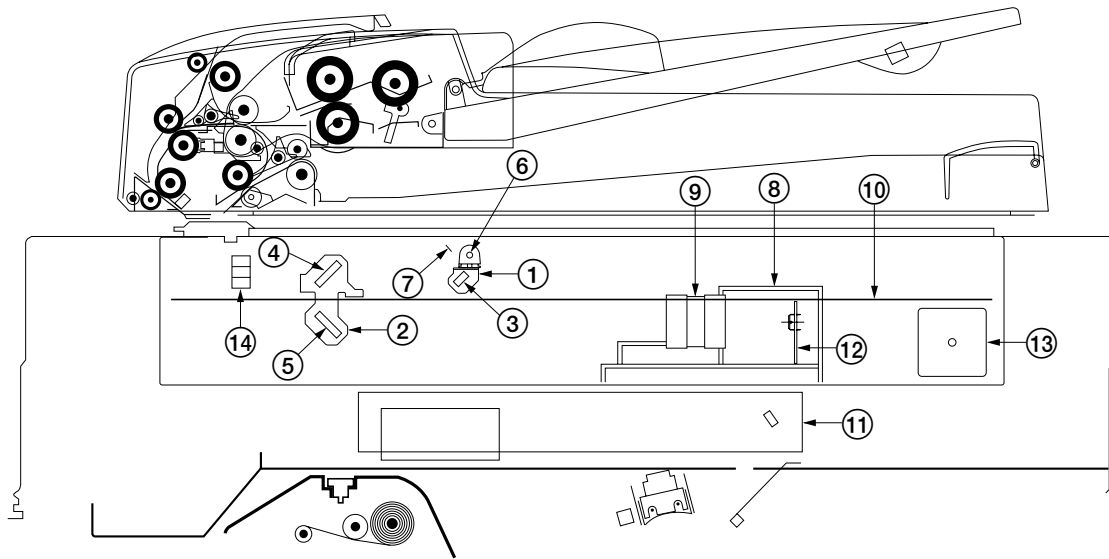


Figure 2-1-16 Optical section

- | | |
|-----------------------|--|
| ① Scanner | ⑨ Lens |
| ② Mirror frame | ⑩ Optical rail |
| ③ Mirror 1 | ⑪ Laser scanner unit (LSU) |
| ④ Mirror 2 | ⑫ CCD PCB (CCDPCB) |
| ⑤ Mirror 3 | ⑬ Scanner motor (SM) |
| ⑥ Exposure lamp (EL) | ⑭ Scanner home position switch (SHPSW) |
| ⑦ Reflector | |
| ⑧ Image scanning unit | |

(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 frame 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 frame is half the speed of the scanner. When the SRDF is used, the scanner and mirror frame stop at the DF original scanning position to start scanning.

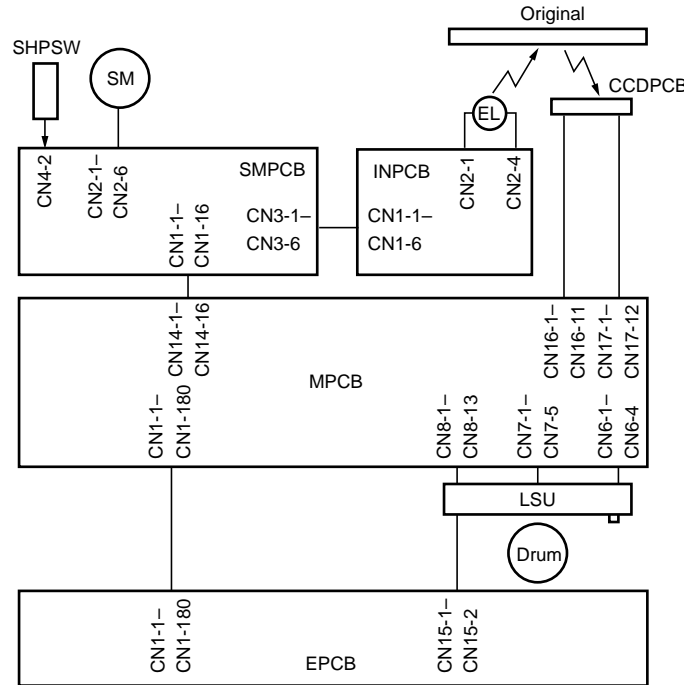
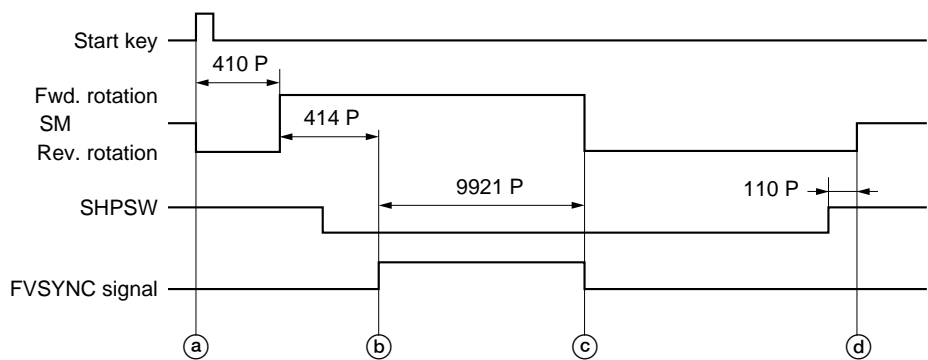


Figure 2-1-17 Optical section block diagram



Manual copy density control, copy paper: A3/11" × 17", magnification ratio 100%

Timing chart 2-1-6 Scanner operation

- Ⓐ When the start key is pressed, the scanner motor (SM) reverses for 410 pulses and then rotates forward.
- Ⓑ 414 pulses after the scanner motor rotates forward, the FVSYNC signal turns on for 9921 pulses for scanning.
- Ⓒ The scanner motor (SM) reverses to return the scanner to the home position.
- Ⓓ 110 pulses after the scanner home position switch (SHPSW) turns on, 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.

• Laser scanner unit

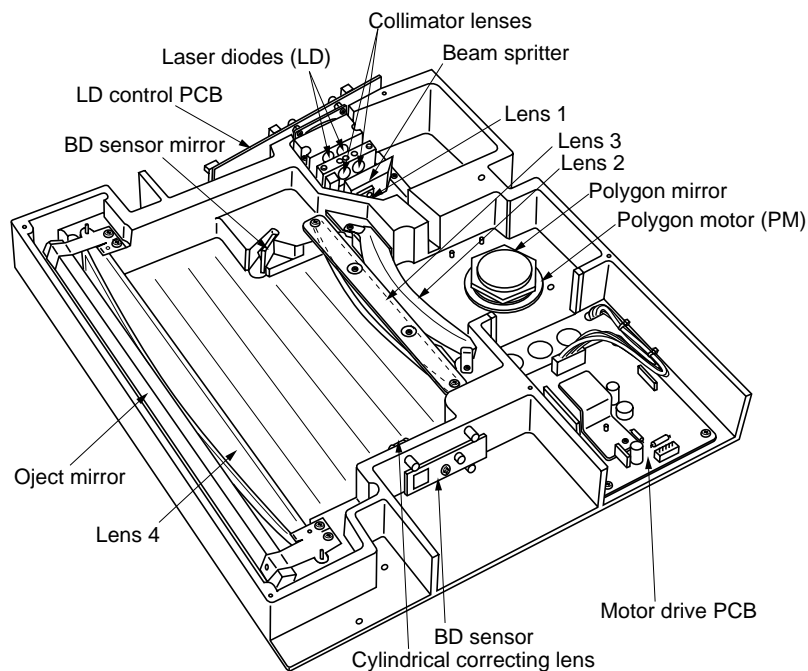


Figure 2-1-18 Laser scanner unit (1)

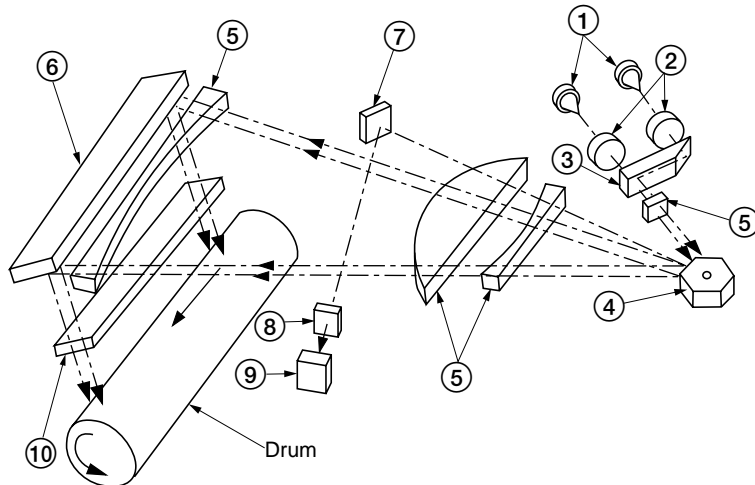


Figure 2-1-19 Laser scanner unit (2)

- ① Laser diodes: Generate the laser beams that form the latent image on the drum.
- ② Collimator lenses: Collimate the diffused laser beams emitted from the laser diodes into cylindrical beams.
- ③ Beam splitter: Refracts the laser beam emitted from one of the laser diodes so that it becomes parallel to the other laser beam, and sends those two beams to lens 1.
- ④ Polygon mirror: 6-faced mirror that rotates at approximately 37795 rpm. Each face reflects the laser beams toward the drum in the horizontal (main) scan direction. The motion of the beams across the drum forms one scan line.
- ⑤ Lenses 1, 2, 3 and 4: Maintain scanning speed across the drum and beam diameters constant. These lenses also correct the vertical alignment of the polygon mirror so that the focal plane of the laser beams are always on the drum.
- ⑥ Object mirror: Reflects the laser beams onto the drum surface.
- ⑦ BD sensor mirror: Directs a laser beam to the BD sensor to generate the horizontal sync signal.
- ⑧ Cylindrical correcting lens: Corrects for the deviation of the laser beam reflected by the BD sensor mirror.
- ⑨ BD sensor: Detects the laser beam reflected by BD sensor mirror, and sends the detection signal to the main PCB (MPCB). The main PCB (MPCB) uses this signal to determine the horizontal scanning signal timing.
- ⑩ Glass dust filter: Prevents dust from entering the unit.

The dimensions of the laser beam are as shown in Figure 2-1-20.

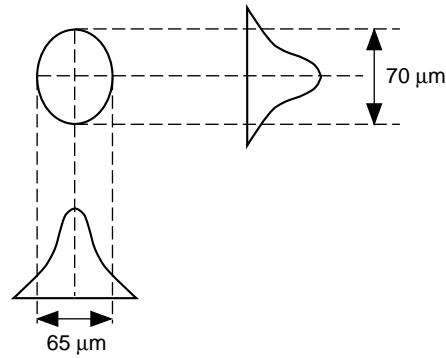


Figure 2-1-20

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 2-1-21. 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.

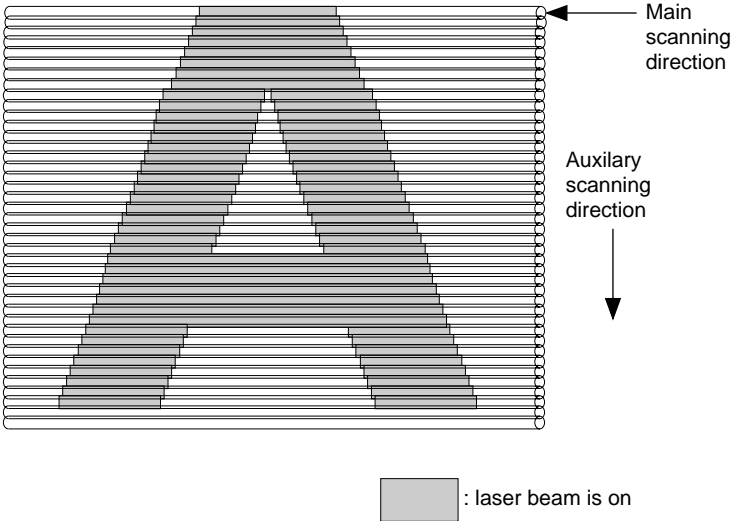


Figure 2-1-21

2-1-4 Developing section

The developing section consists of the developing assembly and the toner hopper assembly.

The developing assembly consists of the developing roller where a magnetic brush is formed, the doctor blade and the developing spirals that agitate the developer.

The toner hopper assembly consists of the toner conveying spiral, toner draw spiral, hopper agitation spring and turns on/off the toner feed motor according to the toner sensor output voltage, and supply toner in the toner hopper to the developing assembly. (The toner hopper assembly is attached to the developing assembly side (machine front).

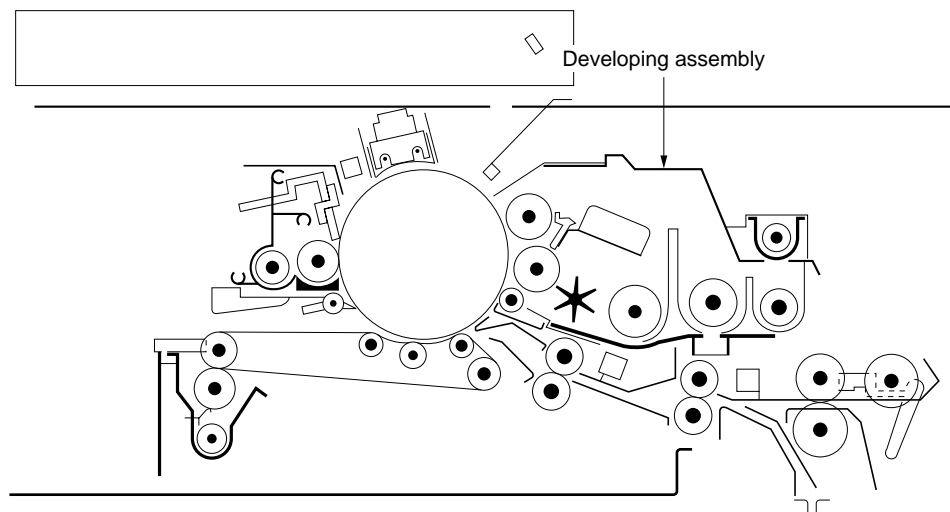


Figure 2-1-22 Developing section

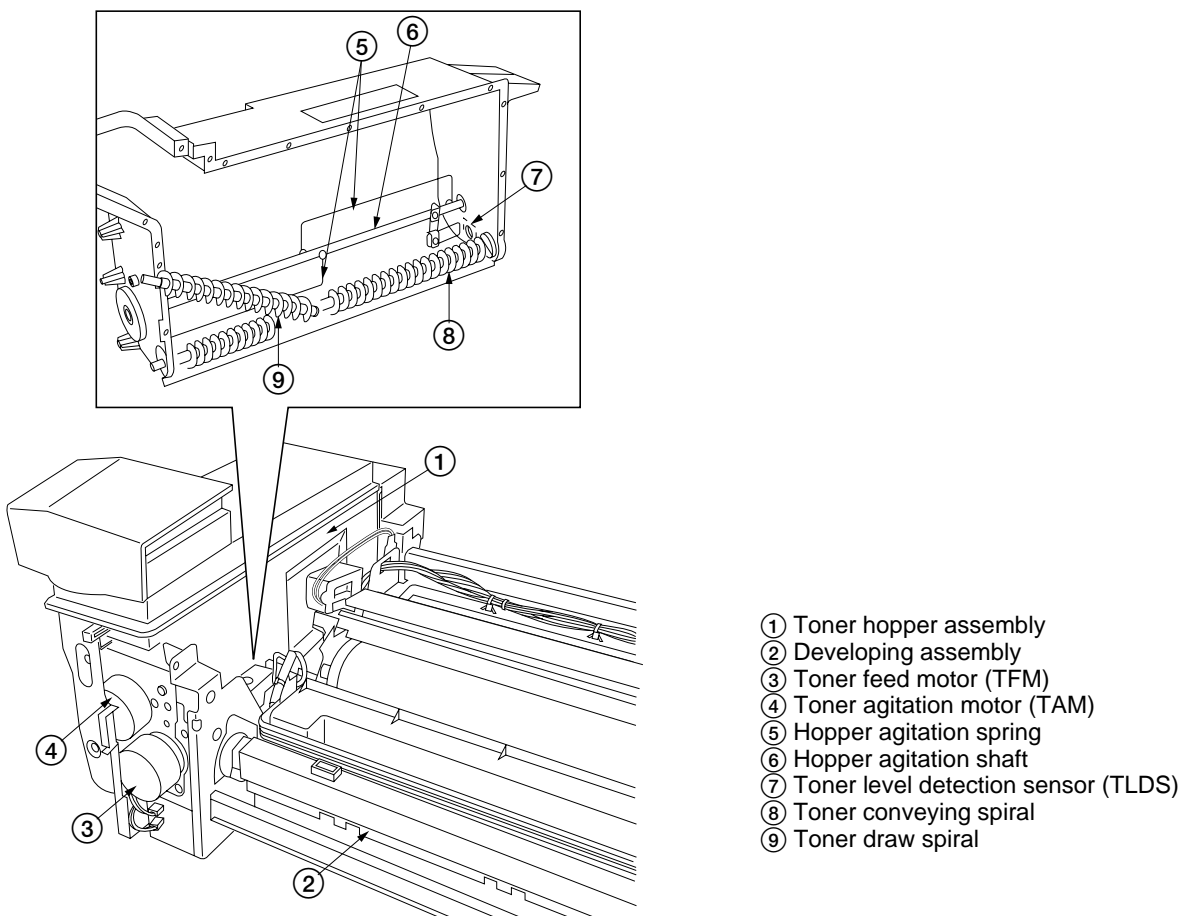


Figure 2-1-23 Toner hopper assembly

(1) Formation of magnetic brush

The upper and lower developing rollers consist of a magnet roller with three or five poles and a sleeve roller. Rotation of the sleeve roller around the magnet roller entrains developer, 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 (HVTPCB) is applied to the upper and lower developing rollers to provide image contrast.

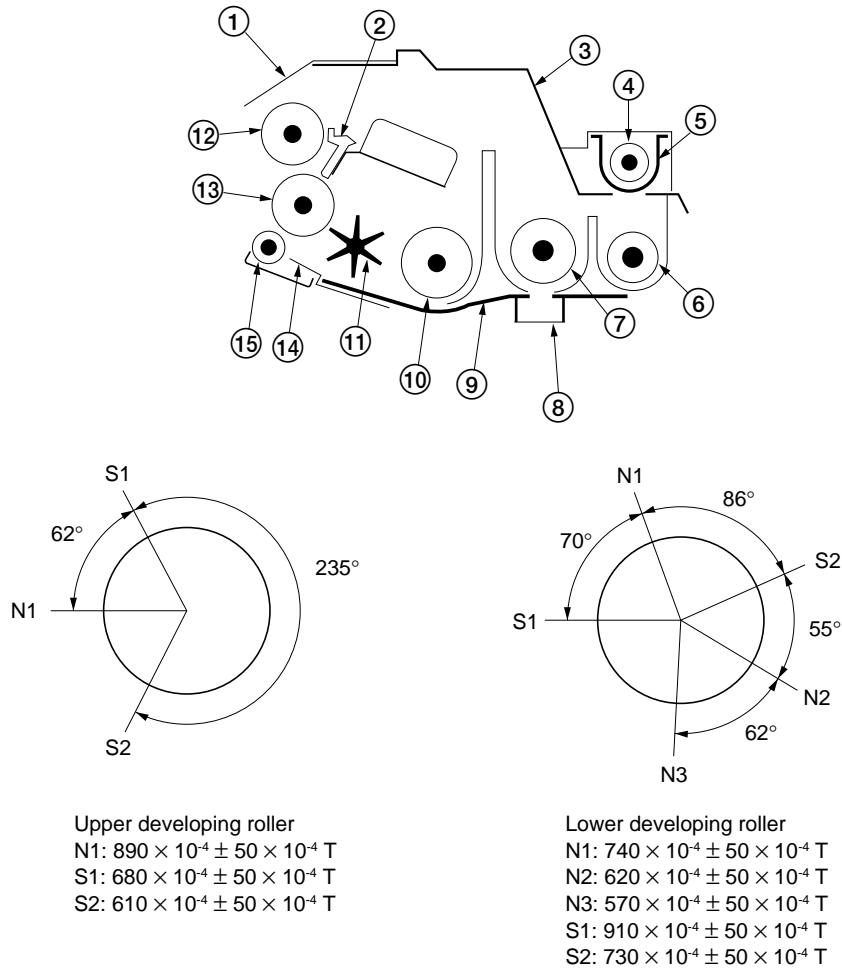


Figure 2-1-24 Forming a magnetic brush

- | | |
|------------------------------------|--|
| ① Developing upper seal | ⑨ Developing housing |
| ② Doctor blade (Doctor blade stay) | ⑩ Developing left spiral |
| ③ Developing cover | ⑪ Developing paddle |
| ④ Toner supply spiral | ⑫ Upper developing roller |
| ⑤ Toner supply case | ⑬ Lower developing roller |
| ⑥ Developing right spiral | ⑭ Developing blade |
| ⑦ Developing center spiral | ⑮ Developing lower roller (Toner removal roller) |
| ⑧ Toner sensor (TNS) | |

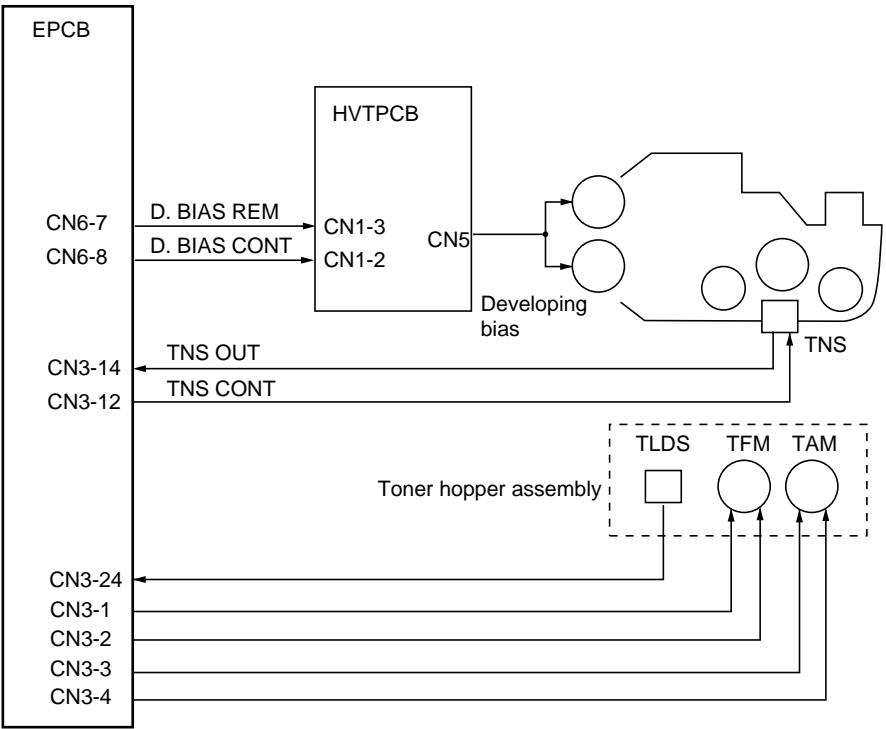


Figure 2-1-25 Developing section block diagram

(2) Toner density control

To maintain the toner density of the developer constant, the toner sensor (TNS) and the toner level sensor (TLDS) detect the toner density and toner level in the toner hopper respectively. Based on the detection result, toner is fed by turning the toner feed motor (TFM) and toner agitation motor (TAM) on and off.

(2-1) Toner empty detection by the toner sensor

Toner density control is performed using as the reference the toner control level (FIRST TARGET) set automatically when maintenance item U130 is run after loading developer.

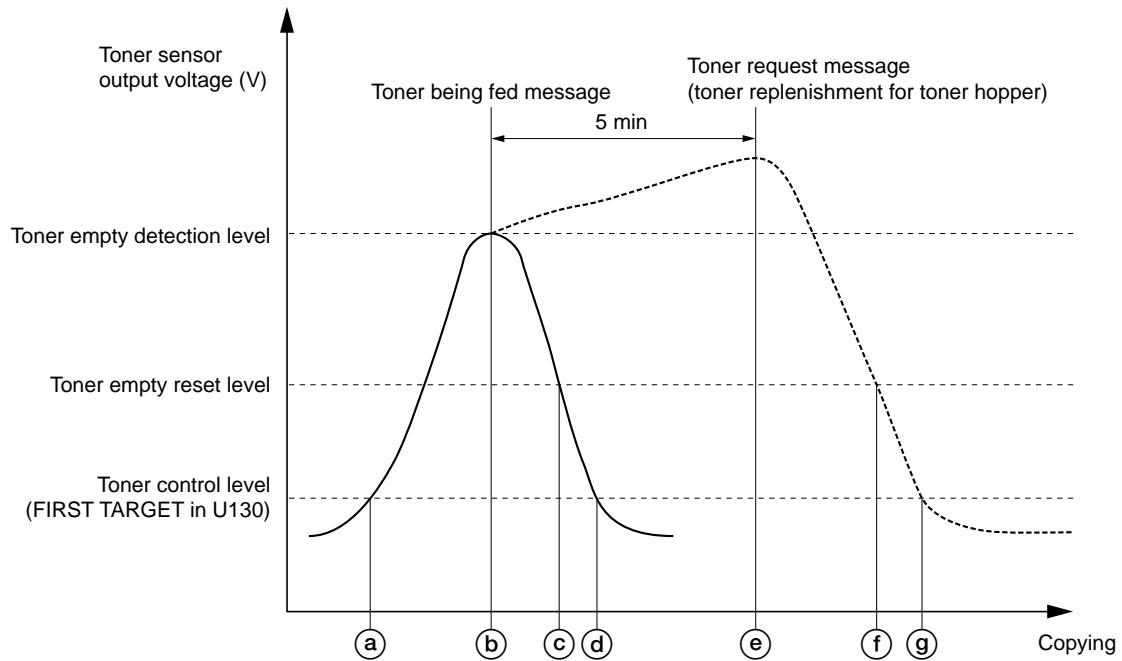


Figure 2-1-26 Toner density control

- Ⓐ When the toner sensor output voltage exceeds the toner control level, the toner feed motor (TFM) turns on to feed toner.
- Ⓑ When the toner sensor output voltage exceeds the toner empty detection level, the toner being fed message appears and forced toner feed is conducted for up to 5 minutes.
- Ⓒ When the toner sensor output voltage drops to the toner empty reset level, the toner being fed message disappears.
- Ⓓ When the toner sensor output voltage drops to the toner control level, the toner feed motor (TFM) turns off and toner feed ends.
- Ⓔ If the toner sensor output voltage does not fall to the toner empty detection level after 5-minute's forced toner feed, the toner request message appears and copies are made based on the conditions set in maintenance item U258. When toner is replenished into the toner hopper and the toner level sensor (TLDS) turns on, the toner feed motor (TFM) turns on to feed toner. The toner being fed message appears.
- Ⓕ When the toner sensor output voltage drops to the toner empty reset level, the toner being fed message disappears.
- Ⓖ When the toner sensor output voltage drops to the toner control level, the toner feed motor (TFM) turns off, and the toner feed ends.

(2-2) Controlling the toner feed motor and toner agitation motor

The toner feed motor (TFM) and toner agitation motor (TAM) are turned on and off based on the toner sensor output voltage as follows:

• Under normal conditions

When the toner sensor output voltage is larger than the toner control level

Toner feed motor (TFM): Turned on for 0.5 s and turned off for 1.5 s

Toner agitation motor (TAM): Turned on for 1 s and turned off for 1 s

When the toner sensor output voltage is larger than the toner control level plus 20

Toner feed motor (TFM): Turned on for 0.5 s and turned off for 0.5 s

Toner agitation motor (TAM): Turned on for 0.5 s and turned off for 0.5 s

When the toner sensor output voltage is larger than the toner control level plus 25

Toner feed motor (TFM): Continuously turned on

Toner agitation motor (TAM): Continuously turned on

• During toner feed

When the toner sensor output voltage is larger than the toner empty detection level (toner feed performed when the level of toner in the toner hopper drops abruptly)

Toner feed motor (TFM): Continuously turned on

Toner agitation motor (TAM): Continuously turned on

When the toner sensor output voltage is larger than the toner control level plus 20

Toner feed motor (TFM): Turned on for 1.5 s and turned off for 0.5 s

Toner agitation motor (TAM): Turned on for 1.5 s and turned off for 0.5 s

When the toner sensor output voltage is larger than the toner control level plus 14

Toner feed motor (TFM): Turned on for 1 s and turned off for 1 s

Toner agitation motor (TAM): Turned on for 1.5 s and turned off for 0.5 s

(2-3) Toner empty detection by the toner level sensor

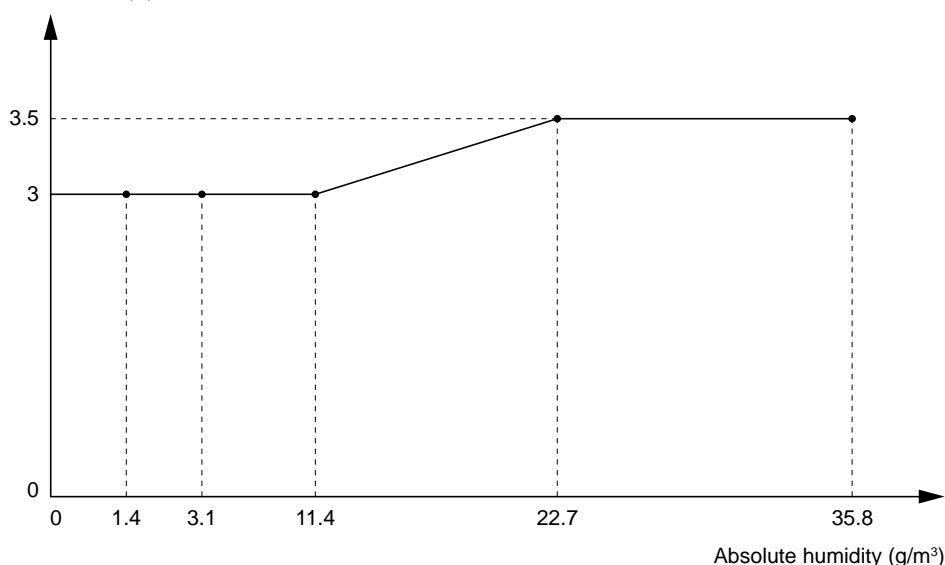
When the setting of maintenance item U136 is "ON," the toner level sensor (TLDS) detects toner empty in the toner hopper.

1. When the toner in the toner hopper is exhausted and the toner level sensor (TLDS) turns off, toner empty is detected and the toner request message appears.
2. When the number of copies made after the toner level sensor (TLDS) has turned off reaches the limit set in maintenance item U258, the toner request message and a message indicating that copying is disabled appear.
3. When toner is replenished into the toner hopper and the toner level sensor (TLDS) turns on, the toner empty detection is reset and toner feed motor (TFM) starts toner feed.

(2-4) Toner control level absolute humidity correction

The results of toner density detection vary with the temperature and humidity due to their influence on the toner sensor output characteristic. Therefore, the toner control level is corrected based on the absolute humidity level detected by the humidity sensor PCB (HUMPCB).

Toner control level (V)



The above correction is for when "TARGET" of U154 is 154.

Figure 2-1-27 Toner control level absolute humidity correction

2-1-5 Transfer and conveying sections

The transfer and paper conveying section comprises the transfer roller for transferring the toner image on the drum onto the paper, the transfer charger belt for conveying the paper after transfer to the fixing section, the belt cleaning brush that cleans the transfer charger belt, etc.

When the copier is in the ready state, the transfer charger belt is in the released position (the state separated from the drum). When copying starts, the transfer charger belt release clutch (TCBRCL) comes on and the action of the transfer charger belt cam engages the transfer charger belt with the drum. When the paper passes between the drum and the transfer charger belt, the transfer bias current output from the transfer charger belt bias PCB (TCBPCB) is applied to the transfer roller. This effects the transfer charging and the toner image developed on the drum is transferred to the paper. Also, through the transfer charge, the transfer charger belt is charged and pulls the paper and separates it from the drum.

Bias voltage is applied to the belt cleaning brush to improve the cleaning effect and to prevent residual toner from sticking to the belt cleaning brush.

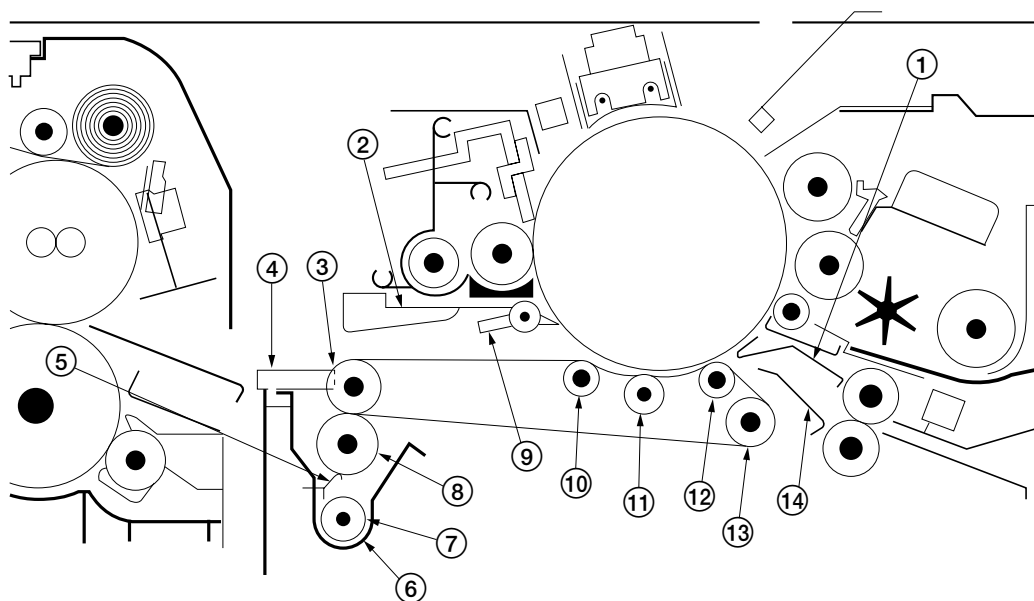


Figure 2-1-28 Transfer and conveying sections

- | | |
|--------------------------------------|------------------------------|
| ① Upper front transfer guide | ⑧ Belt cleaning brush |
| ② Transfer charger belt | ⑨ Separation claw |
| ③ Transfer charger belt drive roller | ⑩ Middle roller |
| ④ Rear transfer guide | ⑪ Transfer roller |
| ⑤ Belt cleaning scraper | ⑫ Middle roller |
| ⑥ Belt cleaning housing | ⑬ Idle roller |
| ⑦ Belt cleaning spiral | ⑭ Lower front transfer guide |

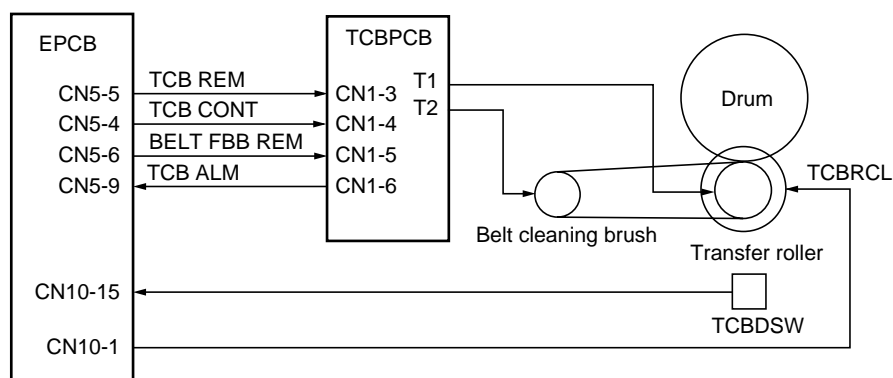
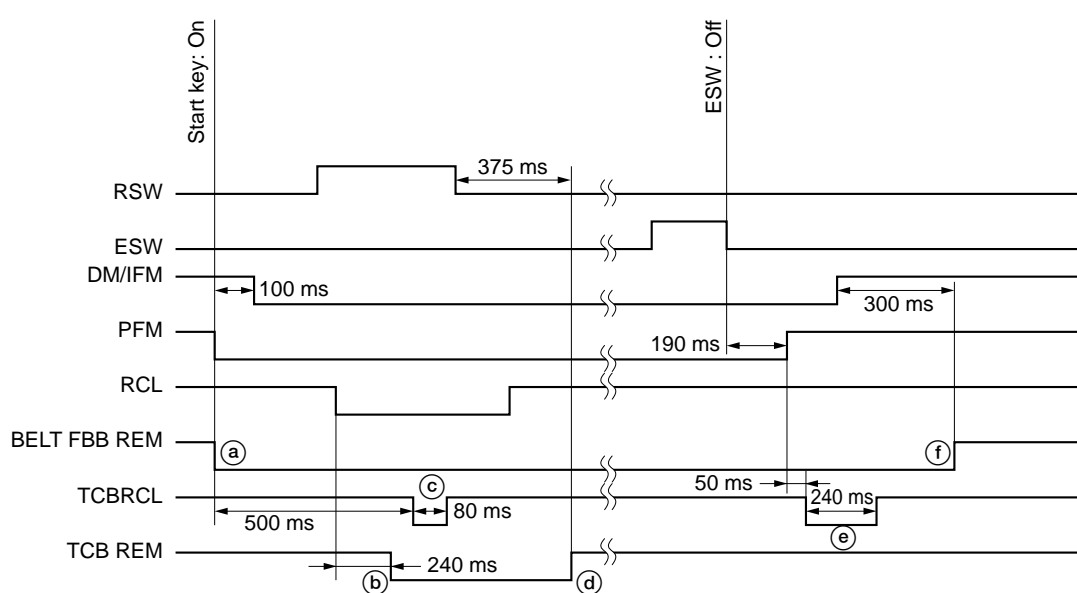


Figure 2-1-29 Transfer and conveying sections block diagram



Timing chart 2-1-7 Transfer operation

- Ⓐ When the start key is pressed, the paper feed motor (PFM) turns on, which starts the drive for the machine. At the same time, the BELT FBB REM signal turns on and the cleaning bias voltage is applied to the belt cleaning brush from the transfer charger belt bias PCB (TCBPCB).
- Ⓑ 240 ms after the registration clutch (RCL) turns on, the TCB REM signal turns on, the transfer bias current is applied to the transfer roller from the transfer charger belt bias PCB (TCBPCB) and the transfer charging starts.
- Ⓒ 500 ms after the machine starts the drive, the transfer charger belt release clutch (TCBRCL) turns on for 80 ms. The transfer charger belt unit is lifted up by the transfer charger belt cam, and the transfer charger belt sticks to the drum.
- Ⓓ 375 ms after the trailing edge of the paper turns the registration switch (RSW) off, the TCB REM signal turns off and the transfer charging ends.
- Ⓔ 50 ms after the paper feed motor (PFM) turns off, the transfer charger belt release clutch (TCBRCL) turns on for 240 ms. The transfer charger belt unit is lowered, and the transfer charger belt is released from the drum and returns to the copy ready position.
- Ⓕ 300 ms after the drive motor (DM) and image forming motor (IFM) turn off, the BELT FBB REM signal turn off and the applying of the cleaning bias voltage to the belt cleaning brush ends.

2-1-6 Cleaning section

The copier employs a blade cleaning method with a cleaning brush.

The cleaning section consists of the cleaning blade and cleaning brush which remove residual toner from the drum surface after transfer, the cleaning brush scraper that remove toner from the cleaning brush, and the cleaning spiral that carries the residual toner to the waste toner tank.

After the transfer process is completed, residual toner on the drum is removed first by the rotation of the cleaning brush and then by the cleaning blade.

The cleaning bias voltage is applied to the cleaning brush to reduce residual charge on the drum surface and at the same time to prevent toner removed from the drum surface from sticking to the cleaning brush due to static.

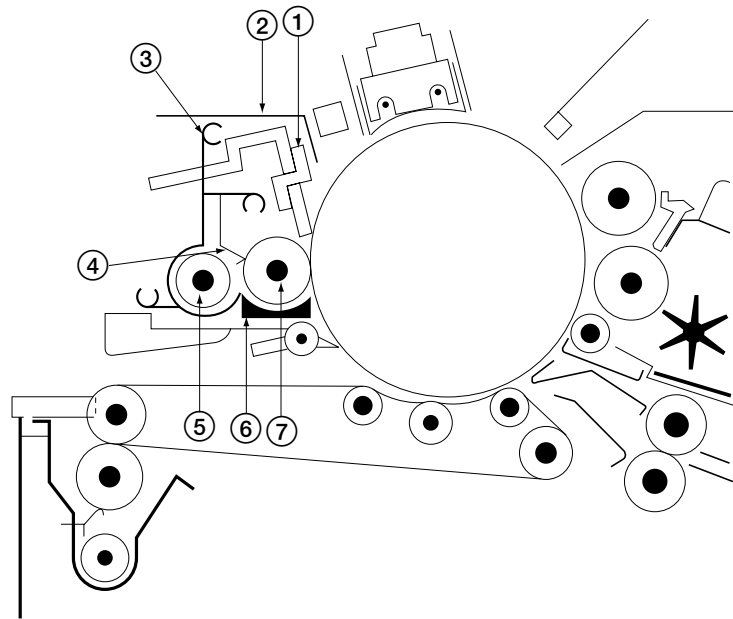


Figure 2-1-30 Cleaning section

- ① Cleaning blade
- ② Upper cleaning cover
- ③ Cleaning stay
- ④ Cleaning brush scraper
- ⑤ Cleaning spiral
- ⑥ Lower cleaning base
- ⑦ Cleaning brush

2-1-7 Charge erasing section

The main component of the charge erasing section is the cleaning lamp (CL).

The cleaning lamp (CL) consists of 27 LEDs (red).

The cleaning lamp (CL) removes residual charge from the drum surface.

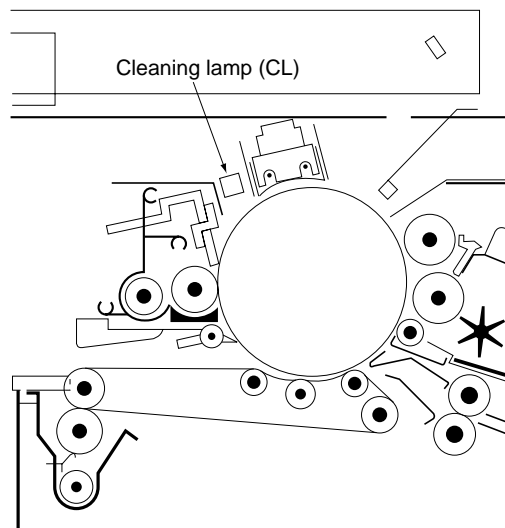


Figure 2-1-31 Charge erasing section

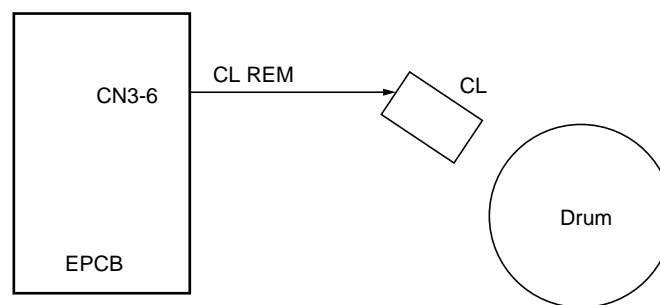
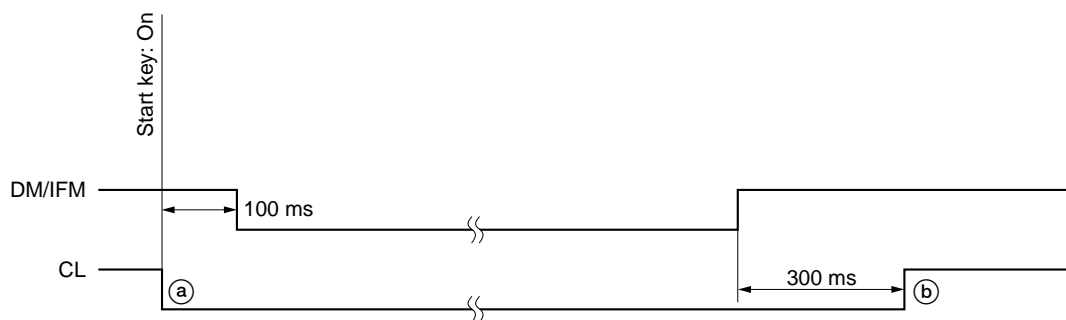


Figure 2-1-32 Charge erasing section block diagram



Timing chart 2-1-8 Charge erasing operation

(a) When the start key is pressed, the cleaning lamp (CL) lights to remove the residual charge from the drum surface.

(b) 300 ms after the drive motor (DM) and image forming motor (IFM) turn off and the machine drive stops, the cleaning lamp (CL) turns off.

2-1-8 Fixing section

The fixing and eject section consists of the parts shown in the figure.

When the paper reaches the fixing section after the transfer process, it passes through the gap between the press roller and heat roller, which is heated by fixing heaters M and S (H1 and H2), where pressure is applied by the pressure springs so that toner on the paper is melted and fused onto the paper.

When the fixing process is completed, the paper is separated from the heat roller and press roller by their separation claws and is ejected out of the copier by the rotation of the fixing eject pulley and roller.

The cleaning felt in contact with the heat roller cleans the surface of the heat roller.

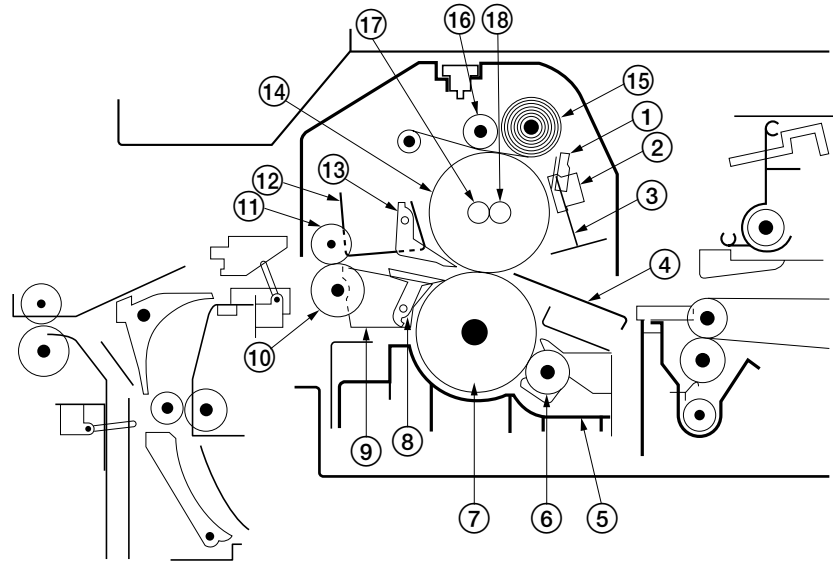


Figure 2-1-33 Fixing section

- | | |
|--------------------------------|-------------------------------|
| ① Fixing unit thermistor (FTH) | ⑩ Fixing eject roller |
| ② Fixing unit thermostat (TH) | ⑪ Fixing eject pulley |
| ③ Upper front fixing guide | ⑫ Upper fixing eject guide |
| ④ Lower front fixing guide | ⑬ Heat roller separation claw |
| ⑤ Lower fixing housing | ⑭ Heat roller |
| ⑥ Lower cleaning roller | ⑮ Cleaning felt |
| ⑦ Press roller | ⑯ Cleaning pressure roller |
| ⑧ Press roller separation claw | ⑰ Fixing heater S (H2) |
| ⑨ Lower fixing eject guide | ⑱ Fixing heater M (H1) |

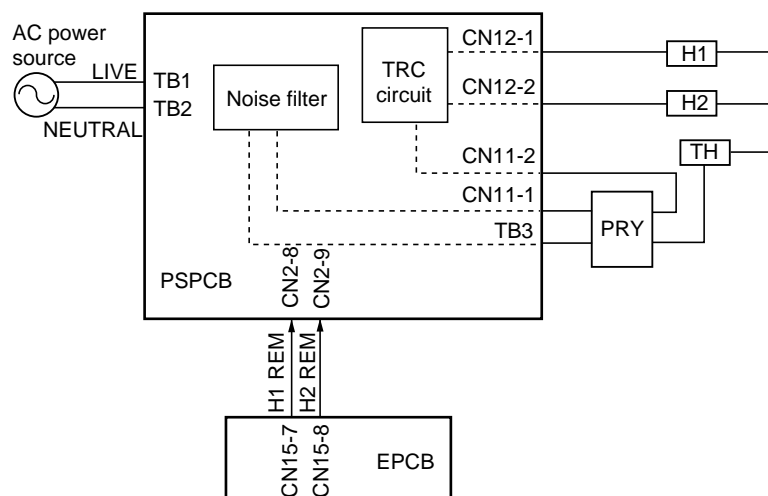
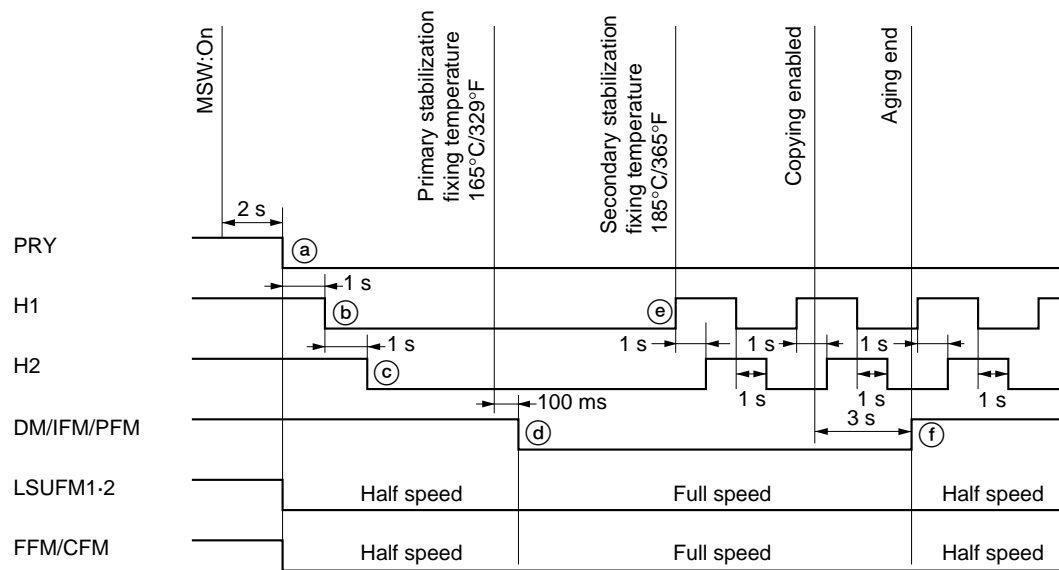


Figure 2-1-34 Fixing section block diagram



Timing chart 2-1-9 Fixing temperature control

- Ⓐ 2 s after the main switch (MSW) is turned on, the power relay (PRY) turns on and LSU fan motors 1 and 2 (LSUFM1 and 2), the fixing unit fan motor (FFM) and the cooling fan motor (CFM) rotate at half speed.
- Ⓑ 1 s after the power relay (PRY) turns on, fixing heater M (H1) turns on to heat the heat roller.
- Ⓒ 1 s after fixing heater M (H1) turns on, fixing heater S (H2) turns on.
- Ⓓ 100 ms after the fixing temperature reaches the primary stabilization temperature (165°C/329°F), the drive motor (DM), image forming motor (IFM) and paper feed motor (PFM) turn on to start aging. At the same time, LSU fan motors 1 and 2 (LSUFM1 and 2), the fixing fan motor (FFM) and the cooling fan motor (CFM) start rotating at full speed.
- Ⓔ When the fixing temperature reaches the secondary stabilization temperature (185°C/365°F), fixing heater M (H1) and fixing heater S (H2) turn on and off to maintain the fixing control temperature at 185°C/365°F.
- Ⓕ 3 s after copying is enabled, the drive motor (DM), image forming motor (IFM) and paper feed motor (PFM) turn off, and aging ends. At the same time, LSU fan motors 1 and 2 (LSUFM1 and 2), the fixing fan motor (FFM) and the cooling fan motor (CFM) start rotating at half speed.

2-1-9 Feedshift and eject sections

The feedshift and eject sections switches the paper path by copy mode and eject paper or convey the paper to the duplex section.

For duplex copy mode, the paper for which copying on the rear side has been completed is conveyed to the duplex section by the feedshift section operation. After the conveyed paper is inverted, it is fed again for front side copying.

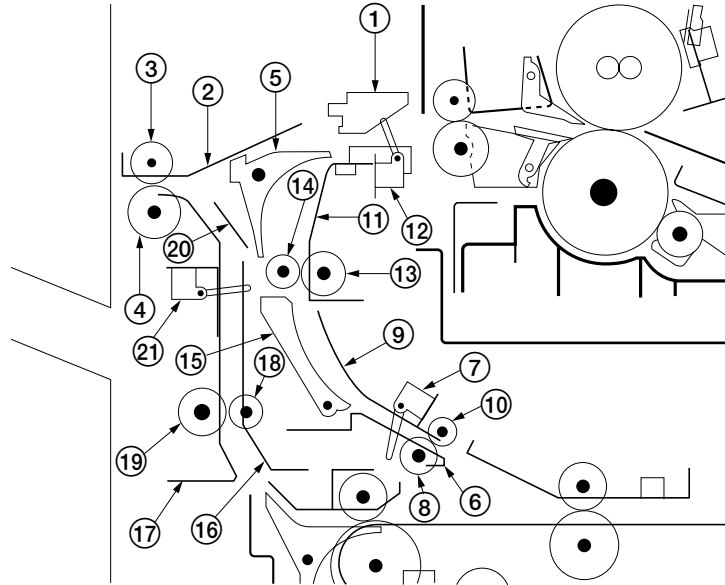


Figure 2-1-35 Feedshift and eject sections

- | | |
|-------------------------------------|--------------------------------------|
| ① Upper feedshift guide | ⑫ Eject switch (ESW) |
| ② Upper eject guide | ⑬ Right feedshift roller |
| ③ Upper eject roller | ⑭ Left feedshift roller |
| ④ Eject roller | ⑮ Left feedshift guide |
| ⑤ Conveying shift guide | ⑯ Lower right switchback eject guide |
| ⑥ Lower feedshift eject guide | ⑰ Left switchback eject guide |
| ⑦ Duplex feedshift switch (DUPFSSW) | ⑱ Right switchback feed roller |
| ⑧ Feedshift roller | ⑲ Left switchback feed roller |
| ⑨ Upper feedshift eject guide | ⑳ Upper right switchback eject guide |
| ⑩ Feedshift pulley | ㉑ Switchback eject switch (SBESW) |
| ⑪ Lower feedshift guide | |

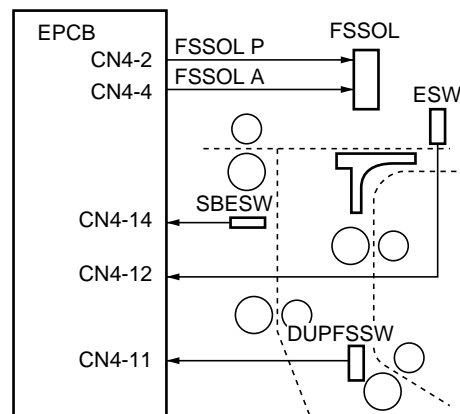


Figure 2-1-36 Feedshift and eject sections block diagram

2-1-10 Duplex section

As paper is conveyed from the feedshift section into the duplex section, the switchback feedshift guide shifts the paper path to switch-back the paper for refeeding or reverse side ejection. The paper is then conveyed to the feedshift and eject section.

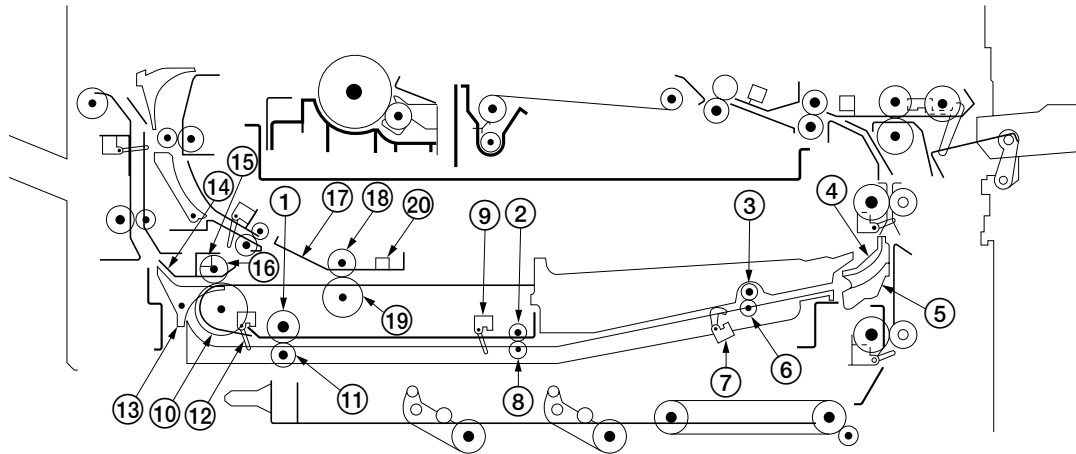


Figure 2-1-37 Duplex section

- | | |
|--|--|
| ① Duplex upper registration roller | ⑫ Duplex paper conveying switch 1 (DUPPCSW1) |
| ② Duplex upper conveying roller | ⑬ Switchback feedshift guide |
| ③ Duplex upper eject roller | ⑭ Duplex refeed guide |
| ④ Duplex upper feed guide | ⑮ Duplex feedshift switch (DUPFSSW) |
| ⑤ Duplex lower feed guide | ⑯ Refeed pulley |
| ⑥ Duplex lower eject roller | ⑰ Duplex upper entry guide |
| ⑦ Duplex eject switch (DUPESW) | ⑱ Duplex switchback pulley |
| ⑧ Duplex lower conveying roller | ⑲ Duplex switchback roller |
| ⑨ Duplex paper conveying switch 2 (DUPPCSW2) | ⑳ Duplex jam detection switch (DUPJSW) |
| ⑩ Refeed roller | |
| ⑪ Duplex lower registration roller | |

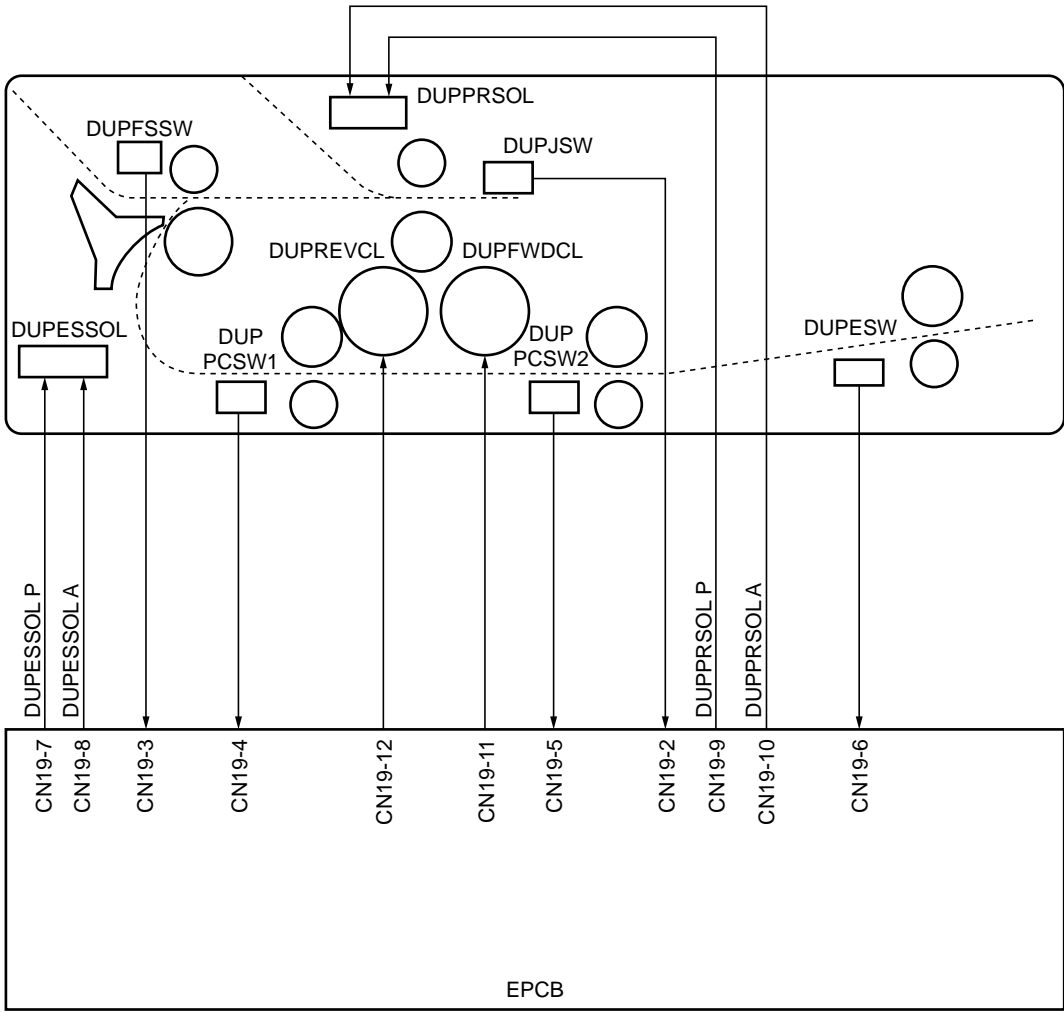
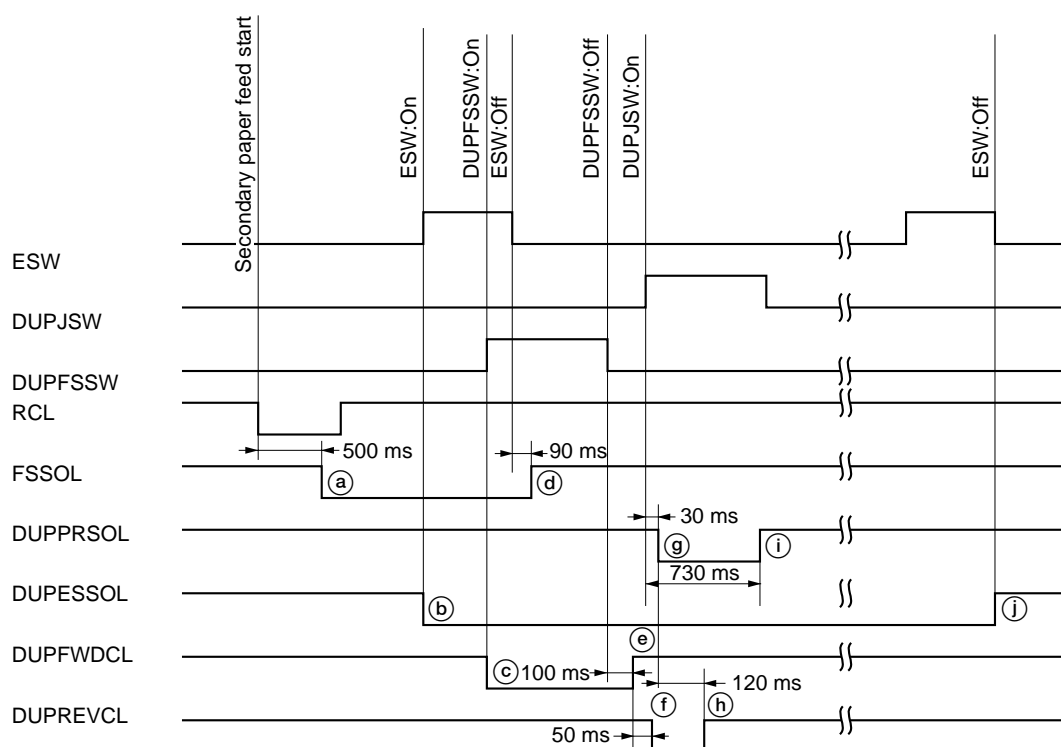


Figure 2-1-38 Duplex section block diagram



Timing chart 2-1-10 Duplex copying operation

- Ⓐ When copying onto the reverse side, 500 ms after the registration clutch (RCL) turns on, the feedshift solenoid (FSSOL) turns on, operating the conveying shift guide to switch the paper path to the duplex unit.
- Ⓑ When the eject switch (ESW) turns on, the duplex eject switching solenoid (DUPESSOL) turns on to operate the switchback feedshift guide.
- Ⓒ When the duplex feedshift switch (DUPFSSW) turns on, the duplex forwarding clutch (DUPFWDCL) turns on, rotating the duplex switchback roller in the forward direction to convey paper to the duplex section.
- Ⓓ 90 ms after the eject switch (ESW) turns off, the feedshift solenoid (FSSOL) turns off.
- Ⓔ 100 ms after the duplex feedshift switch (DUPFSSW) turns off, the duplex forwarding clutch (DUPFWDCL) turns off.
- Ⓕ 50 ms after the duplex forwarding clutch (DUPFWDCL) turns off, the duplex reversing clutch (DUPREVCL) turns on to rotate the duplex switchback roller in the reverse direction.
- Ⓖ 30 ms after the paper enters the duplex section and the duplex jam detection switch (DUPJSW) turns on, the duplex pressure release solenoid (DUPPRSOL) turns on and the duplex switchback pulley lowers. The paper is then switched back by the duplex switchback pulley and duplex switchback roller and re-fed by the refeed roller.
- Ⓗ 120 ms after the duplex pressure release solenoid (DUPPRSOL) turns on, the duplex reversing clutch (DUPREVCL) turns off and the duplex switchback roller stops.
- Ⓘ 730 ms after the duplex jam detection switch (DUPJSW) turns on, the duplex pressure release solenoid (DUPPRSOL) turns off.
- Ⓙ When copying onto the front face is complete and the eject switch (ESW) turns off, the duplex eject switching solenoid (DUPESSOL) turns off.

2-1-11 SRDF

(1) Original feed section

The original feed section consists of the parts shown in Figure 1-3-48. An original placed on the original table is conveyed to the original switchback section or the original conveying section.

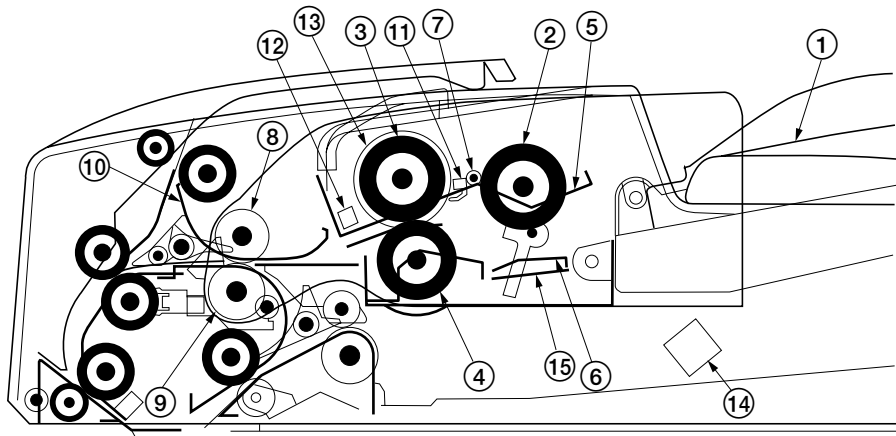


Figure 2-1-39 Original feed section

- | | |
|--------------------------------|----------------------------------|
| ① Original table | ⑨ DF registration roller |
| ② DF forwarding pulleys | ⑩ DF registration guide |
| ③ DF original feed pulley | ⑪ Original set switch (OSSW) |
| ④ DF separation pulley | ⑫ Original feed switch (OFSW) |
| ⑤ DF original feed upper guide | ⑬ Original feed clutch (OFCL) |
| ⑥ DF original feed lower guide | ⑭ Original feed solenoid (OFSOL) |
| ⑦ Original stopper | ⑮ Original feed lift |
| ⑧ DF registration pulley | |

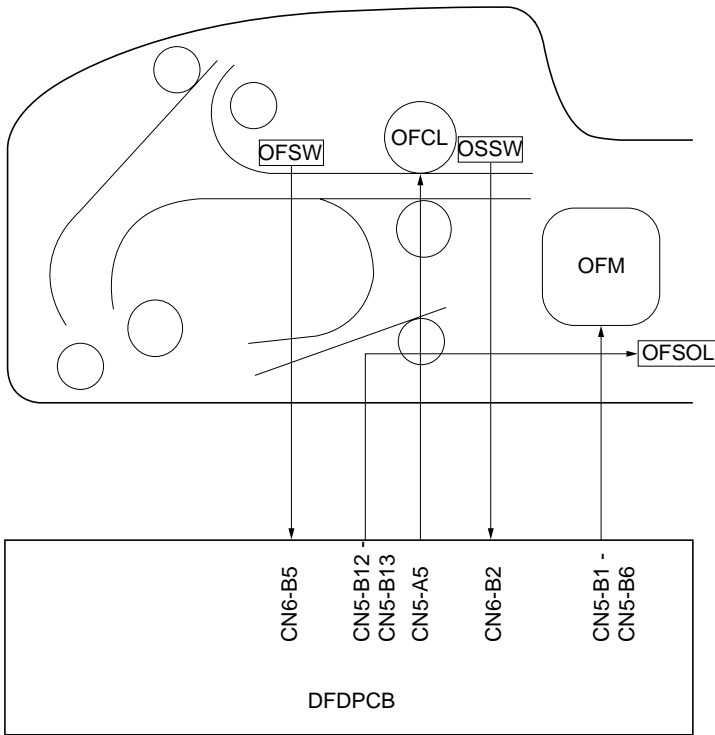
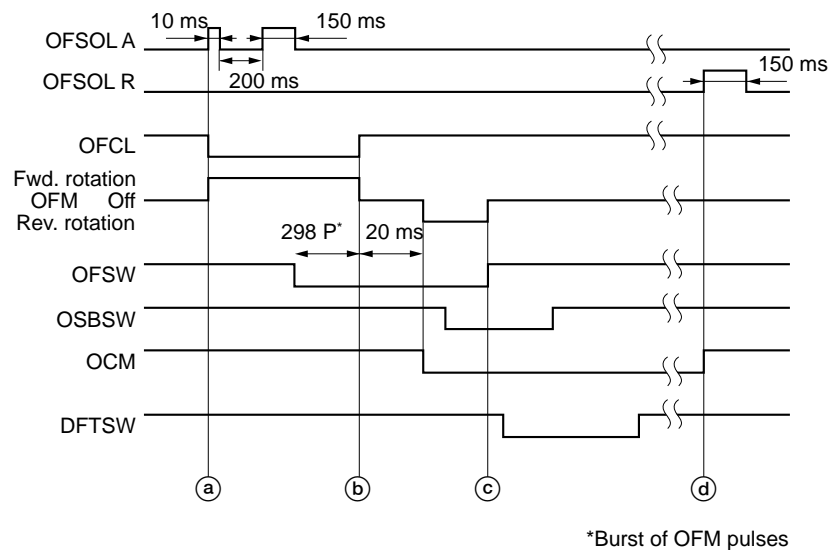


Figure 2-1-40 Original feed section block diagram

(1-1) Original feed timing**Timing chart 2-1-11 Original feed (in simple-sided original mode)**

- Ⓐ The OFSOL A signal goes high for 10 ms and then turns off for 200 ms. It goes high again for 150 ms and the original feed solenoid (OFSOL) turns on, raising the original feed lift to convey the original forward.
- Ⓑ 298 OFM pulses after the leading edge of the original turns the original feed switch (OFSW) on, the original feed clutch (OFCL) and original feed motor (OFM) turn off. 20 ms later, the rotation of the motor switches to the reverse direction and secondary original feed is performed by rotation of the DF registration roller.
- Ⓒ Simultaneously as the trailing edge of the original turns the original feed switch (OFSW) off, the original feed motor (OFM) turns off.
- Ⓓ After ejection of the original, as the original conveying motor (OCM) turns off, the OFSOL R signal turns on for 150 ms and the original feed solenoid (OFSOL) turns off.

(2) Original switchback section

The original switchback section consists of the parts shown in Figure 2-1-41. The original from the original feed section or original conveying section is reversed and conveyed to the original conveying section.

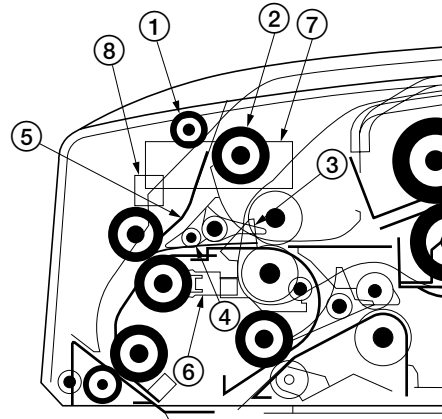


Figure 2-1-41 Original switchback section

- ① Switchback pulley
- ② Switchback roller
- ③ Switchback feedshift guide
- ④ Left switchback guide
- ⑤ Switchback guide
- ⑥ Original switchback switch (OSBSW)
- ⑦ Switchback feedshift solenoid (SBFSSOL)
- ⑧ Switchback pressure solenoid (SBPSOL)

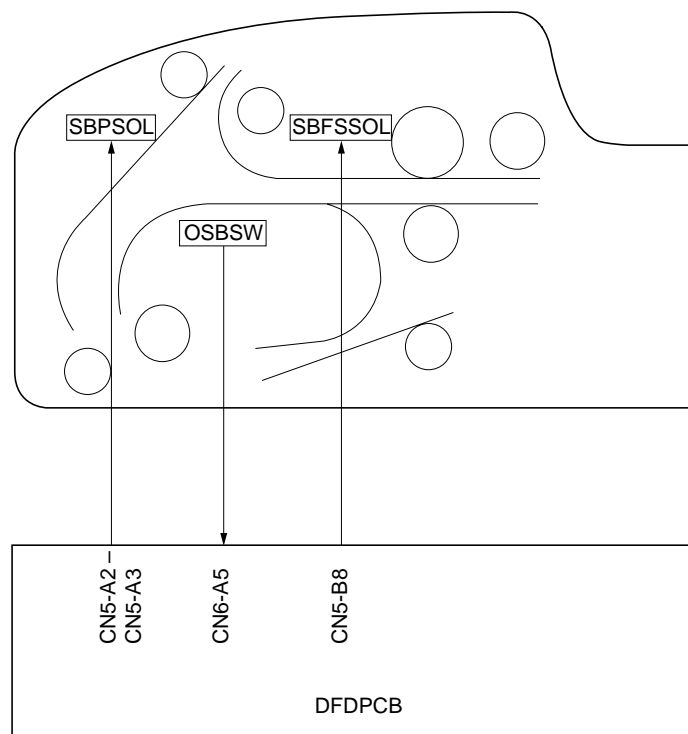


Figure 2-1-42 Original switchback section block diagram

(2-1) Operation of original switchback

In the double-sided original mode, the switchback feedshift solenoid (SBFSSOL) turns on, changing the position of the switchback feedshift guide. This switches the path of the original to the original switchback section to where the original is fed.

The switchback feedshift solenoid (SBFSSOL) then turns off, allowing the switchback feedshift guide to return to the original position by which the path of the original is switched back to the original conveying section. The now reversed original is carried to the original conveying section and the switchback pressure solenoid (SBPSOL) turns off, releasing the switchback pulley to prevent an original jam in the original switchback section.

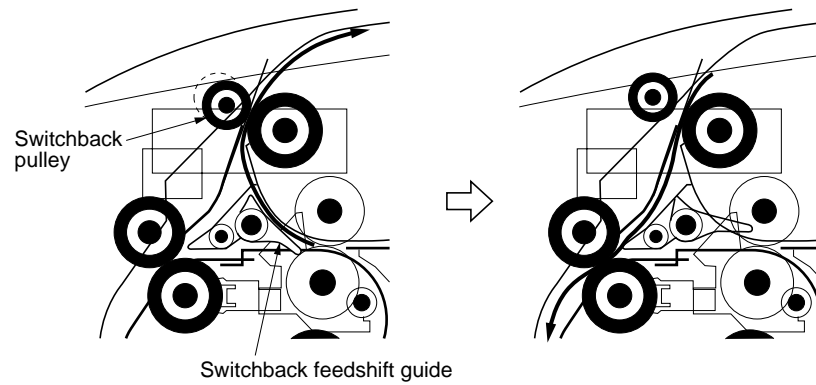


Figure 2-1-43

(3) Original conveying section

The original conveying section consists of the parts shown in Figure 2-1-44. Synchronized with the copier scanning operation, the original is conveyed across the slit glass and ejected when scanning is complete.

In the double-sided original mode, the eject feedshift solenoid (EFSSOL) turns on, moving the eject feedshift guide to switch the path of the original. When the scanning of the first face (reverse face) of the original is complete, the original is conveyed to the original switchback section again.

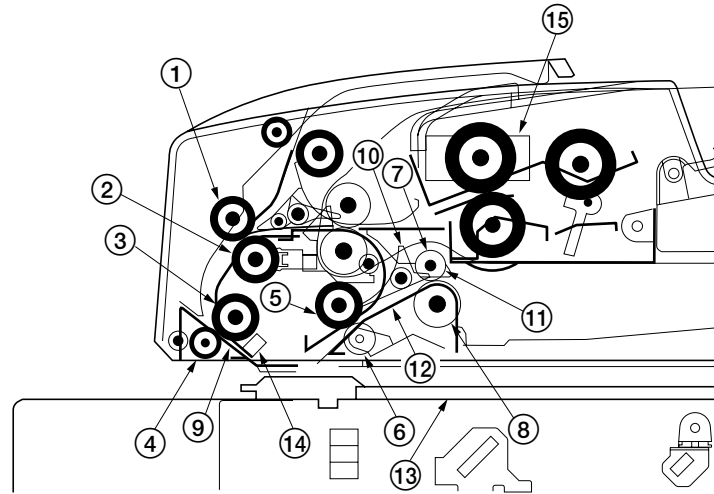


Figure 2-1-44 Original conveying section

- | | |
|------------------------------------|-------------------------------------|
| ① Upper original conveying pulley | ⑨ Original conveying guide |
| ② Upper original conveying roller | ⑩ Eject feedshift guide |
| ③ Lower original conveying roller | ⑪ Upper eject guide |
| ④ Front scanning pulley | ⑫ Lower eject guide |
| ⑤ Middle original conveying roller | ⑬ Slit glass (copier) |
| ⑥ Middle original conveying pulley | ⑭ DF timing switch (DFTSW) |
| ⑦ Eject pulley | ⑮ Eject feedshift solenoid (EFSSOL) |
| ⑧ Eject roller | |

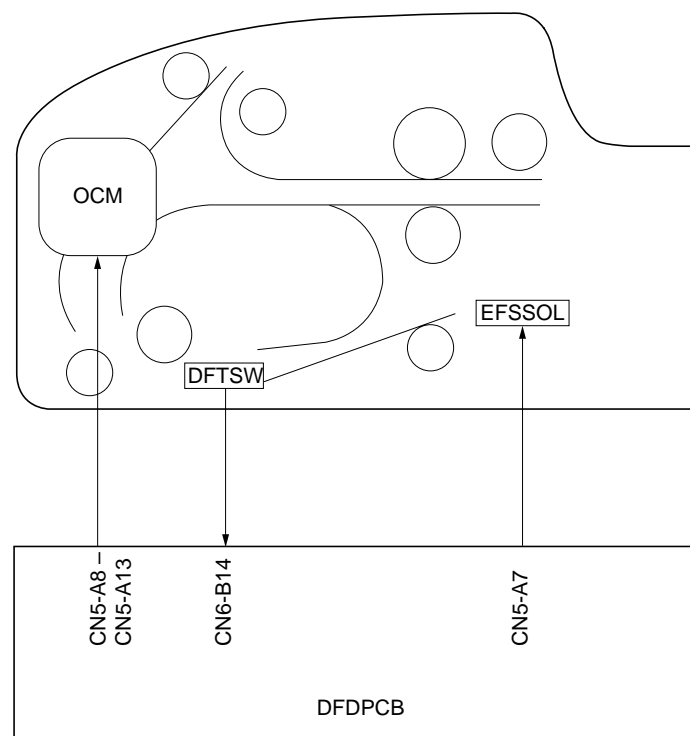
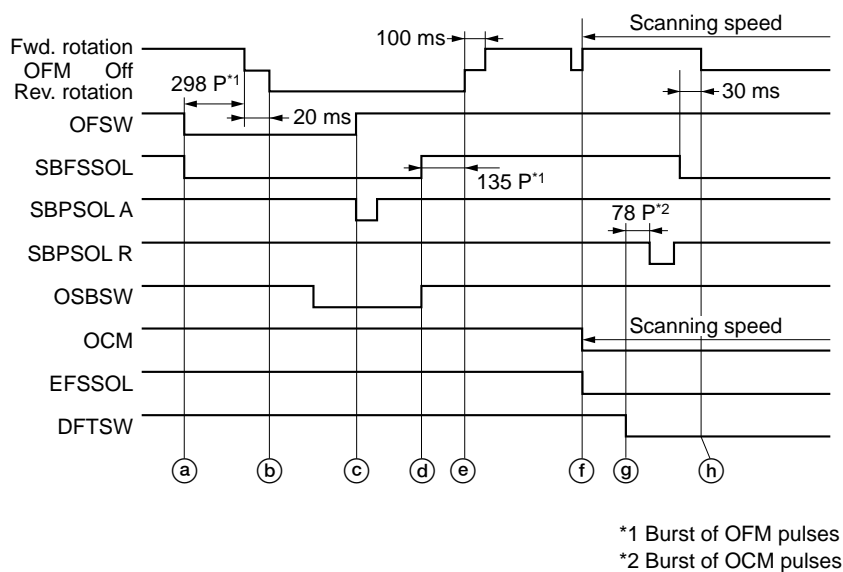
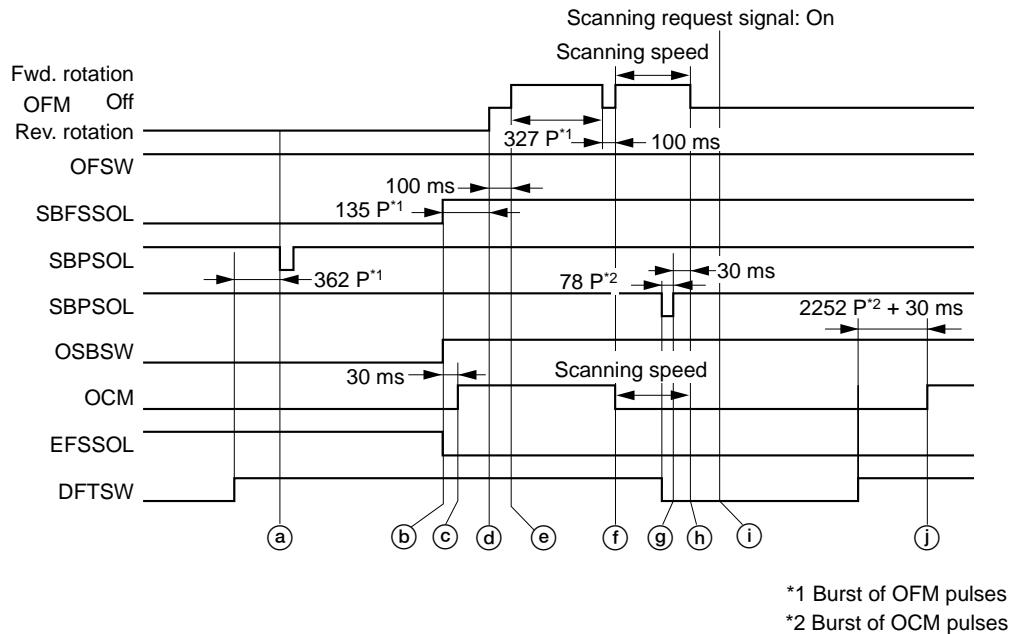


Figure 2-1-45 Original conveying section block diagram

(3-1) Original switchback/conveying timing**Timing chart 2-1-12 Reversing the first face of the original**

- (a) During primary original feed, when the original feed switch (OFSW) turns on, the switchback feedshift solenoid (SBFSSOL) also turns on, changing the position of the switchback feedshift guide. This switches the path of the original to the original switchback section.
- (b) 298 OFM pulses plus 20 ms after the original feed switch (OFSW) turns on, the rotation of the original feed motor (OFM) switches to the reverse direction and the original is conveyed to the switchback section by the rotation of the switchback roller.
- (c) Simultaneously as the original feed switch (OFSW) turns off, the switchback pressure solenoid (SBPSOL) turns on to operate the switchback pulley.
- (d) When the trailing edge of the original turns the original switchback switch (OSBSW) off, the switchback feedshift solenoid (SBFSSOL) turns off, the switchback feedshift guide returns to the original position.
- (e) 135 OFM pulses after the original switchback switch (OSBSW) turns off, the original feed motor (OFM) turns off. 100 ms later, the original feed motor (OFM) rotates forward, switching the rotational direction of the switchback roller. The original in the original switchback section is then reversed and conveyed to the original conveying section.
- (f) Simultaneously as the original feed motor (OFM) starts rotating forward, the original conveying motor (OCM) turns on to convey the original onto the slit glass. The eject feedshift solenoid (EFSSOL) simultaneously turns on, changing the position of the eject feedshift guide. This switches the path of the original to the original switchback section.
- (g) When the original is conveyed onto the slit glass, the DF timing switch (DFTSW) turns on. 78 OCM pulses later, the switchback pressure solenoid (SBPSOL) turns off.
- (h) 30 ms after the switchback pressure solenoid (SBPSOL) turns off, the original feed motor (OFM) turns off.



Timing chart 2-1-13 Reversing of the second face of the original and ejection

- (a) 362 OFM pulses after the scanning of the first face (reverse face) of the original completes and the DF timing switch (DFTSW) turns off, the switchback pressure solenoid (SBPSOL) turns on, operating the switchback pulley.
- (b) When the trailing edge of the original turns the original switchback switch (OSBSW) off, the eject feedshift solenoid (EFSSOL) turns off and the eject feedshift guide returns to the original position, switching the path of the original to the eject section. Simultaneously, the switchback feedshift solenoid (SBFSSOL) turns off and the switchback feedshift guide returns to the original position.
- (c) 30 ms after the original switchback switch (OSBSW) turns off, the original conveying motor (OCM) turns off.
- (d) 135 OFM pulses after the original switchback switch (OSBSW) turns off, the original feed motor (OFM) turns off.
- (e) 100 ms after the original feed motor (OFM) turns off, the motor starts rotating forward, switching the rotational direction of the switchback roller. The original in the original switchback section is then reversed and conveyed to the original conveying section.
- (f) 327 OFM pulses plus 100 ms after the original feed motor (OFM) turns off, the motor starts rotating forward again and the original conveying motor (OCM) turns on simultaneously, conveying the original onto the slit glass.
- (g) 78 OFM pulses after the original is conveyed onto the slit glass and the DF timing switch (DFTSW) turns on, the switchback pressure solenoid (SBPSOL) turns off.
- (h) 30 ms after the switchback pressure solenoid (SBPSOL) turns off, the original feed motor (OFM) turns off.
- (i) When the scanning request signal turns on, scanning of the second face (front face) of the original starts.
- (j) 2252 OCM pulses plus 30 ms after scanning of the second face (front face) of the original completes and the DF timing switch (DFTSW) turns off, the original conveying motor (OCM) turns off, completing the ejection of the original.

2-2-1 Electrical parts layout

(1) PCBs

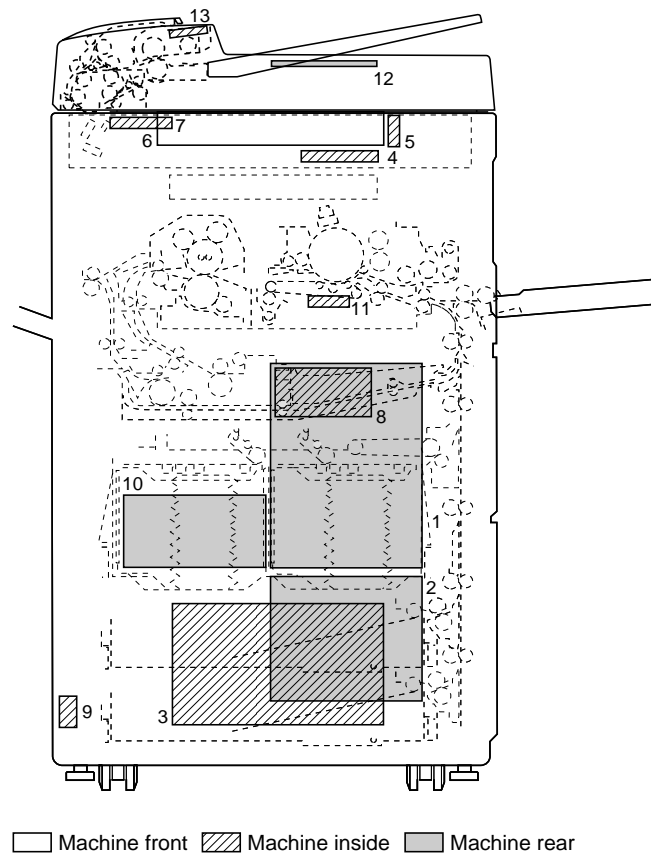
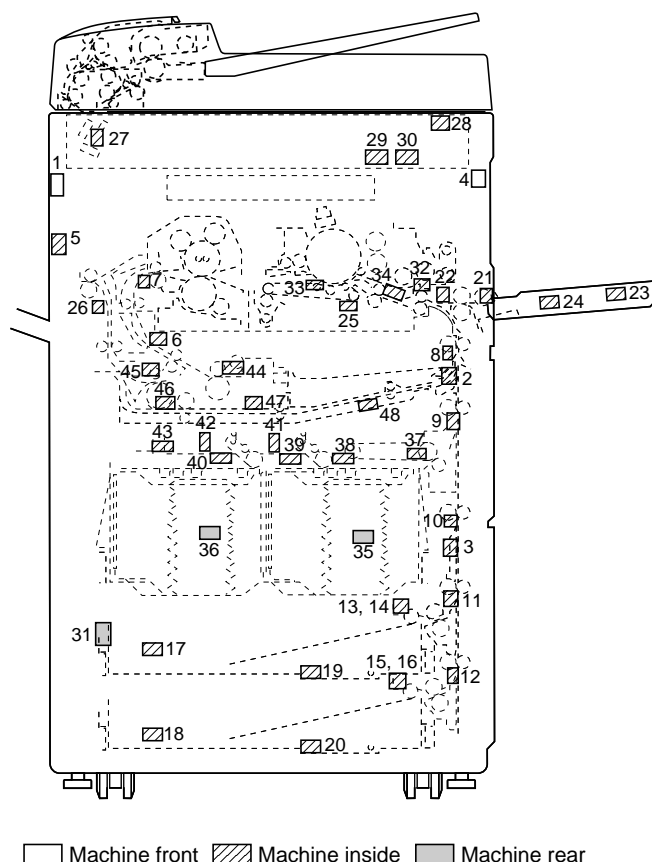


Figure 2-2-1 PCBs

- | | |
|---|--|
| 1. Main PCB (MPCB) | Controls the other PCBs and electrical components. |
| 2. Engine PCB (EPCB) | Controls electrical components and optional devices. |
| 3. Power source PCB (PSPCB) | Generates 24 V DC, +12 V DC, 3.4 V DC and 5 V DC; controls fixing heaters M and S. |
| 4. Scanner motor PCB (SMPCB) | Controls the scanner section. |
| 5. CCD PCB (CCDPCB) | Reads the image off originals. |
| 6. Operation unit PCB (OPCB) | Consists of operation keys and display LEDs. |
| 7. Inverter PCB (INPCB) | Controls the exposure lamp. |
| 8. High voltage transformer PCB (HVTPCB) ... | Generates high voltage for main charging and developing bias. |
| 9. Humidity sensor PCB (HUMPCB) | Detects absolute humidity. |
| 10. Memory PCB (MEMPCB) | Reads and outputs the image. |
| 11. Transfer charger belt bias PCB (TCBPCB) | Generates high voltage for transfer/separation charging. |
| 12. DF driver PCB (DFDPCB) | Controls electrical components of the SRDF. |
| 13. Original set LED PCB (OSLEDPCB) | Indicates presence of originals on the SRDF or an original jam. |

(2) Switches and sensors**Figure 2-2-2 Copier switches and sensors**

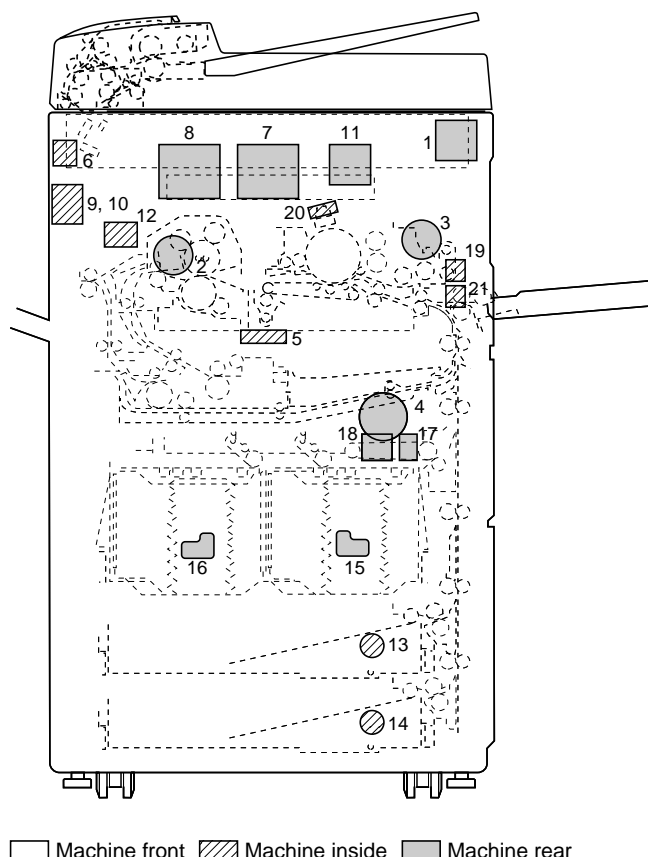
1. Main switch (MSW) Turns the AC power on and off.
2. Paper feed cover safety switch 1 (SSW1) ... Breaks the safety circuit when the upper right cover is opened.
3. Paper feed cover safety switch 2 (SSW2) ... Breaks the safety circuit when the lower right cover is opened.
4. Front cover safety switch 3 (SSW3) Breaks the safety circuit when the front cover is opened.
5. Eject cover safety switch 4 (SSW4) Breaks the safety circuit when the eject cover is opened.
6. Feedshift switch (FSSW) Detects a paper misfeed in the feedshift section.
7. Eject switch (ESW) Detects a paper misfeed in the fixing section.
8. Paper feed switch 1 (PFSW1) Detects a paper misfeed.
9. Paper feed switch 2 (PFSW2) Controls the primary paper feed and detects a paper misfeed.
10. Paper feed switch 3 (PFSW3) Controls feed clutch 3 and detects a paper misfeed.
11. Paper feed switch 4 (PFSW4) Controls feed clutch 4 and detects a paper misfeed.
12. Paper feed switch 5 (PFSW5) Controls feed clutch 5 and detects a paper misfeed.
13. Upper paper switch (PSW-U) Detects the presence of paper in the upper cassette.
14. Upper lift limit switch (LICSW-U) Detects the upper cassette lift reaching the upper limit.
15. Lower paper switch (PSW-L) Detects the presence of paper in the lower cassette.
16. Lower lift limit switch (LICSW-L) Detects the lower cassette lift reaching the upper limit.
17. Upper paper length switch (PLSW-U) Detects the length of paper in the upper cassette.*¹
Detects the presence of the upper cassette.*¹
18. Lower paper length switch (PLSW-L) Detects the length of paper in the lower cassette.*¹
Detects the presence of the lower cassette.*¹
19. Upper paper width switch (PWSW-U) Detects the width of paper in the upper cassette.*²
20. Lower paper width switch (PWSW-L) Detects the width of paper in the lower cassette.*²
21. Bypass paper switch (BYPPSW) Detects the presence of paper on the bypass table.
22. Feed switch (FSW) Controls the secondary paper feed start timing.
23. Bypass paper length switch (BYPPLSW) Detects the length of paper on the bypass table.
24. Bypass paper width switch (BYPPWSW) Detects the width of paper on the bypass table.

*¹: Paper length detection is for inch models and cassette presence detection is for metric models.

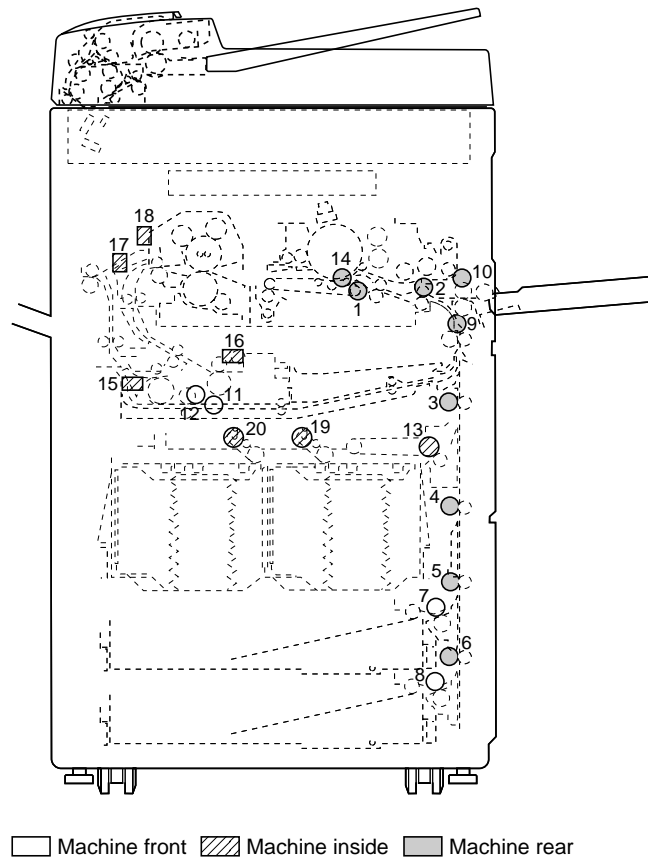
*²: For inch models only.

25. Transfer charger belt detection switch (TCBDSW) Detects the position of the transfer charger belt.
26. Switchback eject switch (SBESW) Detects a paper misfeed in the switchback eject section.
27. Scanner home position switch (SHPSW) Detects the optical system in the home position.
28. Original detection switch (ODSW) Operates the original size detection sensors.
29. Original size detection sensor 1 (OSD1) Detects the size of the original.
30. Original size detection sensor 2 (OSD2) Detects the size of the original.*
31. Waste toner detection switch (WTDSW) Detects the weight of the waste toner tank.
32. Toner sensor (TNS) Detects the toner density in the developing section.
33. Toner level sensor (TLDS) Detects the toner level in the toner hopper.
34. Registration switch (RSW) Controls the secondary paper feed stop timing.
35. Large paper deck paper level detection sensor 1 (LPDPLDSENS1) Detects the paper level in the right large paper deck.
36. Large paper deck paper level detection sensor 2 (LPDPLDSENS2) Detects the paper level in the left large paper deck.
37. Large paper deck paper path sensor 1 (LPDPPSENS1) Detects a paper misfeed and the presence of paper on the lift of the large paper deck.
38. Large paper deck paper path sensor 2 (LPDPPSENS2) Detects a paper misfeed and the presence of paper on the lift of the large paper deck.
39. Large paper deck paper path sensor 3 (LPDPPSENS3) Detects a paper misfeed and the presence of paper on the lift of the large paper deck.
40. Large paper deck paper empty sensor (LPDPESENS) Detects the presence of paper in the left large paper deck.
41. Large paper deck level switch 1 (LPDLSW1) Detects the stop position of the right large paper deck lift.
42. Large paper deck level switch 2 (LPDLSW2) Detects the stop position of the left large paper deck lift.
43. Large paper deck open safety switch (LPDOSSW) Detects when the large paper deck is opened or closed.
44. Duplex jam detection switch (DUPJSW) Detects a paper misfeed.
45. Duplex feedshift switch (DUPFSSW) Detects a paper misfeed in the duplex feedshift section.
46. Duplex paper conveying switch 1 (DUPPCSW1) Detects a paper misfeed in the duplex paper conveying section.
47. Duplex paper conveying switch 2 (DUPPCSW2) Detects a paper misfeed in the duplex paper conveying section.
48. Duplex eject switch (DUPESW) Detects a paper misfeed in the duplex eject section.

* For inch models only.

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

- | | |
|---|---|
| 1. Scanner motor (SM) | Drives the optical system. |
| 2. Drive motor (DM) | Drives the machine. |
| 3. Image forming motor (IFM) | Drives the image formation section. |
| 4. Paper feed motor (PFM) | Drives the paper feed and conveying system. |
| 5. Duplex fan motor (DUPFM) | Cools the duplex section. |
| 6. Optical section fan motor (OPFM) | Cools the optical section. |
| 7. Cooling fan motor (CFM) | Cools the machine inside. |
| 8. Fixing unit fan motor (FFM) | Cools the fixing section. |
| 9. LSU fan motor 1 (LSUFM1) | Cools the LSU. |
| 10. LSU fan motor 2 (LSUFM2) | Cools the LSU. |
| 11. Main charger fan motor (MCFM) | Cools the main charger section. |
| 12. Eject fan motor (EFM) | Cools the eject section. |
| 13. Upper lift motor (PCLM-U) | Drives the upper cassette lift. |
| 14. Lower lift motor (PCLM-L) | Drives the lower cassette lift. |
| 15. Large paper deck right lift motor (LPDLM-R) | Drives the large paper deck right lift. |
| 16. Large paper deck left lift motor (LPDLM-L) | Drives the large paper deck left lift. |
| 17. Blow fan motor 1 (BFM1) | Floats paper toward the paper feed belts. |
| 18. Blow fan motor 2 (BFM2) | Induces paper onto the paper feed belts. |
| 19. Toner feed motor (TFM) | Replenishes toner. |
| 20. Main charger cleaning motor (MCCM) | Cleans the main charger wire. |
| 21. Toner agitation motor (TAM) | Agitates toner. |

(4) Clutches and solenoids**Figure 2-2-4 Copier clutches and solenoids**

- | | |
|---|--|
| 1. Registration clutch (RCL) | Secondary paper feed. |
| 2. Feed clutch 1 (FCL1) | Controls the drive of the upper feed roller. |
| 3. Feed clutch 2 (FCL2) | Controls the drive of vertical conveying roller A. |
| 4. Feed clutch 3 (FCL3) | Controls the drive of vertical conveying roller B. |
| 5. Feed clutch 4 (FCL4) | Controls the drive of vertical conveying roller C. |
| 6. Feed clutch 5 (FCL5) | Controls the drive of vertical conveying roller D. |
| 7. Upper paper feed clutch (PFCL-U) | Primary paper feed from the upper cassette. |
| 8. Lower paper feed clutch (PFCL-L) | Primary paper feed from the lower cassette. |
| 9. Bypass lift clutch (BYPLCL) | Operates the bypass lift guide. |
| 10. Bypass paper feed clutch (BYPPFCL) | Primary paper feed from the bypass table. |
| 11. Duplex forwarding clutch (DUPFWDCL) | Conveys paper forward. |
| 12. Duplex reversing clutch (DUPREVCL) | Conveys paper in the reverse direction. |
| 13. Large paper deck conveying clutch (LPDCCL) | Controls the drive of the paper feed belts. |
| 14. Transfer charger belt release clutch (TCBRCL) | Controls the positioning of the transfer charger belt. |
| 15. Duplex eject switching solenoid (DUPESSOL) | Operates the switchback feedshift guide. |
| 16. Duplex pressure release solenoid (DUPPRSOL) | Operates the duplex switchback pulley. |
| 17. Feedshift solenoid (FSSOL) | Operates the conveying shift guide. |
| 18. Fixing web solenoid (FWEBSOL) | Drives the cleaning felt. |
| 19. Large paper deck paper feed clutch 1 (LPDPFCL1) | Drives the deck paper conveying roller. |
| 20. Large paper deck paper feed clutch 2 (LPDPFCL2) | Drives the deck paper feed roller. |

(5) Other electrical components

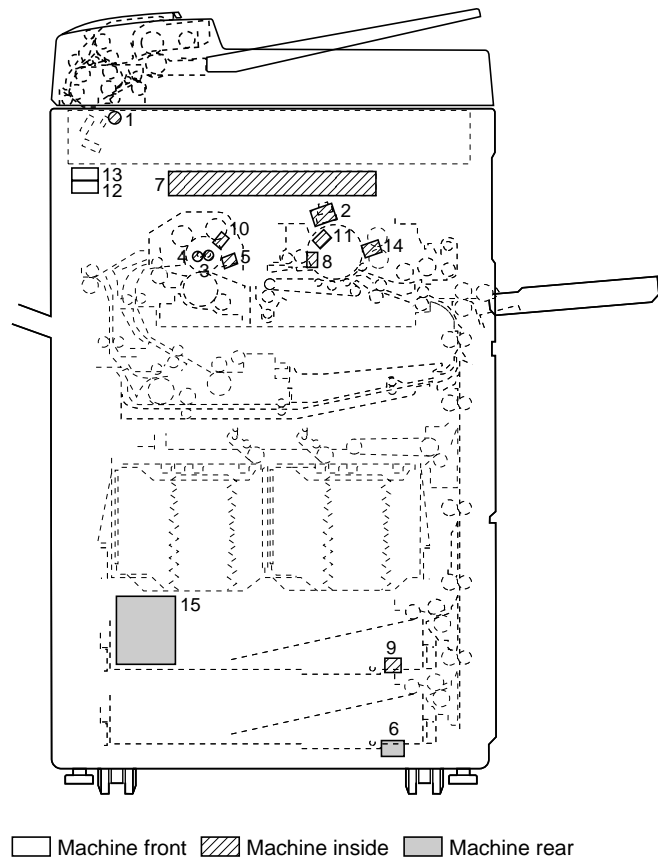
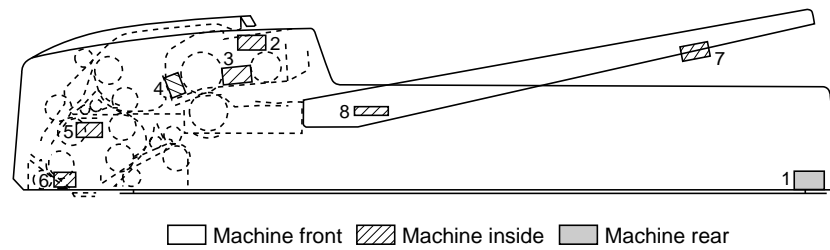


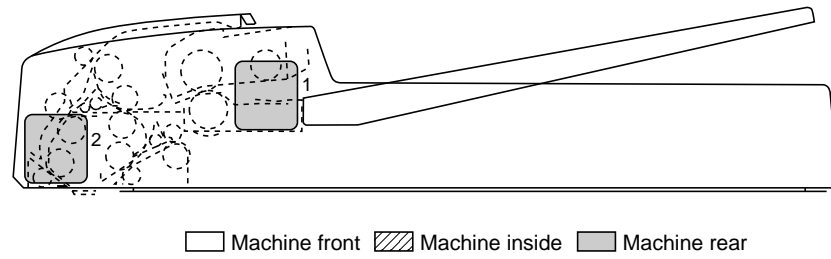
Figure 2-2-5 Other electrical components

- | | |
|---|---|
| 1. Exposure lamp (EL) | Exposes originals. |
| 2. Cleaning lamp (CL) | Removes residual charge from the drum surface. |
| 3. Fixing heater M (H1) | Heats the heat roller. |
| 4. Fixing heater S (H2) | Heats the heat roller. |
| 5. Fixing unit thermostat (TH) | Prevents overheating in the fixing section. |
| 6. Relay (PRY) | Turns the AC power and 24 V DC power supplies to the fixing section on and off. |
| 7. Laser scanner unit (LSU) | |
| • Polygon motor (PM) | Drives the polygon mirror. |
| • Laser diode (LD) | Generates the laser beam. |
| 8. Drum heater (DH) | Prevents drum condensation.* |
| 9. Cassette heater (CH1) | Dehumidifies the cassette section.* |
| 10. Fixing unit thermistor (FTH) | Detects the heat roller temperature. |
| 11. Drum thermistor (DRMTH) | Detects the drum heater temperature.* |
| 12. Total counter (TC) | Displays the total number of copies produced. |
| 13. Scanner counter (SC) | Displays the total number of originals scanned. |
| 14. Drum surface potential sensor (DSPSENS) | Detects the potential on the drum surface. |
| 15. Hard disk (HDD)* | Enables printing, special purpose copying and Box management function. |

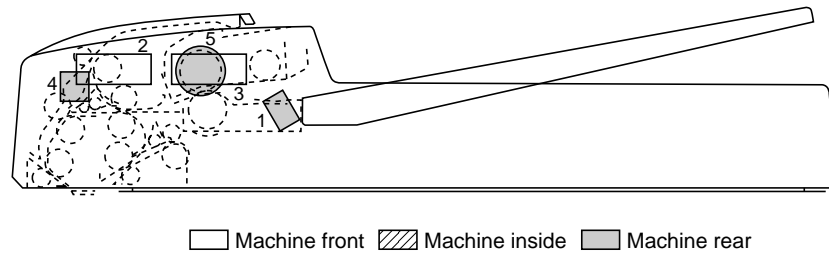
* Optional.

(6) SRDF switches and sensors**Figure 2-2-6 SRDF switches and sensors**

- | | |
|--|---|
| 1. DF safety switch 1 (DFSSW1) | Breaks the safety circuit when the SRDF is opened; resets original misfeed detection. |
| 2. DF safety switch 2 (DFSSW2) | Breaks the safety circuit when the DF original switchback cover is opened; resets original misfeed detection. |
| 3. Original set switch (OSSW) | Detects the presence of an original. |
| 4. Original feed switch (OFSW) | Detects primary original feed end timing. |
| 5. Original switchback switch (OSBSW) | Detects an original misfeed in the original switchback section. |
| 6. DF timing switch (DFTSW) | Detects the original scanning timing. |
| 7. Original size length switch (OSLSW) | Detects the length of the original. |
| 8. Original size width switch (OSWSW) | Detects the width of the original. |

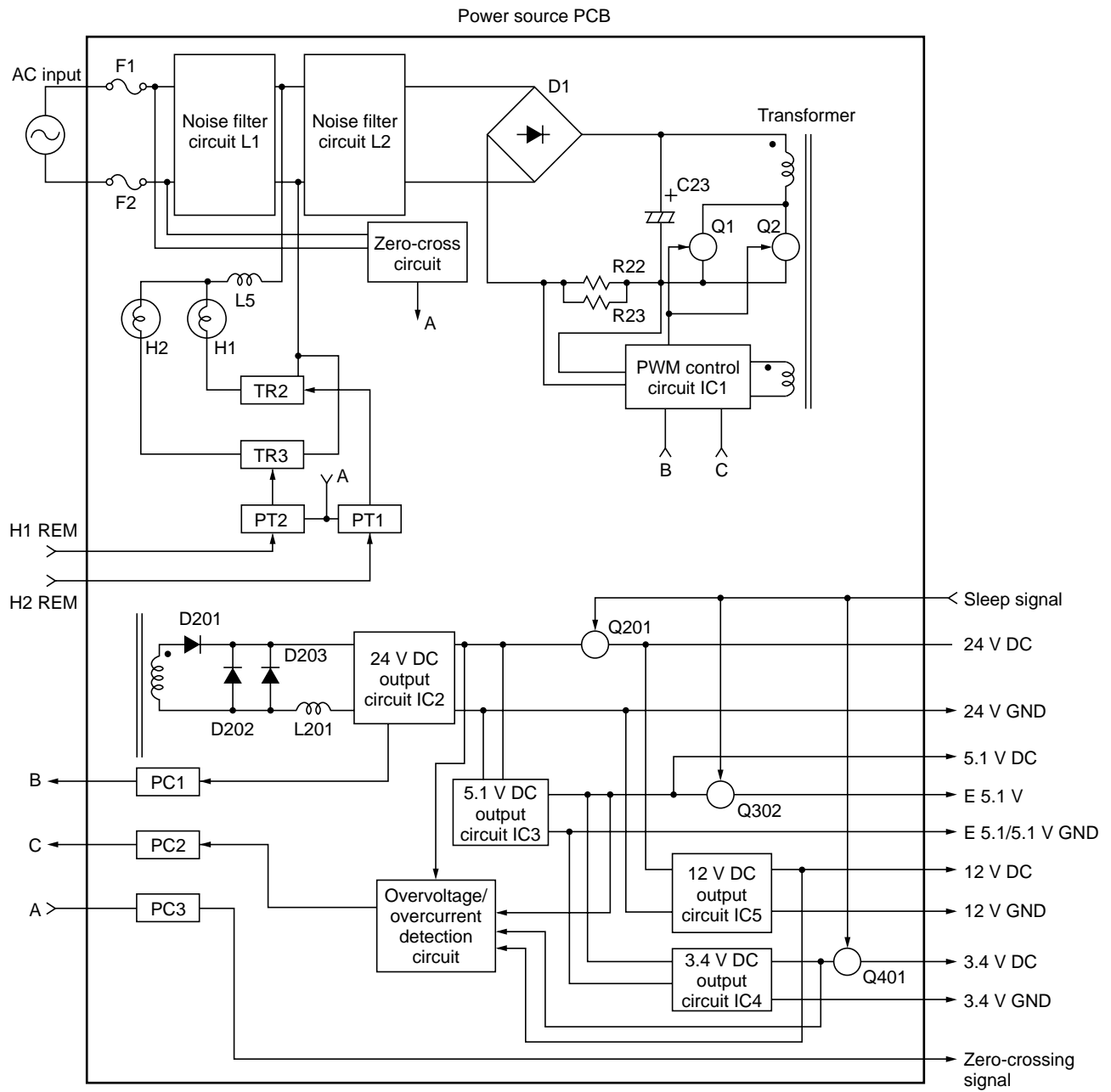
(7) SRDF motors**Figure 2-2-7 SRDF motors**

1. Original feed motor (OFM) Drives the original feed and switchback sections.
2. Original conveying motor (OCM) Drives the original conveying section.

(8) SRDF clutches and solenoids**Figure 2-2-8 SRDF clutches and solenoids**

1. Original feed solenoid (OFSOL) Operates the paper feed lift.
2. Switchback feedshift solenoid (SBFSSOL) Operates the switchback feedshift guide.
3. Eject feedshift solenoid (EFSSOL) Operates the eject feedshift guide.
4. Switchback pressure solenoid (SBPSOL) ... Operates the switchback pulley.
5. Original feed clutch (OFCL) Controls the drive of the DF original feed pulley.

2-3-1 Power source PCB



The power source PCB (PSPCB) is a switching regulator which converts an AC input to generate 24 V DC, 5.1 V DC, 3.4 V DC and 12 V DC. It includes the components shown in Figure 2-3-1; noise filter circuits, a rectifier circuit, a PWM control circuit, a 24 V DC output circuit, a 5.1 V DC output circuit, a 3.4 V DC output circuit, a 12 V DC output circuit, a fixing heater control circuit, an overvoltage/overcurrent detection circuit.

The noise filter circuit, consisting mainly of noise filter circuits L1 and L2 in the power source section and capacitors, attenuates external noise from the AC input and prevents switching noise generated by the power source circuit from leaving the machine via the AC line. Choke coil L5 prevents the noise generated in the heater circuit when the heater turns on from leaving the machine via the AC line.

The rectifier circuit full-wave rectifies the AC input which has passed through the noise filter circuits L1 and L2 using the diode bridge D1.

In the PWM control circuit, PWM controller IC1 turns FETs Q1 and Q2 on and off to convert DC voltage full-wave rectified via diode bridge D1 and smoothed by electrolytic capacitor C23 to a high-frequency current, which is applied to the primary coil of the transformer.

The 24 V DC output circuit smoothes the current induced on the secondary coil of the transformer via diodes D201, D202 and D203 and smoothing choke coil L201, providing a more stable 24 V DC through 24 V DC control circuit including IC2. It also monitors the 24 V DC output status, which is fed back to PWM controller IC1 in the PWM control circuit via photocoupler PC1. PWM controller IC1 controls the switching duty width of switching FETs Q1 and Q2 based on the output voltage status, producing a stable 24 V DC output.

The 5.1 V DC output circuit receives 24 V DC from the 24 V DC control circuit and outputs a stable 5.1 V DC via DC/DC converter controller IC3.

The 3.4 V DC output circuit receives 5.1 V DC from the 5.1 V DC control circuit and outputs a stable 3.4 V DC via DC/DC converter controller IC4.

The 12 V DC output circuit receives 24 V DC from the 24 V DC control circuit and outputs a stable 12 V DC via DC/DC converter controller IC5.

FETs Q201, Q302 and Q401 turn on/off the output based on the sleep signal they receive from the main PCB (MPCB). In the energy saving mode, the FETs turn off to cut off the output of 24 V DC and 3.4 V DC, and some outputs of 5.1 V DC. Since the 12 V DC output is the input from output-controlling FET Q201, output of 12 V DC also ceases. As a result, all DC outputs except some 5.1 V DC outputs are cut off, by which means energy consumption is lowered to the Energy Star accreditation level while in the stand-by mode.

Abnormal rise of voltage for all DC outputs and overcurrent in 5.1 V DC and 12 V DC outputs are monitored by the overvoltage/overcurrent detection circuit, and if any abnormal rise is detected, alarm signals are fed back to the PWM control circuit IC1 via photocoupler PC2 instantly, by which means power supply is limited to the stand-by level. Overload of the 24 V DC output is monitored by resistors R22 and R23 as the total sum of all DC output power. If any abnormal condition is detected, the power supply is latched off. To recover the power supply, remove the cause of abnormality and turn the AC input off and back on. Overload of the 3.4 V DC output is monitored by the overcurrent detection function of IC4 of the 3.4V DC circuit. If any abnormality is detected, only the 3.4 V DC output is shut down, while all other DC outputs remain live. When the abnormal output condition is removed, the 3.4 V DC output returns to the normal output condition.

The fixing heater control circuit sends a zero-crossing signal from the zero-crossing circuit via the photocoupler PC3 to the main PCB (MPCB). These signals are in turn converted into signals to control the on/off timing and phases, which are then input to the power source PCB (PSPCB) as H1 REM and H2 REM signals. The phototriacs PT1 and PT2 are turned on by these signals, and current flows through triacs TR2 and TR3 to turn the fixing heaters on.

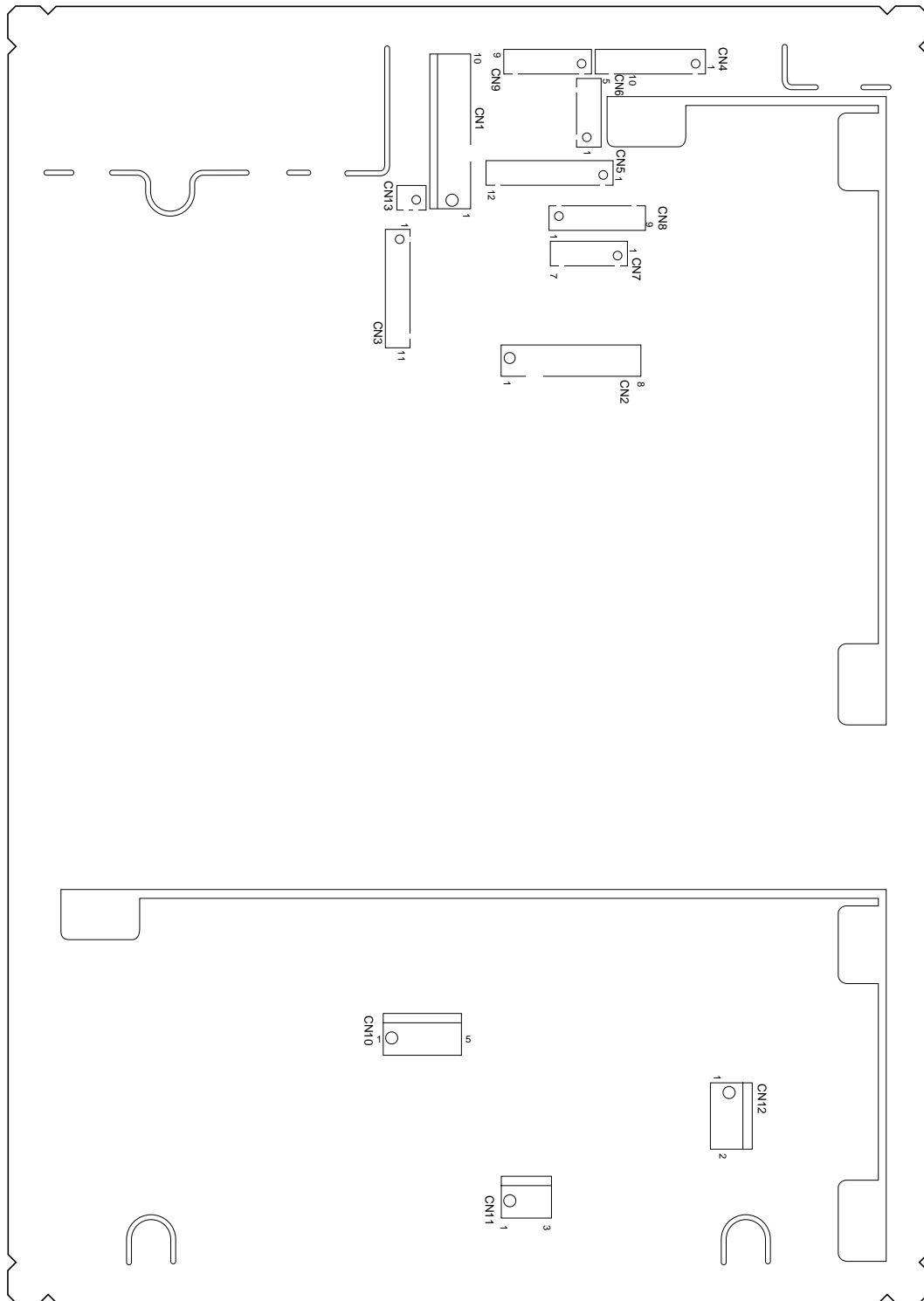


Figure 2-3-2 Power source PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
TB-1	TB-2	120 V AC	120 V AC supply, input
TB-1	TB-2	220 Ø 240 V AC	220 Ø 240 V AC supply, input ²
1-1	1-8	24 V DC	24 V DC supply for CH, output* ¹
1-2	1-8	24 V DC	24 V DC supply, output
1-3	1-8	24 V DC	24 V DC supply, output
1-4	1-8	24 V DC	24 V DC supply for EPCB, output
1-5	1-8	24 V DC	24 V DC supply for MPCB, output
1-6	1-8	24 V DC	24 V DC supply for SMPCB, output
1-7	1-8	24 V DC	24 V DC supply for SMPCB, output
2-6	2-2	0/5 V DC	SLEEP signal, input
2-7	2-2	0/5 V DC (pulse)	Zero-cross signal, input
2-8	2-2	0/5 V DC	H1 on/off, input
2-9	2-2	0/5 V DC	H2 on/off, input
3-1	2-3	24 V DC	24 V DC supply for finisher, output* ¹
3-2	2-3	24 V DC	24 V DC supply for finisher, output* ¹
3-3	2-3	24 V DC	24 V DC supply for finisher, output* ¹
3-4	2-3	24 V DC	24 V DC supply for finisher, output* ¹
3-5	2-3	24 V DC	24 V DC supply for mailbox, output* ¹
3-6	2-3	24 V DC	24 V DC supply for mailbox, output* ¹
3-8	2-3	24 V DC	24 V DC supply for SRDF, output
3-9	2-3	24 V DC	24 V DC supply for SRDF, output
3-10	2-3	24 V DC	24 V DC supply for side deck, output* ¹
3-11	2-3	24 V DC	24 V DC supply for side deck, output* ¹
5-1	5-8	5 V DC	5 V DC supply for finisher, output* ¹
5-2	5-8	5 V DC	5 V DC supply for mailbox, output* ¹
5-4	5-8	5 V DC	5 V DC supply for SRDF, output
5-5	5-9	5 V DC	5 V DC supply for SRDF, output
5-6	5-12	5 V DC	5 V DC supply for side deck, output* ¹
6-1	6-4	3.4 V DC	3.4 V DC supply for MPCB, output
6-2	6-5	3.4 V DC	3.4 V DC supply for MPCB, output
6-3	6-6	3.4 V DC	3.4 V DC supply for MPCB, output
7-1	7-5	5 V DC	5 V DC supply for OPCB, output
7-2	7-6	5 V DC	5 V DC supply for MPCB, output
7-3	7-7	5 V DC	5 V DC supply for MPCB, output
7-4	9-3	5 V DC	5 V DC supply for MPCB, output
8-1	9-4	5 V DC	5 V DC supply for MPCB, output
8-2	9-5	5 V DC	5 V DC supply for MPCB, output
8-3	9-7	5 V DC	5 V DC supply for MPCB, output
8-4	9-1	5 V DC	5 V DC supply for SMPCB, output
8-5	9-2	5 V DC	5 V DC supply for EPCB, output
8-6	7-7	5 V DC	5 V DC supply for MPCB, output
8-9	9-6	12 V DC	12 V D C supply for MPCB, output
10-5	10-1	120 V AC	120 V AC supply for MSW, output
10-5	10-1	220 Ø 240 V AC	220 Ø 240 V AC supply for MSW, output ²
11-1	TB-3	120 V AC	120 V AC supply for PRY, output
11-1	TB-3	220 Ø 240 V AC	220 Ø 240 V AC supply for PRY, output ²
11-3	TB-3	120/0 V AC	PRY on/off, input
11-3	TB-3	220 Ø 240/0 V AC	PRY on/off, input ²
12-1	TB-3	120/0 V AC	H1 on/off, output
12-2	TB-3	120/0 V AC	H2 on/off, output
12-1	TB-3	220 Ø 240/0 V DC	H1 on/off, output ²
12-2	TB-3	220 Ø 240/0 V DC	H2 on/off, output ²

*1: Optional. *2: For 220 Ø 240 V models.

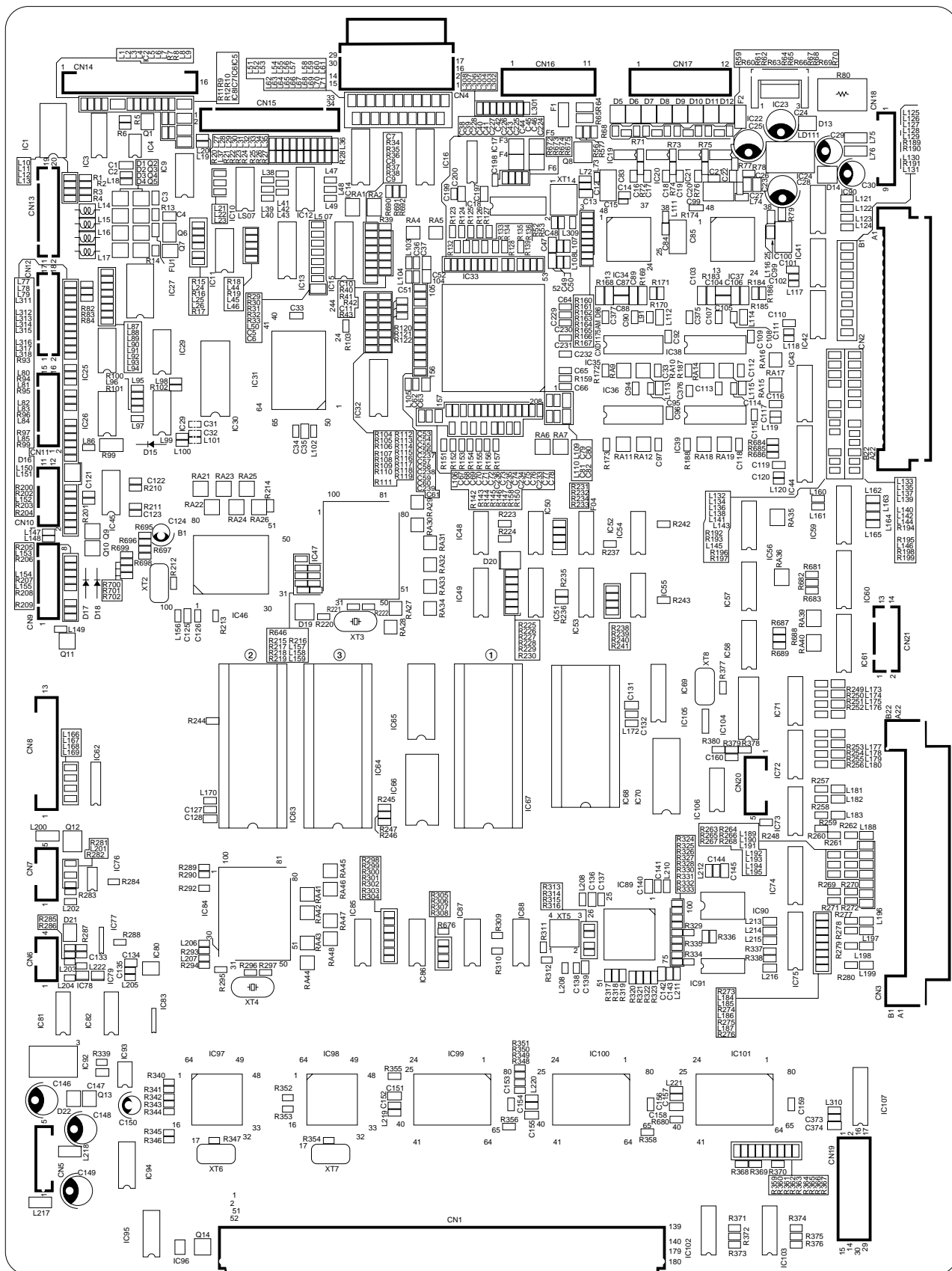


Figure 2-3-4 Main PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-2	CN5-3	0/5 V DC	DUPPCSW2 on/off, input
1-3	CN5-3	0/5 V DC	DUPESW on/off, input
1-4	CN5-3	0/5 V DC	DUPJSW on/off, input
1-5	CN5-3	0/5 V DC	DUPFSSW on/off, input
1-6	CN5-3	0/5 V DC	DUPPCSW1 on/off, input
1-7	CN5-3	0/5 V DC	PFM ALARM signal, output
1-8	CN5-3	0/5 V DC	Duplex unit installed/not installed signal, input
1-9	CN5-3	0/5 V DC	DM ALARM signal, output
1-10	CN5-3	0/5 V DC	IFM ALARM signal, output
1-11	CN5-3	0/4 V DC	BFM1, 2 on/off, output
1-12	CN5-3	0/5 V DC	PFM on/off, output
1-13	CN5-3	0/5 V DC	IFM on/off, output
1-14	CN5-3	0/5 V DC	PFM CLOCK signal, output
1-15	CN5-3	0/5 V DC	IFM CLOCK signal, output
1-16	CN5-3	0/5 V DC	DM on/off, output
1-17	CN5-3	0/5 V DC	H1 on/off, output
1-18	CN5-3	0/5 V DC	DM CLOCK signal, output
1-19	CN5-3	0/5 V DC	DH on/off, output*
1-20	CN5-3	0/5 V DC	H2 on/off, output
1-21	CN5-3	0/5 V DC	CH on/off, output*
1-22	CN5-3	5 V DC	5 V DC supply, input
1-23	CN5-3	0/24 V DC	FCL5 on/off, output
1-24	CN5-3	0/24 V DC	BYPPFCL on/off, output
1-25	CN5-3	0/24 V DC	FCL3 on/off, output
1-26	CN5-3	0/24 V DC	FCL4 on/off, output
1-27	CN5-3	5 V DC	5 V DC supply, input
1-29	CN5-3	5 V DC	5 V DC supply, input
1-30	CN5-3	0/5 V DC	MSW OFF signal, output
1-31	CN5-3	24 V DC	MAIN RESET signal, input
1-33	CN5-3	0/24 V DC	DUPESSOL latch-off signal, output
1-35	CN5-3	0/24 V DC	DUPPRSOL latch-off signal, output
1-36	CN5-3	0/24 V DC	DUPPRSOL latch-on signal, output
1-39	CN5-3	0/24 V DC	RCL on/off, output
1-40	CN5-3	0/24 V DC	FCL1 on/off, output
1-41	CN5-3	0/24 V DC	DUPFWDCL on/off, output
1-42	CN5-3	0/24 V DC	FCL2 on/off, output
1-43	CN5-3	0/24 V DC	DUPREVCL on/off, output
1-45	CN5-3	0/24 V DC	DUPFM on/off, output
1-46	CN5-3	0/24 V DC	DUPESSOL latch-on signal, output
1-48	CN5-3	0/24 V DC	OPFM on/off, output
1-51	CN5-3	0/5 V DC	Reserve input signal 1
1-52	CN5-3	0/5 V DC	Reserve input signal 2
1-53	CN5-3	0/5 V DC	PFSW5 on/off, input
1-54	CN5-3	0/5 V DC	TCBDSW on/off, input
1-55	CN5-3	0/5 V DC	PFSW3 on/off, input
1-56	CN5-3	0/5 V DC	PFSW4 on/off, input
1-57	CN5-3	0/5 V DC	PFSW1 on/off, input
1-58	CN5-3	0/5 V DC	PFSW2 on/off, input
1-59	CN5-3	0/5 V DC	BYPPSW on/off, input
1-60	CN5-3	0/5 V DC	BYPPWSW paper width detection signal (DIG2), input
1-61	CN5-3	0/5 V DC	BYPPWSW paper width detection signal (DIG0), input
1-62	CN5-3	0/5 V DC	BYPPWSW paper width detection signal (DIG1), input
1-63	CN5-3	0/5 V DC	BYPPLSW on/off, input
1-64	CN5-3	0/5 V DC	FSW on/off, input
1-65	CN5-3	24 V DC	FRONT COVER SOURCE signal, output
1-67	CN5-3	0/24 V DC	SSW4 on/off, input

* Optional.

Terminals (CN)		Voltage	Remarks
1-68	CN5-3	0/24 V DC	SSW3 on/off, input
1-69	CN5-3	0/24 V DC	PRY on/off, output
1-70	CN5-3	0/24 V DC	SSW1 on/off, input
1-73	CN5-3	0/24 V DC	PCLM-U on/off, output
1-74	CN5-3	0/24 V DC	PCLM-L on/off, output
1-77	CN5-3	0/24 V DC	TCBRCL on/off, output
1-78	CN5-3	0/24 V DC	BYPLCL on/off, output
1-79	CN5-3	24 V DC	MSW SIG signal, input
1-81	CN5-3	0/5 V DC	WTDSW on/off, input
1-83	CN5-3	0/5 V DC	LPDPESENS on/off, input
1-85	CN5-3	0/5 V DC	LPDPPSENS2 on/off, input
1-86	CN5-3	0/5 V DC	LPDPPSENS3 on/off, input
1-87	CN5-3	24/0 V DC	LPDOSSW on/off, input
1-88	CN5-3	0/5 V DC	LPDPPSENS1 on/off, input
1-89	CN5-3	0/5 V DC	PWSW-L paper width detection signal (DIG2), input*2
1-90	CN5-3	0/5 V DC	PLSW-L on/off, input*3
1-91	CN5-3	0/5 V DC	PWSW-L paper width detection signal (DIG0), input*2
1-92	CN5-3	0/5 V DC	PWSW-L paper width detection signal (DIG1), input*2
1-93	CN5-3	0/5 V DC	PWSW-U paper width detection signal (DIG2), input*2
1-94	CN5-3	0/5 V DC	PLSW-U on/off, input*3
1-95	CN5-3	0/5 V DC	PWSW-U paper width detection signal (DIG0), input*2
1-96	CN5-3	0/5 V DC	PWSW-U paper width detection signal (DIG1), input*2
1-97	CN5-3	0/5 V DC	PSW-U on/off, input
1-98	CN5-3	0/5 V DC	PSW-L on/off, input
1-99	CN5-3	0/5 V DC	LPDPLDSENS1 on/off, input
1-100	CN5-3	0/5 V DC	LPDPLDSENS2 on/off, input
1-101	CN5-3	0/5 V DC	TC count signal, output
1-102	CN5-3	0/5 V DC	TC installed/not installed signal, input
1-103	CN5-3	0/24 V DC	LPDCCL on/off, output
1-104	CN5-3	0/24 V DC	PFCL-U on/off, output
1-105	CN5-3	0/24 V DC	LPDPFCL1 on/off, output
1-106	CN5-3	0/24 V DC	PFCL-L on/off, output
1-107	CN5-3	0/5 V DC	Key card count signal, output*1
1-108	CN5-3	0/24 V DC	LPDPFCL2 on/off, output
1-111	CN5-3	0/5 V DC	Key card count signal, output*1
1-112	CN5-3	0/5 V DC	Key card count connection signal, input*1
1-113	CN5-3	0/5 V DC	Key card control signal, output*1
1-114	CN5-3	0/5 V DC	Key card control signal, output*1
1-115	CN5-3	0/12 V DC	HVTPCB cleaning bias on/off, output
1-116	CN5-3	0/5 V DC	Key card ENABLE signal, output*1
1-117	CN5-3	0/24 V DC	HVTPCB developing bias on/off, output
1-119	CN5-3	0/24 V DC	Transfer charger on/off, output
1-120	CN5-3	0/19 V DC	HVTPCB main charger on/off, output
1-121	CN5-3	0/5 V DC	HVTPCB MC ALARM signal, input
1-122	CN5-3	0/24 V DC	FBB on/off, output
1-123	CN5-3	0 \emptyset 24 V DC	GRID control voltage, output
1-124	CN5-3	0 \emptyset 5 V DC	Developing bias control voltage, output
1-126	CN5-3	0/24 V DC	FWEBSOL on/off, output
1-127	CN5-3	0/5 V DC	FSSW on/off, input
1-128	CN5-3	0/24 V DC	FBB ALARM signal, input
1-129	CN5-3	0/5 V DC	ESW on/off, input
1-130	CN5-3	0/5 V DC	DUPESW on/off, input
1-131	CN5-3	0/24 V DC	FSSOL latch-off signal, output
1-132	CN5-3	0/24 V DC	EFM on/off, output
1-133	CN5-3	0/12 V DC	CL on/off, output

*1: Optional. *2: For inch models only.

*3: Paper length detection for inch models; drawer presence detection for metric models.

Terminals (CN)		Voltage	Remarks
1-134	CN5-3	0/24 V DC	FSSOL latch-on signal, output
1-135	CN5-3	0/24 V DC	MCFM on/off, output
1-137	CN5-3	0/24 V DC	LSUFM1, 2 full speed, output
1-138	CN5-3	0/24 V DC	LSUFM1, 2 half speed, output
1-139	CN5-3	0/24 V DC	CFM on/off, output
1-140	CN5-3	12/24 V DC	CFM half speed/full speed, output
1-141	CN5-3	0/5 V DC	LICSW-U on/off, input
1-142	CN5-3	0/5 V DC	LICSW-L on/off, input
1-143	CN5-3	0/5 V DC	LPDLSW1 on/off, input
1-144	CN5-3	0/5 V DC	LPDLSW2 on/off, input
1-147	CN5-3	0/5 V DC	Key card control signal, output*
1-148	CN5-3	0/5 V DC	Key card control signal, output*
1-149	CN5-3	0/5 V DC	Key card control signal, output*
1-150	CN5-3	0/5 V DC	Key card control signal, output*
1-151	CN5-3	0/5 V DC	Key card control signal, output*
1-152	CN5-3	0/5 V DC	Key card control signal, output*
1-153	CN5-3	0/5 V DC	TH ALARM signal, input
1-154	CN5-3		DSPSENS detection voltage, input
1-155	CN5-3	0/5 V DC	FIX TH L signal, input
1-156	CN5-3	0/5 V DC	FIX TH H signal, input
1-157	CN5-3	0/24 V DC	DH on/off, output*
1-158	CN5-3		TNS control voltage, output
1-159	CN5-3	0/5 V DC	TH DEVE signal, output
1-160	CN5-3		EHUMSENS detection voltage, input
1-162	CN5-3		ETTH detection voltage, input
1-163	CN5-3	0/5 V DC	DSSENS SIG signal, input
1-165	CN5-3	0/5 V DC	TLDS on/off, output
1-166	CN5-3	0/5 V DC	RSW on/off, input
1-167	CN5-3	0/5 V DC	DSSENS LED signal, input
1-169	CN5-3	0 \pm 5 V DC	Transfer charger control voltage, output
1-170	CN5-3		TNS control voltage, output
1-171	CN5-3	0/5 V DC	TFM reference clock signal, output
1-173	CN5-3	0/24 V DC	TAM on/off, output
1-174	CN5-3	0/24 V DC	TFM on/off, output
1-175	CN5-3	0/12 V DC	MCCM forward rotation, output
1-176	CN5-3	0/12 V DC	MCCM reverse rotation, output
1-177	CN5-3	0/24 V DC	LSUFM1 on/off, output (reserve)
1-178	CN5-3	0/24 V DC	LSUFM2 on/off, output (reserve)
1-179	CN5-3	0/24 V DC	FFM on/off, output
1-180	CN5-3	24/12 V DC	FFM full speed/half speed, output
2-A1	2-A6	0/5 V DC	TPPCB T0DATA0 signal, output*
2-A2	2-A6	0/5 V DC	TPPCB T0DATA2 signal, output*
2-A3	2-A6	0/5 V DC	TPPCB T0DATA4 signal, output*
2-A4	2-A6	0/5 V DC	TPPCB T0DATA6 signal, output*
2-A5	2-A6	0/5 V DC	TPPCB WCLK OUT signal, output*
2-A7	2-A6	0/5 V DC	TPPCB MRE OUT signal, output*
2-A8	2-A6	0/5 V DC	TPPCB ACK OUT signal, output*
2-A9	2-A6	0/5 V DC	TPPCB RESERVE OUT signal, output*
2-A11	2-A6	0/5 V DC	TPPCB T1DATA0 signal, input*
2-A12	2-A6	0/5 V DC	TPPCB T1DATA2 signal, input*
2-A13	2-A6	0/5 V DC	TPPCB T1DATA4 signal, input*
2-A14	2-A6	0/5 V DC	TPPCB T1DATA6 signal, input*
2-A15	2-A6	0/5 V DC	TPPCB WCLK IN signal, input*
2-A17	2-A6	0/5 V DC	TPPCB MRE IN signal, input*
2-A18	2-A6	0/5 V DC	TPPCB ACK IN signal, input*
2-A19	2-A6	0/5 V DC	TPPCB RESERVE IN signal, input*

* Optional.

Terminals (CN)		Voltage	Remarks
2-A21	2-A6	0/5 V DC	TPPCB serial signal, input*
2-B1	2-B22	0/5 V DC	TPPCB T0DATA1 signal, output*
2-B2	2-B22	0/5 V DC	TPPCB T0DATA3 signal, output*
2-B3	2-B22	0/5 V DC	TPPCB T0DATA5 signal, output*
2-B4	2-B22	0/5 V DC	TPPCB T0DATA7 signal, output*
2-B5	2-B22	0/5 V DC	TPPCB DB signal, output*
2-B7	2-B22	0/5 V DC	TPPCB WVST OUT signal, output*
2-B8	2-B22	0/5 V DC	TPPCB RDY/BUSY OUT signal, output*
2-B11	2-B22	0/5 V DC	TPPCB T1DATA1 signal, input*
2-B12	2-B22	0/5 V DC	TPPCB T1DATA3 signal, input*
2-B13	2-B22	0/5 V DC	TPPCB T1DATA5 signal, input*
2-B14	2-B22	0/5 V DC	TPPCB T1DATA7 signal, input*
2-B15	2-B22	0/5 V DC	TPPCB _RE signal, output*
2-B17	2-B22	0/5 V DC	TPPCB WVST IN signal, input*
2-B18	2-B22	0/5 V DC	TPPCB RDY/BUSY signal, input*
2-B21	2-B22	0/5 V DC	TPPCB serial signal, output*
3-A1	3-A5	0/5 V DC	MEMPCB VD11 signal, input
3-A2	3-A5	0/5 V DC	MEMPCB VD13 signal, input
3-A3	3-A5	0/5 V DC	MEMPCB VD21 signal, input
3-A4	3-A5	0/5 V DC	MEMPCB VD23 signal, input
3-A11	3-A1	0/5 V DC	MEMPCB RESET MCP signal, output
3-A12	3-A5	0/5 V DC	MEMPCB _SET MCP signal, input
3-A13	3-A5	0/5 V DC	MEMPCB _TAB00 signal, input
3-A14	3-A5	0/5 V DC	MEMPCB RESERVE signal, output
3-A19	3-A5	0/5 V DC	MEMPCB DATA1 signal, output
3-A20	3-A5	0/5 V DC	MEMPCB DATA3 signal, output
3-A21	3-A5	0/5 V DC	MEMPCB DATA5 signal, output
3-A22	3-A5	0/5 V DC	MEMPCB DATA7 signal, output
3-B1	3-A5	0/5 V DC	MEMPCB _VD1 signal, input
3-B2	3-A5	0/5 V DC	MEMPCB VD12 signal, input
3-B3	3-A5	0/5 V DC	MEMPCB _VD2 signal, input
3-B4	3-A5	0/5 V DC	MEMPCB VD22 signal, input
3-B5	3-A5	0/5 V DC	MEMPCB RCK signal, input
3-B6	3-A5	0/5 V DC	MEMPCB MREV D signal, input
3-B7	3-A5	0/5 V DC	MEMPCB _PHSYNC signal, output
3-B8	3-A5	0/5 V DC	MEMPCB _PVST signal, output
3-B9	3-A5	0/5 V DC	MEMPCB _W READY signal, input
3-B10	3-A5	0/5 V DC	MEMPCB _R READY signal, input
3-B11	3-A5	0/5 V DC	MEMPCB TXD ENG signal, output
3-B12	3-A5	0/5 V DC	MEMPCB ACK ENG signal, output
3-B13	3-A5	0/5 V DC	MEMPCB TXD MCP signal, input
3-B14	3-A5	0/5 V DC	MEMPCB ACK MCP signal, input
3-B16	3-A5	0/5 V DC	MEMPCB _WVST signal, output
3-B17	3-A5	0/5 V DC	MEMPCB WCK signal, input
3-B18	3-A5	0/5 V DC	MEMPCB MREID signal, output
3-B19	3-A5	0/5 V DC	MEMPCB DATA2 signal, output
3-B20	3-A5	0/5 V DC	MEMPCB DATA4 signal, output
3-B21	3-A5	0/5 V DC	MEMPCB DATA6 signal, output
3-B22	3-A5	0/5 V DC	MEMPCB DATA8 signal, output
4-2	4-1	0/5 V DC	PCPCB RXD PRT signal, input*
4-3	4-1	0/5 V DC	PCPCB ENGACK PRT signal, output*
4-5	4-1	0/5 V DC	PCPCB TXD PRT signal, output*
4-6	4-1	0/5 V DC	PCPCB PRTACK signal, input*
4-8	4-1	0/5 V DC	PCPCB _PRINT signal, input*
4-9	4-1	0/5 V DC	PCPCB _SETPRT signal, input*
4-10	4-1	0/5 V DC	PCPCB _MRDY signal, input*

* Optional.

Terminals (CN)		Voltage	Remarks
4-11	4-1	0/5 V DC	PCPCB _P1 PRT signal, input*
4-12	4-1	0/5 V DC	PCPCB _P2 PRT signal, output*
4-14	4-1	0/5 V DC	PCPCB _RESET PRT signal, input*
4-16	4-1	0/5 V DC	PCPCB PRTCLK signal, input*
4-18	4-1	0/5 V DC	PCPCB _POVSYNC signal, input*
4-20	4-1	0/5 V DC	PCPCB PMRE signal, input*
4-22	4-1	0/5 V DC	PCPCB PID0 signal, input*
4-23	4-1	0/5 V DC	PCPCB PID1 signal, input*
4-24	4-1	0/5 V DC	PCPCB PID2 signal, input*
4-25	4-1	0/5 V DC	PCPCB PID3 signal, input*
4-27	4-1	0/5 V DC	PCPCB PID4 signal, input*
4-28	4-1	0/5 V DC	PCPCB PID5 signal, input*
4-29	4-1	0/5 V DC	PCPCB PID6 signal, input*
4-30	4-1	0/5 V DC	PCPCB PID7 signal, input*
5-1	5-3	5 V DC	5 V DC supply, input
5-2	5-3	0/5 V DC	SLEEP signal, input
5-4	5-3	5 V DC	5 V DC supply, input
5-5	5-3	0/5 V DC	Zero-cross signal, output
6-1	6-2	0/5 V DC	LSU clock signal, output
6-3	6-2	0/5 V DC	LSU START signal, output
6-4	6-2	0/5 V DC	LSU READY signal, input
7-2	7-1	0/5 V DC	LSU BDØ signal, input
7-3	7-1	0/5 V DC	LSU BD+ signal, input
7-5	7-4	5 V DC	5 V DC supply for LSU, output
8-2	8-1	0/5 V DC	LSU VD2Ø signal, output
8-3	8-1	0/5 V DC	LSU VD2+ signal, output
8-4	8-1	0/5 V DC	LSU VD1Ø signal, output
8-5	8-1	0/5 V DC	LSU VD1+ signal, output
8-7	8-6	0/5 V DC	LSU ENABLE signal, output
8-9	8-8	0/5 V DC	LSU ADJUST2 signal, output
8-11	8-10	0/5 V DC	LSU ADJUST1 signal, output
8-13	8-12	5 V DC	5 V DC supply for LSU, output
9-1	9-4	0/5 V DC	Side deck RESET signal, input*
9-2	9-4	0/5 V DC	Deck connection signal, input*
9-3	9-4	0/5 V DC (pulse)	Serial signal for side deck, output*
9-5	9-4	0/5 V DC (pulse)	Serial signal from side deck, input*
9-7	9-6	0/5 V DC	Side deck READY signal, input*
9-8	9-6	0/5 V DC	Side deck FEED signal, output*
10-1	10-7	0/5 V DC	Finisher RESET signal, input*
10-2	10-7	0/5 V DC	Mailbox RESET signal, input*
10-3	10-7	0/5 V DC	Finisher connection signal, input*
10-4	10-7	0/5 V DC	Mailbox connection signal, input*
10-5	10-7	0/5 V DC (pulse)	Serial signal for finisher, output*
10-6	10-7	0/5 V DC (pulse)	Serial signal for mailbox, output*
10-9	10-11	0/5 V DC (pulse)	Serial signal from finisher, input*
10-10	10-12	0/5 V DC (pulse)	Serial signal from mailbox, input*
11-1	11-4	0/5 V DC (pulse)	MMD count on/off, output
11-2	11-4	0/5 V DC	MMD connection signal, input
11-3	11-4	0/5 V DC (pulse)	Serial signal for MMD, output
11-5	11-6	0/5 V DC (pulse)	Serial signal from MMD, input
11-9	11-8	0/5 V DC (pulse)	Serial signal for coin vender, output*
11-11	11-10	0/5 V DC (pulse)	Serial signal from coin vender, input*
11-13	11-12	0/5 V DC	Coin vender FEED signal, output*
11-14	11-12	0/5 V DC	Coin vender EJECT signal, output*
11-15	11-12	0/5 V DC	Coin vender COPYING signal, output*
11-16	11-12	0/5 V DC	Coin vender ENABLE signal, input*

*Optional.

Terminals (CN)		Voltage	Remarks
12-1	13-2	0/5 V DC	LCD control signal XSCL, output
12-2	13-2	0/5 V DC (pulse)	LCD (XD3) data, output
12-3	13-2	0/5 V DC (pulse)	LCD (XD2) data, output
12-4	13-2	0/5 V DC (pulse)	LCD (XD1) data, output
12-5	13-2	0/5 V DC (pulse)	LCD (XD0) data, output
12-6	13-2	0/5 V DC	LCD control signal LP, output
12-7	13-2	0/5 V DC	LCD control signal DIN, output
12-8	13-2	0/5 V DC	LCD control signal BACK L REM, output
12-9	13-2	0/5 V DC (pulse)	OLPCB LED on DIGLED L4, output
12-10	13-2	0/5 V DC (pulse)	OLPCB LED on DIGLED L3, output
12-11	13-2	0/5 V DC (pulse)	OLPCB LED on DIGLED L2, output
12-12	13-2	0/5 V DC (pulse)	OLPCB LED on DIGLED L1, output
12-13	13-2	0/5 V DC	OLPCB key return signal DIGKEY L3, input
12-14	13-2	0/5 V DC	OLPCB key return signal DIGKEY L2, input
12-15	13-2	0/5 V DC	OLPCB key return signal DIGKEY L1, input
12-16	13-2	0/5 V DC (pulse)	OLPCB scan signal SCAN L3, output
12-17	13-2	0/5 V DC (pulse)	OLPCB scan signal SCAN L2, output
12-18	13-2	0/5 V DC (pulse)	OLPCB scan signal SCAN L1, output
13-3	13-2	0/5 V DC (pulse)	Touch panel detection voltage Y2, output
13-4	13-2	0/5 V DC (pulse)	Touch panel detection voltage X2, output
13-5	13-2	0/5 V DC (pulse)	Touch panel detection voltage Y1, input
13-6	13-2	0/5 V DC (pulse)	Touch panel detection voltage X1, input
13-7	13-2	5 V DC	5 V DC supply, output
13-8	13-2	0/5 V DC	RMT signal, output
13-9	13-2	0/5 V DC (pulse)	ORPCB LED on DIGLED R4, output
13-10	13-2	0/5 V DC (pulse)	ORPCB LED on DIGLED R3, output
13-11	13-2	0/5 V DC (pulse)	ORPCB LED on DIGLED R2, output
13-12	13-2	0/5 V DC (pulse)	ORPCB LED on DIGLED R1, output
13-13	13-2	0/5 V DC	ORPCB key return signal DIGKEY R4, input
13-14	13-2	0/5 V DC	ORPCB key return signal DIGKEY R3, input
13-15	13-2	0/5 V DC	ORPCB key return signal DIGKEY R2, input
13-16	13-2	0/5 V DC	ORPCB key return signal DIGKEY R1, input
13-17	13-2	0/5 V DC (pulse)	ORPCB scan signal SCAN R4, output
13-18	13-2	0/5 V DC (pulse)	ORPCB scan signal SCAN R3, output
13-19	13-2	0/5 V DC (pulse)	ORPCB scan signal SCAN R2, output
13-20	13-2	0/5 V DC (pulse)	ORPCB scan signal SCAN R1, output
14-1	14-14	0/5 V DC	ODSW on/off, input
14-2	14-14		SM current control voltage SM Vref, output
14-3	14-14	0/5 V DC	SM drive control signal SM M1, output
14-4	14-14	0/5 V DC	SM drive control signal SM M2, output
14-5	14-14	0/5 V DC	SM drive control signal SM M3, output
14-6	14-14	0/5 V DC	SM drive control signal SM M4, output
14-7	14-14	0/5 V DC	SM drive control signal SM M5, output
14-8	14-14	0/5 V DC (pulse)	SM drive clock pulse, output
14-9	14-14	0/5 V DC	SM rotational direction switching signal SMOT CWB, output
14-10	14-14	0/5 V DC	SM control signal SMOT RET signal, output
14-11	14-14	0/5 V DC	SM enable signal, output
14-12	14-14	0/5 V DC	EL on/off, output
14-13	14-14	0/5 V DC	SHPSW on/off, input
14-15	14-14	0/5 V DC	OSD2 signal, input*2
14-16	14-14	0/5 V DC	OSD1 signal, input
15-1	15-34	0/5 V DC	OSLED (red) on/off, output
15-2	15-34	0/5 V DC	OSLED (green) on/off, output
15-3	15-34	0/24 V DC	SBPSOL release signal, output
15-4	15-34	0/24 V DC	SBPSOL latch-on signal, output
15-5	15-34	0/24 V DC	OFCL on/off, output

*1: Optional *2: For inch models only.

Terminals (CN)		Voltage	Remarks
15-6	15-34	0/24 V DC	EFSSOL on/off, output
15-8	15-34	0/24 V DC	SBFSSOL on/off, output
15-9	15-34	0/24 V DC	OFSOL release signal, output
15-10	15-34	0/24 V DC	OFSOL latch-on signal, output
15-11	15-34	0/5 V DC	OFM enable signal, output
15-12	15-34	0/5 V DC	OFM control signal OFM RET, output
15-13	15-34	0/5 V DC (pulse)	OFM drive clock pulse, output
15-14	15-34	0/5 V DC	OFM rotational direction switching signal OFM CWB, output
15-15	15-34	0/5 V DC	OCM enable signal, output
15-16	15-34	0/5 V DC (pulse)	OCM drive clock pulse, output
15-17	15-34	0/5 V DC	OCM switching signal OCM CWB, output
15-18	15-34	0/5 V DC	OCM current control voltage OCM Vref, output
15-19	15-34	0/5 V DC	OCM drive control voltage OCM M3, output
15-20	15-34	0/5 V DC	OCM drive control voltage OCM M2, output
15-21	15-34	0/5 V DC	OCM drive control voltage OCM M1, output
15-22	15-34	0/5 V DC	OSLSW on/off, input
15-23	15-34	0/5 V DC	OSBSW on/off, input
15-24	15-34	0/5 V DC	OFSW on/off, input
15-25	15-34	0/5 V DC	OSSW on/off, input
15-28	15-34	0/5 V DC	SRDF installed/not installed detection signal, input
15-29	15-34	0/5 V DC	SZ DET signal, input
15-30	15-34	0/5 V DC	DFSSW2 on/off, input
15-31	15-34	0/5 V DC	DFSSW1 on/off, input
15-32	15-34	0/5 V DC	OSWSW on/off, input
15-33	15-34	0/5 V DC	DFTSW on/off, input
16-1	17-11	0/5 V DC	CCD drive clock signal ϕ CLP $\bar{\phi}$, output
16-2	17-11	0/5 V DC	CCD drive clock signal ϕ CLP+, output
16-3	17-11	0/5 V DC	CCD drive clock signal ϕ RS+, output
16-4	17-11	0/5 V DC	CCD drive clock signal ϕ RS $\bar{\phi}$, output
16-5	17-11	0/5 V DC	CCD drive clock signal ϕ CLK $\bar{\phi}$, output
16-6	17-11	0/5 V DC	CCD drive clock signal ϕ CLK+, output
16-7	17-11	0/5 V DC	CCD drive clock signal ϕ SHIFT+, output
16-8	17-11	0/5 V DC	CCD drive clock signal ϕ SHIFT $\bar{\phi}$, output
16-9	17-11	5 V DC	5 V DC supply, output
16-10	17-11	5 V DC	5 V DC supply, output
16-11	17-11	5 V DC	5 V DC supply, output
17-1	17-11	0/5 V DC	CCD control signal OS2+, input
17-2	17-11	0/5 V DC	CCD control signal OS2 $\bar{\phi}$, input
17-3	17-11	0/5 V DC	CCD control signal OS1+, input
17-4	17-11	0/5 V DC	CCD control signal OS1 $\bar{\phi}$, input
17-5	17-11	0/5 V DC	CCD control signal OS3+, input
17-6	17-11	0/5 V DC	CCD control signal OS3 $\bar{\phi}$, input
17-7	17-11	0/5 V DC	CCD control signal OS4+, input
17-8	17-11	0/5 V DC	CCD control signal OS4 $\bar{\phi}$, input
17-10	17-11	+12 V DC	+12 V DC supply, output
18-1	18-2	24 V DC	24 V DC supply, input
18-3	18-4	5 V DC	5 V DC supply, input
18-5	18-6	3.4 V DC	3.4 V DC supply, input
19-2	19-1	5 V DC	5 V DC supply, output
19-3	19-1	0/5 V DC	IPC address data A0M, output
19-4	19-1	0/5 V DC	IPC address data A2M, output
19-5	19-1	0/5 V DC	IPC address data A4M, output
19-6	19-1	0/5 V DC	IPC address data A6M, output
19-7	19-1	0/5 V DC	IPC address data AD0M, input
19-8	19-1	0/5 V DC	IPC address data AD2M, input
19-9	19-1	0/5 V DC	IPC address data AD4M, input

Terminals (CN)		Voltage	Remarks
19-10	19-1	0/5 V DC	IPC address data AD6M, input
19-12	19-1	0/5 V DC	IPC _WR signal, output
19-13	19-1	0/5 V DC	IPC _SF signal, output
19-14	19-1	5 V DC	5 V DC supply, output
19-17	19-1	5 V DC	5 V DC supply, output
19-18	19-1	0/5 V DC	IPC address data A1M, output
19-19	19-1	0/5 V DC	IPC address data A3M, output
19-20	19-1	0/5 V DC	IPC address data A5M, output
19-21	19-1	0/5 V DC	IPC address data A7M, output
19-22	19-1	0/5 V DC	IPC address data AD1M, output
19-23	19-1	0/5 V DC	IPC address data AD3M, output
19-24	19-1	0/5 V DC	IPC address data AD5M, output
19-25	19-1	0/5 V DC	IPC address data AD7M, output
19-27	19-1	0/5 V DC	IPC _RD signal, output
19-28	19-1	0/5 V DC	IPC _RES SF signal, output
19-29	19-1	5 V DC	5 V DC supply, output
19-30	19-1	0/5 V DC	IPC SET signal, output
20-1	19-1	0/5 V DC	PG DI signal, input
20-2	19-1	0/5 V DC	PG D0 signal, output
20-3	19-1	0/5 V DC	PG EN signal, output
20-4	19-1	0/5 V DC	PG CLK signal, output
20-5	19-1	0/5 V DC	PG SCLE signal, output
20-6	19-1	0/5 V DC	PG VSYNC signal, output

2-3-3 Engine PCB

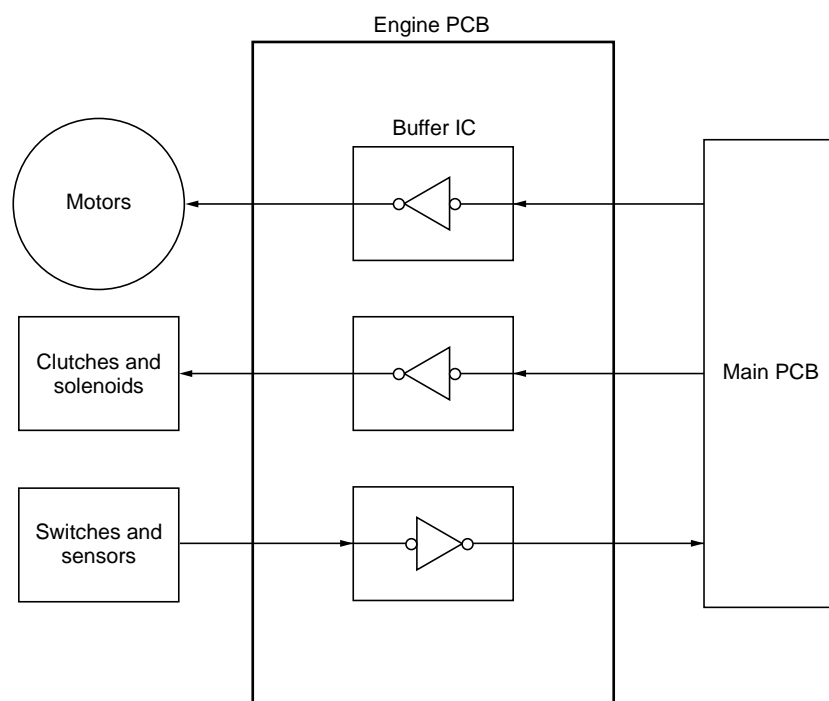
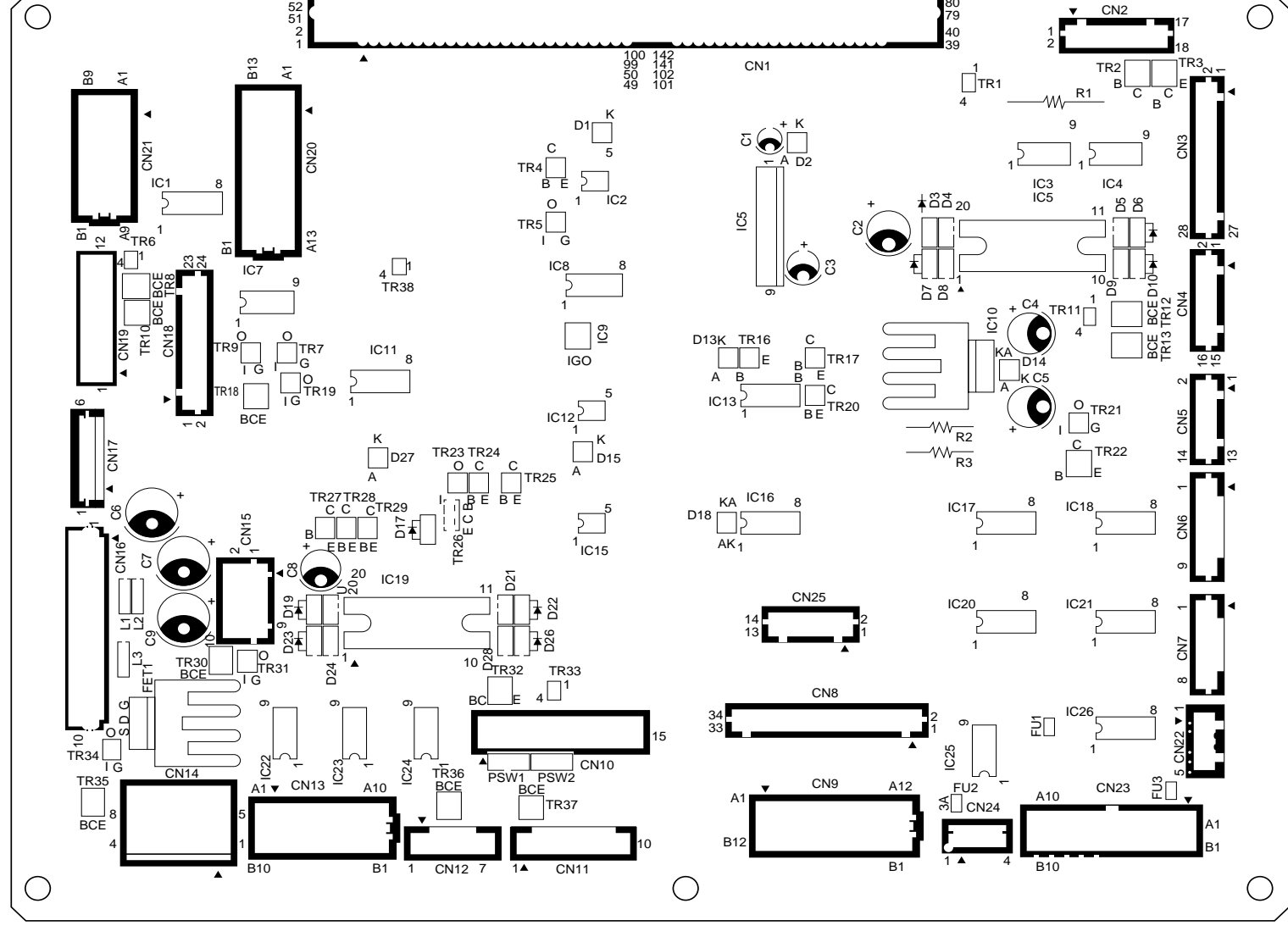


Figure 2-3-5 Engine PCB block diagram

The engine PCB (EPCB) transmits the status of each switch or sensor to the main PCB (MPCB). It also transmits drive control signals from the main PCB (MPCB) through buffer ICs to motors and clutches.



Terminals (CN)		Voltage	Remarks
1-2	17-6	0/5 V DC	DUPPCSW2 on/off, output
1-3	17-6	0/5 V DC	DUPESW on/off, output
1-4	17-6	0/5 V DC	DUPJSW on/off, output
1-5	17-6	0/5 V DC	DUPFSSW on/off, output
1-6	17-6	0/5 V DC	DUPPCSW1 on/off, output
1-7	17-6	0/5 V DC	PFM ALARM signal, input
1-8	17-6	0/5 V DC	Duplex unit installed/not installed signal, output
1-9	17-6	0/5 V DC	DM ALARM signal, input
1-10	17-6	0/5 V DC	IFM ALARM signal, input
1-11	17-6	0/5 V DC	BFM1, 2 on/off, input
1-12	17-6	0/5 V DC	PFM on/off, input
1-13	17-6	0/5 V DC	IFM on/off, input
1-14	17-6	0/5 V DC	PFM CLOCK signal, input
1-15	17-6	0/5 V DC	IFM CLOCK signal, input
1-16	17-6	0/5 V DC	DM on/off, input
1-17	17-6	0/5 V DC	H1 on/off, input
1-18	17-6	0/5 V DC	DM CLOCK signal, input
1-19	17-6	0/5 V DC	DH on/off, input*
1-20	17-6	0/5 V DC	H2 on/off, input
1-21	17-6	0/5 V DC	CH on/off, input*
1-22	17-6	5 V DC	5 V DC supply, output
1-23	17-6	0/24 V DC	FCL5 on/off, input
1-24	17-6	0/24 V DC	BYPPFCL on/off, input
1-25	17-6	0/24 V DC	FCL3 on/off, input
1-26	17-6	0/24 V DC	FCL4 on/off, input
1-27	17-6	5 V DC	5 V DC supply, output
1-29	17-6	5 V DC	5 V DC supply, output
1-30	17-6	0/5 V DC	MSW OFF signal, input
1-31	17-6	24 V DC	MAIN RESET signal, output
1-33	17-6	0/24 V DC	DUPESSOL latch-off signal, input
1-35	17-6	0/24 V DC	DUPPRSOL latch-off signal, input
1-36	17-6	0/24 V DC	DUPPRSOL latch-on signal, input
1-39	17-6	0/24 V DC	RCL on/off, input
1-40	17-6	0/24 V DC	FCL1 on/off, input
1-41	17-6	0/24 V DC	DUPFWDCL on/off, input
1-42	17-6	0/24 V DC	FCL2 on/off, input
1-43	17-6	0/24 V DC	DUPREVCL on/off, input
1-45	17-6	0/24 V DC	DUPFM on/off, input
1-46	17-6	0/24 V DC	DUPESSOL latch-on signal, input
1-48	17-6	0/24 V DC	OPFM on/off, input
1-51	17-6	0/5 V DC	Reserve input signal 1
1-52	17-6	0/5 V DC	Reserve input signal 2
1-53	17-6	0/5 V DC	PFSW5 on/off, output
1-54	17-6	0/5 V DC	TCBDSW on/off, output
1-55	17-6	0/5 V DC	PFSW3 on/off, output
1-56	17-6	0/5 V DC	PFSW4 on/off, output
1-57	17-6	0/5 V DC	PFSW1 on/off, output
1-58	17-6	0/5 V DC	PFSW2 on/off, output
1-59	17-6	0/5 V DC	BYPPSW on/off, output
1-60	17-6	0/5 V DC	BYPPWSW paper width detection signal (DIG2), output
1-61	17-6	0/5 V DC	BYPPWSW paper width detection signal (DIG0), output
1-62	17-6	0/5 V DC	BYPPWSW paper width detection signal (DIG1), output
1-63	17-6	0/5 V DC	BYPPLSW on/off, output
1-64	17-6	0/5 V DC	FSW on/off, output
1-65	17-6	24 V DC	FRONT COVER SOURCE signal, input
1-67	17-6	0/24 V DC	SSW4 on/off, output

* Optional.

Terminals (CN)		Voltage	Remarks
1-68	17-6	0/24 V DC	SSW3 on/off, output
1-69	17-6	0/24 V DC	PRY on/off, input
1-70	17-6	0/24 V DC	SSW1 on/off, output
1-73	17-6	0/24 V DC	PCLM-U on/off, input
1-74	17-6	0/24 V DC	PCLM-L on/off, input
1-77	17-6	0/24 V DC	TCBRCL on/off, input
1-78	17-6	0/24 V DC	BYPLCL on/off, input
1-79	17-6	24 V DC	MSW SIG signal, output
1-81	17-6	0/5 V DC	WTDSW on/off, output
1-83	17-6	0/5 V DC	LPDPESENS on/off, output
1-85	17-6	0/5 V DC	LPDPPSENS2 on/off, output
1-86	17-6	0/5 V DC	LPDPPSENS3 on/off, output
1-87	17-6	24/0 V DC	LPDOSSW on/off, output
1-88	17-6	0/5 V DC	LPDPPSENS1 on/off, output
1-89	17-6	0/5 V DC	PWSW-L paper width detection signal (DIG2), output*2
1-90	17-6	0/5 V DC	PLSW-L on/off, output*3
1-91	17-6	0/5 V DC	PWSW-L paper width detection signal (DIG0), output*2
1-92	17-6	0/5 V DC	PWSW-L paper width detection signal (DIG1), output*2
1-93	17-6	0/5 V DC	PWSW-U paper width detection signal (DIG2), output*2
1-94	17-6	0/5 V DC	PLSW-U on/off, output*3
1-95	17-6	0/5 V DC	PWSW-U paper width detection signal (DIG0), output*2
1-96	17-6	0/5 V DC	PWSW-U paper width detection signal (DIG1), output*2
1-97	17-6	0/5 V DC	PSW-U on/off, output
1-98	17-6	0/5 V DC	PSW-L on/off, output
1-99	17-6	0/5 V DC	LPDPLDSENS1 on/off, output
1-100	17-6	0/5 V DC	LPDPLDSENS2 on/off, output
1-101	17-6	0/5 V DC	TC count signal, input
1-102	17-6	0/5 V DC	TC installed/not installed signal, output
1-103	17-6	0/24 V DC	LPDCCL on/off, input
1-104	17-6	0/24 V DC	PFCL-U on/off, input
1-105	17-6	0/24 V DC	LPDPFCL1 on/off, input
1-106	17-6	0/24 V DC	PFCL-L on/off, input
1-107	17-6	0/5 V DC	Key card count signal, input*1
1-108	17-6	0/24 V DC	LPDPFCL2 on/off, input
1-115	17-6	0/12 V DC	HVTPCB cleaning bias on/off, input
1-116	17-6	0/5 V DC	Key card ENABLE signal, input*1
1-117	17-6	0/24 V DC	HVTPCB developing bias on/off, input
1-119	17-6	0/24 V DC	Transfer charger on/off, input
1-120	17-6	0/19 V DC	HVTPCB main charger on/off, input
1-121	17-6	0/5 V DC	HVTPCB MC ALARM signal, output
1-122	17-6	0/24 V DC	FBB on/off, input
1-123	17-6	0 \varnothing 24 V DC	GRID control voltage, input
1-124	17-6	0 \varnothing 5 V DC	Developing bias control voltage, input
1-126	17-6	0/24 V DC	FWEBSOL on/off, input
1-127	17-6	0/5 V DC	FSSW on/off, output
1-128	17-6	0/24 V DC	FBB ALARM signal, output
1-129	17-6	0/5 V DC	ESW on/off, output
1-130	17-6	0/5 V DC	DUPESW on/off, output
1-131	17-6	0/24 V DC	FSSOL latch-off signal, input
1-132	17-6	0/24 V DC	EFM on/off, input
1-133	17-6	0/12 V DC	CL on/off, input
1-134	17-6	0/24 V DC	FSSOL latch-on signal, input
1-135	17-6	0/24 V DC	MCFM on/off, input
1-137	17-6	0/24 V DC	LSUFM1, 2 full speed, input
1-138	17-6	0/24 V DC	LSUFM1, 2 half speed, input

*1: Optional. *2: For inch models only.

*3: Paper length detection for inch models; drawer presence detection for metric models.

Terminals (CN)		Voltage	Remarks
1-139	17-6	0/24 V DC	CFM on/off, input
1-140	17-6	12/24 V DC	CFM half speed/full speed, input
1-141	17-6	0/5 V DC	LICSW-U on/off, output
1-142	17-6	0/5 V DC	LICSW-L on/off, output
1-143	17-6	0/5 V DC	LPDLSW1 on/off, output
1-144	17-6	0/5 V DC	LPDLSW2 on/off, output
1-153	17-6	0/5 V DC	TH ALARM signal, output
1-154	17-6		DSPSENS detection voltage, output
1-155	17-6	0/5 V DC	FIX TH L signal, output
1-156	17-6	0/5 V DC	FIX TH H signal, output
1-157	17-6	0/24 V DC	DH on/off, input*
1-158	17-6		TNS control voltage, input
1-159	17-6	0/5 V DC	TH DEVE signal, input
1-160	17-6		EHUMSENS detection voltage, output
1-162	17-6		ETTH detection voltage, output
1-163	17-6	0/5 V DC	DSSENS SIG signal, output
1-165	17-6	0/5 V DC	TLDS on/off, input
1-166	17-6	0/5 V DC	RSW on/off, output
1-169	17-6	0 \pm 5 V DC	Transfer charger control voltage, input
1-170	17-6		TNS control voltage, input
1-171	17-6	0/5 V DC	TFM reference clock signal, input
1-173	17-6	0/24 V DC	TAM on/off, input
1-174	17-6	0/24 V DC	TFM on/off, input
1-175	17-6	0/12 V DC	MCCM forward rotation, input
1-176	17-6	0/12 V DC	MCCM reverse rotation, input
1-177	17-6	0/24 V DC	LSUFM1 on/off, input (reserve)
1-178	17-6	0/24 V DC	LSUFM2 on/off, input (reserve)
1-179	17-6	0/24 V DC	FFM on/off, input
1-180	17-6	24/12 V DC	FFM full speed/half speed, input
2-1	5-3	24 V DC	24 V DC supply for LSUFM1, output
2-2	5-3	0/24 V DC	CFM on/off, output
2-3	5-3	24 V DC	24 V DC supply for LSUFM2, output
2-4	5-3	12/24 V DC	CFM half speed/ full speed signal, output
2-5	5-3	24 V DC	24 V DC supply for MCFM, output
2-6	5-3	0/24 V DC	MCFM on/off, output
2-7	5-3	24 V DC	24 V DC supply for FFM, output
2-8	5-3	0/24 V DC	FFM on/off, output
2-9	5-3	12/24 V DC	LSUFM2 half speed/full speed signal, output
2-10	5-3	12/24 V DC	FFM half speed/full speed signal, output
2-11	5-3	0/24 V DC	LSUFM2 on/off, output
2-12	5-3	12/24 V DC	LSUFM1 half speed/full speed signal, output
2-13	5-3	24 V DC	24 V DC supply for CFM, output
2-15	5-3	24 V DC	24 V DC supply, input
2-17	5-3	24 V DC	24 V DC supply, input
2-18	5-3	0/24 V DC	LSUFM1 on/off, output
3-1	3-2	0/24 V DC (pulse)	TFM on/off, output
3-3	3-4	0/24 V DC (pulse)	TAM on/off, output
3-5	5-3	24 V DC	24 V DC supply for CL, output
3-6	5-3	0/12 V DC	CL on/off, output
3-9	5-3	0/12 V DC	MCCM forward rotation, output
3-10	5-3	0/12 V DC	MCCM reverse rotation, output
3-11	5-3	24 V DC	24 V DC supply for TNS, output
3-12	5-3		TNS control voltage, output
3-14	5-3		TNS detection voltage, output
3-22	3-21	0/5 V DC	DRMTH on/off, output
3-24	3-23	0/5 V DC	TLDS on/off, output

* Optional.

Terminals (CN)		Voltage	Remarks
3-25	3-27	5 V DC	5 V DC supply for RSW, output
3-26	3-27	0/5 V DC	5 V DC supply for TLDS, output
3-28	3-27	0/5 V DC	RSW on/off, input
4-1	4-9	24 V DC	24 V DC supply for FSSOL, output
4-2	4-9	0/24 V DC	FSSOL latch-off signal, output
4-4	4-9	0/24 V DC	FSSOL latch-on signal, output
4-5	4-9	12 V DC	12 V DC supply for EFM, output
4-6	4-9	0/12 V DC	EFM on/off, output
4-7	4-9	5 V DC	5 V DC supply for FSSW, output
4-8	4-10	5 V DC	5 V DC supply for EFM, output
4-11	4-9	0/5 V DC	FSSW on/off, input
4-12	4-10	0/5 V DC	ESW on/off, input
4-13	4-15	5 V DC	5 V DC supply for SBESW, output
4-14	4-15	0/5 V DC	SBESW on/off, output
5-1	5-3	24 V DC	24 V DC supply for TCBPCB, output
5-4	5-3	0 $\bar{\text{D}}$ 5 V DC	TCBPCB transfer charger control voltage, output
5-5	5-3	0/24 V DC	TCBPCB transfer charger on/off, output
5-6	5-3	0/24 V DC	TCBPCB FBB on/off, output
5-7	5-3	24 V DC	24 V DC supply for FWEBSOL, output
5-8	5-3	0/24 V DC	FWEBSOL on/off, output
5-9	5-3	0/24 V DC	TCBPCB ALARM signal, output
5-12	5-11	0/5 V DC	FTH on/off, output
6-1	6-2	24 V DC	24 V DC supply for HVTPCB, output
6-3	6-2	0/19 V DC	HVTPCB main charger on/off, output
6-5	6-2	0/5 V DC	HVTPCB MC ALARM signal, input
6-6	6-2	5 V DC	HVTPCB GRID control voltage, output
6-7	6-2	0/24 V DC	HVTPCB developing bias on/off, output
6-8	6-2	0 $\bar{\text{D}}$ 5 V DC	HVTPCB developing bias control voltage, output
6-9	6-2	0/12 V DC	HVTPCB cleaning bias on/off, output
7-1	7-2		ETTH detection voltage, input
7-3	7-2	0 $\bar{\text{D}}$ 5 V DC	EHUMSENS detection voltage, input
7-4	7-2	5 V DC	5 V DC supply for HUMPCB, output
7-7	7-6		DSPSENS detection voltage, input
7-8	7-5	24 V DC	24 V DC supply for DSPSENS, output
8-1	8-13	24 V DC	24 V DC supply for PFCL-U, output
8-2	8-13	24 V DC	24 V DC supply for PFCL-L, output
8-3	8-13	0/24 V DC	PFCL-U on/off, output
8-4	8-13	0/24 V DC	PFCL-L on/off, output
8-5	8-7	5 V DC	5 V DC supply for LICSW-U, output
8-6	8-8	5 V DC	5 V DC supply for LICSW-L, output
8-9	8-7	0/5 V DC	LICSW-U on/off, input
8-10	8-8	0/5 V DC	LICSW-L on/off, input
8-11	8-13	5 V DC	5 V DC supply for PSW-U, output
8-12	8-14	5 V DC	5 V DC supply for PSW-L, output
8-15	8-13	0/5 V DC	PSW-U on/off, input
8-16	8-14	0/5 V DC	PSW-L on/off, input
8-19	8-17	0/5 V DC	PWSW-U paper width detection signal (DIG2), input
8-20	8-18	0/5 V DC	PWSW-L paper width detection signal (DIG2), input
8-21	8-17	0/5 V DC	PWSW-U paper width detection signal (DIG1), input
8-22	8-18	0/5 V DC	PWSW-L paper width detection signal (DIG1), input
8-23	8-17	0/5 V DC	PWSW-U paper width detection signal (DIG0), input
8-24	8-18	0/5 V DC	PWSW-L paper width detection signal (DIG0), input
8-27	8-25	0/5 V DC	PLSW-U on/off, input
8-28	8-26	0/5 V DC	PLSW-L on/off, input
8-29	8-33	0/5 V DC	Reserve input signal
8-30	8-34	0/5 V DC	Reserve input signal

Terminals (CN)		Voltage	Remarks
8-31	8-33	5 V DC	5 V DC supply, input
8-32	8-34	5 V DC	5 V DC supply, input
9-A1	9-A2	0/5 V DC	LPDPESENS on/off, input
9-A3	9-A2	5 V DC	5 V DC supply for LPDPESENS, output
9-A4	9-A5	0/5 V DC	LPDPPSENS3 on/off, input
9-A6	9-A5	5 V DC	5 V DC supply for LPDPPSENS3, output
9-A7	9-A5	0/5 V DC	LPDPPSENS2 on/off, input
9-A9	9-A8	5 V DC	5 V DC supply for LPDPPSENS2, output
9-A10	9-A11	0/5 V DC	LPDPPSENS1 on/off, input
9-A12	9-A11	5 V DC	5 V DC supply for LPDPPSENS1, output
9-B1	9-B2	5 V DC	5 V DC supply for LPDLSW1, output
9-B3	9-B2	0/5 V DC	LPDLSW 1 on/off, input
9-B4	9-B2	5 V DC	5 V DC supply for LPDLSW2, output
9-B6	9-B5	0/5 V DC	LPDLSW 2 on/off, input
9-B7	9-B5	24 V DC	24 V DC supply for LPDOSSW, output
9-B8	9-B5	24/0 V DC	LPDOSSW on/off, input
9-B9	9-B5	24 V DC	24 V DC supply for LPDPFCL1, output
9-B10	9-B5	0/24 V DC	LPDPFCL1 on/off, output
9-B11	9-B5	24 V DC	24 V DC supply for LPDPFCL2, output
9-B12	9-B5	0/24 V DC	LPDPFCL2 on/off, output
10-1	10-8	0/24 V DC	TCBRCL on/off, output
10-2	10-8	24 V DC	24 V DC supply for TCBRCL, output
10-3	10-8	0/24 V DC	LPDLM-R on/off, output
10-4	10-8	24 V DC	24 V DC supply for LPDLM-R, output
10-5	10-8	0/24 V DC	LPDLM-L on/off, output
10-6	10-8	24 V DC	24 V DC supply for LPDLM-L, output
10-7	10-8	5 V DC	5 V DC supply for LPDPLDSENS2, output
10-9	10-8	0/5 V DC	LPDPLDSENS2 on/off, input
10-10	10-11	5 V DC	5 V DC supply for LPDPLDSENS1, output
10-12	10-11	0/5 V DC	LPDPLDSENS1 on/off, input
10-13	10-14	5 V DC	5 V DC supply for TCBDSW, output
10-15	10-14	0/5 V DC	TCBDSW on/off, input
11-1	11-7	24 V DC	24 V DC supply for MSW, output
11-2	11-7	0/24 V DC	MSW forced on/off, output
11-3	11-7	24 V DC	24 V DC supply for MSW, output
11-4	11-7	0/24 V DC	MSW on/off, input
11-5	11-7	24 V DC	24 V DC supply for SC, output
11-6	11-7	0/5 V DC	SC count signal, output
11-10	11-7	0/5 V DC	WTDSW on/off, input
12-1	12-7	24 V DC	24 V DC supply for BYPPFCL, output
12-2	12-7	0/24 V DC	BYPPFCL on/off, output
12-3	12-7	24 V DC	24 V DC supply for BYPLCL, output
12-4	12-7	0/24 V DC	BYPLCL on/off, input
12-5	12-7	0/5 V DC	PFSW1 on/off, input
12-6	12-7	5 V DC	5 V DC supply for PFSW1, output
13-A1	12-7	24 V DC	24 V DC supply for FCL3, output
13-A2	12-7	0/24 V DC	FCL3 on/off, output
13-A3	12-7	24 V DC	24 V DC supply for FCL2, output
13-A4	12-7	0/24 V DC	FCL2 on/off, output
13-A5	12-7	24 V DC	24 V DC supply for FCL1, output
13-A6	12-7	0/24 V DC	FCL1 on/off, output
13-A7	12-7	24 V DC	24 V DC supply for RCL, output
13-A8	12-7	0/24 V DC	RCL on/off, output
13-A9	12-7	24 V DC	24 V DC supply for TC, output
13-A10	12-7	0/5 V DC	TC count signal, output
13-B2	12-7	24 V DC	24 V DC supply for PCLM-U, output

Terminals (CN)		Voltage	Remarks
13-B3	12-7	0/24 V DC	PCLM-U on/off, output
13-B4	12-7	24 V DC	24 V DC supply for PCLM-L, output
13-B5	12-7	0/24 V DC	PCLM-L on/off, output
13-B6	12-7	24 V DC	24 V DC supply for FCL5, output
13-B7	12-7	0/24 V DC	FCL5 on/off, output
13-B8	12-7	24 V DC	24 V DC supply for FCL4, output
13-B9	12-7	0/24 V DC	FCL4 on/off, output
14-1	12-7	24/0 V DC	SSW3 on/off, input
14-2	12-7	24/0 V DC	SSW4 on/off, input
14-3	12-7	24/0 V DC	SSW2 on/off, input
14-4	12-7	0/24 V DC	PRY on/off, output
14-5	12-7	24 V DC	24 V DC SOURCE supply for SSW3, output
14-6	12-7	24 V DC	24 V DC SOURCE supply for SSW4, output
14-7	12-7	24 V DC	24 V DC SOURCE supply for SSW1, output
14-8	12-7	24 V DC	24 V DC supply for PRY, output
15-1	15-2	24 V DC	24 V DC supply for LSU, output (polygon motor)
15-5	15-2	24 V DC	24 V DC supply for CH, output
15-6	15-2	0/5 V DC	CH on/off, output*
15-7	15-2	0/5 V DC	H1 on/off, output
15-8	15-2	0/5 V DC	H2 on/off, output
16-1	16-2	24 V DC	24 V DC supply, input
16-3	16-4	24 V DC	24 V DC supply, input
16-5	16-6	24 V DC	24 V DC supply, input
16-7	16-8	5 V DC	5 V DC supply, input
16-10	16-9	0/24 V DC	DH on/off, output*
17-1	17-6	24 V DC	24 V DC supply for DUPESSOL, output
17-2	17-6	24 V DC	24 V DC supply for DUPPRSOL, output
17-3	17-6	24 V DC	24 V DC supply for DUPFWDCL, output
17-4	17-6	24 V DC	24 V DC supply for DUPREVCL, output
17-5	17-6	5 V DC	5 V DC supply, output
18-1	18-13	0/24 V DC	DUPFM on/off, output
18-2	18-13	24 V DC	24 V DC supply for DUPFM, output
18-3	18-13	0/24 V DC	OPFM on/off, output
18-4	18-13	24 V DC	24 V DC supply for OPFM, output
18-5	18-13	0/24 V DC	LPDCCL on/off, output
18-6	18-13	24 V DC	24 V DC supply for LPDCCL, output
18-7	18-13	0/4 V DC	BFM1 on/off, output
18-8	18-13	0/4 V DC	BFM2 on/off, output
18-9	18-13	24 V DC	24 V DC supply for BFM1, output
18-10	18-13	24 V DC	24 V DC supply for BFM2, output
18-11	18-13	5 V DC	5 V DC supply for BFM1, output
18-12	18-13	5 V DC	5 V DC supply for BFM2, output
18-15	18-17	24 V DC	24 V DC supply for DM, output
18-16	18-18	24 V DC	24 V DC supply for DM, output
18-20	18-19	5 V DC	5 V DC supply for DM, output
18-21	18-19	0/5 V DC	DM on/off, output
18-22	18-19	0/5 V DC	DM ALARM signal, input
18-23	18-19	0/5 V DC (pulse)	DM clock pulse signal, output
19-1	17-6	0/5 V DC	Duplex unit connection signal, input
19-2	17-6	0/5 V DC	DUPJSW on/off, input
19-3	17-6	0/5 V DC	DUPFSSW on/off, input
19-4	17-6	0/5 V DC	DUPPCSW1 on/off, input
19-5	17-6	0/5 V DC	DUPPCSW2 on/off, input
19-6	17-6	0/5 V DC	DUPESW on/off, output
19-7	17-6	0/24 V DC	DUPESSOL latch-off signal, output
19-8	17-6	0/24 V DC	DUPESSOL latch-on signal, output

* Optional.

Terminals (CN)		Voltage	Remarks
19-9	17-6	0/24 V DC	DUPPRSOL latch-off signal, output
19-10	17-6	0/24 V DC	DUPPRSOL latch-on signal, output
19-11	17-6	0/24 V DC	DUPFWDCL on/off, output
19-12	17-6	0/24 V DC	DUPREVCL on/off, output
20-A2	20-A4	0/5 V DC	PFSW5 on/off, input
20-A3	20-A4	5 V DC	5 V DC supply for PFSW5, output
20-A5	20-A7	0/5 V DC	PFSW4 on/off, input
20-A6	20-A7	5 V DC	5 V DC supply for PFSW4, output
20-A8	20-A10	0/5 V DC	PFSW3 on/off, input
20-A9	20-A10	5 V DC	5 V DC supply for PFSW3, output
20-A11	20-A13	0/5 V DC	PFSW2 on/off, input
20-A12	20-A13	0/5 V DC	BYPPLSW on/off, input
20-B1	20-B3	5 V DC	5 V DC supply for PFSW2, output
20-B2	20-B3	5 V DC	5 V DC supply for BYPPLSW, output
20-B5	20-B4	0/5 V DC	BYPPWSW paper width detection signal (DIG2), input
20-B6	20-B4	0/5 V DC	BYPPWSW paper width detection signal (DIG1), input
20-B7	20-B4	0/5 V DC	BYPPWSW paper width detection signal (DIG0), input
20-B8	20-B9	0/5 V DC	FSW on/off, input
20-B10	20-B9	5 V DC	5 V DC supply for FSW, output
20-B11	20-B12	0/5 V DC	BYPPSW on/off, input
20-B13	20-B12	5 V DC	5 V DC supply for BYPPSW, output
21-A1	21-A5	0/5 V DC (pulse)	IFM clock pulse signal, output
21-A2	21-A5	0/5 V DC	IFM ALARM signal, input
21-A3	21-A5	0/5 V DC	IFM on/off, output
21-A4	21-A5	5 V DC	5 V DC supply for IFM, output
21-A8	21-A6	24 V DC	24 V DC supply for IFM, output
21-A9	21-A7	24 V DC	24 V DC supply for IFM, output
21-B1	21-B5	0/5 V DC (pulse)	PFM clock pulse signal for IFM, output
21-B2	21-B5	0/5 V DC	PFM ALARM signal, input
21-B3	21-B5	0/5 V DC	PFM on/off, output
21-B4	21-B5	5 V DC	5 V DC supply for PFM, output
21-B8	21-B6	24 V DC	24 V DC supply for PFM, output
21-B9	21-B7	24 V DC	24 V DC supply for PFM, output
22-1	22-4	24 V DC	24 V DC supply for MMD, output*
22-2	22-4	24 V DC	24 V DC supply for MMD, output*
22-3	22-5	24 V DC	24 V DC supply for coin vender, output*
24-1	24-4	24 V DC	24 V DC supply for key card, output*
24-2	24-4	0/5 V DC	Key card, key counter, copy count signal, output*
24-3	24-4	0/5 V DC	Key card, key counter connected/not connected detection, input*

* Optional.

2-3-4 Operation unit PCB

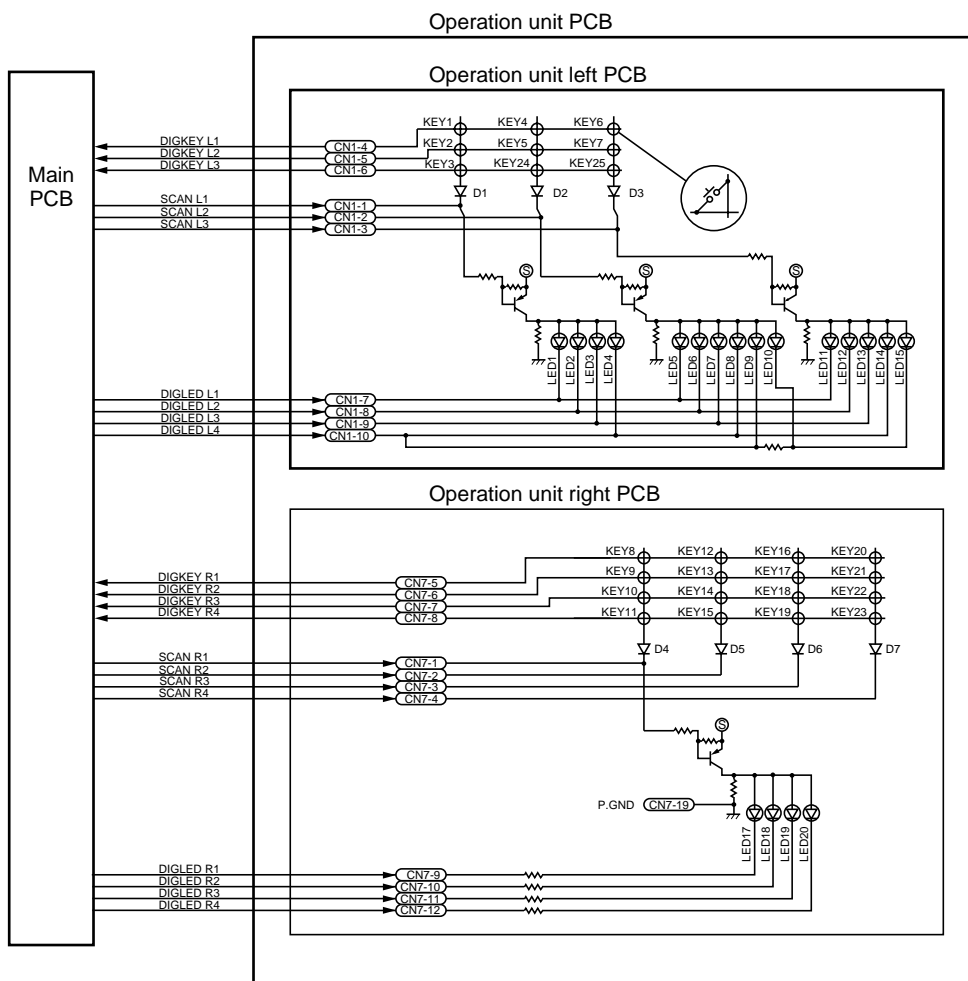


Figure 2-3-7 Operation unit PCB block diagram

The operation unit PCB (OPCB) consists of the operation unit left PCB (OLPCB) and the operation unit right PCB (ORPCB). The operation unit left PCB (OLPCB) consists of key switches and LEDs. The lighting of LEDs is determined by scan signals (SCAN L1 to SCAN L3) and LED lighting selection signals (DIGLED L1 to DIGLED L4) from the main PCB (MPCB). The key switches operated are identified by the scan signals (SCAN L1 to SCAN L3) and the return signals (DIGKEY L1 to DIGKEY L3).

As an example, to light LED 1, the LED lighting selection signal (DIGLED L1) should be driven low in synchronization with a low level on the scan signal (SCAN L1). 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 (SCAN L1) back to the main PCB (MPCB) via the return signal (DIGKEY L1). 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 right PCB (ORPCB) consists of key switches and LEDs. The lighting of LEDs is determined by scan signals (SCAN R1 to SCAN R4) and LED lighting selection signals (DIGLED R1 to DIGLED R4) from the main PCB (MPCB). The key switches operated are identified by the scan signals (SCAN R1 to SCAN R4) and the return signals (DIGKEY R1 to DIGKEY R4).

As an example, to light LED 17, the LED lighting selection signal (DIGLED R1) should be driven low in synchronization with a low level on the scan signal (SCAN R1). LEDs can be lit dynamically by repeating such operations.

As another example, if KEY 8 is pressed, the corresponding key switch is turned on feeding the low level of the scan signal (SCAN R1) back to the main PCB (MPCB) via the return signal (DIGKEY R1). 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.

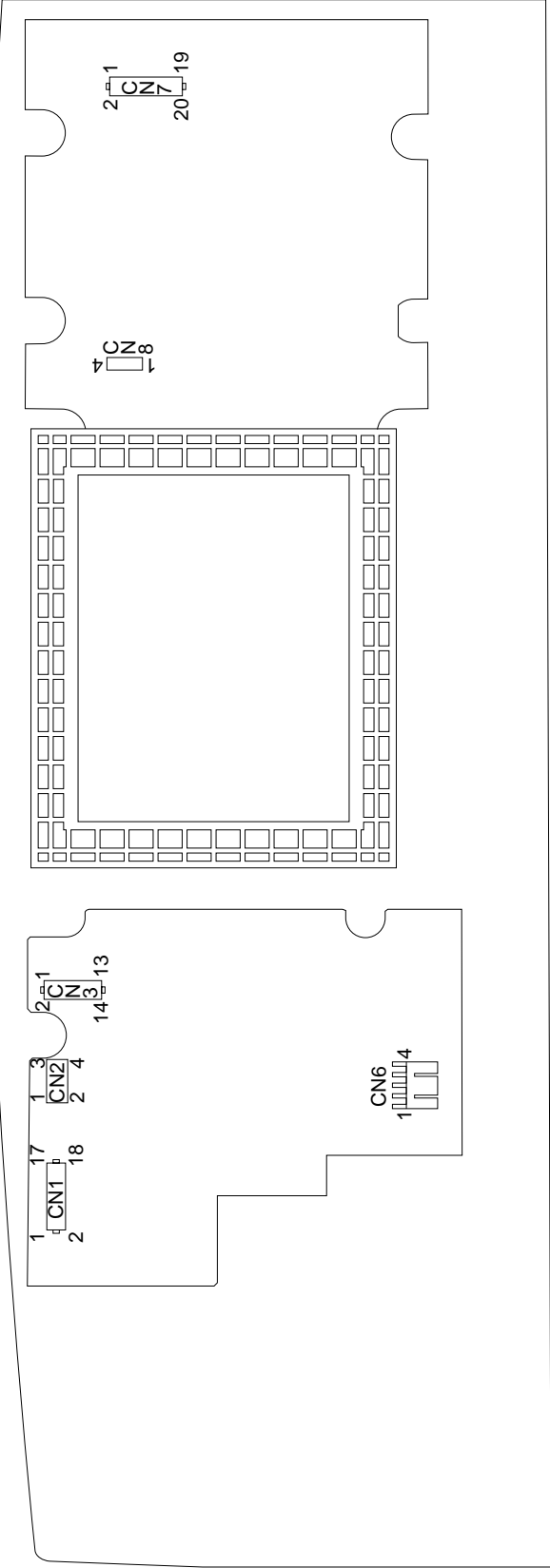


Figure 2-3-8 Operation unit PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	2-4	0/5 V DC (pulse)	OLPCB scan signal SCAN L1, input
1-2	2-4	0/5 V DC (pulse)	OLPCB scan signal SCAN L2, input
1-3	2-4	0/5 V DC (pulse)	OLPCB scan signal SCAN L3, input
1-4	2-4	0/5 V DC	OLPCB key return signal DIGKEY L1, output
1-5	2-4	0/5 V DC	OLPCB key return signal DIGKEY L2, output
1-6	2-4	0/5 V DC	OLPCB key return signal DIGKEY L3, output
1-7	2-4	0/5 V DC (pulse)	OLPCB LED on DIGLED L1, input
1-8	2-4	0/5 V DC (pulse)	OLPCB LED on DIGLED L2, input
1-9	2-4	0/5 V DC (pulse)	OLPCB LED on DIGLED L3, input
1-10	2-4	0/5 V DC (pulse)	OLPCB LED on DIGLED L4, input
1-11	2-4	0/5 V DC	LCD control signal BACK L REM, input
1-12	2-4	0/5 V DC	LCD control signal DIN, input
1-13	2-4	0/5 V DC	LCD control signal LP, input
1-14	2-4	0/5 V DC (pulse)	LCD (XD0) data, input
1-15	2-4	0/5 V DC (pulse)	LCD (XD1) data, input
1-16	2-4	0/5 V DC (pulse)	LCD (XD2) data, input
1-17	2-4	0/5 V DC (pulse)	LCD (XD3) data, input
1-18	2-4	0/5 V DC	LCD control signal XSCL, input
2-1	2-2	24 V DC	24 V DC supply, input
2-3	2-4	5 V DC	5 V DC supply, input
3-1	3-8	0/5 V DC	LCD control voltage, output
3-2	3-8	Ø23 V DC	Ø23 V supply for LCD, output
3-3	3-8	0/5 V DC (pulse)	LCD (XD3) data, output
3-4	3-8	0/5 V DC (pulse)	LCD (XD2) data, output
3-5	3-8	0/5 V DC (pulse)	LCD (XD1) data, output
3-6	3-8	0/5 V DC (pulse)	LCD (XD0) data, output
3-7	3-8	Ø23 V DC	Ø23 V supply for LCD, output
3-9	3-8	5 V DC	5 V DC supply for LCD, output
3-10	3-8	0/5 V DC (pulse)	LCD control signal XSCL, output
3-11	3-8	0/5 V DC (pulse)	LCD control signal LP, output
3-12	3-8	0/5 V DC (pulse)	LCD control signal DIN, output
3-14	3-8	0/5 V DC (pulse)	LCD control signal LCD REM, output
7-1	7-19	0/5 V DC (pulse)	ORPCB scan signal SCAN R1, input
7-2	7-19	0/5 V DC (pulse)	ORPCB scan signal SCAN R2, input
7-3	7-19	0/5 V DC (pulse)	ORPCB scan signal SCAN R3, input
7-4	7-19	0/5 V DC (pulse)	ORPCB scan signal SCAN R4, input
7-5	7-19	0/5 V DC	ORPCB key return signal DIGKEY R1, output
7-6	7-19	0/5 V DC	ORPCB key return signal DIGKEY R2, output
7-7	7-19	0/5 V DC	ORPCB key return signal DIGKEY R3, output
7-8	7-19	0/5 V DC	ORPCB key return signal DIGKEY R4, output
7-9	7-19	0/5 V DC (pulse)	ORPCB LED on DIGLED R1, input
7-10	7-19	0/5 V DC (pulse)	ORPCB LED on DIGLED R2, input
7-11	7-19	0/5 V DC (pulse)	ORPCB LED on DIGLED R3, input
7-12	7-19	0/5 V DC (pulse)	ORPCB LED on DIGLED R4, input
7-13	7-19	0/5 V DC	RMT signal, input
7-14	7-19	5 V DC	5 V DC supply, input
7-15	7-19	0/5 V DC (pulse)	Touch panel detection voltage X1, output
7-16	7-19	0/5 V DC (pulse)	Touch panel detection voltage Y1, output
7-17	7-19	0/5 V DC (pulse)	Touch panel detection voltage X2, input
7-18	7-19	0/5 V DC (pulse)	Touch panel detection voltage Y2, input
8-1	7-19	0/5 V DC (pulse)	Touch panel detection voltage Y2, output
8-2	7-19	0/5 V DC (pulse)	Touch panel detection voltage X1, input
8-3	7-19	0/5 V DC (pulse)	Touch panel detection voltage Y1, input
8-4	7-19	0/5 V DC (pulse)	Touch panel detection voltage X2, output

2-3-5 Scanner motor PCB

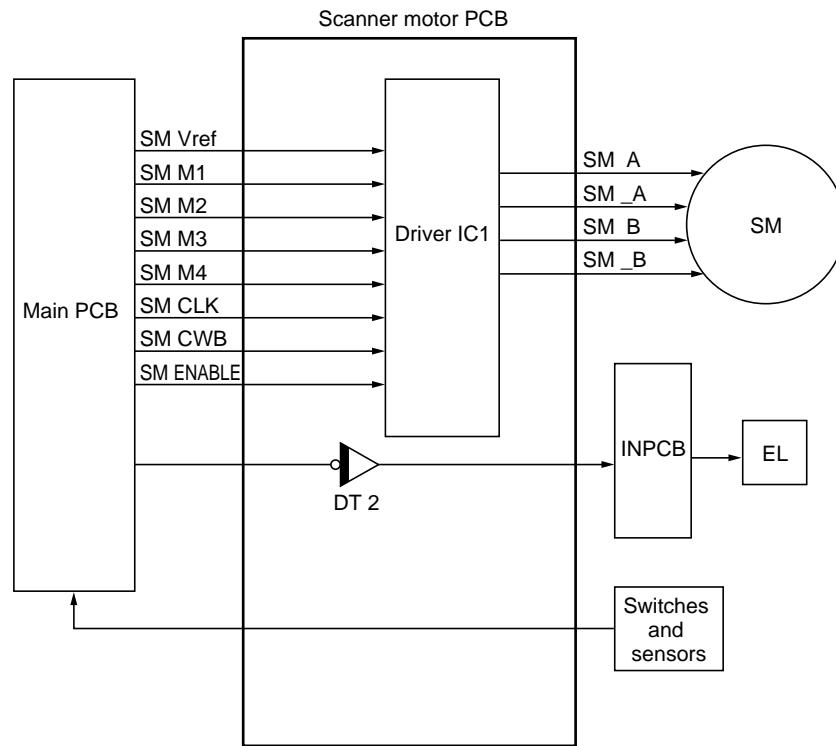


Figure 2-3-9 Scanner motor PCB block diagram

The scanner motor PCB (SMPCB) drives the scanner motor (SM), turns the exposure lamp (EL) on and off, and relays signals from the scanner home position switch (SHPSW) and the original detection switches (ODSW1, 2*). The scanner motor (SM) is driven by turning the output for motor phase switchover on and off (SM A, SM_A, SM B, SM_B). It is activated by the driver IC1 processing the currently set reference signal (SM Vref), mode signals (SM M1 to M3, SM CWB), phase switchover clock (SM CLK), and drive/stop signals (SM ENABLE) from the main PCB (MPCB).

* For inch models only.

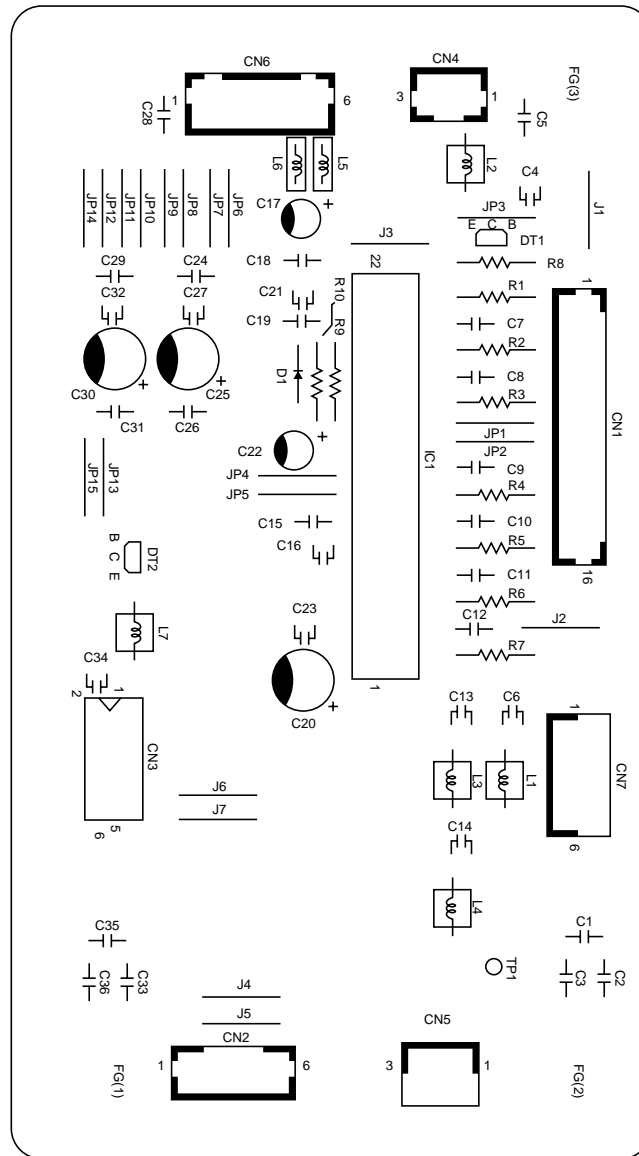


Figure 2-3-10 Scanner motor PCB silk-screen diagram

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 control signal SMOT RET signal, input
1-6	1-1	0/5 V DC	SM rotational direction switching signal SMOT CWB, input
1-7	1-1	0/5 V DC (pulse)	SM drive clock pulse, input
1-8	1-1	0/5 V DC	SM drive control signal SM M5, input
1-9	1-1	0/5 V DC	SM drive control signal SM M4, input
1-10	1-1	0/5 V DC	SM drive control signal SM M3, input
1-11	1-1	0/5 V DC	SM drive control signal SM M2, input
1-12	1-1	0/5 V DC	SM drive control signal SM M1, input
1-13	1-1		SM current control voltage SM Vref, input
1-14	1-1	0/5 V DC	ODSW on/off, output
1-15	1-1	0/5 V DC	OSD2 signal, output*
1-16	1-1	0/5 V DC	OSD1 signal, output
2-1	3-5	0/5 V DC (pulse)	SM coil energization pulse, output (_B)
2-2	3-5	24 V DC	24 V DC supply for SM, output
2-3	3-5	0/5 V DC (pulse)	SM coil energization pulse, output (B)
2-4	3-5	0/5 V DC (pulse)	SM coil energization pulse, output (A)
2-5	3-5	24 V DC	24 V DC supply for SM, output
2-6	3-5	0/5 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, input
5-2	5-1	0/5 V DC	ODSW on/off, input
5-3	5-1	5 V DC	5 V DC supply for ODSW, output
6-2	6-1	24 V DC	24 V DC supply, input
6-4	6-3	24 V DC	24 V DC supply, input
6-6	6-5	5 V DC	5 V DC supply, input
7-2	7-1	5 V DC	5 V DC supply for OSD1, output
7-3	7-1	0/5 V DC	OSD1 on/off, input
7-5	7-4	5 V DC	5 V DC supply for OSD2, output*
7-6	7-4	0/5 V DC	OSD2 on/off, input

* For inch models only.

2-3-6 CCD PCB

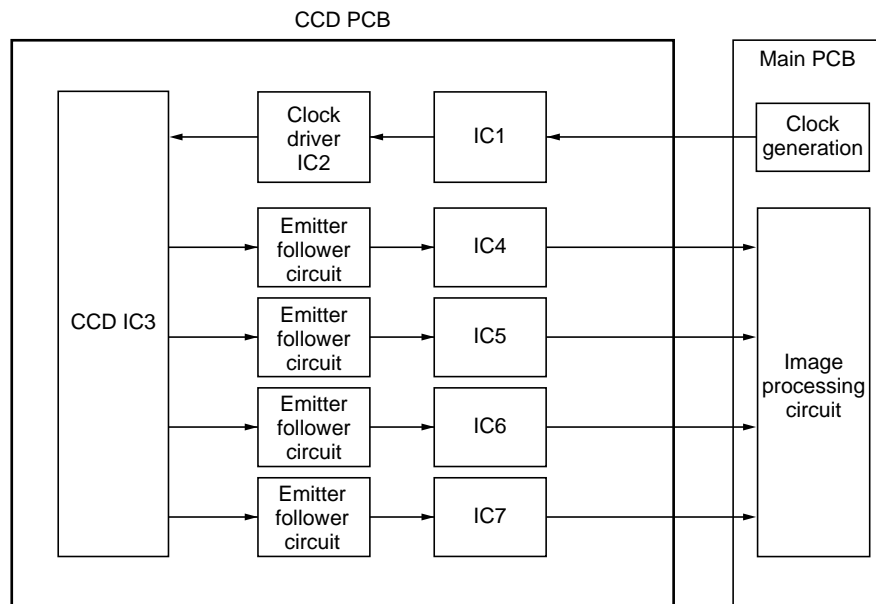


Figure 2-3-11 CCD PCB block diagram

The CCD PCB (CCDPCB) receives clock signals ϕ SHIFT, ϕ CLK, ϕ RS, and ϕ CLP from the main PCB (MPCB), and based on these signals, generates the CCD drive signal to drive CCD IC3.

When clock signals are input, the CCD IC3 outputs analog signals according to the set density of the image, which are transmitted to the main PCB (MPCB) via the emitter follower circuits and differential amplifiers IC4, IC5, IC6 and IC7.

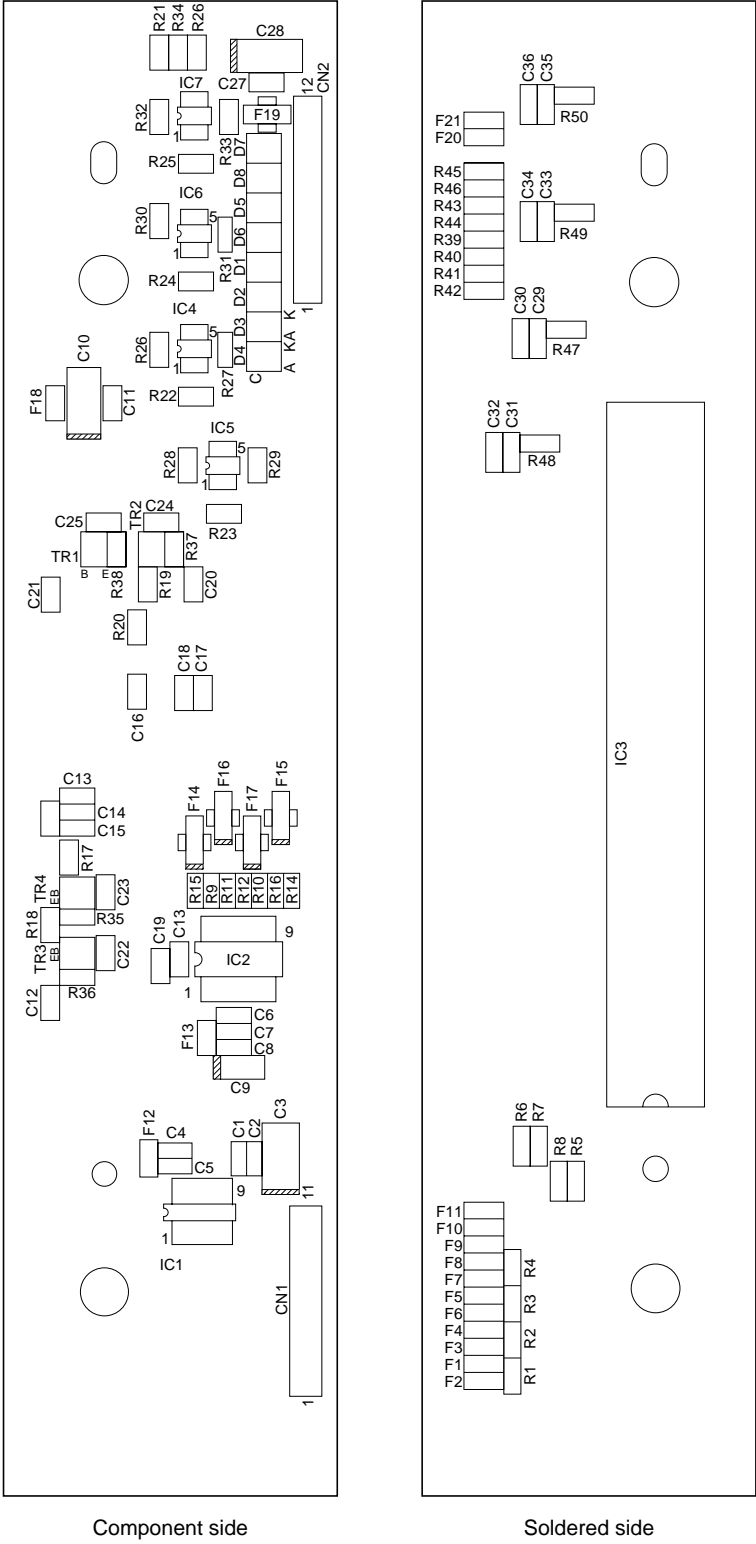


Figure 2-3-12 CCD PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	2-11	0/5 V DC	CCD drive clock signal ϕ CLP \bar{D} , input
1-2	2-11	0/5 V DC	CCD drive clock signal ϕ CLP+, input
1-3	2-11	0/5 V DC	CCD drive clock signal ϕ RS+, input
1-4	2-11	0/5 V DC	CCD drive clock signal ϕ RS \bar{D} , input
1-5	2-11	0/5 V DC	CCD drive clock signal ϕ CLK \bar{D} , input
1-6	2-11	0/5 V DC	CCD drive clock signal ϕ CLK+, input
1-7	2-11	0/5 V DC	CCD drive clock signal ϕ SHIFT+, input
1-8	2-11	0/5 V DC	CCD drive clock signal ϕ SHIFT \bar{D} , input
1-9	2-11	5 V DC	5 V DC supply, input
1-10	2-11	5 V DC	5 V DC supply, input
1-11	2-11	5 V DC	5 V DC supply, input
2-1	2-11	0/5 V DC	CCD control signal OS2+, output
2-2	2-11	0/5 V DC	CCD control signal OS2 \bar{D} , output
2-3	2-11	0/5 V DC	CCD control signal OS1+, output
2-4	2-11	0/5 V DC	CCD control signal OS1 \bar{D} , output
2-5	2-11	0/5 V DC	CCD control signal OS3+, output
2-6	2-11	0/5 V DC	CCD control signal OS3 \bar{D} , output
2-7	2-11	0/5 V DC	CCD control signal OS4+, output
2-8	2-11	0/5 V DC	CCD control signal OS4 \bar{D} , output
2-10	2-11	+12 V DC	+12 V DC supply, input

2-3-7 Inverter PCB

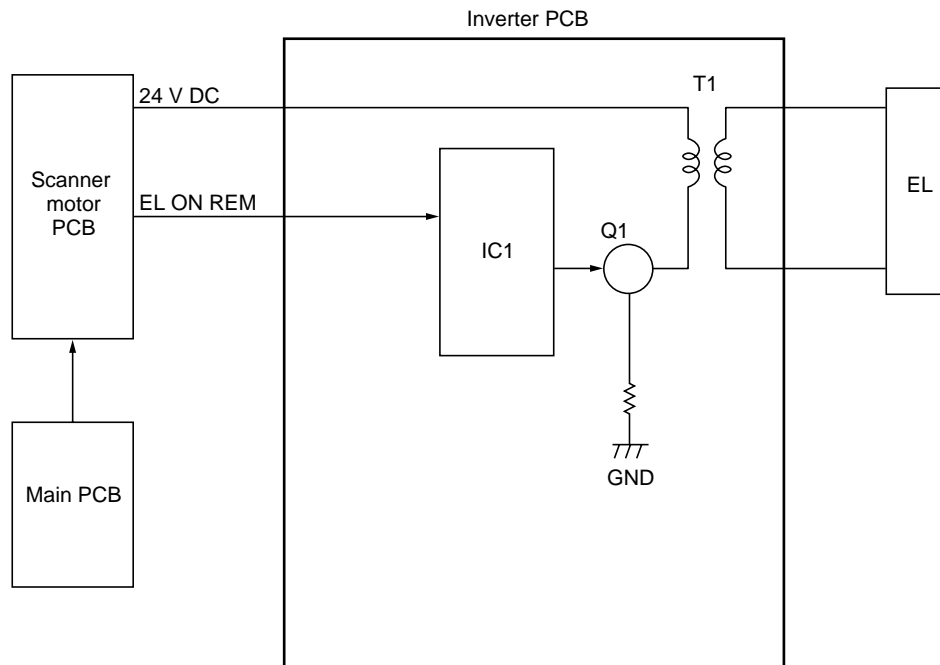


Figure 2-3-13 Inverter PCB block diagram

The inverter PCB (INPCB) consists of the high-frequency pulse generation circuit, which outputs high-frequency pulses for the exposure lamp (EL), and the preheat circuit for the filament of the exposure lamp (EL). When the lighting signal (EL ON REM) is received from the scanner motor PCB (SMPCB), the high-frequency pulse generation circuit outputs high-frequency pulses to the exposure lamp (EL) to turn it on.



2-3-34

2-3-8 DF driver PCB

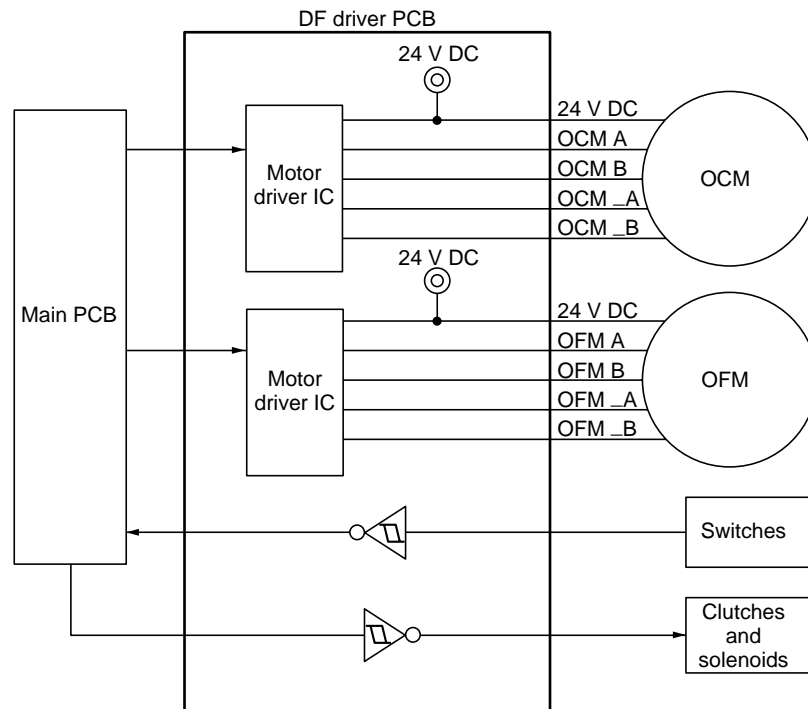


Figure 2-3-15 DF driver PCB block diagram

The DF driver PCB (DFDPCB) consists of motor driver ICs and several other components. It mainly serves to drive the original feed motor (OFM) and the original conveying motor (OCM), under the control of signals received from the main PCB (MPCB). It also relays the 24 V DC power supply to SRDF clutches and solenoids, and 5 V DC power supply to switches, and controls and relays inputs and outputs of other signals.

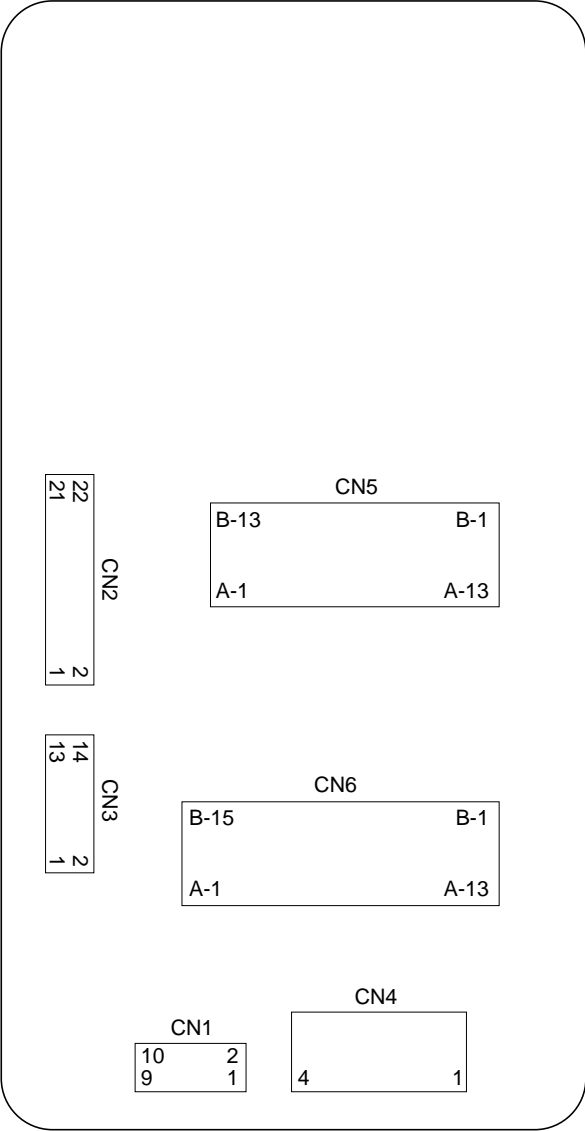
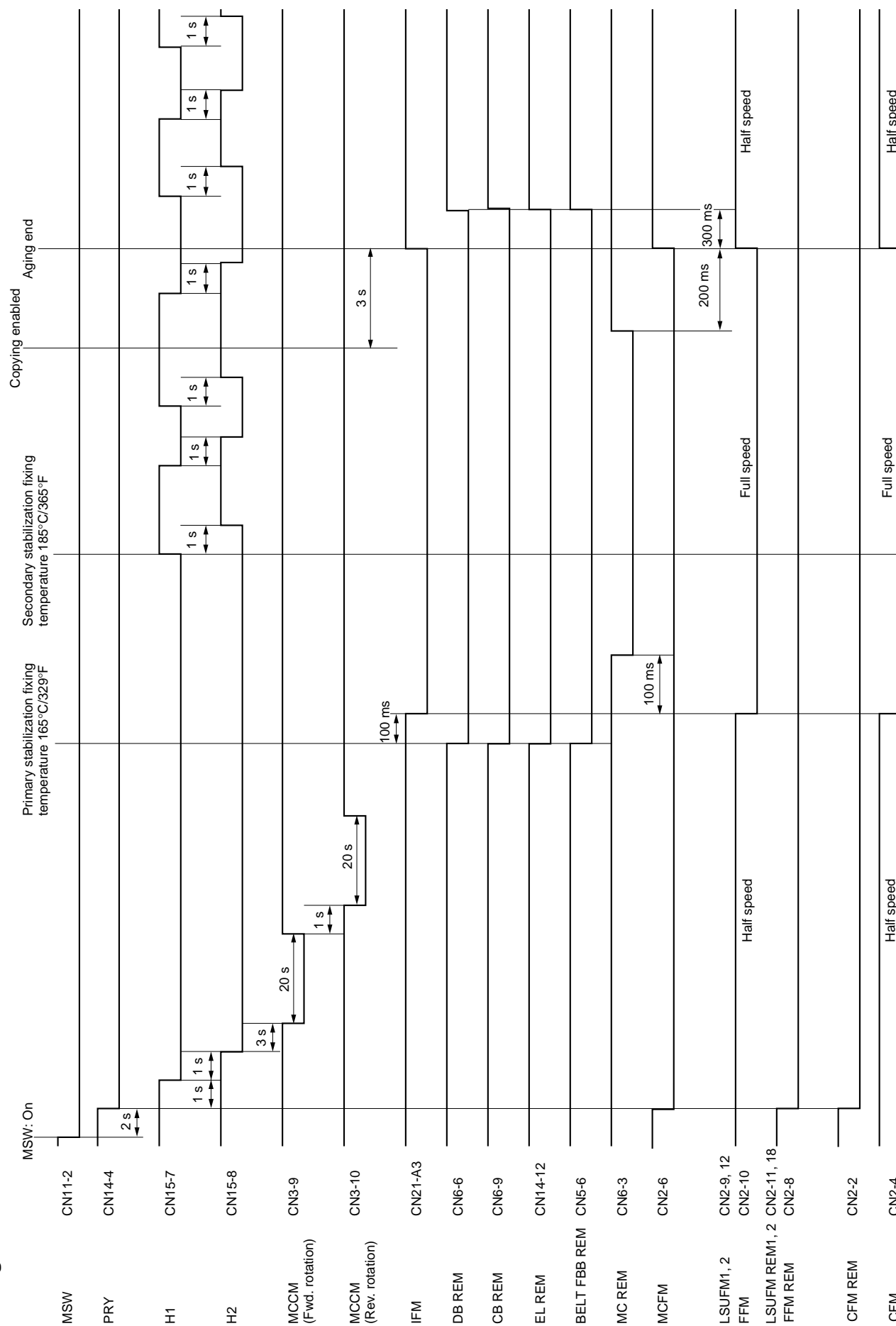


Figure 2-3-16 DF driver PCB silk-screen diagram

Terminals (CN)		Voltage	Remarks
1-1	1-3, 4	24 V DC	24 V DC supply, input
1-2	1-3, 4	24 V DC	24 V DC supply, input
1-7	1-9, 10	5 V DC	5 V DC supply, input
1-8	1-9, 10	5 V DC	5 V DC supply, input
2-1	1-9, 10	0/5 V DC	OCM drive control voltage OCM M1, input
2-2	1-9, 10	0/5 V DC	OCM drive control voltage OCM M2, input
2-3	1-9, 10	0/5 V DC	OCM drive control voltage OCM M3, input
2-6	1-9, 10	0/5 V DC	OCM current control voltage OCM Vref, input
2-7	1-9, 10	0/5 V DC	OCM rotational direction switching signal OCM CWB, input
2-8	1-9, 10	0/5 V DC (pulse)	OCM drive clock pulse, input
2-10	1-9, 10	0/5 V DC	OCM enable signal, input
2-11	1-9, 10	0/5 V DC	OFM rotational direction switching signal OFM CWB, input
2-12	1-9, 10	0/5 V DC (pulse)	OFM drive clock pulse, input
2-13	1-9, 10	0/5 V DC	OFM control signal OFM RET, input
2-14	1-9, 10	0/5 V DC	OFM enable signal, input
2-15	1-9, 10	0/24 V DC	OFSOL latch-on signal, input
2-16	1-9, 10	0/24 V DC	OFSOL latch-off signal, input
2-17	1-9, 10	0/24 V DC	SBFSSOL on/off, input
2-19	1-9, 10	0/24 V DC	EFSSOL on/off, input
2-20	1-9, 10	0/24 V DC	OFCL on/off, input
2-21	1-9, 10	0/24 V DC	SBPSOL latch-on signal, input
2-22	1-9, 10	0/24 V DC	SBPSOL latch-off signal, input
3-1	1-9, 10	0/5 V DC	OSSW on/off, output
3-2	1-9, 10	0/5 V DC	OFSW on/off, output
3-3	1-9, 10	0/5 V DC	OSBSW on/off, output
3-4	1-9, 10	0/5 V DC	DFTSW on/off, output
3-5	1-9, 10	0/5 V DC	OSLSW on/off, output
3-6	1-9, 10	24/0 V DC	DFSSW1 on/off, output
3-7	1-9, 10	24/0 V DC	DFSSW2 on/off, output
3-8	1-9, 10	0/5 V DC	OSWSW on/off, output
3-9	1-9, 10	0/5 V DC	OSLED (green) on/off, input
3-10	1-9, 10	0/5 V DC	OSLED (red) on/off, input
3-11	1-9, 10	0/5 V DC	SRDF installed/not installed detection signal, output
4-3	1-9, 10	24/0 V DC	DFSSW1 on/off, input
4-4	1-9, 10	24/0 V DC	DFSSW2 on/off, input
5-A1	1-3, 4	24 V DC	24 V DC supply for SBPSOL, output
5-A2	1-3, 4	0/24 V DC	SBPSOL latch-on signal, output
5-A3	1-3, 4	0/24 V DC	SBPSOL latch-off signal, output
5-A4	1-3, 4	24 V DC	24 V DC supply for OFCL, output
5-A5	1-3, 4	0/24 V DC	OFCL on/off, output
5-A6	1-3, 4	24 V DC	24 V DC supply for EFSSOL, output
5-A7	1-3, 4	0/24 V DC	EFSSOL on/off, output
5-A8	1-3, 4	24 V DC	24 V DC supply for OCM, output (A)
5-A9	1-3, 4	24 V DC	24 V DC supply for OCM, output (B)
5-A10	1-3, 4	0/5 V DC (pulse)	OCM coil energization pulse, output (A)
5-A11	1-3, 4	0/5 V DC (pulse)	OCM coil energization pulse, output (B)
5-A12	1-3, 4	0/5 V DC (pulse)	OCM coil energization pulse, output (_A)
5-A13	1-3, 4	0/5 V DC (pulse)	OCM coil energization pulse, output (_B)
5-B1	1-3, 4	24 V DC	24 V DC supply for OFM, output (A)
5-B2	1-3, 4	24 V DC	24 V DC supply for OFM, output (B)
5-B3	1-3, 4	0/5 V DC (pulse)	OFM coil energization pulse, output (A)
5-B4	1-3, 4	0/5 V DC (pulse)	OFM coil energization pulse, output (B)
5-B5	1-3, 4	0/5 V DC (pulse)	OFM coil energization pulse, output (_A)
5-B6	1-3, 4	0/5 V DC (pulse)	OFM coil energization pulse, output (_B)
5-B7	1-3, 4	24 V DC	24 V DC supply for SBFSSOL, output
5-B8	1-3, 4	0/24 V DC	SBFSSOL on/off, output

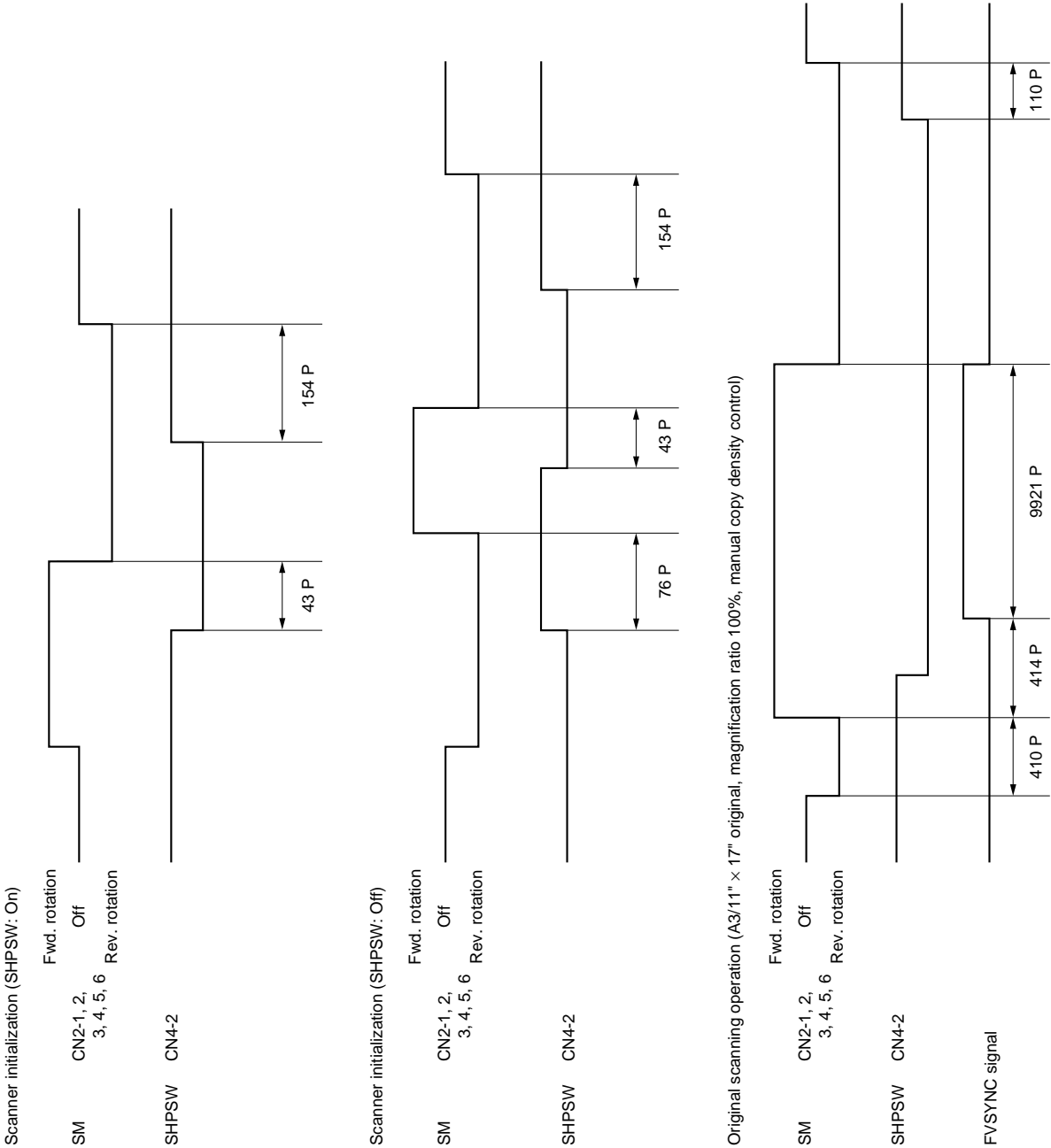
Terminals (CN)		Voltage	Remarks
5-B11	1-3, 4	24 V DC	24 V DC supply for OFSOL, output
5-B12	1-9, 10	0/24 V DC	OFSOL latch-on signal, output
5-B13	1-9, 10	0/24 V DC	OFSOL latch-off signal, output
6-A5	6-A4	0/5 V DC	OSBSW on/off, input
6-A6	6-A4	5 V DC	5 V DC supply for OSBSW, output
6-A8	6-A7	0/5 V DC	OSWSW on/off, input
6-A9	6-A7	5 V DC	5 V DC supply for OSWSW, output
6-A11	6-A10	0/5 V DC	OSLSW on/off, input
6-A12	6-A10	5 V DC	5 V DC supply for OSLSW, output
6-A14	6-A13	0/5 V DC	DFTSW on/off, input
6-A15	6-A13	5 V DC	5 V DC supply for DFTSW, output
6-B1	6-B3	0/5 V DC	OSSW on/off, input
6-B2	6-B3	5 V DC	5 V DC supply for OSSW, output
6-B4	6-B6	0/5 V DC	OFSW on/off, input
6-B5	6-B6	5 V DC	5 V DC supply for OFSW, output
6-B7	6-B8	0/5 V DC	OSLED (green) on/off, output
6-B9	6-B8	0/5 V DC	OSLED (red) on/off, output

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

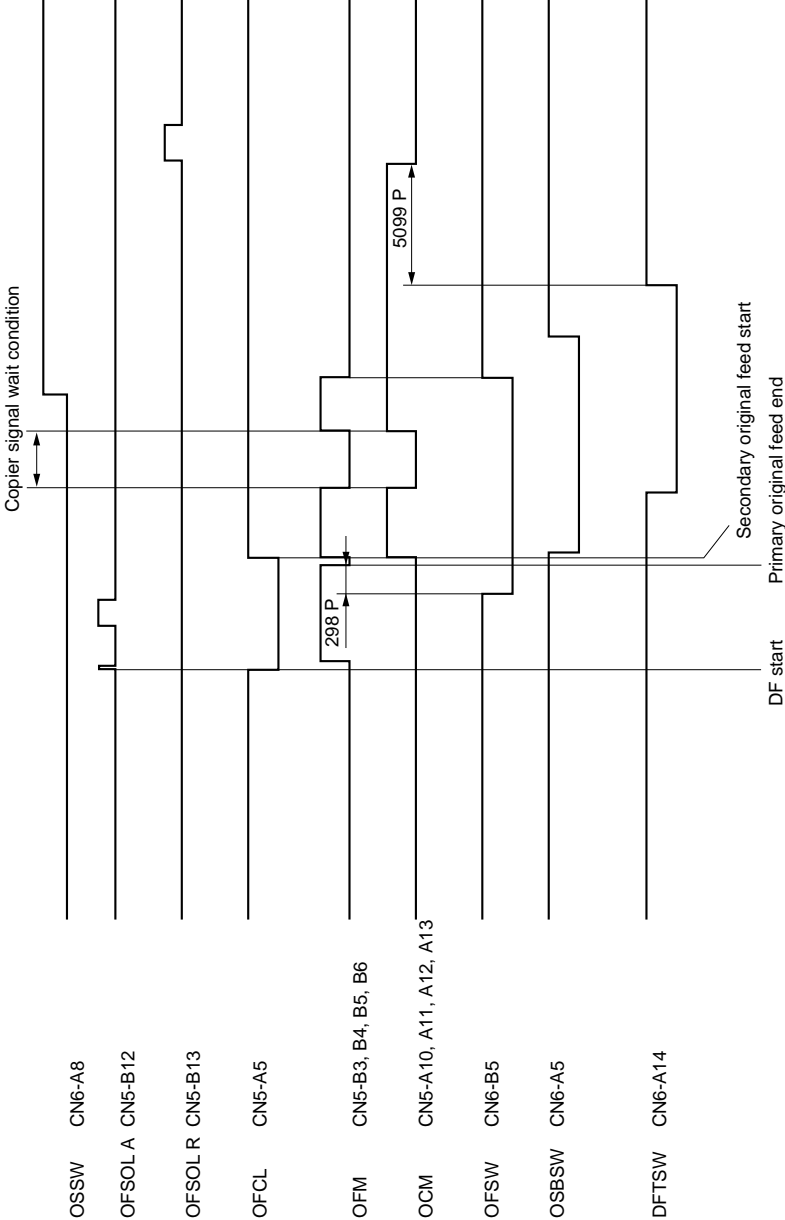


Timing chart No. 2 Scanner operation

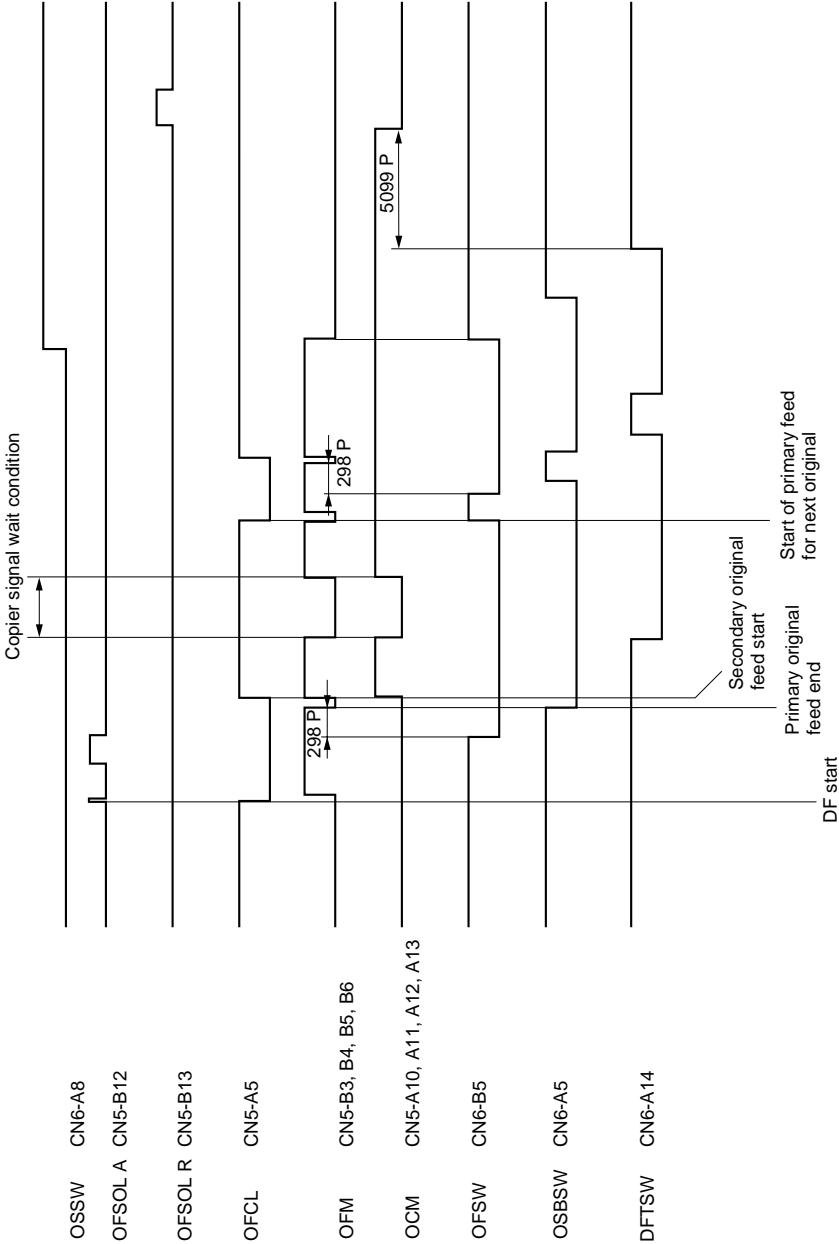
2-4-2



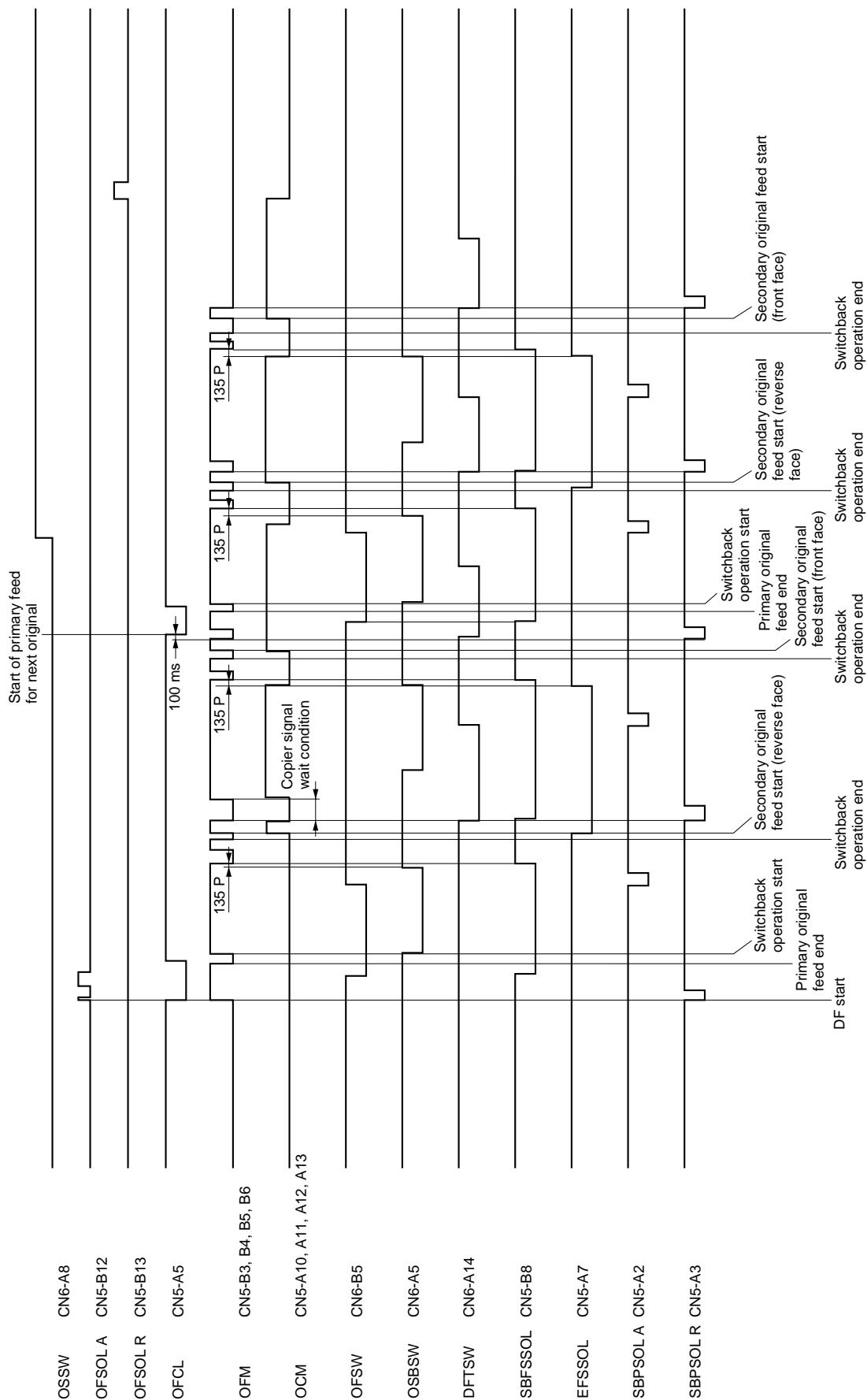
Timing chart No. 3 Original feed operation 1: Feeding an A4/11" × 8 1/2" original in single-sided original mode



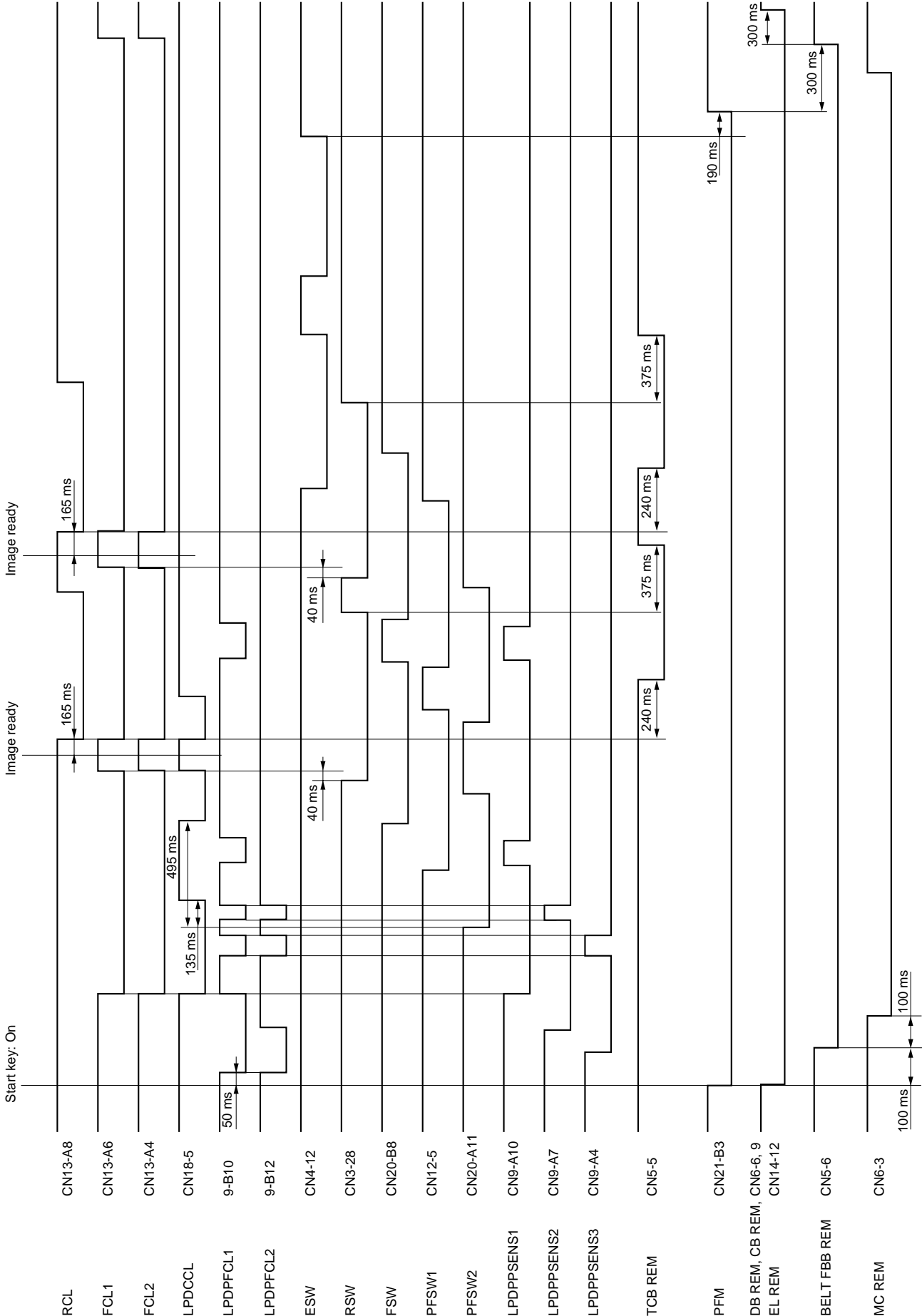
Timing chart No. 4 Original feed operation 2: Feeding two A4/11" × 8 1/2" originals successively in single-sided original mode



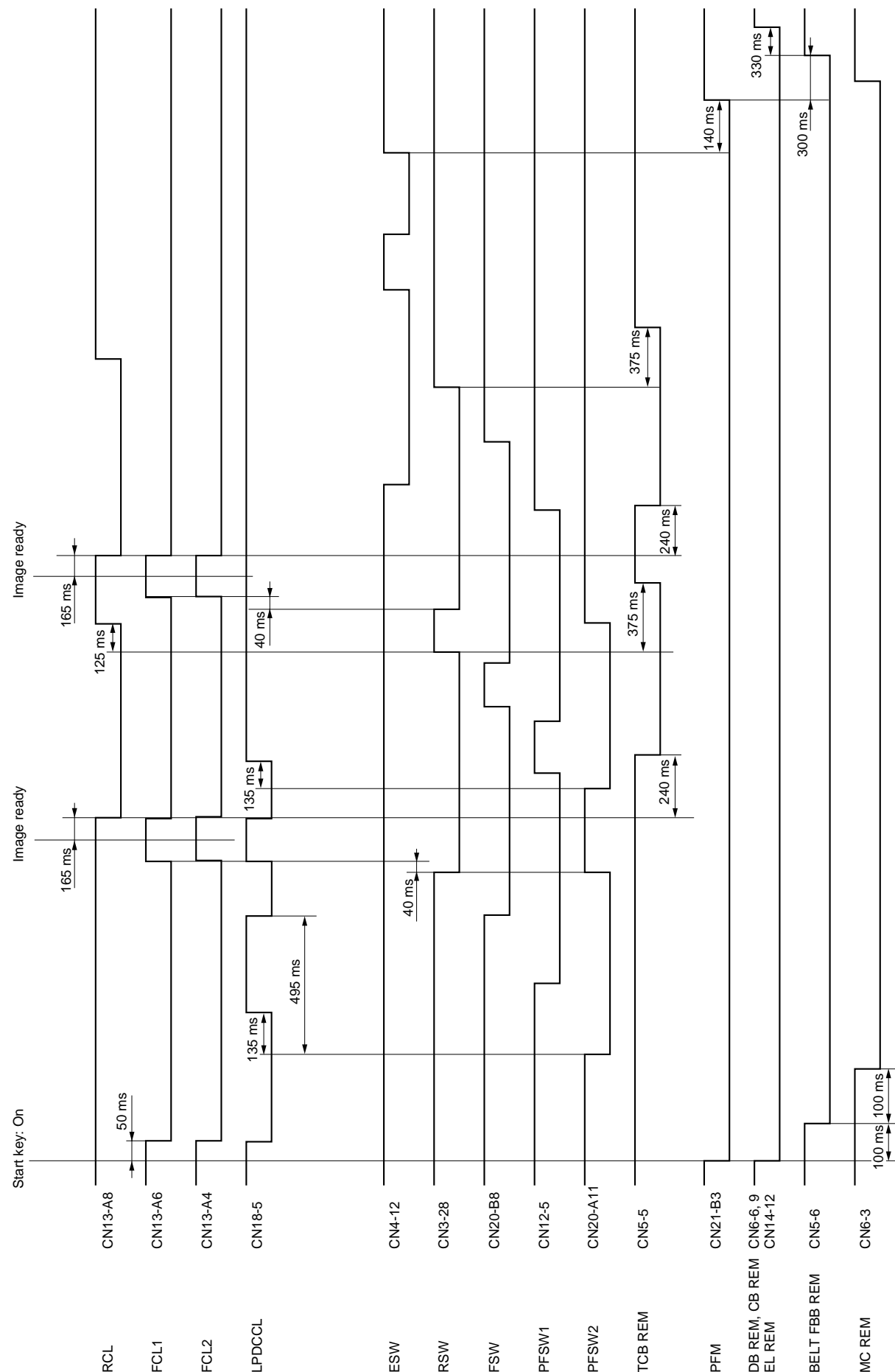
Timing chart No. 5 Original feed operation 3: Feeding two A4R/8¹/₂" × 11" originals successively in double-sided original mode



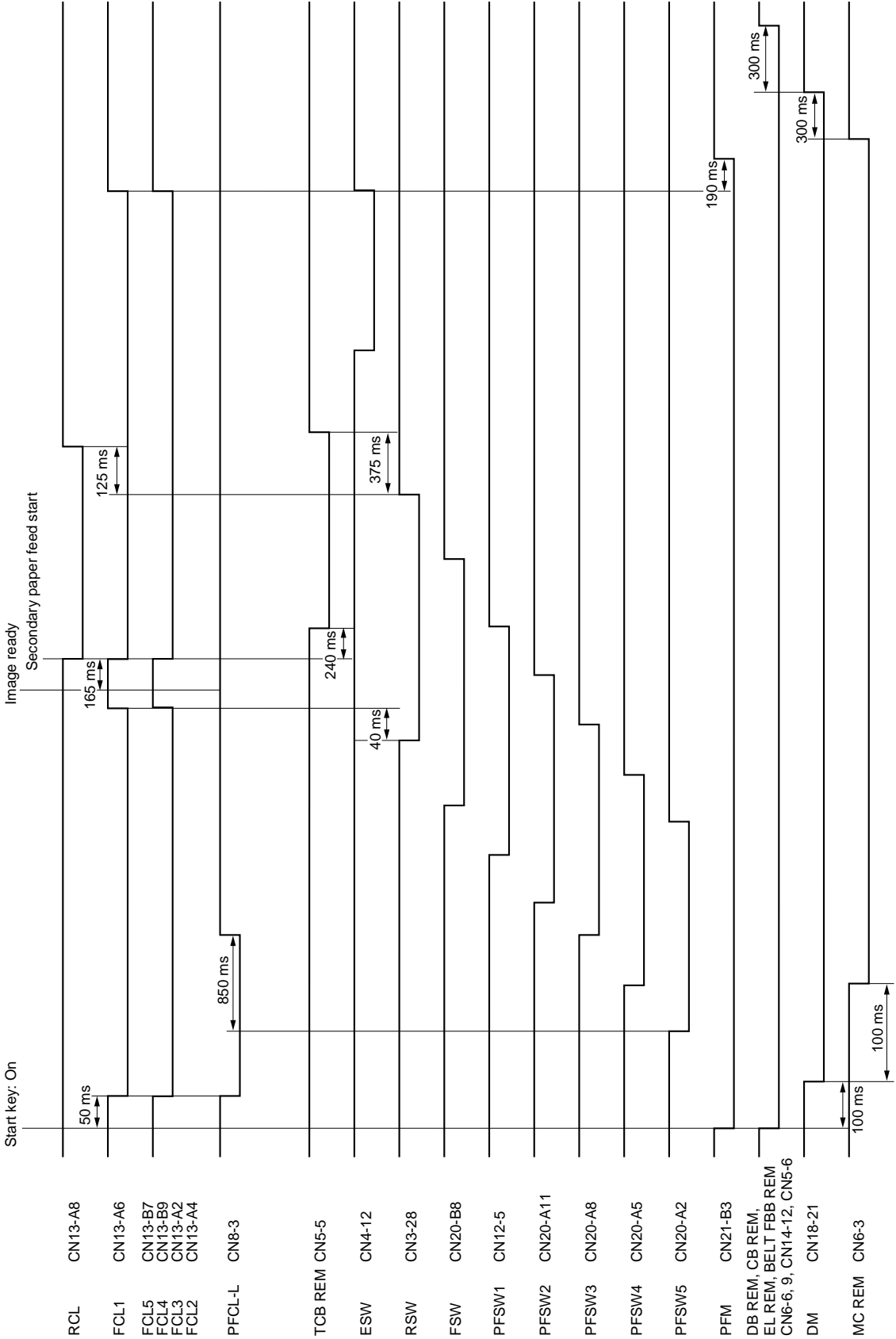
Timing chart No. 6 Continuous copying onto two sheets of A4/11" × 8 1/2" copy paper from the large paper deck left cassette



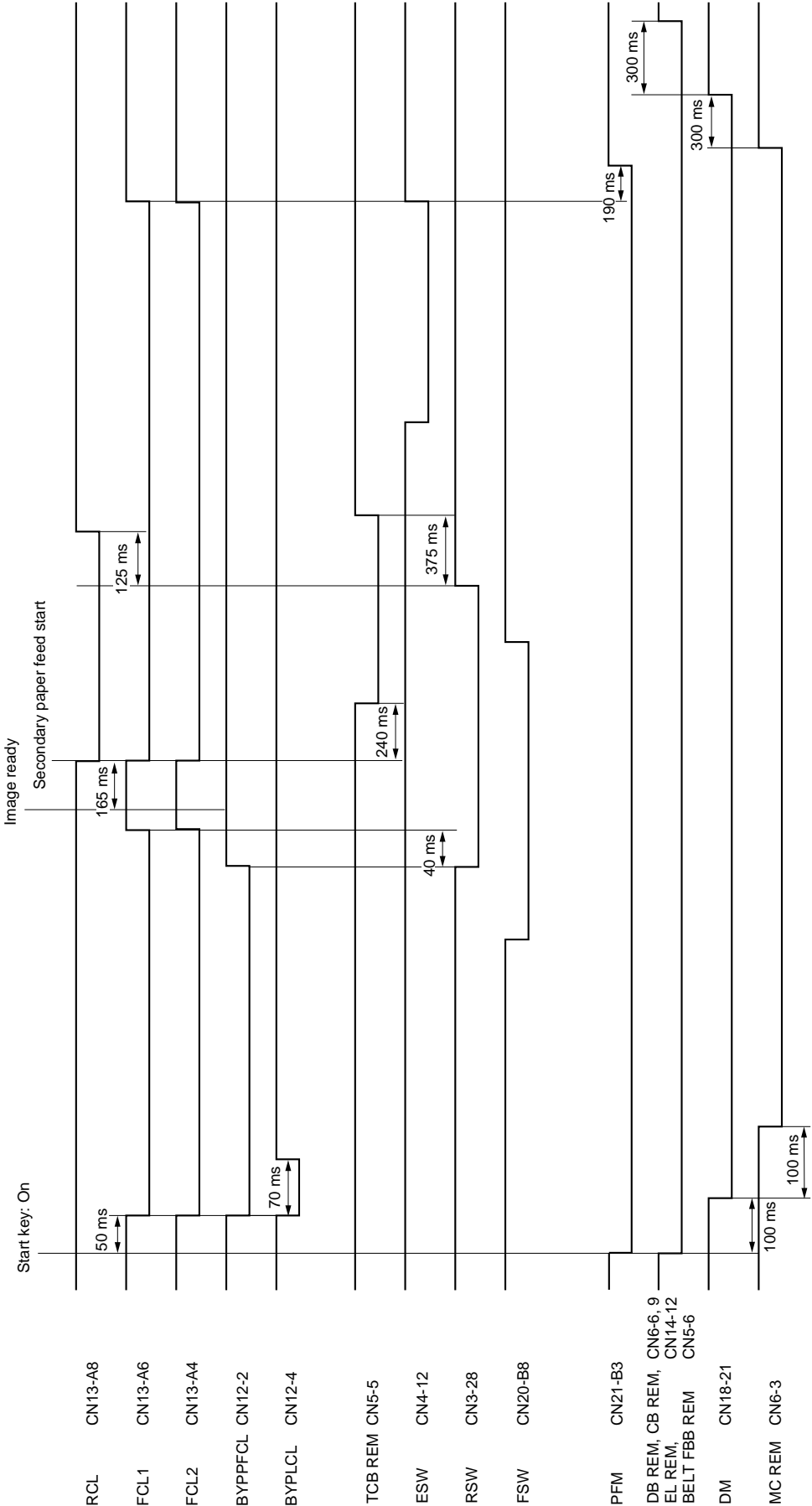
Timing chart No. 7 Continuous copying onto two sheets of A4/11" × 8 1/2" copy paper from the large paper deck right cassette



Timing chart No. 8 Copying onto a sheet of A3/11" × 17" copy paper from the lower cassette



Timing chart No. 9 Copying onto a sheet of A4R/8 1/2" × 11" copy paper from the bypass table



Timing chart No. 10 Continuous duplex copying onto two sheets of A4R/8 1/2" × 11" copy paper from the upper cassette

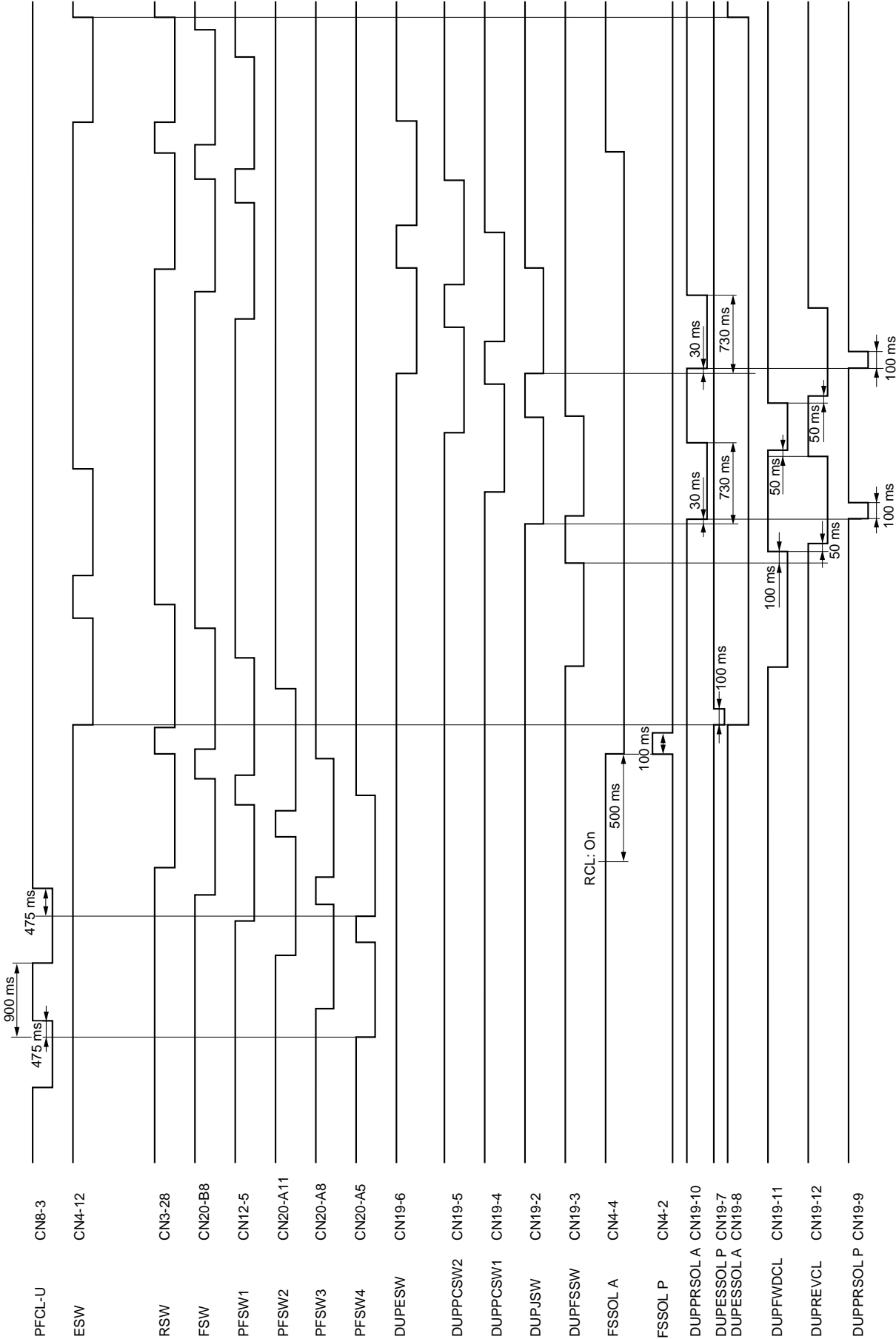
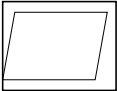
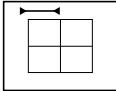
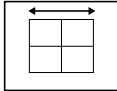

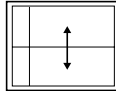
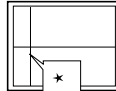
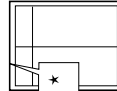
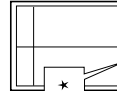
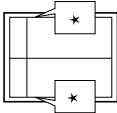
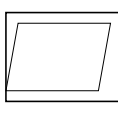
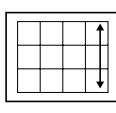
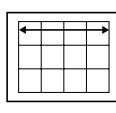
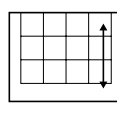
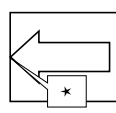
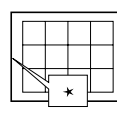
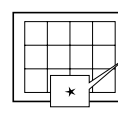
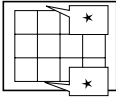


Chart of image adjustment procedures

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
①	Adjusting the lateral squareness (printing adjustment)		Adjusting the position of the laser scanner unit (printing adjustment)	—	—	U089 (1 DOT-LINE)	1-6-32	
②	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Drive motor speed adjustment	U053	MAIN MOTOR	U053 test pattern	1-4-15	
③	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Paper feed motor speed adjustment	U053	CONV MOTOR	U053 test pattern	1-4-15	
④	Adjusting the center line of the bypass table (printing adjustment)		Adjusting the LSU print start timing	U034	LSUOUT DATA	U034 test pattern	1-6-19	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 cassettes and large paper deck (printing adjustment)		Adjusting the position of the rack adjuster	—	—	U034 test pattern	1-6-15	Adjusts the position of each paper source.
			Adjusting the position of the center	—	—		1-6-16	
⑥	Adjusting the leading edge registration (printing adjustment)		Registration clutch turning on timing (secondary paper feed start timing)	U034	RCL ON DATA	U034 test pattern	1-6-17	To make an adjustment for duplex copying, select "RCL ON DATA2".
⑦	Adjusting the leading edge margin (printing adjustment)		LSU illumination start timing	U402	LEAD EDGE	U402 test pattern	1-6-20	
⑧	Adjusting the trailing edge margin (printing adjustment)		LSU illumination end timing	U402	TRAIL EDGE	U402 test pattern	1-6-20	To make an adjustment for duplex copying, select "TRAIL EDGE2".

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
⑨	Adjusting the left and right margins (printing adjustment)		LSU illumination start/end timing	U402	A EDGE/C EDGE	U402 test pattern	1-6-20	
⑩	Adjusting the lateral squareness (scanning adjustment)		Adjusting the position of the LSU (scanning adjustment)	—	—	Test chart	1-6-34	
⑪	Adjusting magnification of the scanner in the main scanning direction (scanning adjustment)		Data processing	U065	MAIN SCAN ADJ	Test chart	1-6-35	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 CONVEY SPEED	Test chart	1-6-36 1-6-70	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	SCAN CENTER ADJ —	Test chart	1-6-37 1-6-71	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	SCAN TIMING DATA LEAD EDGE ADJ	Test chart	1-6-38 1-6-72	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	SCAN B MARGIN DF B MARGIN	Test chart	1-6-39 1-6-74	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	SCAN D MARGIN DF D MARGIN	Test chart	1-6-39 1-6-74	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	SCAN A MARGIN/ SCAN C MARGIN	Test chart	1-6-39 1-6-74	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.
				U404	DF A MARGIN/DF C MARGIN			

When maintenance item U092 (Adjusting the scanner automatically) is run using the specified original (P/N 2AC68241), the following adjustments are automatically made:

- Adjusting the scanner center line (U067)
- Adjusting the scanner magnification in the main scanning direction (U065)
- Adjusting the scanner leading edge registration (U066)
- Adjusting the scanner magnification in the auxiliary scanning direction (U065)
- Adjusting margins for reading an original on the contact glass (U403)

When maintenance item U074 (Adjusting the DF automatically) is run using the specified original (P/N 2AC68241), the following adjustments are automatically made:

- Adjusting the DF magnification (U070)
- Adjusting the DF scanning timing (U071)
- Adjusting the DF center line (U072)
- Adjusting margins for DF original reading (U404)

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: $\pm 1.5 \text{ mm}/375 \text{ mm}$ Using SRDF: $\pm 2.5 \text{ mm}/375 \text{ mm}$
Lateral squareness (printer mode)	$\pm 1.0 \text{ mm}/375 \text{ mm}$
Margins (copier mode)	A: $2.0^{+2.0}_{-1.5} \text{ mm}$ B: $3.0 \pm 2.5 \text{ mm}$ C: $2.0^{+2.0}_{-1.5} \text{ mm}$ D: $3.0 \pm 2.5 \text{ mm}$
Margins (printer mode)	A: $6.0 \pm 2.0 \text{ mm}$ B: $6.0 \pm 2.5 \text{ mm}$ C: $6.0 \pm 2.0 \text{ mm}$ D: $6.0 \pm 2.5 \text{ mm}$
Leading edge registration	Cassette/large paper deck: $\pm 2.5 \text{ mm}$ Bypass: $\pm 2.5 \text{ mm}$ Duplex copying: $\pm 3.0 \text{ mm}$
Skewed paper feed (left-right difference)	Cassette: 1.5 mm or less Bypass: 1.5 mm or less Duplex copying: 2.0 mm or less
Lateral image shifting	Cassette: $\pm 2.0 \text{ mm}$ Bypass: $\pm 2.0 \text{ mm}$ Duplex copying: $\pm 3.0 \text{ mm}$

Maintenance parts list

Maintenance part name		Part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list			
Paper feed belt	BELT, PAPER FEED	2A007010	5	5
Deck paper conveying roller	UPPER ROLLER, CONVEYING	2A007120	5	4
Deck paper feed roller	LEFT ROLLER LCF	2A007590	6	9
Forwarding pulley	PULLEY, PICK-UP	60906161	8	24
Upper paper feed pulley	PULLEY, PAPER FEED	36706290	8	20
Lower paper feed pulley	LOWER PULLEY, PAPER FEED	33906060	8	8
Bypass forwarding roller	ROLLER, SB LEADING FEED	36707050	7	27
Bypass upper paper feed pulley	UPPER PULLEY, BYPASS	61706770	7	43
Bypass lower paper feed pulley	LOWER PULLEY, BYPASS	61706780	7	44
Upper registration roller	UPPER ROLLER, REGISTRATION	36706511	16	28
Lower registration roller	LOWER ROLLER, REGISTRATION	36706520	12	20
Slit glass	CONTACT GLASS, ADF	35911450	13	6
Contact glass	CONTACT GLASS	35912010	13	7
Mirror 1	MIRROR A	2AC12140	14	20
Mirror 2 and mirror 3	MIRROR B	2AC12150	14	21
Lens	LENS, SCANNER	2AC12501	—	—
Reflector	REFLECTOR, SCANNER	2AC12130	14	19
Exposure lamp	LAMP, SCANNER	2A012101	14	36
Optical rail	RAIL, SCANNER	2AC12080	—	—
Original size detection sensor	SENSOR, ORIGINAL DETECTION	35927290	14	58
Developing assembly	DEVELOPING ASS'Y	2A000210	17	1
Developing blade assembly	DEVELOPING BLADE ASS'Y	2A000220	17	3
Lower developing shaft	LOWER SHAFT, DEVELOPING	36714280	18	43
Upper developing seal	UPPER SEAL, DEVELOPING	2A014360	17	37
Developing filter	FILTER, DEVELOPING	2A014460	17	38
Cleaning assembly	CLEANING ASS'Y	2A000661	20	1
Cleaning blade	PARTS, BLADE CLEANING(SP)	36793311	20	18
Separation claw assembly	SEPARATION CLAW ASS'Y	2A000670	20	4
Cleaning brush	BRUSH, CLEANING	2A018050	20	9
Upper cleaning cover	PARTS, UPPER COVER CLEANING(SP)	36793341	20	26
Cleaning brush terminal	TERMINAL, CLEANING BRUSH	36718110	20	25
Lower cleaning blade	LOWER BLADE ASS'Y	2A068210	20	65
Waste toner tank	DISPOSAL TANK ASS'Y	36700522	20	19
Drum assembly	SET, DRUM	2A082010	15	32
Drum heater electrode A	ELECTRODE A, DRUM HEATER	36708040	15	40
Drum heater electrode B	ELECTRODE B, DRUM HEATER	36708190	15	42
Drum surface potential sensor	PARTS SENSOR SURFACE POTENTIAL(SP)	34093331	16	63
Main charger assembly	MAIN CHARGER ASS'Y	2A000070	15	1
Charger wire	TUNGSTEN WIRE(OX) S•P(50M)	74669000	15	30
Cleaning lamp	LAMP, CLEANING LAMP	36908040	15	26
Charger grid assembly	GRID ASS'Y	2A068170	15	3
Main charger rear housing	REAR CHARGER HOUSING ASS'Y	2A068180	15	7
Rear drum electrode wire	REAR DRUM ELECTRODE WIRE ASS'Y	36701012	16	26
Front drum electrode wire	FRONT DRUM ELECTRODE WIRE ASS'Y	36701021	16	27
Charger wire cleaning pad	MC CLEANING PAD ASS'Y	61768121	15	27
Grid wire cleaning pad	GRID CLEANING PAD ASS'Y	36768080	15	22
Upper front transfer guide	UPPER FRONT GUIDE, TRANSFER	36716550	16	49
Heat roller	ROLLER, HEAT	2A020010	23	7
Press roller	ROLLER, PRESSURE	2A020020	23	8
Cleaning felt	FELT, CLEANING	2A020330	23	50
Lower cleaning roller	LOWER ROLLER, CLEANING	2A020340	22	11
Fixing unit thermister	THERMISTOR, FIXING	18520201	23	6
Heat roller separation claw	SEPARATION CLAW, HEAT ROLLER	36720482	22	38
Press roller separation claw	CLAW, PRESS ROLLER	36720493	22	39
Transfer charger belt	PARTS, BELT TRANSFER(SP)	36793281	11	4
Transfer roller	ROLLER, TRANSFER	2A016020	11	3
Belt cleaning brush	BRUSH, BELT CLEANING	2A016040	11	5
Rear transfer guide	REAR GUIDE, TRANSFER	36716383	11	29
Front cleaning seal	PARTS FRONT SHIELD, CLEANING(SP)	36793670	11	32
Drum grounding plate spring	PLATE SPRING, DRUM GROUND	2A022050	25	19

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	Paper feed belt	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-9
	Deck paper conveying roller	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-11
	Deck paper feed roller	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-11
	Forwarding pulley	Clean or replace	Every service	Replace after feeding 300,000 sheets. Clean with alcohol.	1-6-3
	Upper paper feed pulley	Clean or replace	Every service	Replace after feeding 300,000 sheets. Clean with alcohol.	1-6-3
	Lower paper feed pulley	Clean or replace	Every service	Replace after feeding 300,000 sheets. Clean with alcohol.	1-6-3
	Bypass forwarding roller	Clean or replace	Every service	Replace after feeding 300,000 sheets. Clean with alcohol.	1-6-6
	Bypass upper paper feed pulley	Clean or replace	Every service	Replace after feeding 300,000 sheets. Clean with alcohol.	1-6-6
	Bypass lower paper feed pulley	Clean or replace	Every service	Replace after feeding 300,000 sheets. Clean with alcohol.	1-6-6
	Upper registration roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Lower registration roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Guides	Clean	Every service	Clean with alcohol or a dry cloth.	
	Rollers	Clean	Every service	Clean with alcohol or 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.	1-6-25
	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.	
	Mirror 2 and mirror 3	Clean	Every service	Clean with alcohol and then a dry cloth.	
	Lens	Clean	Every service	Clean with a dry cloth.	
	Reflector	Clean	Every service	Clean with a dry cloth.	
	Exposure lamp	Clean or replace	Every service	Replace if an image problem occurs or after the exposure lamp has been lit for 1,000 hours.	
	Optical rail	Grease	Every service	Check noise and shifting and then apply scanner rail grease PG671.	
	Original size detection sensor	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Developing section	Developer	Replace	Every service	Vacuum or clean with a dry cloth.	1-6-48
	Developing assembly	Clean	Every service		
	Developing blade assembly	Replace	Every 600,000 counts		
	Lower developing shaft	Clean	Up to 600,000 counts	Clean with a dry cloth.	1-6-48
		Check and replace	After 600,000 counts (reset after replacement)	Replace if caked with toner.	
	Upper developing seal	Clean	Every 300,000 counts	Vacuum or clean with a dry cloth.	1-6-47
		Replace	Every 600,000 counts		
	Developing filter	Clean	Every 300,000 counts	Vacuum.	1-6-47
		Replace	Every 600,000 counts		
	Toner hopper (cartridge)	Clean	Every service	Vacuum.	
	Seals	Clean	Every service	Vacuum or clean with a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Cleaning section	Cleaning assembly	Clean	Every service	Clean with a dry cloth; replace if the tip is deformed.	1-6-52
	Cleaning blade	Replace	Every service		1-6-56
	Separation claw assembly	Check and replace	Every service		
	Cleaning brush	Replace	Every service	Vacuum or clean with a dry cloth.	1-6-54
	Upper cleaning cover	Clean or replace	Clean after every 300,000 counts; replace after every 600,000 counts		1-6-52
	Cleaning brush terminal	Replace	Every service	Vacuum or clean with a dry cloth.	1-6-54
	Lower cleaning blade	Clean or replace	Clean after every 300,000 counts; replace after every 600,000 counts		
	Waste toner tank	Replace	Every service	Vacuum or clean with a dry cloth.	
	Seals	Clean	Every service		



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Image formation section	Drum assembly	Check and clean	Every service	Clean with the cleaner bermkot; check for scratches on the drum.	1-6-40
	Drum heater electrode A	Check and replace	Every service	Replace if the resistance between the disk and electrode is 10 Ω or more.	1-6-44
	Drum heater electrode B	Check and replace	Every service	Replace if the resistance between the disk and electrode is 10 Ω or more.	1-6-44
	Drum surface potential sensor	Clean	Every service	Air blow (do not vacuum).	
	Main charger assembly	Clean	Every service	Clean the shield with a wet cloth and then a dry cloth.	1-6-22
	Charger wire	Replace	Every service		1-6-22
	Cleaning lamp	Clean	Every service	Clean with alcohol or a dry cloth.	
	Charger grid assembly	Clean	Every service	Clean the grid shield with wet cloth and then a dry cloth.	1-6-22
	Main charger rear housing	Clean	Every service	Clean with alcohol or a dry cloth.	
	Rear drum electrode wire	Clean or replace	Clean after 300,000 counts; check and replace after 600,000 counts	Replace if the resistance between the disk and electrode is 10 Ω or more.	1-6-42
	Front drum electrode wire	Clean or replace	Clean after 300,000 counts; check and replace after 600,000 counts	Replace if the resistance between the disk and electrode is 10 Ω or more.	1-6-42
	Charger wire cleaning pad	Replace	Every 600,000 counts		1-6-24
	Grid wire cleaning pad	Replace	Every 600,000 counts		1-6-24
	Upper front transfer guide	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Fixing section	Heat roller	Clean or replace	Clean after every 300,000 counts; replace after every 600,000 counts	Clean with cleaning oil SH200CV.	1-6-63
	Press roller	Clean or replace	Clean after every 300,000 counts; replace after every 600,000 counts	Clean with cleaning oil SH200CV.	1-6-63
	Cleaning felt	Replace	Every service		1-6-58
	Lower cleaning roller	Replace	Every service		1-6-62
	Fixing unit thermistor	Check and clean	Every service	Clean with toluene or thinner; check the level of wear on contacting surfaces.	1-6-61
	Heat roller separation claw	Clean or replace	Every service	Clean with toluene or thinner; check the levels of wear on the tip of the claw and the coating of the surface that makes contact with paper.	1-6-64
	Press roller separation claw	Clean or replace	Every service	Clean with toluene or thinner; check the levels of wear on the tip of the claw and the coating of the surface that makes contact with paper.	1-6-65
	Guides	Clean	Every service	Clean with a dry cloth, toluene or thinner.	
	Rollers	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper conveying section	Transfer charger belt	Replace	Every 600,000 counts	Vacuum or clean with a dry cloth. Vacuum or clean with a dry cloth.	1-6-49
	Transfer roller	Replace	Every 600,000 counts		1-6-50
	Belt cleaning brush	Replace	Every 600,000 counts		1-6-51
	Rear transfer guide	Clean	Every service		
	Front cleaning seal	Clean or replace	Clean after every 300,000 counts; replace after every 600,000 counts		



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



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Feedshift and duplex sections	Guides	Clean	Every service	Clean with alcohol or a dry cloth.	
	Rollers	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-66



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Drive section	Drum grounding plate spring	Check and replace	After 600,000 counts, check at every service.	Replace when the surface that makes contact with the drum drive shaft breaks.	1-6-75
		Grease	After 600,000 counts, check at every service.	Apply conductive grease GE-334C.	
	Clutches	Check	Every service		

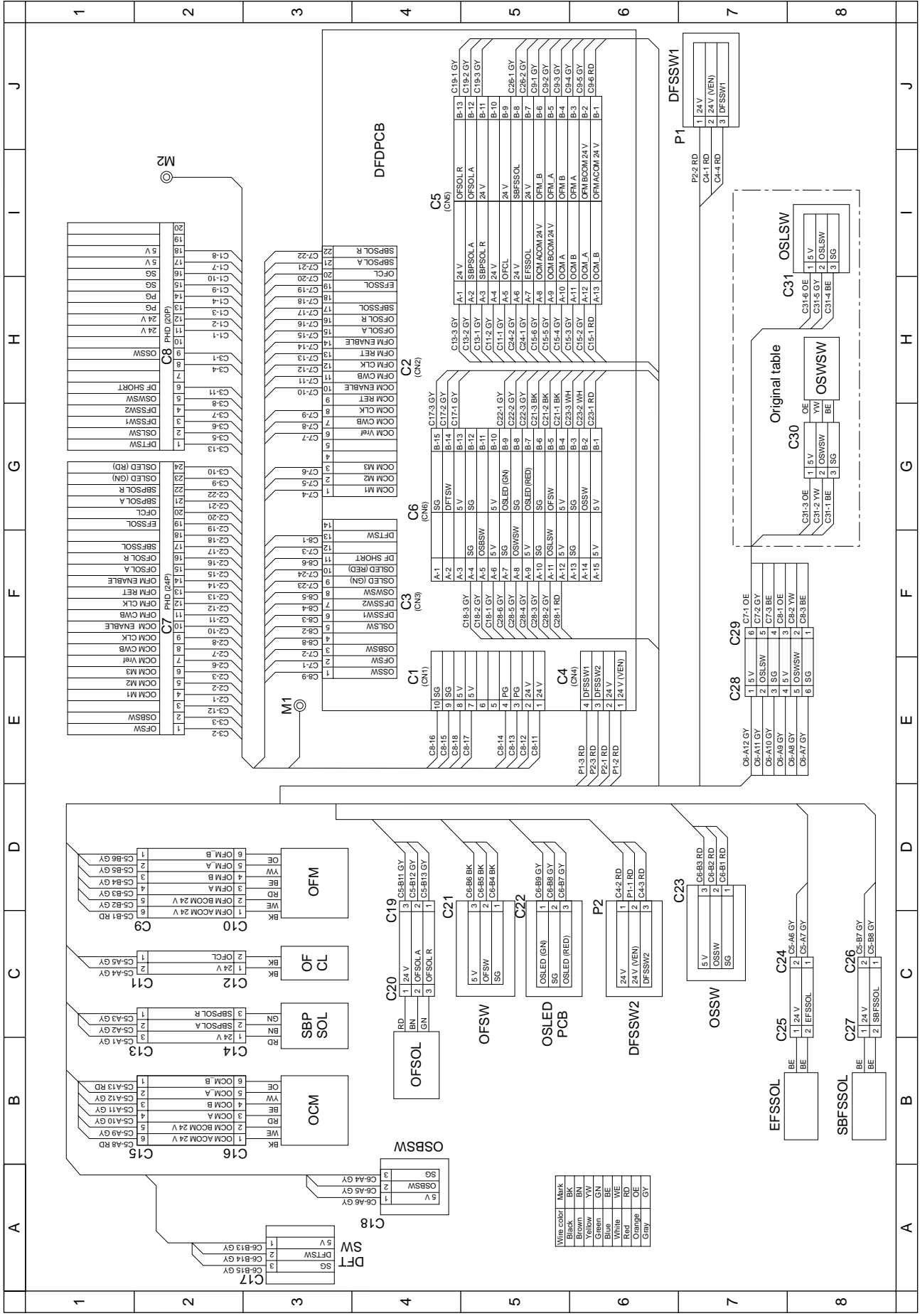


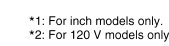
Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Other	Image quality	Check and adjust	Every service		

SRDF wiring diagram





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