



KM-4530

KM-5530

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

45 cpm copier

Type	Console
Copying system	Indirect electrostatic system
Originals	Sheets and books Maximum size: A3/11" × 17"
Original feed system	Fixed
Copy paper	Drawers: Plain paper (60 – 80 g/m ²) Duplex unit: Plain paper (64 – 80 g/m ²) Bypass table: Plain paper (45 – 200 g/m ²) Special paper: Transparencies, tracing paper and colored paper 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, 1:4.00/1:2.00/1:1.41/1:1.27/1:1.06/1:0.90/1:0.75/1:0.70/1:0.50/1:0.25 Inch 1:1, 1:4.00/1:2.00/1:1.54/1:1.29/1:1.21/1:0.78/1:0.77/1:0.64/1:0.50/1:0.25
100% magnification	Copier: ±0.8% DF: ±1.5%
Enlargement/reduction	Copier: ±1.0% DF: ±1.5%
Copy speed	At 100% magnification in memory copy mode: A4/11" × 8 ¹ / ₂ " : 45 copies/min. A4R/8 ¹ / ₂ " × 11" : 32 copies/min. A3/11" × 17" : 24 copies/min. B4 (257 × 364 mm)/8 ¹ / ₂ " × 14" : 28 copies/min. B5: 45 copies/min. B5R: 36 copies/min. When the DF is used (at 100% magnification): A4/11" × 8 ¹ / ₂ " : 45 copies/min.
First copy time	3.9 s less (A4/11" × 8 ¹ / ₂ ", 100% magnification, drawer 1, manual copy density control)
Warm-up time	120 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: Two 500-sheet drawers One 1000-sheet drawer One 1500-sheet drawer Manual feed Capacity: Bypass: 100 sheets
Multiple copying	1 – 999 copies
Photoconductor	OPC (drum diameter 78 mm)
Charging system	Single positive corona charging
Recording system	Semiconductor laser
Developing system	Dry, reverse developing Developer: 2-component, ferrite carrier and black toner Density control: Developer density detection Toner replenishing: Automatic from a toner bottle
Transfer system	Single minus corona charge
Separation system	AC separation corona charger system

2BC/D

Fixing system	Heat roller Heat source: Halogen heaters (main 970 W for 120 V specifications/1150 W for 220-240 V specifications, sub 970 W for 120 V specifications/1150 W for 220-240 V specifications) Control temperature: 185°C/365°F (at normal ambient temperature) Abnormally high temperature protection devices: 150°C/302°F thermostats Fixing pressure: 265 N
Charge erasing system	Exposure by cleaning lamp
Cleaning system	Cleaning blade and fur brush
Scanning system	Flat bed scanning by CCD image sensor
Bitmap memory	128 MB (standard)
Image storage memory	20.0 GB (standard)
Resolution	Reading: 600 × 600 dpi Writing: 1800 equivalent × 600 dpi
Light source	Inert gas lamp
Dimensions	680 (W) × 804 (D) × 1141 (H) mm 26 ^{13/16} " (W) × 31 ^{11/16} " (D) × 44 ^{15/16} " (H)
Weight	Approx. 180 kg/396 lbs
Floor requirements	1331 mm (W) × 804 (D) mm 52 ^{7/16} " (W) × 31 ^{11/16} " (D)
Functions	(1) Self-diagnostics (2) Preheat (3) Automatic copy density control (4) Original size detection (5) Automatic paper selection (6) Automatic magnification selection (7) Zoom mode (8) XY zoom mode (9) Preset zoom mode (10) Document management functions (11) Output management functions (12) Photo mode (13) Duplex copy (14) Margin modes (15) Memo mode (16) Border erase modes (17) Combine/merge copy modes (18) Booklet stitching modes (19) Sort/finished mode (20) Auto selection/filing mode (21) Copy management function (22) Language selection function
Power source	120 V AC, 60 Hz, 12 A 220 – 240 V AC, 50/60 Hz, 7.0 A (max.)
Power consumption	1500 W (max.)
Options	Document finisher, key counter, printer kit, network scanner kit and tandem copy kit.

55 cpm copier

Type	Console
Copying system	Indirect electrostatic system
Originals	Sheets and books Maximum size: A3/11" × 17"
Original feed system	Fixed
Copy paper	Drawers: Plain paper (60 – 80 g/m ²) Duplex unit: Plain paper (64 – 80 g/m ²) Bypass table: Plain paper (45 – 200 g/m ²) Special paper: Transparencies, tracing paper and colored paper 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, 1:4.00/1:2.00/1:1.41/1:1.27/1:1.06/1:0.90/1:0.75/1:0.70/1:0.50/1:0.25 Inch 1:1, 1:4.00/1:2.00/1:1.54/1:1.29/1:1.21/1:0.78/1:0.77/1:0.64/1:0.50/1:0.25
100% magnification	Copier: ±0.8% DF: ±1.5%
Enlargement/reduction	Copier: ±1.0% DF: ±1.5%
Copy speed	At 100% magnification in memory copy mode: A4/11" × 8 ¹ / ₂ " : 55 copies/min. A4R/8 ¹ / ₂ " × 11" : 38 copies/min. A3/11" × 17" : 28 copies/min. B4 (257 × 364 mm)/8 ¹ / ₂ " × 14" : 32 copies/min. B5: 55 copies/min. B5R: 40 copies/min. When the DF is used (at 100% magnification): A4/11" × 8 ¹ / ₂ " : 55 copies/min.
First copy time	3.9 s less (A4/11" × 8 ¹ / ₂ ", 100% magnification, drawer 1, manual copy density control)
Warm-up time	120 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: Two 500-sheet drawers One 1000-sheet drawer One 1500-sheet drawer Manual feed Capacity: Bypass: 100 sheets
Multiple copying	1 – 999 copies
Photoconductor	OPC (drum diameter 78 mm)
Charging system	Single positive corona charging
Recording system	Semiconductor laser
Developing system	Dry, reverse developing Developer: 2-component, ferrite carrier and black toner Density control: Developer density detection Toner replenishing: Automatic from a toner bottle
Transfer system	Single minus corona charge
Separation system	AC separation corona charger system

2BC/D

Fixing system	Heat roller Heat source: Halogen heaters (main 970 W for 120 V specifications/1150 W for 220-240 V specifications, sub 970 W for 120 V specifications/1150 W for 220-240 V specifications) Control temperature: 185°C/365°F (at normal ambient temperature) Abnormally high temperature protection devices: 150°C/302°F thermostats Fixing pressure: 265 N
Charge erasing system	Exposure by cleaning lamp
Cleaning system	Cleaning blade and fur brush
Scanning system	Flat bed scanning by CCD image sensor
Bitmap memory	128 MB (standard)
Image storage memory	20.0 GB (standard)
Resolution	Reading: 600 × 600 dpi Writing: 1800 equivalent × 600 dpi
Light source	Inert gas lamp
Dimensions	680 (W) × 804 (D) × 1141 (H) mm 26 ^{13/16} " (W) × 31 ^{11/16} " (D) × 44 ^{15/16} " (H)
Weight	Approx. 180 kg/396 lbs
Floor requirements	1331 mm (W) × 804 (D) mm 52 ^{7/16} " (W) × 31 ^{11/16} " (D)
Functions	(1) Self-diagnostics (2) Preheat (3) Automatic copy density control (4) Original size detection (5) Automatic paper selection (6) Automatic magnification selection (7) Zoom mode (8) XY zoom mode (9) Preset zoom mode (10) Document management functions (11) Output management functions (12) Photo mode (13) Duplex copy (14) Margin modes (15) Memo mode (16) Border erase modes (17) Combine/merge copy modes (18) Booklet stitching modes (19) Sort/finished mode (20) Auto selection/filing mode (21) Copy management function (22) Language selection function
Power source	120 V AC, 60 Hz, 12 A 220 – 240 V AC, 50/60 Hz, 7.0 A (max.)
Power consumption	1500 W (max.)
Options	Side deck, document finisher, key counter, printer kit, network scanner kit and tandem copy kit.

DF

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" – 5 ^{1/2} " × 8 ^{1/2} "
No. of originals	Up to 70 sheets (A3, B4, folio, 11" × 17", 8 ^{1/2} " × 14") Up to 100 sheets (up to A4/11" × 8 ^{1/2} ") Up to 30 sheets in the auto selection mode
Power source	Electrically connected to the copier

1-1-2 Parts names and their functions

(1) Copier

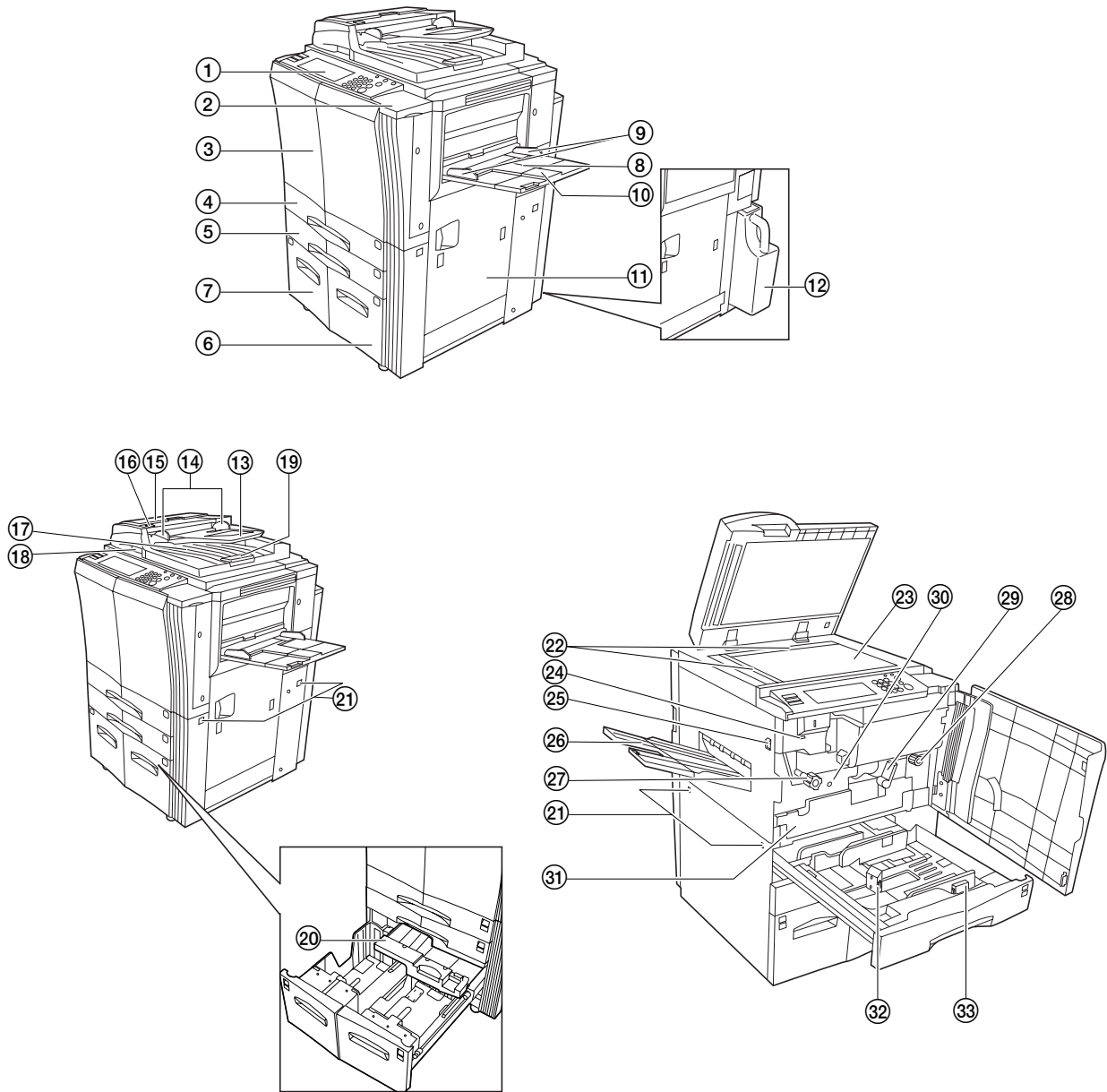


Figure 1-1-1

- | | | |
|-------------------------|---------------------------------|--------------------------------------|
| ① Operation panel | ⑬ Original table | ⑳ Main switch |
| ② Operation right cover | ⑭ Original insert guides | ㉑ Copy eject tray |
| ③ Front cover | ⑮ DF original reversing cover | ㉒ Fixing unit handle |
| ④ Drawer 1 | ⑯ Original set indicator | ㉓ Paper conveying unit handle |
| ⑤ Drawer 2 | ⑰ Original eject table | ㉔ Paper conveying unit release lever |
| ⑥ Drawer 3 | ⑱ DF opening/closing lever | ㉕ Paper conveying unit |
| ⑦ Drawer 4 | ⑲ Ejection extension | ㉖ Duplex unit |
| ⑧ Bypass tray | ⑳ Deck paper conveying unit | ㉗ Paper length guide release levers |
| ⑨ Insert guides | ㉑ Handles for transport | ㉘ Paper width guide release levers |
| ⑩ Bypass extension | ㉒ Original size indicator lines | |
| ⑪ Right cover | ㉓ Contact glass | |
| ⑫ Waste toner box | ㉔ Total counter | |

(2) Operation panel

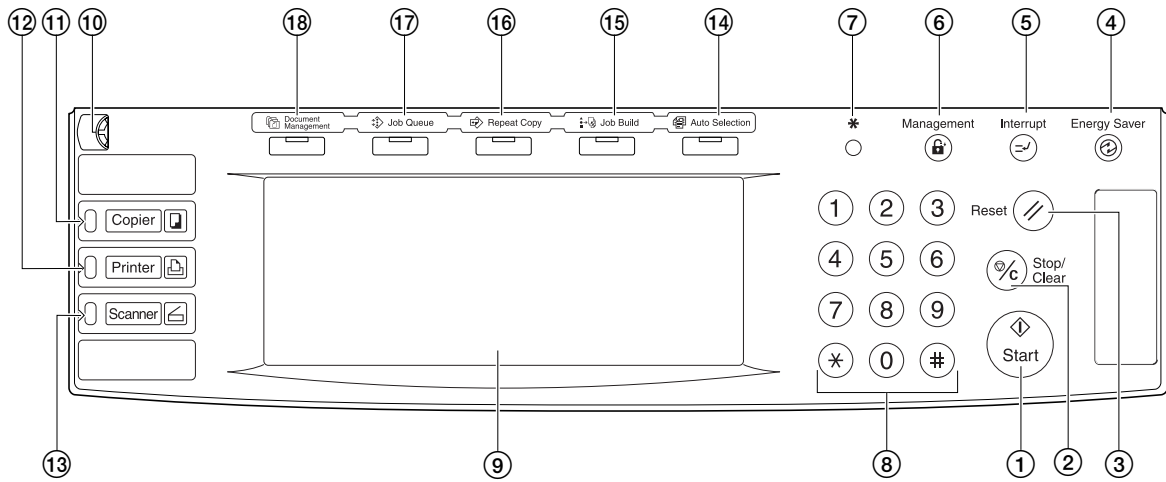


Figure 1-1-2

- | | |
|--------------------------------------|--------------------------------------------|
| ① Start key & indicator lamp | ⑬ Scanner key & indicator lamp |
| ② Stop/clear key | ⑭ Auto selection key & indicator lamp |
| ③ Reset key | ⑮ Job build key & indicator lamp |
| ④ Energy saver key & indicator lamp | ⑯ Repeat copy key & indicator lamp |
| ⑤ Interrupt key & indicator lamp | ⑰ Job queue key & indicator lamp |
| ⑥ Management key | ⑱ Document management key & indicator lamp |
| ⑦ *(default setting) key | |
| ⑧ Numeric key | |
| ⑨ Touch panel | |
| ⑩ Brightness adjustment control dial | |
| ⑪ Copier key & indicator lamp | |
| ⑫ Printer key & indicator lamp | |

1-1-3 Machine cross section

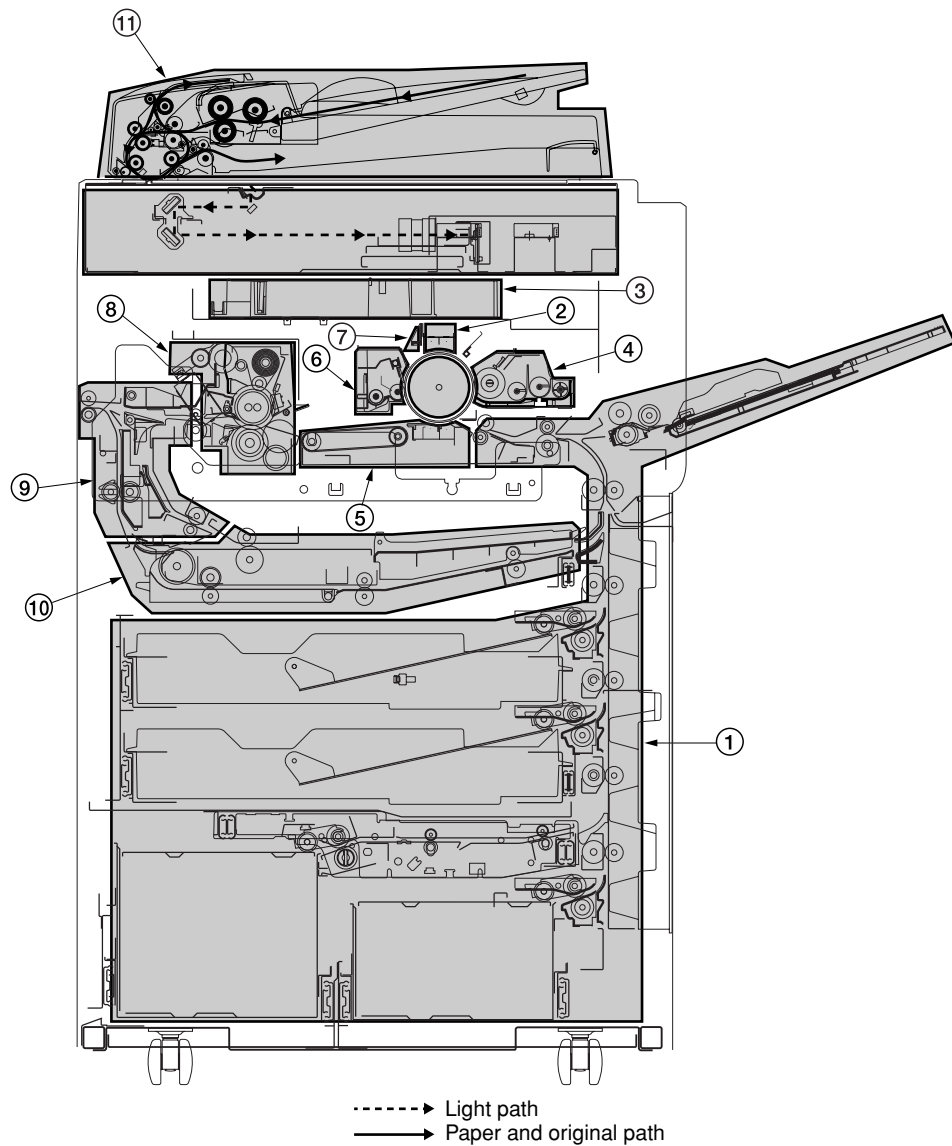


Figure 1-1-3 Machine cross section

- | | |
|----------------------------------------|-------------------------------|
| 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 DF |
| ⑥ Cleaning section | |

1-1-4 Drive system

(1) Drive system 1 (optical section)

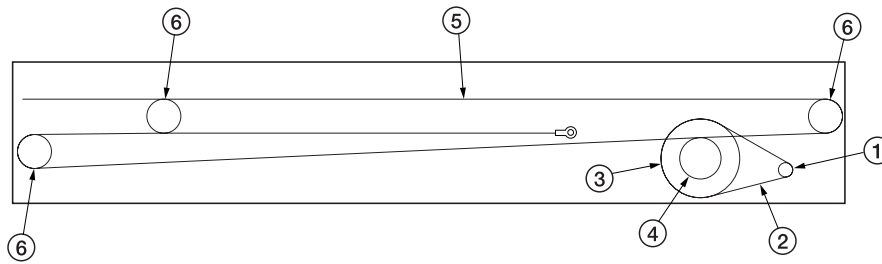


Figure 1-1-4

- 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)

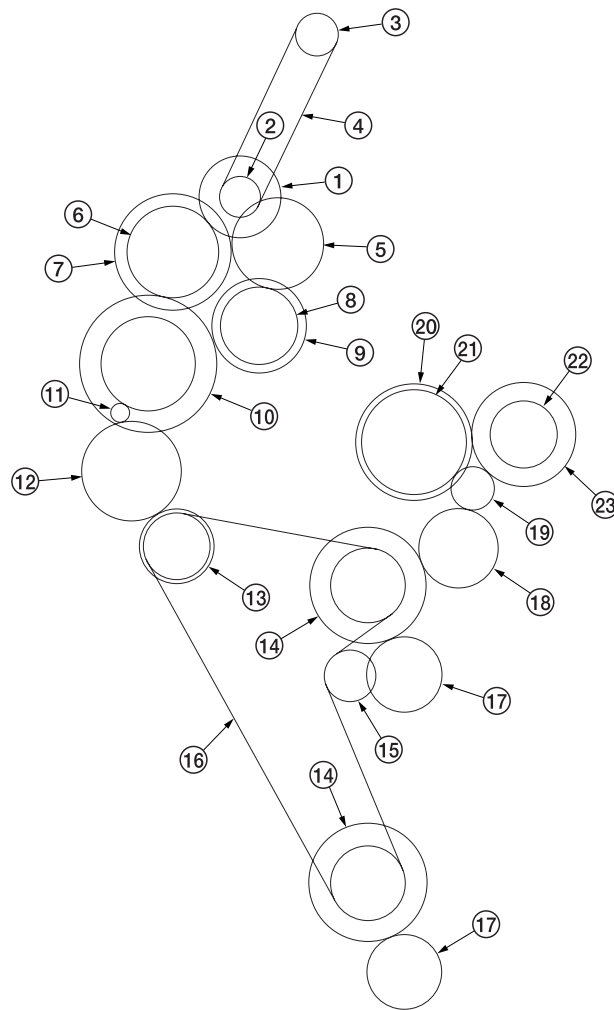


Figure 1-1-5

- | | |
|-----------------------------------|---------------------------------|
| ① Idle gear 30 | ⑬ Paper feed drive pulley 29/52 |
| ② Pulley 16 | ⑭ Idle pulley 31/42 |
| ③ Pulley 20 | ⑮ Tension pulley 20 |
| ④ Developing agitation drive belt | ⑯ Paper feed drive belt |
| ⑤ Gear 32 | ⑰ Idle gear 26 |
| ⑥ Feed gear 42 | ⑱ Gear 19 |
| ⑦ Registration clutch gear | ⑳ Feed high clutch 2 gear |
| ⑧ Feed gear 27 | ㉑ Gear 40 |
| ⑨ Feed low clutch 1 gear 34 | ㉒ Gear 24 |
| ⑩ Feed gear 49/65 | ㉓ Feed low clutch 2 gear |
| ⑪ Paper feed motor gear | |
| ⑫ Paper feed gear 68 | |

(3) Drive system 3 (Deck drive motor drive train)

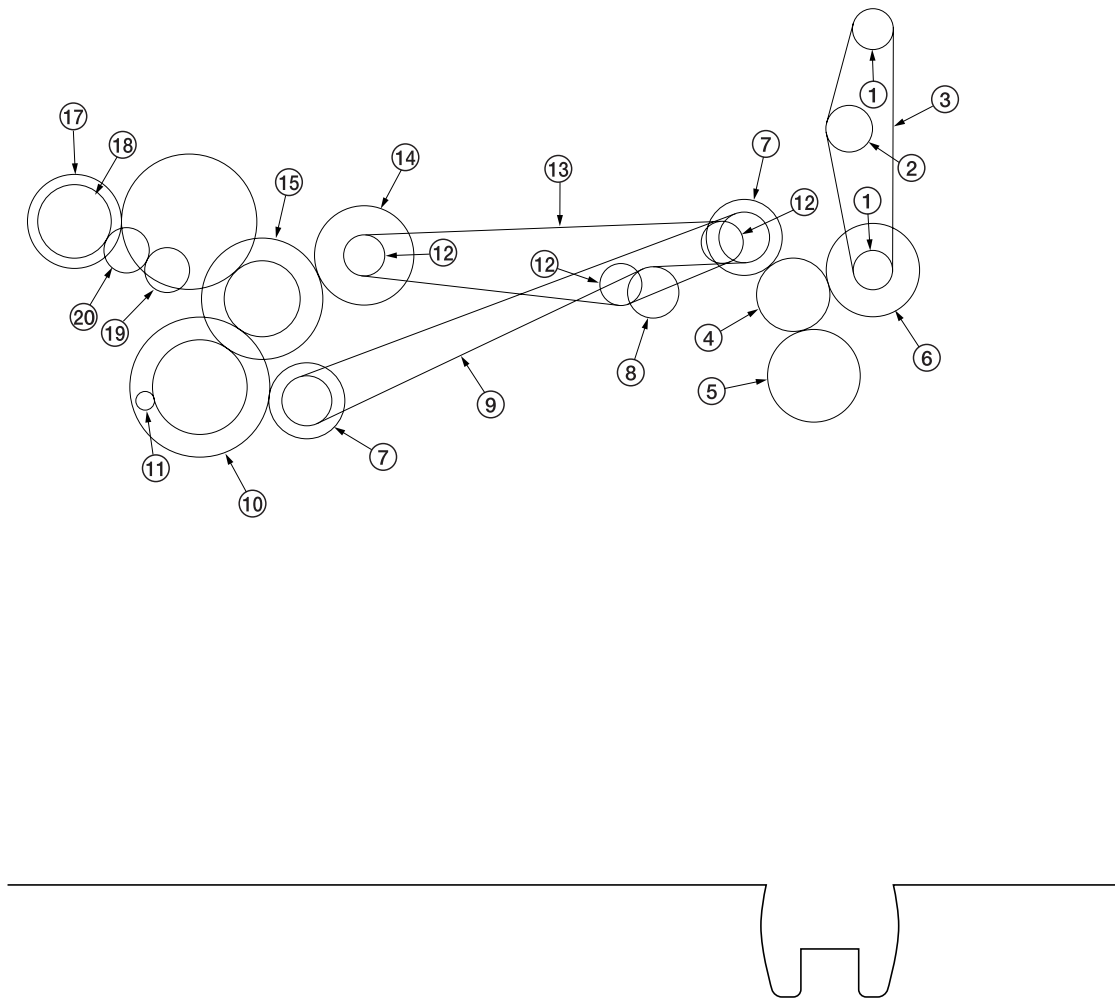


Figure 1-1-6

- | | |
|--------------------------------|--------------------------------|
| ① Pulley 26 | ⑪ Deck drive motor gear |
| ② Tension pulley | ⑫ Pulley 20 |
| ③ Paper feed drive belt | ⑬ Deck conveying belt |
| ④ Idle gear 26 | ⑭ Deck feed clutch gear |
| ⑤ Paper feed clutch 3 gear | ⑮ Deck gear 27/45 |
| ⑥ Feed clutch 5 gear | ⑯ Idle gear 48 |
| ⑦ Deck paper feed drive pulley | ⑰ Paper feed clutch 4 gear |
| ⑧ Tension pulley 20 | ⑱ Paper feed pulley drive gear |
| ⑨ Deck paper feed drive belt | ⑲ Gear 21 |
| ⑩ Feed gear 49/65 | ⑳ Gear 16 |

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

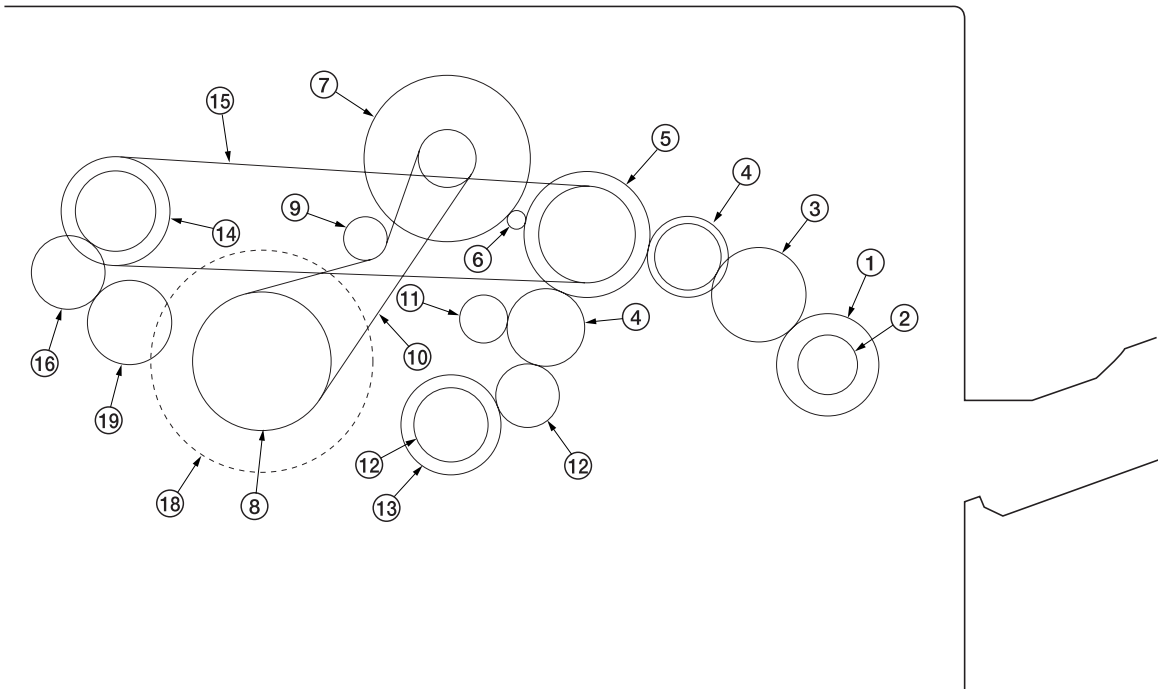


Figure 1-1-7

- | | |
|-------------------------------|----------------------------|
| ① Bypass paper feed idle gear | ⑩ Drum drive belt |
| ② Gear 20 | ⑪ Gear 19 |
| ③ Gear 30 | ⑫ Registration gear 24 |
| ④ Gear 39/25 | ⑬ Registration clutch gear |
| ⑤ Drum drive pulley 23/84 | ⑭ Pulley 40/28 |
| ⑥ Image formation motor gear | ⑮ Cleaning drive belt |
| ⑦ Gear 63/35 | ⑯ Gear 26 |
| ⑧ Drum pulley 51 | ⑰ Gear 30 |
| ⑨ Tension pulley | ⑱ Drum |

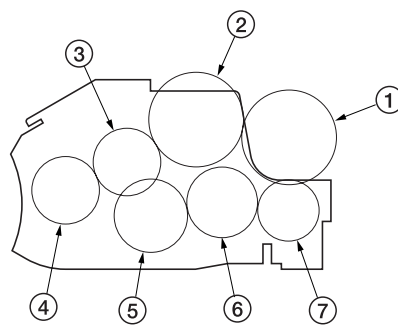


Figure 1-1-8 Developing section

- | | |
|--------------------------|-----------------|
| ① Toner supply gear | ⑤ Spiral gear A |
| ② Developing idle gear | ⑥ Spiral gear B |
| ③ Developing input gear | ⑦ Spiral gear C |
| ④ Developing sleeve gear | |

(5) Drive system 5 (Paper conveying motor drive train)

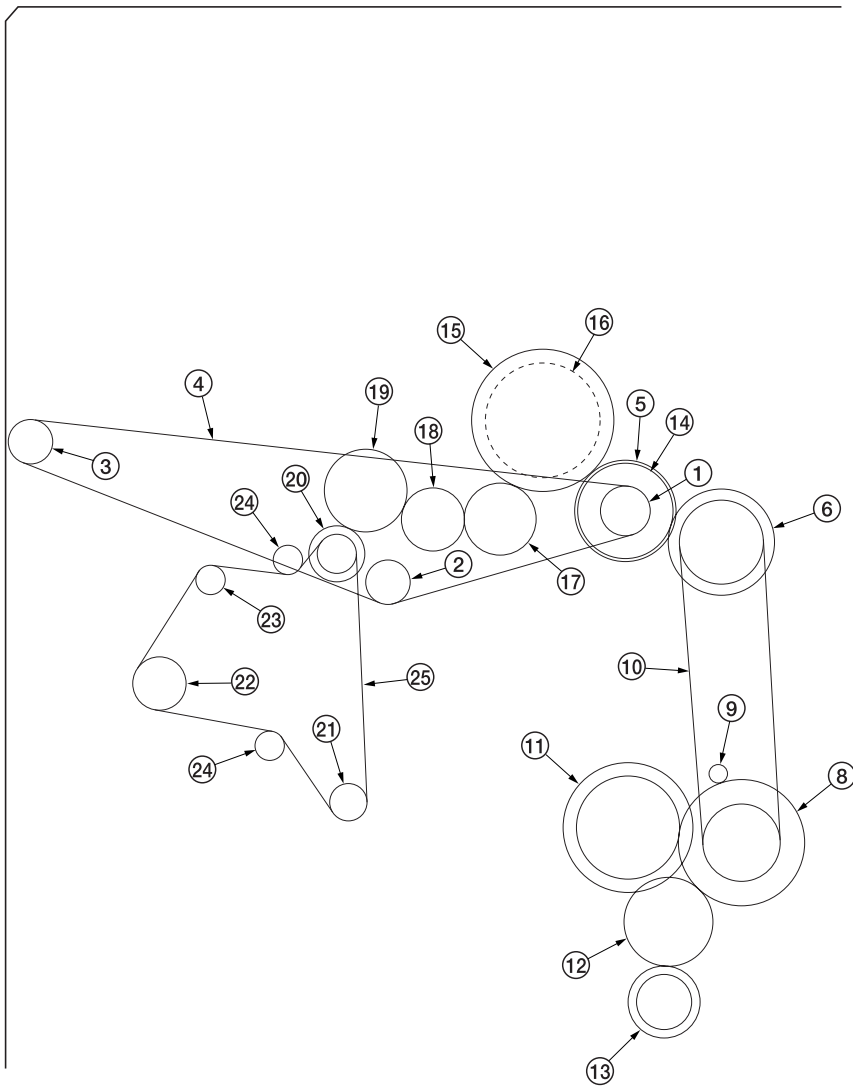


Figure 1-1-9

- | | |
|------------------------------|---------------------------|
| ① Pulley 32 | ⑬ Gear 18/26 |
| ② Pulley 24 | ⑭ Fixing joint gear |
| ③ Pulley 22 | ⑮ Heat roller gear |
| ④ Eject drive belt | ⑯ Heat roller |
| ⑤ Eject drive gear | ⑰ Gear 26 |
| ⑥ Fixing gear 35 | ⑱ Gear 25 |
| ⑦ Fixing pulley 34 | ⑲ Fixing eject joint gear |
| ⑧ Fixing gear 63/32 | ⑳ Pulley 22 |
| ⑨ Paper conveying motor gear | ㉑ Switch back pulley 20 |
| ⑩ Fixing drive belt | ㉒ Pulley 30 |
| ⑪ Duplex gear 45/30 | ㉓ Feed shift belt pulley |
| ⑫ Duplex gear 29/42 | ㉔ Feed shift belt |

(6) Drive system 6 (duplex section)

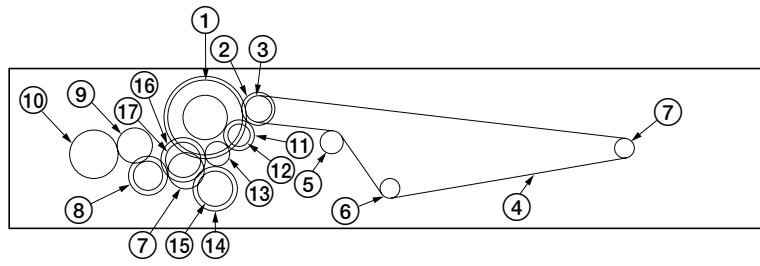
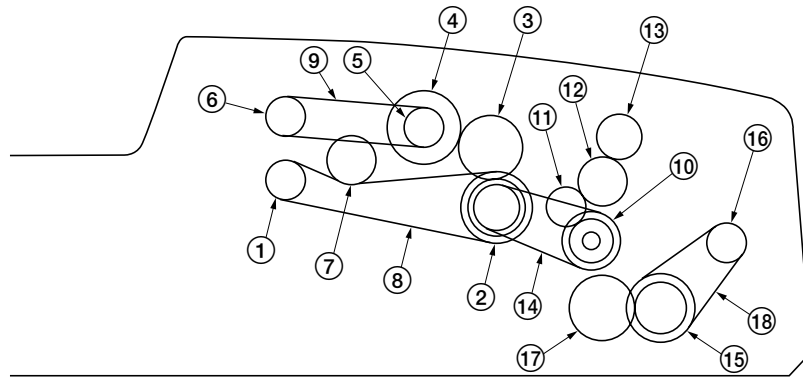


Figure 1-1-10

- | | |
|----------------------------------|---------------------------------|
| 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 | |

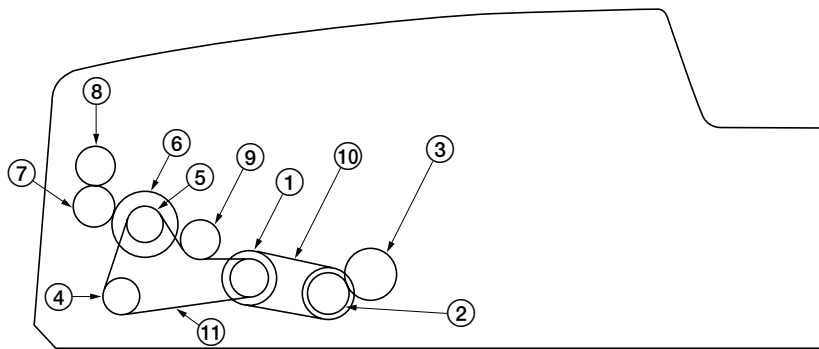
(7) Drive system 7 (DF)



As viewed from machine rear

Figure 1-1-11 DF (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 Switch back 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 DF (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 90% RH. Avoid abrupt changes in temperature and humidity.
- Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
- Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.

1-2-2 Developer and toner

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

1-2-3 Installation environment

1. Temperature: $10 - 35^{\circ}\text{C}/50 - 95^{\circ}\text{F}$
2. Humidity: 15 - 85%RH
3. Power supply: 120 V AC, 12 A
220 - 240 V AC, 7.0 A (max.)
4. Power source frequency: $50 \text{ Hz} \pm 0.3\%/60 \text{ Hz} \pm 0.3\%$
5. Installation location
 - Avoid direct sunlight or bright lighting. Ensure that the photoconductor will not be exposed to direct sunlight or other strong light when removing paper jams.
 - Avoid extremes of temperature and humidity, abrupt ambient temperature changes, and hot or cold air directed onto the machine.
 - Avoid dust and vibration.
 - Choose a surface capable of supporting the weight of the machine.
 - Place the machine on a level surface (maximum allowance inclination: 1°).
 - Avoid air-borne substances that may adversely affect the machine or degrade the photoconductor, such as mercury, acidic or alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.
 - Select a room with good ventilation.
6. Allow sufficient access for proper operation and maintenance of the machine.
Machine front: $1000 \text{ mm}/39\frac{3}{8}"$ Machine rear: $100 \text{ mm}/3\frac{15}{16}"$
Machine right: $700 \text{ mm}/27\frac{9}{16}"$ Machine left: $600 \text{ mm}/23\frac{5}{8}"$

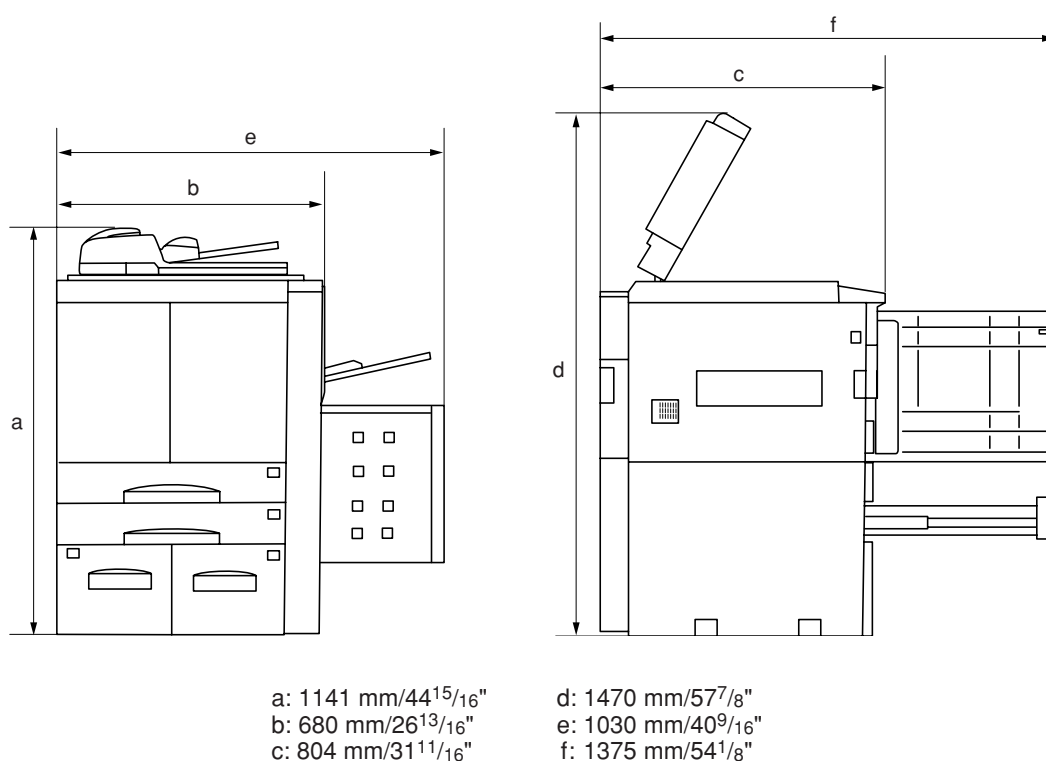
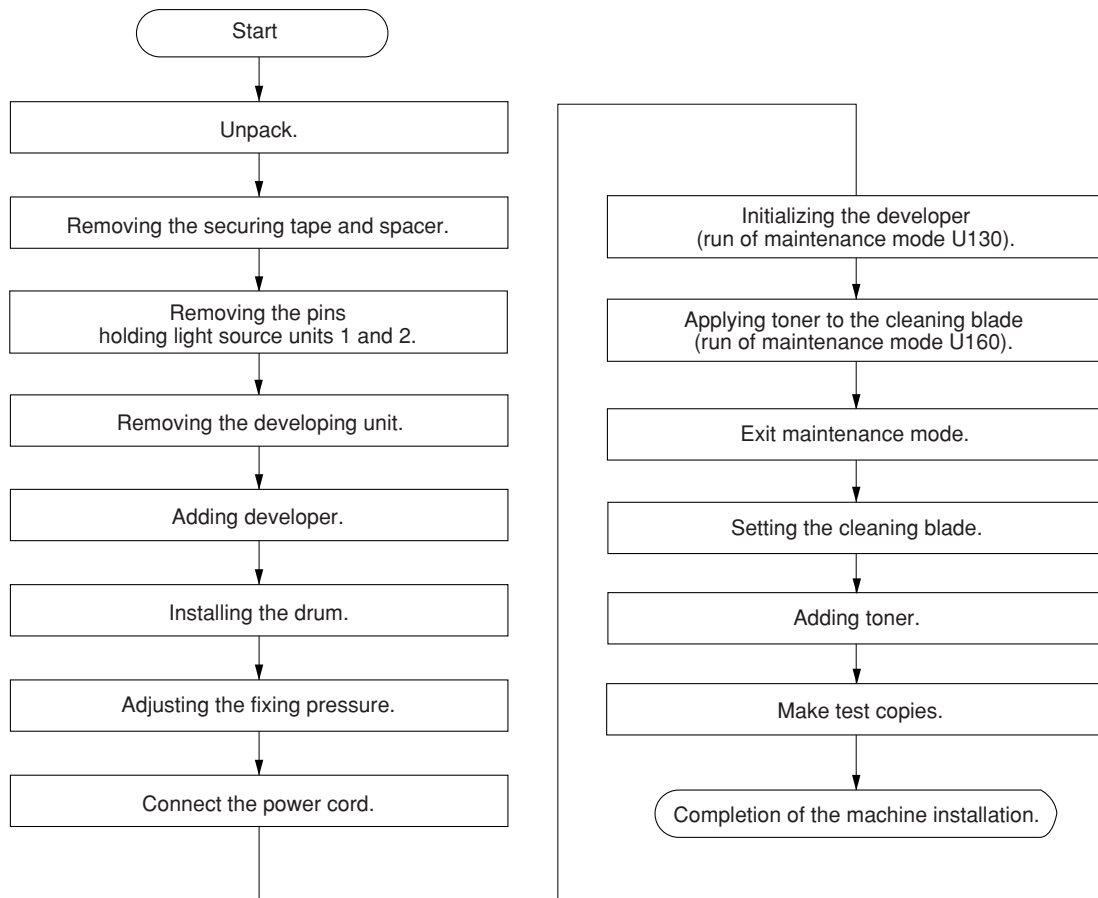


Figure 1-2-1 Installation dimensions

1-3-1 Unpacking and installation

(1) Installation procedure



Unpack.

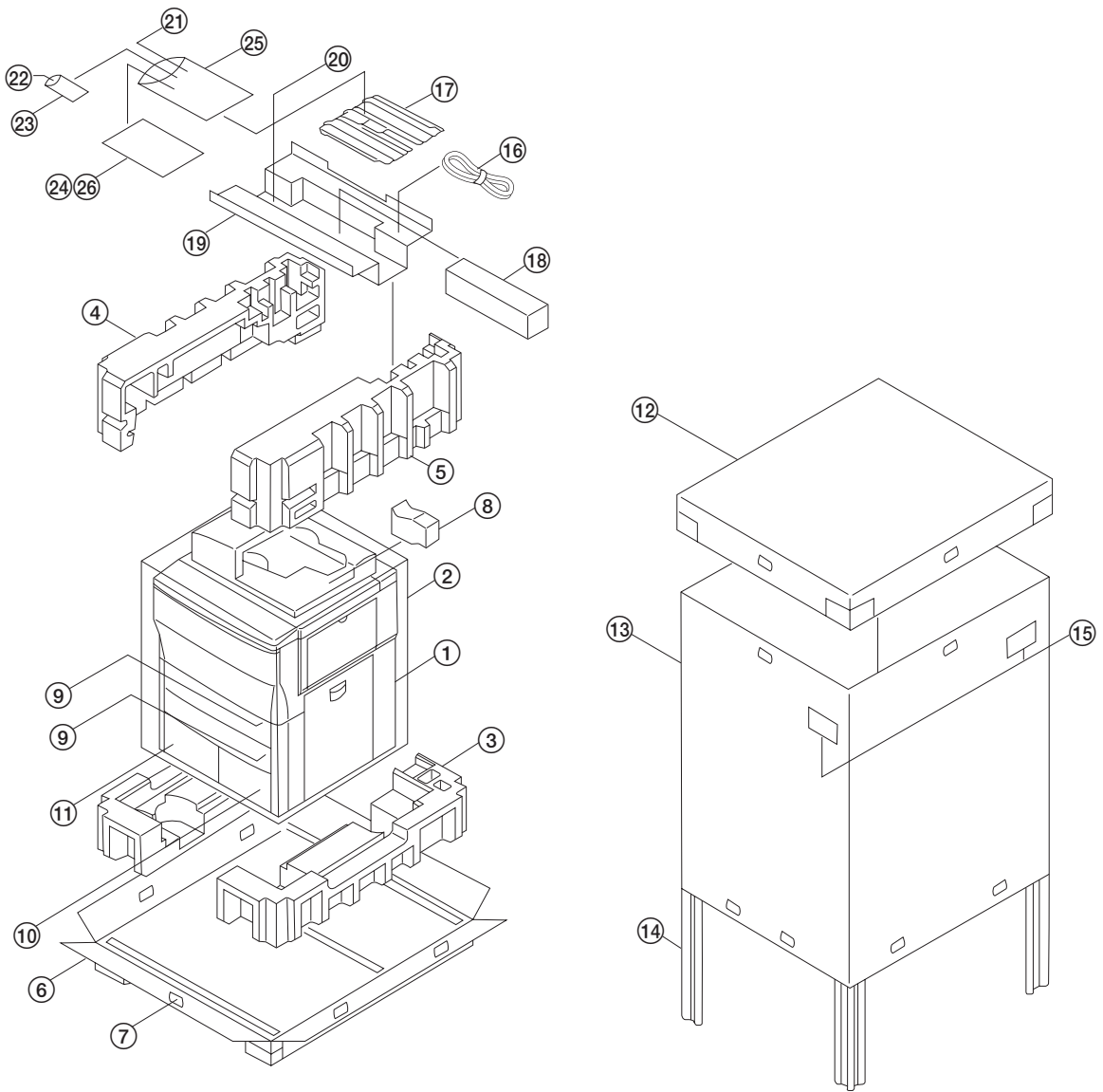


Figure 1-3-1 Unpacking

- | | |
|-------------------|-----------------------------------------------|
| ① Copier | ⑭ Supports |
| ② Machine cover | ⑮ Bar code labels |
| ③ Bottom pad | ⑯ Power code |
| ④ Upper left pad | ⑰ Eject tray |
| ⑤ Upper right pad | ⑱ Drum set |
| ⑥ Skid | ⑲ Tray spacer |
| ⑦ Hinge joints | ⑳ Drawer heater relay cable |
| ⑧ Eject pad | ㉑ Size palates |
| ⑨ Drawer spacer | ㉒ Screws (M3 × 08 flat-head tapping chromate) |
| ⑩ Drawer spacer | ㉓ Plastic bag |
| ⑪ Drawer spacer | ㉔ Operation guide |
| ⑫ Upper case | ㉕ Plastic bag |
| ⑬ Outer case | ㉖ OFF label |

Removing the securing tape and the spacer.

1. Remove the piece of tape that secures the bypass tray.
2. Remove the piece of tape that secures the right cover.
3. Remove the two pieces of tape that secure the right rear cover.
4. Remove the four pieces of tape that secure the drawers.
5. Remove the piece of tape that secures the front cover.
6. Open the front cover and remove the piece of tape that secures the DF.

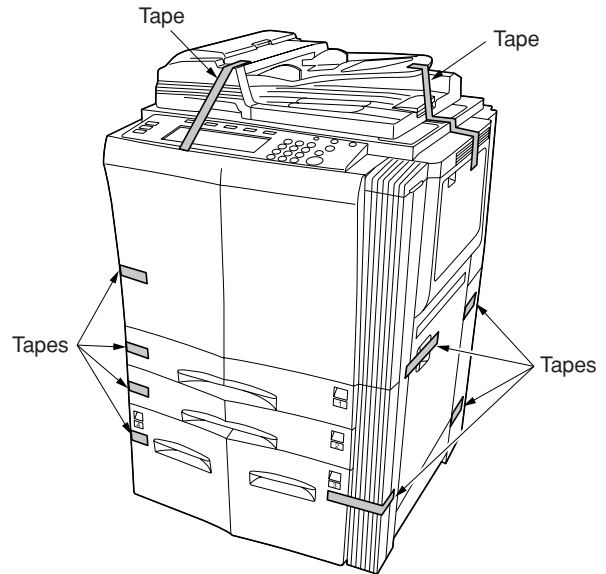


Figure 1-3-2

7. Pull out the duplex unit and remove the two pieces of tape that secure the guide plates.

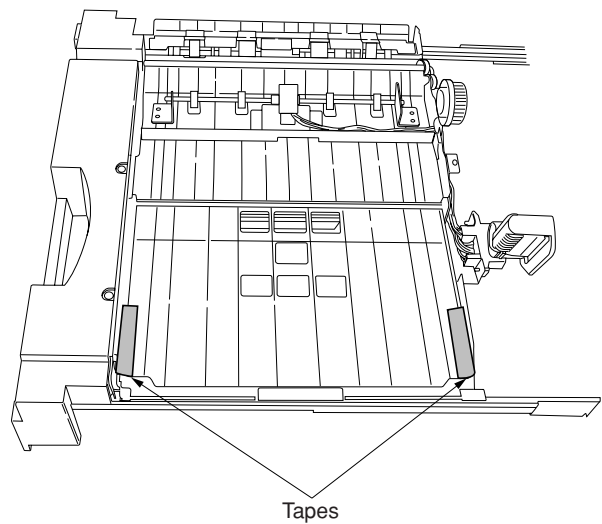


Figure 1-3-3

8. Pull out drawer 1 and drawer 2 and remove the spacer and the two blue screws from each drawer.

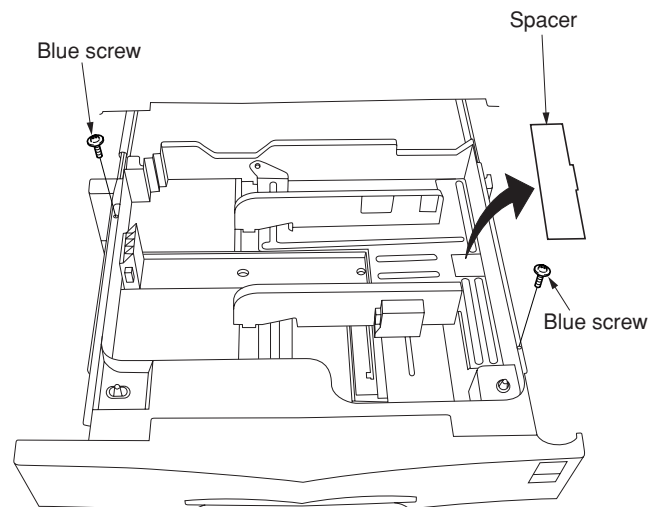


Figure 1-3-4

- 9. Pull out drawer 3, remove the spacer.
- 10. Pull out drawer 4, remove the spacer.

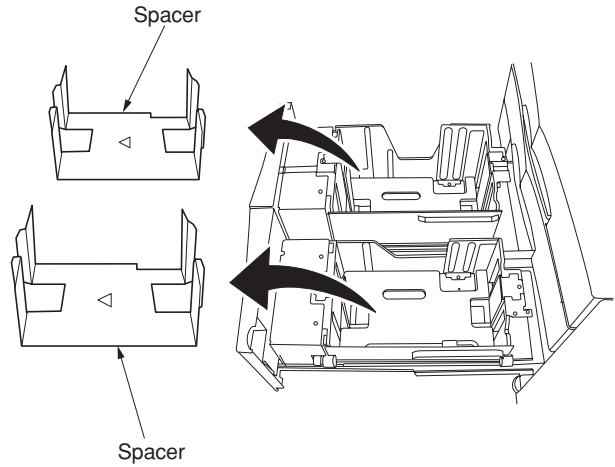


Figure 1-3-5

- 11. Open the DF and remove the piece of tape that secures the original inverse cover.
- 12. Remove the paper from the platen.

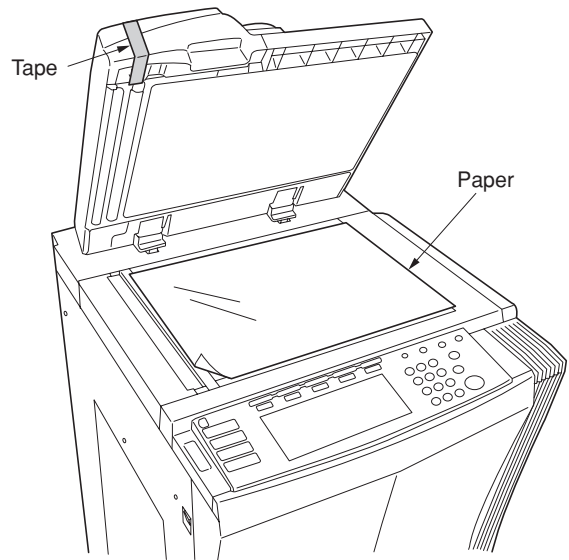


Figure 1-3-6

Removing the pins holding light source units 1 and 2.

- 1. Remove the securing tape from the two pins on the light source unit 1 and from the pin on the light source unit 2, and then remove these pins.

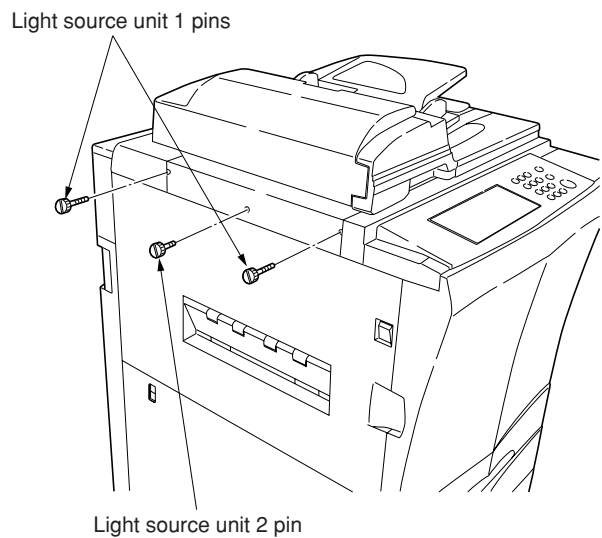


Figure 1-3-7

Removing the developing unit.

1. Open the front cover, pull out the hinge shaft to remove, and remove the front cover.

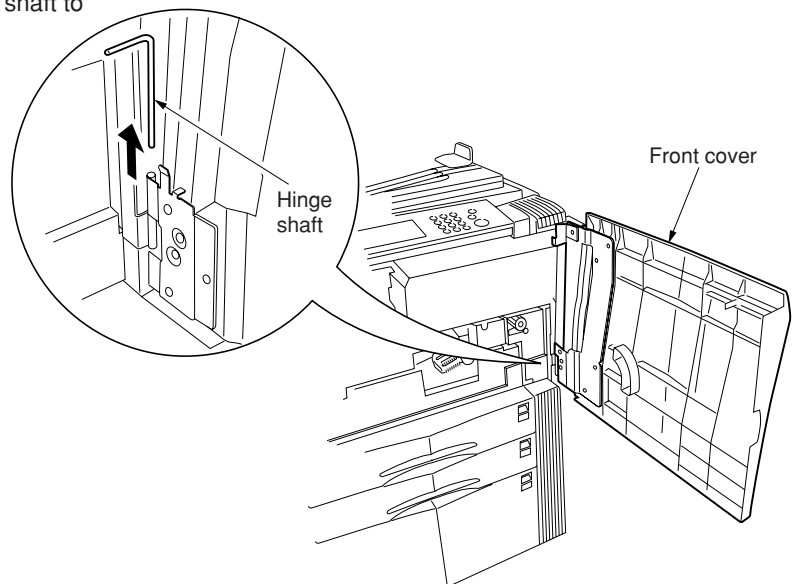


Figure 1-3-8

2. Remove the screw holding the image formation left cover and then the cover.

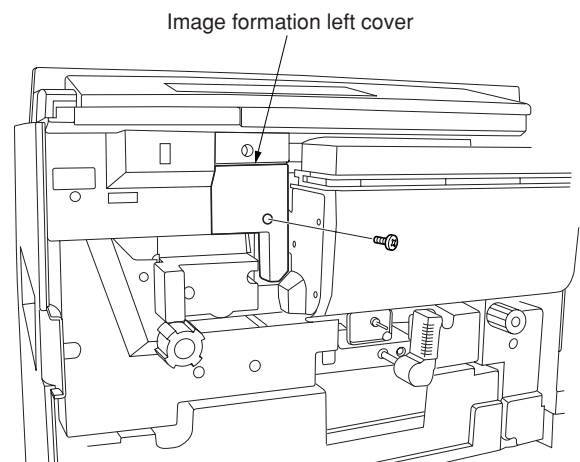


Figure 1-3-9

3. Remove the three screws and the connector that secure the image formation unit and turn down the paper conveying unit release lever to pull out the image formation unit.

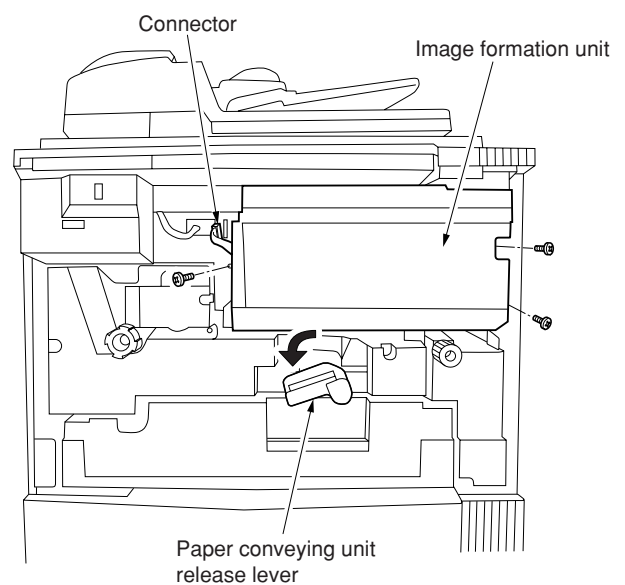


Figure 1-3-10

4. Remove the two screws and open the image formation rail.

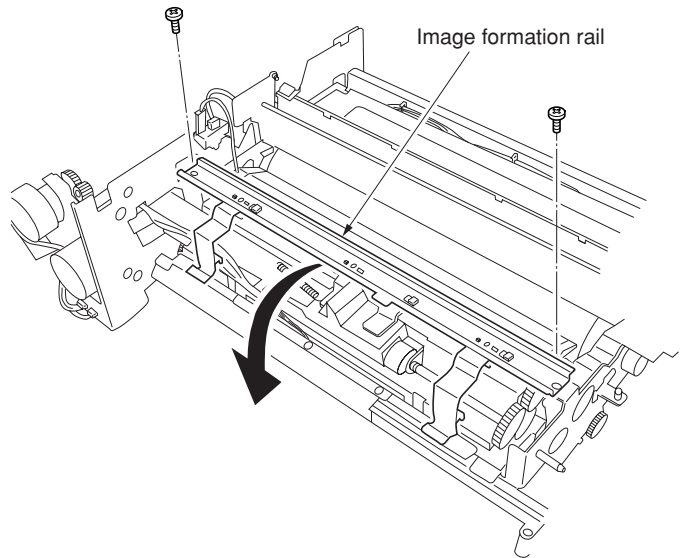


Figure 1-3-11

5. Remove the 1P connector from the developing unit and the 4P connector from the sub toner hopper. Raise the shutter a little and slide it toward the front side of the machine.
6. Turn the auxiliary toner hopper to the right of the machine.

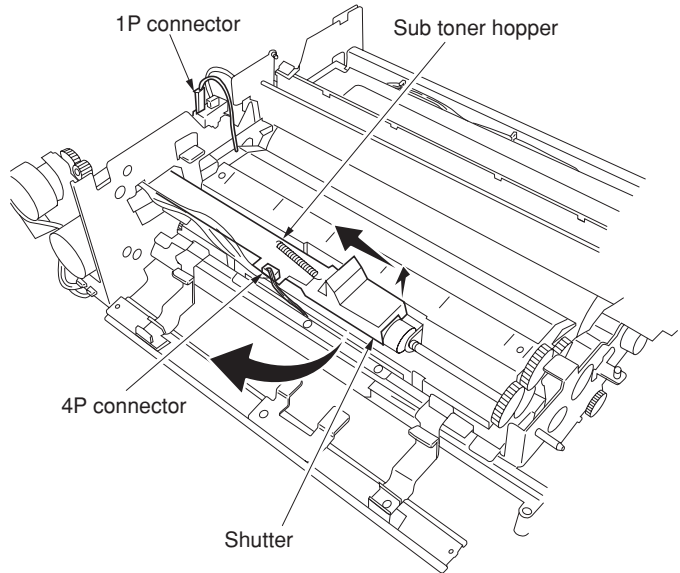


Figure 1-3-12

7. Hold the front and the rear of the developing unit and remove the unit from the image formation unit.

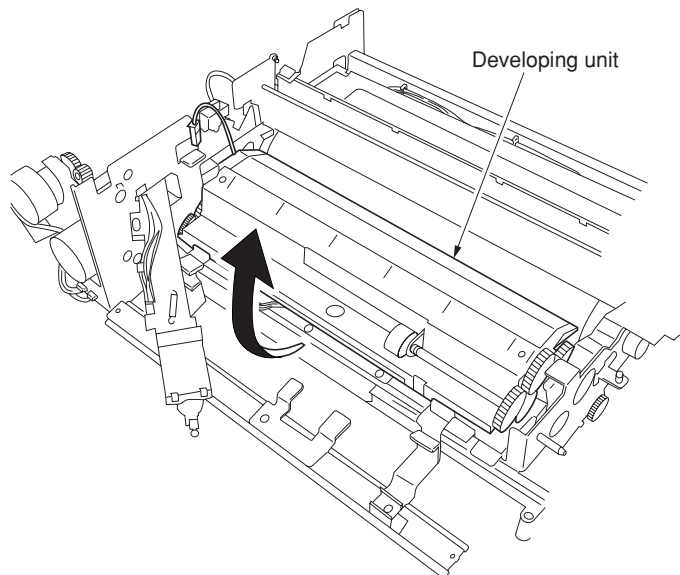


Figure 1-3-13

Adding developer.

1. Remove the two screws and the two hooks and remove the upper developer cover.
- * When adding developer, place the developing unit on a level location.

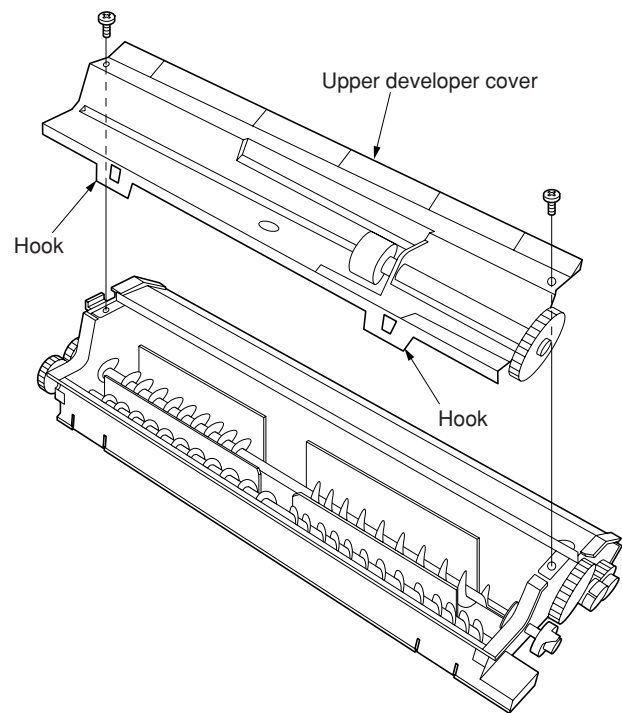


Figure 1-3-14

2. Shake the developer bottle sufficiently to stir the developer.
3. While turning the developing magnet roller gear and the developing spiral cam in the directions indicated by the arrows alternately, add developer uniformly into the developing unit.
- * Never turn the developing magnet roller gear in the reverse direction.
4. Refit the upper developer cover to its original position.

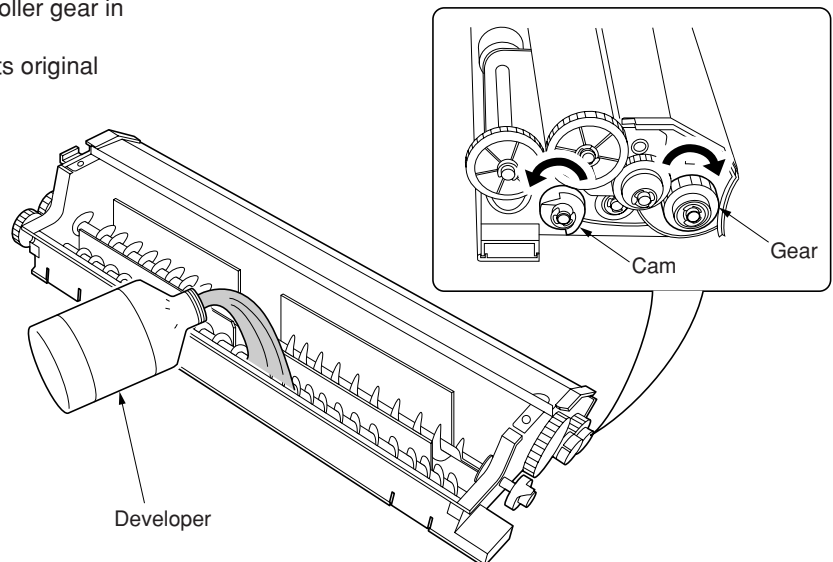


Figure 1-3-15

Installing the drum.

1. Remove the two connectors from the main charger unit.
2. Use a flat-blade screwdriver to loosen the pin at the rear of the main charger unit and remove the main charger unit from the image formation unit.

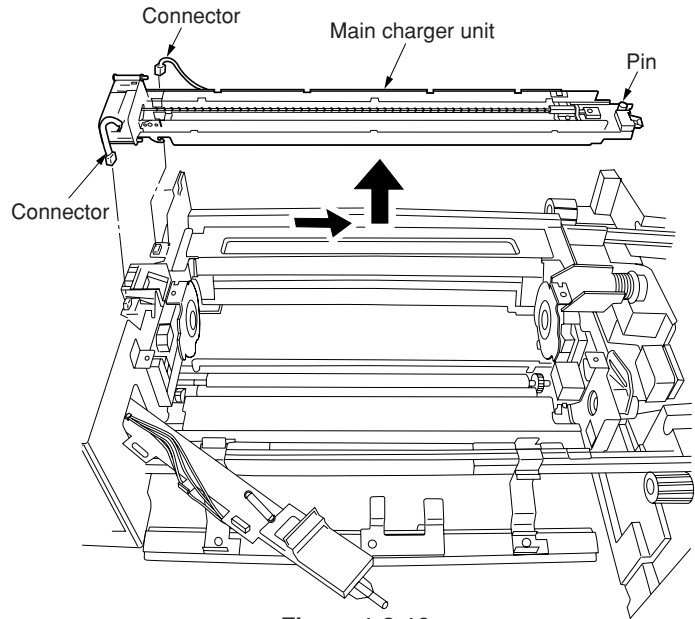


Figure 1-3-16

3. Remove the screw each from the front drum positioning plate and the rear drum positioning plate and remove the plates.

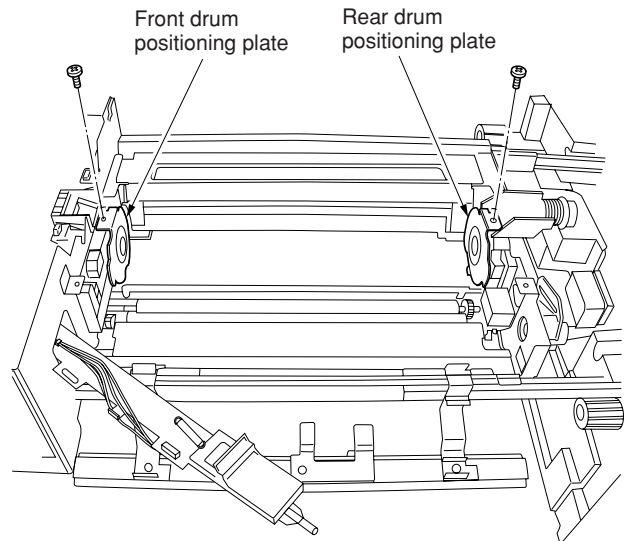


Figure 1-3-17

4. Fit the front drum positioning plate and the rear drum positioning plate to the drum, and set them on the image formation unit.
5. Secure the front drum positioning plate and the rear drum positioning plate with a screw each.
 - * Fit the drum so that the side with the thin shaft of the drum flange is placed on the front side of the machine and the side with the thick shaft of the drum flange is placed on the rear side.
6. Refit the main charger unit and the developing unit to their original positions.
7. Refit the image formation unit to their original positions.

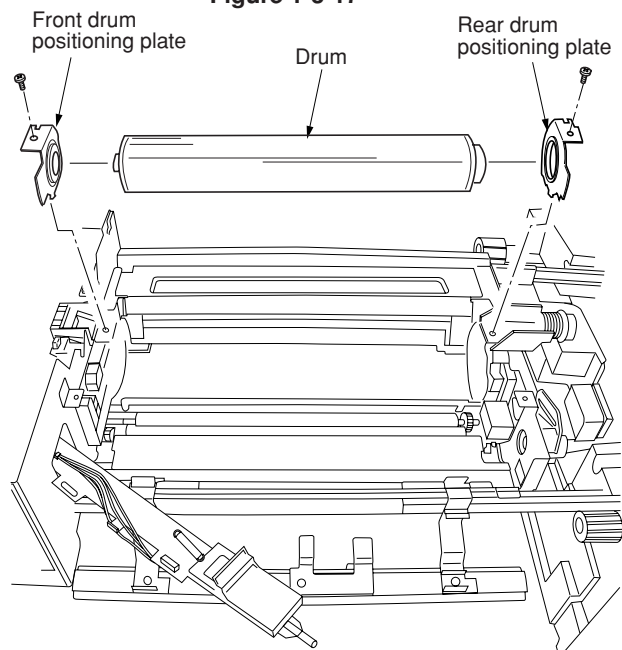


Figure 1-3-18

Adjusting the fixing pressure.

1. Remove the blue screw that secures the paper conveying unit.
2. Pull out the paper conveying unit.

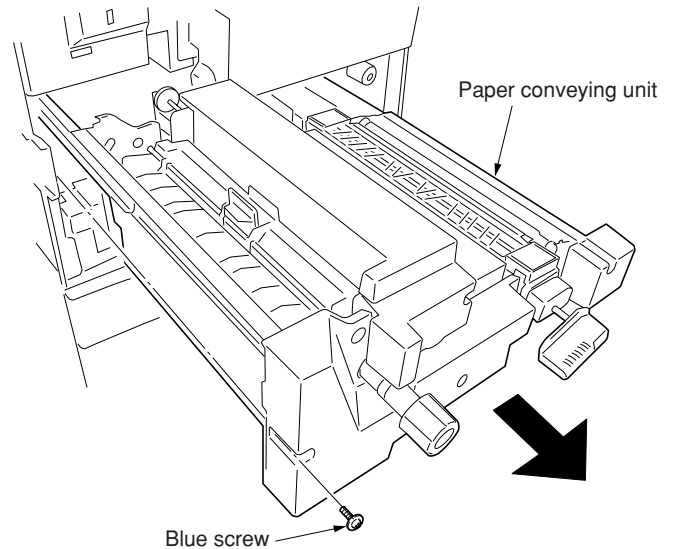


Figure 1-3-19

3. Open the eject cover.
4. Turn the fixing press nuts on the front and rear of the fixing unit clockwise to adjust the fixing pressure.
5. Close the eject cover.
6. Push the paper conveying unit into the machine and raise the paper conveying unit release lever to secure the unit.

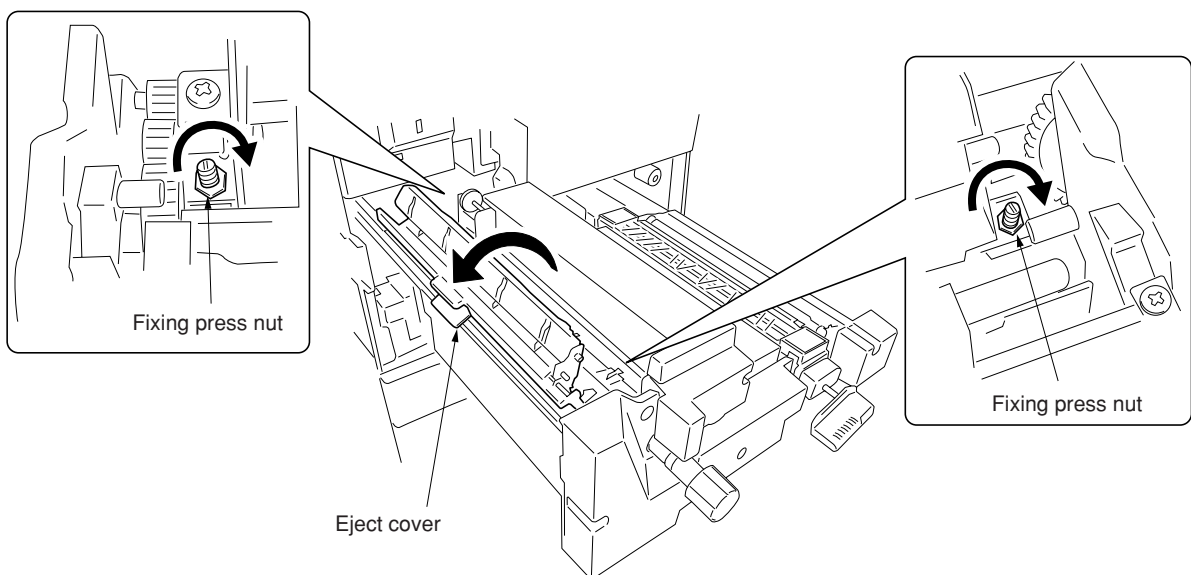


Figure 1-3-20

Connecting the power cord.

1. Refit the front cover to its original position.
2. Connect the power cord to the connector on the copier.*
3. Insert the power plug into the wall outlet. and turn on the main switch with the front cover open.

Initializing the developer (run of maintenance mode U130).

1. After warm-up starts and the message "Close the front cover." appears, use the numeric keys to enter "10871087" to start the maintenance mode.
2. Use the numeric keys to enter "130" and press the Start key.
3. Close the front cover.
4. Press the Start key.

* After approximately two minutes, the toner sensor control voltage and the toner control level will be automatically set and the preset values will be displayed on the touch panel.

Example of display

INPUT: 130 (toner sensor output voltage)

CONTROL: 125 (toner sensor control voltage)

TARGET: 103 (toner feed start level)

HUMID: 65 (absolute humidity)

5. Press the Stop/clear key.

Applying toner to the cleaning blade (run of maintenance mode U160).

1. Use the numeric keys to enter "160" and press the Start key.
 2. Press the Start key.
- * The drum will be covered with toner and driving will stop automatically.

Exit maintenance mode.

1. Open and close the front cover, use the numeric keys to enter "001", and press the Start key.
- * The machine will exit from the maintenance mode.

Setting the cleaning blade.

1. Open the front cover. Remove the three screws and the connector that secure the image formation unit and turn down the paper conveying unit release lever to pull out the image formation unit.
2. After checking that the drum is covered with toner, loosen the blade securing pin on the left side of the imaging unit, slide the blade release lever in the direction indicated by the arrow, and tighten the blade securing pin.
3. Push the image formation unit into the machine to set, and raise the paper conveying unit release lever.
4. Fit the three screws and the connector to secure the image formation unit.

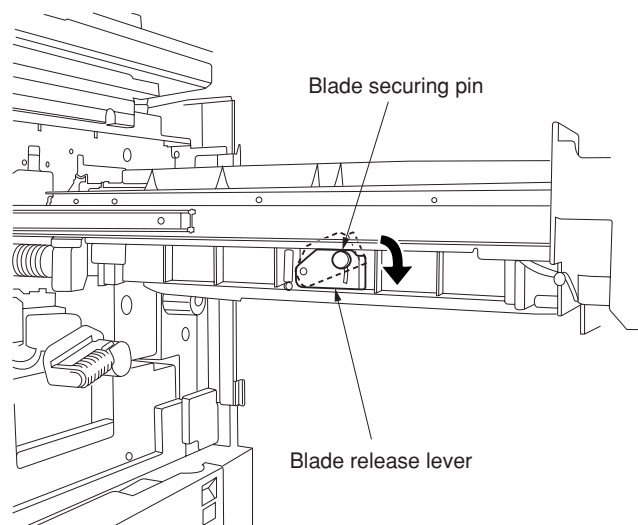


Figure 1-3-21

Adding toner.

1. Open the operation right cover.

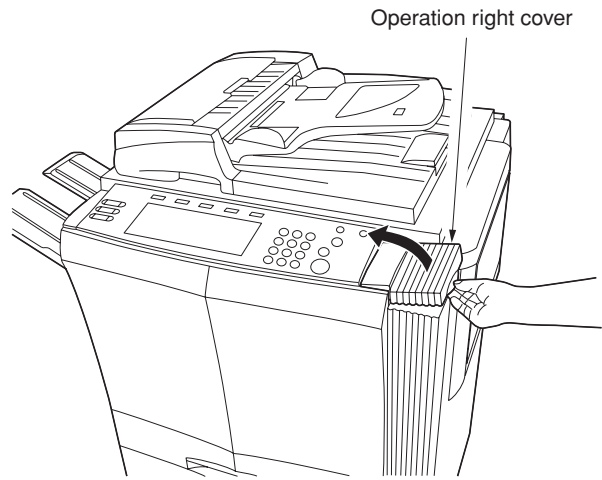


Figure 1-3-22

2. Hold a new toner bottle upside down and tap the bottom approximately 10 times.

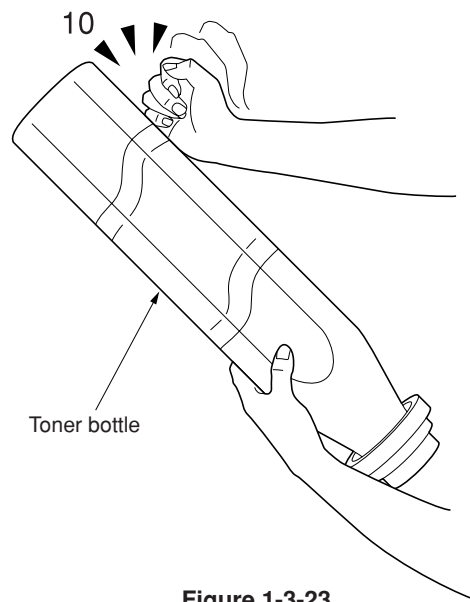


Figure 1-3-23

3. Shake the toner bottle up and down and from side to side approximately 10 times.

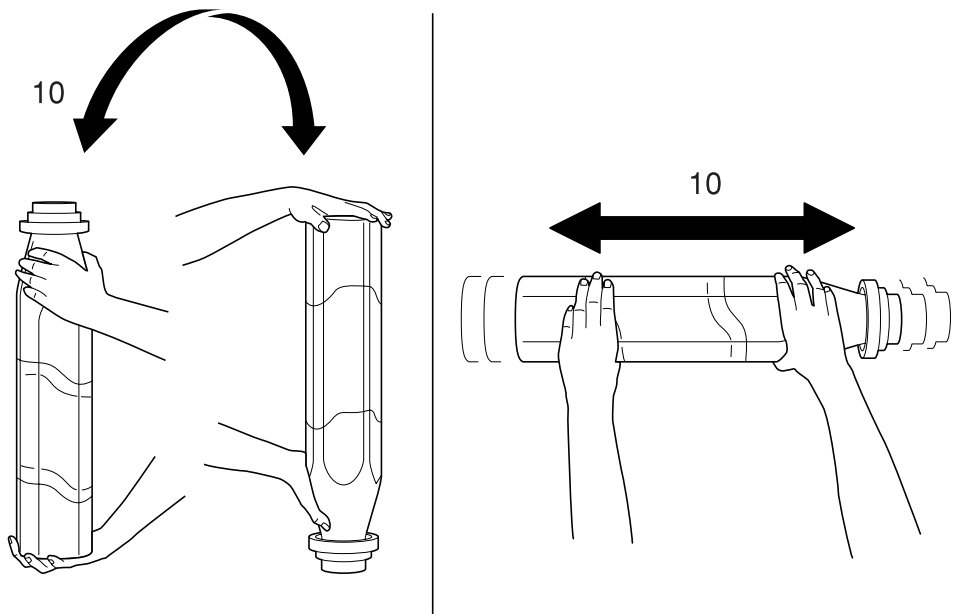


Figure 1-3-24

- 4. Push the round hole of the toner bottle to the metal pin at the opening for toner replenishment.
- 5. While pushing down the toner bottle, turn it 90° clockwise.

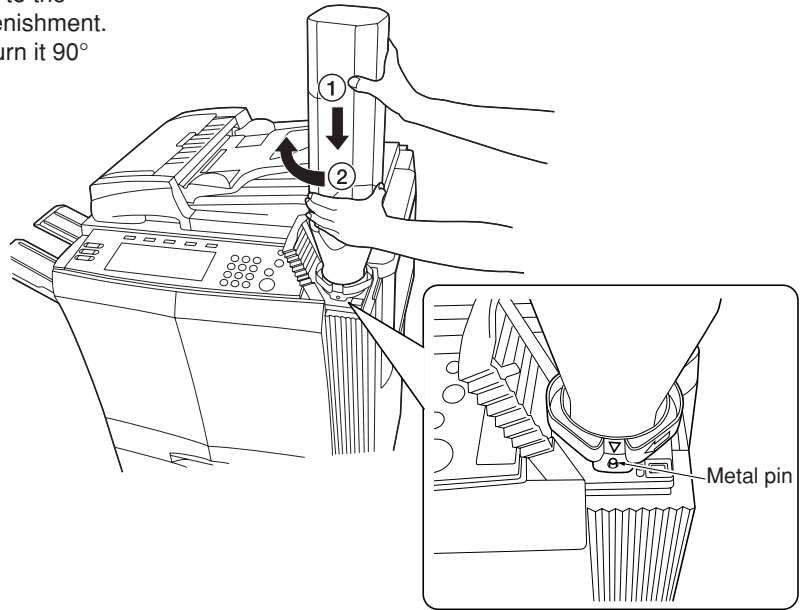


Figure 1-3-25

- 6. Wait until toner drops.

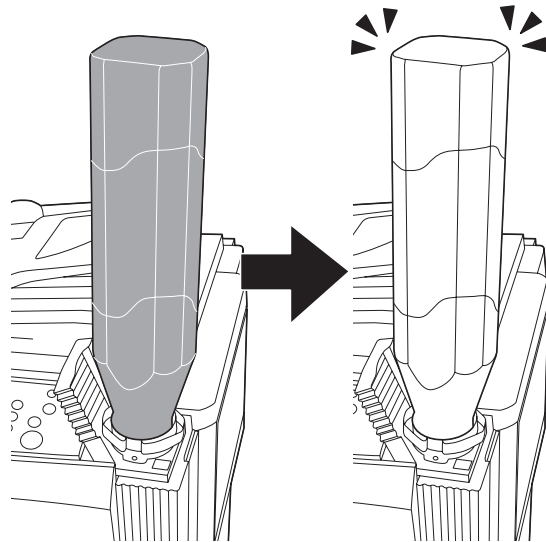


Figure 1-3-26

- 7. To drop toner completely, tap the side of the toner bottle approximately 10 times.

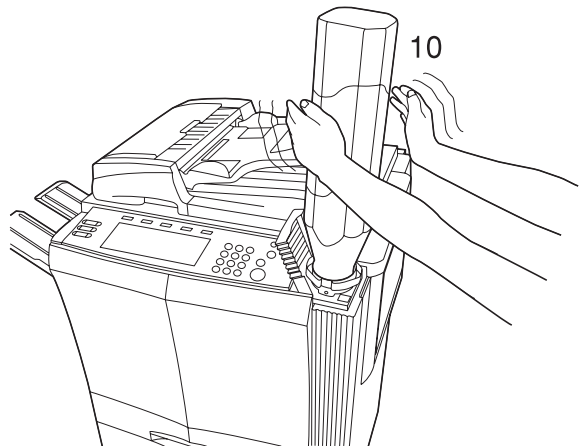


Figure 1-3-27

8. Turn the toner bottle to the original position while pushing it down, and gently remove it from the opening for toner replenishment.
9. Close the operation right cover.

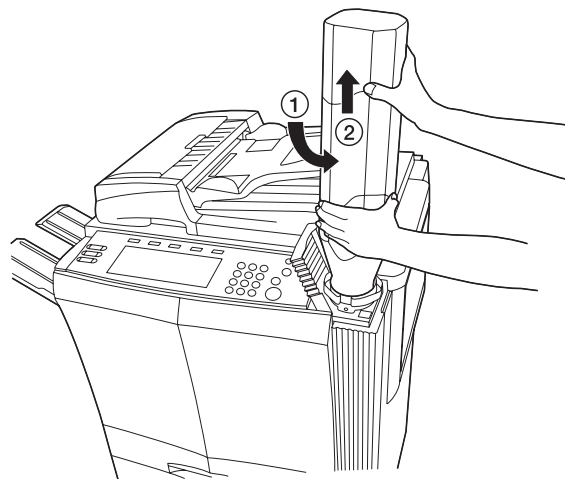


Figure 1-3-28

Make test copies.

1. Set paper in a drawer and execute a test copy run.

Completion of the machine installation.

* If you install the machine in a humid location where paper may be humidified, connect the relay cable for drawer heater. (For the connection method, see the next page.)

• Connection of drawer heater relay cable

Procedure

1. Remove the lower rear cover.
2. Remove the two pins holding the lower right rear cover and then the cover.
3. Remove the four screws holding the waste toner box unit and disconnect the two connectors, and then the unit.

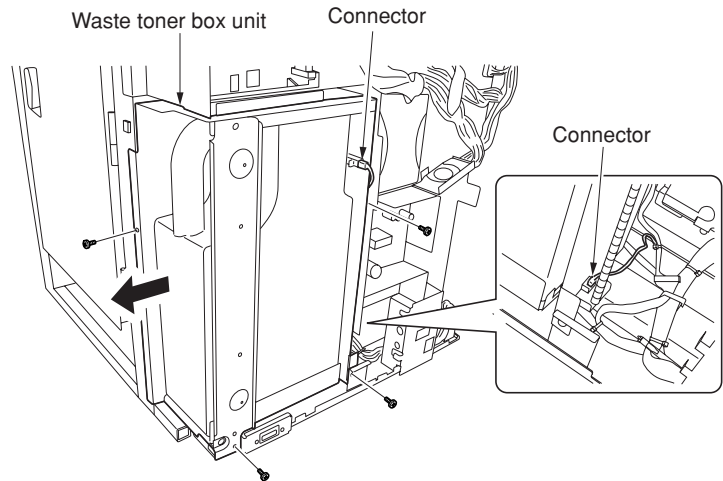


Figure 1-3-29

4. Remove the two screws holding the power supply mount and then the mount.

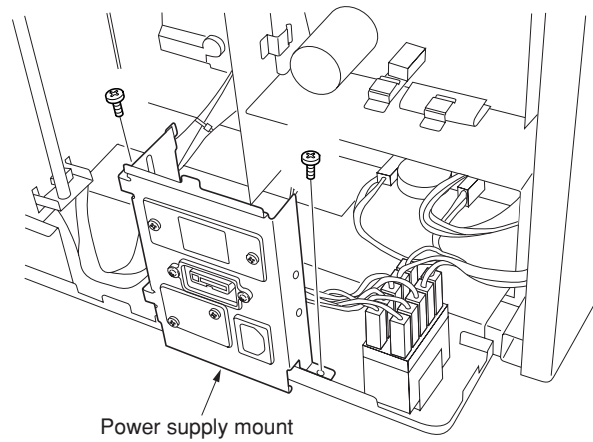


Figure 1-3-30

5. Connect the connector of the drawer heater relay cable to CN12 of the power source PCB.
6. Connect the drawer heater relay cable to the three connectors for drawer heater in the machine.
7. Refit all the removed parts.

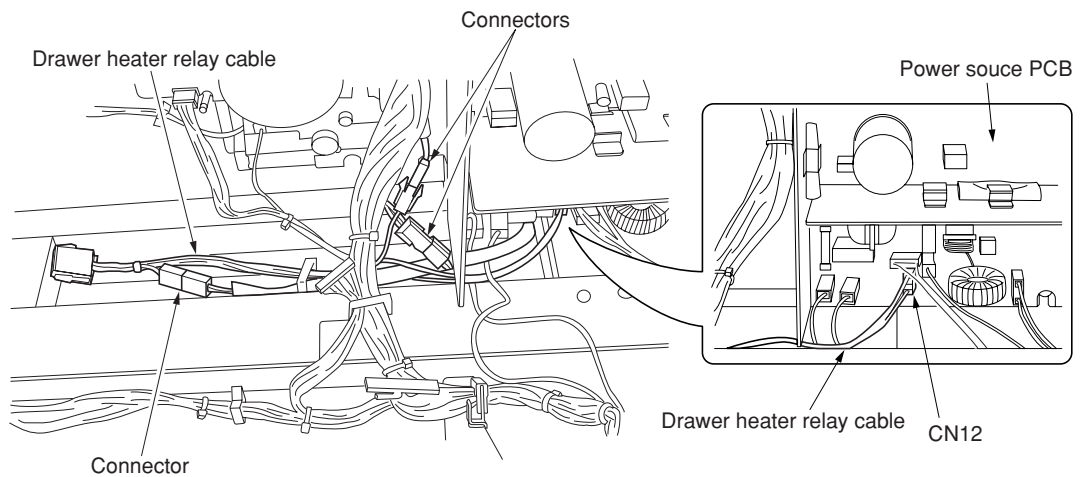


Figure 1-3-31

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 (A3/LEDGER)
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	After ejection
U263	Setting the paper ejection when copying from the DF	FACE-DOWN
U264	Setting the display order of the date	Month/Day/Year (inch) Day/Month/Year (metric)
U266	Setting the number of days after which to automatically delete documents	7
U330	Setting the number of sheets to enter stacking mode during sort operation	100
U331	Switching the paper ejection mode	FACE UP
U343	Switching between duplex/simplex copy mode	OFF
U344	Setting preheat/energy saver mode	ENERGY STAR
U347	Setting auto drawer size detection	ON
U350	Setting the ID-code error output	OFF
U355	Setting the output mode for face up output	FIRST PRINT
User setting	Exposure mode Exposure steps Original image quality Paper selection Default drawer Default magnification Margin width Border erase width Copy limit Auto shutoff time Auto preheat time	Manual 1 step Text+Photo APS Drawer1 Manual Left: 6 mm / 1/4" Top: 0 mm / 0" Outside border: 6 mm / 1/4" Center area: 6 mm / 1/4" 999 90 15

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

Key counter installation requires the following parts:

Key counter set (P/N 2A369703)

Contents of the set:

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

Procedure

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

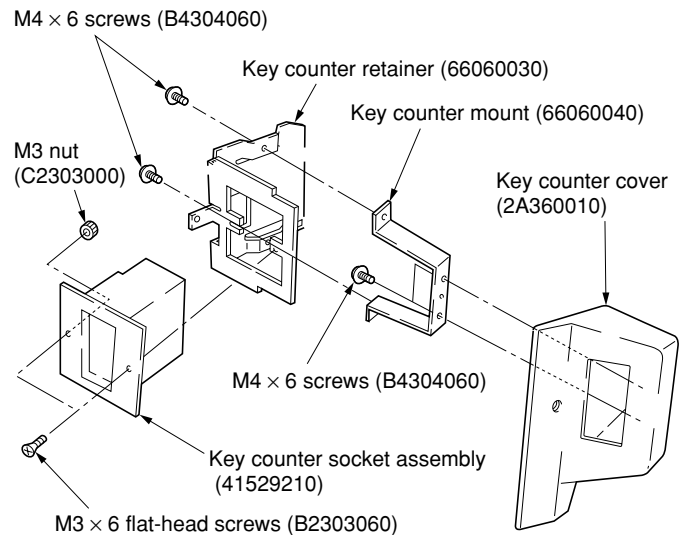


Figure 1-3-32

3. Remove the developing duct cover and middle right cover.
4. Cut out the aperture plate on the middle right cover using nippers.
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 all the removed parts.
8. Fit the key counter cover with the key counter assembly inserted to the key counter cover retainer on the machine.

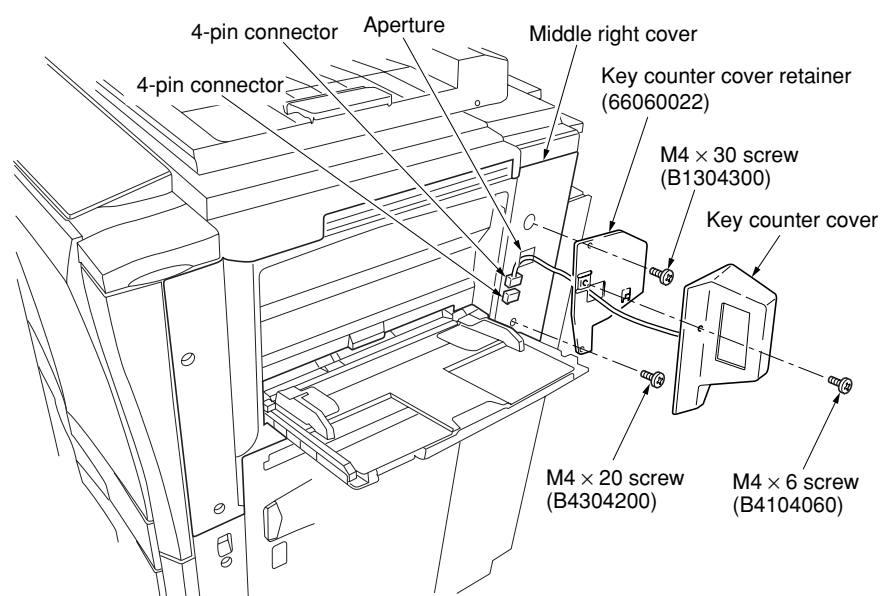


Figure 1-3-33

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 on the touch panel when the key counter is pulled out.
14. Check that the counter counts up as copies are made.

1-3-4 Installing the multi/simple finisher (option)

Preparation

1. Attach the paper insertion aid guide plate to the left cover of the copier and lock down with the two M4 × 10 tap-tight binding screws.

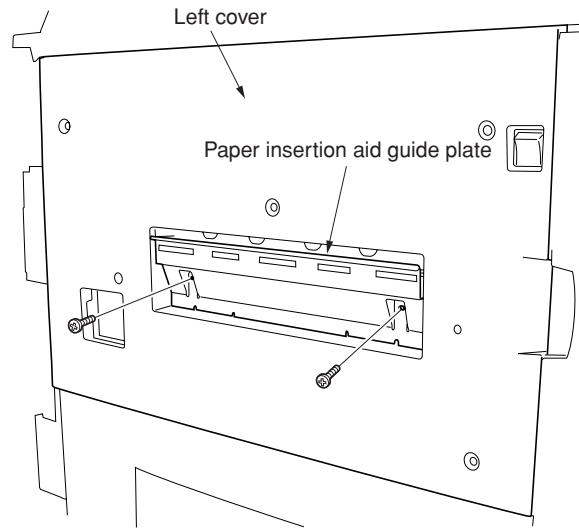


Figure 1-3-34

2. Attach the finisher connecting plate to the copier left cover and then hold them together with the two M4 × 12 binding screws.

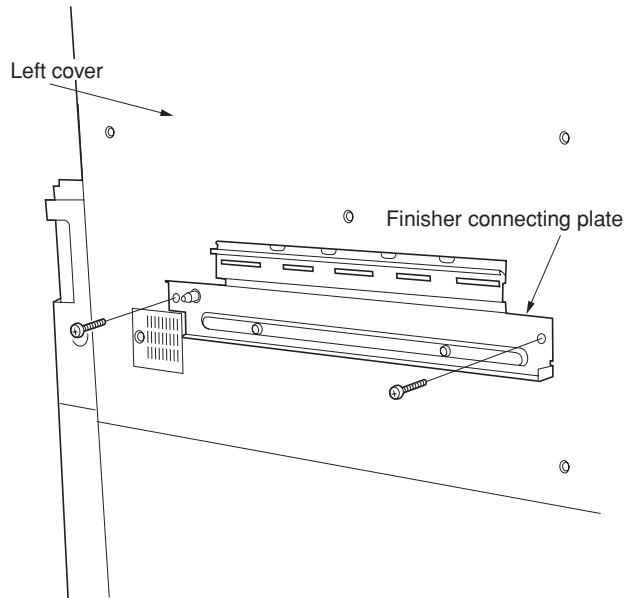


Figure 1-3-35

3. Attach the connecting sponge to the finisher by aligning the sponge to the upper end "a" and front end "b" of the paper port of the finisher.

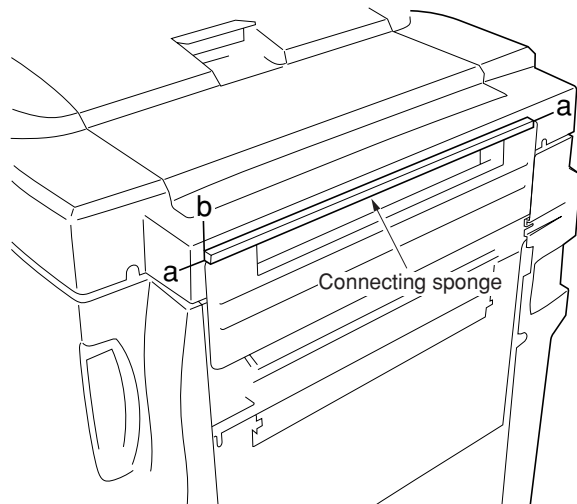
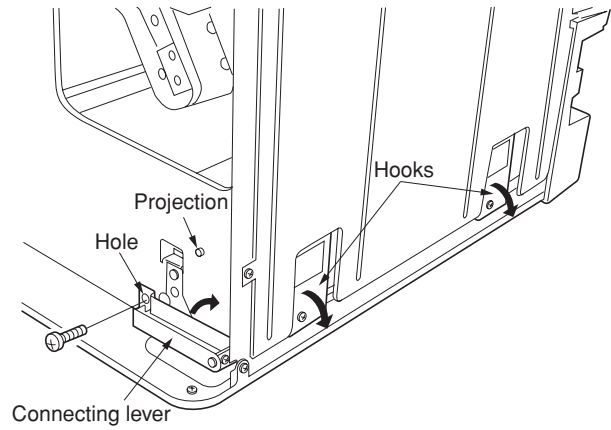
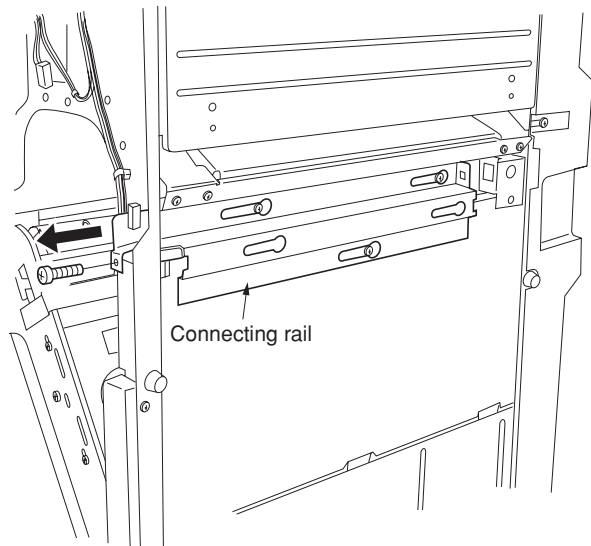


Figure 1-3-36

4. Open the front cover of the finisher.
5. Remove the screw and raise the connecting lever at the bottom of the finisher. Fitting the projection into the hole lowers the hooks.

**Figure 1-3-37**

6. Remove the screw and pull out the connecting rail at the upper part of the finisher.

**Figure 1-3-38**

7. Join the finisher and the copier by hanging the hooks onto the fittings inside the copier.
8. Join the finisher and the copier so that the long pin of the finisher connecting plate is inserted into the hole at the rear of the finisher and the two short pins into the holes on the connecting rail.

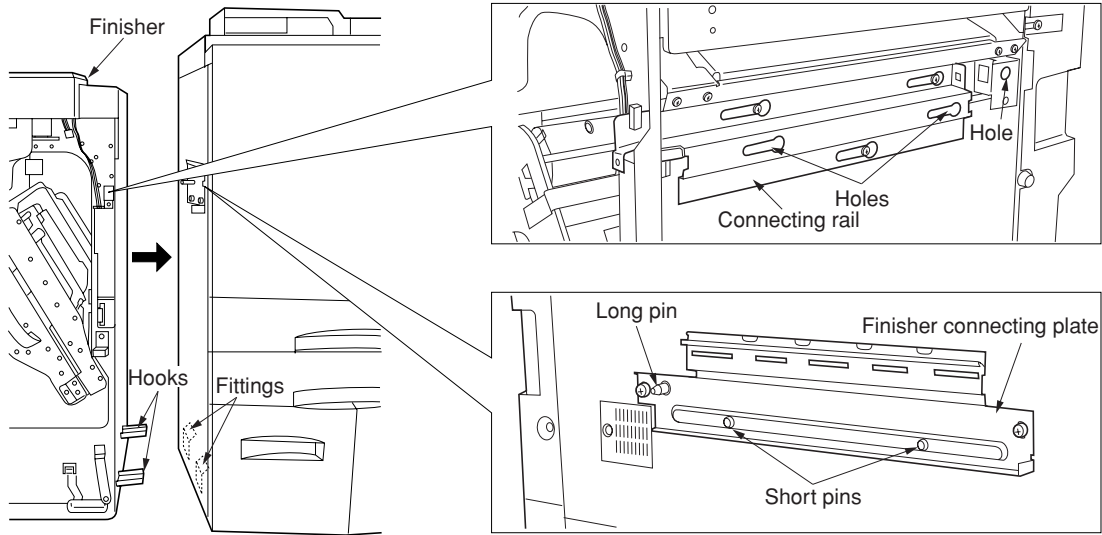


Figure 1-3-39

9. Make sure that the finisher is securely joined with the copier. Then, push the connecting rail in and lock back down with the screw.

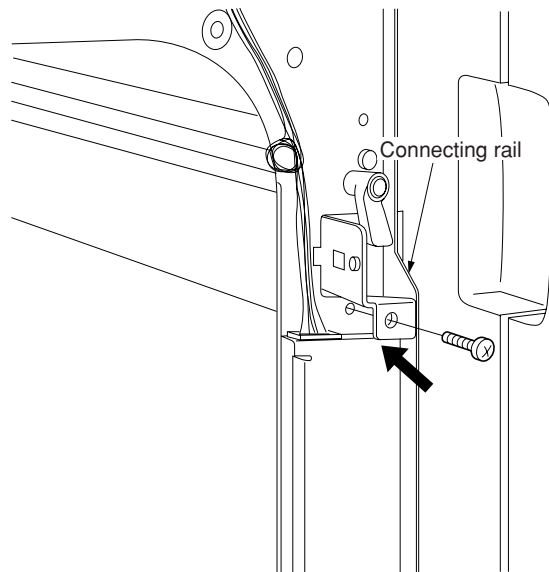
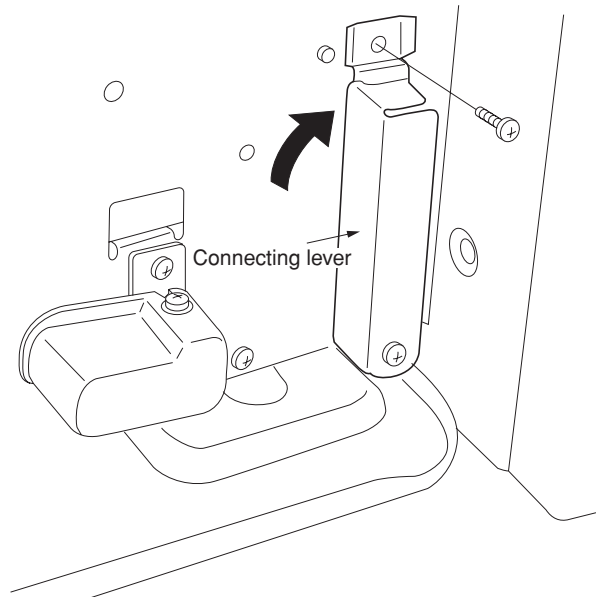
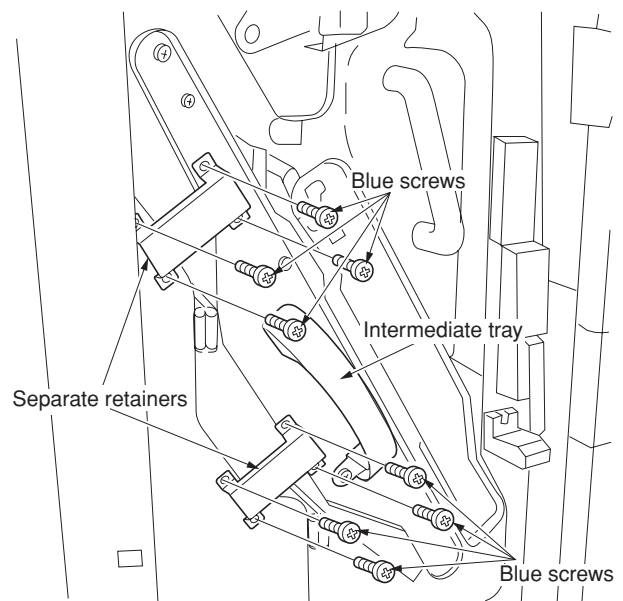


Figure 1-3-40

- Slide the connecting lever rightward and lock down with the screw removed in step.

**Figure 1-3-41**

- Remove the four blue screws locking each of the two separate retainers to the intermediate tray and detach both retainers.

**Figure 1-3-42**

- 12. Pull out the intermediate tray.
- 13. Remove the strip of fixing tape from the release lever.

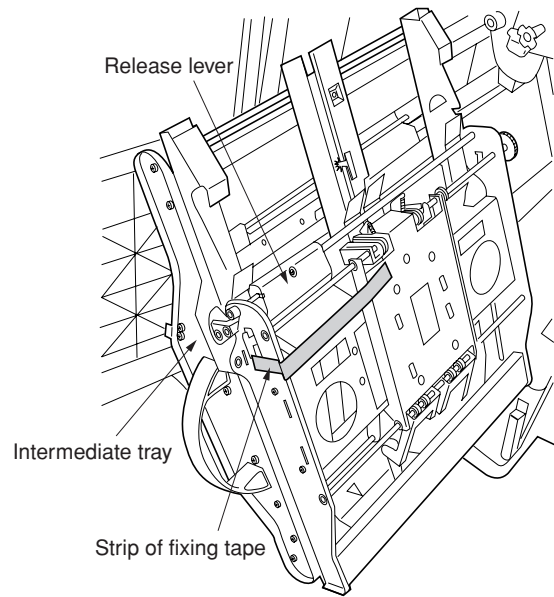


Figure 1-3-43

- 14. Raise the release lever to open the intermediate tray, and then remove the four strips of fixing tape.

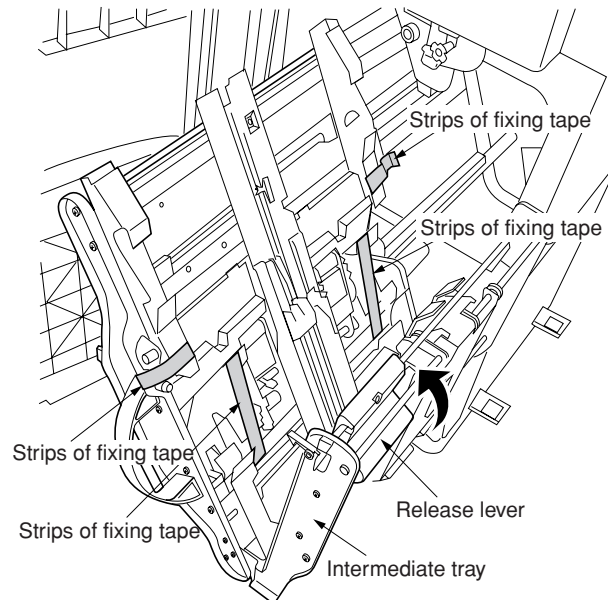


Figure 1-3-44

- 15. Insert a stapler cartridge into each of the staplers and of the intermediate tray. Press on the cartridges until they are securely locked.
Note: With the simple finisher, attach just one stapler cartridge to the stapler.

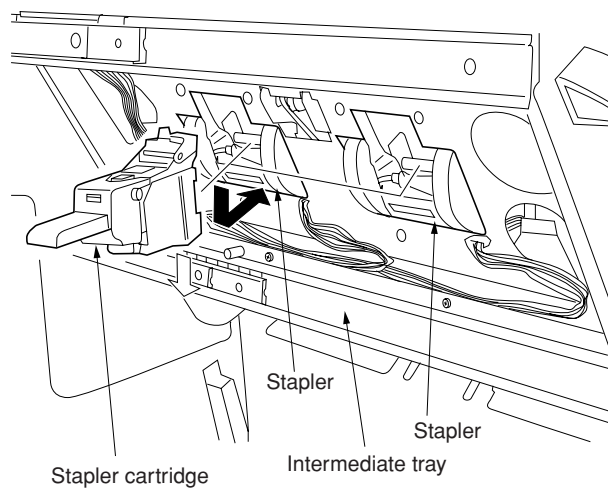


Figure 1-3-45

16. Fit the main tray with two hexagonal nuts.
17. Secure the main tray with two pins.
18. Attach the sub tray to the finisher by inserting the projections at the front and back of the sub tray into the holes of the finisher. (For the multi finisher only)
19. Attach label A to the recessed portion on the side of the main tray.
20. Attach label B to the recessed portion on the side of the sub tray. (For the multi finisher only)

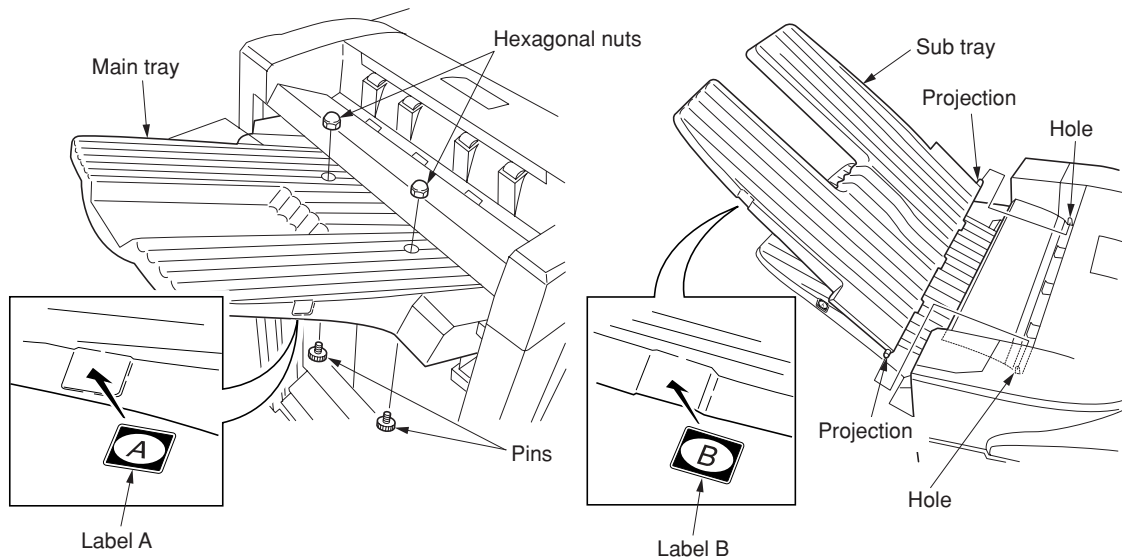


Figure 1-3-46

21. Connect the signal cable of the finisher to the connector of the copier.
22. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.

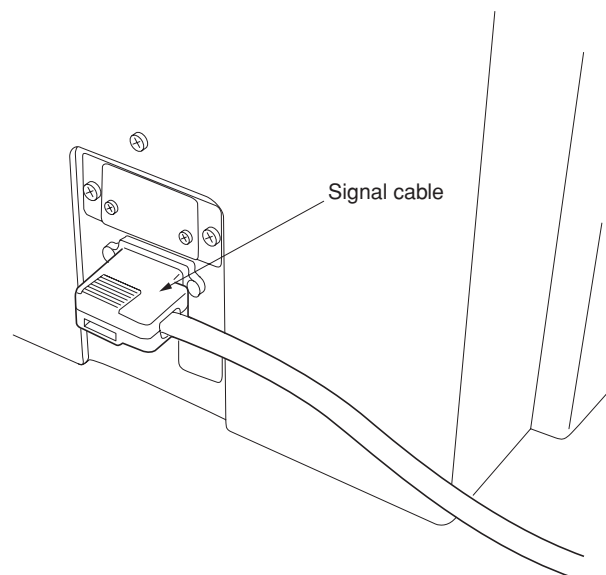


Figure 1-3-47

1-3-5 Installing the side deck (option)

Preparation

1. Remove the screw locking down the developing duct cover followed by the cover. Then, disconnect the 2-pin connector from the cooling fan.
2. Remove the six screws locking down the bypass table and open the table. Open the right cover halfway and detach the middle right cover.

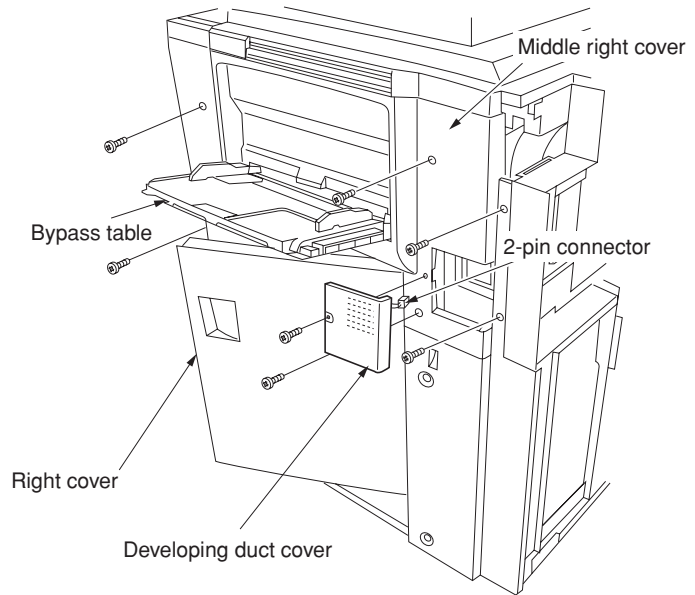


Figure 1-3-48

3. Remove the two pins locking down the right rear lower cover and then detach the cover by sliding in the direction of the arrow.
4. Remove the two screws locking down the right front lower cover followed by the cover.

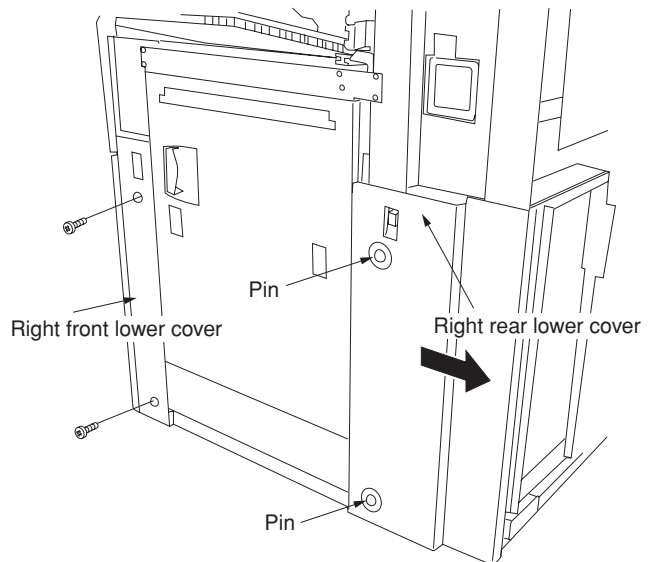


Figure 1-3-49

5. Break off the three knock-out pieces on the right cover of the copier.
Note: Be sure to remove the burrs from the cover using needle-nose pliers or a knife.
6. Remove the four screws locking down the paper feed section lower cover followed by the cover. Break off the knock-out piece on the paper feed section lower cover.
Note: Be sure to remove the burrs from the cover using needle-nose pliers or a knife.

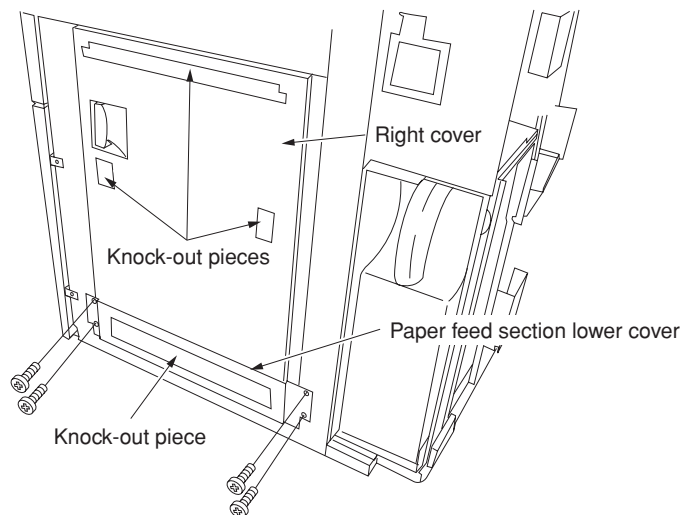


Figure 1-3-50

7. Reattach the paper feed section lower cover, right rear lower cover and right front lower cover.
8. Open the right cover and remove from the copier by raising the cover in the direction of the arrow.

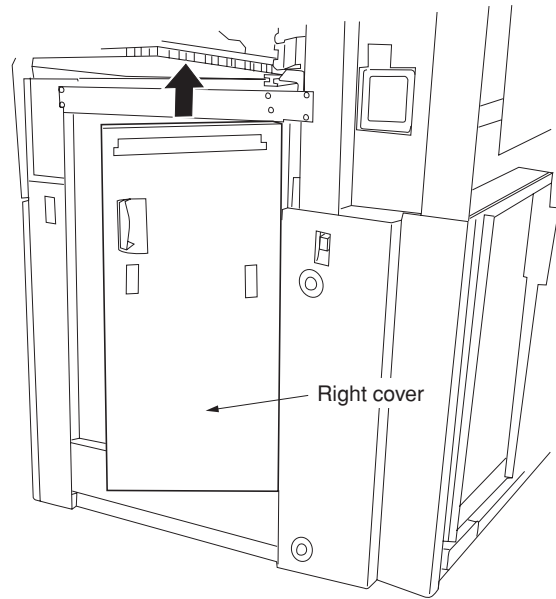


Figure 1-3-51

9. Attach the upper merge guide with two M4 × 8 TP-P tight screws.
Note: With the 55 cpm copier, be sure to use the merge guide with “2BD” etched on it.

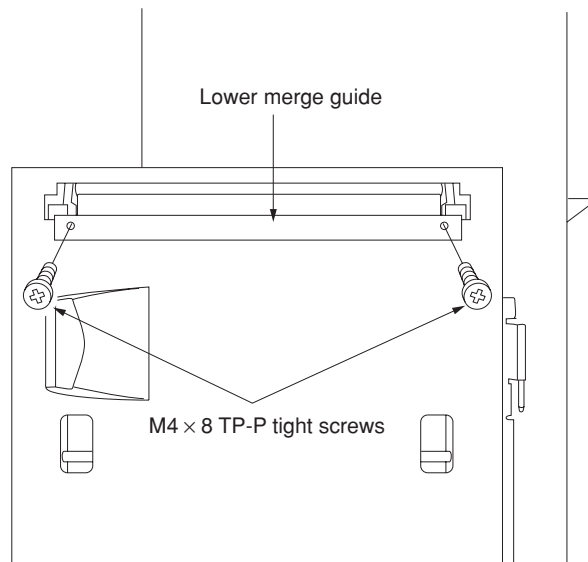


Figure 1-3-52

10. Attach the upper merge guide with two M4 × 8 TP-P tight screws.

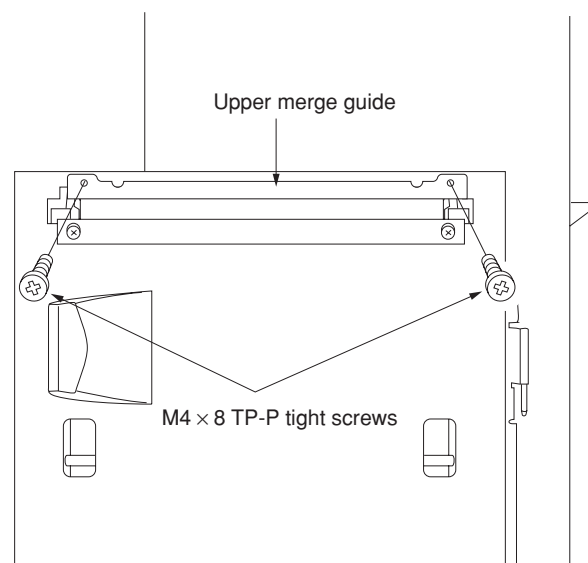


Figure 1-3-53

11. Lock down the upper and lower merge guides with the four M3 × 6 TP-A bronze screws.

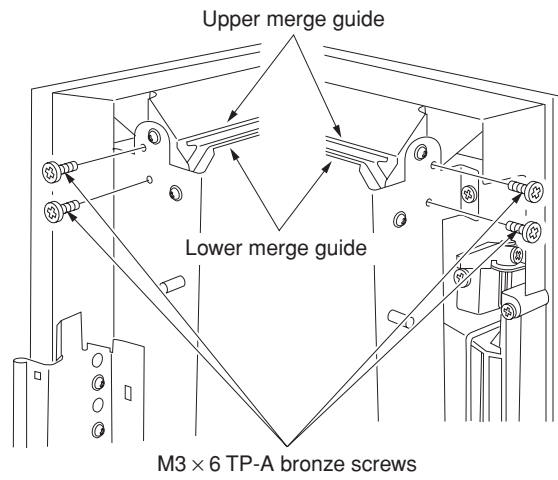


Figure 1-3-54

12. Attach the interlock switch backstop to the right rear lower cover with the M4 × 12 flat head screw.
13. Reattach the developing duct cover, middle right cover and right cover.
Note: When reattaching the developing unit duct cover, be sure to reconnect the 2-pin connector to the cooling fan.

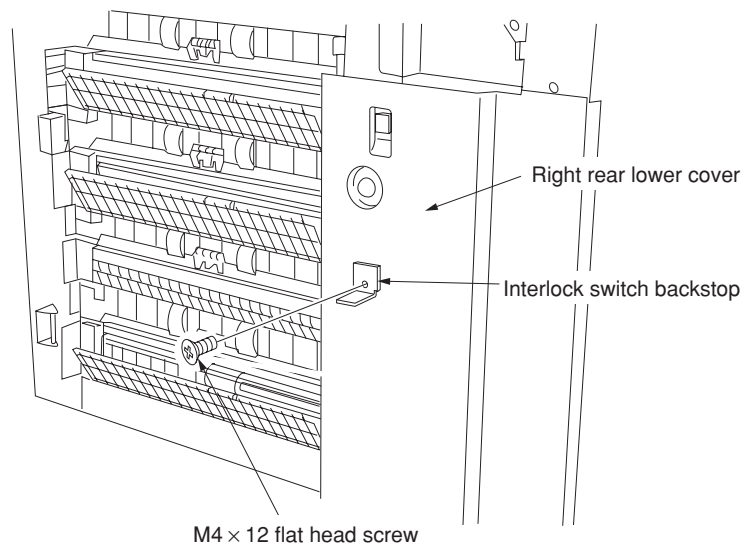


Figure 1-3-55

14. Pull out the retaining rail from the side deck and insert into the paper feed section lower cover of the copier.

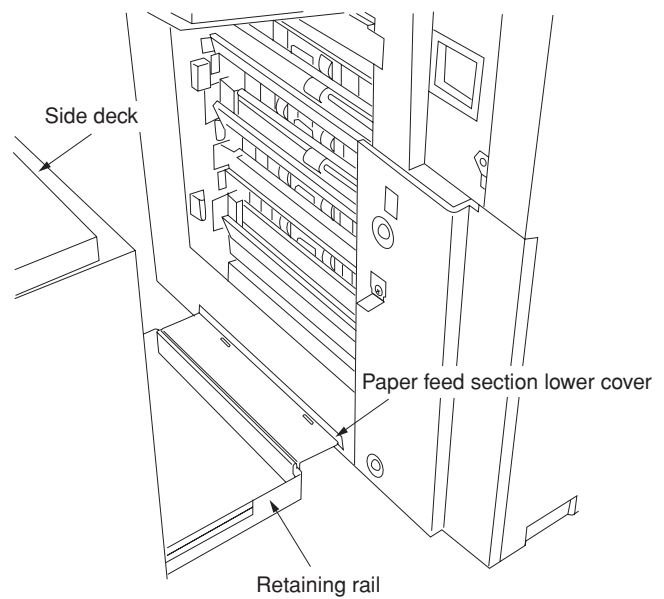


Figure 1-3-56

15. Open the right cover. Attach the retaining rail to the copier with the V-groove of the rail aligned with the center of the scale located at the base of the copier, using the two M4 × 6 TP-A chromate screws.

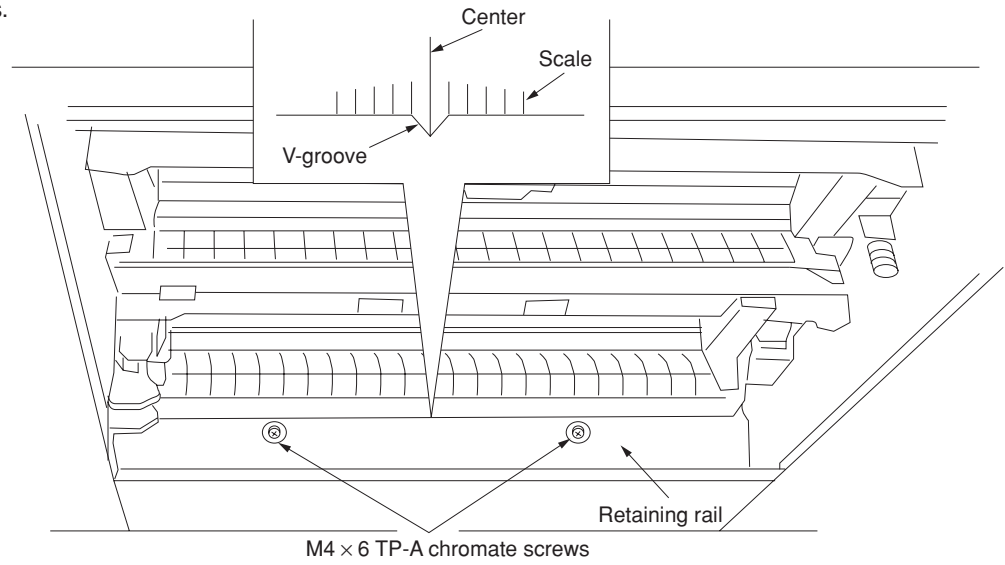


Figure 1-3-57

16. When the side deck is installed on the copier, connect the deck signal cable to the connector on the copier rear.

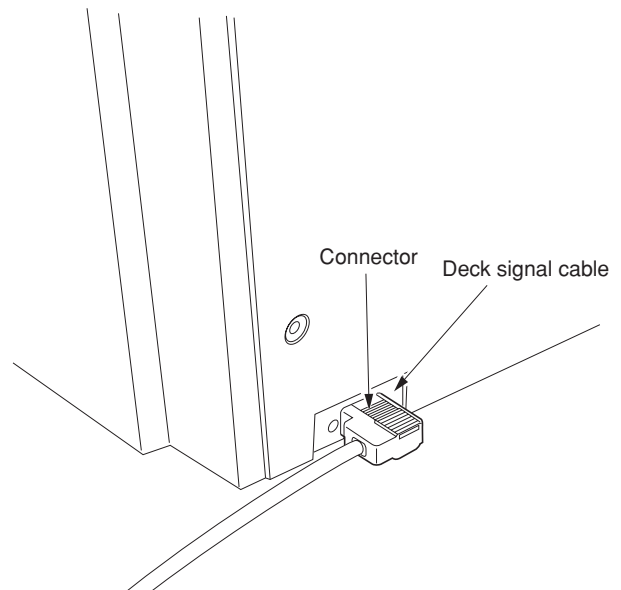


Figure 1-3-58

1-3-6 Installing the Network scanner kit (option)

Preparation

1. Remove three screws and remove the middle rear B cover.
2. Remove two screws and remove the middle rear C cover.
3. Remove four screws and remove the middle rear cover.

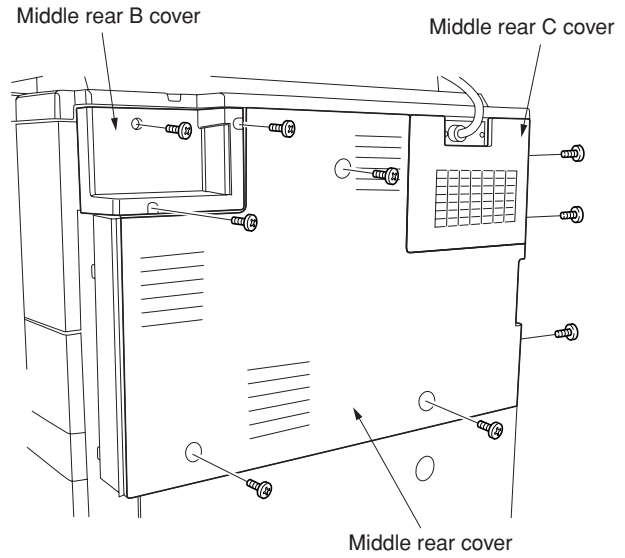


Figure 1-3-59

4. Remove the four screws and remove the upper sequence cover.
5. Remove the two screws and remove the cover.

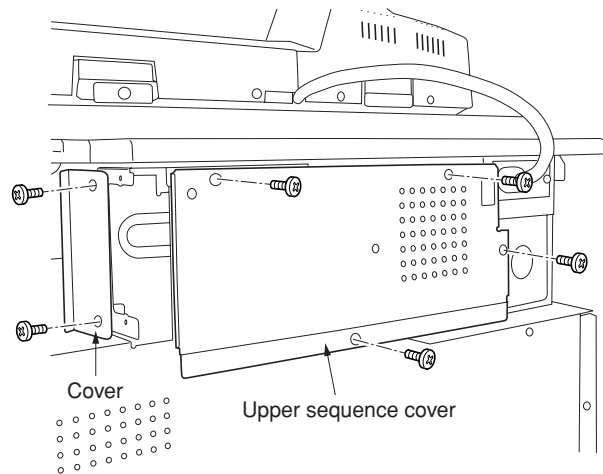


Figure 1-3-60

6. Firmly push connector CN1 on the scanner board all the way into connector CN4 on the main PCB.
7. Fasten the scanner board to the controller-box cover with two screws.
8. Refit the covers that have been removed in step 1 to 4.

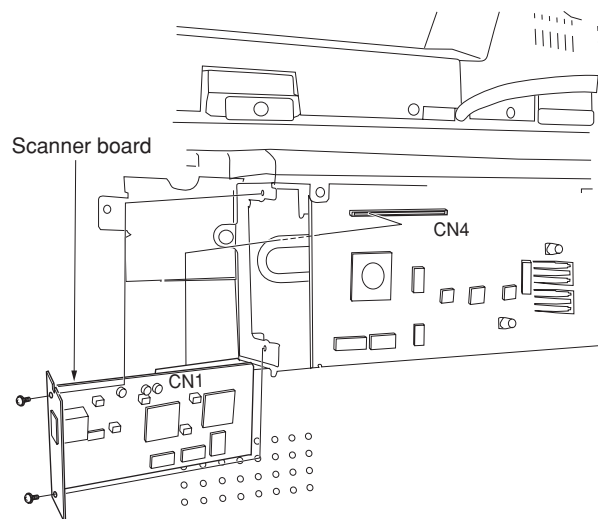
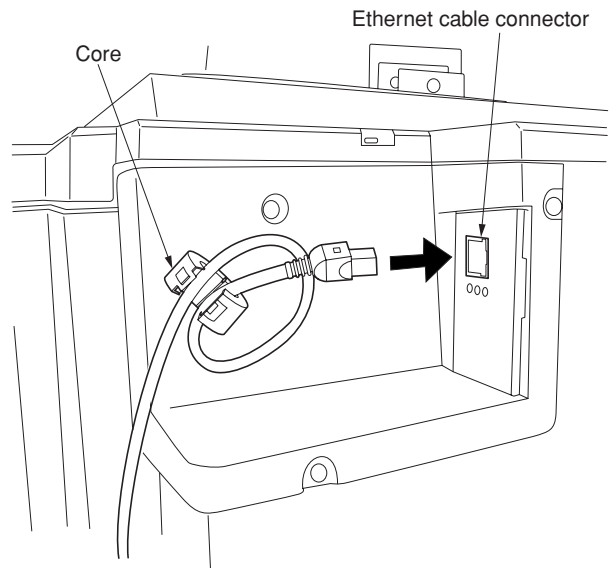


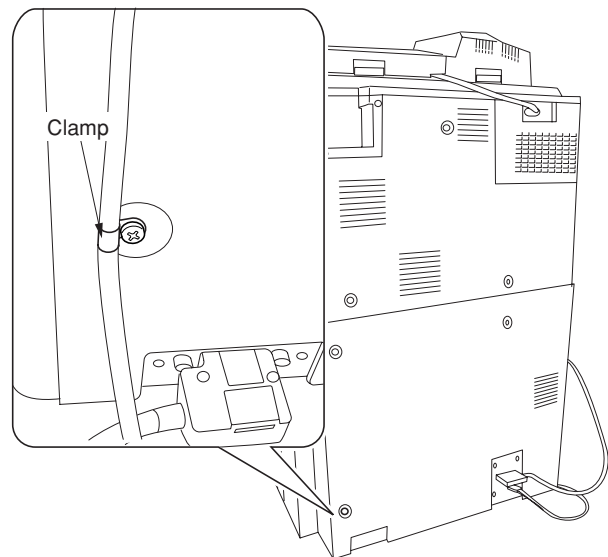
Figure 1-3-61

230 V specifications only

9. Fit the Ethernet cable to the core by winding it one turn around the core.
10. Fit the Ethernet cable described in step 9 to the Ethernet cable connector.

**Figure 1-3-62**

11. Secure the Ethernet cable to the lower left screw at the lower rear cover with the clamp.

**Figure 1-3-63**

1-3-7 Installing the Printer kit (option)

Preparation

1. Remove two screws and take off the cover.

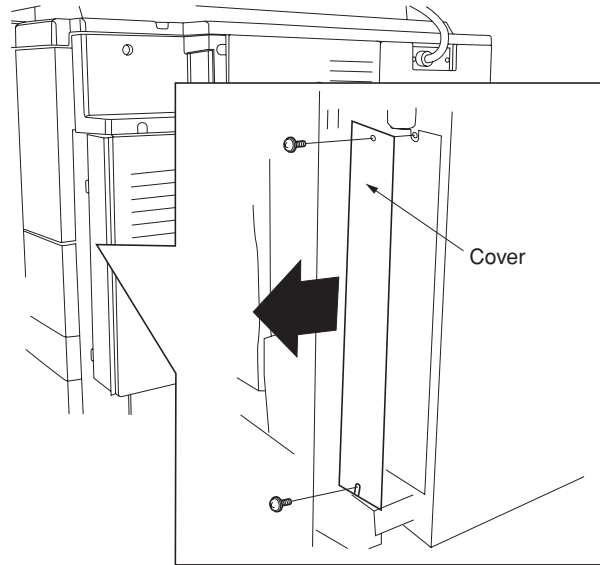


Figure 1-3-64

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

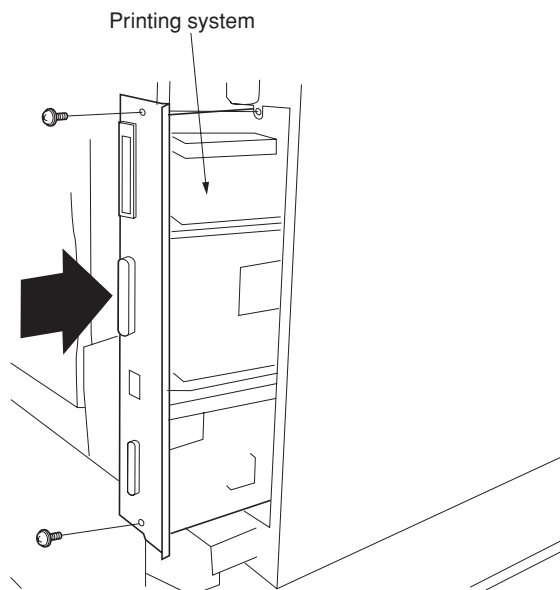
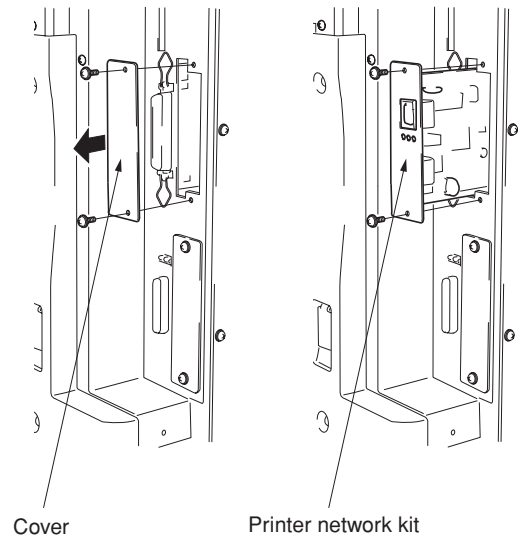


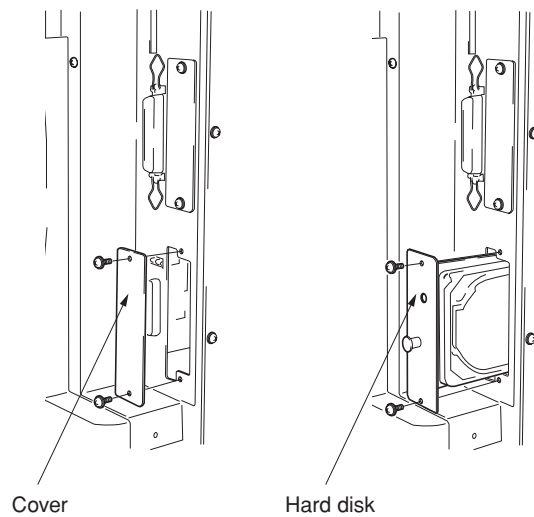
Figure 1-3-65

Install the (optional) printer network kit.

3. Remove two screws and take off the cover.
4. Push the printer network kit all the way in along the rails, and fasten it to the controller box with two screws.

**Figure 1-3-66****Install the (optional) hard disk.**

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

**Figure 1-3-67**

Installing the Optional Bar-Code Reader

7. Fasten the serial connector in place with two screws.

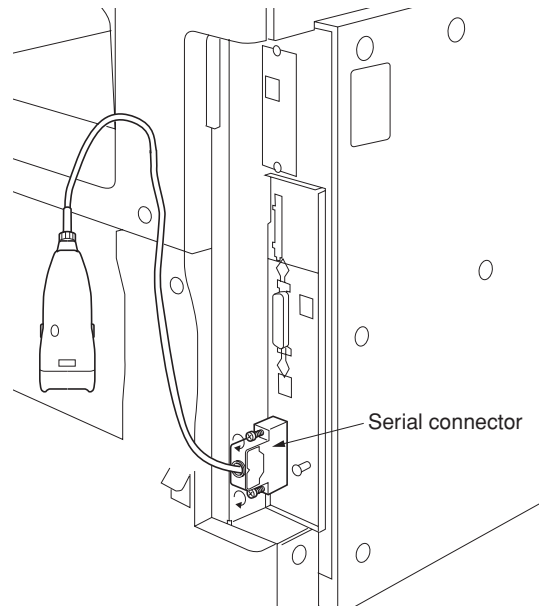


Figure 1-3-68

Installing the Optional Memory DIMM

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

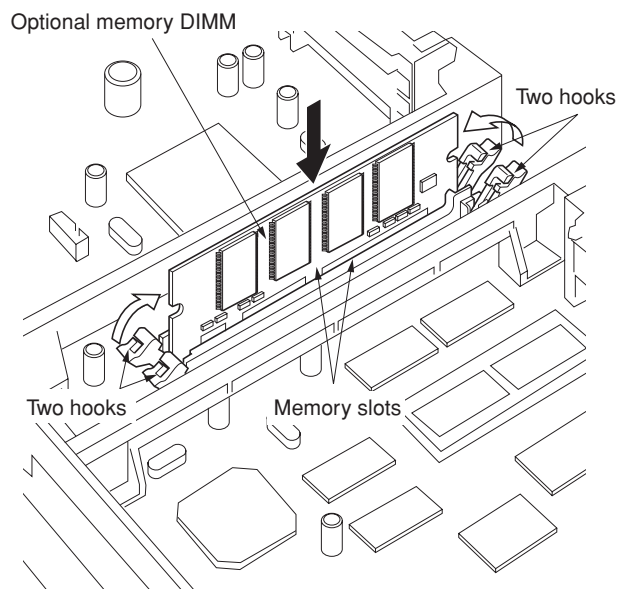


Figure 1-3-69

1-3-8 Installing the tandem kit (option)

Preparation

1. Remove the two screws securing the middle rear C cover and then the cover.
2. Remove the five screws securing the middle rear cover and then the cover.
3. Remove the five screws securing the lower rear cover and then the cover.

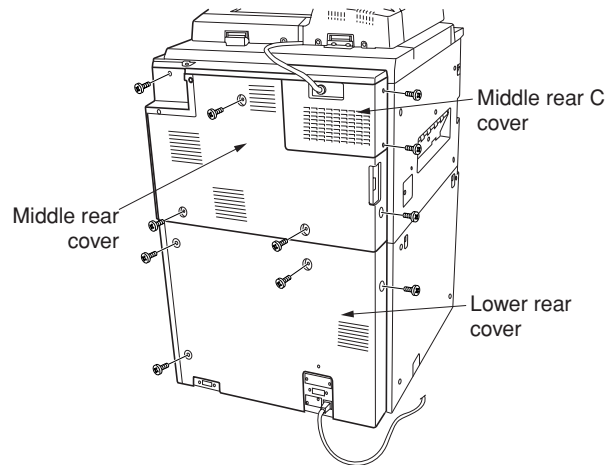


Figure 1-3-70

4. Remove the eleven screws securing the upper and lower sequence covers and then the covers.

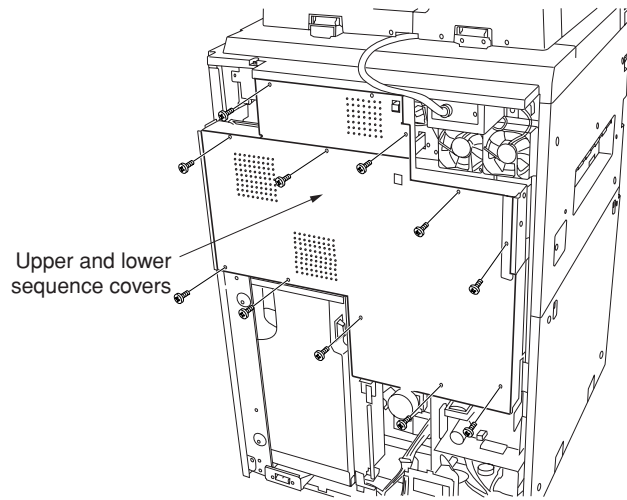


Figure 1-3-71

5. Remove the two screws securing the interface mounting plate and then the plate.
6. Remove the two screws securing the interface cover and then the cover.

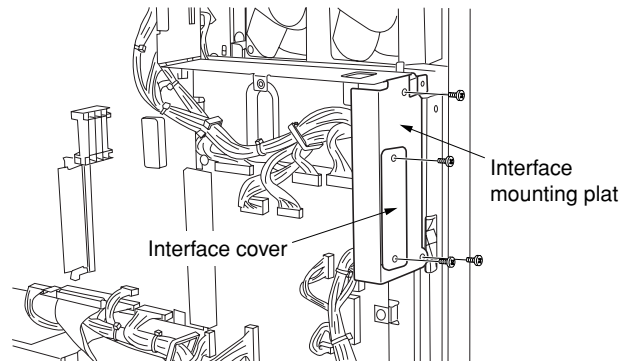


Figure 1-3-72

7. Insert CN2 on the assembly relay PCB into CN1 on the interface PCB for installation.

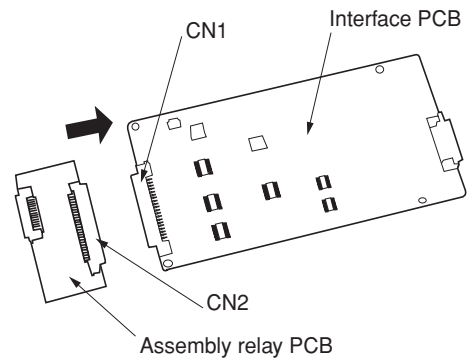


Figure 1-3-73

8. Insert CN1 on the assembly relay PCB into CN5 on the main PCB of the copier.

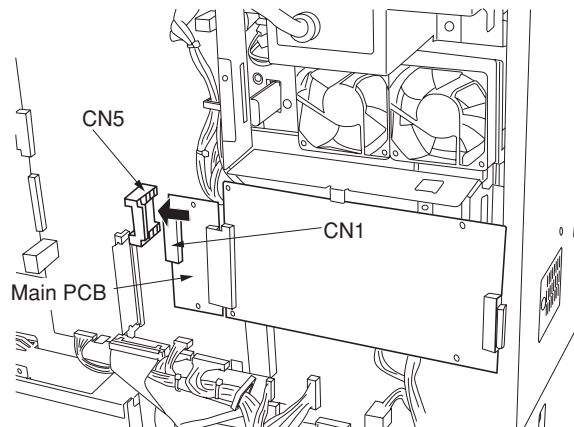


Figure 1-3-74

9. Secure the interface PCB with an M4 × 6 binding screw.
10. Insert the 2-pin connector on the S-BOX wire into 2-pin connector CN1 on the interface PCB.

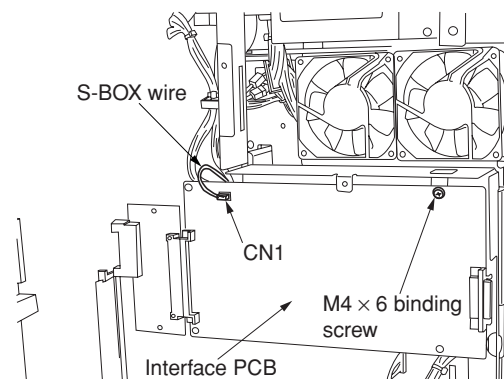
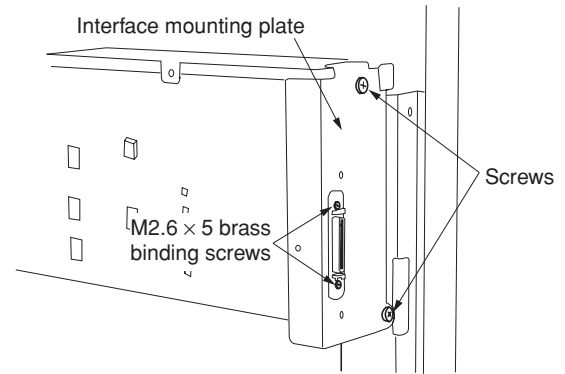
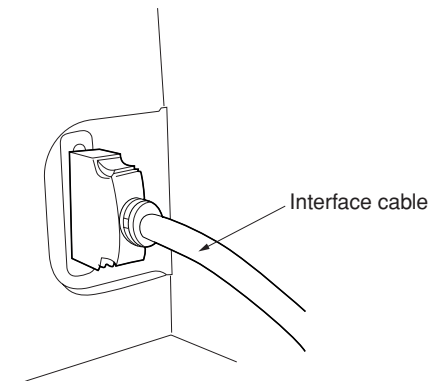


Figure 1-3-75

11. Secure the interface mounting plate with the two screws removed in step 5.
12. Secure the connector of the interface PCB to the interface mounting plate with two M2.6 × 5 brass binding screws.

**Figure 1-3-76**

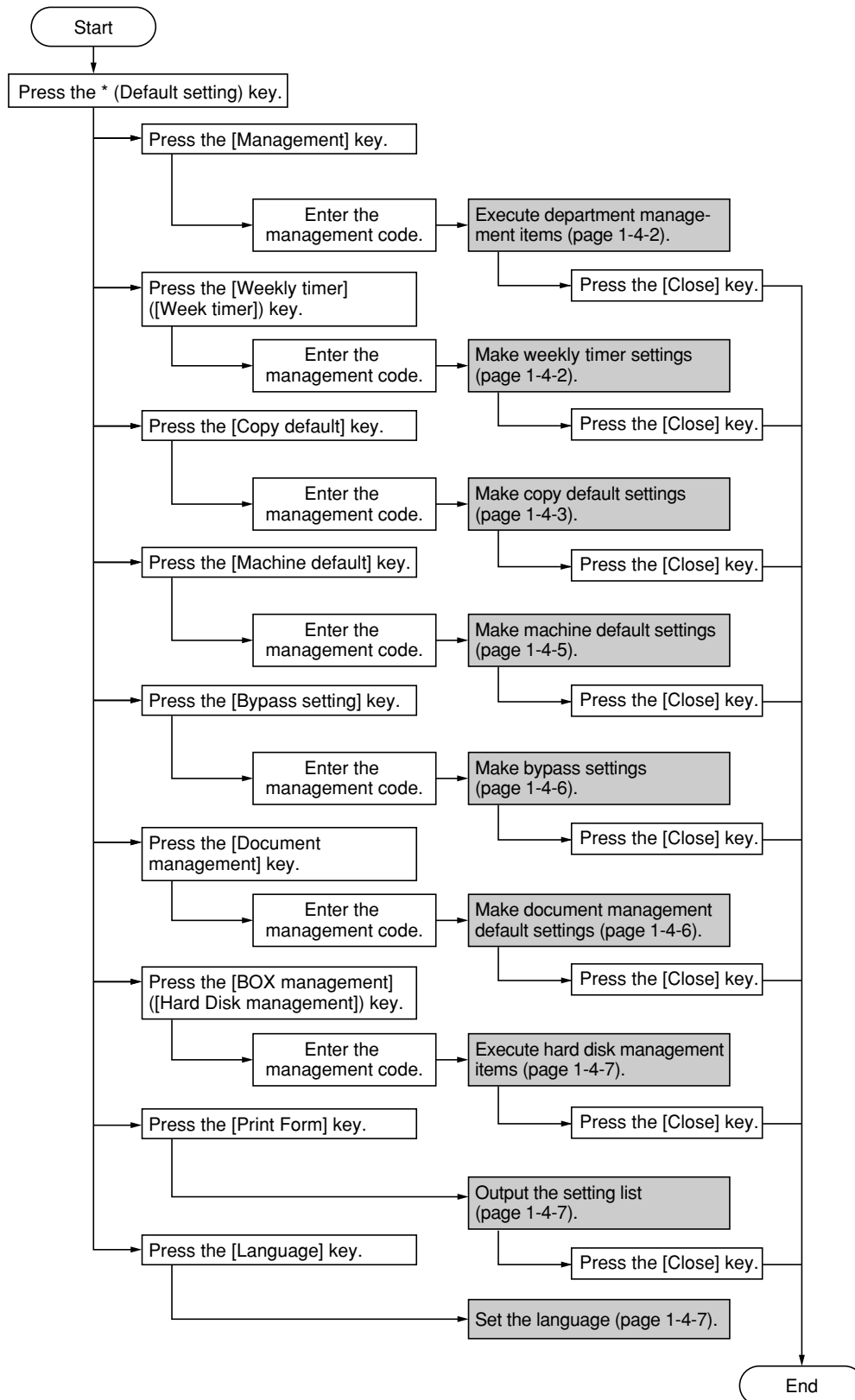
13. Refit the upper and lower sequence covers, the lower rear cover, the middle rear cover, and the middle rear C cover.
14. Connect the interface cable to the connector of the interface PCB.

**Figure 1-3-77**

1-4-1 Copier management

This copier is equipped with the maintenance mode for service personnel and the management mode that can be used also by users (mainly by copier administrator). In this copier management mode, settings such as default settings can be changed.

(1) Using the copier management mode



(2) Setting department management items

Registering a new department code

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

1. Press the [ID-code Reg./Del.] key.
2. Press the [Register] key and press the [# keys].
3. Enter a department code (8-digit) using the numeric keys and press the [# keys].
4. Enter the number of copies limit using the numeric keys. The copy limit can be set to any 1 page increment between 1 and 999999. Entering "0" enables unlimited copying.
5. Press the [Close] key.
6. Press the [Close] key.
7. Press the [On] key.
8. Press the [Close] key.

Deleting a department code

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

Altering the copy limit

1. Press the [# of copy correct] key.
2. Select the department code to be altered and press the [Correction] key.
3. Enter the number of copies limit using the numeric keys. The copy limit can be set to any 1 page increment between 1 and 999999. Entering "0" enables unlimited copying.
4. Press the [Close] key.
5. Press the [Close] key.
6. Press the [On] key.
7. Press the [Close] key.

Clearing copy counts

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

Viewing copy counts

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

Print management list

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

Enabling/disabling department management

1. Select "On" or "Off".

Enabling/disabling printer department management

1. Select "On" or "Off" under "Printer".

Setting printer error report

When the printer department management is enabled, if printing is performed with an incorrect department code, an error report can be output.

1. Press the [On] key under "Printer".
2. Press the [Print Err. PRT.] key.
3. Press the [On] key.
4. Press the [Close] key.

(3) Weekly timer

Setting weekly timer

Sets the time at which the copier is to be turned ON or OFF during each day of the week, or whether it will be left ON or OFF all day on any of those days.

1. Select the day of the week and press the [Change #] key.
2. To set the time at which the copier is to be turned on or off, press the [Select work time] key and press the +/- keys to select the power-on hour and minute and the power-off hour and minute.
To set the copier OFF all day, press the [All day-OFF] key.
To set the copier ON all day, press the [All day-ON] key.
3. Press the [Close] key.

Canceling the weekly timer function temporarily

1. Select the day of the week and press the [Change #] key.
2. Press the [On] key under "Cancel".
3. Press the [Close] key.

Turning the [weekly timer] key ON/OFF

1. Select "On" or "Off".

(4) Copy default**Exposure mode**

Selects the exposure mode at power-on.

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

Exposure steps

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

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

Original image quality

Selects the copy quantity mode at power-on.

1. Select "Original image quality" ("Image quality Original") and press the [Change #] key.
2. Select "Text+Photo", "Photo" or "Text".

Custom original size (setting No. 1 - No. 4)

Sets the custom original sizes.

1. Select one of "Original size" settings ("custom 1" through "custom 4") and press the [Change #] key.
2. Press the [On] key.
3. Press the +/- keys to set Y (width).
Setting range: 2 to 11" (inch specifications)
50 to 297 mm (metric specifications)
4. Press the +/- keys to set X (length).
Setting range: 2 to 17" (inch specifications)
50 to 432 mm (metric specifications)

Eco print

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

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

Paper selection

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

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

Select paper type (APS)

Specifies paper types to be selected for the auto paper selection mode.

1. Select "Select paper type(APS)" and press the [Change #] key.
2. Press the [On] key.
3. Select the paper type. (Multiple types can be selected.)

Default drawer

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

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

Drawer for cover paper

Sets the drawer to be selected for cover paper.

1. Select "Drawer for cover paper" and press the [Change #] key.
2. Select the drawer for cover paper.

Default magnification

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

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

Auto exposure adjustment

Adjusts the exposure for the auto exposure mode.

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

Auto exposure adjustment (OCR)

Adjusts the exposure for scanning with OCR in the scanner mode.

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

Manual exposure adjustment (Mixed)

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

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

Manual exposure adjustment (Text)

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

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

Manual exposure adjustment (Photo)

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

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

Margin width

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

1. Select "Default margin width" and press the [Change #] key.
2. Press the up, down, right, and left cursor keys to set the default settings.
Setting range: 0 to 3/4" (inch specifications)
0 to 18 mm (metric specifications)

Border erase width

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

1. Select "Default erase width" and press the [Change #] key.
2. Press the +/- keys to adjust default erase width.

Setting range:

Outside border:

0 to 3/4" (inch specifications)

0 to 18 mm (metric specifications)

Center area:

0 to 1 1/2" (inch specifications)

0 to 36 mm (metric specifications)

Copy limit

Sets the number of copies limit for multiple copying.

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

Modify Copy

Disables the modify copy function or enables the modify copy function in the default mode.

1. Select "Modify Copy" and press the [Change #] key.
2. Select "On" or "Off" under "Function".
3. Select "On" or "Off" under "Default".

Job Queue Report

Sets whether or not the job queue report is selected.

1. Select "Job Queue Report" and press the [Change #] key.
2. Select "off", "On/All copy job" ("On/(All copy)") or "On/reserved" ("On/reserv.job").

Display register key

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

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

Customize the base screen (main function)

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

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

Customize the copy operating screen (add function)

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

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

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

Enables or disables the auto drawer switching function and sets whether "All types of paper" or "Feed same paper type" is selected.

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

Paper size (drawer No.1 & No.2)

Sets the size of paper that is loaded in drawers 1 and 2.

1. Select one of the "Paper size" settings ("1st drawers" or "2nd drawer") and press the [Change #] key.
2. Select the paper size.

Paper type (drawer No.1 - No.5)

Sets the type of paper for drawers 1 through 5.

1. Select one of "Paper type" settings ("1st drawer" through "5th drawer") and press the [Change #] key.
2. Select the paper type.

Select paper type (2 sided)

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

1. Select "Select paper type (2 sided)" and press the [Change #] key.
2. Select one of the "custom" paper type settings ("custom 1" through "custom 8") and set "On" or "Off".

Auto shutoff time

Sets the auto shutoff time.

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

Auto preheat time

Sets the auto preheat time.

1. Select "Auto preheat time" and press the [Change #] key.
2. Press the +/- keys to set the auto preheat time.
Setting range: 1 to 45 minutes
Note: Set the auto preheat time to be shorter than the auto shutoff time.

Copy eject location setting

Sets the copy eject location when a finisher and a multi-job tray are installed.

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

Key sound

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

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

Silent mode

Selects whether or not to enter silent mode after copying.

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

Day & time

Sets the current date and time.

1. Select "Day & time" and press the [Change #] key.
2. Press the +/- keys to set the year, month, day, hour, and minute respectively.

Time difference

Sets the time difference.

1. Select "Time difference" and press the [Change #] key.
2. Press the +/- keys to set the time difference.
Setting range: +12:00 to -12:00

Management code change

Changes the management code.

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

Auto shutoff

Sets whether the auto shutoff function is available.

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

(6) Bypass setting

Paper size and paper type settings

Sets the paper size and paper type for the bypass settings.

1. To enable the auto paper size detection, press the [Auto Detection] key and select "Centimeter" or "Inch".
To set a custom size, press the [Input size] key and press the +/- keys to set the paper size.
Setting range: Width: 3 7/8" - 11 5/8" (inch specifications)
Length: 5 7/8" - 17"
Width: 98 - 297 mm (metric specifications)
Length: 148 - 432 mm
2. Press the [Select paper type] key.
3. Select the paper type.
4. Press the [Close] key.

Other standard size setting

Sets a special standard size.

1. Press the [Others standard] key.
2. Press the [Select size] key.
3. Select the paper size.
4. Press the [Close] key.

(7) Document management default setting

Document list print out

Prints out each job list.

1. Press the function key to print out the document list you want.

Reset box

Prints out each job list.

1. Press the function key to delete all data you don't want.
2. Press the [Yes] key.

Box name setting

Sets the name of synergy print box.

1. Press the [Box editing] key.
2. Select the desired box.
3. Press the [Change #] key.
4. Enter the box name.
5. Press the [End] key.
6. Press the [Yes] key.
7. Press the [Close] key.
8. Press the [Job cancel] key.

Box password setting

Sets the password for the synergy print box.

1. Press the [Box editing] key.
2. Select the desired box.
3. Select "Password" and press the [Change #] key.
4. Enter the password and press the [Close] key.
5. Press the [Close] key.
6. Press the [Job cancel] key.

Box data deletion

Deletes the data in the synergy print box.

1. Press the [Box editing] key.
2. Select the desired box.
3. Press the [Reset Box] key.
4. Press the [Yes] key.
5. Press the [Close] key.
6. Press the [Job cancel] key.

Duration to save document data setting

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

1. Press the [Document data saving term] ([Document data save period]) key.
2. Press the +/- keys to set the duration.
Setting range: 1 to 7 days
To save documents with no specific duration, press the [Save without duration] key.
3. Press the [Close] key.

(8) Hard disk management

Deletes the invalid data in the hard disk.

1. Press the [On] key.
2. Press the [Close] key.

(9) Report

Outputs the setting reports.

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

(10) Language

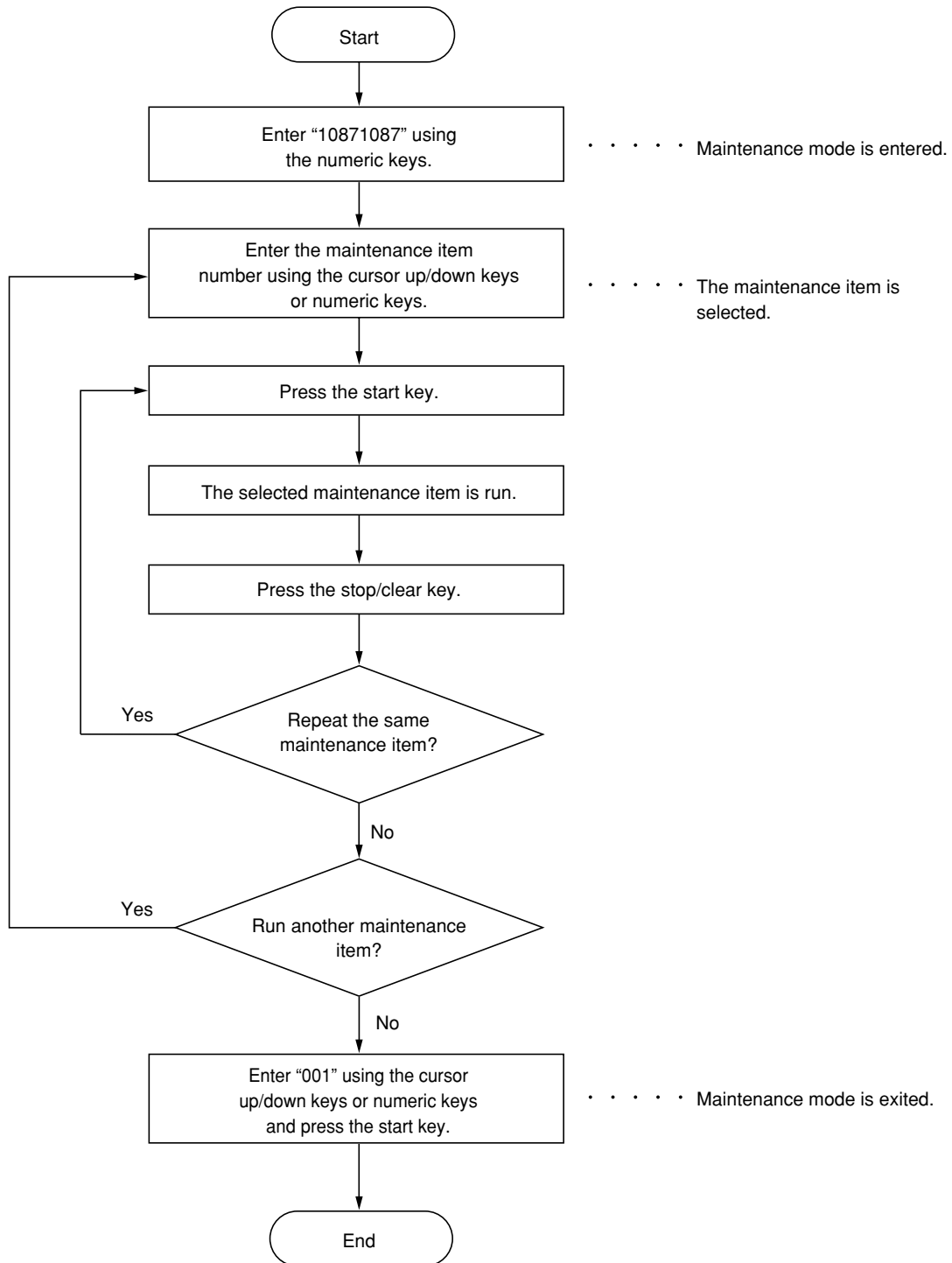
Switches the language to be displayed on the press panel.

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

1-4-2 Maintenance mode

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

(1) Executing a maintenance item



(2) Maintenance mode item list

Section	Item No.	Maintenance item contents	Initial setting*
General	U000	Outputting an own-status report	—
	U001	Exiting the maintenance mode	—
	U003	Setting the service telephone number	*****
	U004	Setting the machine number	000000
	U005	Copying without paper	—
	U019	Displaying the ROM version	—
Initialization	U020	Initializing all data	—
	U021	Initializing counters and mode settings	—
	U022	Initializing data for optical system	—
	U024	HDD formatting	—
Drive, paper feed, paper conveying and cooling system	U030	Checking motor operation	—
	U031	Checking switches for paper conveying	—
	U032	Checking clutch operation	—
	U033	Checking solenoid operation	—
	U034	Adjusting the print start timing • Leading edge registration/Leading edge registration for duplex copying • Center line/Center line for duplex copying	2.5/0 -17/0
	U035	Setting folio size • Length • Width	330 210
	U037	Checking fan motor operation	—
	U050	Setting switchback drive	—
	U051	Adjusting the amount of slack in the paper at the registration roller	—
	U053	Performing fine adjustment of the motor speed • Image formation motor • Paper conveying motor • Polygon motor	6 5 0
	U054	Adjusting the amount of slack in the paper at the vertical conveying	0
Optical	U060	Adjusting the scanner input properties	12
	U061	Turning the exposure lamp on	—
	U063	Adjusting the shading position	0
	U064	Adjusting the CCD level	9
	U065	Adjusting the scanner magnification • Main scanning direction/auxiliary scanning direction	-6/0
	U066	Adjusting the leading edge registration for scanning an original on the contact glass • Leading edge registration/Leading edge registration for rotate copying	-10/0
	U067	Adjusting the center line for scanning an original on the contact glass • Center line/Center line for rotate copying	-30/0
	U070	Adjusting the DF magnification	-1
	U071	Adjusting the DF scanning timing • DF leading edge registration • DF trailing edge registration	10 -15
	U072	Adjusting the DF center line • 1 sided mode/front in 2 sided mode/rear in 2 sided mode	-8/-8/-7
	U073	Checking scanner operation	—
	U074	Executing DF automatic adjustment	—
	U080	Adjusting exposure in toner economy mode	-6
	U089	Outputting a MIP-PG pattern	—
	U091	Checking shading	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Optical	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient • Text and photo/text/photo	0/0/0
	U099	Checking and setting the original size detection sensor	—
High voltage	U100	Checking the operation of main high voltage	—
	U101	Setting the other high voltages	—
	U102	Setting the cleaning interval for the main charger	2
	U110	Checking/clearing the drum count	—
	U111	Checking/clearing the drum drive time	—
	U126	Setting effective potential correction	—
Developing	U130	Initial setting for the developer	—
	U131	Setting the toner sensor control voltage	—
	U132	Replenishing toner forcibly	—
	U135	Checking toner feed motor operation	—
	U136	Turning the toner level detection function on/off	On
	U137	Checking the toner level detection sensor	—
	U147	Setting toner loading operation	On
	U155	Displaying the toner sensor output	—
	U156	Changing the toner control level	—
	U157	Checking/clearing the developing drive time	—
	U158	Checking/clearing the developing count	—
Fixing and cleaning	U160	Applying toner to the cleaning blade	—
	U161	Setting the fixing control temperature • Control temperature during copying • Primary stabilization fixing temperature • Secondary stabilization fixing temperature • Aging time after secondary stabilization	185 165 185 120
	U162	Stabilizing fixing forcibly	—
	U163	Resetting the fixing problem data	—
	U194	Setting the fixing web drive	—
	U196	Turning the fixing heater on	—
	U198	Setting the fixing phase control	—
	Operation panel and support equipmen	U200	Turning all LEDs on
U201		Initializing the touch panel	—
U202		Setting the KMAS host monitoring system	—
U203		Operating DF separately	—
U204		Setting the presence or absence of a key card or key counter	—
U206		Setting the presence or absence of the coin vender	—
U207		Checking the operation panel keys	—
U208		Setting the paper size for the large paper deck	Inch: 11" × 8 ¹ / ₂ " Metric: A4
U209		Setting date and time	—
U212		Setting the deck lift operation	Side feed
U240		Checking the operation of the finisher	—
U241		Checking the operation of the switches of the finisher	—
U243		Checking the operation of the DF motors, solenoids and clutch	—
U244		Checking the DF switches	—
U245		Checking messages	—
U247		Setting the paper feed device	—
U248	Setting the paper eject devices	—	

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Mode setting	U250	Setting the maintenance cycle	500000
	U251	Checking/clearing the maintenance count	—
	U252	Setting the destination	Inch
	U253	Switching between double and single counts	Double count
	U254	Turning auto start function on/off	On
	U255	Setting auto clear time	90
	U256	Turning auto preheat/energy saver function on/off	On
	U258	Switching copy operation at toner empty detection	—
	U260	Changing the copy count timing	After ejection
	U263	Setting the paper ejection when copying from the DF	Face-down ejection
	U264	Setting the display order of the date	—
	U265	Setting OEM purchaser code	0
	U266	Setting the number of days after which to automatically delete documents	7
	U275	Setting the number of sheets for duplex circulation	Mode0
	U330	Setting the number of sheets to enter stacking mode during sort operation	100
	U331	Switching the paper ejection mode	Face-up ejection
	U332	Setting the size conversion factor	1.0
	U336	Setting the HDD type	0
	U341	Specific paper feed location setting for printing function	—
	U342	Setting the ejection restriction	—
	U343	Switching between duplex/simplex copy mode	Off
	U344	Setting preheat/energy saver mode	ENERGY STAR
	U345	Setting the value for maintenance due indication	—
U347	Setting auto drawer size detection	On	
Printer	U350	Setting the ID-code error output	Off
	U355	Setting the output mode for face up output	First print
Image processing	U402	Adjusting margins of image printing	—
	U403	Adjusting margins for scanning an original on the contact glass	—
	U404	Adjusting margins for scanning an original from the DF	—
	U407	Adjusting the leading edge registration for memory image printing	0
Network scanner	U504	Initializing the scanner NIC	—
Others	U901	Checking/clearing copy counts by paper feed locations	—
	U903	Checking/clearing the paper jam counts	—
	U904	Checking/clearing the service call counts	—
	U905	Checking/clearing counts by optional devices	—
	U906	Resetting partial operation control	—
	U907	Checking and resetting the count value on each ejection location	—
	U908	Changing the total counter value	—
	U909	Checking/clearing the fixing web count	—
	U910	Clearing the black ratio data	—
	U911	Checking/clearing copy counts by paper sizes	—
	U921	Checking/clearing the waste toner box maintenance count value	—
	U922	Checking/clearing the solenoid count value	—
	U960	Outputting the machine used circumstances list	—
	U990	Checking/clearing the time for the exposure lamp to light	—
	U991	Checking/clearing the scanner count	—
	U992	Checking or clearing the printer count	

* Initial setting for executing maintenance item U020

(3) Contents of maintenance mode items

Maintenance item No.	Description								
<p>U000</p>	<p>Outputting an own-status report</p> <p>Description Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences.</p> <p>Purpose To check the current setting of the maintenance items, or paper jam or service call occurrences. Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be output. The selected item is displayed in reverse. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Output list</th> </tr> </thead> <tbody> <tr> <td>MAINTENANCE</td> <td>List of the current settings of the maintenance modes</td> </tr> <tr> <td>JAM</td> <td>List of the paper jam occurrences</td> </tr> <tr> <td>SERVICE CALL</td> <td>List of the service call occurrences</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The interrupt copy mode is entered and a list is output. When A4/11" × 8¹/₂" paper is available, a report of this size is output. If not, specify the paper feed location. When output is complete, the screen for selecting an item is displayed. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Output list	MAINTENANCE	List of the current settings of the maintenance modes	JAM	List of the paper jam occurrences	SERVICE CALL	List of the service call occurrences
Display	Output list								
MAINTENANCE	List of the current settings of the maintenance modes								
JAM	List of the paper jam occurrences								
SERVICE CALL	List of the service call occurrences								
<p>U001</p>	<p>Exiting the maintenance mode</p> <p>Description Exits the maintenance mode and returns to the normal copy mode.</p> <p>Purpose To exit the maintenance mode.</p> <p>Method Press the start key. The normal copy mode is entered.</p>								

Maintenance item No.	Description								
U003	<p>Setting the service telephone number</p> <p>Description Sets the telephone number to be displayed when a service call code is detected.</p> <p>Purpose To set the telephone number to call service when installing the machine.</p> <p>Method Press the start key. The currently set telephone number is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Enter a telephone number (up to 15 digits) using the numeric keys. <ul style="list-style-type: none"> To enter symbols such as hyphens and parentheses, select as required from the symbols displayed on the touch panel as shown below. To move the cursor, press LEFT or RIGHT in the bottom row. <table border="1"> <tbody> <tr> <td>*</td> <td>#</td> </tr> <tr> <td>(</td> <td>)</td> </tr> <tr> <td>-</td> <td>(Space)</td> </tr> <tr> <td>LEFT</td> <td>RIGHT</td> </tr> </tbody> </table> Press the start key. The phone number is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	*	#	()	-	(Space)	LEFT	RIGHT
*	#								
()								
-	(Space)								
LEFT	RIGHT								
U004	<p>Setting the machine number</p> <p>Description Displays and changes the machine number.</p> <p>Purpose To check or set the machine number.</p> <p>Method Press the start key. The currently set machine number is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Enter the last six digits of the machine number using the numeric key. Do not enter the first two digits, 3 and 7. Press the start key. The machine number is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>								

Maintenance item No.	Description																								
<p>U005</p>	<p>Copying without paper</p> <p>Description Simulates the copy operation without paper feed.</p> <p>Purpose To check the overall operation of the machine.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated. The selected item is displayed in reverse. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Operation</th> </tr> </thead> <tbody> <tr> <td>PPC</td> <td>Only the copier operates.</td> </tr> <tr> <td>PPC + DF</td> <td>Both the copier and DF operate (continuous operation).</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the interrupt key. The copy mode screen is displayed. 4. Set the operation conditions required on the copy mode screen. Changes in the following settings can be made. <ul style="list-style-type: none"> • Paper feed locations • Magnifications • Simplex or duplex copy mode • Number of copies: in simplex copy mode, continuous copying is performed when set to 999; in duplex copy mode, continuous copying is performed regardless of the setting. • Copy density • Keys on the operation panel other than the energy saver (preheat) key 5. To control the paper feed pulley, remove all the paper in the drawers, or the drawers. With the paper present, the paper feed pulley does not operate. 6. Press the start key. The operation starts. Copy operation is simulated without paper under the set conditions. When operation is complete, the screen for selecting an item is displayed. 7. To stop continuous operation, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operation	PPC	Only the copier operates.	PPC + DF	Both the copier and DF operate (continuous operation).																		
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<p>U019</p>	<p>Displaying the ROM version</p> <p>Description Displays the part number of the ROM fitted to each PCB.</p> <p>Purpose To check the part number or to decide if the ROM version is new from the last digit of the number.</p> <p>Method Press the start key. The last eight digits of the part number indicating the ROM version are displayed.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>MAIN</td> <td>Main ROM IC</td> </tr> <tr> <td>MMI 1</td> <td>Operation ROM IC</td> </tr> <tr> <td>MMI 2</td> <td>Operation ROM IC</td> </tr> <tr> <td>LANGUAGE(Stand.)</td> <td>Standard language ROM IC</td> </tr> <tr> <td>LANGUAGE(Optional)</td> <td>Optional language ROM IC</td> </tr> <tr> <td>MAIN BOOT</td> <td>Boot of main ROM IC</td> </tr> <tr> <td>MMI BOOT</td> <td>Boot of operation ROM IC</td> </tr> <tr> <td>NETWORK SCANNER</td> <td>Optional network scanner ROM IC</td> </tr> <tr> <td>FINISHER</td> <td>Optional finisher ROM IC</td> </tr> <tr> <td>FINISHER BOOT</td> <td>Boot of optional finisher ROM IC</td> </tr> <tr> <td>PRINTER</td> <td>Optional printer ROM IC</td> </tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN	Main ROM IC	MMI 1	Operation ROM IC	MMI 2	Operation ROM IC	LANGUAGE(Stand.)	Standard language ROM IC	LANGUAGE(Optional)	Optional language ROM IC	MAIN BOOT	Boot of main ROM IC	MMI BOOT	Boot of operation ROM IC	NETWORK SCANNER	Optional network scanner ROM IC	FINISHER	Optional finisher ROM IC	FINISHER BOOT	Boot of optional finisher ROM IC	PRINTER	Optional printer ROM IC
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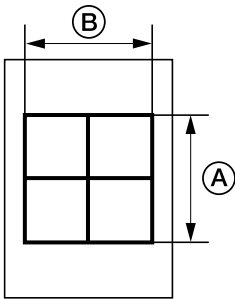
Maintenance item No.	Description
U020	<p>Initializing all data</p> <p>Description Initializes all the backup RAM on the main PCB to return to the original settings.</p> <p>Purpose Used when replacing the backup RAM on the main PCB.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key. All data in the backup RAM is initialized, and the original settings for inch specifications are set. When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on and the display language to the initial setting of English. <p>Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U021	<p>Initializing counters and mode settings</p> <p>Description Initializes the setting data other than that for adjustments due to variations between respective machines, i.e., settings for counters, service call history and mode settings. As a result, initializes the backup RAM according to the specifications depending on the destination selected in U252.</p> <p>Purpose Used to return the machine settings to the factory settings.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting. <p>Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U022	<p>Initializing data for optical system</p> <p>Description Initializes only the data set for the optical section.</p> <p>Purpose To be executed after replacing the scanner unit.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. Press SCANNER on the touch panel. 3. Press EXECUTE on the touch panel. It is displayed in reverse. 4. Press the start key. The data for the optical section (U060 to 067, U080 to 099, U403, U990 and U991) is initialized. <p>Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description										
<p>U024</p>	<p>HDD formatting</p> <p>Description Formats the HDD backup data areas for the network scanner and department administration.</p> <p>Purpose To initialize the HDD when installing or replacing the HDD after shipping.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. Press EXECUTE on the touch panel. It is displayed in reverse. 3. Press the start key to initialize the hard disk. The EXECUTE display flashes during initializing. Initialization results will be displayed when initializing is completed. 4. Press the stop/clear key. The screen for selecting a maintenance item No. will be displayed again. <p>Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>										
<p>U030</p>	<p>Checking motor operation</p> <p>Description Drives each motor.</p> <p>Purpose To check the operation of each motor.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the motor to be operated. The selected item is displayed in reverse and the operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Motor</th> </tr> </thead> <tbody> <tr> <td>MAIN</td> <td>Image formation motor (IFM)</td> </tr> <tr> <td>CONV</td> <td>Paper conveying motor (PCM)</td> </tr> <tr> <td>FEED</td> <td>Paper feed motor (PFM)</td> </tr> <tr> <td>DECK</td> <td>Deck drive motor (DDM)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. To stop operation, press the stop/clear key. <p>Completion Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motor	MAIN	Image formation motor (IFM)	CONV	Paper conveying motor (PCM)	FEED	Paper feed motor (PFM)	DECK	Deck drive motor (DDM)
Display	Motor										
MAIN	Image formation motor (IFM)										
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Maintenance item No.	Description																																				
U031	<p>Checking switches for paper conveying</p> <p>Description</p> <p>Displays the on-off status of each paper detection switch on the paper path.</p> <p>Purpose</p> <p>To check if the switches for paper conveying operate correctly.</p> <p>Method</p> <ol style="list-style-type: none"> <li>1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed. <li>2. Turn each switch on and off manually to check the status. <p>When the on-status of a switch is detected, that switch is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Switches</th> </tr> </thead> <tbody> <tr> <td>FEED B SW</td> <td>Paper feed switch 2 (PFSW2)</td> </tr> <tr> <td>FEED C SW</td> <td>Paper feed switch 3 (PFSW3)</td> </tr> <tr> <td>FEED D SW</td> <td>Paper feed switch 4 (PFSW4)</td> </tr> <tr> <td>FEED E SW</td> <td>Paper feed switch 5 (PFSW5)</td> </tr> <tr> <td>FEED F SW</td> <td>Paper feed switch 6 (PFSW6)</td> </tr> <tr> <td>FEED DK 2SW</td> <td>Deck paper conveying switch 2 (DPCSW2)</td> </tr> <tr> <td>FEED DK 1SW</td> <td>Deck paper conveying switch 1 (DPCSW1)</td> </tr> <tr> <td>FEED A SW</td> <td>Paper feed switch 1 (PFSW1)</td> </tr> <tr> <td>RESIST SW</td> <td>Registration switch (RSW)</td> </tr> <tr> <td>EJECT SW</td> <td>Eject switch (ESW)</td> </tr> <tr> <td>BRA SW</td> <td>Feed shift switch (FSSW)</td> </tr> <tr> <td>REV SW</td> <td>Face down eject switch (FDESW)</td> </tr> <tr> <td>DUP BRA SW</td> <td>Duplex feed shift switch (DUPFSSW)</td> </tr> <tr> <td>DUP J SW</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</p> <p>Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	FEED B SW	Paper feed switch 2 (PFSW2)	FEED C SW	Paper feed switch 3 (PFSW3)	FEED D SW	Paper feed switch 4 (PFSW4)	FEED E SW	Paper feed switch 5 (PFSW5)	FEED F SW	Paper feed switch 6 (PFSW6)	FEED DK 2SW	Deck paper conveying switch 2 (DPCSW2)	FEED DK 1SW	Deck paper conveying switch 1 (DPCSW1)	FEED A SW	Paper feed switch 1 (PFSW1)	RESIST SW	Registration switch (RSW)	EJECT SW	Eject switch (ESW)	BRA SW	Feed shift switch (FSSW)	REV SW	Face down eject switch (FDESW)	DUP BRA SW	Duplex feed shift switch (DUPFSSW)	DUP J SW	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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FEED E SW	Paper feed switch 5 (PFSW5)																																				
FEED F SW	Paper feed switch 6 (PFSW6)																																				
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DUP3 SW	Duplex eject switch (DUPESW)																																				

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>PF A</td> <td>Paper feed clutch 1 (PFCL1)</td> </tr> <tr> <td>PF B</td> <td>Paper feed clutch 2 (PFCL2)</td> </tr> <tr> <td>PF C</td> <td>Paper feed clutch 3 (PFCL3)</td> </tr> <tr> <td>PF D</td> <td>Paper feed clutch 4 (PFCL4)</td> </tr> <tr> <td>FEED B L</td> <td>Feed low clutch 2 (FCL2-L)</td> </tr> <tr> <td>FEED B H</td> <td>Feed high clutch 2 (FCL2-H)</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 DK</td> <td>Deck feed clutch (DFCL)</td> </tr> <tr> <td>FEED A L</td> <td>Feed low clutch 1 (FCL1-L)</td> </tr> <tr> <td>FEED A H</td> <td>Feed high clutch 1 (FCL1-H)</td> </tr> <tr> <td>RESIST</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> </tbody> </table> <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)	PF A	Paper feed clutch 1 (PFCL1)	PF B	Paper feed clutch 2 (PFCL2)	PF C	Paper feed clutch 3 (PFCL3)	PF D	Paper feed clutch 4 (PFCL4)	FEED B L	Feed low clutch 2 (FCL2-L)	FEED B H	Feed high clutch 2 (FCL2-H)	FEED C	Feed clutch 3 (FCL3)	FEED D	Feed clutch 4 (FCL4)	FEED E	Feed clutch 5 (FCL5)	FEED DK	Deck feed clutch (DFCL)	FEED A L	Feed low clutch 1 (FCL1-L)	FEED A H	Feed high clutch 1 (FCL1-H)	RESIST	Registration clutch (RCL)	DUP FWD	Duplex forwarding clutch (DUPFWDCL)	DUP REV	Duplex reversing clutch (DUPREVCL)
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PF B	Paper feed clutch 2 (PFCL2)																																		
PF C	Paper feed clutch 3 (PFCL3)																																		
PF D	Paper feed clutch 4 (PFCL4)																																		
FEED B L	Feed low clutch 2 (FCL2-L)																																		
FEED B H	Feed high clutch 2 (FCL2-H)																																		
FEED C	Feed clutch 3 (FCL3)																																		
FEED D	Feed clutch 4 (FCL4)																																		
FEED E	Feed clutch 5 (FCL5)																																		
FEED DK	Deck feed clutch (DFCL)																																		
FEED A L	Feed low clutch 1 (FCL1-L)																																		
FEED A H	Feed high clutch 1 (FCL1-H)																																		
RESIST	Registration clutch (RCL)																																		
DUP FWD	Duplex forwarding clutch (DUPFWDCL)																																		
DUP REV	Duplex reversing clutch (DUPREVCL)																																		
U033	<p>Checking solenoid operation</p> <p>Description Turns each solenoid on.</p> <p>Purpose To check the operation of each solenoid.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the solenoid to be operated. The selected item is displayed in reverse, and the solenoid turns on for 1 s. <table border="1"> <thead> <tr> <th>Display</th> <th>Solenoids</th> </tr> </thead> <tbody> <tr> <td>BRANCH</td> <td>Feed shift 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>SB SOL</td> <td>Bypass solenoid (BYPSOL)</td> </tr> <tr> <td>FIX WEB SOL</td> <td>Fixing WEB solenoid (FWEBSOL)</td> </tr> <tr> <td>MSW OFF</td> <td>Main switch turns on</td> </tr> </tbody> </table> <p>Select MAIN SW SOL to check the operation of the main switch in auto shut off.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Solenoids	BRANCH	Feed shift solenoid (FSSOL)	DUP FS	Duplex eject switching solenoid (DUPESSOL)	DUP PR	Duplex pressure release solenoid (DUPPRSOL)	SB SOL	Bypass solenoid (BYPSOL)	FIX WEB SOL	Fixing WEB solenoid (FWEBSOL)	MSW OFF	Main switch turns on																				
Display	Solenoids																																		
BRANCH	Feed shift solenoid (FSSOL)																																		
DUP FS	Duplex eject switching solenoid (DUPESSOL)																																		
DUP PR	Duplex pressure release solenoid (DUPPRSOL)																																		
SB SOL	Bypass solenoid (BYPSOL)																																		
FIX WEB SOL	Fixing WEB solenoid (FWEBSOL)																																		
MSW OFF	Main switch turns on																																		
U034	<p>Adjusting the print start timing</p> <p>Adjustment See pages 1-6-15 and 17.</p>																																		

Maintenance item No.	Description												
U035	<p>Setting folio size</p> <p>Description Changes the image area for copying onto folio size paper.</p> <p>Purpose To prevent the image at the trailing edge, or right or left side of the paper from not being copied by setting the actual size of the folio paper used.</p> <p>Method Press the start key. The screen for adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be set. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>LENGTH DATA</td> <td>Length</td> <td>330 to 356 mm</td> <td>330</td> </tr> <tr> <td>WIDTH DATA</td> <td>Width</td> <td>200 to 220 mm</td> <td>210</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Display	Setting	Setting range	Initial setting	LENGTH DATA	Length	330 to 356 mm	330	WIDTH DATA	Width	200 to 220 mm	210
Display	Setting	Setting range	Initial setting										
LENGTH DATA	Length	330 to 356 mm	330										
WIDTH DATA	Width	200 to 220 mm	210										
U037	<p>Checking fan motor operation</p> <p>Description Applies power to each fan motor to turn on.</p> <p>Purpose To check the operation of each fan motor.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the desired fan motor to operate. The selected item is displayed in reverse and the operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Switches</th> </tr> </thead> <tbody> <tr> <td>CONV FAN</td> <td>Paper conveying fan motor (PCFM)</td> </tr> <tr> <td>DEV FAN</td> <td>Image formation fan motor (IFFM)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. To stop operation, press the stop/clear key. <p>Completion Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	CONV FAN	Paper conveying fan motor (PCFM)	DEV FAN	Image formation fan motor (IFFM)						
Display	Switches												
CONV FAN	Paper conveying fan motor (PCFM)												
DEV FAN	Image formation fan motor (IFFM)												
U050	<p>Setting the switchback drive</p> <p>Adjustment See page 1-6-66.</p>												
U051	<p>Adjusting the amount of slack in the paper</p> <p>Adjustment See page 1-6-19.</p>												

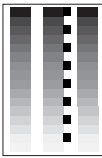

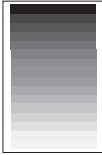
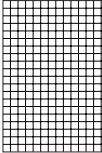
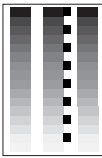

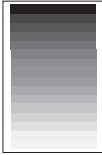
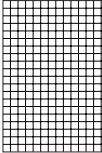
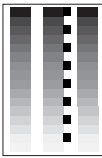

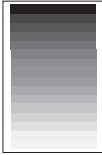
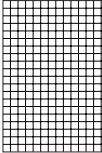
Maintenance item No.	Description																
U053	<p>Performing fine adjustment of the motor speed</p> <p>Description Performs fine adjustment of the speeds of the motors.</p> <p>Purpose Used to adjust the speed of the respective motors when the magnification is not correct.</p> <p>Method Press the start key. The screen for adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be set. The selected item is displayed in reverse. 2. Change the setting using the cursor up/down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>MAIN MOTOR</td> <td>Image formation motor speed adjustment</td> <td>0 to +14</td> <td>6</td> </tr> <tr> <td>CONV MOTOR</td> <td>Paper conveying motor speed adjustment</td> <td>0 to +14</td> <td>5</td> </tr> <tr> <td>POLYGON MOTOR</td> <td>Polygon motor speed adjustment</td> <td>-20 to +20</td> <td>0</td> </tr> </tbody> </table> <p>MAIN MOTOR /CONV MOTOR Increasing the setting makes the image longer in the auxiliary scanning direction, and decreasing it makes the image shorter in the auxiliary scanning direction.</p> <p>POLYGON MOTOR Increasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction; decreasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction.</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode. Correct values for an A3/11" × 17" output are: A = 300 ± 1.5 mm B = 260 ± 1.0 mm</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Figure 1-4-1</p> <p>Adjustment</p> <ol style="list-style-type: none"> 1. Output an A3/11" × 17" VTC pattern in interrupt mode. 2. Measure A and B on the VTC pattern (Figure 1-4-1), and perform the following adjustments if they are different from the correct sizes: A: Image formation motor speed adjustment B: Polygon motor speed adjustment <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	MAIN MOTOR	Image formation motor speed adjustment	0 to +14	6	CONV MOTOR	Paper conveying motor speed adjustment	0 to +14	5	POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0
Display	Description	Setting range	Initial setting														
MAIN MOTOR	Image formation motor speed adjustment	0 to +14	6														
CONV MOTOR	Paper conveying motor speed adjustment	0 to +14	5														
POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0														

Maintenance item No.	Description						
U054	<p>Adjusting the amount of slack in the paper</p> <p>Adjustment See page 1-6-20.</p>						
U060	<p>Adjusting the scanner input properties</p> <p>Description Adjusts the image scanning density in text, text and photo, or photo mode.</p> <p>Purpose Used when the entire image appears too dark or light.</p> <p>Method Press the start key. The screen for executing is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Image scanning density</td> <td>1 to +23</td> <td>12</td> </tr> </tbody> </table> <p>Increasing the setting makes the density lower, and decreasing it makes the density higher.</p> <ol style="list-style-type: none"> Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p> <p>Caution The following settings are also reset to the initial values by performing this maintenance item:</p> <ul style="list-style-type: none"> Exposure density gradient set in maintenance mode (U093) Exposure set in the copy default item of the copier management mode 	Description	Setting range	Initial setting	Image scanning density	1 to +23	12
Description	Setting range	Initial setting					
Image scanning density	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</p> <ol style="list-style-type: none"> Press the start key. The screen for executing is displayed. Press the start key. The exposure lamp lights. To turn the exposure lamp off, press the stop/clear key. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description								
<p>U063</p>	<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</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for adjustment is displayed. 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>Shading position</td> <td>-8 to +2</td> <td>0</td> <td>0.17 mm</td> </tr> </tbody> </table> <p>Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left.</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for adjustment. 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						
<p>U064</p>	<p>Adjusting the CCD level</p> <p>Description Adjusts the CCD level.</p> <p>Purpose To adjust when density difference due to CCD is generated between both sides of the center of the copy image.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for adjustment is displayed. 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>CCD level</td> <td>0 to +15</td> <td>9</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	CCD level	0 to +15	9		
Description	Setting range	Initial setting							
CCD level	0 to +15	9							
<p>U065</p>	<p>Adjusting the scanner magnification</p> <p>Adjustment See pages 1-6-34 and 35.</p>								
<p>U066</p>	<p>Adjusting the leading edge registration for scanning an original on the contact glass</p> <p>Adjustment See page 1-6-36.</p>								
<p>U067</p>	<p>Adjusting the center line for scanning an original on the contact glass</p> <p>Adjustment See page 1-6-37.</p>								
<p>U070</p>	<p>Adjusting the DF magnification</p> <p>Adjustment See pages 1-6-68.</p>								
<p>U071</p>	<p>Adjusting the DF scanning timing</p> <p>Adjustment See page 1-6-70.</p>								
<p>U072</p>	<p>Adjusting the DF center line</p> <p>Adjustment See page 1-6-69.</p>								

Maintenance item No.	Description																																												
U073	<p>Checking scanner operation</p> <p>Description Simulates the scanner operation under arbitrary conditions.</p> <p>Purpose To check scanner operation.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be changed. The selected item is displayed in reverse. 3. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th> <th>Operating conditions</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>ZOOM</td> <td>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>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>Paper size</th> <th>Setting</th> <th>Paper 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>24</td> <td>11" × 8¹/₂"</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>8¹/₂" × 14"</td> </tr> <tr> <td>40</td> <td>A4R</td> <td>56</td> <td>8¹/₂" × 11"</td> </tr> <tr> <td>41</td> <td>B5R</td> <td>58</td> <td>5¹/₂" × 8¹/₂"</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key. The setting is set. Scanning starts under the selected conditions. 5. To stop operation, press the stop/clear key. <p>Completion Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Operating conditions	Setting range	ZOOM	Magnification	25 to 400%	SIZE	Original size	See below.	LAMP	On and off of the exposure lamp	0 (off) or 1 (on)	Setting	Paper size	Setting	Paper size	8	A4	42	A5R	9	B5	47	Folio	24	11" × 8 ¹ / ₂ "	52	11" × 17"	36	A3	53	11" × 15"	39	B4	55	8 ¹ / ₂ " × 14"	40	A4R	56	8 ¹ / ₂ " × 11"	41	B5R	58	5 ¹ / ₂ " × 8 ¹ / ₂ "
Display	Operating conditions	Setting range																																											
ZOOM	Magnification	25 to 400%																																											
SIZE	Original size	See below.																																											
LAMP	On and off of the exposure lamp	0 (off) or 1 (on)																																											
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40	A4R	56	8 ¹ / ₂ " × 11"																																										
41	B5R	58	5 ¹ / ₂ " × 8 ¹ / ₂ "																																										

Maintenance item No.	Description																		
<p>U074</p>	<p>Executing DF automatic adjustment</p> <p>Description Uses a specified original and automatically adjusts the following items in the DF scanning section.</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 the margins for scanning an original from the DF (U404) <p>When you run this maintenance mode, the preset values of U70, U071, U072, and U404 will also be updated.</p> <p>Purpose To perform automatic adjustment of various items in the DF scanning section.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Set a specified original (part number: 2AC68241) in the DF. 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>CONVEY SPEED</td> <td>DF 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>DF CENTER</td> <td>DF center line</td> </tr> <tr> <td>DF A MARGIN</td> <td>DF scanning left margin</td> </tr> <tr> <td>DF B MARGIN</td> <td>DF scanning leading edge margin</td> </tr> <tr> <td>DF C MARGIN</td> <td>DF scanning right margin</td> </tr> <tr> <td>DF D MARGIN</td> <td>DF scanning trailing edge margin</td> </tr> </tbody> </table> <p>If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.</p> <p>Completion Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item is displayed. If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.</p>	Display	Description	CONVEY SPEED	DF auxiliary scanning direction	LEAD EDGE ADJ	DF leading edge registration	TRAIL EDGE ADJ	DF trailing edge registration	DF CENTER	DF center line	DF A MARGIN	DF scanning left margin	DF B MARGIN	DF scanning leading edge margin	DF C MARGIN	DF scanning right margin	DF D MARGIN	DF scanning trailing edge margin
Display	Description																		
CONVEY SPEED	DF auxiliary scanning direction																		
LEAD EDGE ADJ	DF leading edge registration																		
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DF A MARGIN	DF scanning left margin																		
DF B MARGIN	DF scanning leading edge margin																		
DF C MARGIN	DF scanning right margin																		
DF D MARGIN	DF scanning trailing edge margin																		
<p>U080</p>	<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 adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Exposure is toner economy mode</td> <td>-12 to 0</td> <td>-6</td> </tr> </tbody> </table> <p>Increasing the setting makes the image darker; decreasing it makes the image lighter.</p> <ol style="list-style-type: none"> 2. Press the start key. The value is set. <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Exposure is toner economy mode	-12 to 0	-6												
Description	Setting range	Initial setting																	
Exposure is toner economy mode	-12 to 0	-6																	

Maintenance item No.	Description																								
U089	<p>Outputting a MIP-PG pattern</p> <p>Description Selects and outputs the MIP-PG pattern created in the copier.</p> <p>Purpose When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output MIP-PG pattern.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the MIP-PG pattern to be output. <table border="1"> <thead> <tr> <th>Display</th> <th>PG pattern to be output</th> <th>Purpose</th> </tr> </thead> <tbody> <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> </tbody> </table> <ol style="list-style-type: none"> 3. To change the output conditions of MONO-LEVEL and 1dot-LINE, use the cursor up/down keys to change the preset values and press the Start key to register the setting. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Output density of MONO-LEVEL</td> <td>0 or 70</td> <td>0</td> </tr> <tr> <td>1dot-LINE</td> <td>0 to 21</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the interrupt key. The copy mode screen is displayed. 5. Press the start key. A MIP-PG pattern is output. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for 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)	Display	Setting range	Initial setting	Output density of MONO-LEVEL	0 or 70	0	1dot-LINE	0 to 21	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.																							
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1 DOT-LINE		To check fine line reproducibility. To adjust the position of the laser scanner unit (lateral squareness)																							
Display	Setting range	Initial setting																							
Output density of MONO-LEVEL	0 or 70	0																							
1dot-LINE	0 to 21	0																							

Maintenance item No.	Description						
<p>U091</p>	<p>Checking shading</p> <p>Description Performs scanning under the same conditions as before and after shading is performed, displaying the original scanning values at nine points of the contact glass.</p> <p>Purpose To check the change in original scanning values before and after shading. The results may be used to decide the causes for fixing unevenness (uneven density) of the gray area of an image: either due to optical (shading or CCD) or other problems. Also to check the causes for a white or black line appearing longitudinally.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated. The selected item is displayed in reverse. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Display</th> <th style="text-align: center;">Description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">SHD BEFORE</td> <td>Performs scanning before shading and displays the result.</td> </tr> <tr> <td style="text-align: center;">SHD AFTER</td> <td>Performs scanning after shading and displays the result.</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. Scanning is performed under the selected conditions and the result is displayed. When scanning is performed before shading, the scan value at the machine center should be slightly different from those at the machine front and rear. When scanning is performed after shading, there should be no difference between respective values. Any differences between the values at machine front and rear indicates that scanner problem causes the fixing unevenness. If the displayed results indicate no shading problems, the fixing unevenness (uneven copy density) is caused by factors other than in the scanner section (shading or CCD). If a black line appears, the cause may assumed to be based on the results of the scanning operation before shading: if a white line appears, they may be assumed based on the results of the scanning operation after shading. Note that depending on the thickness and location of the black or white line, it may not be possible to use this method to determine the cause. This is because the displayed values obtained from scanning at the limit of nine points are insufficient to provide significant information. <div style="text-align: center; margin: 20px 0;"> </div> <p style="text-align: center;">Figure 1-4-2</p> <ol style="list-style-type: none"> 4. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for entering a maintenance item is displayed.</p>	Display	Description	SHD BEFORE	Performs scanning before shading and displays the result.	SHD AFTER	Performs scanning after shading and displays the result.
Display	Description						
SHD BEFORE	Performs scanning before shading and displays the result.						
SHD AFTER	Performs scanning after shading and displays the result.						

Maintenance item No.	Description																		
U092	<p>Adjusting the scanner automatically</p> <p>Description Makes auto scanner adjustments in the order below using the specified original.</p> <ul style="list-style-type: none"> • Adjusting the scanner center line (U067) • Adjusting the scanner magnification in the main direction(U065) • Adjusting the scanner leading edge registration (U066) • Adjusting the scanner magnification in the auxiliary direction (U065) • Adjusting the margins for scanning 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: 2A068020) on the contact glass. 2. Press the start key. The screen for executing is displayed. 3. Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SCAN CENTER</td> <td>Scanner center line</td> </tr> <tr> <td>SCAN TIMING</td> <td>Scanner leading edge registration</td> </tr> <tr> <td>SUB SCAN</td> <td>Scanner auxiliary scanning direction</td> </tr> <tr> <td>MAIN SCAN</td> <td>Scanner main scanning direction</td> </tr> <tr> <td>DF A MARGIN</td> <td>Scanner scanning left margin</td> </tr> <tr> <td>DF B MARGIN</td> <td>Scanner scanning leading edge margin</td> </tr> <tr> <td>DF C MARGIN</td> <td>Scanner scanning right margin</td> </tr> <tr> <td>DF D MARGIN</td> <td>Scanner scanning trailing edge margin</td> </tr> </tbody> </table> <p>If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.</p> <p>Completion Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed. If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.</p>	Display	Description	SCAN CENTER	Scanner center line	SCAN TIMING	Scanner leading edge registration	SUB SCAN	Scanner auxiliary scanning direction	MAIN SCAN	Scanner main scanning direction	DF A MARGIN	Scanner scanning left margin	DF B MARGIN	Scanner scanning leading edge margin	DF C MARGIN	Scanner scanning right margin	DF D MARGIN	Scanner scanning trailing edge margin
Display	Description																		
SCAN CENTER	Scanner center line																		
SCAN TIMING	Scanner leading edge registration																		
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DF B MARGIN	Scanner scanning leading edge margin																		
DF C MARGIN	Scanner scanning right margin																		
DF D MARGIN	Scanner scanning trailing edge margin																		

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</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the image mode to be adjusted and press the start key. The screen for the selected item is displayed. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>MIXED</td> <td>Density in text and photo mode</td> </tr> <tr> <td>TEXT</td> <td>Density in text mode</td> </tr> <tr> <td>PHOTO</td> <td>Density in photo mode</td> </tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be adjusted. The selected item is displayed in reverse. 2. Adjust the setting using the cursor up/down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.</p> <div style="text-align: center;"> </div> <p>Figure 1-4-3 Exposure density gradient</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MIXED	Density in text and photo mode	TEXT	Density in text mode	PHOTO	Density in photo mode	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																				
MIXED	Density in text and photo mode																				
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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 and press the start key. The screen for executing each item is displayed. <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 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;"> <p>Rear of machine — : 123 123 123</p> <p>Center of machine — : 123 123 123</p> <p>Front of machine — : 255 255 255</p> </div> <p style="text-align: center;">Figure 1-4-4</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> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>LEVEL</td> <td>Detection sensor threshold value</td> <td>0 to 255</td> <td>170</td> </tr> <tr> <td>WAIT TIME</td> <td>Original size judgment time*</td> <td>0 to 100</td> <td>50</td> </tr> <tr> <td>ORIG. AREA</td> <td>Original size detection position display (mm)</td> <td>—</td> <td>—</td> </tr> <tr> <td>SIZE</td> <td>Detected original size display</td> <td>—</td> <td>—</td> </tr> </tbody> </table> <p style="text-align: center;">Time from activation of the original detection switch (ODSW) to original size judgment</p> <p>Method to set the detection threshold value</p> <ol style="list-style-type: none"> 1. Adjust the preset value using the cursor up/down keys. A larger value increases the sensor sensitivity, and a smaller value decreases it. 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Method to set the original size judgment time</p> <ol style="list-style-type: none"> 1. Adjust the preset value using the cursor up/down keys. A larger value increases the original size judgment time, and a smaller value decreases it. 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for maintenance item No. is displayed.</p>	Display	Description	DATA	Displaying detection sensor transmission data	B/W LEVEL	Setting detection sensor threshold value Setting original size judgment time	Display	Description	Setting range	Initial setting	LEVEL	Detection sensor threshold value	0 to 255	170	WAIT TIME	Original size judgment time*	0 to 100	50	ORIG. AREA	Original size detection position display (mm)	—	—	SIZE	Detected original size display	—	—
Display	Description																										
DATA	Displaying detection sensor transmission data																										
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WAIT TIME	Original size judgment time*	0 to 100	50																								
ORIG. AREA	Original size detection position display (mm)	—	—																								
SIZE	Detected original size display	—	—																								

Maintenance item No.	Description																
U100	<p>Checking the operation of main high voltage</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.</p> <p>Start Press the start key. The screen for selecting an item is displayed.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Method for main charger output</p> <ol style="list-style-type: none"> 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. 2. To stop operation, press the stop/clear key. <p>Setting the grid control voltage</p> <ol style="list-style-type: none"> 1. Press the DSP DATA on the touch panel of the screen for selecting an item. 2. Change the setting using the * or # keys. <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>Grid control voltage</td> <td>77 to 230</td> <td>168</td> </tr> </tbody> </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>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	168
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	168															

Maintenance item No.	Description																																																
U101	<p>Setting the other high voltages</p> <p>Description Sets the developing bias control voltage, the transfer control voltage, and the separation control voltage or checks the output of these voltages.</p> <p>Purpose To check or change the developing bias, the transfer voltage, and the separation voltage.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DEV BIAS SET</td> <td>Setting of developing bias control voltage</td> </tr> <tr> <td>TC SET</td> <td>Setting and output check of transfer control voltage</td> </tr> <tr> <td>AC SET</td> <td>Setting of separation control voltage</td> </tr> </tbody> </table> <p>Setting: developing bias control voltage</p> <ol style="list-style-type: none"> Press the DEV BIAS SET on the touch panel of the screen for selecting an item. Select an item to be set. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>DB DATA</td> <td>Developing bias step control final voltage</td> <td>0 to 255</td> <td>207</td> </tr> <tr> <td>DB DATA2</td> <td>Developing bias step control initial voltage</td> <td>0 to 255</td> <td>52</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. Increasing the setting makes the image darker; decreasing it makes the image lighter. Press the start key. The value is set. <p>Setting: transfer bias control voltage</p> <ol style="list-style-type: none"> Press the TC SET on the touch panel of the screen for selecting an item. Select an item to be set. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>TC DATA</td> <td>Transfer control voltage for simplex copying</td> <td>0 to 255</td> <td>210</td> </tr> <tr> <td>TC DATA (DUP)</td> <td>Transfer control voltage for duplex copying</td> <td>0 to 255</td> <td>210</td> </tr> <tr> <td>TC ON</td> <td>Transfer voltage output ON</td> <td>—</td> <td>—</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. Increasing the setting makes the transfer voltage higher, and decreasing it makes the voltage lower. 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. Press the start key. The value is set. <p>Setting: separation bias control voltage</p> <ol style="list-style-type: none"> Press the AC SET on the touch panel of the screen for selecting an item. Select an item to be set. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>AC DATA</td> <td>separation control voltage for simplex copying</td> <td>0 to 255</td> <td>200</td> </tr> <tr> <td>AC DATA (DUP)</td> <td>separation control voltage for duplex copying</td> <td>0 to 255</td> <td>230</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. Increasing the setting makes the separation voltage higher, and decreasing it makes the voltage lower. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for maintenance item No. is displayed.</p>	Display	Description	DEV BIAS SET	Setting of developing bias control voltage	TC SET	Setting and output check of transfer control voltage	AC SET	Setting of separation control voltage	Display	Description	Setting range	Initial setting	DB DATA	Developing bias step control final voltage	0 to 255	207	DB DATA2	Developing bias step control initial voltage	0 to 255	52	Display	Description	Setting range	Initial setting	TC DATA	Transfer control voltage for simplex copying	0 to 255	210	TC DATA (DUP)	Transfer control voltage for duplex copying	0 to 255	210	TC ON	Transfer voltage output ON	—	—	Display	Description	Setting range	Initial setting	AC DATA	separation control voltage for simplex copying	0 to 255	200	AC DATA (DUP)	separation control voltage for duplex copying	0 to 255	230
Display	Description																																																
DEV BIAS SET	Setting of developing bias control voltage																																																
TC SET	Setting and output check of transfer control voltage																																																
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AC DATA (DUP)	separation control voltage for duplex copying	0 to 255	230																																														

Maintenance item No.	Description						
<p>U102</p>	<p>Setting the cleaning interval for the main charger</p> <p>Description Executes a cleaning operation for the main charger and changes the intervals at which the main charger is cleaned.</p> <p>Purpose To check the cleaning operation for the main charger. Also to change the intervals for the operation. Making the intervals longer decreases the stand-by time when starting copying.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MC ADJUST DATA</td> <td>Main charger cleaning operation intervals</td> </tr> <tr> <td>MC TEST RUN</td> <td>Main charger cleaning operation ON</td> </tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the * or # keys. Setting range: 0 to 20 (unit: 1,000 sheets) Initial setting: 2 If the preset value is set to 0, the main charger cleaning operation will not be performed. If you select MC TEST RUN, the main charger cleaning operation will be performed once. Press the start key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MC ADJUST DATA	Main charger cleaning operation intervals	MC TEST RUN	Main charger cleaning operation ON
Display	Description						
MC ADJUST DATA	Main charger cleaning operation intervals						
MC TEST RUN	Main charger cleaning operation ON						
<p>U110</p>	<p>Checking/clearing the drum count</p> <p>Description Displays the drum counts for checking, clearing or changing the figure, which is used as a reference when correcting the main charger potential output.</p> <p>Purpose To check the drum status. Also used to clear the count after replacing the drum during regular maintenance. Since the count was cleared before shipping, do not clear it when installing.</p> <p>Method Press the start key. The drum counter count is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> Press the CLEAR on the touch panel. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> Enter a six-digit count using the numeric keys. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed. <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>						

Maintenance item No.	Description																																		
U111	<p>Checking/clearing the drum drive time</p> <p>Description Displays the drum drive time for checking, clearing or changing a figure, which is used as a reference when correcting the high voltage based on time.</p> <p>Purpose To check the drum status. Also used to clear the drive time after replacing the drum.</p> <p>Method Press the start key. The drum drive time is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Press the reset key. 2. Press the start key. The drive time is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Enter a five-digit drive time using the numeric keys. 2. Press the start key. The drive time is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit the maintenance mode without changing the drive time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>																																		
U126	<p>Setting effective potential correction</p> <p>Description Sets the correction interval and the correction target value for effective potential correction.</p> <p>Purpose To run when replacing the drum or when a density failure which may be caused mainly by the drum occurs.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to change the setting. 2. Use the numeric keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>START (M)</td> <td>Drum drive time for starting correction</td> <td>0 to 600000</td> <td>17000</td> </tr> <tr> <td>INTERVAL (M)</td> <td>Correction interval for effective potential correction</td> <td>0 to 600000</td> <td>1000</td> </tr> <tr> <td>TARGET</td> <td>Effective correction target value</td> <td>0 to 999</td> <td>550</td> </tr> <tr> <td>RUN</td> <td>To run the test operation</td> <td>—</td> <td>—</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>Test operation</p> <ol style="list-style-type: none"> 1. Select RUN and start test operation. <p>* After correction is complete, each data will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>VO A</td> <td>Dark potential measurement A acquired data</td> </tr> <tr> <td>VR A</td> <td>Light potential measurement A acquired data</td> </tr> <tr> <td>VO B</td> <td>Dark potential measurement B acquired data</td> </tr> <tr> <td>VR B</td> <td>Light potential measurement B acquired data</td> </tr> <tr> <td>VO TARGET</td> <td>Target dark potential calculation result</td> </tr> <tr> <td>DB CAL</td> <td>Developing bias calculation result</td> </tr> </tbody> </table> <p>Completion To exit this maintenance item without changing the current value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	START (M)	Drum drive time for starting correction	0 to 600000	17000	INTERVAL (M)	Correction interval for effective potential correction	0 to 600000	1000	TARGET	Effective correction target value	0 to 999	550	RUN	To run the test operation	—	—	Display	Description	VO A	Dark potential measurement A acquired data	VR A	Light potential measurement A acquired data	VO B	Dark potential measurement B acquired data	VR B	Light potential measurement B acquired data	VO TARGET	Target dark potential calculation result	DB CAL	Developing bias calculation result
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VR B	Light potential measurement B acquired data																																		
VO TARGET	Target dark potential calculation result																																		
DB CAL	Developing bias calculation result																																		

Maintenance item No.	Description										
U130	<p>Initial setting for the developer</p> <p>Description Automatically sets the toner sensor control voltage and toner feed start 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</p> <ol style="list-style-type: none"> 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. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>INPUT</td> <td>Toner sensor output value</td> </tr> <tr> <td>CONTROL</td> <td>Toner sensor control voltage</td> </tr> <tr> <td>TARGET</td> <td>Toner feed start level</td> </tr> <tr> <td>HUMID</td> <td>Absolute humidity</td> </tr> </tbody> </table> <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 feed start level (U156) • Clearing the developing drive time (U157) • Clearing the developing count (U158) • Resetting the toner feed start level and toner empty detection <p>Completion Press the stop/clear key after initial setting is complete. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	INPUT	Toner sensor output value	CONTROL	Toner sensor control voltage	TARGET	Toner feed start level	HUMID	Absolute humidity
Display	Description										
INPUT	Toner sensor output value										
CONTROL	Toner sensor control voltage										
TARGET	Toner feed start level										
HUMID	Absolute humidity										
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 screen for adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Adjust the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Toner sensor control voltage</td> <td>0 to 255</td> <td>154</td> </tr> </tbody> </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> <ol style="list-style-type: none"> 2. Press the start key. The value is set. <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Toner sensor control voltage	0 to 255	154				
Description	Setting range	Initial setting									
Toner sensor control voltage	0 to 255	154									

Maintenance item No.	Description										
U132	<p>Replenishing toner forcibly</p> <p>Description Replenishes toner forcibly until the toner sensor output value reaches the toner feed start level.</p> <p>Purpose Used when the toner empty is detected frequently.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. Press the start key. Operation starts, and the current data is displayed. Toner is replenished until the toner sensor output value reaches the toner feed start level. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>INPUT</td> <td>Toner sensor output value after start key is pressed</td> </tr> <tr> <td>CONTROL</td> <td>Current toner feed start level</td> </tr> <tr> <td>TARGET</td> <td>Current toner sensor control voltage</td> </tr> <tr> <td>HUMID</td> <td>Absolute humidity</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. To stop operation, press the stop/clear key. <p>Completion Press the stop/clear key when toner replenishment stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	INPUT	Toner sensor output value after start key is pressed	CONTROL	Current toner feed start level	TARGET	Current toner sensor control voltage	HUMID	Absolute humidity
Display	Description										
INPUT	Toner sensor output value after start key is pressed										
CONTROL	Current toner feed start level										
TARGET	Current toner sensor control voltage										
HUMID	Absolute humidity										
U135	<p>Checking toner feed motor operation</p> <p>Description Drives the toner feed motor.</p> <p>Purpose To check the operation of the toner feed motor.</p> <p>Caution Note that driving the motor unnecessarily long may cause a toner jam, resulting in machine lockup. Be sure to drive the motor for only a few seconds.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated. The toner feed motor turns on. 3. To stop operation, press the stop/clear key. <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>										
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. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select ON or OFF. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>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> <ol style="list-style-type: none"> 2. Press the start key. The value is set. <p>Completion To exit this maintenance item without changing the current value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	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										

Maintenance item No.	Description												
<p>U137</p>	<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 screen for executing 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)												
<p>U147</p>	<p>Setting toner loading operation</p> <p>Description Sets toner loading operation after completion of copying.</p> <p>Purpose To set whether or not toner is loaded on the drum after low density copying. Normally no change is necessary from the initial setting.</p> <p>Method 1. Press the start key. The screen for adjustment is displayed. 2. Select ON or OFF. The selected item is displayed im reverse.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Toner loaded</td> </tr> <tr> <td>OFF</td> <td>Toner not loaded</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <p>3. Press the start key. The value is set.</p> <p>Completion To exit this maintenance item without changing the current value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Toner loaded	OFF	Toner not loaded						
Display	Description												
ON	Toner loaded												
OFF	Toner not loaded												
<p>U155</p>	<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>INPUT</td> <td>Toner sensor output value after start key is pressed</td> </tr> <tr> <td>TARGET</td> <td>Current toner feed level (value corrected based on humidity and drive time)</td> </tr> <tr> <td>CONTROL</td> <td>Current toner sensor control voltage</td> </tr> <tr> <td>HUMID</td> <td>Absolute humidity</td> </tr> <tr> <td>OUT TEMP</td> <td>External temperature</td> </tr> </tbody> </table> <p>3. Press the stop/clear key. The sampling operation stops.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	INPUT	Toner sensor output value after start key is pressed	TARGET	Current toner feed level (value corrected based on humidity and drive time)	CONTROL	Current toner sensor control voltage	HUMID	Absolute humidity	OUT TEMP	External temperature
Display	Description												
INPUT	Toner sensor output value after start key is pressed												
TARGET	Current toner feed level (value corrected based on humidity and drive time)												
CONTROL	Current toner sensor control voltage												
HUMID	Absolute humidity												
OUT TEMP	External temperature												

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 border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Setting for the toner control level</p> <ol style="list-style-type: none"> 1. Press the TARGET on the touch panel of the screen for selecting an item. 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Toner control level</td> <td>0 to 255</td> <td>102</td> </tr> </tbody> </table> <p>Increasing the setting makes the toner density lower.</p> <ol style="list-style-type: none"> 3. Press the start key. The time is set. <p>Setting for the toner empty level</p> <ol style="list-style-type: none"> 1. Press the EMPTY on the touch panel of the screen for selecting an item. 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Difference between the toner control level and the toner empty level</td> <td>0 to 255</td> <td>30</td> </tr> </tbody> </table> <p>Increasing the setting makes the toner empty level higher: the toner density is lower when the toner empty is detected.</p> <ol style="list-style-type: none"> 3. Press the start key. The time is set. <p>Setting for the toner control reference voltage</p> <ol style="list-style-type: none"> 1. Press the FIRST TARGET on the touch panel of the screen for selecting an item. 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Toner control reference voltage</td> <td>0 to 255</td> <td>102</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The time is set. <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	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	102	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																										
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Description	Setting range	Initial setting																									
Toner control level	0 to 255	102																									
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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						
<p>U157</p>	<p>Checking/clearing the developing drive time</p> <p>Description Displays the developing drive time for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.</p> <p>Purpose To check the developing drive time after replacing the developing unit.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MAG TIME(M)</td> <td>Image formation motor drive time</td> </tr> <tr> <td>AGT TIME(M)</td> <td>Paper feed motor drive time</td> </tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the item to be cleared. 2. Press the reset key. 3. Press the start key. The drive time is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be changed. 2. Enter a five-digit drive time (in minutes) using the numeric keys. 3. Press the start key. The drive time is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the drive time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAG TIME(M)	Image formation motor drive time	AGT TIME(M)	Paper feed motor drive time
Display	Description						
MAG TIME(M)	Image formation motor drive time						
AGT TIME(M)	Paper feed motor drive time						
<p>U158</p>	<p>Checking/clearing the developing count</p> <p>Description Displays the developing count for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.</p> <p>Purpose To check the developing count after replacing the developing unit.</p> <p>Method Press the start key. The developing count is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Press the reset key. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Enter a six-digit count using the numeric keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						
<p>U160</p>	<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</p> <ol style="list-style-type: none"> 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>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 curling or creasing of paper, or solve a fixing problem on thick paper.</p> <p>Method Press the start key. The screen for adjustment is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>CONT TEMP</td> <td>Control temperature during copying</td> <td>170 to 200 (°C)</td> <td>185</td> </tr> <tr> <td>1ST TEMP</td> <td>Primary stabilization fixing temperature</td> <td>140 to 200 (°C)</td> <td>165</td> </tr> <tr> <td>2ND TEMP</td> <td>Secondary stabilization fixing temperature</td> <td>170 to 200 (°C)</td> <td>185</td> </tr> <tr> <td>TIME</td> <td>Aging time after secondary stabilization</td> <td>0 to 180 (s)</td> <td>120</td> </tr> </tbody> </table> <p>Setting</p> <ol style="list-style-type: none"> Select the item to be set. The selecting item is displayed in reverse. Change the setting using the cursor up/down keys. The respective temperatures are to be set such that 2ND TEMP ≥ 1ST TEMP. Press the start key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	Setting range	Initial setting	CONT TEMP	Control temperature during copying	170 to 200 (°C)	185	1ST TEMP	Primary stabilization fixing temperature	140 to 200 (°C)	165	2ND TEMP	Secondary stabilization fixing temperature	170 to 200 (°C)	185	TIME	Aging time after secondary stabilization	0 to 180 (s)	120
Display	Description	Setting range	Initial setting																		
CONT TEMP	Control temperature during copying	170 to 200 (°C)	185																		
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2ND TEMP	Secondary stabilization fixing temperature	170 to 200 (°C)	185																		
TIME	Aging time after secondary stabilization	0 to 180 (s)	120																		
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> <ol style="list-style-type: none"> Press the start key. The screen for executing is displayed. Press the start key. The forced stabilization mode is entered, and stabilization operation stops regardless of fixing temperature. The screen for selecting a maintenance item No. is displayed. To exit the forced stabilization mode, turn the power off and on. <p>Completion To exit this maintenance item without executing forced fixing stabilization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>																				
U163	<p>Resetting the fixing problem data</p> <p>Description Resets the detection of a service call code indicating a problem in the fixing section.</p> <p>Purpose To prevent accidents due to an abnormally high fixing temperature.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for executing is displayed. Press EXECUTE on the touch panel. Press the start key. The fixing problem data is initialized. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</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 fixing web roller becomes extremely soiled.</p> <p>Method Press the start key. The screen for adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Interval for turning on the fixing web solenoid</td> <td>1 to 40</td> <td>30</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set. <p>Completion To exit this maintenance item without changing the current value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Interval for turning on the fixing web solenoid	1 to 40	30
Description	Setting range	Initial setting					
Interval for turning on the fixing web solenoid	1 to 40	30					
U196	<p>Turning the fixing heater on</p> <p>Description Turns the fixing heater M or S on.</p> <p>Purpose To check fixing heaters turning on.</p> <p>Method</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item is displayed. Select the heater to be turned on. The selected heater turns on for 3 s and then turns off. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MAIN</td> <td>Fixing heater M (FH-M)</td> </tr> <tr> <td>SUB</td> <td>Fixing heater S (FH-S)</td> </tr> </tbody> </table> <p>Completion Press the stop/clear key when fixing motors M and S are off. The screen for selecting the maintenance item No. is displayed.</p>	Display	Description	MAIN	Fixing heater M (FH-M)	SUB	Fixing heater S (FH-S)
Display	Description						
MAIN	Fixing heater M (FH-M)						
SUB	Fixing heater S (FH-S)						
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. The screen for adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Select ON or OFF. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Fixing phase control present</td> </tr> <tr> <td>OFF</td> <td>Fixing phase control absent</td> </tr> </tbody> </table> <p>Initial setting: ON (220-240 V specifications) / OFF (120 V specifications)</p> <ol style="list-style-type: none"> If you select ON, use the * or # key to set 0 (100 V system fixing heater phase control) or 1 (200 V system fixing heater phase control). Press the start key. The value is set. <p>Completion To exit this maintenance item without changing the current value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Fixing phase control present	OFF	Fixing phase control absent
Display	Description						
ON	Fixing phase control present						
OFF	Fixing phase control absent						

Maintenance item No.	Description
U200	<p>Turning all LEDs on</p> <p>Description Turns all the LEDs on the operation panel on.</p> <p>Purpose To check if all the LEDs on the operation panel light.</p> <p>Method Press the start key. All the LEDs on the operation panel light. Press the stop/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance item No. is displayed.</p>
U201	<p>Initializing the touch panel</p> <p>Description Automatically correct the positions of the X- and Y-axes of the touch panel.</p> <p>Purpose To automatically correct the display positions on the touch panel after it is replaced.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed, and the + key displayed at the upper left of the touch panel flashes. 2. Press on the center of the + key. The + key on lower right flashes. 3. Press the center of the flashing +. Initialization of the touch panel is complete, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without initializing, press the stop/clear key. The screen for selecting a maintenance mode No. is displayed.</p>
U202	<p>Setting the KMAS host monitoring system</p> <p>Description Initializes or operates the KMAS host monitoring system. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary.</p>

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

Maintenance item No.	Description
U206	<p>Setting the presence or absence of the coin vender</p> <p>Description Sets the presence or absence of the optional coin vender. Also sets the details for coin vender operation, such as mode and unit price. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary.</p>
U207	<p>Checking the operation panel keys</p> <p>Description Checks operation of the operation panel keys.</p> <p>Purpose To check operation of all the keys and LEDs on the operation panel.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. "COUNT1" is displayed and the leftmost LED on the operation panel lights. 3. As the keys lined up in the same line as the lit indicator are pressed in the order from the top to the bottom, the figure shown on the touch panel increases in increments of 1. When all the keys in that line are pressed and if there are any LEDs corresponding to the keys in the line on the immediate right, the top LED in that line will light. 4. When all the keys on the operation panel have been pressed, all the LEDs light for up to 10 seconds. 5. When the LEDs go off, press the start key. All the LEDs light for 10 seconds again. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U208	<p>Setting the paper size for the large paper deck</p> <p>Description Sets the sizes of paper placed in drawer 3, drawer 4 and optional side deck (55 cpm copier only) respectively.</p> <p>Purpose To set the size when the size of paper placed in drawer 3, drawer 4 or optional side deck is changed.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the paper size (A4/11" × 8¹/₂" or B5). The selected item is displayed in reverse. Initial setting: A4/11" × 8¹/₂" 2. Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description						
<p>U209</p>	<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> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. The current setting for the year is displayed. 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. 3. Set the month using the numeric or Up/Down keys and press the start key. The current setting for the date is displayed. 4. Set the date using the numeric or Up/Down keys and press the start key. The current time setting for hours is displayed. 5. Set the hours using the numeric or Up/Down keys and press the start key. The current time setting for minutes is displayed. 6. 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>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>						
<p>U212</p>	<p>Setting the deck lift operation</p> <p>Description Sets the operation of the side deck (55 cpm copier only) 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 will be displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select the method to load paper. <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> <ol style="list-style-type: none"> 2. Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SIDE FEED	Load paper through the right cover	UPPER FEED	Load paper through the upper cover
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Maintenance item No.	Description																																																
U240	<p>Checking the operation of the finisher</p> <p>Description Turns each motor, clutch and solenoid of the optional document finisher ON.</p> <p>Purpose Used to check the operation of each motor, clutch and solenoid of the optional document finisher.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Select the motor, clutch or solenoid that you want to check the operation for. The selected item is displayed in reverse and the operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Motors, clutches and solenoids</th> </tr> </thead> <tbody> <tr><td>CONV MOTOR</td><td>Paper conveying motor (PCM)</td></tr> <tr><td>PUNCH MOTOR</td><td>Punch motor (PUNM)</td></tr> <tr><td>WID T MOTOR</td><td>Front/rear upper side-registration guide motor (SRGM-FU/SRGM-RU)</td></tr> <tr><td>WID U MOTOR</td><td>Lower side-registration guide motor (SRGM-L)</td></tr> <tr><td>MTRAY MOTOR</td><td>Main tray elevation motor (MTEM)</td></tr> <tr><td>JTRAY MOTOR</td><td>Multi job tray elevation motor (MJTEM)</td></tr> <tr><td>BRA A SOL</td><td>Feedshift solenoid A (FSSOLA)</td></tr> <tr><td>BRA B SOL</td><td>Feedshift solenoid B (FSSOLB)</td></tr> <tr><td>BRA C SOL</td><td>Feedshift solenoid C (FSSOLC)</td></tr> <tr><td>PUNCH P SOL</td><td>Punch solenoid (PUNSOL)</td></tr> <tr><td>MTRAY SOL</td><td>Paper holder solenoid (PHSOL)</td></tr> <tr><td>EJEC SOL</td><td>Eject guide solenoid (EGSOL)</td></tr> <tr><td>PUNCH I SOL</td><td>Paper entry guide solenoid (PEGSOL)</td></tr> <tr><td>MIDDLE SOL</td><td>Movable guide solenoid (MGSOL)</td></tr> <tr><td>DRAM CL</td><td>Standbu drum clutch (SDCL)</td></tr> <tr><td>FEED IN CL</td><td>Paper conveying clutch (PCCL)</td></tr> <tr><td>PUNCH CL</td><td>Punch clutch (PUNCL)</td></tr> <tr><td>SADDLE ROL1</td><td>Main motor (MM)</td></tr> <tr><td>SADDLE ROL2</td><td>Main motor (MM)</td></tr> <tr><td>SADDLE BLD</td><td>Centerfold blade motor (SBLM)</td></tr> <tr><td>SADDLE INI1</td><td>Centering plate motor (CPM)</td></tr> <tr><td>SADDLE INI2</td><td>Side-registration guide motor (SRGM)</td></tr> <tr><td>SADDLE SOL</td><td>Pressures release solenoid (PRSOL)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 3. To turn ON a clutch or solenoid with the motor driving, press the interrupt key before selecting the clutch or solenoid. * The driving motor will start operation, and the selected clutch or the solenoid will remain ON until the interrupt key is pressed again. 4. To stop motor driving, press the interrupt key again. 5. To return to the screen for selecting an item, press the stop/clear key with the motor stopped. <p>Completion Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motors, clutches and solenoids	CONV MOTOR	Paper conveying motor (PCM)	PUNCH MOTOR	Punch motor (PUNM)	WID T MOTOR	Front/rear upper side-registration guide motor (SRGM-FU/SRGM-RU)	WID U MOTOR	Lower side-registration guide motor (SRGM-L)	MTRAY MOTOR	Main tray elevation motor (MTEM)	JTRAY MOTOR	Multi job tray elevation motor (MJTEM)	BRA A SOL	Feedshift solenoid A (FSSOLA)	BRA B SOL	Feedshift solenoid B (FSSOLB)	BRA C SOL	Feedshift solenoid C (FSSOLC)	PUNCH P SOL	Punch solenoid (PUNSOL)	MTRAY SOL	Paper holder solenoid (PHSOL)	EJEC SOL	Eject guide solenoid (EGSOL)	PUNCH I SOL	Paper entry guide solenoid (PEGSOL)	MIDDLE SOL	Movable guide solenoid (MGSOL)	DRAM CL	Standbu drum clutch (SDCL)	FEED IN CL	Paper conveying clutch (PCCL)	PUNCH CL	Punch clutch (PUNCL)	SADDLE ROL1	Main motor (MM)	SADDLE ROL2	Main motor (MM)	SADDLE BLD	Centerfold blade motor (SBLM)	SADDLE INI1	Centering plate motor (CPM)	SADDLE INI2	Side-registration guide motor (SRGM)	SADDLE SOL	Pressures release solenoid (PRSOL)
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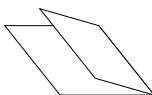

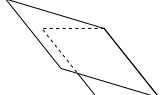
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<p>U241</p>	<p>Checking the operation of the switches of the finisher</p> <p>Description Displays the status of each switch of the optional document finisher.</p> <p>Purpose Used to check the operation of each switch of the optional document finisher.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key to run the maintenance item. 2. Turn each switch ON manually. <p>* When a switch is detected to be in the ON position, the display for that switch will be highlighted.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Switches</th> </tr> </thead> <tbody> <tr> <td>CONV</td> <td>Paper entry sensor (PES)</td> </tr> <tr> <td>EJECT SUB</td> <td>Paper ejection sensor (PEJS)</td> </tr> <tr> <td>CONV TRAY</td> <td>Intermediate tray paper conveying sensor (ITPCS)</td> </tr> <tr> <td>EJECT MAIN</td> <td>Sub tray paper ejection sensor (STPES)</td> </tr> <tr> <td>TRAY U PAP</td> <td>Upper paper sensor (PS-U)</td> </tr> <tr> <td>TRAY L PAP</td> <td>Lower paper sensor (PS-L)</td> </tr> <tr> <td>MTRAY U LMT</td> <td>Main tray upper limit detection sensor (MTULDS)</td> </tr> <tr> <td>MTRAY L LMT</td> <td>Main tray lower limit detection sensor (MTLLDS)</td> </tr> <tr> <td>MTRAY POS</td> <td>Main tray paper upper surface detection light emitting/intercepting sensor (MTPUSDLES/MTPUSDLIS)</td> </tr> <tr> <td>MTRAY PUSH</td> <td>Paper holder detection sensor (PHDS)</td> </tr> <tr> <td>MTRAY OVER1</td> <td>Main tray load 1000 detection sensor (MTLDS-10)</td> </tr> <tr> <td>MTRAY OVER2</td> <td>Main tray load 1500 detection sensor (MTLDS-15)</td> </tr> <tr> <td>MTRAY OVER3</td> <td>Main tray load 3000/2000 detection sensor (MTLDS-30/MTLDS-20)</td> </tr> <tr> <td>JOB U LMT</td> <td>Multi job tray upper limit detection sensor (MJTULDS)</td> </tr> <tr> <td>JOB L LMT</td> <td>Multi job tray lower limit detection sensor (MJTLLDS)</td> </tr> <tr> <td>JOB SAFETY</td> <td>Multi job tray front/rear switch (MJTSW-F/MJTSW-R)</td> </tr> <tr> <td>JOB POS</td> <td>Multi job tray position sensor (MJPS)</td> </tr> <tr> <td>JOB OVER</td> <td>Multi job tray paper upper surface detection light emitting/intercepting sensor (MJTPUSDLES/MJTPUSDLIS)</td> </tr> <tr> <td>JOB PAP1</td> <td>Paper detection switch 1 (PDSW1)</td> </tr> <tr> <td>JOB PAP2</td> <td>Paper detection switch 2 (PDSW2)</td> </tr> <tr> <td>JOB PAP3</td> <td>Paper detection switch 3 (PDSW3)</td> </tr> <tr> <td>JOB PAP4</td> <td>Paper detection switch 4 (PDSW4)</td> </tr> <tr> <td>JOB PAP5</td> <td>Paper detection switch 5 (PDSW5)</td> </tr> <tr> <td>SDL CONV</td> <td>Centerfold unit paper entry sensor (CUPES)</td> </tr> <tr> <td>SDL EJECT</td> <td>Eject switch (ESW)</td> </tr> <tr> <td>SDL PAP</td> <td>Eject tray paper detection switch (ETPDSW)</td> </tr> <tr> <td>SDL BIN PAP</td> <td>Inside tray detection sensor (ITDS)</td> </tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	CONV	Paper entry sensor (PES)	EJECT SUB	Paper ejection sensor (PEJS)	CONV TRAY	Intermediate tray paper conveying sensor (ITPCS)	EJECT MAIN	Sub tray paper ejection sensor (STPES)	TRAY U PAP	Upper paper sensor (PS-U)	TRAY L PAP	Lower paper sensor (PS-L)	MTRAY U LMT	Main tray upper limit detection sensor (MTULDS)	MTRAY L LMT	Main tray lower limit detection sensor (MTLLDS)	MTRAY POS	Main tray paper upper surface detection light emitting/intercepting sensor (MTPUSDLES/MTPUSDLIS)	MTRAY PUSH	Paper holder detection sensor (PHDS)	MTRAY OVER1	Main tray load 1000 detection sensor (MTLDS-10)	MTRAY OVER2	Main tray load 1500 detection sensor (MTLDS-15)	MTRAY OVER3	Main tray load 3000/2000 detection sensor (MTLDS-30/MTLDS-20)	JOB U LMT	Multi job tray upper limit detection sensor (MJTULDS)	JOB L LMT	Multi job tray lower limit detection sensor (MJTLLDS)	JOB SAFETY	Multi job tray front/rear switch (MJTSW-F/MJTSW-R)	JOB POS	Multi job tray position sensor (MJPS)	JOB OVER	Multi job tray paper upper surface detection light emitting/intercepting sensor (MJTPUSDLES/MJTPUSDLIS)	JOB PAP1	Paper detection switch 1 (PDSW1)	JOB PAP2	Paper detection switch 2 (PDSW2)	JOB PAP3	Paper detection switch 3 (PDSW3)	JOB PAP4	Paper detection switch 4 (PDSW4)	JOB PAP5	Paper detection switch 5 (PDSW5)	SDL CONV	Centerfold unit paper entry sensor (CUPES)	SDL EJECT	Eject switch (ESW)	SDL PAP	Eject tray paper detection switch (ETPDSW)	SDL BIN PAP	Inside tray detection sensor (ITDS)
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U243	<p>Checking the operation of the DF motors, solenoids and clutch</p> <p>Description Turns the motors, solenoids or clutch in the DF on.</p> <p>Purpose To check the operation of the DF motors, solenoids and clutch .</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated. The selected item is displayed in reverse and the operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Motors, solenoids and clutch</th> <th>Operation In operation</th> </tr> </thead> <tbody> <tr> <td>F MOT</td> <td>Original feed motor (OFM)</td> <td>In operation</td> </tr> <tr> <td>C MOT</td> <td>Original paper conveying motor (OCM)</td> <td>On for 0.5 s</td> </tr> <tr> <td>FD CL</td> <td>Original feed clutch (OFCL)</td> <td>On for 0.5 s</td> </tr> <tr> <td>EJ SL</td> <td>Eject feedshift solenoid (EFSSOL)</td> <td>On for 0.5 s</td> </tr> <tr> <td>RJ SL</td> <td>Switchback feedshift solenoid (SBFSSOL)</td> <td>On for 0.5 s</td> </tr> <tr> <td>FD SL</td> <td>Original feed solenoid (OFSOL)</td> <td>On and off</td> </tr> <tr> <td>RP SL</td> <td>Switchback pressure solenoid (SBPSOL)</td> <td>On and off</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. To turn each motor off, press the stop/clear key. <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motors, solenoids and clutch	Operation In operation	F MOT	Original feed motor (OFM)	In operation	C MOT	Original paper conveying motor (OCM)	On for 0.5 s	FD CL	Original feed clutch (OFCL)	On for 0.5 s	EJ SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s	RJ SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s	FD SL	Original feed solenoid (OFSOL)	On and off	RP SL	Switchback pressure solenoid (SBPSOL)	On and off
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FD SL	Original feed solenoid (OFSOL)	On and off																							
RP SL	Switchback pressure solenoid (SBPSOL)	On and off																							
U244	<p>Checking the DF switches</p> <p>Description Displays the status of the respective switches in the DF.</p> <p>Purpose To check if respective switches in the DF operate correctly.</p> <p>Start</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the type of switches (SW or VR) to be checked. The screen for executing each item is displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Type of switches</th> </tr> </thead> <tbody> <tr> <td>SW</td> <td>On/off switches</td> </tr> <tr> <td>VR</td> <td>Volume switch</td> </tr> </tbody> </table> <p>Method for the on/off switches</p> <ol style="list-style-type: none"> 1. Turn the respective switches on and off manually to check the status. If the on-status of a switch is detected, the corresponding switch is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Switches</th> </tr> </thead> <tbody> <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> </tbody> </table> <ol style="list-style-type: none"> 2. To return to the screen for selecting an item, press the stop/clear key. 	Display	Type of switches	SW	On/off switches	VR	Volume switch	Display	Switches	SET SW	Original set switch (OSSW)	FEED SW	Original feed switch (OFSW)	REV SW	Original switchback switch (OSBSW)	TMG SW	DF timing switch (DFTSW)	SZ A SW	Original size length switch (OSLSW)						
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Maintenance item No.	Description																												
<p>U244</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. The detected original width is displayed as a numerical value with the decimals omitted.</p> <table border="1"> <thead> <tr> <th>Numerical value</th> <th colspan="2">Original width to be detected</th> </tr> </thead> <tbody> <tr> <td>000</td> <td rowspan="3">A5R</td> <td rowspan="3">5 1/2" × 8 1/2"</td> </tr> <tr> <td>49.664</td> </tr> <tr> <td>50.176</td> </tr> <tr> <td>61.440</td> <td rowspan="3">B5R</td> <td rowspan="6">8 1/2" × 14"/ 8 1/2" × 11"</td> </tr> <tr> <td>61.952</td> </tr> <tr> <td>103.936</td> </tr> <tr> <td>104.448</td> <td rowspan="3">Folio/A4R</td> </tr> <tr> <td>139.264</td> </tr> <tr> <td>139.776</td> </tr> <tr> <td>146.432</td> <td rowspan="3">B4/B5</td> </tr> <tr> <td>146.994</td> </tr> <tr> <td>197.120</td> </tr> <tr> <td>197.632</td> <td rowspan="3">CF (11" × 15")</td> <td rowspan="3">11" × 17"/ 11" × 15"/ 11" × 8 1/2"</td> </tr> <tr> <td>197.720</td> </tr> <tr> <td>223.232</td> </tr> <tr> <td>256</td> <td>A3/A4</td> </tr> </tbody> </table> <p>For example, if any value between 105 and 139 is displayed when the original insertion guides are adjusted for A4R paper, it indicates that the original width is detected correctly.</p> <p>2. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Numerical value	Original width to be detected		000	A5R	5 1/2" × 8 1/2"	49.664	50.176	61.440	B5R	8 1/2" × 14"/ 8 1/2" × 11"	61.952	103.936	104.448	Folio/A4R	139.264	139.776	146.432	B4/B5	146.994	197.120	197.632	CF (11" × 15")	11" × 17"/ 11" × 15"/ 11" × 8 1/2"	197.720	223.232	256	A3/A4
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197.720																													
223.232																													
256	A3/A4																												

Maintenance item No.	Description												
U245	<p>Checking messages</p> <p>Description Displays a list of messages on the touch panel of the operation panel.</p> <p>Purpose To check the messages to be displayed.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Select the item to be displayed. 3. Change the screen using the cursor up/down keys to display each message one at a time. When a message number is entered with the numeric keys and then the start key is pressed, the message corresponding the specified number is displayed. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>												
U247	<p>Setting the paper feed device</p> <p>Description Drives each motor of the optional side deck.</p> <p>Purpose To check the operation of the optional side deck.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the motor to be operated. The selected item is displayed in reverse and the operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Motor</th> </tr> </thead> <tbody> <tr> <td>SDECK MOT</td> <td>Side deck drive motor (SDDM)</td> </tr> <tr> <td>SDECK FAN</td> <td>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>SDECK FDCL</td> <td>Side deck paper feed clutch (SDPFCL)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. To stop operation, press the stop/clear key. <p>Completion Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.</p>	Display	Motor	SDECK MOT	Side deck drive motor (SDDM)	SDECK FAN	Suction fan motor (IFM)	SDECK LIFT	Side deck lift motor (SDLM)	SDECK CVCL	Side deck paper conveying clutch (SDCCL)	SDECK FDCL	Side deck paper feed clutch (SDPFCL)
Display	Motor												
SDECK MOT	Side deck drive motor (SDDM)												
SDECK FAN	Suction fan motor (IFM)												
SDECK LIFT	Side deck lift motor (SDLM)												
SDECK CVCL	Side deck paper conveying clutch (SDCCL)												
SDECK FDCL	Side deck paper feed clutch (SDPFCL)												

Maintenance item No.	Description																						
U248	<p>Setting the paper eject devices</p> <p>Description Adjusts the amount of slack in the paper for finisher punch mode, the booklet stapling position, and the center folding position for the copier with an optional finisher installed.</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. • Adjustment of booklet stapling position Adjusts the booklet stapling position in the stitching mode if the position is not proper. • Adjustment of center folding position Adjusts the center folding position in the stitching mode if the position is not proper. <p>Start Press the start key. The screen for selecting an item is displayed.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 40%;">Display</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>PUNCH TIMING</td> <td>Adjustment of the amount of slack in the paper in punch mode</td> </tr> <tr> <td>SADDLE STAPLE ADJUST</td> <td>Booklet stapling position adjustment</td> </tr> <tr> <td>SADDLE ADJUST</td> <td>Adjustment of center folding position</td> </tr> </tbody> </table> <p>Setting the amount of slack in the paper</p> <ol style="list-style-type: none"> 1. Select PUNCH TIMING on the screen for selecting an item. 2. Change the setting using the cursor up/down keys. <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Description</th> <th style="width: 20%;">Setting range</th> <th style="width: 30%;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>Amount of slack in the paper</td> <td style="text-align: center;">-15 to +15</td> <td style="text-align: center;">0</td> </tr> </tbody> </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 1.0 mm.</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the booklet stapling position</p> <ol style="list-style-type: none"> 1. Select SADDLE STAPLE ADJUST on the screen for selecting an item. 2. Select the size to be set. 3. Change the setting using the cursor up/down keys. <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 30%;">Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A4R/LTR</td> <td>Adjustment of booklet stapling position for A4R/LETTER size</td> </tr> <tr> <td>B4R</td> <td>Adjustment of booklet stapling position for B4R size</td> </tr> <tr> <td>A3R/LDR</td> <td>Adjustment of booklet stapling position for A3R/LEDGER size</td> </tr> </tbody> </table> <p>Setting range: -10 to +10 Initial setting: 0 Change in value per step: 0.6 mm</p>	Display	Operation	PUNCH TIMING	Adjustment of the amount of slack in the paper in punch mode	SADDLE STAPLE ADJUST	Booklet stapling position adjustment	SADDLE ADJUST	Adjustment of center folding position	Description	Setting range	Initial setting	Amount of slack in the paper	-15 to +15	0	Display	Description	A4R/LTR	Adjustment of booklet stapling position for A4R/LETTER size	B4R	Adjustment of booklet stapling position for B4R size	A3R/LDR	Adjustment of booklet stapling position for A3R/LEDGER size
Display	Operation																						
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B4R	Adjustment of booklet stapling position for B4R size																						
A3R/LDR	Adjustment of booklet stapling position for A3R/LEDGER size																						

Maintenance item No.	Description										
U248	Left stapling	Right stapling	Adjustment method								
			Proper								
	 Upper side is longer.	 Lower side is longer.	Decrease the preset value.								
	 Lower side is longer.	 Upper side is longer.	Increase the preset value.								
<p>4. Press the start key. The value is set. 5. To return to the screen for selecting an item, press the stop/clear key.</p>											
<p>Setting the center folding position</p>											
<p>1. Select SADDLE ADJUST on the screen for selecting an item. 2. Select the size to be set. 3. Change the setting using the cursor up/down keys.</p>											
<table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>A4R/LTR</td> <td>Adjustment of center folding position for A4R/LETTER size</td> </tr> <tr> <td>B4R</td> <td>Adjustment of center folding position for B4R size</td> </tr> <tr> <td>A3R/LDR</td> <td>Adjustment of center folding position for A3R/LEDGER size</td> </tr> </tbody> </table>				Display	Description	A4R/LTR	Adjustment of center folding position for A4R/LETTER size	B4R	Adjustment of center folding position for B4R size	A3R/LDR	Adjustment of center folding position for A3R/LEDGER size
Display	Description										
A4R/LTR	Adjustment of center folding position for A4R/LETTER size										
B4R	Adjustment of center folding position for B4R size										
A3R/LDR	Adjustment of center folding position for A3R/LEDGER size										
<p>Setting range: -10 to +10 Initial setting: 0 Change in value per step: 0.55 mm</p>											
<p>4. Press the start key. The value is set. 5. To return to the screen for selecting an item, press the stop/clear key.</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>											

Maintenance item No.	Description						
<p>U250</p>	<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.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Maintenance cycle</td> <td>0 to 600000</td> <td>500000</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Maintenance cycle	0 to 600000	500000
Description	Setting range	Initial setting					
Maintenance cycle	0 to 600000	500000					
<p>U251</p>	<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</p> <ol style="list-style-type: none"> Press the reset key. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> Enter a six-digit count using the numeric keys. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description																									
U252	<p>Setting the destination</p> <p>Description Switches the operations and screens of the machine according to the destination.</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 selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Select the destination. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>JAPAN METRIC</td> <td>Metric (Japan) specifications</td> </tr> <tr> <td>INCH</td> <td>Inch (North America) specifications</td> </tr> <tr> <td>EUROPE METRIC</td> <td>Metric (Europe) specifications</td> </tr> <tr> <td>ASIA PACIFIC</td> <td>Metric (Asia Pacific) specifications</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The setting is set, and the machine automatically returns to the same status as when the power is turned on. <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> <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> <ul style="list-style-type: none"> Initial setting according to the destinations <table border="1"> <thead> <tr> <th>Maintenance item No.</th> <th>Title</th> <th>Japan</th> <th>Inch</th> <th>Europe Metric, Asia Pacific</th> </tr> </thead> <tbody> <tr> <td>253</td> <td>Switching between double and single counts</td> <td>Single</td> <td>Double</td> <td>Double</td> </tr> <tr> <td>255</td> <td>Setting auto clear time</td> <td>120 s</td> <td>90 s</td> <td>90 s</td> </tr> </tbody> </table>	Display	Description	JAPAN METRIC	Metric (Japan) specifications	INCH	Inch (North America) specifications	EUROPE METRIC	Metric (Europe) specifications	ASIA PACIFIC	Metric (Asia Pacific) specifications	Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific	253	Switching between double and single counts	Single	Double	Double	255	Setting auto clear time	120 s	90 s	90 s
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JAPAN METRIC	Metric (Japan) specifications																									
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Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific																						
253	Switching between double and single counts	Single	Double	Double																						
255	Setting auto clear time	120 s	90 s	90 s																						
U253	<p>Switching between double and single counts</p> <p>Description Switches the count system for the total counter and other counters.</p> <p>Purpose According to user (copy service provider) request, select if A3/LEDGER or B4/LEGEL 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</p> <ol style="list-style-type: none"> Select double or single count. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SINGLE COUNT</td> <td>Single count for all size paper</td> </tr> <tr> <td>DOUBLE COUNT(A3/LEDGER)</td> <td>Double count for A3/LEDGER paper only</td> </tr> <tr> <td>DOUBLE COUNT(B4/LEGEL)</td> <td>Double count for B4/LEGEL size or larger</td> </tr> </tbody> </table> <p>Initial setting: DOUBLE COUNT(A3/LEDGER)</p> <ol style="list-style-type: none"> Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	SINGLE COUNT	Single count for all size paper	DOUBLE COUNT(A3/LEDGER)	Double count for A3/LEDGER paper only	DOUBLE COUNT(B4/LEGEL)	Double count for B4/LEGEL size or larger																	
Display	Description																									
SINGLE COUNT	Single count for all size paper																									
DOUBLE COUNT(A3/LEDGER)	Double count for A3/LEDGER paper only																									
DOUBLE COUNT(B4/LEGEL)	Double count for B4/LEGEL size or larger																									

Maintenance item No.	Description						
<p>U254</p>	<p>Turning auto start function on/off</p> <p>Description Selects if the auto start function is turned on.</p> <p>Purpose Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Select either ON or OFF. The selected item is displayed in reverse. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Display</th> <th style="text-align: center;">Description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">ON</td> <td>Auto start function on</td> </tr> <tr> <td style="text-align: center;">OFF</td> <td>Auto start function off</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <ol style="list-style-type: none"> Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Auto start function on	OFF	Auto start function off
Display	Description						
ON	Auto start function on						
OFF	Auto start function off						
<p>U255</p>	<p>Setting auto clear time</p> <p>Description Sets the time to return to initial settings after copying is complete.</p> <p>Purpose To be set according to frequency of use. Set to a comparatively long time for continuous copying at the same settings, and a comparatively short time for frequent copying at various settings.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Description</th> <th style="text-align: center;">Setting range</th> <th style="text-align: center;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>Auto clear time</td> <td>0 to 270 (s)</td> <td>90</td> </tr> </tbody> </table> <p>The setting can be changed by 30 s per step. When set to 0, the auto clear function is cancelled.</p> <ol style="list-style-type: none"> Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Auto clear time	0 to 270 (s)	90
Description	Setting range	Initial setting					
Auto clear time	0 to 270 (s)	90					

Maintenance item No.	Description						
U256	<p>Turning auto preheat/energy saver function on/off</p> <p>Description Selects if the auto preheat/energy saver function is turned on. When set to ON, the time to enter preheat/energy saver mode can be changed in copy management mode.</p> <p>Purpose According to user request, to set the preheat time to save energy, or enable copying promptly without the recovery time from preheat mode.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select ON or OFF. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Auto preheat/energy saver function on</td> </tr> <tr> <td>OFF</td> <td>Auto preheat/energy saver function off</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. When the setting is changed from OFF to ON, the auto preheat time is set to the initial setting of 15 minutes. <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>Purpose To change the copying operation after detection of toner empty status.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <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>Operation of copies after toner empty detection</td> </tr> </tbody> </table> <p>Setting the number of copies after turning off of the toner level sensor before indicating toner empty</p> <p>1. Change the setting using the cursor up/down keys.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>Number of copies to be made after turning off of the toner level sensor before indicating toner empty</td> <td>100 to 300 (copies)</td> <td>200</td> </tr> </tbody> </table> <p>The setting can be changed by 100 per step.</p> <p>2. Press the start key. The value is set, and the screen for selecting 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 border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>SINGLE</td> <td>Enables only single copying.</td> </tr> <tr> <td>CONTINUE</td> <td>Enables single and continuous copying.</td> </tr> </tbody> </table> <p>Initial setting: SINGLE</p> <p>2. Set the number of copies that can be made using the cursor up/down keys.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>Number of copies after toner empty detection</td> <td>0 to 200 (copies)</td> <td>5</td> </tr> </tbody> </table> <p>The setting can be changed by 5 copies per step. When set to 0, the number of copies is not limited regardless of the setting for single or continuous copying.</p> <p>3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion 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	EMPTY COUNT	Number of copies to be made after turning off of the toner level sensor before indicating toner empty	EMPTY MODE	Operation of copies after toner empty detection	Description	Setting range	Initial setting	Number of copies to be made after turning off of the toner level sensor before indicating toner empty	100 to 300 (copies)	200	Display	Description	SINGLE	Enables only single copying.	CONTINUE	Enables single and continuous copying.	Description	Setting range	Initial setting	Number of copies after toner empty detection	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	Operation of copies after toner empty detection																								
Description	Setting range	Initial setting																							
Number of copies to be made after turning off of the toner level sensor before indicating toner empty	100 to 300 (copies)	200																							
Display	Description																								
SINGLE	Enables only single copying.																								
CONTINUE	Enables single and continuous copying.																								
Description	Setting range	Initial setting																							
Number of copies after toner empty detection	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. If a paper jam occurs frequently in the finisher when the number of copies is counted at the time of paper ejection, copies are provided without copy counts. The copy service provider cannot charge for such copying. To prevent this, the copy timing should be made earlier. If a paper jam occurs frequently in the paper conveying or fixing sections when the number of copies is counted before the paper reaches those sections, copying is charged without a copy being made. To prevent this, the copy timing should be made later.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting 1. Select the copy count timing . The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FEED</td> <td>When secondary paper feed starts</td> </tr> <tr> <td>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 selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	FEED	When secondary paper feed starts	EJECT	When the paper is ejected		
Display	Description								
FEED	When secondary paper feed starts								
EJECT	When the paper is ejected								
U263	<p>Setting the paper ejection when copying from the DF</p> <p>Description Sets whether the copies will be ejected in the same or opposite order as the originals when copying from the DF.</p> <p>Purpose Set according to the preference of the user.</p> <p>Method Press the start key. The screen for selecting an item will be displayed.</p> <p>Setting 1. Use the cursor up/down keys to select the ejection order.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>FACE-DOWN (NOMAL)</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 selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Setting	FACE-DOWN (NOMAL)	Face down ejection	FACE-UP (SPEED)	Face up ejection with bitmap copy	FACE-UP (MEMORY)	Face up ejection with memory copy
Display	Setting								
FACE-DOWN (NOMAL)	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								
<p>U264</p>	<p>Setting the display order of the date</p> <p>Description Selects year, month and day as the order of that appears on lists, etc.</p> <p>Purpose Set according to the user preference.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the desired order. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Initial setting: MONTH-DATE-YEAR (for the inch specifications) DATE-MONTH-YEAR (for the metric specifications)</p> <ol style="list-style-type: none"> Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Setting	YEAR-MONTH-DATE	Year/Month/Day	MONTH-DATE-YEAR	Month/Day/Year	DATE-MONTH-YEAR	Day/Month/Year
Display	Setting								
YEAR-MONTH-DATE	Year/Month/Day								
MONTH-DATE-YEAR	Month/Day/Year								
DATE-MONTH-YEAR	Day/Month/Year								
<p>U265</p>	<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</p> <ol style="list-style-type: none"> Use the numeric keys or cursor up/down keys to adjust the preset value. Press the start key. The count is set , and the screen for selecting a maintenance 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 No. is displayed.</p>								

Maintenance item No.	Description						
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. The current setting is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Number of days after which to automatically delete documents</td> <td>0 to 7 (days)</td> <td>7</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Number of days after which to automatically delete documents	0 to 7 (days)	7
Description	Setting range	Initial setting					
Number of days after which to automatically delete documents	0 to 7 (days)	7					
U275	<p>Setting the number of sheets for duplex circulation</p> <p>Description Sets the number of sheets for circulation in the duplex copy mode.</p> <p>Purpose To reduce the number of sheets for circulation if paper jams occur frequently in the duplex copy mode.</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 an item to be set. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MODE0</td> <td>Circulation of five sheets</td> </tr> <tr> <td>MODE1</td> <td>Circulation of four sheets</td> </tr> </tbody> </table> <p>Initial setting: MODE0</p> <ol style="list-style-type: none"> 3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MODE0	Circulation of five sheets	MODE1	Circulation of four sheets
Display	Description						
MODE0	Circulation of five sheets						
MODE1	Circulation of four sheets						

Maintenance item No.	Description						
U330	<p>Setting the number of sheets to enter stacking mode during sort operation</p> <p>Description Sets the number of copies at which copy ejection will be switched from the optional document finisher's sub tray to its main tray when sorting is turned ON in the setting for the output mode under user simulation.</p> <p>Purpose To be set as required according to the number of copies the user makes.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Description</th> <th style="text-align: center;">Setting range</th> <th style="text-align: center;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>Number of copies to be ejected on the sub tray</td> <td>0 to 250 (sheets)</td> <td>100</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Initial setting	Number of copies to be ejected on the sub tray	0 to 250 (sheets)	100
Description	Setting range	Initial setting					
Number of copies to be ejected on the sub tray	0 to 250 (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 user request.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Select the ejection mode. The selected item is displayed in reverse. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Display</th> <th style="text-align: center;">Description</th> </tr> </thead> <tbody> <tr> <td>FACE UP</td> <td>Face-up ejection</td> </tr> <tr> <td>FACE DOWN</td> <td>Face-down ejection</td> </tr> </tbody> </table> <p>Initial setting: FACE UP</p> <ol style="list-style-type: none"> Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	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 Sets the coefficient of nonstandard sizes in relation to the A4/11" × 8¹/₂" size. The coefficient set here is used to convert the black ratio in relation to the A4/11" × 8¹/₂" size and to display the result in user simulation.</p> <p>Purpose To set the coefficient for converting the black ratio for nonstandard sizes in relation to the A4/11" × 8¹/₂" size for copying and printing respectively.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select copying (COPY) or printing (PRT). 2. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>COPY</td> <td>Size parameter for copying</td> <td>0.1 to 3.0</td> <td>1.0</td> </tr> <tr> <td>PRT</td> <td>Size parameter for printing</td> <td>0.1 to 3.0</td> <td>1.0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>	Display	Description	Setting range	Initial setting	COPY	Size parameter for copying	0.1 to 3.0	1.0	PRT	Size parameter for printing	0.1 to 3.0	1.0
Display	Description	Setting range	Initial setting										
COPY	Size parameter for copying	0.1 to 3.0	1.0										
PRT	Size parameter for printing	0.1 to 3.0	1.0										
U336	<p>Setting the HDD type</p> <p>Description Sets the manufacturer and type of the HDD.</p> <p>Purpose To set data according to the manufacturer and type of the new HDD after replacement.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>HDD type</td> <td>0 to 250</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>	Description	Setting range	Initial setting	HDD type	0 to 250	0						
Description	Setting range	Initial setting											
HDD type	0 to 250	0											

Maintenance item No.	Description												
U341	<p>Specific paper feed location setting for printing function</p> <p>Description Sets a paper feed location specified for printer output (only if a printer kit is installed).</p> <p>Purpose To use a paper feed location only for printer output.</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 paper feed location for the printer. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>CASSETTE 1</td> <td>Drawer 1</td> </tr> <tr> <td>CASSETTE 2</td> <td>Drawer 2</td> </tr> <tr> <td>CASSETTE 3</td> <td>Drawer 3</td> </tr> <tr> <td>CASSETTE 4</td> <td>Drawer 4</td> </tr> <tr> <td>SIDE DECK</td> <td>Optional side deck (55 cpm copier only)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The setting is set. <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	CASSETTE 1	Drawer 1	CASSETTE 2	Drawer 2	CASSETTE 3	Drawer 3	CASSETTE 4	Drawer 4	SIDE DECK	Optional side deck (55 cpm copier only)
Display	Description												
CASSETTE 1	Drawer 1												
CASSETTE 2	Drawer 2												
CASSETTE 3	Drawer 3												
CASSETTE 4	Drawer 4												
SIDE DECK	Optional side deck (55 cpm copier only)												
U342	<p>Setting the ejection restriction</p> <p>Description Sets or cancels the restriction on the number of sheets to be ejected continuously when the internal eject tray is selected as the eject location.</p> <p>Purpose According to user request, sets or cancels restriction on the number of sheets.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select ON or OFF. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Sets restriction on the number of sheets</td> </tr> <tr> <td>OFF</td> <td>Cancels restriction on the number of sheets</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The setting is set. <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	Sets restriction on the number of sheets	OFF	Cancels restriction on the number of sheets						
Display	Description												
ON	Sets restriction on the number of sheets												
OFF	Cancels restriction on the number of sheets												
U343	<p>Switching between duplex/simplex copy mode</p> <p>Description Switches the initial setting between duplex and simplex copy.</p> <p>Purpose To be set according to frequency of use: set to the more frequently used mode.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select ON or OFF. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Duplex copy</td> </tr> <tr> <td>OFF</td> <td>Simplex copy</td> </tr> </tbody> </table> <p>Initial setting: OFF</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Duplex copy	OFF	Simplex copy						
Display	Description												
ON	Duplex copy												
OFF	Simplex copy												

Maintenance item No.	Description										
U344	<p>Setting preheat/energy saver mode</p> <p>Description Changes the control for preheat/energy saver mode.</p> <p>Purpose According to user request, selects which has priority, the recovery time from preheat or energy saver.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Select control mode. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>INSTANT READY</td> <td>The fixing control temperature is not lowered and only the display on the operation panel is turned off.</td> </tr> <tr> <td>ENERGY STAR</td> <td>The fixing control temperature is lowered by 30°C/86°F and forced stabilization is performed 30 seconds after exiting preheat.</td> </tr> <tr> <td>E 2000</td> <td>The fixing control temperature is lowered by 30°C/86°F and forced stabilization is performed 30 seconds after exiting preheat.</td> </tr> <tr> <td>TOP RUNNER</td> <td>Control in accordance with Top Runner is performed.</td> </tr> </tbody> </table> <p>Initial setting: ENERGY STAR</p> <ol style="list-style-type: none"> 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion 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	INSTANT READY	The fixing control temperature is not lowered and only the display on the operation panel is turned off.	ENERGY STAR	The fixing control temperature is lowered by 30°C/86°F and forced stabilization is performed 30 seconds after exiting preheat.	E 2000	The fixing control temperature is lowered by 30°C/86°F and forced stabilization is performed 30 seconds after exiting preheat.	TOP RUNNER	Control in accordance with Top Runner is performed.
Display	Description										
INSTANT READY	The fixing control temperature is not lowered and only the display on the operation panel is turned off.										
ENERGY STAR	The fixing control temperature is lowered by 30°C/86°F and forced stabilization is performed 30 seconds after exiting preheat.										
E 2000	The fixing control temperature is lowered by 30°C/86°F and forced stabilization is performed 30 seconds after exiting preheat.										
TOP RUNNER	Control in accordance with Top Runner is performed.										
U345	<p>Setting the value for maintenance due indication</p> <p>Description Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends. When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message is displayed. This maintenance mode is effective for only Japanese specification.</p>										

Maintenance item No.	Description						
<p>U347</p>	<p>Setting auto drawer size detection</p> <p>Description Turns the auto drawer size detection function on/off.</p> <p>Purpose To be used when turning the auto paper size (in the drawers) 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</p> <p>1. Select ON or OFF. The selected item is displayed in reverse.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Detects the paper sizes in the drawers automatically.</td> </tr> <tr> <td>OFF</td> <td>Does not detect the paper sizes in the drawers automatically.</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <p>2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ON	Detects the paper sizes in the drawers automatically.	OFF	Does not detect the paper sizes in the drawers automatically.
Display	Description						
ON	Detects the paper sizes in the drawers automatically.						
OFF	Does not detect the paper sizes in the drawers automatically.						
<p>U350</p>	<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</p> <p>1. Select ON or OFF. The selected item is displayed in reverse.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">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 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	Error report is output	OFF	Error report is not output
Display	Description						
ON	Error report is output						
OFF	Error report is not output						

Maintenance item No.	Description						
U355	<p>Setting the output mode for face up output</p> <p>Description Specifies whether to output from the first page so that the pages after the second page are stacked on the first page or to output from the last page so that the first page is stacked at the top when outputting face up in printing.</p> <p>Purpose Set according to the preference of the user.</p> <p>Method Press the start key. The screen for adjustment is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Select The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FIRST PRINT</td> <td>To output from the first page</td> </tr> <tr> <td>ORDER OF PAGE</td> <td>To output from the last page</td> </tr> </tbody> </table> <p>Initial setting: FIRST PRINT</p> <ol style="list-style-type: none"> Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	FIRST PRINT	To output from the first page	ORDER OF PAGE	To output from the last page
Display	Description						
FIRST PRINT	To output from the first page						
ORDER OF PAGE	To output from the last page						
U402	<p>Adjusting margins of image printing</p> <p>Adjustment See page 1-6-18.</p>						
U403	<p>Adjusting margins for scanning an original on the contact glass</p> <p>Adjustment See page 1-6-38.</p>						
U404	<p>Adjusting margins for scanning an original from the DF</p> <p>Adjustment See page 1-6-72.</p>						
U407	<p>Adjusting the leading edge registration for memory image printing</p> <p>Adjustment See page 1-6-16.</p>						

Maintenance item No.	Description																
<p>U504</p>	<p>Initializing the scanner NIC</p> <p>Description Initializing the optional scanner NIC to its factory default.</p> <p>Purpose To return to a setup at the time of factory shipments.</p> <p>Method</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 scanner NIC is initialized. <p>Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>																
<p>U901</p>	<p>Checking/clearing copy counts by paper feed locations</p> <p>Description Displays or clears copy counts by paper feed locations.</p> <p>Purpose To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The counts by paper feed locations are displayed. 2. Change the screen using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th> <th>Paper feed locations</th> </tr> </thead> <tbody> <tr> <td>BYPASS</td> <td>Bypass tray</td> </tr> <tr> <td>FIRST</td> <td>Drawer 1</td> </tr> <tr> <td>SECOND</td> <td>Drawer 2</td> </tr> <tr> <td>THIRD</td> <td>Drawer 3</td> </tr> <tr> <td>FORTH</td> <td>Drawer 4</td> </tr> <tr> <td>SIDE DECK</td> <td>Optional side deck (55 cpm copier only)</td> </tr> <tr> <td>DUPLEX</td> <td>Duplex unit</td> </tr> </tbody> </table> <p>When an optional paper feed device is not installed, the corresponding count is not displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the count to be cleared. The selected item is displayed in reverse. To clear the counts for all paper feed locations, press the reset key. 2. Press the start key. The count is cleared. When clearing all counts, the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Paper feed locations	BYPASS	Bypass tray	FIRST	Drawer 1	SECOND	Drawer 2	THIRD	Drawer 3	FORTH	Drawer 4	SIDE DECK	Optional side deck (55 cpm copier only)	DUPLEX	Duplex unit
Display	Paper feed locations																
BYPASS	Bypass tray																
FIRST	Drawer 1																
SECOND	Drawer 2																
THIRD	Drawer 3																
FORTH	Drawer 4																
SIDE DECK	Optional side deck (55 cpm copier only)																
DUPLEX	Duplex unit																

Maintenance item No.	Description						
<p>U903</p>	<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>Implementation Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COUNT</td> <td>Displays/clears the jam counts</td> </tr> <tr> <td>TOTAL COUNT</td> <td>Displays the total jam counts</td> </tr> </tbody> </table> <p>Method: Displays/clears the jam counts</p> <ol style="list-style-type: none"> 1. Select COUNT in the screen for selecting an item. The count for jam detection by type will be displayed. 2. Change the screen using the * or # keys. 3. Select the counts for all jam codes, press the reset key. 4. Press the start key. The count is cleared. <p>Method: Displays the total jam counts</p> <ol style="list-style-type: none"> 1. Select TOTAL COUNT in the screen for selecting an item. The total number of jam counts by type will be displayed. 2. Use the * or # keys to switch the display. You cannot clear the total number of jam count. To return to the screen for selecting an item, press the stop clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	COUNT	Displays/clears the jam counts	TOTAL COUNT	Displays the total jam counts
Display	Description						
COUNT	Displays/clears the jam counts						
TOTAL COUNT	Displays the total jam counts						
<p>U904</p>	<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>Implementation Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COUNT</td> <td>Displays/clears the call for service counts</td> </tr> <tr> <td>TOTAL COUNT</td> <td>Displays the total call for service counts</td> </tr> </tbody> </table> <p>Method: Displays/clears the call for service counts</p> <ol style="list-style-type: none"> 1. Select COUNT in the screen for selecting an item. The count for call for service detection by type will be displayed. 2. Change the screen using the * or # keys. 3. Select the counts for all service call, press the reset key. 4. Press the start key. The count is cleared. <p>Method: Displays the total call for service counts</p> <ol style="list-style-type: none"> 1. Select TOTAL COUNT in the screen for selecting an item. The total number of call for service counts by type will be displayed. 2. Use the * or # keys to switch the display. You cannot clear the total number of call for service count. To return to the screen for selecting an item, press the stop clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	COUNT	Displays/clears the call for service counts	TOTAL COUNT	Displays the total call for service counts
Display	Description						
COUNT	Displays/clears the call for service counts						
TOTAL COUNT	Displays the total call for service counts						

Maintenance item No.	Description																				
<p>U905</p>	<p>Checking/clearing counts by optional devices</p> <p>Description Displays or clears the counts of the DF or optional finisher.</p> <p>Purpose To check the use of the DF and optional finisher. Also to clear the counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the device, the count of which is to be checked. The count of the selected device is displayed. <ul style="list-style-type: none"> • DF <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: center;">Display</th> <th style="text-align: center;">Description</th> </tr> </thead> <tbody> <tr> <td>CHANGE</td> <td>Original replacement count</td> </tr> <tr> <td>ADF</td> <td>No. of single-sided originals that has passed through the DF in ADF mode</td> </tr> <tr> <td>RADF</td> <td>No. of double-sided originals that has passed through the DF in RADF mode</td> </tr> </tbody> </table> • Finisher <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: center;">Display</th> <th style="text-align: center;">Description</th> </tr> </thead> <tbody> <tr> <td>CP CNT</td> <td>No. of copies that has passed</td> </tr> <tr> <td>STAPLE</td> <td>Frequency the stapler has been activated</td> </tr> <tr> <td>PUNCH</td> <td>Frequency the punch has been activated</td> </tr> <tr> <td>STACK</td> <td>Frequency the stacker has been activated</td> </tr> <tr> <td>SADDLE</td> <td>Frequency the center holding 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. Select the counts for all, press the reset key. 2. Press the start key. The count is cleared. 3. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	CHANGE	Original replacement count	ADF	No. of single-sided originals that has passed through the DF in ADF mode	RADF	No. of double-sided originals that has passed through the DF in RADF mode	Display	Description	CP CNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	PUNCH	Frequency the punch has been activated	STACK	Frequency the stacker has been activated	SADDLE	Frequency the center holding has been activated
Display	Description																				
CHANGE	Original replacement count																				
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Display	Description																				
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STAPLE	Frequency the stapler has been activated																				
PUNCH	Frequency the punch has been activated																				
STACK	Frequency the stacker has been activated																				
SADDLE	Frequency the center holding has been activated																				
<p>U906</p>	<p>Resetting partial operation control</p> <p>Description Resets the service call code for partial operation control.</p> <p>Purpose To be reset after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Press EXECUTE on the touch panel. 3. Press the start key to reset partial operation control. The maintenance mode is exited, and the machine returns to the same status as when the main switch is turned on. 																				

Maintenance item No.	Description								
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 screen for selecting an item is displayed. 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"> Select the count to be cleared. The selected item is displayed in reverse. To clear the counts for all, press the reset key. Press the start key. The count is cleared, When clearing all counts, the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	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								
U908	<p>Changing the total counter value</p> <p>Description Displays, clears and changes the total counter value.</p> <p>Purpose To check the total counter value.</p> <p>Method Press the start key. The screen for total count value is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TOTAL COUNT</td> <td>Electronic total counter value</td> </tr> <tr> <td>TOTAL COUNT (MACHINE)</td> <td>Mechanical total counter value entered at the beginning</td> </tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> Select the count to be cleared. The selected item is displayed in reverse. Press the reset key. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	TOTAL COUNT	Electronic total counter value	TOTAL COUNT (MACHINE)	Mechanical total counter value entered at the beginning		
Display	Description								
TOTAL COUNT	Electronic total counter value								
TOTAL COUNT (MACHINE)	Mechanical total counter value entered at the beginning								
U909	<p>Checking/clearing the fixing web count</p> <p>Description Displays and clears the count of the fixing web roller operation.</p> <p>Purpose To clear the fixing web counts after replacing the fixing web roller during maintenance or for other reasons.</p> <p>Method Press the start key.</p> <p>Clearing</p> <ol style="list-style-type: none"> Press the reset key. Press the start key. The value is cleared. The screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> Enter a six-digit value using the numeric keys. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>								

Maintenance item No.	Description
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</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Press CANCEL on the touch panel. 3. Press the start key. The accumulated black ratio data is cleared, and the screen for selecting a maintenance item is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p>
U911	<p>Checking/clearing copy counts by paper sizes</p> <p>Description Displays and clears the paper feed counts by paper sizes.</p> <p>Purpose To check or clear the counts after replacing consumable parts.</p> <p>Method Press the start key. The screen for the paper feed counts by paper size is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the paper size. The selected item is displayed in reverse. To clear all counts, press the reset key. 2. Press the start key. The count is cleared. When clearing all counts, the screen for selecting a maintenance item is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>
U921	<p>Checking/clearing the waste toner box maintenance count value</p> <p>Description Displays and clears the count value of waste toner box</p> <p>Purpose To check the period of replacement of waste toner box. Also to clear the count value after replacement.</p> <p>Method Press the start key.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Press the reset key. 2. Press the start key. The value is cleared. The screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Enter a six-digit value using the numeric keys. 2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>

Maintenance item No.	Description						
U922	<p>Checking/clearing the solenoid count value</p> <p>Description Displays and clears the count value of solenoid</p> <p>Purpose To check the period of replacement of solenoid. Also to clear the count value after replacement.</p> <p>Method Press the start key.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>BRA SOL COUNT</td> <td>Feed shift solenoid (FSSOL)</td> </tr> <tr> <td>DPRAS SOL COUNT</td> <td>Duplex pressure release solenoid (DUPPRSOL)</td> </tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the item to be cleared. 2. Press the reset key. 3. Press the start key. The value is cleared. The screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be changed. 2. Enter a six-digit value using the numeric keys. 3. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance No. item is displayed.</p>	Display	Description	BRA SOL COUNT	Feed shift solenoid (FSSOL)	DPRAS SOL COUNT	Duplex pressure release solenoid (DUPPRSOL)
Display	Description						
BRA SOL COUNT	Feed shift solenoid (FSSOL)						
DPRAS SOL COUNT	Duplex pressure release solenoid (DUPPRSOL)						
U960	<p>Outputting the machine used circumstances list</p> <p>Description Outputs machine used circumstances list and clears the data.</p> <p>Purpose To check the machine operation situation. Also to clear the data.</p> <p>Method Press the start key.</p> <p>Outputting the list</p> <ol style="list-style-type: none"> 1. Select OUTPUT. 2. Press the start key to output the list. <p>Clearing</p> <ol style="list-style-type: none"> 1. Select COUNT CLEAR. 2. Press the start key to clear the count. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						
U990	<p>Checking/clearing the time for the exposure lamp to light</p> <p>Description Displays, clears or changes the accumulated time for the exposure lamp to light.</p> <p>Purpose To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement.</p> <p>Method Press the start key. The accumulated time of illumination for the exposure lamp is displayed in minutes.</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Press the reset key. 2. Press the start key. The accumulated time is cleared, and the screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Enter a six-digit accumulated time using the numeric keys. 2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the accumulated time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description						
<p>U991</p>	<p>Checking/clearing the scanner count</p> <p>Description Displays or clears the scanner operation count.</p> <p>Purpose To check the status of use of the scanner.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TOTAL SCAN COUNT</td> <td>Counts of scanner operation</td> </tr> <tr> <td>NT SCAN COUNT</td> <td>Counts of network scanner operation</td> </tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the item to be cleared. 2. Press the reset key. 3. Press the start key. The count is cleared. The screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Select the item to be changed. 2. Enter a seven-digit count using the numeric key. 3. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance No. item is displayed.</p>	Display	Description	TOTAL SCAN COUNT	Counts of scanner operation	NT SCAN COUNT	Counts of network scanner operation
Display	Description						
TOTAL SCAN COUNT	Counts of scanner operation						
NT SCAN COUNT	Counts of network scanner operation						
<p>U992</p>	<p>Checking or clearing the printer count</p> <p>Description Displays, clears or changes the print count of the printer when the optional printer board is installed.</p> <p>Purpose To check the frequency of use of the printer.</p> <p>Method Press the start key. The screen</p> <p>Clearing</p> <ol style="list-style-type: none"> 1. Press the reset key. 2. Press the start key. The count is cleared. The screen for selecting a maintenance item No. is displayed. <p>Setting</p> <ol style="list-style-type: none"> 1. Enter a seven-digit count using the numeric keys. 2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance No. item is displayed.</p>						

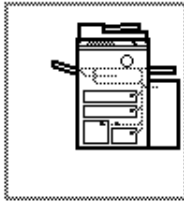
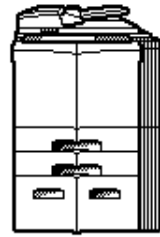

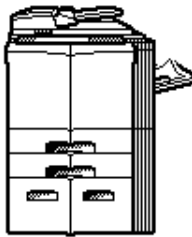
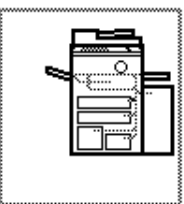
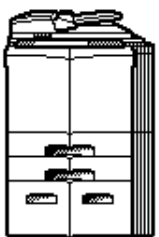
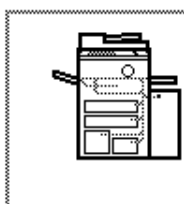
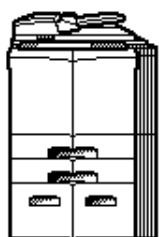
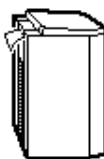
1-5-1 Paper misfeed detection

(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 drawer, front cover or right cover. When paper is jammed in the DF, open the DF original reversing cover. To clear a jam in the feedshift and duplex sections, draw out the duplex unit.

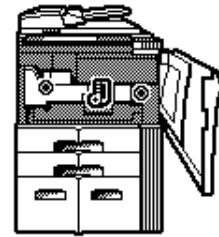
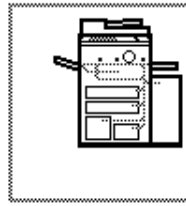
Paper misfeed detection can be reset by opening and closing the respective covers to turn safety switch 1 or 2 off and on.

<ul style="list-style-type: none"> • Misfeed in drawer Jam code 10 Jam code 11 Jam code 12 Jam code 13 Jam code 16 Jam code 17 Jam code 31 	 
<ul style="list-style-type: none"> • Misfeed in bypass Jam code 14 	 
<ul style="list-style-type: none"> • Misfeed in right cover Jam code 18 Jam code 19 Jam code 20 Jam code 21 Jam code 22 Jam code 24 Jam code 25 Jam code 26 Jam code 27 Jam code 28 Jam code 29 	 
<ul style="list-style-type: none"> • Misfeed in side deck*1 Jam code 15 	  

*1: Optional for 55 cpm copier only. *2: Optional.

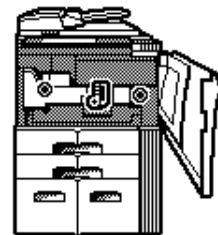
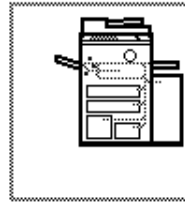
• Misfeed in paper conveying section

- Jam code 23
- Jam code 30
- Jam code 32



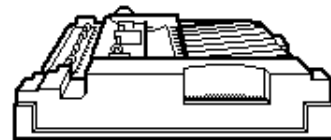
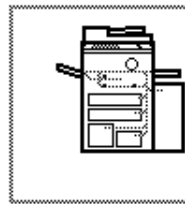
• Misfeed in fixing section

- Jam code 40
- Jam code 50
- Jam code 52
- Jam code 53



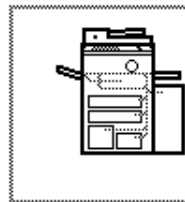
• Misfeed in duplex section

- Jam code 51
- Jam code 60
- Jam code 61
- Jam code 62
- Jam code 63
- Jam code 64
- Jam code 65
- Jam code 66
- Jam code 67
- Jam code 68



• Misfeed in DF

- Jam code 70
- Jam code 71
- Jam code 72
- Jam code 73
- Jam code 74
- Jam code 75
- Jam code 76



• Misfeed in document finisher*2

- Jam code 80 to 95

*1: Optional for 55 cpm copier only. *2: Optional.

(2) Paper misfeed detection conditions

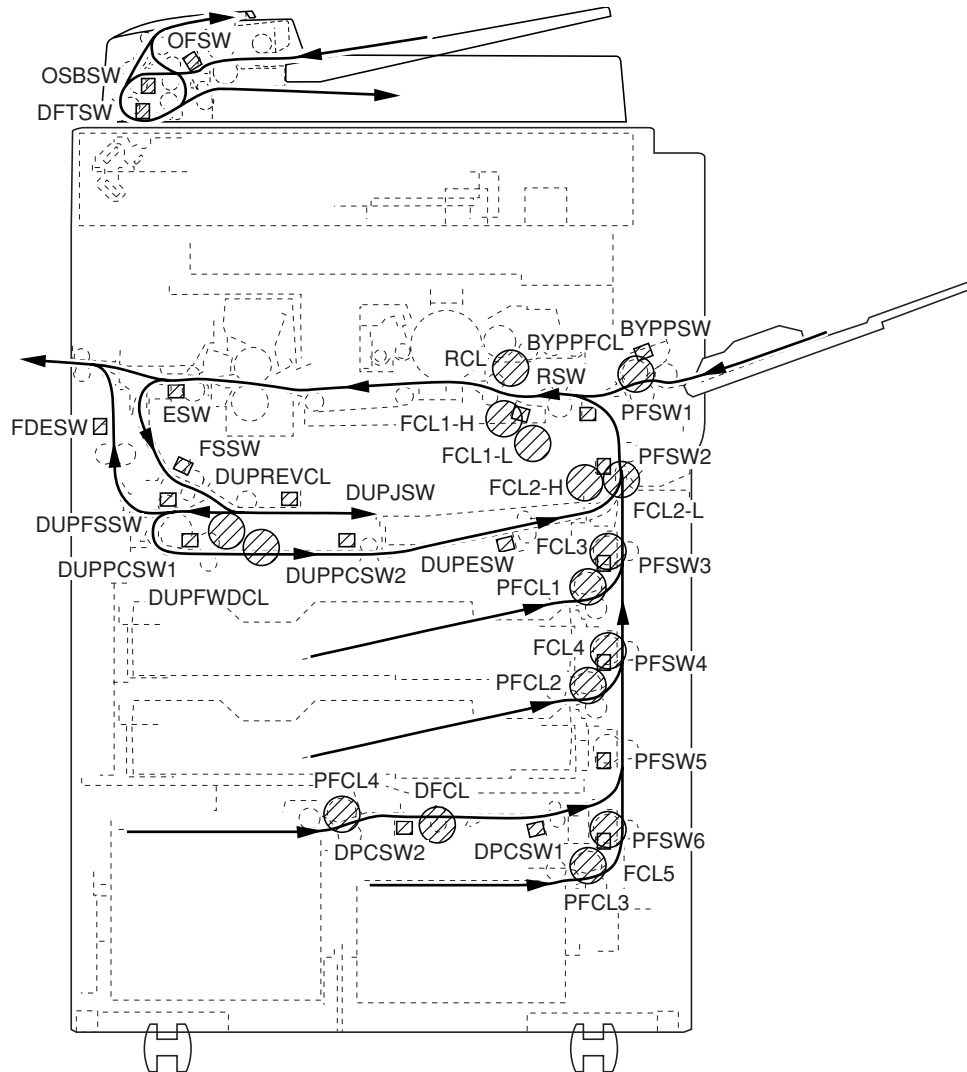


Figure 1-5-1

Section	Jam code	Description	Conditions
Paper feed section	10	No paper feed from drawer 1	Paper feed switch 3 (PFSW3) does not turn on within 660 ms of paper feed clutch 1 (PFCL1) turning on; the clutch is then successively turned off for 1 s and turned back on once, but the switch again fails to turn on within 660 ms.
	11	No paper feed from drawer 2	Paper feed switch 4 (PFSW4) does not turn on within 660 ms of paper feed clutch 2 (PFCL2) turning on; the clutch is then successively turned off for 1 s and turned back on once, but the switch again fails to turn on within 660 ms.
	12	No paper feed from drawer 3	Paper feed switch 6 (PFSW6) does not turn on within 660 ms of paper feed clutch 3 (PFCL3) turning on; the clutch is then successively turned off for 1 s and turned back on once, but the switch again fails to turn on within 660 ms.
	13	No paper feed from drawer 4	Deck paper conveying switch 1 (DPCSW1) does not turn on within 660 ms of paper feed clutch 4 (PFCL4) turning on; the clutch is then successively turned off for 1 s and turned back on once, but the switch again fails to turn on within 660 ms.
	14	No paper feed from by-pass	Paper feed switch 1 (PFSW1) does not turn on within 980 ms of the bypass paper feed clutch (BYPPFCL) turning on; the clutch is then successively turned off for 1 s and turned back on once, but the switch again fails to turn on within 980 ms.
	15	No paper feed from side deck ^{*1}	Paper feed switch 2 (PFSW2) does not turn on within 660 ms of the side deck paper feed clutch (SDPFCL) turning on; the clutch is then successively turned off for 1 s and turned back on once, but the switch again fails to turn on within 660 ms.
	16	Misfeed in deck paper conveying section 1	Deck paper conveying switch 1 (DPCSW1) does not turn on within 760 ms of deck paper conveying switch 2 (DPCSW2) turning on.
	17	Misfeed in deck paper conveying section 2	Paper feed switch 5 (PFSW5) does not turn on within 840 ms of deck paper conveying switch 1 (DPCSW1) turning on. Deck paper conveying switch 1 (DPCSW1) does not turn off within 760 ms of deck paper conveying switch 2 (DPCSW2) turning off.
	18	Misfeed in copier vertical paper conveying section 1	Paper feed switch 1 (PFSW1) does not turn on within 760 ms of paper feed switch 2 (PFSW2) turning on.
	19	Misfeed in copier vertical paper conveying section 2	Paper feed switch 2 (PFSW2) does not turn on within 800 ms of paper feed switch 3 (PFSW3) turning on.
	20	Misfeed in copier vertical paper conveying section 3	Paper feed switch 3 (PFSW3) does not turn on within 800 ms of paper feed switch 4 (PFSW4) turning on.
	21	Misfeed in copier vertical paper conveying section 4	Paper feed switch 4 (PFSW4) does not turn on within 800 ms of paper feed switch 5 (PFSW5) turning on.
	22	Misfeed in copier vertical paper conveying section 5	Paper feed switch 5 (PFSW5) does not turn on within 760 ms of paper feed switch 6 (PFSW6) turning on.
23	Misfeed in converging section	The registration switch (RSW) does not turn on within 740 ms of paper feed switch 1 (PFSW1) turning on.	

*1: Optional for 55 cpm copier only. *2: Optional.
1-5-4

Section	Jam code	Description	Conditions
Paper feed section	24	Multiple sheets in copier vertical conveying section 1	Paper feed switch 2 (PFSW2) does not turn off within the time required to convey the length of the used paper size plus 1470 ms of turning on. Paper feed switch 2 (PFSW2) does not turn off within 800 ms of paper feed switch 3 (PFSW3) turning off.
	25	Multiple sheets in copier vertical conveying section	Paper feed switch 2 (PFSW2) does not turn off by the previous paper within 1330 ms of duplex eject switch (DUPESW) turning on.
	26	Multiple sheets in copier vertical conveying section 2	Paper feed switch 3 (PFSW3) does not turn off within the time required to convey the length of the used paper size plus 1470 ms of turning on. Paper feed switch 3 (PFSW3) does not turn off within 800 ms of paper feed switch 4 (PFSW4) turning off.
	27	Multiple sheets in copier vertical conveying section 3	Paper feed switch 4 (PFSW4) does not turn off within the time required to convey the length of the used paper size plus 1470 ms of turning on. Paper feed switch 4 (PFSW4) does not turn off within 800 ms of paper feed switch 5 (PFSW5) turning off.
	28	Multiple sheets in copier vertical conveying section 4	Paper feed switch 5 (PFSW5) does not turn off within the time required to convey the length of the used paper size plus 1470 ms of turning on. Paper feed switch 5 (PFSW5) does not turn off within 760 ms of paper feed switch 6 (PFSW6) turning off.
	29	Multiple sheets in copier vertical conveying section 5	Paper feed switch 6 (PFSW6) does not turn off within the time required to convey the length of the used paper size plus 1470 ms of turning on. Paper feed switch 6 (PFSW6) does not turn off within 930 ms of deck paper conveying switch 2 (DPCSW2) turning off.
	30	Multiple sheets in converging section	Paper feed switch 1 (PFSW1) does not turn off within the time required to convey the length of the used paper size plus 2179 ms of turning on. Paper feed switch 1 (PFSW1) does not turn off within 667 ms of paper feed switch 2 (PFSW2) turning off.
	31	Multiple sheets in deck paper conveying section	Deck paper conveying switch 2 (DPCSW2) does not turn off within the time required to convey the length of the used paper size plus 1470 ms of turning on.
Paper conveying section	32	Misfeed in registration/transfer section	The registration switch (RSW) does not turn off within 670 ms of paper feed switch 1 (PFSW1) turning off.
Fixing section	40	Misfeed in fixing section	The eject switch (ESW) does not turn on within 2260 ms of the registration clutch (RCL) turning on. Even if 2260 ms elapses after the registration clutch (RCL) turns on, the OFF status of the eject switch (ESW) for the preceding paper is not detected.
Eject section	50	Misfeed in eject section	The eject switch (ESW) does not turn off within the time required to convey the length of the used paper size plus 2180 ms of turning on.
	51	Misfeed in face down eject section	The face down eject switch (FDESW) does not turn off within the time required to convey the length of the used paper size plus 2180 ms of turning on.

Section	Jam code	Description	Conditions
Feedshift section	52	Misfeed in feedshift section	The feedshift switch (FSSW) does not turn on within 1190 ms of the eject switch (ESW) turning on.
	53	Misfeed in feedshift detention section	The feedshift switch (FSSW) does not turn off within 1190 ms of the eject switch (ESW) turning off. Even if 1190 ms elapses after the eject switch (ESW) turns on, the OFF status of the feedshift switch (FSSW) for the preceding paper is not detected.
Duplex section	60	Misfeed in duplex tray section	The duplex feedshift switch (DUPFSSW) does not turn on within 860 ms of the duplex reversing clutch (DUPREVCL) turning on.
	61	Misfeed in duplex feedshift section (face down eject)	The face down eject switch (FDESW) does not turn on within 1120 ms of the duplex feedshift switch (DUPFSSW) turning on.
	62	Misfeed in duplex feedshift section (duplex)	Duplex paper conveying switch 1 (DUPPCSW1) does not turn on within 910 ms of the duplex feedshift switch (DUPFSSW) turning on. Even if 860 ms elapses after the duplex reverse clutch (DUPREVCL) turns on, the ON status of the duplex feedshift switch (DUPFSSW) for the preceding paper is not detected.
	63	Misfeed in duplex paper conveying section 1	Duplex paper conveying switch 2 (DUPPCSW2) does not turn on within 1280 ms of duplex paper conveying switch 1 (DUPPCSW1) turning on.
	64	Misfeed in duplex paper conveying detention section 1	Duplex paper conveying switch 2 (DUPPCSW2) does not turn off within 1280 ms of duplex paper conveying switch 1 (DUPPCSW1) turning off. Duplex paper conveying switch 2 (DUPPCSW2) does not turn off within 1280 ms of duplex paper conveying switch 1 (DUPPCSW1) turning on.
	65	Misfeed in duplex paper conveying section 2	The duplex eject switch (DUPESW) does not turn on within 1270 ms of duplex paper conveying switch 2 (DUPPCSW2) turning on.
	66	Misfeed in duplex paper conveying detention section 2	The duplex eject switch (DUPESW) does not turn off within 1270 ms of duplex paper conveying switch 2 (DUPPCSW2) turning off. The duplex eject switch (DUPESW) does not turn off within 1270 ms of duplex paper conveying switch 2 (DUPPCSW2) turning on.
	67	Misfeed in duplex eject section	Paper feed switch 1 (PFSW1) does not turn on within 1200 ms of the duplex eject switch (DUPESW) turning on.
	68	Misfeed in duplex eject detention section	Paper feed switch 1 (PFSW1) does not turn off within 1200 ms of the duplex eject switch (DUPESW) turning off.
	DF	70	No original feed
71		An original jam in the original feed section 1	In the secondary original feed in the 1 sided original mode, even if the specified number of pulses of the original feed motor (OFM) passes after the original switchback switch (OSBSW) turns on, the ON status of the DF timing switch (DFTSW) is not detected.

Section	Jam code	Description	Conditions
DF	72	An original jam in the original feed section 2	<p>In the secondary original feed in the 1 sided original mode, even if the specified number of pulses of the original conveying motor (OCM) passes after the DF timing switch (DFTSW) turns on, the OFF status of the original feed switch (OFSW) or the original switchback switch (OSBSW) is not detected.</p> <p>In the original switchback in the 2 sided original mode, even if the specified number of pulses of the original feed motor (OFM) passes after the original feed switch (OFSW) turns on, the OFF status of the original feed switch (OFSW) is not detected and the ON status of the original switchback switch (OSBSW) is not detected.</p>
	73	An original jam in the original conveying section	<p>In the secondary original feed in the 1 sided or 2 sided original mode, even if the specified number of pulses of the original conveying motor (OCM) passes after the DF timing switch (DFTSW) turns on, the OFF status of the DF timing switch (DFTSW) is not detected.</p> <p>In the secondary original feed in the 1 sided or 2 sided original mode, before the specified number of pulses of the original conveying motor (OCM) passes after the DF timing switch (DFTSW) turns on, the OFF status of the DF timing switch (DFTSW) is detected.</p>
	74	An original jam remaining after retries	In the secondary original feed in the 1 sided or 2 sided original mode, even if retry operation is performed five times, secondary original feed is not performed.
	75	An original jam in the switchback section 1	<p>In the original switchback in the 2 sided original mode, even if the specified number of pulses of the original feed motor (OFM) passes after the original switchback switch (OSBSW) turns on, the OFF status of the original switchback switch (OSBSW) is not detected.</p> <p>In the secondary original feed in the 2 sided original mode, even if the specified number of pulses of the original feed motor (OFM) passes after the original conveying motor (OCM) turns on, the ON status of the DF timing switch (DFTSW) is not detected.</p> <p>In the original switchback in the 2 sided original mode, even if the specified number of pulses of the original feed motor (OFM) passes after the original feed switch (OFSW) turns on, the OFF status of the original feed switch (OFSW) is not detected and the OFF status of the original switchback switch (OSBSW) is detected.</p>
	76	An original jam in the switchback section 2	In the original switchback for the second original or after in the 2 sided original mode, even if the specified number of pulses of the original conveying motor (OCM) passes after the DF timing switch (DFTSW) turns on, the ON status of the original switchback switch (OSBSW) is not detected.

Section	Jam code	Description	Conditions
Finisher*2	80	Jam between the finisher and copier	There is no reply.
	81	Paper jam during paper insertion to the finisher	See the finisher service manual.
	82	Paper jam during paper insertion to the finisher and paper ejection to the sub tray	See the finisher service manual.
	83	Paper jam at the siding drum	See the finisher service manual.
	84	Paper jam during paper insertion to the intermediate tray	See the finisher service manual.
	85	Paper jam during ejection of stack of paper	See the finisher service manual.
	86	Jam in eject section of main tray	See the finisher service manual.
	87	Jam in eject section (middle tray) of main tray	See the finisher service manual.
	88	Jam in eject section of main tray	See the finisher service manual.
	89	Jam in cover open	See the finisher service manual.
	90	Jam in stapler	See the finisher service manual.
	91	Jam in saddle paper entry section	See the finisher service manual.
	92	Jam in saddle paper entry section	See the finisher service manual.
	93	Jam in saddle tray section	See the finisher service manual.
	94	Jam in saddle eject section	See the finisher service manual.
	95	Jam in saddle eject section	See the finisher service manual.

*1: Optional for 55 cpm copier only. *2: Optional.
1-5-8

(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 1/2/3/4/5/6, the registration switch or eject switch.	Check visually and remove it, if any.
	Defective paper feed switch 1.	Run maintenance item U031 and turn paper feed switch 1 on and off manually. Replace paper feed switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 2.	Run maintenance item U031 and turn paper feed switch 2 on and off manually. Replace paper feed switch 2 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 3.	Run maintenance item U031 and turn paper feed switch 3 on and off manually. Replace paper feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 4.	Run maintenance item U031 and turn paper feed switch 4 on and off manually. Replace paper feed switch 4 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 5.	Run maintenance item U031 and turn paper feed switch 5 on and off manually. Replace paper feed switch 5 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 6.	Run maintenance item U031 and turn paper feed switch 6 on and off manually. Replace paper feed switch 6 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.	
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 1). Jam code 10	Paper in drawer 1 is extremely curled.	Change the paper.
	Check if the upper paper feed pulley, lower paper feed pulley or upper forwarding pulley of drawer 1 are deformed.	Check visually and replace any deformed pulleys.
	Broken paper feed switch 3 actuator.	Check visually and replace paper feed switch 3 if its actuator is broken.
	Defective paper feed switch 3.	Run maintenance item U031 and turn paper feed switch 3 on and off manually. Replace paper feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 1). Jam code 10	Check if paper feed clutch 1 malfunctions.	Run maintenance item U032 and select paper feed clutch 1 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 1.	Check (see page 1-5-46).
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 2). Jam code 11	Paper in drawer 2 is extremely curled.	Change the paper.
	Check if the upper paper feed pulley, lower paper feed pulley or upper forwarding pulley of drawer 2 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.	Run maintenance item U031 and turn paper feed switch 4 on and off manually. Replace paper feed switch 4 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if paper feed clutch 2 malfunctions.	Run maintenance item U032 and select paper feed clutch 2 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 2.	Check (see page 1-5-46).
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 3). Jam code 12	Paper in drawer 3 is extremely curled.	Change the paper.
	Broken paper feed switch 6 actuator.	Check visually and replace paper feed switch 6 if its actuator is broken.
	Defective paper feed switch 6.	Run maintenance item U031 and turn paper feed switch 6 on and off manually. Replace paper feed switch 6 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if paper feed clutch 3 malfunctions.	Run maintenance item U032 and select paper feed clutch 3 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 3.	Check (see page 1-5-46).
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 4). Jam code 13	Paper in drawer 4 is extremely curled.	Change the paper.
	Broken deck paper conveying switch 1 actuator.	Check visually and replace deck feed switch 1 if its actuator is broken.
	Defective deck paper conveying switch 1.	Run maintenance item U031 and turn deck paper conveying switch 1 on and off manually. Replace deck paper conveying switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 4). Jam code 13	Check if paper feed clutch 4 malfunctions.	Run maintenance item U032 and select paper feed clutch 4 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with paper feed clutch 4.	Check (see page 1-5-46).
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from bypass). Jam code 14	Paper on the bypass table is extremely curled.	Change the paper.
	Check if the forwarding pulley, upper or lower paper feed pulleys of the bypass are deformed.	Check visually and replace any deformed pulleys.
	Broken paper feed switch 1 actuator.	Check visually and replace paper feed switch 1 if its actuator is broken.
	Defective paper feed switch 1.	Run maintenance item U031 and turn paper feed switch 1 on and off manually. Replace paper feed switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the bypass paper feed clutch malfunctions.	Run maintenance item U032 and select the bypass paper feed clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the bypass paper feed clutch.	Check (see page 1-5-46).
(7) A paper jam in the paper feed section is indicated during copying (no paper feed from side deck*). Jam code 15	Check if the side deck paper feed clutch malfunctions.	Check and repair if necessary.
	Electrical problem with the side deck paper feed clutch.	Check.
(8) A paper jam in the paper feed section is indicated during copying (jam in deck paper conveying section). Jam code 16/17	Broken deck paper conveying switch 2 actuator.	Check visually and replace deck paper conveying switch 2 if its actuator is broken.
	Defective deck paper conveying switch 2.	Run maintenance item U031 and turn deck paper conveying switch 2 on and off manually. Replace deck paper conveying switch 2 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 5 actuator.	Check visually and replace paper feed switch 5 if its actuator is broken.
	Defective paper feed switch 5.	Run maintenance item U031 and turn paper feed switch 5 on and off manually. Replace paper feed switch 5 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the deck feed clutch malfunctions.	Run maintenance item U032 and select the deck feed clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the deck feed clutch.	Check (see page 1-5-47).

*Optional for 55 cpm copier only.

Problem	Causes/check procedures	Corrective measures
(9) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section). Jam code 18/19/20/21/22	Broken paper feed switch 1 actuator.	Check visually and replace paper feed switch 1 if its actuator is broken.
	Defective paper feed switch 1.	Run maintenance item U031 and turn paper feed switch 1 on and off manually. Replace paper feed switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 2 actuator.	Check visually and replace paper feed switch 2 if its actuator is broken.
	Defective paper feed switch 2.	Run maintenance item U031 and turn paper feed switch 2 on and off manually. Replace paper feed switch 2 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 3 actuator.	Check visually and replace paper feed switch 3 if its actuator is broken.
	Defective paper feed switch 3.	Run maintenance item U031 and turn paper feed switch 3 on and off manually. Replace paper feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 4 actuator.	Check visually and replace paper feed switch 4 if its actuator is broken.
	Defective paper feed switch 4.	Run maintenance item U031 and turn paper feed switch 4 on and off manually. Replace paper feed switch 4 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 5 actuator.	Check visually and replace paper feed switch 5 if its actuator is broken.
	Defective paper feed switch 5.	Run maintenance item U031 and turn paper feed switch 5 on and off manually. Replace paper feed switch 5 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 6 actuator.	Check visually and replace paper feed switch 6 if its actuator is broken.
	Defective paper feed switch 6.	Run maintenance item U031 and turn paper feed switch 6 on and off manually. Replace paper feed switch 6 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B,C,D and E 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,D and E are deformed.	Repair or replace if necessary.
Check if the feed clutch 3/4/5 malfunctions.	Run maintenance item U032 and select the feed clutch 3/4/5 on the touch panel to be turned on and off. Check the status and remedy if necessary.	

Problem	Causes/check procedures	Corrective measures
(9) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section). Jam code 18/19/20/21/22	Electrical problem with the feed clutch 3/4/5.	Check (see page 1-5-45).
(10) A paper jam in the paper feed section is indicated during copying (jam in converging section). Jam code 23	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the registration switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(11) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section). Jam code 24/25/26/27/28/29	Broken paper feed switch 2 actuator.	Check visually and replace paper feed switch 2 if its actuator is broken.
	Defective paper feed switch 2.	Run maintenance item U031 and turn paper feed switch 2 on and off manually. Replace paper feed switch 2 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 3 actuator.	Check visually and replace paper feed switch 3 if its actuator is broken.
	Defective paper feed switch 3.	Run maintenance item U031 and turn paper feed switch 3 on and off manually. Replace paper feed switch 3 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 4 actuator.	Check visually and replace paper feed switch 4 if its actuator is broken.
	Defective paper feed switch 4.	Run maintenance item U031 and turn paper feed switch 4 on and off manually. Replace paper feed switch 4 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 5 actuator.	Check visually and replace paper feed switch 5 if its actuator is broken.
	Defective paper feed switch 5.	Run maintenance item U031 and turn paper feed switch 5 on and off manually. Replace paper feed switch 5 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken paper feed switch 6 actuator.	Check visually and replace paper feed switch 6 if its actuator is broken.
	Defective paper feed switch 6.	Run maintenance item U031 and turn paper feed switch 6 on and off manually. Replace paper feed switch 6 if indication of the corresponding switch on the touch panel is not displayed in reverse.
Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B,C,D and E do not contact each other.		Check visually and remedy if necessary.

Problem	Causes/check procedures	Corrective measures
(11) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section). Jam code 24/25/26/27/28/29	Check if the feed pulleys, feed roller and vertical paper conveying rollers A, B,C,D and E are deformed.	Repair or replace if necessary.
	Check if the feed clutch 3/4/5 malfunctions.	Run maintenance item U032 and select the feed clutch 3/4/5 on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the feed clutch 3/4/5.	Check (see page 1-5-45).
	Deformed guides along the paper conveying path.	Repair or replace if necessary.
(12) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier converging section). Jam code 30	Broken paper feed switch 1 actuator.	Check visually and replace paper feed switch 1 if its actuator is broken.
	Defective paper feed switch 1.	Run maintenance item U031 and turn paper feed switch 1 on and off manually. Replace paper feed switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.
(13) A paper jam in the paper feed section is indicated during copying (multiple sheets in deck paper conveying section). Jam code 31	Check if the deck paper conveying rollers are deformed.	Repair or replace if necessary.
(14) A paper jam in the paper conveying section is indicated during copying (jam in registration/transfer section). Jam code 32	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-44).
	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.
(15) A paper jam in the fixing section is indicated during copying (jam in fixing section). Jam code 40	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-44).
	Check if the upper and lower registration rollers contact each other.	Check visually and remedy if necessary.

Problem	Causes/check procedures	Corrective measures
(15) A paper jam in the fixing section is indicated during copying (jam in fixing section). Jam code 40	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.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(16) A paper jam in the eject section is indicated during copying (jam in eject section). Jam code 50	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.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(17) A paper jam in the eject section is indicated during copying (jam in face down eject section). Jam code 51	Defective face down eject switch.	Run maintenance item U031 and turn the face down eject switch on and off manually. Replace the face down eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the left or right face down feed roller is deformed.	Check visually and replace any deformed rollers.
	Check if the right middle or left face down eject guide is deformed.	Repair or replace if necessary.
(18) A paper jam in the feedshift section is indicated during copying (jam in feedshift section). Jam code 52/53	Broken feedshift switch actuator.	Check visually and replace the feedshift switch if its actuator is broken.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the feedshift switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(18) A paper jam in the feedshift section is indicated during copying (jam in feedshift section). Jam code 52/53	Electrical problem with the feedshift solenoid.	Check (see page 1-5-47).
	Deformed lower feedshift guide.	Repair or replace if necessary.
	Check if the left and right feedshift rollers contact each other.	Check visually and remedy if necessary.
(19) A paper jam in the duplex section is indicated during copying (jam in duplex tray section). Jam code 60	Broken duplex feedshift switch actuator.	Check visually and replace the duplex feedshift switch if its actuator is broken.
	Defective duplex feedshift switch.	Run maintenance item U031 and turn the duplex feedshift switch on and off manually. Replace the duplex feedshift switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the duplex pressure release solenoid malfunctions.	Run maintenance item U033 and select the duplex pressure release solenoid on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the duplex pressure release solenoid.	Check (see page 1-5-47).
(20) A paper jam in the duplex section is indicated during copying (jam in duplex feedshift section). Jam code 61	Check if the duplex eject switching solenoid malfunctions.	Check and repair if necessary.
	Electrical problem with the duplex eject switching solenoid.	Check (see page 1-5-47).
	Defective face down eject switch.	Run maintenance item U031 and turn the face down eject switch on and off manually. Replace the face down eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(21) A paper jam in the duplex section is indicated during copying (jam in duplex feedshift section). Jam code 62	Broken duplex paper conveying switch 1 actuator.	Check visually and replace duplex paper conveying switch 1 if its actuator is broken.
	Defective duplex paper conveying switch 1.	Run maintenance item U031 and turn duplex paper conveying switch 1 on and off manually. Replace duplex paper conveying switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective duplex feedshift switch.	Run maintenance item U031 and turn the duplex feedshift switch on and off manually. Replace the duplex feedshift switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
<p>(22) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section). Jam code 63/64/65/66</p>	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.	Run maintenance item U031 and turn duplex paper conveying switch 2 on and off manually. Replace duplex paper conveying switch 2 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken duplex eject switch actuator.	Check visually and replace the duplex eject switch if its actuator is broken.
	Defective duplex eject switch.	Run maintenance item U031 and turn the duplex eject switch on and off manually. Replace the duplex eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	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.
	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.
<p>(23) A paper jam in the duplex section is indicated during copying (jam in duplex eject section). Jam code 67/68</p>	Broken paper feed switch 1 actuator.	Check visually and replace paper feed switch 1 if its actuator is broken.
	Defective paper feed switch 1.	Run maintenance item U031 and turn paper feed switch 1 on and off manually. Replace paper feed switch 1 if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Broken duplex eject switch actuator.	Check visually and replace the duplex eject switch if its actuator is broken.
	Defective duplex eject switch.	Run maintenance item U031 and turn the duplex eject switch on and off manually. Replace the duplex eject switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

• DF

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.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the original feed switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	A piece of paper torn from an original is caught around the original switch-back switch.	Remove any found.
	Defective original switch-back switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	A piece of paper torn from an original is caught around the DF timing switch.	Remove any found.
	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the DF timing switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(2) An original jams during continuous copying of multiple originals.	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the original feed switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the original feed motor or the original conveying motor malfunction.	Run maintenance item U243 and select the original feed motor/ original conveying motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
(3) An original jams in the DF is indicated during copying (no original feed). Jam code 70	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the original feed switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
(4) An original jams in the DF during copying (a jam in the original feed/conveying section). Jam code 72/73	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the DF timing switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the original feed switch if indication of the corresponding switch on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(4) An original jams in the DF during copying (a jam in the original feed/conveying section). Jam code 72/73	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Check if the DF original feed pulley or the DF separation pulley is deformed.	Check visually and replace the deformed pulley.
	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.	Run maintenance item U243 and select the original conveying motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
(5) An original jams in the DF during copying (a jam in the original switchback section). Jam code 75/76	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the DF timing switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor on the touch panel to be turned on and off. Check the status and remedy if necessary.
(6) 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 0040 and 7810, indicating the nature of the problem. A message is also displayed requesting the user to call for service.

After removing the problem, the self-diagnostic function can be reset by turning safety switches 1 or 2 off and back on.



Figure 1-5-2 Service call code display

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0040	Network scanner PCB* problem • Correct communication data is not obtained from network scanner PCB.	Defective network scanner PCB.	Replace the network scanner PCB and check for correct operation.
C0100	Backup memory read/write problem • Read and write data does not match.	Defective backup RAM or main PCB.	Replace the main PCB and check for correct operation.
C0110	Backup memory data problem • Data in the specified area of the backup memory does not match the specified values.	Problem with the backup memory data.	Turn safety switch 1 off and back on and run maintenance item U020 to set the contents of the backup memory data again.
		Defective backup RAM.	If the C0110 is displayed after re-setting the backup memory contents, replace the backup RAM or main PCB.
C0210	Operation unit PCB communication problem • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connectors CN10 on the main PCB and CN2 on the operation unit PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB or operation unit left PCB.	Replace the main PCB or operation unit left PCB and check for correct operation.
C0240	Printer PCB* communication problem • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector CN3 on the main PCB and the connector on the printer PCB. Repair or replace if necessary.
		Defective main PCB or printer PCB.	Replace the main PCB or printer PCB and check for correct operation.
C0250	Network scanner PCB* communication problem • There is no reply, in during regular communication from network scanner PCB to main PCB.	Poor contact in the connector terminals.	Check the connection of connector CN4 on the main PCB and the connector on the network scanner PCB. Repair or replace if necessary.
		Defective main PCB or network scanner PCB.	Replace the main PCB or network scanner PCB and check for correct operation.

*: Optional.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0420	Side deck*¹ 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 connectors CN13 on the main PCB and CN3 on the side deck main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective side deck main PCB.	Replace the side deck main PCB and check for correct operation.
C0440	Finisher*² 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 connectors CN24 on the main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C0610	Bitmap (DIMM) problem <ul style="list-style-type: none"> There is a problem with the data or address bus of the bitmap DRAM. 	Defective main PCB.	Replace the main PCB and check for correct operation.
		DIMM installed incorrectly.	Check if the DIMM is inserted into the socket on the main PCB correctly.
		Defective DIMM.	Replace the DIMM and check for correct operation.
C0630	DMA problem <ul style="list-style-type: none"> DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time. 	Defective main PCB.	Replace the main PCB and check for correct operation.

*1: Optional for 55 cpm copier only. *2: Optional.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0640	Hard disk drive problem <ul style="list-style-type: none"> The hard disk drive cannot be accessed. 	Poor contact of the hard disk drive connector terminals.	Check the connection of connectors CN2 on the main PCB and hard disk drive, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective hard disk drive.	Replace the hard disk drive and check for correct operation.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C1010	Upper lift motor problem [Drawer 1] <ul style="list-style-type: none"> When the drawer 1 is inserted, the lift limit switch 1 does not turn on within 5.5 s of the upper lift motor turning on. During copying, the lift limit switch 1 does not turn on within 200 ms of the upper lift motor turning on. 	Broken gears or couplings of the upper lift motor.	Replace the upper lift motor.
		Defective upper lift motor.	Check for continuity across the coil. If none, replace the upper lift motor.
		Poor contact of the lift motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective lift limit switch 1.	Check if CN 7-6 on the engine PCB goes low when the lift limit switch 1 is turned off. If not, replace the lift limit switch 1.
		Poor contact of the lift limit switch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C1020	Lower lift motor problem [Drawer 2] <ul style="list-style-type: none"> When the drawer 2 is inserted, the lift limit switch 2 does not turn on within 5.5 s of the lower lift motor turning on. During copying, the lift limit switch 2 does not turn on within 200 ms of the lower lift motor turning on. 	Broken gears or couplings of the lower lift motor.	Replace the lower lift motor.
		Defective lower lift motor.	Check for continuity across the coil. If none, replace the lower lift motor.
		Poor contact of the lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective lift limit switch 2.	Check if CN7-22 on the engine PCB goes low when the lift limit switch 2 is turned off. If not, replace the lift limit switch 2.
		Poor contact of the lift limit switch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1100	Deck right lift motor problem [Drawer 3] <ul style="list-style-type: none"> When the drawer 3 is inserted, the Deck lift limit switch 1 does not turn on within 33 s of the deck right lift motor turning on. During copying, the deck lift limit switch 1 does not turn on within 200 ms of the deck right lift motor turning on. 	Broken gears or couplings of the deck right lift motor.	Replace the deck right lift motor.
		Defective deck right lift motor.	Check for continuity across the coil. If none, replace the deck right lift motor.
		Poor contact of the deck right lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective deck lift limit switch 1.	Check if CN8-2 on the engine PCB goes low when the deck right lift limit switch 1 is turned off. If not, replace the deck lift limit switch 1.
		Poor contact of the deck lift limit switch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C1110	Deck left lift motor problem [Drawer 4] <ul style="list-style-type: none"> When the drawer 4 is inserted, the deck lift limit switch 2 does not turn on within 33 s of the deck left lift motor turning on. During copying, the deck lift limit switch 2 does not turn on within 200 ms of the deck left lift motor turning on. 	Broken gears or couplings of the deck left lift motor.	Replace the deck left lift motor.
		Defective deck left lift motor.	Check for continuity across the coil. If none, replace the deck left lift motor.
		Poor contact of the deck left lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective deck left lift limit switch 2.	Check if CN26-8 on the engine PCB goes low when the deck lift limit switch 2 is turned off. If not, replace the deck lift limit switch 2.
		Poor contact of the deck lift limit switch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1140	Side deck* lift motor (going up) problem <ul style="list-style-type: none"> When the side deck's right cover is closed, the upper limit detection switch does not turn on within 17 s of the side deck lift motor turning on. When the upper limit detection switch detects edge of turning off signal, the upper limit detection switch does not turn on within 200 ms of the side deck lift motor turning on. 	Poor contact in the upper limit detection switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective upper limit detection switch.	Replace the upper limit detection switch.
		Defective side deck main PCB.	Replace the side deck main PCB.
C1150	Side deck* lift motor (going down) problem <ul style="list-style-type: none"> When the side deck's right cover is closed, the lower limit detection switch does not turn on within 17 s of the side deck lift motor turning on. When the lower limit detection switch detects edge of turning off signal, the lower limit detection switch does not turn on within 200 ms of the side deck lift motor turning on. 	Poor contact in the lower limit detection switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective lower limit detection switch.	Replace the lower limit detection switch.
		Defective side deck main PCB.	Replace the side deck main PCB.
		Poor contact in the image formation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C2000	Image formation 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 image formation motor rotation control circuit.	Replace the image formation motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C2500	Paper feed motor problem <ul style="list-style-type: none"> LOCK DRIVE 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.

*: Optional for 55 cpm copier only.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2550	Paper conveying motor problem • LOCK ALM signal remains high for 1 s, 1 s after the paper conveying motor has turned on.	Poor contact in the paper conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective paper conveying motor rotation control circuit.	Replace the paper conveying motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C2600	Deck drive motor problem • LOCK ALM signal remains high for 1 s, 1 s after the deck drive motor has turned on.	Poor contact in the deck drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective deck drive motor rotation control circuit.	Replace the deck drive motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C2640	Side deck* drive motor problem • SDDM ALM signal remains high for 1 s, 1 s after the side deck drive motor has turned on. Scanner carriage problem	Poor contact in the side deck drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective side deck drive motor rotation control circuit.	Replace the side deck drive motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.

*: Optional for 55 cpm copier only.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C3100	<ul style="list-style-type: none"> The home position is not correct when the power is turned on or copying the document placed on the contact glass. 	Poor contact of the connector terminals.	Check the connection of connector CN10 on the engine PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective engine PCB or scanner drive PCB.	Replace the engine PCB or scanner drive PCB and check for correct operation.
		Defective scanner motor.	Replace the scanner motor.
C3300	Optical system (AGC) problem <ul style="list-style-type: none"> After AGC, correct input is not obtained at CCD. 	Insufficient exposure lamp luminosity.	Replace the exposure lamp or inverter PCB.
		Defective engine PCB.	Replace the engine PCB and check for correct operation.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position sensor.
		CCD PCB output problem.	Replace the ISU.
C4000	Polygon motor synchronization problem <ul style="list-style-type: none"> The polygon motor does not reach the stable speed within 9 s of the START 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 CN1-4 on the main PCB. If not, replace the power source PCB.
		Defective engine PCB.	Check if 24 V DC is output from CN14-14 on the engine PCB. If not, replace the main PCB.
C4010	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. BD steady-state problem	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 CN1-4 on the main PCB. If not, replace the power source PCB.
		Defective engine PCB.	Check if 24 V DC is output from CN14-14 on the engine PCB. If not, replace the main PCB.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C4200	<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 and check for correct operation.
C5100	Main charger problem MC ALM signal is detected continuously for 400 ms when MC REM signal is turned on.	Leakage during main charging.	Check and clean the main charger unit.
		Defective high voltage transformer PCB.	Replace the high voltage transformer PCB and check for correct operation.
C5110	Transfer/separation charger problem SC/TC ALM signal is detected continuously for 400 ms when SC/TC REM signal is turned on.	Leakage during transfer/separation charging.	Check and clean the transfer charger unit.
		Defective high voltage transformer PCB.	Replace the high voltage transformer PCB and check for correct operation.
C5500	Drum surface potential sensor problem 1 Drum surface potential sensor output voltage is 0.5 V or less when MC REM signal is turn on. (except during stepping control)	Poor contact in the drum surface potential sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective drum surface potential sensor.	Replace the drum surface potential sensor.
		Defective engine PCB.	Replace the engine PCB and check for correct operation.
		Defective high voltage transformer PCB.	Replace the high voltage transformer PCB and check for correct operation.
C5510	Drum surface potential sensor problem 2 Drum surface potential sensor output voltage is 4.5 V or less when MC REM signal is turn on. (except during stepping control)	Defective drum surface potential sensor.	Replace the drum surface potential sensor.
C5600	Drum surface potential problem 1 <ul style="list-style-type: none"> 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 and check for correct operation.
		Defective engine PCB.	Replace the engine PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C5610	Drum surface potential problem 2 <ul style="list-style-type: none"> Minimizing the grid output cannot set the potential. 	Defective high voltage transformer PCB.	Replace the high voltage transformer PCB and check for correct operation.
C6000	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 CN25 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.
		Fixing heater M and S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater M and S wire.	Check for continuity. If none, replace the fixing heater M and S.
C6020	Abnormally high fixing unit thermistor temperature <ul style="list-style-type: none"> The fixing temperature exceeds 220°C/446 °F for 10 s. The fixing unit temperature detection circuit on the engine PCB detects and abnormally high temperature. 	Shorted fixing unit thermistor.	Measure the resistance. If it is 0 Ω, replace the fixing unit thermistor.
		Broken fixing heater control circuit on the power source PCB.	Replace the power source PCB and check for correct operation.
C6030	Broken fixing unit thermistor <ul style="list-style-type: none"> The fixing temperature remains at 0°C/32°F for 30 s continuously when the fixing heater is on. 	Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN25 on the engine PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Broken fixing unit thermistor.	Check and reinstall if necessary.
C6050	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 CN25 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 ∞ Ω, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.
		Fixing heater M and S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater M and S wire.	Check for continuity. If none, replace the fixing heater M and S.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6400	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 CN17 on the main PCB and CN2 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 C6400 is detected while CN2-7 on the power source PCB outputs the zero-crossing signal.
C7100	Toner sensor problem <ul style="list-style-type: none"> The toner 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.
		Defective developer.	Replace the developer.
C7300	Toner hopper problem <ul style="list-style-type: none"> Toner level is not detected when toner empty is detected. 	Defective toner level detection sensor.	Replace the toner level detection sensor.
		Poor contact in the toner level detection sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
C7800	Broken external temperature thermistor <ul style="list-style-type: none"> The input voltage is 4.5 V or more. 	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 and check for correct operation.
C7810	Short-circuited external temperature thermistor <ul style="list-style-type: none"> The input voltage is 0.5 V or less. 	Defective external temperature thermistor.	Replace the humidity sensor PCB and check for correct operation.
		Defective humidity sensor PCB.	Replace the humidity sensor PCB and check for correct operation.

1-5-3 Image formation problems

(1) No image appears (entirely white).



See page 1-5-33

(2) No image appears (entirely black).



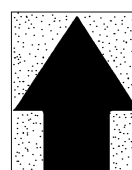
See page 1-5-33

(3) Image is too light.



See page 1-5-34

(4) Background is visible.



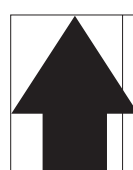
See page 1-5-34

(5) A white line appears longitudinally.



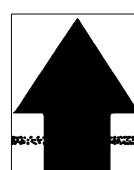
See page 1-5-34

(6) A black line appears longitudinally.



See page 1-5-35

(7) A black line appears laterally.



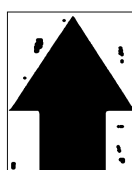
See page 1-5-35

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



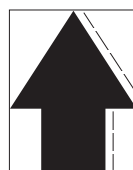
See page 1-5-35

(9) Black dots appear on the image.



See page 1-5-36

(10) Image is blurred.



See page 1-5-36

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



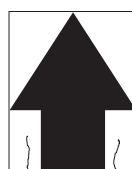
See page 1-5-36

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



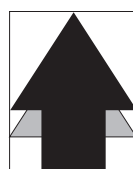
See page 1-5-37

(13) Paper creases.



See page 1-5-37

(14) Offset occurs.



See page 1-5-37

(15) Image is partly missing.



See page 1-5-38

(16) Fixing is poor.



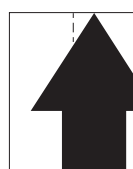
See page 1-5-38

(17) Image is out of focus.



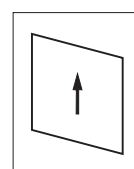
See page 1-5-38

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



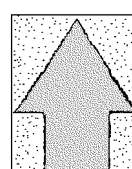
See page 1-5-38

(19) Image is not square.



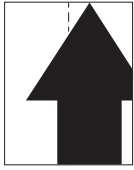
See page 1-5-39

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



See page 1-5-39

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



See page 1-5-39

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



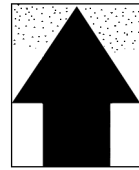
See page 1-5-40

(23) When the duplex unit is used, the center of the original image and that of the copy image do not align.



See page 1-5-40

(24) Toner scatters at the leading edge of the image.



See page 1-5-40

(1) No image appears
(entirely white).

Causes

1. No transfer charging.



Causes	Check procedures/corrective measures
1. No transfer charging.	
A. Broken transfer charger wire.	Replace the transfer charger wire.
B. 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.
C. Defective engine PCB.	Check if CN12-3 on the engine PCB goes low when maintenance item U101 is run. If not, replace the engine PCB.
D. Defective high voltage transformer PCB.	Check if transfer charging takes place when CN1-7 on the high voltage transformer PCB goes low while maintenance item U101 is run. If not, replace the high voltage transformer PCB.

(2) No image appears
(entirely black).

Causes

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



Causes	Check procedures/corrective measures
1. No main charging.	
A. Broken main charger wire.	Replace the main charger 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 engine PCB.	Check if CN12-12 on the engine PCB goes low when maintenance item U100 is run. If not, replace the engine PCB.
E. Defective high voltage transformer PCB.	Check if main charging takes place when CN1-12 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.

(3) Image is too light.



Causes

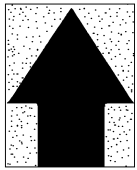
1. Insufficient toner.
2. Deteriorated developer.
3. Dirty or deteriorated drum.

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 1-6-42).

(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.

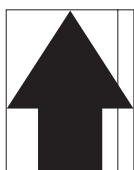
Causes

1. Dirty or flawed transfer charger wire.
2. Foreign matter in the developing section.
3. Flawed drum.
4. Dirty shading plate.



Causes	Check procedures/corrective measures
1. Dirty or flawed transfer charger wire.	Clean the transfer charger wire or, if it is flawed, replace it.
2. Foreign matter in the developing section.	Check if the magnetic brush is formed uniformly. If not, replace the developer.
3. Flawed drum.	Replace the drum (see page 1-6-42).
4. Dirty shading plate.	Clean the shading plate.

(6) A black line appears longitudinally.

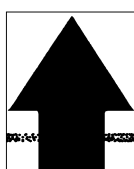


Causes

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

Causes	Check procedures/corrective measures
1. Dirty contact glass.	Clean the contact glass.
2. Dirty or flawed drum.	Clean the drum or, if it is flawed, replace it (see page 1-6-42).
3. Deformed or worn cleaning blade.	Replace the cleaning blade (see page 1-6-52).
4. Dirty scanner mirror.	Clean the scanner mirror.

(7) A black line appears laterally.

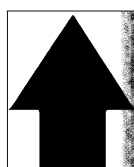


Causes

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 1-6-42).
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.

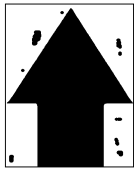


Causes

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

Causes	Check procedures/corrective measures
1. Dirty main charger wire.	Clean the main charger 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 1-6-21).

(9) Black dots appear on the image.

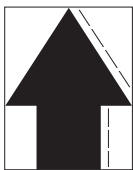


Causes

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 1-6-42).
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.

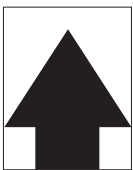


Causes

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 1-6-59).
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

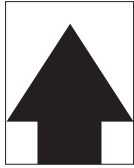
1. Misadjusted leading edge registration.

Causes	Check procedures/corrective measures
1. Misadjusted leading edge registration.	Readjust the leading edge registration (see pages 1-6-15).

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

Causes

1. Registration clutch, bypass paper feed clutch or paper feed clutch 1/2/3/4 installed or operating incorrectly.

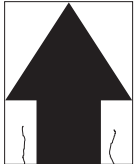


Causes	Check procedures/corrective measures
1. Registration clutch, bypass paper feed clutch or paper feed clutch 1/2/3/4 installed or operating incorrectly.	Check the installation position and operation of the registration clutch, bypass paper feed clutch and paper feed clutch 1/2/3/4. If any of them operates incorrectly, replace it.

(13) Paper creases.

Causes

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

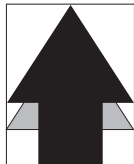


Causes	Check procedures/corrective measures
1. Paper curled.	Check the paper storage conditions.
2. Paper damp.	Check the paper storage conditions.
3. Defective pressure springs.	Replace the pressure springs.

(14) Offset occurs.

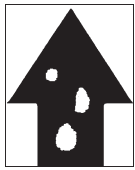
Causes

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.

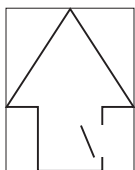


Causes

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 1-6-42).

(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 1-6-59).

(17) Image is out of focus.

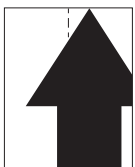


Causes

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.

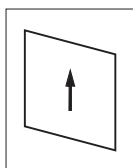


Causes

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 1-6-17).
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.

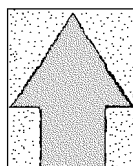


Causes

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 1-6-33).

(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 engine PCB.	Check if CN12-9 on the engine PCB goes low when maintenance item U030 is run. If not, replace the engine PCB.
C. 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) There is a regular error between the centers of the original and copy image when the DF is used.



Causes

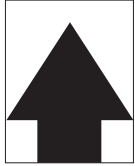
1. Misadjusted DF center line.

Causes	Check procedures/corrective measures
1. Misadjusted DF center line.	Readjust the DF center line (see page 1-6-69).

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

Causes

1. Misadjusted DF original scanning start position.

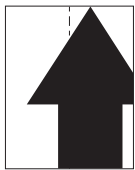


Causes	Check procedures/corrective measures
1. Misadjusted DF original scanning start position.	Readjust the DF original scanning start position (see page 1-6-70).

(23) When the duplex unit is used, the center of the original image and that of the copy image do not align.

Causes

1. Side registration section installed incorrectly.

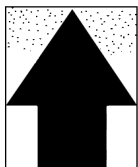


Causes	Check procedures/corrective measures
1. Side registration section installed incorrectly.	Adjust the installation position of the side registration section.

(24) Toner scatters at the leading edge of the image.

Causes

1. Registration cleaner brush or lower registration cleaner soiled with paper powder.



Causes	Check procedures/corrective measures
1. Registration cleaner brush or lower registration cleaner soiled with paper powder.	Vacuum clean the paper powder from the registration cleaner brush or lower registration cleaner .

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 and/or right cover are/is not closed completely.	Check the front and right 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 or 2.	Check for continuity across the contacts of each switch. If none, replace the switch.
(2) The image formation motor does not operate (C2000).	Defective power source PCB.	With AC present, check for 5 V DC at CN5-12 on the power source PCB and 24 V DC at CN1-2. If none, replace the power source PCB.
	Poor contact in the image formation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken image formation motor gear.	Check visually and replace the image formation motor if necessary.
	Defective image formation motor.	Run maintenance item U030 and check if the image formation motor operates when CN15-A3 on the engine PCB goes low. If not, replace the image formation motor.
(3) Paper feed motor does not operate (C2500).	Defective engine PCB.	Run maintenance item U030 and check if CN15-A3 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 CN16-5 on the engine PCB goes low. If not, replace the paper feed motor.
Defective engine PCB.	Run maintenance item U030 and check if CN16-5 on the engine PCB goes low. If not, replace the engine PCB.	

Problem	Causes	Check procedures/corrective measures
(4) The paper conveying motor does not operate (C2550).	Poor contact in the paper conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper conveying motor gear.	Check visually and replace the paper conveying motor if necessary.
	Defective paper conveying motor.	Run maintenance item U030 and check if the paper conveying motor operates when CN15-B3 on the engine PCB goes low. If not, replace the paper conveying motor.
	Defective engine PCB.	Run maintenance item U030 and check if CN15-B3 on the engine PCB goes low. If not, replace the engine PCB.
(5) The deck drive motor does not operate (C2600).	Poor contact in the deck drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken deck drive motor gear.	Check visually and replace the deck drive motor if necessary.
	Defective deck drive motor.	Run maintenance item U030 and check if the deck drive motor operates when CN16-6 on the engine PCB goes low. If not, replace the deck drive motor.
	Defective engine PCB.	Run maintenance item U030 and check if CN16-6 on the engine PCB goes low. If not, replace the engine PCB.
(6) 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 drive PCB. If not, replace the scanner motor.
	Defective scanner drive PCB.	Run maintenance item U073 and check if the scanner motor operates when CN1-10, CN1-11 and CN1-12 go low. If not, replace the scanner drive PCB.
(7) The paper conveying fan motor does not operate.	Broken paper conveying fan motor coil.	Check for continuity across the coil. If none, replace the paper conveying fan motor.
	Poor contact in the paper conveying 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 CN3-B4 on the engine PCB goes low. If not, replace the engine PCB.
(8) The image formation fan motor does not operate.	Broken image formation fan motor coil.	Check for continuity across the coil. If none, replace the image formation fan motor.
	Poor contact in the image formation 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 CN14-12 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(9) 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.
(10) The fixing fan motor does not operate.	Broken fixing fan motor coil.	Check for continuity across the coil. If none, replace the fixing fan motor.
	Poor contact in the fixing fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(11) Eject fan motor 1 does not operate.	Broken eject fan motor 1 coil.	Check for continuity across the coil. If none, replace eject fan motor 1.
	Poor contact in eject fan motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(12) Eject fan motor 2 does not operate.	Broken eject fan motor 2 coil.	Check for continuity across the coil. If none, replace eject fan motor 2.
	Poor contact in eject fan motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(13) The HDD fan motor does not operate.	Broken HDD fan motor coil.	Check for continuity across the coil. If none, replace the HDD fan motor.
	Poor contact in the HDD fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(14) The power supply fan motor does not operate.	Broken power supply fan motor coil.	Check for continuity across the coil. If none, replace the power supply fan motor.
	Poor contact in the power supply fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(15) The upper lift motor does not operate (C1010).	Broken upper lift motor coil.	Check for continuity across the coil. If none, replace the upper lift motor.
	Poor contact in the upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Check if 24 V DC is output across CN17-5 on the engine PCB right after drawer 1 is installed. If not, replace the engine PCB.
(16) The lower lift motor does not operate (C1020).	Broken lower lift motor coil.	Check for continuity across the coil. If none, replace the lower lift motor.
	Poor contact in the lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine PCB.	Check if 24 V DC is output across CN17-10 on the engine PCB right after drawer 2 is installed. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(17) The deck right lift motor does not operate (C1100).	Broken deck right lift motor coil.	Check for continuity across the coil. If none, replace the deck right lift motor.
	Poor contact in the 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 CN8-18 on the engine PCB right after drawer 3 is installed. If not, replace the engine PCB.
(18) The deck left lift motor does not operate (C1110).	Broken deck left lift motor coil.	Check for continuity across the coil. If none, replace the deck left lift motor.
	Poor contact in the 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 CN8-16 on the engine PCB right after drawer 4 is installed. If not, replace the engine PCB.
(19) 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 CN4-1 and CN4-2 on the engine PCB. If not, replace the engine PCB.
(20) 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.
(21) 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.
(22) The transfer charger cleaning motor does not operate.	Broken transfer charger cleaning motor coil.	Check for continuity across the coil. If none, replace the transfer charger cleaning motor.
	Poor contact in the transfer charger cleaning motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(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 CN18-A6 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(24) Feed low clutch 1 does not operate.	Broken feed low clutch 1 coil.	Check for continuity across the coil. If none, replace feed low clutch 1.
	Poor contact in feed low 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 CN18-A4 on the engine PCB goes low. If not, replace the engine PCB.
(25) Feed high clutch 1 does not operate.	Broken feed high clutch 1 coil.	Check for continuity across the coil. If none, replace feed high clutch 1.
	Poor contact in feed high 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 CN18-A1 on the engine PCB goes low. If not, replace the engine PCB.
(26) Feed low clutch 2 does not operate.	Broken feed low clutch 2 coil.	Check for continuity across the coil. If none, replace feed low clutch 2.
	Poor contact in feed low 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 CN18-B1 on the engine PCB goes low. If not, replace the engine PCB.
(27) Feed high clutch 2 does not operate.	Broken feed high clutch 2 coil.	Check for continuity across the coil. If none, replace feed high clutch 2.
	Poor contact in feed high 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 CN18-A8 on the engine PCB goes low. If not, replace the engine PCB.
(28) 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 CN18-B3 on the engine PCB goes low. If not, replace the engine PCB.
(29) 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 CN18-B5 on the engine PCB goes low. If not, replace the engine PCB.
(30) 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 CN18-B7 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(31) Paper feed clutch 1 does not operate.	Broken paper feed clutch 1 coil.	Check for continuity across the coil. If none, replace paper feed clutch 1.
	Poor contact in 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 CN7-11 on the engine PCB goes low. If not, replace the engine PCB.
(32) Paper feed clutch 2 does not operate.	Broken paper feed clutch 2 coil.	Check for continuity across the coil. If none, replace paper feed clutch 2.
	Poor contact in 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 CN7-27 on the engine PCB goes low. If not, replace the engine PCB.
(33) Paper feed clutch 3 does not operate.	Broken paper feed clutch 3 coil.	Check for continuity across the coil. If none, replace paper feed clutch 3.
	Poor contact in paper 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 CN8-7 on the engine PCB goes low. If not, replace the engine PCB.
(34) Paper feed clutch 4 does not operate.	Broken paper feed clutch 4 coil.	Check for continuity across the coil. If none, replace paper feed clutch 4.
	Poor contact in paper 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 CN26-12 on the engine PCB goes low. If not, replace the engine PCB.
(35) 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 CN9-B5 on the engine PCB goes low. If not, replace the engine PCB.
(36) 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 CN6-11 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(37) 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 CN6-12 on the engine PCB goes low. If not, replace the engine PCB.
(38) The deck feed clutch does not operate.	Broken deck feed clutch coil.	Check for continuity across the coil. If none, replace the deck feed clutch.
	Poor contact in the deck 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 CN26-14 on the engine PCB goes low. If not, replace the engine PCB.
(39) The bypass solenoid does not operate.	Broken bypass solenoid coil.	Check for continuity across the coil. If none, replace the bypass solenoid.
	Poor contact in the bypass 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 CN9-B3 on the engine PCB goes low. If not, replace the engine PCB.
(40) 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 CN6-7 and CN6-8 on the engine PCB go low. If not, replace the engine PCB.
(41) 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 CN6-9 and CN6-10 on the engine PCB go low. If not, replace the engine PCB.
(42) 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 CN3-A7 and CN3-A8 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(43) 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 CN14-4 on the engine PCB goes low. If not, replace the engine PCB.
(44) 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 CN4-11 on the engine PCB is held low, replace the engine PCB.
(45) 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 CN1-5 and CN1-6 on the inverter PCB are held low, replace the inverter PCB.
	Defective scanner drive PCB.	If the exposure lamp turn on when CN3-1 and CN3-2 on the scanner motor PCB are held low, replace the scanner drive PCB.
(46) The exposure lamp does not turn off.	Defective inverter PCB.	If the exposure lamp does not turn off with CN1-5 and CN1-6 on the inverter PCB high, replace the inverter PCB.
	Defective scanner drive PCB.	If CN3-1 and CN3-2 on the scanner motor PCB are always low, replace the scanner drive PCB.
(47) Fixing heater M or S does not turn on (C6000).	Broken wire in fixing heater M or S.	Check for continuity across each heater. If none, replace the heater (see page 1-6-55).
	Fixing unit thermostat triggered.	Check for continuity across thermostat. If none, remove the cause and replace the thermostat.
(48) 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 CN2-5 and CN2-6 on the engine PCB go high, replace the engine PCB.
(49) Main charging is not performed (C5100).	Broken main charger wire.	See page 1-5-33.
	Leaking main charger housing.	
	Poor contact in the high voltage transformer PCB connector terminals.	
	Defective engine PCB.	
	Defective high voltage transformer PCB.	

Problem	Causes	Check procedures/corrective measures
(50) Transfer charging is not performed (C5110).	Broken transfer charger wire.	See page 1-5-33.
	Poor contact in the high voltage transformer PCB connector terminals.	
	Defective engine PCB.	
	Defective high voltage transformer PCB.	
(51) Separation charging is not performed (C5110).	Broken separation charger wire.	Replace the separation charger wire (see page 1-6-48).
	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.
(52) 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 CN1-9 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 CN12-9 on the engine PCB goes low during copying. If not, replace the engine PCB.
(53) The original size is not detected.	Defective original detection switch.	If the level of CN5-2 on the scanner drive PCB does not change when the original detection switch is turned on and off, replace the original detection switch.
(54) 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 drive PCB.	Check if sensor operates correctly. If not, replace it or, if necessary, the scanner drive PCB.
(55) 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.

Problem	Causes	Check procedures/corrective measures
(56) The message re- questing paper to be loaded is shown when paper is present in drawer 1.	Poor contact in paper switch 1 connector termi- nals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective paper switch 1.	Check if CN7-9 on the engine PCB goes low when paper switch 1 is turned on with 5 V DC present at CN7-10 on the engine PCB. If not, replace paper switch 1.
(57) The message re- questing paper to be loaded is shown when paper is present in drawer 2.	Poor contact in paper switch 2 connector termi- nals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective paper switch 2.	Check if CN7-25 on the engine PCB goes low when paper switch 2 is turned on with 5 V DC present at CN7-26 on the en- gine PCB. If not, replace paper switch 2.
(58) The message re- questing paper to be loaded is shown when paper is present in drawer 3.	Poor contact in deck paper switch 1 connector termi- nals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective deck paper switch 1.	Check if CN8-5 on the engine PCB goes low when deck paper switch 1 is turned on with 5 V DC present at CN8-6 on the en- gine PCB. If not, replace deck paper switch 1.
(59) The message re- questing paper to be loaded is shown when paper is present in drawer 4.	Poor contact in deck paper switch 2 connector termi- nals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective deck paper switch 2.	Check if CN26-17 on the engine PCB goes low when deck pa- per switch 2 is turned on with 5 V DC present at CN26-18 on the engine PCB. If not, replace deck paper switch 2.
(60) The message re- questing paper to be loaded is shown when paper is present on the by- pass table.	Poor contact in the bypass paper switch connector terminals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective bypass paper switch.	Check if CN9-B8 on the engine PCB goes low when the bypass paper switch is turned on with 5 V DC present at CN9-B9 on the engine PCB. If not, replace the bypass paper switch.
(61) The size of paper in drawer 1 is not dis- played correctly.	Poor contact in the upper paper length switch con- nector terminals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective upper paper length switch.	Check if CN7-14 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 con- nector terminals.	Reinsert the connector. Also check for continuity within the con- nector cable. If none, remedy or replace the cable.
	Defective upper paper width switch.	Check if the levels of CN7-1, CN7-2 and CN7-3 on the engine PCB change alternately when the width guide in drawer 1 is moved. If not, replace the upper paper width switch.

Problem	Causes	Check procedures/corrective measures
(62) The size of paper in drawer 2 is not displayed correctly.	Poor contact in the lower paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper length switch.	Check if CN7-16 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.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective lower paper width switch.	Check if the levels of CN7-17, CN7-18 and CN7-19 on the engine PCB change alternately when the width guide in drawer 2 is moved. If not, replace the lower paper width switch.
(63) 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 CN9-A2 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 CN9-A6, CN9-A7 and CN9-A8 on the engine PCB change alternately when the insert guide on the bypass table is moved. If not, replace the bypass paper width switch.

Problem	Causes	Check procedures/corrective measures
(64) 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 1/2/3/4/5/6, registration switch, feedshift switch or eject switch.	Check and remove if any.
	Defective paper feed switch 1.	Run maintenance item U031 and turn paper feed switch 1 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 2.	Run maintenance item U031 and turn paper feed switch 2 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 3.	Run maintenance item U031 and turn paper feed switch 3 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 4.	Run maintenance item U031 and turn paper feed switch 4 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 5.	Run maintenance item U031 and turn paper feed switch 5 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective paper feed switch 6.	Run maintenance item U031 and turn paper feed switch 6 on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective registration switch.	Run maintenance item U031 and turn the registration switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective feedshift switch.	Run maintenance item U031 and turn the feedshift switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	Defective eject switch.	Run maintenance item U031 and turn the eject switch on and off manually. Replace the switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
(65) The message requesting covers to be closed is displayed when the front and right covers are closed.	Poor contact in the connector terminals of safety switch 1 or 2.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective safety switch 1 or 2.	Check for continuity across each switch. If there is no continuity when the switch is on, replace it.
(66) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

• DF

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 DF 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.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the original feed switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	A piece of paper torn from an original is caught around the original switch-back switch.	Remove any found.
	Defective original switch-back switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the original switchback switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	A piece of paper torn from an original is caught around the DF timing switch.	Remove any found.
	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the DF timing switch if indication of the corresponding switch on the touch panel is not displayed in reverse.
	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/E, 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: paper feed clutches 1/2/3/4, feed low clutches 1/2, feed high clutches 1/2, feed clutches 3/4/5, deck feed clutch and bypass paper feed clutch.	See pages 1-5-45, 46, and 47.
(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 1-5-44.
(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 1-6-22).
	The scanner motor malfunctions.	See page 1-5-42.
(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 1-5-47.
	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: paper feed clutches 1/2/3/4, feed low clutches 1/2, feed high clutches 1/2, feed clutches 3/4/5, deck feed clutch and bypass paper feed clutch.	Correct.

• DF

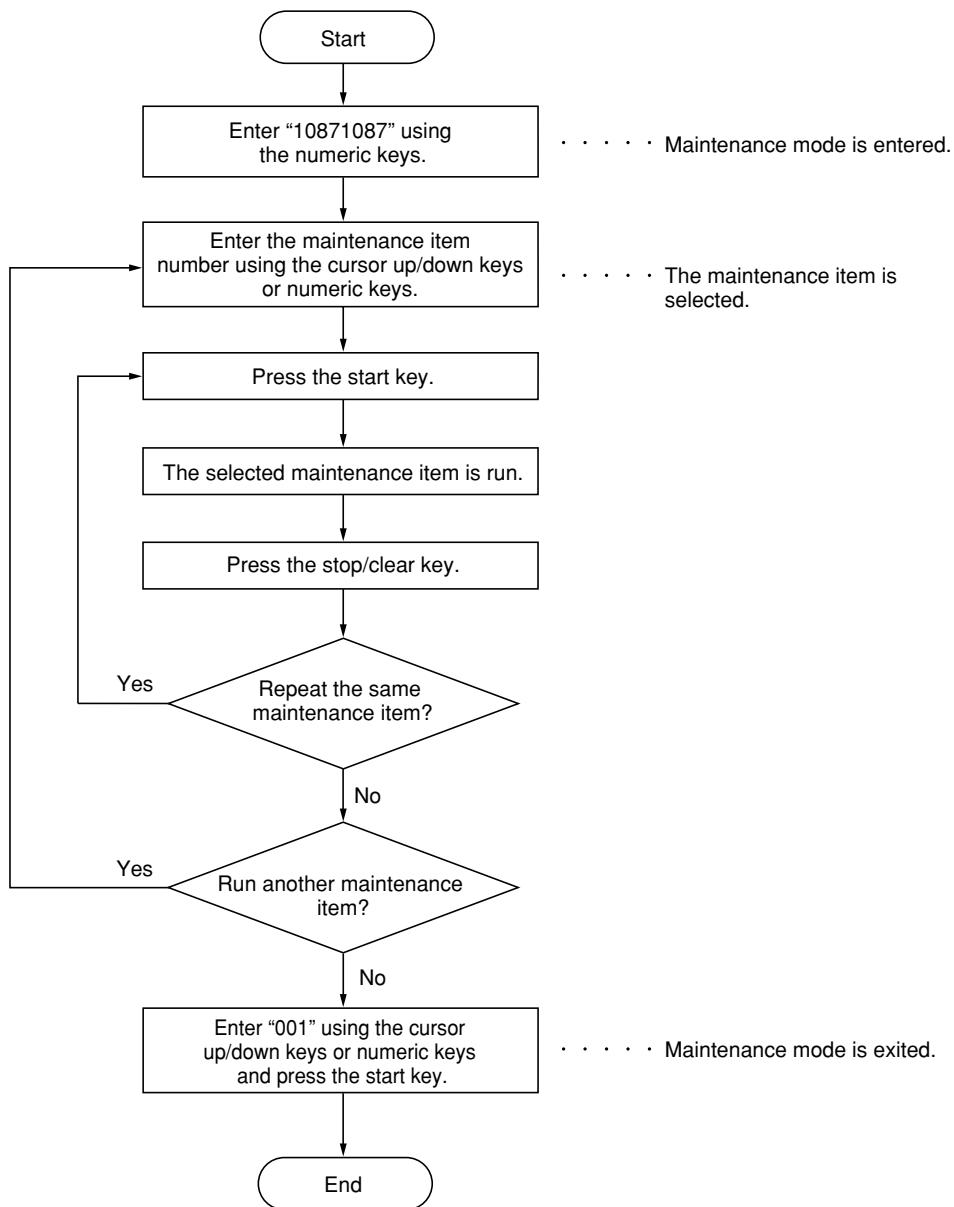
Problem	Causes/check procedures	Corrective measures
(1) No primary original feed.	The surfaces of the DF forwarding pulleys, DF original feed pulley or DF separation pulley are dirty with paper powder.	Check and clean them with isopropyl alcohol if they are dirty.
	Check if the DF original feed pulley or the DF forwarding pulley is deformed.	If so, replace (see page 1-6-67).
	Electrical problem with the following clutch or solenoid: • Original feed solenoid • Original feed clutch	See pages 1-5-53 and 54.
(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*
 - Fluke 8060A*
 - Arlec DMM1050
 - Arlec YF1030C
- * Capable of measuring RMS values.
- Prepare the following as test originals:
 - NTC (new test chart)

(2) Running a maintenance item



1-6-2 Paper feed section

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

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

(1-1) Detaching and refitting the pulleys of drawers 1, 2, and 3

Procedure

- Removing the primary paper feed unit
 1. Remove the screw holding the developing duct cover and disconnect the connector, and then remove the cover.

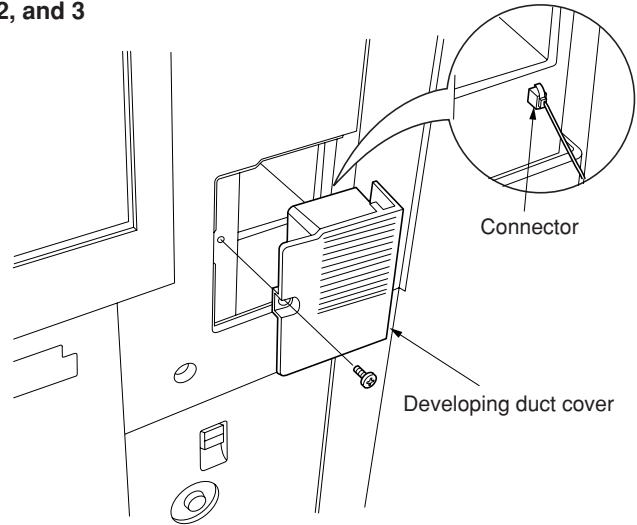


Figure 1-6-1

2. Remove the six screws holding the middle right cover and then the cover.

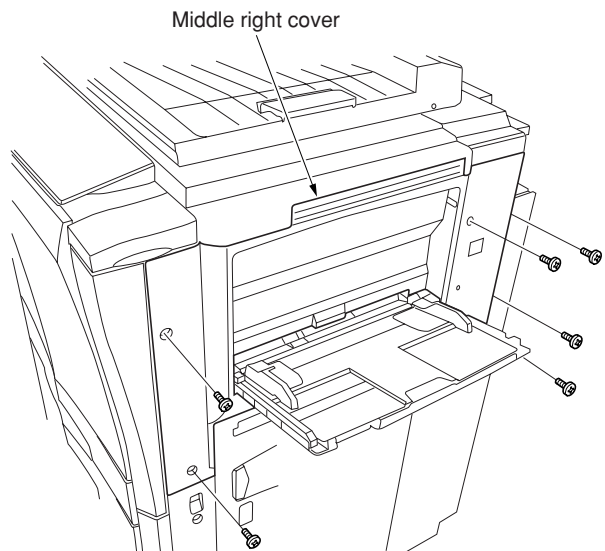


Figure 1-6-2

3. Lift the right cover and remove it from the main unit of the machine.

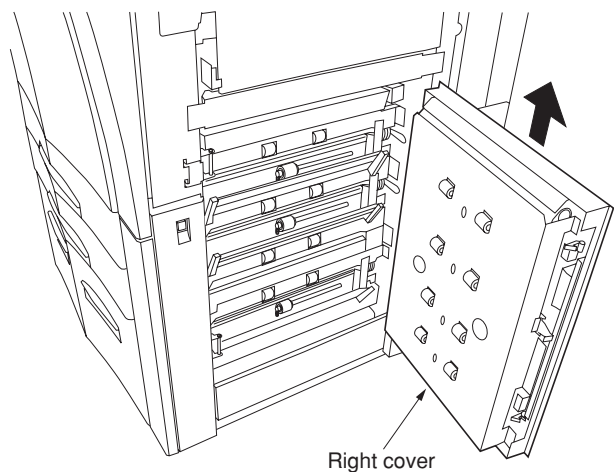


Figure 1-6-3

4. Remove the screw holding the interlock cover and then the cover (only when detaching and refitting the primary paper feed unit of drawer 1).

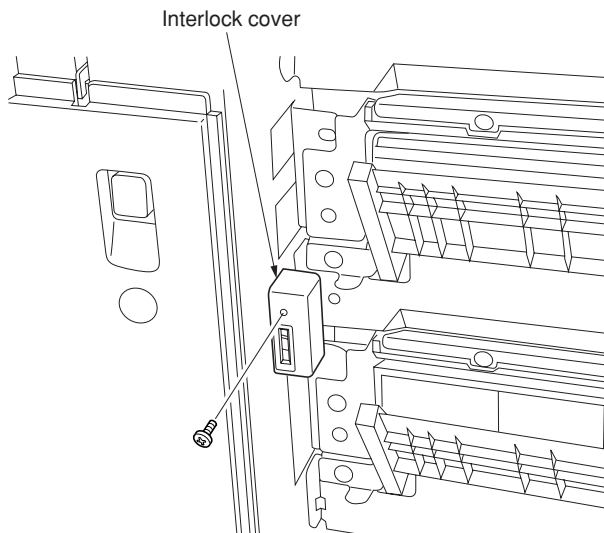


Figure 1-6-4

5. Remove the screw and then remove the support plate and the confluence guide (only when detaching and refitting the primary paper feed unit of drawer 1 or 2).
6. Pull out the relevant drawer.

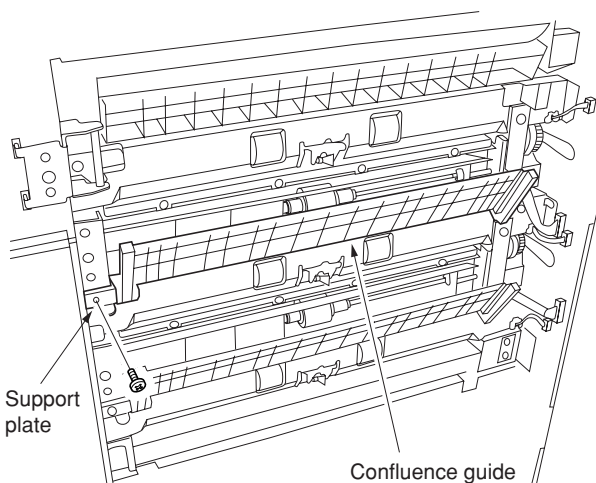


Figure 1-6-5

7. Remove the three screws and the 8-pin connector and then remove the primary paper feed unit from the right side of the main unit of the machine.

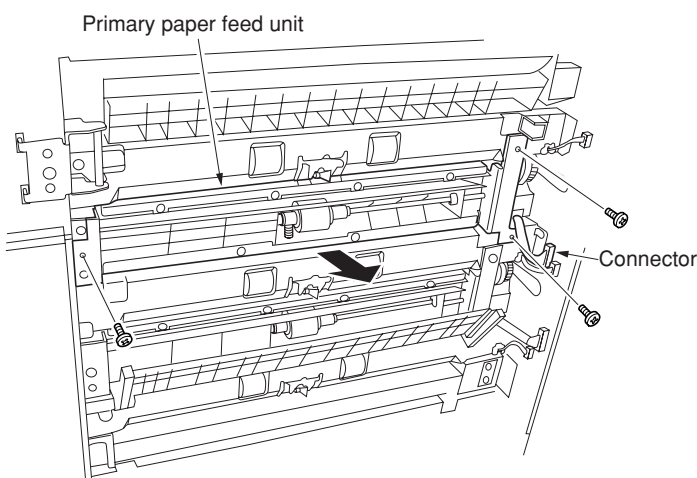


Figure 1-6-6

- Removing the forwarding pulley
8. Raise the forwarding pulley retainer in the direction of the arrow, and then remove it from the primary paper feed unit.

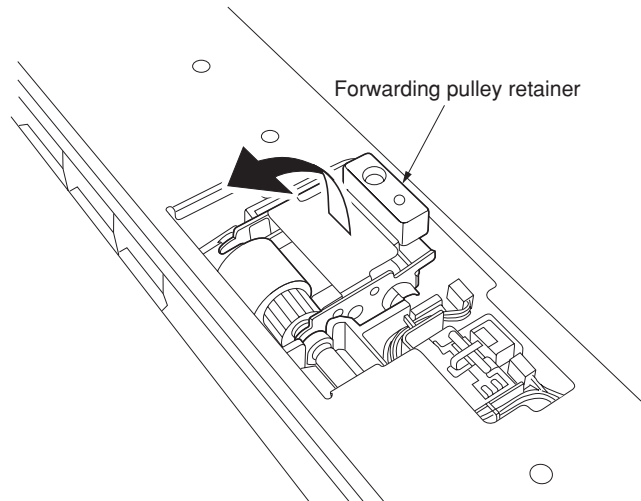


Figure 1-6-7

9. Remove the stop ring and pull the forwarding pulley shaft in the direction of the arrow, and then remove the forwarding pulley.
- * When fitting the forwarding pulley, ensure that the gear section engages.

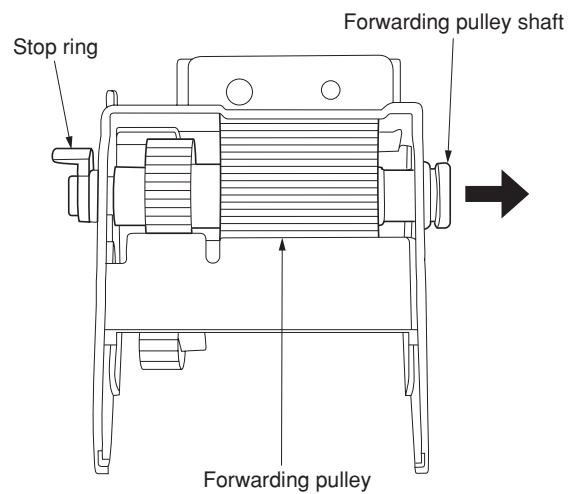


Figure 1-6-8

- Removing the upper paper feed pulley
10. Remove the two screws and then remove the paper feed clutch support plate and the bushing.

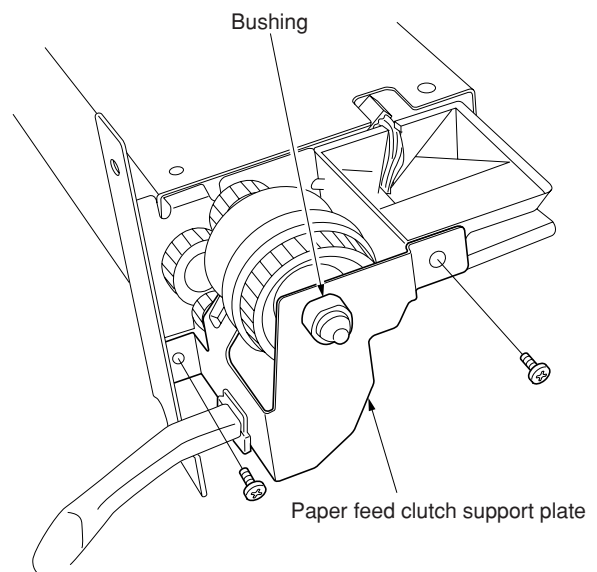


Figure 1-6-9

11. Remove the two stop rings and disconnect the connector of the paper feed clutch.
12. Pull the upper paper feed shaft in the direction of the arrow, and then remove the upper paper feed pulley.
 - * When fitting the upper paper feed pulley, put the end face with a silver ring to the front side of the machine.
 - * When fitting the upper paper feed shaft, ensure that the notch of the paper feed clutch is inserted into the detent.

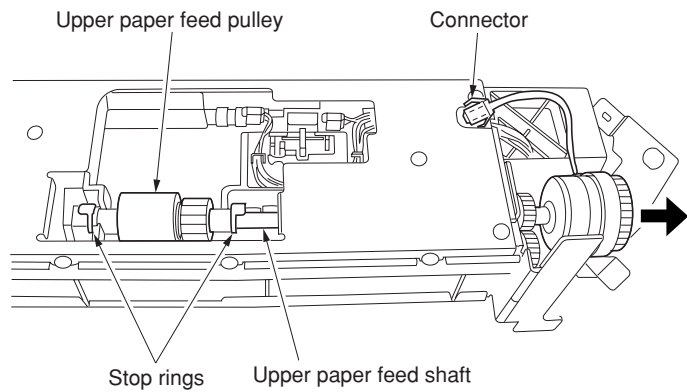


Figure 1-6-10

- Removing the lower paper feed pulley
13. Remove the stop ring on the rear of the primary paper feed unit.
 14. Pull the lower paper feed shaft in the direction of the arrow, and then remove the lower paper feed pulley.
 15. Refit all the removed parts.

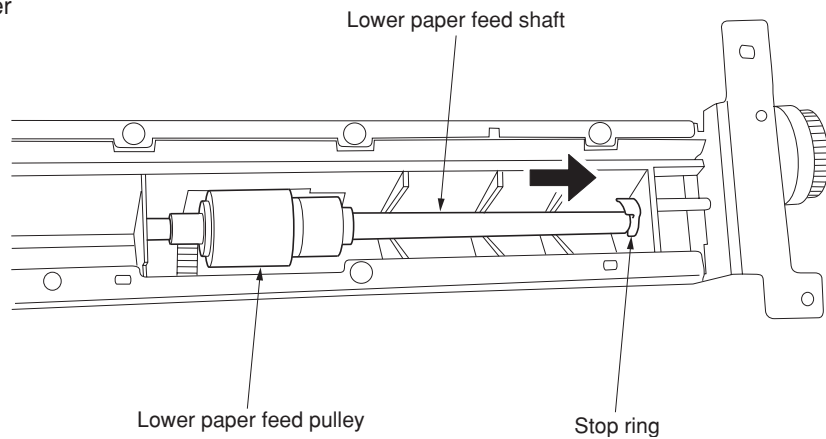
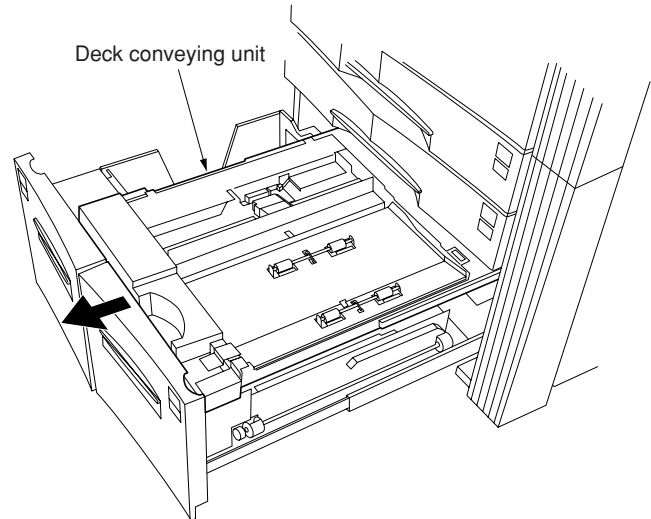


Figure 1-6-11

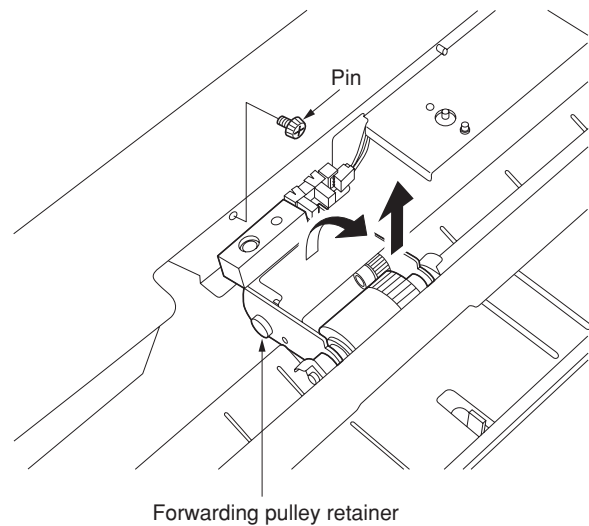
(1-2) Detaching and refitting the pulley of drawer 4**Procedure**

• Removing the forwarding pulley

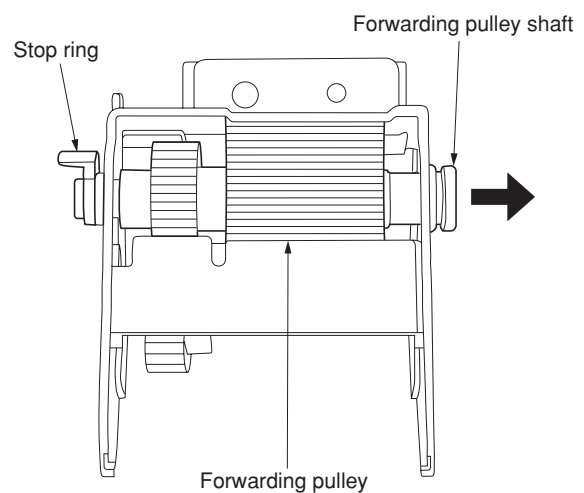
1. Pull out drawers 3 and 4 and then pull out the deck conveying unit.

**Figure 1-6-12**

2. Remove the pin, raise the forwarding pulley retainer in the direction of the arrow, and then remove it from the deck conveying unit.

**Figure 1-6-13**

3. Remove the stop ring, pull the forwarding pulley shaft in the direction of the arrow, and then remove the forwarding pulley.
- * When fitting the forwarding pulley, ensure that the gear section engages.

**Figure 1-6-14**

- Removing the upper paper feed pulley
4. Remove the four screws holding the deck conveying unit and then the unit from the machine.

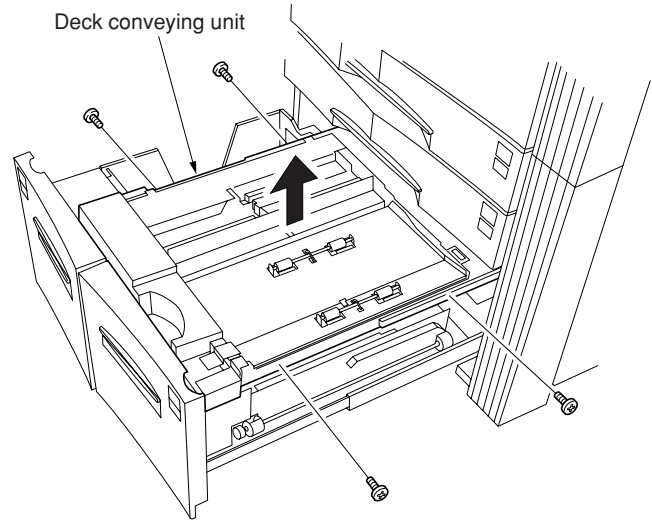


Figure 1-6-15

5. Remove the stop ring and then the gear.

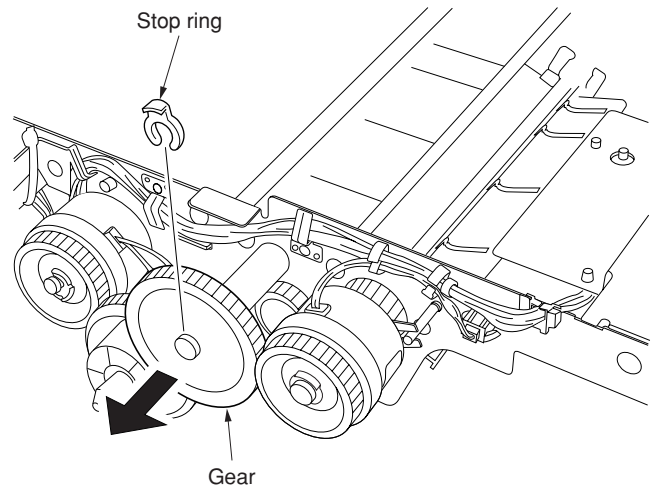


Figure 1-6-16

6. Remove the two stop rings and disconnect the connector, and then remove the wire of the paper feed clutch from the wire saddle.
 7. Pull the upper paper feed shaft in the direction of the arrow, and then remove the upper paper feed pulley.
- * When fitting the upper paper feed pulley, put the end face with a silver ring to the front side of the machine.
 - * When fitting the upper paper feed shaft, ensure that the notch of the paper feed clutch is inserted into the detent.

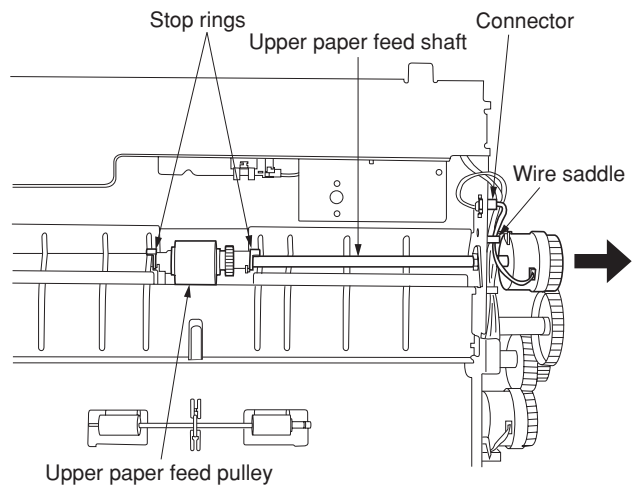


Figure 1-6-17

- Removing the lower paper feed pulley
8. Remove the two springs and tilt the lower paper feed pulley unit down in the direction of the arrow.
 - * Remove the springs from the side of the guide plate.

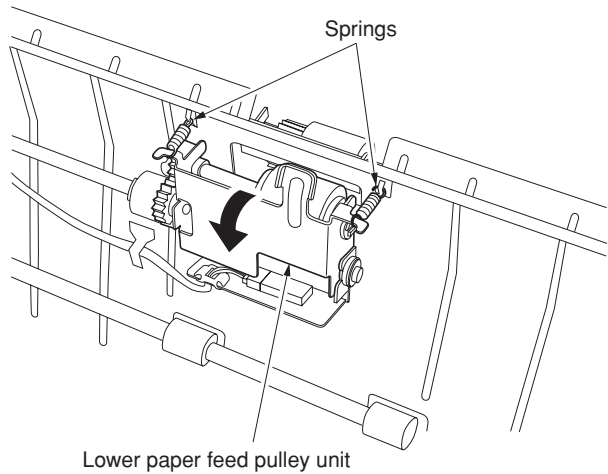


Figure 1-6-18

9. Remove the stop ring and pull the lower paper feed pulley shaft in the direction of the arrow, and then remove the lower paper feed pulley.
10. Refit all the removed parts.

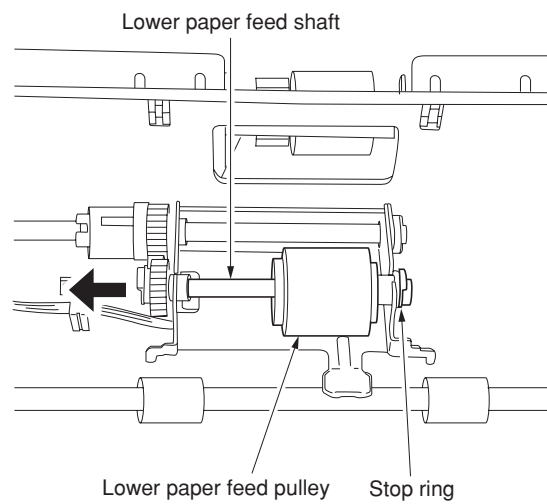


Figure 1-6-19

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

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

Procedure

- Removing the bypass paper feed unit
 1. Remove the developing duct cover and middle right cover (see page 1-6-3).
 2. Raise the bypass tray in the direction of the arrow and lift it.
 3. Disconnect the connectors of the bypass tray and then remove the tray.

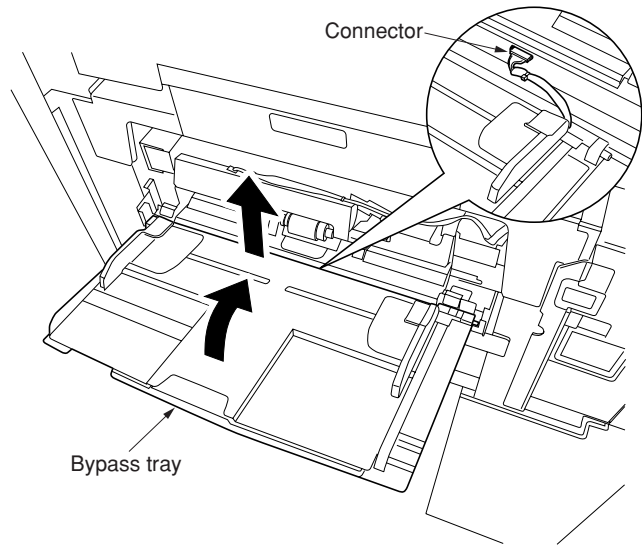


Figure 1-6-20

4. Remove the five screws holding the bypass paper feed unit and disconnect the connector, and then the unit.

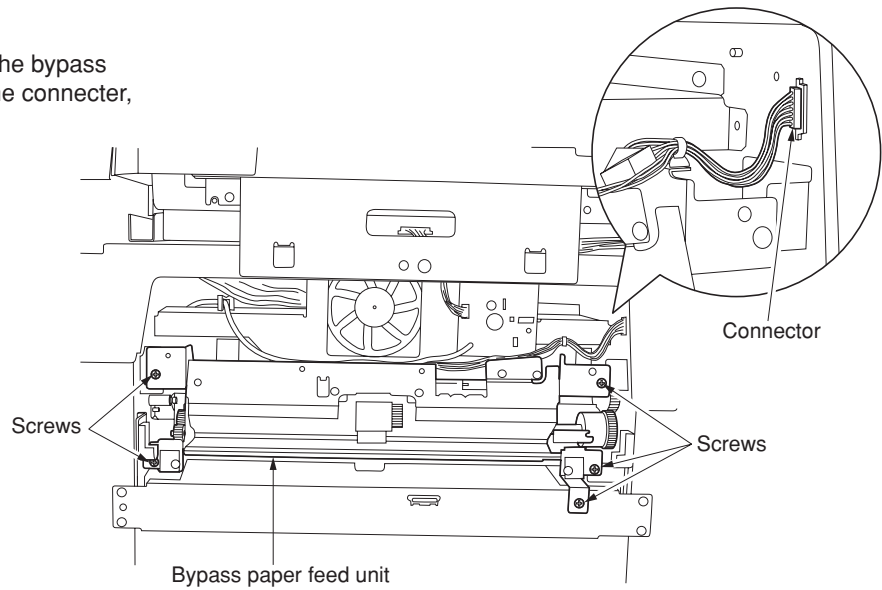


Figure 1-6-21

- Removing the bypass forwarding pulley
 5. Remove the stop ring from the bypass forwarding pulley retainer.
 6. Pull the bypass forwarding pulley shaft in the direction of the arrow, and then remove the bypass forwarding pulley.

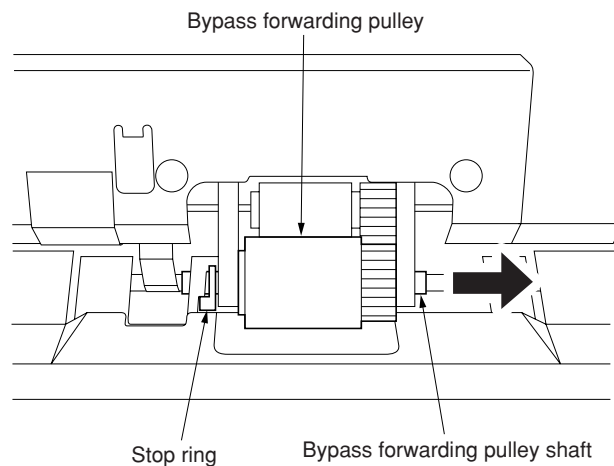


Figure 1-6-22

- Removing the bypass upper paper feed pulley
7. Remove the spring, stop ring and bushing from the bypass forwarding pulley retainer.
 8. Disconnect the connector of the bypass paper feed clutch and then remove the wire from the edging and the wire saddle.
 9. While pressing the bypass solenoid lever, remove the bypass forwarding pulley retainer.

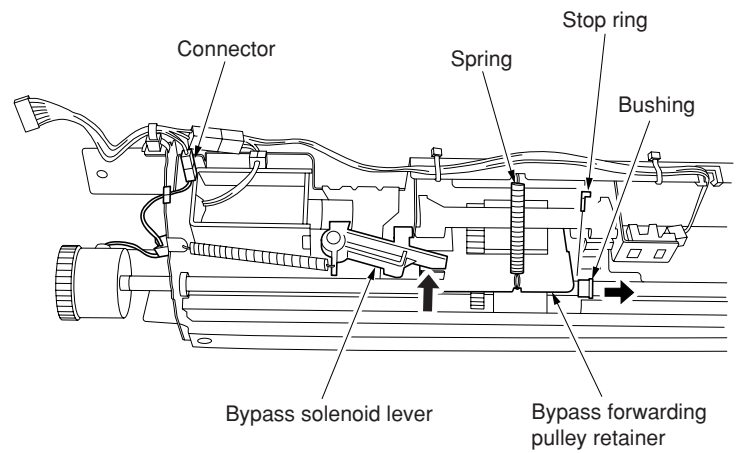


Figure 1-6-23

10. Remove the stop ring, gear, spring pin and bushing on the front of the bypass paper feed unit.

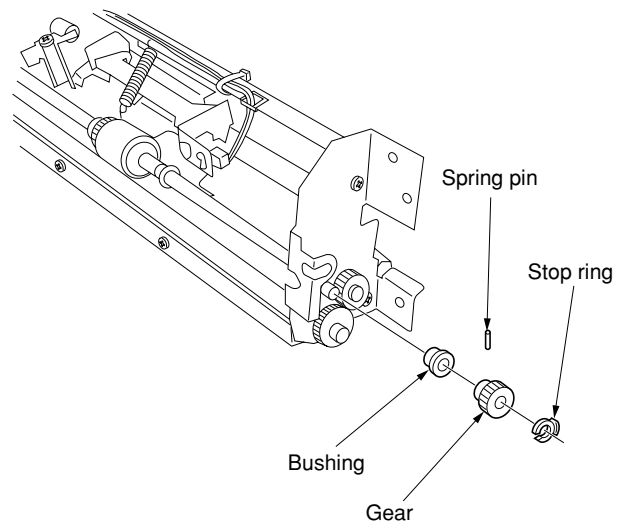


Figure 1-6-24

11. Pull the bypass paper feed shaft in the direction of the arrow, and then remove the bushing and bypass upper paper feed pulley.
 - * When fitting the bypass upper paper feed pulley, put the blue end face to the front side of the machine.

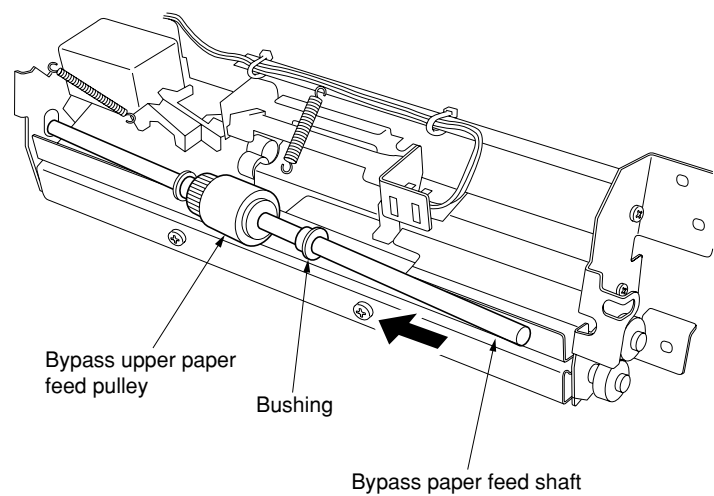


Figure 1-6-25

2BC/D

- Removing the bypass lower paper feed pulley
12. Remove the two screws from the bypass paper feed unit and then remove the bypass lower paper feed pulley unit.

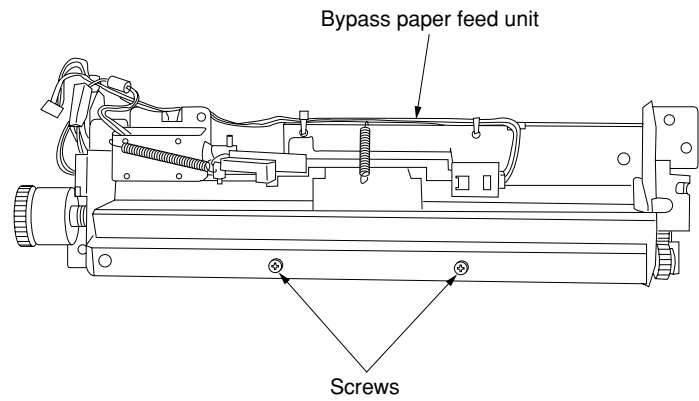


Figure 1-6-26

13. Remove the two stop rings and pull the joint shaft in the direction of the arrow, and then remove the bypass lower paper feed pulley.
14. Refit all the removed parts.

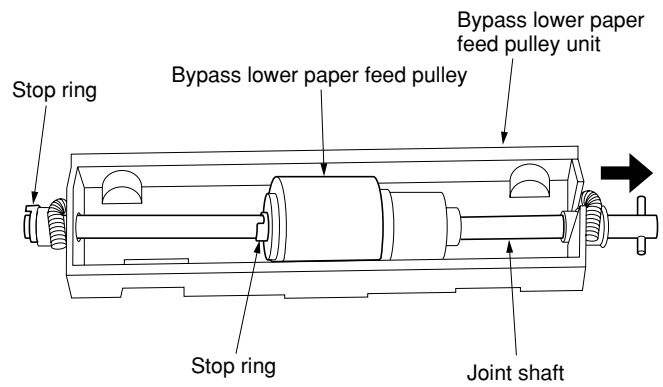


Figure 1-6-27

(3) Detaching and refitting the registration cleaner brush

Follow the procedure below to clean or replace the registration cleaner brush.

Procedure

1. Remove the developing unit (see page 1-6-44).
2. Remove the two screws and then remove the registration cleaner brush.
3. Replace the registration cleaner brush and refit all the removed parts.

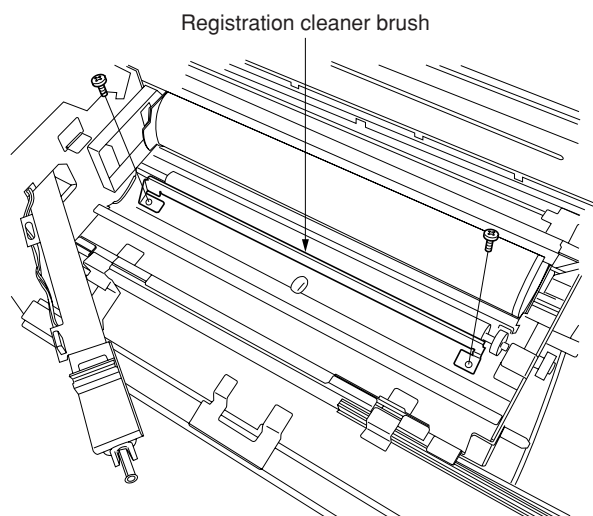


Figure 1-6-28

(4) Detaching and refitting the lower registration cleaner

Follow the procedure below to clean or replace the lower registration cleaner.

Procedure

1. Open the front cover, tilt the paper conveying unit release lever down, and pull out the paper conveying unit.
2. Remove the screw and pull the lower registration cleaner toward you to remove it.
3. Replace the lower registration cleaner and refit all the removed parts.

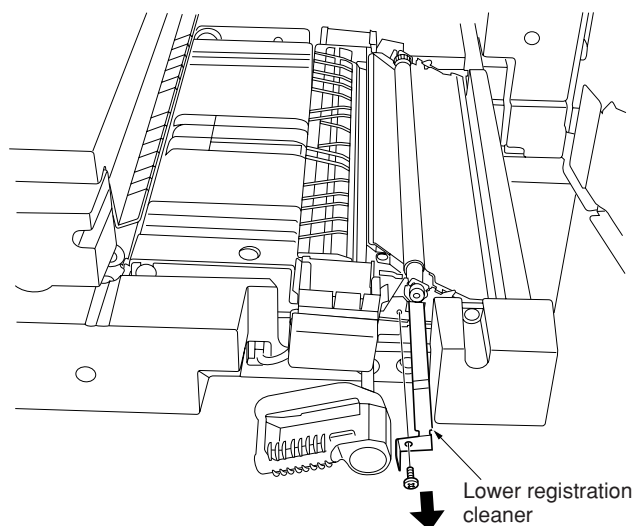


Figure 1-6-29

(5) Detaching and refitting the ozone filter

Follow the procedure below to replace the ozone filter.

Procedure

1. Remove the screw holding the conveying duct cover and then the cover.
2. Remove the two screws holding the middle rear C cover and then the cover.

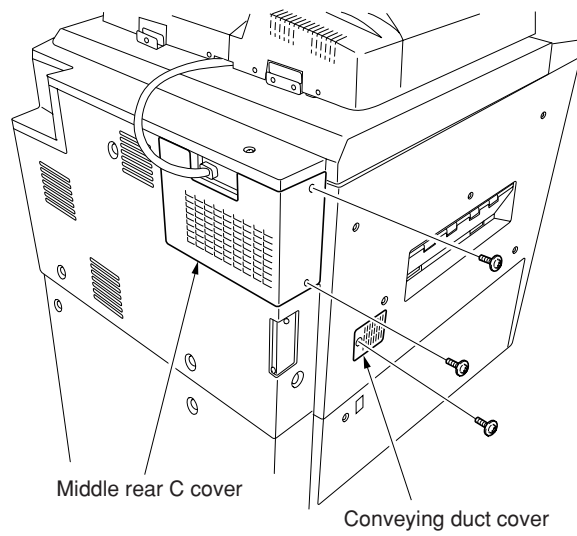


Figure 1-6-30

3. Replace the ozone filter and refit all the removed parts.

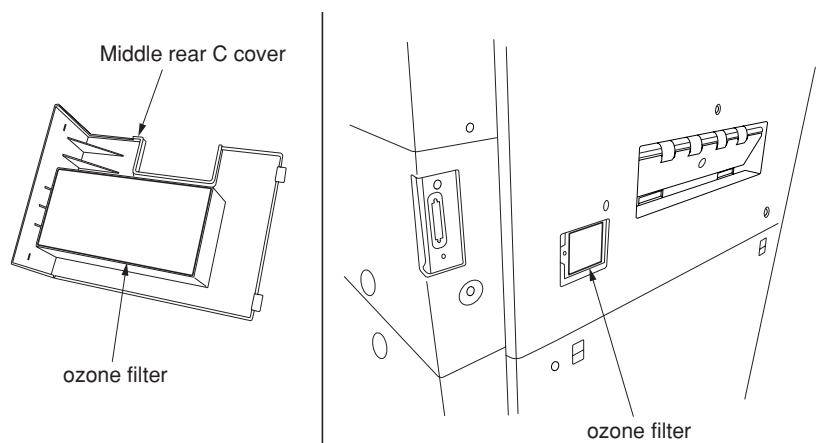


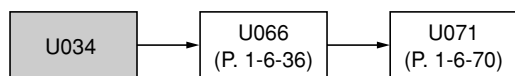
Figure 1-6-31

(6) Adjustment after roller and clutch replacement

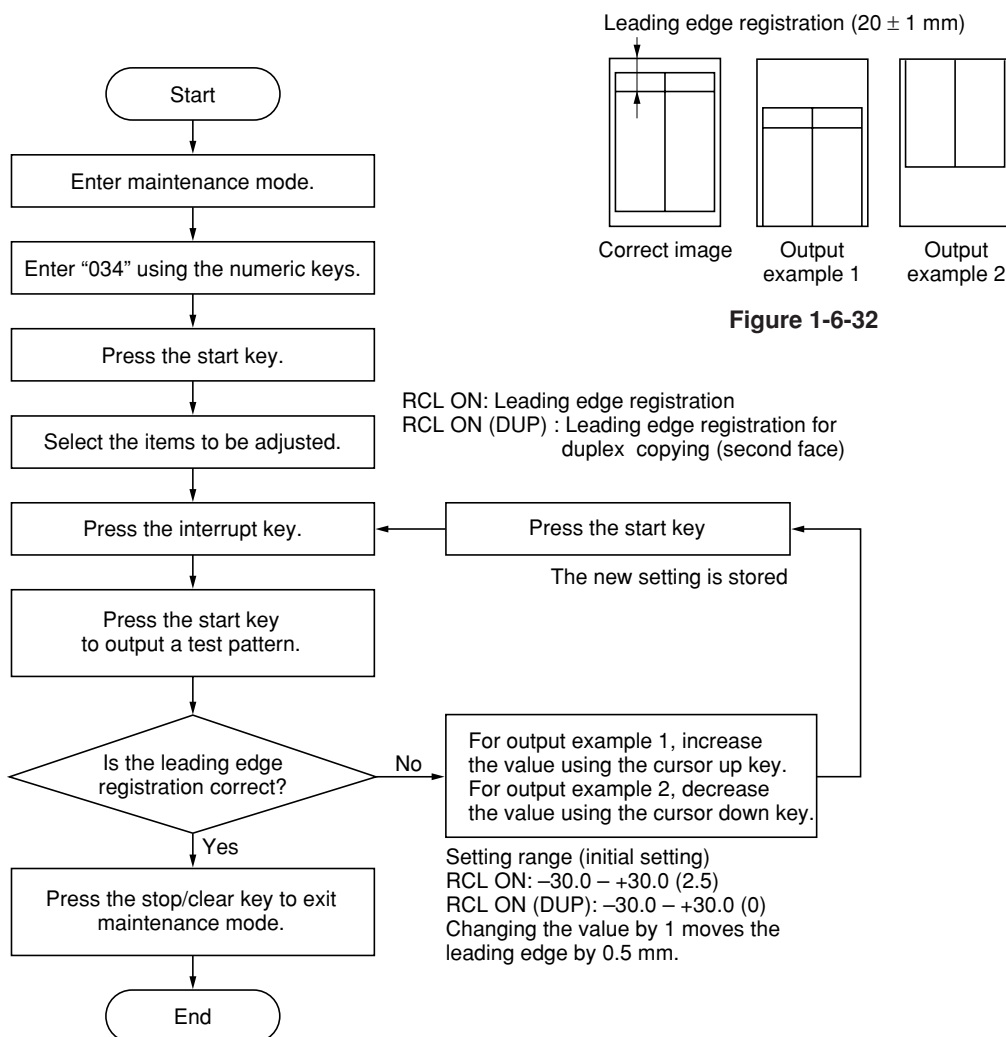
Perform the following adjustment after refitting rollers and clutches.

(6-1) Adjusting the leading edge registration of image printing

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

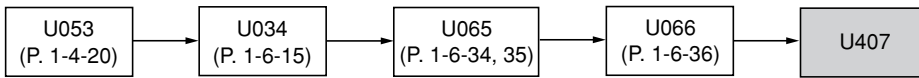
**Caution**

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

Procedure

(6-2) Adjusting the leading edge registration for memory image printing

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



Caution

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

Procedure

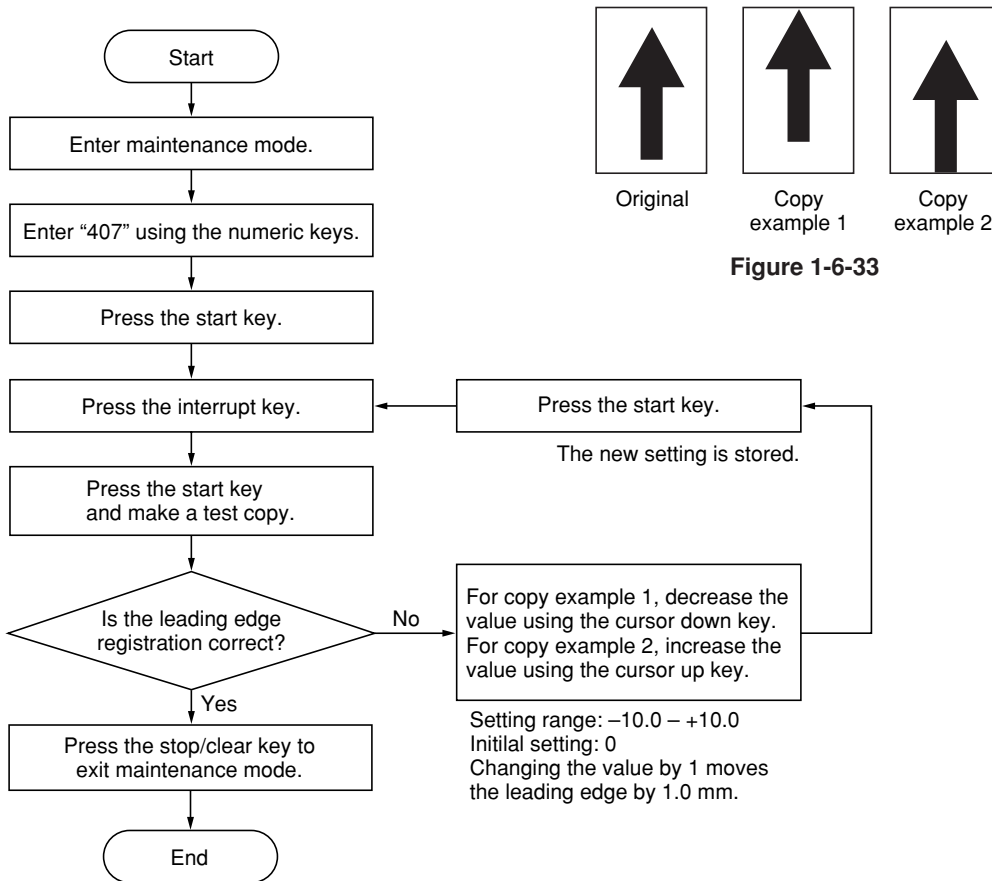
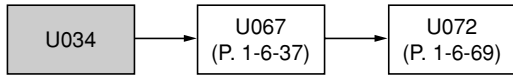


Figure 1-6-33

(6-3) Adjusting the center line of image printing

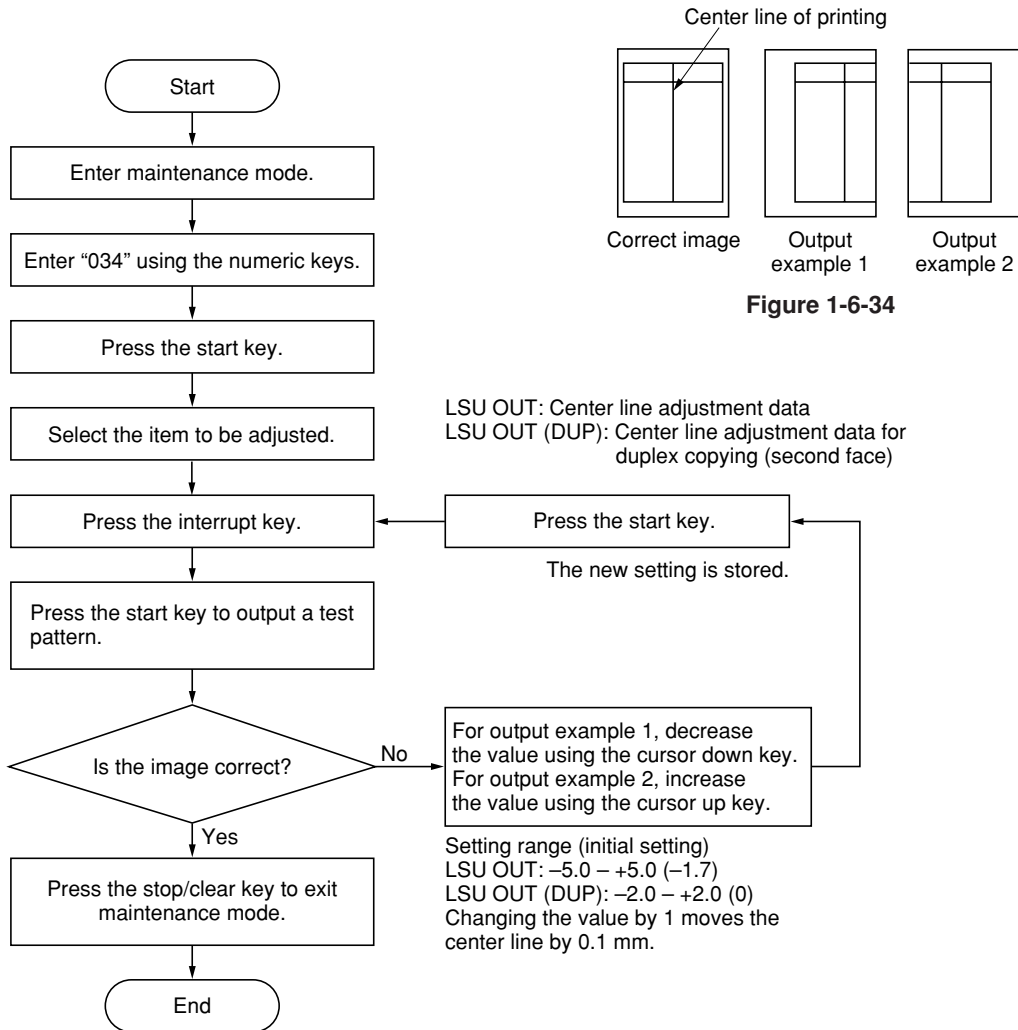
Make the following adjustment if there is a regular error between the center lines of the copy image and original when paper is fed from the drawer.



Caution

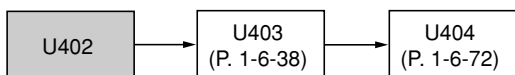
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure



(6-4) Adjusting the margins for printing

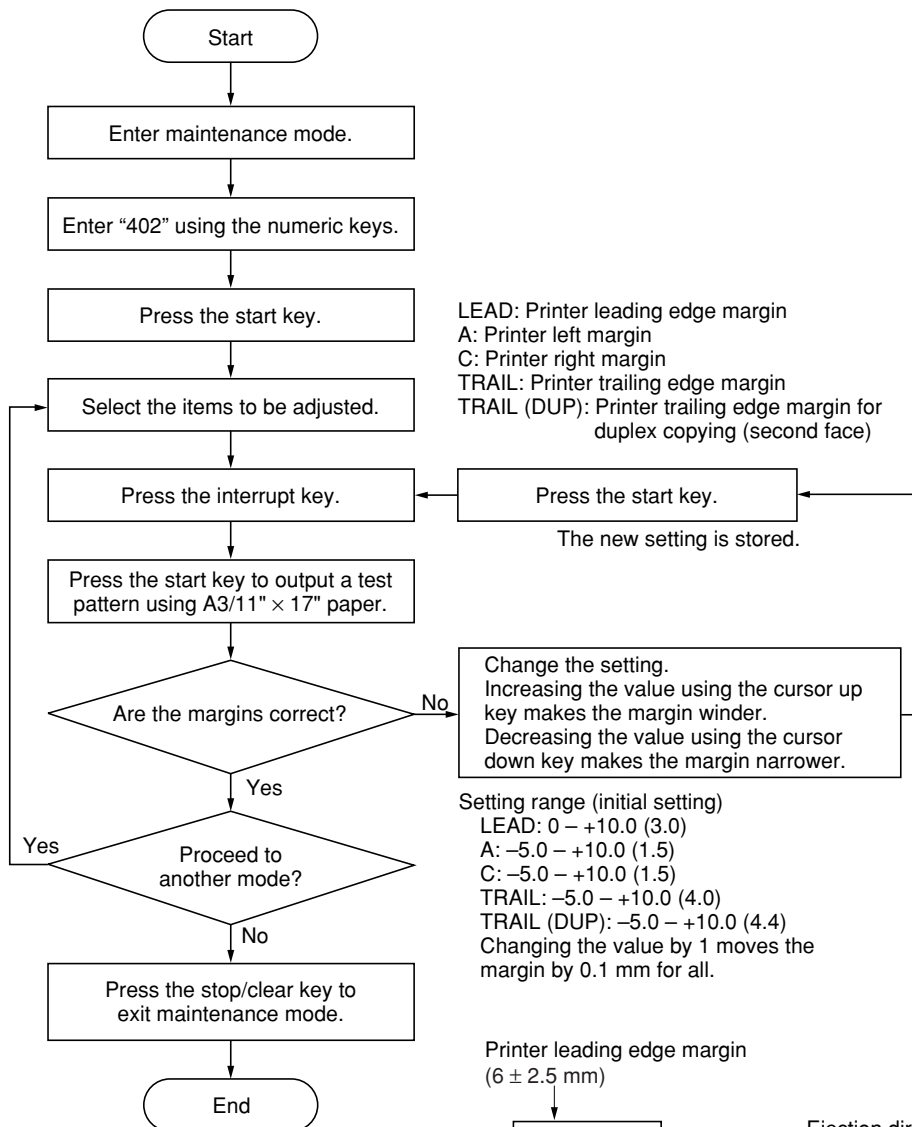
Make the following adjustment if the margins are not correct.



Caution

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

Procedure



LEAD: Printer leading edge margin
 A: Printer left margin
 C: Printer right margin
 TRAIL: Printer trailing edge margin
 TRAIL (DUP): Printer trailing edge margin for duplex copying (second face)

Setting range (initial setting)
 LEAD: 0 – +10.0 (3.0)
 A: –5.0 – +10.0 (1.5)
 C: –5.0 – +10.0 (1.5)
 TRAIL: –5.0 – +10.0 (4.0)
 TRAIL (DUP): –5.0 – +10.0 (4.4)
 Changing the value by 1 moves the margin by 0.1 mm for all.

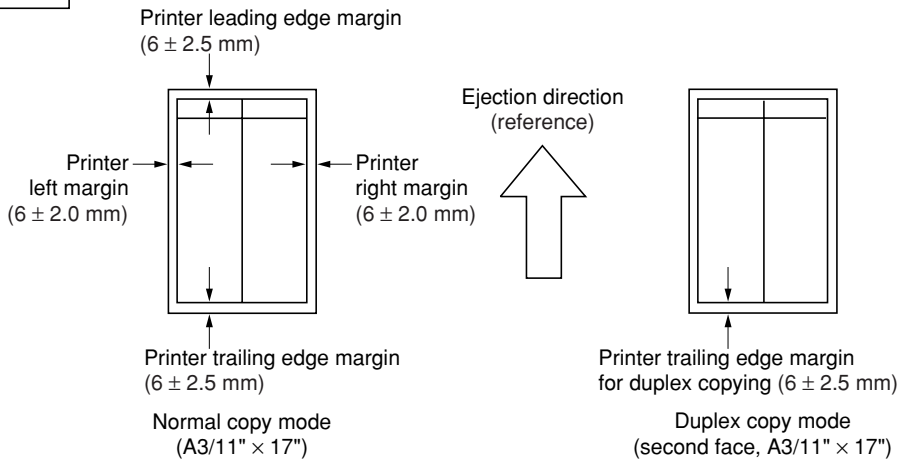


Figure 1-6-35

(6-5) Adjusting the amount of slack in the paper at the registration roller

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

Procedure

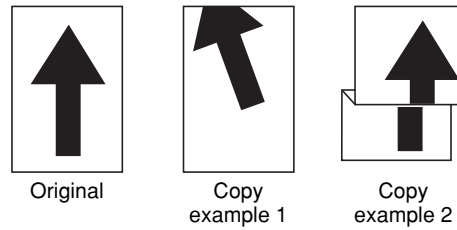
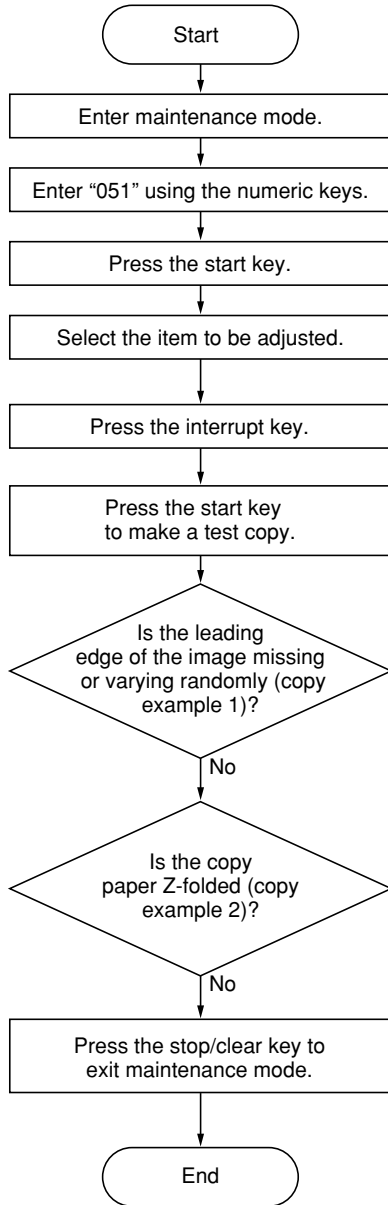


Figure 1-6-36

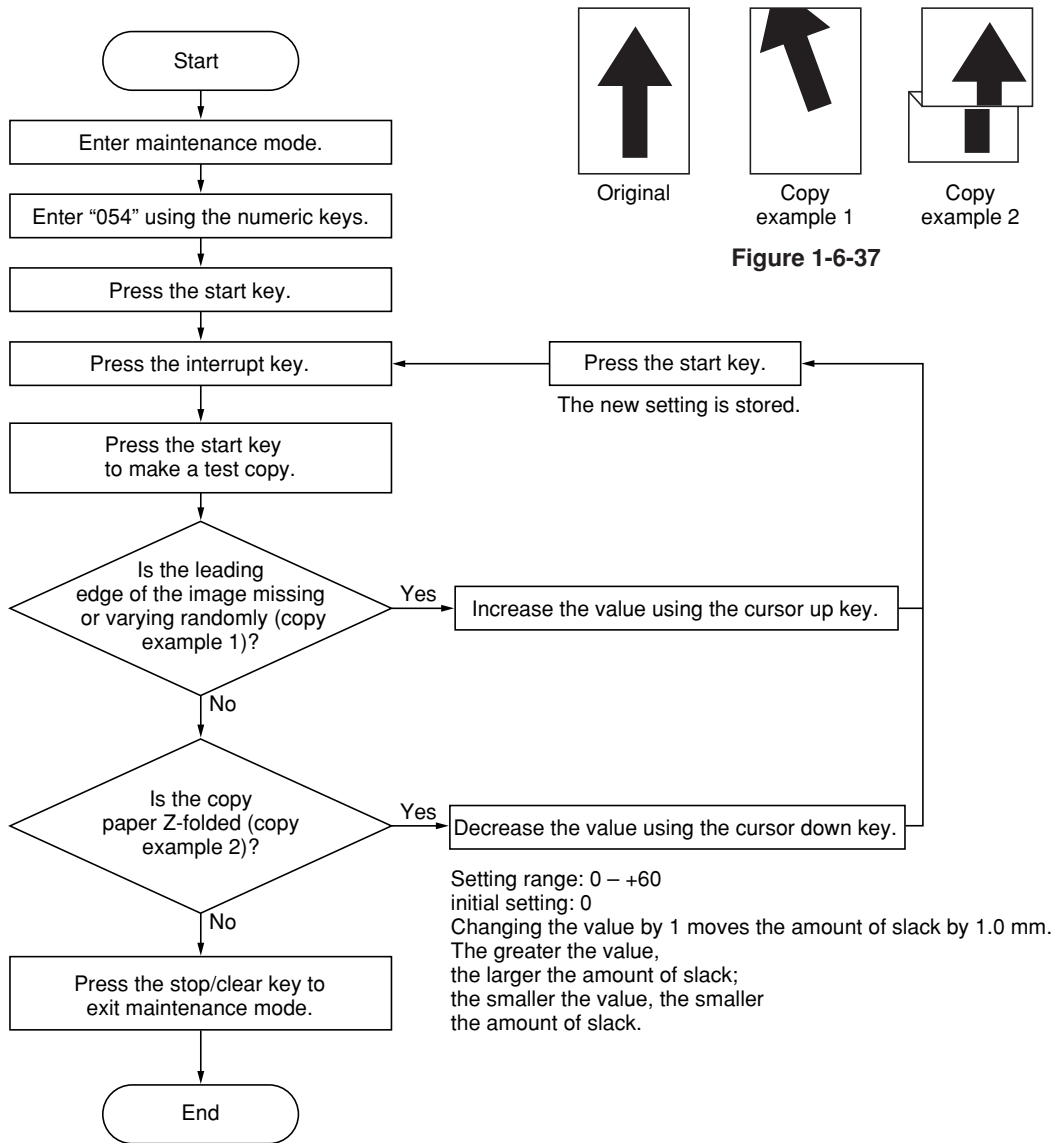
- Amount of slack in the paper at the registration roller
- DECK DATA : Drawers 1
- DECK DATA2 : Drawers 2
- BYPASS DATA : Bypass tray
- DUPLEX DATA : Duplex copying (second face)

Setting range (initial setting)
 DECK DATA : -30 - +40 (-25)
 DECK DATA2 : -30 - +40 (0)
 BYPASS DATA : -30 - +40 (25)
 DUPLEX DATA : -30 - +40 (10)
 Changing the value by 1 moves the amount of slack by 1.0 mm.
 The greater the value, the larger the amount of slack;
 the smaller the value, the smaller the amount of slack.

(6-6) Adjusting the amount of slack in the paper at the vertical conveying

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 Optical section

(1) Detaching and refitting the exposure lamp

Follow the procedure below to replace the exposure lamp.

Procedure

1. Open the DF.
2. Remove the two screws holding the upper right cover and then the cover.

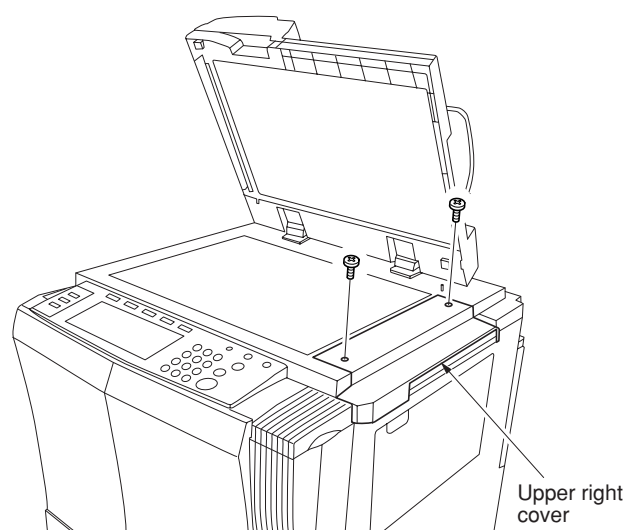


Figure 1-6-38

3. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
4. Move the mirror 1 frame to the cutouts at the center of the machine.
* When moving the mirror 1 frame, do not touch the exposure lamp nor inverter PCB.
5. Disconnect the exposure lamp connector from the inverter PCB.
6. Remove the two screws holding the exposure lamp and then the lamp.
7. Replace the exposure lamp and refit all the removed parts.

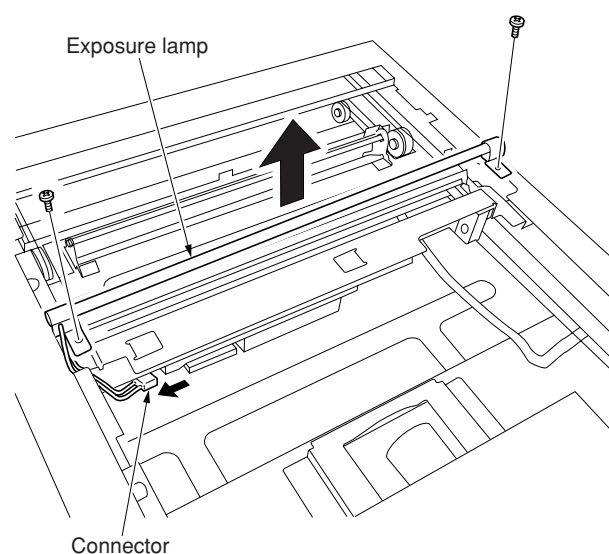


Figure 1-6-39

(2) Detaching and refitting the scanner wires

Follow the procedure below when the scanner wires are broken or to be replaced.

Caution

After replacing the scanner wire, make a test copy and check the copy image. If the image is incorrect, perform the adjustments (see pages 1-6-31 to 38).

(2-1) Detaching the scanner wires

Procedure

1. Remove the DF.
2. Remove the contact glass.

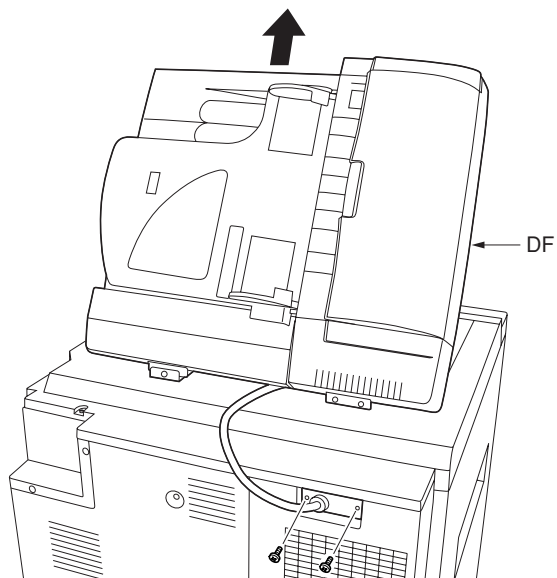


Figure 1-6-40

3. Remove the four screws holding the upper rear cover and then the cover.
4. Remove the two screws holding the upper left cover and then the cover.

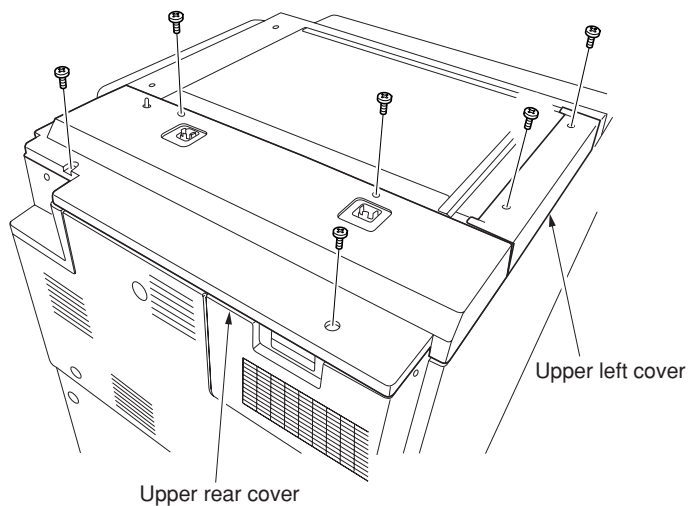


Figure 1-6-41

- Remove the two screws holding the slit glass and then the glass.

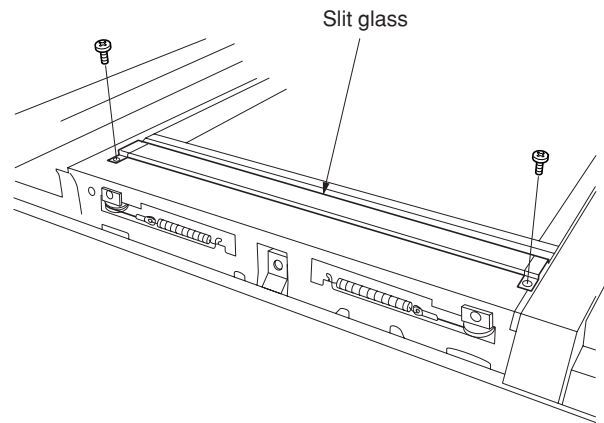


Figure 1-6-42

- Open the front cover and pull out the image formation unit.
- Remove four screws holding the operation unit lower inner cover and then the cover.

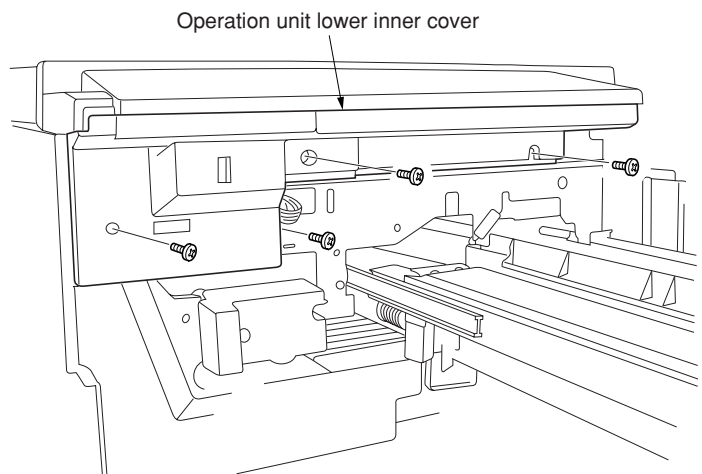


Figure 1-6-43

- Remove the five screws and disconnect the three connectors, and then remove the operation unit.

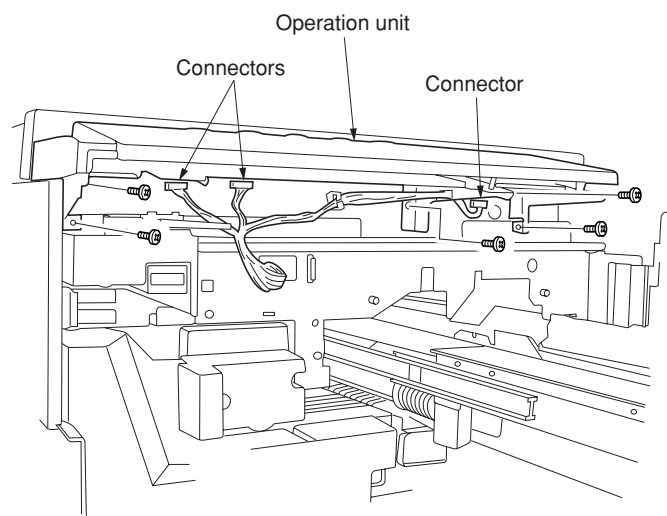


Figure 1-6-44

9. Remove the four screws holding the mirror 1 upper frame and then the frame.
10. Remove the two screws holding each of the front and rear wire retainers and then the retainers from the mirror 1 lower frame.
11. Remove the mirror 1 lower frame from the scanner unit.

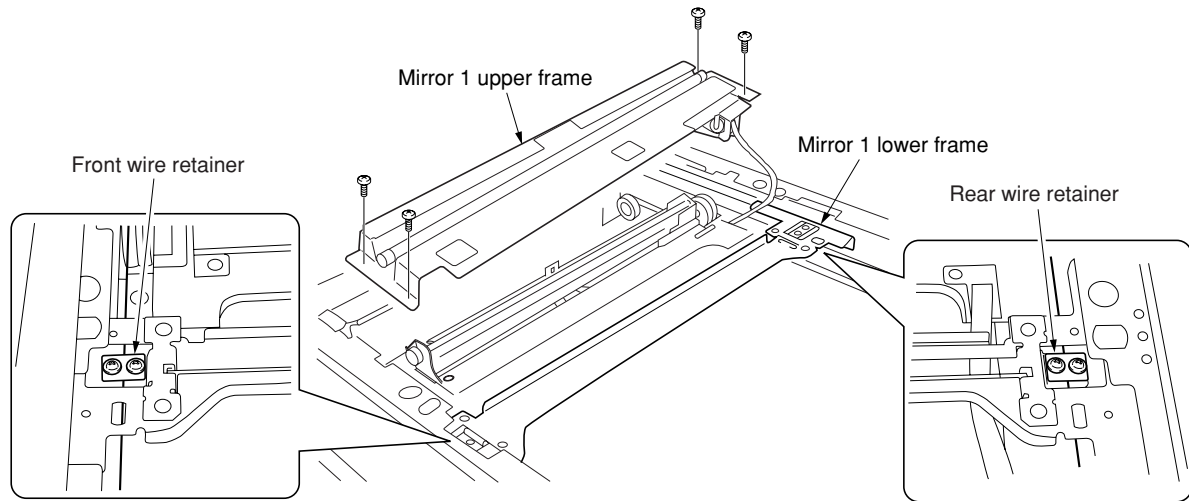


Figure 1-6-45

12. Remove the round terminal of the scanner wire from the scanner wire spring on the left side of the scanner unit.
13. Remove the scanner wire.

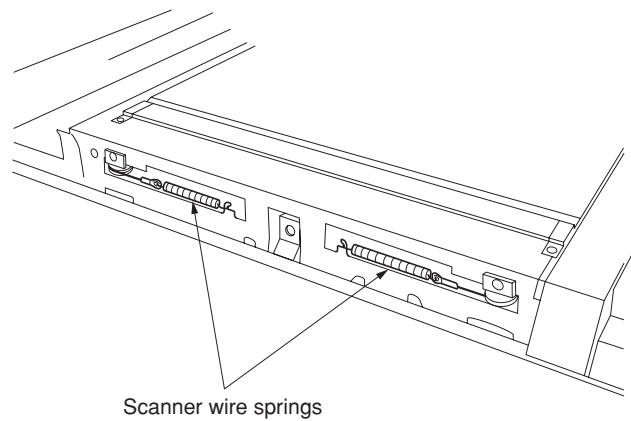


Figure 1-6-46

(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
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.
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.

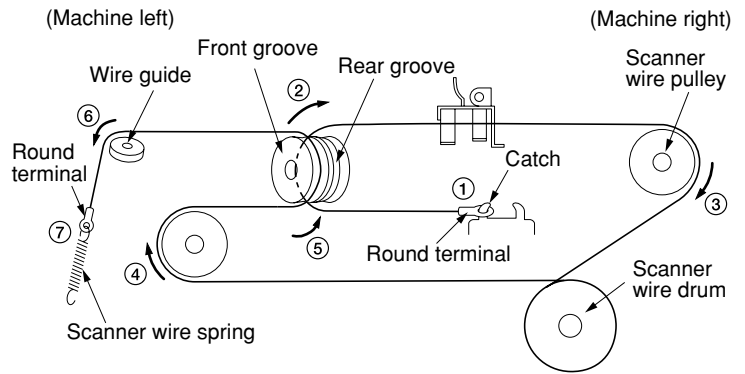


Figure 1-6-47

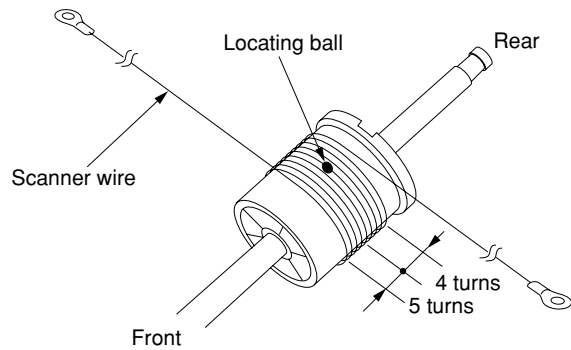


Figure 1-6-48

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 the removed parts.

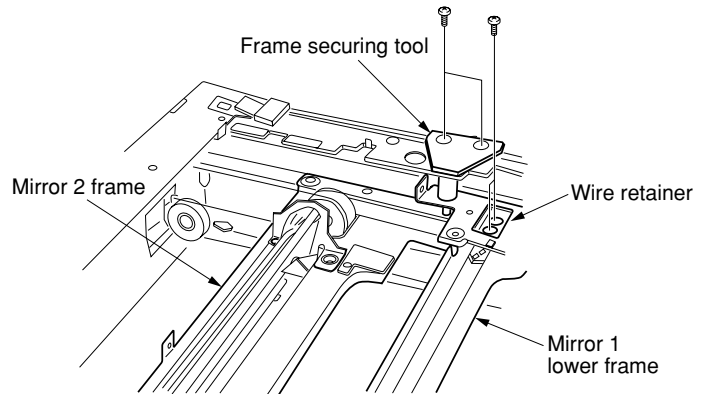
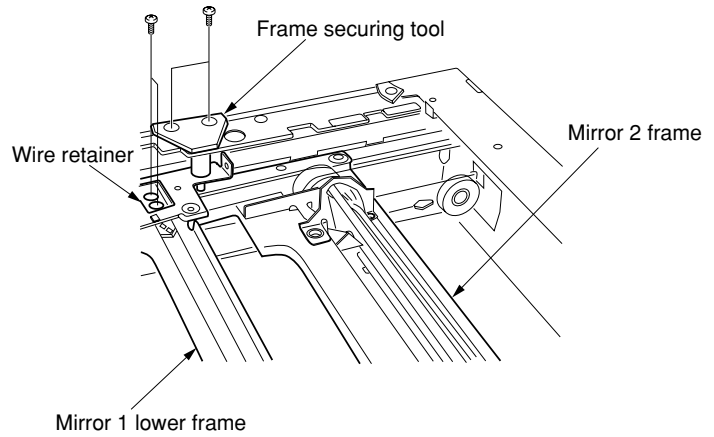


Figure 1-6-49

(3) Detaching and refitting the laser scanner unit

Follow the procedure below to replace the laser scanner unit.

Caution

After replacing the laser scanner unit, make a test copy and check the copy image. If the image is incorrect, proceed to "(6) Adjusting scanner image lateral squareness (reference)".

Procedure

1. Remove the DF, upper rear cover, middle rear C cover, developing duct cover, upper right cover, upper left cover and contact glass.
2. Remove the operation unit (see page 1-6-22).
3. Remove the three screws and then remove the right scanner reinforcement.

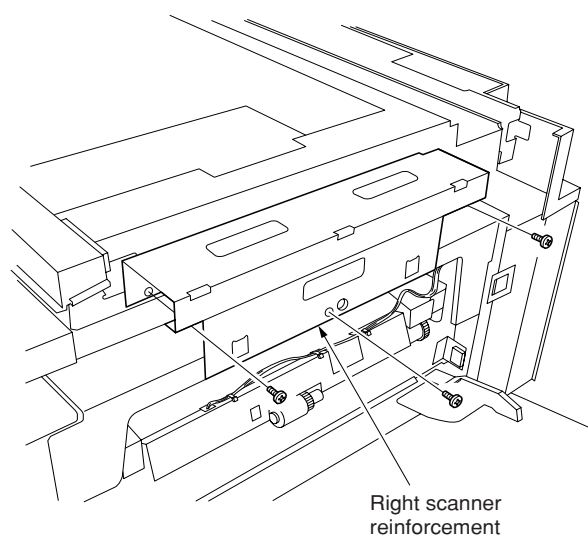


Figure 1-6-50

4. Disconnect the two connectors CN14 and CN15 on the main PCB.

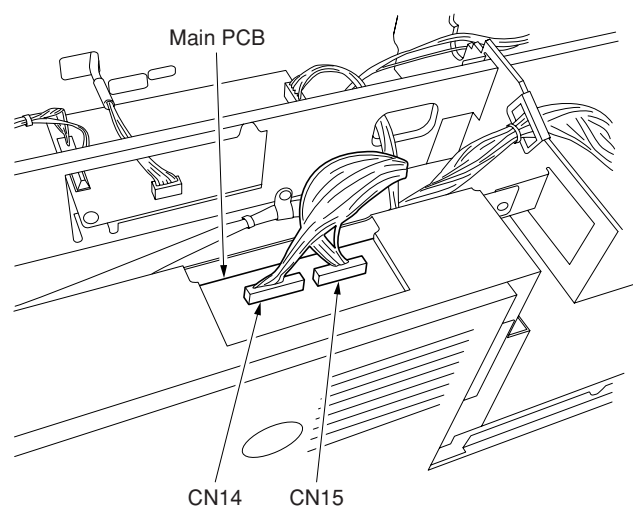


Figure 1-6-51

5. Disconnect the two connectors CN1 and CN6 on the scanner drive PCB.

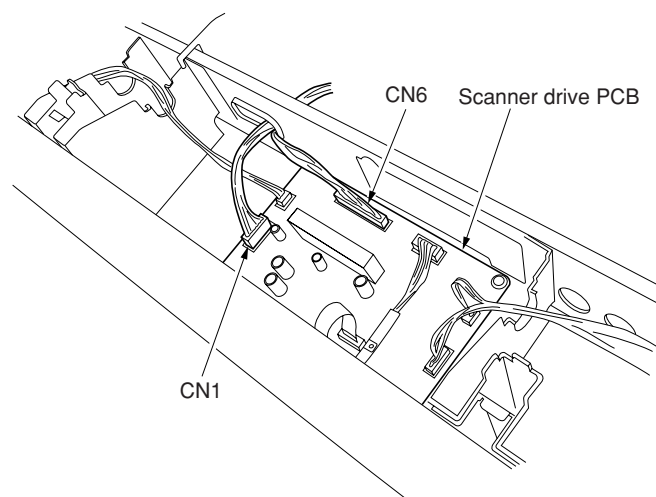


Figure 1-6-52

6. Remove the wire saddle located at the side of the scanner drive PCB from the scanner unit.

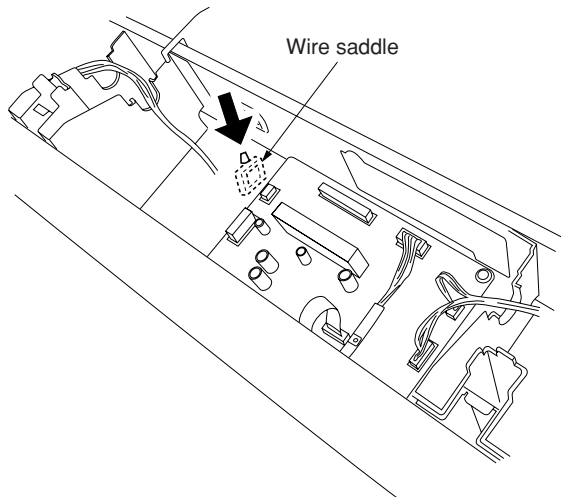


Figure 1-6-53

7. Remove the three screws holding the DF connector mount and then the mount.

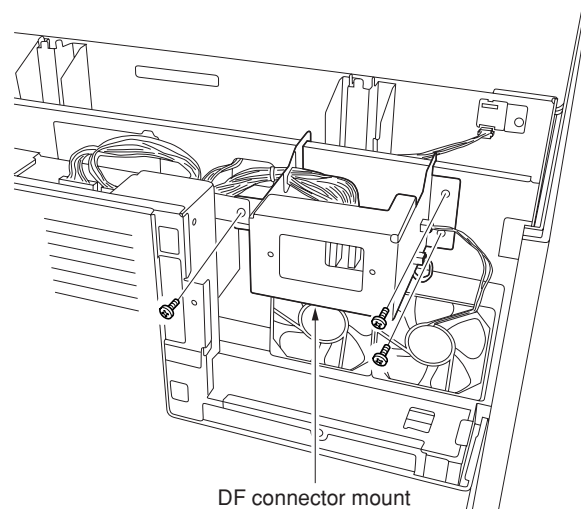


Figure 1-6-54

8. Remove the four screws with rubber mounts and then the scanner unit.

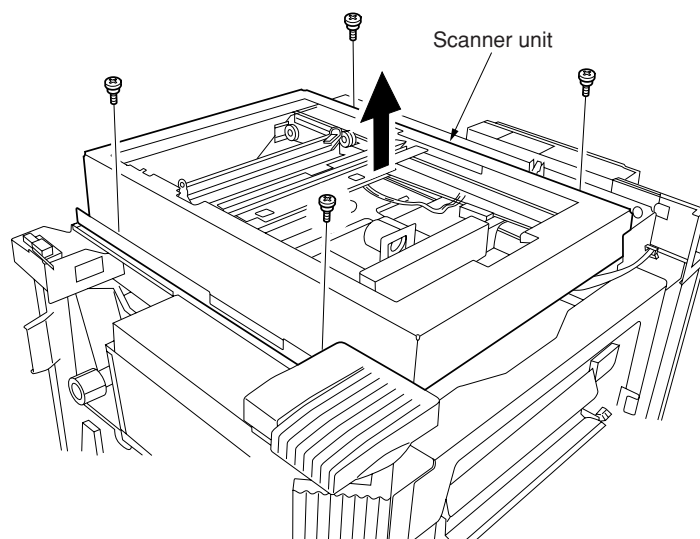
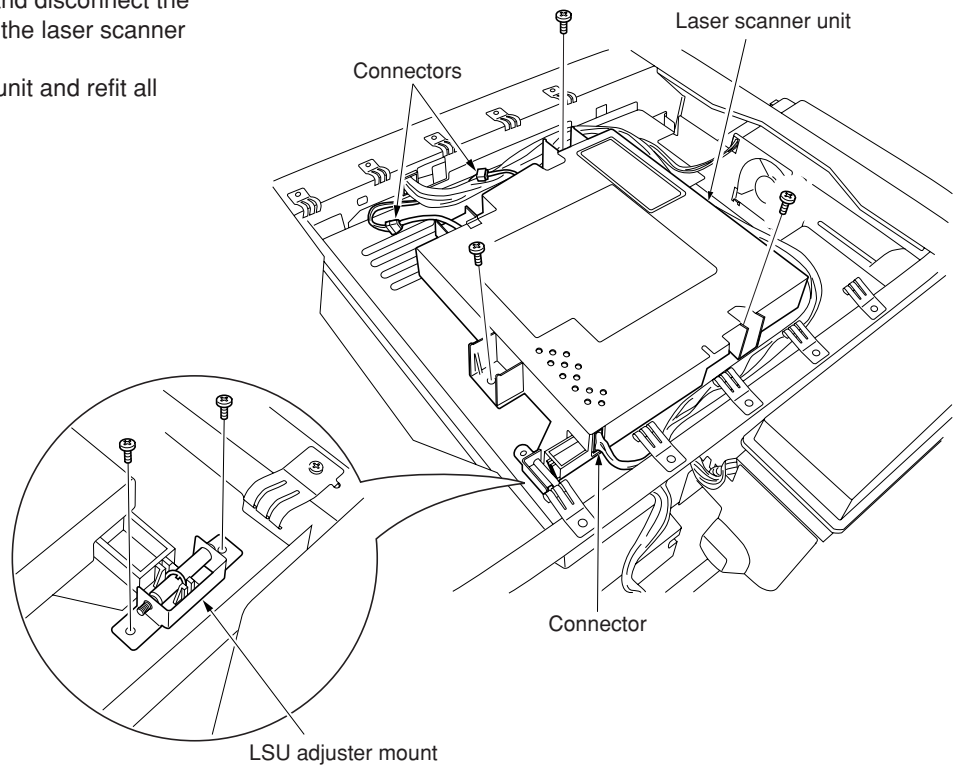


Figure 1-6-55

9. Remove the two screws holding the LSU adjuster mount and then the mount.
10. Remove the three screws and disconnect the three connectors, and then the laser scanner unit.
11. Replace the laser scanner unit and refit all the removed parts.

**Figure 1-6-56**

(4) Detaching and refitting the ISU (reference)

Follow the procedure below to replace the ISU.

Caution

After replacing the ISU, make a test copy and check the copy image. If the image is incorrect, perform the adjustments (see pages 1-6-31 to 38).

ISU installation requires the following tools:

Two positioning pins (P/N 1856812)

Procedure

• Detaching the ISU

1. Remove the contact glass.
2. Remove the nine screws holding the ISU cover and then the cover.

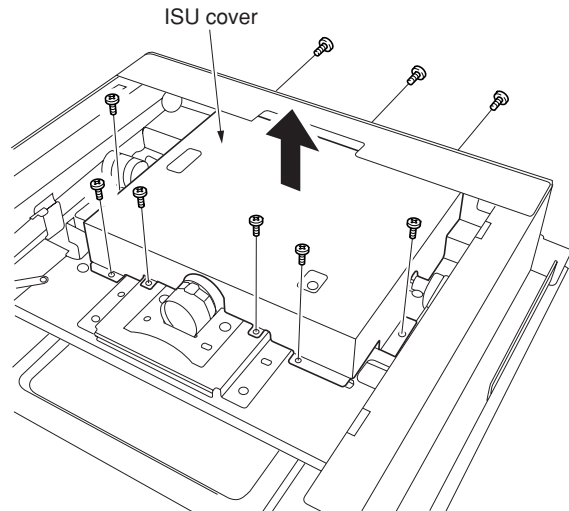


Figure 1-6-57

3. Remove the four screws and disconnect the two connectors, and then remove the ISU.
4. Replace the ISU.

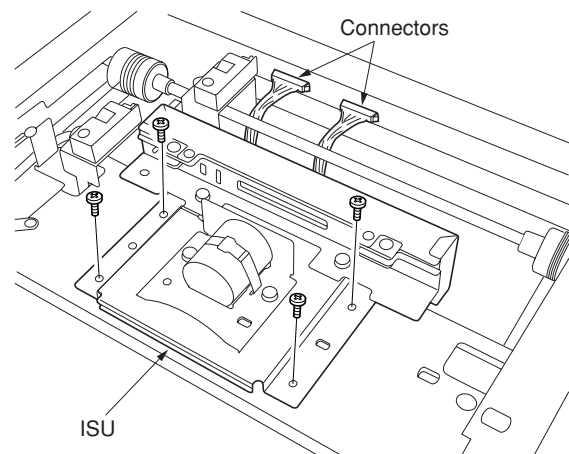


Figure 1-6-58

• Refitting the ISU

5. Secure the ISU using the two positioning pins.
6. Refit the ISU using four screws.
7. Remove the two positioning pins.
8. Connect the two connectors.
9. Refit all the removed parts.

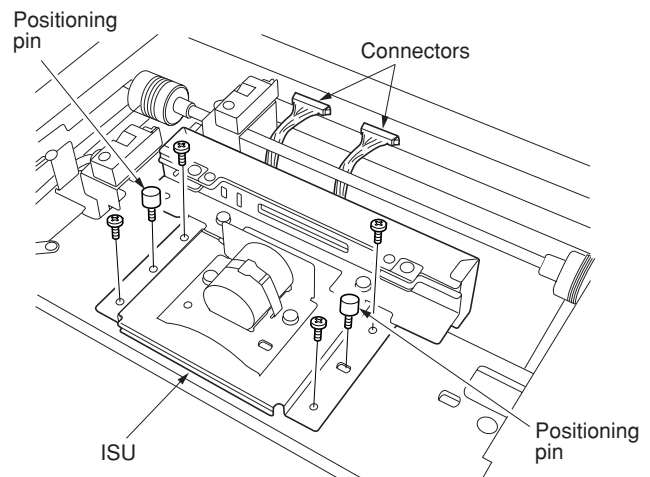


Figure 1-6-59

(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.

Perform adjustment of straightness when proper straightness cannot be obtained even if you perform “Adjusting the registration/vertical conveying slack amount (P.1-6-19, 20)” first and then check the straightness of copy images.

Procedure

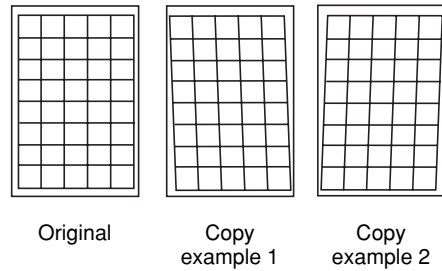


Figure 1-6-60

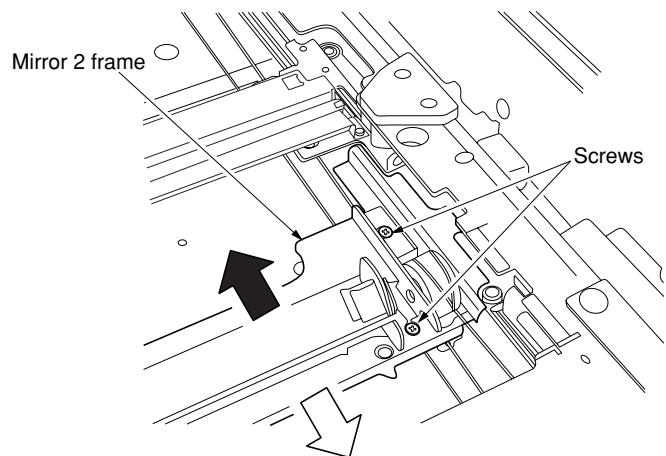
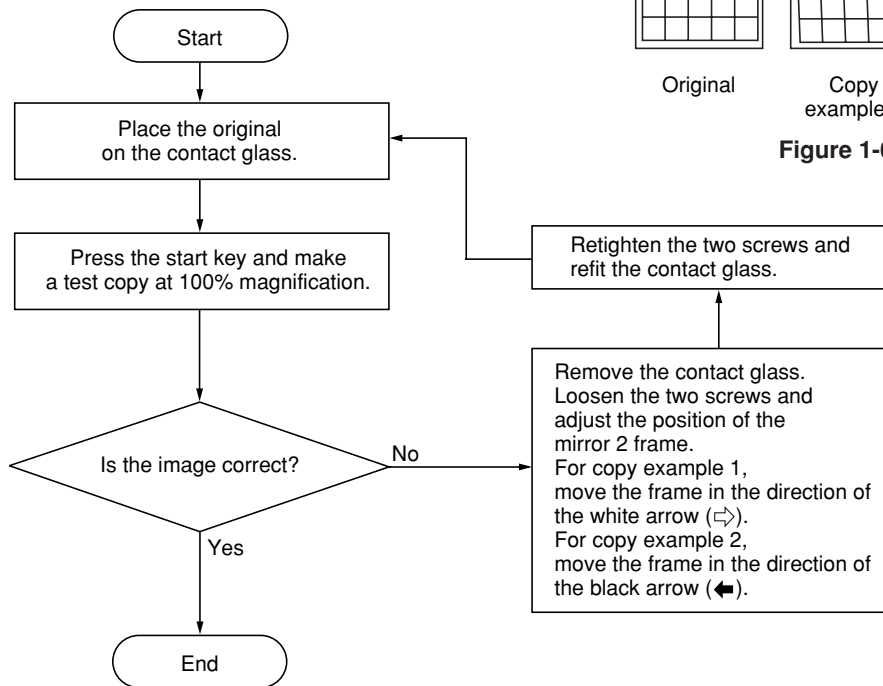


Figure 1-6-61

(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 pull out the image formation unit, and remove the operation unit lower inner 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

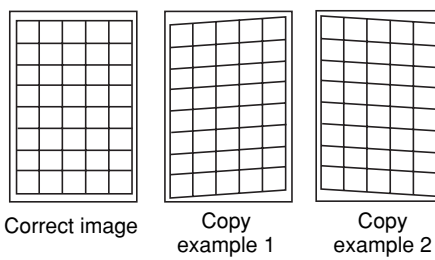
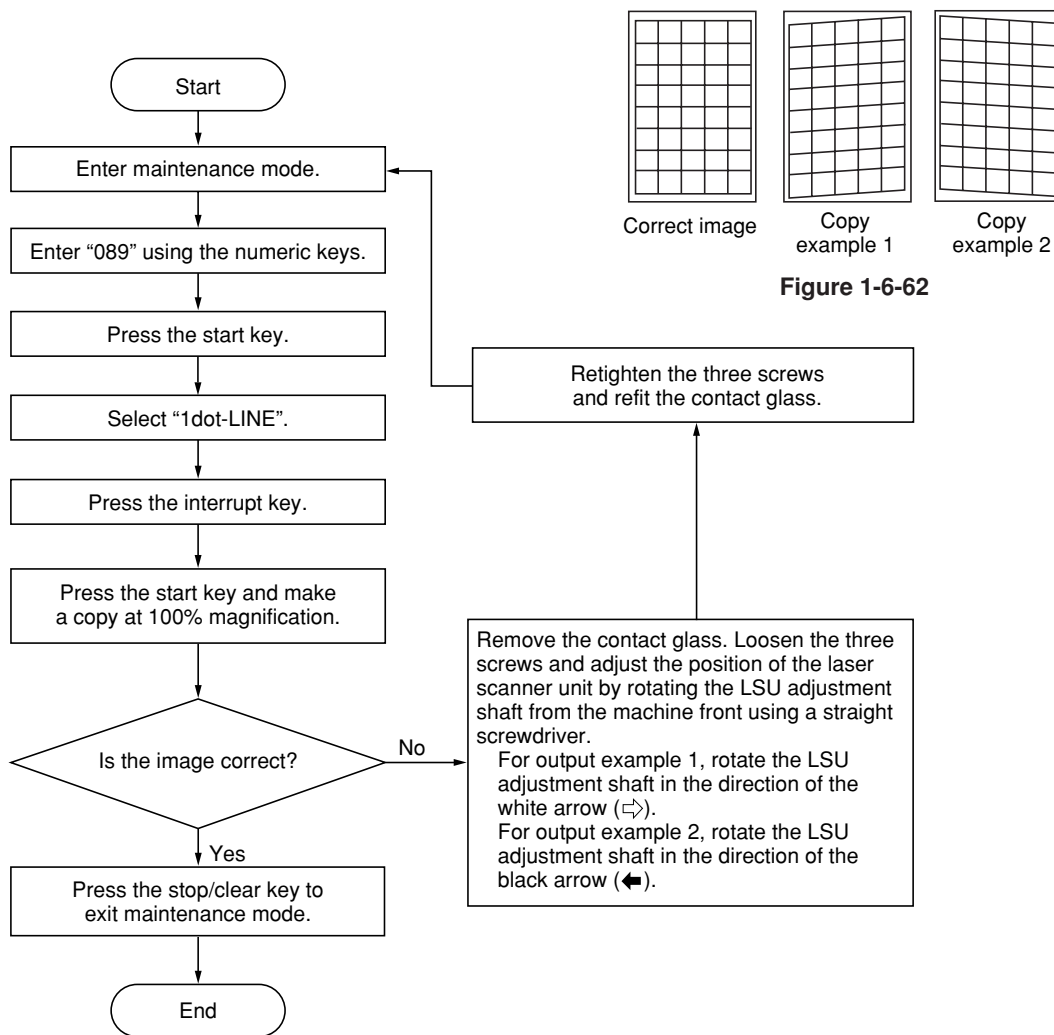


Figure 1-6-62

Remove the contact glass. Loosen the three screws and adjust the position of the laser scanner unit by rotating the LSU adjustment shaft from the machine front using a straight screwdriver.
 For output example 1, rotate the LSU adjustment shaft in the direction of the white arrow (⇒).
 For output example 2, rotate the LSU adjustment shaft in the direction of the black arrow (⇐).

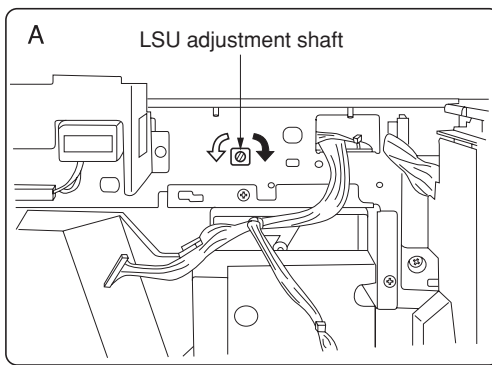
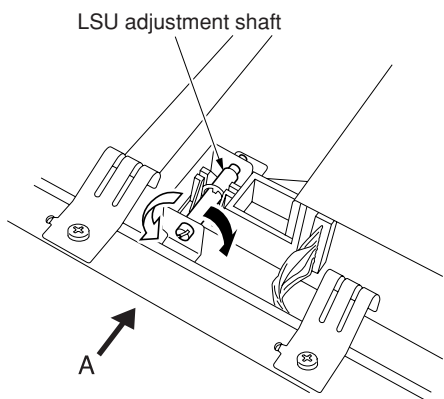


Figure 1-6-63

(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.

Procedure

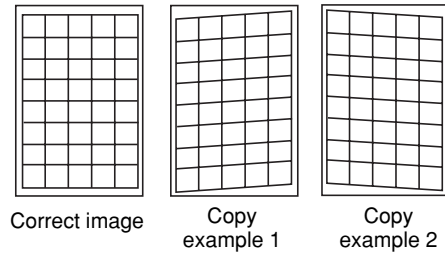
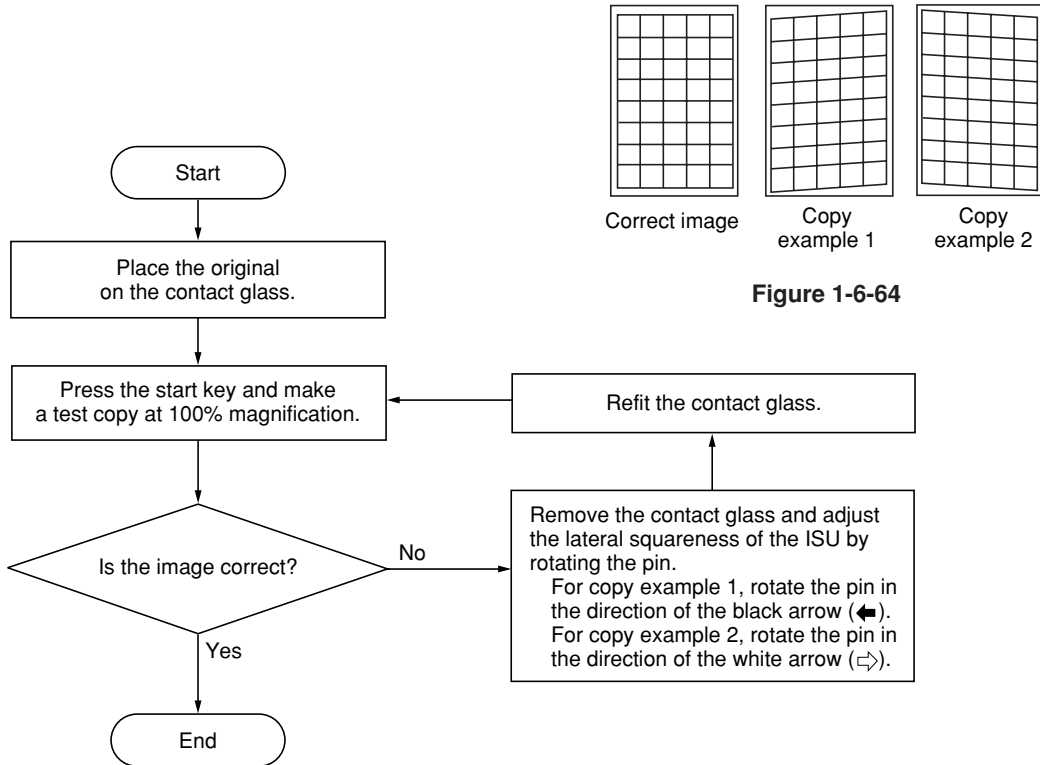


Figure 1-6-64

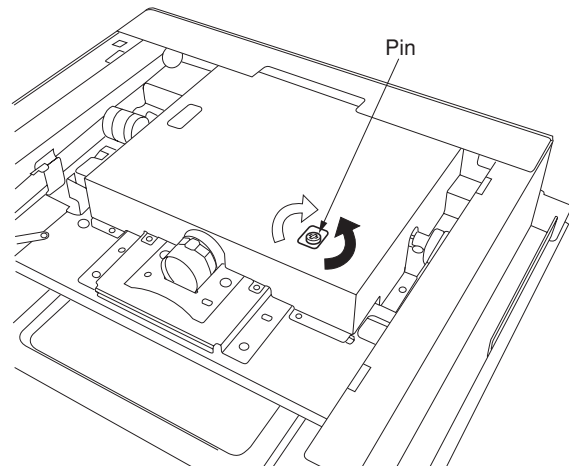
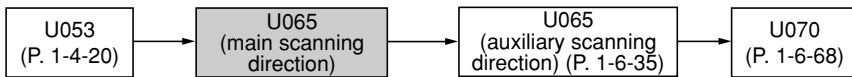


Figure 1-6-65

(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

Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode. Also, perform “(8) Adjusting magnification of the scanner in the auxiliary scanning direction” (page 1-6-35) and “(10) Adjusting the scanner center line” (page 1-6-37) after this adjustment.

Procedure

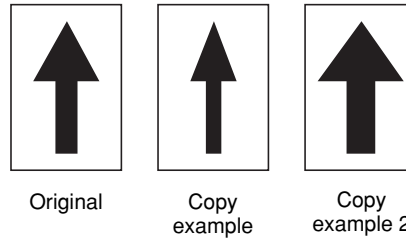
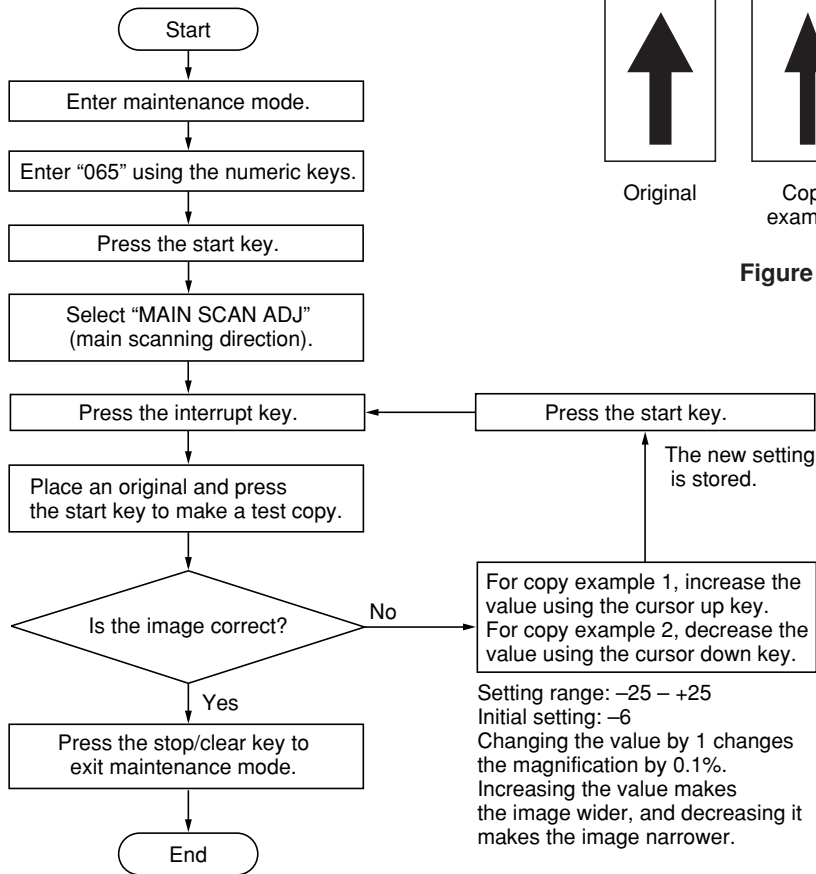
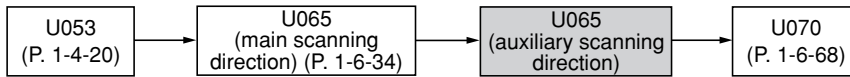


Figure 1-6-66

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

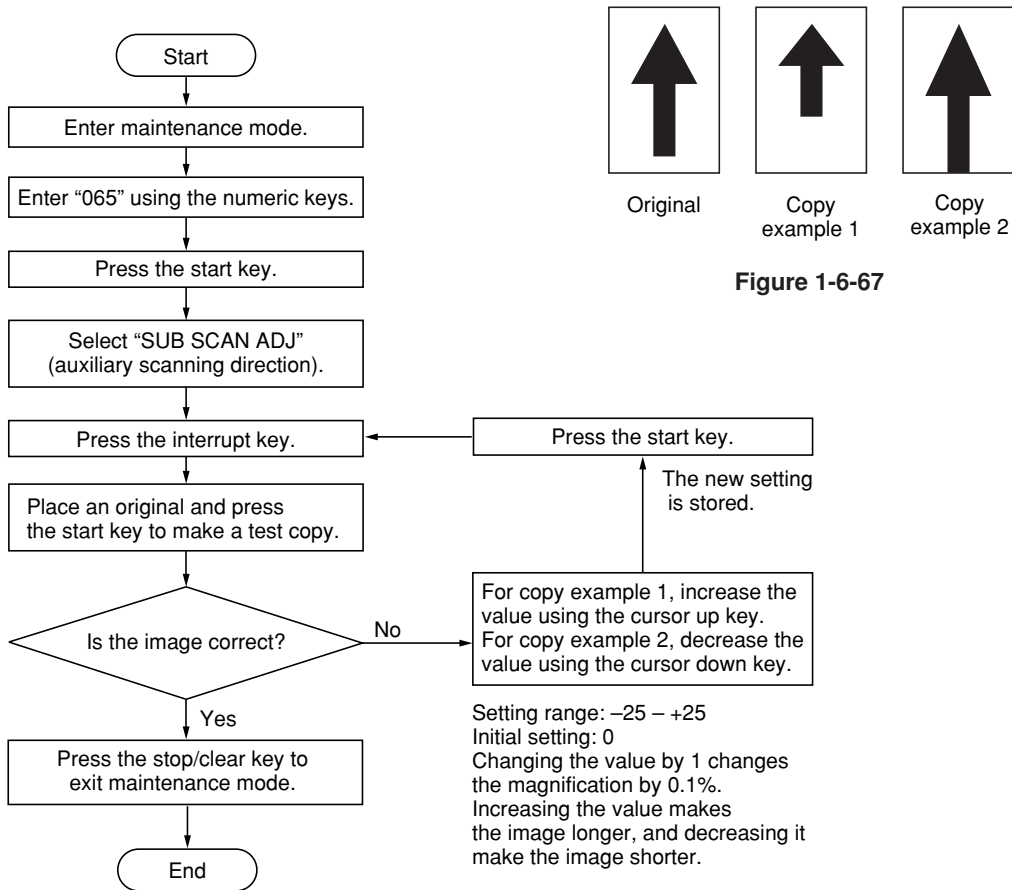
Perform the following adjustment if the magnification in the auxiliary scanning direction is not correct.



Caution

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

Procedure



(9) Adjusting the scanner leading edge registration

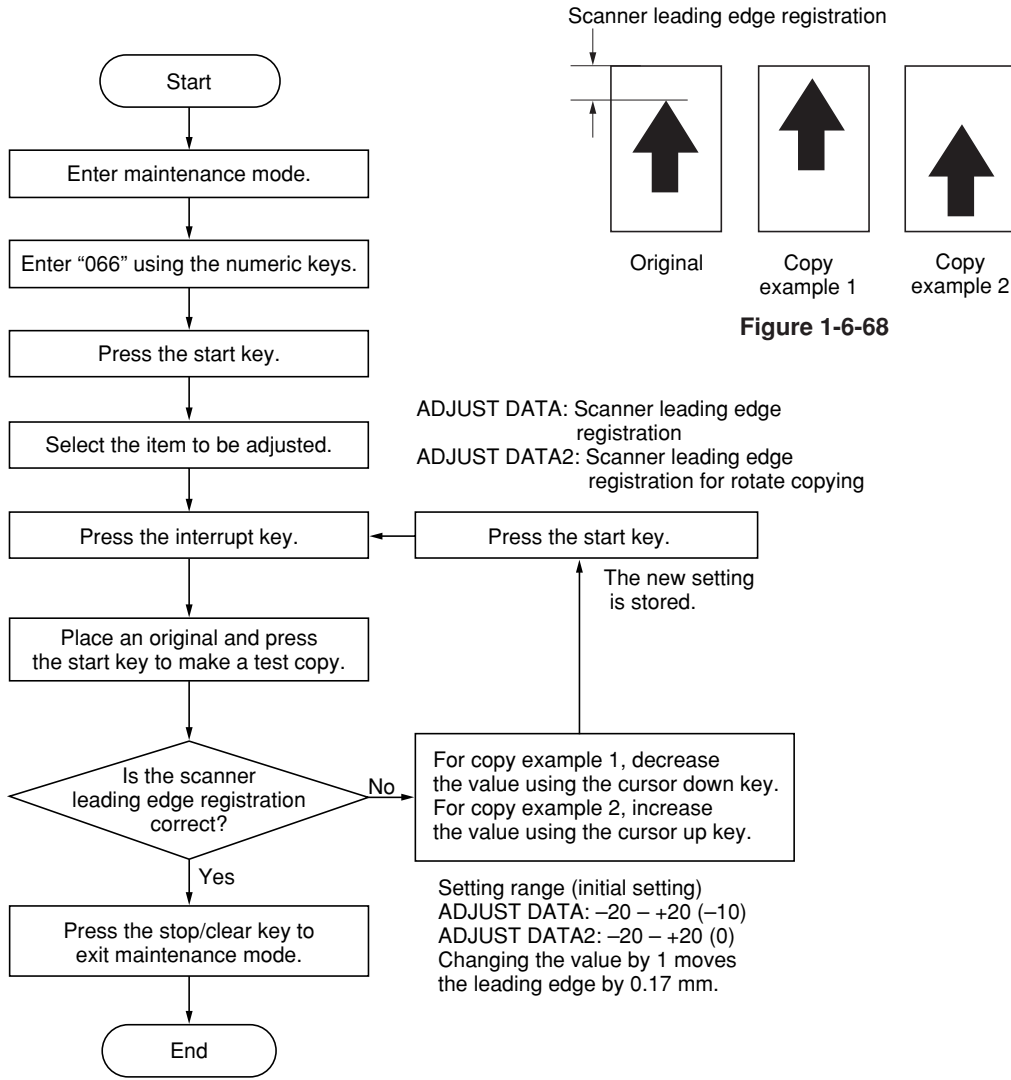
Perform the following adjustment if there is regular error between the leading edges of the copy image and original.



Caution

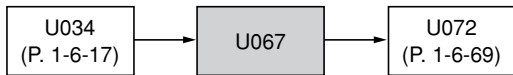
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

Procedure



(10) Adjusting the scanner center line

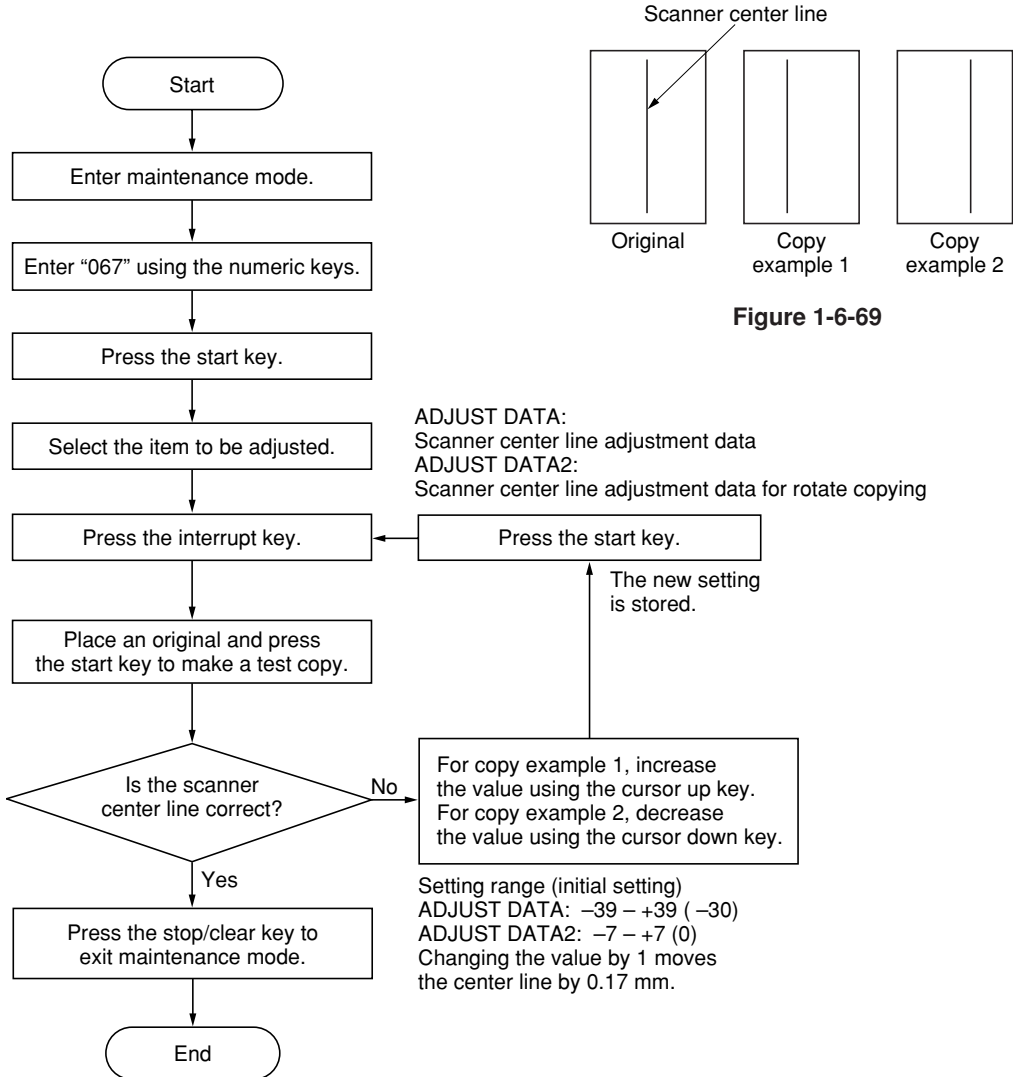
Perform the following adjustment if there is a regular error between the center lines of the copy image and original.



Caution

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

Procedure



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

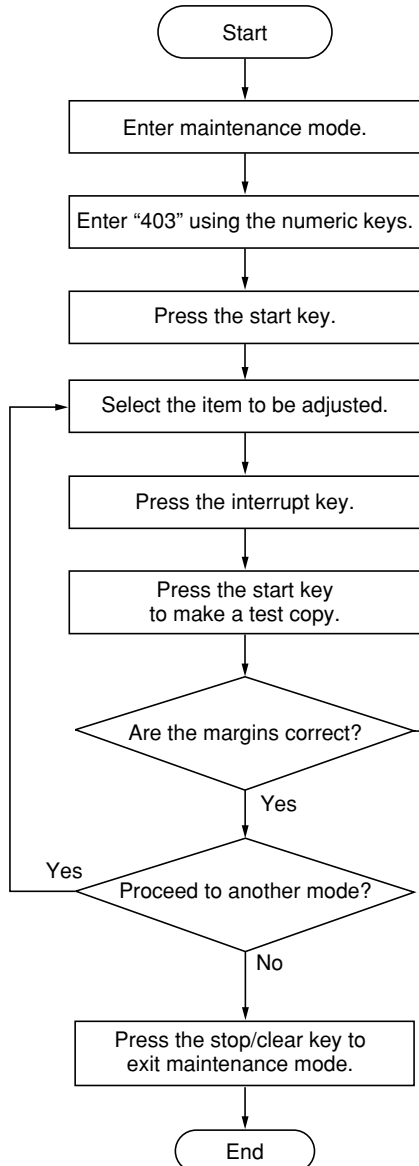
Perform the following adjustment if the margins are not correct.



Caution

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

Procedure



A MARGIN: Scanner left margin
 B MARGIN: Scanner leading edge margin
 C MARGIN: Scanner right margin
 D MARGIN: Scanner trailing edge margin

Press the start key.
 The new setting is stored.

Change the setting.
 Increasing the value using the cursor up key makes the margin wider.
 Decreasing the value using the cursor down key makes the margin narrower.

Setting range (initial setting)
 Scanner left margin: 0 – +10.0 (2.0)
 Scanner leading edge margin: 0 – +10.0 (2.0)
 Scanner right margin: 0 – +10.0 (2.0)
 Scanner trailing edge margin: 0 – +10.0 (4.0)
 Changing the value by one moves the margin by 0.5 mm for all.

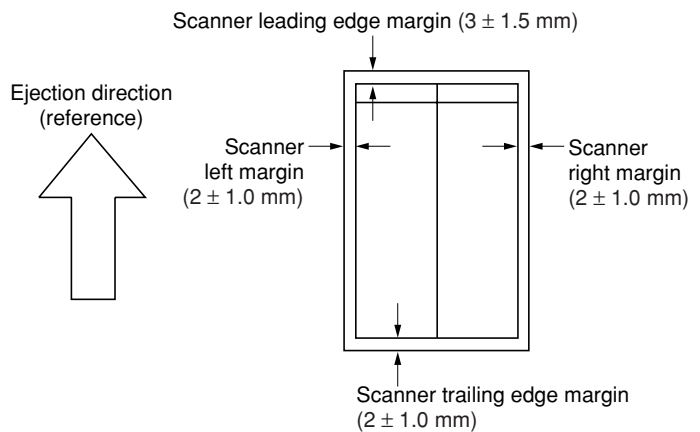


Figure 1-6-70

1-6-4 Main charging section

(1) Detaching and refitting the charger wire and main charger grid

Follow the procedure below when the charger wire or main charger grid 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. Open the front cover and pull out the image formation unit (see page 1-6-44).
2. Disconnect the two 2-pin connectors for the main charger cleaning motor and cleaning lamp.
3. Use a flat-blade screwdriver to loosen the pin and remove the main charger unit from the image formation unit.

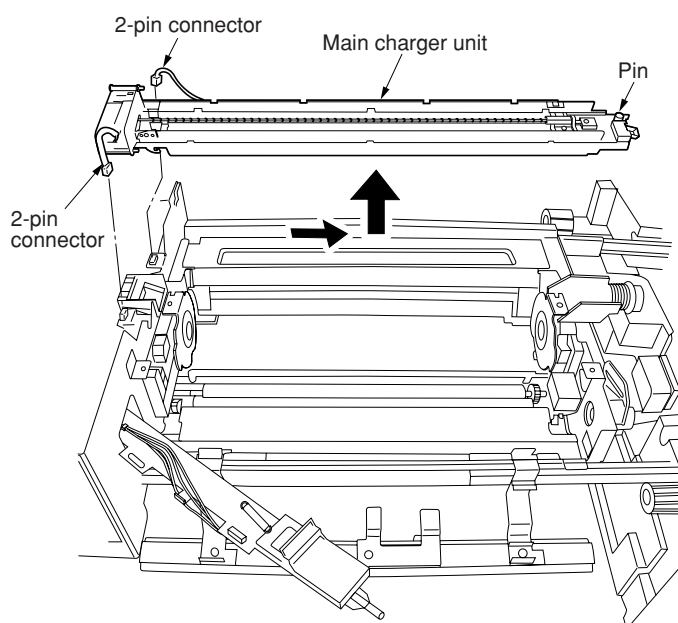


Figure 1-6-71

4. Remove the screw holding the main charger grid and then the grid.
5. Remove the grid wire cleaning pad and main charger wire cleaning pad (see page 1-6-41).

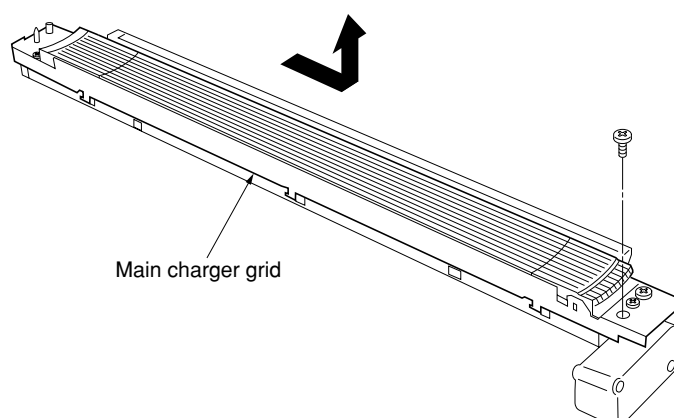


Figure 1-6-72

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.

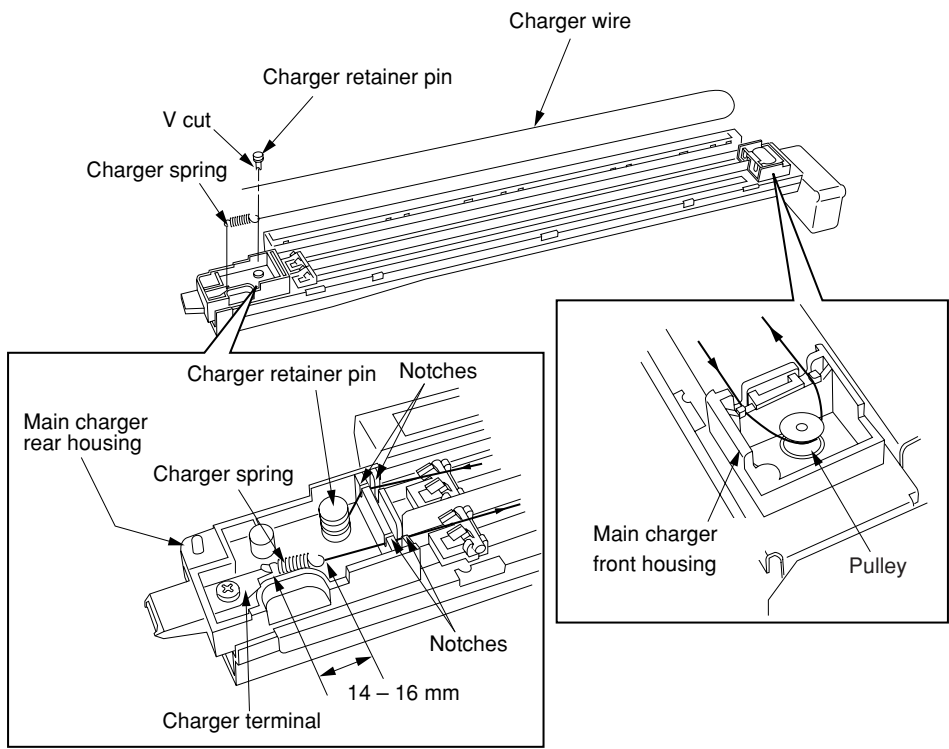


Figure 1-6-73

(2) Detaching and refitting the grid wire cleaning pad and main charger wire cleaning pad

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

Procedure

1. Remove the main charger grid (see page 1-6-39).
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 main charger wire cleaning pads.
4. Refit all the removed parts.

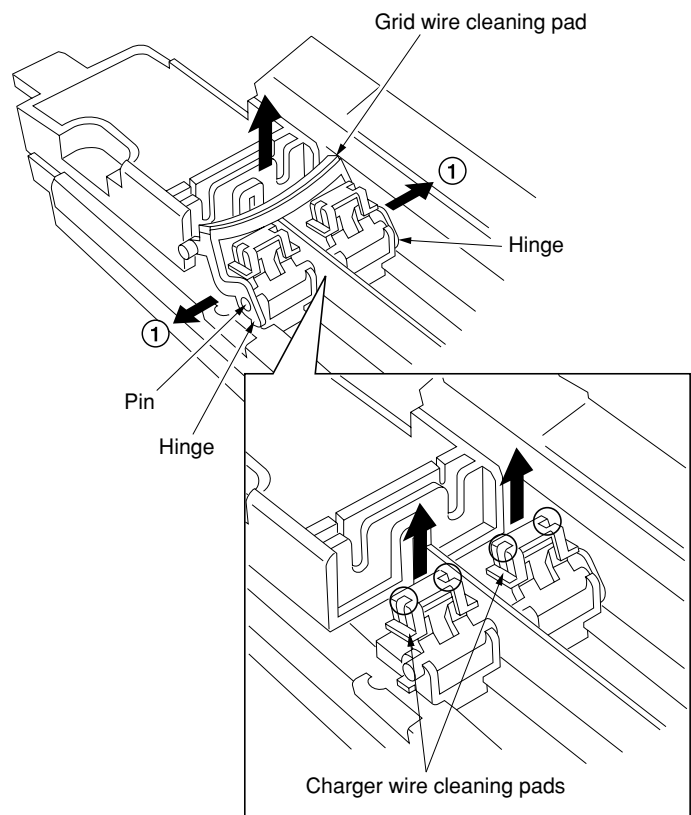


Figure 1-6-74

1-6-5 Drum section

(1) Detaching and refitting the drum

Follow the procedure below to replace the drum.

Cautions

- Avoid direct sunlight or strong light when detaching and refitting the drum.
- Hold the drum at the ends and never touch the drum surface.

Procedure

1. Remove the developing unit (see page 1-6-44).
2. Remove the main charger unit (see page 1-6-39).
3. Loosen the blade securing pin, slide the blade release lever in the direction indicated by the arrow and tighten the blade securing pin.

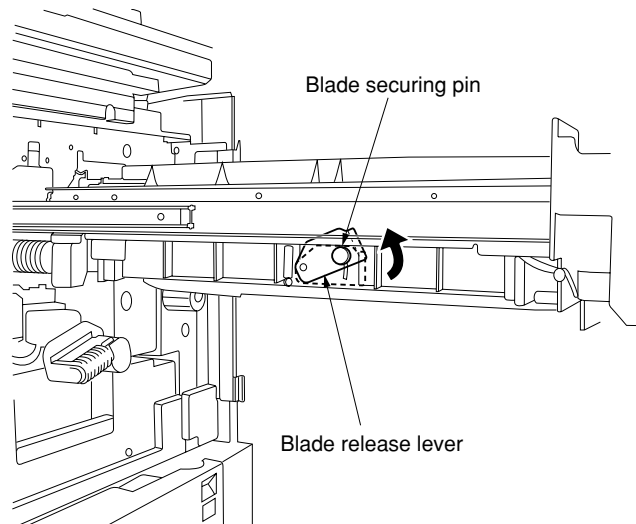


Figure 1-6-75

4. Remove the one screw each from the drum front and rear retainers and then the drum from the image formation unit.

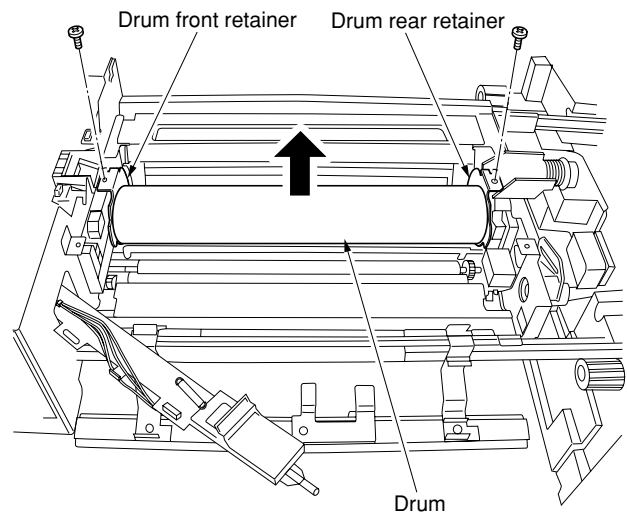
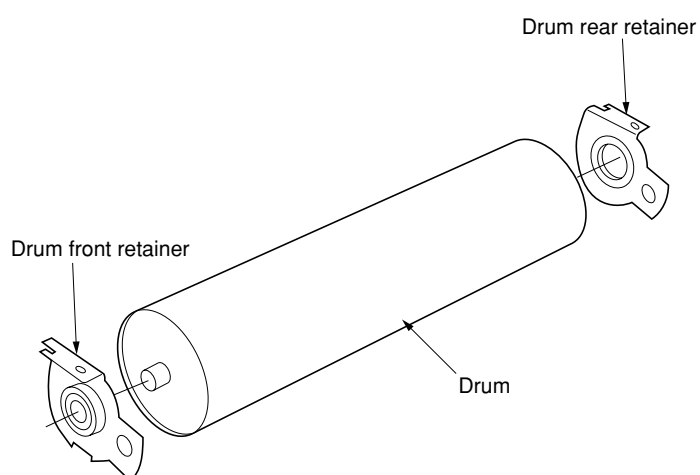


Figure 1-6-76

5. Remove the drum front and rear retainers from the drum. Replace the drum.
 - * When installing the drum, orient correctly with the thinner end of the drum flange shaft at the machine front and the thicker end at the machine rear.
6. Refit all the removed parts.
7. Enter the maintenance mode and run the following modes.
 - U110: Clearing the drum count value
 - U111: Clearing the drum drive time
 - U160: Applying toner to the cleaning blade
8. Pull out the image formation unit, return the blade release lever to its original position, and put the cleaning blade to the drum.

**Figure 1-6-77**

1-6-6 Developing section

(1) Detaching and refitting the developing unit

Follow the procedure below to check, clean or replace the developing unit.

Procedure

1. Open the front cover.
2. Remove the screw holding the image formation left cover and then the cover.

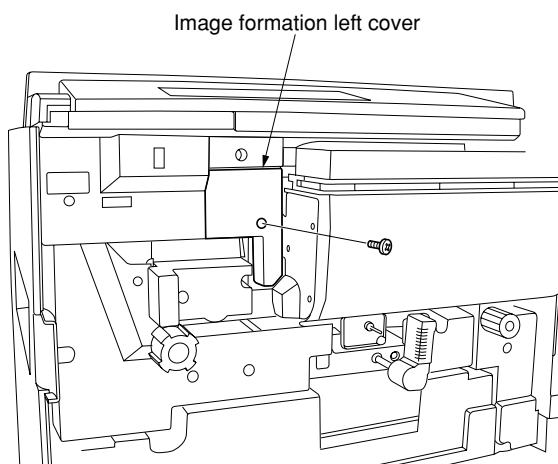


Figure 1-6-78

3. Remove the three screws and disconnect the connector, tilt the paper conveying unit release lever down, and then pull out the image formation unit.

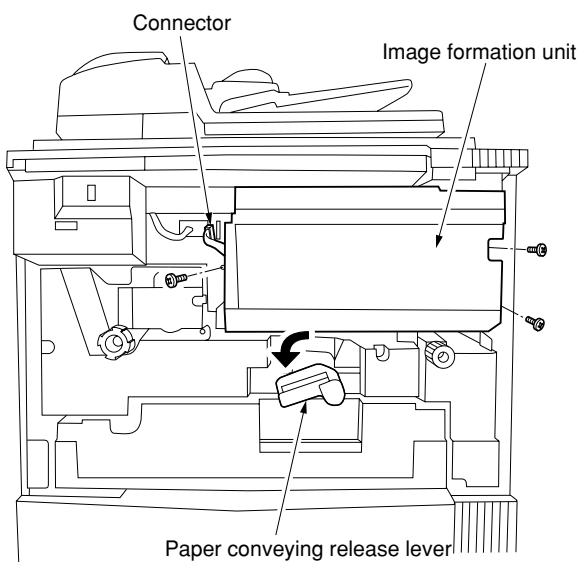


Figure 1-6-79

4. Remove the two screws and open the image formation rail in the direction of the arrow.

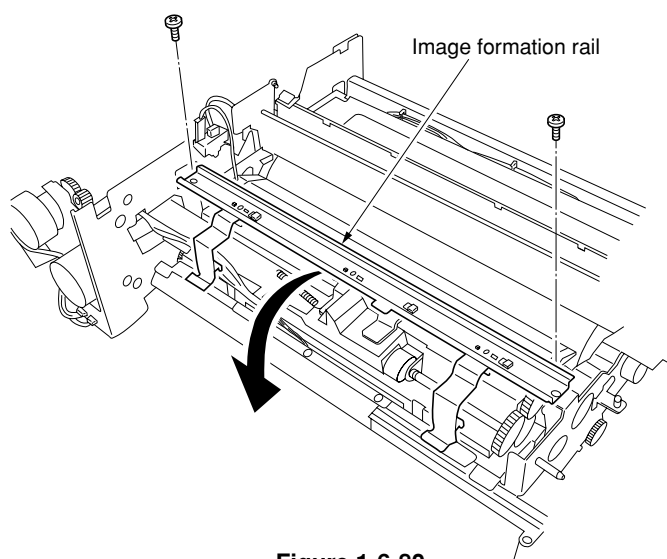


Figure 1-6-80

5. Disconnect the two connectors.
6. Raise the shutter a little and slide it toward the front side of the machine.
7. Turn the sub toner hopper to the right of the machine.

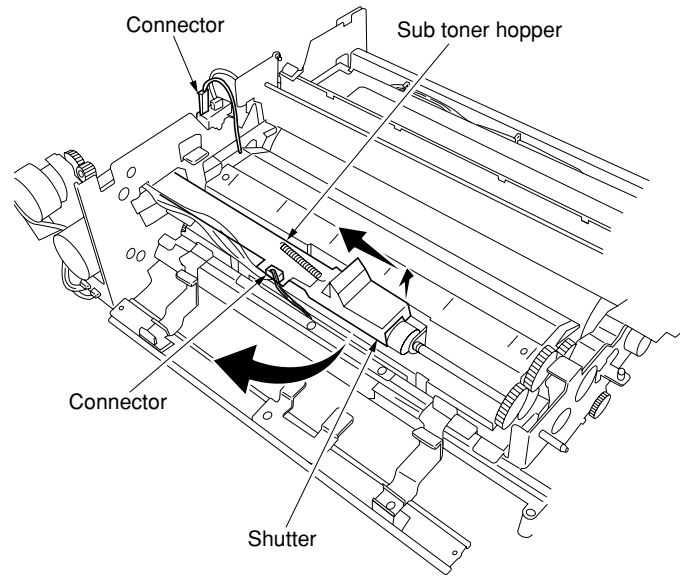


Figure 1-6-81

8. Remove the developing unit from the image formation unit.
9. Check, clean or replace the developing unit and refit all the removed parts.

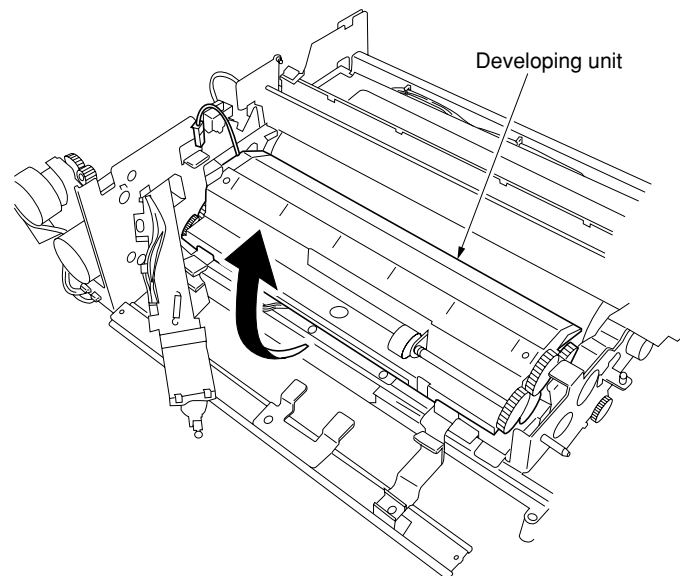


Figure 1-6-82

(2) Detaching and refitting the developing unit upper seal

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

Procedure

1. Remove the developing unit (see page 1-6-44).
 2. Remove the two screws holding the developing unit upper seal and then the seal.
 3. Clean or replace the developing unit upper seal and refit all the removed parts.
- * When attaching the developing unit upper seal, fit both ends of the seal (round portions) into the grooves of the developer housing.

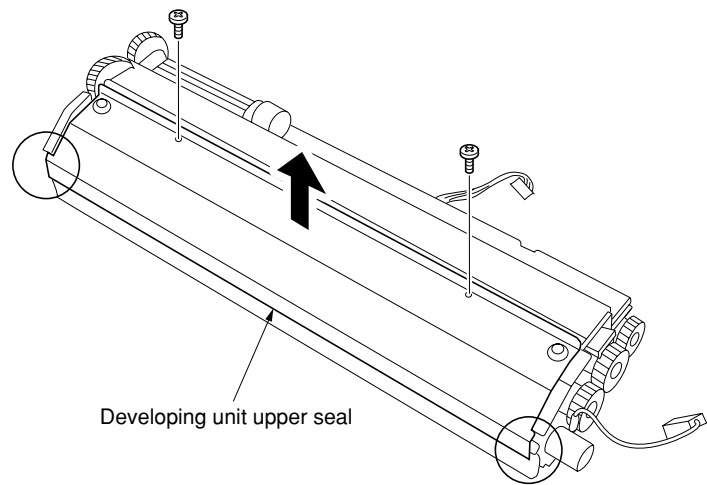


Figure 1-6-83

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

Perform the following adjustment if the image is abnormally dark or light.

- Before starting this adjustment, the correct amount of developer is present.

Procedure

1. Remove the developing unit (see page 1-6-44).
2. Loosen the hexagonal socket head screw on the front of developing sleeve using a hexagonal wrench.
3. Turn the developing roller shaft using a straight screwdriver until the distance between the top of the magnetic brush and the bottom of the developing unit housing is 26 mm (reference).
4. Tighten the hexagonal socket head screw to secure the developing roller shaft.
5. Refit all the removed parts.
6. After adjustment, make a test copy to check for performance.

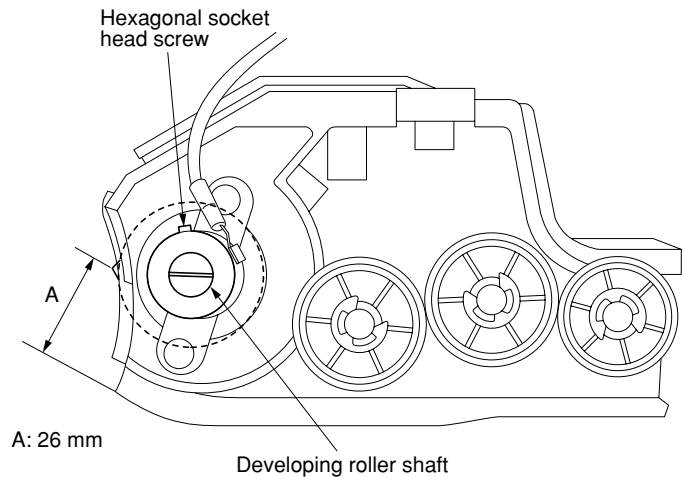


Figure 1-6-84

(4) Adjusting the position of the doctor blade (reference)

Perform the following adjustment if carrier or background appears on the copy image.

Procedure

1. Remove the developing unit (see page 1-6-44).
2. Remove the two screws holding the developing unit upper seal and then the seal (see page 1-6-46).
3. Measure the distance between the developing roller and the doctor blade with a thickness gauge as shown in Figure, and adjust the doctor blade until the correct distances are obtained at the center and ends of the developing unit housing; the 0.50 mm gauge should go into the gap and the 0.55 mm one should not.
 - * The smaller the distance, the lighter the image; the larger the distance, the darker the image.
4. Refit all the removed parts.
5. After adjustment, make a test copy to check for performance.

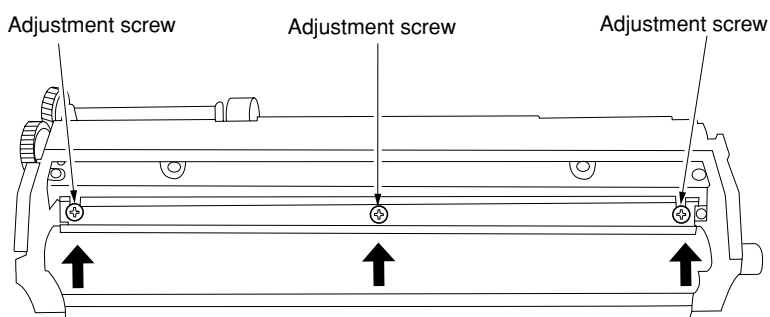


Figure 1-6-85

(5) Detaching and refitting the developing duct filter

Follow the procedure below to replace the developing duct filter.

Procedure

1. Remove the screw and disconnect the connector, and then remove the developing duct cover.
2. Replace the developing duct filter and refit all the removed parts.

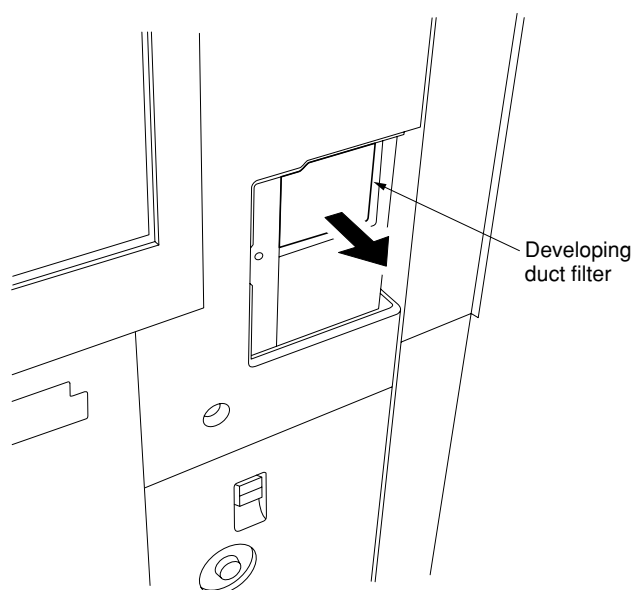


Figure 1-6-86

1-6-7 Transfer and separation section

(1) Detaching and refitting the charger wires and cleaning pads

Follow the procedure below when the charger wires and cleaning pads 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 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 transfer charger shield when replacing the charger wire.
- * Do not use organic solvents such as alcohol and thinner to clean the transfer charger shield.

Procedure

1. Open the front cover, tilt the paper conveying unit release lever down, and pull out the paper conveying unit.
2. Remove the connector, widen the engagement portions a little, and remove the transfer unit from the paper conveying unit.

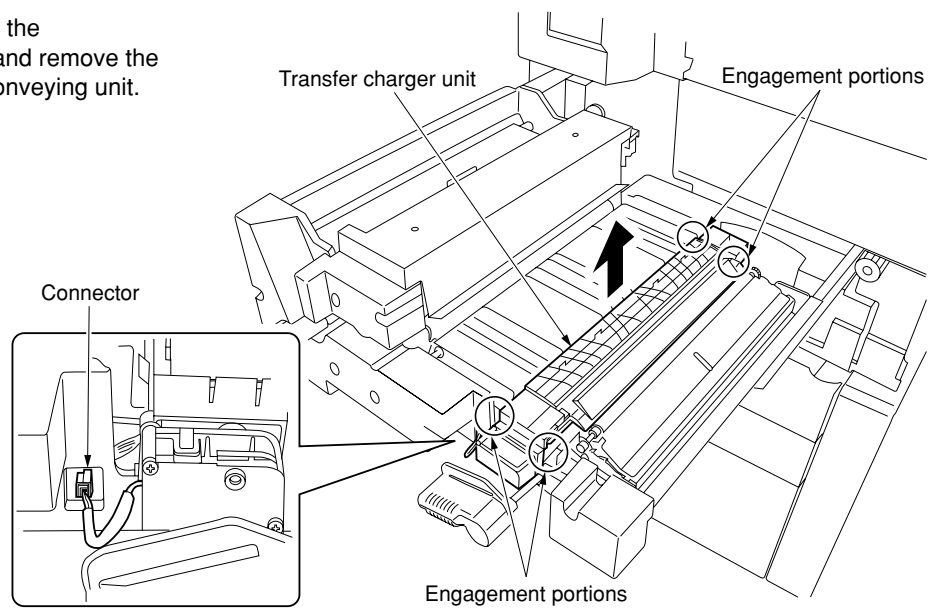


Figure 1-6-87

3. Remove the transfer charger front and rear lids.
4. Remove the separation guide.
5. Replace the transfer charger cleaning pad and separation charger cleaning pad.
6. Remove the charger wire retainer pins, charger springs and then the charger wires.

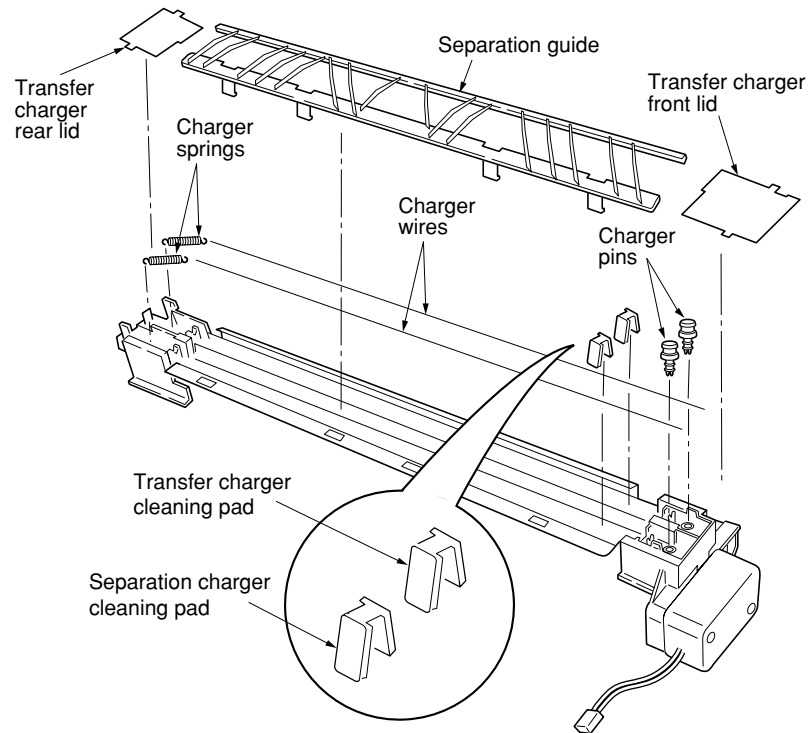


Figure 1-6-88

7. Wind one end of the new wire at least five turns around the end of the charger spring.
8. Hook the other end of the charger spring onto the catch on the transfer charger terminal on the rear of the transfer charger housing.
9. Pass the charger wire through the notches in the front and rear of the transfer charger housing, and stretch it.
10. Insert the charger wire under the charger wire retainer pin into the hole at the front of the transfer charger housing.
 - * The charger wire must be adjusted so that the charger spring stretches to 12.5 ± 1.5 mm.
 - * Cut off the excess wire under the charger wire retainer pin.
11. Refit all removed parts.

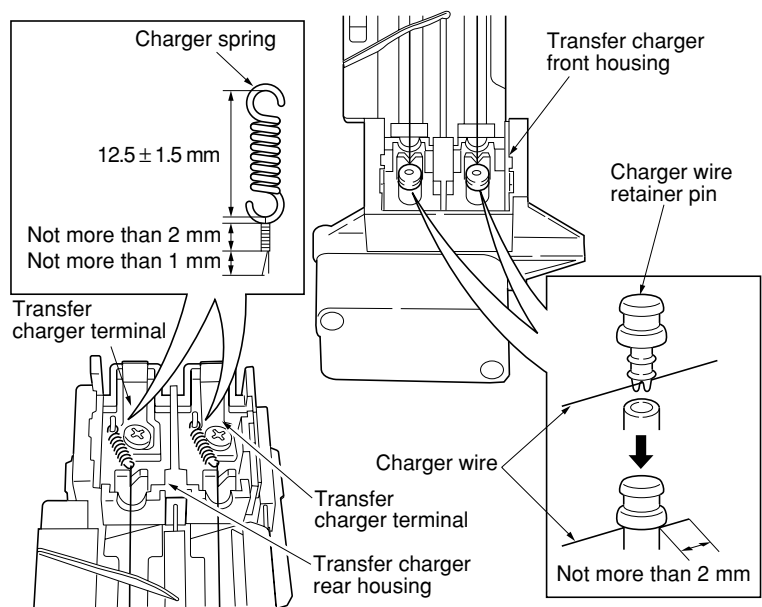


Figure 1-6-89

1-6-8 Cleaning section

(1) Detaching and refitting the drum separation claw and cleaning lower seal

Follow the procedure below to replace the drum separation claw and cleaning lower seal.

Procedure

1. Remove the drum (see page 1-6-42).
2. Remove the four screws and disconnect the connector of the cleaning earth wire, and then remove the cleaning unit.

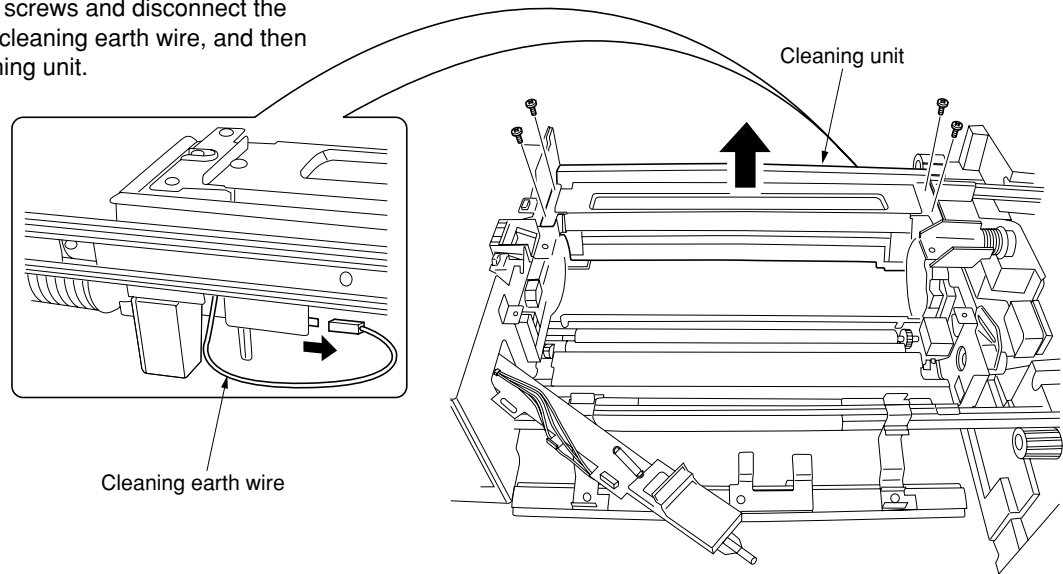


Figure 1-6-90

3. Remove the two screws holding each of the drum separation claw units and then the units.

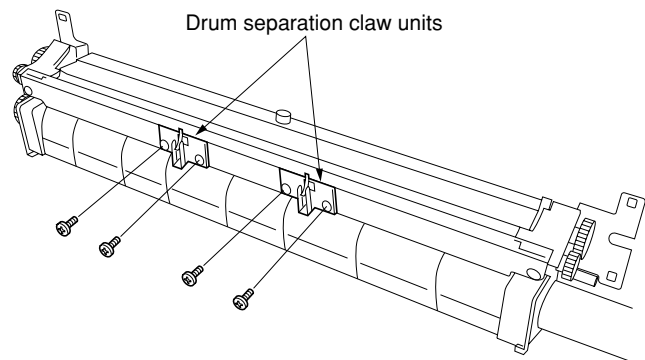


Figure 1-6-91

4. Remove the pulley, spring and drum separation claw from the drum separation claw unit.

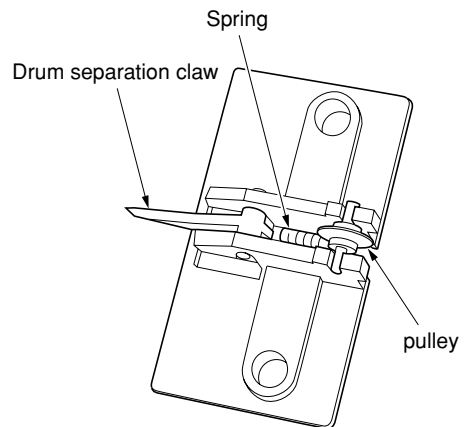
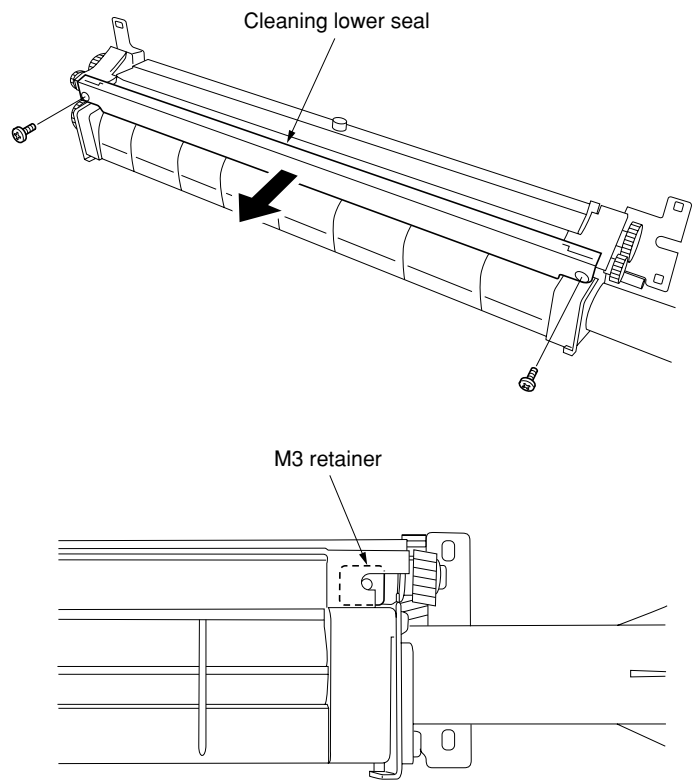


Figure 1-6-92

5. Remove the two screws holding the cleaning lower seal and then the seal.
 - * When removing the cleaning lower seal, take care not to lose the M3 retainer located on the housing side.
6. Replace the drum separation claws and cleaning lower seal and refit all the removed parts.

**Figure 1-6-93**

(2) Detaching and refitting the cleaning blade

Follow the procedure below to replace the cleaning blade.

Procedure

1. Remove the cleaning unit (see page 1-6-50).
2. Remove the two screws holding the cleaning cover and then the cover.

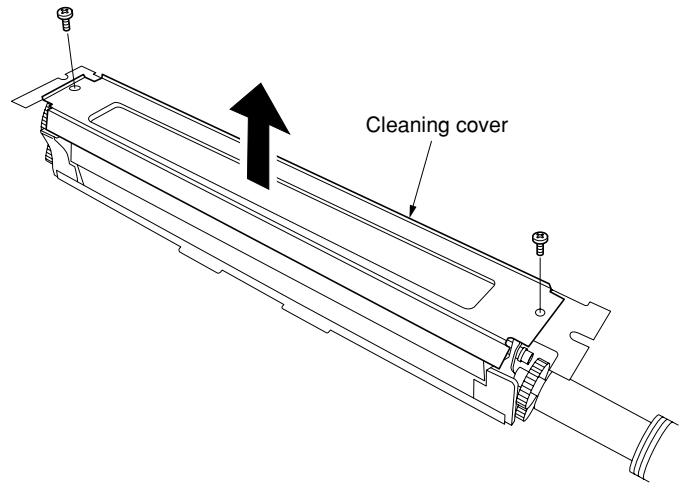


Figure 1-6-94

3. Remove the retainer pin holding the cleaning blade and then the blade.
4. Replace the cleaning blade and refit all the removed parts.
 - * Do not apply the cleaning blade to the drum and keep it released.
5. Enter the maintenance mode and run U160 "Applying toner to the cleaning blade."
6. Pull out the image formation unit, return the blade release lever to its original position, and put the cleaning blade to the drum.

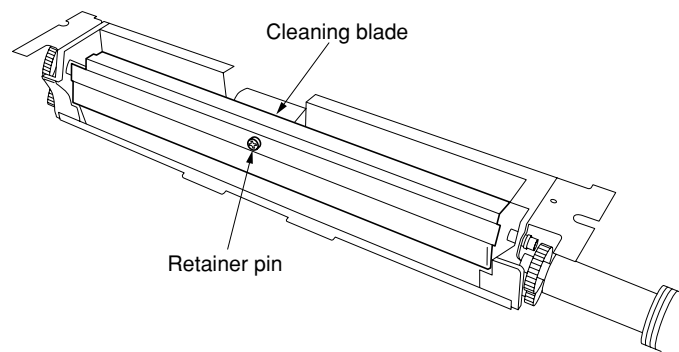


Figure 1-6-95

(3) Detaching and refitting the thrust gear

Follow the procedure below to replace the thrust gear.

Procedure

1. Remove the cleaning unit (see page 1-6-50).
2. Remove the E ring and then the thrust gear.
3. Replace the thrust gear and refit all the removed parts.

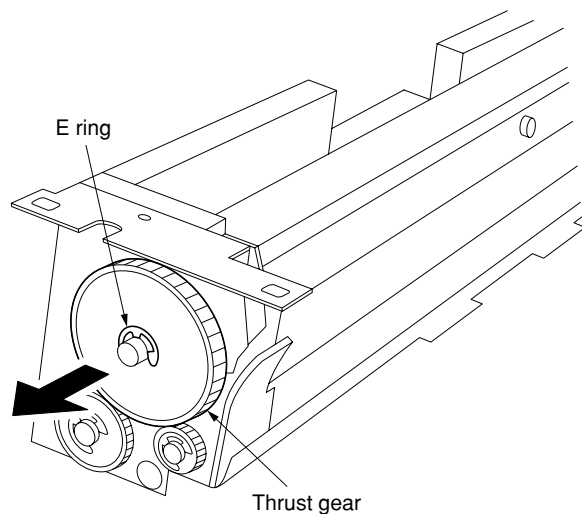


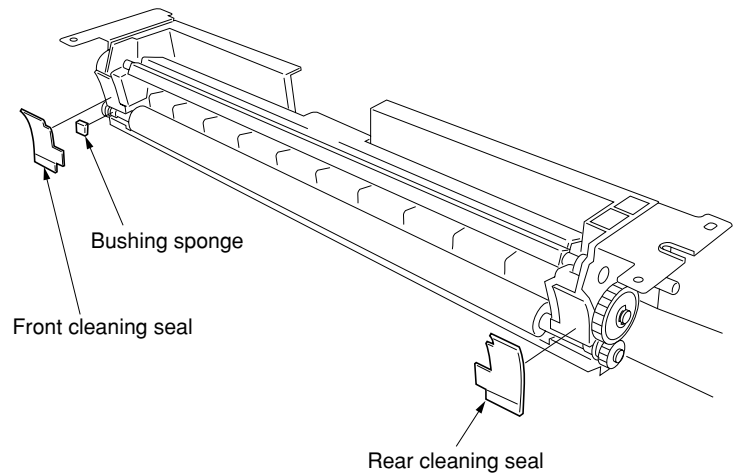
Figure 1-6-96

(4) Detaching and refitting the cleaning brush, front and rear cleaning seal and bushing brush

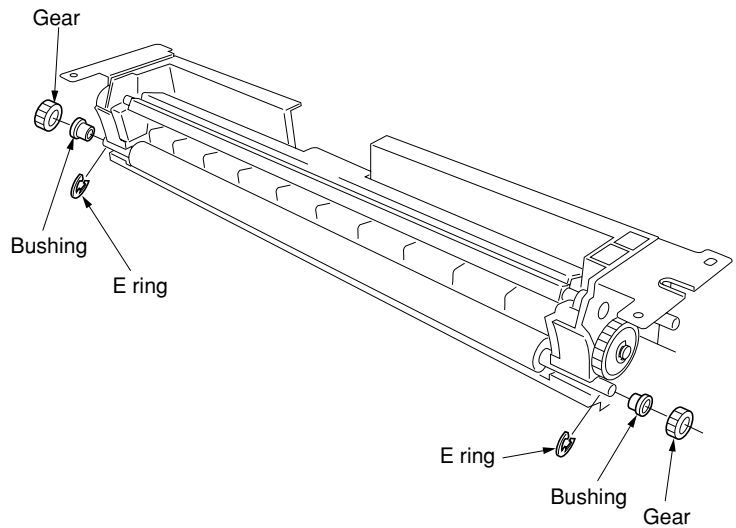
Follow the procedure below to replace the cleaning brush, front and rear cleaning seal and bushing brush.

Procedure

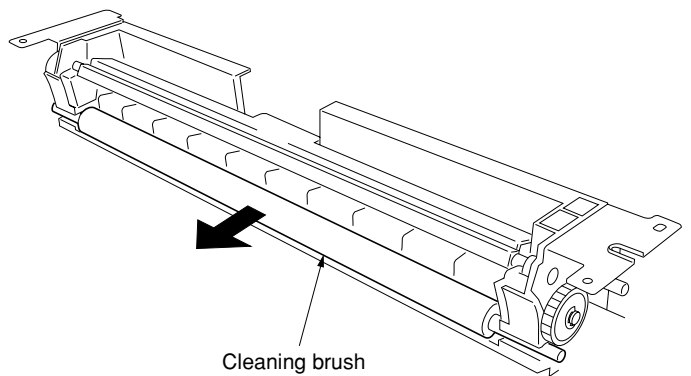
1. Remove the cleaning unit (see page 1-6-50).
2. Remove the cleaning lower seal and cleaning blade (see pages 1-6-50 and 52).
3. Remove the front and the rear cleaning seals from the cleaning housing.
4. Remove the bushing sponge from the front of the cleaning housing.

**Figure 1-6-97**

5. Remove an E ring, a gear, and a bushing from the front and the rear of the cleaning brush respectively.

**Figure 1-6-98**

6. Remove the cleaning brush from the cleaning housing.

**Figure 1-6-99**

7. Replace the cleaning brush, front and rear cleaning seal and bushing sponge. Refit all the removed parts.

* Attach the front and rear cleaning seals within the standard value range shown in the illustration.

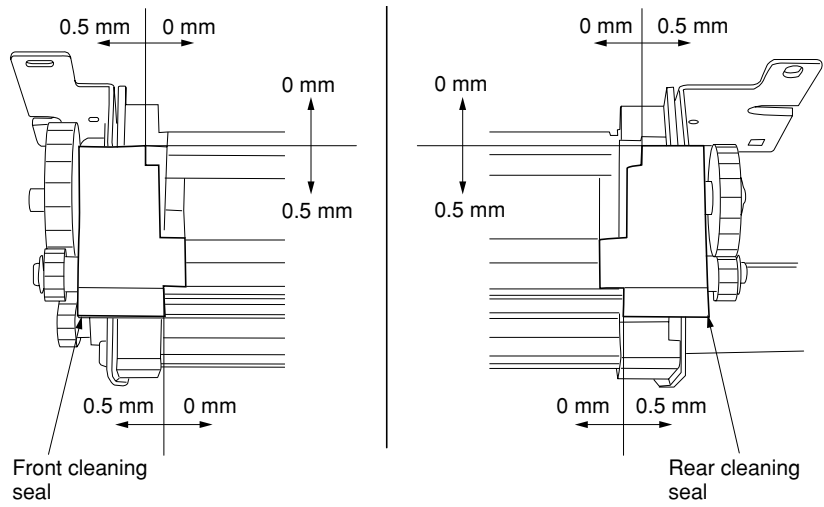


Figure 1-6-100

1-6-9 Fixing section

(1) Detaching and refitting the fixing unit

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

Procedure

1. Open the front cover, tilt the paper conveying unit release lever down, and pull out the paper conveying unit.
2. Open the eject cover.
3. Remove the two screws holding the fixing unit and then the unit from the conveying unit.
4. Check or replace the fixing unit and refit all the removed parts.

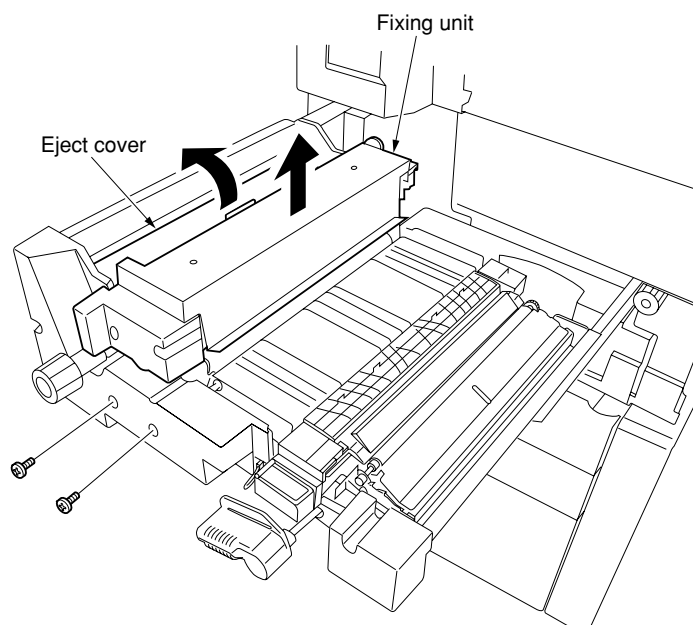


Figure 1-6-101

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

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

Procedure

1. Remove the fixing unit.
2. Remove the two screws holding the fixing front cover and then the cover.

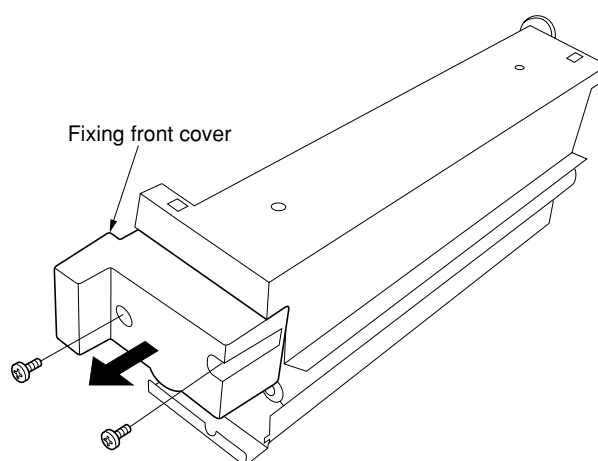


Figure 1-6-102

3. Remove the screw on the front of fixing unit.

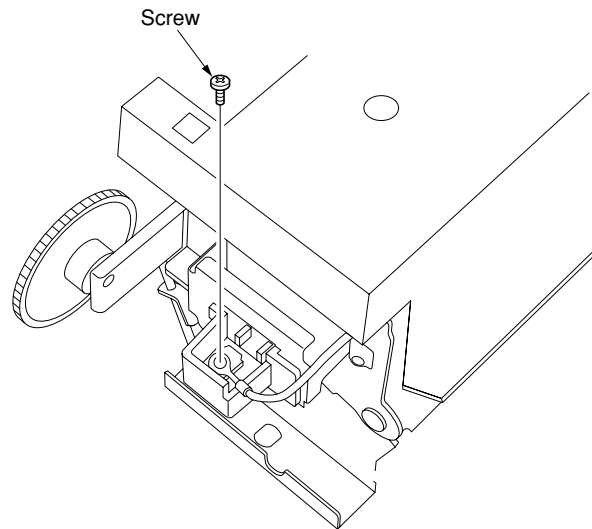


Figure 1-6-103

4. Disconnect the two connectors on the rear of fixing unit and remove the screw holding the heater retainer and then the retainer.

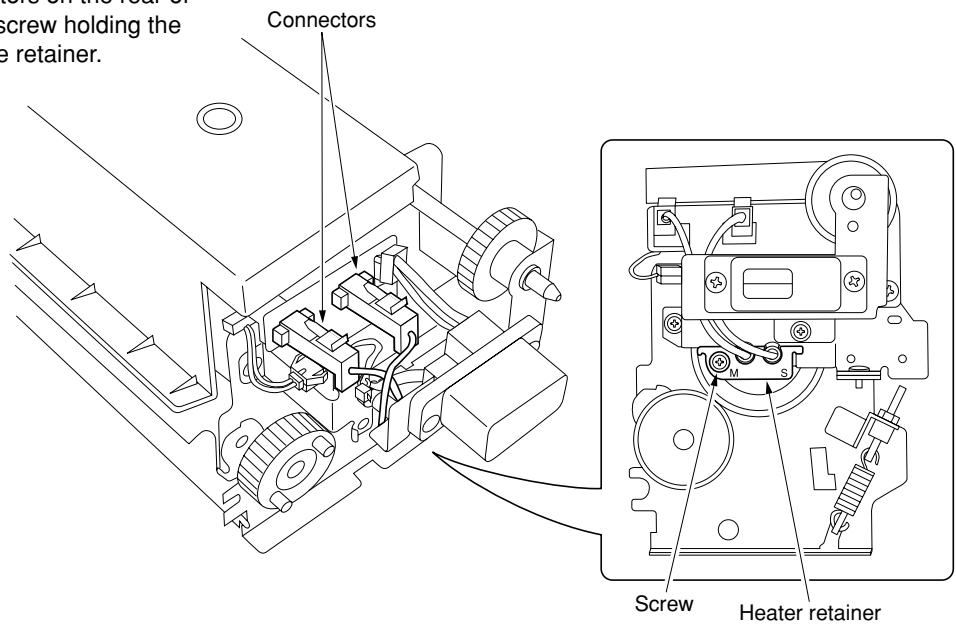


Figure 1-6-104

- 5. Pull out the fixing heater M and S from the rear of fixing unit.
- 6. Replace the fixing heater M and S and all the removed parts.
 - * When replacing the fixing heater M and S alone, remove the screw from the junction portion.
 - * When fitting the fixing heater M and S, connect the connectors to those with the corresponding colors respectively.

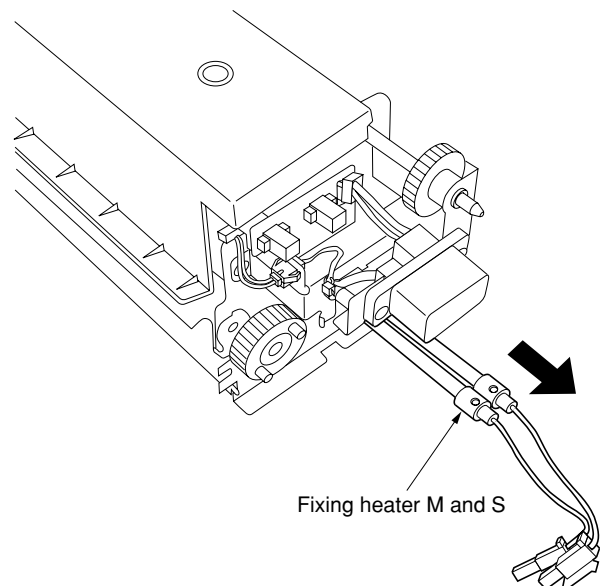


Figure 1-6-105

(3) Detaching and refitting the heat roller

Follow the procedure below to replace the heat roller.

Procedure

1. Remove the one screw holding each on the front and rear of fixing unit, and then open the fixing unit.

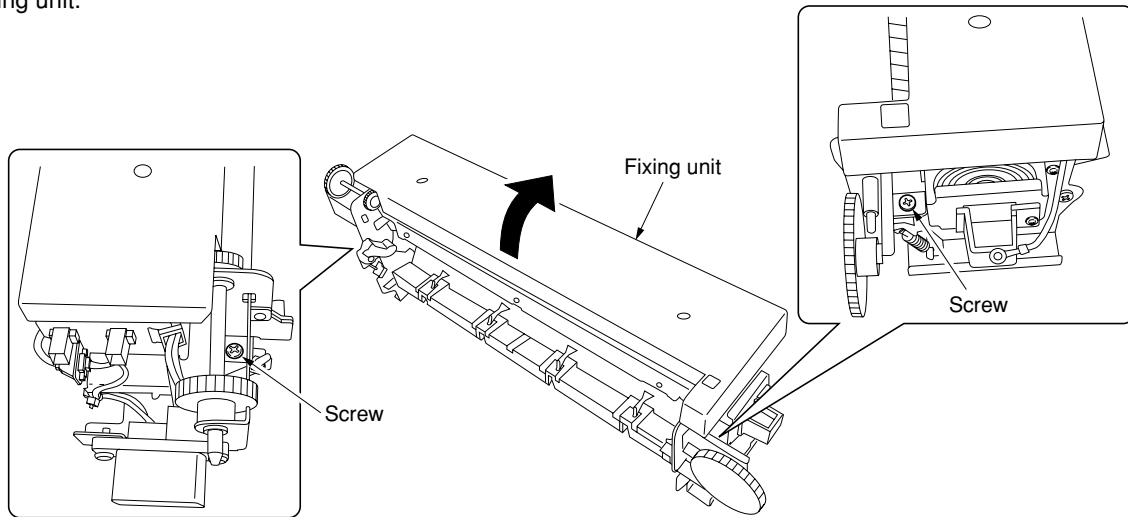


Figure 1-6-106

2. Loosen the one screw holding each of the heat roller retainers on the front and rear of fixing unit.
3. Remove the heat roller from the fixing unit.

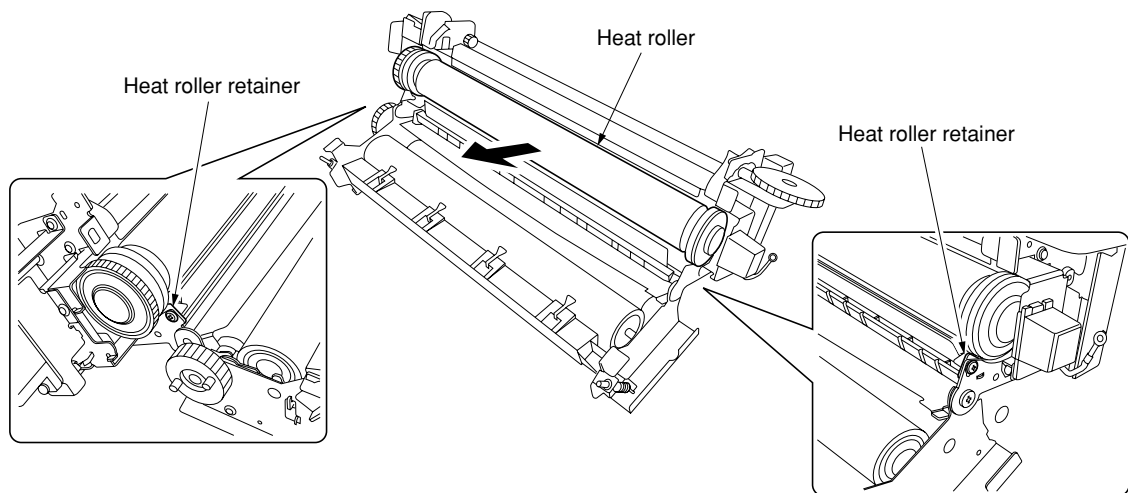


Figure 1-6-107

2BC/D

4. Remove the circlip, bearing and bushing from the front of the heat roller and then remove the circlip, gear, bearing and bushing from the rear.
5. Replace the heat roller and all the removed parts.

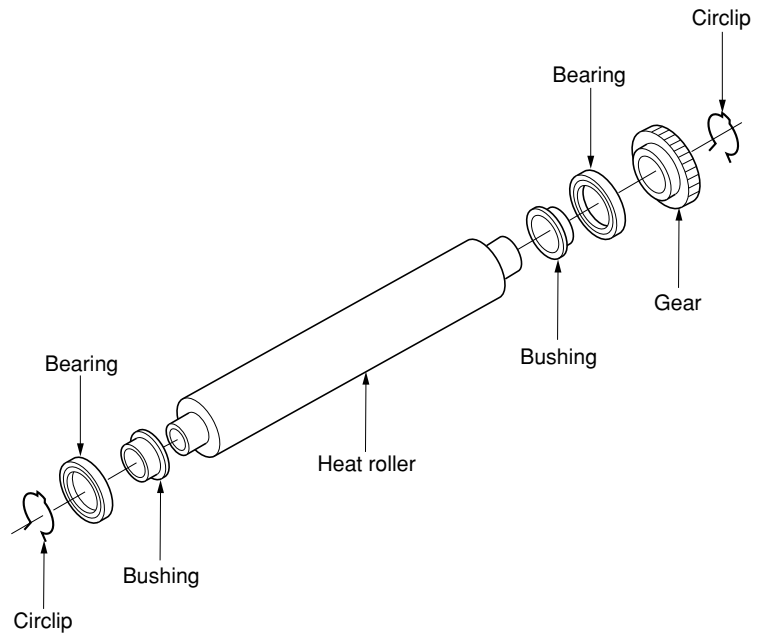


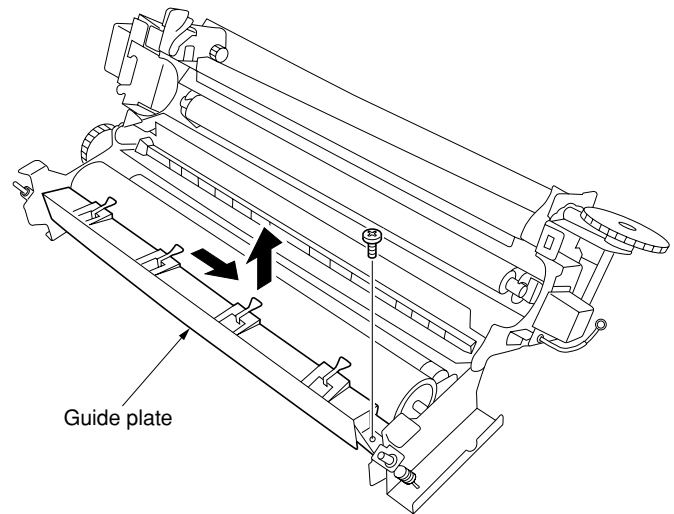
Figure 1-6-108

(4) Detaching and refitting the press roller

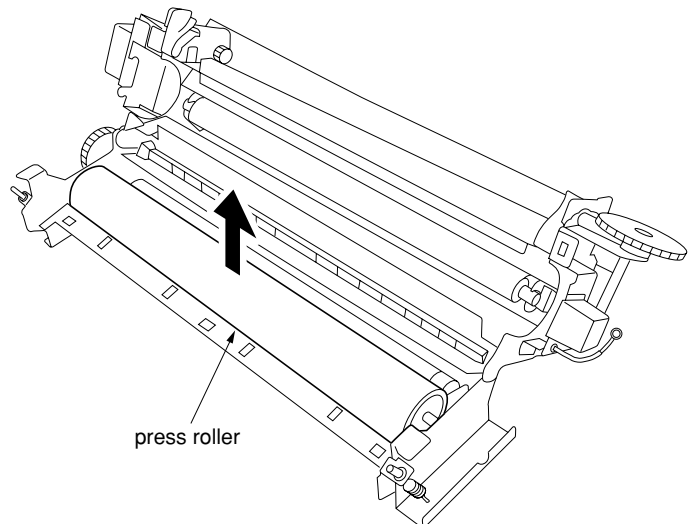
Follow the procedure below to replace the press roller.

Procedure

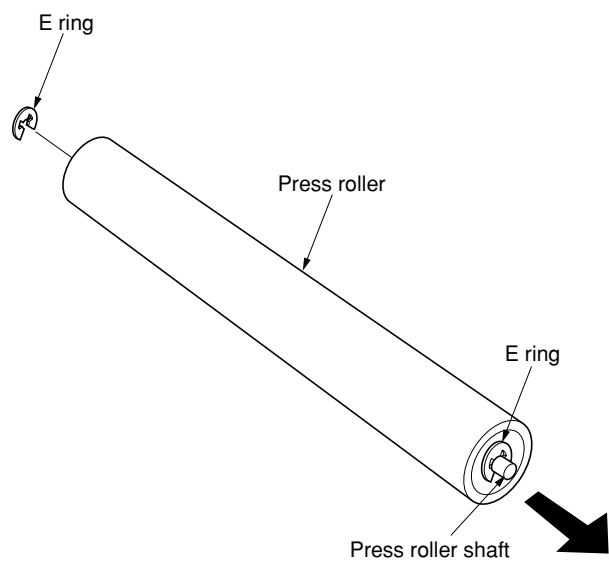
1. Remove the heat roller (see page 1-6-57).
2. Remove the screw holding the guide plate and then the plate.

**Figure 1-6-109**

3. Remove the press roller from the fixing unit.

**Figure 1-6-110**

4. Remove the E ring on either the front or rear end of the press roller and pull out the press roller shaft.
5. Replace the press roller and all the removed parts.

**Figure 1-6-111**

(5) Detaching and refitting the lower cleaning roller

Follow the procedure below to replace the lower cleaning roller.

Procedure

1. Remove the press roller (see page 1-6-59).
2. Remove the lower cleaning roller from the fixing unit.
3. Remove the bushings on the front and rear end of the lower cleaning roller.
4. Replace the lower cleaning roller and all the removed parts.

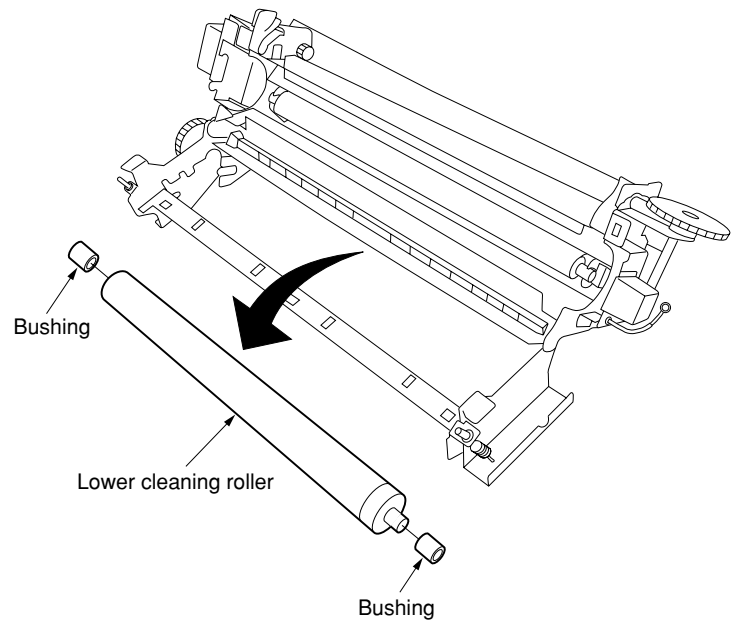


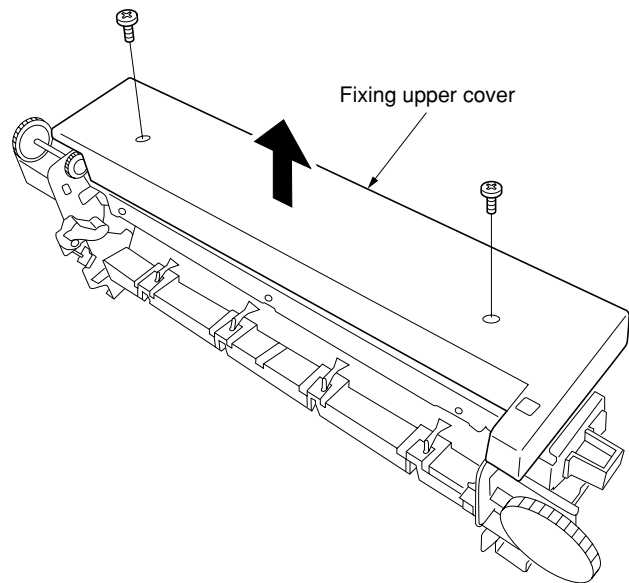
Figure 1-6-112

(6) Detaching and refitting the fixing unit thermistor

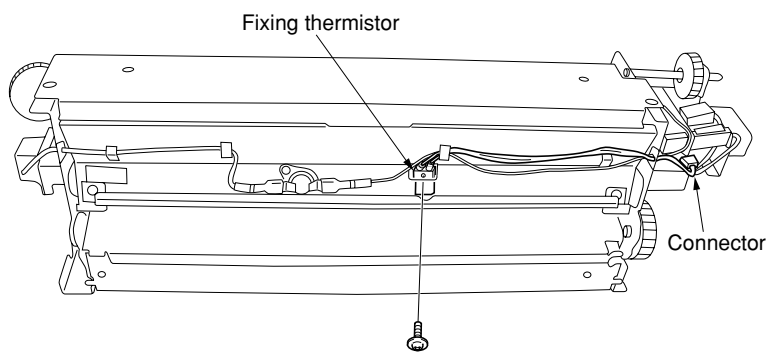
Follow the procedure below to check or replace the fixing unit thermistor.

Procedure

1. Remove the fixing unit (see page 1-6-55).
2. Remove the two screws holding the fixing upper cover and then the cover.

**Figure 1-6-113**

3. Remove the screw holding the fixing unit thermistor and disconnect the connector, and then remove the thermistor.
4. Check or replace the fixing unit thermistor and all the removed parts.

**Figure 1-6-114**

(7) Detaching and refitting the fixing web roller

Follow the procedure below to replace the fixing web roller.

Procedure

1. Remove the fixing unit (see page 1-6-55).
2. Remove the two screws holding the fixing upper cover and then the cover (see page 1-6-61).
3. Remove the two screws holding the fixing web roller unit and then the unit.

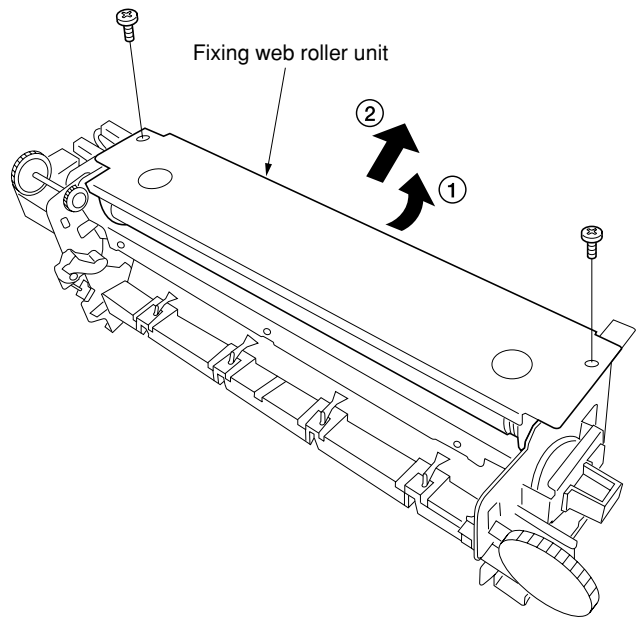


Figure 1-6-115

4. Press the fixing web roller in the direction of the arrow to remove it.
5. Replace the fixing web roller and all the removed parts.

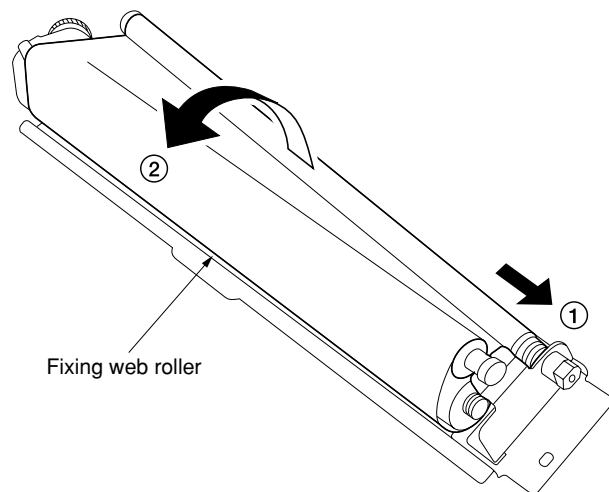


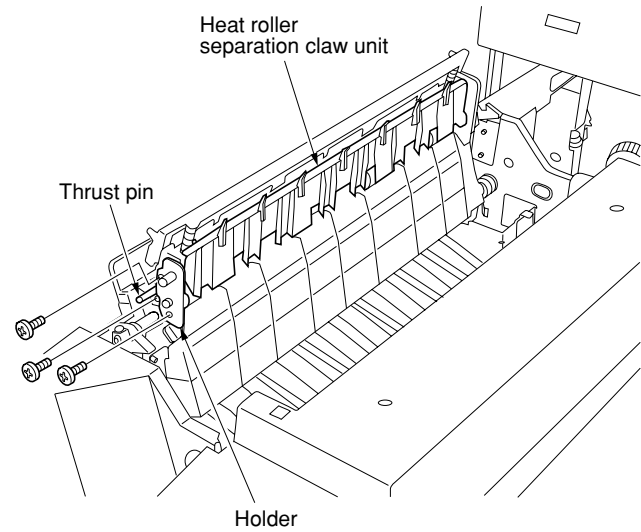
Figure 1-6-116

(8) Detaching and refitting the heat roller separation claw

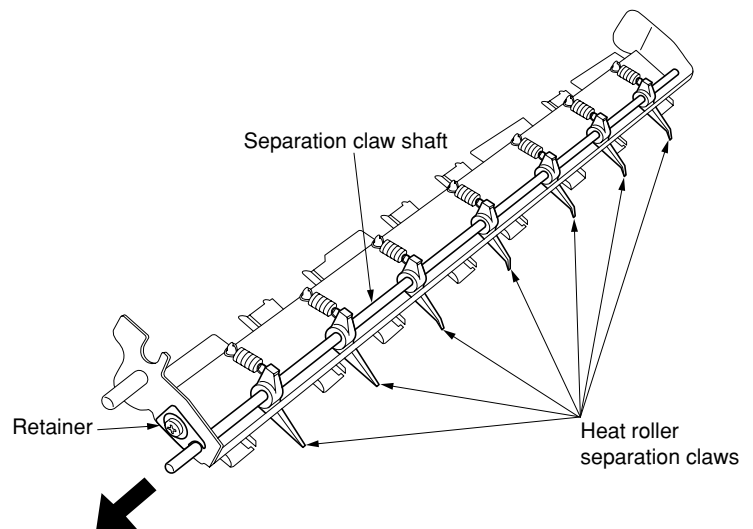
Follow the procedure below to replace the heat roller separation claw.

Procedure

1. Open the front cover, tilt the paper conveying unit release lever down, and pull out the paper conveying unit.
2. Open the eject cover.
3. Remove the screw holding the thrust pin and then the pin.
4. Remove the two screws holding the holder and then the holder. Remove the heat roller separation claw unit.

**Figure 1-6-117**

5. Remove the spring from heat roller separation claw.
6. Loosen the screw holding the retainer and pull out the separation claw shaft.
7. Replace the heat roller separation claw and all the removed parts.

**Figure 1-6-118**

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 and pull out the duplex unit.
2. Remove the four screws holding the duplex unit and then the unit from the machine.

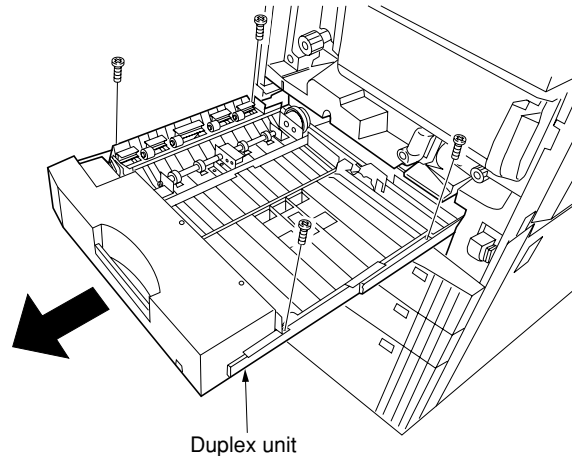


Figure 1-6-119

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

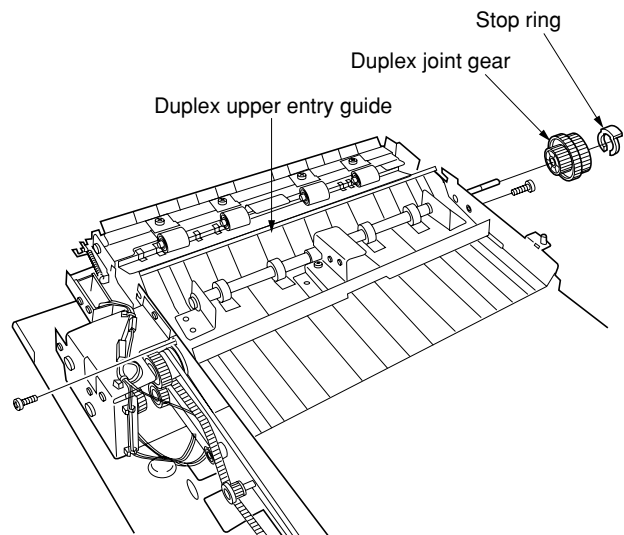


Figure 1-6-120

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

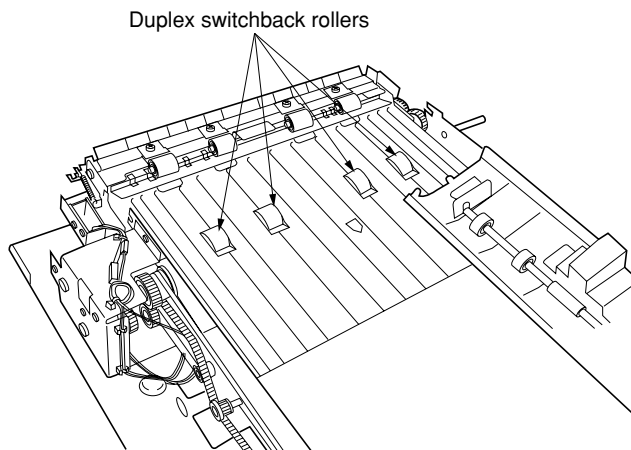


Figure 1-6-121

(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.

Procedure

1. Open the front cover and pull out the duplex unit.
2. Remove the four screws holding the duplex cover and then the 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.

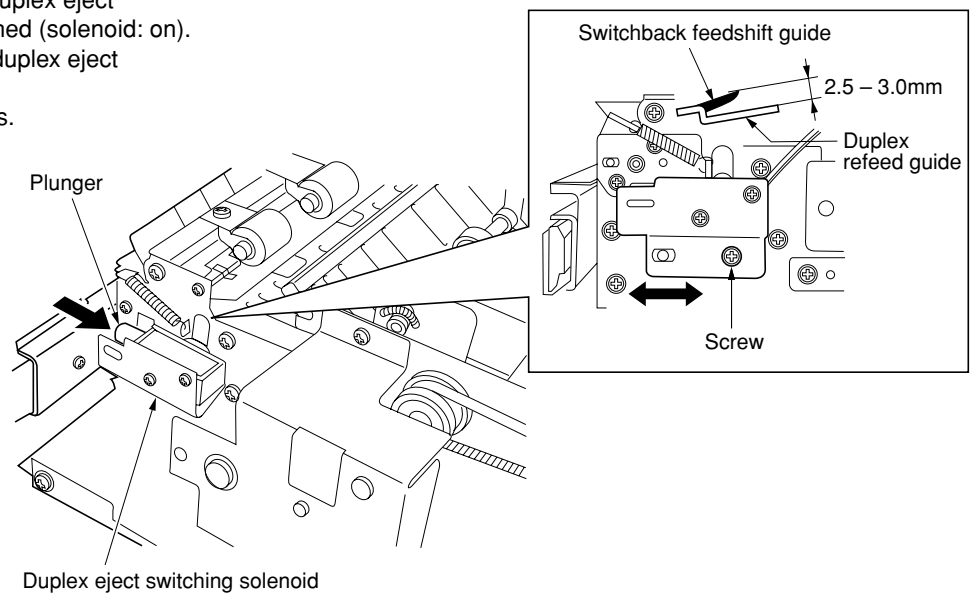


Figure 1-6-122

(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

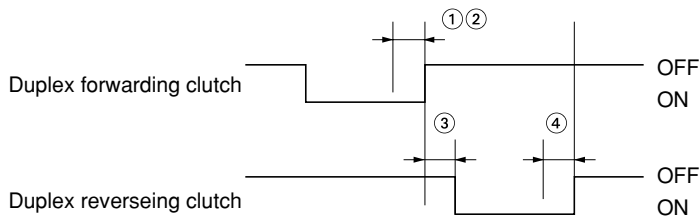
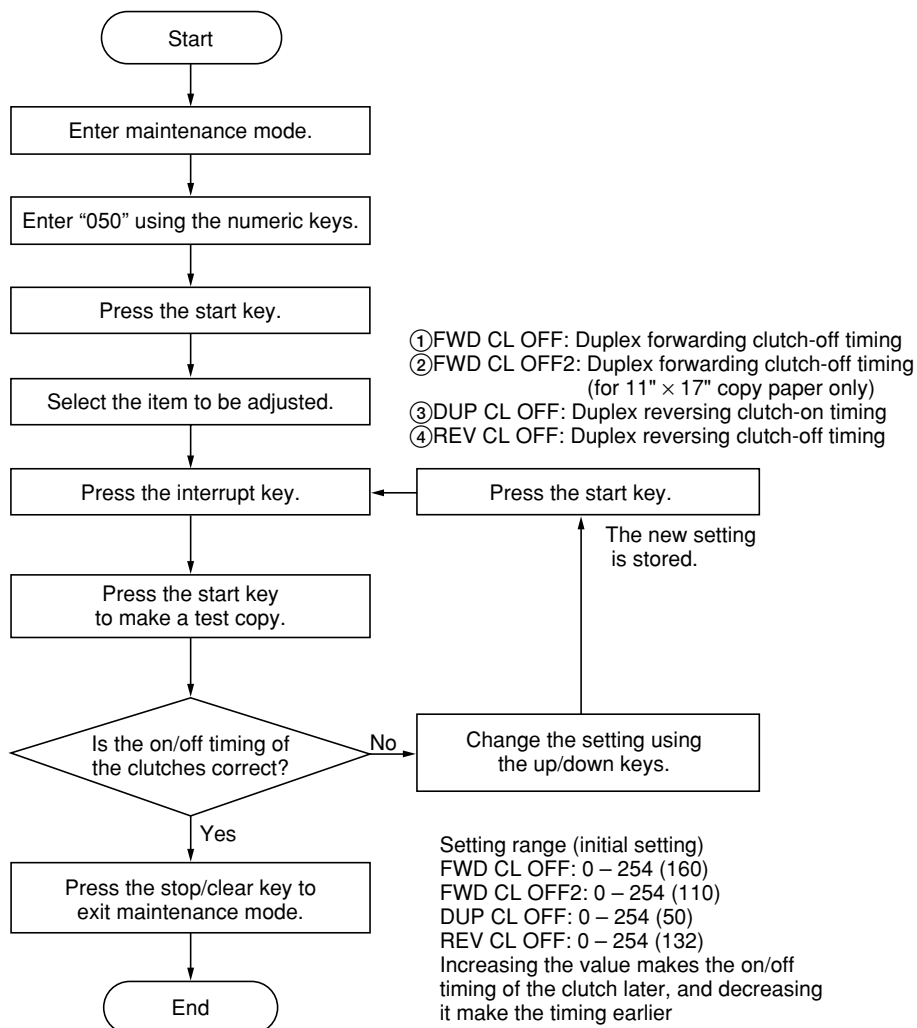


Figure 1-6-123

1-6-11 DF 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 holding the upper original feed cover and then the cover.
 - Detaching the DF forwarding pulley
3. Remove the stop ring at the machine front and then remove the bushing.
4. Pull out the forwarding shaft and 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 and then remove the bushing.
7. Remove the stop ring at the machine rear, pull out the front original feed shaft, 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.

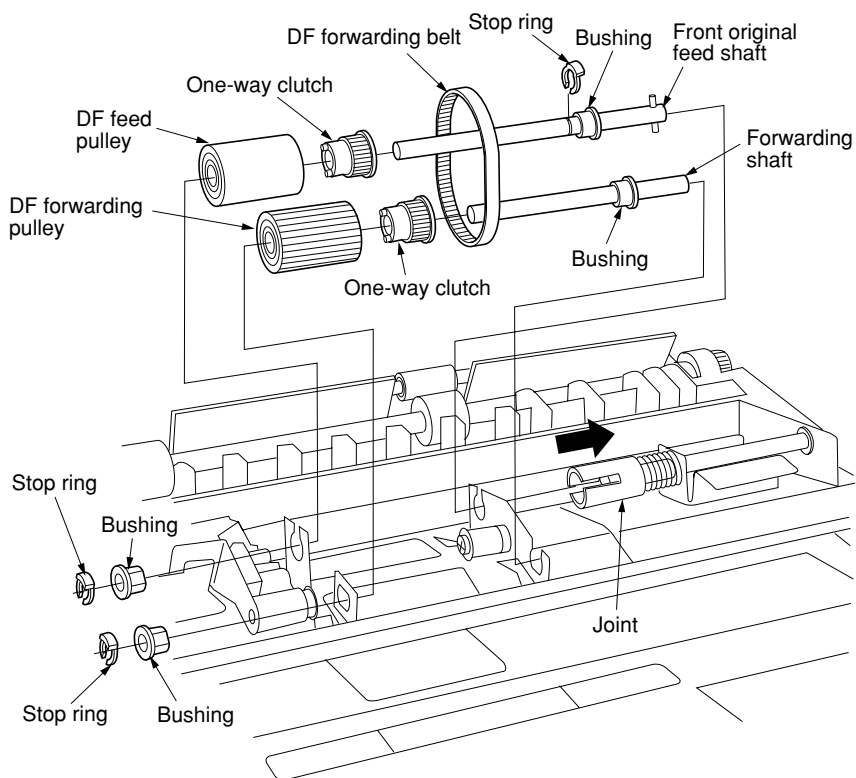
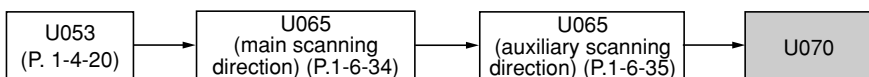


Figure 1-6-124

(2) Adjusting the DF magnification

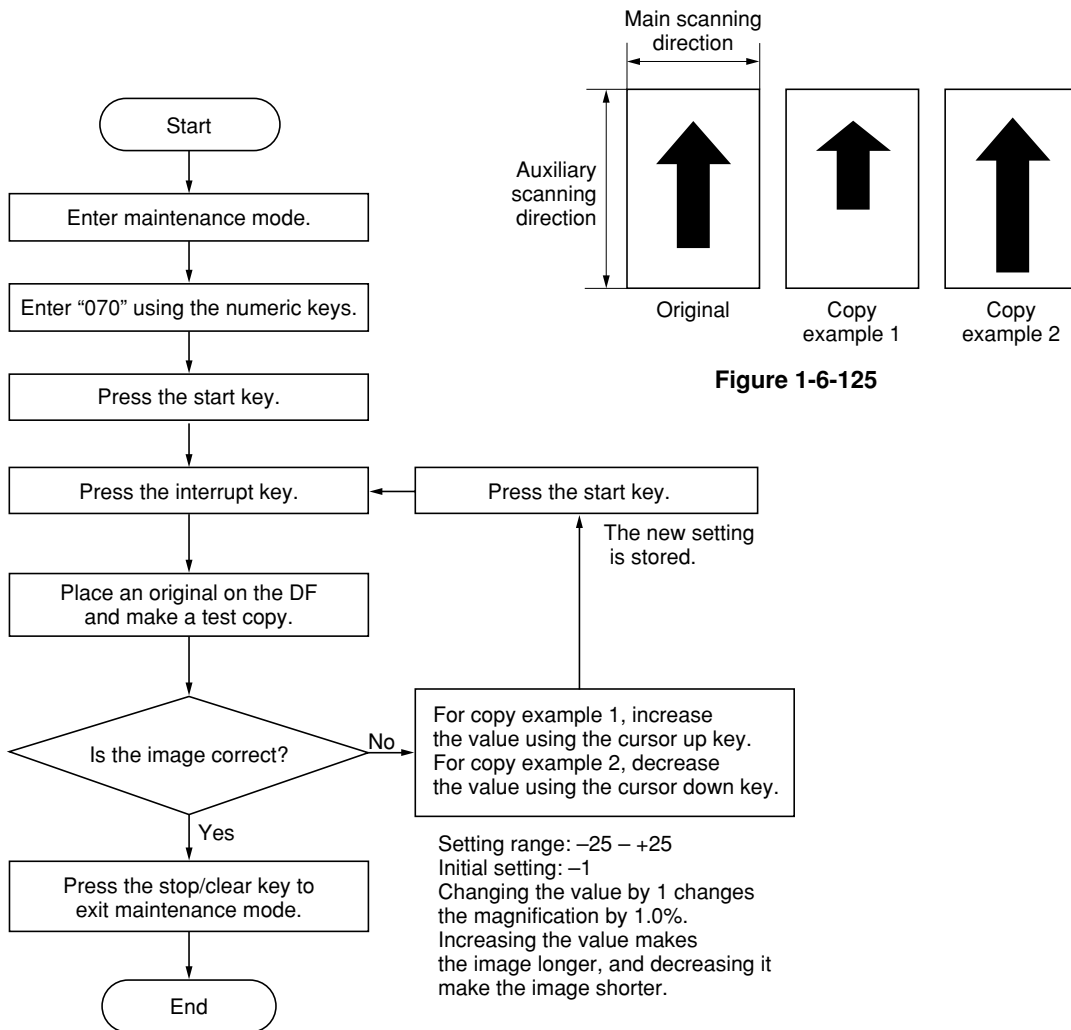
Adjust magnification in the auxiliary scanning direction if magnification is incorrect when the DF is used.



Caution

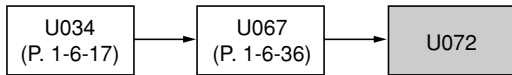
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode.

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 when the DF is used.



Caution

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

Procedure

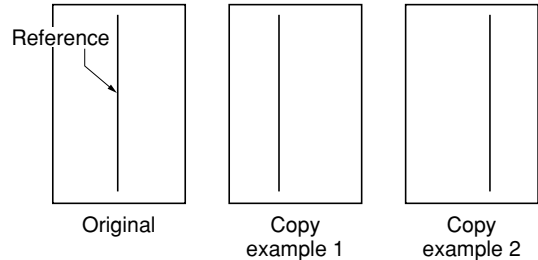
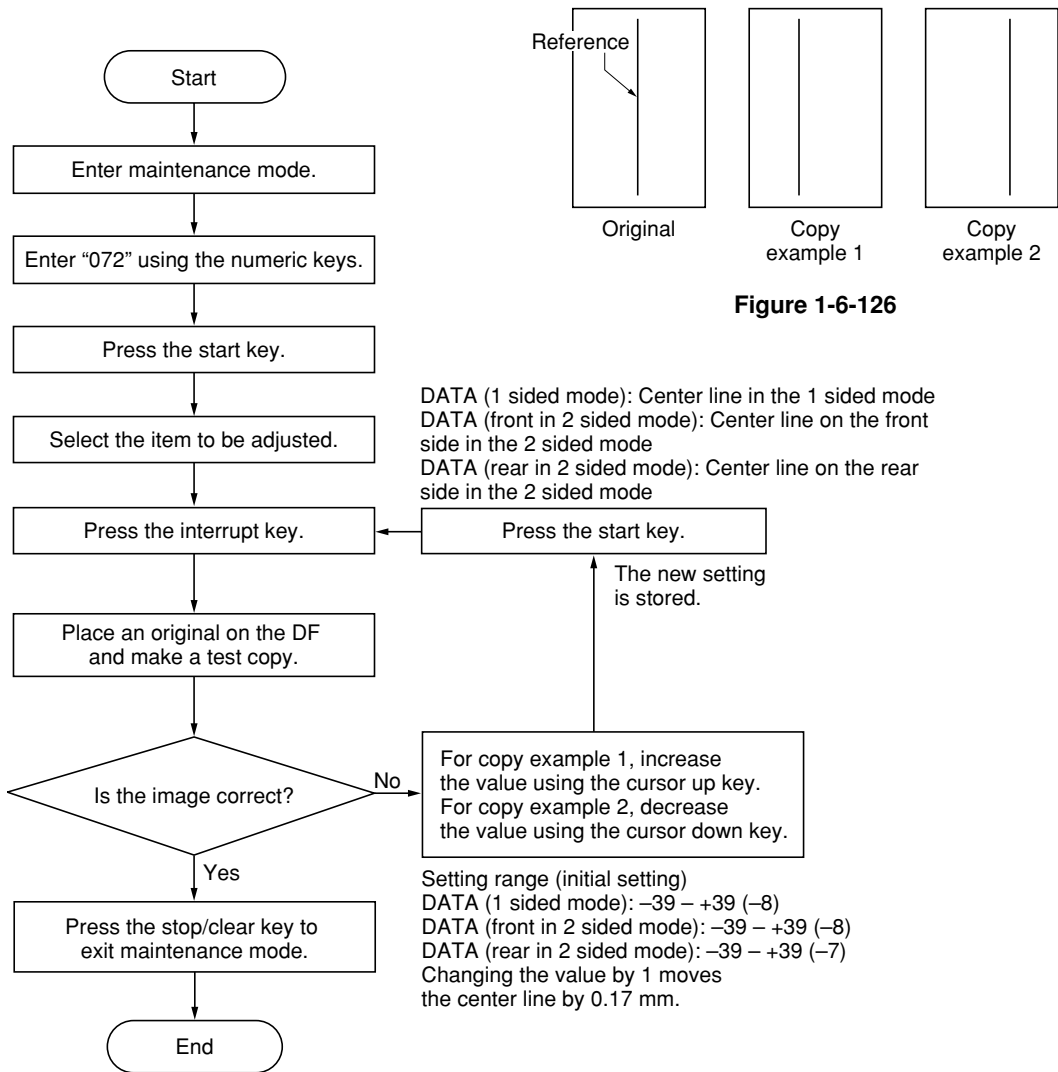


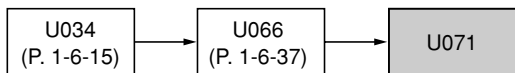
Figure 1-6-126

DATA (1 sided mode): Center line in the 1 sided mode
 DATA (front in 2 sided mode): Center line on the front side in the 2 sided mode
 DATA (rear in 2 sided mode): Center line on the rear side in the 2 sided mode

Setting range (initial setting)
 DATA (1 sided mode): -39 - +39 (-8)
 DATA (front in 2 sided mode): -39 - +39 (-8)
 DATA (rear in 2 sided mode): -39 - +39 (-7)
 Changing the value by 1 moves the center line by 0.17 mm.

(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

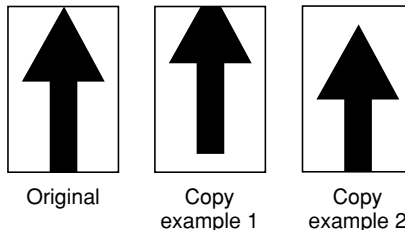
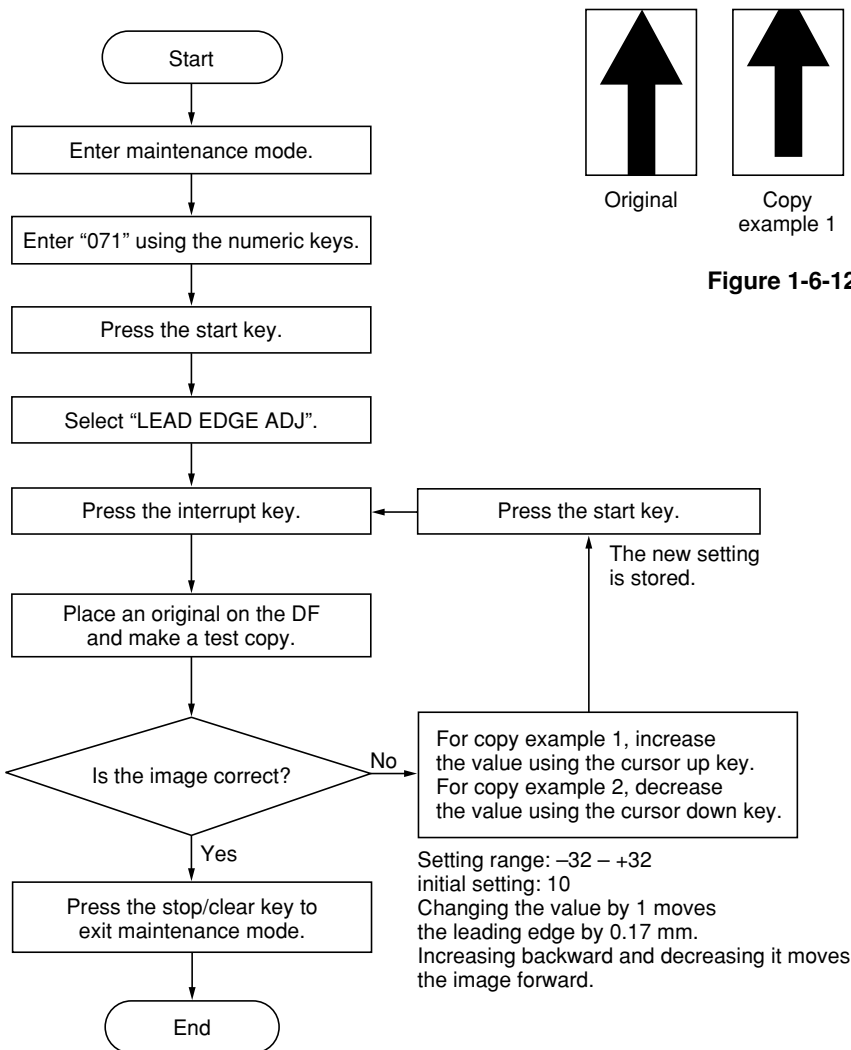
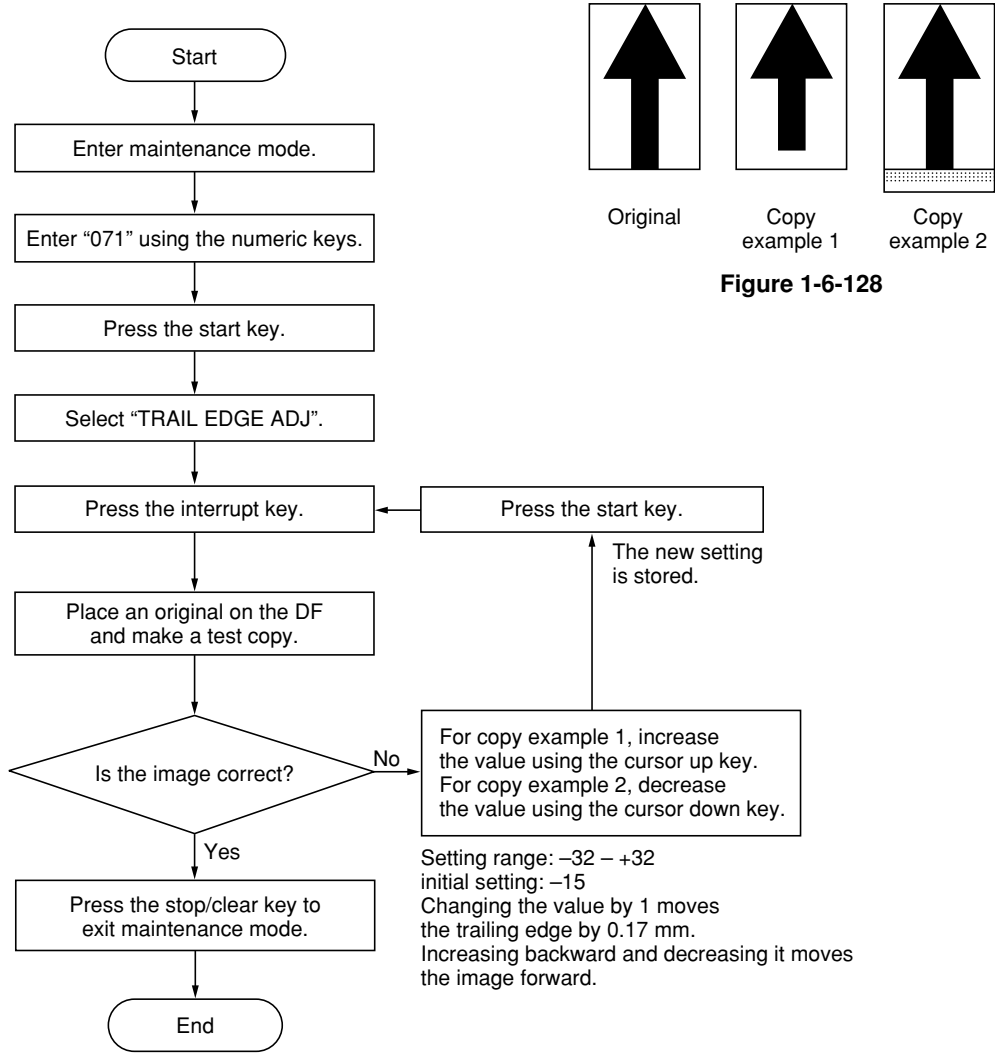


Figure 1-6-127

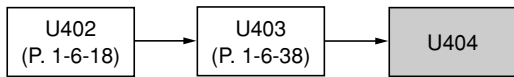
(4-2) Adjusting the DF trailing edge registration

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

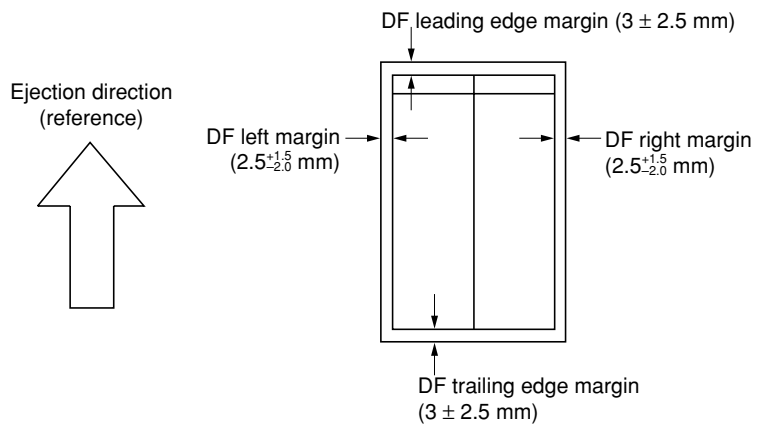
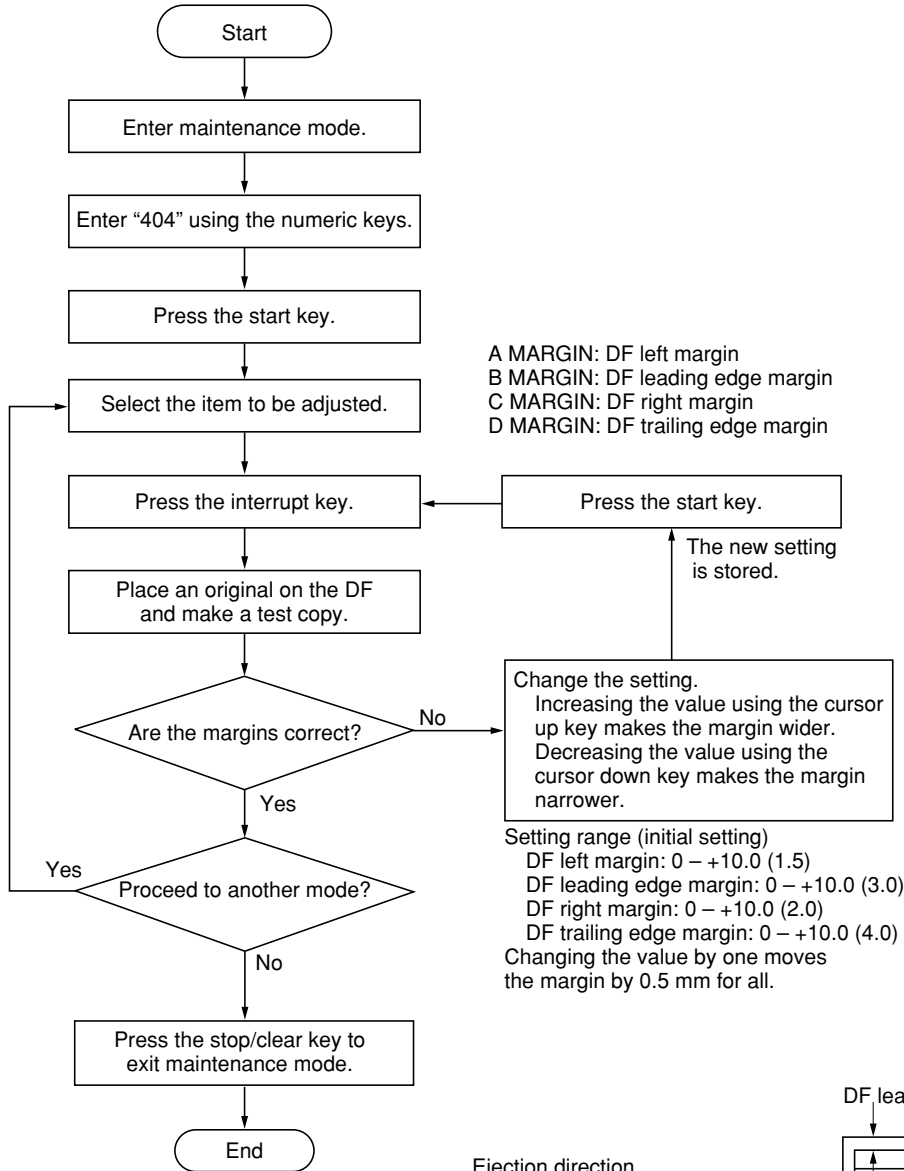


Figure 1-6-129

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

Firmware upgrading requires the following tools:

Compact Flash (Products manufactured by SANDISK are recommended.)

NOTE

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

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

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

Procedure

1. Turn the main switch off and disconnect the power plug.
2. Remove the middle rear C cover.
3. Insert Compact Flash in a notch hole of the copier.
 - * Insert it straight all the way into the machine with the front side facing the rear of the machine. If the main switch is turned off when the CompactFlash is not properly inserted, the PCB may be damaged.
4. Insert the power plug and turn the main switch on.
 - * The Energy saver key and the Start key will blink alternately and firmware upgrade operation will start. (for approximately three minutes)

Upgrading firmware starts for 3 minutes.

Caution:

Never turn the main switch off during upgrading.

5. "Completed" is displayed on the touch panel when upgrading is complete.
6. Turn the main switch off and disconnect the power plug.
7. Remove Compact Flash from the copier and refit the middle rear C cover.
8. Insert the power plug and turn the main switch on.

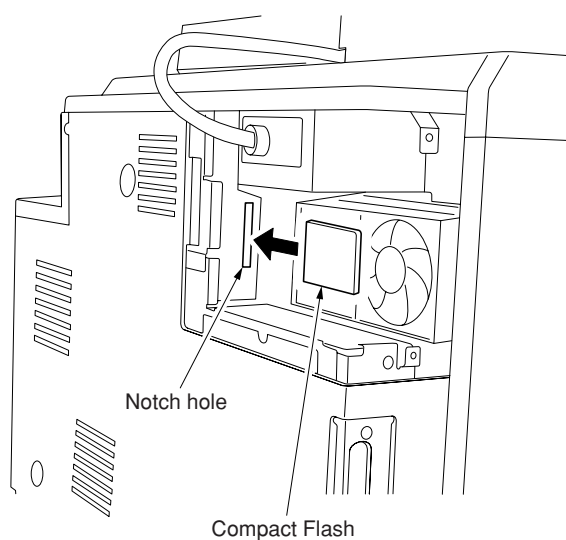


Figure 1-7-1

2BC/D

1-7-2 Adjustment-free variable resistors (VR)

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

- High voltage transformer PCB: VR101, VR102, VR201, VR301, VR302, VR401, VR402, VR403
- Inverter PCB: VR1

2-1-1 Paper feed section

The paper feed system of this copier includes drawers 1 and 2 that hold 500 sheets of paper each, drawer 3 that holds 1,000 sheets, drawer 4 that holds 1,500 sheets, and the bypass table.

The paper feed section consists of the primary paper feed and secondary paper feed subsections. Primary paper feed conveys paper from one of the four drawers or the 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) Drawers 1 and 2 paper feed

Drawers 1 and 2 consist of the lift mechanism with the drawer operating plate for making paper come into contact with the forwarding pulley and the paper feed mechanism with the forwarding pulley for pulling out paper from the drawer, the upper paper feed pulley and so on.

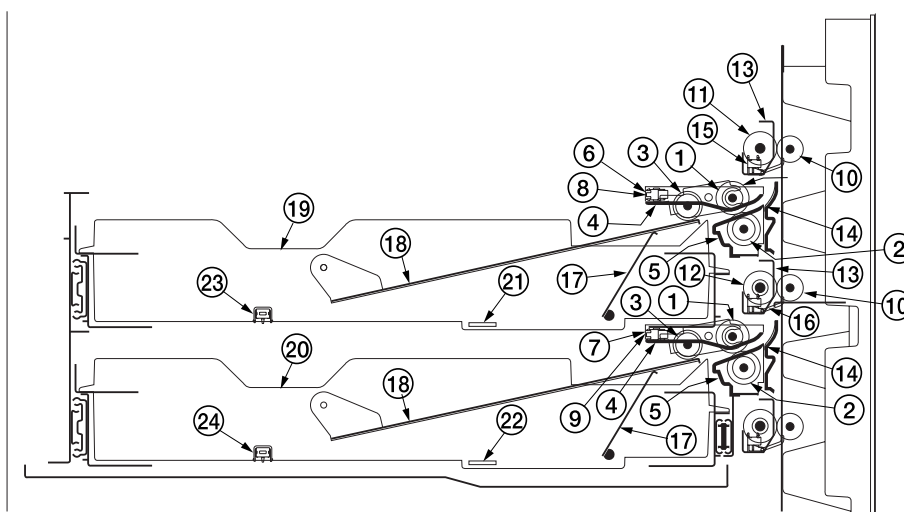


Figure 2-1-1 Paper feed section (1)

- | | |
|-------------------------------------|--------------------------------------|
| ① Upper paper feed pulley | ⑬ Left feed guide plate |
| ② Lower paper feed pulley | ⑭ Confluence guide |
| ③ Forwarding pulley | ⑮ Paper feed switch 3 (PFSW3) |
| ④ Upper paper feed housing | ⑯ Paper feed switch 4 (PFSW4) |
| ⑤ Lower paper feed housing | ⑰ Lift operating plate |
| ⑥ Paper switch 1 (PSW1) | ⑱ Drawer 1 |
| ⑦ Paper switch 2 (PSW2) | ⑲ Drawer 2 |
| ⑧ Lift limit switch 1 (LILSW1) | ⑳ Upper paper width switch (PWSW-U) |
| ⑨ Lift limit switch 2 (LILSW2) | ㉑ Lower paper width switch (PWSW-L) |
| ⑩ Right feed pulley | ㉒ Upper paper length switch (PLSW-U) |
| ⑪ Vertical paper conveying roller B | ㉓ Lower paper length switch (PLSW-L) |
| ⑫ Vertical paper conveying roller C | |

(1-1) Detecting the paper level

The mechanism of paper level detection is same for drawers 1 and 2, so only drawer 1 is explained here. The drawer operating plate for making paper in the drawer come into contact with the forwarding pulley is activated by raising the lift operating plate. The lift operating plate is attached on the lift shaft to which the upper lift motor (LM-U) is connected. When the drawer is set to the copier or the lift limit switch 1 (LILSW1) is turned off as the paper on the lift is used for copying, the upper lift motor (LM-U) will operate until the leading edge of the paper on the drawer operating plate turns lift limit switch 1 (LILSW1) on. The tilting up angle of the lift operating plate (lift motor drive shaft angle) is therefore small when the paper level is low, and large when the paper level is high. The upper lift motor (LM-U) includes a circuit that converts the tilting up angle into 2-bit digital data by dividing the angle into four levels and outputs the data as paper level detection signals (UPLESW1, UPLESW2). The engine PCB (EPCB) judges the amount of paper remaining with four levels of full, 3/4, 1/2, and 1/4 based of the UPLESW1 and UPLESW2 signals and judges also exhaustion of paper when paper switch 1 (PSW1) is not turned on even if the lift limit switch (LILSW1) is turned on. The PCB, therefore, detects five levels of the amount of paper remaining in total.

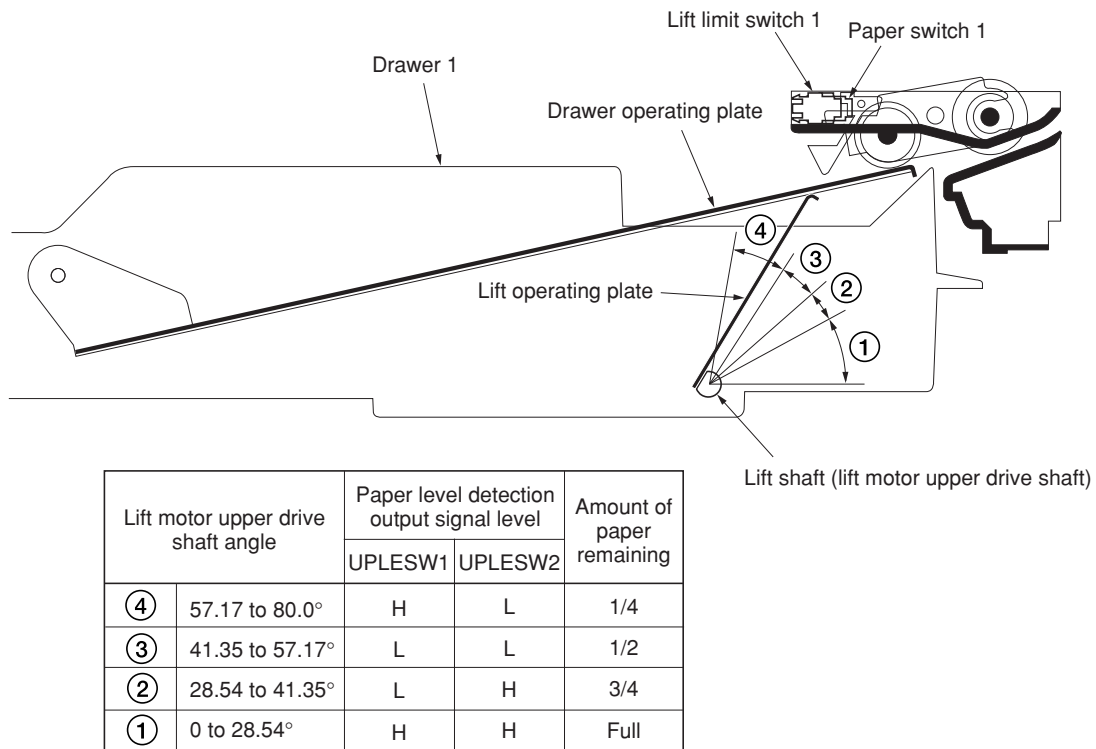


Figure 2-1-2 Paper level detection

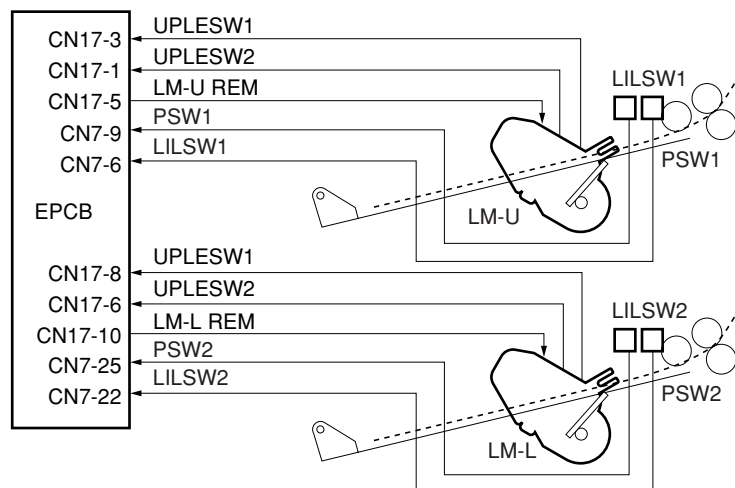


Figure 2-1-3 Paper level detection section block diagram

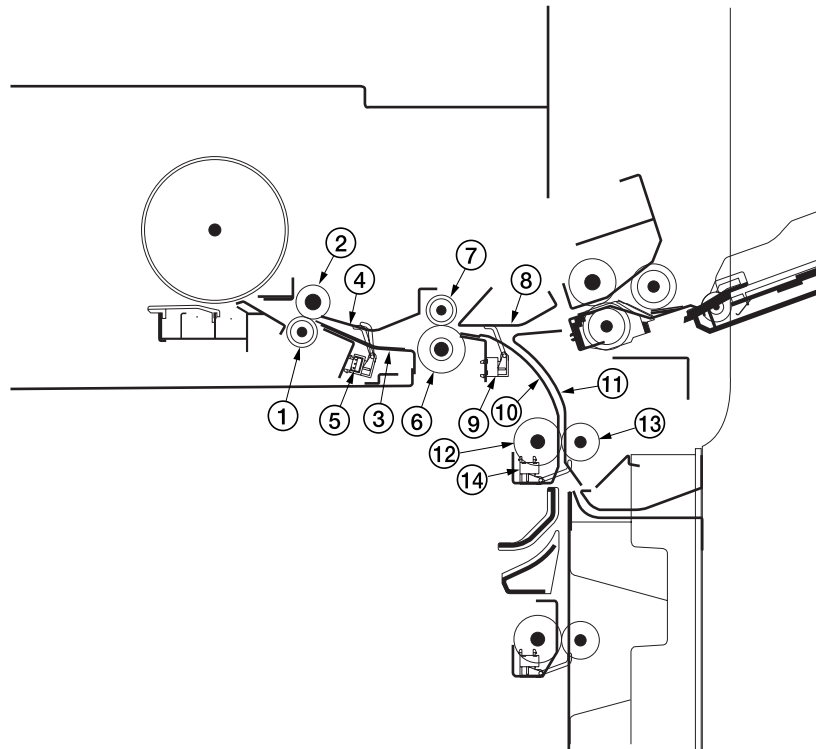


Figure 2-1-4 Paper feed section (2)

- ① Lower registration roller
- ② Upper registration roller
- ③ Front registration guide
- ④ Upper registration guide
- ⑤ Registration switch (RSW)
- ⑥ Lower feed roller
- ⑦ Upper feed roller
- ⑧ Upper right feed guide
- ⑨ Paper feed switch 1 (PFSW1)
- ⑩ Upper left feed guide
- ⑪ Lower right feed guide
- ⑫ Vertical paper conveying roller A
- ⑬ Right feed pulley
- ⑭ Paper feed switch 2 (PFSW2)

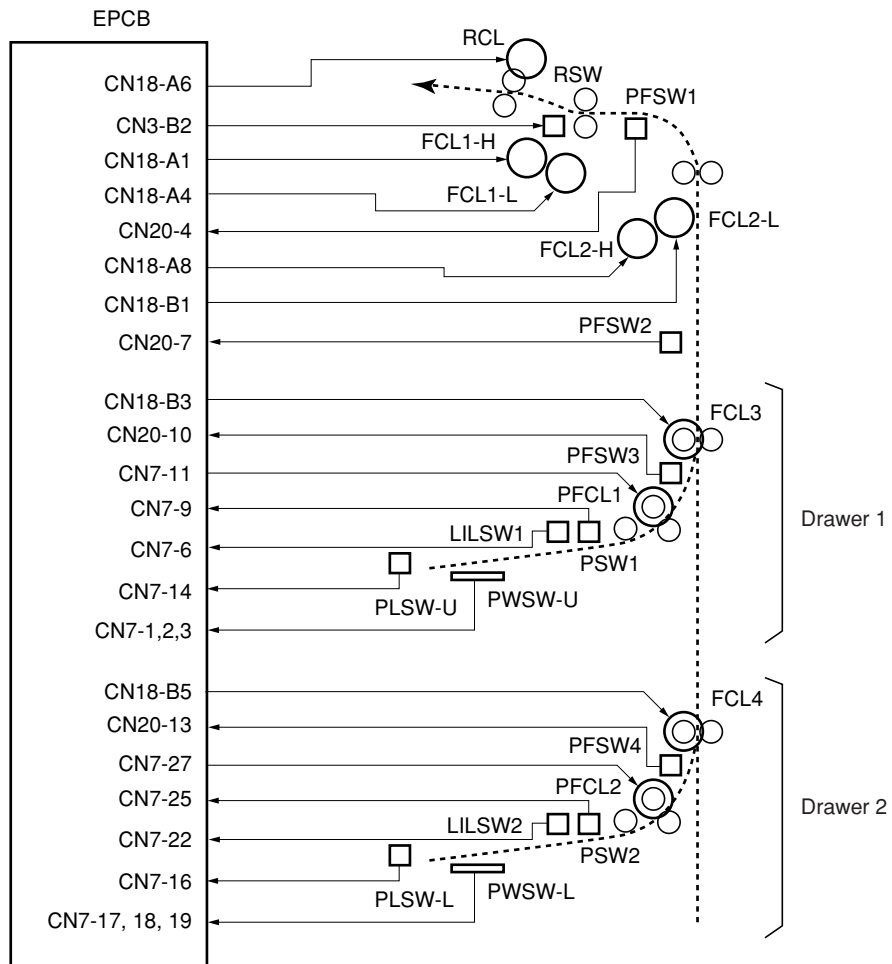
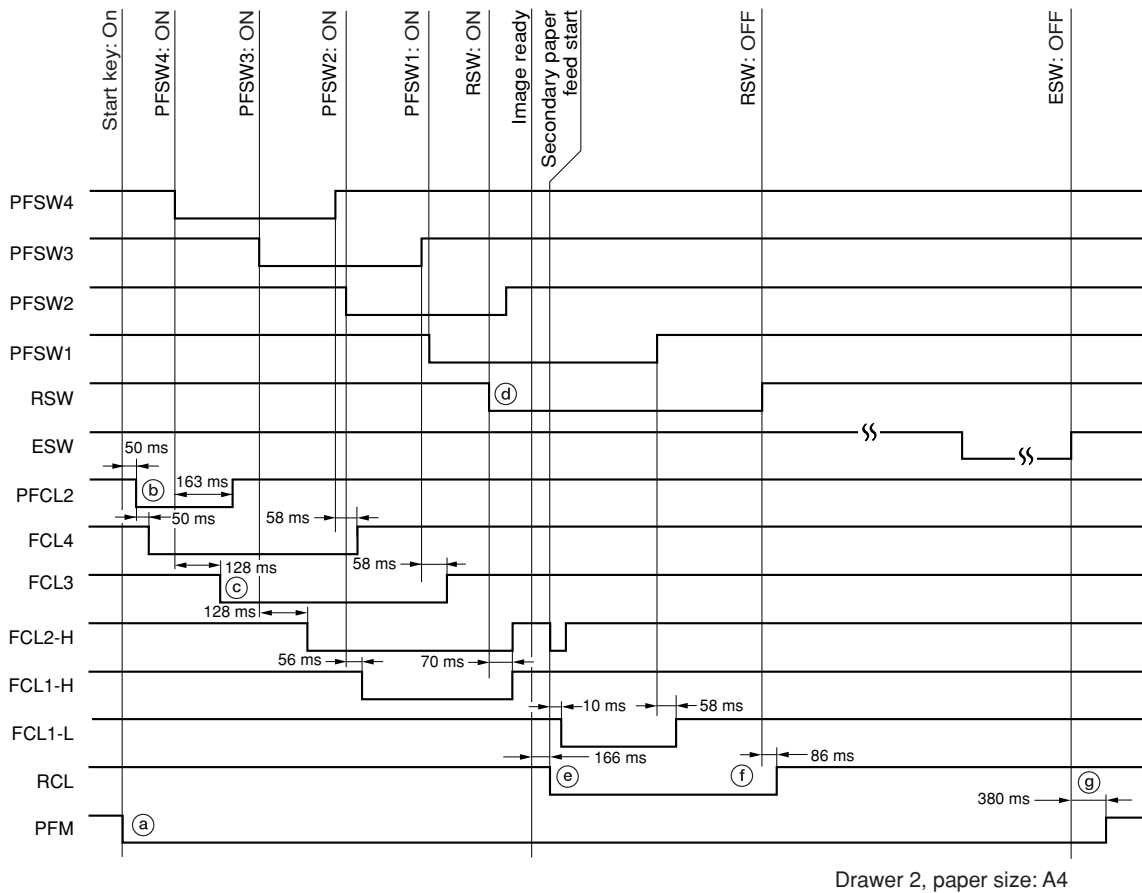


Figure 2-1-5 Paper feed section block diagram (paper feed section of drawers 1 and 2)



Timing chart 2-1-1 Drawer 2 paper feed

- (a) When the start key is pressed, the paper feed motor (PFM) turns on and thereby machine drive starts.
- (b) 50 ms after the start key is pressed, paper feed clutch 2 (PFCL2) turns on and the forwarding pulley and upper and lower paper feed pulleys of drawer 2 rotate to start primary paper feed. 50 ms later, feed clutch 4 (FCL4) turns on and paper is fed to the vertical paper conveying section.
- (c) 128 ms after the paper turns paper feed switch 4 (PFSW4) on, feed clutch 3 (FCL3) turns on. 128 ms after paper feed switch 3 (PFSW3) turns on, feed high clutch 2 (FCL2-H) turns on. 56 ms after paper feed switch 2 (PFSW2) turns on, feed high clutch 1 (FCL1-H) turns on and paper feed switch 1 (PFSW1) turns on. 163 ms after the paper turns paper feed switch 4 (PFSW4) off, paper feed clutch 2 (PFSW2) turns off. 58 ms after paper feed switch 3 (PFSW3) turns off, feed clutch 3 (FCL3) turns off.
- (d) The paper turns the registration switch (RSW) on to complete the primary paper feed. 70 ms later, feed high clutch 2 (FCL2-H) and feed high clutch 1 (FCL1-H) turn off.
- (e) 166 ms after the image ready signal turns on, the registration clutch (RCL) turns on to start secondary paper feed. 10 ms later, feed low clutch 1 (FCL1-L) turns on.
- (f) 86 ms after the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off to complete the secondary paper feed.
- (g) When the paper is ejected, the eject switch (ESW) turns off. 380 ms later, the paper feed motor (PFM) turns off to complete the paper feed.

(2) Drawers 3 and 4 paper feed

Drawer 3 located in the right of the deck holds 1,000 sheets of paper and drawer 4 located in the left of the deck holds 1,500 sheets of paper.

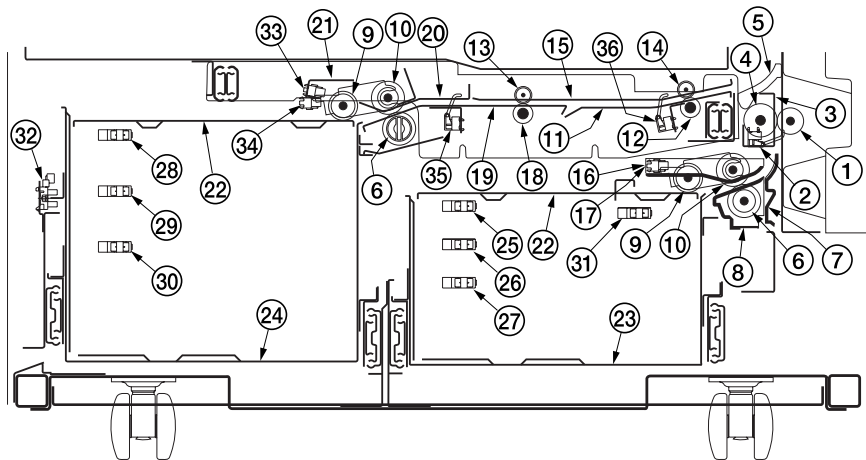


Figure 2-1-6 Drawers 3 and 4 (deck)

- | | |
|--------------------------------------|----------------------------------------------|
| ① Right feed pulley | ⑱ Deck left paper conveying roller |
| ② Paper feed switch 6 (PFSW6) | ⑲ Deck lower paper feed guide |
| ③ Left feed guide | ⑳ Deck upper paper feed guide |
| ④ Vertical paper conveying roller E | ㉑ Deck left paper conveying stay |
| ⑤ Deck upper confluence guide | ㉒ Deck lift plate |
| ⑥ Lower paper feed pulley | ㉓ Deck base A |
| ⑦ Confluence guide | ㉔ Deck base B |
| ⑧ Lower paper feed housing | ㉕ Deck right paper level switch 1 (DPLSW1-R) |
| ⑨ Forwarding pulley | ㉖ Deck right paper level switch 2 (DPLSW2-R) |
| ⑩ Upper paper feed pulley | ㉗ Deck right paper level switch 3 (DPLSW3-R) |
| ⑪ Deck lower paper conveying guide | ㉘ Deck left paper level switch 1 (DPLSW1-L) |
| ⑫ Deck right paper conveying roller | ㉙ Deck left paper level switch 2 (DPLSW2-L) |
| ⑬ Deck upper paper conveying pulley | ㉚ Deck left paper level switch 3 (DPLSW3-L) |
| ⑭ Deck upper paper conveying guide | ㉛ Deck right switch (DSW-R) |
| ⑮ Deck lift limit switch 1 (DLILSW1) | ㉜ Deck lift limit switch 2 (DLILSW2) |
| ⑯ Deck paper switch 1 (DPSW1) | ㉝ Deck left switch (DSW-L) |
| | ㉞ Deck paper switch 2 (DPSW2) |

(2-1) Drawer 3 paper feed

Drawer 3 consists of the paper lifting mechanism with a lift for lifting paper in the drawer and the paper feed mechanism with a forwarding pulley for pulling out paper from the drawer, an upper paper feed pulley, and so on.

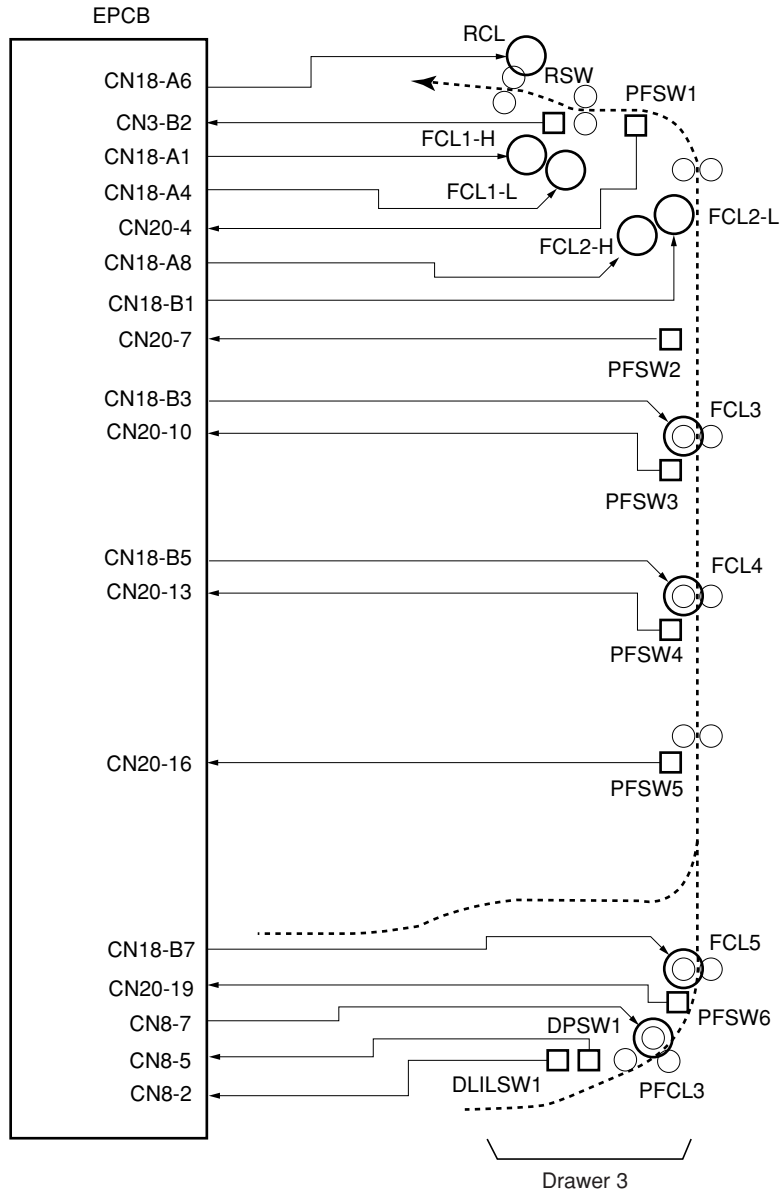
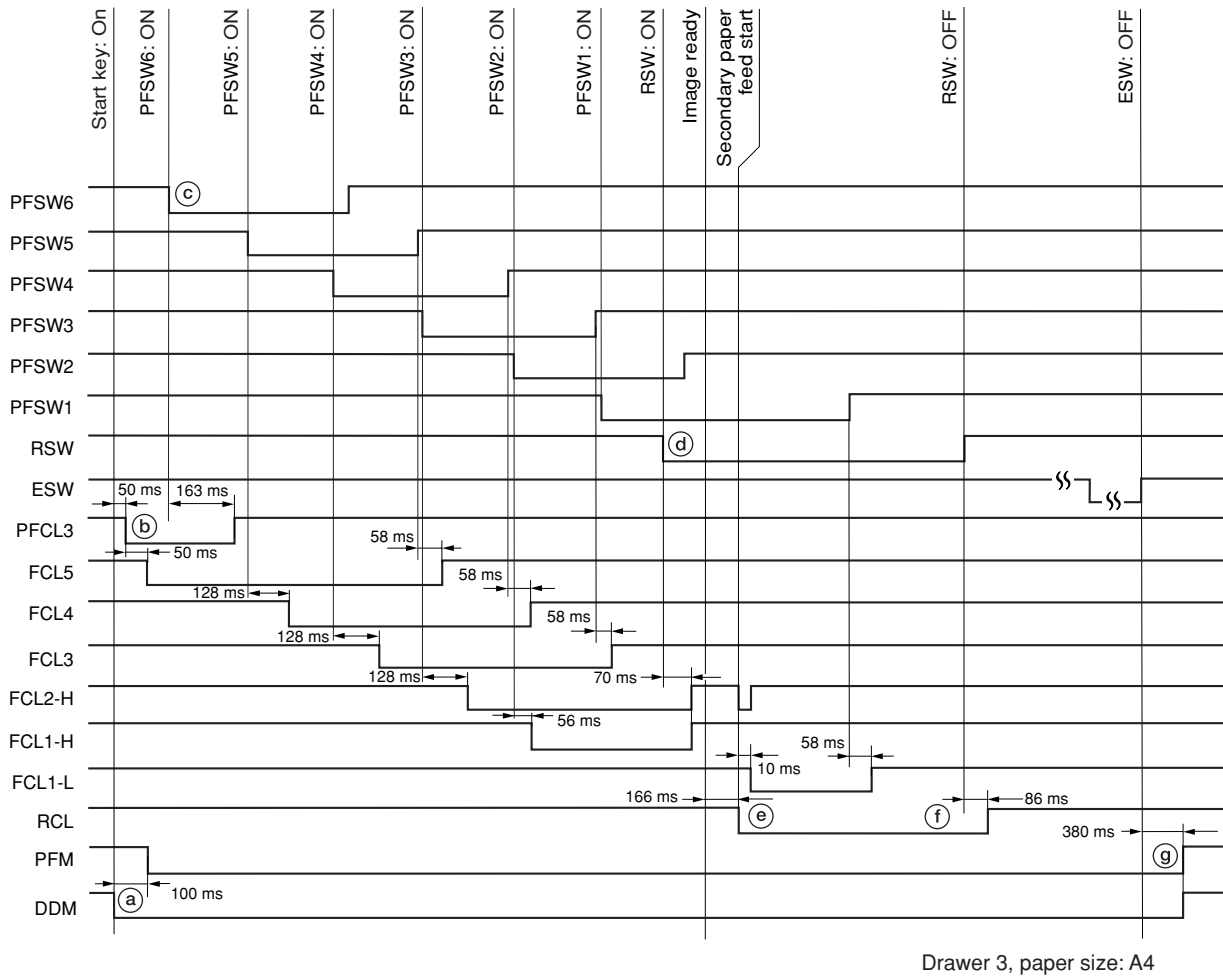


Figure 2-1-7 Drawer 3 block diagram



Timing chart 2-1-2 Drawer 3 paper feed

- (a) When the start key is pressed, the deck drive motor (DDM) turns on and 100 ms later the paper feed motor (PFM) turns on, thereby starting machine drive.
- (b) 50 ms after the start key is pressed, paper feed clutch 3 (PFCL3) turns on and the forwarding pulley and upper and lower paper feed pulleys of drawer 3 rotate to start primary paper feed. 50 ms later, feed clutch 5 (FCL5) turns on and paper is fed to the vertical paper conveying section.
- (c) 128 ms after the paper turns paper feed switch 6 (PFSW6) on and then turns paper feed switch 5 (PFSW5) on, feed clutch 4 (FCL4) turns on. 128 ms after paper feed switch 4 (PFSW4) turns on, feed clutch 3 (FCL3) turns on. 128 ms after paper feed switch 3 (PFSW3) turns on, feed high clutch 2 (FCL2-H) turns on. 56 ms after paper feed switch 2 (PFSW2) turns on, feed high clutch 1 (FCL1-H) turns on and paper feed switch 1 (PFSW1) turns on. 58 ms after the paper turns paper feed switch 6 (PFSW6) off and then turns paper feed switch 5 (PFSW5) off, feed clutch 5 (FCL5) turns off. 58 ms after paper feed switch 4 (PFSW4) turns off, feed clutch 4 (FCL4) turns off. 58 ms after paper feed switch 3 (PFSW3) turns off, feed clutch 3 (FCL3) turns off.
- (d) The paper turns the registration switch (RSW) on to complete the primary paper feed. 70 ms later, feed high clutch 2 (FCL2-H) and feed high clutch 1 (FCL1-H) turn off.
- (e) 166 ms after the image ready signal turns on, the registration clutch (RCL) turns on to start secondary paper feed. 10 ms later, feed low clutch 1 (FCL1-L) turns on.
- (f) 86 ms after the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off to complete the secondary paper feed.
- (g) 380 ms after the paper turns the eject switch (ESW) off, the deck drive motor (DDM) and the paper feed motor (PFM) turn off to complete the paper feed.

(2-2) Drawer 4 paper feed

Drawer 4 consists of the paper lifting mechanism with a deck lift and the paper feed mechanism with a forwarding pulley for pulling out paper from the drawer, an upper paper feed pulley, and so on. Also a paper conveying section for conveying paper horizontally is provided.

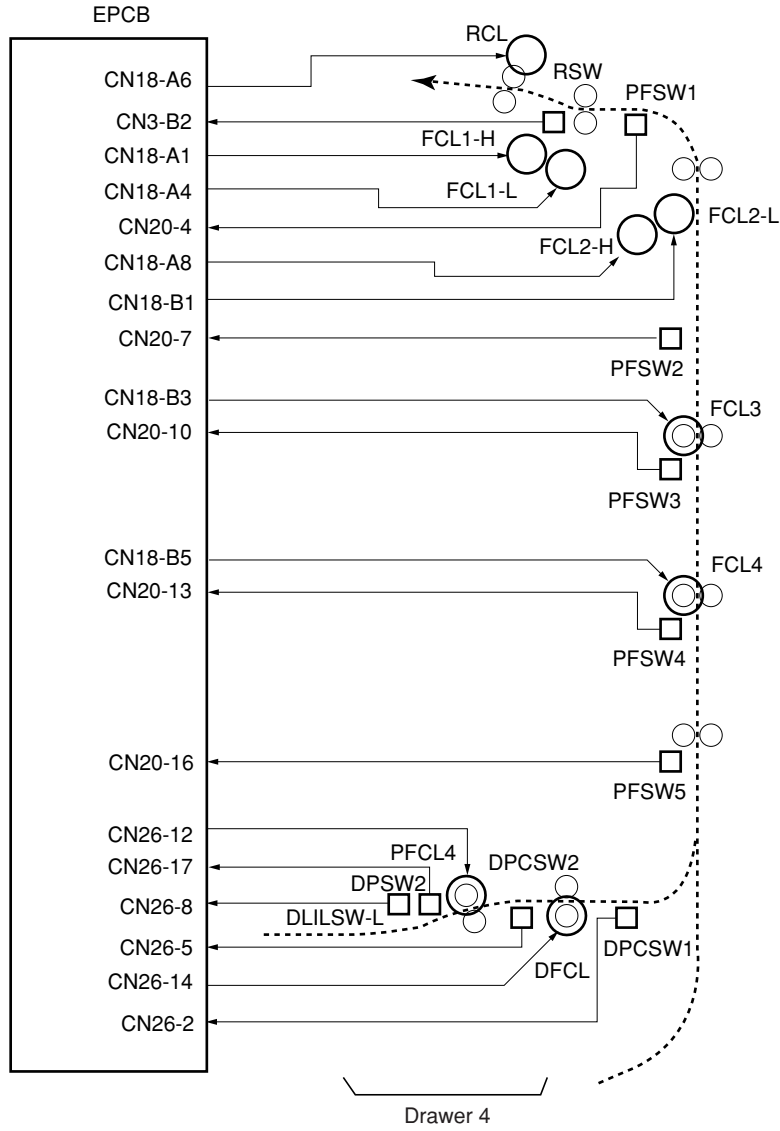
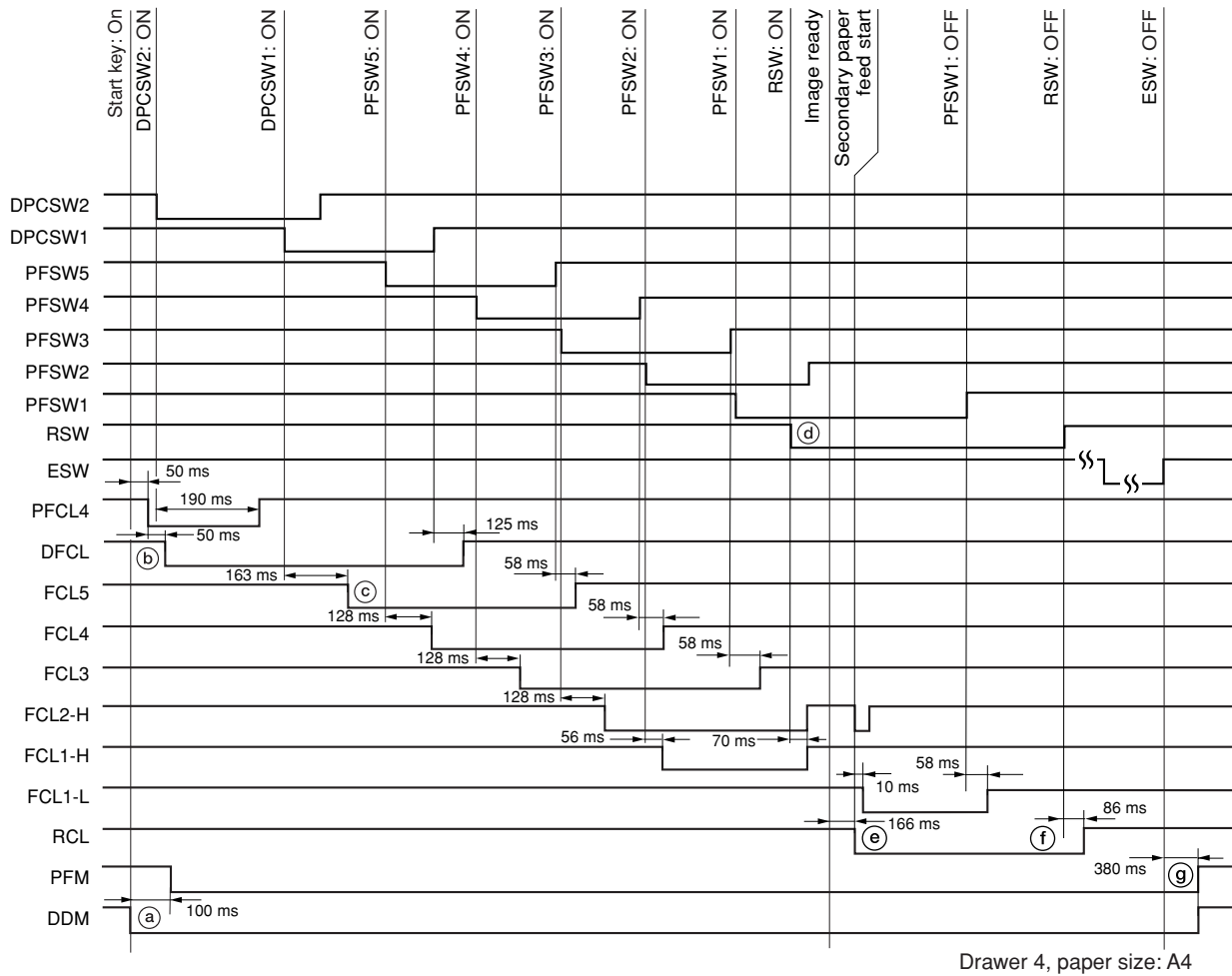


Figure 2-1-8 Drawer 4 block diagram



Timing chart 2-1-3 Drawer 4 paper feed

- (a) When the start key is pressed, the deck drive motor (DDM) turns on and 100 ms later the paper feed motor (PFM) turns on, thereby starting paper feed.
- (b) 50 ms after the start key is pressed, paper feed clutch 4 (PFCL4) turns on and the forwarding pulley and upper and lower paper feed pulleys of drawer 4 rotate to start primary paper feed. 50 ms later, the deck feed clutch (DFCL) turns on and paper is fed through the horizontal paper conveying section.
- (c) 163 ms after the paper turns deck paper conveying switch 2 (DPCSW2) on and then turns deck paper conveying switch 1 (DPCSW1) on, feed clutch 5 (FCL5) turns on. 128 ms after paper feed switch 5 (PFSW5) turns on, feed clutch 4 (FCL4) turns on. 128 ms after paper feed switch 4 (PFSW4) turns on, feed clutch 3 (FCL3) turns on. 128 ms after paper feed switch 3 (PFSW3) turns on, feed high clutch 2 (FCL2-H) turns on. 56 ms after paper feed switch 2 (PFSW2) turns on, feed high clutch 1 (FCL1-H) turns on and the paper is conveyed to the position where paper feed switch 1 (PFSW1) turns on. 125 ms after the paper turns deck paper conveying switch 1 (DPCSW1) off, the deck feed clutch (DFCL) turns off. 58 ms after paper feed switch 5 (PFSW5) turns off, feed clutch 5 (FCL5) turns off. 58 ms after paper feed switch 4 (PFSW4) turns off, feed clutch 4 (FCL4) turns off.
- (d) The paper advances and turns the registration switch (RSW) on to complete the primary paper feed. 70 ms later, feed high clutch 2 (FCL2-H) and feed high clutch 1 (FCL1-H) turn off.
- (e) 166 ms after the image ready signal turns on, the registration clutch (RCL) turns on to start secondary paper feed. 10 ms later, feed low clutch 1 (FCL1-L) turns on.
- (f) 86 ms after the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off to complete the secondary paper feed.
- (g) 380 ms after the paper turns the eject switch (ESW) off, the deck drive motor (DDM) and the paper feed motor (PFM) turn off to complete the paper feed.

(2-3) Raising and lowering the lift

The mechanism of paper lifting with the deck lift is same for drawers 3 and 4, so only drawer 3 is explained here. The deck lift is suspended with wire at four points, and the deck right lift motor (DLM-R) drives the lift by winding up the wire. The stop control of the deck lift at the upper limit is performed with deck lift limit switch 1 (DLILSW1). When paper is loaded on the deck lift and the drawer is set in the copier, the deck right lift motor (DLM-R) turns on to start winding up the wire. The deck lift rises until the leading edge of the paper turns deck lift limit switch 1 (DLILSW1) on and then stops. When deck lift limit switch 1 (DLILSW1) is turned off as the paper on the lift is used for copying, the deck lift is raised until the deck right lift motor (DLM-R) turns on again and the leading edge of the paper turns deck lift limit switch 1 (DLILSW1) on. When the drawer is pulled out from the copier for loading paper or other purposes, the lift drive shaft is released from the coupler of the deck right lift motor (DLM-R), allowing the lift to descend under its own weight. The damper mounted via a gear to the lift drive shaft buffers the impact of the descending lift.

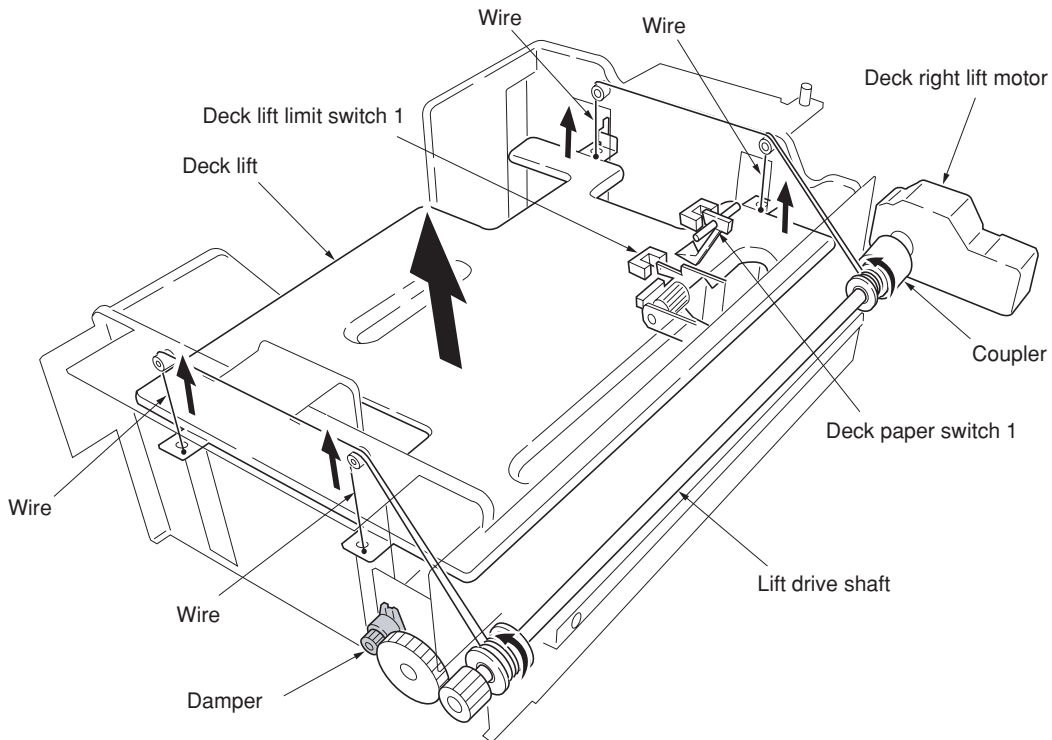


Figure 2-1-9 Raising and lowering the lift

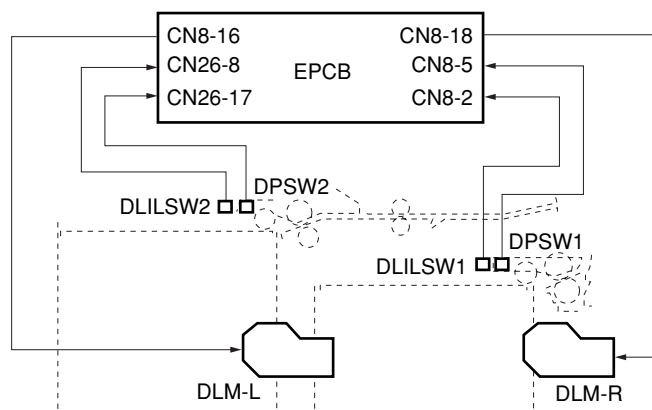


Figure 2-1-10 Lift block diagram

(2-4) Detecting the paper level

* The mechanism of paper level detection is same for drawers 3 and 4, so only drawer 3 is explained here.
 When the drawer is pulled out from the copier and then pushed in again or when paper on the lift is used for copying, the deck right lift motor (DLM-R) drives until the leading edge of the paper on the lift turns deck lift limit switch 1 (DLILSW1) on. The rising level of the lift, therefore, depends on the amount of paper remaining. When the amount of paper remaining is large, the level is low, and when small, the level is high. At the rear portion of the deck, deck right paper level switches 1, 2, and 3 (DPLSW1-R, DPLSW2-R, DPLSW3-R) are mounted at three levels and turn on or off based on the shielding plate mounted to the lift. The engine PCB (EPCB) detects the level below which the actuator turns the switches on (or no switch on) when the deck right lift motor (DLM-R) rises and judges the rising level of the lift (paper level) with four levels. The PCB judges also exhaustion of paper when deck paper switch 1 (DPSW1) is not turned on even if deck lift limit switch 1 (DLILSW1) is turned on. The PCB, therefore, detects five levels of paper remaining in total.

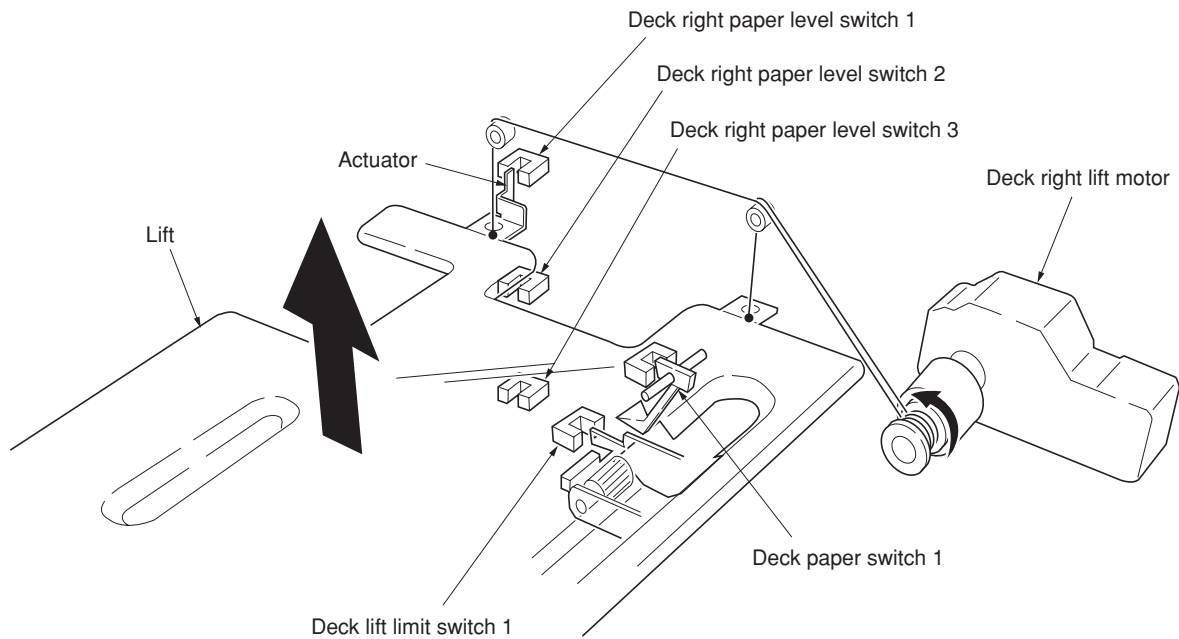


Figure 2-1-11 Detecting the paper level

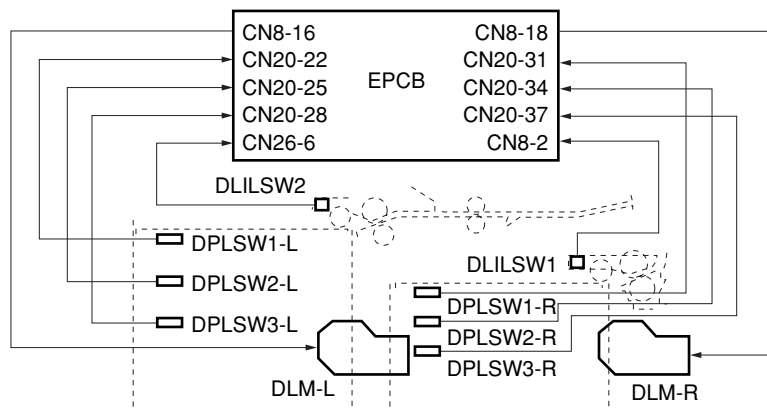


Figure 2-1-12 Paper level detection system block diagram

(3) Paper feed from the bypass table

The bypass table holds up to 100 sheets of paper at one time.

the bypass solenoid (BYP SOL) turns on, unlocking the bypass stopper and lowering the bypass forwarding pulley until it comes into contact with the paper. This conveys paper placed on the bypass table to the bypass upper and lower paper feed pulleys, is primary paper fed by the rotation of the bypass forwarding pulley 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.

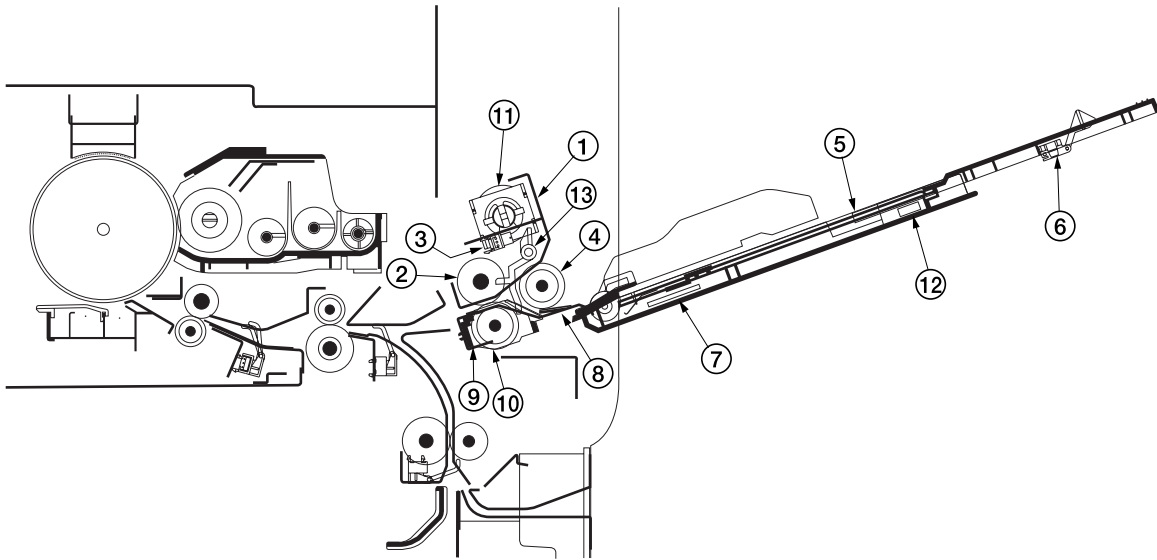


Figure 2-1-13 Bypass paper feed section

- | | |
|---------------------------------------------|----------------------------------|
| ① Upper bypass guide | ⑧ Bypass lift guide |
| ② Bypass upper paper feed pulley | ⑨ Lower bypass housing |
| ③ Bypass paper switch (BYPPSW) | ⑩ Bypass lower paper feed pulley |
| ④ Bypass forwarding pulley | ⑪ Bypass solenoid (BYP SOL) |
| ⑤ Bypass table | ⑫ Bypass tray switch (BYPTSW) |
| ⑥ Bypass paper size length switch (BYPPLSW) | ⑬ Bypass stopper |
| ⑦ Bypass paper size width switch (BYPPWSW) | |

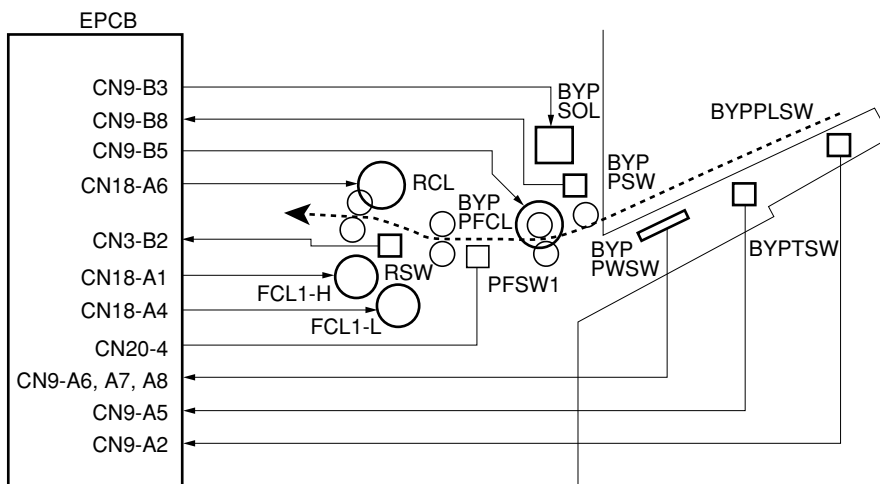
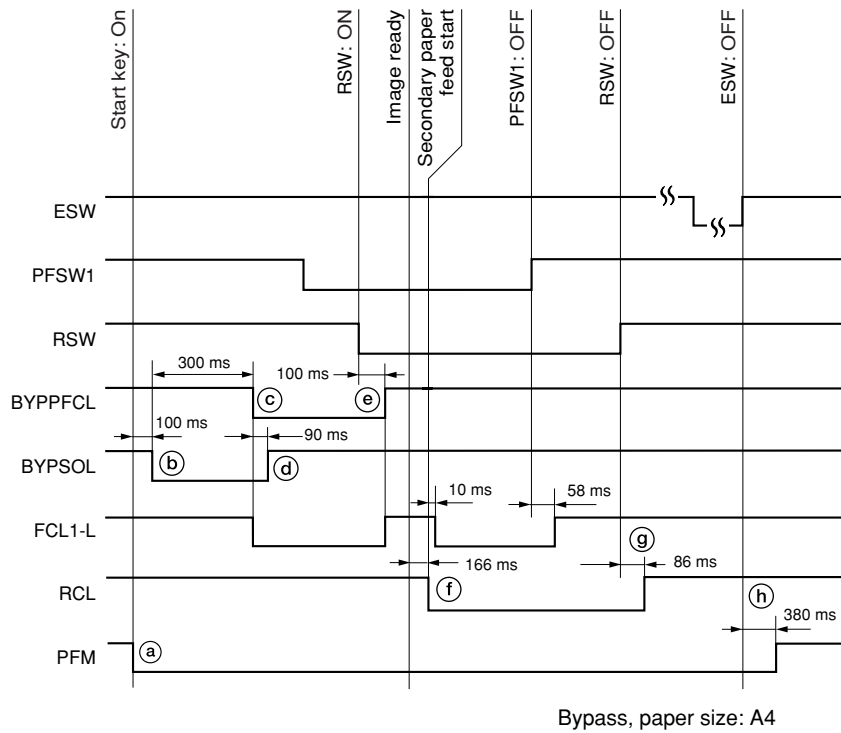


Figure 2-1-14 Bypass paper feed section block diagram



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

- (a) When the start key is pressed, the paper feed motor (PFM) turns on, thereby starting paper feed.
- (b) 100 ms after the start key is pressed, the bypass solenoid (BYP SOL) turns on. The bypass stopper is unlocked and the bypass forwarding pulley lowers to forward the paper.
- (c) 300 ms after the bypass solenoid (BYP SOL) turns on, the bypass paper feed clutch (BYPPFCL) turns on and the bypass forwarding pulley and bypass upper and lower paper feed pulleys rotate to start primary paper feed. 90 ms later, feed low clutch 1 (FCL1-L) turns on.
- (d) 90 ms after the bypass solenoid (BYP SOL) turns on, the bypass solenoid (BYP SOL) turns off to lower the bypass lift guide to return to the paper feed standby position.
- (e) 100 ms after the paper turns the registration switch (RSW) on, the bypass paper feed clutch (BYPPFCL) and feed low clutch 1 (FCL1-L) turn off to complete the primary paper feed.
- (f) 166 ms after the image ready signal turns on, the registration clutch (RCL) turns on to start secondary paper feed. 10 ms later, feed high clutch 1 (FCL1-H) turns on.
- (g) 86 ms after the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off to complete the secondary paper feed.
- (h) 380 ms after the paper turns the eject switch (ESW) off, the paper feed motor (PFM) turns off to complete the paper feed.

2-1-2 Main charging section

The main charging section consists of the main charger unit, drum, drum surface potential sensor (DSPS), and so on. The drum is electrically charged to form an image.

The drum surface potential sensor (DSPS) reads the drum surface potential and outputs data for surface potential correction to the engine PCB (EPCB).

The main charger unit has the main charger cleaning motor (MCCM), main charger cleaning pad, and so on for automatic cleaning of the charger wire.

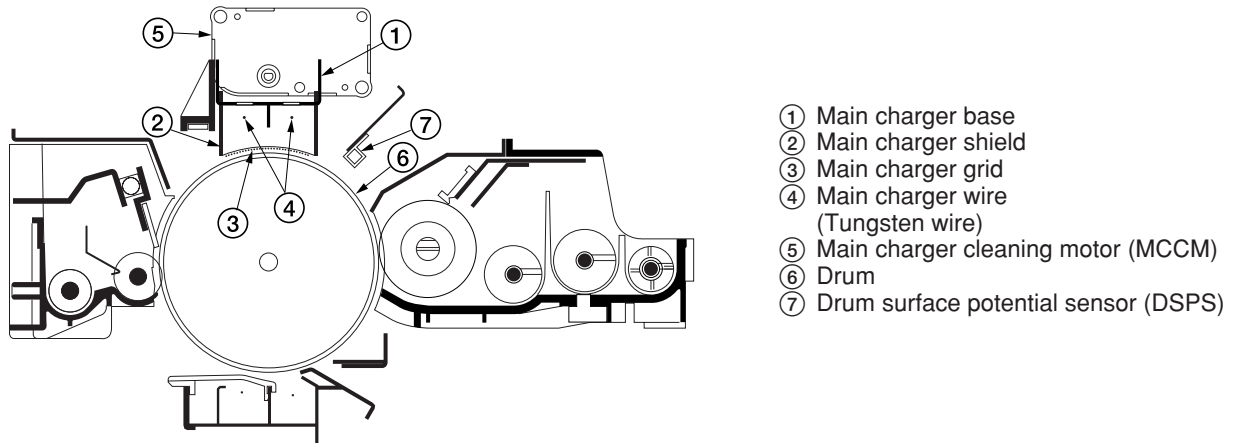


Figure 2-1-15 Main charging section

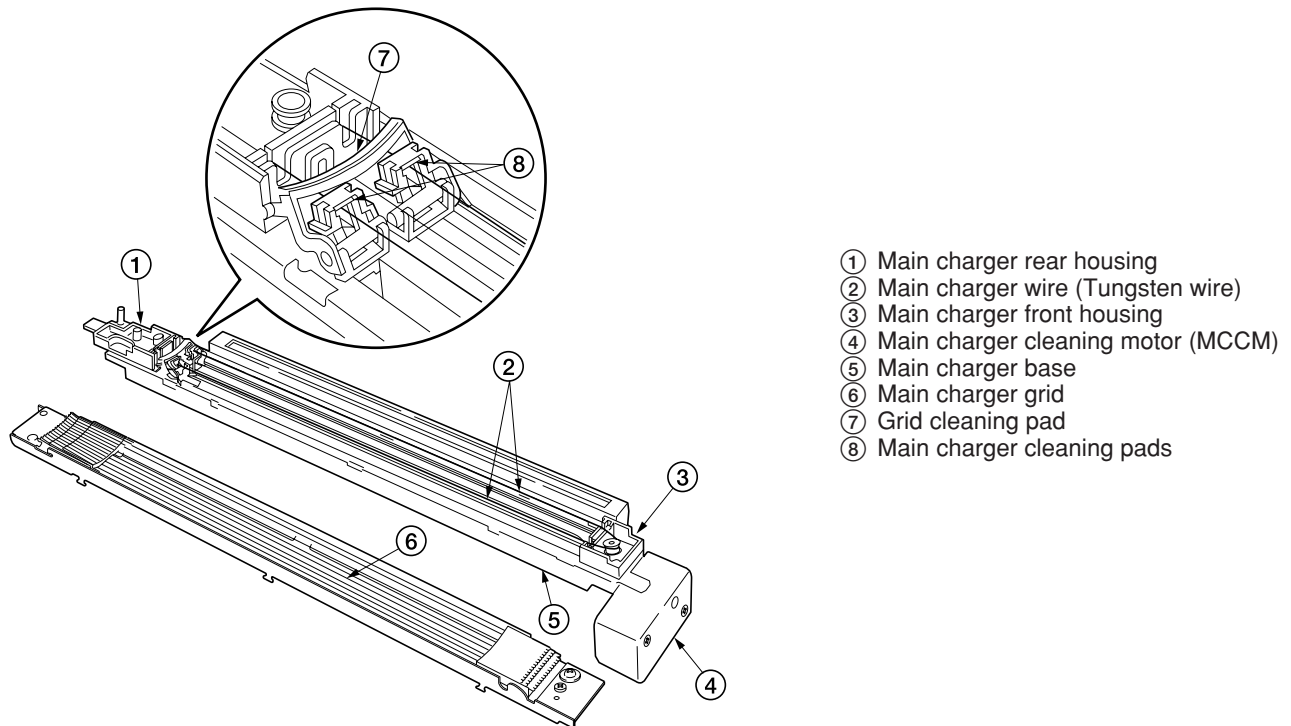


Figure 2-1-16 Main charger unit

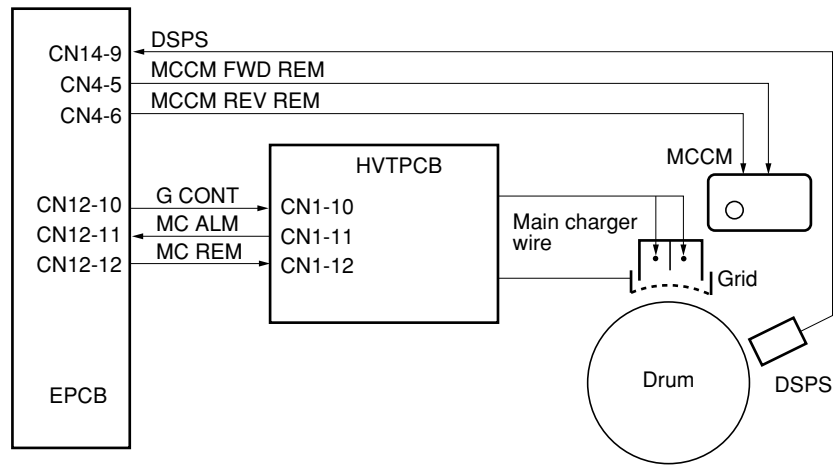
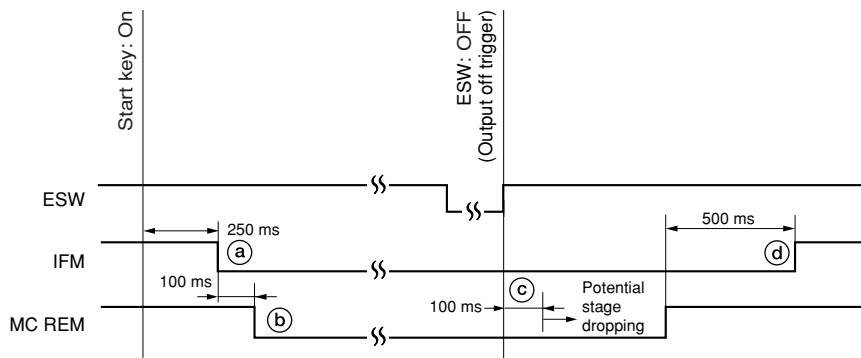


Figure 2-1-17 Main charging section block diagram



Timing chart 2-1-5 Main charging

- (a) 250 ms after the start key is pressed, the image formation motor (IFM) turns on to start machine drive.
- (b) 100 ms after the image formation motor (IFM) turns on, the MC REM signal turns on, high voltage is applied to the main charger from the high voltage transformer PCB (HVT PCB) and main charging starts.
- (c) The potential stage dropping control of main charging is triggered when the eject switch (ESW) turns off.
- (d) 500 ms after the end of potential stage dropping control of main charging, the image formation motor (IFM) 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.

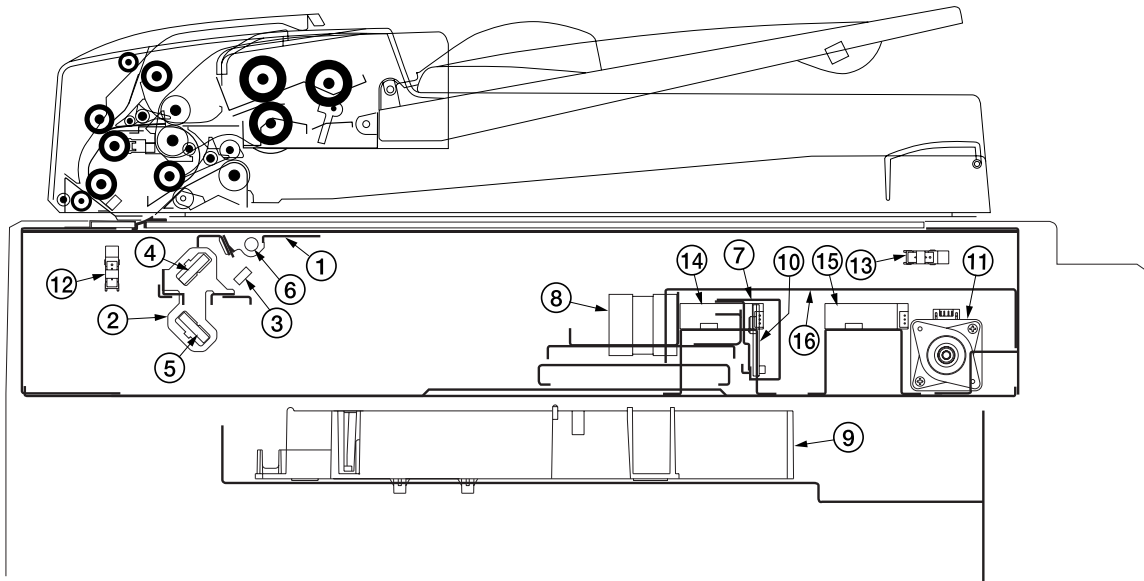


Figure 2-1-18 Optical section

- | | |
|----------------------------|---------------------------------------------|
| ① Mirror 1 frame | ⑪ Scanner motor (SM) |
| ② Mirror 2 frame | ⑫ Scanner home position switch (SHPSW) |
| ③ Mirror 1 | ⑬ Original detection switch (ODSW) |
| ④ Mirror 2 | ⑭ Original size detection sensor 1 (OSDS1) |
| ⑤ Mirror 3 | ⑮ Original size detection sensor 2 (OSDS2)* |
| ⑥ Exposure lamp (EL) | ⑯ ISU cover |
| ⑦ Image scanning unit | |
| ⑧ Lens | |
| ⑨ Laser scanner unit (LSU) | |
| ⑩ CCD PCB (CCDPCB) | |

*: For inch models only.

(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 mirror 1 and 2 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 2 frame is half the speed of the mirror 1 frame. When the DF is used, the mirror 1 and 2 frame stop at the DF original scanning position to start scanning.

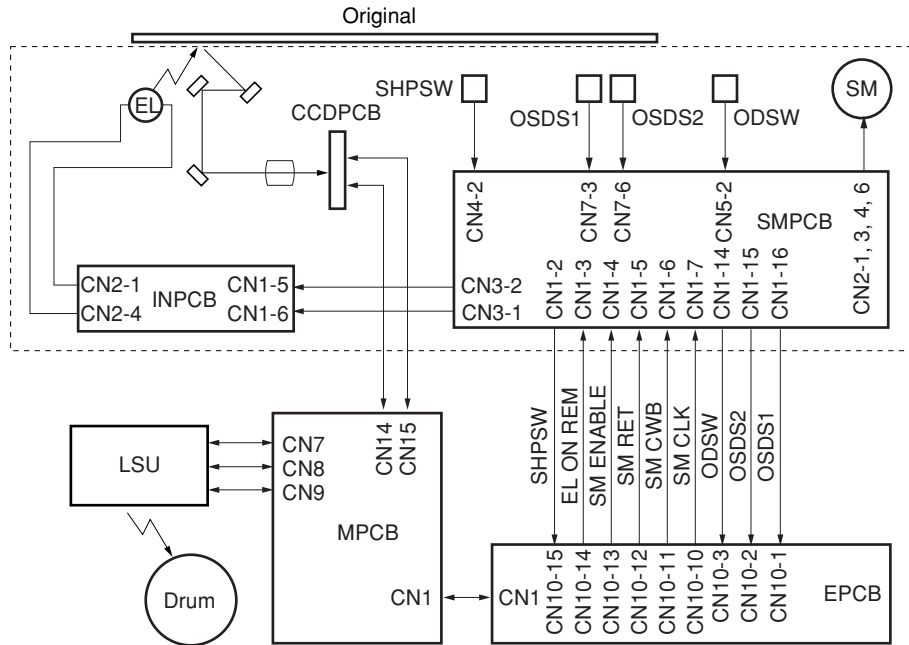
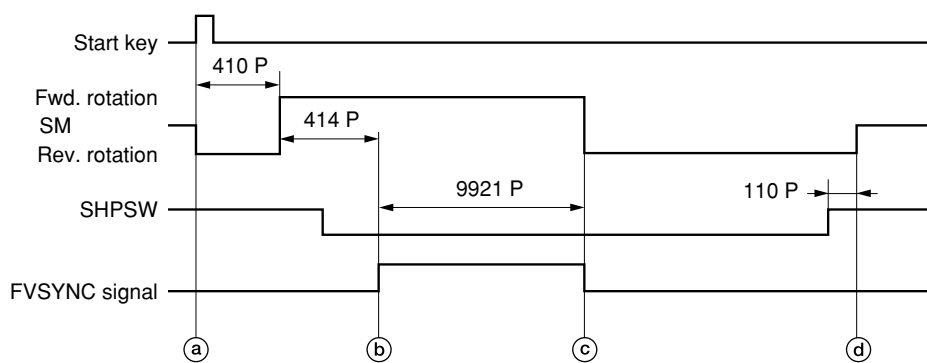


Figure 2-1-19 Optical section block diagram



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

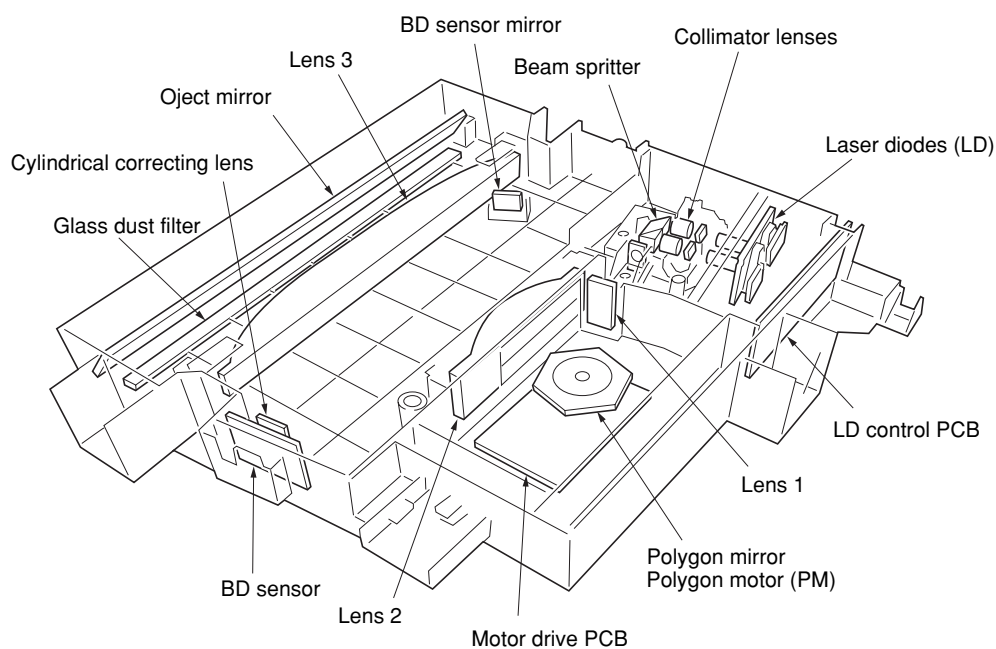


Figure 2-1-20 Laser scanner unit (1)

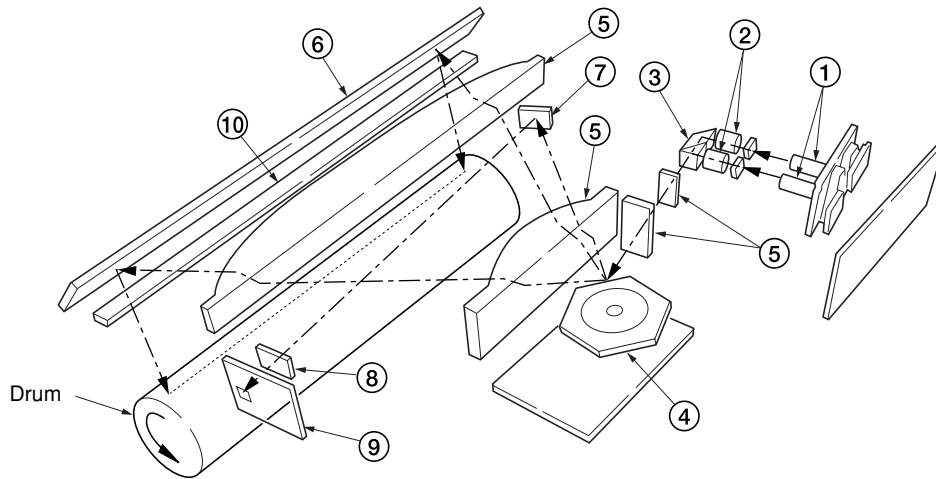


Figure 2-1-21 Laser scanner unit (2)

- 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 34251.969 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 2-1-22.

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 2-1-23. 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.

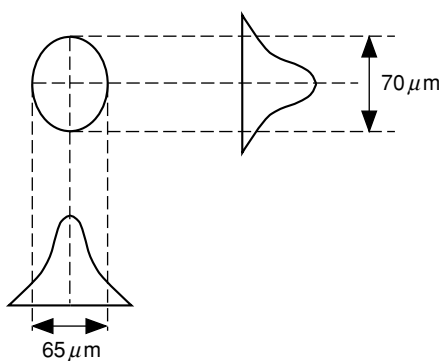


Figure 2-1-22

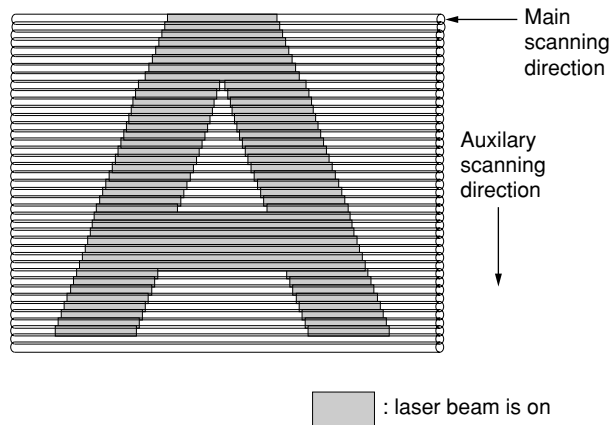


Figure 2-1-23

2-1-4 Developing section

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

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

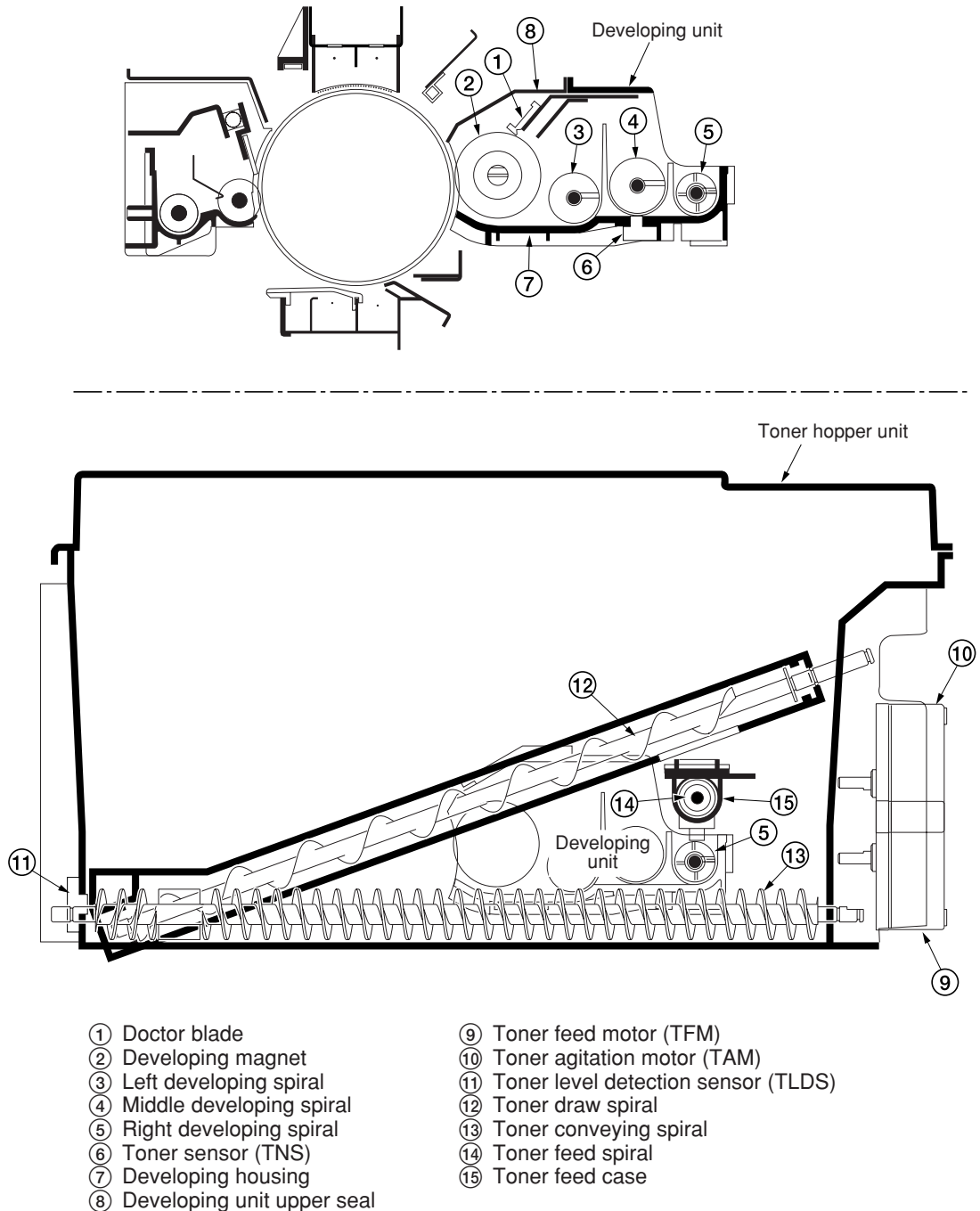
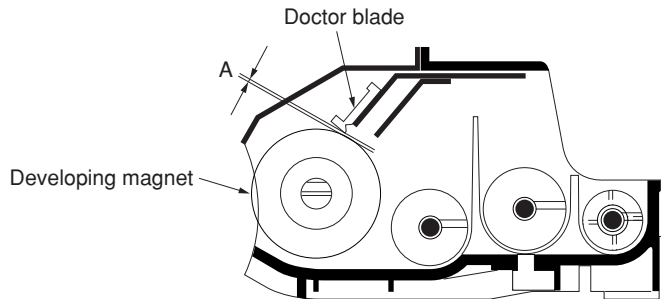


Figure 2-1-24 Developing section

(1) Formation of magnetic brush

The developing magnet consists of a magnet roller with 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 that is used for developing. The height of the magnet brush is regulated by the doctor blade; the developing result is affected by the position of the poles on the magnet roller and the position of the doctor blade. A developing bias voltage generated by the high voltage transformer PCB (HVTPCB) is applied to the developing magnet to provide image contrast.



A: $0.53 \pm 0.05\text{mm}$ (between the doctor blade and the developing magnet)

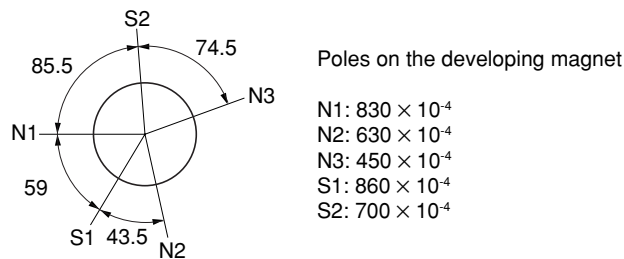


Figure 2-1-25 Forming a magnetic brush

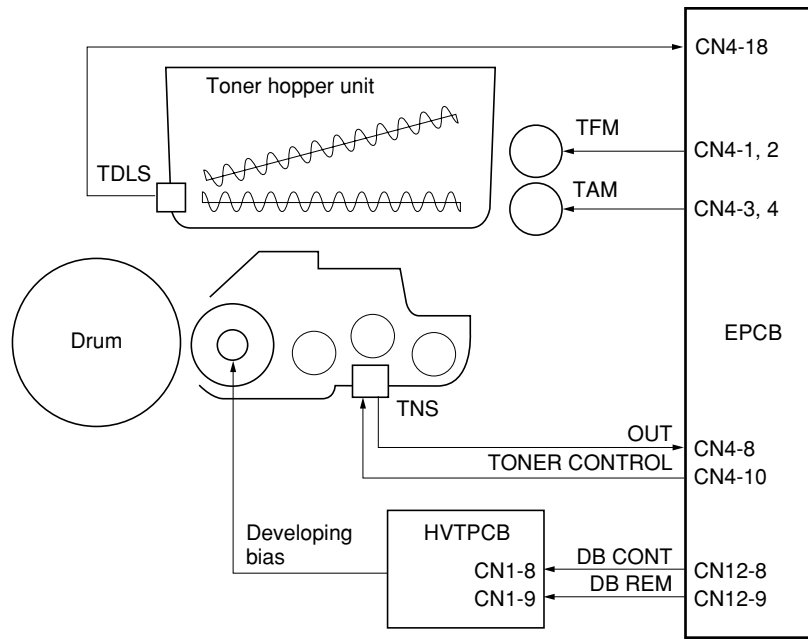
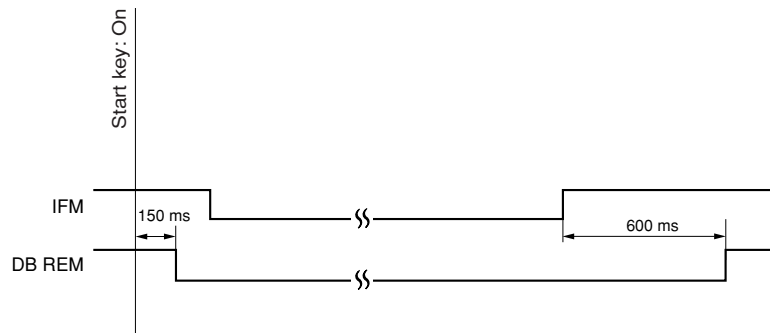


Figure 2-1-26 Developing section block diagram



Timing chart 2-1-7 Operation of developing bias

- Ⓐ 150 ms after the start key is pressed, the DB REM signal turns on to apply the developing bias to the developing roller.
- Ⓑ 600 ms after the image forming motor (IFM) turns off, the DB REM signal turns off.

(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.

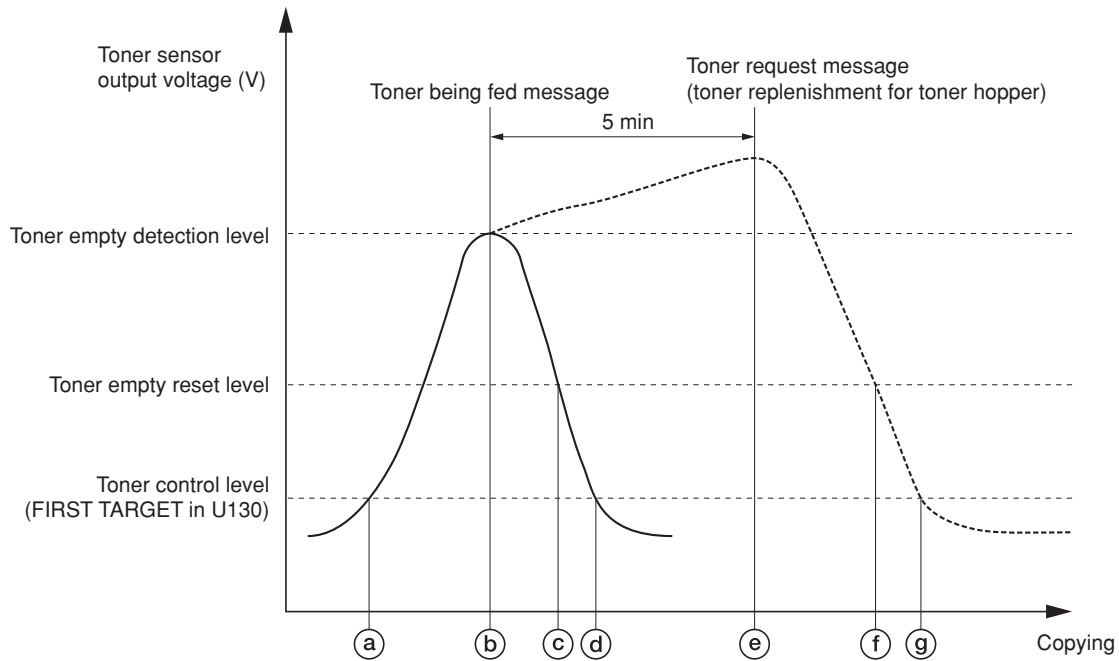


Figure 2-1-27 Toner density control

- Ⓐ 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

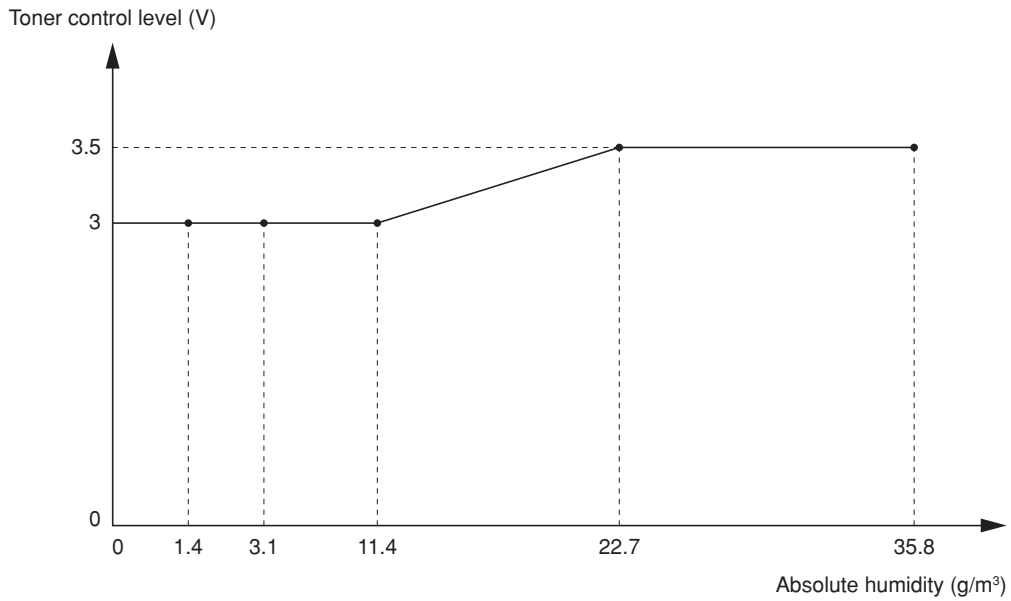
(2-3) Toner empty detection by the toner level sensor

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).



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

Figure 2-1-28 Toner control level absolute humidity correction

2-1-5 Transfer/separation and conveying sections

The transfer/separation section consists of the transfer charger unit and the drum separation claw. The transfer charger unit consists of the transfer charger for transferring the toner image on the drum onto paper and the separation charger for separating the paper from the drum. The transfer charger performs transfer charging by applying a high voltage generated by the high voltage transformer PCB (HVTPCB) to both ends of the tungsten wire. The separation charger, when an alternating voltage is applied from the high voltage transformer PCB (HVTPCB), discharges it and neutralizes the residual charge on the paper for which transfer is complete. The paper is therefore separated from the drum by its own weight. The drum separation claw is used as auxiliary measures for separating securely the paper that has been separated from the drum.

The paper conveying section consists of the paper conveying belt assembly, the paper conveying motor (PCM), and so on. The paper that passes through the transfer/separation section is conveyed to the fixing section with the paper conveying belt. Holes are provided on the paper conveying belt and the paper conveying fan motor (PCFM) attracts the paper from under the paper conveying section.

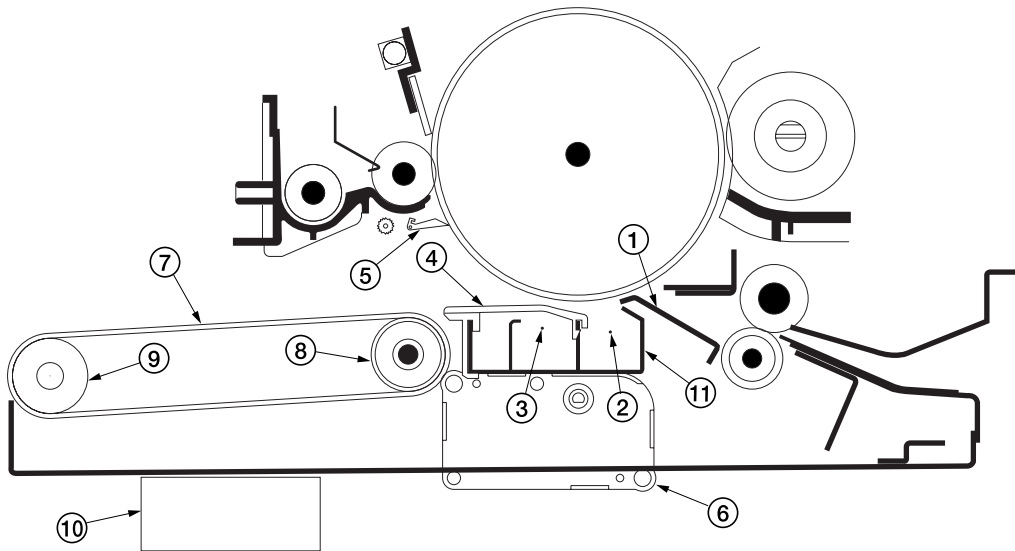


Figure 2-1-29 Transfer/separation and conveying sections

- | | |
|------------------------------------------|------------------------------------|
| ① Lower front transfer guide | ⑦ Paper conveying belt |
| ② Transfer charger wire | ⑧ Paper conveying roller |
| ③ Separation charger wire | ⑨ Paper conveying roller |
| ④ Separation guide | ⑩ Paper conveying fan motor (PCFM) |
| ⑤ Drum separation claw | ⑪ Transfer charger shield |
| ⑥ Transfer charger cleaning motor (TCCM) | |

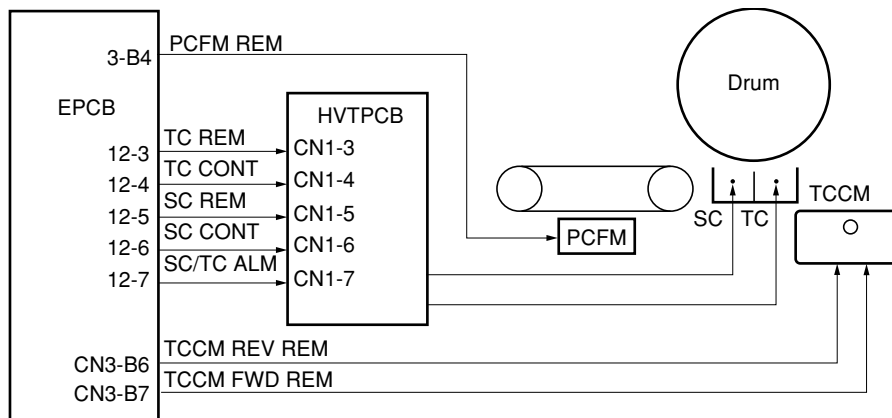
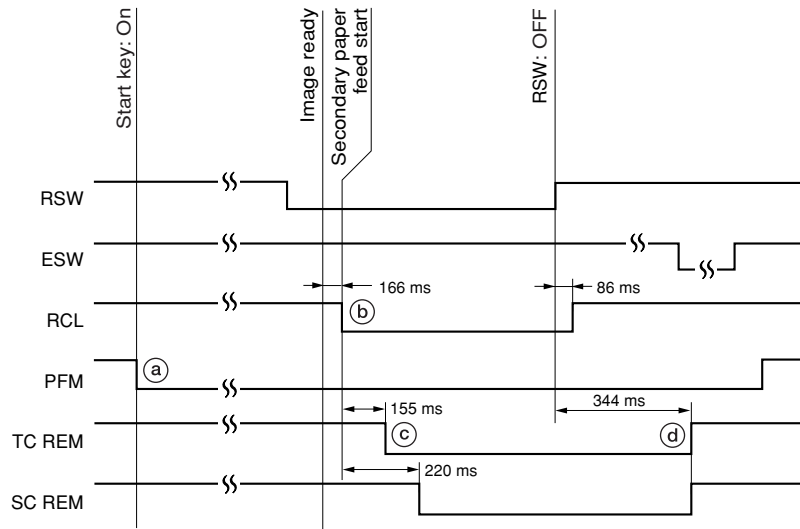


Figure 2-1-30 Transfer/separation and conveying sections block diagram



Timing chart 2-1-8 Transfer/separation operation

- (a) When the start key is pressed, the paper feed motor (PFM) turns on, which starts paper feed.
- (b) 166 ms after the image ready signal turns on, the registration clutch (RCL) turns on to start secondary paper feed.
- (c) 155 ms and 220 ms after the registration clutch (RCL) turns on, the TC REM signal and the SC REM signal turn on respectively and the transfer charging and the separation charging start respectively.
- (d) 344 ms after the paper turns the registration switch (RSW) off, the TC REM and SC REM signals turn off to complete transfer charging and separation charging.

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 the cleaning brush which remove residual toner from the drum surface after transfer, the cleaning brush scraper that removes toner from the cleaning brush, and the cleaning spiral that carries the residual toner to the waste toner box. After the transfer process is completed, residual toner on the drum surface is removed first by the rotation of the cleaning brush and then by the cleaning blade. The pre-cleaning lamps 1 and 2 (PCL1, PCL2) are provided on the front and rear ends of the drum respectively. The LED light irradiates the drum ends to improve the cleaning performance on the drum ends.

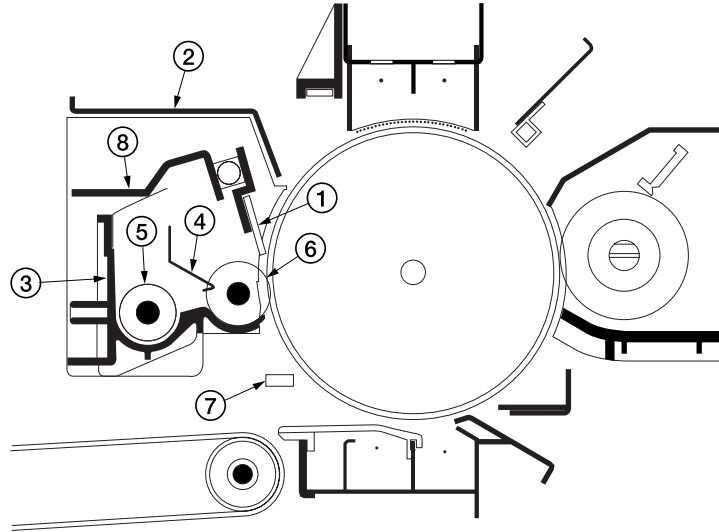


Figure 2-1-31 Cleaning section

- | | |
|--------------------------|-------------------------------------------|
| ① Cleaning blade | ⑤ Cleaning spiral |
| ② Cleaning cover | ⑥ Cleaning brush |
| ③ Cleaning housing | ⑦ Pre-cleaning lamps 1 and 2 (PCL1, PCL2) |
| ④ Cleaning brush scraper | ⑧ Cleaning blade pressure plate |

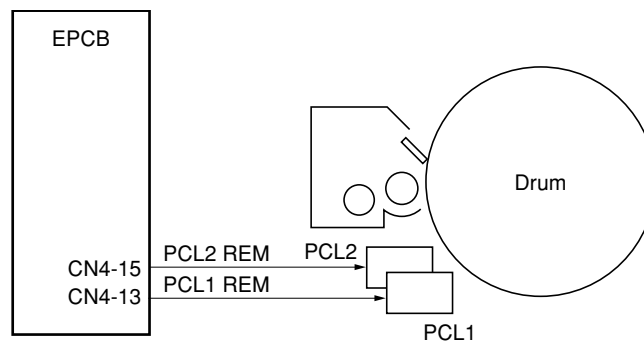


Figure 2-1-32 Cleaning section

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 45 LEDs (red) and removes residual charge from the drum surface.

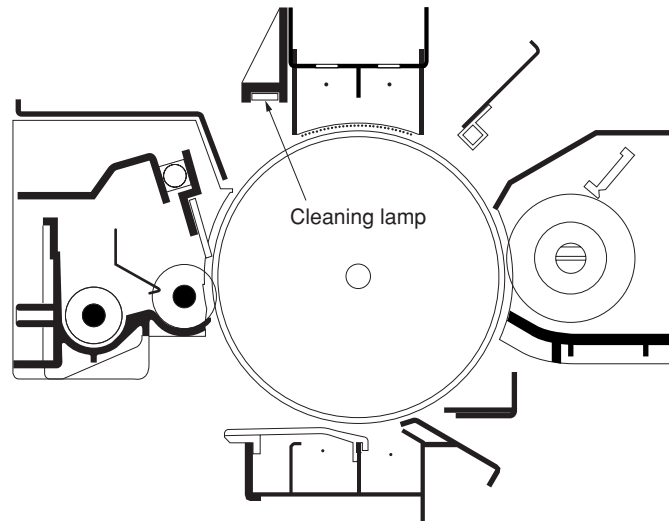


Figure 2-1-33 Charge erasing section

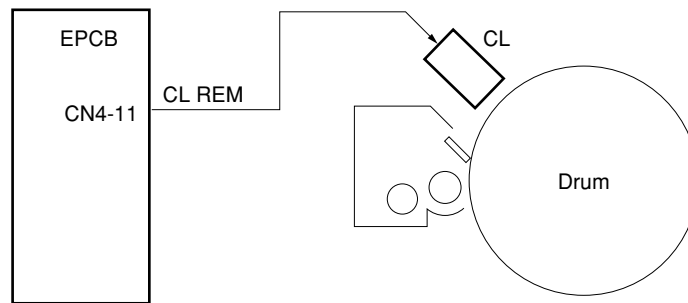
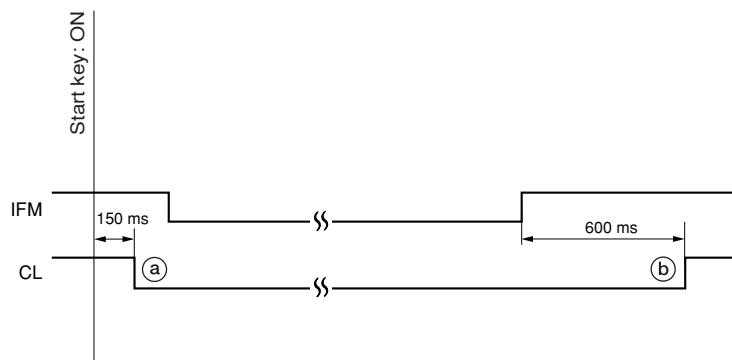


Figure 2-1-34 Charge erasing section block diagram



Timing chart 2-1-9 Charge erasing operation

- Ⓐ 150 ms after the start key is pressed, the cleaning lamp (CL) lights to remove the residual charge from the drum surface.
- Ⓑ 600 ms after the image formation motor (IFM) turns off, the cleaning lamp (CL) turns off.

2-1-8 Fixing section

The fixing 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 the heat roller, which is heated by fixing heaters M and S (FH-M and FH-S), 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 the press roller by their separation claws and is ejected out of the fixing section by the rotation of the fixing eject pulley and roller.

The fixing web roller in contact with the heat roller cleans the surface of the heat roller.

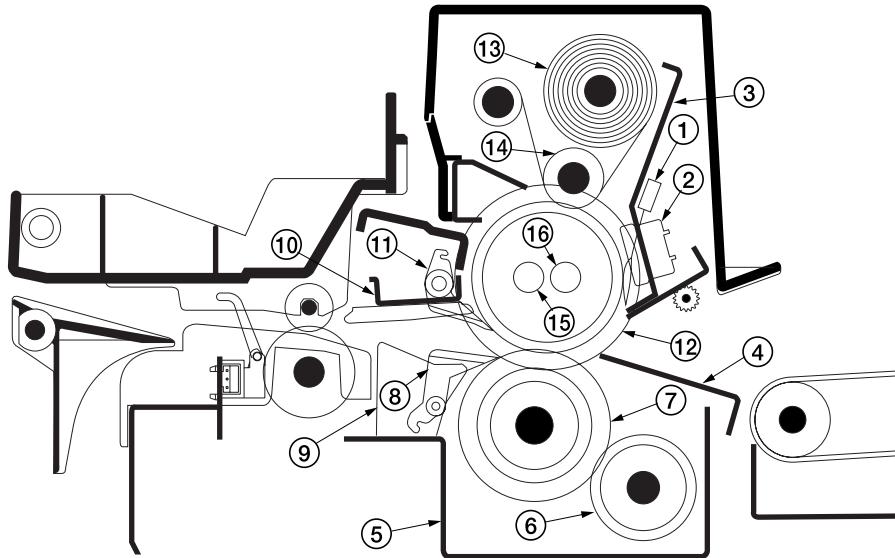


Figure 2-1-35 Fixing section

- | | |
|--------------------------------|-------------------------------|
| ① Fixing unit thermistor (FTH) | ⑨ Lower fixing eject guide |
| ② Fixing unit thermostat (FTS) | ⑩ Upper fixing eject guide |
| ③ Fixing stay | ⑪ Heat roller separation claw |
| ④ Lower front fixing guide | ⑫ Heat roller |
| ⑤ Fixing housing | ⑬ Fixing web roller |
| ⑥ Lower cleaning roller | ⑭ Cleaning pressure roller |
| ⑦ Press roller | ⑮ Fixing heater S (FH-S) |
| ⑧ Press roller separation claw | ⑯ Fixing heater M (FH-M) |

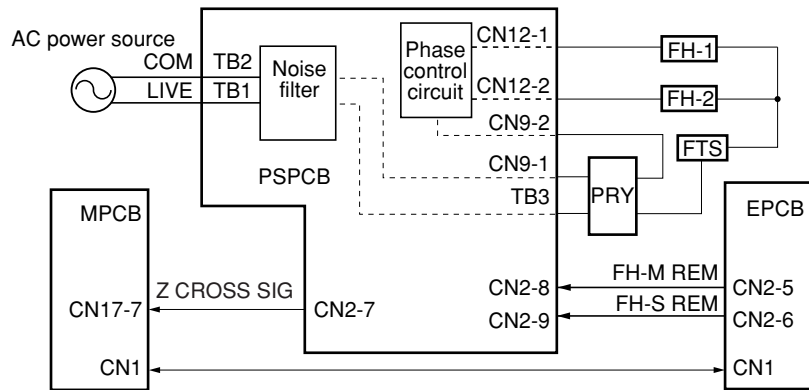
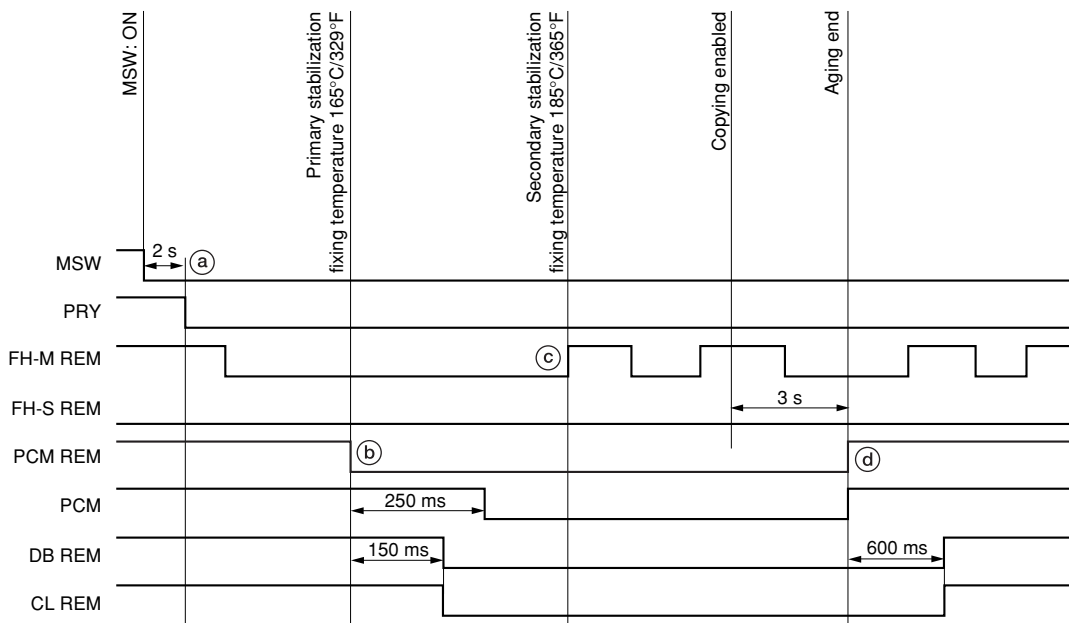


Figure 2-1-36 Fixing section block diagram



Timing chart 2-1-10 Fixing temperature control

- Ⓐ 2 s after the main switch (MSW) is turned on, the power relay (PRY) turns on.
- Ⓑ 1 s after the power relay (PRY) turns on, fixing heater M (FH-M) turns on to heat the heat roller.
- Ⓒ When the fixing temperature reaches the primary stabilization temperature (165°C/329°F), the paper conveying motor (PCM) turns on. 150 ms later, the DB REM signal and the cleaning lamp (CL) turn on, and 250 ms later, the paper conveying motor (PCM) turns on to start aging.
- Ⓓ When the fixing temperature reaches the secondary stabilization temperature (185°C/365°F), fixing heater M (FH-M) turns on and off to maintain the fixing control temperature at 185°C/365°F.
- Ⓔ 3 s after copying is enabled, the paper conveying motor (PCM) turns off. 600 ms later, the DB REM signal and the cleaning lamp turn off and the aging ends.

2-1-9 Feedshift and eject sections

The feedshift and eject sections switch the paper path based on the 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.

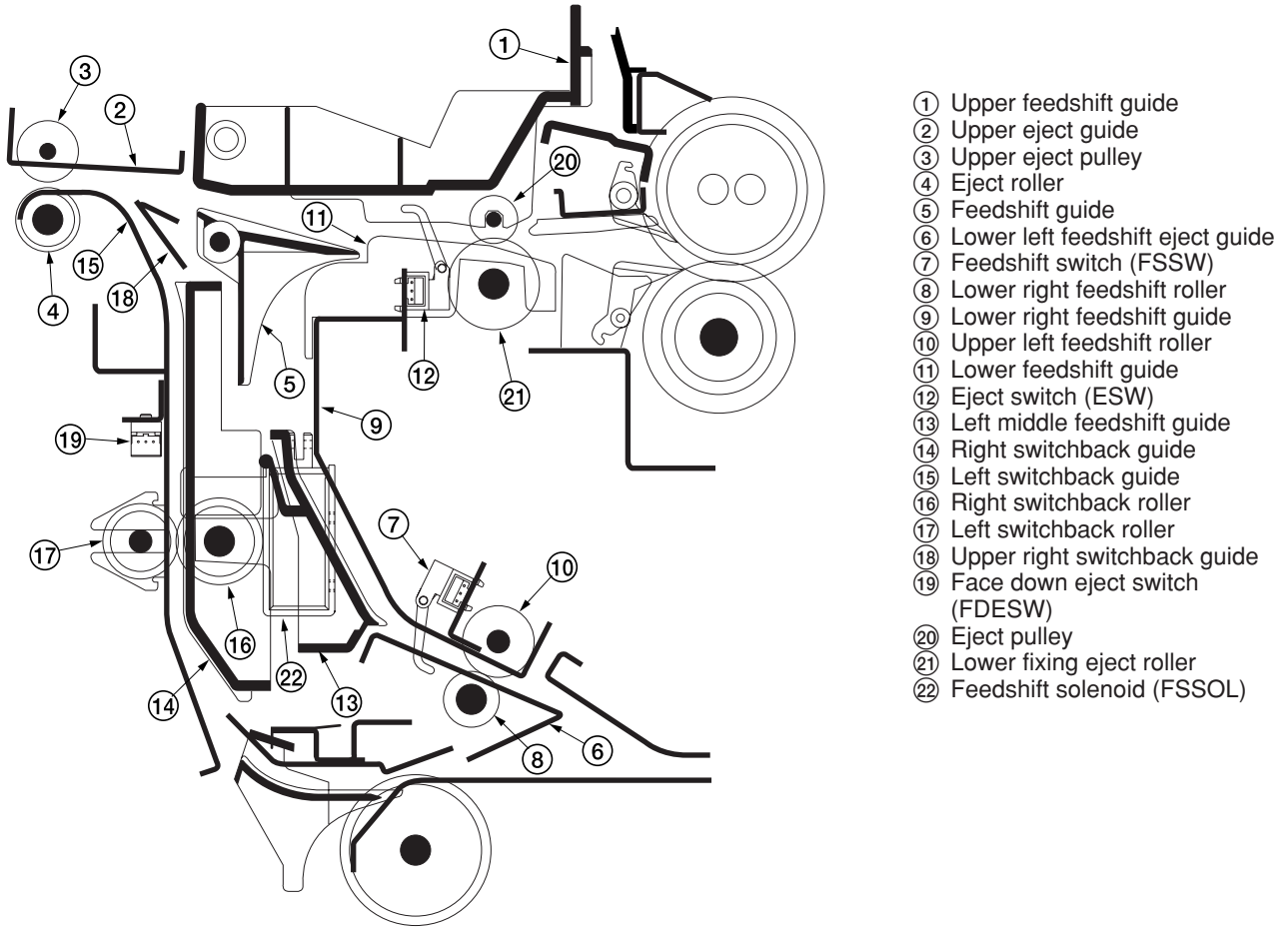


Figure 2-1-37 Feedshift and eject sections

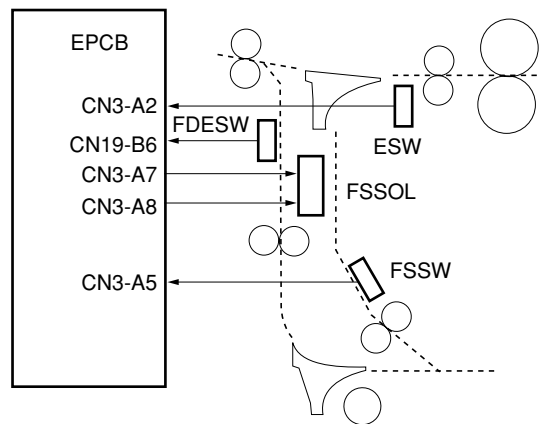


Figure 2-1-38 Feedshift and eject sections block diagram

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.

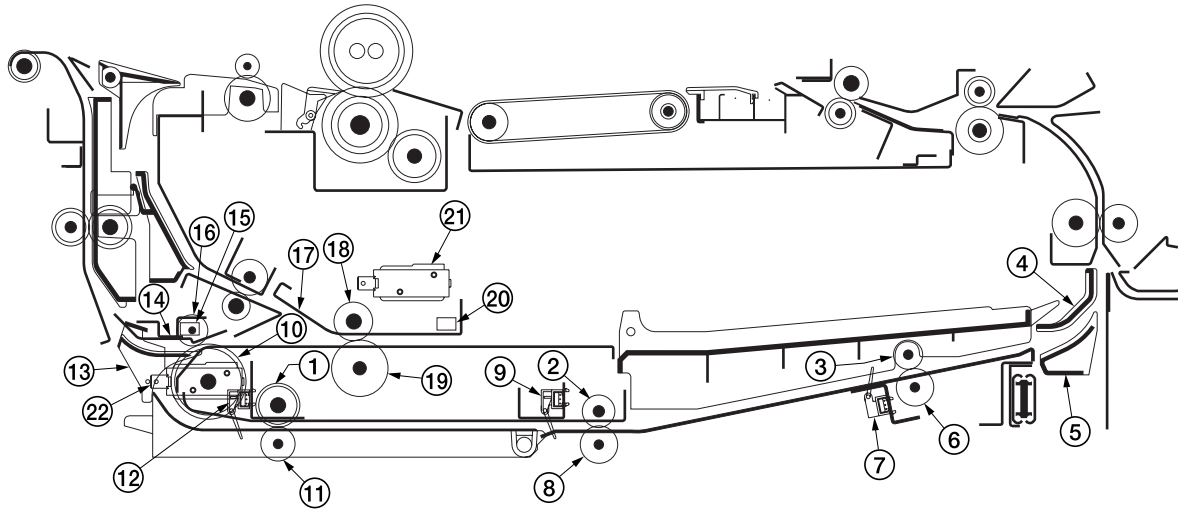


Figure 2-1-39 Duplex section

- | | |
|----------------------------------------------|-----------------------------------------------|
| ① Duplex upper registration roller | ⑬ Switchback feedshift guide |
| ② Duplex upper conveying roller | ⑭ Duplex refeed guide |
| ③ Duplex upper eject roller | ⑮ Duplex feedshift switch (DUPFSSW) |
| ④ Duplex upper confluence guide | ⑯ Refeed pulley |
| ⑤ Duplex lower confluence guide | ⑰ Duplex upper entry guide |
| ⑥ Duplex lower eject roller | ⑱ Duplex switchback pulley |
| ⑦ Duplex eject switch (DUPESW) | ⑲ Duplex switchback roller |
| ⑧ Duplex lower conveying roller | ⑳ Duplex jam detection switch (DUPJSW) |
| ⑨ Duplex paper conveying switch 2 (DUPPCSW2) | ㉑ Duplex pressure release solenoid (DUPPRSOL) |
| ⑩ Refeed roller | ㉒ Duplex eject switching solenoid (DUPESSOL) |
| ⑪ Duplex lower registration roller | |
| ⑫ Duplex paper conveying switch 1 (DUPPCSW1) | |

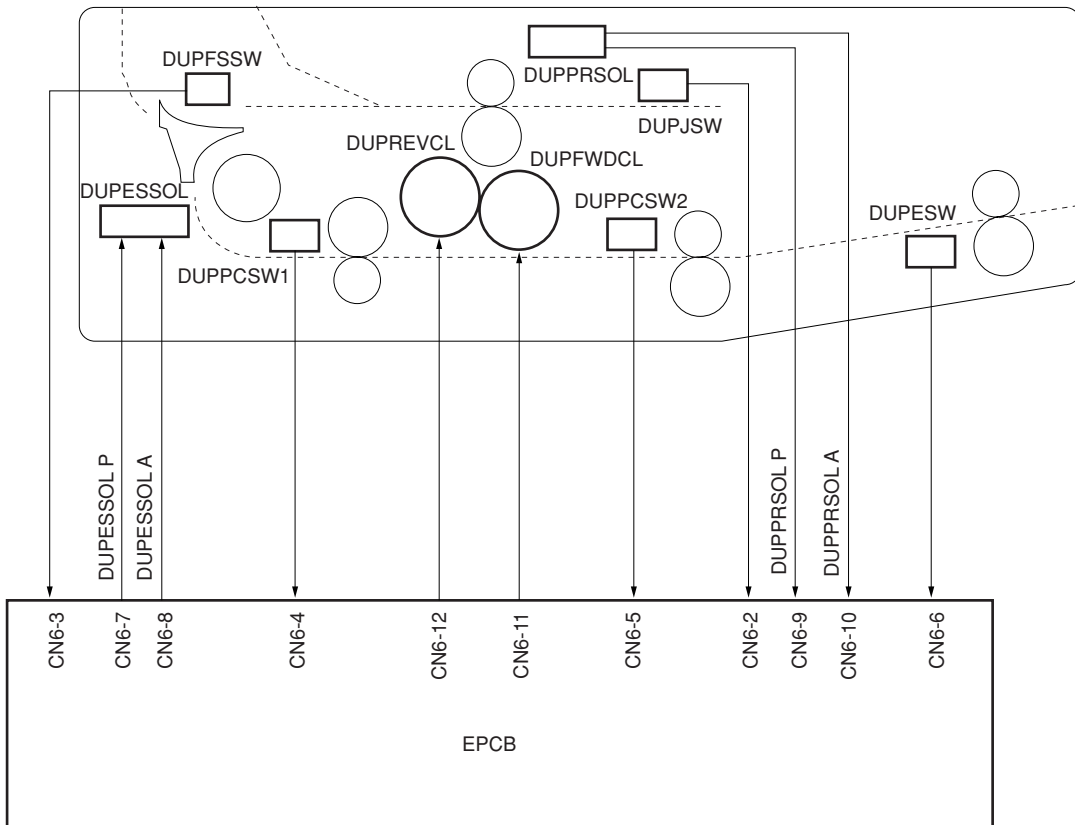
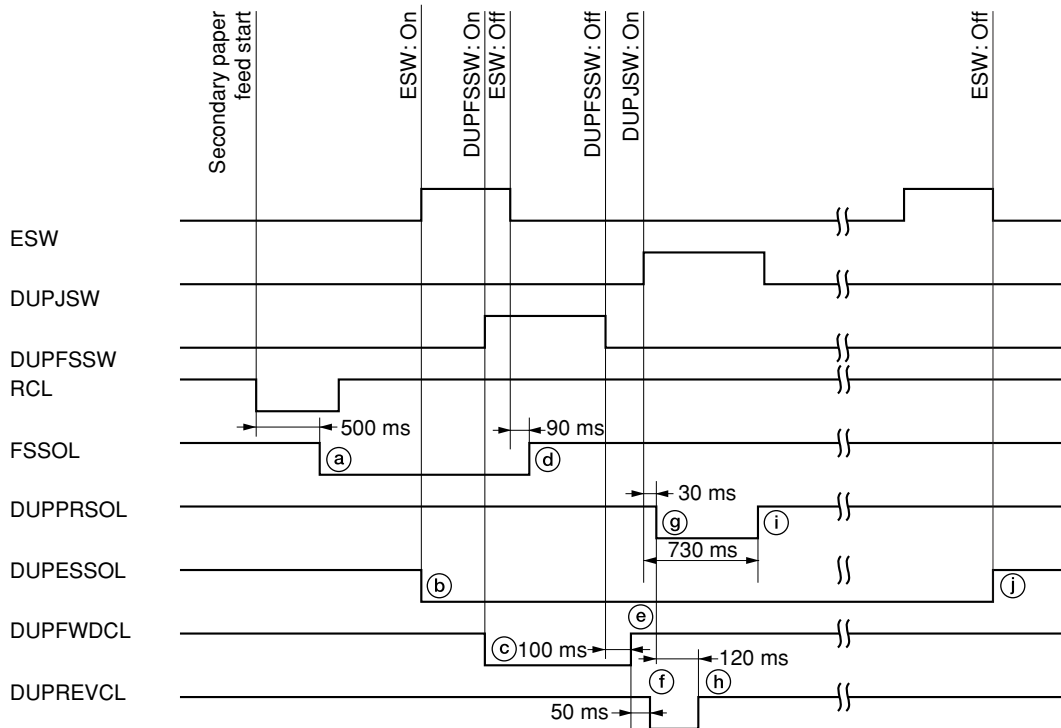


Figure 2-1-40 Duplex section block diagram



Timing chart 2-1-11 Duplex copying operation

- (a) 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.
- (b) When the eject switch (ESW) turns on, the duplex eject switching solenoid (DUPESSOL) turns on to operate the switchback feedshift guide.
- (c) When the duplex feedshift switch (DUPFSSW) turns on, the duplex forwarding clutch (DUPFWDC L) turns on, rotating the duplex switchback roller in the forward direction to convey paper to the duplex section.
- (d) 90 ms after the eject switch (ESW) turns off, the feedshift solenoid (FSSOL) turns off.
- (e) 100 ms after the duplex feedshift switch (DUPFSSW) turns off, the duplex forwarding clutch (DUPFWDC L) turns off.
- (f) 50 ms after the duplex forwarding clutch (DUPFWDC L) turns off, the duplex reversing clutch (DUPREVCL) turns on to rotate the duplex switchback roller in the reverse direction.
- (g) 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.
- (h) 120 ms after the duplex pressure release solenoid (DUPPRSOL) turns on, the duplex reversing clutch (DUPREVCL) turns off and the duplex switchback roller stops.
- (i) 730 ms after the duplex jam detection switch (DUPJSW) turns on, the duplex pressure release solenoid (DUPPRSOL) turns off.
- (j) 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 DF

(1) Original feed section

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

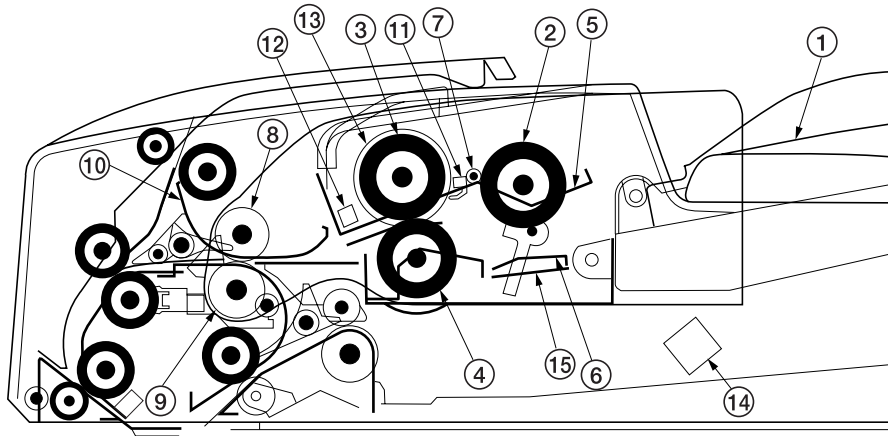


Figure 2-1-41 Original feed section

- | | |
|--------------------------------|----------------------------------|
| 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 | |

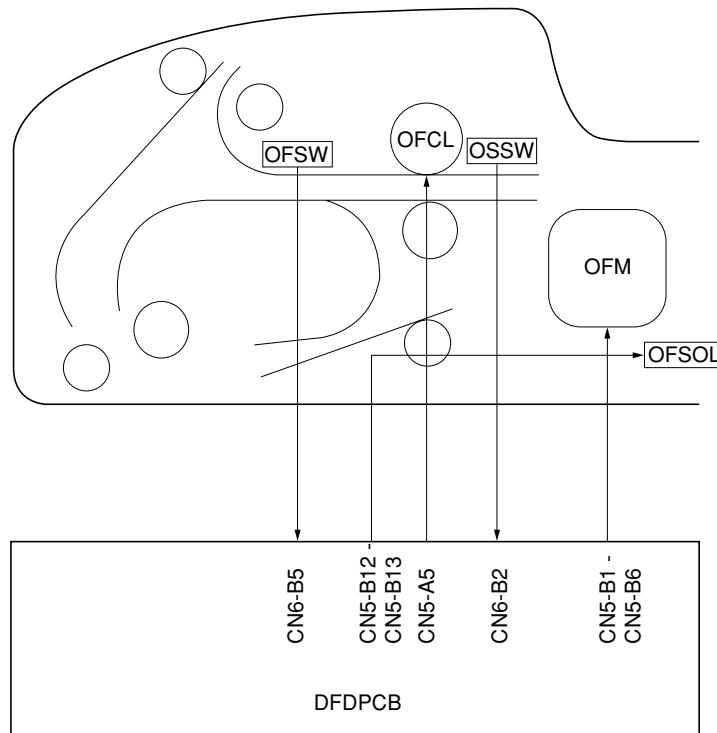
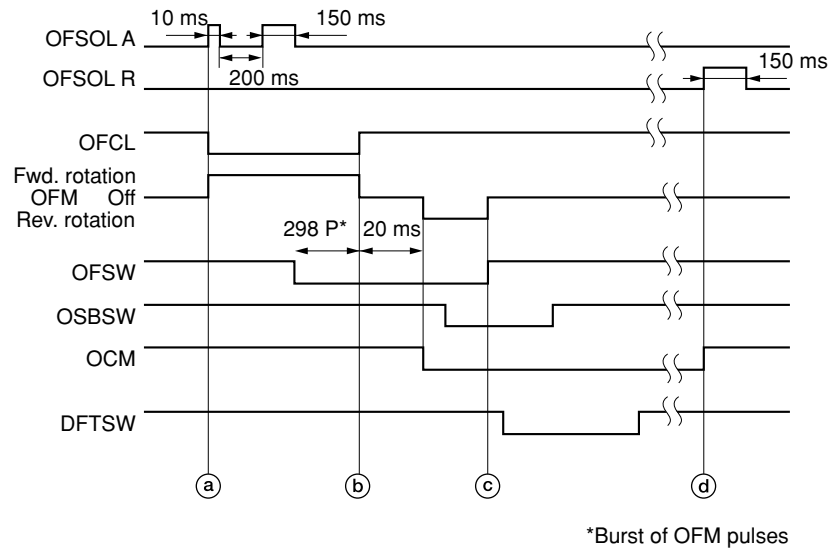


Figure 2-1-42 Original feed section block diagram

(1-1) Original feed timing



Timing chart 2-1-12 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. The original from the original feed section or original conveying section is reversed and conveyed to the original conveying section.

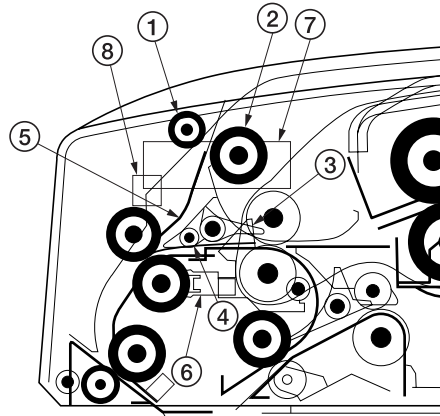


Figure 2-1-43 Original switchback section

- 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)

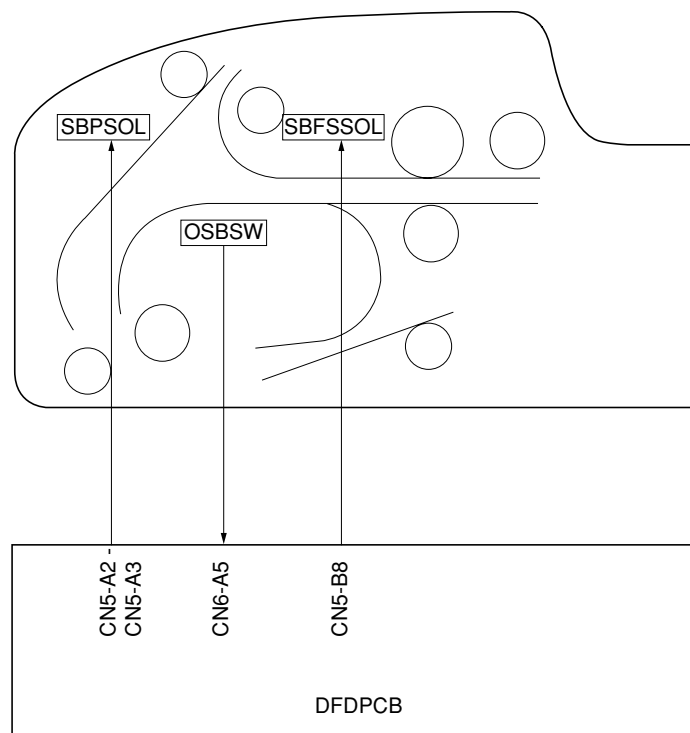


Figure 2-1-44 Original switchback section block diagram

(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.

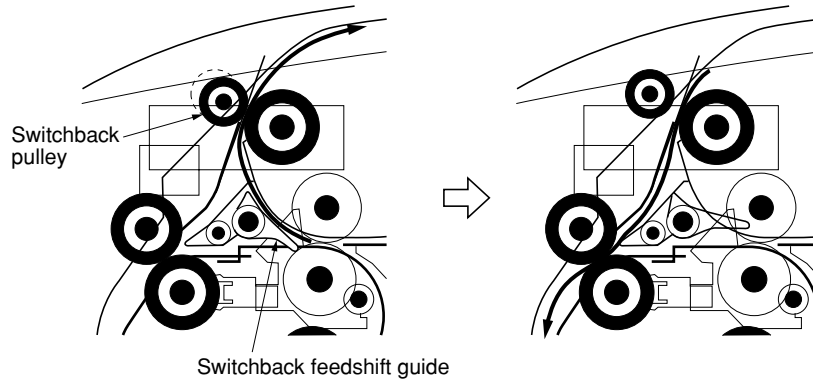


Figure 2-1-45

(3) Original conveying section

The original conveying section consists of the parts shown in Figure. 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.

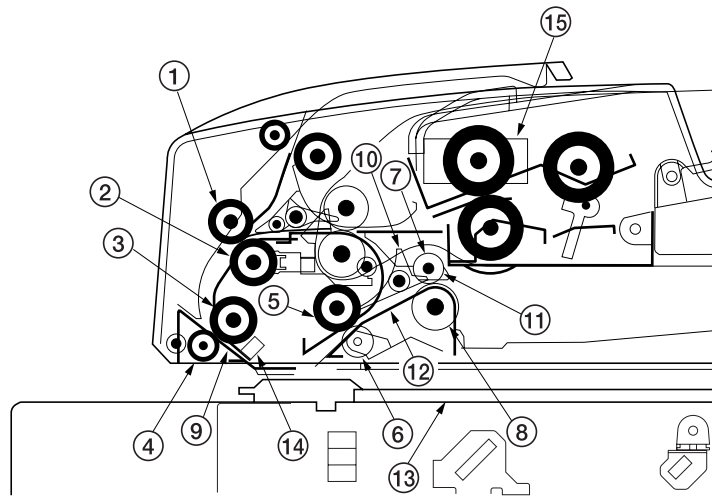


Figure 2-1-46 Original conveying section

- | | |
|------------------------------------|-------------------------------------|
| 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 | |

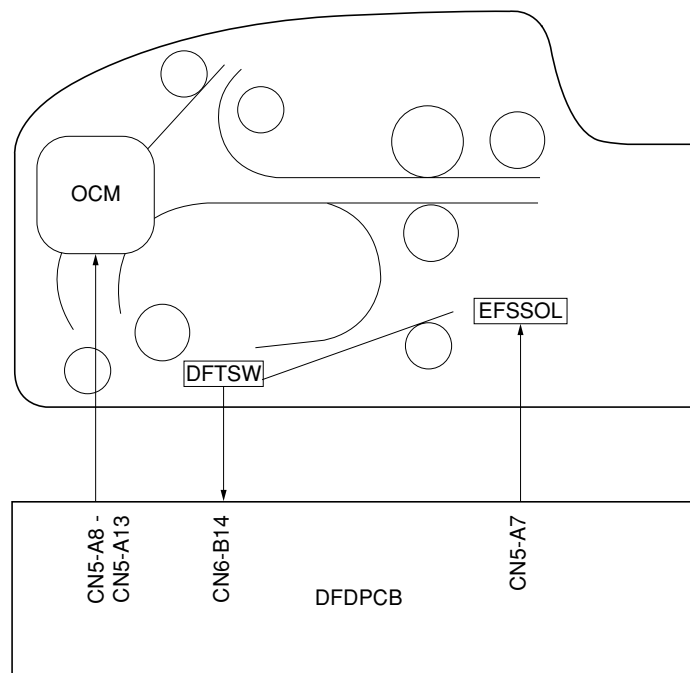
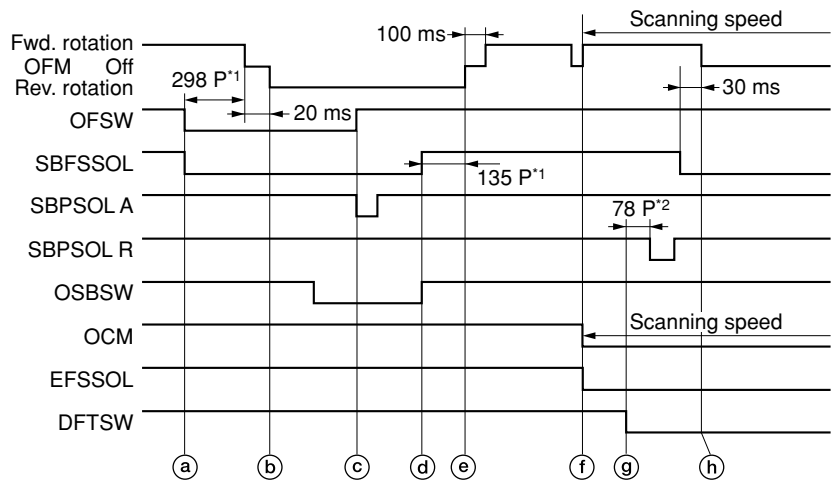


Figure 2-1-47 Original conveying section block diagram

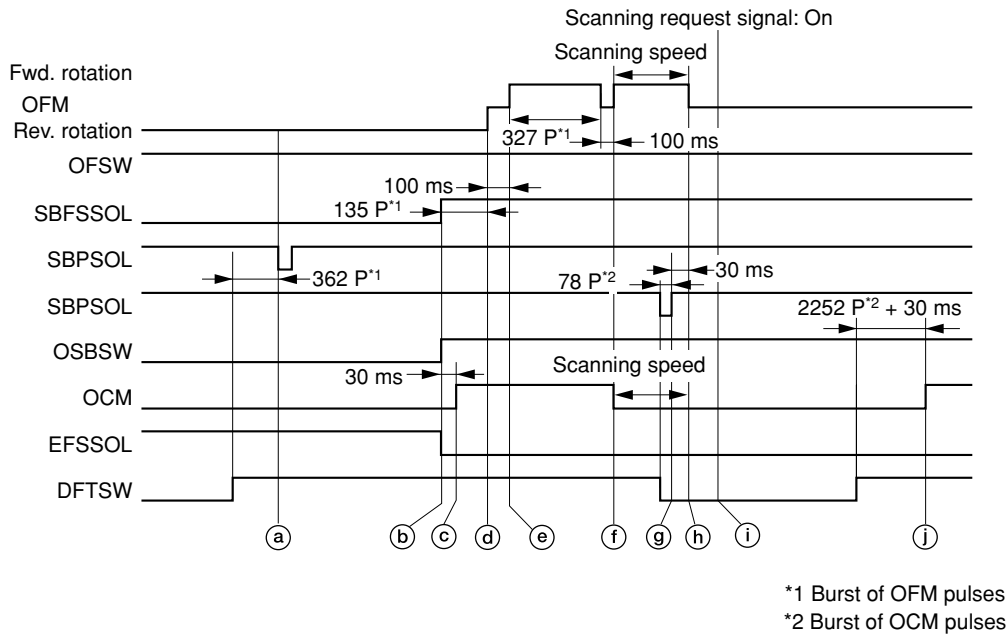
(3-1) Original switchback/conveying timing



*1 Burst of OFM pulses
 *2 Burst of OCM pulses

Timing chart 2-1-13 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).
- (h) 30 ms after the switchback pressure solenoid (SBPSOL) turns off, the original feed motor (OFM) turns off.



Timing chart 2-1-14 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. High voltage transformer PCB (HVTPCB) | Main charging. Generates developing bias and high voltages for transfer. |
| 5. CCD PCB (CCDPCB) | Reads the image off originals. |
| 6. Humidity sensor PCB (HUMPCB) | Detects absolute humidity. |
| 7. Operation unit left PCB (OPCB-L) | Controls touch panel and LCD indication. |
| 8. Operation unit right PCB (OPCB-R) | Consists of the operation keys and display LEDs. |
| 9. Inverter PCB (INPCB) | Controls the exposure lamp. |
| 10. Scanner drive PCB (SDPCB) | Controls the scanning section. |

(2) Switches and sensors

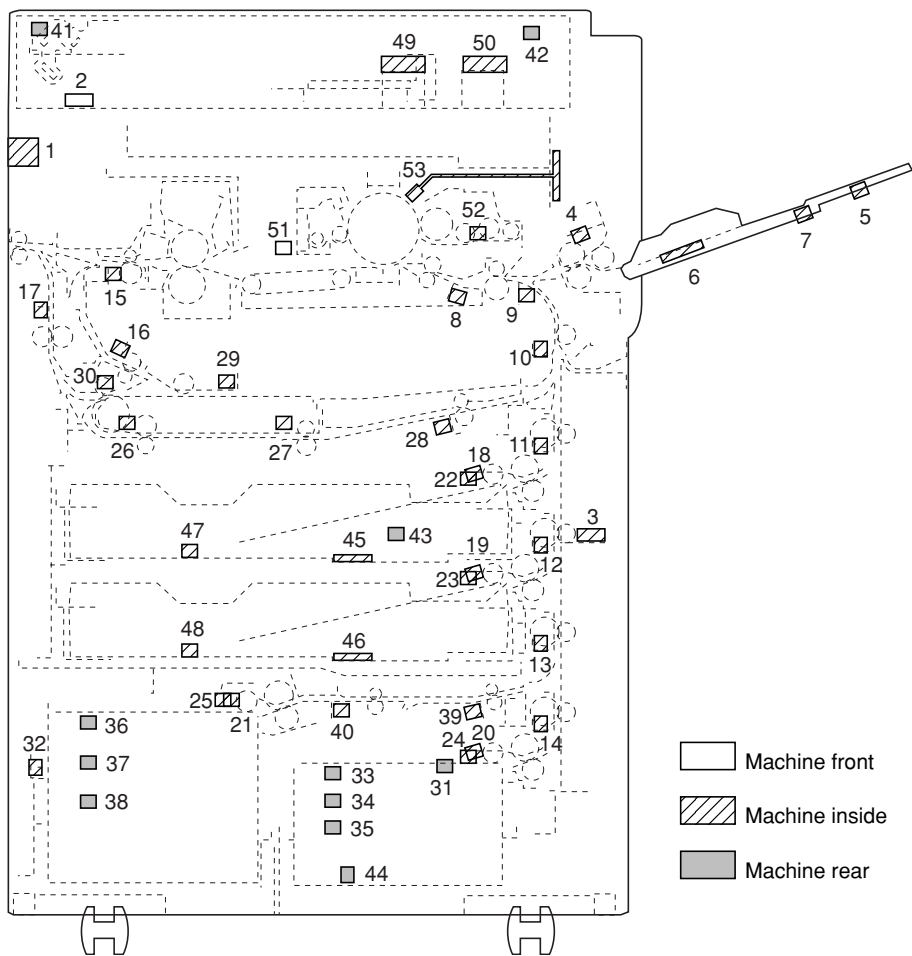


Figure 2-2-2 Switches and sensors

- 1. Main switch (MSW) Turns the AC power on and off.
- 2. Safety switch 1 (SSW1) Breaks the safety circuit when the front cover is opened.
- 3. Safety switch 2 (SSW2) Breaks the safety circuit when the right cover is opened.
- 4. Bypass paper switch (BYPPSW) Detects the presence of paper on the bypass tray.
- 5. Bypass paper size length switch (BYPPLSW) Detects the length of paper on the bypass tray.
- 6. Bypass paper size width switch (BYPPWSW) Detects the width of paper on the bypass tray.
- 7. Bypass tray switch (BYPTSW) Detects a multi-bypass extension is pulled.
- 8. Registration switch (RSW) Controls the secondary paper feed start timing.
- 9. Paper feed switch 1 (PFSW1) Detects a paper misfeed in the converging section.
- 10. Paper feed switch 2 (PFSW2) Controls feed high/low clutch 1 and detects a paper misfeed.
- 11. Paper feed switch 3 (PFSW3) Controls feed high/low clutch 2 and detects a paper misfeed.
- 12. Paper feed switch 4 (PFSW4) Controls feed clutch 3 and detects a paper misfeed.
- 13. Paper feed switch 5 (PFSW5) Controls feed clutch 4 and detects a paper misfeed.
- 14. Paper feed switch 6 (PFSW6) Controls feed clutch 5 and detects a paper misfeed.
- 15. Eject switch (ESW) Detects a paper misfeed in the fixing section.
- 16. Feed shift switch (FSSW) Detects a paper misfeed in the feed shift section.

17. Face down eject switch (FDESW) Detects a paper misfeed in the face down eject section.
18. Lift limit switch 1 (LILSW1) Detects the drawer 1 lift reaching the upper limit.
19. Lift limit switch 2 (LILSW2) Detects the drawer 2 lift reaching the upper limit.
20. Deck lift limit switch 1 (DLILSW1) Detects the drawer 3 lift reaching the upper limit.
21. Deck lift limit switch 2 (DLILSW2) Detects the drawer 4 lift reaching the upper limit.
22. Paper switch 1 (PSW1) Detects the presence of paper in the drawer 1.
23. Paper switch 2 (PSW2) Detects the presence of paper in the drawer 2.
24. Deck paper switch 1 (DPSW1) Detects the presence of paper in the drawer 3.
25. Deck paper switch 2 (DPSW2) Detects the presence of paper in the drawer 4.
26. Duplex paper conveying switch 1
(DUPPCSW1) Detects a paper misfeed in the duplex paper conveying section.
27. Duplex paper conveying switch 2
(DUPPCSW2) Detects a paper misfeed in the duplex paper conveying section.
28. Duplex eject switch (DUPESW) Detects a paper misfeed in the switch back eject section.
29. Duplex jam detection switch (DUPJSW) Detects a paper misfeed in the duplex tray section.
30. Duplex feed shift switch (DUPFSSW) Detects a paper misfeed in the duplex feed shift section.
31. Deck right switch (DSW-R) Detects the presence of drawer 3.
32. Deck left switch (DSW-L) Detects the presence of drawer 4.
33. Deck right paper level switch 1
(DPLSW1-R) Detects the paper level in the drawer 3.
34. Deck right paper level switch 2
(DPLSW2-R) Detects the paper level in the drawer 3.
35. Deck right paper level switch 3
(DPLSW3-R) Detects the paper level in the drawer 3.
36. Deck left paper level switch 1
(DPLSW1-L) Detects the paper level in the drawer 4.
37. Deck left paper level switch 2
(DPLSW2-L) Detects the paper level in the drawer 4.
38. Deck left paper level switch 3
(DPLSW3-L) Detects the paper level in the drawer 4.
39. Deck paper conveying switch 1
(DPCSW1) Detects a paper misfeed in the deck paper conveying section.
40. Deck paper conveying switch 2
(DPCSW2) Detects a paper misfeed in the deck paper conveying section.
41. Scanner home position switch (SHPSW) Detects the optical system in the home position.
42. Original detection switch (ODSW) Operates the original size detection sensor.
43. Waste toner detection sensor (WTDS) Detects the waste toner over flow in the waste toner box.
44. Waste toner box switch (WTBSW) Detects the weight of the waste toner box.
45. Upper paper width switch (PWSW-U) Detects the width of paper in the drawer 1.
46. Lower paper width switch (PWSW-L) Detects the width of paper in the drawer 2.
47. Upper paper length switch (PLSW-U) Detects the length of paper in the drawer 1.
48. Lower paper length switch (PLSW-L) Detects the length of paper in the drawer 2.
49. Original size detection sensor 1
(OSDS1) Detects the size of the original.
50. Original size detection sensor 2
(OSDS2)*1 Detects the size of the original.
51. Toner level detection sensor (TLDS) Detects the toner level in the toner hopper.
52. Toner sensor (TNS) Detects the toner density in the developing unit.
53. Drum surface potential sensor (DSPS) Detects the drum surface potential.

*1: For inch models only.

(3) Motors

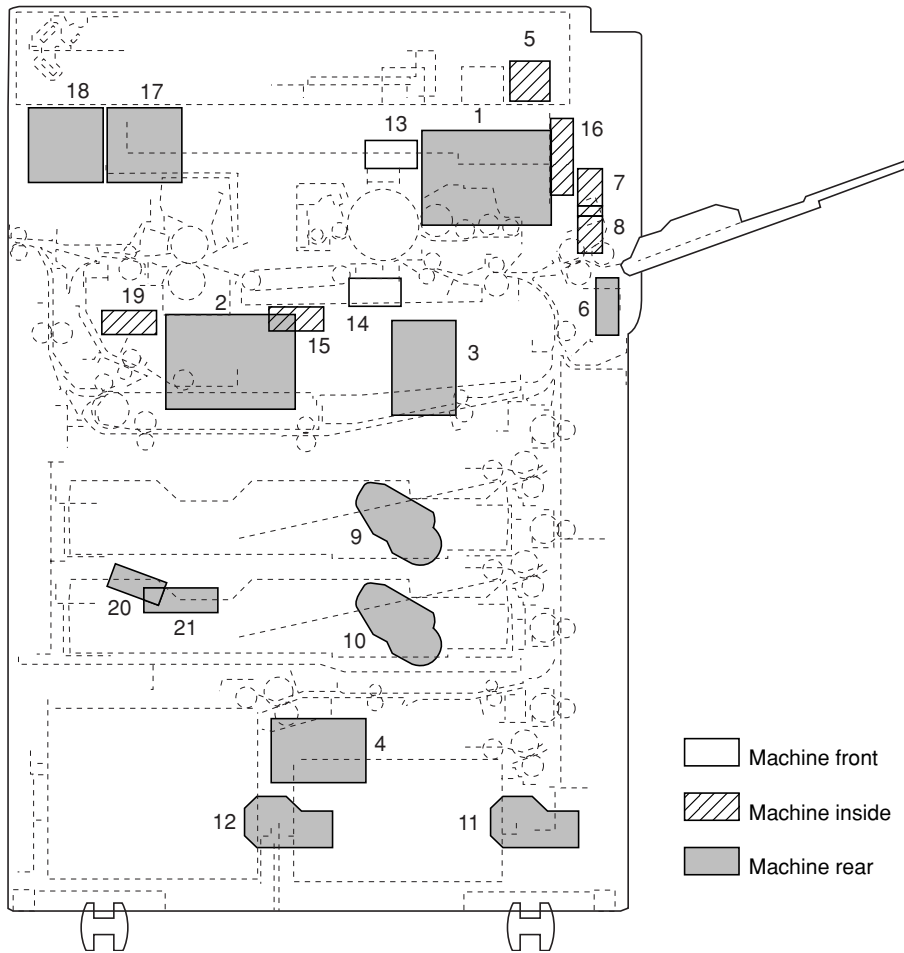


Figure 2-2-3 Motors

- 1. Image formation motor (IFM) Drives image formation section.
- 2. Paper conveying motor (PCM) Drives paper conveying section and fixing section.
- 3. Paper feed motor (PFM) Drives paper feed section.
- 4. Deck drive motor (DDM) Drives deck paper feed section.
- 5. Scanner motor (SM) Drives the optical system.
- 6. Image formation fan motor (IFFM) Cools the image formation section.
- 7. Toner feed motor (TFM) Replenishes toner.
- 8. Toner agitation motor (TAM) Agitates toner.
- 9. Upper lift motor (LM-U) Drives drawer 1 lift.
- 10. Lower lift motor (LM-L) Drives drawer 2 lift.
- 11. Deck right lift motor (DLM-R) Drives drawer 3 lift.
- 12. Deck left lift motor (DLM-L) Drives drawer 4 lift.
- 13. Main charger cleaning motor (MCCM) Cleans main charger wire and grid.
- 14. Transfer charger cleaning motor (TCCM) Cleans transfer charger wire.
- 15. Paper conveying fan motor (PCFM) Attracts paper towards the conveying belt.
- 16. Cooling fan motor (CFM) Cools the machine interior.
- 17. Eject fan motor 1 (EFM1) Cools the machine interior (around the fixing unit).
- 18. Eject fan motor 2 (EFM2) Cools the machine interior (around the fixing unit).
- 19. Fixing fan motor (FFM) Cools the machine interior (around the fixing unit).
- 20. HDD fan motor (HDDFM) Cools the machine interior (Hard disk drive).
- 21. Power supply fan motor (PSFM) Cools the machine interior (around the power supply unit).

(4) Clutches and solenoids

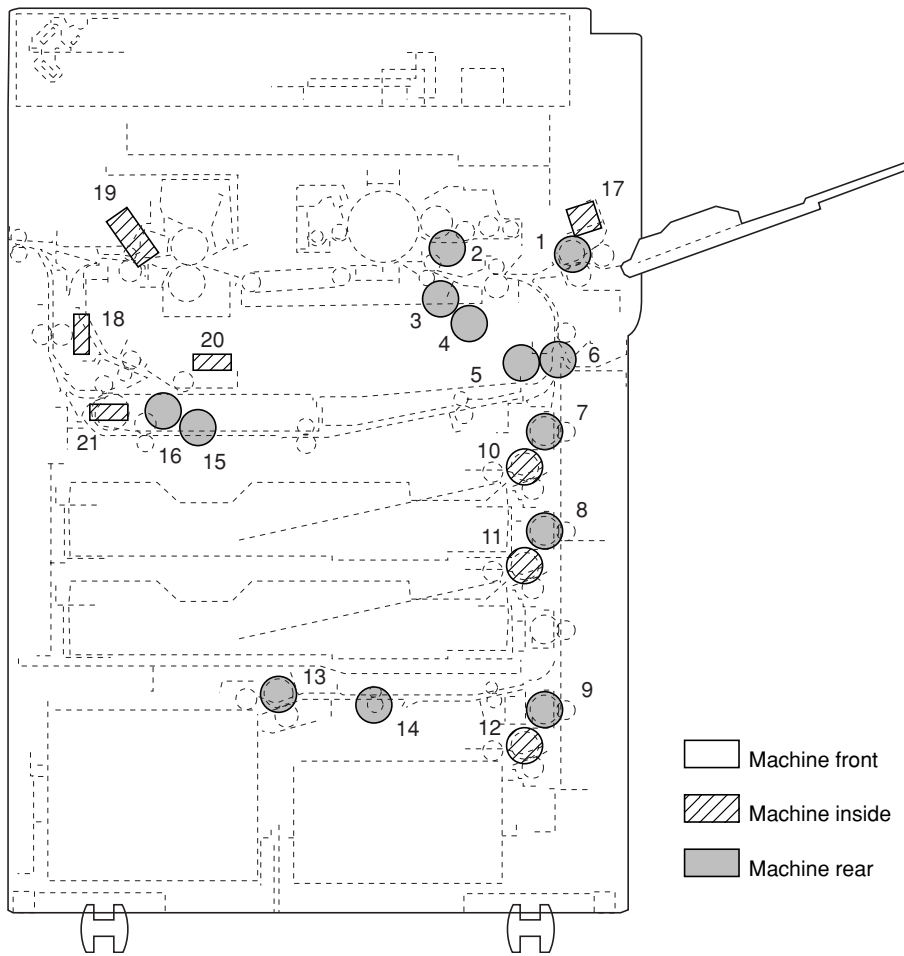


Figure 2-2-4 Clutches and Solenoids

- 1. Bypass paper feed clutch (BYPPFCL) Primary paper feed from the bypass tray.
- 2. Registration clutch (RCL) Secondary paper feed.
- 3. Feed high clutch 1 (FCL1-H) Controls the drive of upper feed roller.
- 4. Feed low clutch 1 (FCL1-L) Controls the drive of upper feed roller.
- 5. Feed high clutch 1 (FCL1-H) Controls the drive of lower feed roller.
- 6. Feed low clutch 2 (FCL2-L) Controls the drive of lower feed roller.
- 7. Feed clutch 3 (FCL3) Controls the drive of vertical conveying roller A.
- 8. Feed clutch 4 (FCL4) Controls the drive of vertical conveying roller B.
- 9. Feed clutch 5 (FCL5) Controls the drive of vertical conveying roller C and D.
- 10. Paper feed clutch 1 (PFCL1) Primary paper feed from the drawer 1.
- 11. Paper feed clutch 2 (PFCL2) Primary paper feed from the drawer 2.
- 12. Paper feed clutch 3 (PFCL3) Primary paper feed from the drawer 3.
- 13. Paper feed clutch 4 (PFCL4) Primary paper feed from the drawer 4.
- 14. Deck feed clutch (DFCL) Controls the drive of deck feed roller.
- 15. Duplex forwarding clutch (DUPFWDCL) Conveys paper forward.
- 16. Duplex reversing clutch (DUPREVCL) Conveys paper in the reverse direction.
- 17. Bypass solenoid (BYP SOL) Operates the bypass forwarding pulley.
- 18. Feed shift solenoid (FSSOL) Operates the feed shift guide.
- 19. Fixing web solenoid (FWEBSOL) Drives the fixing web roller.
- 20. Duplex pressure release solenoid (DUPPRSOL) Operates the duplex switch back pulley.
- 21. Duplex eject switching solenoid (DUPESSOL) Operates the switch back feedshift guide.

(5) Other electrical components

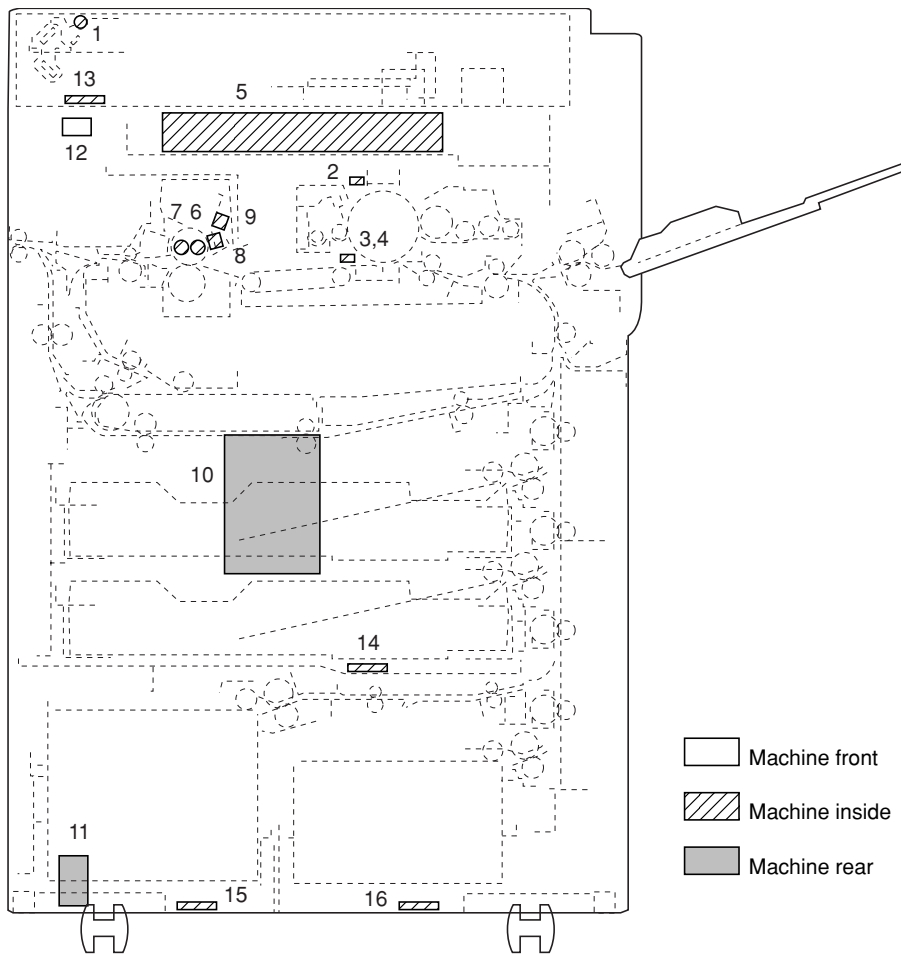


Figure 2-2-5 Other electrical components

- | | |
|-------------------------------------------|---------------------------------------------------------------------------------|
| 1. Exposure lamp (EL) | Exposes originals. |
| 2. Cleaning lamp (CL) | Removes residual charge from the drum surface. |
| 3. Pre-cleaning lamp 1 (PCL1) | |
| 4. Pre-cleaning lamp 2 (PCL2) | |
| 5. Laser scanner unit (LSU) | |
| • Polygon motor (PM) | Drives the polygon mirror. |
| • Laser diode (LD) | Generates the laser beam. |
| 6. Fixing heater M (FH-M) | Heats the heat roller. |
| 7. Fixing heater S (FH-S) | Heats the heat roller. |
| 8. Fixing unit thermostat (FTS) | Prevents overheating in the fixing section. |
| 9. Fixing unit thermistor (FTH) | Detects the heat roller temperature. |
| 10. Hard disk drive (HDD) | Enables printing, special purpose copying and Box management function. |
| 11. Power relay (PRY) | Turns the AC power and 24 V DC power supplies to the fixing section on and off. |
| 12. Total counter (TC) | Displays the total number of copies produced. |
| 13. Scanner dehumidify heater (SH)* | Dehumidifies the scanner unit. |
| 14. Dehumidify heater (DH1) | Dehumidifies the drawer 1 and 2 section. |
| 15. Dehumidify heater (DH2) | Dehumidifies the drawer 3 section. |
| 16. Dehumidify heater (DH3) | Dehumidifies the drawer 4 section. |

*: Option

(6) DF PCBs

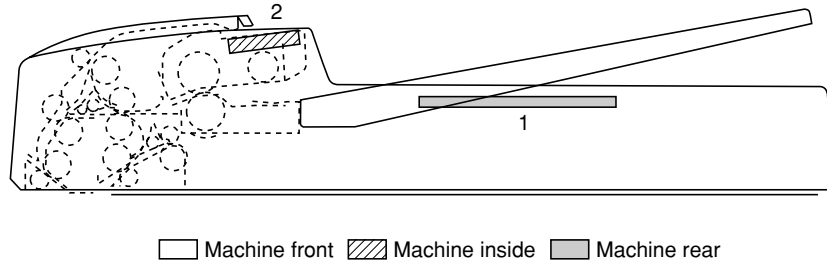


Figure 2-2-6 DF PCBs

- 1. DF driver PCB (DFDPCB) Controls electrical components of the DF.
- 2. Original set LED PCB (OSLEDPCB) Indicates presence of originals on the DF or an original jam.

(7) DF switches and sensors

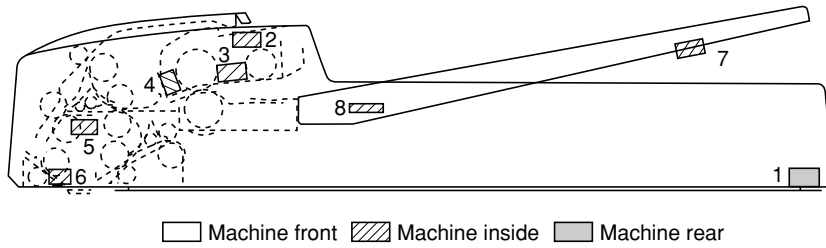


Figure 2-2-7 DF switches and sensors

- 1. DF safety switch 1 (DFSSW1) Breaks the safety circuit when the DF 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.

(8) DF motors

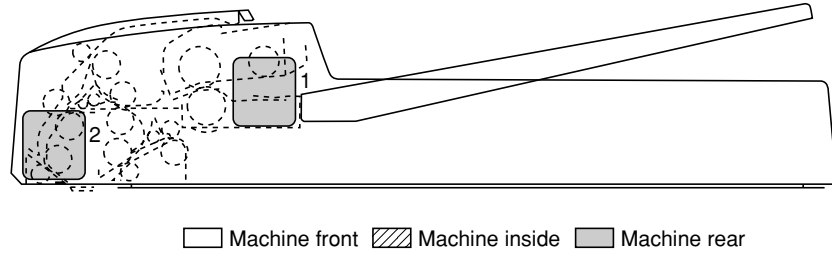


Figure 2-2-8 DF motors

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

(9) DF clutches and solenoids

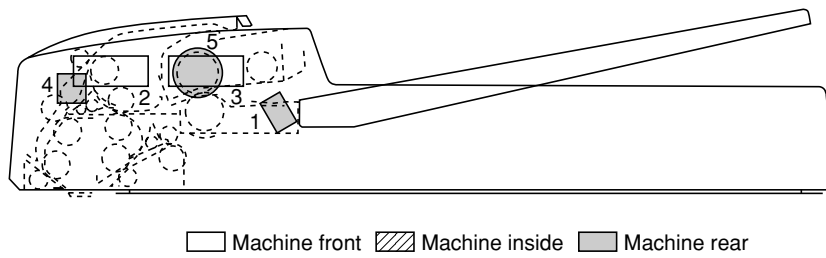


Figure 2-2-9 DF clutches and solenoids

- 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

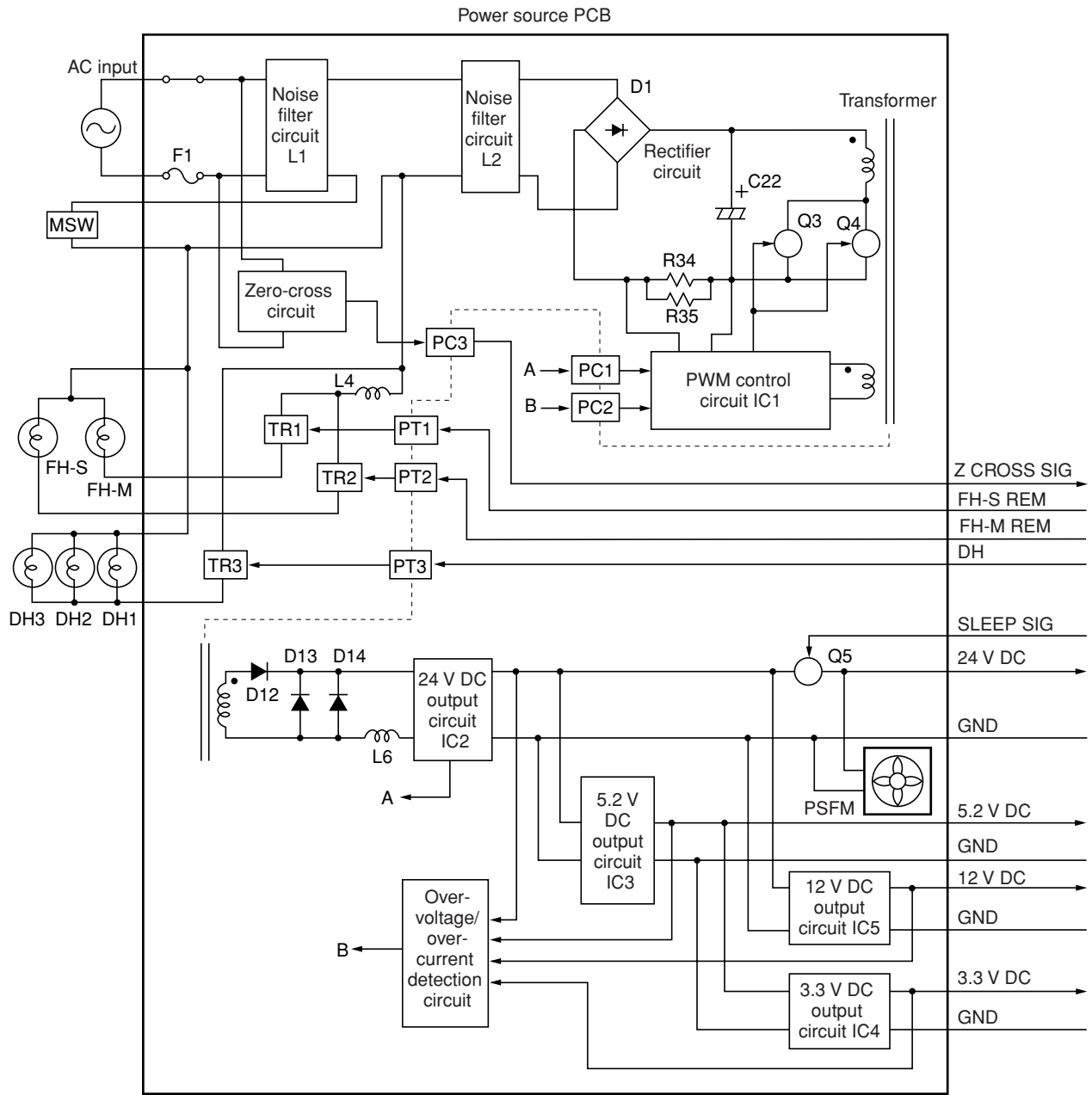


Figure 2-3-1 Power source PCB block diagram

The power source PCB (PSPCB) is a switching regulator which converts an AC input to generate 24 V DC, 5.2 V DC, 3.3 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 5.2 V DC output circuit, a 3.3 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 L4 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 C22 to a high-frequency voltage, which is applied to the primary coil of the transformer.

The 24 V DC output circuit smooths the current induced on the secondary coil of the transformer via diodes D12, D13 and D14 and smoothing choke coil L6, 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 PC2. PWM controller IC1 controls the switching duty width of switching FETs Q3 and Q4 based on the output voltage status, producing a stable 24 V DC output.

The 5.2 V DC output circuit receives 24 V DC from the 24 V DC control circuit and outputs a stable 5.2 V DC via DC/DC converter controller IC3.

The 3.3 V DC output circuit receives 5.2 V DC from the 5.2 V DC control circuit and outputs a stable 3.3 V DC via regulator IC 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.

Abnormal rise of voltage for all DC outputs and overcurrent in 5.2 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 PC1 instantly, by which means power supply is limited to the stand-by level. Overload of the 24 V DC output is monitored by resistors R34 and R35 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.

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 FH-M REM and FH-S REM signals. The phototriacs PT1 and PT2 are turned on by these signals, and current flows through triacs TR1 and TR2 to turn the fixing heaters FH-M and FH-S on.

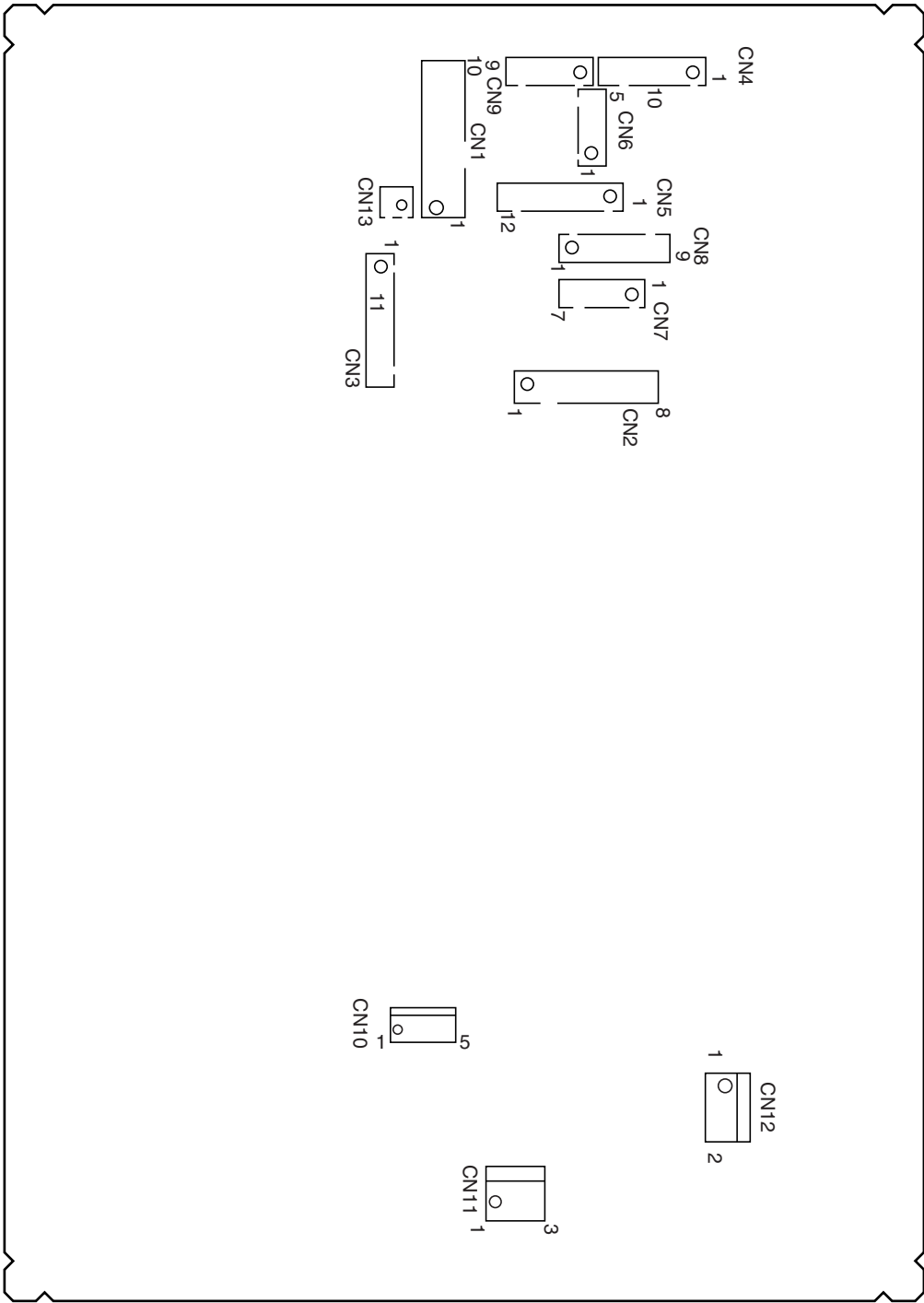


Figure 2-3-2 Power source PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description	
TB Connected to the AC power plug and power relay.	TB1	LIVE	I	Local voltage	120 V AC or 220-240 V AC	
	TB2	COM	I	Local voltage	120 V AC or 220-240 V AC	
	TB3	LIVE OUT	O	Local voltage	120 V AC or 220-240 V AC via MSW	
CN1 Connected to the power relay, engine PCB, main PCB, and scanner drive PCB.	2	24V	O	24 V DC	DC power source to PRY	
	3	24V	O	24 V DC	DC power source to PRY	
	4	24V	O	24 V DC	DC power supply for EPCB	
	5	24V	O	24 V DC	DC power supply for MPCB	
	6	24V	O	24 V DC	DC power supply for SDPCB	
	7	24V	O	24 V DC	DC power supply for SDPCB	
	8	G(24V)	-	-	Ground for EPCB	
	9	G(R24V)	-	-	Ground for EPCB	
	10	G(R24V)	-	-	Ground for EPCB	
	CN2 Connected to the main PCB, scanner drive PCB.	2	P.G	-	-	Ground for MPCB
3		P.G	-	-	Ground for SDPCB	
4		P.G	-	-	Ground for SDPCB	
5		DH	I	0 V/5.2 V DC	DH1*, DH2*, and DH3*: On/Off	
6		SLEEP SIG	I	0 V/5.2 V DC	Sleep mode signal: On/Off	
7		Z CROSS SIG	O	0 V/5.2 V DC (pulse)		
CN3 Connected to the finisher*, side deck*, DF driver PCB, and operation unit right PCB.	1	24V	O	24 V DC	Power supply (via fuse F201) for finisher*	
	2	24V	O	24 V DC	Power supply (via fuse F201) for finisher*	
	3	24V	O	24 V DC	Power supply (via fuse F201) for finisher*	
	4	24V	O	24 V DC	Power supply (via fuse F201) for finisher*	
	5	24V	O	24 V DC	Power supply (via fuse F201) for side deck*	
	6	24V	O	24 V DC	Power supply (via fuse F201) for side deck*	
	7	24V	O	24 V DC	Power supply (via fuse F202) for DFDPCB	
	8	24V	O	24 V DC	Power supply (via fuse F202) for DFDPCB	
CN4 Connected to the finisher*, side deck*, and DF driver PCB.	1	P.G	-	Ground	Ground for finisher*	
	2	P.G	-	Ground	Ground for finisher*	
	3	P.G	-	Ground	Ground for finisher*	
	4	P.G	-	Ground	Ground for finisher*	
	7	P.G	-	Ground	Ground for DFDPCB	
	8	P.G	-	Ground	Ground for DFDPCB	
	9	P.G	-	Ground	Ground for side deck*	
	10	P.G	-	Ground	Ground for side deck*	
	CN5 Connected to the main PCB, DF driver PCB, tandem printer PCB*, scanner drive PCB, engine PCB and side deck*.	1	3.4V	O	3.3 V DC	Power supply for MPCB
		2	5V	O	5.2 V DC	Power supply (via fuse F301) for DFDPCB
3		5V	O	5.2 V DC	Power supply (via fuse F301) for DFDPCB	
4		5V	O	5.2 V DC	Power supply (via fuse F301) for side deck*	
5		5V	O	5.2 V DC	Power supply for TAMPCB*	
6		5V	O	5.2 V DC	Power supply for SDPCB	
7		5V	O	5.2 V DC	Power supply for MPCB	
8		5V	O	5.2 V DC	Power supply for EPCB	
9		5V	O	5.2 V DC	Power supply for EPCB	
10		5V	O	5.2 V DC	Power supply for MPCB	
11		5V	O	5.2 V DC	Power supply for MPCB	
12		5V	O	5.2 V DC	Power supply for MPCB	

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
CN6 Connected to the main PCB, DF driver PCB, Tandem printer PCB*, engine PCB, and side deck*.	1	S.G(3.4V)	-	Ground	Ground for MPCB
	2	S.G	-	Ground	Ground for DFDPB
	3	S.G	-	Ground	Ground for side deck*
	4	S.G	-	Ground	Ground for SDPCB
	5	G(5V)	-	Ground	Ground for MPCB
	6	S.G	-	Ground	Ground for TAMPCB*
	7	G(5V)	-	Ground	Ground for EPCB
	8	S.G	-	Ground	Ground for MPCB
	9	S.G	-	Ground	Ground for MPCB
	10	S.G	-	Ground	Ground for MPCB
	11	G(5V)	-	Ground	Ground for MPCB
CN7 Connected to the hard disk drive.	1	12V	O	12 V DC	Power supply for HDD
	2	S.G(12V)	-	Ground	Ground for HDD
	3	5V	O	5.2 V DC	Power supply for HDD
	4	S.G	-	Ground	Ground for HDD
CN8 Connected to the main switch.	1	LIVE OUT	O	120 V AC or 220-240 V AC	AC power source to MSW
	3	-	I	120 V AC or 220-240 V AC	AC power source via MSW
	5	LIVE IN	I	120 V AC or 220-240 V AC	AC power source via MSW
CN9 Connected to the power relay.	1	NEUTRAL OUT	O	120 V AC or 220-240 V AC	AC power source to PRY
	2	-	I	120 V AC or 220-240 V AC	AC power source via PRY
CN10 Connected to the fixing heater M and fixing heater S.	1	-	O	120 V/0 V AC or 220-240 V/0 V AC	FH-M: On/Off
	2	-	O	120 V/0 V AC or 220-240 V/0 V AC	FH-S: On/Off
CN11 Connected to the power source fan motor.	1	24V	O	24 V DC	Power supply for PSFM
	2	P.G	-	Ground	Ground for PSFM
CN12 Connected to the dehumidify heaters.	1	-	O	120 V/0 V AC or 220-240 V/0 V AC	DH1*, DH2*, and DH3*: On/Off
	4	-	O	120 V AC 220-240 V AC	AC power source for DH1*, DH2*, and DH3*

*: Optional

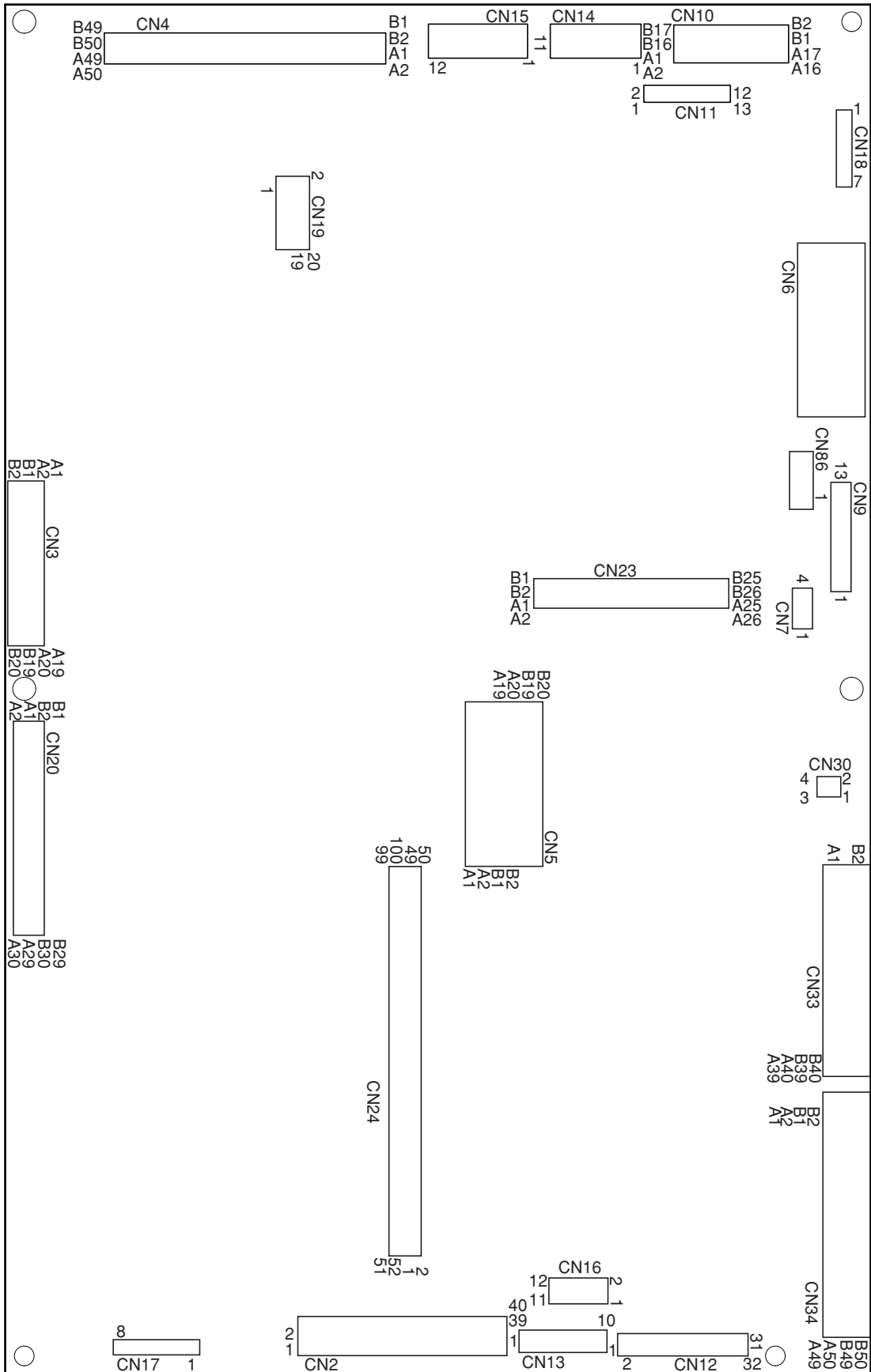


Figure 2-3-4 Main PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN7 Connected to the polygon motor control PCB (LSU).	1	CLOCK	O	0 V/5.2 V DC (pulse)	PM rotation control clock
	2	G(5V)	-	Ground	Ground for PM control PCB (LSU)
	3	START	O	0 V/5.2 V DC	PM: On/Off
	4	READY	I	0 V/5.2 V DC	PM rotation status: Stabilized/Not stabilized
CN8 Connected to the BD sensor PCB (LSU).	1	G(5V)	-	Ground	Ground for BD sensor PCB (LSU)
	2	BD-	I	0 V/5.2 V DC (pulse)	Horizontal synchronized signal (-)
	3	BD+	I	0 V/5.2 V DC (pulse)	Horizontal synchronized signal (+)
	4	G(5V)	-	Ground	Ground for BD sensor PCB (LSU)
	5	5V	O	5.2 V DC	Power supply for BD sensor PCB (LSU)
	6	BDREF	I	0 V/5.2 V DC	BD sensor PCB (LSU) control signal
CN9 Connected to the LD control PCB (LSU).	1	G(5V)	-	Ground	Ground for LD control PCB (LSU)
	2	/VD2-	O	0 V/5.2 V DC	Video data signal
	3	/VD2+	O	0 V/5.2 V DC	Video data signal
	4	/VD1-	O	0 V/5.2 V DC	Video data signal
	6	/VD1+	O	0 V/5.2 V DC	Video data signal
	7	/EN	O	0 V/5.2 V DC	LD output enable signal: Enable/Not enable
	8	G(5V)	-	Ground	Ground for LD control PCB (LSU)
	9	/ADJUST2	O	0 V/5.2 V DC	LD power adjust signal (2)
	10	G(5V)	-	Ground	Ground for RSW
	11	/ADJUST1	O	0 V/5.2 V DC	LD power adjust signal (1)
	12	G(5V)	-	Ground	Ground for LD control PCB (LSU)
	13	5V	O	5.2 V DC	Power supply for LD control PCB (LSU)
	CN10 Connected to the operation unit left PCB and operation unit right PCB.	A1	BUZZER	O	0 V/5.2 V DC
A2		X1	I	0 V to 5 V DC	Touch panel detection voltage
A3		Y1	I	0 V to 5 V DC	Touch panel detection voltage
A4		X2	O	0 V to 5 V DC	Touch panel detection voltage
A5		Y2	O	0 V to 5 V DC	Touch panel detection voltage
A6		LCD FRAME	O	-	LCD control signal
A7		LCD LOAD	O	-	LCD control signal
A8		LCD CP	O	0 V/5.2 V DC (pulse)	LCD drive clock
A9		LCD VSS(S.G)	-	ground	Ground for LCD (OPCB-L)
A10		LCD VDD(5V)	O	5.2 V DC	Power supply for LCD (OPCB-L)
A11		LCD VSS(S.G)	-	-	Ground for LCD (OPCB-L)
A12		LCD DISP OFF	O	0 V/5.2 V DC	LCD: On/Off
A13		LCD D0	O	0 V/5.2 V DC (pulse)	LCD display data (0)
A14		LCD D1	O	0 V/5.2 V DC (pulse)	LCD display data (1)
A15		LCD D2	O	0 V/5.2 V DC (pulse)	LCD display data (2)
A16		LCD D3	O	0 V/5.2 V DC (pulse)	LCD display data (3)
A17		VEE OFF	O	0 V/C V DC	LCD power supply control signal
B1		NC	-	-	Not used
B2		NC	-	-	Not used
B3		LAMP OFF	O	0 V/5.2 V DC	LCD back light: On/Off
B4		S.GND	-	Ground	Ground for OPCB-R
B5		5V	O	5.2 V DC	Power supply for OPCB-R
B6		DIG LED 8	O	0 V/5.2 V DC (pulse)	LED drive signal 8
B7		DIG LED 7	O	0 V/5.2 V DC (pulse)	LED drive signal 7
B8		SCAN 8	O	0 V/5.2 V DC (pulse)	LED scan signal 8
B9		SCAN 7	O	0 V/5.2 V DC (pulse)	LED scan signal 7
B10		SCAN 6	O	0 V/5.2 V DC (pulse)	LED scan signal 6
B11		DIG KEY 9	I	0 V/5.2 V DC (pulse)	KEY return signal 9
B12		DIG KEY 8	I	0 V/5.2 V DC (pulse)	KEY return signal 8
B13		DIG KEY 7	I	0 V/5.2 V DC (pulse)	KEY return signal 7
B14		DIG KEY 6	I	0 V/5.2 V DC (pulse)	KEY return signal 6
B15		DIG KEY 5	I	0 V/5.2 V DC (pulse)	KEY return signal 5
B16	DIG KEY 4	I	0 V/5.2 V DC (pulse)	KEY return signal 4	

Connector	Pin No.	Signal	I/O	Voltage	Description
CN11 Connected to the operation unit left PCB.	1	DIG LED 6	O	0 V/5.2 V DC (pulse)	LED drive signal 6
	2	DIG LED 5	O	0 V/5.2 V DC (pulse)	LED drive signal 5
	3	DIG LED 4	O	0 V/5.2 V DC (pulse)	LED drive signal 4
	4	DIG LED 3	O	0 V/5.2 V DC (pulse)	LED drive signal 3
	5	DIG LED 2	O	0 V/5.2 V DC (pulse)	LED drive signal 2
	6	DIG LED 1	O	0 V/5.2 V DC (pulse)	LED drive signal 1
	7	SCAN 4	O	0 V/5.2 V DC (pulse)	LED scan signal 4
	8	SCAN 3	O	0 V/5.2 V DC (pulse)	LED scan signal 3
	9	SCAN 2	O	0 V/5.2 V DC (pulse)	LED scan signal 2
	10	SCAN 1	O	0 V/5.2 V DC (pulse)	LED scan signal 1
	11	DIG KEY 3	I	0 V/5.2 V DC (pulse)	KEY return signal 3
	12	DIG KEY 2	I	0 V/5.2 V DC (pulse)	KEY return signal 2
	13	DIG KEY 1	I	0 V/5.2 V DC (pulse)	KEY return signal 1
CN12 Connected to the DF driver PCB.	1	OSLED (RED)	O	0 V/5.2 V DC	OSLED (red): On/Off
	2	OSLED (GN)	O	0 V/5.2 V DC	OSLED (green): On/Off
	3	SBPSOL (RET)	O	0 V/24 V DC	SBPSOL (release): On/Off
	4	SBPSOL (ACT)	O	0 V/24 V DC	SBPSOL (latch-on): On/Off
	5	OFCL	O	0 V/24 V DC	OFCL: On/Off
	6	EFSSOL	O	0 V/24 V DC	EFSSOL: On/Off
	7	OFSOL (RET)	O	0 V/24 V DC	OFSOL (release): On/Off
	8	SBFSSOL	O	0 V/24 V DC	SBFSSOL: On/Off
	9	OFM ENABLE	O	0 V/5.2 V DC	OFM (enable): On/Off
	10	OFSOL (ACT)	O	0 V/24 V DC	OFSOL (latch-on): On/Off
	11	OFM CLK	O	0 V/5.2 V DC (pulse)	OFM drive clock pulse
	12	OFM RET	O	0 V/5.2 V DC	OFM control signal: On/Off
	13	OCM ENABLE	O	0 V/5.2 V DC	OCM (enable): On/Off
	14	OFM CWB	O	0 V/5.2 V DC	OFM rotational direction switching signal
	15	OCM CWB	O	0 V/5.2 V DC	OCM rotational direction switching signal
	16	OCM CLK	O	0 V/5.2 V DC (pulse)	OCM drive clock pulse
	17	OCM M3	O	0 V/5.2 V DC	OCM drive control signal (M3)
	18	CMOT Vref	O	0 V/5.2 V DC	OCM drive control signal
	19	OCM M1	O	0 V/5.2 V DC	OCM drive control signal (M1)
	20	OCM M2	O	0 V/5.2 V DC	OCM drive control signal (M2)
	21	OSBSW	I	0 V/5.2 V DC	OSBSW: On/Off
	22	OFSW	I	0 V/5.2 V DC	OFSW: On/Off
	23	SET SW	I	0 V/5.2 V DC	OSLSW: On/Off
	24	DF SHORT	I	0 V/5.2 V DC	DF set status: Installed/Not installed
	25	SZ DET	I	0 V/5.2 V DC	Original size detection signal
	26	DFSSW2	I	0 V/5.2 V DC	DFSSW2: On/Off
	27	DFSSW1	I	0 V/5.2 V DC	DFSSW1: On/Off
	28	SZ SW A	I	0 V/5.2 V DC	OSWSW: On/Off
	29	DFTSW	I	0 V/5.2 V DC	DFTSW: On/Off
	30	S.GND	-	-	Ground for DFPCB
	31	NC	-	-	Not used
	32	NC	-	-	Not used
CN13 Connected to the side deck*.	1	RESET	O	0 V/5.2 V DC	Side deck*: Reset/Normal
	2	SET SIG	I	0 V/5.2 V DC	Side deck* set status: Installed/Not installed
	3	TxD	O	0 V/5.2 V DC (pulse)	Serial communication transmit signal
	4	S.GND	-	-	Ground for serial communication
	5	RxD	I	0 V/5.2 V DC (pulse)	Serial communication receive signal
	6	S.GND	-	-	Ground for serial communication
	7	READY	I	0 V/5.2 V DC	Side deck* ready signal
	8	FEED	O	0 V/5.2 V DC	Side deck* control signal
	9	FEED SW	I	0 V/5.2 V DC	Side deck* control signal
	10	FEED REQUEST	O	0 V/3.3 V DC	Side deck* control signal

*: Optional

Connector	Pin No.	Signal	I/O	Voltage	Description
CN14 Connected to the CCD PCB.	1	CLP-	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	2	CLP+	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	3	RS+	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	4	RS-	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	5	CLK-	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	6	CLK+	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	7	SHIFT+	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	8	SHIFT-	O	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	9	5V	O	5.2 V DC	Power supply for CCDPCB
	10	5V	O	5.2 V DC	Power supply for CCDPCB
	11	5V	O	5.2 V DC	Power supply for CCDPCB
CN15 Connected to the CCD PCB.	1	OS2+	I	0 V to 12 V DC	CCDPCB control signal
	2	OS2-	I	0 V to 12 V DC	CCDPCB control signal
	3	OS1+	I	0 V to 12 V DC	CCDPCB control signal
	4	OS1-	I	0 V to 12 V DC	CCDPCB control signal
	5	OS3+	I	0 V to 12 V DC	CCDPCB control signal
	6	OS3-	I	0 V to 12 V DC	CCDPCB control signal
	7	OS4+	I	0 V to 12 V DC	CCDPCB control signal
	8	OS4-	I	0 V to 12 V DC	CCDPCB control signal
	9	N.C	-	-	Not used
	10	+12V	O	+12 V DC	Power supply for CCDPCB
	11	G(analog)	-	Ground	Analog ground for CCDPCB
	12	G(analog)	-	Ground	Analog ground for CCDPCB
CN17 Connected to the power source PCB.	1	5V	I	5.2 V DC	Power supply from PSPCB
	2	SLEEP SIG	O	0 V/5.2 V DC	PSPCB sleep mode: On/Off
	3	S.G(5V)	-	Ground	Ground from PSPCB
	4	S.G(5V)	-	Ground	Ground from PSPCB
	5	5V	I	5.2 V DC	Power supply from PSPCB
	6	5V	I	5.2 V DC	Power supply from PSPCB
	7	Z CROSS SIG	I	0 V/5.2 V DC (pulse)	Zero cross signal
	8	DH REM	O	0 V/5.2 V DC	DH1*, DH2*, and DH3*: On/Off
CN18 Connected to the power source PCB.	1	24V	I	24 V DC	Power supply from PSPCB
	2	P.G	-	Ground	Ground from PSPCB
	3	5V	I	5.2 V DC	Power supply from PSPCB
	4	S.G	-	Ground	Ground from PSPCB
	5	3.4V	I	3.3 V DC	Power supply from PSPCB
	6	S.G(3.4V)	-	Ground	Ground from PSPCB

2-3-3 Engine PCB

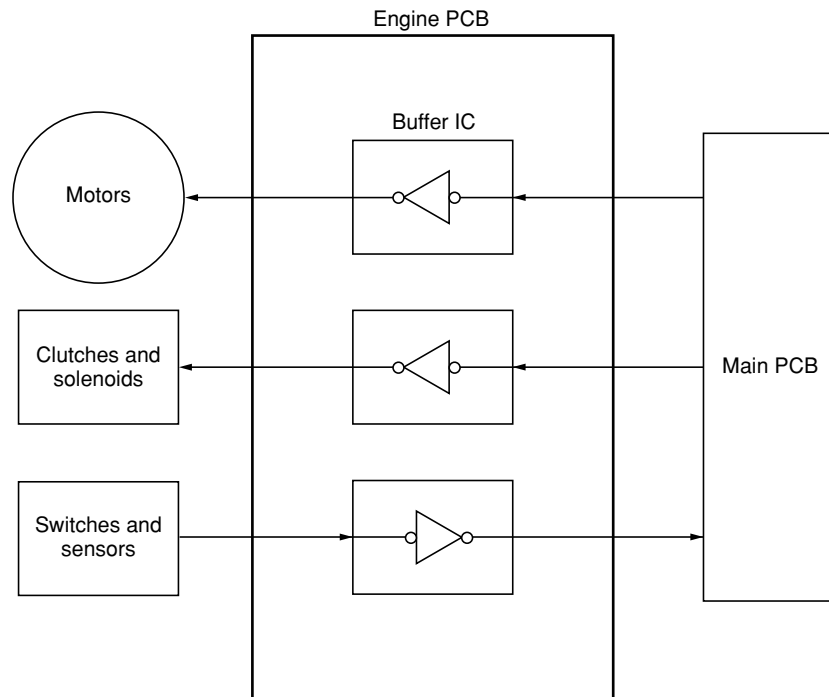


Figure 2-3-5 Engine PCB block diagram

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.

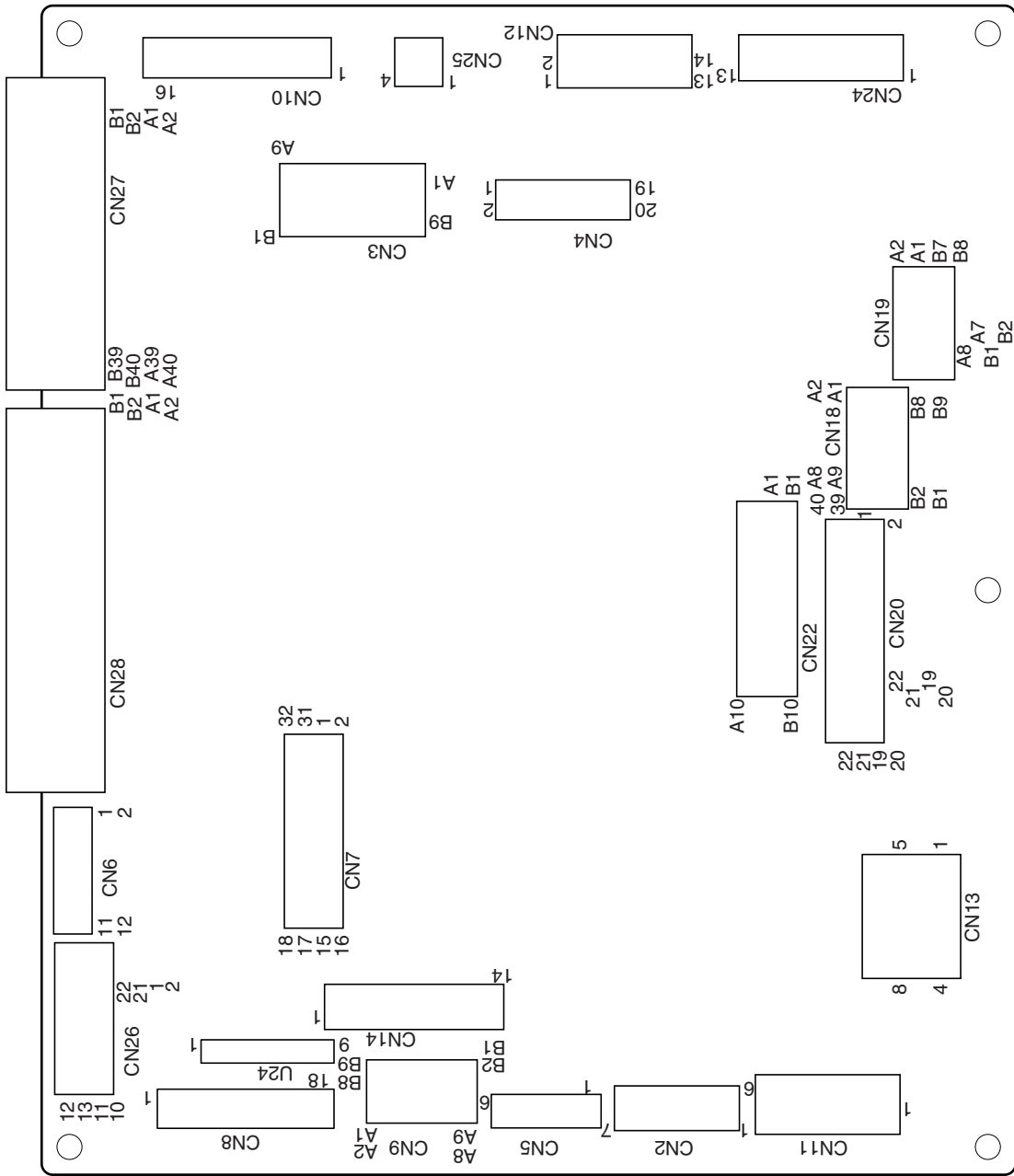


Figure 2-3-6 Engine PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN2 Connected to the power source PCB.	1	5V	I	5.2 V DC	Power supply from PSPCB
	2	G(5V)	-	Ground	Ground from PSPCB
	3	G(5V)	-	Ground	Ground from PSPCB
	4	G(5V)	-	Ground	Ground from PSPCB
	5	FH-M REM	O	0 V/5.2 V DC	FH-M: On/Off
	6	FH-S REM	O	0 V/5.2 V DC	SH-M: On/Off
	7	5V	I	5.2 V DC	Power supply from PSPCB
CN3 Connected to the paper conveying unit.	A1	G(5V)	-	Ground	Ground for ESW
	A2	ESW SIG	I	0 V/5.2 V DC	ESW: On/Off
	A3	5V	O	5.2 V DC	Power supply for ESW
	A4	G(5V)	-	Ground	Ground for FSSW
	A5	FSSW SIG	I	0 V/5.2 V DC	FSSW: On/Off
	A6	5V	O	5.2 V DC	Power supply for FSSW
	A7	FSSOL A	O	0 V/24 V DC	FSSOL (A): On/Off
	A8	FSSOL P	O	0 V/24 V DC	FSSOL (P): On/Off
	A9	24V	-	24 V DC	Power supply for FSSOL
	B1	G(5V)	-	Ground	Ground for RSW
	B2	RSW	I	0 V/5.2 V DC	RSW: On/Off
	B3	5V	O	5.2 V DC	Power supply for RSW
	B4	PCFM	O	0 V/24 V DC	PCFM: On/Off
	B5	R24V	O	24 V DC	Power supply for PCFM
B6	TCCM REV	O	0 V/12 V DC	TCCM reverse rotation: On/Off	
B7	TCCM FWD	O	0 V/12 V DC	TCCM forward rotation: On/Off	
B8	FFM	O	0 V/24 V DC	FFM: On/Off	
B9	R24V	O	24 V DC	Power supply for FFM	
CN4 Connected to the image formation unit.	1	TFM	O	24 V/0 V AC (pseudo)	TFM: On/Off
	2	TFM	O	24 V/0 V AC (pseudo)	TFM: On/Off
	3	TAM	O	24 V/0 V AC (pseudo)	TFM: On/Off
	4	TAM	O	24 V/0 V AC (pseudo)	TFM: On/Off
	5	MCCM FWD	O	0 V/12 V DC	MCCM forward rotation: On/Off
	6	MCCM REV	O	0 V/12 V DC	MCCM reverse rotation: On/Off
	7	G(5V)	-	-	Ground for TNS
	8	OUT	O	0V to 5 V DC	TNS control voltage
	9	R24V	O	24 V DC	Power supply for TNS
	10	TNS	I	0V to 5 V DC	TNS sensing voltage
	11	CL	O	0 V/24 V DC	CL: On/Off
	12	24V	O	24 V DC	Power supply for CL
	13	PCL1	O	0 V/24 V DC	PCL1: On/Off
	14	24V	O	24 V DC	Power supply for PCL1
	15	PCL2	O	0 V/24 V DC	PCL2: On/Off
	16	24V	O	24 V DC	Power supply for PCL2
	17	G(5V)	-	Ground	Ground for TLDS
	18	TLDS	I	0V to 5 V DC	TLDS sensing voltage
	19	5V	O	5.2 V DC	Power supply for TLDS
	20	NC	-	-	Not used
CN5 Connected to the duplex unit.	1	R24V	O	24 V DC	Power supply for DUPESSOL
	2	R24V	O	24 V DC	Power supply for DUPPRSOL
	3	R24V	O	24 V DC	Power supply for DUPFWDCL
	4	R24V	O	24 V DC	Power supply for DUPREVCL
	5	5V	O	5.2 V DC	Power supply for DUPJSW, DUPFSSW, DUPPCSW1, DUPPCSW2, and DUPESW
	6	S.G	-	Ground	Ground for DUPJSW, DUPFSSW, DUPPCSW1, DUPPCSW2, and DUPESW

Connector	Pin No.	Signal	I/O	Voltage	Description
CN6 Connected to the duplex unit.	1	SET SIG	I	0 V/5.2 V DC	Duplex unit set status: Installed/Not installed
	2	DUPJSW	I	0 V/5.2 V DC	DUPJSW: On/Off
	3	DUFSSW	I	0 V/5.2 V DC	DUFSSW: On/Off
	4	DUPPCSW1	I	0 V/5.2 V DC	DUPPCSW1: On/Off
	5	DUPPCSW2	I	0 V/5.2 V DC	DUPPCSW2: On/Off
	6	DUPESW	I	0 V/5.2 V DC	DUPESW: On/Off
	7	DUPESSOL P	O	0 V/24 V DC	DUPESSOL (P): On/Off
	8	DUPESSOL A	O	0 V/24 V DC	DUPESSOL (A): On/Off
	9	DUPPRSOL P	O	0 V/24 V DC	DUPPRSOL (P): On/Off
	10	DUPPRSOL A	O	0 V/24 V DC	DUPPRSOL (A): On/Off
	11	DUPFWDCL	O	0 V/24 V DC	DUPFWDCL: On/Off
	12	DUPREVCL	O	0 V/24 V DC	DUPREVCL: On/Off
CN7 Connected to the upper paper width switch, lower paper width switch, lift limit switch 1, lift limit switch 2, paper switch 1, paper switch 2, paper feed clutch 1, paper feed clutch 2, and main switch.	1	PWSW-U DIG0	I	0 V/5.2 V DC	PWSW-U (0): On/Off
	2	PWSW-U DIG1	I	0 V/5.2 V DC	PWSW-U (1): On/Off
	3	PWSW-U DIG2	I	0 V/5.2 V DC	PWSW-U (2): On/Off
	4	S.GND	-	Ground	Ground for PWSW-U
	5	S.GND	-	Ground	Ground for LILSW1
	6	LILSW1	I	0 V/5.2 V DC	LILSW1: On/Off
	7	5V	O	5.2 V DC	Power supply for LILSW1
	8	S.GND	-	Ground	Ground for PSW1
	9	PSW1	I	0 V/5.2 V DC	PSW1: On/Off
	10	5V	O	5.2 V DC	Power supply for PSW1
	11	PFCL1	O	0 V/24 V DC	PFCL1: On/Off
	12	R24V	O	24 V DC	Power supply for PFCL1
	13	S.GND	-	Ground	Ground for PLSW-U
	14	PLSW-U	I	0 V/5.2 V DC	PLSW-U: On/Off
	15	S.GND	-	Ground	Ground for PLSW-L
	16	PLSW-L	I	0 V/5.2 V DC	PLSW-L: On/Off
	17	PWSW-L DIG0	I	0 V/5.2 V DC	PWSW-L (0): On/Off
	18	PWSW-L DIG1	I	0 V/5.2 V DC	PWSW-L (1): On/Off
	19	PWSW-L DIG2	I	0 V/5.2 V DC	PWSW-L (2): On/Off
	20	S.GND	-	Ground	Ground for PWSW-L
	21	S.GND	-	Ground	Ground for LILSW2
22	LILSW2	I	0 V/5.2 V DC	LILSW2: On/Off	
23	5V	O	5.2 V DC	Power supply for LILSW2	
24	S.GND	-	Ground	Ground for PSW2	
25	PSW2	I	0 V/5.2 V DC	PSW2: On/Off	
26	5V	O	5.2 V DC	Power supply for PSW2	
27	PFCL2	O	0 V/24 V DC	PFCL2: On/Off	
28	R24V	O	24 V DC	Power supply for PFCL2	
30	24V	O	24 V DC	Power supply for MSW	
31	MSW OFF REM	O	0 V/24 V DC	MSW: Off/Normal	
CN8 Connected to the deck lift limit switch 1, deck paper switch, paper feed clutch 3, deck left switch, deck right switch, deck left lift motor, and deck right lift motor.	1	S.GND	-	Ground	Ground for DLILSW1
	2	DLILSW1	I	0 V/5.2 V DC	DLILSW1: On/Off
	3	5V	O	5.2 V DC	Power supply for DLILSW1
	4	S.GND	-	Ground	Ground for DPSW1
	5	DPSW1	I	0 V/5.2 V DC	DPSW1: On/Off
	6	5V	O	5.2 V DC	Power supply for DPSW1
	7	PFCL3	O	0 V/24 V DC	PFCL3: On/Off
	8	R24V	O	24 V DC	Power supply for PFCL3
	9	S.GND	-	Ground	Ground for DSW-L
	10	DSW-L	I	0 V/5.2 V DC	DSW-L: On/Off
	11	5V	O	5.2 V DC	Power supply for DSW-L
	12	S.GND	-	Ground	Ground for DSW-R
	13	DSW-R	I	0 V/5.2 V DC	DSW-R: On/Off
	14	5V	O	5.2 V DC	Power supply for DSW-R
	15	R24V	O	24 V DC	Power supply for DLM-L
	16	DLM-L	O	0 V/24 V DC	DLM-L: On/Off
	17	R24V	O	24 V DC	Power supply for DLM-R
	18	DLM-R	O	0 V/24 V DC	DLM-R: On/Off

Connector	Pin No.	Signal	I/O	Voltage	Description
CN9 Connected to the bypass paper switch, bypass tray switch, bypass solenoid, bypass paper feed clutch, and bypass paper switch.	A1	5V	O	5.2 V DC	Power supply for BYPPLSW
	A2	BYPPLSW	I	0 V/5.2 V DC	BYPPLSW: On/Off
	A3	G(5V)	-	-	Ground for BYPPLSW
	A4	G(5V)	-	-	Ground for BYPTSW
	A5	BYPTSW	I	0 V/5.2 V DC	BYPTSW: On/Off
	A6	BYPPWSW DIG0	I	0 V/5.2 V DC	BYPPWSW (0): On/Off
	A7	BYPPWSW DIG1	I	0 V/5.2 V DC	BYPPWSW (1): On/Off
	A8	BYPPWSW DIG2	I	0 V/5.2 V DC	BYPPWSW (2): On/Off
	A9	S.GND	-	Ground	Ground for BYPPWSW
	B1	NC	-	-	Not used
	B2	NC	-	-	Not used
	B3	BYPSOL	O	0 V/24 V DC	BYPSOL: On/Off
	B4	R24V	O	24 V DC	Power supply for BYPSOL
	B5	BYPPFCL	O	0 V/24 V DC	BYPPFCL: On/Off
B6	R24V	O	24 V DC	Power supply for BYPPFCL	
B7	G(5V)	-	-	Ground for BYPPSW	
B8	BYPPSW	I	0 V/5.2 V DC	BYPPSW: On/Off	
B9	5V	O	5.2 V DC	Power supply for BYPPSW	
CN10 Connected to the scanner drive PCB.	1	OSDS1	I	0 V/5.2 V DC	OSDS1: On/Off
	2	OSDS2	I	0 V/5.2 V DC	OSDS2*: On/Off
	3	ODSW	I	0 V/5.2 V DC	ODSW: On/Off
	4	SM Vref	O	0 V to 5 V DC	SM current control voltage
	5	SM M1	O	0 V/5.2 V DC	SM drive mode signal (M1)
	6	SM M2	O	0 V/5.2 V DC	SM drive mode signal (M2)
	7	SM M3	O	0 V/5.2 V DC	SM drive mode signal (M3)
	8	NC	-	-	-
	9	NC	-	-	-
	10	SM CLK	I	0 V/5.2 V DC (pulse)	SM drive control clock
	11	SM CWB	O	0 V/5.2 V DC	SM rotation direction switching signal
	12	SM RET	O	0 V/5.2 V DC	SM drive control signal
	13	SM ENABLE	O	0 V/5.2 V DC	SM drive : Enable/Not enable
	14	EL ON REM	O	5.2 V DC	EL: On/Off
	15	SHPSW	I	0 V/5.2 V DC	SHPSW: On/Off
	16	G(5V)	-	Ground	Ground for SDPCB
CN11 Connected to the power relay and power source PCB.	1	R24V	I	24 V DC	DC power source via PRY
	2	R24V	I	24 V DC	DC power source via PRY
	3	G(R24V)	-	-	Ground from PSPACE
	4	G(R24V)	-	-	Ground from PSPACE
	5	G(24V)	-	-	Ground from PSPACE
	6	24V	I	24 V DC	DC power source from PSPACE
CN12 Connected to the high voltage transformer PCB.	1	PTC ALM	I	5.2 V/0 V DC	PTC output status: Normal/Abnormal
	2	PTC REM	O	0 V/24 V DC	PTC: On/Off
	3	TC REM	O	0 V/24 V DC	TC: On/Off
	4	TC CONT	O	0 V to 5 V DC	TC output control voltage
	5	SC REM	O	0 V/24 V DC	SC: On/Off
	6	SC CONT	O	0 V to 5 V DC	SC output control voltage
	7	SC/TC ALM	I	24 V/0 V DC	SC and TC output status: Normal/Abnormal
	8	DB CONT	O	0 V to 5 V DC	DB output control voltage
	9	DB REM	O	0 V/24 V DC	DB: On/Off
	10	G CONT	O	0 V to 5 V DC	Main charger grid control voltage
	11	MC ALM	I	24 V/0 V DC	MC output status: Normal/Abnormal
	12	MC REM	O	0 V/24 V DC	MC: On/Off
	13	GND(24V)	-	Ground	Ground for HVTPCB
	14	R24V	O	24 V DC	Power supply for HVTPCB

*: Inch model only.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN13 Connected to the safety switch 1, safety switch 2, and power source PCB.	2	SSW2	I	24 V/0 V DC	SSW2: On/Off
	3	SSW1	I	24 V/0 V DC	SSW1: On/Off
	6	24V	O	24 V DC	DC power source to PRY
	5	PRY REM	O	0 V/24 V DC	PRY: On/Off
	7	24V SOURCE	O	24 V DC	DC power source to SSW2
	8	24V SOURCE	O	24 V DC	DC power source to SSW1
CN14 Connected to the HDD fan motor, fixing web solenoid, drum surface potential sensor, image formation fan motor, and polygon motor (LSU).	1	24V	O	24 V DC	Power supply for HDDFM
	2	HDDFM	O	0 V/24 V DC	HDDFM: On/Off
	3	24V	O	24 V DC	Power supply for FWESOL
	4	FWESOL	O	0 V/24 V DC	FWESOL: On/Off
	5	NC	-	-	Not used
	6	NC	-	-	Not used
	7	P.G	-	Ground	Ground for DSPS
	8	S.G	-	Ground	Ground for DSPS
	9	DSPS	I	0 V to 24 V DC	DSPS sensing voltage
	10	R24V	O	24 V DC	Power supply for DSPS
	11	R24V	O	24 V DC	Power supply for IFFM
	12	IFFM	O	0 V/24 V DC	IFFM: On/Off
	13	G(24V)	-	Ground	Ground for PM (LSU)
	14	R24V	O	24 V DC	Power supply for PM (LSU)
CN15 Connected to the image formation motor and paper conveying motor.	A1	CLOCK	O	0 V/5.2 V DC (pulse)	IFM drive control clock
	A2	LOCK ALM	I	5.2 V/0 V DC	IFM rotation status: Normal/Lock
	A3	IFM REM	O	0 V/5.2 V DC	IFM : On/Off
	A4	5V	O	5.2 V DC	Power source for IFM
	A5	S.G	-	Ground	Ground for IFM
	A6	P.G	-	Ground	Ground for IFM
	A7	P.G	-	Ground	Ground for IFM
	A8	R24V	O	24 V DC	Power supply for IFM
	A9	R24V	O	24 V DC	Power supply for IFM
	B1	CLOCK	O	0 V/5.2 V DC (pulse)	PCM drive control clock
	B2	LOCK ALM	I	5.2 V/0 V DC	PCM rotation status: Normal/Lock
	B3	PCM REM	O	0 V/5.2 V DC	PCM : On/Off
	B4	5V	O	5.2 V DC	Power source for PCM
	B5	S.G	-	Ground	Ground for PCM
	B6	P.G	-	Ground	Ground for PCM
	B7	P.G	-	Ground	Ground for PCM
B8	R24V	O	24 V DC	Power supply for PCM	
B9	R24V	O	24 V DC	Power supply for PCM	
CN16 Connected to the paper feed motor, deck drive motor, and waste toner detection sensor.	1	R24V	O	24 V DC	Power supply for PFM
	2	R24V	O	24 V DC	Power supply for DDM
	3	P.G	-	Ground	Ground for PFM
	4	P.G	-	Ground	Ground for DDM
	5	PFM REM	O	0 V/5.2 V DC	PFM: On/Off
	6	DDM REM	O	0 V/5.2 V DC	DDM: On/Off
	7	LOCK DRIVE	I	5.2 V/0 V DC	PFM rotation status: Normal/Lock
	8	LOCK DRIVE	I	5.2 V/0 V DC	DDM rotation status: Normal/Lock
	9	5V	O	5.2 V DC	Power supply for WTDS
	10	WTDS	I	0 V/5.2 V DC	WTDS: On/Off
	11	S.GND	-	Ground	Ground for WTDS
	12	NC	-	-	Not used

Connector	Pin No.	Signal	I/O	Voltage	Description
CN17 Connected to the upper lift motor and lower lift motor.	1	UPLESW2	I	0 V/5.2 V DC	Upper drawer paper level signal (2): Low/High
	2	COM(G)	-	Ground	Ground for LM-U
	3	UPLESW1	I	0 V/5.2 V DC	Upper drawer paper level signal (1): Low/High
	4	R24V	O	24 V DC	Power supply for LM-U
	5	LM-U	O	0 V/24 V DC	LM-U: On/Off
	6	UPLESW2	I	0 V/5.2 V DC	Lower drawer paper level signal (2): Low/High
	7	COM(G)	-	Ground	Ground for LM-L
	8	UPLESW1	I	0 V/5.2 V DC	Upper drawer paper level signal (1): Low/High
	9	R24V	O	24 V DC	Power supply for LM-L
	10	LM-L	O	0 V/24 V DC	LM-L: On/Off
YC18 Connect to the feed high clutch 1, feed low clutch 1, registration clutch, feed high clutch 2, feed low clutch 2, feed clutch 3, feed clutch 4, and feed clutch 5.	A1	FCL1-H	O	0 V/24 V DC	FCL1-H: On/Off
	A2	NC	-	-	Not used
	A3	R24V	O	24 V DC	Power supply for FCL1-H
	A4	FCL1-L	O	0 V/24 V DC	FCL1-L: On/Off
	A5	R24V	O	24 V DC	Power supply for FCL1-L
	A6	RCL	O	0 V/24 V DC	RCL: On/Off
	A7	R24V	O	24 V DC	Power supply for RCL
	A8	FCL2-H	O	0 V/24 V DC	FCL2-H: On/Off
	A9	R24V	O	24 V DC	Power supply for FCL2-H
	B1	FCL2-L	O	0 V/24 V DC	FCL2-L: On/Off
	B2	R24V	O	24 V DC	Power supply for FCL2-L
	B3	FCL3	O	0 V/24 V DC	FCL3: On/Off
	B4	R24V	O	24 V DC	Power supply for FCL3
B5	FCL4	O	0 V/24 V DC	FCL4: On/Off	
B6	R24V	O	24 V DC	Power supply for FCL4	
B7	FCL5	O	0 V/24 V DC	FCL5: On/Off	
B8	R24V	O	24 V DC	Power supply for FCL5	
B9	NC	-	-	Not used	
CN19 Connected to the total counter, cooling fan motor, eject fan motor 1, eject fan motor 2, humidity sensor PCB, and face down eject switch.	A1	TC	O	0 V/24 V DC	TC count: On/Off
	A2	R24V	O	24 V DC	Power supply for TC
	A3	CFM	O	0 V/24 V DC	CFM: On/Off
	A4	R24V	O	24 V DC	Power supply for CFM
	A5	EFM1	O	0 V/24 V DC	EFM1: On/Off
	A6	R24V	O	24 V DC	Power supply for EFM1
	A7	EFM2	O	0 V/24 V DC	EFM2: On/Off
	A8	R24V	O	24 V DC	Power supply for EFM2
	B1	5V	O	5.2 V DC	Power supply for HUMPCB
	B2	HUMS SIG	I	0 V to 5 V DC	HUMPCB sensing humidity voltage
	B3	S.G(TH)	-	Ground	Ground for HUMPCB
B4	TH	I	0 V to 5 V DC	HUMPCB sensing temperature voltage	
B5	GND(5V)	-	Ground	Ground for FDESW	
B6	FDESW	I	0 V/5.2 V DC	FDESW: On/Off	
B7	5V	O	5.2 V DC	Power supply for FDESW	
B8	NC	-	-	Not used	

Connector	Pin No.	Signal	I/O	Voltage	Description
YC20 Connected to the paper feed switch 1, paper feed switch 2, paper feed switch 3, paper feed switch 4, paper feed switch 5, paper feed switch 6, deck left paper level switch 1, deck left paper level switch 2, deck left paper level switch 3, deck right paper level switch 1, deck right paper level switch 2, deck right paper level switch 3, and waste toner box switch.	1	NC	-	-	Not used
	2	NC	-	-	Not used
	3	G(5V)	-	-	Ground for PFSW1
	4	PFSW1	I	0 V/5.2 V DC	PFSW1: On/Off
	5	5V	O	5.2 V DC	Power supply for PFSW1
	6	G(5V)	-	-	Ground for PFSW2
	7	PFSW2	I	0 V/5.2 V DC	PFSW2: On/Off
	8	5V	O	5.2 V DC	Power supply for PFSW2
	9	G(5V)	-	-	Ground for PFSW3
	10	PFSW3	I	0 V/5.2 V DC	PFSW3: On/Off
	11	5V	O	5.2 V DC	Power supply for PFSW3
	12	G(5V)	-	-	Ground for PFSW4
	13	PFSW4	I	0 V/5.2 V DC	PFSW4: On/Off
	14	5V	O	5.2 V DC	Power supply for PFSW4
	15	G(5V)	-	-	Ground for PFSW5
	16	PFSW5	I	0 V/5.2 V DC	PFSW5: On/Off
	17	5V	O	5.2 V DC	Power supply for PFSW5
	18	G(5V)	-	-	Ground for PFSW6
	19	PFSW6	I	0 V/5.2 V DC	PFSW6: On/Off
	20	5V	O	5.2 V DC	Power supply for PFSW6
	21	G(5V)	-	-	Ground for DPLSW1-L
	22	DPLSW1-L	I	0 V/5.2 V DC	DPLSW1-L: On/Off
	23	5V	O	5.2 V DC	Power supply for DPLSW1-L
	24	G(5V)	-	-	Ground for DPLSW2-L
	25	DPLSW2-L	I	0 V/5.2 V DC	DPLSW2-L: On/Off
	26	5V	O	5.2 V DC	Power supply for DPLSW2-L
	27	G(5V)	-	-	Ground for DPLSW3-L
	28	DPLSW3-L	I	0 V/5.2 V DC	DPLSW3-L: On/Off
	29	5V	O	5.2 V DC	Power supply for DPLSW3-L
	30	G(5V)	-	-	Ground for DPLSW1-R
	31	DPLSW1-R	I	0 V/5.2 V DC	DPLSW1-R: On/Off
	32	5V	O	5.2 V DC	Power supply for DPLSW1-R
	33	G(5V)	-	-	Ground for DPLSW2-R
	34	DPLSW2-R	I	0 V/5.2 V DC	DPLSW2-R: On/Off
	35	5V	O	5.2 V DC	Power supply for DPLSW2-R
	36	G(5V)	-	-	Ground for DPLSW3-R
	37	DPLSW3-R	I	0 V/5.2 V DC	DPLSW3-R: On/Off
	38	5V	O	5.2 V DC	Power supply for DPLSW3-R
	39	G(5V)	-	-	Ground for WTBSW
	40	WTBSW	I	0 V/5.2 V DC	WTBSW: On/Off
CN24 Connected to the finisher*, key counter*, and key card*.	1	5V	O	5.2 V DC	Power supply for finisher*
	2	SET SIG	I	0 V/5.2 V DC	Finisher* setting status: Installed/Not installed
	3	RESET	O	0 V/5.2 V DC	Finisher* reset signal: Reset/Normal
	4	G(5V)	-	-	Ground for finisher*
	5	TxD	O	0 V/5.2 V DC (pulse)	Serial communication transmit signal
	6	G(5V)	-	Ground	Ground for serial communication signal
	7	RxD	I	0 V/5.2 V DC (pulse)	Serial communication receive signal
	8	G(5V)	-	Ground	Ground for serial communication signal
	9	E5V	O	5.2 V DC	Power supply for finisher*
	10	R24V	O	24 V DC	Power supply for key card* or key counter*
	11	COUNT REM	O	0 V/5.2 V DC	Key card* or key counter* count: On/Off
	12	SET SIG	I	0 V/5.2 V DC	Key card* or key counter* setting status: Installed/Not installed
	13	SET G	-	Ground	Ground for key card* or key counter*
CN25 Connected to the fixing thermistor.	1	5V	O	5.2 V DC	Power supply for FTH
	2	FTH SIG	I	0 V to 5 V DC	FTH sensing voltage
	3	SET SIG	I	0 V/5.2 V DC	Fixing unit setting status: Installed/Not installed
	4	S.GND	-	Ground	Ground for fixing unit

2-3-4 Scanner drive PCB

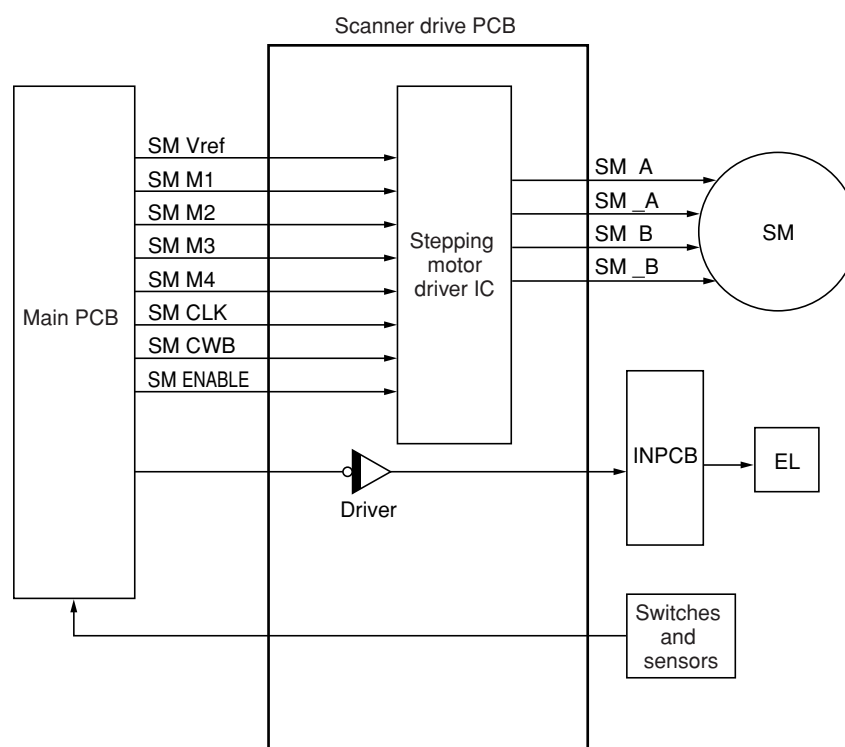


Figure 2-3-7 Scanner drive PCB block diagram

The scanner drive PCB (SDPCB) drives the scanner motor (SM), turns the exposure lamp (EL) on and off, and relays signals from the scanner home position switch (SHPSW), the original size detection sensor 1 (OSDS1), the original size detection sensor 2 (OSDS2*) and the original detection switch (ODSW).

The scanner motor (SM) is driven by turning the output for motor phase switch over on and off (SM A, SM_A, SM B, SM_B). It is activated by the stepping motor driver IC processing the currently set reference signal (SM Vref), drive mode signals (SM M1 to M3, SM CWB), phase switch over clock (SM CLK), and drive/stop signals (SM ENABLE) from the main PCB (MPCB).

*: Inch model only.

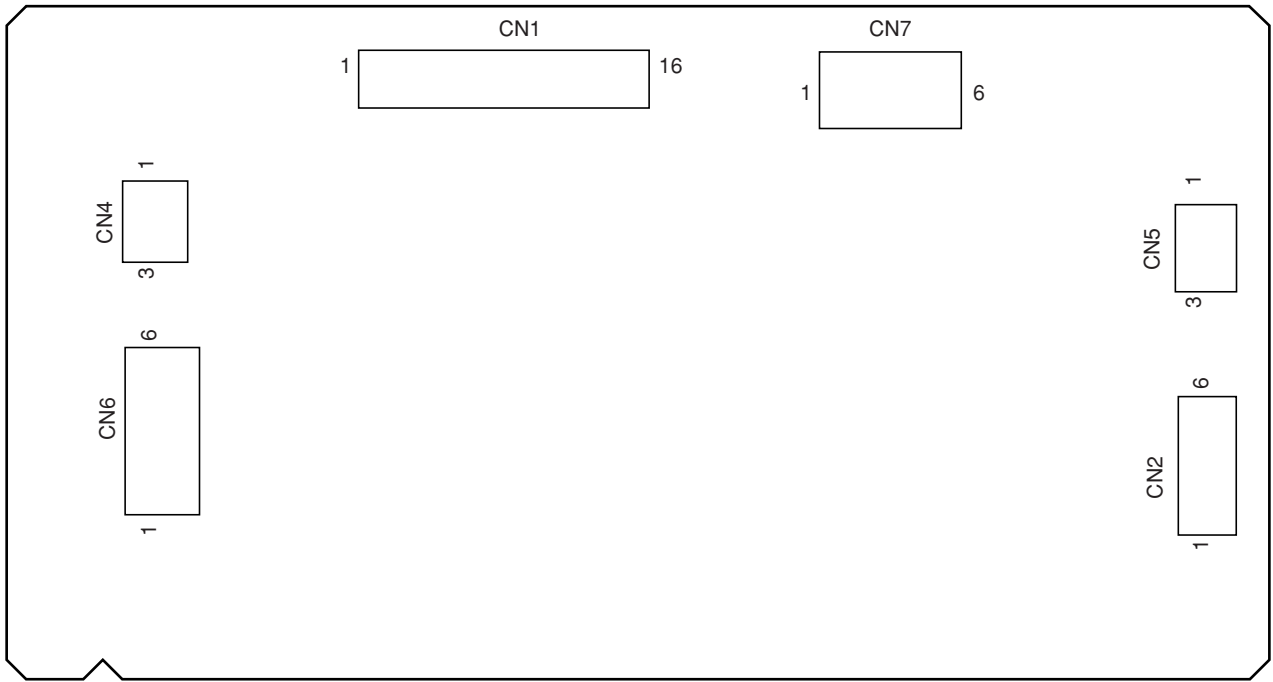


Figure 2-3-8 Scanner drive PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1 Connected to the engine PCB.	1	G(5V)	-	Ground	Ground for SDPCB
	2	SHPSW	O	0 V/5.2 V DC	SHPSW: On/Off
	3	EL ON REM	I	5.2 V DC	EL: On/Off
	4	SM ENABLE	I	0 V/5.2 V DC	SM drive enable signal: Enable/Not enable
	5	SM RET	I	0 V/5.2 V DC	SM drive control signal
	6	SM CWB	I	0 V/5.2 V DC	SM rotation direction switching signal
	7	SM CLK	I	0 V/5.2 V DC (pulse)	SM drive control clock
	8	NC	-	-	-
	9	NC	-	-	-
	10	SM M3	I	0 V/5.2 V DC	SM drive mode signal (M3)
	11	SM M2	I	0 V/5.2 V DC	SM drive mode signal (M2)
	12	SM M1	I	0 V/5.2 V DC	SM drive mode signal (M1)
	13	SM Vref	I	0V to 5 V DC	SM current control voltage
	14	ODSW	O	0 V/5.2 V DC	ODSW: On/Off
	15	OSDS2	O	0 V/5.2 V DC	OSDS2*: On/Off
	16	OSDS1	O	0 V/5.2 V DC	OSDS1: On/Off
CN2 Connected to the scanner motor.	1	SM _B	O	0 V/24 V DC (pulse)	SM drive pulse phase _B
	2	24V	O	24 V DC	Power supply for SM
	3	SM B	O	0 V/24 V DC (pulse)	SM drive pulse phase B
	4	SM A	O	0 V/24 V DC (pulse)	SM drive pulse phase A
	5	24V	O	24 V DC	Power supply for SM
	6	SM _A	O	0 V/24 V DC (pulse)	SM drive pulse phase _A
CN3 Connected to the INPCB.	1	EL ON	O	0 V/24 V DC	EL: On/Off
	2	EL ON	O	0 V/24 V DC	EL: On/Off
	3	24V	O	24 V DC	Power supply for INPCB
	4	24V	O	24 V DC	Power supply for INPCB
	5	G(24V)	-	Ground	Ground for INPCB
	6	G(24V)	-	Ground	Ground for INPCB
CN4 Connected to the scanner home position switch.	1	5V	O	5.2 V DC	Power supply for SHPSW
	2	SHPSW	I	0 V/5.2 V DC	SHPSW: On/Off
	3	GND	-	-	Ground for SHPSW
CN5 Connected to the original detection switch.	1	5V	O	5.2 V DC	Power supply for ODSW
	2	ODSW	I	0 V/5.2 V DC	ODSW: On/Off
	3	GND	-	-	Ground for ODSW
CN6 Connected to the power source PCB.	1	G(24V)	-	Ground	Ground from PSPCB
	2	24V	I	24 V DC	Power source from PSPCB
	3	G(24V)	-	Ground	Ground from PSPCB
	4	24V	I	24 V DC	Power source from PSPCB
	5	G(5.1V)	-	Ground	Ground from PSPCB
	6	5.1V	I	5.2 V DC	Power source from PSPCB
CN7 Connected to the original size detection sensors 1 and 2*.	1	S.G	-	Ground	Ground for OSDS1
	2	5V	O	5.2 V DC	Power supply for OSDS1
	3	OSDS1	I	0 V/5.2 V DC	OSDS1: On/Off
	4	S.G	-	Ground	Ground for OSDS2*
	5	5V	O	5.2 V DC	Power supply for OSDS2*
	6	OSDS2	I	0 V/5.2 V DC	OSDS2C: On/Off

*: Inch model only.

2-3-5 CCD PCB

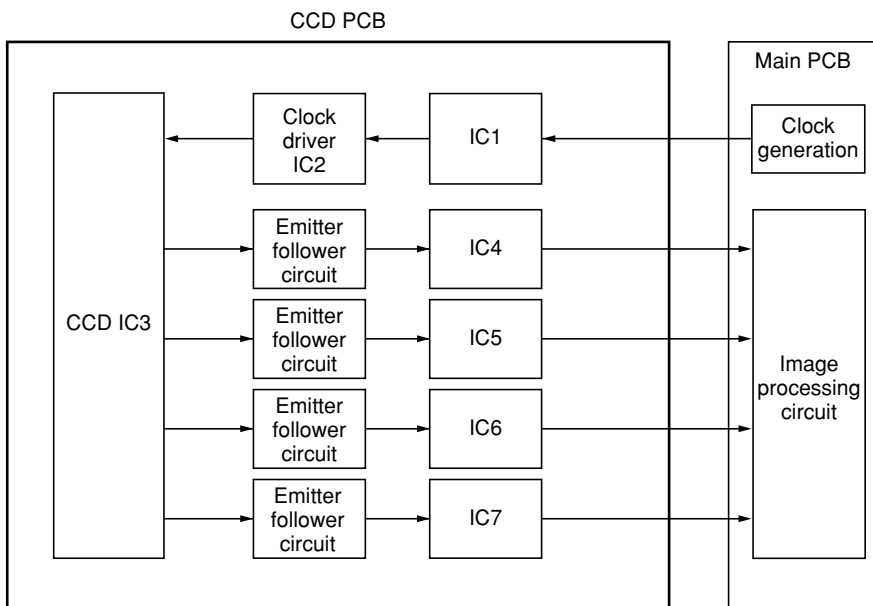


Figure 2-3-9 CCD PCB block diagram

The CCD PCB (CCDPCB) receives clock signals SHIFT+, SHIFT-, CLK+, CLK-, RS+, RS-, CLP+, and 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.

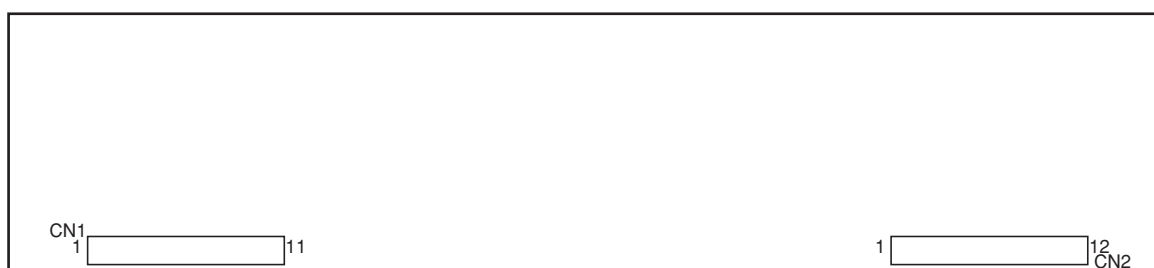
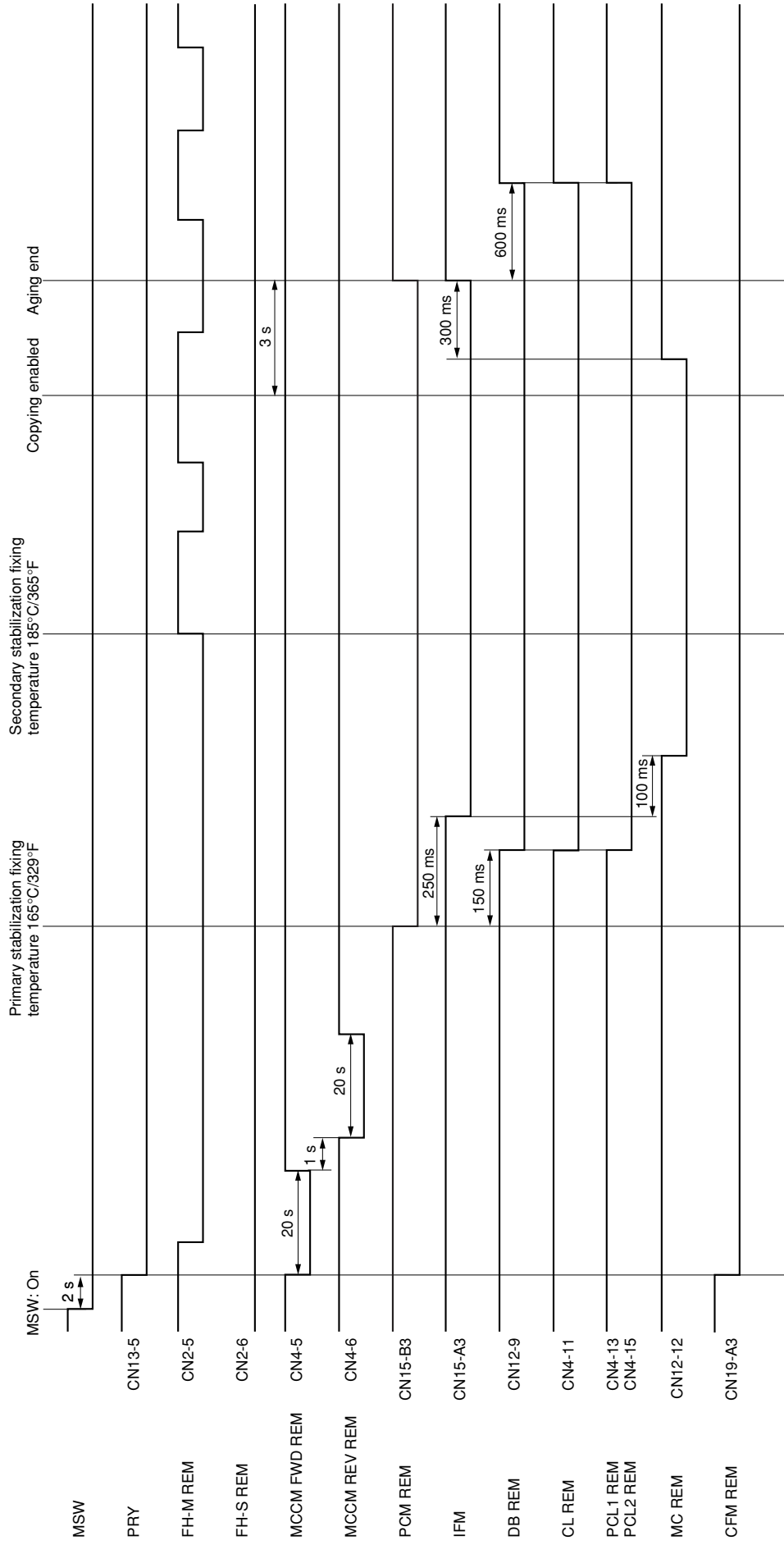


Figure 2-3-10 CCD PCB silk-screen diagram

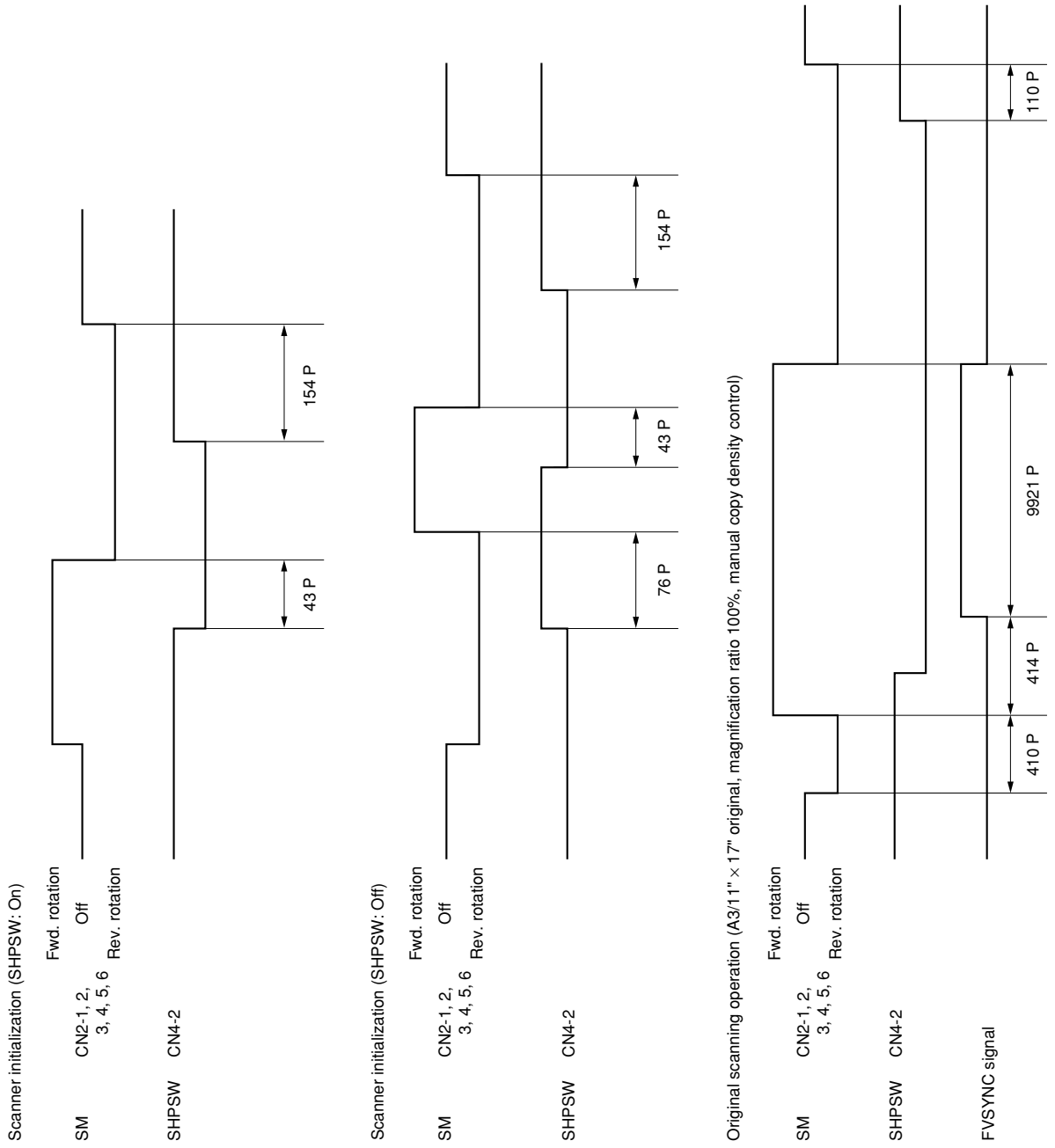
Connector	Pin No.	Signal	I/O	Voltage	Description
CN1 Connected to the main PCB.	1	CLP-	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	2	CLP+	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	3	RS+	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	4	RS-	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	5	CLK-	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	6	CLK+	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	7	SHIFT+	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	8	SHIFT-	I	0 V/3.3 V DC (pulse)	CCDPCB drive clock signal
	9	5V	I	5.2 V DC	Power source from MPCB
	10	5V	I	5.2 V DC	Power source from MPCB
	11	5V	I	5.2 V DC	Power source from MPCB
CN2 Connected to the main PCB.	1	OS2+	O	0 V/12 V DC (pulse)	CCDPCB control signal
	2	OS2-	O	0 V/12 V DC (pulse)	CCDPCB control signal
	3	OS1+	O	0 V/12 V DC (pulse)	CCDPCB control signal
	4	OS1-	O	0 V/12 V DC (pulse)	CCDPCB control signal
	5	OS3+	O	0 V/12 V DC (pulse)	CCDPCB control signal
	6	OS3-	O	0 V/12 V DC (pulse)	CCDPCB control signal
	7	OS4+	O	0 V/12 V DC (pulse)	CCDPCB control signal
	8	OS4-	O	0 V/12 V DC (pulse)	CCDPCB control signal
	9	N.C	-	-	Not used
	10	+12V	I	+12 V DC	Power source from MPCB
	11	G(analog)	-	Ground	Analog ground from MPCB
	12	G(analog)	-	Ground	Analog ground from MPCB

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

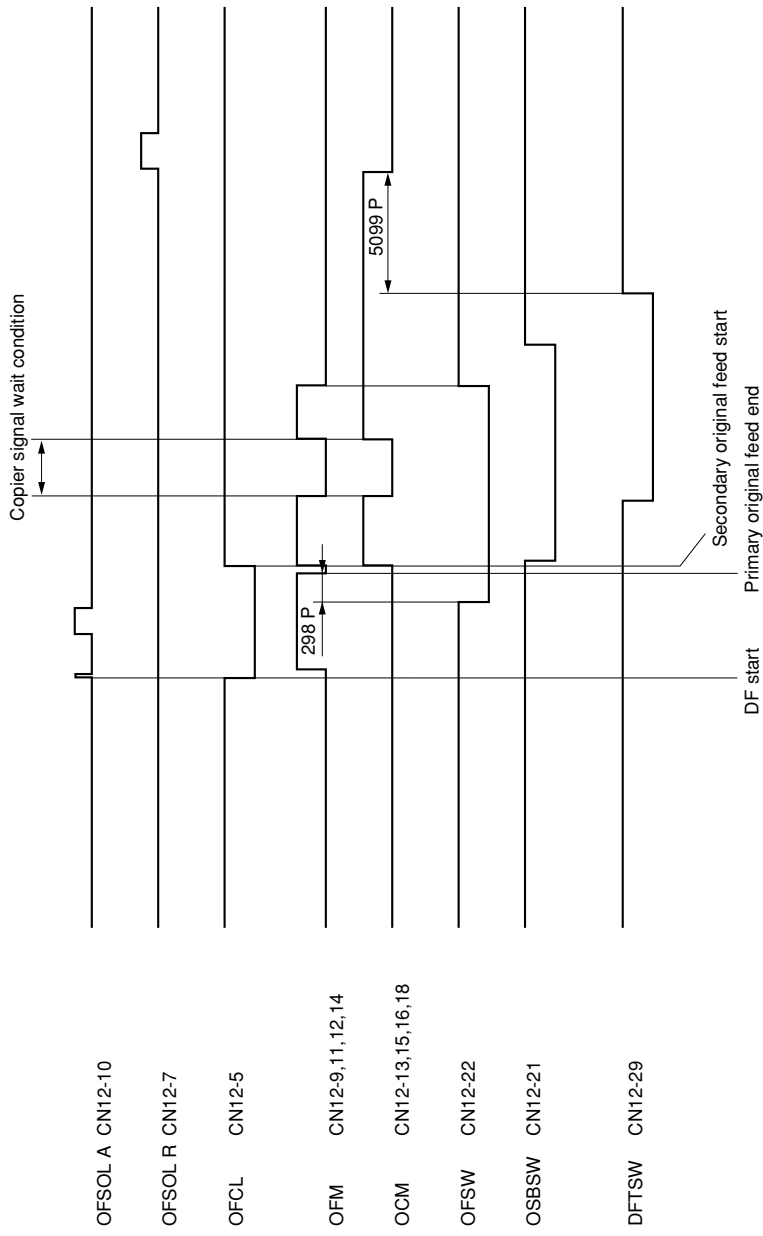


Timing chart No. 2 Scanner operation

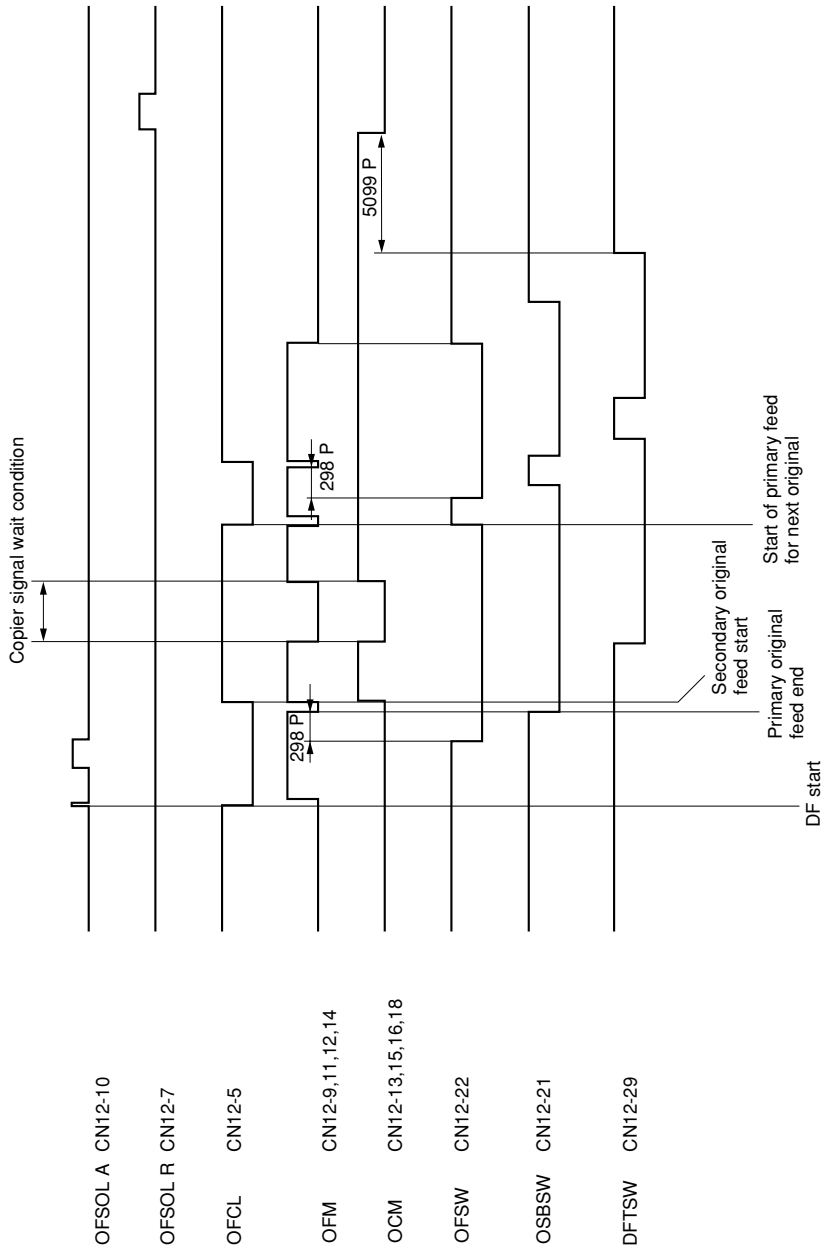
2-4-2



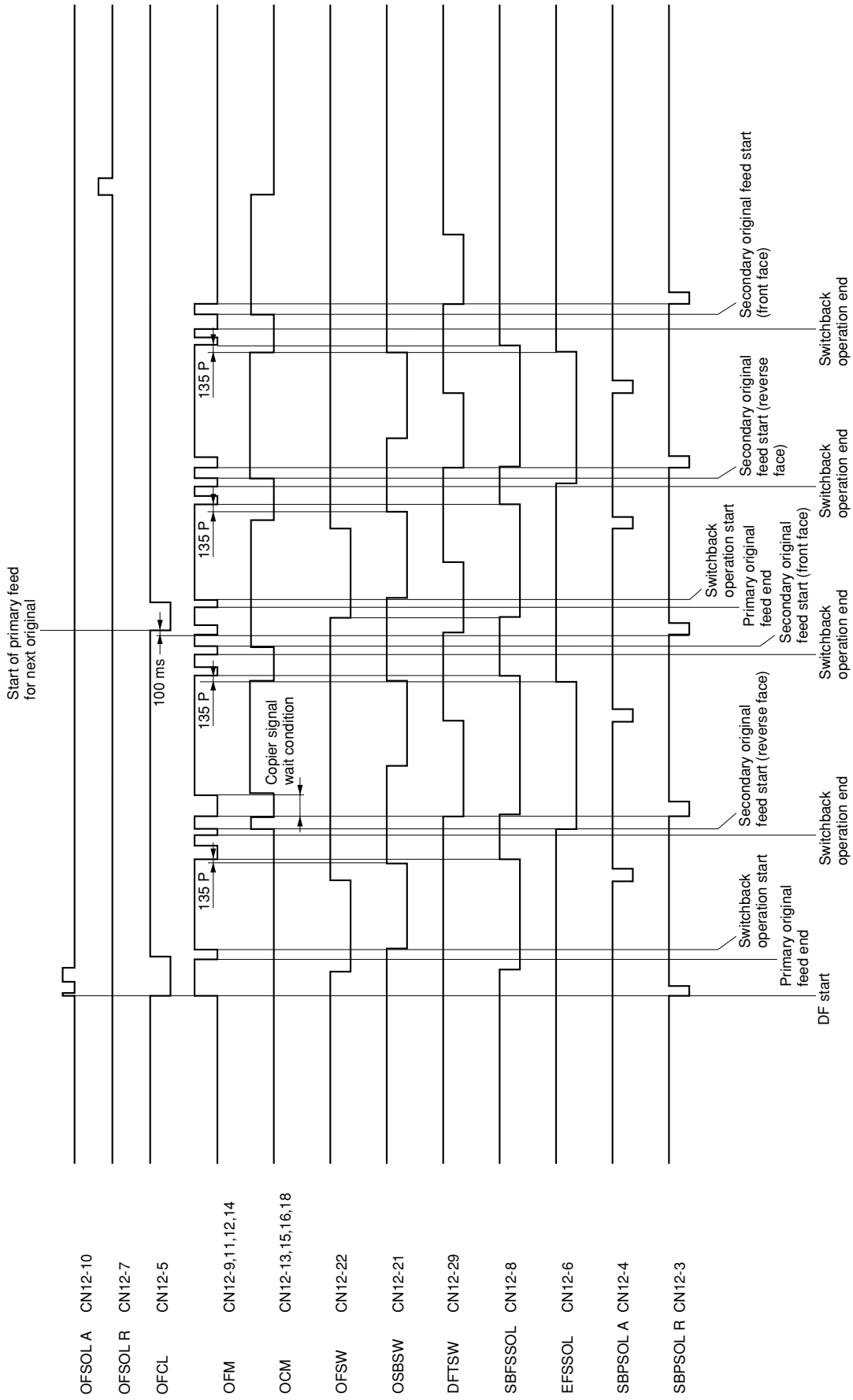
Timing chart No. 3 Original feed operation 1: Feeding an A4/11" x 8 1/2" original in single-sided original mode



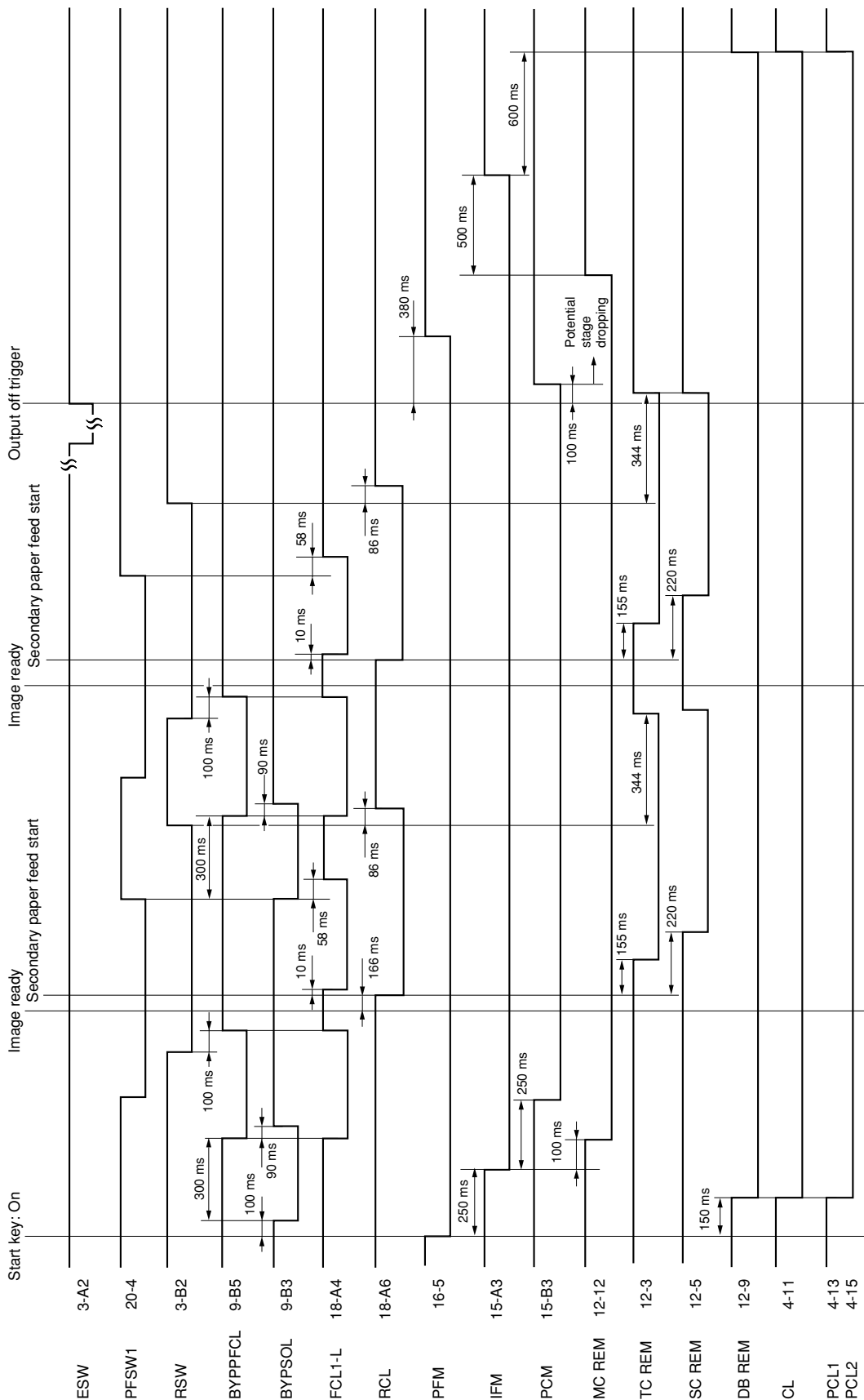
Timing chart No. 4 Original feed operation 2: Feeding two A4/11" x 8 1/2" originals successively in single-sided original mode



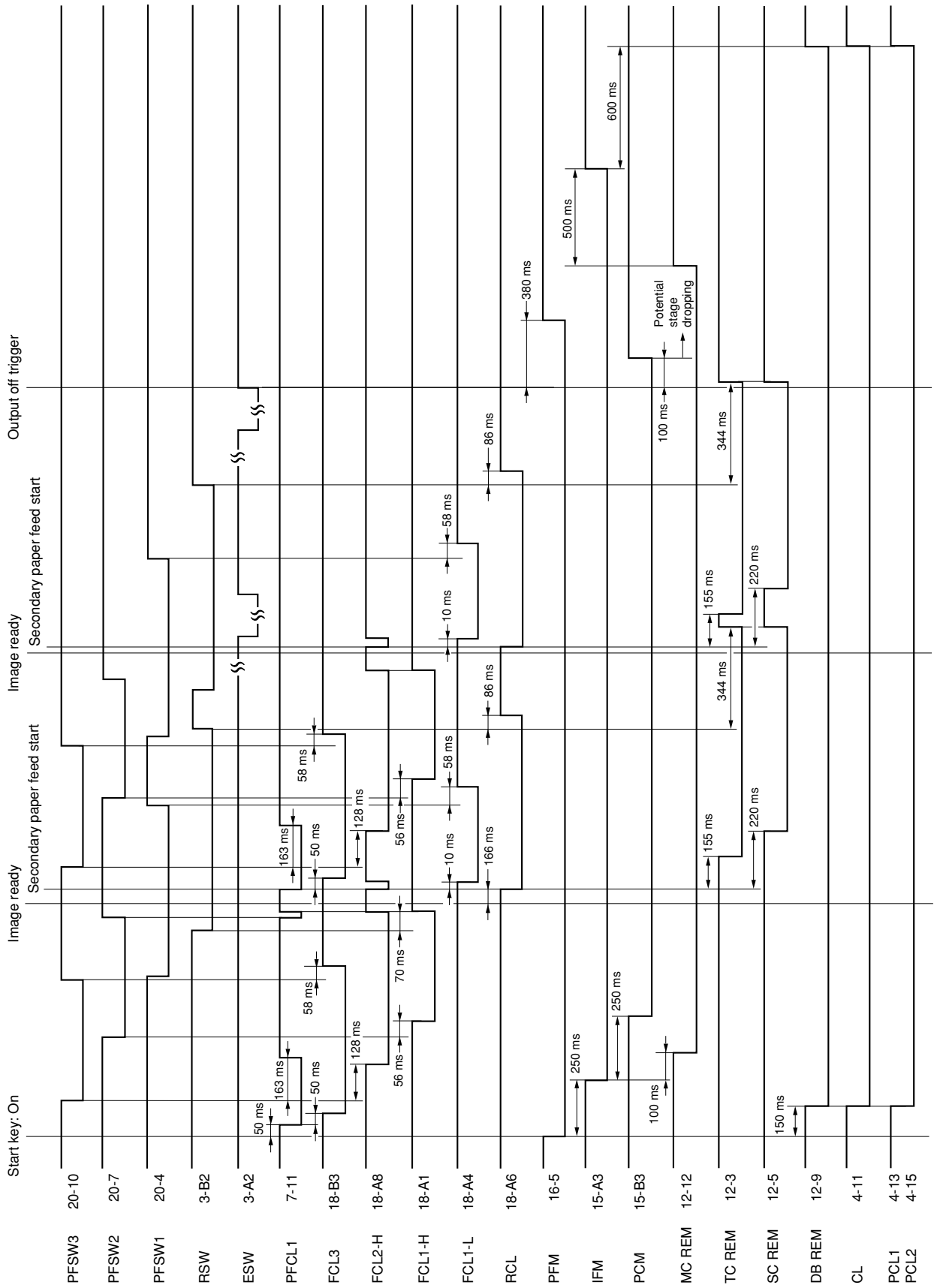
Timing chart No. 5 Original feed operation 3: Feeding two A4R/8 1/2" x 11" originals successively in double-sided original mode



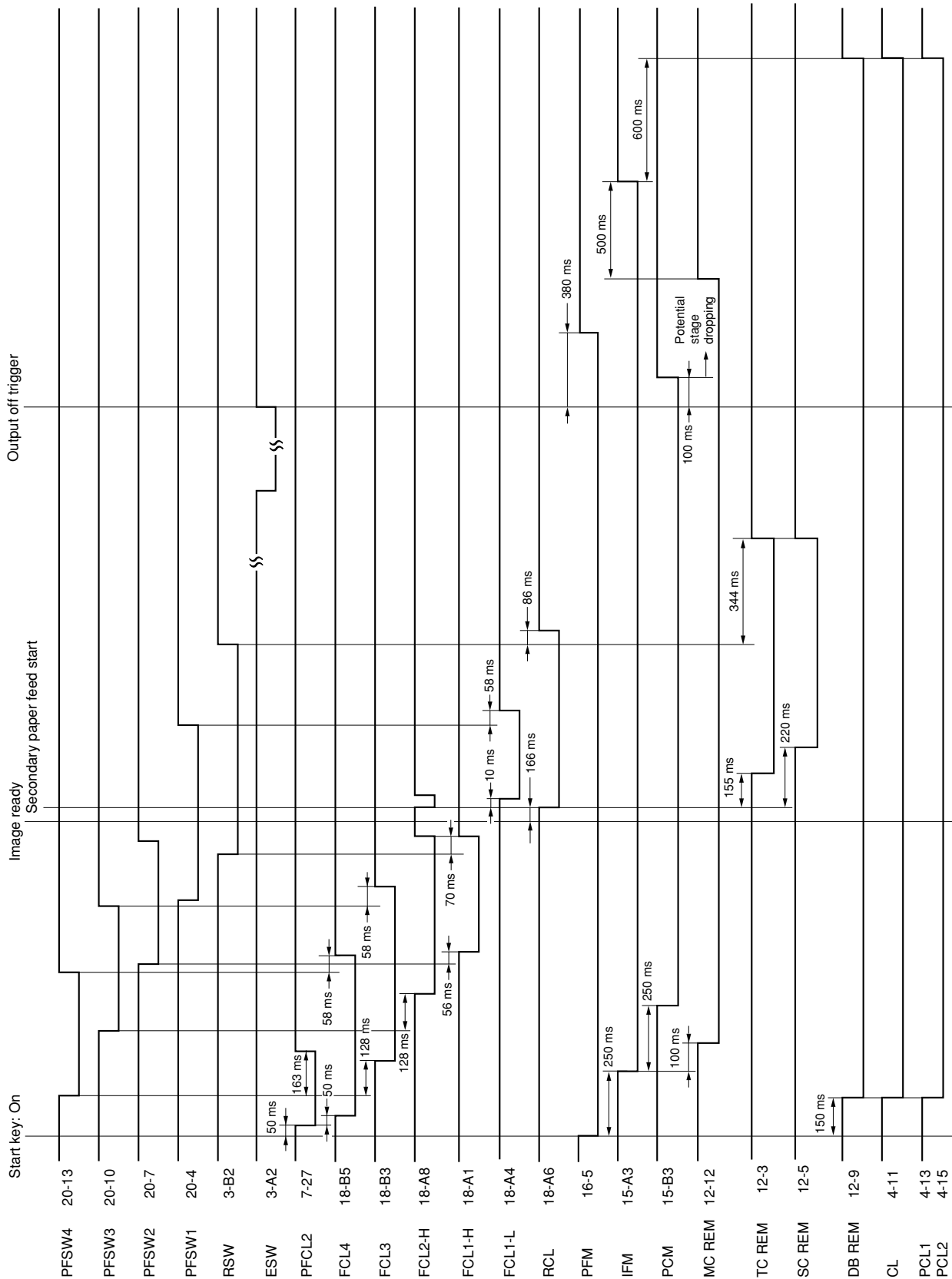
Timing chart No. 6 Continuous copying onto two sheets of A4/11" x 8 1/2" copy paper from the bypass table



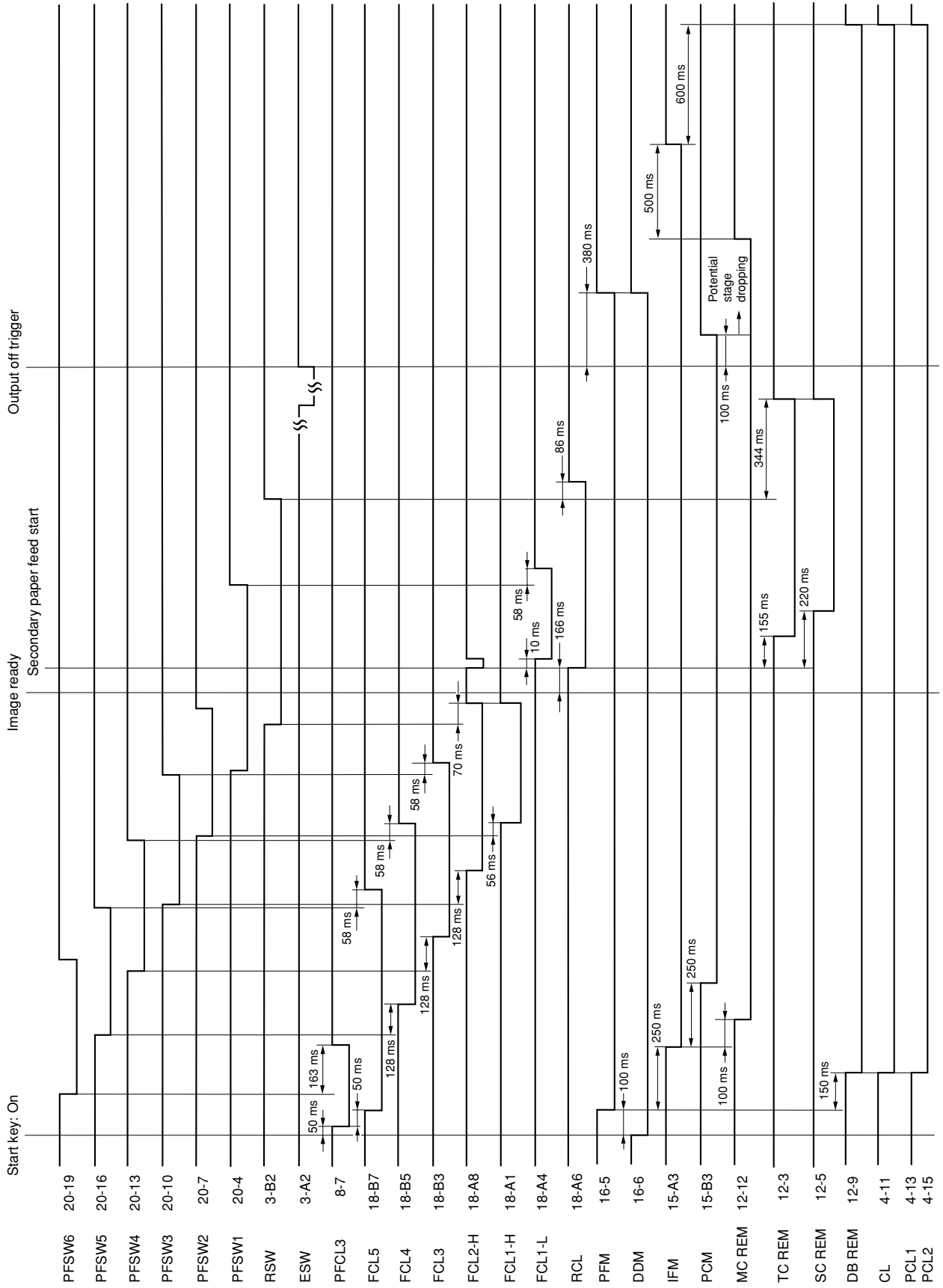
Timing chart No. 7 Continuous copying onto two sheets of A4/11" x 8 1/2" copy paper from the drawer 1



Timing chart No. 8 Copying onto a sheet of A4/11" x 8 1/2" copy paper from the drawer 2



Timing chart No. 9 Copying onto a sheet of A4/11" x 8 1/2" copy paper from the drawer 3



Timing chart No. 10 Copying onto a sheet of A4/11" x 8 1/2" copy paper from the drawer 4

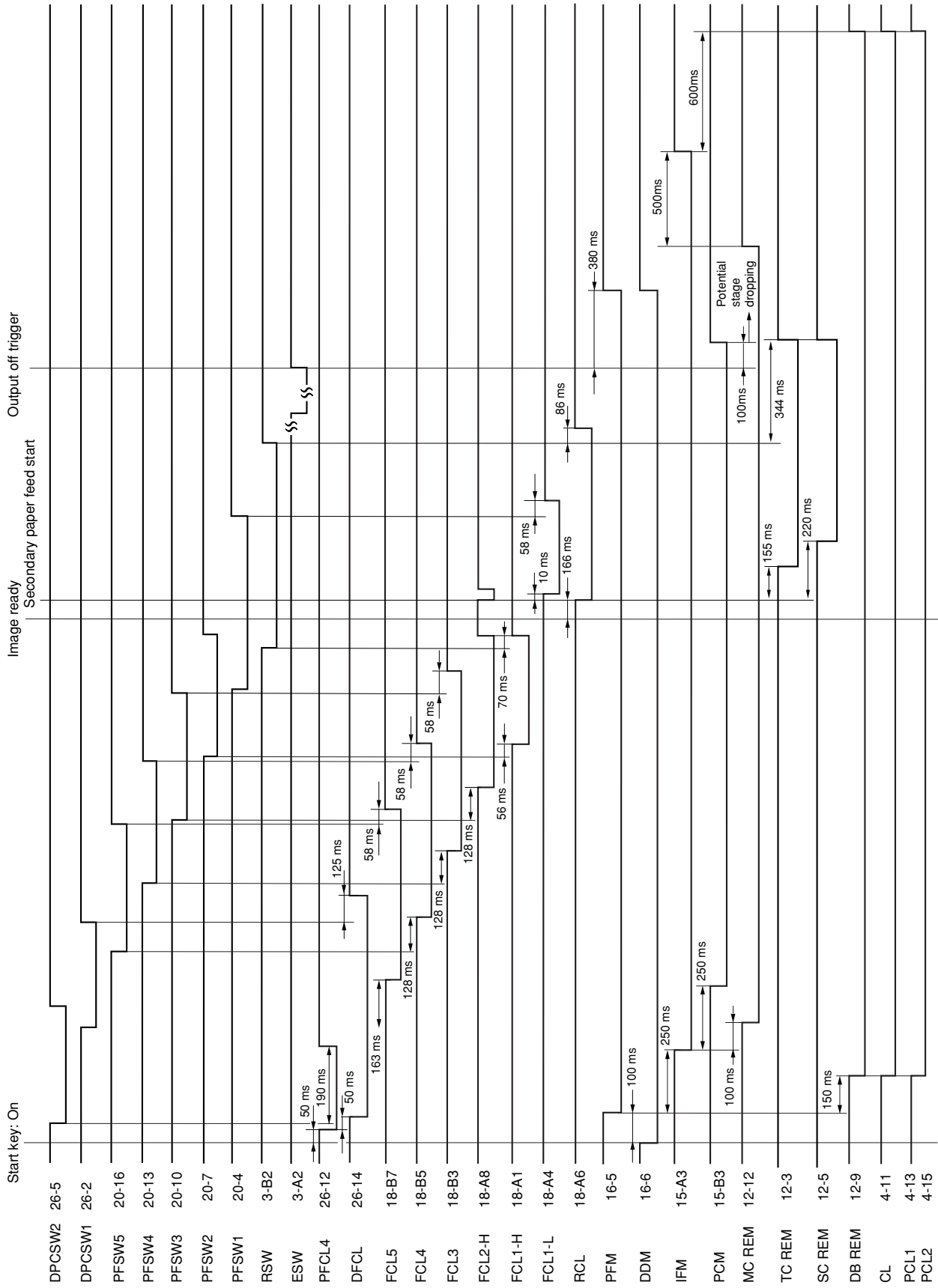
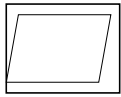
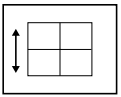
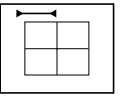
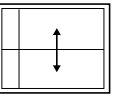
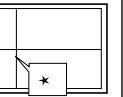
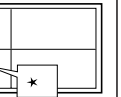
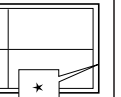
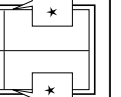
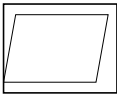
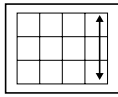
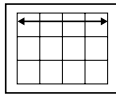
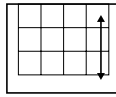
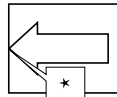
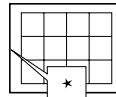
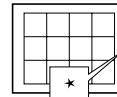
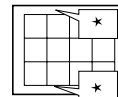


Chart of image adjustment procedures

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 main scanning direction (printing adjustment)		Polygon motor speed adjustment	U053	POLYGON MOTOR	U053 test pattern	1-4-20	
③	Adjusting the magnification in the auxiliary scanning direction (printing adjustment)		Image formation motor speed adjustment	U053	MAIN MOTOR	U053 test pattern	1-4-20	
④	Adjusting the center line of the bypass table (printing adjustment)		Adjusting the LSU print start timing	U034	LSUOUT	U034 test pattern	1-6-17	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 leading edge registration (printing adjustment)		Registration clutch turning on timing (secondary paper feed start timing)	U034	RCL ON	U034 test pattern	1-6-15	To make an adjustment for duplex copying, select "RCL ON (DUP)".
⑥	Adjusting the leading edge margin (printing adjustment)		LSU illumination start timing	U402	LEAD	U402 test pattern	1-6-18	
⑦	Adjusting the trailing edge margin (printing adjustment)		LSU illumination end timing	U402	TRAIL	U402 test pattern	1-6-18	To make an adjustment for duplex copying, select "TRAIL (DUP)".
⑧	Adjusting the left and right margins (printing adjustment)		LSU illumination start/end timing	U402	A/C	U402 test pattern	1-6-18	

Adjusting order	Item	Image	Description	Maintenance mode		Original	Page	Remarks
				Item No.	Mode			
⑨	Adjusting the lateral squareness (scanning adjustment)		Adjusting the position of the ISU (scanning adjustment)	—	—	U089 (1 dot-LINE)	1-6-33	
⑩	Adjusting magnification of the scanner in the main scanning direction (scanning adjustment)		Data processing	U065	MAIN SCAN ADJ	Test chart	1-6-34	No adjustment for copying using the DF.
⑪	Adjusting magnification of the scanner in the auxiliary scanning direction (scanning adjustment)		Original scanning speed	U065 U070	SUB SCAN ADJ —	Test chart	1-6-35 1-6-70	U065: For copying an original placed on the contact glass. U070: For copying originals from the DF.
⑫	Adjusting the center line (scanning adjustment)		Adjusting the original scan data (image adjustment)	U067 U072	ADJUST DATA —	Test chart	1-6-37 1-6-69	U067: For copying an original placed on the contact glass. U072: For copying originals from the DF.
⑬	Adjusting the leading edge registration (scanning adjustment)		Original scan start timing	U066 U071	ADJUST DATA LEAD EDGE ADJ	Test chart	1-6-36 1-6-70	U066: For copying an original placed on the contact glass. U071: For copying originals from the DF.
⑭	Adjusting the leading edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	B MARGIN B MARGIN	Test chart	1-6-38 1-6-72	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.
⑮	Adjusting the trailing edge margin (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	D MARGIN D MARGIN	Test chart	1-6-38 1-6-72	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.
⑯	Adjusting the left and right margins (scanning adjustment)		Adjusting the original scan data (image adjustment)	U403 U404	A MARGIN/ C MARGIN/ A MARGIN/ C MARGIN	Test chart	1-6-38 1-6-72	U403: For copying an original placed on the contact glass. U404: For copying originals from the DF.

When maintenance item U092 (Adjusting the scanner automatically) is run using the specified original (P/N 2A068020), the following adjustments are automatically made:

- Adjusting the scanner center line (U067)
- Adjusting the scanner 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 DF: $\pm 1.5\%$
Enlargement/reduction	Copier: $\pm 1.0\%$ Using DF: $\pm 1.5\%$
Lateral squareness (copier mode)	Copier: ± 1.5 mm/375 mm
Lateral squareness (printer mode)	Using DF: ± 2.5 mm/375 mm
Margins (copier mode)	± 1.0 mm/375 mm A: $2.0^{+0.5}_{-1.5}$ mm B: 3.0 ± 2.5 mm
Margins (printer mode)	C: $2.0^{+0.5}_{-1.5}$ mm D: 3.0 ± 2.5 mm A: 0.5 mm or more B: 3.0 ± 2.5 mm
Leading edge registration	C: 0.5 mm or more D: 3.0 ± 2.5 mm Drawer: ± 2.5 mm Bypass: ± 2.5 mm
Skewed paper feed (left-right difference)	Duplex copying: ± 2.5 mm Drawer: 1.5 mm or less Bypass: 1.5 mm or less
Lateral image shifting	Duplex copying: 2.0 mm or less Drawer: ± 2.0 mm Bypass: ± 2.0 mm Duplex copying: ± 3.0 mm

Maintenance parts list

Maintenance part name		Part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list			
Primary paper feed unit	PARTS,ASS'Y PRIMARY PAPER FEED,SP	2BC93010	7	1
Forwarding pulley	PULLEY,LEADING FEED	2BC06810	6,7	57,35
Upper paper feed pulley	PULLEY,PAPER FEED	2BC06900	6,7	9,4
Lower paper feed pulley	LOWER PULLEY,PAPER FEED	33906060	6,7	43,15
Bypass forwarding pulley	PULLEY,LEADING FEED	33906470	27	49
Bypass upper paper feed pulley	UPPER PULLEY,BYPASS	61706770	27	45
Bypass lower paper feed pulley	LOWER PULLEY,PAPER FEED	33906060	27	69
Registration cleaner brush	PARTS,REGISTRATION CLEANER,SP	2BC93180	8	(33,35)
Lower registration cleaner	PARTS,LOWER REGISTRATION CLEANER,SP	2BC93190	17	(17,18)
Paper conveying belt	BELT,CONVEYING	2BC16130	17	7
Middle paper conveying belt	BELT B,CONVEYING MIDDLE	2BC16480	17	6
Ozone filter	FILTER,OZONE	2BC16350	1	14
Transfer unit	PARTS,ASS'Y TRANSFER CHARGER,SP	2BC93020	20	3
Charger wire	TUNGSTEN WIRE(OX) SP (50M)	74669000	20	24
Cleaning pad	CLEANING PAD ASS'Y	33900940	20	15
Slit glass	CONTACT GLASS,ADF	35911450	11	3
Contact glass	CONTACT GLASS	35912010	11	9
Mirror 1	MIRROR A	2AC12140	10	49
Mirror 2	MIRROR B	2AC12150	10	53
Reflector	REFLECTOR,SCANNER	2AC12130	10	26
Exposure lamp	LAMP,SCANNER	2BC12150	10	27
Original size detection sensor	SENSOR,ORIGINAL DETECTION	35927290	10	36
Developing unit	PARTS,ASS'Y DEVELOPING,SP	2BC93040	13	-
Lower developing cover	LOWER COVER,DEVELOPING	2BC14120	13	4
Developing unit upper seal	UPPER SEAL,DEVELOPING	2BC14150	13	6
Developing duct	DUCT,DEVELOPING	2BC14130	22	71
Developing duct filter	FILTER,DEVELOPING DUCT	2AC14560	22	74
Sub hopper coupling	COUPLING,SUB HOPPER	33915540	30	3
Drum	SET,DRUM	2BC82020	8	24
Main charger unit	PARTS,ASS'Y MAIN CHARGER,SP	2BC93030	9	-
Charger wire cleaning pad	MC CLEANING PAD ASS'Y	2A068220	9	15
Grid wire cleaning pad	GRID CLEANING PAD ASS'Y	36768081	9	23
Charger wire	WIRE,MAIN CHARGER	2A068240	9	14
Main charger grid	GRID ASS'Y	2A068171	9	26
Cleaning lamp	LAMP,CLEANING LAMP	2AR27031	9	18
Pre-cleaning lamp	LAMP PCL	2BC27090	8	2
Cleaning unit	PARTS,CLEANING ASS'Y,SP	2BC93050	14	1
Cleaning lower seal	LOWER SEAL,CLEANING	2BC18070	14	39
Cleaning brush	BRUSH,CLEANING	2BC18190	14	22
Front cleaning seal	PART,FRONT CLEANING SEAL	2BC93160	14	(37,52,53)
Rear cleaning seal	PART,REAR CLEANING SEAL	2BC93170	14	(38,53,54)
Cleaning blade	BLADE,CLEANING	2BC18460	14	55
Thrust gear	GEAR 45B,THRUST	2BC18680	14	32
Blade side front sponge	FRONT SPONGE,BLADE SIDE	2BC18340	14	7
Blade side rear sponge	REAR SPONGE,BLADE SIDE	2BC18350	14	8
Bushing sponge	SPONGE,BRUSH BUSHING	2BC18700	14	50
Drum separation claw unit	PARTS,ASS'Y SEPARATION CLAW(SP)	2BC93130	14	40
Waste toner box	DISPOSAL TANK ASS'Y	2BC60010	15	11
Fixing unit	PARTS 120,ASS'Y FIXING,SP	2BC93070	19	-
Fixing unit	PARTS 230,ASS'Y FIXING,SP	2BC93080	19	-
Heat roller	ROLLER,HEAT	2BC20530	19	24
Press roller	PRESS ROLLER	2BC20260	19	16
Press roller separation claw	CLAW,PRESS ROLLER	36720493	19	54
Fixing unit thermistor	THERMISTOR,FIXING	2BC20430	19	42
Fixing web roller	FELT,CLEANING	2A020330	19	65
Lower cleaning roller	LOWER ROLLER,CLEANING	2A020340	19	6
Fixing heater M	HEATER M,FIXING(120)	2BC20290	19	46
	HEATER M,FIXING(220 - 240)	2BC20310	19	46
Fixing heater S	HEATER S,FIXING(120)	2BC20300	19	47
	HEATER S,FIXING(220 - 240)	2BC20320	19	47
Heat roller separation claw unit	PARTS,ASS'Y FIXING EJECT GUIDE,SP	2BC93090	26	38
Heat roller separation claw	SEPARATION CLAW B	61720750	19	41
Drum drive grounding plate	GROUND PLATE,DRUM DRIVE	2AC08160	22	41
Ozone filter	FILTER,MAIN	2BC23020	1	39

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	Primary paper feed unit	Clean or replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 150,000 sheets (drawers 1 and 2) or 300,000 sheets (paper deck).	1-6-3
	Forwarding pulley	Clean or replace	Every service		1-6-3
	Upper paper feed pulley	Clean or replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 150,000 sheets (drawers 1 and 2) or 300,000 sheets (paper deck).	1-6-3
	Lower paper feed pulley	Clean or replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 150,000 sheets (drawers 1 and 2) or 300,000 sheets (paper deck).	1-6-3
	Bypass forwarding pulley	Clean or replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 300,000 sheets.	1-6-10
	Bypass upper paper feed	Clean or replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 300,000 sheets.	1-6-10
	Bypass lower paper feed	Clean or replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 300,000 sheets.	1-6-10
	Registration cleaner brush	Clean or replace	Every service	Vacuum. Replace if it does not touch the registration roller.	1-6-13
	Lower registration cleaner brush	Clean or replace	Every service	Vacuum. Replace if it does not touch the registration roller.	1-6-13
	Rollers	Clean	Every service	Clean with alcohol or a dry cloth.	
	Clutches	Clean	Every service	Check the leading edge registration and paper feed conditions.	
	Paper conveying belt	Clean	Every service	Clean with alcohol or a dry cloth.	
	Middle paper conveying belt	Clean	Every service	Clean with alcohol or a dry cloth.	
	Ozone filter	Replace	Every service		1-6-14
Transfer unit	Clean	Every service	Clean with a wet cloth and then a dry cloth.	1-6-48	
Charger wire	Replace	Every service		1-6-48	
Cleaning pad	Replace	Every service		1-6-48	
Guides	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.	1-6-21
	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	Check and 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	Developing unit	Replace	Every service	Vaccum.	1-6-44
	Lower developing cover	Clean	Every service		Vacuum or clean with a dry cloth. Replace if deformation, waviness or break of the seal is found.
	Developing unit upper seal	Clean	Every service		
	Seals and sponges	Check and replace	Every service		
	Gears	Clean	Every service	Check for vacuum and breakage.	1-6-47
	Developing duct	Check	Every service	Check noise and the levels of wear.	
	Developing duct filter	Grease	Every service	Apply grease TMP1-200G.	
	Sub hopper coupling	Clean	Every service	Vaccum.	
	Replace	Every service	Check noise and Apply grease TMP1-200G.		
	Check and Grease	Every service			



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Image formation section	Drum	Replace	Every service	Clean the shield with a wet cloth and then a dry cloth.	1-6-42
	Main charger unit	Clean	Every service		1-6-39
	Charger wire cleaning pad	Replace	Every service		
	Grid wire cleaning pad	Replace	Every service	1-6-41	
	Charger wire	Replace	Every service	1-6-39	
	Main charger grid	Clean or replace	Every service	Clean the shield with a wet cloth and then a dry cloth. Replace if damage or folds are serious.	1-6-39
	Cleaning lamp	Clean	Every service	Clean with a dry cloth.	
	Pre-cleaning lamp	Clean	Every service	Clean with a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Cleaning section	Cleaning unit	Replace	Every service		1-6-50
	Cleaning lower seal	Replace	Every service		1-6-50
	Cleaning brush	Replace	Every service		1-6-53
	Front cleaning seal	Replace	Every service		1-6-53
	Rear cleaning rear seal	Replace	Every service		1-6-53
	Cleaning blade	Replace	Every service		1-6-52
	Thrust gear	Check and replace	Every service	Replace if breakage or the like is found.	1-6-52
	Blade side front sponge	Check and replace	Every service	Replace if cushioning characteristics are lost. When replacing, a front cleaning sponge (2BC1839) is needed.	
	Blade side rear sponge	Check and replace	Every service	Replace if cushioning characteristics are lost. When replacing, a rear cleaning sponge (2BC1840) is needed.	
	Bushing sponge	Replace	Every service		1-6-53
	Drum separation claw unit	Replace	Every service		1-6-50
	Waste toner box	Replace	Every service		



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Fixing section	Fixing unit	Replace	Every service		1-6-55
	Heat roller	Replace	Every service		1-6-57
	Press roller	Replace	Every service		1-6-59
	Press roller separation claw	Clean	Every service		
	Fixing unit thermistor	Check and clean	Every service	Clean with alcohol; check the level of wear on contacting surfaces.	1-6-61
	Fixing web roller	Replace	Every service		1-6-62
	Lower cleaning roller	Replace	Every service		1-6-60
	Fixing heater M	Check	Every service	Check for decrease of quantity of light.	1-6-55
	Fixing heater S	Check	Every service	Check for decrease of quantity of light.	1-6-55
	Heat roller separation claw unit	Replace	Every service		1-6-63
	Heat roller separation claw	Replace	Every service		1-6-63
	Guides	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Eject section	Rollers	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject pulley	Clean	Every service	Clean with alcohol or a dry cloth.	
	Guides	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	Rollers Guides Bushes	Clean Clean Check and grease	Every service Every service Every service	Clean with alcohol or a dry cloth. Clean with alcohol or a dry cloth. Check for unusual noise at the roller section. If unusual noise occurs, apply grease 1.	



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	Drum drive grounding plate	Check and grease	Every service	Apply conductive grease GE-334C.	
	Ozone filter	Replace	Every service		



- Run the following maintenance modes.

Method	Maintenance item contents	Page
U126	Setting of effective potential correction	1-4-33
U130	Initial setting for the developer	1-4-34
U160	Applying toner to the cleaning blade	1-4-38
U110	Checking/clearing the drum count	1-4-32
U111	Checking/clearing the drum drive time	1-4-33
U909	Checking/clearing the fixing web count	1-4-69
U921	Checking/clearing the waste toner box maintenance count value	1-4-70
U251	Checking/clearing the maintenance count	1-4-52

Optional devices supplied parts list

Multi finisher

Name used in service manual	Name used in installation guide	Part No.
Main tray	Main tray	3B804140
Finisher connecting plate	Finisher connecting plate	3B803010
Stapler cartridge	Stapler cartridge	3B827020
M4 × 12 binding screw	M4 × 12 binding screw	B1304120
Hexagonal nut	Hexagonal nut	C1054070
Pin	Pin	33920500
Sub tray	Sub tray	3B804180
Paper insertion aid guide plate	Paper insertion aid guide plate	3B816900
M4 × 10 tap-tight binding screw	M4 × 10 tap-tight binding screw	B3314100
Connecting sponge	Connecting sponge	3B803020

Simple finisher

Name used in service manual	Name used in installation guide	Part No.
Main tray	Main tray	3B804140
Finisher connecting plate	Finisher connecting plate	3B803010
Stapler cartridge	Stapler cartridge	3B827020
M4 × 12 binding screw	M4 × 12 binding screw	B1304120
Hexagonal nut	Hexagonal nut	C1054070
Pin	Pin	33920500
Paper insertion aid guide plate	Paper insertion aid guide plate	3B816900
M4 × 10 tap-tight binding screw	M4 × 10 tap-tight binding screw	B3314100
Connecting sponge	Connecting sponge	3B803020

Side deck

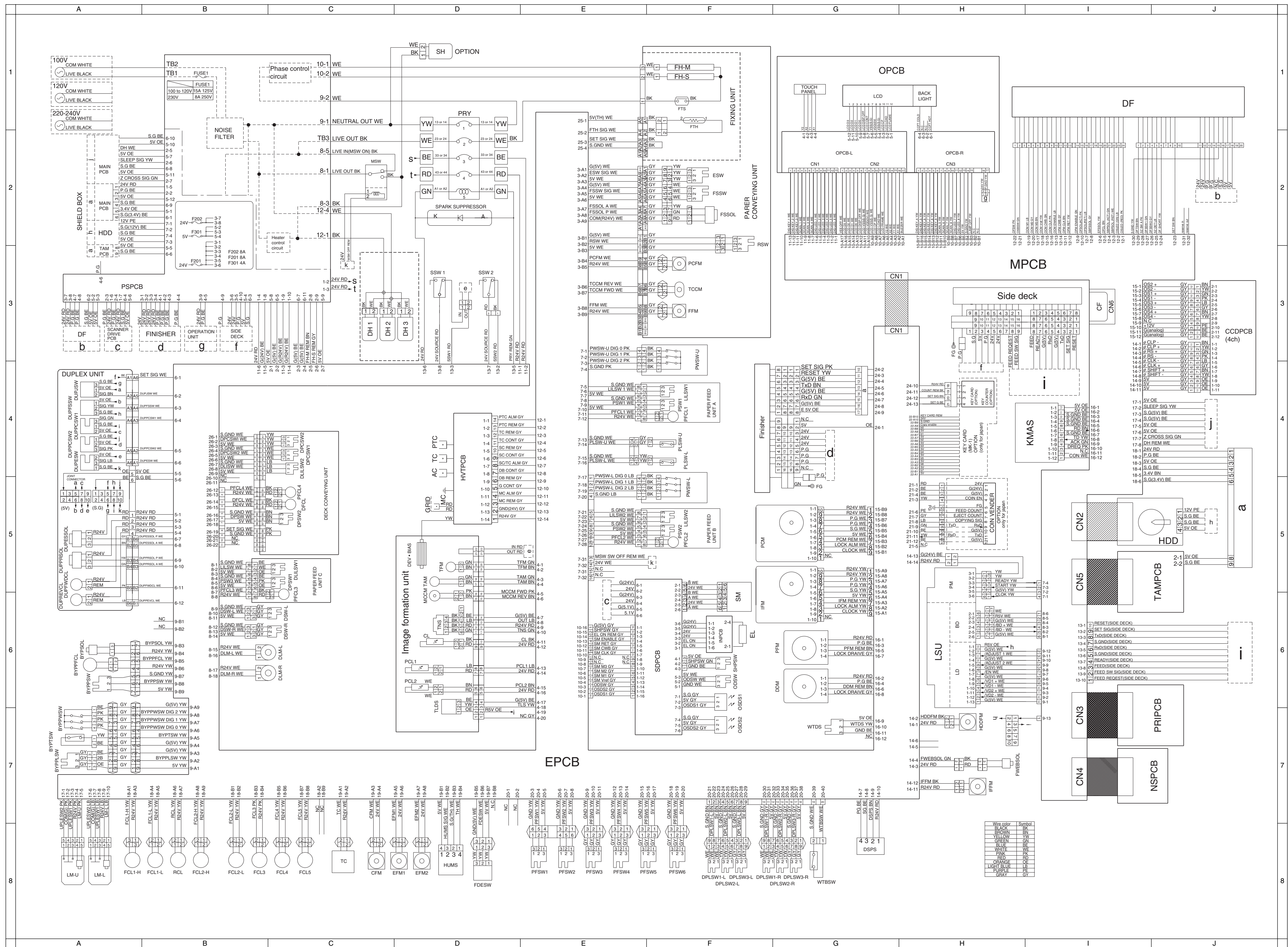
Name used in service manual	Name used in installation guide	Part No.
Upper merge guide	Upper merge guide	2BD60010
Lower merge guide	Lower merge guide	2BD60020
Interlock switch backstop	Interlock switch backstop	3BF19720
M4 × 6 TP-A chromate screw	M4×6 TP-A chromate screw	B4004060
M4 × 12 flat head screw	M4×12 flat head screw	B200412
M3 × 6 TP-A bronze screw	M3×6 TP-A bronze screw	B4303060
M4 × 8 TP-P tight screw	M4×8 TP-P tight screw	B4044080

Network scanner kit

Name used in service manual	Name used in installation guide	Part No.
Core	Core	2AV274400
Clamp	Clamp	M25051900

Tandem kit

Name used in service manual	Name used in installation guide	Part No.
Interface PCB	Interface PCB	3BS28010
Interface cable	Interface cable	3BS27010
M4 × 6 bronze binding screw	M4×6 bronze binding screw	B1304060
M2.6 × 5 brass binding screw	M2.6×5 brass binding screw	B1600050
Assembly relay PCB	Assembly relay PCB	2BC60020



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