



KM-4230 / 5230

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SERVICE MANUAL

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Service
Manual

KM-4230 / 5230



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 (\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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I

THEORY AND CONSTRUCTION SECTION

I Theory and
Construction Section





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1-1 Specifications

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



**1-1-1 Specifications****Copier (42 ppm copier)**

| | |
|------------------------------|--|
| Type | Desktop |
| Copying system | Dry, indirect electrostatic system |
| Originals | Sheets and books |
| | Maximum size: A3/11" × 17" |
| Original feed system | Fixed |
| Copy paper | Drawer and duplex unit: Plain paper (64 – 80 g/m ²) |
| | Bypass table: Plain paper (60 – 160 g/m ²) |
| | Special paper: Transparencies, tracing paper, colored paper, letterhead and envelopes (only when used as a printer) |
| | Note: Use the bypass table for special paper. |
| Copying sizes | Maximum: A3/11" × 17" |
| | Minimum: A6R/5 ¹ / ₂ " × 8 ¹ / ₂ " |
| | During duplex copying |
| | Maximum: A3/11" × 17" |
| | Minimum: A5R/5 ¹ / ₂ " × 8 ¹ / ₂ " |
| Magnification ratios | Manual mode: 25 – 400%, 1% increments |
| | Auto copy mode: Fixed ratios |
| | Metric |
| | 1:1 ± 0.1%, 1:4.00/1:2.00/1:1.41/1:1.06/1:0.75/ |
| | 1:0.70/1:0.50/1:0.25 |
| | Inch |
| | 1:1 ± 0.1%, 1:4.00/1:2.00/1:1.29/1:1.21/1:0.78/ |
| | 1:0.64/1:0.50/1:0.25 |
| Copy speed | At 100% magnification in memory copy mode: |
| | A4/11" × 8 ¹ / ₂ " : 42 copies/min. |
| | A4R/8 ¹ / ₂ " × 11" : 32 copies/min. |
| | A3/11" × 17" : 24 copies/min. |
| | B5 : 42 copies/min. |
| | B5R : 36 copies/min. |
| | B4 (257 × 364)/8 ¹ / ₂ " × 14" : 28 copies/min. |
| | When the SRDF is used (at 100% magnification): |
| | A4/11" × 8 ¹ / ₂ " : 42 copies/min. |
| First copy time | 4.5 s or less (A4/11" × 8 ¹ / ₂ " , 100% magnification, upper drawer, manual copy density control) |
| Warm-up time | 120 s or less (room temperature 20°C/68°F, 65%RH) |
| Paper feed system | Automatic feed |
| | Capacity: |
| | Drawers: 550 sheets |
| | Manual feed |
| | Capacity: |
| | Bypass: 100 sheets |
| Photoconductor | OPC (drum diameter 60 mm) |
| Charging system | Single positive corona charging, 670 – 730 μA |
| Exposure light source | Semiconductor laser |
| Exposure scanning system ... | Polygon mirror |

1-1-1



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| | |
|-----------------------------|---|
| Developing system | Dry, reverse developing (magnetic brush) Developer: 2-component, ferrite carrier and N29T black toner Toner density control: toner sensor Toner replenishing: automatic from a toner cartridge |
| Transfer system | Single negative corona charging, -210 μ A |
| Separation system | Single AC corona charging |
| Fixing system | Heat roller Heat source: halogen heaters (main 850 W, sub 850 W) Control temperature: 180°C/356°F (at normal ambient temperature) Abnormally high temperature protection devices: 140°C/284°F thermostat Fixing pressure: 210 N |
| Charge erasing system | Exposure by cleaning lamp |
| Cleaning system | Cleaning blade |
| Scanning system | Flat bed scanning by CCD image sensor |
| Bit map memory | 12 MB (standard) |
| Image storage memory | 32 MB (standard) |
| Resolution | 600 \times 600 dpi |
| Light source | Inert gas lamp (12 W) |
| Dimensions | 627 (W) \times 748 (D) \times 841 (H) mm 24 ¹¹ / ₁₆ " (W) \times 29 ⁷ / ₁₆ " (D) \times 33 ¹ / ₈ " (H) |
| Weight | 129 kg/283.8 lbs |
| Floor requirements | 1287 mm (W) \times 748 (D)mm 50 ⁵ / ₁₆ " (W) \times 29 ⁷ / 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) Enlargement/reduction copy (8) Fixed ratio selection (9) Size zoom mode (10) XY zoom mode (11) Photo mode (12) Duplex copy (13) Margin copy (14) Print page numbers function (15) Split copy (16) Border erasing (17) Sheet copy (18) Transparency backing sheet function (19) Form overlay (20) Combine copy (21) Booklet + cover copy (22) Sort copy (23) Invert copy (24) Mirror image mode |

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- (25) Program copy
- (26) Setting change mode
- (27) Job build mode
- (28) Department control
- (29) Weekly timer
- (30) Language selection
- Power source 120 V AC, 60 Hz, 10.5 A
220 – 240 V AC, 50 or 60 Hz, 4.9 A
- Power consumption 1300 W (for 120 V specifications)
1200 W (for 220-240 V specifications)
- Options Paper feed desk, large paper deck, finisher, key counter,
key card*, printer unit, memory copy board, additional
memory (16 MB/32 MB), booklet stitcher, MMD host
monitoring system device* and copy tray*.

* for 120 V specifications only



1-1-3





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Copier (52 ppm copier)

| | |
|--------------------------------|---|
| Type | Console |
| Copying system | Dry, indirect electrostatic system |
| Originals | Sheets and books Maximum size: A3/11" × 17" |
| Original feed system | Fixed |
| Copy paper | Drawer and duplex unit: Plain paper (64 – 80 g/m ²) Bypass table: Plain paper (60 – 160 g/m ²) Special paper: Transparencies, tracing paper, colored paper, letterhead and envelopes (only when used as a printer) Note: Use the bypass table for special paper. |
| Copying sizes | Maximum: A3/11" × 17" Minimum: A6R/5 ¹ / ₂ " × 8 ¹ / ₂ " During duplex copying Maximum: A3/11" × 17" Minimum: A5R/5 ¹ / ₂ " × 8 ¹ / ₂ " |
| Magnification ratios | Manual mode: 25 – 400%, 1% increments Auto copy mode: Fixed ratios Metric 1:1 ± 0.1%, 1:4.00/1:2.00/1:1.41/1:1.06/1:0.75/ 1:0.70/1:0.50/1:0.25 Inch 1:1 ± 0.1%, 1:4.00/1:2.00/1:1.29/1:1.21/1:0.78/ 1:0.64/1:0.50/1:0.25 |
| Copy speed | At 100% magnification in memory copy mode: A4/11" × 8 ¹ / ₂ " : 52 copies/min. A4R/8 ¹ / ₂ " × 11" : 35 copies/min. A3/11" × 17" : 26 copies/min. B5 : 52 copies/min. B5R : 42 copies/min. B4 (257 × 364)/8 ¹ / ₂ " × 14" : 31 copies/min. When the SRDF is used (at 100% magnification): A4/11" × 8 ¹ / ₂ " : 42 copies/min. |
| First copy time | 4.5 s or less (A4/11" × 8 ¹ / ₂ ", 100% magnification, upper drawer, manual copy density control) |
| Warm-up time | 180 s or less (room temperature 20°C/68°F, 65%RH) |
| Paper feed system | Automatic feed Capacity: Drawers: 550 sheets Manual feed Capacity: Bypass: 100 sheets |
| Photoconductor | OPC (drum diameter 60 mm) |
| Charging system | Single positive corona charging, 670 – 730 μA |
| Exposure light source | Semiconductor laser |
| Exposure scanning system | Polygon mirror |
| Developing system | Dry, reverse developing (magnetic brush) Developer: 2-component, ferrite carrier and N29T black toner |

1-1-4





| | |
|-----------------------------|---|
| | Toner density control: toner sensor |
| | Toner replenishing: automatic from a toner cartridge |
| Transfer system | Single negative corona charging, -210 μA |
| Separation system | Single AC corona charging |
| Fixing system | Heat roller |
| | Heat source: halogen heaters (main 850 W, sub 850W) |
| | Control temperature: 190°C/374°F (at normal ambient temperature) |
| | Abnormally high temperature protection devices: |
| | 140°C/284°F thermostat |
| | Fixing pressure: 210 N |
| Charge erasing system | Exposure by cleaning lamp |
| Cleaning system | Cleaning blade |
| Scanning system | Flat bed scanning by CCD image sensor |
| Bit map memory | 12 MB (standard) |
| Image storage memory | 32 MB (standard) |
| Resolution | 600 × 600 dpi |
| Light source | Inert gas lamp (12 W) |
| Dimensions | 627 (W) × 748 (D) × 1131 (H) mm |
| | 24 ^{11/16} " (W) × 29 ^{7/16} " (D) × 44 ^{9/16} " (H) |
| Weight | 160 kg/352 lbs |
| Floor requirements | 1287 mm (W) × 748 (D)mm |
| | 50 ^{5/16} " (W) × 29 ^{7/16} " (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) Enlargement/reduction copy |
| | (8) Fixed ratio selection |
| | (9) Size zoom mode |
| | (10) XY zoom mode |
| | (11) Photo mode |
| | (12) Duplex copy |
| | (13) Margin copy |
| | (14) Print page numbers function |
| | (15) Split copy |
| | (16) Border erasing |
| | (17) Sheet copy |
| | (18) Transparency backing sheet function |
| | (19) Form overlay |
| | (20) Combine copy |
| | (21) Booklet + cover copy |
| | (22) Sort copy |
| | (23) Invert copy |
| | (24) Mirror image mode |
| | (25) Program copy |
| | (26) Setting change mode |
| | (27) Job build mode |





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| | |
|-------------------------|---|
| | (28) Department control |
| | (29) Weekly timer |
| | (30) Language selection |
| Power source | 120 V AC, 60 Hz, 10.5 A |
| | 220 – 240 V AC, 50 or 60 Hz, 4.9 A |
| Power consumption | 1200 W (for 120 V specifications) |
| | 1300 W (for 220-240 V specifications) |
| Options | Finisher, key counter, key card*, printer unit, additional memory (16 MB/32 MB) , MMD host monitoring system device* and copy tray* |
| | * for 120 V specifications only |

SRDF

| | |
|----------------------------|---|
| Original feed system | Automatic feed |
| Originals | Sheets |
| Original weights | Single-sided original mode: 35 – 160 g/m ² |
| | Double-sided original mode: 50 – 120 g/m ² |
| Original paper | Plain paper, thermal paper, art paper, colored paper |
| Original sizes | A3 – A5R, folio/11" × 17" – 8 ¹ / ₂ " × 5 ¹ / ₂ " |
| No. of originals | Up to 50 sheets (A3, B4, folio, 11" × 17", 8 ¹ / ₂ " × 14") |
| | Up to 70 sheets (up to A4/11" × 8 ¹ / ₂ ") |
| | Up to 50 sheets in the auto selection mode |
| | Art or thermal paper must be fed individually. |
| Power source | Electrically connected to the copier |

Large paper deck

| | |
|---------------------|--|
| Paper | Plain paper (64 – 80 g/m ²) |
| Paper size | A4/11" × 8 ¹ / ₂ ", B5 |
| Capacity | 3000 sheets (1500 sheets × 2) |
| No. of stacks | 2 |
| Power source | Electrically connected to the copier |

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1-2-1 Drum

Note the following when handling or storing the drum.

- When removing the image formation unit, never expose the drum surface to strong direct light.
- Keep the drum at an ambient temperature between $-20^{\circ}\text{C}/-4^{\circ}\text{F}$ and $40^{\circ}\text{C}/104^{\circ}\text{F}$ and at a relative humidity not higher than 85% RH. Avoid abrupt changes in temperature and humidity.
- Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
- Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.
- If the machine is left open for more than 5 minutes for maintenance, remove the drum and store it in the drum storage bag (Part No. 78369020).

1-2-2 Developer and toner

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



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| | (12-3) Raising and lowering the lifts | 1-3-74 |
| | (12-4) Detecting the paper level | 1-3-76 |

1-3-1 Part names and their functions

• 42 ppm copier

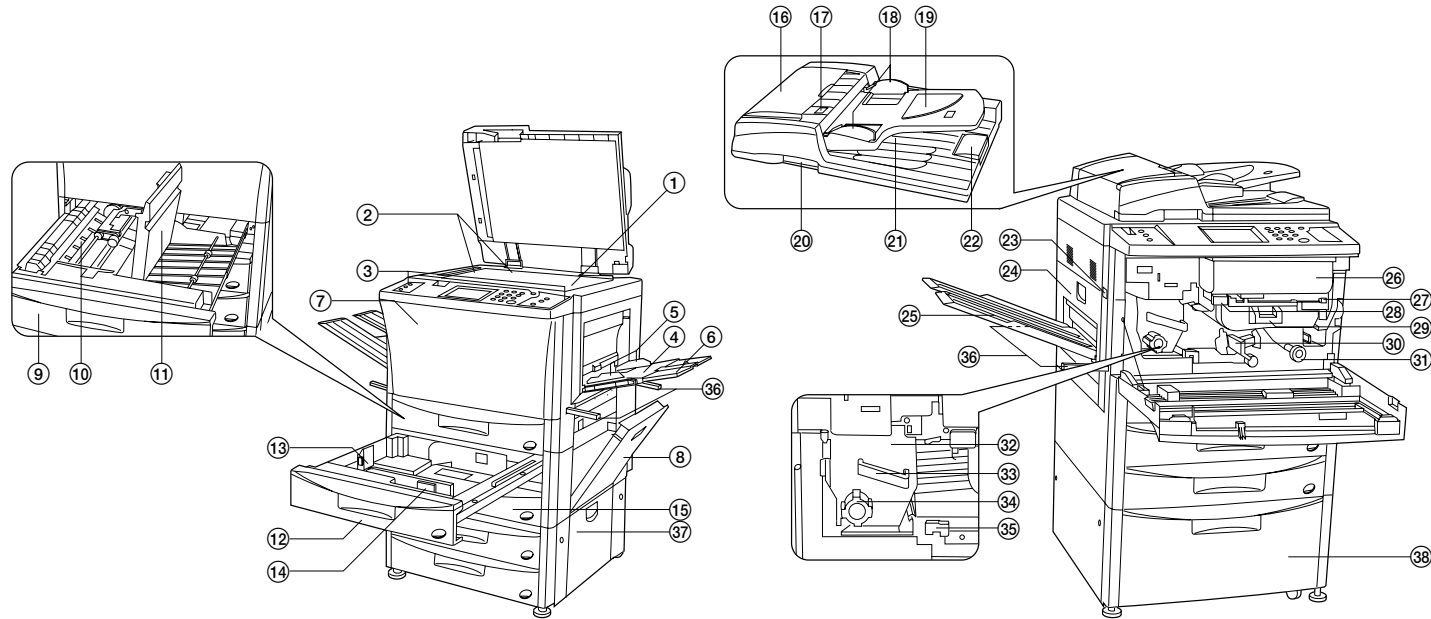


Figure 1-3-1-a

- ① Contact platen
- ② Original size indicator lines
- ③ Operation panel
- ④ Bypass table
- ⑤ Insert guide
- ⑥ Support guide
- ⑦ Front cover
- ⑧ Right cover
- ⑨ Duplex unit
- ⑩ Re-feeding section

- ⑪ Duplex unit cover
- ⑫ Upper drawer
- ⑬ Length guide tab
- ⑭ Width guide tab
- ⑮ Lower drawer
- ⑯ DF original reversing cover
- ⑰ Original set indicator
- ⑱ Original insertion guides
- ⑲ Original table
- ⑳ DF opening/closing lever

- ㉑ Original ejection cover
- ㉒ Paper ejection guide
- ㉓ Main switch
- ㉔ Left cover
- ㉕ Copy tray*1
- ㉖ Toner cartridge
- ㉗ Toner cartridge release lever
- ㉘ Image formation unit release button
- ㉙ Image formation unit handle
- ㉚ Paper transfer unit release lever

- ㉛ Paper feed section knob
 - ㉜ Fixing unit
 - ㉝ Fixing unit handle
 - ㉞ Fixing knob
 - ㉟ Fixing unit release lever
 - ㊱ Handles for transport
 - ㊲ Paper feed desk*2
 - ㊳ Large paper deck*2
- *1: Optional for 120 V specifications.
 *2: Optional.

2A3/4

• 52 ppm copier

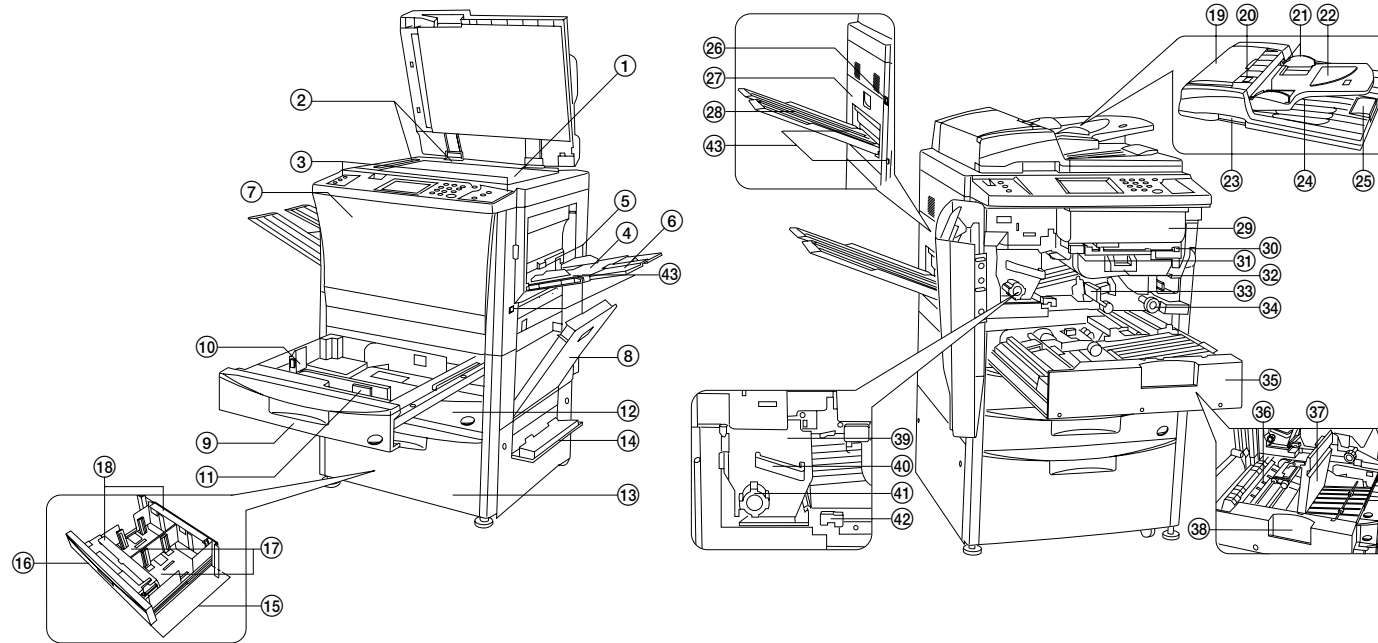
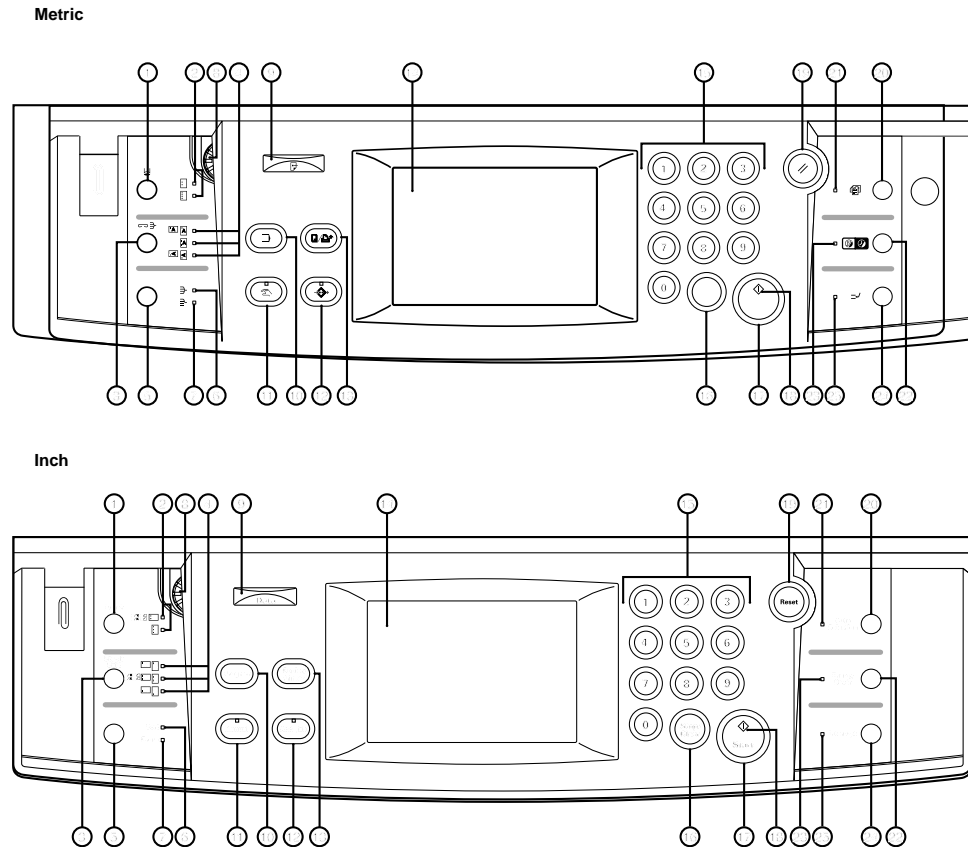


Figure 1-3-1-b

- | | | | |
|---------------------------------|-------------------------------|---------------------------------------|--------------------------------------|
| ① Contact platen | ⑫ Lower drawer | ⑳ DF opening/closing lever | ㉔ Paper feed section knob |
| ② Original size indicator lines | ⑬ Large paper deck | ㉑ Original ejection cover | ㉕ Duplex unit |
| ③ Operation panel | ⑭ Deck side cover | ㉒ Paper ejection guide | ㉖ Re-feeding section |
| ④ Bypass table | ⑮ Drawer | ㉓ Main switch | ㉗ Duplex unit cover |
| ⑤ Insert guide | ⑯ Deck front cover | ㉔ Left cover | ㉘ Duplex unit handle |
| ⑥ Support guide | ⑰ Lifts | ㉕ Copy tray* | ㉙ Duplex unit handle |
| ⑦ Front cover | ⑱ Paper side guides | ㉖ Toner cartridge | ㉚ Fixing unit |
| ⑧ Right cover | ㉑ DF original reversing cover | ㉗ Toner cartridge release lever | ㉛ Fixing unit handle |
| ⑨ Upper drawer | ㉒ Original set indicator | ㉘ Image formation unit release button | ㉜ Fixing knob |
| ⑩ Length guide tab | ㉓ Original insertion guides | ㉙ Image formation unit handle | ㉝ Fixing unit release lever |
| ⑪ Width guide tab | ㉔ Original table | ㉚ Paper transfer unit release lever | ㉞ Handles for transport |
| | | | * Optional for 120 V specifications. |

1-3-2



- ① Punch mode key
- ② Punch mode indicator
- ③ Staple sort mode key
- ④ Staple sort mode indicator
- ⑤ Sorter mode key
- ⑥ Sort mode indicator
- ⑦ Group mode indicator
- ⑧ Brightness adjustment control
- ⑨ Data indicator
- ⑩ Program key
- ⑪ Manual key
- ⑫ Add job key
- ⑬ Copier/printer switching key
- ⑭ Touch panel
- ⑮ Numeric keys
- ⑯ Stop/clear key
- ⑰ Print key
- ⑱ Print indicator
- ⑲ Reset key
- ⑳ Auto selection key
- ㉑ Auto selection indicator
- ㉒ Energy saver key
- ㉓ Energy saver indicator
- ㉔ Interrupt key
- ㉕ Interrupt indicator

Figure 1-3-2 Operation panel

2A3/4

1-3-2 Machine cross section

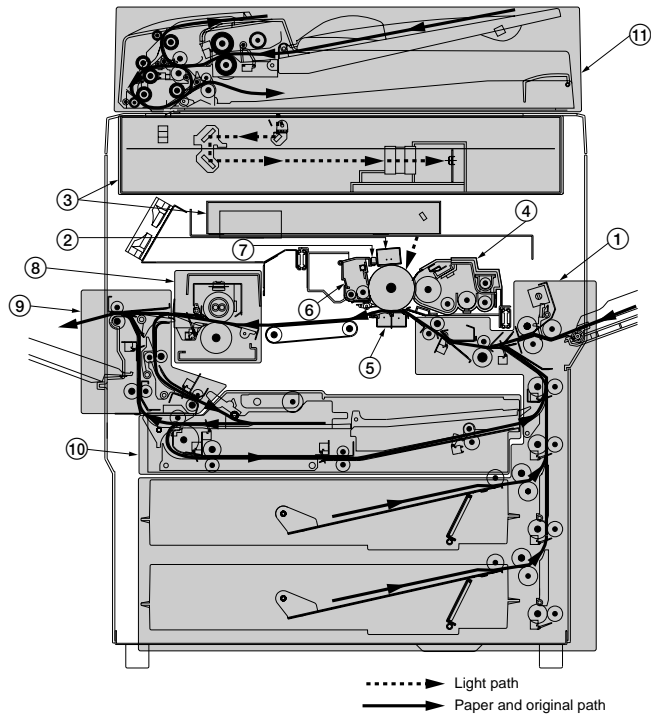
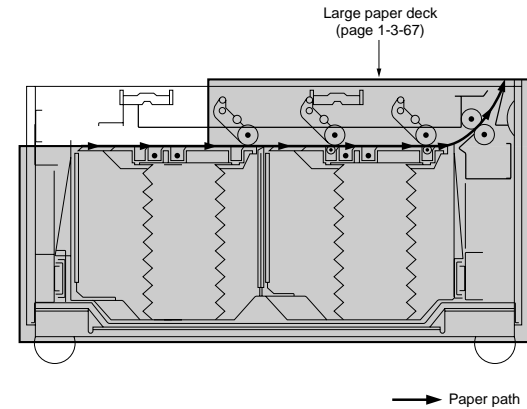


Figure 1-3-3 Machine cross section—copier and SRDF

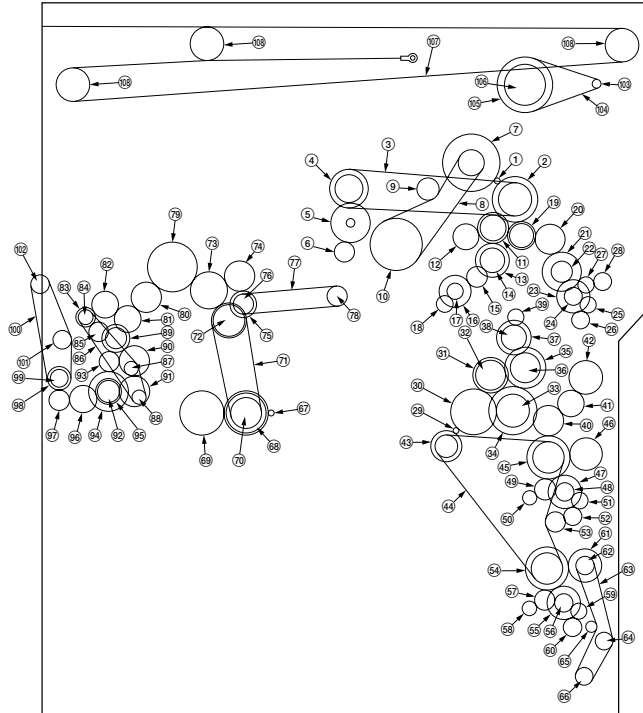
- ① Paper feed section (page 1-3-8)
- ② Main charging section (page 1-3-16)
- ③ Optical section (page 1-3-19)
- ④ Developing section (page 1-3-25)
- ⑤ Transfer and separation section (page 1-3-36)
- ⑥ Cleaning section (page 1-3-40)
- ⑦ Charge erasing section (page 1-3-41)
- ⑧ Fixing section (page 1-3-43)
- ⑨ Feedshift and eject section (page 1-3-49)
- ⑩ Duplex section (page 1-3-51)
- ⑪ SRDF (page 1-3-57)



**Figure 1-3-4 Machine cross section—Large paper deck
 (42 ppm: optional/52 ppm: standard)**

1-3-4

1-3-3 Drive system



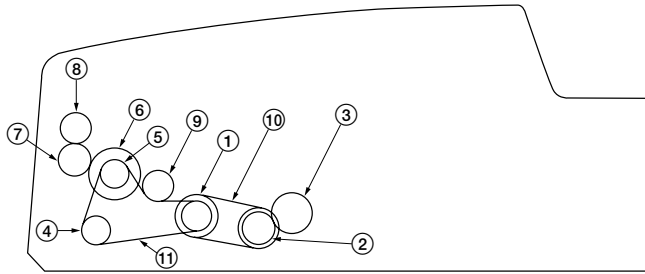
As viewed from the machine front

Figure 1-3-5 Drive system—copier

- | | | |
|-----------------------------|----------------------------------|--------------------------------------|
| ① Drive motor gear | ⑪ Gear 35/29 | ⑥⑤ Tension pulley 10 |
| ② Idle pulley 63/35 | ⑫ Developing drive gear | ⑥⑥ Feed roller 4 pulley |
| ③ Cleaning drive belt | ⑬ Gear 31 | ⑥⑦ Paper conveying motor gear |
| ④ Idle pulley 40/38 | ⑭ Gear 24 | ⑥⑧ Idle gear 43 |
| ⑤ Blade thrust gear | ⑮ Gear 20 | ⑥⑨ Duplex unit input gear |
| ⑥ Cleaning spiral gear | ⑯ Registration clutch gear | ⑦⑩ Pulley 63/32 |
| ⑦ Idle pulley 80/26 | ⑰ Upper registration roller gear | ⑦① Paper conveying drive belt |
| ⑧ Drum drive belt | ⑱ Lower registration roller gear | ⑦② Pulley 36/32 |
| ⑨ Drum drive tension pulley | ⑲ Gear 39/25 | ⑦③ Idle gear 36/36 |
| ⑩ Drum drive pulley | ⑳ Gear 30 | ⑦④ Idle gear 30 |
| | | ⑦⑤ Gear 26 |
| | | ⑦⑥ Paper conveying roller |
| | | ⑦⑦ Paper conveying belt |
| | | ⑦⑧ Paper conveying pulley |
| | | ⑦⑨ Fixing drive gear |
| | | ⑦⑩ Idle gear 30 |
| | | ⑦⑪ Idle gear 26 |
| | | ⑦⑫ Idle gear 26 |
| | | ⑦⑬ Gear 19 |
| | | ⑦⑭ Pulley 22 |
| | | ⑦⑮ Gear 19 |
| | | ⑦⑯ Feedshift drive belt |
| | | ⑦⑰ Tension pulley 22 |
| | | ⑦⑱ Pulley 22 |
| | | ⑦⑲ Gear 20/28 |
| | | ⑦⑳ Idle gear 29 |
| | | ⑦㉑ Idle gear 30 |
| | | ⑦㉒ One-way gear |
| | | ⑦㉓ Idle gear 20 |
| | | ⑦㉔ Eject speed switching clutch gear |
| | | ⑦㉕ Gear 26 |
| | | ⑦㉖ Idle gear 26 |
| | | ⑦㉗ Idle gear 20 |
| | | ⑦㉘ Gear 23 |
| | | ⑦㉙ Pulley 28 |
| | | ⑦㉚ Eject drive belt |
| | | ⑦㉛ Tension pulley 28 |
| | | ⑦㉜ Eject roller pulley |
| | | ⑦㉝ Scanner motor pulley |
| | | ⑦㉞ Scanner drive belt |
| | | ⑦㉟ Scanner drive pulley |
| | | ⑦㊱ Scanner wire drum |
| | | ⑦㊲ Scanner wire |
| | | ⑦㊳ Scanner wire pulley |

- ⑳ Gear 37
- ㉑ Gear 20
- ㉒ Bypass paper feed clutch gear
- ㉓ Gear 18
- ㉔ Gear 16
- ㉕ Lower bypass paper feed pulley gear
- ㉖ Gear 16
- ㉗ Bypass forwarding pulley gear
- ㉘ paper feed motor gear
- ㉙ Gear 55/45
- ㉚ Feed clutch 5 gear
- ㉛ Gear 30
- ㉜ Feed clutch 4 gear
- ㉝ Gear 47
- ㉞ Gear 40
- ㉟ Gear 28
- ㊱ Gear 34
- ㊲ Lower feed roller gear
- ㊳ Upper feed roller gear
- ㊴ Gear 30
- ㊵ Gear 28
- ㊶ Feed clutch 1 gear
- ㊷ Idle pulley 38/23
- ㊸ Paper feed drive belt
- ㊹ Idle pulley 31/42
- ㊺ Feed clutch 2 gear
- ㊻ Upper paper feed clutch gear
- ㊼ Upper paper feed pulley gear
- ㊽ Gear 21
- ㊾ Forwarding pulley gear
- ㊿ Gear 16
- 1 Lower paper feed pulley gear
- 2 Paper feed tension pulley
- 3 Idle pulley 31/42
- 4 Lower paper feed clutch gear
- 5 Upper paper feed pulley gear
- 6 Gear 21
- 7 Forwarding pulley gear
- 8 Gear 16
- 9 Lower paper feed pulley gear
- 10 Feed clutch 3 gear
- 11 Feed roller 3 pulley
- 12 Feed drive belt
- 13 Feed idle pulley

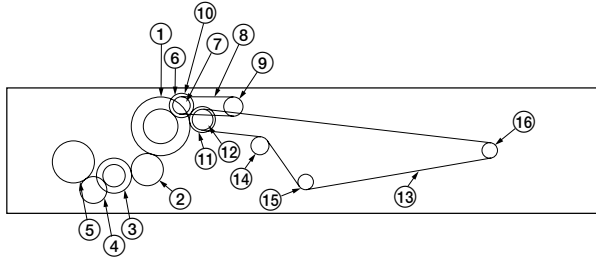
2A3/4



As viewed from machine front

Figure 1-3-6 Drive system—SRDF (inside front of machine)

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

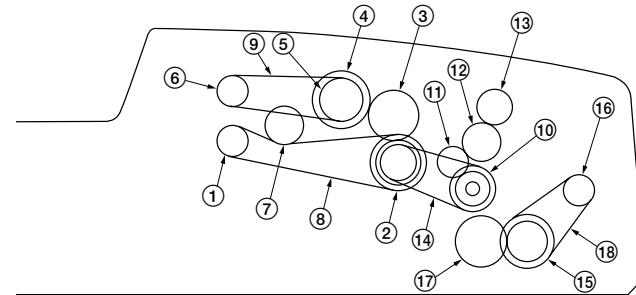


As viewed from machine front

Figure 1-3-8 Drive system—Duplex section

- | | |
|----------------------------------|----------------------------------|
| ① Duplex joint gear | ⑨ Forwarding pulley 27 |
| ② Gear 28 | ⑩ Gear 18 |
| ③ Duplex registration gear 20/30 | ⑪ Gear 26 |
| ④ Gear 26 | ⑫ Paper conveying pulley 40 |
| ⑤ Switchback roller gear | ⑬ Paper conveying drive belt |
| ⑥ Forwarding drive gear 18 | ⑭ Paper conveying tension pulley |
| ⑦ Pulley 22 | ⑮ Paper conveying pulley 20 |
| ⑧ Forwarding belt | ⑯ Paper conveying pulley 20 |

1-3-6



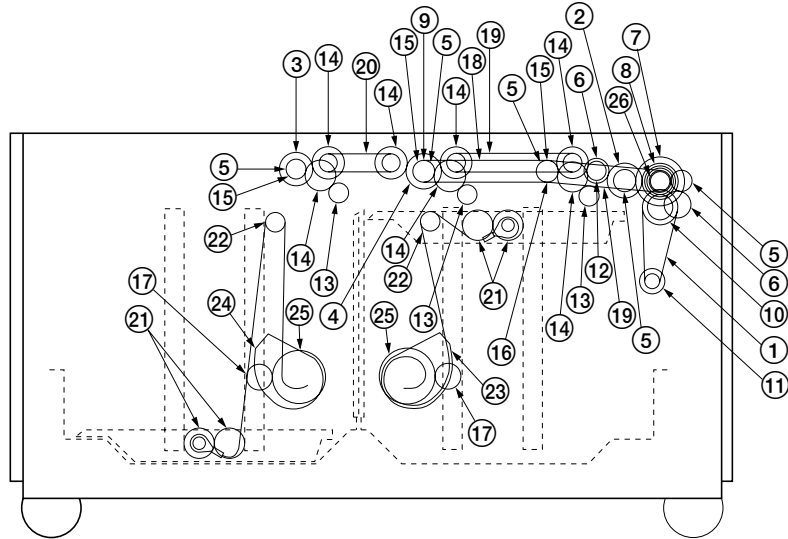
As viewed from machine rear

Figure 1-3-7 Drive system—SRDF (inside rear of machine)

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



2A3/4



As viewed from machine front

**Figure 1-3-9 Drive system—Large paper deck
(42 ppm: optional/52 ppm: standard)**

- | | |
|--------------------------|----------------------------|
| ① Belt 180-6 | ⑭ Pulley 20, gear 32 |
| ② Paper feed clutch 1 | ⑮ One-way drum |
| ③ Paper feed clutch 2 | ⑯ Pulley 18-OW |
| ④ Paper conveying clutch | ⑰ Pulse gear |
| ⑤ Gear 20 | ⑱ Belt 258 |
| ⑥ Gear 26 | ⑲ Belt 234 |
| ⑦ Gear 50-20 | ⑳ Belt 144 |
| ⑧ Gear 35-1-20 | ㉑ Gear 1.0-24 |
| ⑨ Pulley 18 | ㉒ Lift pulley |
| ⑩ Gear 43-20 | ㉓ Left lift belt assembly |
| ⑪ Pulley S2M-18 | ㉔ Right lift belt assembly |
| ⑫ Gear 16 | ㉕ Paper deck motor gear |
| ⑬ Roller 0.8-20 | ㉖ Pulley 16 |

1-3-7





2A3/4

1-3-4 Mechanical construction

(1) Paper feed section

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

(1-1) Paper feed from the drawers

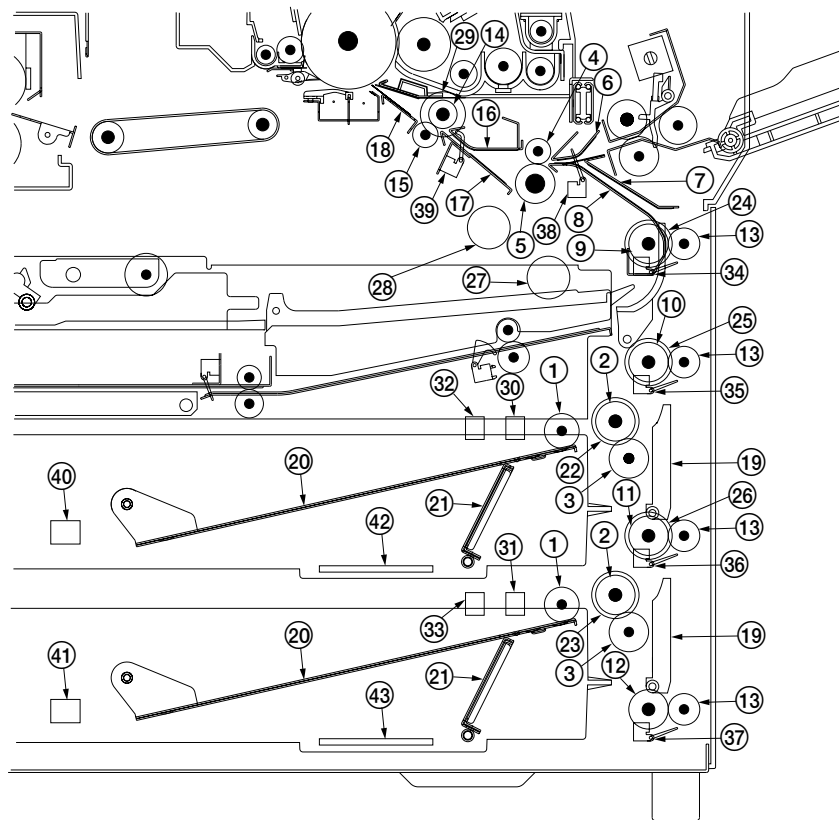


Figure 1-3-10 Drawer paper feed and secondary paper feed sections

1-3-8





2A3/4

- ① Forwarding pulley
- ② Upper paper feed pulley
- ③ Lower paper feed pulley
- ④ Upper feed roller
- ⑤ Lower feed roller
- ⑥ Upper feed guide plate
- ⑦ Middle feed guide plate
- ⑧ Lower feed guide plate
- ⑨ Feed roller 1
- ⑩ Feed roller 2
- ⑪ Feed roller 3
- ⑫ Feed roller 4
- ⑬ Feed pulley
- ⑭ Upper registration roller
- ⑮ Lower registration roller
- ⑯ Upper registration guide
- ⑰ Lower registration guide
- ⑱ Lower pre-transfer guide
- ⑲ Feed guide
- ⑳ Drawer lift
- ㉑ Lift operation plate
- ㉒ Upper paper feed clutch (PFCL-U)
- ㉓ Lower paper feed clutch (PFCL-L)
- ㉔ Feed clutch 1 (FCL1)
- ㉕ Feed clutch 2 (FCL2)
- ㉖ Feed clutch 3 (FCL3)
- ㉗ Feed clutch 4 (FCL4)
- ° Feed clutch 5 (FCL5)
- ㉙ Registration clutch (RCL)
- ㉚ Upper paper switch (PSW-U)
- ㉛ Lower paper switch (PSW-L)
- ㉜ Upper lift limit switch (LICSW-U)
- ㉝ Lower lift limit switch (LICSW-L)
- ㉞ Paper feed switch 1 (PFSW1)
- ㉟ Paper feed switch 2 (PFSW2)
- ㊱ Paper feed switch 3 (PFSW3)
- ㊲ Paper feed switch 4 (PFSW4)
- ㊳ Feed switch (FSW)
- ㊴ Registration switch (RSW)
- ㊵ Upper paper length switch (PLSW-U)
- ㊶ Lower paper length switch (PLSW-L)
- ㊷*Upper paper width switch (PWSW-U)
- ㊸*Lower paper width switch (PWSW-L)

* For inch specifications only.

1-3-9



2A3/4

Each drawer consists of a lift driven by the lift motor and other components. Each drawer can hold up to 550 sheets of paper.
 Paper is fed from the drawer by the rotation of the forwarding pulley and upper paper feed pulley. The lower paper feed pulley prevents multiple sheets from being fed at one time, via the torque limiter.

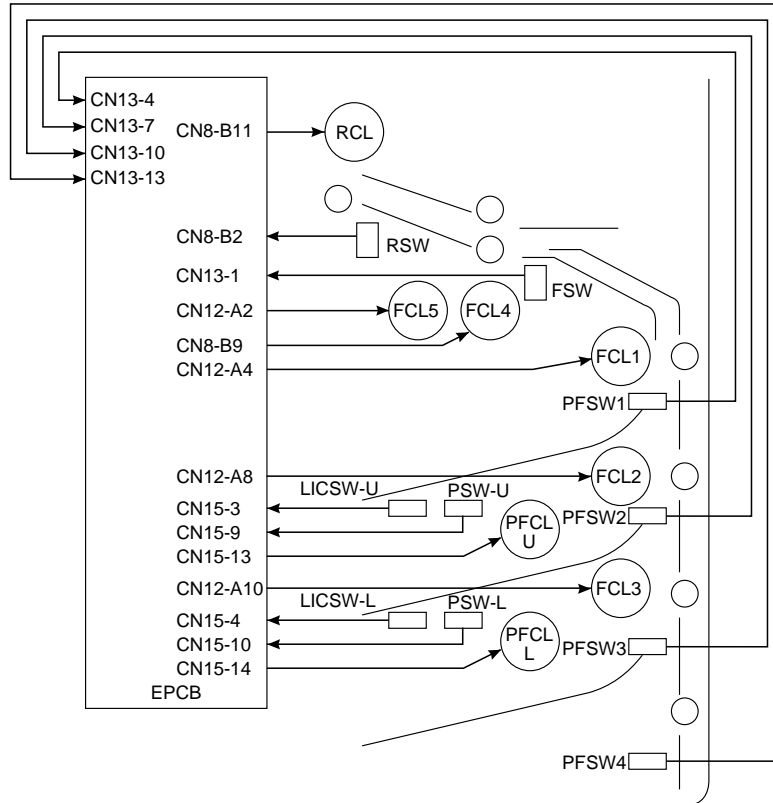


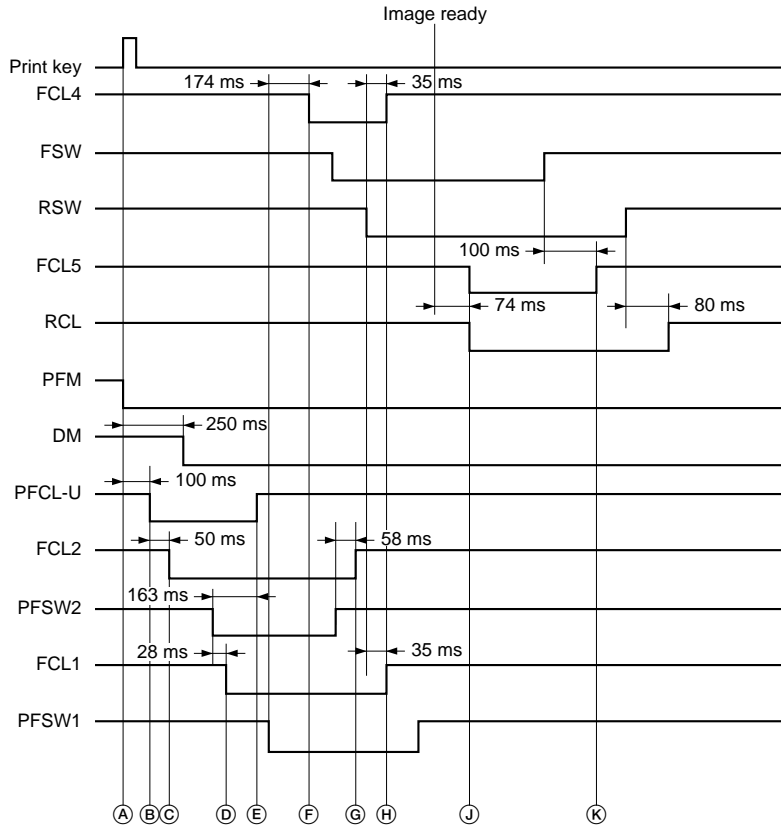
Figure 1-3-11 Drawer paper feed section block diagram

1-3-10





2A3/4



Auto copy density control, copy paper: A4/11" × 8 1/2", magnification ratio 100%

Timing chart 1-3-1 Paper feed from the upper drawer

1-3-11





2A3/4

- Ⓐ When the print key is pressed, the paper feed motor (PFM) turns on, and 250 ms later the drive motor (DM) turns on to start drive for the paper feed section.
- Ⓑ 100 ms after the print key is pressed, the upper paper feed clutch (PFCL-U) turns on, and the upper and lower paper feed pulleys rotate to start the primary paper feed.
- Ⓒ 50 ms after the upper paper feed clutch (PFCL-U) turns on, feed clutch 2 (FCL2) turns on, and feed roller 2 rotates.
- Ⓓ 28 ms after the leading edge of the paper turns paper feed switch 2 (PFSW2) on, feed clutch 1 (FCL1) turns on, and feed roller 1 rotates.
- Ⓔ 163 ms after paper feed switch 2 (PFSW2) turns on, the upper paper feed clutch (PFCL-U) turns off.
- Ⓕ 174 ms after the leading edge of the paper turns paper feed switch 1 (PFSW1) on, feed clutch 4 (FCL4) turns on, and the lower feed roller rotates at high speed to create slack in the paper before registration.
- Ⓖ 58 ms after the trailing edge of the paper turns paper feed switch 2 (PFSW2) turns off, feed clutch 2 (FCL2) turns off.
- Ⓗ 35 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutches 1 and 4 (FCL1 and FCL4) turn off.
- Ⓘ 74 ms after image ready signal turn on, the registration clutch (RCL) turns on, causing the upper and lower registration rollers to rotate to start secondary paper feed. Simultaneously, feed clutch 5 (FCL5) turns on and the lower feed roller rotates at low speed.
- Ⓙ 100 ms after the trailing edge of the paper turns the feed switch (FSW) off, feed clutch 5 (FCL5) turns off.
- Ⓚ 80 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off.

1-3-12



2A3/4

(1-2) Paper feed from the bypass table

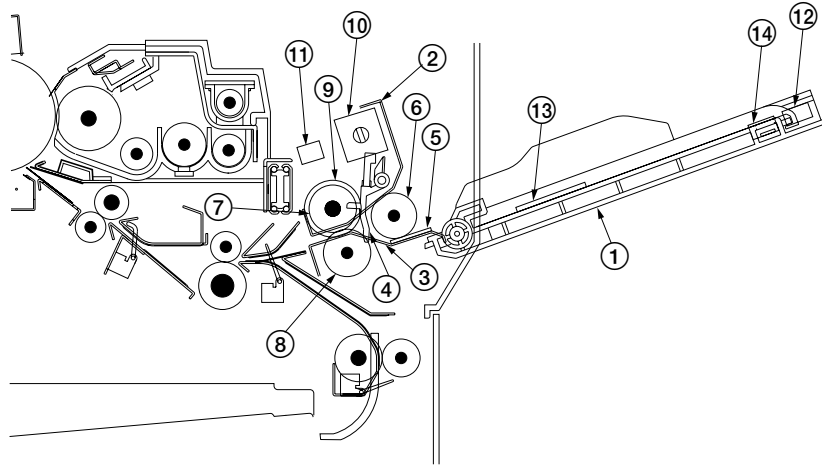


Figure 1-3-12 Bypass paper feed section

- | | |
|----------------------------------|--|
| ① Bypass table | ⑨ Bypass paper feed clutch (BYPPFCL) |
| ② Bypass upper guide | ⑩ Bypass solenoid (BYP SOL) |
| ③ Bypass lower guide | ⑪ Bypass paper switch (BYPPSW) |
| ④ Bypass stopper | ⑫ Bypass paper length switch (BYPPLSW) |
| ⑤ Bypass friction plate | ⑬ Bypass paper width switch (BYPPWSW) |
| ⑥ Bypass forwarding pulley | ⑭ Bypass table extended detection switch (BYPEDSW) |
| ⑦ Bypass upper paper feed pulley | |
| ⑧ Bypass lower paper feed pulley | |

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

When the start key is pressed, 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. The bypass paper feed clutch (BYPPFCL) then turns on, transmitting the drive motor (DM) drive to these pulleys to start primary paper feed.

The bypass lower paper feed pulley rotates opposite to the paper feed direction so that the torque limiter prevents multiple sheets from being fed at one time.

1-3-13





2A3/4

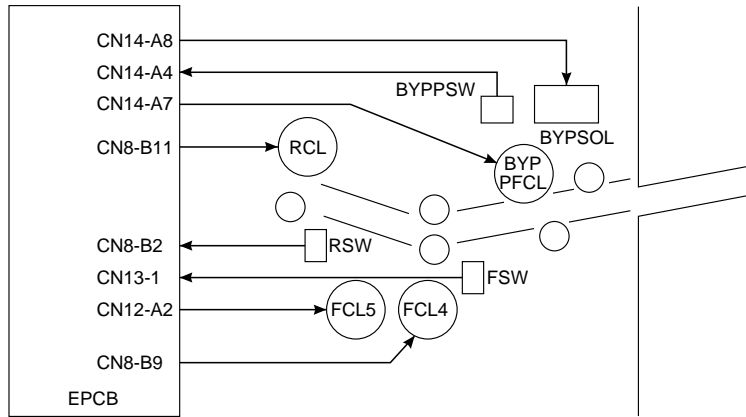
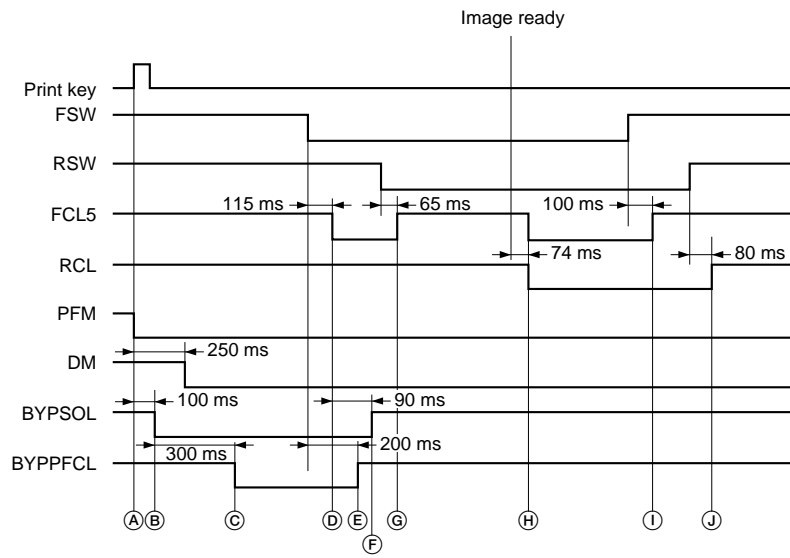


Figure 1-3-13 Bypass paper feed section block diagram



Auto copy density control, copy paper: A5R/5 1/2" x 8 1/2", magnification ratio 25%

Timing chart 1-3-2 Paper feed from the bypass table

1-3-14





2A3/4

- Ⓐ When the print key is pressed, the paper feed motor (PFM) turns on, and 250 ms later the drive motor (DM) turns on to start drive for the paper feed section.
- Ⓑ 100 ms after the print key is pressed, the bypass solenoid (BYP SOL) turns on. The bypass stopper is then unlocked, and the bypass forwarding pulley lowers to forward the paper.
- Ⓒ 300 ms after the bypass solenoid (BYP SOL) turns on, the bypass paper feed clutch (BYPPFCL) turns on, and the upper and lower bypass paper feed pulleys rotate to start primary paper feed.
- Ⓓ 115 ms after the leading edge of the paper turns the feed switch (FSW) on, feed clutch 5 (FCL5) turns on, and the lower feed roller rotates at low speed to create slack in the paper before registration.
- Ⓔ 200 ms after the feed switch (FSW) turns on, the bypass paper feed clutch (BYPPFCL) turns off.
- Ⓕ 90 ms after feed clutch 5 (FCL5) turns on, the bypass solenoid (BYP SOL) turns off.
- Ⓖ 65 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutch 5 (FCL 5) turns off.
- Ⓗ 74 ms after the image ready signal turns on, the registration clutch (RCL) turns on, and the upper and lower registration rollers rotate to start secondary paper feed. Simultaneously, feed clutch 5 (FCL5) turns on and lower feed roller rotates at low speed.
- Ⓘ 100 ms after the trailing edge of the paper turns the feed switch (FSW) off, feed clutch 5 (FCL5) turns off.
- Ⓙ 80 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off.



1-3-15





2A3/4

(2) Main charging section

The main charging section consists of the drum and the main charger assembly. The main charger assembly charges the drum so that a latent image is formed on the surface, the charger grid ensuring the charge is applied uniformly.

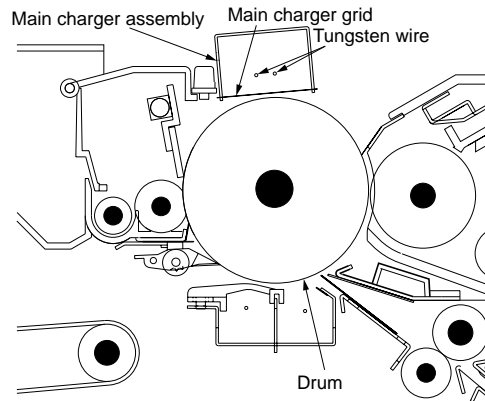


Figure 1-3-14 Main charging section



1-3-16



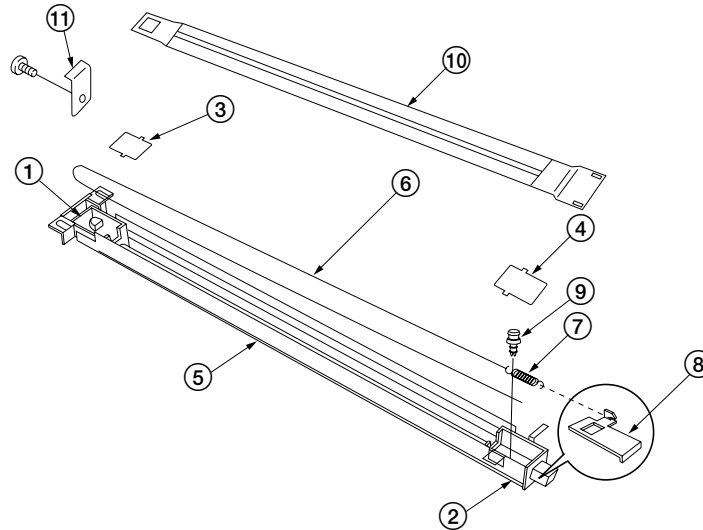


Figure 1-3-15 Main charger

- | | |
|------------------------------|----------------------|
| ① Main charger front housing | ⑥ Tungsten wire |
| ② Main charger rear housing | ⑦ Charger spring |
| ③ Main charger front lid | ⑧ Charger terminal |
| ④ Main charger rear lid | ⑨ Charger pin |
| ⑤ Main charger shield | ⑩ Main charger grid |
| | ⑪ Grid tension plate |

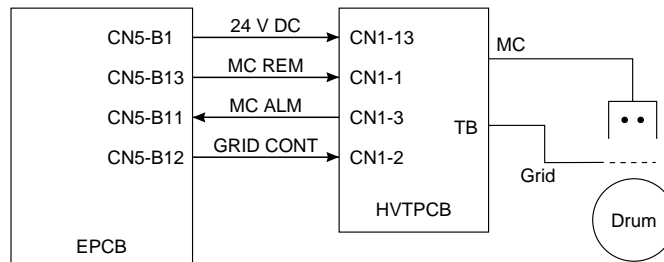
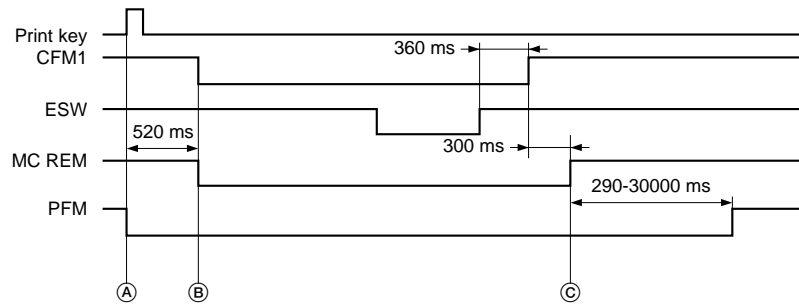


Figure 1-3-16 Main charging section block diagram





2A3/4



Auto copy density control, copy paper: A4/11" × 8½", magnification ratio 100%

Timing chart1-3-3 Main charging

- Ⓐ When the print key is pressed, the paper feed motor (PFM) turns on.
- Ⓑ 520 ms after the paper feed motor (PFM) turns on, main charging (MC REM) starts.
- Ⓒ 300 ms after cooling fan motor 1 (CFM1) turns off, main charging (MC REM) is completed.

1-3-18





2A3/4

(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.

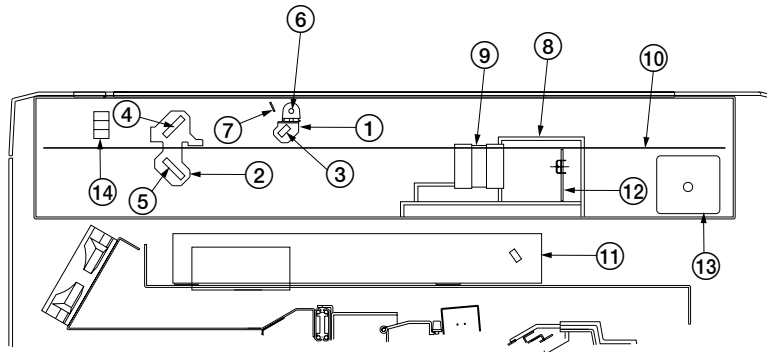


Figure 1-3-17 Optical section

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

1-3-19



2A3/4

Original scanning

The original image is illuminated by the exposure lamp (EL) and scanned by the CCD PCB (CCDPCB) in the image scanning unit via the three mirrors, the reflected light being converted to an electrical signal.

The scanner and mirror frame travel to scan on the optical rails on the front and rear of the machine to scan from side to side. The speed of the mirror frame is half the speed of the scanner. When the SRDF is used, the scanner and mirror frame stop at the DF original scanning position to start scanning.

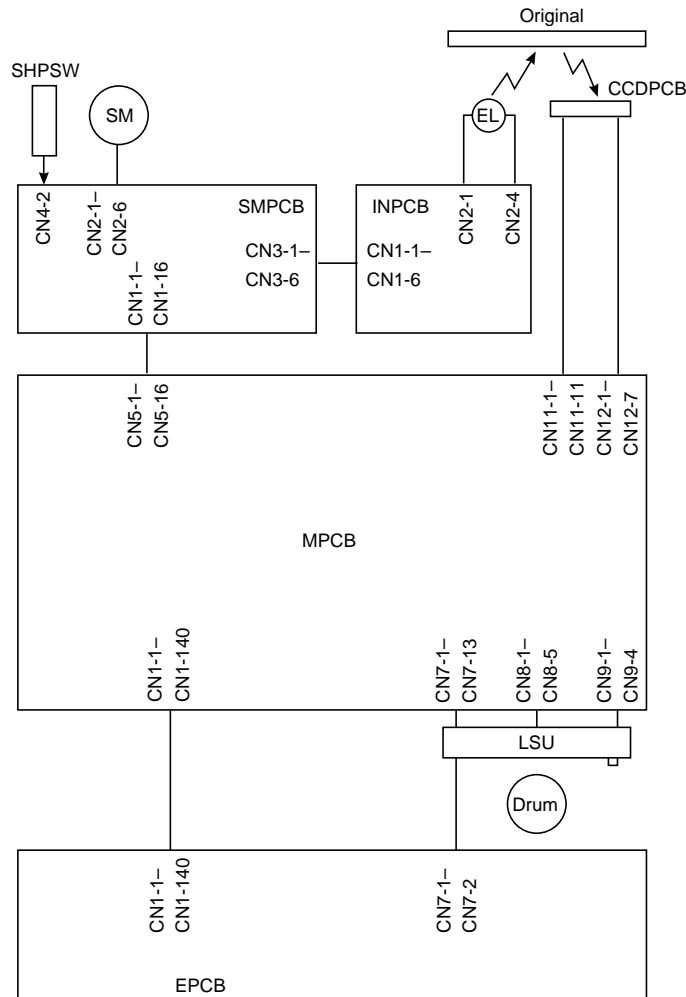


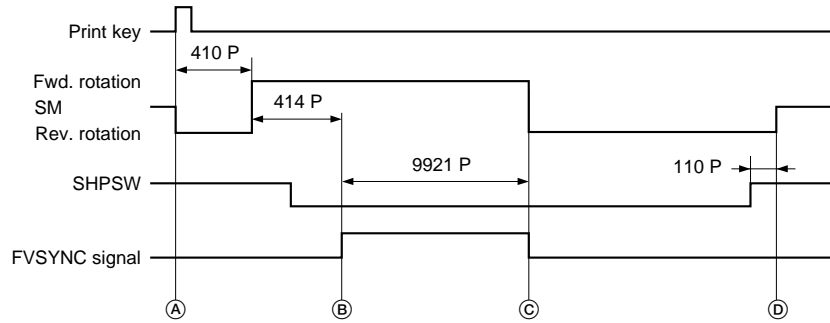
Figure 1-3-18 Optical section block diagram

1-3-20





2A3/4



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

Timing chart 1-3-4 Scanner operation

- Ⓐ When the print 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.

1-3-21





2A3/4

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**

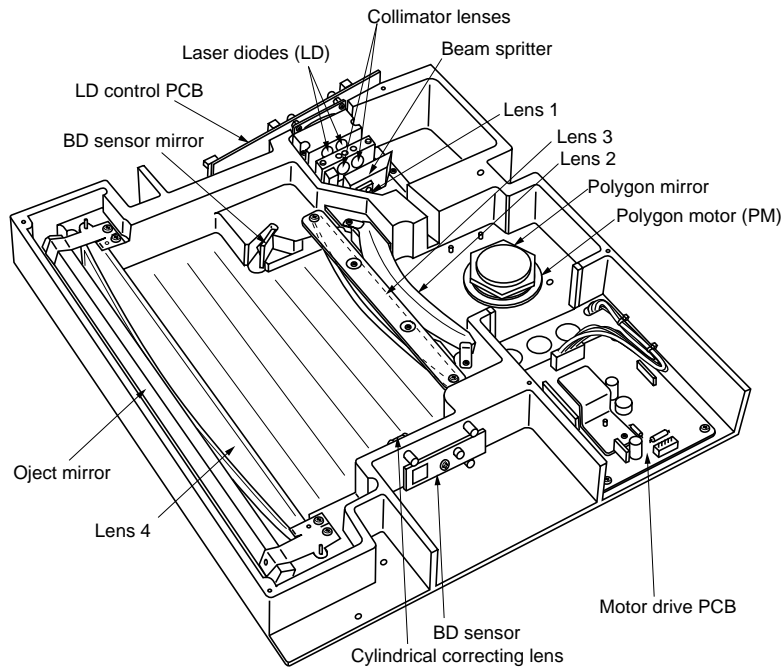


Figure 1-3-19 Laser scanner unit (1)

1-3-22





2A3/4

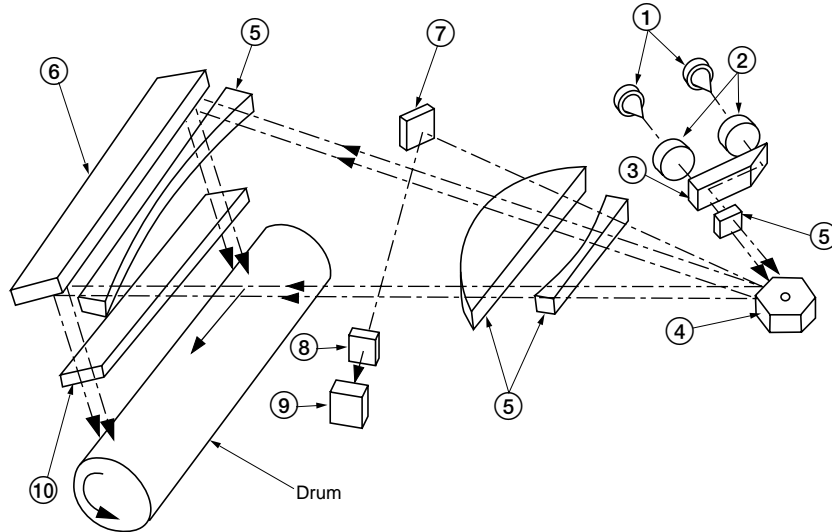


Figure 1-3-20 Laser scanner unit (2)

- 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 29527 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.

1-3-23





2A3/4

The dimensions of the laser beam are as shown in Figure 1-3-19.

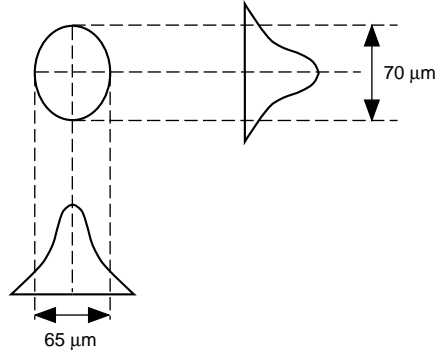


Figure 1-3-21

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 1-3-22. 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.

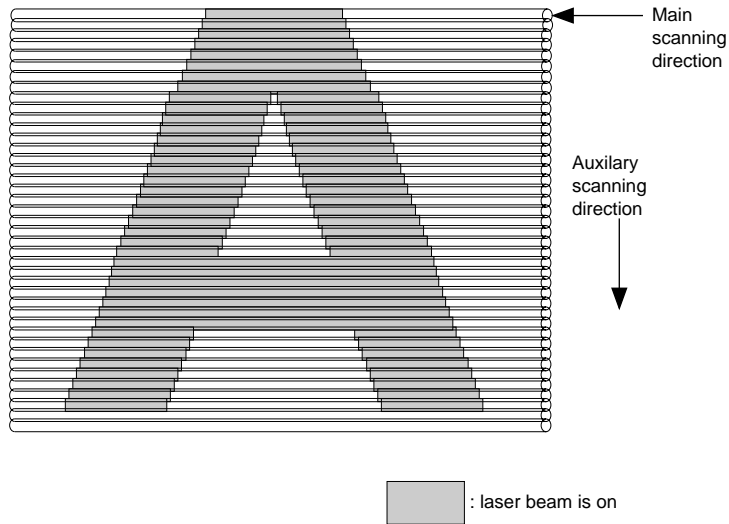


Figure 1-3-22

1-3-24





2A3/4

(4) Developing section

The developing section consists of the developing unit and the toner recycling assembly.

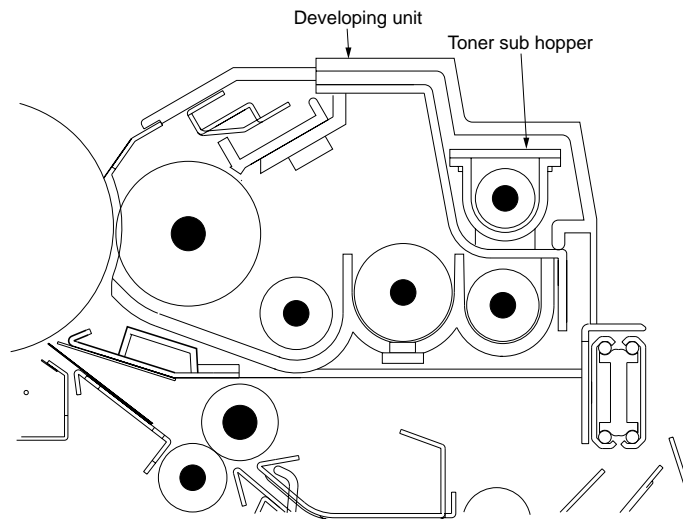


Figure 1-3-23 Developing section

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 recycling assembly consists of the toner main and sub-hoppers. In the main hopper new toner from the toner cartridge is mixed with residual toner recovered from the cleaning section. The mixture is conveyed by the sub-hopper to the developing unit. The toner level detection sensor (TLDS) checks whether or not toner remains in the main hopper.

1-3-25





2A3/4

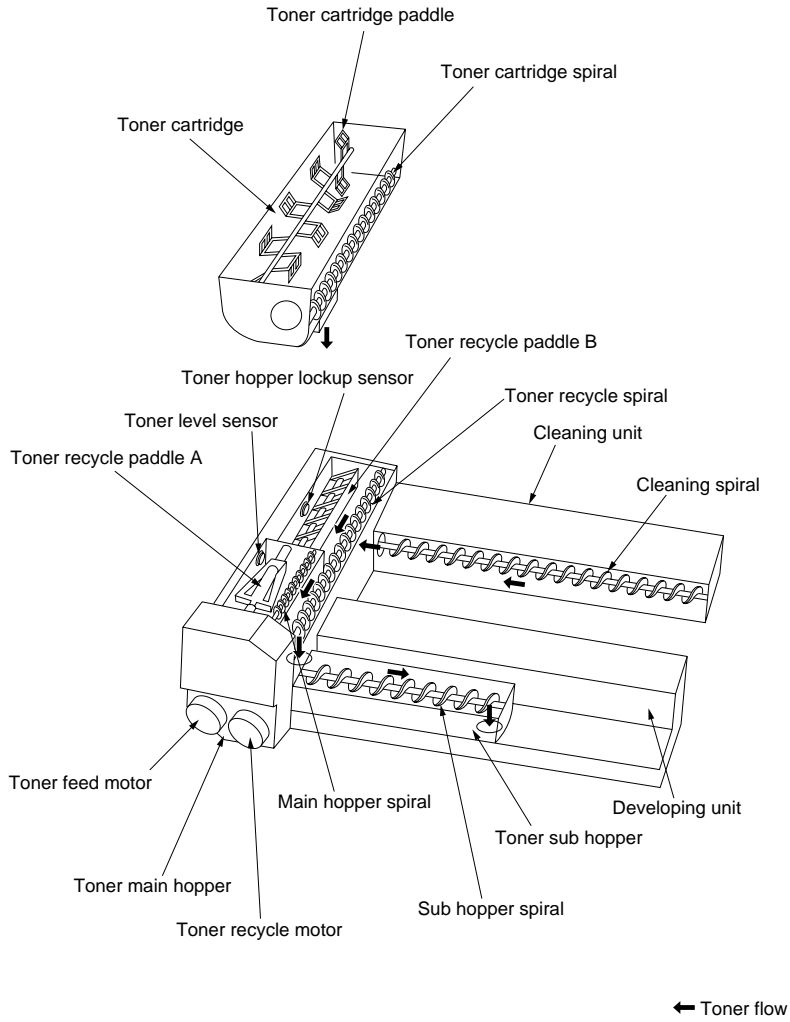


Figure 1-3-24 Toner recycling

1-3-26





Formation of magnetic brush

The developing roller 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. 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 (HVTPCB) is applied to the developing roller to provide image contrast.

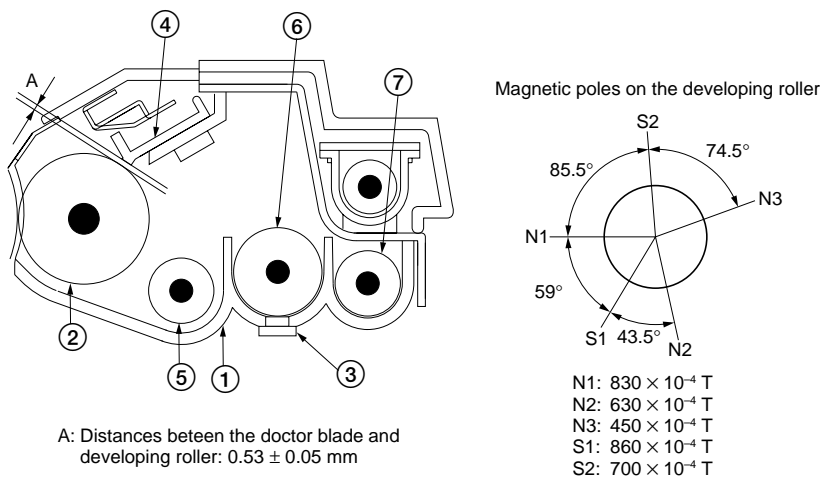


Figure 1-3-25 Forming a magnetic brush

- | | |
|---------------------------|-----------------------|
| ① Developing unit housing | ⑤ Developing spiral A |
| ② Developing roller | ⑥ Developing spiral B |
| ③ Toner sensor (TNS) | ⑦ Developing spiral C |
| ④ Doctor blade | |





2A3/4

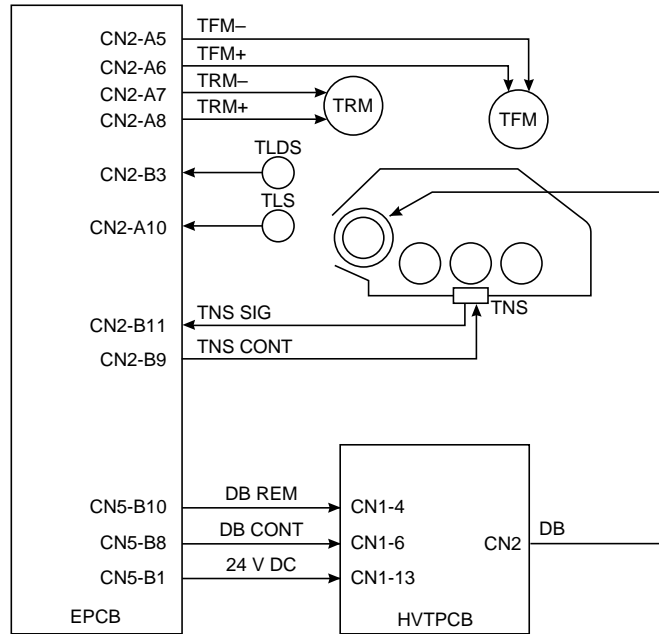


Figure 1-3-26 Developing section block diagram

Toner density is detected by the toner sensor (TNS). The sensor section of the toner sensor detects the ratio of toner to carrier in the developer near it and converts it into a voltage. As more toner is used, the ratio of toner to carrier decreases, increasing the toner sensor output voltage. When the ratio drops below the specified value, the increase in toner sensor output voltage triggers toner replenishing. When toner is added and the ratio of toner to carrier returns to normal, the toner sensor output voltage drops to the point where toner replenishing stops.

1-3-28





Toner density control

Toner density control is conducted using the TARGET value as the reference which is the toner sensor initial output value set by maintenance item U130 when developer is loaded for the first time.

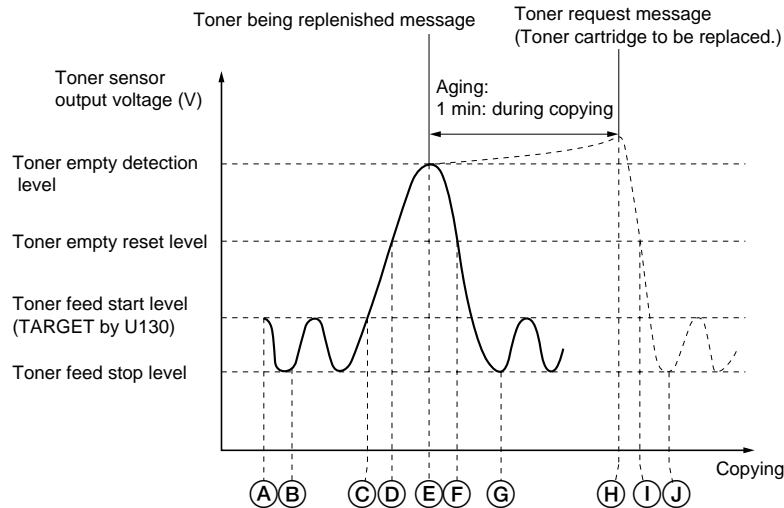


Figure 1-3-27 Toner density control

- Ⓐ When the toner sensor output voltage exceeds the toner feed start level, the toner feed motor (TFM) and the toner recycle motor (TRM) operate intermittently—on for 0.5 s and off for 1.5 s, and on for 1.0 s and off for 1.0 s, respectively—to replenish toner.
- Ⓑ As toner is replenished, the toner sensor output voltage drops below the toner feed stop level and replenishing stops.
- Ⓒ Both the toner feed motor (TFM) and toner recycle motor (TRM) operate intermittently—on for 0.5 s and off for 0.5 s—to replenish toner until the toner sensor output voltage reaches the toner empty reset level after exceeding the toner feed start level.
- Ⓓ The toner feed motor (TFM) and toner recycle motor (TRM) operate intermittently—on for 1.0 s and off for 1.0 s, and on for 1.5 s and off for 0.5 s, respectively—to replenish toner until the toner sensor output voltage reaches the toner empty detection level after exceeding the toner feed reset level.
- Ⓔ When the toner sensor output voltage exceeds the toner empty detection level after toner replenishing is carried out, the toner being replenished message appears. Both the toner feed motor (TFM) and toner recycle motor (TRM) then operate intermittently—on for 1.5 s and off for 0.5 s—for 1 min. for aging. If the voltage fails to fall to the toner empty reset level, the toner request message appears.





2A3/4

- Ⓕ When the toner sensor output voltage drops to the toner empty reset level, the toner being replenished message disappears, and both the toner feed motor (TFM) and toner recycle motor (TRM) operate intermittently—on for 0.5 s and off for 0.5 s—to replenish toner.
- Ⓖ When toner is replenished, the toner sensor output voltage drops below the toner feed stop level and replenishing stops.
- Ⓗ After the toner cartridge is replaced, both the toner feed motor (TFM) and toner recycle motor (TRM) operate intermittently—on for 1.5 s and off for 0.5 s—to replenish toner.
- Ⓘ When the toner sensor output voltage drops to the toner feed stop level, the toner request message disappears. Both the toner feed motor (TFM) and toner recycle motor (TRM) then operate intermittently—on for 1.0 s and off for 1.0 s—to replenish toner.
- Ⓙ When toner is replenished, the toner sensor output voltage drops to the toner feed stop level and replenishing stops.

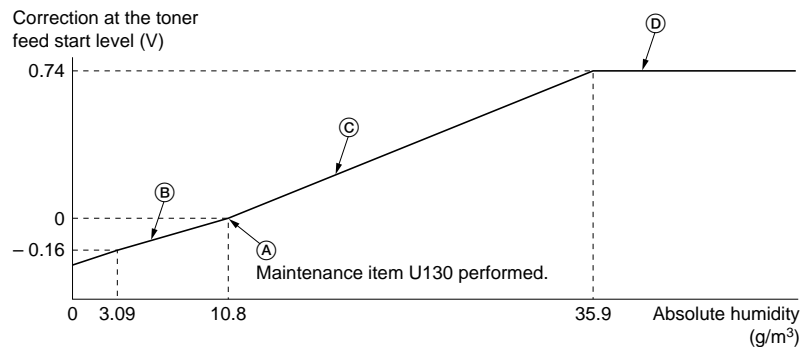


1-3-30



**Correcting toner feed start level**

The toner feed start level is corrected based on the absolute humidity and the drive time so that toner density becomes proper depending on the change of the humidity and the drive time.

• Correction based on the absolute humidity**Figure 1-3-28 Correction based on the absolute humidity**

- Ⓐ When maintenance item U130 is carried out for initial developer setting, the toner sensor control voltage (CONTROL) is set so that the toner sensor outputs 2.01 V when the absolute humidity is 10.8 g/m³.
- Ⓑ When the absolute humidity is between 0 and 10.8 g/m³, the toner feed start level is decreased with the absolute humidity so that the toner sensor output voltage drops.
- Ⓒ When the absolute humidity is between 10.8 and 35.9 g/m³, the toner feed start level is increased with the absolute humidity so that the toner sensor output voltage rises.
- Ⓓ When the absolute humidity exceeds 35.9 g/m³, the toner feed start level is increased by 0.74 V to regulate the toner sensor output.



2A3/4

Computing the absolute humidity

The external humidity sensor (EHUMSENS) and external temperature thermistor (ETTH) are located on the humidity sensor PCB (HUMPCB). The external humidity sensor (EHUMSENS) converts the relative humidity detected by the humidity sensing element into a voltage and sends it to the engine PCB (EPCB). The main PCB (MPCB) computes the absolute humidity based on this EHUMSENS signal and the temperature (ETTH signal) detected by the external temperature thermistor (ETTH).

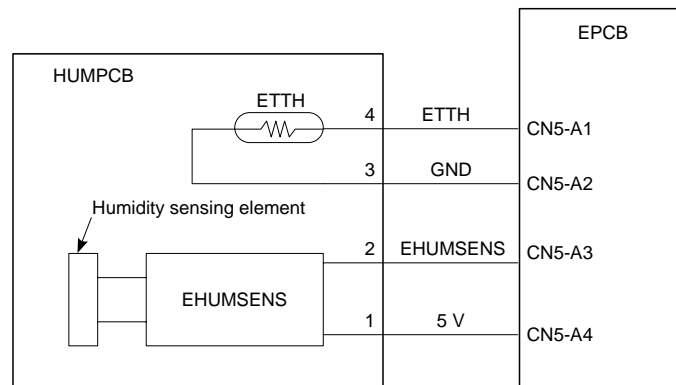


Figure 1-3-29 Absolute humidity computation block diagram



1-3-32



**• Correction based on the total drive motor time**

The toner feed start level is also corrected based on the total time the drive motor (DM) has been on from execution of maintenance item U130, so that the toner sensor output is regulated properly.

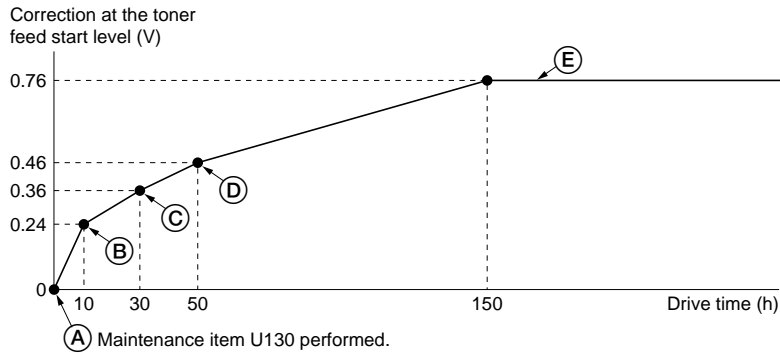


Figure 1-3-30 Correction based on the total drive motor time

- Ⓐ When maintenance item U130 is carried out for initial developer setting, the total drive motor time is cleared and the correction for the toner feed start level is reset to 0.
- Ⓑ When the total drive time reaches 10 hours, the toner feed start level is corrected with a constant value of 0.24 V.
- Ⓒ When the total drive time reaches 30 hours, the toner feed start level is corrected with a constant value of 0.36 V.
- Ⓓ When the total drive time reaches 50 hours, the toner feed start level is corrected with a constant value of 0.46 V.
- Ⓔ When the total drive time exceeds 150 hours, the toner feed start level is corrected with a constant value of 0.76 V.



2A3/4

Toner level detection

The toner level in the toner main hopper is monitored by the toner level detection sensor (TLDS). It converts the presence or absence of toner in the toner main hopper into a voltage and sends it to the main PCB (MPCB), which triggers a message to request the toner cartridge to be replaced before the recycled toner ratio in the toner main hopper reaches a significant level.

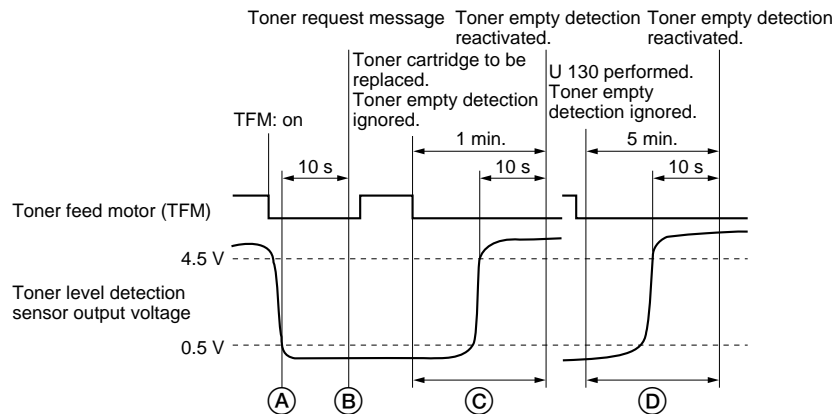


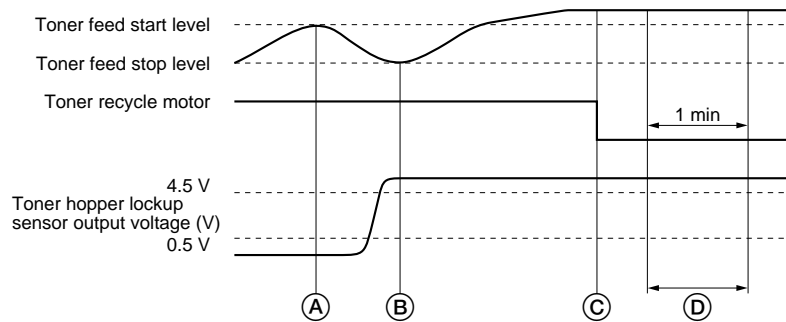
Figure 1-3-31 Toner level detection

- (A) When the toner level detection sensor (TLDS) output voltage drops below 0.5 V while the toner feed motor (TFM) is on, the toner motor drive time starts to be counted.
- (B) If the toner level detection sensor (TLDS) output voltage remains below 0.5 V for 10 s, the toner request message appears.
Note: When the toner request message is displayed under these conditions, the available copy mode and the number of copies that can be made are restricted as set in maintenance item U258 (see page 3-2-74).
- (C) Toner empty detection is ignored for 1 min. (the toner feed motor on time) after the toner cartridge has been replaced. If the toner level detection sensor (TLDS) output remains at 4.5 V or above for 10 s, toner empty detection is reactivated.
- (D) Toner empty detection is ignored for 5 min. (the toner feed motor on time) after maintenance item U130 has been performed for developer initial setting. If the toner level detection sensor (TLDS) output remains at 4.5 V or above for 10 s, toner empty detection is reactivated.

1-3-34

**Toner hopper lockup detection**

The amount of recycled toner in the toner main hopper is monitored by the toner hopper lockup sensor (TLS). It converts the presence or absence of toner in the toner main hopper into a voltage and sends it to the main PCB, which prevents toner main hopper lockup as the amount of the recycled toner in the hopper increases.

**Figure 1-3-32 Toner hopper lockup detection**

- Ⓐ When the toner hopper lockup sensor (TLS) output voltage is below 0.5 V, toner is replenished to control toner density.
- Ⓑ When the toner hopper lockup sensor (TLS) output voltage exceeds 4.5 V while toner sensor output voltage is below the toner feed start level, toner is not replenished.
- Ⓒ When the toner sensor output voltage is over the toner feed start level while the toner hopper lockup sensor (TLS) output level is over 4.5 V, the toner feed motor (TFM) does not operate, while the toner recycle motor (TRM) operates continuously.
- Ⓓ When the toner hopper lockup sensor (TLS) output voltage is over 4.5 V, the on-time of the toner recycle motor (TRM) is counted. When the continuous on-time exceeds 1 min., C740 (toner hopper problem) is displayed.



2A3/4

(5) Transfer and separation section

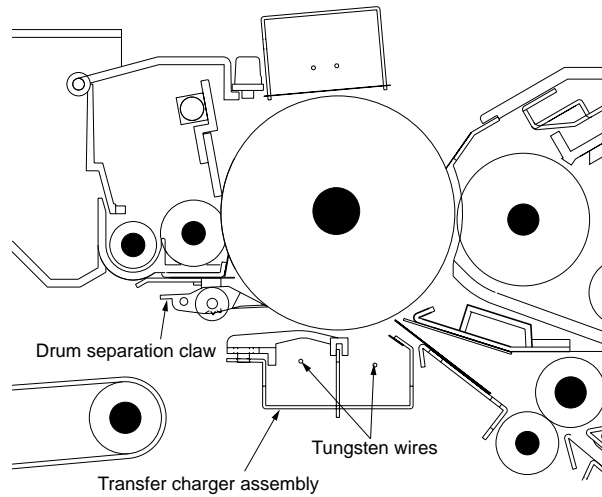


Figure 1-3-33 Transfer and separation section

The transfer and separation section consists of the transfer charge assembly and drum separation claws.

The transfer charge assembly consists of the transfer charger that applies a high voltage to transfer the toner image from the drum surface onto the paper, and the separation charger that helps the paper separate from the drum surface.

In the transfer charger, a high voltage generated by the high-voltage transformer PCB (HVTPCB) is applied to the both ends of the tungsten wire.

The separation charger uses the AC voltage applied from the high-voltage transformer PCB to neutralize the residual charge on the paper after the transfer process. The paper can then separate from the drum under its own weight.

The separation claws ensure that the paper separates reliably from the drum.

1-3-36





2A3/4

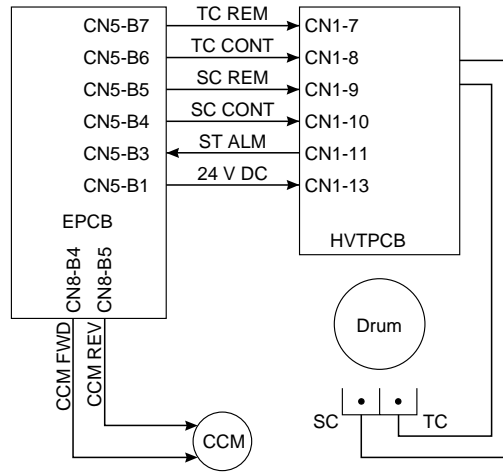


Figure 1-3-34 Transfer and separation section block diagram



1-3-37





2A3/4

Charger wire cleaning

The charger wires are cleaned by the transfer charger cleaning pad and separation charger cleaning pad traveling along each wire. The pads are placed on a slider which moves back and forth along the charger cleaning spiral as the spiral is turned by the charger cleaning motor (CCM).

The two shield cleaning sponges travel along the transfer charger shield, cleaning the inside of the shield.

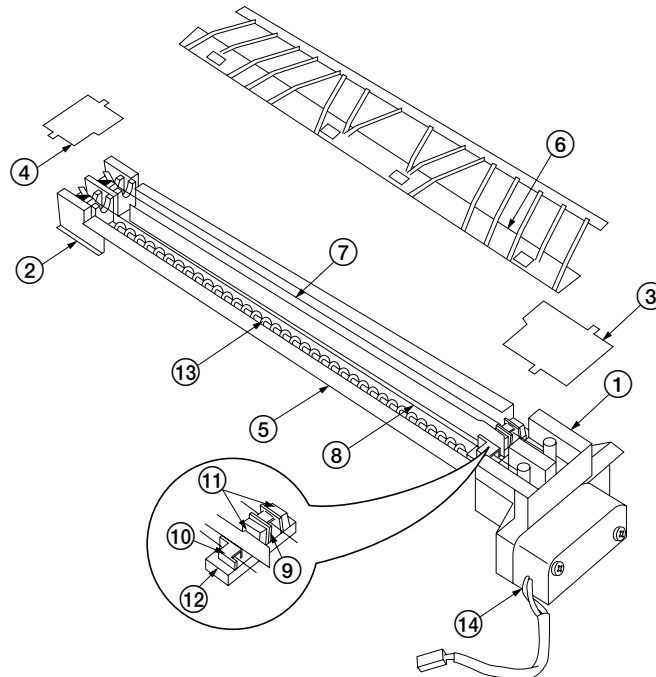


Figure 1-3-35 Transfer charger assembly

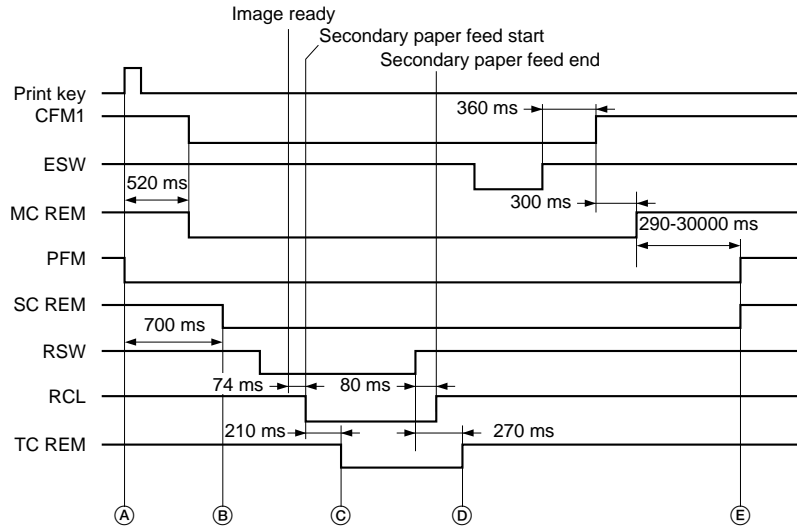
- | | |
|----------------------------------|-----------------------------------|
| ① Transfer charger front housing | ⑧ Tungsten wire for separation |
| ② Transfer charger rear housing | ⑨ Transfer charger cleaning pad |
| ③ Transfer charger front lid | ⑩ Separation charger cleaning pad |
| ④ Transfer charger rear lid | ⑪ Shield cleaning sponges |
| ⑤ Transfer charger shield | ⑫ Charger cleaning pad slider |
| ⑥ Separation guide | ⑬ Charger cleaning spiral |
| ⑦ Tungsten wire for transfer | ⑭ Charger cleaning motor (CCM) |

1-3-38





2A3/4



Auto copy density control, copy paper: A4/11" × 8 1/2", magnification ratio 100%

Timing chart 1-3-5 Transfer and separation

- (A) When the print key is pressed, the paper feed motor (PFM) turns on.
- (B) 700 ms after the paper feed motor (PFM) turns on, separation charging (SC REM) starts.
- (C) 210 ms after the registration clutch (RCL) turn on to start secondary paper feed, transfer charging (TC REM) starts.
- (D) 270 ms after the trailing edge of the paper turns the registration switch (RSW) off, transfer charging (TC REM) ends.
- (E) 290 to 30000 ms after the main charging (MC REM) ends, the paper feed motor (PFM) turns off and separation charging (SC REM) ends.

1-3-39





2A3/4

(6) Cleaning section

The cleaning section consists of the cleaning blade and brush that remove residual toner from the drum surface after the transfer process, and the cleaning spiral that carries the residual toner back to the toner recycling assembly.

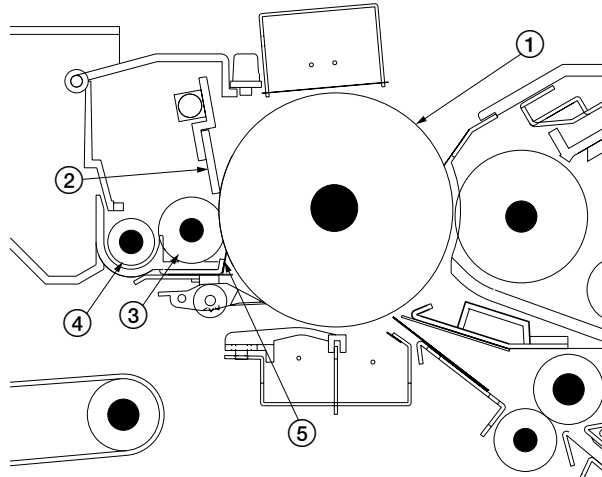


Figure 1-3-36 Cleaning section

- ① Drum
- ② Cleaning blade
- ③ Cleaning brush
- ④ Cleaning spiral
- ⑤ Lower cleaning seal

1-3-40





2A3/4

(7) Charge erasing section

The cleaning lamp (CL) consists of 36 LEDs which remove residual charge from the drum surface.

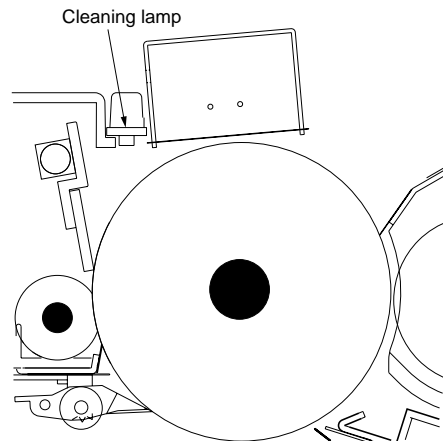


Figure 1-3-37 Charge erasing section

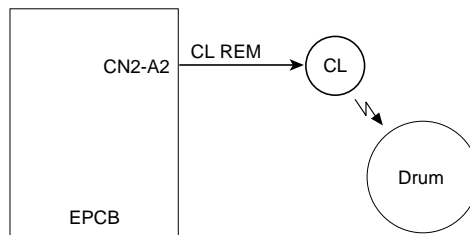


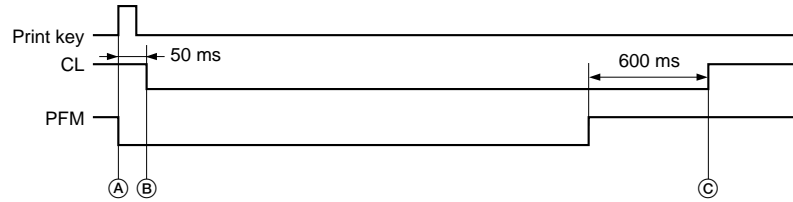
Figure 1-3-38 Charge erasing section block diagram

1-3-41





2A3/4



Auto copy density control, copy paper: A4/11" × 8¹/₂", magnification ratio 100%

Timing chart 1-3-6 Charge erasing

- (A) When the print key is pressed, the paper feed motor (PFM) turns on.
- (B) 50 ms after the paper feed motor (PFM) turns on, the cleaning lamp (CL) lights to remove the residual charge from the drum surface after the residual toner is removed by the cleaning section.
- (C) 600 ms after the paper feed motor (PFM) turns off, the cleaning lamp (CL) turns off.

1-3-42





2A3/4

(8) Fixing section

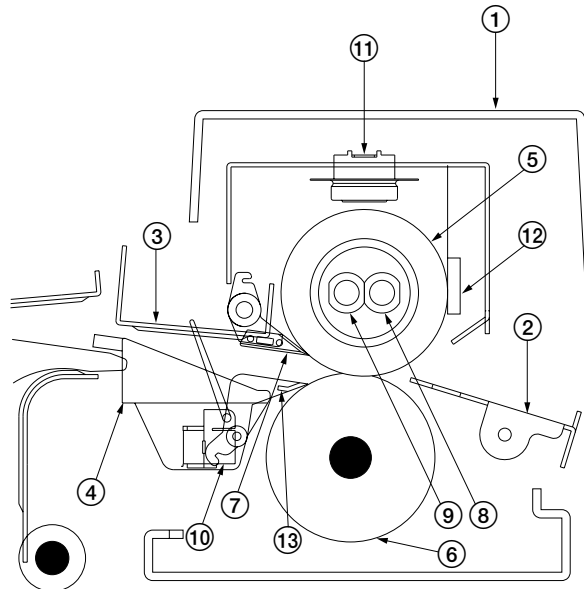


Figure 1-3-39 Fixing section

- | | |
|--------------------------------|---------------------------------|
| ① Fixing unit upper cover | ⑧ Fixing heater M (H1) |
| ② Fixing unit front guide | ⑨ Fixing heater S (H2) |
| ③ Fixing unit upper guide | ⑩ Eject switch (ESW) |
| ④ Fixing unit lower left guide | ⑪ Fixing unit thermostat (TH) |
| ⑤ Heat roller | ⑫ Fixing unit thermistor (FTH) |
| ⑥ Press roller | ⑬ Press roller separation claws |
| ⑦ Heat roller separation claws | |

1-3-43





2A3/4

The fixing section consists of the parts shown in Figure 1-3-39. When paper reaches the fixing section after the transfer process, it passes between the press roller and heat roller, which is heated by fixing heaters M or S (H1 or H2). Pressure is applied by the pressure springs so that the toner on the paper is melted, fused and fixed onto the paper.

When the fixing process is completed, the paper is separated from the heat roller by its separation claws and is ejected from the copier to either the eject section or duplex section.

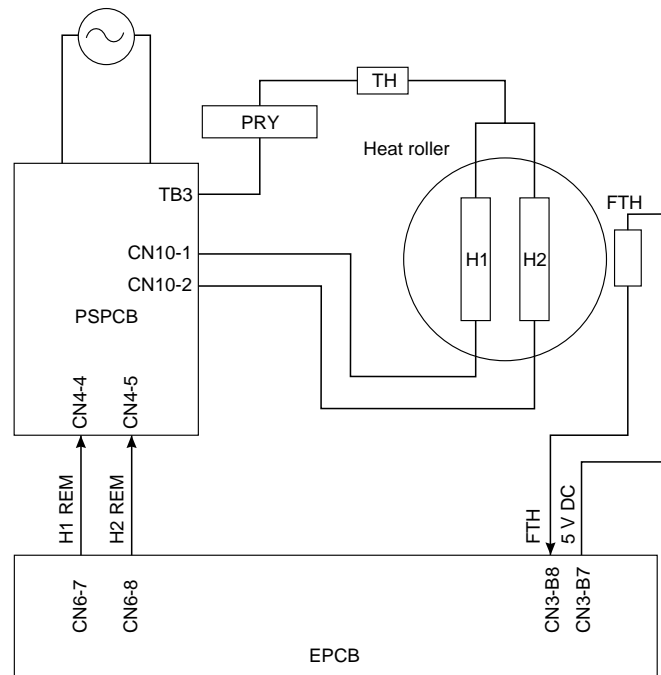


Figure 1-3-40 Fixing section block diagram

1-3-44





2A3/4

Heating the heat roller and detecting temperature

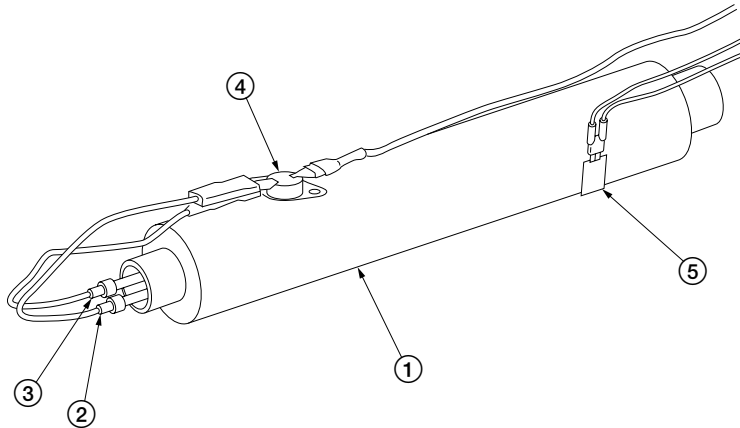


Figure 1-3-41 Heating the heat roller and detecting temperature

- | | |
|------------------------|--------------------------------|
| ① Heat roller | ④ Fixing unit thermostat (TH) |
| ② Fixing heater M (H1) | ⑤ Fixing unit thermistor (FTH) |
| ③ Fixing heater S (H2) | |

The heat roller is heated by fixing heaters M or S (H1 or H2) inside it; its surface temperature is detected by the fixing unit thermistor (FTH) and is regulated by the fixing heaters turning on and off.

If the fixing section becomes abnormally hot, either the fixing unit thermistor detects it or fixing unit thermostat (TH) operates, in each case, shutting the power to the fixing heaters off.

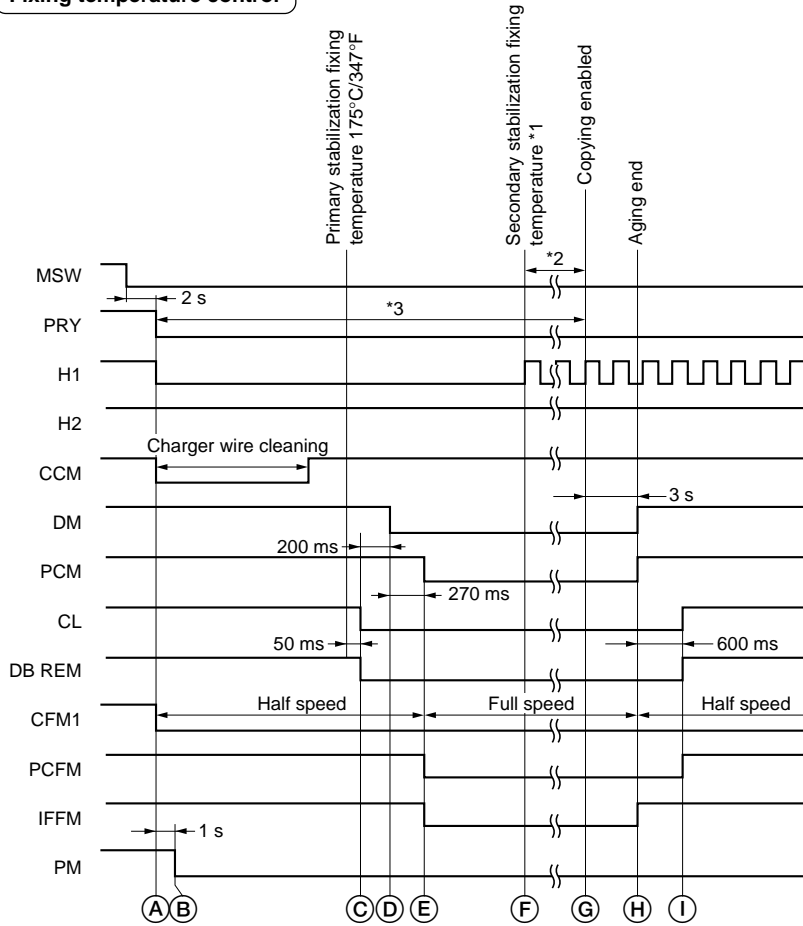
1-3-45





2A3/4

Fixing temperature control



*1: 42 ppm: 180°C/356°F
52 ppm: 190°C/374°F

*2: 42 ppm: 60 s
52 ppm: 120 s

*3: 42 ppm: 116 s
52 ppm: 176 s

Timing chart 1-3-7 Fixing temperature control

- Ⓐ 2s after the main switch (MSW) is turned on, the power relay (PRY) and fixing heater M (H1) turn on to heat the heat roller. The charger cleaning motor (CCM) also turns on to clean the charger wire, and cooling fan motor 1 (CFM1) rotates at half speed.
- Ⓑ 1 s after fixing heater M (H1) turns on, the polygon motor (PM) in the laser scanner unit turns on.

1-3-46





2A3/4

- Ⓒ When the fixing temperature reaches 175°C/347°F, the copier enters primary stabilization. 50 ms later the cleaning lamp (CL) and developing bias (DB REM) turn on and primary stabilization starts.
- Ⓓ 200 ms after the cleaning lamp (CL) turns on, the drive motor (DM) turns on.
- Ⓔ 270 ms after the drive motor (DM) turns on, the paper conveying motor (PCM), paper conveying fan motor (PCFM) and image formation section fan motor (IFFM) turn on and cooling fan motor 1 (CFM1) rotates at full speed.
- Ⓕ When the fixing temperature reaches 180°C/356°F (42 ppm) or 190°C/374°F (52 ppm), the copier enters secondary stabilization. Fixing heater M (H1) is turned on and off to keep the fixing temperature at 180°C/356°F (42 ppm) or 190°C/374°F (52 ppm) and aging starts.
- Ⓖ 116 s (42 ppm) or 176 s (52 ppm) after the power relay (PRY) turns on or 60 s (42 ppm) or 120 s (52 ppm) after the copier enters secondary stabilization (whichever event occurs first), copying is enabled.
- Ⓗ 3 s after copying is enabled, the drive motor (DM), paper conveying motor (PCM) and image formation section fan motor (IFFM) turn off, and aging ends. Cooling fan motor 1 (CFM1) rotates at half speed.
- Ⓛ 600 ms after aging ends, the cleaning lamp (CL), developing bias (DB REM) and paper conveying fan motor (PCFM) turn off.

• **Fixing control temperature correction**

Depending on the ambient temperature, the fixing control temperature is corrected as follows.

Table 1-3-1

| | Copy setting | Fixing control temperature |
|---|--|--|
| Correction for low ambient temperature (Ambient temperature: 17°C/ 62.6°F or below) | Paper feed from upper and lower drawers, bypass table and large paper deck | 42 ppm: 190°C/374°F (10°C/18°F higher) 52 ppm: 195°C/383°F (5°C/9°F higher) |
| Correction for high ambient temperature (Ambient temperature: 37°C/ 98.6°F or higher) | Continuous copying of 100 or less sheets in duplex copy mode | 42 ppm: 160°C/320°F (20°C/36°F lower) 52 ppm: 170°C/338°F (20°C/36°F lower) |

Fixing heater M or S (H1 or H2) is turned on for 5 s from the start of the copying operation so that the fixing control temperature becomes 190°C/374°F (10°C/18°F higher for 42 ppm) or 195°C/383°F (5°C/9°F higher for 52 ppm).

1-3-47





2A3/4

Paper separation

Paper is separated in the fixing section by the separation claws as shown in Figure 1-3-42.

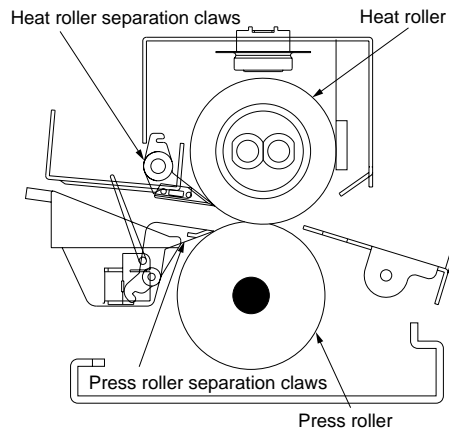


Figure 1-3-42 Paper separation

1-3-48



2A3/4

(9) Feedshift and eject section

The feedshift and eject section consists of the parts shown in Figure 1-3-43. When fixing is complete, the conveying path is switched by the feedshift guide to eject the paper to either the copy tray or duplex unit.

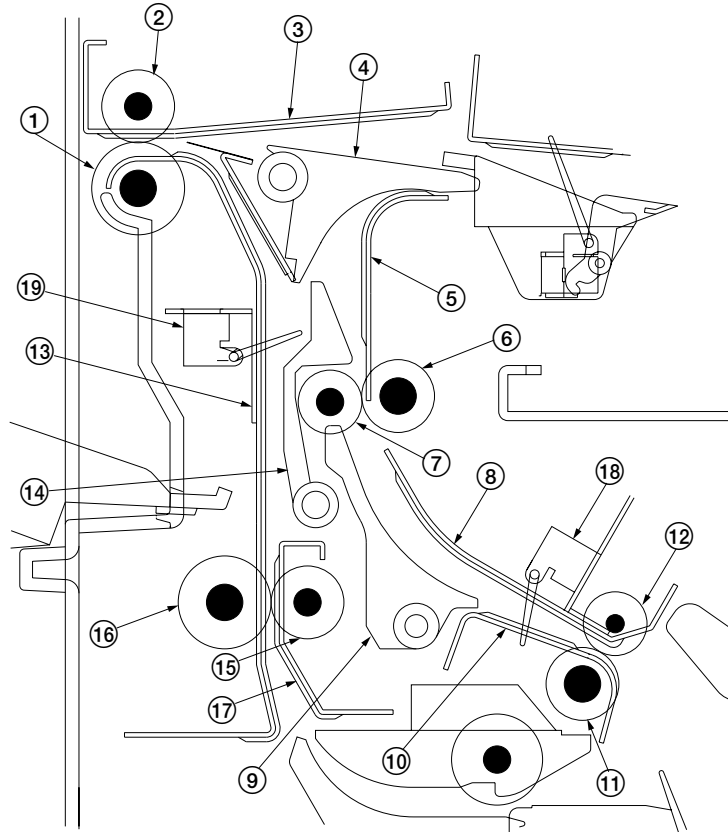


Figure 1-3-43 Feedshift and eject section

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

1-3-49





2A3/4

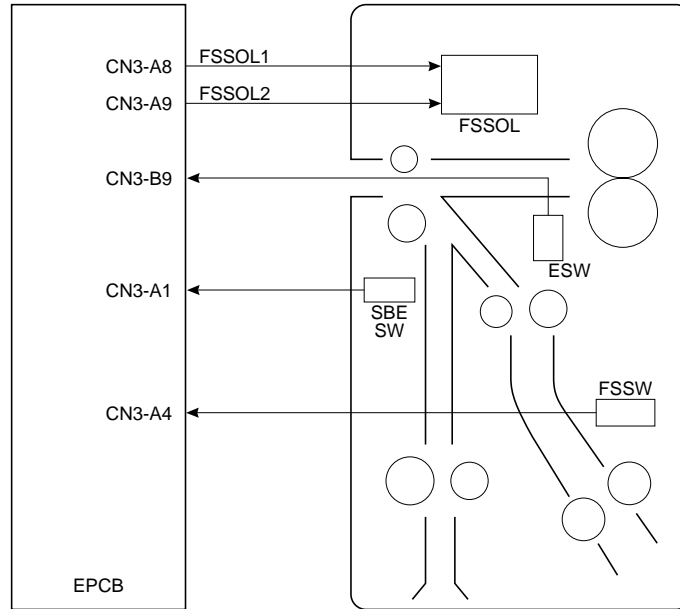


Figure 1-3-44 Feedshift and eject section block diagram

1-3-50





(10) Duplex section

In duplex copy mode, the paper copied onto the first face (rear face) is sent to the duplex section for side registration and switchback, and refeed for copying onto the second face (front face).

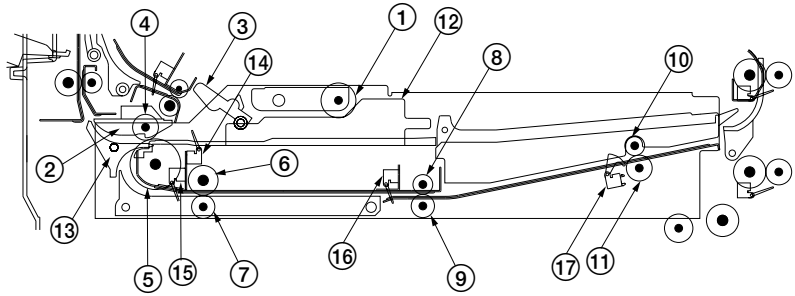


Figure 1-3-45 Duplex section

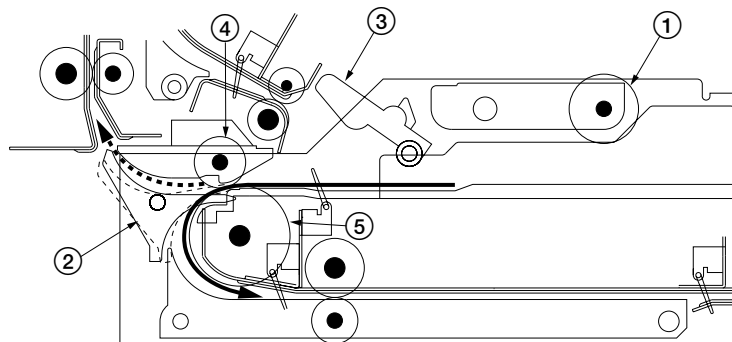
- | | |
|------------------------------------|---|
| ① Duplex forwarding pulley | ⑩ Duplex eject roller |
| ② Upper refeed guide | ⑪ Duplex eject pulley |
| ③ Paper tapping guide | ⑫ Side registration guides |
| ④ Refeed pulley | ⑬ Switchback feedshift guide |
| ⑤ Switchback roller | ⑭ Stock switch (STKSW) |
| ⑥ Duplex upper registration roller | ⑮ Duplex registration switch (DUPRSW) |
| ⑦ Duplex lower registration roller | ⑯ Duplex paper conveying switch (DUPPCSW) |
| ⑧ Duplex conveying roller | ⑰ Duplex eject switch (DUPESW) |
| ⑨ Duplex conveying pulley | |





2A3/4

When the paper is sent to the duplex section, the duplex paper tapping solenoid (DUPPTSOL) lowers, which forwards the paper by means of the rotation of the duplex forwarding pulley until it is caught by the switchback roller. In duplex copy mode, the switchback feedshift solenoid (SBFSSOL) turns on to operate the switchback feedshift guide. The paper is then sent to the duplex paper conveying section by the rotation of the switchback roller. During switchback ejection, the paper is conveyed to the feedshift and eject section and ejected with the copied face down.



← In duplex copy mode
←..... During switchback ejection

Figure 1-3-46 Duplex refeed mechanism

- ① Duplex forwarding pulley
- ② Switchback feedshift guide
- ③ Paper tapping guide
- ④ Refeed pulley
- ⑤ Switchback roller

1-3-52





2A3/4

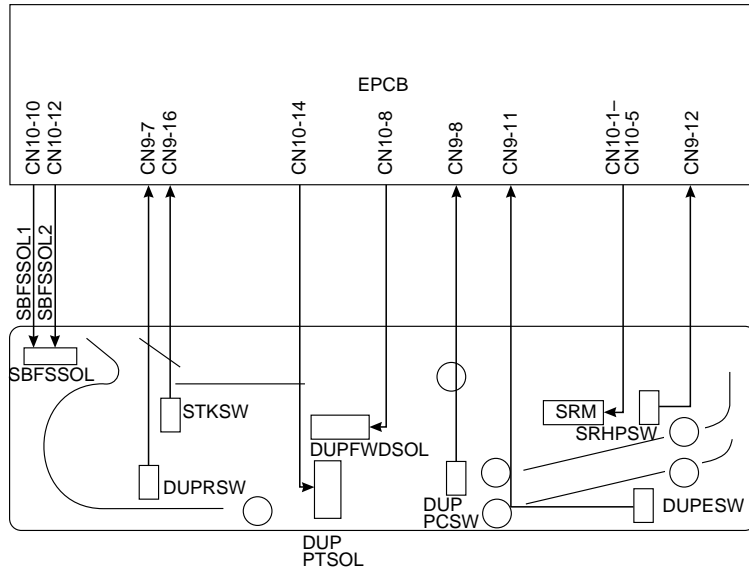


Figure 1-3-47 Duplex section block diagram



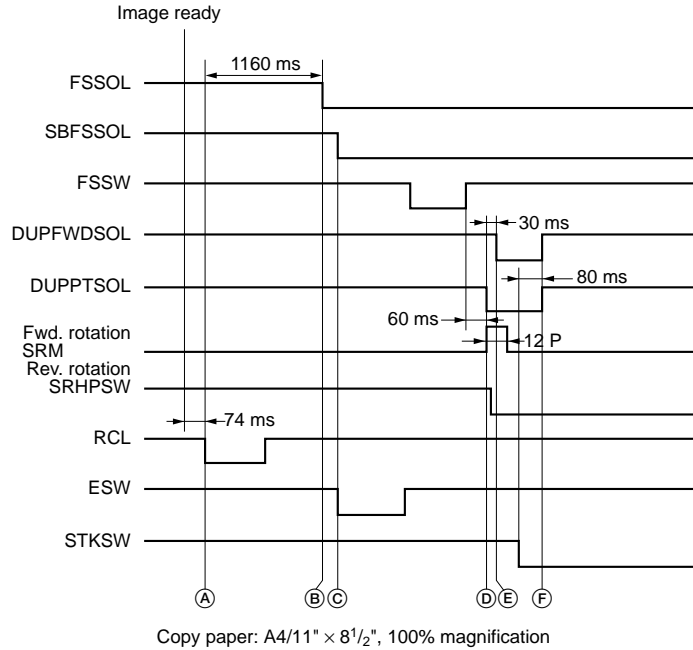
1-3-53





2A3/4

Duplex copying operation timing

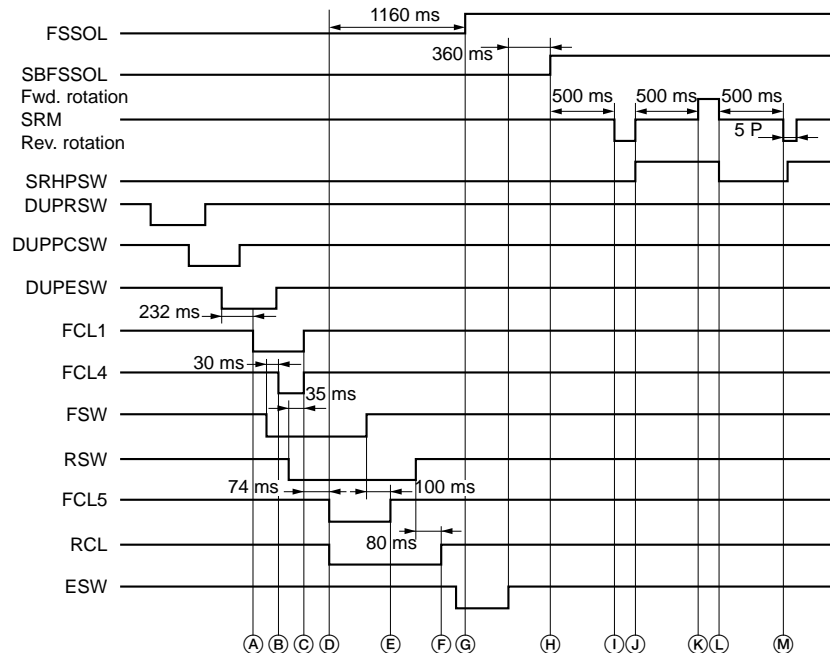


Timing chart 1-3-8 Feedshift and side registration

- (A) 74 ms after the image ready signal turns on during copying onto the first face (back), the registration clutch (RCL) turns on to start secondary paper feed.
- (B) 1160 ms after the registration clutch (RCL) turns on, the feedshift solenoid (FSSOL) turns on, operating the feedshift guide to switch the paper path to the duplex unit.
- (C) When the leading edge of the paper turns the eject switch (ESW) on, the switchback feedshift solenoid (SBFSSOL) turns on, operating the switchback guide to switch the paper path to the duplex unit conveying section.
- (D) 60 ms after copying onto the first face (back) is completed and the trailing edge of the paper turns the feedshift switch (FSSW) off, the side registration motor (SRM) rotates forward for 12 pulses for side registration. At the same time, the duplex paper tapping solenoid (DUPPTSOL) turns on, and the paper tapping guide lowers to hold down the trailing edge (leading edge during refeed) of the paper that was conveyed to the duplex section.
- (E) 30 ms after the duplex paper tapping solenoid (DUPPTSOL) turns on, the duplex forwarding solenoid (DUPFWDSOL) turns on, operating the duplex forwarding pulley to forward the paper until it is caught by the switchback roller.
- (F) 80 ms after the stock switch (STKSW) turns off, the duplex tapping solenoid (DUPPTSOL) and duplex forwarding solenoid (DUPFWDSOL) turn off.

1-3-54



Copy paper: A4/11" × 8¹/₂", 100% magnification**Timing chart 1-3-9 Refeed**

- Ⓐ 232 ms after the leading edge of the paper turns the duplex eject switch (DUPESW) on, feed clutch 1 (FCL1) turns on and feed roller 1 rotates.
- Ⓑ 30 ms after the leading edge of the paper turns the feed switch (FSW) on, feed clutch 4 turns on and the lower feed roller rotates at high speed to create slack in the paper before registration.
- Ⓒ 35 ms after the leading edge of the paper turns the registration switch (RSW) on, feed clutch 1 (FCL1) and feed clutch 4 (FCL4) turn off.
- Ⓓ 74 ms after feed clutch 4 (FCL4) turns off, the registration clutch (RCL) turns on, and the upper and lower registration rollers rotate to start secondary paper feed. At the same time feed clutch 5 (FCL5) turns on and the lower feed roller rotates at low speed.
- Ⓔ 100 ms after the trailing edge of the paper turns the feed switch (FSW) off, feed clutch 5 (FCL5) turns off.
- Ⓕ 80 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off.
- Ⓖ 1160 ms after the registration clutch (RCL) turns on, the feedshift solenoid (FSSOL) turns off.
- Ⓗ 360 ms after copying onto the second face (front) is completed and the eject switch (ESW) turns off, the switchback feedshift solenoid (SBFSSOL) turns off.
- Ⓛ 500 ms after the switchback feedshift solenoid (SBFSSOL) turns off, the side registration motor (SRM) reverses to move the side registration guides outwards.

1-3-55





2A3/4

- ⓐ When the side registration home position switch (SRHPSW) turns on, the side registration motor (SRM) turns off.
- ⓑ 500 ms after the side registration home position switch (SRHPSW) turns on, the side registration motor (SRM) rotates forward to move the side registration guides inwards.
- ⓒ When the side registration home position switch (SRHPSW) turns off, the side registration motor (SRM) turns off.
- ⓓ 500 ms after the side registration home position switch (SRHPSW) turns off, the side registration motor (SRM) reverses for 5 pulses, and the side registration guide stops at its home position.



1-3-56





(11) SRDF

(11-1) Original feed section

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

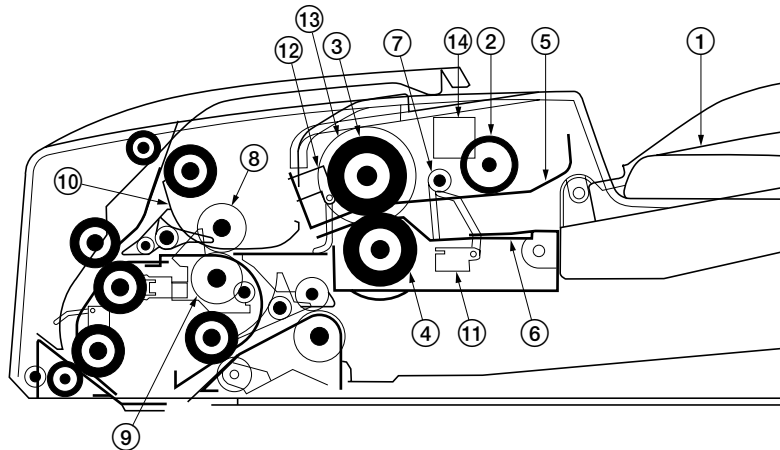


Figure 1-3-48 Original feed section

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





2A3/4

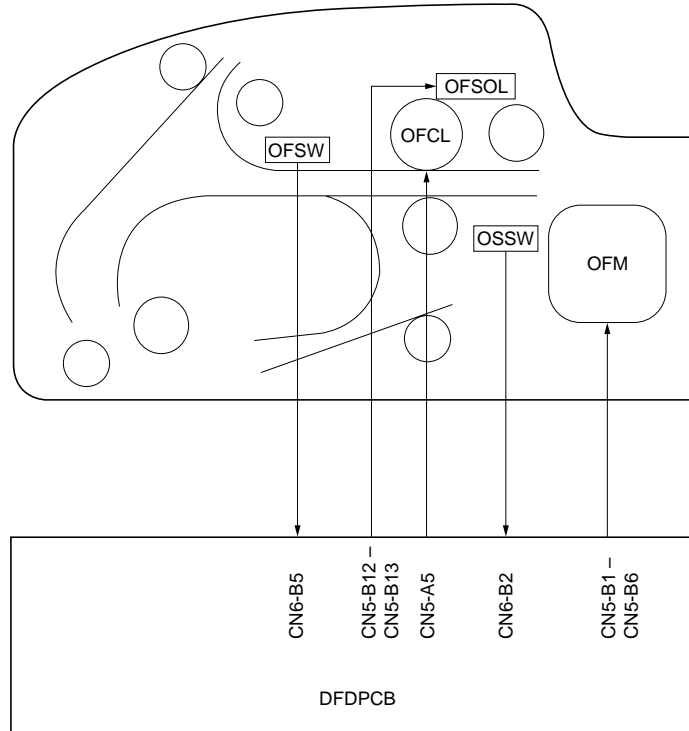
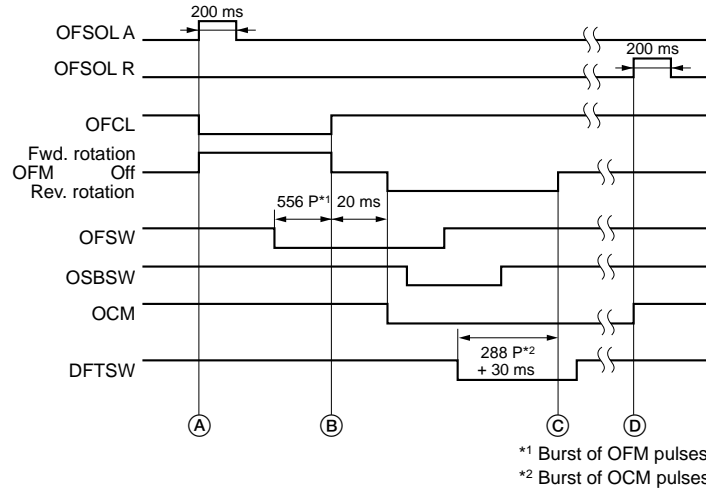


Figure 1-3-49 Original feed section block diagram

1-3-58



**Original feed timing****Timing chart 1-3-10 Original feed (in double-sided original mode)**

- (A) The OFSOLA signal turns on for 200 ms and then the original feed solenoid (OFSOL) turns on, lowering the DF forwarding pulleys and releasing the original stopper to convey the original forward. The original feed clutch (OFCL) simultaneously turns on, rotating the DF original feed pulley to start primary original feed. The original feed motor (OFM) rotates forward during this operation.
- (B) 556 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.
- (C) 288 OFM pulses plus 30 ms after the leading edge of the original turns the DF timing switch (DFTSW) on, the original feed motor (OFM) turns off.
- (D) After ejection of the original, as the original conveying motor (OCM) turns off, the OFSOL R signal turns on for 200 ms and the original feed solenoid (OFSOL) turns off.





2A3/4

(11-2) Original switchback section

The original switchback section consists of the parts shown in Figure 1-3-50. The original from the original feed section or original conveying section is reversed and conveyed to the original conveying section.

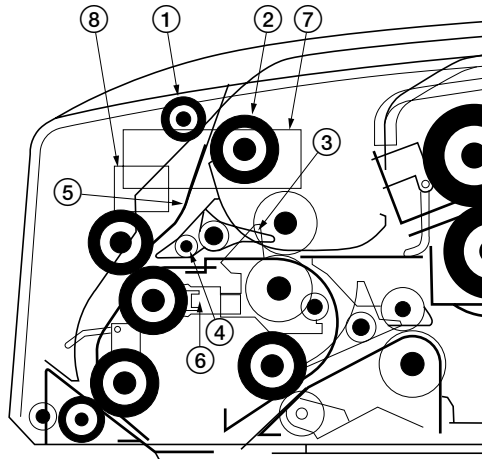


Figure 1-3-50 Original switchback section

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

1-3-60





2A3/4

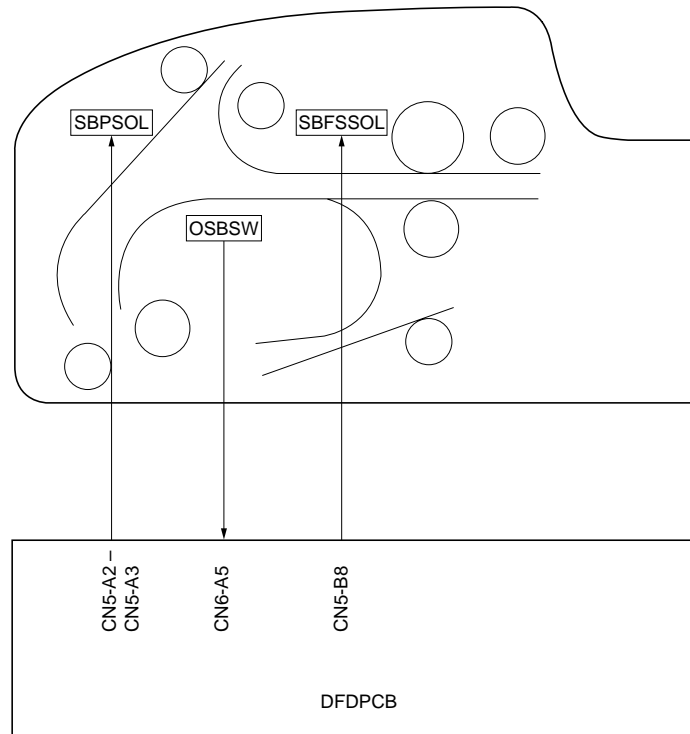


Figure 1-3-51 Original switchback section block diagram

1-3-61





2A3/4

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.

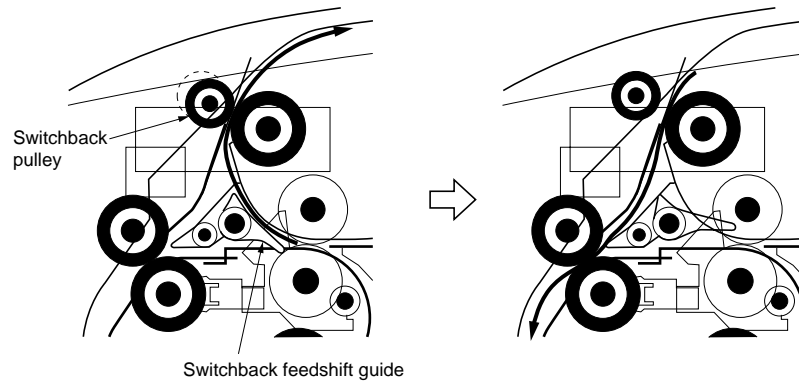


Figure 1-3-52

1-3-62





2A3/4

(11-3) Original conveying section

The original conveying section consists of the parts shown in Figure 1-3-53.

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.

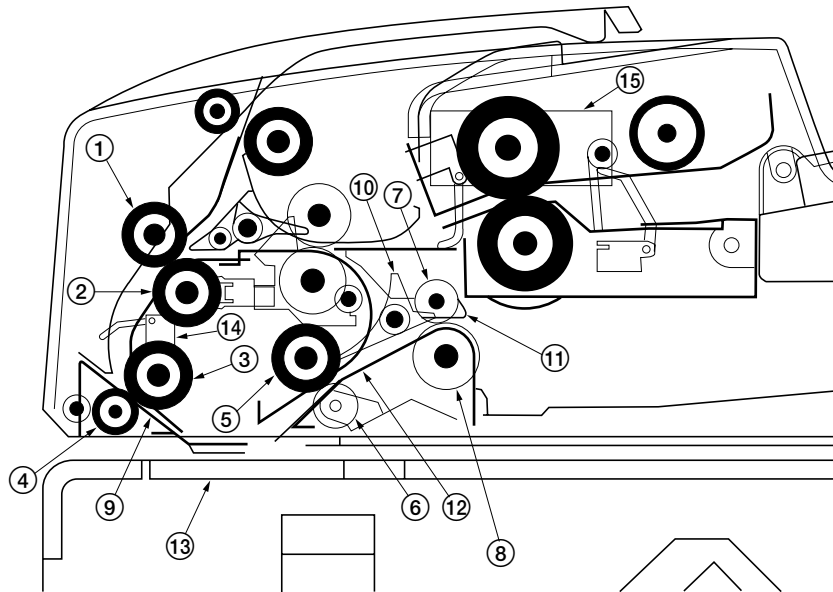


Figure 1-3-53 Original conveying section

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

1-3-63





2A3/4

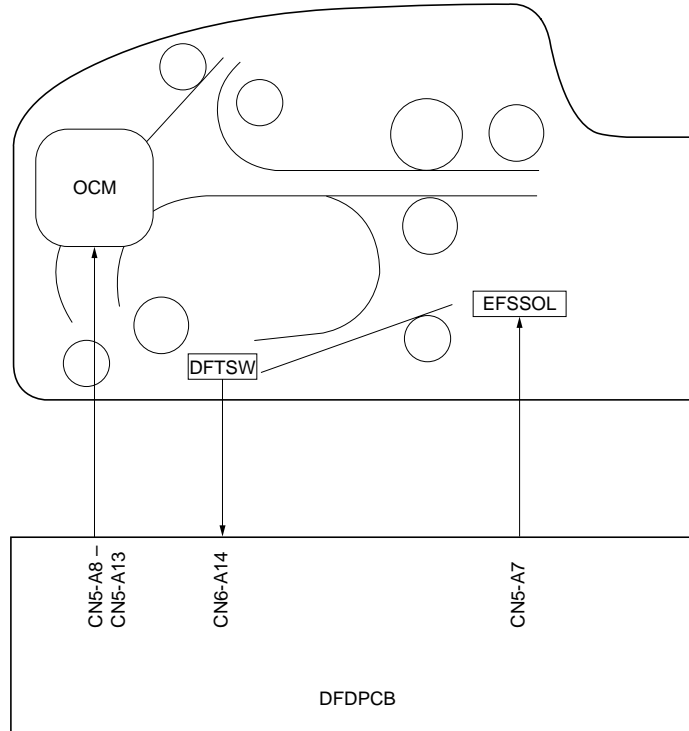
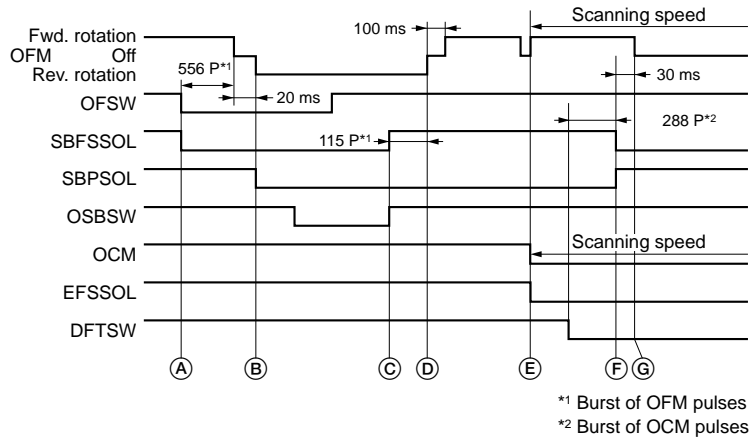


Figure 1-3-54 Original conveying section block diagram

1-3-64



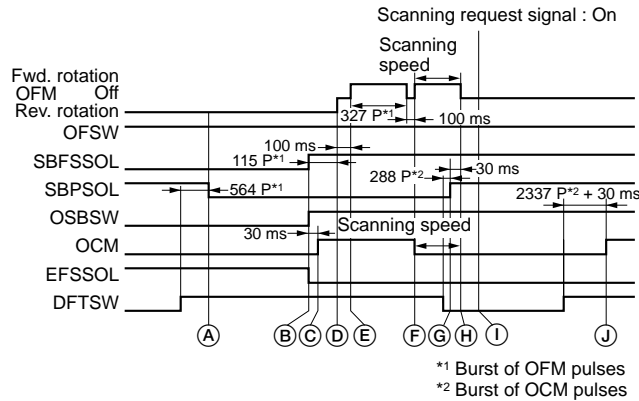
**Original switchback/conveying timing****Timing chart 1-3-11 Reversing the first face of the original**

- Ⓐ 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.
- Ⓑ 556 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. The switchback pressure solenoid (SBPSOL) simultaneously turns on to operate the switchback pulley.
- Ⓒ 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.
- Ⓓ 115 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.
- Ⓔ 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.
- Ⓕ When the original is conveyed onto the slit glass, the DF timing switch (DFTSW) turns on. 288 OCM pulses later, the switchback pressure solenoid (SBPSOL).
- Ⓖ 30 ms after the switchback pressure solenoid (SBPSOL) turns off, the original feed motor (OFM) turns off.





2A3/4



Timing chart 1-3-12 Reversing of the second face of the original and ejection

- Ⓐ 564 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.
- Ⓑ 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. Simultaneously, the switchback feedshift solenoid (SBFSSOL) turns off and the switchback feedshift guide returns to the original position.
- Ⓒ 30 ms after the original switchback switch (OSBSW) turns off, the original conveying motor (OCM) turns off.
- Ⓓ 115 OFM pulses after the original switchback switch (OSBSW) turns off, the original feed motor (OFM) turns off.
- Ⓔ 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.
- Ⓕ 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.
- Ⓖ 288 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.
- Ⓗ 30 ms after the switchback pressure solenoid (SBPSOL) turns off, the original feed motor (OFM) turns off.
- Ⓘ When the scanning request signal turns on, scanning of the second face (front face) of the original starts.
- Ⓙ 2337 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.

1-3-66





2A3/4

(12) Large paper deck (42 ppm: optional/52 ppm: standard)

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

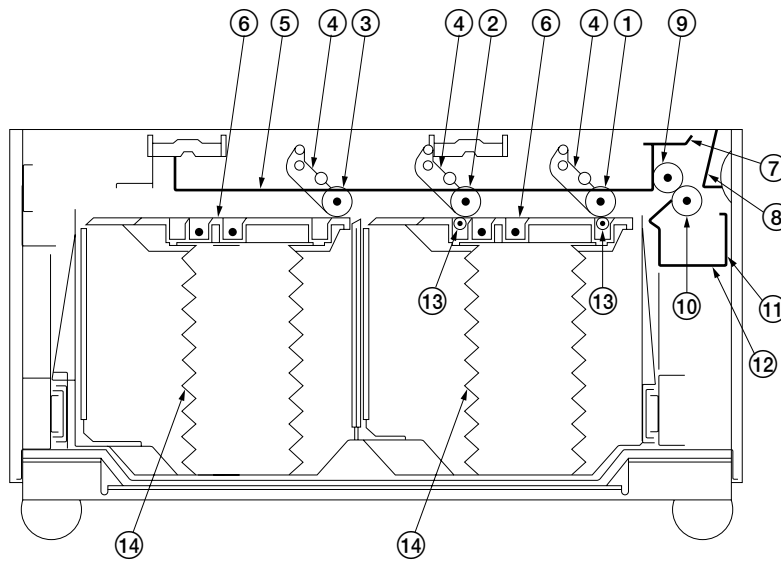


Figure 1-3-55 Mechanical construction (1)

- | | |
|-------------------------------|--------------------------------|
| ① Deck paper feed roller 1 | ⑧ Deck side cover |
| ② Deck paper conveying roller | ⑨ Upper deck separation roller |
| ③ Deck paper feed roller 2 | ⑩ Lower deck separation roller |
| ④ Pickup arm | ⑪ Bracket |
| ⑤ Paper conveying base | ⑫ Paper guide D |
| ⑥ Lift | ⑬ Guide pulley |
| ⑦ Paper guide U | ⑭ Air damper |

1-3-67





2A3/4

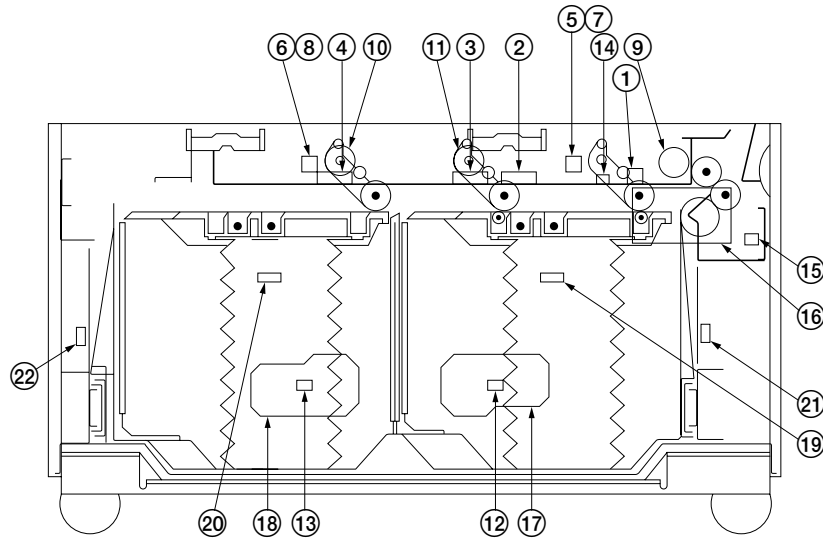


Figure 1-3-56 Mechanical construction (2)

- | | |
|--|---|
| ① Paper path sensor 1 (PPSENS1) | ⑭ Deck open/closed safety switch (DOSSW) |
| ② Paper path sensor 2 (PPSENS2) | ⑮ Side cover switch (SCSW) |
| ③ Paper path sensor 3 (PPSENS3) | ⑯ Deck paper conveying motor (CM) |
| ④ Paper empty sensor (PESENS) | ⑰ Paper deck motor 1 (PDM1) |
| ⑤ Deck level switch 1 (DLSW1, front) | ⑱ Paper deck motor 2 (PDM2) |
| ⑥ Deck level switch 2 (DLSW2, front) | ⑲ Paper level detection sensor 1 (PLDSENS1) |
| ⑦ Upper limit switch 1 (UPSW1, rear) | ⑳ Paper level detection sensor 2 (PLDSENS2) |
| ⑧ Upper limit switch 2 (UPSW2, rear) | ㉑* Dehumidifier heater 1 (DH1) |
| ⑨ Paper feed clutch 1 (PFCL1) | ㉒* Dehumidifier heater 2 (DH2) |
| ⑩ Paper feed clutch 2 (PFCL2) | |
| ⑪ Paper conveying clutch (CCL) | |
| ⑫ Paper deck motor pulse sensor 1 (PDMSENS1) | |
| ⑬ Paper deck motor pulse sensor 2 (PDMSENS2) | |

* Service part.

1-3-68

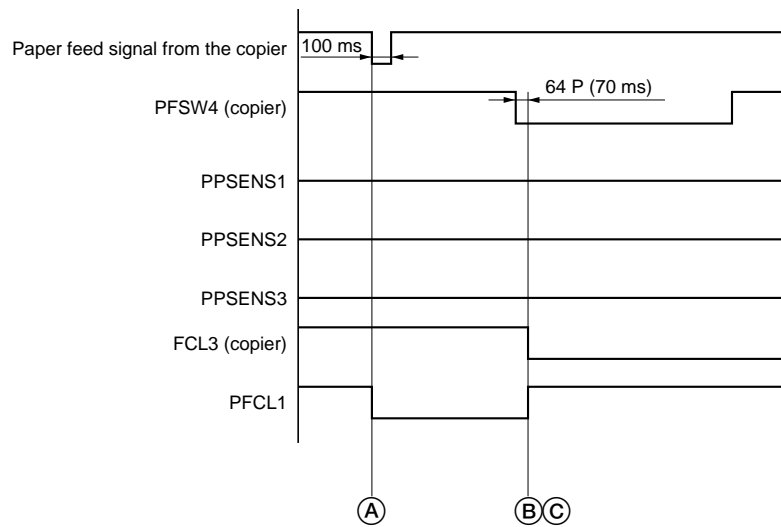




2A3/4

(12-1) Right cassette primary paper feed

As paper feed clutch 1 (PFCL1) turns on, the drive is transmitted to deck paper feed roller 1 and the upper and lower deck separation rollers, starting primary paper feed from the right cassette. The upper and lower deck separation rollers ensure that the paper is fed one sheet at a time and that it is fed into the copier correctly. To prevent multiple sheets from being fed, there is a torque limiter on the lower deck separation roller.



Timing chart 1-3-13 Right cassette primary paper feed

- Ⓐ The paper feed signal from the copier turns paper feed clutch 1 (PFCL1) on, starting primary paper feed.
- Ⓑ 64 pulses after paper feed switch 4 (PFSW4) on the copier has been turned on by the leading edge of the paper, paper feed clutch 1 (PFCL1) turns off.
- Ⓒ 70 ms after paper feed switch 4 (PFSW4) on the copier has turned on, copier feed clutch 3 (FCL3) turns on to feed the paper to complete primary paper feed.

1-3-69





2A3/4

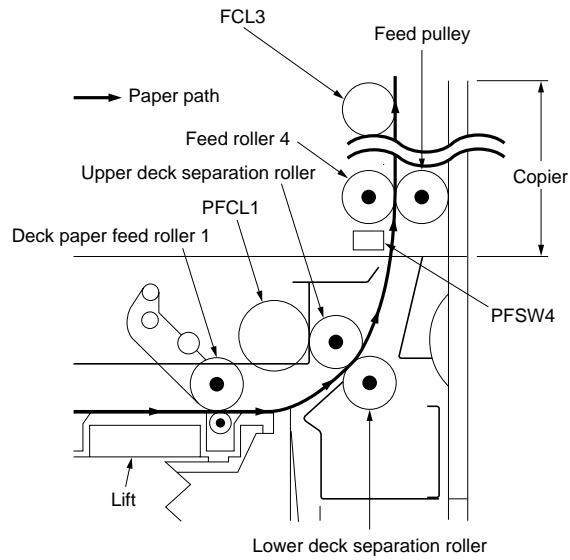


Figure 1-3-57 Right cassette paper feed section



1-3-70





2A3/4

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

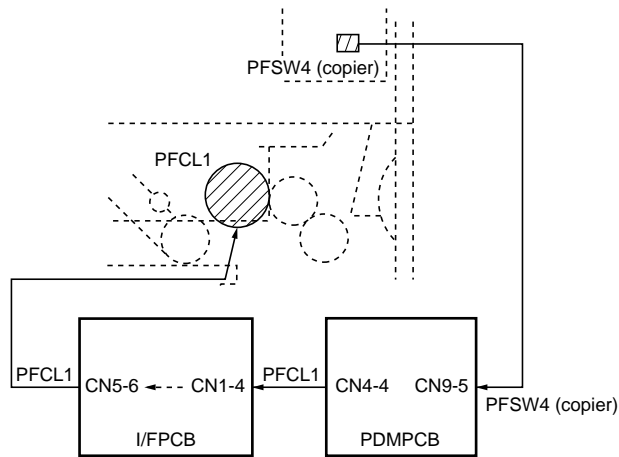


Figure 1-3-58 Right cassette primary paper feed section block diagram



1-3-71

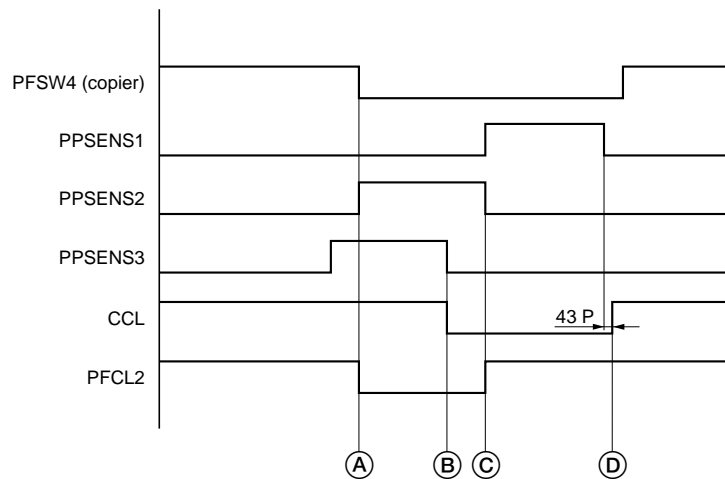




2A3/4

(12-2) Left cassette primary paper feed

As the last sheet in the right cassette is fed, paper feed clutch 2 (PFCL2) and the paper conveying clutch (CCL) turn on for primary feed from the left cassette. Deck paper feed roller 2 and the deck paper conveying roller start to rotate to convey paper from the left cassette onto the right cassette lift.



Timing chart 1-3-14 Left cassette primary paper feed

- Ⓐ When copier paper feed switch 4 (PFSW4) is turned on by the last paper from the right cassette, paper feed clutch 2 (PFCL2) turns on to start primary paper feed.
- Ⓑ The paper conveying clutch (CCL) turns on as soon as the leading edge of the paper from the left cassette turns paper path sensor 3 (PPSENS3) on.
- Ⓒ Paper feed clutch 2 (PFCL2) turns off as soon as the leading edge of the paper from the left cassette turns paper path sensor 2 (PPSENS2) on, completing primary paper feed.
- Ⓓ 43 pluses after the leading edge of the paper from the left cassette turns paper path sensor 1 (PPSENS1) on, the paper conveying clutch (CCL) turns off and the paper stops in the right cassette.

1-3-72





2A3/4

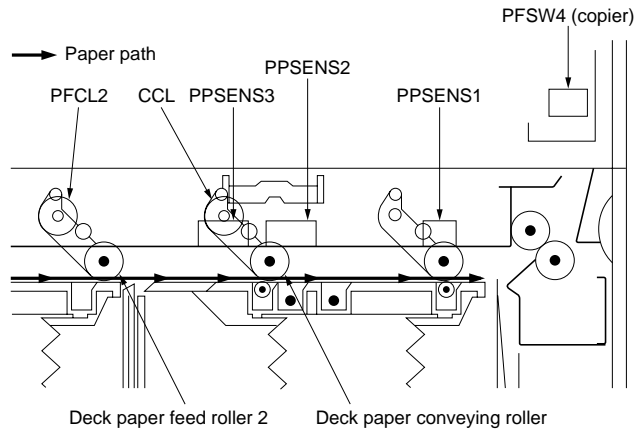


Figure 1-3-59 Left cassette paper feed section

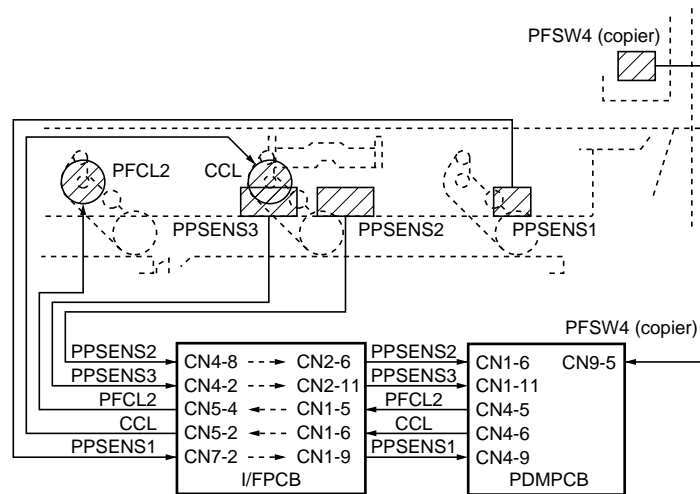


Figure 1-3-60 Left cassette primary paper feed section block diagram

1-3-73





2A3/4

(12-3) Raising and lowering the lifts

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

Paper deck motor 1 (PDM1) drives the right lift belt assembly that winches the belt up and hence raises the lift until it is stopped by deck level switch 1 (DLSW1).

When paper is loaded on the lift and the deck is closed, the lift is raised until deck level switch 1 (DLSW1) turns on.

When deck level switch 1 (DLSW1) is turned off as the paper on the lift is used, paper deck motor 1 (PDM1) starts to raise the lift until the switch turns on.

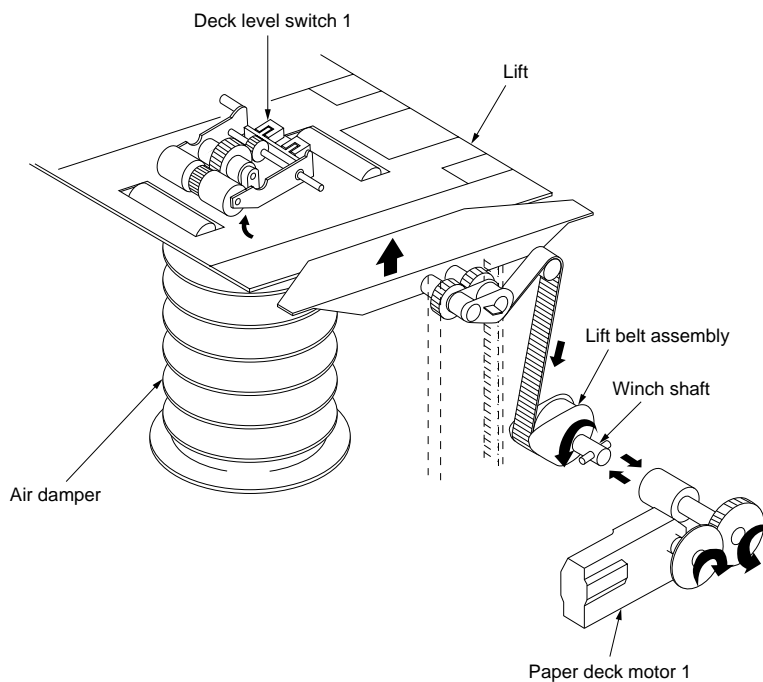


Figure 1-3-61 Raising and lowering the lift

When the deck is opened for removing a jammed paper or other purposes, the winch shaft is released from its holder on paper deck motor 1 (PDM1), allowing the lift to descend under its own weight. The air damper buffers the impact of the descending lift.

1-3-74





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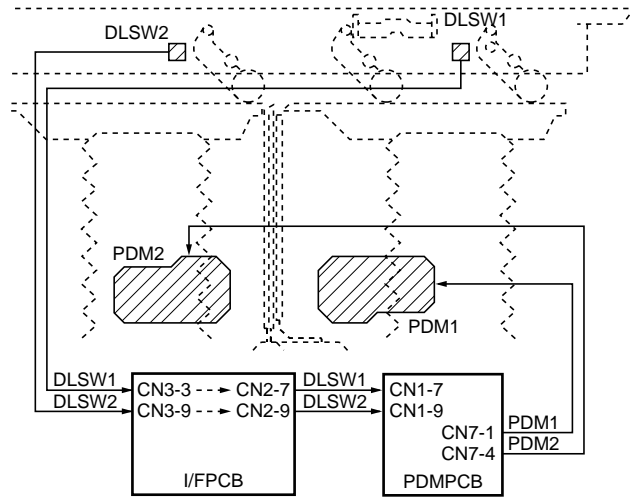


Figure 1-3-62 Lift block diagram



1-3-75





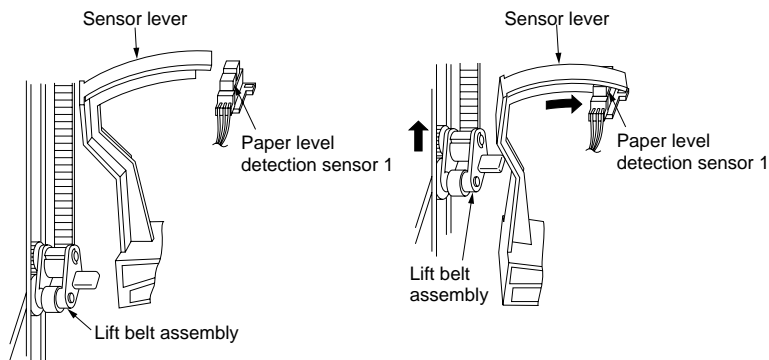
2A3/4

(12-4) Detecting the paper level

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

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

As more copies are made with the message on, paper path sensors 1, 2 and 3 (PPSENS1, 2, 3) or the paper empty sensor (PESENS) start to detect absence of paper, and the message on the copier touch panel changes to "Place paper in deck."



When paper level detection sensor 1 is off When paper level detection sensor 1 is on

Figure 1-3-63 Detecting the paper level

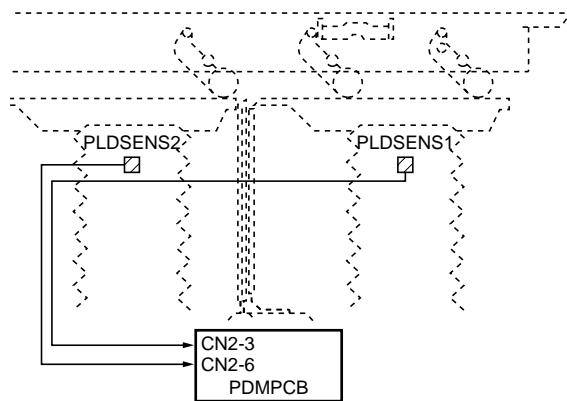


Figure 1-3-64 Paper level detection system block diagram

1-3-76





II

ELECTRICAL SECTION

II Electrical Section





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CONTENTS

2-1 Electrical Parts Layout

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| (3) Large paper deck (42 ppm: optional/52 ppm: standard) | 2-1-15 |





2-1-1 Electrical parts layout

(1) Copier

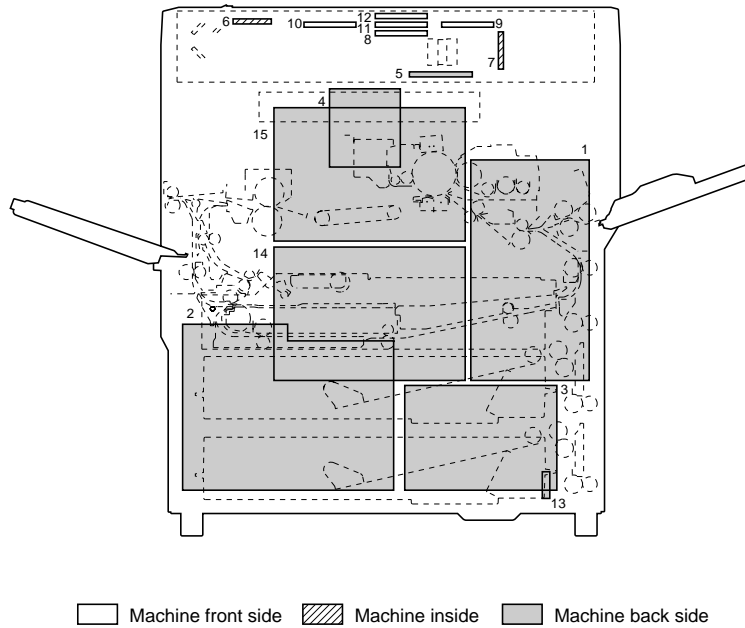


Figure 2-1-1 Copier (PCBs)

- | | |
|--|---|
| 1. Main PCB (MPCB) | Controls the other PCBs, electrical components and optional devices; image processing. |
| 2. Power source PCB (PSPCB) | Generates 24 V DC, +12 V DC and 5 V DC; controls fixing heaters M and S. |
| 3. Engine PCB (EPCB) | Interfaces output and input signals to and from electrical components and optional devices. |
| 4. High-voltage transformer PCB (HVTPCB) ... | Main charging. Generates developing bias, and high voltages for transfer and separation. |
| 5. Scanner motor PCB (SMPCB) | Controls the scanner motor. |
| 6. Inverter PCB (INPCB) | Controls the exposure lamp. |
| 7. CCD PCB (CCDPCB) | Reads the image off originals. |
| 8. Operation unit main PCB (OMPCB) | Controls the operation unit. |
| 9. Operation unit right PCB (ORPCB) | Consists of operation keys and display LEDs. |
| 10. Operation unit left PCB (OLPCB) | Consists of the operation keys, backlight and display LEDs. |





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- 11. LCD Displays copy modes and messages.
- 12. Touch panel Consists of a touch-sensitive layer which detects presses of operation keys displayed on the LCD.
- 13. Humidity sensor PCB (HUMPCB) Detects the absolute humidity.
 - External humidity sensor (EHUMSENS) ... Detects the external humidity.
 - External temperature thermistor (ETTH) ... Detects the external temperature.
- 14. Memory copy PCB 1 (MCPCB1) Reads and outputs the image.
- 15.*Memory copy PCB 2 (MCPCB2) Reads and outputs the image.

* 42 ppm: optional/52 ppm: standard.

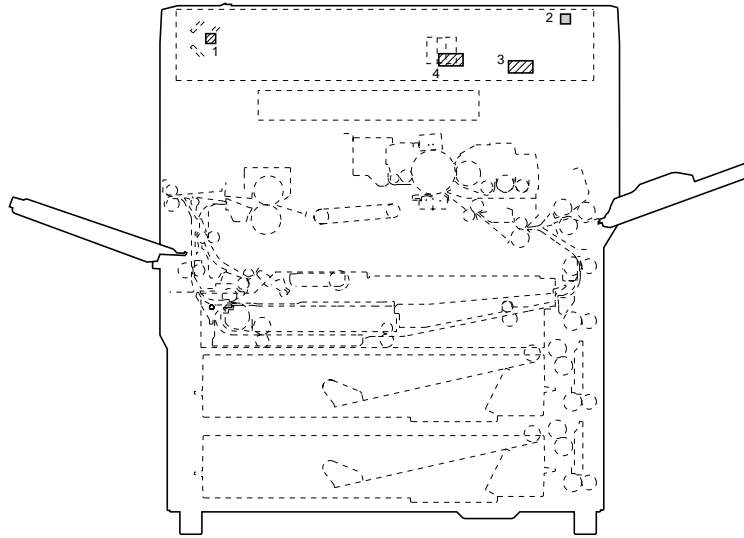


2-1-2





2A3/4



Machine front side
 Machine inside
 Machine back side

Figure 2-1-2 Copier (switches and sensors in the scanning system)

1. Scanner home position switch (SHPSW) Detects the scanner in the home position.
2. Original detection switch (ODSW) Operates the original size sensors.
3. Original size sensors 1 (OSD1) Detects the original size.
- 4.*Original size sensors 2 (OSD2) Detects the original size.

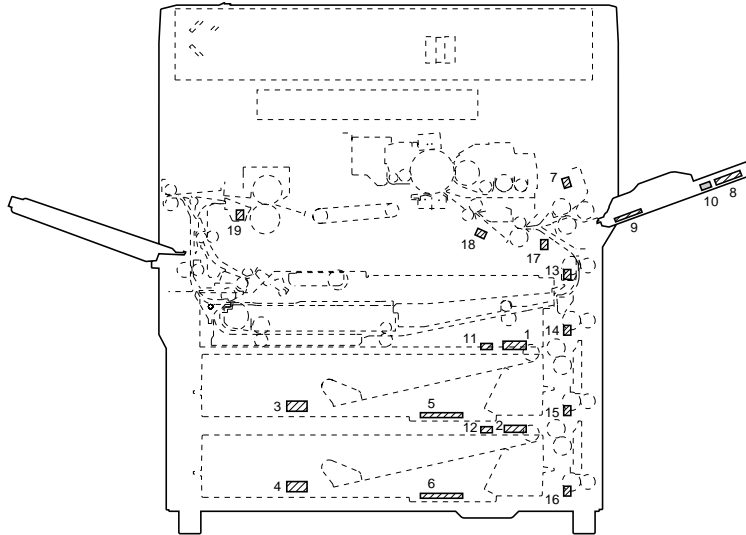
* For inch specifications only.

2-1-3





2A3/4



Machine front side
 Machine inside
 Machine back side

Figure 2-1-3 Copier (switches in the paper feed and conveying system)

- 1. Upper paper switch (PSW-U) Detects the presence of paper in the upper drawer.
- 2. Lower paper switch (PSW-L) Detects the presence of paper in the lower drawer.
- 3. Upper paper length switch (PLSW-U) Detects the length of paper in the upper drawer (inch specifications).
Detects the presence of the upper drawer (metric specifications).
- 4. Lower paper length switch (PLSW-L) Detects the length of paper in the lower drawer (inch specifications).
Detects the presence of the lower drawer (metric specifications).
- 5.*Upper paper width switch (PWSW-U) Detects the width of paper in the upper drawer.
- 6.*Lower paper width switch (PWSW-L) Detects the width of paper in the lower drawer.
- 7. Bypass paper switch (BYPPSW) Detects the presence of paper on the bypass table.

* For inch specifications only.

2-1-4





2A3/4

- 8. Bypass paper length switch (BYPPLSW) Detects the length of paper on the bypass table.
- 9. Bypass paper width switch (BYPPWSW) Detects the width of paper on the bypass table.
- 10. Bypass table extended detection switch Detects when the bypass table support guide is extended to use long paper.
(BYPEDSW)
- 11. Upper lift limit switch (LICSW-U) Detects the upper drawer lift reaching the upper limit.
- 12. Lower lift limit switch (LICSW-L) Detects the lower drawer lift reaching the upper limit.
- 13. Paper feed switch 1 (PFSW1) Controls feed clutch 4.
- 14. Paper feed switch 2 (PFSW2) Controls feed clutch 1, 2 and 3, and the upper paper feed clutch.
- 15. Paper feed switch 3 (PFSW3) Controls the lower paper feed clutch.
- 16. Paper feed switch 4 (PFSW4) Controls feed clutch 3.
- 17. Feed switch (FSW) Controls the secondary paper feed start timing.
- 18. Registration switch (RSW) Controls the secondary paper feed end timing.
- 19. Eject switch (ESW) Detects paper jam in the fixing section.

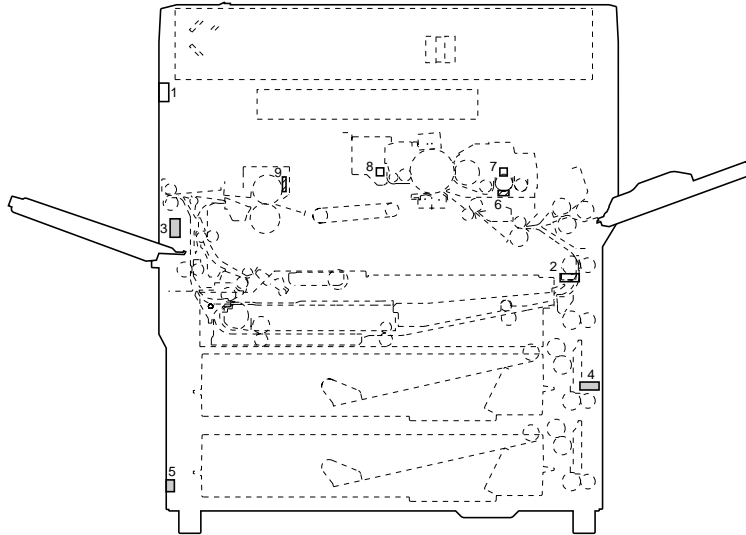


2-1-5





2A3/4



Machine front side Machine inside Machine back side

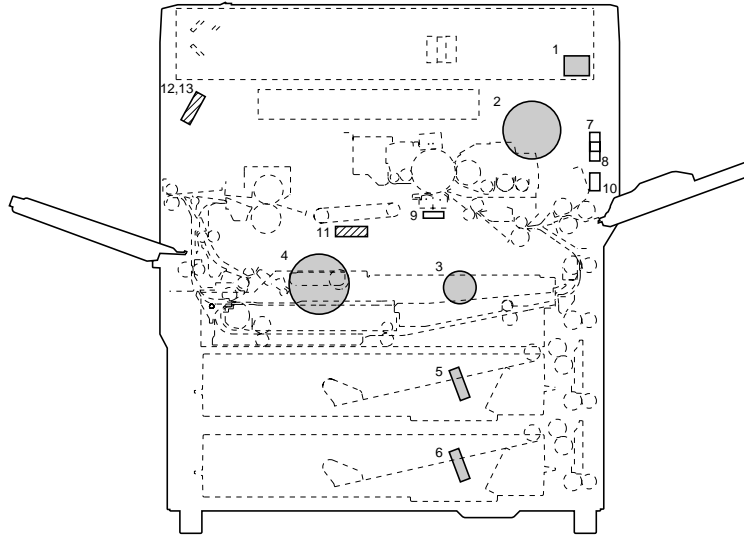
Figure 2-1-4 Copier (switches and sensors)

- 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; resets paper jam detection.
- 3. Safety switch 2 (SSW2) Breaks the safety circuit when the left cover is opened; resets paper jam detection.
- 4. Safety switch 3 (SSW3) Breaks the safety circuit when the right cover is opened; resets paper jam detection.
- 5.*Heater switch (HSW) Turns the optical and drawer heaters on and off.
- 6. Toner sensor (TNS) Detects the toner density in the developing section.
- 7. Toner level sensor (TLDS) Detects the toner level in the toner hopper.
- 8. Toner hopper lockup sensor (TLS) Detects the amount of recycled toner in the toner hopper.
- 9. Fixing unit thermistor (FTH) Detects the heat roller temperature.

* Service part.

2-1-6





□ Machine front side ▨ Machine inside ▒ Machine back side

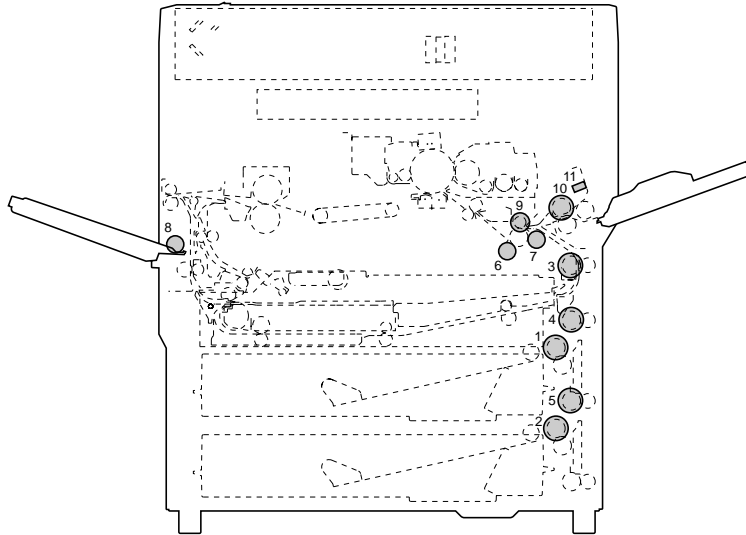
Figure 2-1-5 Copier (motors)

- 1. Scanner motor (SM) Drives the scanner.
- 2. Drive motor (DM) Drives the image formation section.
- 3. Paper feed motor (PFM) Drives the paper feed section.
- 4. Paper conveying motor (PCM) Conveys paper.
- 5. Upper lift motor (CLM-U) Drives the upper drawer lift.
- 6. Lower lift motor (CLM-L) Drives the lower drawer lift.
- 7. Toner feed motor (TFM) Replenishes toner.
- 8. Toner recycle motor (TRM) Replenishes recycled toner.
- 9. Charger cleaning motor (CCM) Cleans the transfer and separation
charger wires.
- 10. Image formation unit fan motor (IFFM) Collects scattered toner.
- 11. Paper conveying section fan motor Assists paper advance along the paper
(PCFM) conveying path and exhausts heat.
- 12. Cooling fan motor 1 (CFM1) Cools the machine interior.
- 13. Cooling fan motor 2 (CFM2) Cools the machine interior.





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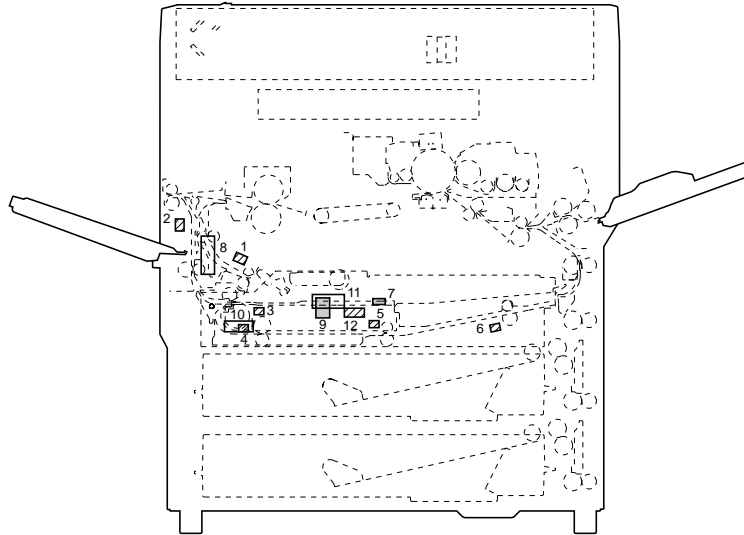
Machine front side Machine inside Machine back side

Figure 2-1-6 Copier (clutches and solenoids)

- 1. Upper paper feed clutch (PFCL-U) Primary paper feed from the upper drawer.
- 2. Lower paper feed clutch (PFCL-L) Primary paper feed from the lower drawer.
- 3. Feed clutch 1 (FCL1) Controls the drive of feed roller 1.
- 4. Feed clutch 2 (FCL2) Controls the drive of feed roller 2.
- 5. Feed clutch 3 (FCL3) Controls the drive of feed rollers 3 and 4.
- 6. Feed clutch 4 (FCL4) Controls the drive of the lower feed roller at high speed.
- 7. Feed clutch 5 (FCL5) Controls the drive of the lower feed roller at low speed.
- 8. Eject speed switching clutch (ESCL) Switches the paper ejection speed.
- 9. Registration clutch (RCL) Secondary paper feed.
- 10. Bypass paper feed clutch (BYPPFCL) Primary paper feed from the bypass table.
- 11. Bypass solenoid (BYPSOL) Operates the bypass forwarding pulley.

2-1-8





□ Machine front side ▨ Machine inside ■ Machine back side

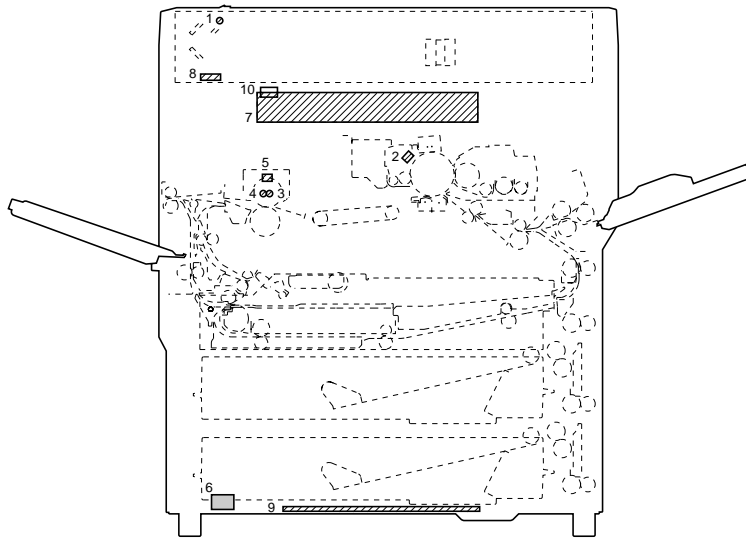
Figure 2-1-7 Copier (feedshift and duplex sections)

- 1. Feedshift switch (FSSW) Detects a paper jam in the feedshift section.
- 2. Switchback eject switch (SBESW) Detects a paper jam in the switchback eject section.
- 3. Stock switch (STKSW) Detects the presence of paper in the duplex unit.
- 4. Duplex registration switch (DUPRSW) Detects a paper jam in the duplex section.
- 5. Duplex paper conveying switch (DUPPCSW) Detects a paper jam in the duplex paper conveying section.
- 6. Duplex eject switch (DUPESW) Detects a paper jam in the duplex eject section.
- 7. Side registration home position switch (SRHPSW) Detects the side registration guides in the home positions.
- 8. Feedshift solenoid (FSSOL) Operates the feedshift guide.
- 9. Duplex forward solenoid (DUPFWD SOL) Operates the duplex forwarding pulley.
- 10. Switchback feedshift solenoid (SBFSSOL) Operates the switchback feedshift guide.
- 11. Duplex paper tapping solenoid (DUPPTSOL) Operates the paper tapping guide.
- 12. Side registration motor (SRM) Operates the side registration guides.





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□ Machine front side ▨ Machine inside ■ Machine back side



Figure 2-1-8 Copier (other electrical components)

- 1. Exposure lamp (EL) Exposes originals.
- 2. Cleaning lamp (CL) Removes residual charge from the drum surface.
- 3. Fixing heater M (H1) Heats the heat roller.
- 4. Fixing heater S (H2) Heats the heat roller.
- 5. Fixing unit thermostat (TH) Prevents overheating in the fixing section.
- 6. Relay (PRY) Turns the AC power and 24 V DC power supplies to the fixing section on and off.
- 7. Laser scanner unit (LSU)
 - Polygon motor (PM) Drives the polygon mirror.
 - Laser diode (LD) Generates the laser beam.
- 8.*Optical heater (OPH) Dehumidifies the optical section.
- 9.*Drawer heater (CH) Dehumidifies the drawer section.
- 10. Total counter (TC) Displays the total number of copies produced.

* Service part.

2-1-10





2A3/4

(2) SRDF

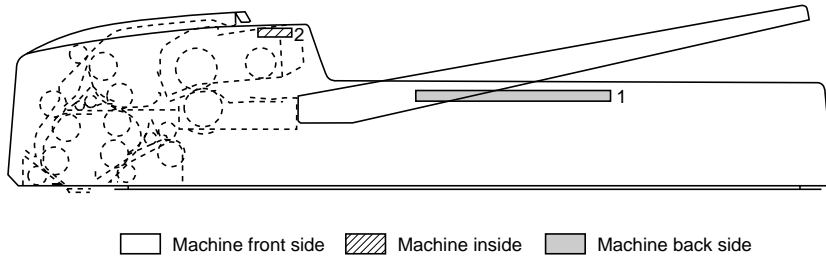


Figure 2-1-9 SRDF (PCBs)

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



2-1-11





2AD-1

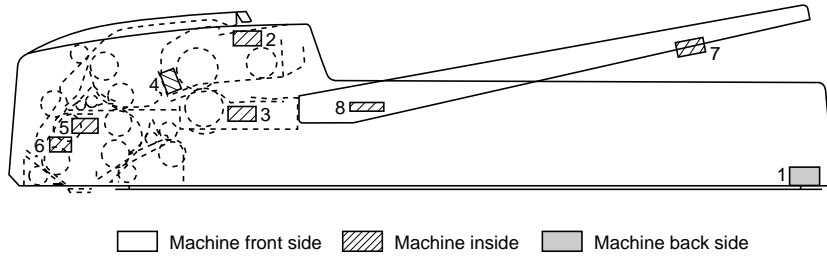


Figure 2-1-10 SRDF (switches and sensors)

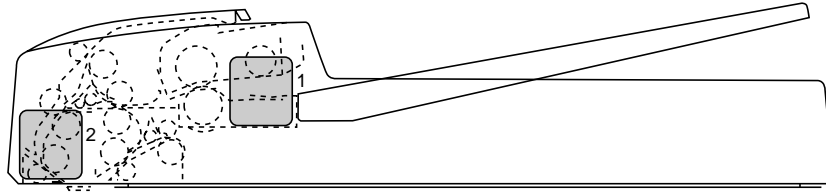
1. DF safety switch 1 (DFSSW1) Breaks the safety circuit when the SRDF is opened; resets original jam detection.
2. DF safety switch 2 (DFSSW2) *Breaks the safety circuit when the DF original reversing cover is opened; resets original jam detection.*
3. Original set switch (OSSW) Detects the presence of an original.
4. Original feed switch (OFSW) Detects primary original feed end timing.
5. Original switchback switch (OSBSW) Detects an original jam 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.

2-1-12





2A3/4



□ Machine front side ▨ Machine inside ■ Machine back side

Figure 2-1-11 SRDF (motors)

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



2-1-13





2A3/4

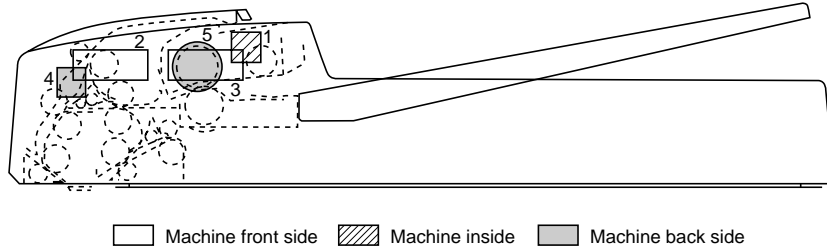


Figure 2-1-12 SRDF (clutches and solenoids)

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



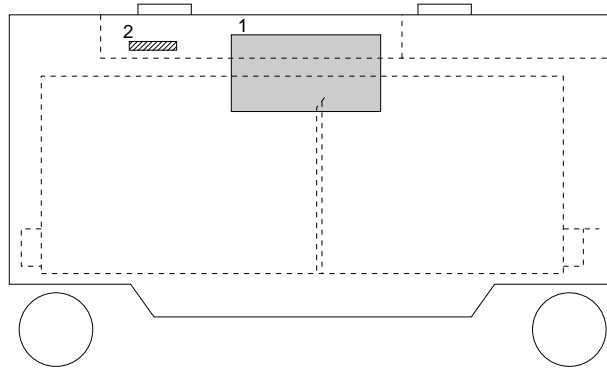
2-1-14





2A3/4

(3) Large paper deck (42 ppm: optional/52 ppm: standard)



Machine front side
 Machine inside
 Machine back side

Figure 2-1-13 Large paper deck (PCBs)

1. Deck main PCB (PDMPCB) Controls other PCBs and electrical components.
2. Interface PCB (I/FPCB) Interfaces between the deck main PCB and other electrical components.

2-1-15





2A3/4

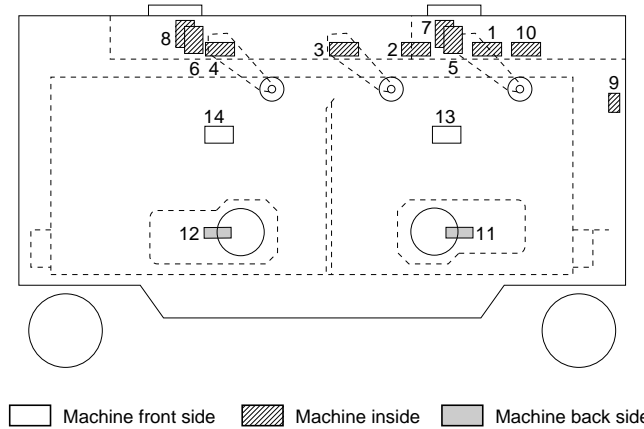


Figure 2-1-14 Large paper deck (switches and sensors)

1. Paper path sensor 1 (PPSENS1) Detect paper jams and the absence of paper on the lifts.
2. Paper path sensor 2 (PPSENS2) Detect paper jams and the absence of paper on the lifts.
3. Paper path sensor 3 (PPSENS3) Detect paper jams and the absence of paper on the lifts.
4. Paper empty sensor (PESENS) Detects the absence of paper in the left cassette.
5. Deck level switch 1 (DLSW1) Detects the right cassette lift in the home position.
6. Deck level switch 2 (DLSW2) Detects the left cassette lift in the home position.
7. Upper limit switch 1 (UPSW1) Detects the right cassette lift being raised past the limit.
8. Upper limit switch 2 (UPSW2) Detects the left cassette lift being raised past the limit.
9. Side cover switch (SCSW) Detects if the deck side cover is opened or closed.
10. Deck open/closed safety switch (DOSSW) Detects if the deck is open or closed.
11. Paper deck motor pulse sensor 1 (PDMSENS1) Detects abnormal paper deck motor 1 rotation.
12. Paper deck motor pulse sensor 2 (PDMSENS2) Detects abnormal paper deck motor 2 rotation.
13. Paper level detection sensor 1 (PLDSENS1) Detects the paper level in the right cassette.
14. Paper level detection sensor 2 (PLDSENS2) Detects the paper level in the left cassette.

2-1-16



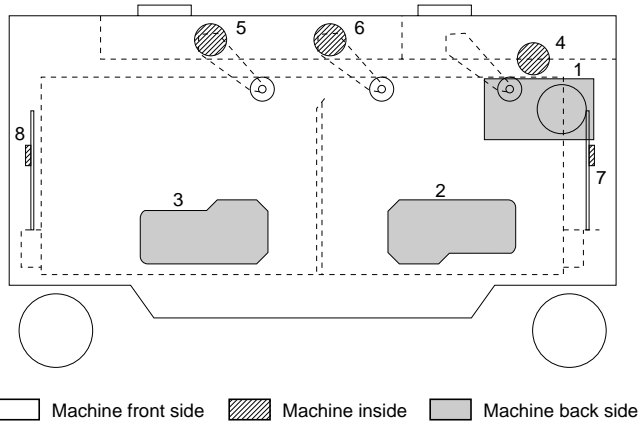


Figure 2-1-15 Large paper deck (other electrical components)

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

* Service part.





CONTENTS

2-2 Detection of Paper Misfeed

| | |
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| (4) Finisher (optional) | 2-2-13 |
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| 2-2-4 Original misfeed detection conditions | 2-2-15 |





2-2-1 Paper misfeed detection

When a paper jam occurs, the machine immediately stops operation and displays a message on the touch panel in the operation unit indicating a paper jam, the jam location and the jam code.

To remove the jammed paper, open either the drawer, duplex unit, front cover, right cover or left cover as necessary.

To reset the paper misfeed detection, open and close the respective cover to turn safety switches 1, 2 or 3 off and on.

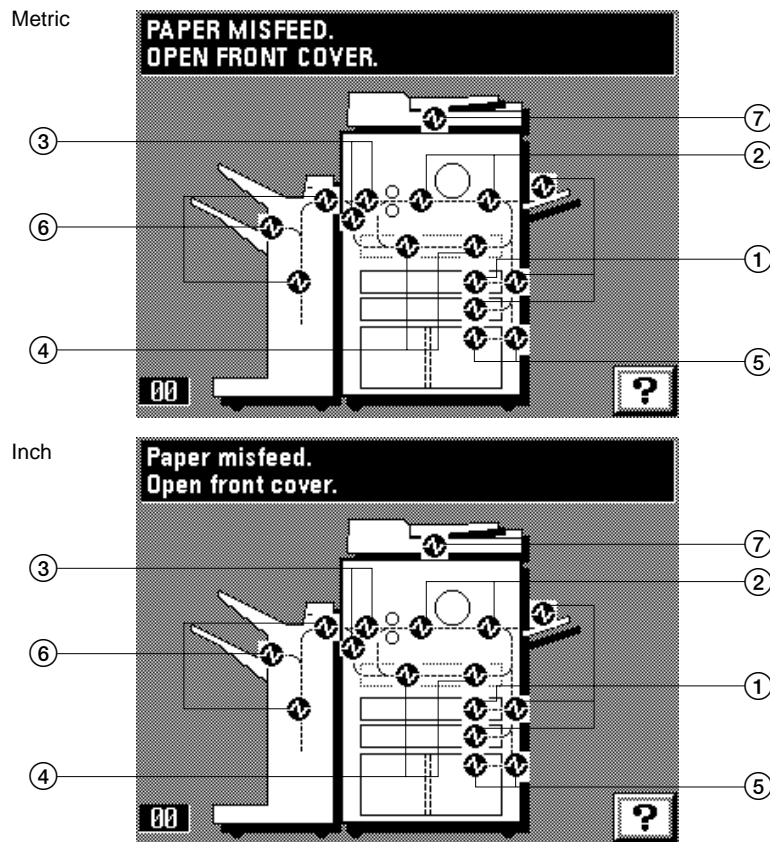


Figure 2-2-1 Misfeed location indication

- ① Paper feed section
 - ② Paper conveying section
 - ③ Fixing and eject section
 - ④ Duplex section
 - ⑤ Large paper deck
 - ⑥ Finisher*
 - ⑦ SRDF
- * Optional.

2-2-1





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2-2-2 Paper misfeed detection conditions

(1) Copier

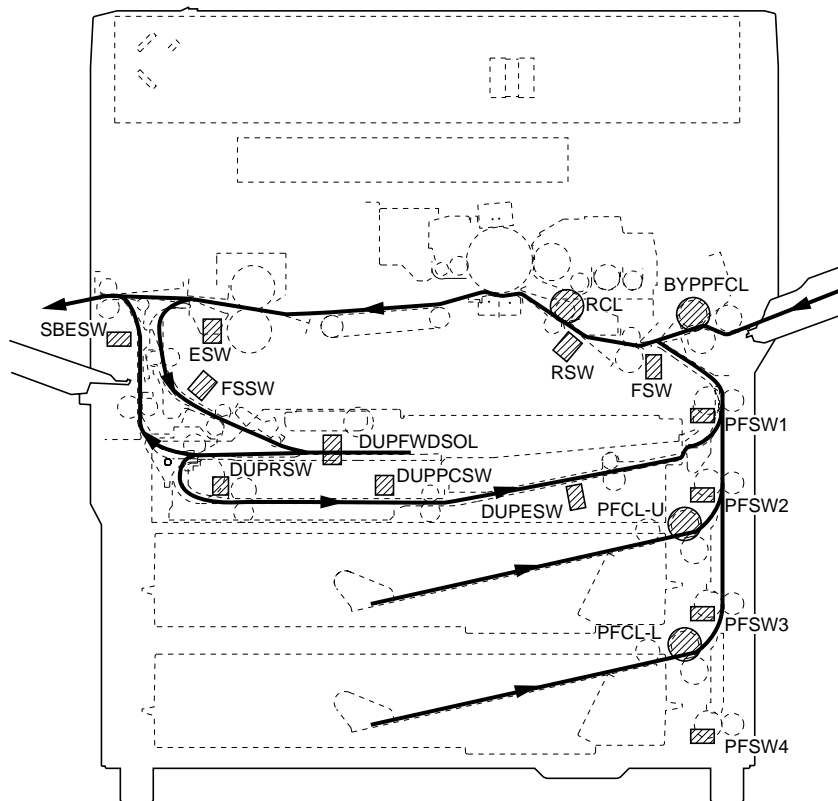


Figure 2-2-2 Copier

2-2-2



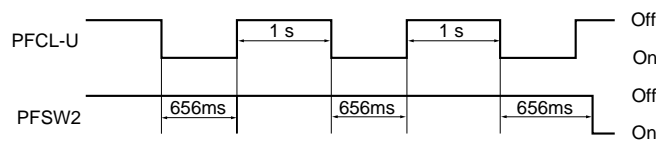


1. Jam at power-on (jam code 00)

- One or more of the switches in the paper conveying system is on when the main switch is turned on.

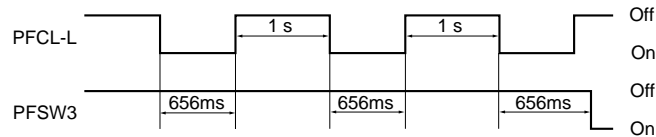
2. Paper feed section

- No paper feed from copier upper drawer (jam code 10)
Paper feed switch 2 (PFSW2) does not turn on within 656 ms after the upper paper feed clutch (PFCL-U) is turned on; even if retry of this operation is carried out twice after turning off the upper paper feed clutch (PFCL-U) for 1 second, the switch again fails to turn on within the same time.



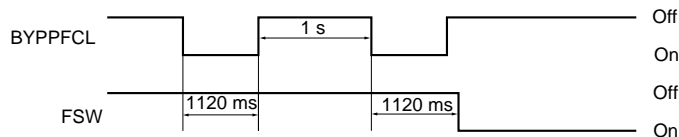
Timing chart 2-2-1

- No paper feed from copier lower drawer (jam code 11)
Paper feed switch 3 (PFSW3) does not turn on within 656 ms after the lower paper feed clutch (PFCL-L) is turned on; even if retry of this operation is carried out twice after turning off the lower paper feed clutch (PFCL-L) for 1 second, the switch again fails to turn on within the same time.



Timing chart 2-2-2

- No paper feed from bypass (jam code 14)
The feed switch (FSW) does not turn on within 1120 ms of the bypass paper feed clutch (BYPPFCL) turning on; the clutch is then held off for 1 s and turned back on, but the switch again fails to turn on within 1120 ms of the retry.



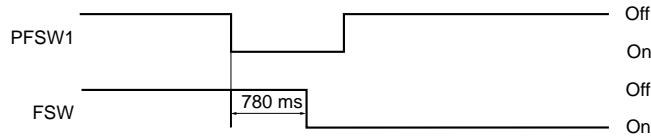
Timing chart 2-2-3





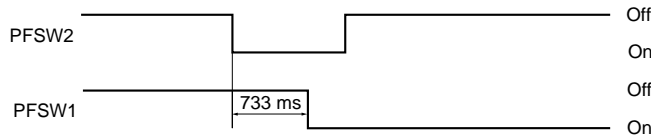
2A3/4

- Jam in copier vertical paper conveying section (jam code 18)
The feed switch (FSW) does not turn on within 780 ms of paper feed switch 1 (PFSW1) turning on.



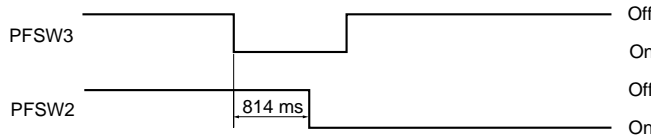
Timing chart 2-2-4

- Paper feed switch 1 (PFSW1) does not turn on within 733 ms of paper feed switch 2 (PFSW2) turning on.



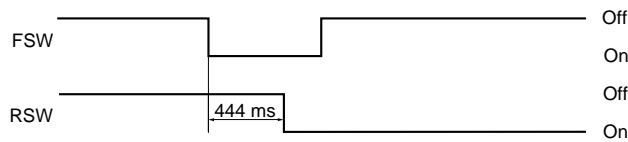
Timing chart 2-2-5

- Paper feed switch 2 (PFSW2) does not turn on within 814 ms of paper feed switch 3 (PFSW3) turning on.



Timing chart 2-2-6

- Jam in converging section (jam code 20)
The registration switch (RSW) does not turn on within 444 ms of the feed switch (FSW) turning on.



Timing chart 2-2-7

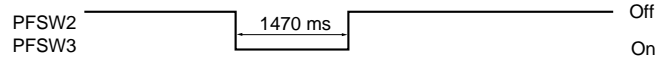
2-2-4





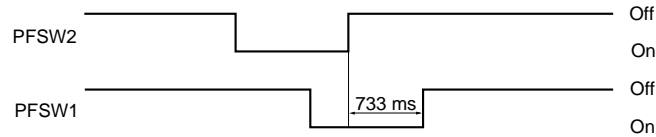
2A3/4

- Multiple sheets in paper feed section (jam code 21)
Paper feed switch 2 or 3 (PFSW2 or 3) does not turn off within 1470 ms of turning on.



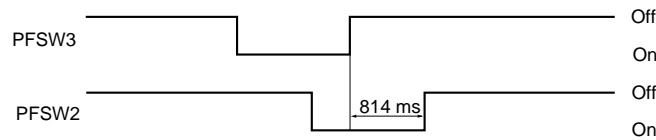
Timing chart 2-2-8

- Multiple sheets in copier vertical conveying section (jam code 22)
Paper feed switch 1 (PFSW1) does not turn off within 733 ms of paper feed switch 2 (PFSW2) turning off.



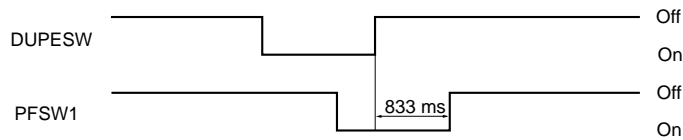
Timing chart 2-2-9

- Paper feed switch 2 (PFSW2) does not turn off within 814 ms of paper feed switch 3 (PFSW3) turning off.



Timing chart 2-2-10

- Paper feed switch 1 (PFSW1) does not turn off within 833 ms of duplex eject switch (DUPESW) turning off.



Timing chart 2-2-11

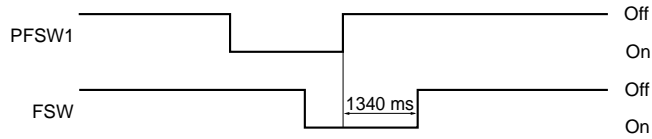
2-2-5





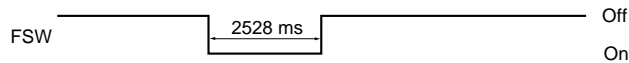
2A3/4

- Multiple sheets before registration section (jam code 23)
The feed switch (FSW) does not turn off within 1340 ms of paper feed switch 1 (PFSW1) turning off.



Timing chart 2-2-12

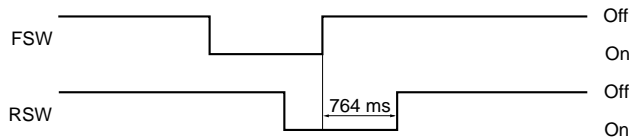
The feed switch (FSW) does not turn off within 2528 ms of turning on during bypass paper feed.



Timing chart 2-3-13

3. Paper conveying section

- Jam in registration/transfer section (jam code 30)
The registration switch (RSW) does not turn off within 764 ms of the feed switch (FSW) turning off.



Timing chart 2-2-14

2-2-6



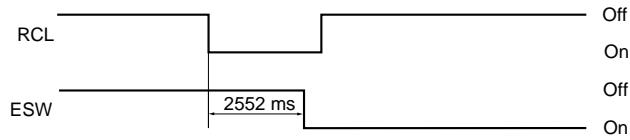


2A3/4

4. Fixing section

- Jam in fixing section (jam code 40)

The eject switch (ESW) does not turn on within 2552 ms of the registration clutch (RCL) turning on.

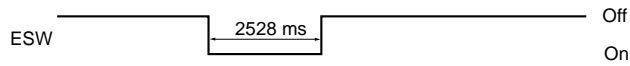


Timing chart 2-2-15

5. Eject section

- Jam in eject section (jam code 50)

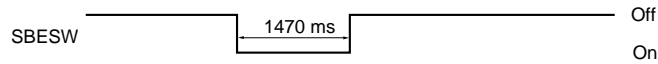
The eject switch (ESW) does not turn off within 2528 ms of turning on.



Timing chart 2-2-16

- Jam in switchback eject section (jam code 51)

The switchback eject switch (SBESW) does not turn off within 1470 ms of turning on.



Timing chart 2-2-17

2-2-7



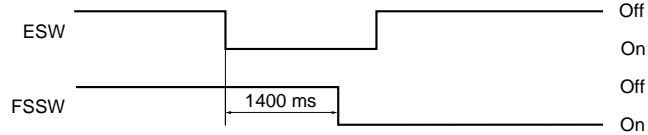


2A3/4

6. Feedshift section

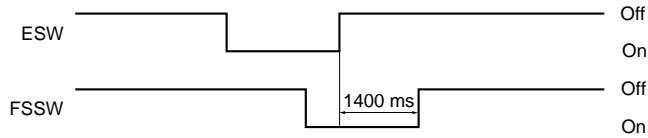
- Jam in feedshift section (jam code 52)

The feedshift switch (FSSW) does not turn on within 1400 ms of the eject switch (ESW) turning on.



Timing chart 2-2-18

The feedshift switch (FSSW) does not turn off within 1400 ms of the eject switch (ESW) turning off.

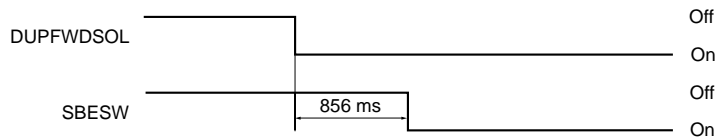


Timing chart 2-2-19

7. Duplex section

- Jam in duplex stock section (jam code 60)

The switchback eject switch (SBESW) does not turn on within 856 ms of the duplex forward solenoid (DUPFWDSOL) turning on.



Timing chart 2-2-20

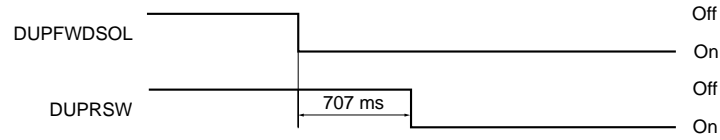
2-2-8





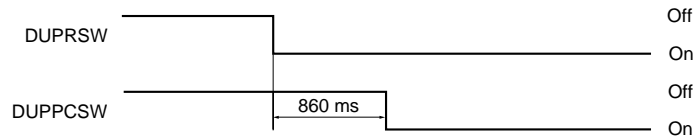
2A3/4

The duplex registration switch (DUPRSW) does not turn on within 707 ms of the duplex forward solenoid (DUPFWSOL) turning on.



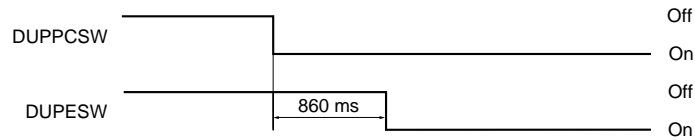
Timing chart 2-2-21

- Duplex paper conveying section (jam code 61)
The duplex paper conveying switch (DUPPCSW) does not turn on within 860 ms of the duplex registration switch (DUPRSW) turning on.



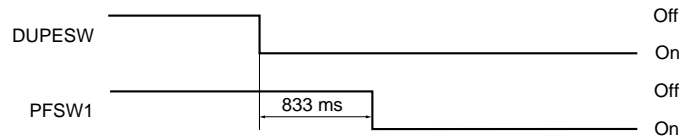
Timing chart 2-2-22

The duplex eject switch (DUPESW) does not turn on within 860 ms of the duplex paper conveying switch (DUPPCSW) turning on.



Timing chart 2-2-23

Paper feed switch 1 (PFSW1) does not turn on within 833 ms of the duplex eject switch (DUPESW) turning on.



Timing chart 2-2-24

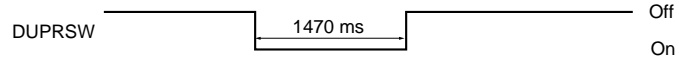
2-2-9





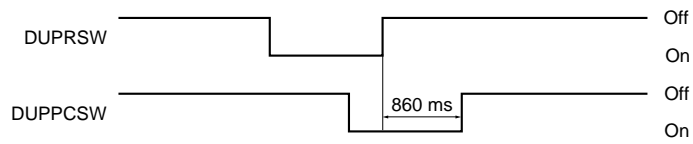
2A3/4

Duplex registration switch (DUPRSW) does not turn off within 1470 ms of turning on.



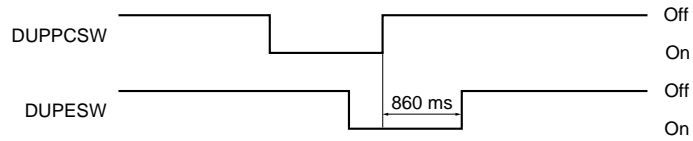
Timing chart 2-2-25

Duplex paper conveying switch (DUPPCSW) does not turn off within 860 ms of the duplex registration switch (DUPRSW) turning off.



Timing chart 2-2-26

The duplex eject switch (DUPESW) does not turn off within 860 ms of the duplex paper conveying switch (DUPPCSW) turning off.



Timing chart 2-2-27

2-2-10





(2) Large paper deck (42 ppm: optional/52 ppm: standard)

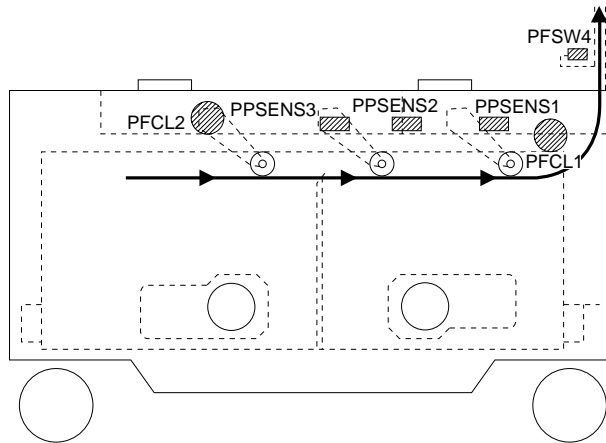
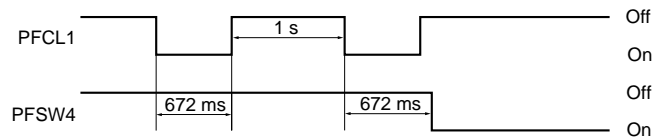


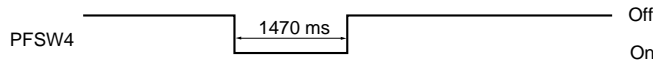
Figure 2-2-3 Large paper deck

- No paper feed from large paper deck (jam code 12)
Paper feed switch 4 (PFSW4) does not turn on within 672 ms of paper feed clutch 1 (PFCL1) turning on; the clutch is then held off for 1 s and turned back on, but the switch again fails to turn on within 672 ms of the retry.



Timing chart 2-2-28

- Multiple sheets in paper feed section (jam code 21)
Paper feed switch 4 (PFSW4) does not turn off within 1470 ms of turning on.



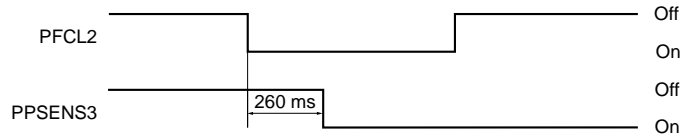
Timing chart 2-2-29





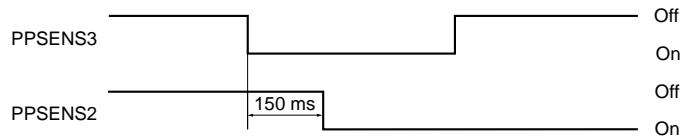
2A3/4

- Paper failing to reach PPS2 in large paper deck horizontal paper path (jam code 15)
Paper path sensor 3 (PPSENS3) does not turn on within 260 ms of paper feed clutch 2 (PFCL2) turning on.



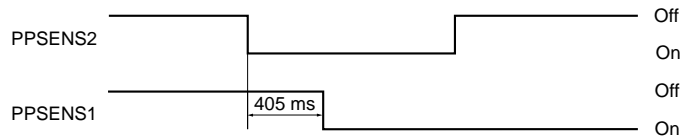
Timing chart 2-2-30

- Paper failing to reach PPS1 in large paper deck horizontal paper path (jam code 16)
Paper path sensor 2 (PPSENS2) does not turn on within 150 ms of paper path sensor 3 (PPSENS3) turning on.



Timing chart 2-2-31

- Paper failing to reach PPS0 in large paper deck horizontal paper path (jam code 17)
Paper path sensor 1 (PPSENS1) does not turn on within 405 ms of paper path sensor 2 (PPSENS2) turning on.



Timing chart 2-2-32

2-2-12





2A3/4

(3) Paper feed desk (optional for 42 ppm only)

(see the paper feed desk service manual)

- No paper feed from paper feed desk upper drawer (jam code 12)
- No paper feed from paper feed desk lower drawer (jam code 13)
- Jam in paper feed desk vertical paper conveying section (jam code 19)

(4) Finisher (optional)

(see the finisher service manual)

- Initial clogging jam (jam code 00)
- Jam in paper entry section (jam code 81)
- Jam in eject section of non-sort tray (jam code 82)
- Jam in paper conveying section of internal tray (jam code 83)
- Jam in eject section of sort tray (jam code 84)



2-2-13





2A3/4

2-2-3 Original misfeed detection

When an original jams, the machine immediately stops operation and a message is shown on the touch panel in the operation unit. The SRDF original set indicator also flashes red. To remove the jammed original, open the SRDF or DF original reversing cover. To reset the original misfeed detection, open and close the SRDF or DF original reversing cover to turn DF safety switch 1 or 2 off and on.

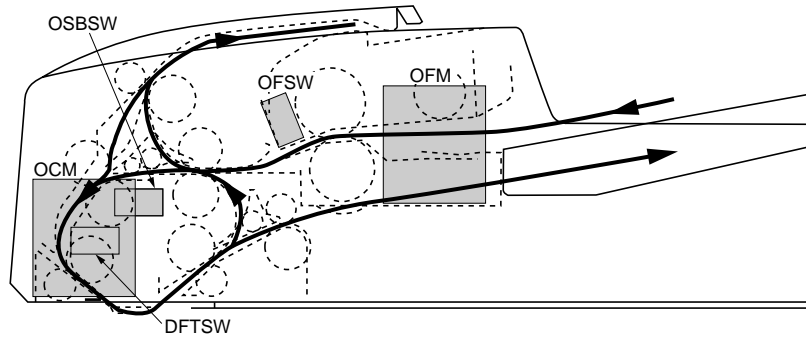


Figure 2-2-4 Original misfeed detection

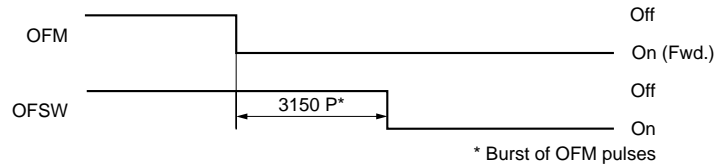
2-2-14





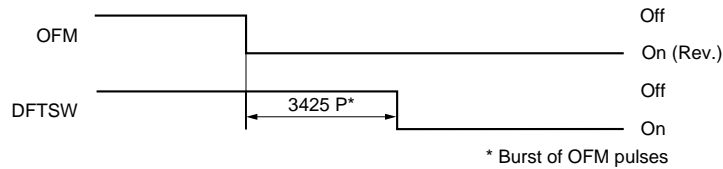
2-2-4 Original misfeed detection conditions

- Initial movement confirmation JAM
When the DF START signal is received, switches other than the original set switch (OSSW) and the original size length switch (OSLSW) on the original table are on.
- No paper feed (jam code 70)
During the primary feed of the second or later original in the single-sided or double-sided original mode, the original feed switch (OFSW) does not turn on within 3150 original feed motor (OFM) pulses from the start of forward rotation of the original feed motor (OFM).



Timing chart 2-2-33

- An original jam in the original feed/conveying section (jam code 71)
During the secondary original feed in the single-sided original mode, the DF timing switch (DFTSW) does not turn on within 3425 original feed motor (OFM) pulses from the start of reverse rotation of the original feed motor (OFM). Alternatively, during continuous original feed in the single-sided original mode, the DF timing switch (DFTSW) does not turn on for the second time under the above conditions.



Timing chart 2-2-34

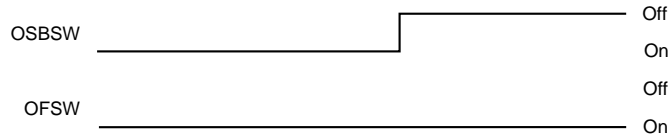
During the secondary original feed in the single-sided original mode, the original feed switch (OFSW) has not turned off before the DF timing switch (DFTSW) turns off.





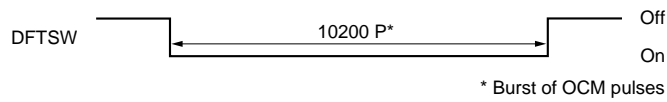
2A3/4

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



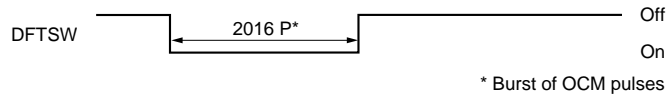
Timing chart 2-2-35

During the secondary original feed in the single-sided or double-sided original mode, the DF timing switch (DFTSW) does not turn on within 10200 original conveying motor (OCM) pulses from the DF timing switch (DFTSW) turning on.



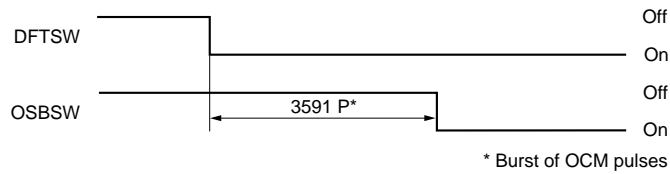
Timing chart 2-2-36

In the single-sided or double-sided original mode, the DF timing switch (DFTSW) turns off within 2016 original conveying motor (OCM) pulses from the DF timing switch (DFTSW) turning on.



Timing chart 2-2-37

While scanning the first face (reverse face) of an original in the double-sided original mode, the original switchback switch (OSBSW) does not turn on within 3591 original conveying motor (OCM) pulses from the DF timing switch (DFTSW) turning on.



Timing chart 2-2-38

2-2-16





CONTENTS

2-3 Operation of the PCBs

| | |
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2A3/4

2-3-1 Power source PCB

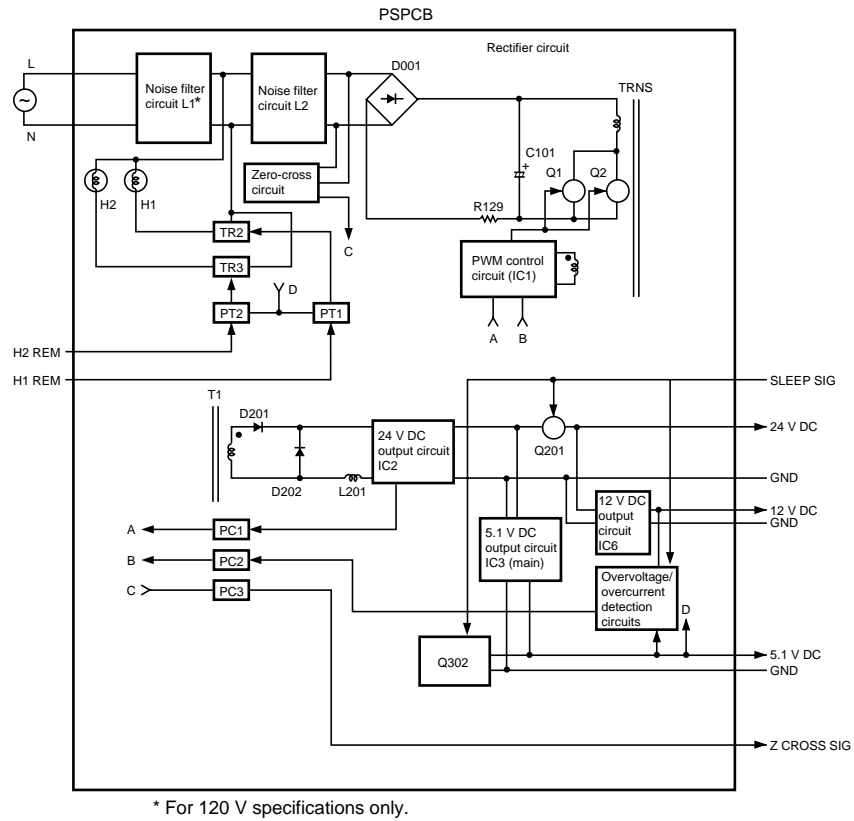


Figure 2-3-1 Power source PCB block diagram

2-3-1





2A3/4

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

The noise filter circuits, consisting mainly of the noise filter circuit in the power source section and capacitors, attenuates external noise and prevents switching noise generated by the power source circuit and the heater control circuit from leaving the machine via the AC line.

The rectifier circuit full-wave rectifies the AC input which has passed through the noise filter circuit using the diode bridge D001.

The switching control circuit turns the FETs Q1 and Q2 on and off via the PWM controller IC1 to apply the AC component from the DC voltage smoothed via the electrolytic capacitor C101 to the primary coil of the transformer TRNS.

The 24 V DC output circuit smoothes the current induced on the secondary coil of the transformer TRNS via diodes D201 and D202, and outputs a more stable 24 V DC by the function of shunt regulator IC2. The output status of 24 V DC is fed back to the PWM control IC1 in the switching control circuit via the photocoupler PC1, and based on the feedback, the PWM control IC1 outputs stable 24 V DC constantly by controlling the switching duty pulse width for the FETs Q1 and Q2.

The 5.1 V DC output control circuit IC3 receive 24 V DC from the 24 V DC output circuit and output stable 5.1 V DC by the function of the DC/DC converter control IC3.

The 12 V DC output circuit receive 24 V DC from the 24 V DC output circuit and outputs stable 12 V DC by the function of a power supply regulator.

In the energy saving mode, the FETs Q210 and Q302 are opened when they receive a sleep signal from the main PCB (MPCB), thus cutting off the output of 24 V DC and a part of 5.1 V DC. Since input to the 12 V DC control circuit IC4 is also cut off, output of 12 V DC also ceases.

As a result, all outputs except the sub-output from the 5.1 V DC output circuit IC3 are cut off, by which means energy consumption is lowered to the Energy Star accreditation level while in the stand-by mode.

Abnormal rise of voltage for all DC outputs and overcurrent in all outputs except the 24 V DC and 12 V DC outputs are monitored by the overvoltage and overcurrent detection circuits, and if any abnormal rise is detected, alarm signals are fed back to the PWM control circuit IC1 on the primary side via photocoupler PC2, by which means power supply is shut down. Overload of the 24 V DC output is monitored by resistor R129 as the total sum of current on the primary side, and if any abnormal condition is detected, the operation of the PWM control circuit IC1 stops and the power supply is shut down. Overload of the 12 V DC output circuit is controlled by the overcurrent protection function of power source regulator IC4. When the abnormal output condition is removed, the 12 V DC output returns to the normal output condition.

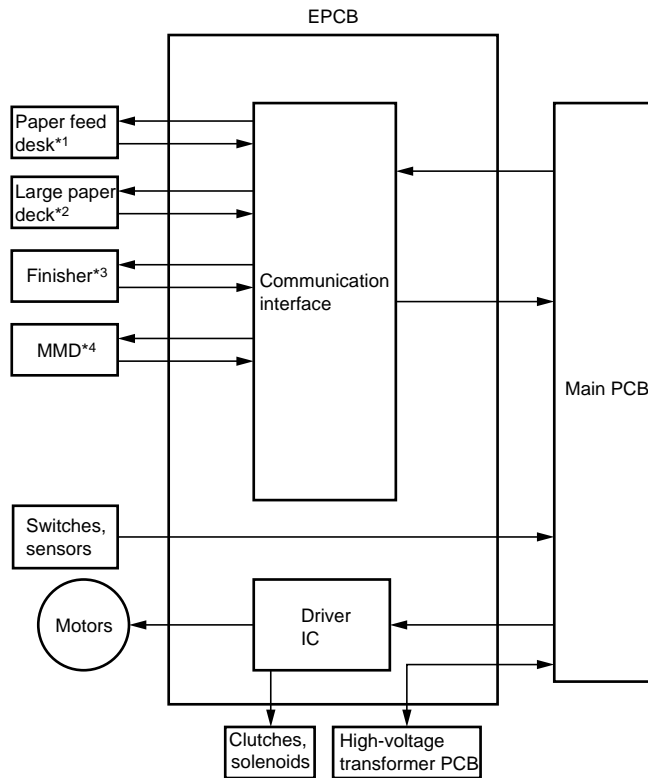
The fixing heater control circuit sends zero-crossing signal (Z CROSS SIG) via the photocoupler PC3 to the main PCB (MPCB). These signals are in turn converted into signals to control the on/off timing and phases, which are then input to the power source PCB (PSPCB) as the H1 REM and H2 REM signals. The phototriacs PT1 and PT2 are turned on by the H1 REM and H2 REM signals, and electricity flows through triacs TR2 and TR3 to turn the fixing heaters on.

2-3-2





2-3-2 Engine PCB



*1: Optional for 42 ppm only.
 *2: 42 ppm: Optional/52 ppm: standard

*3: Optional.
 *4: Optional for 120 V specifications only.

Figure 2-3-2 Engine PCB block diagram

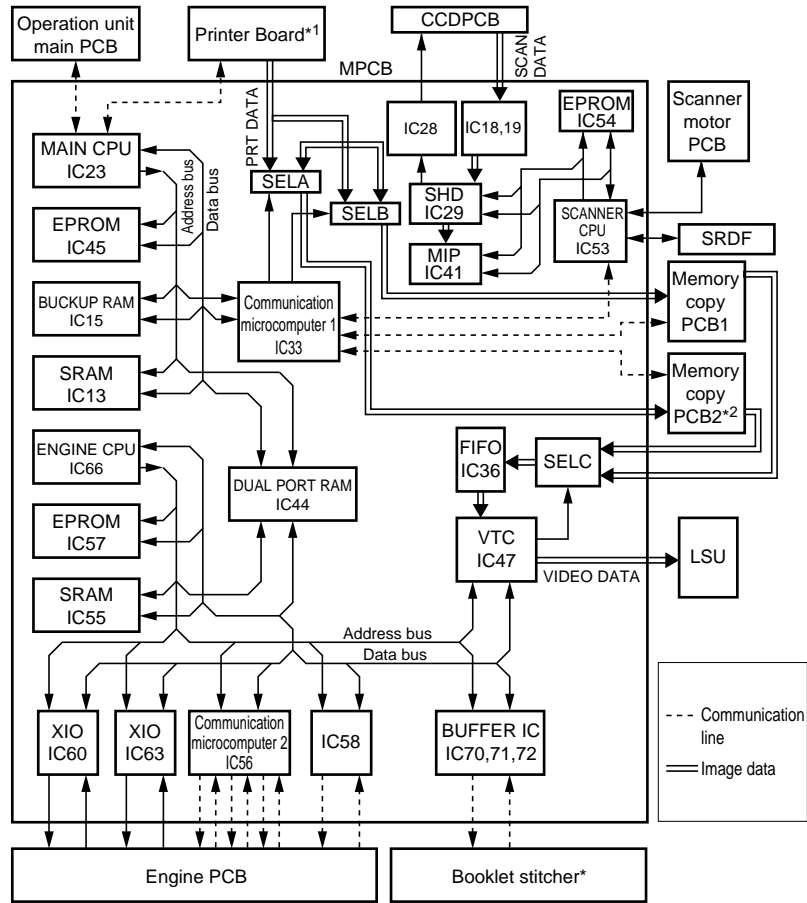
The engine PCB (EPCB) transmits the status of each switch to the main PCB (MPCB) and transmits the control signals output from the main PCB (MPCB) through driver ICs to motors, clutches and solenoids. It also receives and transmits input and output signals to and from optional devices via a communication interface.





2A3/4

2-3-3 Main PCB



*1: Optional
 *2: 42 ppm: optional/52 ppm: standard

Figure 2-3-3 Main PCB block diagram

2-3-4





2A3/4

The main PCB (MPCB) consists of the main CPU (IC23), the engine CPU (IC66), the scanner CPU (IC53), communication microcomputers (IC33 and IC56), SRAMs (IC13 and IC55), battery-integrated RAM for back-up (IC15), EPROMs (IC45, IC54, and IC57), a dual port RAM (IC44), ASICs for input and output control (XIO:IC60 and IC63), ASICs for controlling image data input (SHD:IC29 and MIP:IC41), an ASIC for controlling image data output (VTC:IC47)etc.

The main CPU (IC23) controls the engine CPU (IC66) and the scanner CPU (IC53), and controls the flow of image data transmitted between the MIP (IC41), memory copy PCB 1 (MCPCB1), memory copy PCB 2 (MCPCB2), and the printer board.

The scanner CPU (IC53) controls the SHD (IC29) and the MIP (IC41), and sets the processing for image signals from the CCD PCB (CCDPCB). Also it controls driving of the scanner and the SRDF via the scanner motor PCB (SMPCB) and the SRDF DF driver PCB (DFDPCB).

The engine CPU (IC66) controls the operation of motors, clutches, and solenoids, output of image data, and communication with optional devices via the engine PCB (EPCB).



2-3-5





2A3/4

2-3-4 Memory copy PCB

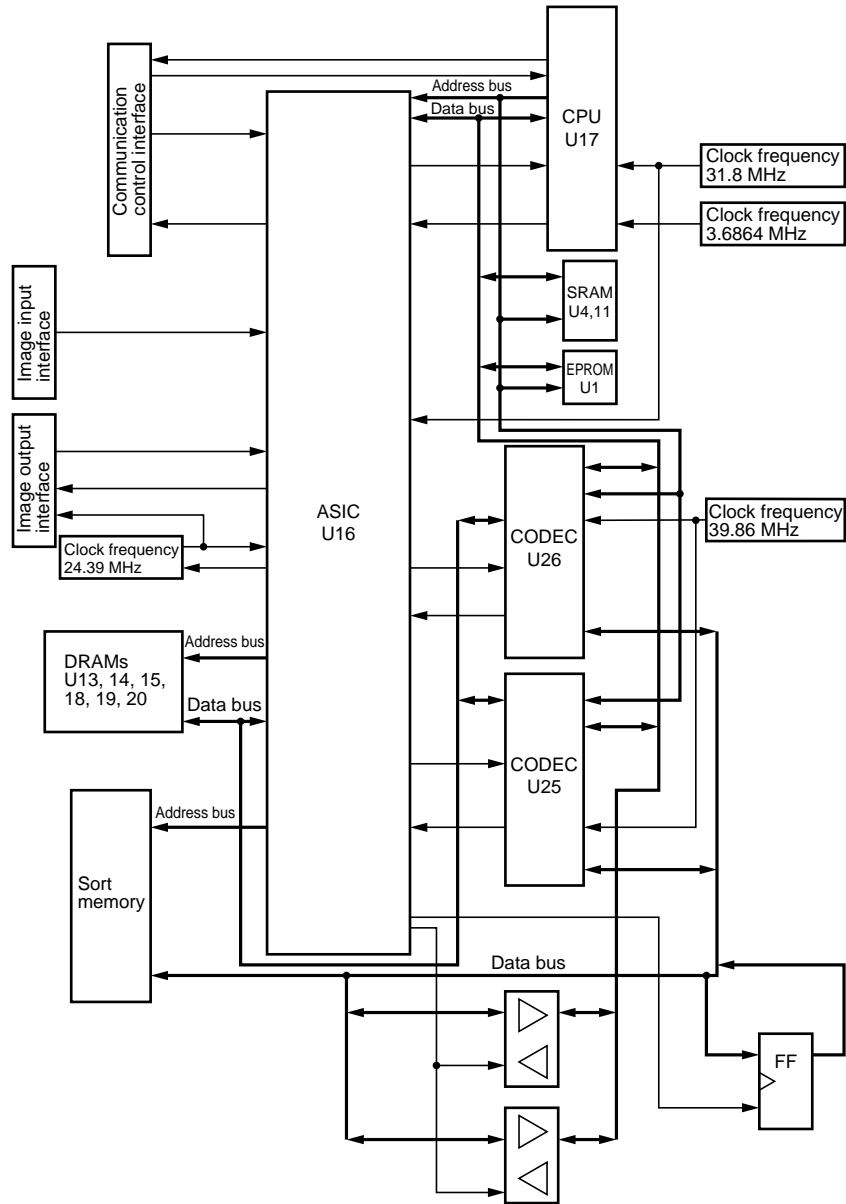


Figure 2-3-4 Memory copy PCB 1 block diagram

2-3-6





2A3/4

The following is a description of memory copy PCB 1 (MCPCB1). Memory copy PCB 2 (MCPCB2) is identical to memory copy PCB 1 (MCPCB1).

Memory copy PCB 1 (MCPCB1) consists of CPU U17, ASIC U16, SRAMs U4 and U11, DRAMs U13, U14, U15, U18, U19 and U20, EPROM U1, and CODECs U25 and U26.

The memory copy PCB mainly serves to read images from the scanner based on the control signals from the main PCB (MPCB), and output the images to the engine (the component where printing to paper and driving of mechanisms are executed). It also performs editing operations such as image rotation, image summary and image synthesizing.

Since the original scanning speed of the scanner and the printing speed of the engine (the component where printing to paper and driving of mechanisms are executed) are different, and their operations not synchronized, memory copy PCB 1 (MCPCB1) also serves as a buffer to deal with the speed and timing differences between them.



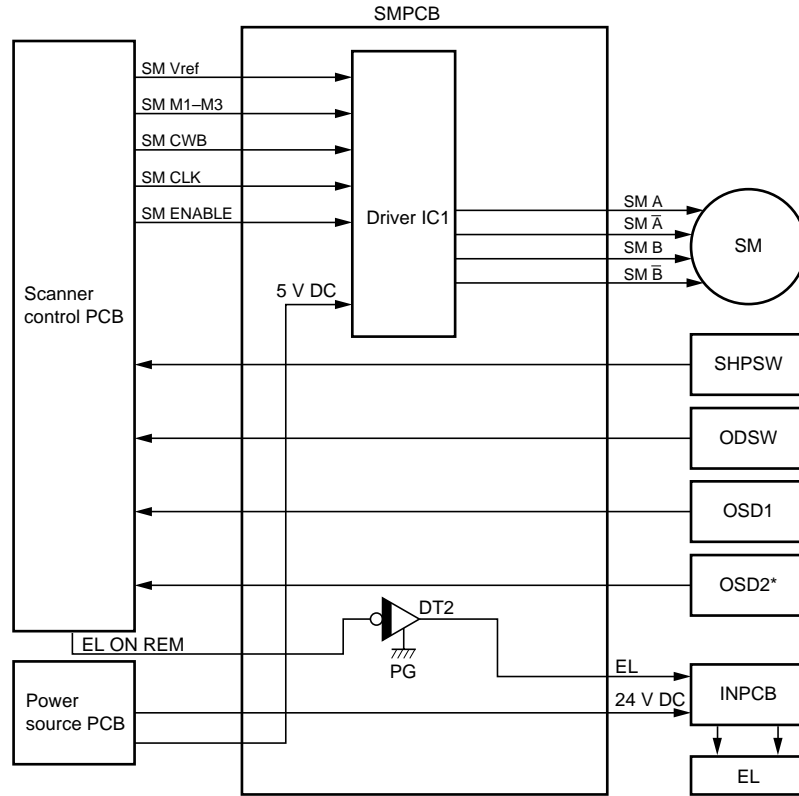
2-3-7





2A3/4

2-3-5 Scanner motor PCB



* For inch specification only.

Figure 2-3-5 Scanner motor PCB block diagram

The scanner motor PCB (SMPCB) drives the scanner motor (SM), turns the exposure lamp (EL) on and off, and relays signals from the scanner home position switch (SHPSW), original size sensor 1, 2 (OSD1, 2) and the original detection switch (ODSW).

The scanner motor (SM) is driven by turning the output for motor phase switchover on and off (SM A, SM A-bar, SM B, SM B-bar). It is activated by the driver IC1 processing the currently set reference signal (SM Vref), mode signals (SM M1 - M3, SM CWB), phase changeover clock (SM CLK), drive/stop signals (SM ENABLE) from the main PCB.

The exposure lamp (EL) is turned on when the signal (EL ON REM) from the scanner control PCB (SCPCB) is inverted by DT2 and the resulting lamp on/off signal (EL) goes low. Signals from the scanner home position switch (SHPSW), original size sensor 1, 2 (OSD1, 2) and the original detection switch (ODSW) are relayed to the main PCB (MPCB).

2-3-8





2AD-1

2A3/4

2-3-6 CCD PCB

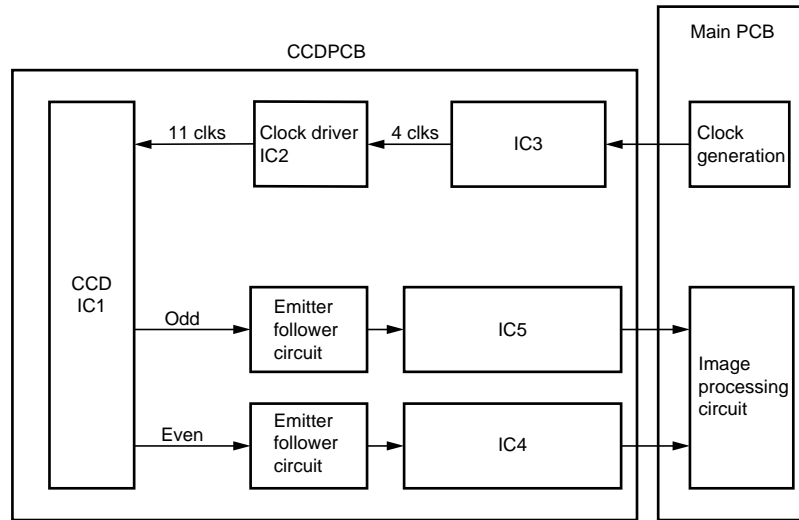


Figure 2-3-6 CCD PCB block diagram

The CCD PCB (CCDPCB) receives clock signals ϕ SHIFT, ϕ CLK, ϕ RS, ϕ CLP and generate eleven signals based on those clock signals necessary to drive the CCD IC1. When clock signals are input, the CCD IC1 outputs analog signals which are divided into even pixel signals and odd pixel signals depending on the set density of the image, which are transmitted to the main PCB (MPCB) via the emitter follower circuit and differential amplifiers IC4 and IC5.

2-3-9





2A3/4

2-3-7 DF driver PCB

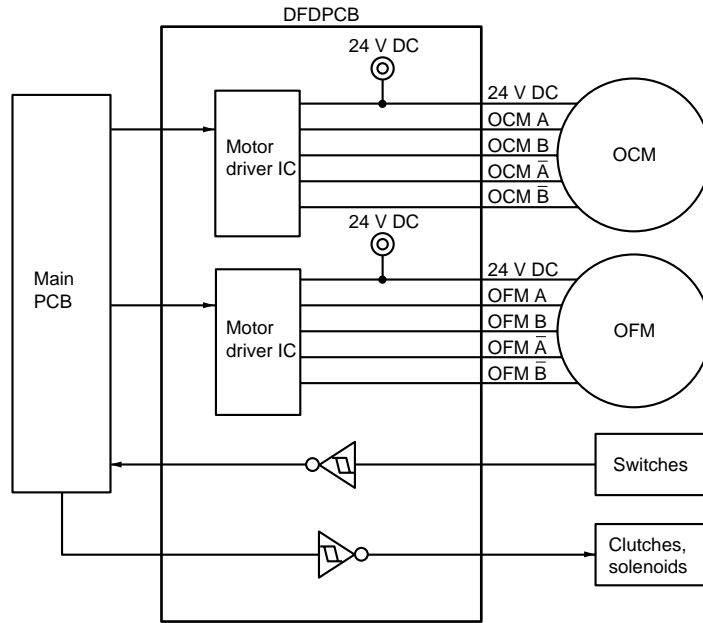


Figure 2-3-7 DF driver PCB block diagram

The DF driver PCB (DFDPCB) consists of a motor drive ICs and several other components. It mainly serves to drive the original feed motor (OFM) and the original conveying motor (OCM), under the control of signals received form the main PCB (MPCB). It also relays the 24 V DC power supply to the SRDF clutches and solenoids and the 5 V DC power supply to various switches and drives, and relays inputs and outputs of other signals.

2-3-10





2-3-8 Operation unit main PCB, operation unit right PCB, and operation unit left PCB

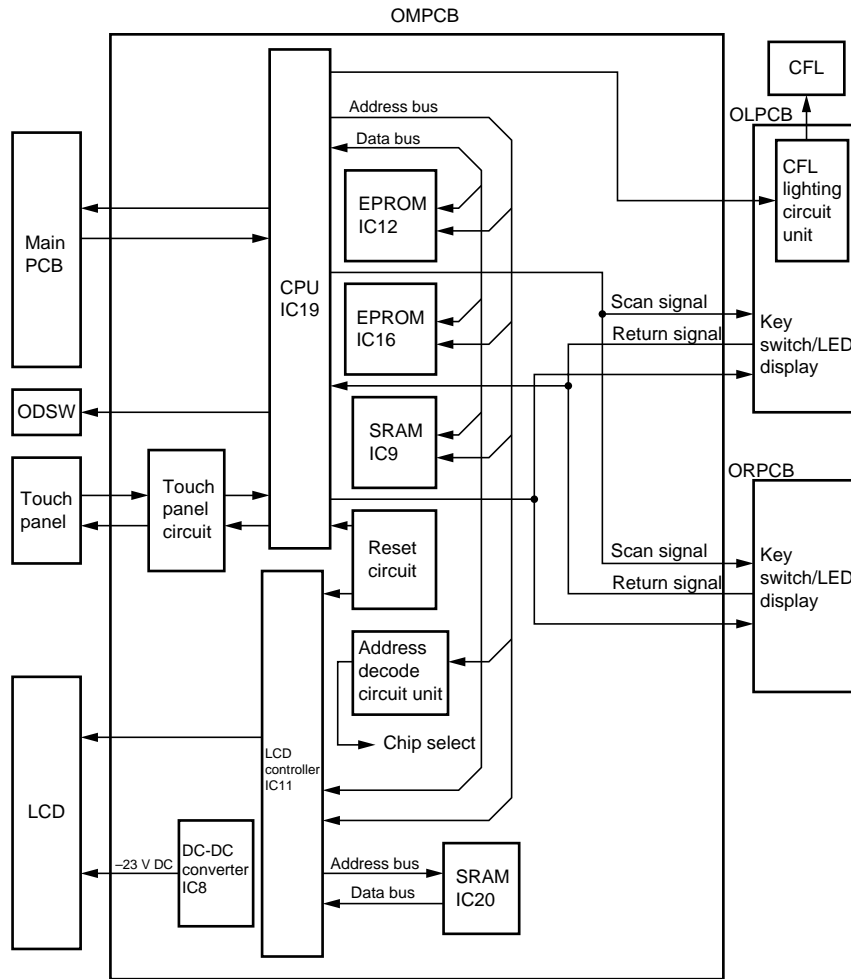


Figure 2-3-8 Operation unit main PCB, operation unit right PCB, and operation unit left PCB block diagram





2A3/4

On the operation unit main PCB (OMPCB), the major component is the CPU IC19, which directly controls the operation of the machine in response to a control program located in EPROM IC12 and executed from SRAM IC9. EPROM IC16 contains font data for the LCD display and LCD controller IC11 controls the LCD panel display from instructions contained in SRAM IC20.

The operation unit right PCB (ORPCB), consisting of key switches and LEDs, is controlled by scan signals and LED lighting signals from the operation unit main PCB (OMPCB).

The operation unit left PCB (OLPCB) consists of key switches, LEDs and the CFL lighting drive circuit. Key switches and LEDs are controlled by scan signals and LED lighting signals from the operation unit main PCB (OMPCB), and the CFL lighting drive circuit. This circuit generates AC power for CFL lighting drive and is controlled by the turning on and off of CFL lighting signals by the operation unit main PCB (OMPCB).



2-3-12





(1) Operation unit left PCB

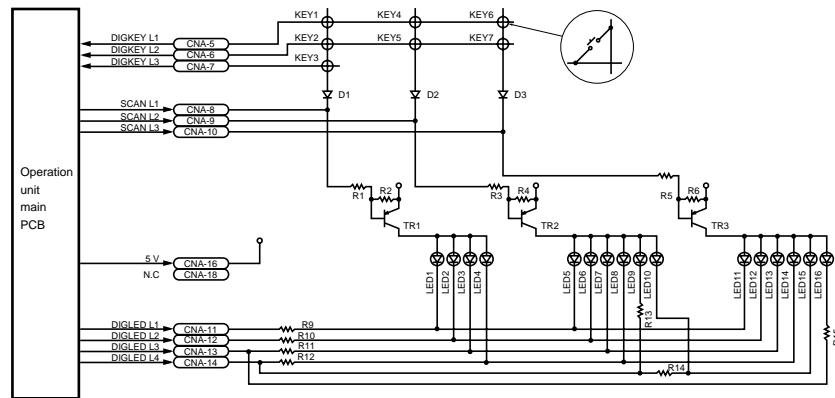


Figure 2-3-9 Operation unit left PCB block diagram

Selection of key switches and the lighting of LEDs are determined by scan signals (SCAN L1 - L3) and LED signal selection signals (DIGLED L1 - L4). The key switch operated is identified by the scan signals (SCAN L1 - L3) and the return signals (DIGKEY L1 - L3).

As an example, to light LED 1, the LED lighting selection signal (DIGLED L1) should be driven low in synchronization with a low level on the scan signal (SCAN L1). Transistor TR1 conducts and LED1 is lit. LEDs can be lit dynamically by repeating such operations.

As an example, if KEY1 is pressed, the corresponding key switch is turned on feeding the low level of the scan signal back to the operation unit main PCB (OMPCB) via the return signal (DIGKEY L1). The operation unit main PCB (OMPCB) locates the position where the line outputting the scan signal and the line inputting the return signal cross, and thereby determines which key switch was operated.





2A3/4

(2) Operation unit right PCB

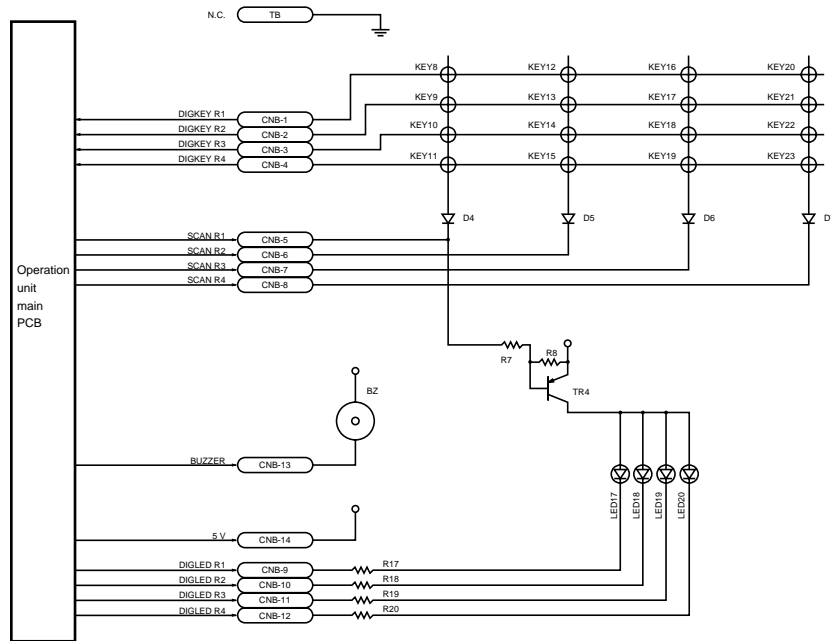


Figure 2-3-10 Operation unit right PCB block diagram

The operation unit right PCB (ORPCB) consists of key switches and LEDs. Depending on the scan signals (SCAN R1 - R4) and the LED lighting selection signals (DIGLED R1 - R4) received from the operation unit main PCB (OMPcb), the LED to be lit is selected, and the key switch pressed is identified by the scan signals (SCAN R1 - R4) and the return signals (DIGKEY R1 - R4).

As an example, to light LED17, the LED lighting selection signal (DIGLED R1) should be driven low in synchronization with a low level on the scan signal (SCAN R1).

Transistor TR4 conducts and LED17 is lit. LEDs can be lit dynamically by repeating such operations.

As an example, if KEY8 is pressed, the corresponding key switch is turned on feeding the low level of the scan signal back to the operation unit main PCB (OMPcb) via the return signal (DIGKEY R1). The operation unit main PCB (OMPcb) locates the position where the line outputting the scan signal and the line inputting the return signal cross, and thereby determines which key switch was operated.

2-3-14





2-3-9 Deck main PCB (42 ppm: optional/52 ppm: standard)

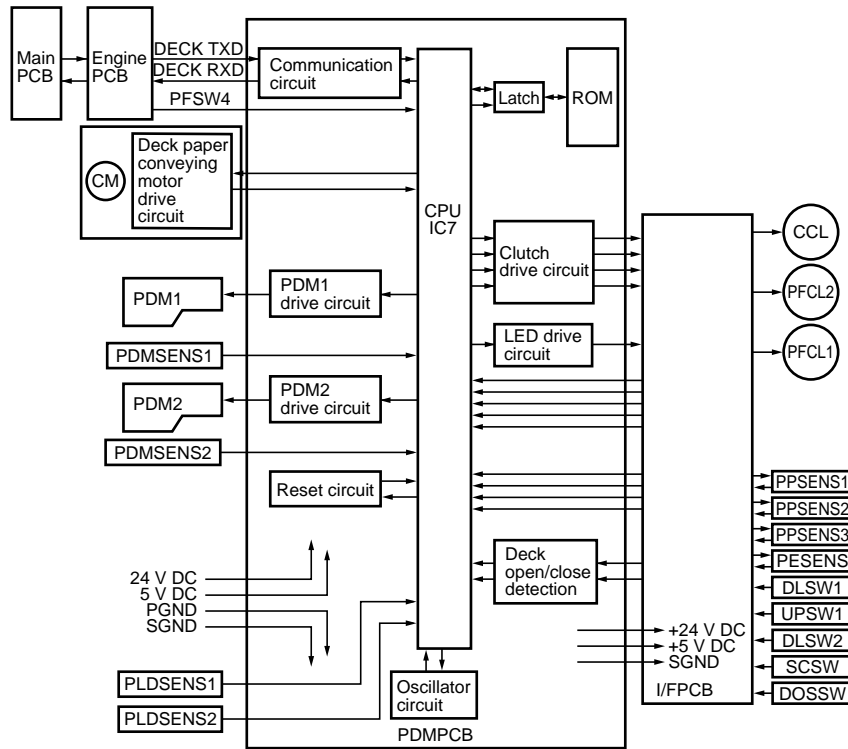


Figure 2-3-11 Deck main PCB block diagram

The deck main PCB (PDMPCB) consists of the CPU IC7, which serially communicates with the main PCB (MPCB) via the engine PCB (EPCB); the deck paper conveying motor drive circuit; the paper deck motor drive circuits; the clutch drive circuit; the reset circuit; and the LED drive circuit. It controls the entire large paper deck.





2A3/4

(1) Paper deck motor drive circuits

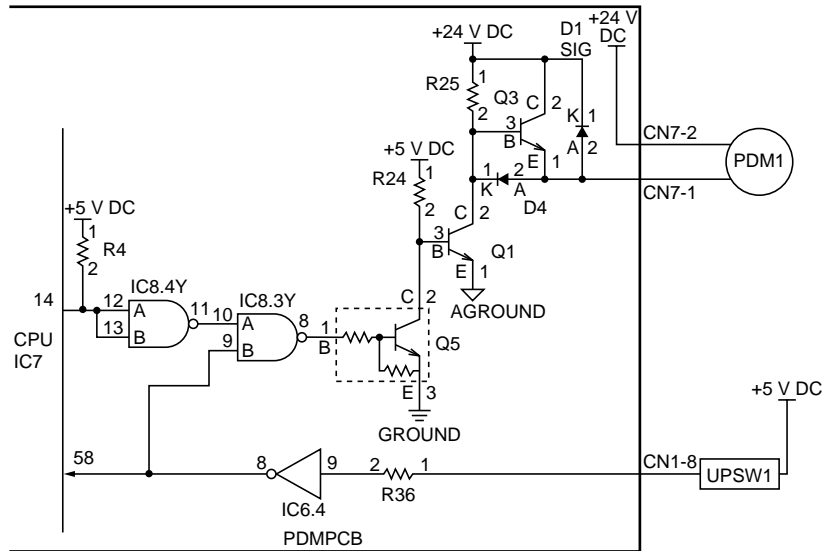


Figure 2-3-12 Paper deck motor 1 drive circuit

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

When pin 14 of the CPU IC7 goes low, transistor Q1 is turned on causing paper deck motor 1 (PDM1) to rotate. When transistor Q1 is turned off, paper deck motor 1 (PDM1) stops. A brake circuit ensures the prompt stopping of the motor. When transistor Q1 turns off, transistor Q3 turns on, supplying 24 V DC to CN7-1 thereby preventing paper deck motor 1 (PDM1) from rotating further under momentum.

When the right cassette lift is raised past the limit, upper limit switch 1 (UPSW1) turns on, taking the level at pin 58 of the CPU IC7 low, which turns transistor Q1 and hence paper deck motor 1 (PDM1) off. This level change is also passed to pin 9 of a protective circuit consisting of IC8.3, forcing paper deck motor 1 (PDM1) off directly in case the CPU IC7 fails.

2-3-16





2A3/4

(2) Clutch drive circuit

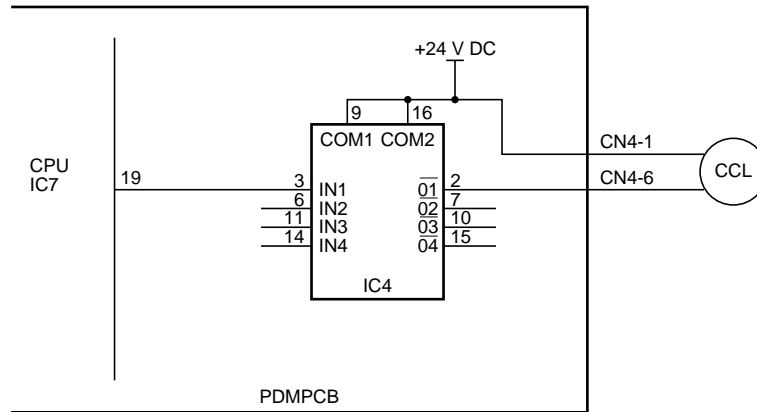


Figure 2-3-13 Paper conveying clutch drive circuit

When pin 19 of the CPU IC7 goes low, pin 2 of IC4 goes low, which turns the paper conveying clutch (CCL) on. The other clutches are controlled in the same manner.

2-3-17



2A3/4

(3) Operating principle of reflective photosensors PPSSENS1, PPSSENS2, PPSSENS3 and PESENS

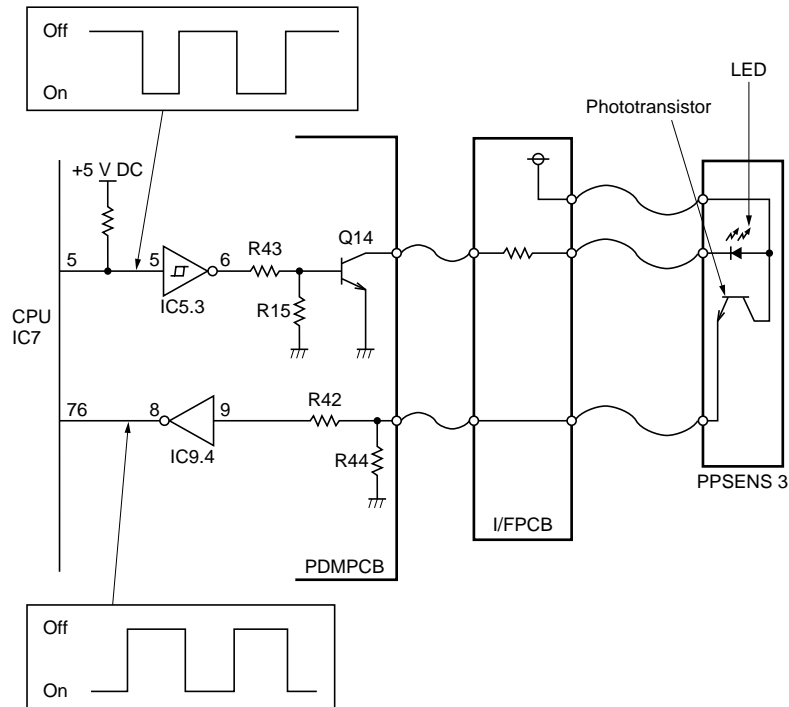


Figure 2-3-14 Reflective photosensor (PPSENS3) circuit

The following is the operating principle of paper path sensor 3 (PPSENS3). Paper path sensors 1 and 2 (PPSENS1, PPSSENS2) and the paper empty sensor (PESENS) operate in the same manner.

Pulsating signal from pin 5 of the CPU IC7 turns Q14 on and off, causing the LED on the sensor PCB to flash. When the flashing LED light reflects on the paper, the phototransistor turns on and off. The on/off signal is then inverted by IC9.4 and the paper presence signal (pulse) is input at pin 76 of the CPU IC7.

If there is no paper, the phototransistor remains off and 5 V DC is input at pin 76 of the CPU IC7.

2-3-18





(4) Reset circuit

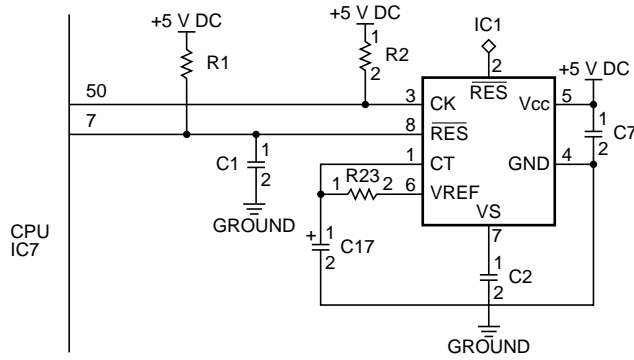


Figure 2-3-15 Reset circuit

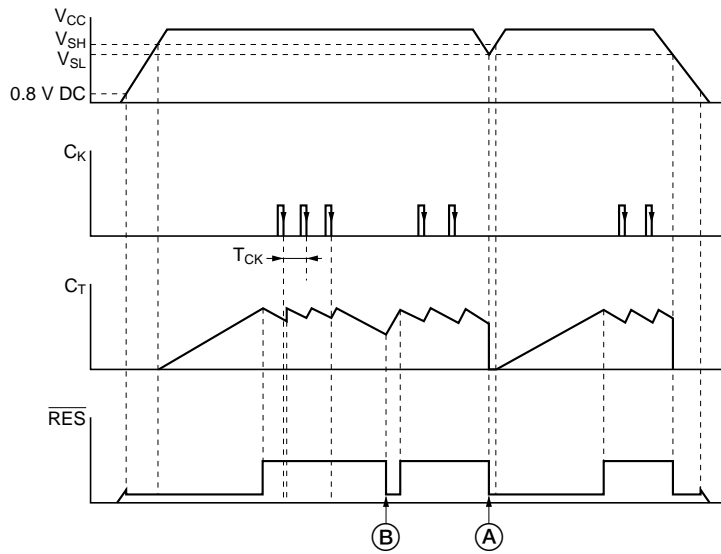


Figure 2-3-16 CPU reset operation timing chart (abridged)

IC1 monitors the supply voltage and also determines if the CPU IC7 is operating correctly. If the supply voltage V_{cc} drops below V_{sl} (approx. 4.2 V DC), the reset signal (\overline{RES}) is output to the CPU IC7 (A in the timing chart).

IC1 monitors the clock signal (CK) from pin 50 of the CPU IC7 which goes low periodically. If the CPU IC7 fails, IC1 detects that the clock signal (CK) has stopped and sends a reset signal (\overline{RES}) to the CPU IC7 (B in the timing chart). To reset the CPU IC7, pin 8 (\overline{RES}) of IC1, which usually outputs 5 V DC, goes low and takes the level at pin 7 of the CPU IC7 low.





III

SET UP AND ADJUSTMENT SECTION



III Set Up and
Adjustment Section





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3-1-1 Unpacking and installation

(1) Installation environment

1. Temperature: 10 - 35°C/50 - 95°F
2. Humidity: 15 - 18%RH
3. Power supply: 120 V AC, 10 A
220 - 240 V AC, 4.8 A
4. Power source frequency: 50 Hz $\pm 0.3\%$ /60 Hz $\pm 0.3\%$
5. Installation location
 - Avoid direct sunlight or bright lighting. Ensure that the photoconductor will not be exposed to direct sunlight or other strong light when removing paper jams.
 - Avoid extremes of temperature and humidity, abrupt ambient temperature changes, and hot or cold air directed onto the machine.
 - Avoid dust and vibration.
 - Choose a surface capable of supporting the weight of the machine.
 - Place the machine on a level surface (maximum allowance inclination: 1°).
 - Avoid air-borne substances that may adversely affect the machine or degrade the photoconductor, such as mercury, acidic or alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.
 - Select a room with good ventilation.
6. Allow sufficient access for proper operation and maintenance of the machine.
Machine front: 1000 mm/39³/₈" Machine rear: 100 mm/4"
Machine right: 700 mm/27⁵/₈" Machine left: 600 mm/23⁵/₈"

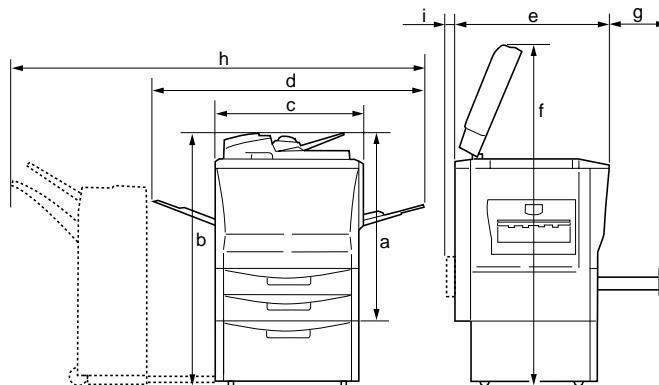


Figure 3-1-1 Installation dimensions

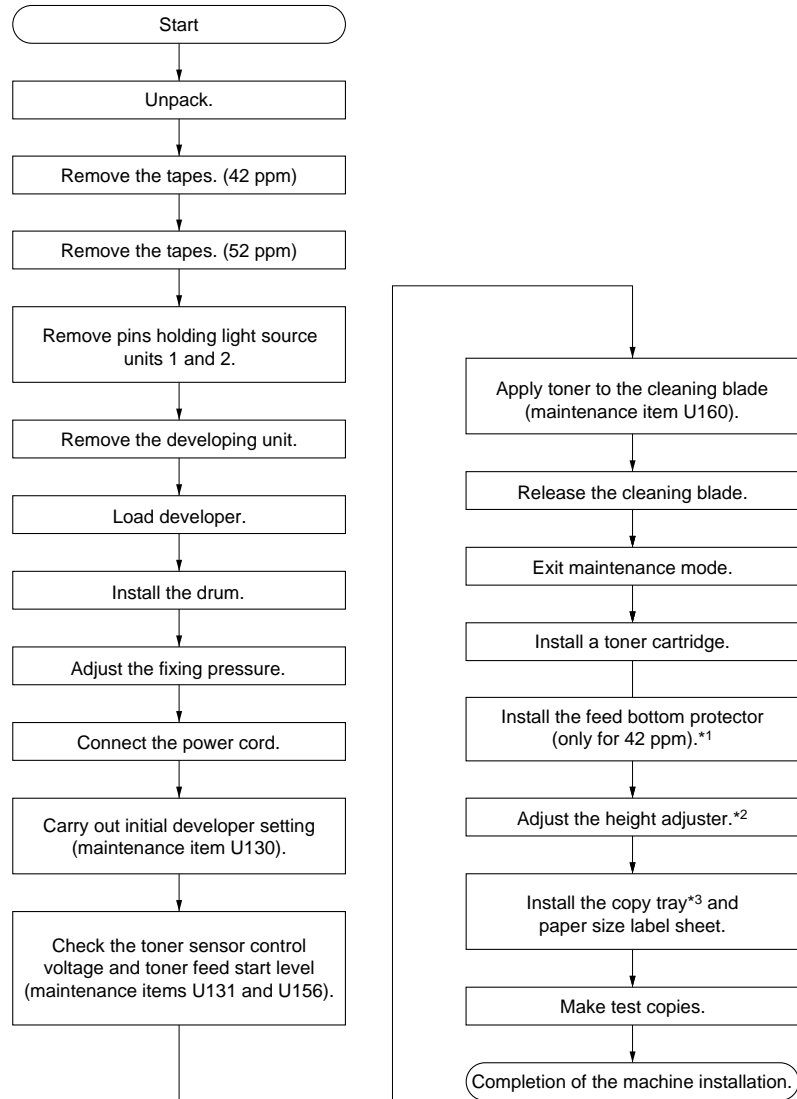
| | | |
|--|--|---|
| a: 811 mm/31 ¹⁵ / ₁₆ " | d: 1279 mm/50 ³ / ₈ " | g: 455 mm/17 ¹⁵ / ₁₆ " |
| b: 1131 mm/44 ¹ / ₂ " | e: 748 mm/29 ⁷ / ₁₆ " | h: 1827 mm/71 ¹⁵ / ₁₆ " |
| c: 627 mm/24 ¹¹ / ₁₆ " | f: 1506 mm/59 ⁵ / ₁₆ " | i: 35 mm/1 ³ / ₈ " |





2A3/4

(2) Installation procedure



*1: When neither the paper feed desk nor the large paper deck is installed.

*2: When the paper feed desk or the large paper deck is installed.

*3: For 220 - 240 V specifications only.

3-1-2





2A3/4

• 42 ppm

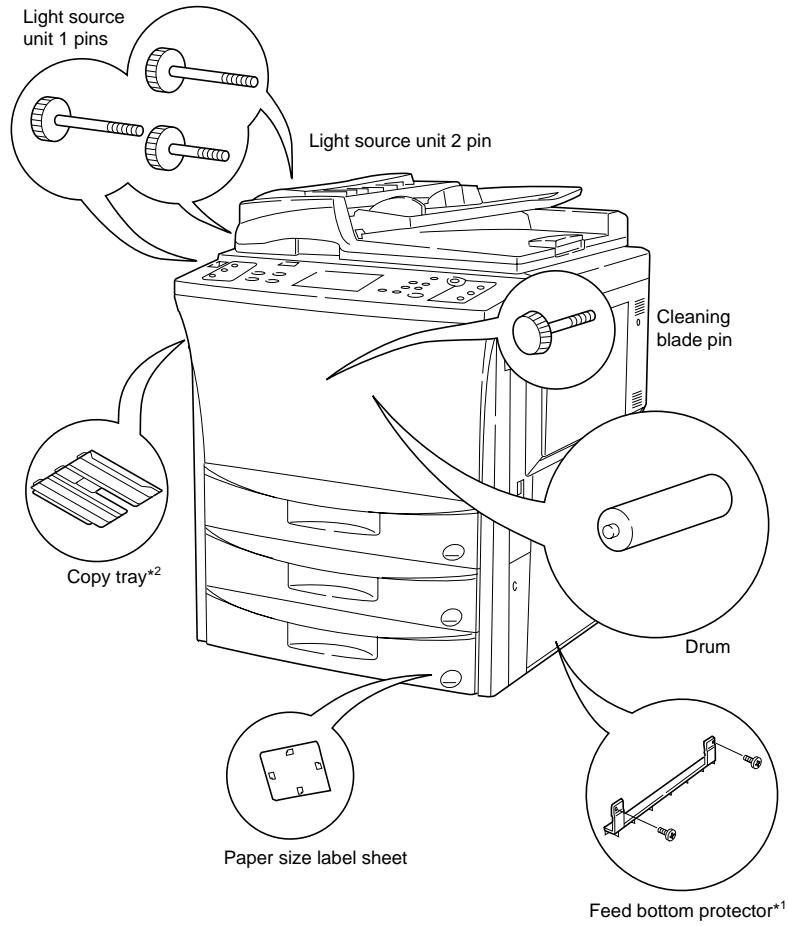


Figure 3-1-2-a

*1: When neither the paper feed desk nor the large paper deck is installed.

*2: For 220-240 V specifications only.

3-1-3





2A3/4

• 52 ppm

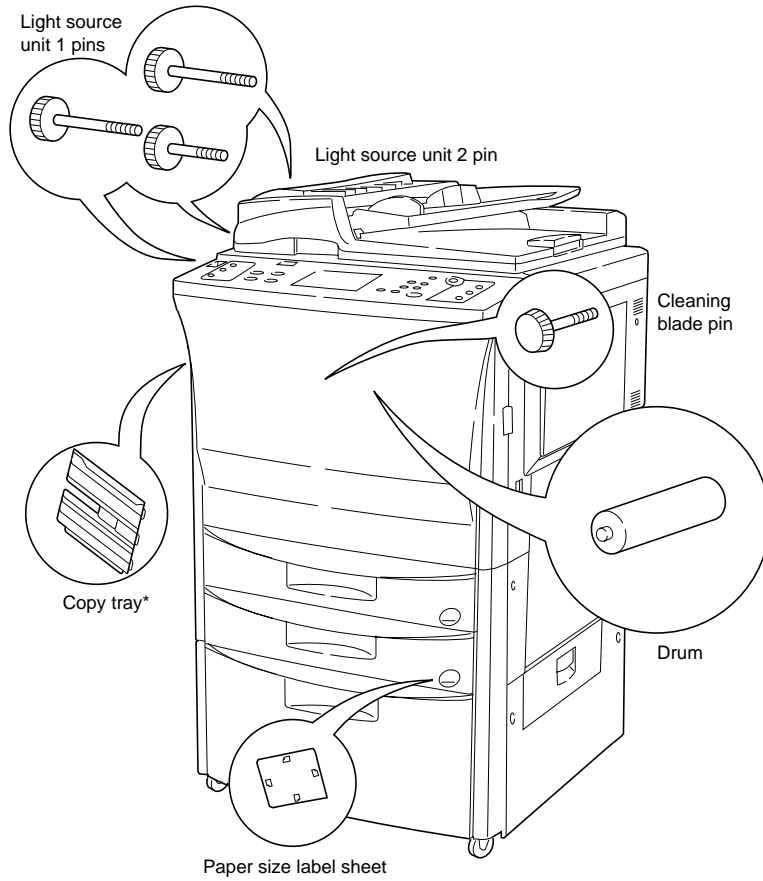
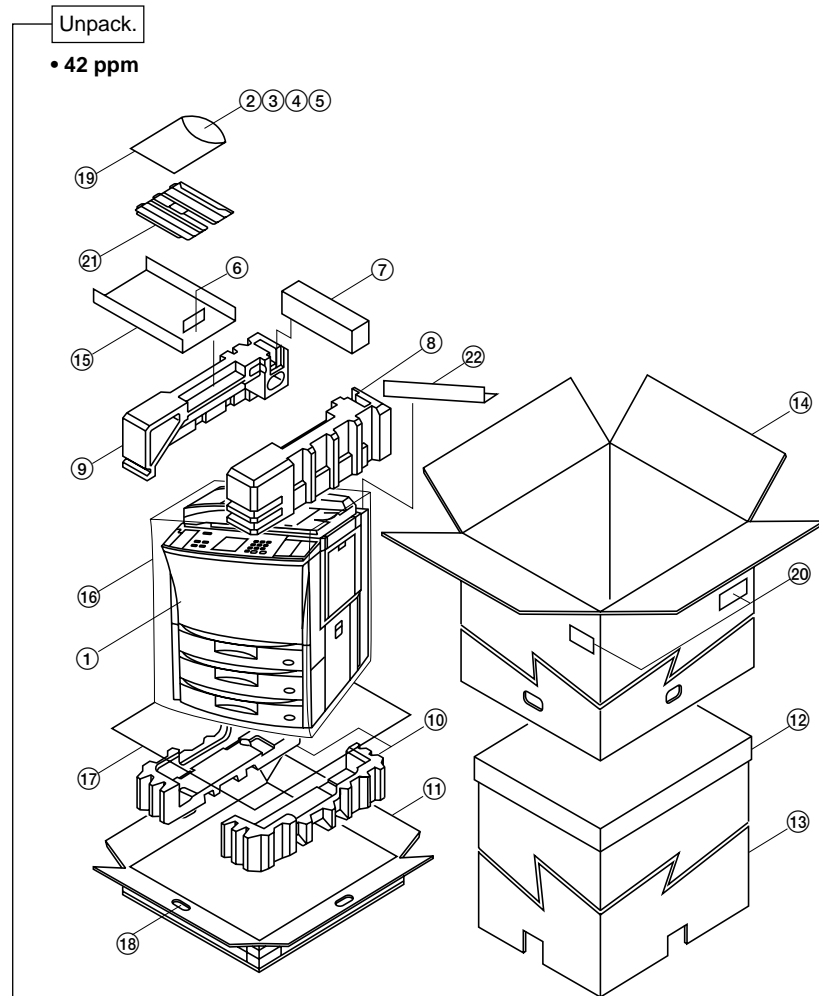


Figure 3-1-2-b

* For 220-240 V specifications only.

3-1-4





Unpack.

• 42 ppm

Figure 3-1-3-a Unpacking

- | | | |
|----------------------------------|---------------|-------------------------|
| ① Copier | ⑧ Right pad | ⑯ Machine cover |
| ② Desk retainer | ⑨ Left pad | ⑰ Machine bottom cover |
| ③ Paper size label sheet | ⑩ Bottom pads | ⑱ Plastic bag |
| ④ M4 × 6 TP screws | ⑪ Skid | ⑳ Bar code labels |
| ⑤ BVM4 × 6 bronze binding screws | ⑫ Top plate | ㉑ Copy tray* |
| ⑥ Power cord* | ⑬ Inner frame | ㉒ Feed bottom protector |
| ⑦ Drum set | ⑭ Outer case | |
| | ⑮ Tray spacer | |

* For 220 - 240 V specifications only.





2A3/4

• 52 ppm

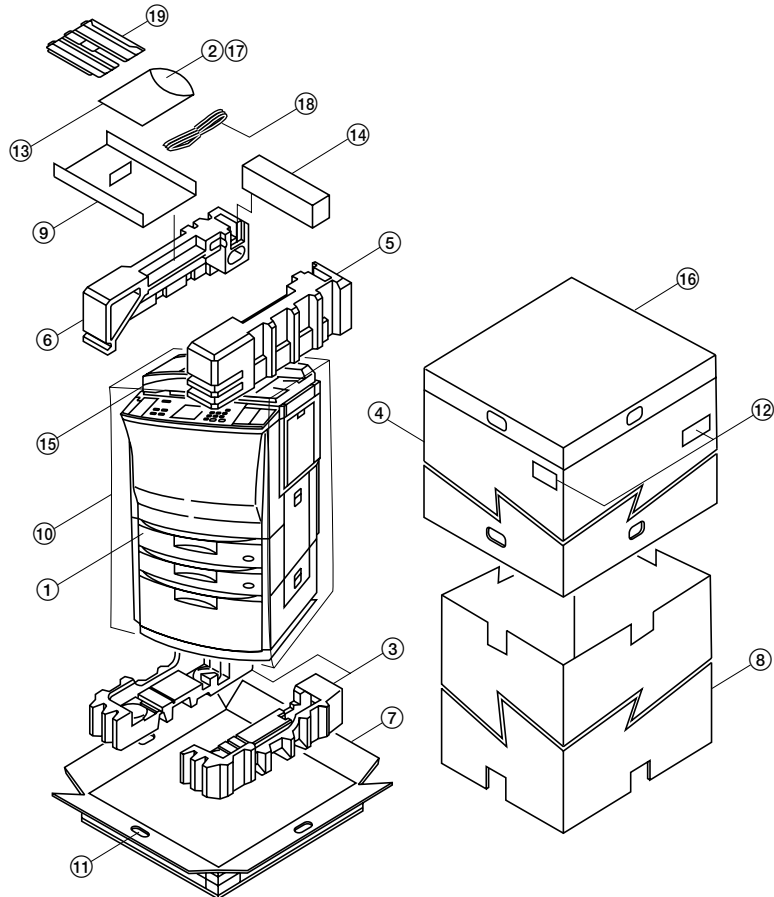


Figure 3-1-3-b Unpacking

- | | | |
|--------------------------|-------------------|-------------------------|
| ① Copier | ⑧ Inner frame | ⑮ Top spacer |
| ② Paper size label sheet | ⑨ Tray spacer | ⑯ Upper case |
| ③ Bottom pads | ⑩ Machine cover | ⑰ Business reply mail*1 |
| ④ Outer case | ⑪ Hinge joint | ⑱ Power cord*2 |
| ⑤ Right pad | ⑫ Bar code labels | ⑲ Copy tray*2 |
| ⑥ Left pad | ⑬ Plastic bag | |
| ⑦ Skid | ⑭ Drum set | |

*1: For 120 V specifications only.

*2: For 220 - 240 V specifications only.

3-1-6





2A3/4

Remove the tapes. (42 ppm)

1. Remove the two tapes holding the front cover.
2. Remove the two tapes holding the duplex unit.
3. Remove the two tapes holding the drawers.
4. Remove the two tapes holding the right cover.
5. Open the front cover and remove the three tapes holding the SRDF.
6. Remove the two tapes holding the power cord.*
7. Remove the tape binding the power cord.

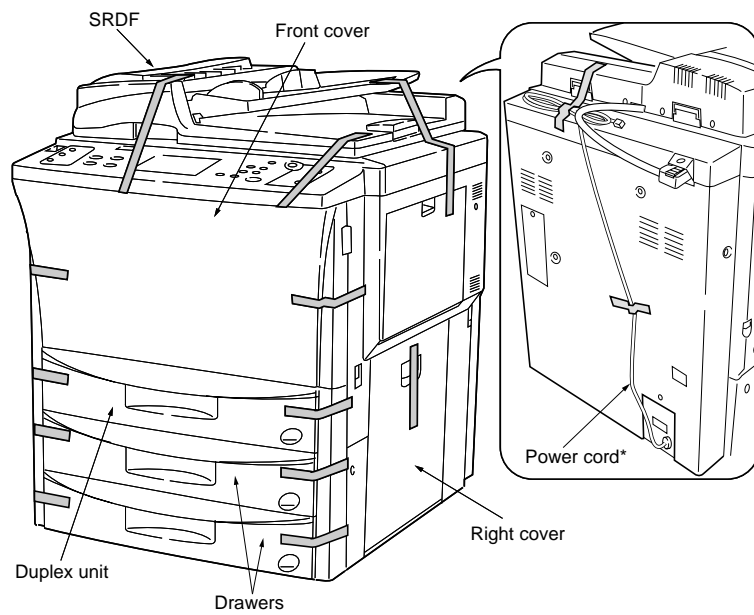


Figure 3-1-4

* For 120 V specifications only.

3-1-7





2A3/4

8. Remove the two tapes holding the feed bottom protector and then the protector.
9. Remove the two tapes holding the DF original reversing cover.
10. Remove the tape holding the paper ejection guide.
11. Remove the three tapes holding the pins for light source units 1 and 2.
12. Remove the tape holding the left cover.

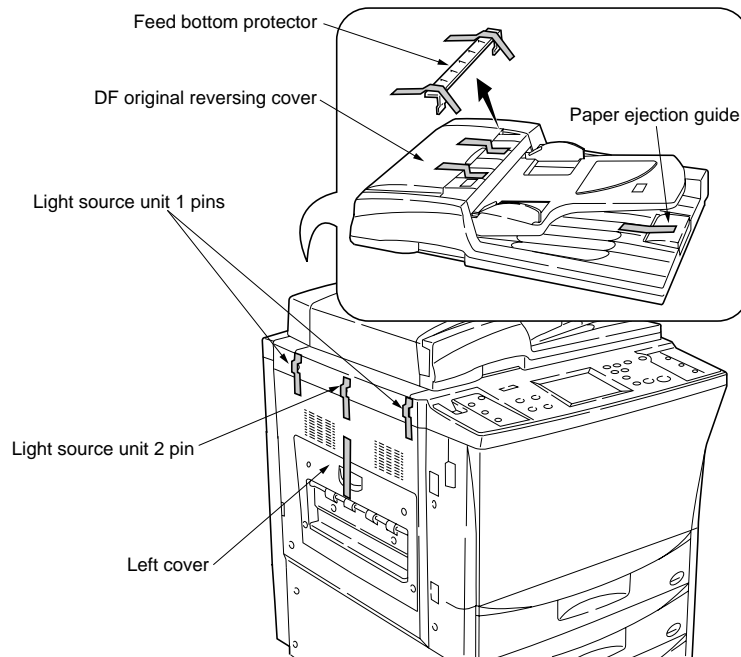


Figure 3-1-5

3-1-8



2A3/4

13. Open the duplex unit and remove the two tapes holding the duplex cover.

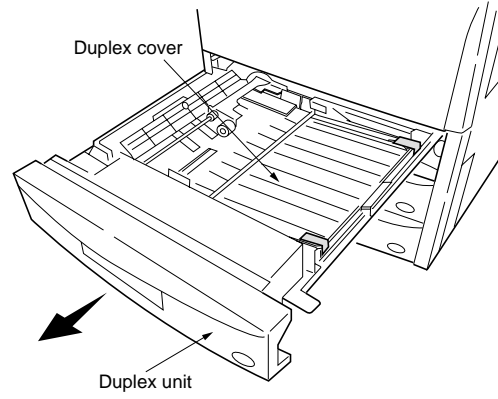


Figure 3-1-6

14. Open the drawers and remove the two tapes from each of them.

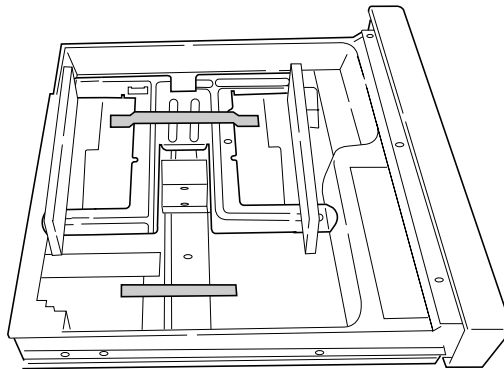


Figure 3-1-7

3-1-9





2A3/4

15. Open the SRDF and remove the paper from the contact glass.
16. Remove the protective film from the edge of the contact glass.
17. Remove the tape holding the original detection switch.

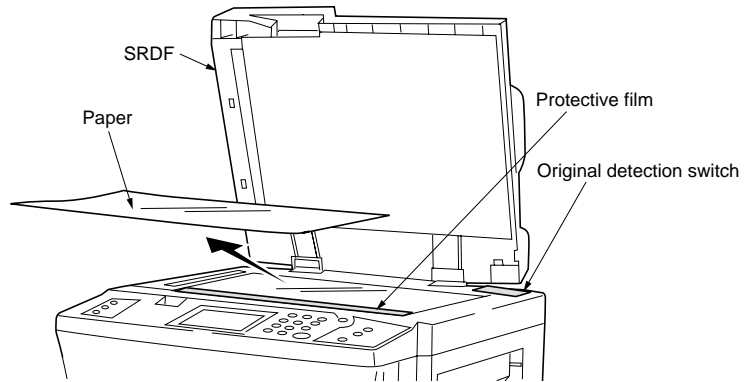


Figure 3-1-8

3-1-10



2A3/4

Remove the tapes. (52 ppm)

1. Remove the tape holding the front cover.
2. Remove the two tapes holding the drawers.
3. Remove the tape holding the right cover.
4. Remove the tape holding the deck side cover.
5. Open the front cover and remove the three tapes holding the SRDF.
6. Remove the two tapes holding the power cord.*
7. Remove the tape binding the power cord.

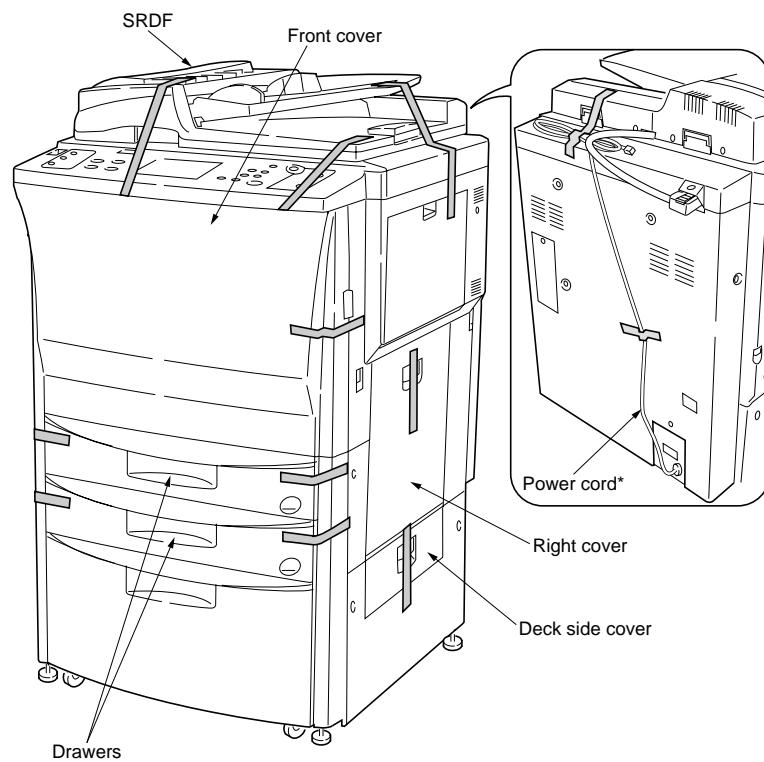


Figure 3-1-9

* For 120 V specifications only.

3-1-11





2A3/4

8. Remove the two tapes holding the DF original reversing cover.
9. Remove the tape holding the paper ejection guide.
10. Remove the three tapes holding the pins for light source units 1 and 2.
11. Remove the tape holding the left cover.

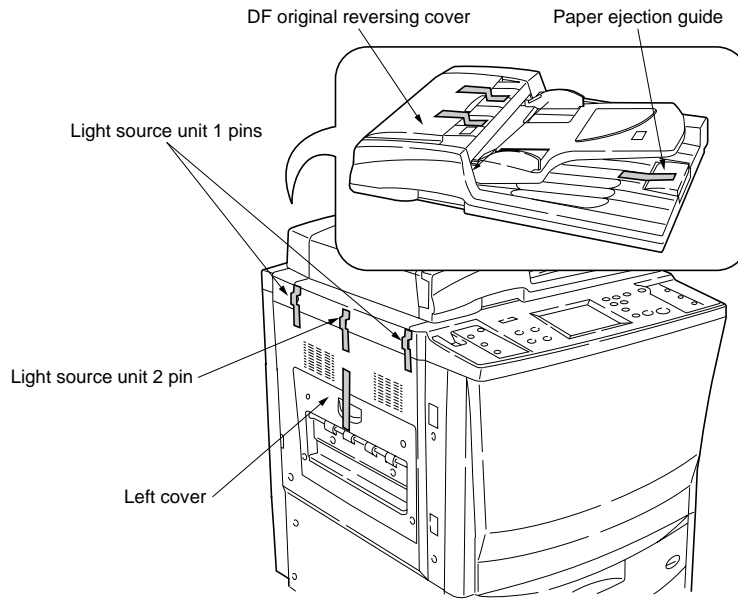


Figure 3-1-10

3-1-12





2A3/4

12. Open the front cover and then the duplex unit. Remove the two tapes holding the duplex cover.

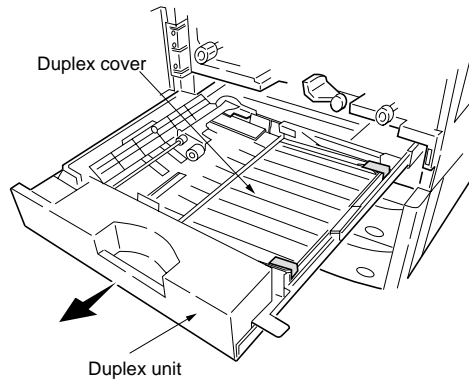


Figure 3-1-11

13. Open the drawers and remove the tape from each of them.

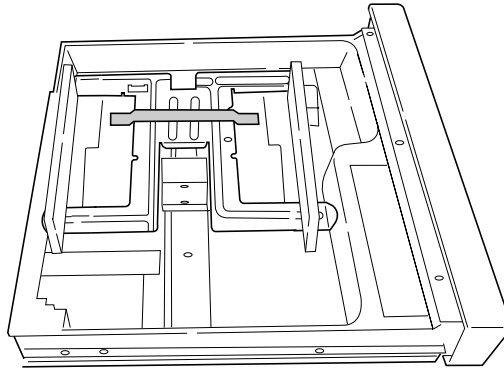


Figure 3-1-12

3-1-13





2A3/4

14. Open the SRDF and remove the paper from the contact glass.
15. Remove the protective film from the edge of the contact glass.
16. Remove the tape holding the original detection switch.

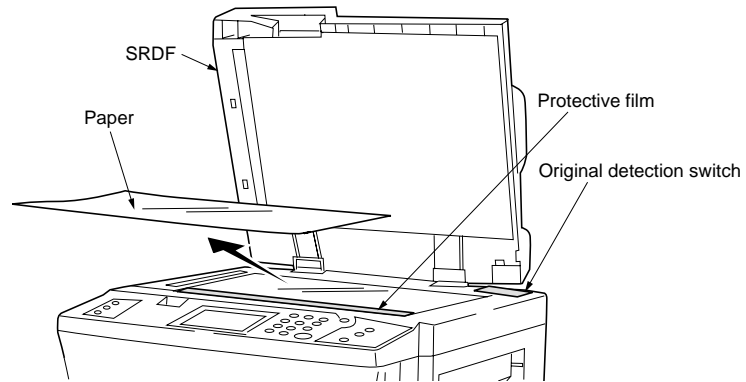


Figure 3-1-13

3-1-14



2A3/4

Remove pins holding light source units 1 and 2.

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

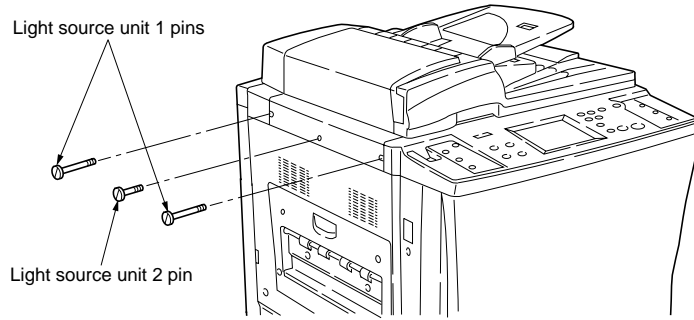
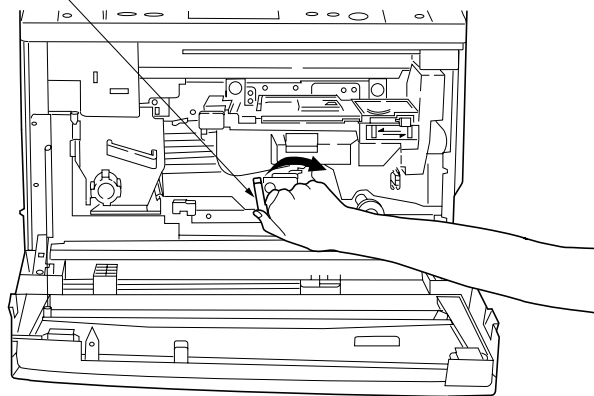


Figure 3-1-14

Remove the developing unit.

1. Open the front cover.
2. Turn the paper transfer section release lever to the right.

Paper transfer section release lever



* Illustration shows a 42 ppm.

Figure 3-1-15

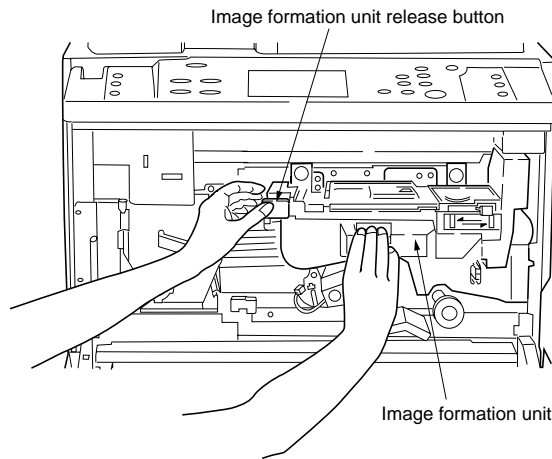
3-1-15





2A3/4

3. While pressing the image formation unit release button, pull the image formation unit out.



* Illustration shows a 42 ppm.

Figure 3-1-16

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

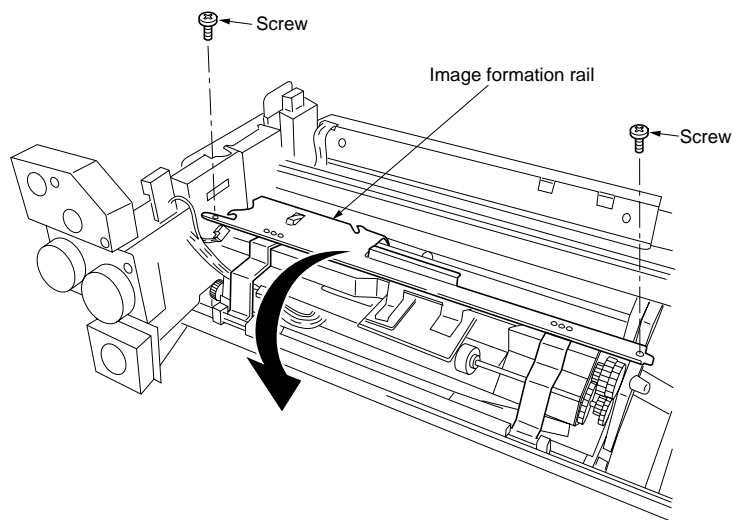


Figure 3-1-17

3-1-16





2A3/4

5. Detach the 1-pin connector of the developing unit and 4-pin connector of the toner sub-hopper.
6. Slide the joint toward the machine rear. While sliding the shutter toward the machine front, close the shutter.
7. Lift the toner sub-hopper slightly and turn it toward the machine right.

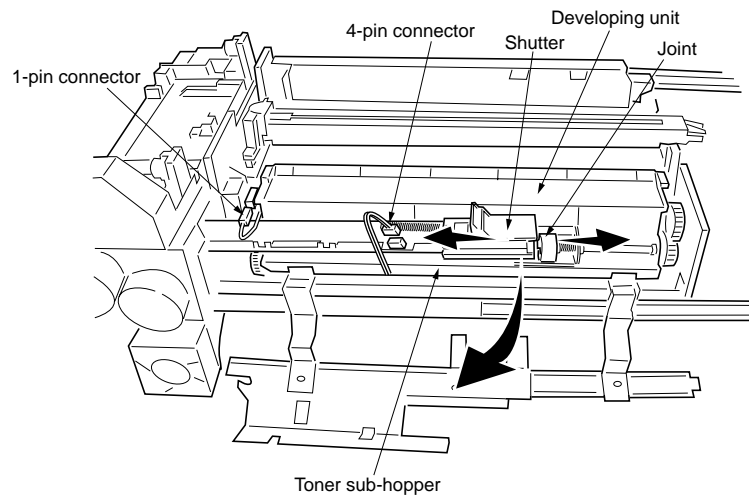


Figure 3-1-18

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

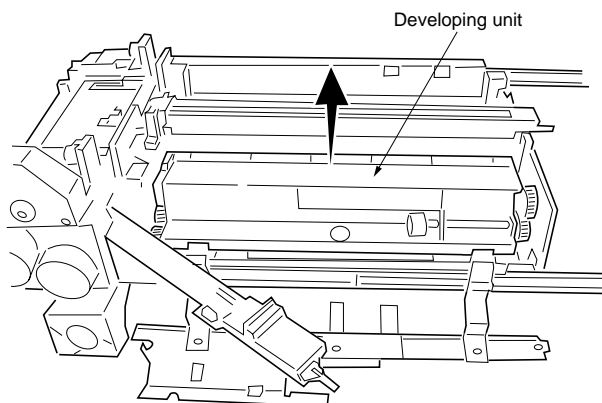


Figure 3-1-19 Removing the developing unit

3-1-17





2A3/4

Load developer.

1. Remove the two screws and unlock the two hooks to remove the developing unit upper cover.
Caution: Place the developing unit on a level surface when loading developer.

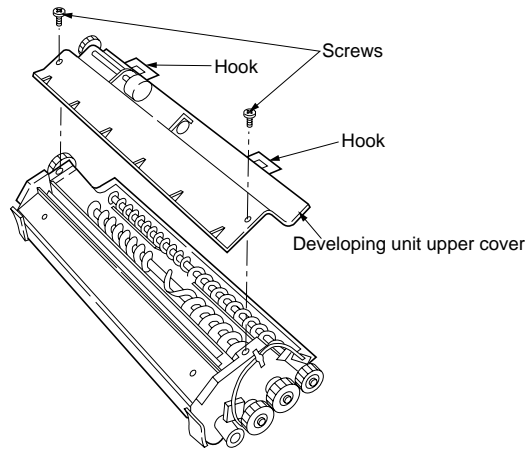


Figure 3-1-20

2. Shake the developer bottle well to agitate the developer.
3. While turning the developing gear in the direction of the arrow in the diagram, uniformly pour developer into the developing unit.
Caution: Never turn the developing gear in the reverse direction.

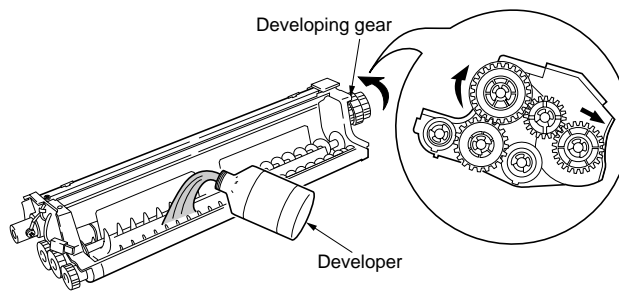


Figure 3-1-21 Loading developer

4. Refit the developing unit upper cover using the two screws.

3-1-18





2A3/4

Install the drum.

1. Remove the two screws and detach the main charger assembly.
2. Remove the two screws and open the upper cleaning cover.

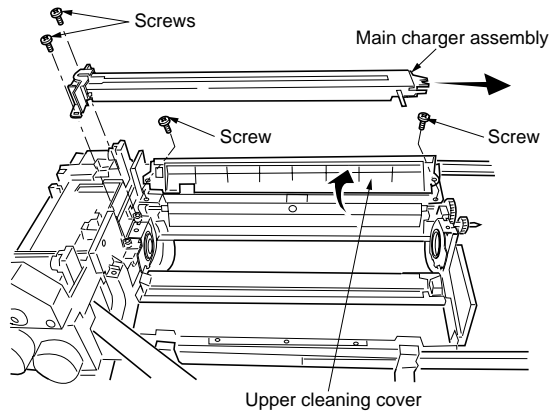


Figure 3-1-22

3. Remove the screw from each of the front and rear drum retainers and then the retainers.

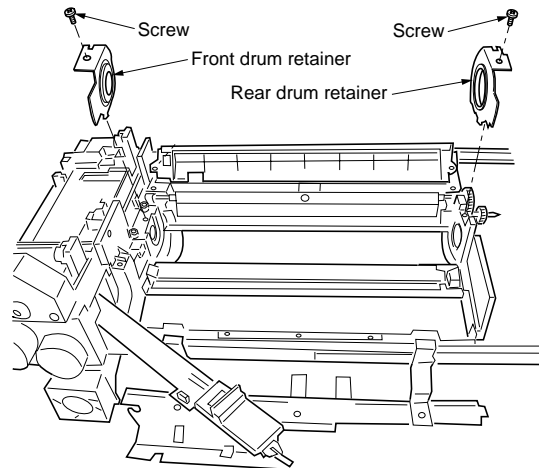


Figure 3-1-23

3-1-19





2A3/4

4. Fit the front and rear drum retainers to the drum and install the drum to the image formation unit.
5. Secure each of the front and rear drum retainers using the screws removed in step 3.
 - 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.

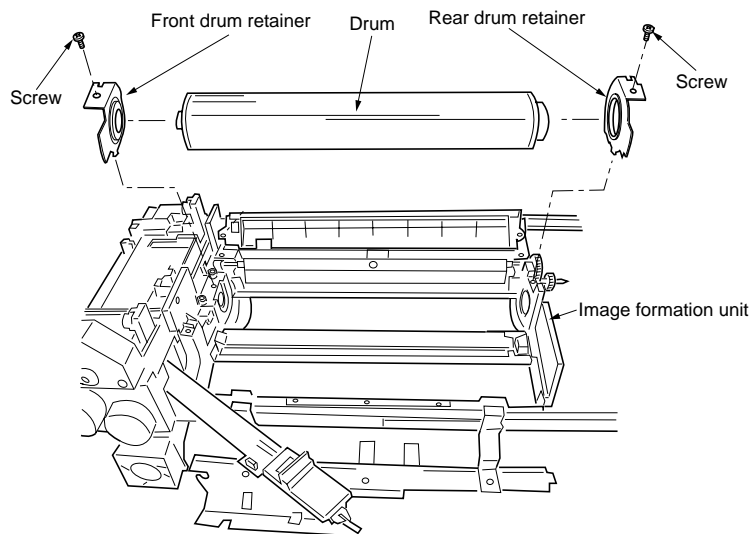


Figure 3-1-24 Installing the drum

6. Close the upper cleaning cover and secure using the two screws.
7. Fit the main charger assembly to the image formation unit and secure using the two screws.
 - When installing the main charger assembly, fix with the assembly pushed all the way toward the machine front.
8. Fit the developing unit to the image formation unit.
9. Return the toner sub-hopper to the original position.
10. Open the shutter by sliding toward the machine rear and connect it to the joint.
11. Plug the 1-pin connector of the developing unit and 4-pin connector of the toner sub-hopper.
12. Close the image formation rail and secure using the two screws.

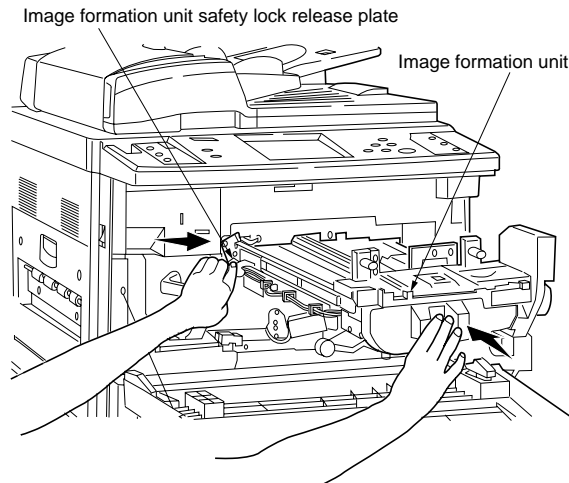
3-1-20





2A3/4

13. While pressing the image formation unit safety lock release plate, put the image formation unit back into the machine.



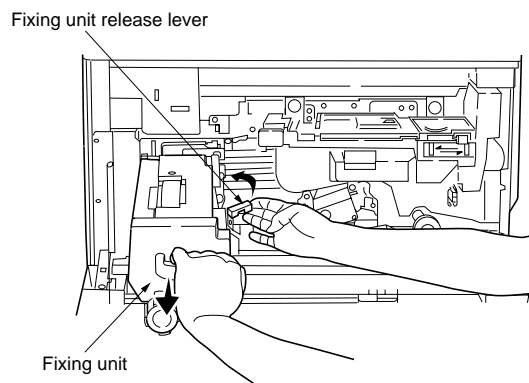
* Illustration shows a 42 ppm.

Figure 3-1-25

14. Return the paper transfer section release lever to the original position to secure the paper conveying section.

Adjust the fixing pressure.

1. While lifting the fixing unit release lever, pull the fixing unit out from the machine.



* Illustration shows a 42 ppm.

Figure 3-1-26 Pulling out the fixing unit

3-1-21





2A3/4

2. To adjust the fixing pressure, tighten the fixing pressure nuts on the front and rear of the fixing unit clockwise until each nut clamps the angle bracket against the locking nuts underneath.

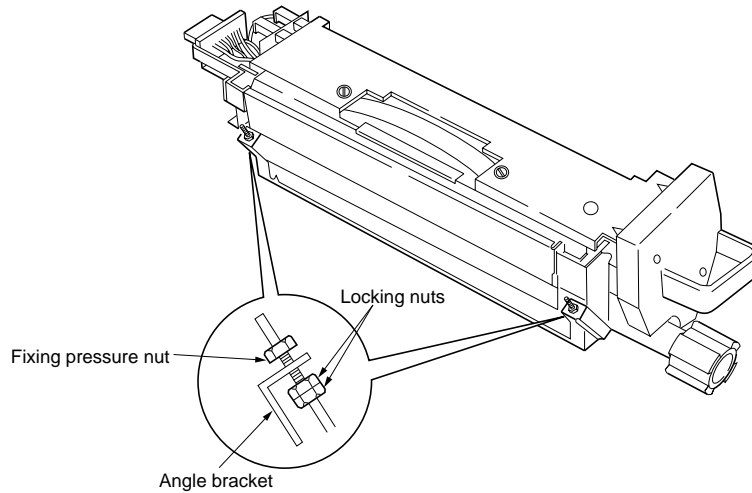


Figure 3-1-27 Adjusting the fixing pressure

3. While lifting the fixing unit release lever, slide the fixing unit back into the machine.
4. Close the front cover.

3-1-22



Connect the power cord.

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

Carry out initial developer setting (maintenance item U130).

1. Turn the main switch on and enter the maintenance mode by entering "10871087" using the numeric keys.
 - The machine enters the maintenance mode immediately after the transfer charger wire cleaning completes.
2. Enter "130" using the numeric keys and press the print key.
3. Press the print key to execute the maintenance item.
 - In approximately 2.5 minutes, the toner feed start level and toner sensor control voltage are automatically set and the settings displayed on the touch panel.
Display example
CONTROL: 156 (Toner sensor control voltage)
TARGET: 100 (Toner feed start level)
HUMID: 91 (Absolute humidity)
4. Press the stop/clear key.

Check the toner sensor control voltage and toner feed start level (maintenance items U131 and U156).

1. Run maintenance items U131 and U156 and check that the values set in maintenance item U130 are displayed on the touch panel.
2. Press the stop/clear key.

Apply toner to the cleaning blade (maintenance item U160)

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

* For 220 - 240 V specifications only.



2A3/4

Release the cleaning blade.

1. Open the front cover.
2. Turn the paper transfer section release lever to the right to unlock the paper conveying section.
3. While pressing the image formation unit release button, pull the image formation unit out.
4. After checking that toner is applied to the drum, loosen the cleaning blade pin at the left of the image formation unit and slide the cleaning blade lever in the direction of the arrow.
 - The cleaning blade is now unlocked and comes into contact with the drum.
5. Retighten the cleaning blade pin to secure the cleaning blade lever.

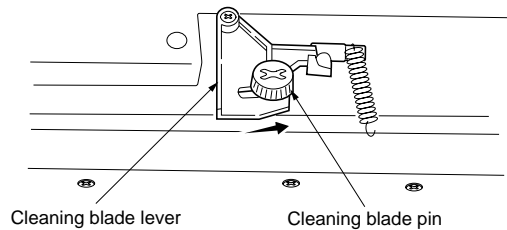


Figure 3-1-28

6. While pressing the image formation unit safety lock release plate, slide the image formation unit back into the machine.
7. Return the paper transfer section release lever to the original position to secure the paper conveying section.
8. Close the front cover.

Exit maintenance mode.

1. Enter "001" using the numeric keys and press the print key.
 - The machine exits the simulation mode.

Install a toner cartridge.

1. Shake the toner cartridge upside-down and side-to-side to agitate the toner.

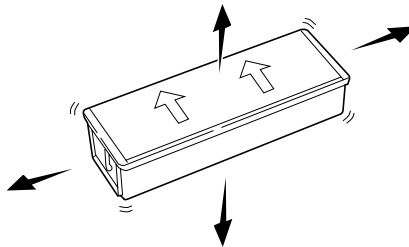


Figure 3-1-29

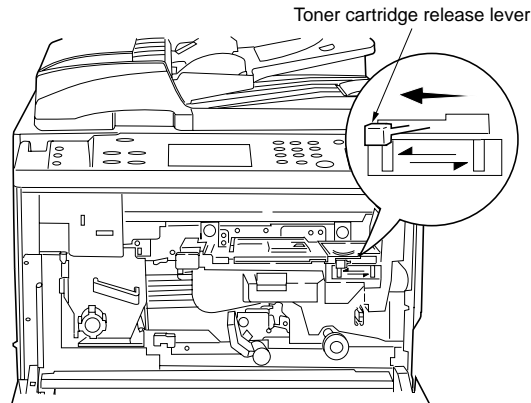
3-1-24





2A3/4

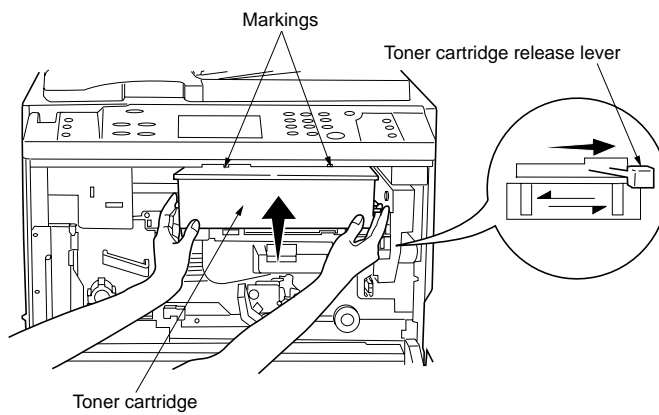
2. After the machine has stabilized, open the front cover.
3. Shift the toner cartridge release lever to the left.



* Illustration shows a 42 ppm.

Figure 3-1-30

4. Insert the toner cartridge by aligning the two arrows on the top of the toner cartridge with the two markings on the machine.
5. Shift the toner cartridge release lever to the right to secure the toner cartridge.



* Illustration shows a 42 ppm.

Figure 3-1-31

6. Close the front cover.

3-1-25





2A3/4

Install the feed bottom protector (only for 42 ppm).*1

1. Remove the screws from the right front lower cover B and right rear lower cover and then detach the covers.
2. Fit the feed bottom protector using two M4 x 6 TP screws.
3. Refit all removed parts.

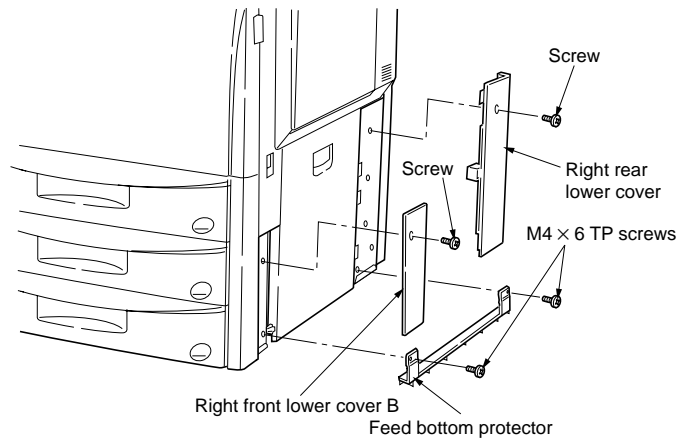


Figure 3-1-32

*1: When neither the paper feed desk nor the large paper deck is installed.

3-1-26



2A3/4

Adjust the height adjusters.*²

1. Turn the four height adjusters at the bottom of the machine so that the machine is level.

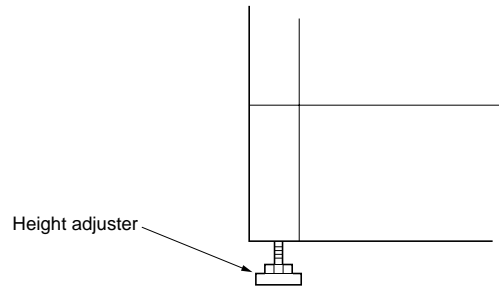


Figure 3-1-33

*2: When the paper feed desk or the large paper deck is installed.

Install the copy tray*³ and paper size label sheet.

1. Install the copy tray.*³
2. Load paper so that the copying side (the side facing upward when unpacked) faces downward.
 - When loading paper on the bypass table, load so that the copying side (the side facing upward when unpacked) faces upward.
 - Loading paper upside down may cause a paper jam.

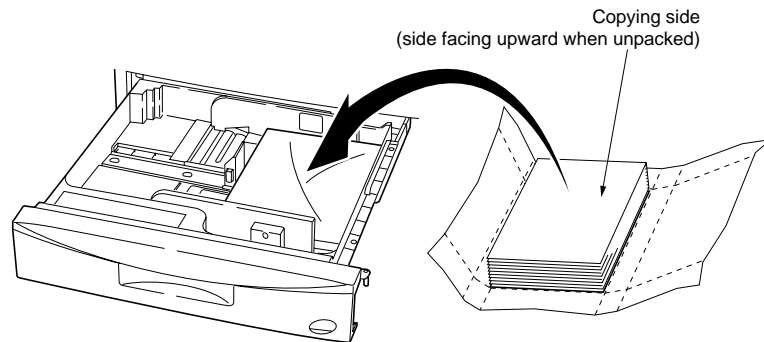


Figure 3-1-34

*3: For 220 - 240 V specifications only.

3-1-27





2A3/4

3. Slide the paper size label sheet into the front of drawer.

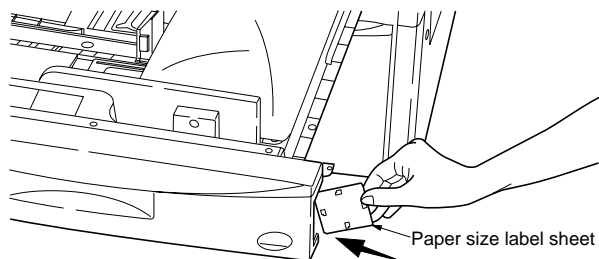


Figure 3-1-35

4. If the user requests the side guides to be fixed, fix according to the paper size using four M3 × 8 flat-head screws.

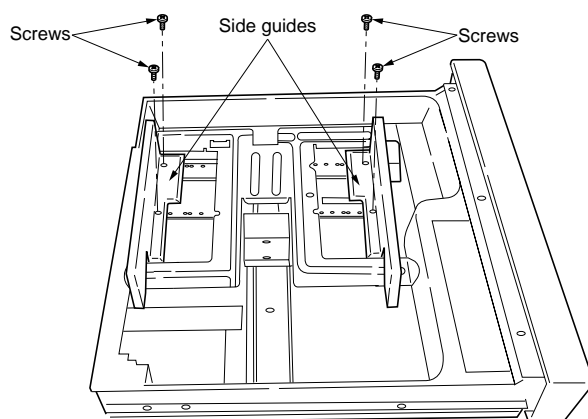


Figure 3-1-36

5. Set the paper size on the operation panel. (For 220 - 240 V specifications only)

Make test copies.

1. Place an original and make test copies.
Check if the center lines of the large paper deck, the bypass table and each drawer are correct. If not, adjust the center lines.

Completion of the machine installation.

3-1-28





2A3/4

3-1-2 Setting initial copy modes

Factory settings are as follows:

| Maintenance item No. | Contents | Factory setting |
|----------------------|---|--|
| U253 | Switching between double and single counts | Double count |
| U254 | Turning auto start function on/off | ON |
| U255 | Setting auto clear time | 90 |
| U256 | Turning auto preheat/energy saver function on/off | ON |
| U258 | Switching copy operation at toner empty detection | SINGLE MODE, 0 |
| U260 | Changing the copy count timing | EJECT |
| U263 | Setting DF copy ejection orientation | Face down |
| U264 | Setting date display order | Month-day-year (inch) Day-month-year (metric) |
| U330 | Sets the number of copies for switching the copy eject tray in the finisher | 100 |
| U333 | Setting the number of digits of ID-code | 4 digits |
| U334 | Setting the ejection method in the booklet stitcher | 2 BIN |
| U343 | Switching between duplex/simplex copy mode | Simplex copy |
| U344 | Setting preheat/energy saver mode | Energy Star |
| U347 | Setting auto drawer size detection | ON (inch) OFF (metric) |
| U348 | Setting the copy density adjustment range | SPECIAL AREA |
| U350 | Setting the ID-code error output | ON |

3-1-29



2A3/4

3-1-3 Installing the memory copy kit (42 ppm: option/52 ppm: standard)

Memory copy kit installation requires the following parts:

Memory copy kit (P/N 2AC82020)

Contents of the kit

- Memory copy PCB (assembly, P/N 2AC01120)
- Three (3) BVM4 × 6 bronze binding screws (P/N B1304060)

<Procedure>

1. Detach the SRDF connector.
2. Remove the seven screws holding the rear cover and then the cover.
3. Remove the eight screws holding the main PCB cover and then the cover.

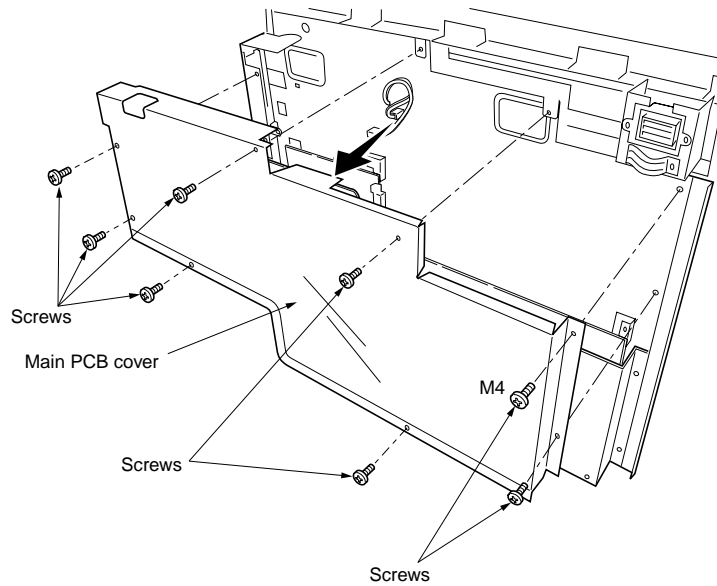


Figure 3-1-37

3-1-30





2A3/4

4. Insert the connector of the memory copy PCB into the connector of the main PCB.
5. Clip the memory copy PCB over the board support.

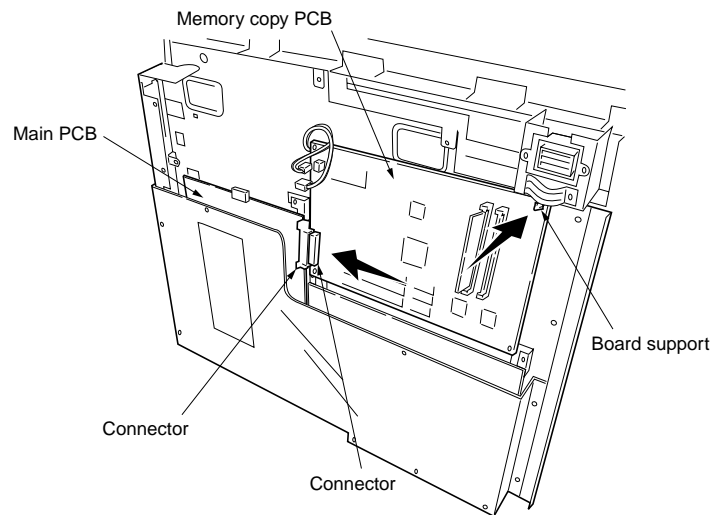


Figure 3-1-38

6. Secure the memory copy PCB using the three BVM4 × 6 bronze binding screws.

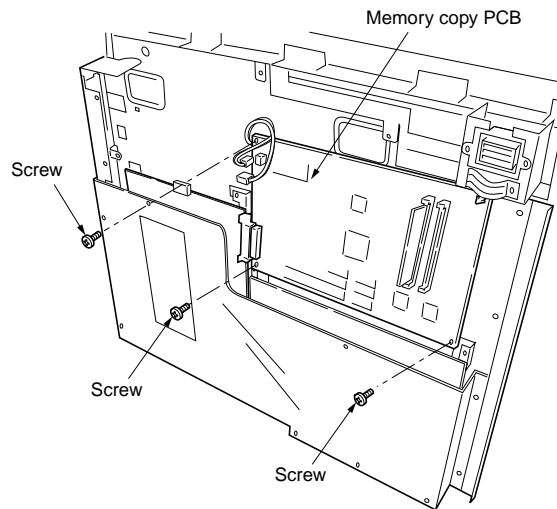


Figure 3-1-39

3-1-31





2A3/4

7. Insert the connector of the machine into the connector on the memory copy PCB.

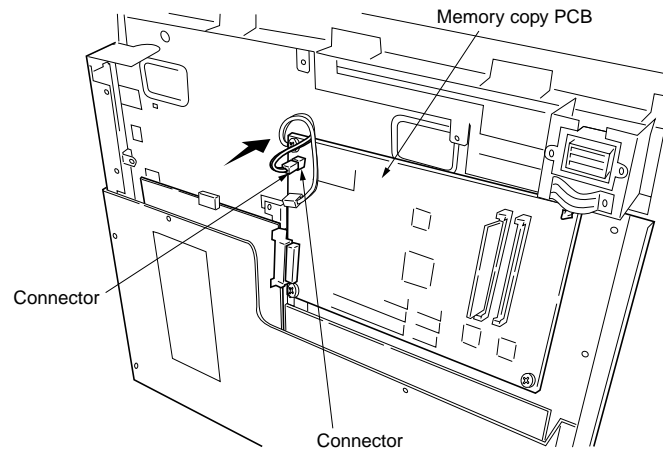


Figure 3-1-40

8. Refit all removed parts.



3-1-32





2A3/4

3-1-4 Installing the image memory SIMM (option)

Installation of add-on image memory to the memory copy PCB requires the following part:
Image memory (16 MB or 32 MB 72-pin SIMM)

<Procedure>

1. Detach the SRDF connector.
2. Remove the seven screws holding the rear cover and then the cover.
3. Remove the eight screws holding the main PCB cover and then the cover.
 - To install an add-on image memory to memory copy PCB 2 only, proceed to step 5.

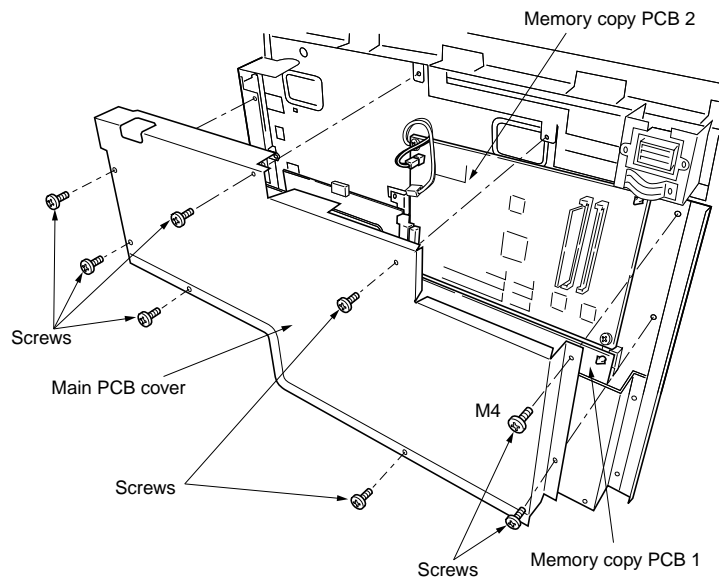


Figure 3-1-41

3-1-33





2A3/4

4. Remove the six screws holding the sequence cover and then the cover.

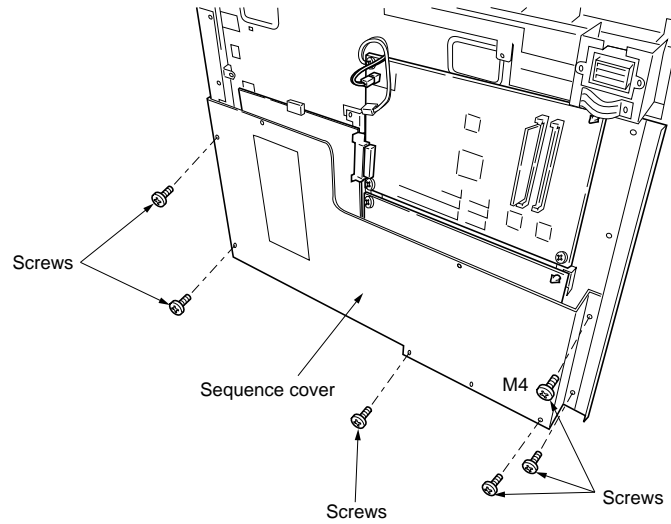


Figure 3-1-42

5. Fit an image memory into the add-on memory slot on the memory copy PCB.

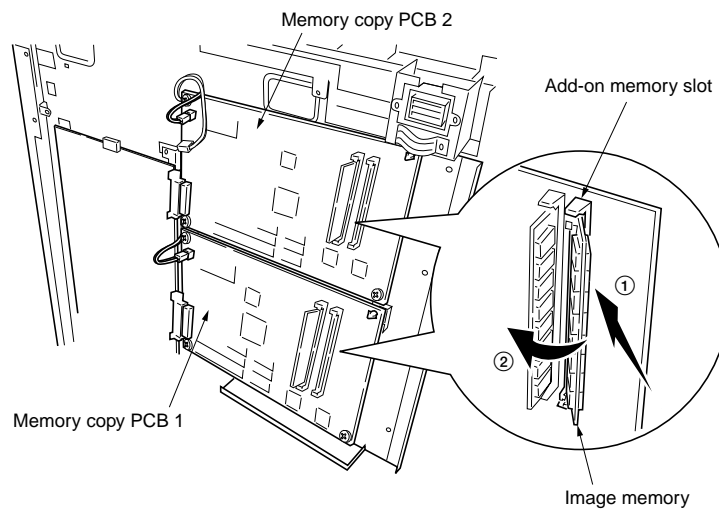


Figure 3-1-43

6. Refit all removed parts.

3-1-34





2A3/4

3-1-5 Installing the optical heater (service part)

Optical heater installation requires the following parts:
Optical heater (P/N 33960020): for 220 - 240 V specifications
Optical heater (P/N 34860030): for 120 V specifications
Heater switch (P/N 68427020)
Dehumidifier relay cable (P/N 2AC60020)
Two BVM4 × 6 bronze binding screws (P/N B1304060)

<Procedure>

1. Detach SRDF connector.
2. Remove the SRDF.
3. Remove the seven screws holding the rear cover and then the cover.
4. Remove the two screws holding the upper rear cover and then the cover.
5. Remove the two screws holding the upper right cover and then the cover.
6. Remove the contact glass.
7. Move the scanner toward the machine right.
8. Pass the 2-pin connector of the optical heater cable to the machine rear through the two cable holes.
9. Fit the optical heater using the two screws.

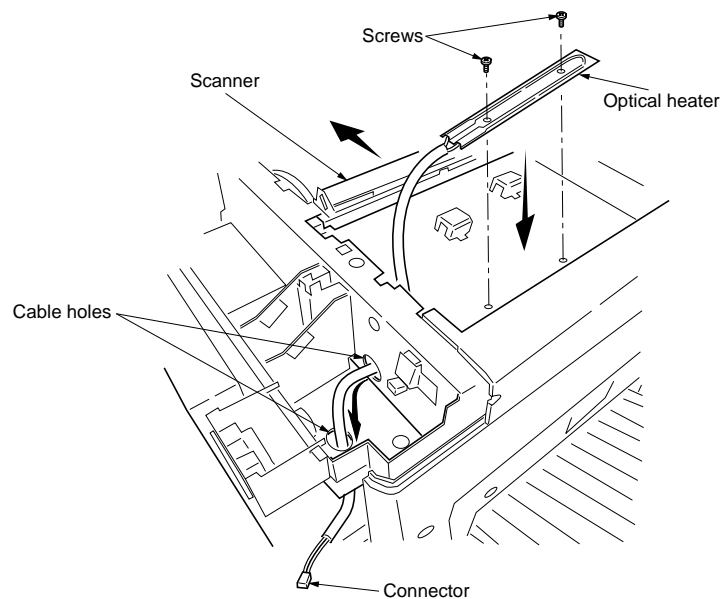


Figure 3-1-44

3-1-35





2A3/4

10. Route the dehumidifier relay cable using the five wire saddles.
11. Insert the 2-pin connector of the optical heater into the 2-pin connector of the dehumidifier relay cable.
12. Insert the 2-pin connector of the main PCB into the 2-pin connector of the dehumidifier relay cable.
13. Insert the 4-pin connector of the main PCB into the 4-pin connector of the dehumidifier relay cable.

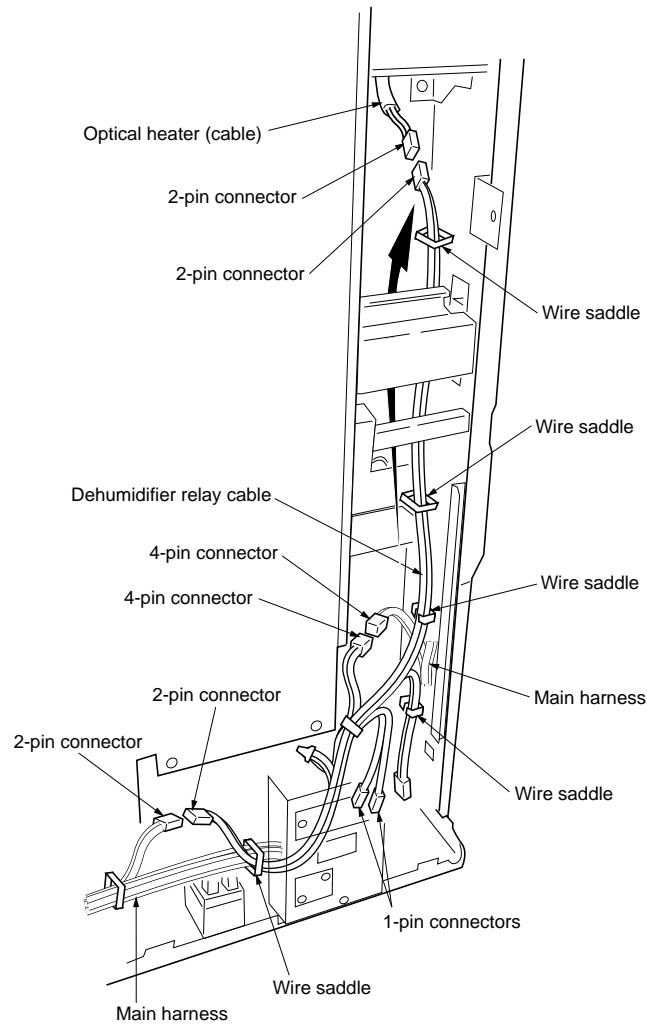


Figure 3-1-45

3-1-36





2A3/4

14. Remove the two screws holding the lower left cover and then the cover.
15. Remove the cap in the lower left cover.
16. Refit the lower left cover using the two screws.
17. Insert the heater switch.
18. Plug the two 1-pin connectors of the dehumidifier relay cable onto the terminals of the heater switch.

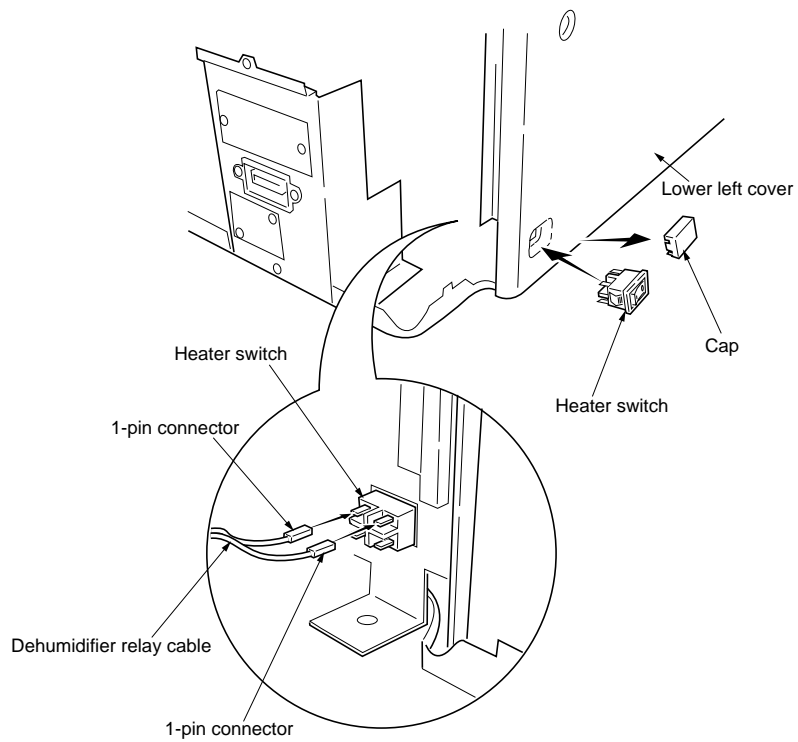


Figure 3-1-46

19. Refit all removed parts.

3-1-37





2A3/4

3-1-6 Installing the drawer heater (service part)

Drawer heater installation requires the following parts:

Drawer heater (P/N 33960020): for 220 - 240 V specifications

Drawer heater (P/N 34860030): for 120 V specifications

Heater switch (P/N 68427020)

Dehumidifier relay cable (P/N 2AC60020)

Two M4 × 8 S tight screws (P/N B3324080)

Binding band SG-130 (P/N M2107120)

<Procedure>

1. Remove the four screws holding the upper drawer and then the drawer.
2. Remove the two screws holding the lower left cover and then the cover.
3. Remove the lower drawer.
4. Pass the 2-pin connector of the drawer heater cable to the machine rear through the cable hole in the left back corner of the machine.
5. Fit the drawer heater using the two screws.
6. Attach the binding band to the drawer heater cable and insert the band into the hole in the bottom of the machine.

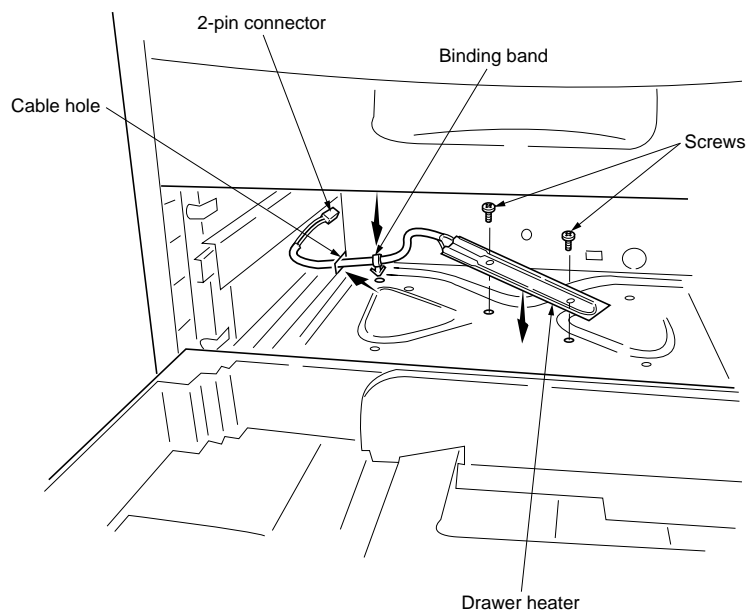


Figure 3-1-47

3-1-38





2A3/4

7. Detach the SRDF connector.
8. Remove the seven screws holding the rear cover and then the cover.
9. Route the dehumidifier relay cable using the five wire saddles.
10. Insert 2-pin connector of the drawer heater into the 2-pin connector of the dehumidifier relay cable.
11. Insert the 2-pin connector of the main harness into the 2-pin connector of the dehumidifier relay cable.
12. Insert the 4-pin connector of the main harness into the 4-pin connector of the dehumidifier relay cable.

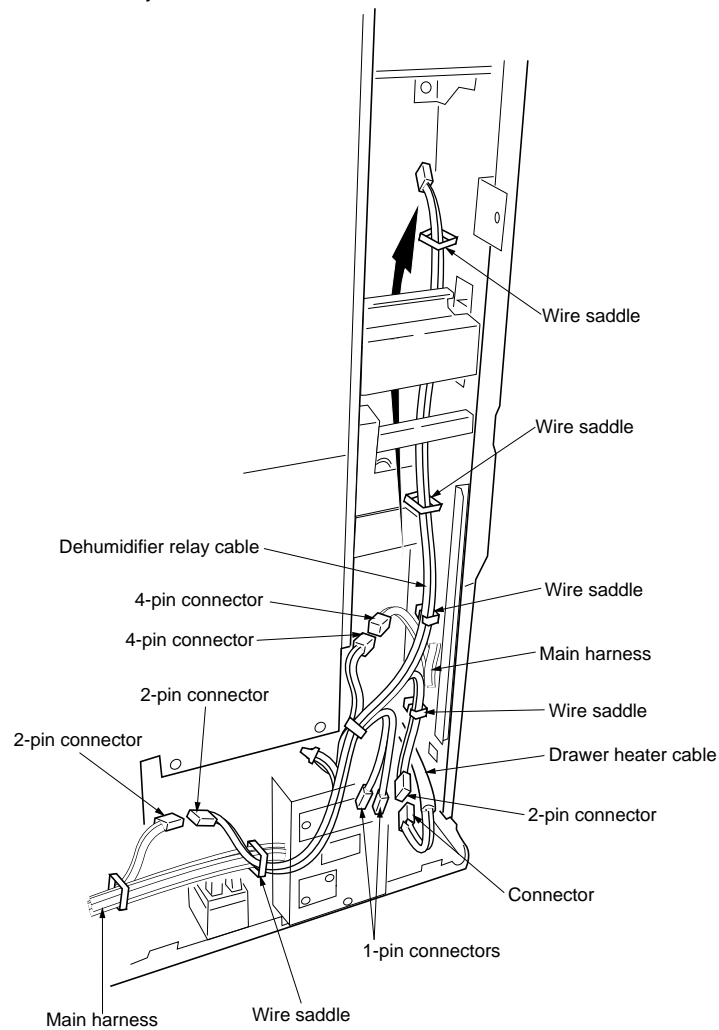


Figure 3-1-48

3-1-39





2A3/4

13. Remove the two screws holding the lower left cover and then the cover.
14. Remove the cap in the lower left cover.
15. Refit the lower left cover using the two screws.
16. Insert the heater switch instead.
17. Plug the two 1-pin connectors of the dehumidifier relay cable onto the terminals of the heater switch.

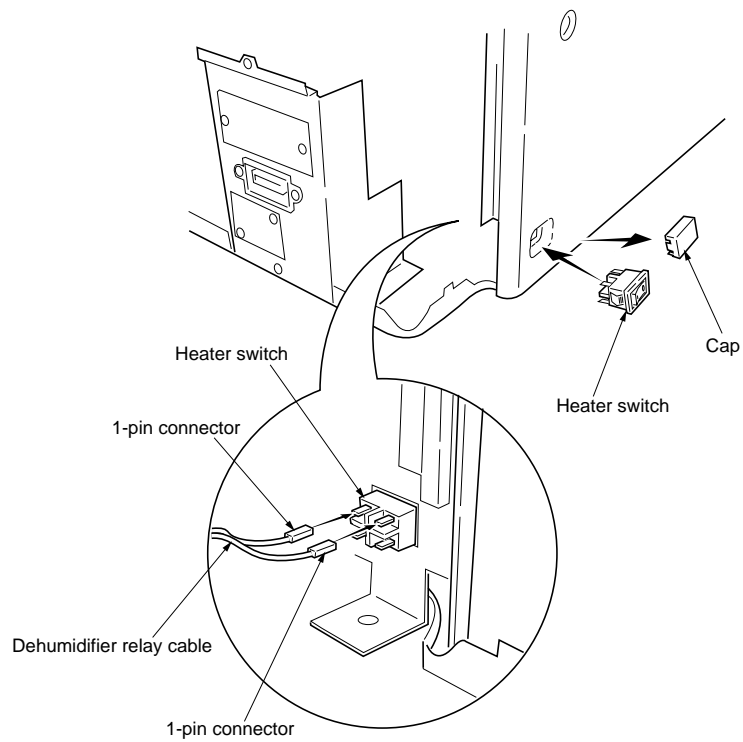


Figure 3-1-49

18. Refit all removed parts.

3-1-40





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

Key counter installation requires the following parts:

Key counter set (P/N 66069781)

Contents of the set:

- Key counter cover (P/N 66060010)
- Key counter retainer (P/N 66060030)
- Key counter cover retainer (P/N 66060021)
- Key counter mount (P/N 66060040)
- Key counter assembly (P/N 29236240)
- Four (4) M4 × 6 bronze TP-A screws (P/N B4304060)
- Two (2) M4 × 10 bronze TP-A screws (P/N B4304100)
- One (1) M4 × 6 chrome TP-A screw (P/N B4104060)
- Two (2) M3 × 6 bronze flat-head screws (P/N B2303060)
- One (1) M3 bronze nut (P/N C2303000)

<Procedure>

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

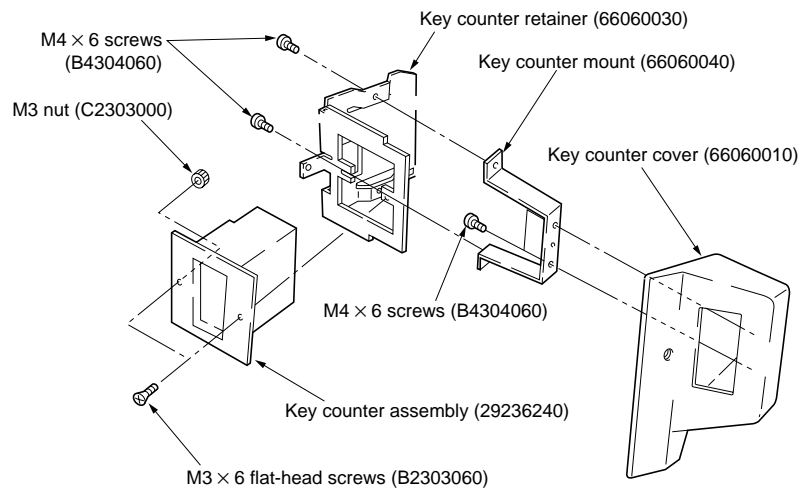


Figure 3-1-50





2A3/4

3. Remove the screw holding right front lower cover B and then the cover.
4. Remove the screw holding the right rear lower cover and then the cover.
5. Remove the two screws and detach the middle right cover from the machine.
6. Cut out the aperture plate on the middle right cover using nippers.

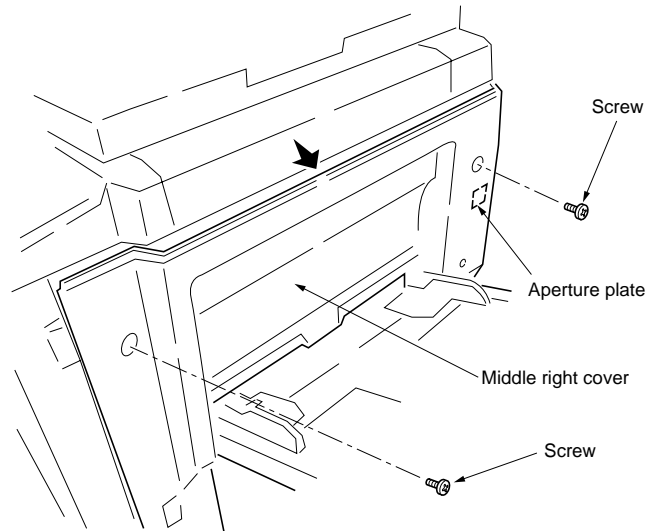


Figure 3-1-51

3-1-42





2A3/4

7. 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.
8. 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.
9. Refit the screw to the machine front side of the middle right cover.
10. Fit the key counter cover with the key counter assembly inserted to the key counter cover retainer on the machine.

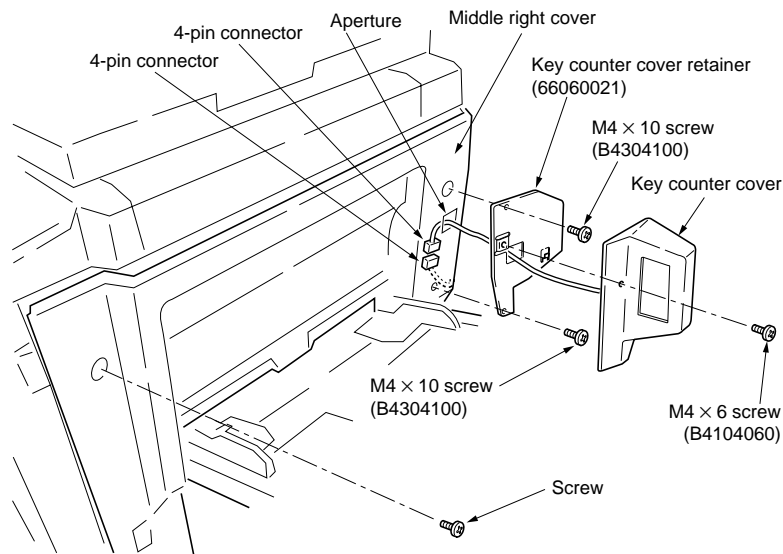


Figure 3-1-52

11. Insert the key counter into the key counter assembly.
12. Turn the main switch on and enter the maintenance mode.
13. Run maintenance item U204 and select "KEY COUNTER."
14. Exit the maintenance mode.
15. Check that the message requesting the key counter to be inserted is displayed when the key counter is pulled out.
16. Check that the counter counts up as copies are made.

3-1-43





2A3/4

3-1-8 Installing the dehumidifier heaters (service part)

Dehumidifier heater installation requires the following parts:

Two dehumidifier heaters (P/N 33960020): for 220 - 240 V specifications

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

Two heater bases (P/N 54107410)

Eight BVM4 x 06 bronze binding screws (P/N B1304060)

Eight EDS-2 edgings (P/N M2104210)

Relay wire (P/N 53310390)

Six SG-110 V0 bands (P/N M2107200)

<Procedure>

1. Fit the dehumidifier heaters to the heater bases using two screws for each.

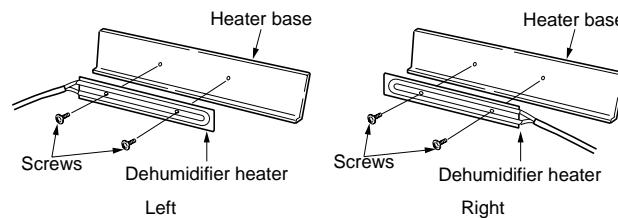


Figure 3-1-53

2. Remove the two screws from each of the deck right cover, deck left cover and deck rear cover and then the covers.
3. Open the large paper deck.
4. Detach the deck paper conveying motor connector.
5. Remove the spring from the deck paper conveying motor bracket.
6. Remove the four screws holding the deck paper conveying motor bracket and then the bracket.
7. Remove the two screws holding the deck paper conveying unit assembly and then the assembly.

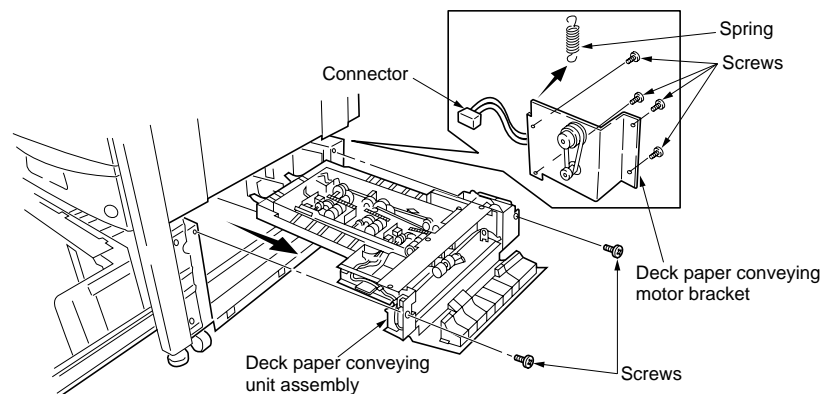


Figure 3-1-54

3-1-44





2A3/4

8. Fit the dehumidifier heater assemblies to the right and left of the large paper deck using two screws for each.

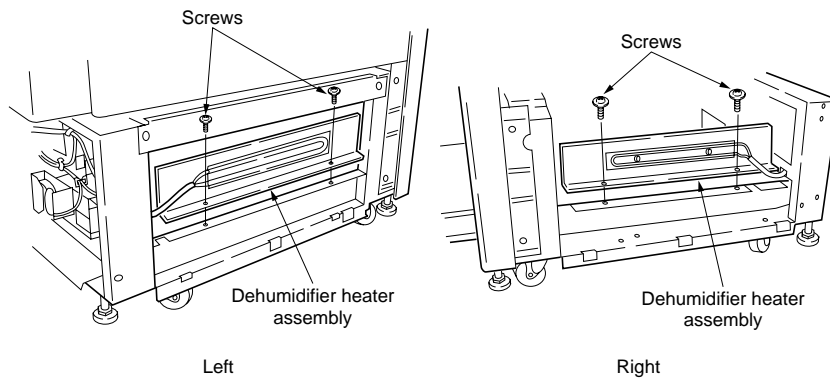


Figure 3-1-55

9. Fit the edgings to the two U-shaped cutouts in the rear frame.
10. Pull the dehumidifier heater wires out to the machine rear through the edgings.

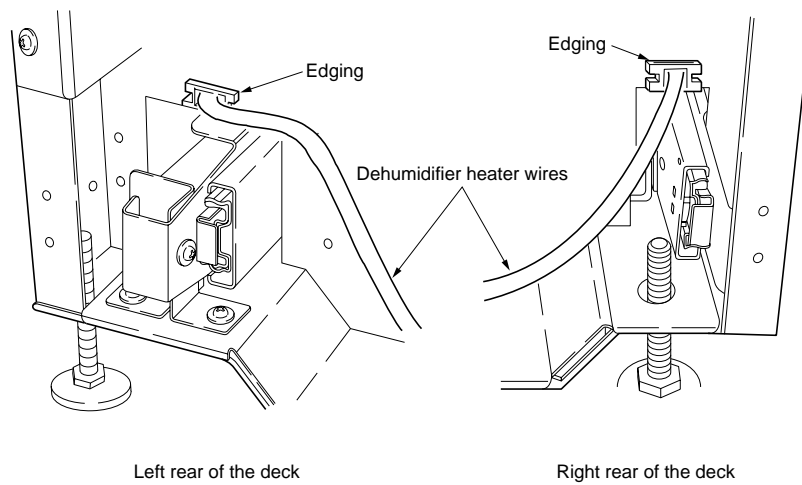


Figure 3-1-56

3-1-45





2A3/4

11. Detach the open connector from the connector of the main wire on the machine rear.

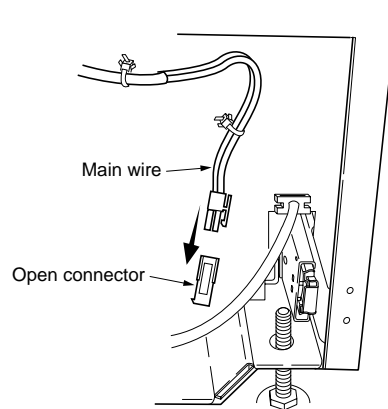


Figure 3-1-57

12. Insert the dehumidifier heater connectors into the relay wire connectors (see (A) in Figure 3-1-58).
13. Insert the main wire connector into the relay wire connector (see (B) in Figure 3-1-58).
14. Tidy up the large paper deck wires and relay wire using the six bands and route the wires while clipping the bands into holes in the rear frame.

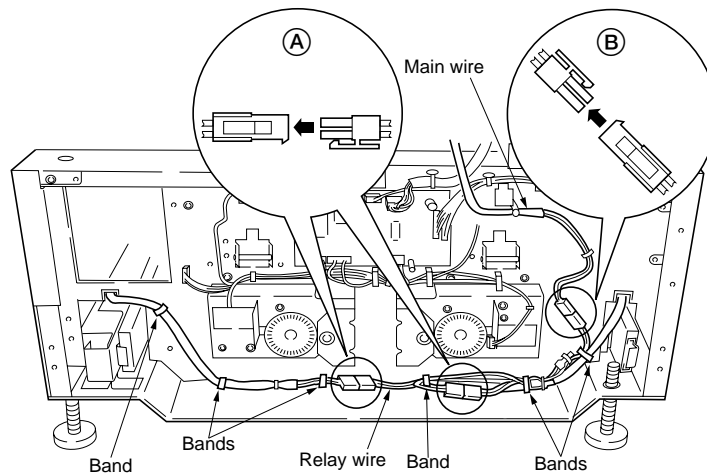


Figure 3-1-58

15. Refit all removed parts.

3-1-46





2A3/4

3-1-9 Installing the MMD host monitoring system device (optional for 120 V specifications only)

<Procedure>

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

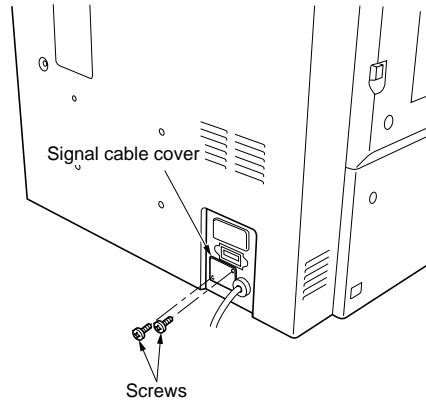


Figure 3-1-59

2. Pull the 10-pin connector out of the machine, remove the jumper and insert the connector into the 10-pin connector of the signal cable. Secure the signal cable using the two screws removed in step 1.

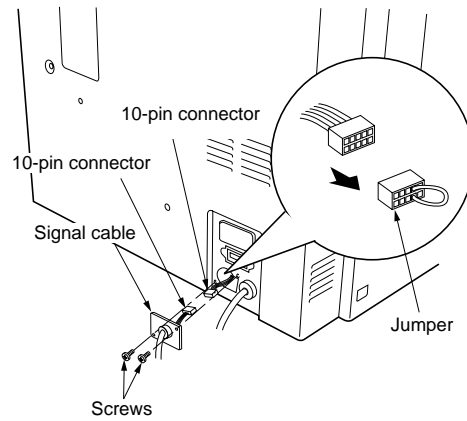


Figure 3-1-60

3-1-47





2A3/4

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

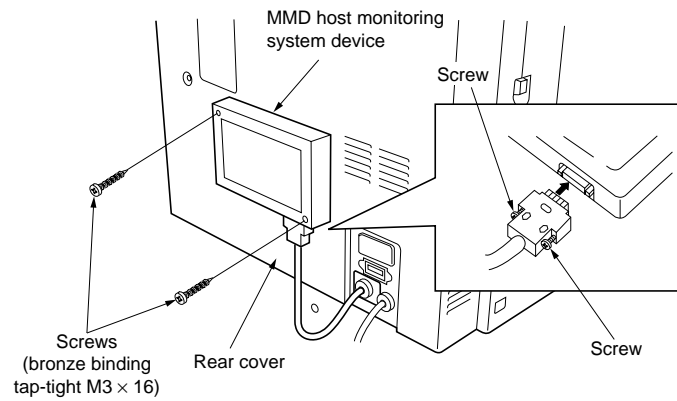


Figure 3-1-61

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

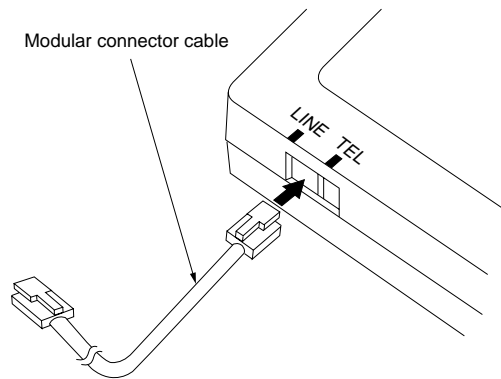


Figure 3-1-62

3-1-48





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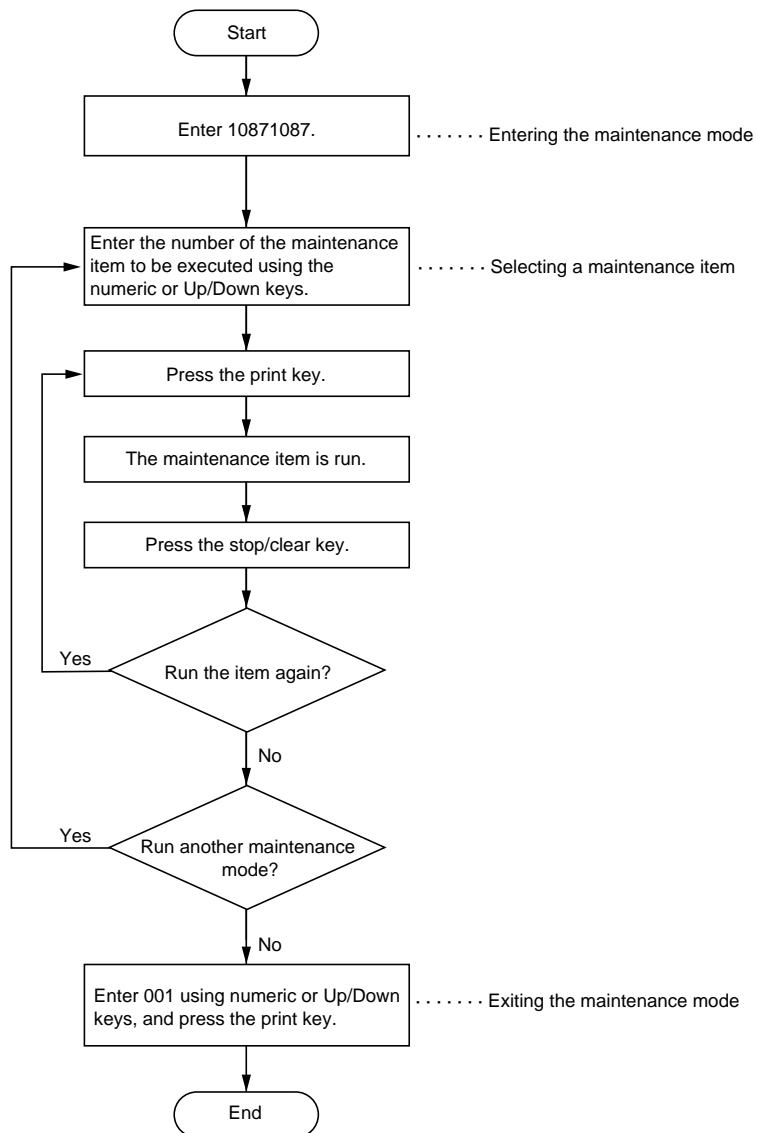




3-2-1 Maintenance mode

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

(1) Executing a maintenance item





2A3/4

• Data setting

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

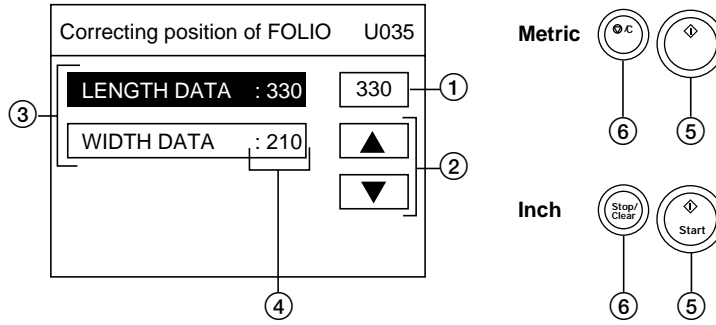


Figure 3-2-1

- ① Adjustment window Displays the data to be set.
- ② Up/Down keys Changes the setting.
- ③ Items Displays the selected item in reverse.
- ④ Current setting Displays the previously set data by pressing the print key.
- ⑤ Print key Sets the changed setting.
- ⑥ Stop/clear key Cancels the change.

3-2-2





• Operation execution

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

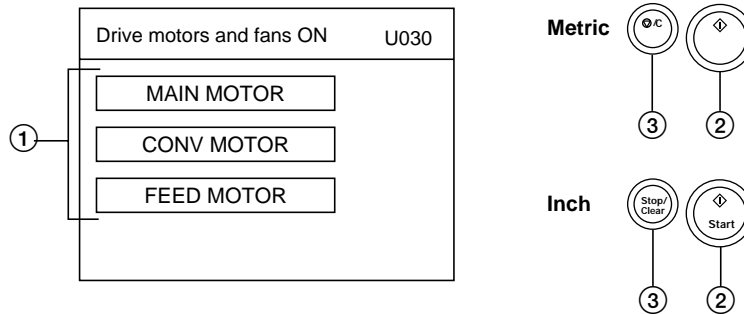


Figure 3-2-2

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

• Interrupt copy mode

Outputting a test copy or VTC pattern is required in some maintenance items. Such an output is enabled by pressing the interrupt key to enter interrupt copy mode. However, since this function is restricted depending on maintenance items, only outputting may be enabled, or a test copy even from an original may not be as good as that made in normal copy mode.

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





2A3/4

(2) Maintenance mode item list

| Section | Item No. | Maintenance item contents | Initial setting* |
|--|----------|---|---------------------|
| General | U000 | Outputting an own-status report | — |
| | U001 | Exiting the maintenance mode | — |
| | U002 | Setting the factory default data | — |
| | U003 | Setting the service telephone number | — |
| | U004 | Setting the machine number | — |
| | U005 | Copying without paper | — |
| | U019 | Displaying the ROM version | — |
| Initialization | U020 | Initializing all data | — |
| | U021 | Initializing memories | — |
| | U022 | Initializing backup data | — |
| Drive, paper feed, paper conveying and cooling system | U030 | Checking motor operation | — |
| | U031 | Checking switches for paper conveying | — |
| | U032 | Checking clutch operation | — |
| | U033 | Checking solenoid operation | — |
| | U034 | Adjusting the print start timing Adjusting leading edge registration Adjusting leading edge registration (second face) Adjusting the print center line | — 4 0 0 |
| | U035 | Setting folio size Length Width | 330 210 |
| | U036 | Setting envelope size Length Width | 242 162 |
| | U051 | Adjusting the amount of slack in the paper before registration Drawer feed Bypass feed Duplex feed | — 20 — 5 — 25 |
| | U052 | Adjusting the side margins for duplex copying | 0 |
| | U053 | Performing fine adjustment of the motor speed Drive motor/paper conveying motor | 8 |
| Optical | U060 | Adjusting the scanner input properties Text/text and photo/photo mode | 12 |
| | U061 | Turning the exposure lamp on | — |
| | U063 | Adjusting the shading position | 0 |

* Initial setting for executing maintenance item U020

3-2-4





2A3/4

| Section | Item No. | Maintenance item contents | Initial setting* |
|--------------|----------|---|----------------------|
| Optical | U065 | Adjusting the scanner magnification Main scanning direction/auxiliary scanning direction | 0 |
| | U066 | Adjusting the scanner leading edge registration | 0 |
| | U067 | Adjusting the scanner center line | 0 |
| | U070 | Adjusting the DF magnification | 0 |
| | U071 | Adjusting the DF scanning timing | 0 |
| | U072 | Adjusting the DF center line | 0 |
| | U073 | Checking scanner operation | — |
| | U080 | Adjusting exposure in toner economy mode | - 6 |
| | U088 | Setting the input filter (moiré reduction mode) | OFF |
| | U089 | Outputting a PG pattern | — |
| | U091 | Checking shading | — |
| | U092 | Adjusting the scanner automatically | — |
| | U093 | Setting the exposure density gradient Text/text and photo/photo mode | 0 |
| | U099 | Checking and setting the original size detection sensor | — |
| High voltage | U100 | Setting the surface potential | 150 |
| | U101 | Setting high voltages Developing bias Transfer voltage Separation voltage | 220/57 140 100 |
| | U102 | Setting the cleaning interval for the transfer charger | 1 |
| | U110 | Checking/clearing the drum count | — |
| | U111 | Checking/clearing the drum drive time | — |
| Developing | U130 | Initial setting for the developer | — |
| | U131 | Setting the toner sensor control voltage | 153 |
| | U132 | Replenishing toner forcibly | — |
| | U133 | Collecting the recycled toner | — |
| | U135 | Checking toner motor operation | — |
| | U136 | Turning the toner level detection function on/off | ON |
| | U137 | Checking the toner level detection sensor | — |
| | U155 | Displaying the toner sensor output | — |

* Initial setting for executing maintenance item U020

3-2-5





2A3/4

| Section | Item No. | Maintenance item contents | Initial setting* |
|---------------------------------------|--|---|------------------|
| Developing | U156 | Changing the toner control level Toner feed start level Toner empty level | 114 20 |
| | 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 | 42ppm 52ppm |
| | | Normal stabilization control temperature | 180 190 |
| | | Primary stabilization temperature | 175 175 |
| | | Secondary stabilization temperature | 180 190 |
| | Aging time after secondary stabilization | 60 120 | |
| | U162 | Stabilizing fixing forcibly | — |
| U196 | Turning the fixing heater on | — | |
| U198 | Setting the fixing phase control | ON | |
| Operation panel and support equipment | U200 | Turning all LEDs on | — |
| | U201 | Initializing the touch panel | — |
| | U202 | Setting the MMD host monitoring system | — |
| | U203 | Operating DF separately | — |
| | U204 | Setting the presence or absence of a key card or key counter | — |
| | U206 | Setting the presence or absence of the coin vender | OFF |
| | U209 | Setting date and time | — |
| | U243 | Checking the operation of the DF motors, clutches and solenoids | — |
| | U244 | Checking the DF switches | — |
| | U245 | Checking messages | — |
| | U247 | Checking the operation of the large paper deck and paper feed desk | — |
| | U248 | Setting the paper eject device | 0 |
| | | • Adjustment of the amount of slack in the paper in punch mode | 75000 |
| • Punch limit | | — | |
| • Punch-hole scrap count | | 0 | |
| Mode setting | U250 | Setting the maintenance cycle | 150 |
| | U251 | Checking/clearing the maintenance count | — |
| | U252 | Setting the destination | — |
| | U253 | Switching between double and single counts | SINGLE COUNT |

* Initial setting for executing maintenance item U020
3-2-6



2A3/4

| Section | Item No. | Maintenance item contents | Initial setting* |
|------------------|----------|---|---------------------|
| Mode setting | U254 | Turning auto start function on/off | ON |
| | U255 | Setting auto clear time | 120 |
| | U256 | Turning auto preheat/energy saver function on/off | ON |
| | U258 | Switching copy operation at toner empty detection | SINGLE MODE, 0 |
| | U260 | Changing the copy count timing | EJECT |
| | U263 | Setting DF copy ejection orientation | FACE-DOWN |
| | U264 | Setting date display order | — |
| | U265 | Setting OEM purchaser code | — |
| | U330 | Sets the number of copies for switching the copy eject tray in the finisher | 100 |
| | U333 | Setting the number of digits of ID-code | 4 digits |
| | U334 | Setting the ejection method in the saddle finisher | 2 BIN |
| | U343 | Switching between duplex/simplex copy mode | OFF |
| | U344 | Setting preheat/energy saver mode | Energy Star applied |
| | U345 | Setting the value for maintenance due indication | 0 |
| | U347 | Setting auto drawer size detection | ON |
| | U348 | Setting the copy density adjustment range | NORMAL |
| | U350 | Setting the ID-code error output | ON |
| Image processing | U402 | Adjusting margins in image printing | — |
| | U403 | Adjusting margins for reading an original on the contact glass | — |
| | U404 | Adjusting margins for DF original reading | — |
| Others | U901 | Checking/clearing copy counts by paper feed locations | — |
| | 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 | Checking the count value of the electronic counter | — |
| | U990 | Checking/clearing the time for the exposure lamp to light | — |
| | U992 | Checking/clearing the printer count | — |

* Initial setting for executing maintenance item U020

3-2-7





2A3/4

(3) Contents of maintenance mode items

| Maintenance item No. | Description | | | | | | | | |
|----------------------|--|---------|-------------|-------------|---|-----|-----------------------------------|--------------|--------------------------------------|
| U000 | <p>Outputting an own-status report</p> <p>Description Outputs lists of the current settings of the maintenance modes, and paper jam and service call occurrences.</p> <p>Purpose To check the current setting of the maintenance modes, or paper jam or service call occurrences. Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance modes to reenter the settings after initialization or replacement.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print 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 print 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 | | | | | | | | |

3-2-8





| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|------------|----------------------------------|---------------|--|
| U001 | <p>Exiting the maintenance mode</p> <p>Description Exits the maintenance mode and return to the normal copy mode.</p> <p>Purpose To exit the maintenance mode.</p> <p>Method Press the print key. The normal copy mode is entered.</p> | | | | | | |
| U002 | <p>Setting the factory default data</p> <p>Description Restores the machine conditions to the factory default settings. Also an OEM purchaser code can be input.</p> <p>Purpose To reset the values such as an electronic counter. Also to move the mirror frame of the scanner to the position for transport (position in which the frame can be fixed).</p> <p>Start Press the print key. The screen for selecting an item is displayed.</p> <p>Method</p> <p>① Select a mode.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MODE1(ALL)</td> <td>Normal factory default settings.</td> </tr> <tr> <td>MODE2(SELECT)</td> <td>Factory default settings except for language*.</td> </tr> </tbody> </table> <p>② Use the numeric keys or Up/Down keys to input the OEM code.</p> <p>③ Press the print key.</p> <p>* The maintenance No. selection screen will appear again.</p> <p>Completion To exit the maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | MODE1(ALL) | Normal factory default settings. | MODE2(SELECT) | Factory default settings except for language*. |
| Display | Description | | | | | | |
| MODE1(ALL) | Normal factory default settings. | | | | | | |
| MODE2(SELECT) | Factory default settings except for language*. | | | | | | |





2A3/4

| 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 print key. The currently set telephone number is displayed.</p> <p>Setting</p> <p>① Enter a telephone number (up to 15 digit) using the numeric keys. To enter symbols such as hyphens and parentheses, select as required from the symbols displayed on the touch panel as shown below. To move the cursor, press either of the arrows in the bottom row.</p> <table border="1"> <tbody> <tr> <td>*</td> <td>#</td> </tr> <tr> <td>(</td> <td>)</td> </tr> <tr> <td>-</td> <td>(Space)</td> </tr> <tr> <td>←</td> <td>→</td> </tr> </tbody> </table> <p>② Press the print key. The phone number is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit the maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | * | # | (|) | - | (Space) | ← | → |
| * | # | | | | | | | | |
| (|) | | | | | | | | |
| - | (Space) | | | | | | | | |
| ← | → | | | | | | | | |

3-2-10





2A3/4

| Maintenance item No. | Description |
|----------------------|---|
| U004 | <p>Setting the machine number</p> <p>Description Displays and changes the machine number.</p> <p>Purpose To check or set the machine number.</p> <p>Method Press the print key. The currently set machine number is displayed.</p> <p>Setting</p> <ol style="list-style-type: none">① Enter the last six digits of the machine number using the numeric key. Do not enter the first two digits, 3 and 7.② Press the print key. The machine number is set. <p>Completion To exit the maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> |

3-2-11





2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|---|---------|-----------|-----|---------------------------|----------|--|
| U005 | <p>Copying without paper</p> <p>Description Simulates the copy operation without paper feed.</p> <p>Purpose To check the overall operation of the machine.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the item to be operated. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>PPC</td> <td>Only the copier operates.</td> </tr> <tr> <td>PPC + DF</td> <td>Both the copier and SRDF 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 modes • Number of copies: in simplex copy mode, continuous copying is performed when set to 999; in duplex copy mode, continuous copying is performed regardless of the setting. • Copy density • Keys on the operation panel other than the energy saver key 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 print 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 SRDF operate (continuous operation). |
| Display | Operation | | | | | | |
| PPC | Only the copier operates. | | | | | | |
| PPC + DF | Both the copier and SRDF operate (continuous operation). | | | | | | |

3-2-12





| Maintenance item No. | Description | | | | | | | | | | | | | | | | |
|----------------------|--|---------|-------------|------|-------------|--------|---------------|-----|------------------|------|-------------|---------|----------------|------|--------------------|-------|--------------------|
| U019 | <p>Displaying the ROM version</p> <p>Description Displays the part number of the ROM fitted to each PCB.</p> <p>Purpose To check the part number or to decide if the ROM version is new from the last digit of the number.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The last six digits of the part number indicating the ROM version are displayed. ② Change the screen using The Up/Down keys. <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>MAIN</td> <td>Main ROM IC</td> </tr> <tr> <td>ENGINE</td> <td>Engine ROM IC</td> </tr> <tr> <td>MMI</td> <td>Operation ROM IC</td> </tr> <tr> <td>FONT</td> <td>Font ROM IC</td> </tr> <tr> <td>SCANNER</td> <td>Scanner ROM IC</td> </tr> <tr> <td>MEM1</td> <td>Memory copy ROM IC</td> </tr> <tr> <td>MEM2*</td> <td>Memory copy ROM IC</td> </tr> </tbody> </table> <p style="margin-left: 100px;">* 42 ppm: optional 52 ppm: standard</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | MAIN | Main ROM IC | ENGINE | Engine ROM IC | MMI | Operation ROM IC | FONT | Font ROM IC | SCANNER | Scanner ROM IC | MEM1 | Memory copy ROM IC | MEM2* | Memory copy ROM IC |
| Display | Description | | | | | | | | | | | | | | | | |
| MAIN | Main ROM IC | | | | | | | | | | | | | | | | |
| ENGINE | Engine ROM IC | | | | | | | | | | | | | | | | |
| MMI | Operation ROM IC | | | | | | | | | | | | | | | | |
| FONT | Font ROM IC | | | | | | | | | | | | | | | | |
| SCANNER | Scanner ROM IC | | | | | | | | | | | | | | | | |
| MEM1 | Memory copy ROM IC | | | | | | | | | | | | | | | | |
| MEM2* | Memory copy ROM IC | | | | | | | | | | | | | | | | |
| U020 | <p>Initializing all data</p> <p>Description Initializes all the backup RAM on the main PCB to return to the original settings.</p> <p>Purpose Used when replacing the backup RAM on the main PCB.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for executing is displayed. ② Press EXECUTE on the touch panel. It is displayed in reverse. ③ Press the print key. All data in the backup RAM is initialized, and the original settings for Japan specifications are set. <p>When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on.</p> <p>Completion To exit the maintenance mode without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | | | | | | | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U021 | <p>Initializing memories</p> <p>Description Initializes the setting data other than that for adjustments due to variations between respective machines, i.e., settings for counters, service call code detection and modes. As a result, initializes the backup RAM according to the specifications depending on the destination selected in U252.</p> <p>Purpose Used to return the machine settings to the factory settings.</p> <p>Method</p> <ol style="list-style-type: none">① Press the print key. The screen for executing is displayed.② Press EXECUTE on the touch panel. It is displayed in reverse.③ Press the print key. All data other than that for adjustments due to variations between machines is initialized. <p>When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on.</p> <p>Completion To exit the maintenance mode without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> |

3-2-14





| Maintenance item No. | Description |
|----------------------|---|
| U022 | <p>Initializing backup data</p> <p>Description Initializes only the data set for the optical section.</p> <p>Purpose To be executed after replacing the scanner unit.</p> <p>Method</p> <ol style="list-style-type: none">① Press the print key. The screen for executing is displayed.② Press SCANNER on the touch panel. EXECUTE is displayed.③ Press EXECUTE on the touch panel. It is displayed in reverse.④ Press the print key. The data for the optical section (U060 to 099, U403, U404 and U990) is initialized. <p>Completion To exit the maintenance mode, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> |





2A3/4

| Maintenance item No. | Description | | | | | | | | |
|----------------------|--|---------|-----------|------------|--|------------|-------------------------------------|------------|--------------------------------|
| U030 | <p>Checking motor operation</p> <p>Description Drives each motor.</p> <p>Purpose To check the operation of each motor.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the motor to be operated. The selected item is displayed in reverse and the operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>MAIN MOTOR</td> <td>The drive motor operates and developing bias is applied.</td> </tr> <tr> <td>CONV MOTOR</td> <td>The paper conveying motor operates.</td> </tr> <tr> <td>FEED MOTOR</td> <td>The paper feed motor operates.</td> </tr> </tbody> </table> <ol style="list-style-type: none"> ③ To stop operation, press the stop/clear key. <p>Completion Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.</p> | Display | Operation | MAIN MOTOR | The drive motor operates and developing bias is applied. | CONV MOTOR | The paper conveying motor operates. | FEED MOTOR | The paper feed motor operates. |
| Display | Operation | | | | | | | | |
| MAIN MOTOR | The drive motor operates and developing bias is applied. | | | | | | | | |
| CONV MOTOR | The paper conveying motor operates. | | | | | | | | |
| FEED MOTOR | The paper feed motor operates. | | | | | | | | |

3-2-16





| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---------|----------|----------|-----------------------------|----------|-----------------------------|----------|-----------------------------|----------|-----------------------------|---------|-------------------|-------|--|------|---------------------------|--------|--------------------|--------|-------------------------|--------|---------------------------------|-------|--|----------|----------------------|---------|-------------------------------------|---------|---|---------|------------------------------|
| U031 | <p>Checking switches for paper conveying</p> <p>Description Displays the on-off status of each paper detection switch on the paper path.</p> <p>Purpose To check if the switches for paper conveying operate correctly.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. A list of the switches, the on-off status of which can be checked, are displayed. ② Turn each switch on and off manually to check the status. <p>When the on-status of a switch is detected, that switch is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Switches</th> </tr> </thead> <tbody> <tr> <td>FEED1 SW</td> <td>Paper feed switch 1 (PFSW1)</td> </tr> <tr> <td>FEED2 SW</td> <td>Paper feed switch 2 (PFSW2)</td> </tr> <tr> <td>FEED3 SW</td> <td>Paper feed switch 3 (PFSW3)</td> </tr> <tr> <td>FEED4 SW</td> <td>Paper feed switch 4 (PFSW4)</td> </tr> <tr> <td>FEED SW</td> <td>Feed switch (FSW)</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>R SW</td> <td>Registration switch (RSW)</td> </tr> <tr> <td>EJE SW</td> <td>Eject switch (ESW)</td> </tr> <tr> <td>BRA SW</td> <td>Feedshift switch (FSSW)</td> </tr> <tr> <td>REV SW</td> <td>Switchback eject switch (SBESW)</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>DUP PESW</td> <td>Stock switch (STKSW)</td> </tr> <tr> <td>DUP1 SW</td> <td>Duplex registration switch (DUPRSW)</td> </tr> <tr> <td>DUP2 SW</td> <td>Duplex paper conveying switch (DUPPCSW)</td> </tr> <tr> <td>DUP3 SW</td> <td>Duplex eject switch (DUPESW)</td> </tr> </tbody> </table> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Switches | FEED1 SW | Paper feed switch 1 (PFSW1) | FEED2 SW | Paper feed switch 2 (PFSW2) | FEED3 SW | Paper feed switch 3 (PFSW3) | FEED4 SW | Paper feed switch 4 (PFSW4) | FEED SW | Feed switch (FSW) | ----- | | R SW | Registration switch (RSW) | EJE SW | Eject switch (ESW) | BRA SW | Feedshift switch (FSSW) | REV SW | Switchback eject switch (SBESW) | ----- | | DUP PESW | Stock switch (STKSW) | DUP1 SW | Duplex registration switch (DUPRSW) | DUP2 SW | Duplex paper conveying switch (DUPPCSW) | DUP3 SW | Duplex eject switch (DUPESW) |
| Display | Switches | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED1 SW | Paper feed switch 1 (PFSW1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED2 SW | Paper feed switch 2 (PFSW2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED3 SW | Paper feed switch 3 (PFSW3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED4 SW | Paper feed switch 4 (PFSW4) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED SW | Feed switch (FSW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R SW | Registration switch (RSW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EJE SW | Eject switch (ESW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRA SW | Feedshift switch (FSSW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REV SW | Switchback eject switch (SBESW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DUP PESW | Stock switch (STKSW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DUP1 SW | Duplex registration switch (DUPRSW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DUP2 SW | Duplex paper conveying switch (DUPPCSW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DUP3 SW | Duplex eject switch (DUPESW) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



2A3/4

| 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 print 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>F FEED</td> <td>Upper paper feed clutch (PFCL-U)</td> </tr> <tr> <td>S FEED</td> <td>Lower paper feed clutch (PFCL-L)</td> </tr> <tr> <td>FEED L</td> <td>Feed clutch 5 (FCL5)</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>FEED H</td> <td>Feed clutch 4 (FCL4)</td> </tr> <tr> <td>FEED 1</td> <td>Feed clutch 1 (FCL1)</td> </tr> <tr> <td>FEED 2</td> <td>Feed clutch 2 (FCL2)</td> </tr> <tr> <td>FEED 3</td> <td>Feed clutch 3 (FCL3)</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>REGIST</td> <td>Registration clutch (RCL)</td> </tr> <tr> <td>EJECT SP</td> <td>Eject speed switching clutch (ESCL)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> ③ To turn each clutch on while a motor is driving, press the interrupt key before selecting the clutch. The drive motor, paper feed motor and paper conveying motor turn on, and the selected clutch remains on until the stop/clear key is pressed. If the upper or lower paper feed clutch is turned on while a motor is driving, paper is conveyed by the rotation of the paper feed pulley, resulting in a paper jam. Be sure to remove the paper drawers before turning either of these clutches on. ④ To stop the motor drive, press the interrupt copy key. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Clutches | SB FEED | Bypass paper feed clutch (BYPPFCL) | F FEED | Upper paper feed clutch (PFCL-U) | S FEED | Lower paper feed clutch (PFCL-L) | FEED L | Feed clutch 5 (FCL5) | ----- | | FEED H | Feed clutch 4 (FCL4) | FEED 1 | Feed clutch 1 (FCL1) | FEED 2 | Feed clutch 2 (FCL2) | FEED 3 | Feed clutch 3 (FCL3) | ----- | | REGIST | Registration clutch (RCL) | EJECT SP | Eject speed switching clutch (ESCL) |
| Display | Clutches | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SB FEED | Bypass paper feed clutch (BYPPFCL) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F FEED | Upper paper feed clutch (PFCL-U) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S FEED | Lower paper feed clutch (PFCL-L) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED L | Feed clutch 5 (FCL5) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED H | Feed clutch 4 (FCL4) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED 1 | Feed clutch 1 (FCL1) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED 2 | Feed clutch 2 (FCL2) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED 3 | Feed clutch 3 (FCL3) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REGIST | Registration clutch (RCL) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EJECT SP | Eject speed switching clutch (ESCL) | | | | | | | | | | | | | | | | | | | | | | | | | | |

3-2-18





| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | |
|----------------------|---|---------|-----------|---------|--------------------------|--------|----------------------------|---------|--|----------|---------------------------------------|-------|--|----------|---|-------|--|---------|----------------------------|
| 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 print 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>SB LIFT</td> <td>Bypass solenoid (BYPSOL)</td> </tr> <tr> <td>BRANCH</td> <td>Feedshift solenoid (FSSOL)</td> </tr> <tr> <td>END PRE</td> <td>Duplex paper tapping solenoid (DUPPTSOL)</td> </tr> <tr> <td>TRAY FEE</td> <td>Duplex forwarding solenoid (DUPFWSOL)</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>TRAY CHG</td> <td>Switchback feedshift solenoid (SBFSSOL)</td> </tr> <tr> <td colspan="2">-----</td> </tr> <tr> <td>MSW OFF</td> <td>The main switch turns off.</td> </tr> </tbody> </table> <p>MSW OFF is selected when the operation of the main switch is checked in auto shutoff mode.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Solenoids | SB LIFT | Bypass solenoid (BYPSOL) | BRANCH | Feedshift solenoid (FSSOL) | END PRE | Duplex paper tapping solenoid (DUPPTSOL) | TRAY FEE | Duplex forwarding solenoid (DUPFWSOL) | ----- | | TRAY CHG | Switchback feedshift solenoid (SBFSSOL) | ----- | | MSW OFF | The main switch turns off. |
| Display | Solenoids | | | | | | | | | | | | | | | | | | |
| SB LIFT | Bypass solenoid (BYPSOL) | | | | | | | | | | | | | | | | | | |
| BRANCH | Feedshift solenoid (FSSOL) | | | | | | | | | | | | | | | | | | |
| END PRE | Duplex paper tapping solenoid (DUPPTSOL) | | | | | | | | | | | | | | | | | | |
| TRAY FEE | Duplex forwarding solenoid (DUPFWSOL) | | | | | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | | | | | | |
| TRAY CHG | Switchback feedshift solenoid (SBFSSOL) | | | | | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | | | | | | |
| MSW OFF | The main switch turns off. | | | | | | | | | | | | | | | | | | |
| U034 | <p>Adjusting the print start timing</p> <p>Adjustment See pages 3-3-18 and 19.</p> | | | | | | | | | | | | | | | | | | |





2A3/4

| 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 print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> ① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window. ② Change the setting using the 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;">Setting</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">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>220 to 220 mm</td> <td>210</td> </tr> </tbody> </table> <ol style="list-style-type: none"> ③ Press the print key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Setting | Setting range | Initial setting | LENGTH DATA | Length | 330 to 356 mm | 330 | WIDTH DATA | Width | 220 to 220 mm | 210 |
| Display | Setting | Setting range | Initial setting | | | | | | | | | | |
| LENGTH DATA | Length | 330 to 356 mm | 330 | | | | | | | | | | |
| WIDTH DATA | Width | 220 to 220 mm | 210 | | | | | | | | | | |
| U036 | <p>Setting envelope size</p> <p>Description Changes the image area for printing onto an envelope when the optional printer unit is installed.</p> <p>Purpose To prevent the image at the trailing edge, or right or left side of the paper from not being printed by setting the actual size of the envelop used.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> ① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window. ② Change the setting using the 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;">Setting</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>LENGTH DATA</td> <td>Length</td> <td>162 to 242 mm</td> <td>242</td> </tr> <tr> <td>WIDTH DATA</td> <td>Width</td> <td>98 to 162 mm</td> <td>162</td> </tr> </tbody> </table> <ol style="list-style-type: none"> ③ Press the print key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Setting | Setting range | Initial setting | LENGTH DATA | Length | 162 to 242 mm | 242 | WIDTH DATA | Width | 98 to 162 mm | 162 |
| Display | Setting | Setting range | Initial setting | | | | | | | | | | |
| LENGTH DATA | Length | 162 to 242 mm | 242 | | | | | | | | | | |
| WIDTH DATA | Width | 98 to 162 mm | 162 | | | | | | | | | | |

3-2-20



| Maintenance item No. | Description | | | | | | | | | | | | |
|----------------------|--|---------------|-----------------|---------------|-----------------|------------|------------------------------|---------|---|------------|--|---------|---|
| U051 | <p>Adjusting the amount of slack in the paper before registration</p> <p>Adjustment See page 3-3-22.</p> | | | | | | | | | | | | |
| U052 | <p>Adjusting the side margins for duplex copying</p> <p>Adjustment See page 3-3-88.</p> | | | | | | | | | | | | |
| U053 | <p>Performing fine adjustment of the motor speed</p> <p>Description Performs fine adjustment of the speeds of the drive motor and paper conveying motor.</p> <p>Purpose Used to adjust the speed of the respective motors when the magnification in the auxiliary scanning direction is not correct after the motor is replaced.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window. Change the setting using the 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>MAIN MOTOR</td> <td>Drive motor speed adjustment</td> <td>0 to 14</td> <td>8</td> </tr> <tr> <td>CONV MOTOR</td> <td>Paper conveying motor speed adjustment</td> <td>0 to 14</td> <td>8</td> </tr> </tbody> </table> <p>Increasing the setting makes the motor speed faster and the image longer, and decreasing it makes the speed slower and the image shorter.</p> <ol style="list-style-type: none"> Press the print 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" x 17" output are:</p> <p>Ⓐ = 150 mm Ⓑ = 300 mm</p> | Display | Description | Setting range | Initial setting | MAIN MOTOR | Drive motor speed adjustment | 0 to 14 | 8 | CONV MOTOR | Paper conveying motor speed adjustment | 0 to 14 | 8 |
| Display | Description | Setting range | Initial setting | | | | | | | | | | |
| MAIN MOTOR | Drive motor speed adjustment | 0 to 14 | 8 | | | | | | | | | | |
| CONV MOTOR | Paper conveying motor speed adjustment | 0 to 14 | 8 | | | | | | | | | | |

Figure 3-2-3





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | | |
|----------------------|--|---------------|-----------------|---------------|-----------------|-------------------|----------------------|---------|----|------------------|--------------------------------|---------|----|--------------------|-----------------------|---------|----|
| U053 | <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 3-2-3), and perform the following adjustments if they are different from the correct sizes: <ul style="list-style-type: none"> (A): Drive motor adjustment (B): Paper conveying motor adjustment <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</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 in the specified mode.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> ① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window. ② Change the setting using the 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>TEXT γ adj</td> <td>Density in text mode</td> <td>0 to 23</td> <td>12</td> </tr> <tr> <td>MIX γ adj</td> <td>Density in text and photo mode</td> <td>0 to 23</td> <td>12</td> </tr> <tr> <td>PHOTO γ adj</td> <td>Density in photo mode</td> <td>0 to 23</td> <td>12</td> </tr> </tbody> </table> <p style="margin-left: 20px;">Increasing the setting makes the density lower, and decreasing it makes the density higher.</p> <ol style="list-style-type: none"> ③ Press the print key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> <p>Supplement The following settings are also reset to the initial values by performing this maintenance item:</p> <ul style="list-style-type: none"> • Exposure density gradient set in maintenance mode (U093) • Auto and manual exposure set in the copy default item of the copier management mode | Display | Description | Setting range | Initial setting | TEXT γ adj | Density in text mode | 0 to 23 | 12 | MIX γ adj | Density in text and photo mode | 0 to 23 | 12 | PHOTO γ adj | Density in photo mode | 0 to 23 | 12 |
| Display | Description | Setting range | Initial setting | | | | | | | | | | | | | | |
| TEXT γ adj | Density in text mode | 0 to 23 | 12 | | | | | | | | | | | | | | |
| MIX γ adj | Density in text and photo mode | 0 to 23 | 12 | | | | | | | | | | | | | | |
| PHOTO γ adj | Density in photo mode | 0 to 23 | 12 | | | | | | | | | | | | | | |

3-2-22





| Maintenance item No. | Description | | | | | | | | |
|----------------------|---|-----------------|--------------------------|-----------------|--------------------------|------------------|----------|---|---------|
| 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"> ① Press the print key. The screen for selecting an item is displayed. ② Press the print key. The exposure lamp lights. ③ 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> | | | | | | | | |
| U063 | <p>Adjusting the shading position</p> <p>Description Changes the shading position.</p> <p>Purpose Used when white lines continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for adjustment is displayed. ② Change the setting using the Up/Down keys. <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> <th style="text-align: left;">Change in value per step</th> </tr> </thead> <tbody> <tr> <td>Shading position</td> <td>-2 to +2</td> <td>0</td> <td>0.17 mm</td> </tr> </tbody> </table> <p style="margin-left: 20px;">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 print key. The value is set. <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Description | Setting range | Initial setting | Change in value per step | Shading position | -2 to +2 | 0 | 0.17 mm |
| Description | Setting range | Initial setting | Change in value per step | | | | | | |
| Shading position | -2 to +2 | 0 | 0.17 mm | | | | | | |





2A3/4

| Maintenance item No. | Description |
|----------------------|---|
| U065 | Adjusting the scanner magnification Adjustment See pages 3-3-36 and 37. |
| U066 | Adjusting the scanner leading edge registration Adjustment See page 3-3-39. |
| U067 | Adjusting the scanner center line Adjustment See page 3-3-38. |
| U070 | Adjusting the DF magnification Adjustment See page 3-3-96. |
| U071 | Adjusting the DF scanning timing Adjustment See page 3-3-98. |
| U072 | Adjusting the DF center line Adjustment See page 3-3-97. |

3-2-24



| 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 print key. The screen for selecting an item is displayed. ② Select the item to be changed. The selected item is displayed in reverse. ③ Change the setting using the Up/Down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Operating conditions</th> <th style="text-align: left;">Setting range</th> </tr> </thead> <tbody> <tr> <td>ZOOM</td> <td>ZOOM Magnification</td> <td>25 to 400%</td> </tr> <tr> <td>SIZE</td> <td>Original size</td> <td>See below.</td> </tr> <tr> <td>LAMP</td> <td>LAMP on and off of the exposure lamp</td> <td>0 (off) or 1 (on)</td> </tr> </tbody> </table> <p>Original sizes for each setting in SIZE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Setting</th> <th style="text-align: center;">Original size</th> <th style="text-align: center;">Setting</th> <th style="text-align: center;">Original size</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">8</td> <td>A4</td> <td style="text-align: center;">42</td> <td>A5R</td> </tr> <tr> <td style="text-align: center;">9</td> <td>B5</td> <td style="text-align: center;">47</td> <td>Folio</td> </tr> <tr> <td style="text-align: center;">18</td> <td>11" × 8½"</td> <td style="text-align: center;">52</td> <td>11" × 17"</td> </tr> <tr> <td style="text-align: center;">36</td> <td>A3</td> <td style="text-align: center;">53</td> <td>11" × 15"</td> </tr> <tr> <td style="text-align: center;">39</td> <td>B4</td> <td style="text-align: center;">55</td> <td>8½" × 14"</td> </tr> <tr> <td style="text-align: center;">40</td> <td>A4R</td> <td style="text-align: center;">56</td> <td>8½" × 11"</td> </tr> <tr> <td style="text-align: center;">41</td> <td>B5R</td> <td style="text-align: center;">58</td> <td>5½" × 8½"</td> </tr> </tbody> </table> <ol style="list-style-type: none"> ④ Press the print key. 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 | ZOOM Magnification | 25 to 400% | SIZE | Original size | See below. | LAMP | LAMP on and off of the exposure lamp | 0 (off) or 1 (on) | Setting | Original size | Setting | Original size | 8 | A4 | 42 | A5R | 9 | B5 | 47 | Folio | 18 | 11" × 8½" | 52 | 11" × 17" | 36 | A3 | 53 | 11" × 15" | 39 | B4 | 55 | 8½" × 14" | 40 | A4R | 56 | 8½" × 11" | 41 | B5R | 58 | 5½" × 8½" |
| Display | Operating conditions | Setting range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZOOM | ZOOM Magnification | 25 to 400% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIZE | Original size | See below. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAMP | LAMP on and off of the exposure lamp | 0 (off) or 1 (on) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Setting | Original size | Setting | Original size | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | A4 | 42 | A5R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | B5 | 47 | Folio | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 11" × 8½" | 52 | 11" × 17" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | A3 | 53 | 11" × 15" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | B4 | 55 | 8½" × 14" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | A4R | 56 | 8½" × 11" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | B5R | 58 | 5½" × 8½" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |





2A3/4

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

3-2-26

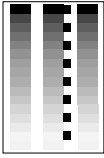


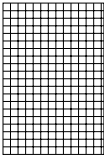




| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|----|----------------------|-----|------------------|
| U088 | <p>Setting the input filter (moiré reduction mode)</p> <p>Description Turns moiré reduction mode on and off by switching the input filter on and off.</p> <p>Purpose Used to prevent regular density unevenness (moiré) on halftone image areas of the copy image in text mode and text and photo mode. Such moiré is more likely to appear when an enlargement or reduction copy is made in text mode from an original containing large halftone image areas.</p> <p>Method Press the print 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"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Moiré reduction mode</td> </tr> <tr> <td>OFF</td> <td>Normal copy mode</td> </tr> </tbody> </table> <p>Initial setting: OFF</p> <p>If moiré on the copy image is significant, change the setting to ON. Note that when the moiré reduction mode is turned on, the resolution may be slightly reduced.</p> <p>② Press the print key. The value is set. The screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit the maintenance mode without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | ON | Moiré reduction mode | OFF | Normal copy mode |
| Display | Description | | | | | | |
| ON | Moiré reduction mode | | | | | | |
| OFF | Normal copy mode | | | | | | |



2A3/4

| Maintenance item No. | Description | |
|----------------------|--|--|
| U089 | <p>Outputting a PG pattern</p> <p>Description Selects and outputs the PG pattern created in the copier.</p> <p>Purpose When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output PG pattern.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the PG pattern to be output. | |
| | Display | PG pattern to be output |
| | GRAYSCALE |  |
| | MONO-LEVEL |  |
| | 256-LEVEL |  |
| | 1 DOT-LINE |  |
| | | <p>To check the laser scanner unit engine output characteristics.</p> <p>To check the drum quality.</p> <p>To check resolution reproducibility in printing.</p> <p>To check fine line reproducibility. To adjust the position of the laser scanner unit (lateral squareness)</p> |

3-2-28





| Maintenance item No. | Description | | | | | | |
|----------------------------------|--|-----------------|---------------|-----------------|----------------------------------|----------|---|
| U089 | <p>③ To change the output conditions for MONO-LEVEL, change the setting using The Up/Down keys.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Output conditions for MONO-LEVEL</td> <td>0 to 255</td> <td>0</td> </tr> </tbody> </table> <p>Increasing the setting makes the density higher, and decreasing it makes the density lower. Entirely white paper is output when the setting is 0, and entirely black paper is output when it is 255.</p> <p>④ Press the interrupt key. The screen for copy mode is displayed.</p> <p>⑤ Press the print key. A PG pattern is output.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p> | Description | Setting range | Initial setting | Output conditions for MONO-LEVEL | 0 to 255 | 0 |
| Description | Setting range | Initial setting | | | | | |
| Output conditions for MONO-LEVEL | 0 to 255 | 0 | | | | | |





2A3/4

| Maintenance item No. | Description |
|----------------------|---|
| U091 | <p>Checking shading</p> <p>Description Performs scanning under the same conditions as before and after shading is performed, displaying the original scanning values at nine points of the contact glass on the touch panel.</p> <p>Purpose To check the change in original scanning values before and after shading. The results may be used to decide the causes for fixing unevenness (uneven density) of the gray area of an image: either due to optical (shading or CCD) or other problems. Also to check the causes for a white or black line appearing longitudinally.</p> |

3-2-30



| Maintenance item No. | Description | | | | | |
|----------------------|---|---------|-----------|------------|---|-----------|
| U091 | <p>Method</p> <p>① Press the print key. The screen for selecting an item is displayed.</p> <p>② Select the item to be operated. The selected item is displayed in reverse.</p> | | | | | |
| | <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Operation</th> </tr> </thead> <tbody> <tr> <td>SHD BEFORE</td> <td>Performs scanning before shading and displays the result.</td> </tr> <tr> <td>SHD AFTER</td> <td>Performs scanning after shading and displays the result.</td> </tr> </tbody> </table> <p>③ Press the print key. Operation starts.</p> <p>Scanning is performed under the selected conditions and the result is displayed.</p> <p>When scanning is performed before shading, the scan value at the machine center should be slightly different from those at the machine front and rear. When scanning is performed after shading, there should be no difference between respective values. Any differences between the values at machine front and rear indicates that scanner problem causes the fixing unevenness.</p> <p>If the displayed results indicate no shading problems, the fixing unevenness (uneven copy density) is caused by factors other than in the scanner section (shading or CCD).</p> <p>If a black line appears, the cause may assumed to be based on the results of the scanning operation before shading: if a white line appears, they may be assumed based on the results of the scanning operation after shading. Note that depending on the thickness and location of the black or white line, it may not be possible to use this method to determine the cause. This is because the displayed values obtained from scanning at the limit of nine points are insufficient to provide significant information.</p> <div style="text-align: center;"> <p style="margin-left: 100px;">20 mm from the machine left — : 011 024 015</p> <p style="margin-left: 100px;">200 mm from the machine left — : 001 000 000</p> <p style="margin-left: 100px;">400 mm from the machine left — : 004 004 000</p> <p style="margin-left: 100px;">100 mm from the machine center toward machine front — Machine center</p> <p style="margin-left: 100px;">100 mm from machine center toward machine rear</p> </div> <p>Figure 3-2-4</p> <p>④ Press the stop/clear key. The screen for selecting an item is displayed.</p> <p>Completion Press the stop/clear key. The screen for entering a maintenance item is displayed.</p> | Display | Operation | SHD BEFORE | Performs scanning before shading and displays the result. | SHD AFTER |
| Display | Operation | | | | | |
| SHD BEFORE | Performs scanning before shading and displays the result. | | | | | |
| SHD AFTER | Performs scanning after shading and displays the result. | | | | | |





2AD-1

| Maintenance item No. | Description | | | | | | | | | | |
|----------------------|---|---------|-------------|-----------------|---------------------|---------------|--|-----------------|------------------------------|--------------|--|
| U092 | <p>Adjusting the scanner automatically</p> <p>Description Makes auto scanner adjustments in the order below using the specified original.</p> <ul style="list-style-type: none"> • Adjusting the scanner center line (U067) • Adjusting the scanner magnification in the main scanning direction (U065) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) <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: 2AC68240) on the contact glass. ② Press the print key. The screen for executing is displayed. ③ Press the print key. Auto adjustment starts. When adjustment is complete, each adjusted value 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>SCAN CENTER ADJ</td> <td>Scanner center line</td> </tr> <tr> <td>MAIN SCAN ADJ</td> <td>Scanner magnification in the main scanning direction</td> </tr> <tr> <td>SCAN TIMING ADJ</td> <td>Scanner leading registration</td> </tr> <tr> <td>SUB SCAN ADJ</td> <td>Scanner magnification in the auxiliary direction</td> </tr> </tbody> </table> <p><i>If a problem occurs during auto adjustment, an error code is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.</i></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 | SCAN CENTER ADJ | Scanner center line | MAIN SCAN ADJ | Scanner magnification in the main scanning direction | SCAN TIMING ADJ | Scanner leading registration | SUB SCAN ADJ | Scanner magnification in the auxiliary direction |
| Display | Description | | | | | | | | | | |
| SCAN CENTER ADJ | Scanner center line | | | | | | | | | | |
| MAIN SCAN ADJ | Scanner magnification in the main scanning direction | | | | | | | | | | |
| SCAN TIMING ADJ | Scanner leading registration | | | | | | | | | | |
| SUB SCAN ADJ | Scanner magnification in the auxiliary direction | | | | | | | | | | |

3-2-32





| 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 print key. The screen for selecting an item is displayed. ② Select the image mode to be adjusted. The screen for the selected item is displayed. <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>TEXT</td> <td>Density in text mode</td> </tr> <tr> <td>MIXED</td> <td>Density in text and photo mode</td> </tr> <tr> <td>PHOTO</td> <td>Density in photo mode</td> </tr> </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 and the current setting is displayed in the adjustment window. ② Adjust the setting using the 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> <p style="text-align: center;">Figure 3-2-5 Exposure density gradient</p> | | | Display | Description | TEXT | Density in text mode | MIXED | Density in text and photo mode | PHOTO | Density in photo mode | Display | Description | Setting range | Initial setting | DARKER | Change in density when manual density is set dark | 0 to 3 | 0 | LIGHTER | Change in density when manual density is set light | 0 to 3 | 0 |
| Display | Description | | | | | | | | | | | | | | | | | | | | | | |
| TEXT | Density in text mode | | | | | | | | | | | | | | | | | | | | | | |
| MIXED | Density in text and photo mode | | | | | | | | | | | | | | | | | | | | | | |
| PHOTO | Density in photo mode | | | | | | | | | | | | | | | | | | | | | | |
| Display | Description | Setting range | Initial setting | | | | | | | | | | | | | | | | | | | | |
| DARKER | Change in density when manual density is set dark | 0 to 3 | 0 | | | | | | | | | | | | | | | | | | | | |
| LIGHTER | Change in density when manual density is set light | 0 to 3 | 0 | | | | | | | | | | | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | |
|----------------------|---|---------|-------------|------|---|-----------|---|-----------------|---------------|-------------------|---------------|------------------|---------------|
| U093 | <p>③ Press the print key. The value is set.</p> <p>④ To return to the screen for selecting an item, press the stop/clear key.</p> <p>Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p> | | | | | | | | | | | | |
| 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> <p>① Press the print key. The screen for selecting an item is displayed.</p> <p>② Select an item.</p> <p style="padding-left: 20px;">* The screen for executing each item is displayed.</p> <table border="1" style="margin-left: 20px;"> <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> <p>① Press the print key. The detection sensor transmission data is displayed.</p> <div style="margin-left: 40px;"> <table style="border-collapse: collapse;"> <tr> <td style="padding-right: 10px;">Rear of machine</td> <td style="border: 1px solid black; padding: 2px;">: 123 123 123</td> </tr> <tr> <td style="padding-right: 10px;">Center of machine</td> <td style="border: 1px solid black; padding: 2px;">: 123 123 123</td> </tr> <tr> <td style="padding-right: 10px;">Front of machine</td> <td style="border: 1px solid black; padding: 2px;">: 255 255 255</td> </tr> </table> </div> <p style="text-align: center;">Figure 3-2-6</p> <p>② To return to the screen for selecting an item, press the stop/clear key.</p> | Display | Description | DATA | Displaying detection sensor transmission data | B/W LEVEL | Setting detection sensor threshold value Setting original size judgment time | Rear of machine | : 123 123 123 | Center of machine | : 123 123 123 | Front of machine | : 255 255 255 |
| Display | Description | | | | | | | | | | | | |
| DATA | Displaying detection sensor transmission data | | | | | | | | | | | | |
| B/W LEVEL | Setting detection sensor threshold value Setting original size judgment time | | | | | | | | | | | | |
| Rear of machine | : 123 123 123 | | | | | | | | | | | | |
| Center of machine | : 123 123 123 | | | | | | | | | | | | |
| Front of machine | : 255 255 255 | | | | | | | | | | | | |

3-2-34





| Maintenance item No. | Description | | | | | | | | | | |
|----------------------|---|---------|-------------|-------|----------------------------------|-----------|------------------------------|---------------|---|------|--------------------------------|
| U099 | <p>Setting</p> <p>① Select an item to be set.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>LEVEL</td> <td>Detection sensor threshold value</td> </tr> <tr> <td>WAIT TIME</td> <td>Original size judgment time*</td> </tr> <tr> <td>ORIGINAL AREA</td> <td>Original size detection position display (mm)</td> </tr> <tr> <td>SIZE</td> <td>Detected original size display</td> </tr> </tbody> </table> <p>* Time from activation of the original detection switch (ODSW) to original size judgment</p> <p>Method to set the detection threshold value</p> <p>① Adjust the preset value using the Up/Down keys.</p> <p>* A larger value increases the sensor sensitivity, and a smaller value decreases it.</p> <p>② Press the print key. The value is set.</p> <p>③ To return to the screen for selecting an item, press the stop/clear key.</p> <p>Method to set the original size judgment time</p> <p>① Adjust the preset value using the Up/Down keys.</p> <p>* A larger value increases the original size judgment time, and a smaller value decreases it.</p> <p>② Press the print key. The value is set.</p> <p>③ To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion</p> <p>Press the stop/clear key at the screen for selecting an item. The screen for maintenance item No. is displayed.</p> | Display | Description | LEVEL | Detection sensor threshold value | WAIT TIME | Original size judgment time* | ORIGINAL AREA | Original size detection position display (mm) | SIZE | Detected original size display |
| Display | Description | | | | | | | | | | |
| LEVEL | Detection sensor threshold value | | | | | | | | | | |
| WAIT TIME | Original size judgment time* | | | | | | | | | | |
| ORIGINAL AREA | Original size detection position display (mm) | | | | | | | | | | |
| SIZE | Detected original size display | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | | |
|----------------------|---|-----------------|-------------|---------|-----------------------------------|-------|-----------------------------|-----------|-------------------------------------|--------------|---|-------------|---------------|-----------------|----------------------|----------|-----|
| U100 | <p>Setting the surface potential</p> <p>Description Changes the surface potential by changing the grid control voltage. Also performs main charging.</p> <p>Purpose To set the surface potential or check main charging. Also used when reentering data after replacing the backup RAM or initializing the set data.</p> <p>Start Press the print 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>MC 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 MC DATA on the touch panel of the screen for selecting an item. ② Change the setting using the Up/Down 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>0 to 255</td> <td>150</td> </tr> </tbody> </table> <p>Increasing the setting makes the surface potential higher, and decreasing it makes the potential lower.</p> <p>Change in value per step: approximately 3.6 V</p> <ol style="list-style-type: none"> ③ Press the print 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 when main charger output stops. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | MC 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 | 0 to 255 | 150 |
| Display | Description | | | | | | | | | | | | | | | | |
| MC 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 | 0 to 255 | 150 | | | | | | | | | | | | | | | |

3-2-36





| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|--|---------------|-----------------|---------|-------------|--------------|-----------------------------|--------|---|--------|--------------------------------|---------|-----------|---------------|-----------------|---------|--|----------|-----|----------|---|----------|----|
| U101 | <p>Setting high voltages</p> <p>Description Changes the developing bias voltage, transfer voltage and separation voltage by changing the developing bias control voltage, transfer control voltage and separation control voltage. Also checks the transfer output voltage.</p> <p>Purpose To check and change high voltages other than the main charger voltage.</p> <p>Start</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select an item to be set or checked. 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>DEV BIAS SET</td> <td>Setting the developing bias</td> </tr> <tr> <td>TC SET</td> <td>Setting and checking the transfer voltage</td> </tr> <tr> <td>AC SET</td> <td>Setting the separation voltage</td> </tr> </tbody> </table> <p>Setting the developing bias</p> <ol style="list-style-type: none"> ① Select the item to be adjusted. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window. ② Change the setting using the 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;">Operation</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Initial setting</th> </tr> </thead> <tbody> <tr> <td>DB DATA</td> <td>Developing bias control voltage during image formation</td> <td>0 to 255</td> <td>220</td> </tr> <tr> <td>DB DATA2</td> <td>Developing bias control voltage during no image formation</td> <td>0 to 255</td> <td>57</td> </tr> </tbody> </table> <p>Increasing the setting makes the developing bias higher, and decreasing it makes the bias lower.</p> <ol style="list-style-type: none"> ③ Press the print key. The value is set. ④ To return to the screen for selecting in item, press the stop/clear key. | | | Display | Description | DEV BIAS SET | Setting the developing bias | TC SET | Setting and checking the transfer voltage | AC SET | Setting the separation voltage | Display | Operation | Setting range | Initial setting | DB DATA | Developing bias control voltage during image formation | 0 to 255 | 220 | DB DATA2 | Developing bias control voltage during no image formation | 0 to 255 | 57 |
| Display | Description | | | | | | | | | | | | | | | | | | | | | | |
| DEV BIAS SET | Setting the developing bias | | | | | | | | | | | | | | | | | | | | | | |
| TC SET | Setting and checking the transfer voltage | | | | | | | | | | | | | | | | | | | | | | |
| AC SET | Setting the separation voltage | | | | | | | | | | | | | | | | | | | | | | |
| Display | Operation | Setting range | Initial setting | | | | | | | | | | | | | | | | | | | | |
| DB DATA | Developing bias control voltage during image formation | 0 to 255 | 220 | | | | | | | | | | | | | | | | | | | | |
| DB DATA2 | Developing bias control voltage during no image formation | 0 to 255 | 57 | | | | | | | | | | | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | |
|----------------------|--|---|----------------------|
| U101 | Setting the transfer voltage | | |
| | ① Change the setting using the Up/Down keys. | | |
| | Display | Operation | Setting range |
| | TC DATA | Transfer control voltage | 0 to 255 |
| | | Increasing the setting makes the transfer voltage higher, and decreasing it makes the voltage lower. | |
| | | ② Press the print key. The value is set. | |
| | | ③ To check the transfer voltage output, press the TC ON on the touch panel. The currently set transfer voltage is output. | |
| | | ④ To stop the transfer voltage output, press the stop/clear key. | |
| | | ⑤ To return to the screen for selecting an item, press the stop/clear key after the transfer voltage output is stopped. | |
| | Setting the separation voltage | | |
| | ① Change the setting using the Up/Down keys. | | |
| | Display | Description | Setting range |
| | AC DATA | Separation control voltage | 0 to 255 |
| | | Increasing the setting makes the separation voltage higher, and decreasing it makes the voltage lower. | |
| | | ② Press the print key. The value is set. | |
| | | ③ To return to the screen for selecting an item, press the stop/clear key. | |
| | Interrupt copy mode | | |
| | While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. | | |
| | Completion | | |
| | Press the stop/clear key. The screen for selecting a maintenance item No. is displayed. | | |

3-2-38





| Maintenance item No. | Description | | | | | | | | |
|---|--|-----------------|--------------------------|-----------------|--------------------------|---|---------|---|-------------|
| U102 | <p>Setting the cleaning interval for the transfer charger</p> <p>Description Executes a cleaning operation for the transfer charger and changes the intervals at which the transfer charger is cleaned.</p> <p>Purpose To check the cleaning operation for the transfer charger. Also to change the intervals for the operation. Making the intervals longer decreases the stand-by time when starting copying.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② To execute the cleaning operation, press TEST RUN. The cleaning operation for the transfer charger is executed once. <p>Setting</p> <ol style="list-style-type: none"> ① Change the setting using the 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>Transfer charger cleaning operation intervals</td> <td>0 to 20</td> <td>1</td> <td>1000 copies</td> </tr> </tbody> </table> | Description | Setting range | Initial setting | Change in value per step | Transfer charger cleaning operation intervals | 0 to 20 | 1 | 1000 copies |
| Description | Setting range | Initial setting | Change in value per step | | | | | | |
| Transfer charger cleaning operation intervals | 0 to 20 | 1 | 1000 copies | | | | | | |
| | <p>When set to 3, the transfer charger is cleaned every 3000 copies (3 by 1000) counted after the main switch is turned on. When set to 0, the transfer charger is not cleaned.</p> <ol style="list-style-type: none"> ② Press the print key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | | | | | | | | |



2A3/4

| Maintenance item No. | Description |
|----------------------|---|
| U110 | <p>Checking/clearing the drum count</p> <p>Description Displays the drum counts for checking or clearing the figure, which is used as a reference when correcting the main charger potential output.</p> <p>Purpose To check the drum status. Also used to clear the count after replacing the drum during regular maintenance. Since the count was cleared before shipping, do not clear it when installing.</p> <p>Method Press the print key. The drum counter count is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none">① Press CLEAR on the touch panel.② Press the print 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 print key. The count is set, and the screen for selecting a maintenance 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> |

3-2-40





| Maintenance item No. | Description |
|----------------------|--|
| U111 | <p>Checking/clearing the drum drive time</p> <p>Description Displays the drum drive time for checking or clearing 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 print key. The drum drive time is displayed in minutes.</p> <p>Clearing</p> <ol style="list-style-type: none">① Press CLEAR on the touch panel.② Press the print key. The 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 (in minutes) using the numeric keys.② Press the print key. The time is set, and the screen for selecting a maintenance No. is displayed. <p>Completion To exit this maintenance item without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> |



2A3/4

| 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 print key. The screen for executing is displayed. ② Press the print 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>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>The toner sensor output value is displayed on the right side of the screen.</p> <p>Supplement The following data is also renewed or cleared by performing this maintenance item:</p> <ul style="list-style-type: none"> • Renewing the toner sensor control voltage (U131) • Renewing the toner 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 After initial setting is complete, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | CONTROL | Toner sensor control voltage | TARGET | Toner feed start level | HUMID | Absolute humidity |
| Display | Description | | | | | | | | |
| CONTROL | Toner sensor control voltage | | | | | | | | |
| TARGET | Toner feed start level | | | | | | | | |
| HUMID | Absolute humidity | | | | | | | | |

3-2-42





| Maintenance item No. | Description | | | | | | |
|------------------------------|--|-----------------|---------------|-----------------|------------------------------|----------|-----|
| U131 | <p>Setting the toner sensor control voltage</p> <p>Description Displays or changes the toner sensor control voltage automatically set in maintenance item U130.</p> <p>Purpose To check the automatically set toner sensor control voltage. Also to change the toner density if an image is too dark or light.</p> <p>Method Press the print key. The current setting for the toner sensor control voltage is displayed.</p> <p>Setting ① Change the setting using the Up/Down keys.</p> <table 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>153</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> <p>② Press the print key. The value is set.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Description | Setting range | Initial setting | Toner sensor control voltage | 0 to 255 | 153 |
| Description | Setting range | Initial setting | | | | | |
| Toner sensor control voltage | 0 to 255 | 153 | | | | | |





2A3/4

| 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 print key. The screen for executing is displayed. ② Press the print key. Operation starts, and the current data is displayed. <p>Toner is replenished until the toner sensor output value reaches the toner feed start level.</p> <p>To stop operation, press the start/clear key.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>TARGET (NOW)</td> <td>Current toner feed start level</td> </tr> <tr> <td>CONTROL (NOW)</td> <td>Current toner sensor control voltage</td> </tr> <tr> <td>HUMID</td> <td>Absolute humidity</td> </tr> </tbody> </table> <p>The current toner sensor output value is displayed on the right side of the screen.</p> <p>Completion Press the stop/clear key when toner replenishment stops. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | TARGET (NOW) | Current toner feed start level | CONTROL (NOW) | Current toner sensor control voltage | HUMID | Absolute humidity |
| Display | Description | | | | | | | | |
| TARGET (NOW) | Current toner feed start level | | | | | | | | |
| CONTROL (NOW) | Current toner sensor control voltage | | | | | | | | |
| HUMID | Absolute humidity | | | | | | | | |
| U133 | <p>Collecting the recycled toner</p> <p>Description Transfers residual toner in the cleaning section, toner main hopper and toner sub hopper to the developing unit.</p> <p>Purpose To dispose of residual toner inside the machine when the developer is replaced. Be sure to run this maintenance item before replacing the developer. Failing to do so could lead to toner scattering.</p> <p>There is no need to run this maintenance item if the developer is to be loaded for the first time in such occasion as machine installation.</p> | | | | | | | | |

3-2-44





| Maintenance item No. | Description | | | | | | |
|----------------------|--|-------------|-----------|---------|------------------------|---------|---------------------------|
| U133 | <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for executing is displayed. ② Press ON on the touch panel. The selected item is displayed in reverse. ③ Press the print key. The toner recycle motor turn on and recycled toner collection is performed for approximately 5 minutes. The ON display on the touch panel flashes during the operation and returns to the normal state when it ends. <p>To interrupt operation, press the stop/clear key.</p> <p>Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</p> | | | | | | |
| U135 | <p>Checking toner motor operation</p> <p>Description Drives the toner feed motor or toner recycle motor.</p> <p>Purpose To check the operation of the toner feed motor or toner recycle motor.</p> <p>Caution Note that driving either of the motors unnecessarily long may cause a toner jam, resulting in machine lockup. Be sure to drive each motor for just several seconds.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the motor to be driven. The selected motor is displayed in reverse, and operation starts. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Operation</th> </tr> </thead> <tbody> <tr> <td>MOTOR 1</td> <td>Toner feed motor drive</td> </tr> <tr> <td>MOTOR 2</td> <td>Toner recycle motor drive</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 operation stops. The screen for selecting a maintenance item No. is displayed.</p> | Description | Operation | MOTOR 1 | Toner feed motor drive | MOTOR 2 | Toner recycle motor drive |
| Description | Operation | | | | | | |
| MOTOR 1 | Toner feed motor drive | | | | | | |
| MOTOR 2 | Toner recycle motor drive | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|--------|---|--------|--|
| U136 | <p>Turning the toner level detection function on/off</p> <p>Description Turning the control based on the toner level sensor output on/off.</p> <p>Purpose To enable copying using the toner in the developing section after the toner level in the toner hopper decreases, by turning the control function off</p> <p>Method Press the print key.</p> <p>Setting ① Press ON or OFF to change the operation.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Controls based on the detection by the toner sensor detection sensor.</td> </tr> <tr> <td>OFF</td> <td>Ignores the detection by the toner level detection sensor.</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | ON | Controls based on the detection by the toner sensor detection sensor. | OFF | Ignores the detection by the toner level detection sensor. |
| Display | Description | | | | | | |
| ON | Controls based on the detection by the toner sensor detection sensor. | | | | | | |
| OFF | Ignores the detection by the toner level detection sensor. | | | | | | |
| U137 | <p>Checking the toner level detection sensor</p> <p>Description Displays the detection status of the toner level detection sensor and toner hopper lockup detection sensor.</p> <p>Purpose To check the toner level and recycle toner level in the toner hopper.</p> <p>Method ① Press the print key. The detected status of the each sensor is displayed.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TE1 SW</td> <td>Toner level detection sensor (toner level in the toner hopper)</td> </tr> <tr> <td>TE2 SW</td> <td>Toner hopper lockup detection sensor (recycle toner level)</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 | TE1 SW | Toner level detection sensor (toner level in the toner hopper) | TE2 SW | Toner hopper lockup detection sensor (recycle toner level) |
| Display | Description | | | | | | |
| TE1 SW | Toner level detection sensor (toner level in the toner hopper) | | | | | | |
| TE2 SW | Toner hopper lockup detection sensor (recycle toner level) | | | | | | |

3-2-46





| Maintenance item No. | Description | | | | | | | | |
|----------------------|---|---------|-------------|--------------|---|---------------|--------------------------------------|-------|-------------------|
| U155 | <p>Displaying the toner sensor output</p> <p>Description Displays the toner sensor output value , and related data.</p> <p>Purpose To check the toner sensor output value.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for executing is displayed. ② Press the print key. The current data is displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TARGET (NOW)</td> <td>Current toner feed level (corrected value for humidity and drive time)</td> </tr> <tr> <td>CONTROL (NOW)</td> <td>Current toner sensor control voltage</td> </tr> <tr> <td>HUMID</td> <td>Absolute humidity</td> </tr> </tbody> </table> <p>The current toner sensor output value is displayed on the right side of the screen.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | TARGET (NOW) | Current toner feed level (corrected value for humidity and drive time) | CONTROL (NOW) | Current toner sensor control voltage | HUMID | Absolute humidity |
| Display | Description | | | | | | | | |
| TARGET (NOW) | Current toner feed level (corrected value for humidity and drive time) | | | | | | | | |
| CONTROL (NOW) | Current toner sensor control voltage | | | | | | | | |
| HUMID | Absolute humidity | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|-------------|--------|------------------------|-------|---|-------------|---------------|-----------------|------------------------|----------|-----|-------------|---------------|-----------------|---|----------|----|
| U156 | <p>Changing the toner control level</p> <p>Description Changes the toner feed start level set in maintenance item U130 or the toner empty level to be determined by the difference from the toner feed start level.</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" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>TARGET</td> <td>Toner feed start level</td> </tr> <tr> <td>EMPTY</td> <td>Difference between the toner feed start level and toner empty level</td> </tr> </tbody> </table> <p>Setting for the toner feed start level</p> <ol style="list-style-type: none"> ① Press TARGET. ② Change the setting using the Up/Down key. <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>Toner feed start level</td> <td>0 to 255</td> <td>114</td> </tr> </tbody> </table> <p>Increasing the setting makes the toner density lower.</p> <ol style="list-style-type: none"> ③ Press the print key. The value is set. <p>Setting for the toner empty level</p> <ol style="list-style-type: none"> ① Press EMPTY. ② Change the setting using the Up/Down key. <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>Difference between the toner feed start level and the toner empty level</td> <td>0 to 255</td> <td>20</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 print key. The value is set. <p>Completion Press the stop/clear key. The screen for selecting maintenance item No. is displayed.</p> | Display | Description | TARGET | Toner feed start level | EMPTY | Difference between the toner feed start level and toner empty level | Description | Setting range | Initial setting | Toner feed start level | 0 to 255 | 114 | Description | Setting range | Initial setting | Difference between the toner feed start level and the toner empty level | 0 to 255 | 20 |
| Display | Description | | | | | | | | | | | | | | | | | | |
| TARGET | Toner feed start level | | | | | | | | | | | | | | | | | | |
| EMPTY | Difference between the toner feed start level and toner empty level | | | | | | | | | | | | | | | | | | |
| Description | Setting range | Initial setting | | | | | | | | | | | | | | | | | |
| Toner feed start level | 0 to 255 | 114 | | | | | | | | | | | | | | | | | |
| Description | Setting range | Initial setting | | | | | | | | | | | | | | | | | |
| Difference between the toner feed start level and the toner empty level | 0 to 255 | 20 | | | | | | | | | | | | | | | | | |

3-2-48





| Maintenance item No. | Description |
|----------------------|--|
| U157 | <p>Checking/clearing the developing drive time</p> <p>Description Checks or clears the developing drive time, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.</p> <p>Purpose To check the developing drive time after replacing the developer.</p> <p>Method Press the print key. The developing drive time is displayed in minutes.</p> <p>Clearing</p> <ol style="list-style-type: none"> ① Press CLEAR on the touch panel. ② Press the print key. The count is set, 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 (in minutes) using the numeric keys. ② Press the print key. The time is set, and the screen for selecting a maintenance No. is displayed. <p>Completion To exit the maintenance mode without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> |
| U158 | <p>Checking/clearing the developing count</p> <p>Description Checks or clears the developing count, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.</p> <p>Purpose To check the developing count after replacing the developer.</p> <p>Method Press the print key. The developing count is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> ① Press CLEAR on the touch panel. ② Press the print key. The count is set, 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 print key. The count is set, and the screen for selecting a maintenance 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> |



2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U160 | <p>Applying toner to the cleaning blade</p> <p>Description Applies toner to the cleaning blade.</p> <p>Purpose To apply toner to the drum to coat the cleaning blade. To be executed when replacing or cleaning the cleaning blade or the drum.</p> <p>Method</p> <ol style="list-style-type: none">① Press the print key. The screen for executing is displayed.② Press the print key. Operation starts. <p>When the operation is complete, the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without performing operation, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> |

3-2-50





2A3/4

| Maintenance item No. | Description | | | |
|----------------------|--|----------------------|------------------------|---------------|
| U161 | <p>Setting the fixing control temperature</p> <p>Description Changes the fixing control temperature.</p> <p>Purpose Normally no change is necessary. However, can be used to prevent curled or creased paper, or solve a fixing problem on thick paper. Also used to output a test pattern for measuring fixing pressure.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the item to be set. The selected item is displayed in reverse, and the current setting is displayed in the adjustment window.</p> <p>② Change the setting using the Up/Down key.</p> | | | |
| Display | Description | Setting range | Initial setting | |
| | | | 42 ppm | 52 ppm |
| CONTROL TEMP | Normal stabilization fixing temperature | 100 to 200 (°C) | 180 | 190 |
| FIRST TEMP | Primary stabilization fixing temperature | 100 to 200 (°C) | 175 | 175 |
| SECOND TEMP | Secondary stabilization fixing temperature | 100 to 200 (°C) | 180 | 190 |
| RUNNING TIME | Aging time after secondary stabilization | 0 to 120 (s) | 60 | 120 |
| | <p>The respective temperatures are to be set such that CONTROL TEMP ≥ SECOND ≥ TEMPFIRST TEMP.</p> <p>③ Press the print key. The value is set.</p> <p>Interrupt copy mode While this maintenance item is being performed, a test pattern for measuring fixing pressure is output in interrupt copy mode (see page 3-3-79).</p> <p>Completion Press the stop/clear key. The screen for selecting maintenance item No. is displayed.</p> | | | |

3-2-51





2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|------|----------------------|-----|----------------------|
| 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"> ① Press the print key. The screen for executing is displayed. ② Press the print key. The forced stabilization mode is entered, and stabilization operation stops. The screen for selecting a maintenance item No. is displayed. <p style="padding-left: 2em;">To exit the forced stabilization mode, turn the power off and on.</p> <p>Completion To exit this maintenance item without executing forced fixing stabilization, press the stop clear key.</p> | | | | | | |
| U196 | <p>Turning the fixing heater on</p> <p>Description Turns the fixing heater on.</p> <p>Purpose To check fixing heaters M or S.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the heater to be turned on. The selected heater turns on for 3 s and then turns off. <table border="1" style="margin-left: 2em;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>MAIN</td> <td>Fixing heater M (H1)</td> </tr> <tr> <td>SUB</td> <td>Fixing heater S (H2)</td> </tr> </tbody> </table> <p>Completion Press the stop/clear key when fixing motors M and S are off. The screen for selecting the maintenance item No. is displayed.</p> | Display | Description | MAIN | Fixing heater M (H1) | SUB | Fixing heater S (H2) |
| Display | Description | | | | | | |
| MAIN | Fixing heater M (H1) | | | | | | |
| SUB | Fixing heater S (H2) | | | | | | |

3-2-52





| Maintenance item No. | Description | | | | | | |
|----------------------|---|---------|-------------|----|------------------------------|-----|-----------------------------|
| U198 | <p>Setting the fixing phase control</p> <p>Description Sets the use of fixing phase control to reduce electrical noise generated by the copier.</p> <p>Purpose Normally no change is necessary. If electrical noise generated by the copier causes flickering of the lights around the copier, select fixing phase control to reduces the noise.</p> <p>Method Press the print key.</p> <p>Setting</p> <p>① Press ON or OFF to change operation.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Fixing phase control present</td> </tr> <tr> <td>OFF</td> <td>Fixing phase control absent</td> </tr> </tbody> </table> <p>Initial setting: ON for metric and OFF for inch specifications</p> <p>② Press the print key. The setting is set. The screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | ON | Fixing phase control present | OFF | Fixing phase control absent |
| Display | Description | | | | | | |
| ON | Fixing phase control present | | | | | | |
| OFF | Fixing phase control absent | | | | | | |
| U200 | <p>Turning all LEDs on</p> <p>Description Turns all the LEDs on the operation panel on.</p> <p>Purpose To check if all the LEDs on the operation panel light</p> <p>Method Press the print key. All the LEDs on the operation panel light.</p> <p>Completion Press the stop/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance mode is displayed.</p> | | | | | | |





2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| 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 print 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> |

3-2-54



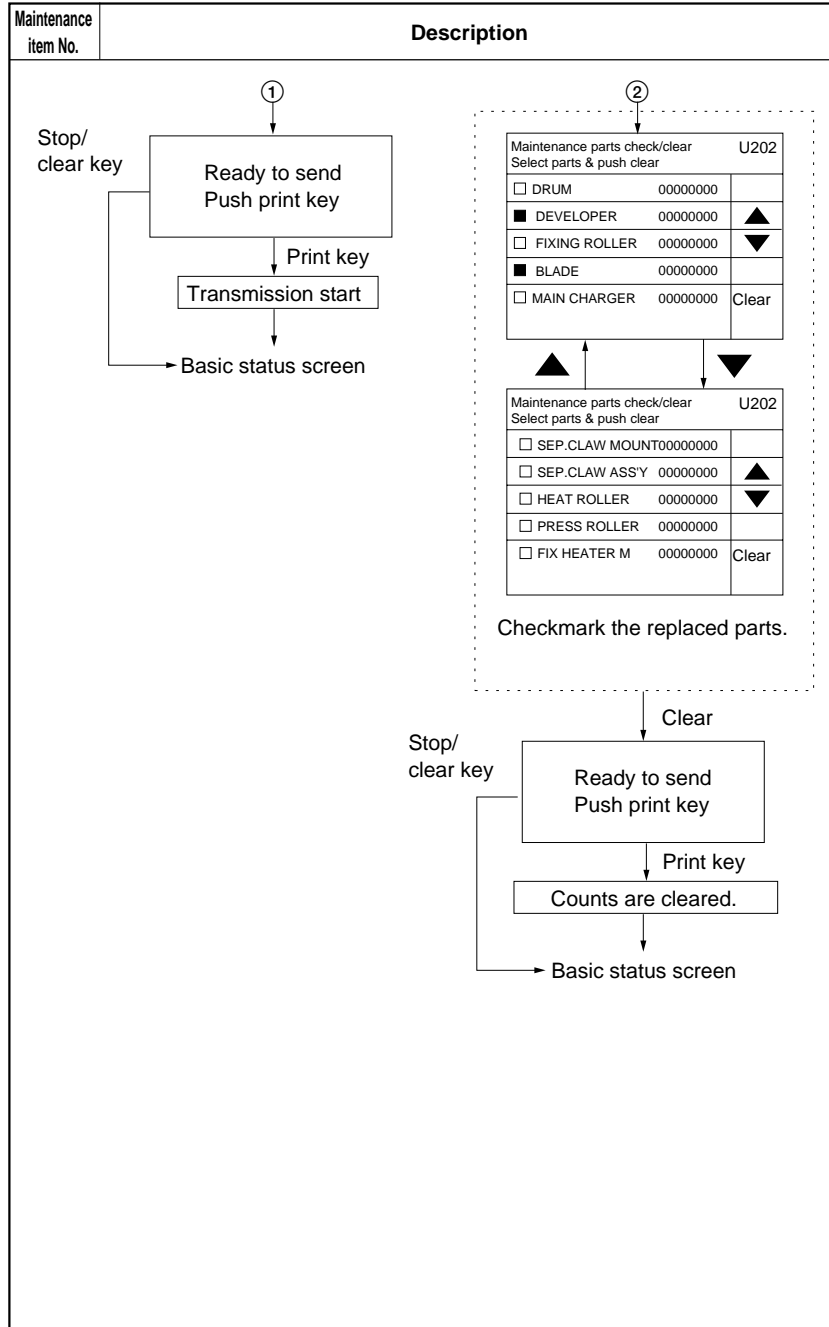


| Maintenance item No. | Description | | | | | | | | | | | | |
|------------------------------------|---|------------------------------------|------|-------------------|---|-------------------------|---|------------------------|---|----------------------|---|-----------------------|---|
| U202 | <p>Setting the MMD host monitoring system</p> <p>Description Initializes or operates the MMD host monitoring system* * Optional for 120 V specifications only.</p> <p>Purpose Used when setting up the machine or during regular maintenance or repair.</p> <p>Method ① Press the print key. The basic status screen is displayed. ② Operates the device following the instructions on the touch panel.</p> <p>Completion Press the stop/clear key on the basic screen. The screen for selecting a maintenance item No. is displayed.</p> <div style="text-align: center;"> <p>[Basic status]</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 80%;">Maintenance item No. select screen</td> <td style="width: 20%;">U202</td> </tr> <tr> <td>Technician arrive</td> <td style="text-align: right;">①</td> </tr> <tr> <td>Maintenance count clear</td> <td style="text-align: right;">②</td> </tr> <tr> <td>Service report (leave)</td> <td style="text-align: right;">③</td> </tr> <tr> <td>Phone number setting</td> <td style="text-align: right;">④</td> </tr> <tr> <td>Device initialization</td> <td style="text-align: right;">⑤</td> </tr> </table> <p style="margin-left: 20px;">Maintenance item No. select screen</p> <p style="margin-left: 20px;">↑ Stop/clear key</p> </div> <ul style="list-style-type: none"> • To initialize the MMD host monitoring system, run the following modes in order: <ul style="list-style-type: none"> · Phone number setting ④ · Device initialization ⑤ • During regular maintenance or service <ul style="list-style-type: none"> · Technician arrive ① · Maintenance count clear ② · Service report (leave) ③ | Maintenance item No. select screen | U202 | Technician arrive | ① | Maintenance count clear | ② | Service report (leave) | ③ | Phone number setting | ④ | Device initialization | ⑤ |
| Maintenance item No. select screen | U202 | | | | | | | | | | | | |
| Technician arrive | ① | | | | | | | | | | | | |
| Maintenance count clear | ② | | | | | | | | | | | | |
| Service report (leave) | ③ | | | | | | | | | | | | |
| Phone number setting | ④ | | | | | | | | | | | | |
| Device initialization | ⑤ | | | | | | | | | | | | |



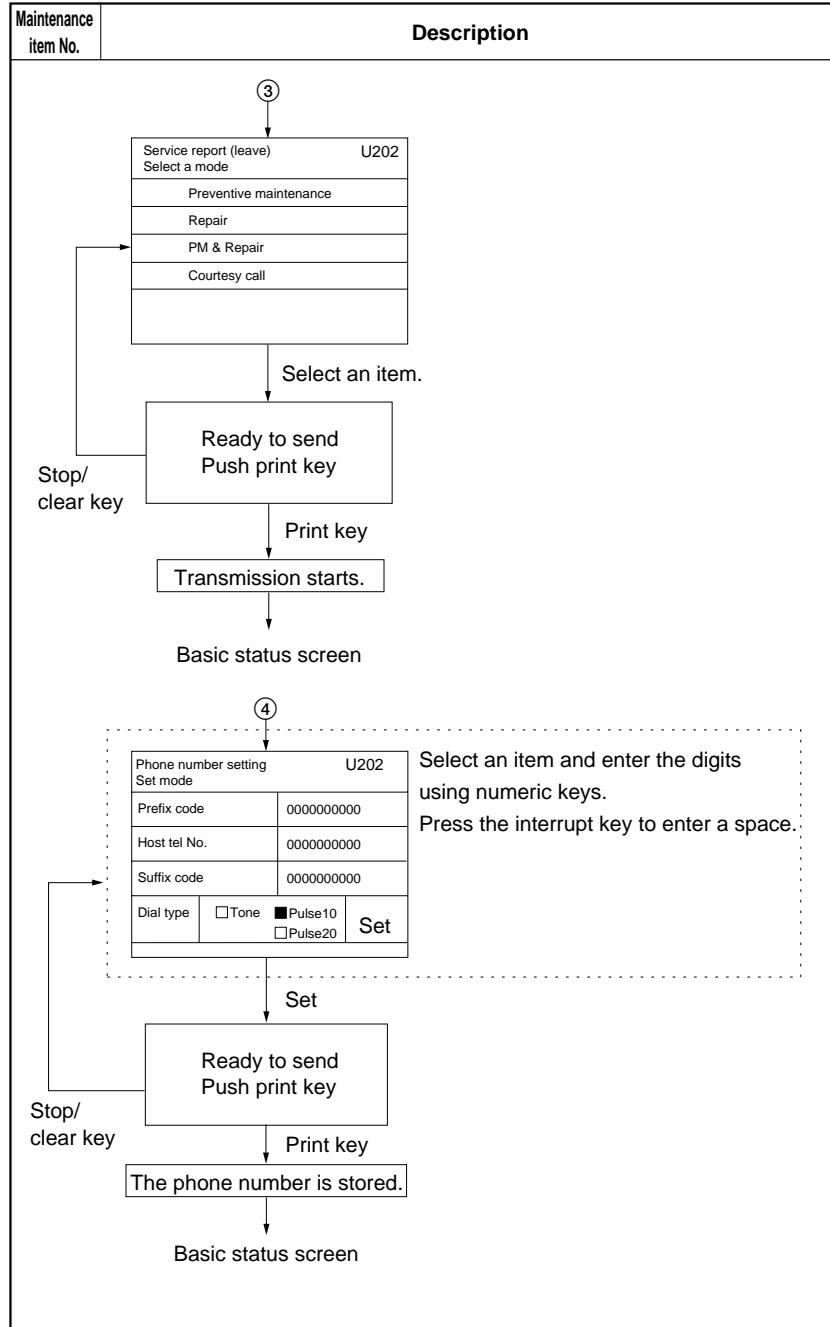


2A3/4



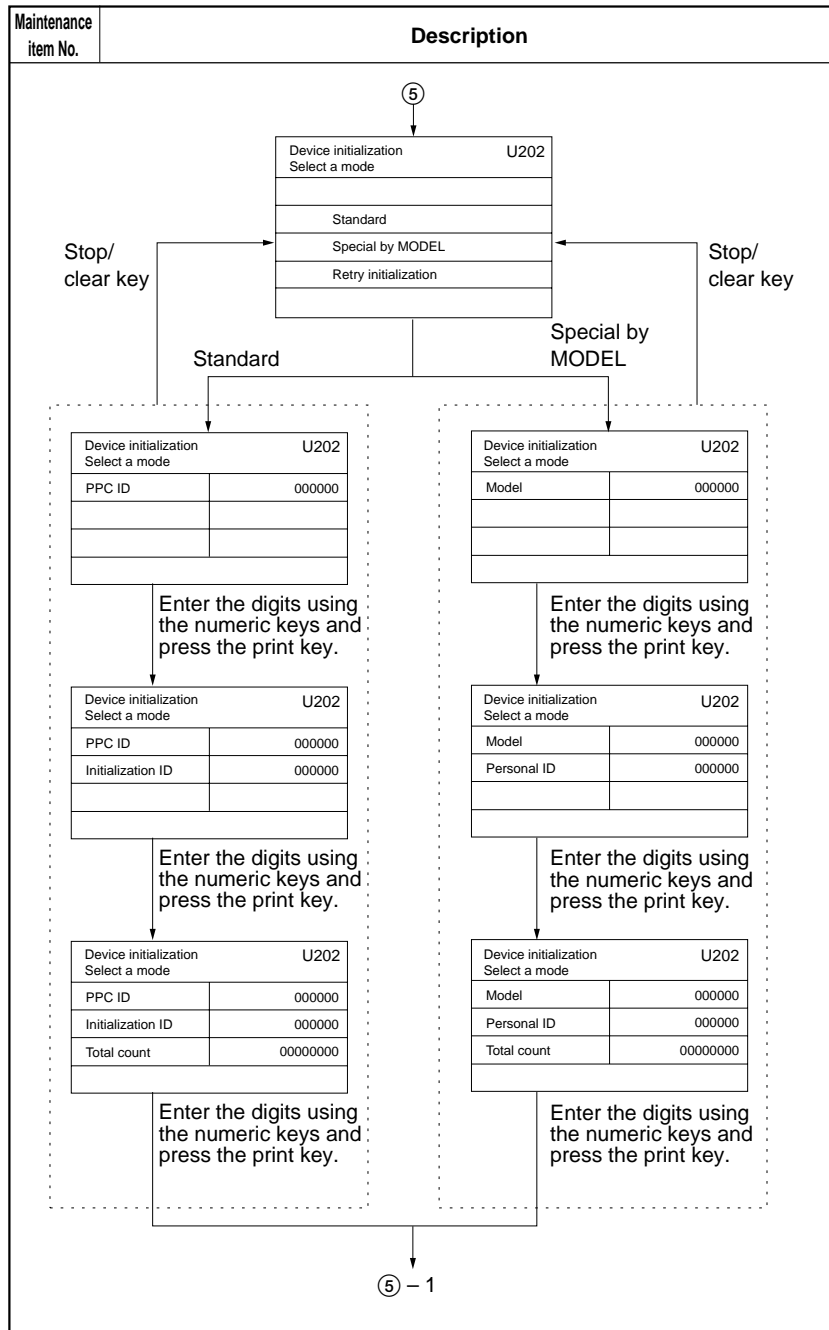
3-2-56





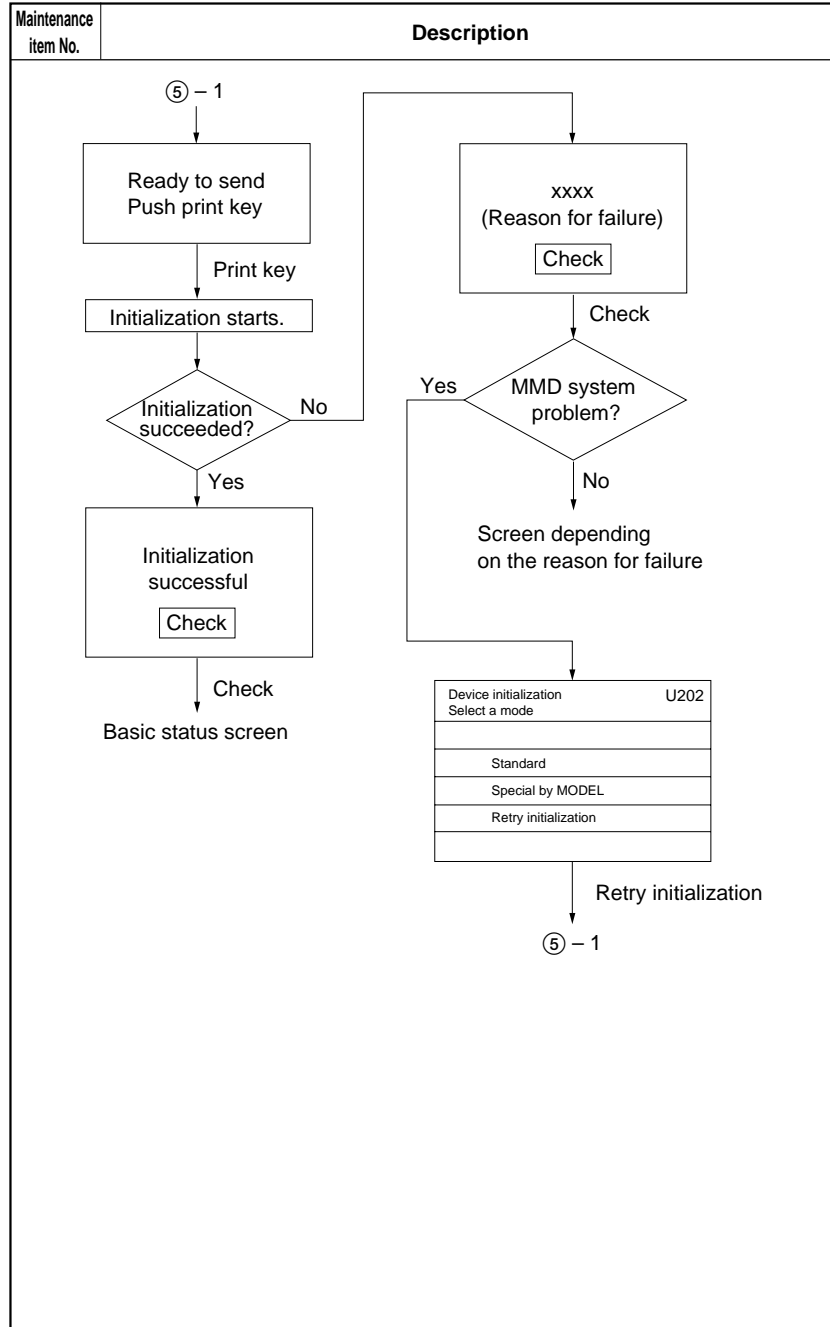


2A3/4



3-2-58







2A3/4

| Maintenance item No. | Description | | | | | | | | | | |
|-----------------------|--|---------|-----------|----------|-----------------------------------|-----------|-----------------------------------|----------------------|---|-----------------------|---|
| U203 | <p>Operating DF separately</p> <p>Description Simulates the original conveying operation separately in the SRDF.</p> <p>Purpose To check the SRDF.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Set the magnification to between 25 and 200% using the Up/Down keys. ③ Place an original in the SRDF if running this simulation with paper. ④ Select the item to be operated. The selected item is displayed in reverse and operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>ADF MODE</td> <td>With paper, single-sided original</td> </tr> <tr> <td>RADF MODE</td> <td>With paper, double-sided original</td> </tr> <tr> <td>ADF MODE (NON-PAPER)</td> <td>Without paper, single-sided original (continuous operation)</td> </tr> <tr> <td>RADF MODE (NON-PAPER)</td> <td>Without paper, double-sided original (continuous operation)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> ⑤ To stop continuous operation, press the stop/clear key. <p>Completion Press the stop/clear key when the operation stops. The screen for selecting the maintenance item No. is displayed.</p> | Display | Operation | ADF MODE | With paper, single-sided original | RADF MODE | With paper, double-sided original | ADF MODE (NON-PAPER) | Without paper, single-sided original (continuous operation) | RADF MODE (NON-PAPER) | Without paper, double-sided original (continuous operation) |
| Display | Operation | | | | | | | | | | |
| ADF MODE | With paper, single-sided original | | | | | | | | | | |
| RADF MODE | With paper, double-sided original | | | | | | | | | | |
| ADF MODE (NON-PAPER) | Without paper, single-sided original (continuous operation) | | | | | | | | | | |
| RADF MODE (NON-PAPER) | Without paper, double-sided original (continuous operation) | | | | | | | | | | |

3-2-60





| Maintenance item No. | Description | | | | | | |
|----------------------|---|---------|-------------|----------|----------------------------|-------------|-------------------------------|
| U204 | <p>Setting the presence or absence of a key card or key counter</p> <p>Description Sets the presence or absence of the optional key card or key counter.</p> <p>Purpose A key card is not available for metric specifications. The setting for the HECON key card, which is supported by inch-specification machines, is not necessary in this maintenance item.</p> <p>Method Press the start key.</p> <p>Setting</p> <p>① Select the optional counter to be installed. The selected counter is displayed in reverse. Pressing the reversed item again resets the selection.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>KEY CARD</td> <td>The key card is installed.</td> </tr> <tr> <td>KEY COUNTER</td> <td>The key counter is installed.</td> </tr> </tbody> </table> <p>② Press the print key. The screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | KEY CARD | The key card is installed. | KEY COUNTER | The key counter is installed. |
| Display | Description | | | | | | |
| KEY CARD | The key card is installed. | | | | | | |
| KEY COUNTER | The key counter is installed. | | | | | | |





2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U206 | Setting the presence or absence of the coin vender Description Sets the presence or absence of the optional coin vender. Also sets the details for coin vender operation, such as mode and unit price. This is an optional device which is currently supported only by Japanese specification machines, so no setting is necessary. |

3-2-62





| Maintenance item No. | Description | | | | | | | | | | | | | | | | |
|----------------------|---|---------|-------------|---|--------|---|---------|---|-----------|---|----------|---|--------|---|----------|---|--------|
| U209 | <p>Setting date and time</p> <p>Description Sets the real time clock, which is used as a reference when correcting drum time.</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 print 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 print key. The current setting for the month is displayed. ③ Set the month using the numeric or Up/Down keys and press the print key. The current setting for the date is displayed. ④ Set the date using the numeric or Up/Down keys and press the print key. The current setting for the day of the week is displayed. ⑤ Set the day of the week using the numeric or Up/Down keys and press the print key. The current time setting for hours is displayed. <table border="1"> <thead> <tr> <th>Setting</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>Monday</td></tr> <tr><td>2</td><td>Tuesday</td></tr> <tr><td>3</td><td>Wednesday</td></tr> <tr><td>4</td><td>Thursday</td></tr> <tr><td>5</td><td>Friday</td></tr> <tr><td>6</td><td>Saturday</td></tr> <tr><td>7</td><td>Sunday</td></tr> </tbody> </table> <ol style="list-style-type: none"> ⑥ Set the time (hours, 0 to 23) using the numeric or Up/Down keys and press the print key. The current time setting for minutes is displayed. ⑦ Set the minutes using the numeric or Up/Down keys and press the print 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> | Setting | Description | 1 | Monday | 2 | Tuesday | 3 | Wednesday | 4 | Thursday | 5 | Friday | 6 | Saturday | 7 | Sunday |
| Setting | Description | | | | | | | | | | | | | | | | |
| 1 | Monday | | | | | | | | | | | | | | | | |
| 2 | Tuesday | | | | | | | | | | | | | | | | |
| 3 | Wednesday | | | | | | | | | | | | | | | | |
| 4 | Thursday | | | | | | | | | | | | | | | | |
| 5 | Friday | | | | | | | | | | | | | | | | |
| 6 | Saturday | | | | | | | | | | | | | | | | |
| 7 | Sunday | | | | | | | | | | | | | | | | |



2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|--------------|---------|--------------------------------|-----------|---------|---------------------------|--------------|---------|--------------------------------------|--------------|---------|-----------------------------|--------------|-----------|-----------------------------------|--------------|------------|---|--------------|---------|--------------------------------|------------|-----------|---------------------------------------|------------|
| U243 | <p>Checking the operation of the DF motors, clutches and solenoids</p> <p>Description Turns the SRDF motors, clutches or solenoids on.</p> <p>Purpose To check the operation of the SRDF motors, clutches and solenoids.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the item to be operated. The selected item is displayed in reverse, and operation starts. <table border="1"> <thead> <tr> <th>Display</th> <th>Motors, clutches and solenoids</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>F MOTOR</td> <td>Original feed motor (OFM)</td> <td>In operation</td> </tr> <tr> <td>C MOTOR</td> <td>Original paper conveying motor (OCM)</td> <td>In operation</td> </tr> <tr> <td>FEED CL</td> <td>Original feed clutch (OFCL)</td> <td>On for 0.5 s</td> </tr> <tr> <td>EJ JCT SL</td> <td>Eject feedshift solenoid (EFSSOL)</td> <td>On for 0.5 s</td> </tr> <tr> <td>REV JCT SL</td> <td>Switchback feedshift solenoid (SBFSSOL)</td> <td>On for 0.5 s</td> </tr> <tr> <td>FEED SL</td> <td>Original feed solenoid (OFSOL)</td> <td>On and off</td> </tr> <tr> <td>REVPRS SL</td> <td>Switchback pressure solenoid (SBPSOL)</td> <td>On and off</td> </tr> </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, clutches and solenoids | Operation | F MOTOR | Original feed motor (OFM) | In operation | C MOTOR | Original paper conveying motor (OCM) | In operation | FEED CL | Original feed clutch (OFCL) | On for 0.5 s | EJ JCT SL | Eject feedshift solenoid (EFSSOL) | On for 0.5 s | REV JCT SL | Switchback feedshift solenoid (SBFSSOL) | On for 0.5 s | FEED SL | Original feed solenoid (OFSOL) | On and off | REVPRS SL | Switchback pressure solenoid (SBPSOL) | On and off |
| Display | Motors, clutches and solenoids | Operation | | | | | | | | | | | | | | | | | | | | | | | | |
| F MOTOR | Original feed motor (OFM) | In operation | | | | | | | | | | | | | | | | | | | | | | | | |
| C MOTOR | Original paper conveying motor (OCM) | In operation | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED CL | Original feed clutch (OFCL) | On for 0.5 s | | | | | | | | | | | | | | | | | | | | | | | | |
| EJ JCT SL | Eject feedshift solenoid (EFSSOL) | On for 0.5 s | | | | | | | | | | | | | | | | | | | | | | | | |
| REV JCT SL | Switchback feedshift solenoid (SBFSSOL) | On for 0.5 s | | | | | | | | | | | | | | | | | | | | | | | | |
| FEED SL | Original feed solenoid (OFSOL) | On and off | | | | | | | | | | | | | | | | | | | | | | | | |
| REVPRS SL | Switchback pressure solenoid (SBPSOL) | On and off | | | | | | | | | | | | | | | | | | | | | | | | |

3-2-64





| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---------|------------------|----|-----------------|----|---------------|---------|----------|--------|----------------------------|---------|-----------------------------|--------|------------------------------------|--------|--------------------------|-------|--|---------|-------------------------------------|
| U244 | <p>Checking the DF switches</p> <p>Description Displays the status of the respective switches on the SRDF.</p> <p>Purpose To check if respective switches on the SRDF operate correctly.</p> <p>Start</p> <ol style="list-style-type: none"> Press the print key. The screen for selecting an item is displayed. Select the type of switches (SW or VR) to be checked. The screen for executing 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"> 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 colspan="2">-----</td> </tr> <tr> <td>SZ A SW</td> <td>Original size length switch (OSLSW)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> To return to the screen for selecting an item, press the stop/clear key. <p>Method for the volume switch</p> <ol style="list-style-type: none"> Move the original insertion guides to check the detection status of the original size width switch. As shown on the next page, the detected original width is displayed as a numerical value with the decimals omitted. | Display | Type of switches | SW | On/off switches | VR | Volume switch | Display | Switches | SET SW | Original set switch (OSSW) | FEED SW | Original feed switch (OFSW) | REV SW | Original switchback switch (OSBSW) | TMG SW | DF timing switch (DFTSW) | ----- | | SZ A SW | Original size length switch (OSLSW) |
| Display | Type of switches | | | | | | | | | | | | | | | | | | | | |
| SW | On/off switches | | | | | | | | | | | | | | | | | | | | |
| 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) | | | | | | | | | | | | | | | | | | | | |



2A3/4

| Maintenance item No. | Description | |
|----------------------|---|---|
| U244 | Numerical value | Original width to be detected |
| | 000 ⋮ 49.664 ⋮ 50.176 ⋮ 61.440 ⋮ 61.952 ⋮ 103.936 ⋮ 104.448 ⋮ 139.264 ⋮ 139.776 ⋮ 146.432 ⋮ 146.994 ⋮ 197.120 ⋮ 197.632 ⋮ 197.720 ⋮ 223.232 ⋮ 256 | <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;"> <p>A5R</p> </div> <div style="margin-bottom: 20px;"> <p>B5R</p> </div> <div style="margin-bottom: 20px;"> <p>Folio/A4R</p> </div> <div style="margin-bottom: 20px;"> <p>B4/B5</p> </div> <div style="margin-bottom: 20px;"> <p>CF (11" x 15")</p> </div> <div> <p>A3/A4</p> </div> </div> <div style="margin-left: 20px; margin-top: 20px;"> <p>5 1/2" x 8 1/2"</p> <p>8 1/2" x 14"/ 8 1/2" x 11"</p> <p>11" x 17"/ 11" x 15"/ 11" x 8 1/2"</p> </div> |
| | <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> | |

3-2-66





| 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 print key. ② Change the screen using the Up/Down keys to display each message one at a time. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| U247 | <p>Checking the operation of the large paper deck and paper feed desk</p> <p>Description Turns on motors and clutches of the large paper deck*¹ or the upper and lower drawers of the optional paper feed desk*². *1: 42 ppm: optional/52 ppm: standard. *2: Optional for 42 ppm only.</p> <p>Purpose To check the operation of motors and clutches of the respective paper feed devices.</p> <p>Start</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the paper feed device to be checked. The screen for executing 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;">Paper feed device</th> </tr> </thead> <tbody> <tr> <td>3000 DECK</td> <td>Large paper deck</td> </tr> <tr> <td>500 × 2 DESK</td> <td>Upper and lower drawers of the paper feed desk</td> </tr> </tbody> </table> <p>Method</p> <ol style="list-style-type: none"> ① Press the item to be operated. The selected item is displayed in reverse and operation starts. <ul style="list-style-type: none"> • Large paper deck <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Motors and clutches</th> <th style="text-align: left;">Operation</th> </tr> </thead> <tbody> <tr> <td>LCF MOT</td> <td>Deck paper conveying motor (CM)</td> <td>On for 5 s</td> </tr> <tr> <td>L CL</td> <td>Paper feed clutch 1 (PFCL1)</td> <td>On for 1s</td> </tr> <tr> <td>PCL1</td> <td>Paper conveying clutch (CCL)</td> <td>On for 1s</td> </tr> <tr> <td colspan="3" style="border-top: 1px dashed black;"></td> </tr> <tr> <td>PCL2</td> <td>Paper feed clutch 2 (PFCL2)</td> <td>On for 1s</td> </tr> </tbody> </table> | Display | Paper feed device | 3000 DECK | Large paper deck | 500 × 2 DESK | Upper and lower drawers of the paper feed desk | Display | Motors and clutches | Operation | LCF MOT | Deck paper conveying motor (CM) | On for 5 s | L CL | Paper feed clutch 1 (PFCL1) | On for 1s | PCL1 | Paper conveying clutch (CCL) | On for 1s | | | | PCL2 | Paper feed clutch 2 (PFCL2) | On for 1s |
| Display | Paper feed device | | | | | | | | | | | | | | | | | | | | | | | | |
| 3000 DECK | Large paper deck | | | | | | | | | | | | | | | | | | | | | | | | |
| 500 × 2 DESK | Upper and lower drawers of the paper feed desk | | | | | | | | | | | | | | | | | | | | | | | | |
| Display | Motors and clutches | Operation | | | | | | | | | | | | | | | | | | | | | | | |
| LCF MOT | Deck paper conveying motor (CM) | On for 5 s | | | | | | | | | | | | | | | | | | | | | | | |
| L CL | Paper feed clutch 1 (PFCL1) | On for 1s | | | | | | | | | | | | | | | | | | | | | | | |
| PCL1 | Paper conveying clutch (CCL) | On for 1s | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCL2 | Paper feed clutch 2 (PFCL2) | On for 1s | | | | | | | | | | | | | | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | |
|----------------------|---|------------|---------------------|-----------|----------|------------------------|------------|---------|-------------------------|------------|--------|--|-----------|--------|--|-----------|
| U247 | <ul style="list-style-type: none"> Upper and lower drawers of the paper feed desk <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Motors and clutches</th> <th style="text-align: left;">Operation</th> </tr> </thead> <tbody> <tr> <td>DESK MOT</td> <td>Desk drive motor (DDM)</td> <td>On for 5 s</td> </tr> <tr> <td>FEED CL</td> <td>Desk feed clutch (DFCL)</td> <td>On for 1 s</td> </tr> <tr> <td>UPP CL</td> <td>Upper desk paper feed clutch (DPFCL-U)</td> <td>On for 1s</td> </tr> <tr> <td>LOW CL</td> <td>Lower desk paper feed clutch (DPFCL-L)</td> <td>On for 1s</td> </tr> </tbody> </table> <p>② To return to the screen for selecting an item, press the stop/clear key.</p> <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p> | Display | Motors and clutches | Operation | DESK MOT | Desk drive motor (DDM) | On for 5 s | FEED CL | Desk feed clutch (DFCL) | On for 1 s | UPP CL | Upper desk paper feed clutch (DPFCL-U) | On for 1s | LOW CL | Lower desk paper feed clutch (DPFCL-L) | On for 1s |
| Display | Motors and clutches | Operation | | | | | | | | | | | | | | |
| DESK MOT | Desk drive motor (DDM) | On for 5 s | | | | | | | | | | | | | | |
| FEED CL | Desk feed clutch (DFCL) | On for 1 s | | | | | | | | | | | | | | |
| UPP CL | Upper desk paper feed clutch (DPFCL-U) | On for 1s | | | | | | | | | | | | | | |
| LOW CL | Lower desk paper feed clutch (DPFCL-L) | On for 1s | | | | | | | | | | | | | | |
| U248 | <p>Setting the paper eject device</p> <p>Description Adjusts the amount of slack in the paper for the optional finisher in punch mode when it is attached. Also sets the punch limit and displays and clears the punch-hole scrap count. Adjusts the booklet stapling position for each paper size when the optional booklet stitcher is attached.</p> <p>Purpose</p> <ul style="list-style-type: none"> Adjustment of the amount of slack in the paper in punch mode Adjusts the amount of slack in the paper while in the punch section if, in punch mode, paper jams or is Z-folded frequently due to too much slack in the paper, or, the position of punch holes varies due to too little slack in the paper. Punch limit setting Sets the punch limit to notify the user of the time to collect punch-hole scrap. Punch-hole scrap count display (clearing) Used to manually clear the punch-hole scrap count if a message requiring collection of punch-hole scrap is shown on the touch panel after collection. If punch-hole scrap is collected with the copier power turned off, the punch-hole scrap count is not cleared and consequently this problem occurs. Booklet stapling position adjustment Adjusts the booklet stapling position in the stitching mode if the position is not proper. | | | | | | | | | | | | | | | |

3-2-68



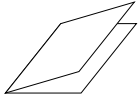
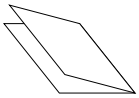
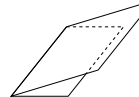
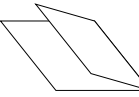
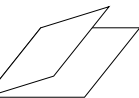
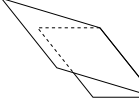
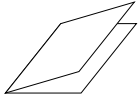
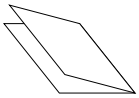
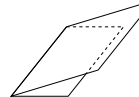
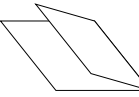
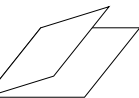
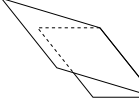
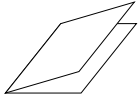
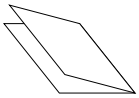
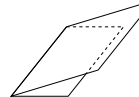
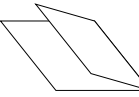
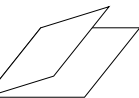
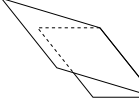


| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|--|-----------------|-----------------|--------------|--|-------------|------------------------------------|---------------|--------------------------------------|-------------|---------------|-----------------|------------------------------|------------|---|---------|-------------|---------------|-----------------|-------------|--|-------------|-------|-----------|---|-------------|---|
| U248 | <p>Start</p> <p>Press the print 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>PUNCH TIMING</td> <td>Adjustment of the amount of slack in the paper in punch mode</td> </tr> <tr> <td>PUNCH LIMIT</td> <td>Punch limit/punch-hole scrap count</td> </tr> <tr> <td>SADDLE ADJUST</td> <td>Booklet stapling position adjustment</td> </tr> </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 Up/Down 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>Amount of slack in the paper</td> <td>-15 to +15</td> <td>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 1.25 mm.</p> <ol style="list-style-type: none"> ③ Press the print key. The value is set. ④ To return to the screen for selecting an item, press the stop/clear key. <p>Setting the punch limit or displaying the punch-hole scrap count</p> <ol style="list-style-type: none"> ① Select PUNCH LIMIT on the screen for selecting an item. ② Select the item to be set. ③ Change the setting using the numeric keys or the Up/Down keys. <p>To clear the punch-hole scrap count, press the all clear/reset key.</p> <table border="1" style="width: 100%;"> <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>PUNCH LIMIT</td> <td>Punch limit (maximum number of punching times)</td> <td>0 to 999000</td> <td>75000</td> </tr> <tr> <td>PUNCH CNT</td> <td>Punch-hole scrap count (current number of punching times)</td> <td>0 to 999999</td> <td>—</td> </tr> </tbody> </table> <p>PUNCH LIMIT can be changed in increments of 1000 times. When the punch-hole scrap count reaches the punch limit, "Check punch waste tank." is displayed on the touch panel.</p> <ol style="list-style-type: none"> ④ Press the print key. The value is set. ⑤ To return to the screen for selecting an item, press the stop/clear key. | Display | Description | PUNCH TIMING | Adjustment of the amount of slack in the paper in punch mode | PUNCH LIMIT | Punch limit/punch-hole scrap count | SADDLE ADJUST | Booklet stapling position adjustment | Description | Setting range | Initial setting | Amount of slack in the paper | -15 to +15 | 0 | Display | Description | Setting range | Initial setting | PUNCH LIMIT | Punch limit (maximum number of punching times) | 0 to 999000 | 75000 | PUNCH CNT | Punch-hole scrap count (current number of punching times) | 0 to 999999 | — |
| Display | Description | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PUNCH TIMING | Adjustment of the amount of slack in the paper in punch mode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PUNCH LIMIT | Punch limit/punch-hole scrap count | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SADDLE ADJUST | Booklet stapling position adjustment | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description | Setting range | Initial setting | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amount of slack in the paper | -15 to +15 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Display | Description | Setting range | Initial setting | | | | | | | | | | | | | | | | | | | | | | | | |
| PUNCH LIMIT | Punch limit (maximum number of punching times) | 0 to 999000 | 75000 | | | | | | | | | | | | | | | | | | | | | | | | |
| PUNCH CNT | Punch-hole scrap count (current number of punching times) | 0 to 999999 | — | | | | | | | | | | | | | | | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | |
|--|--|----------------------------|-----------------|-------------------------|---------------|----------------|-------------------|--|--|--------|--|--|----------------------------|--|--|----------------------------|
| U248 | Setting the booklet stapling position | | | | | | | | | | | | | | | |
| | ① Select SADDLE ADJUST on the screen for selecting an item. ② Select the size to be set. ③ Adjust the preset value using the Up/Down keys. | | | | | | | | | | | | | | | |
| Display | Description | Setting range | Initial setting | Chang in value per step | | | | | | | | | | | | |
| A4R | Adjustment of booklet stapling position for A4R size | -125 to +125 | 0 | 0.25 mm | | | | | | | | | | | | |
| B4R | Adjustment of booklet stapling position for B4R size | -125 to +125 | 0 | 0.25 mm | | | | | | | | | | | | |
| A3R | Adjustment of booklet stapling position for A3R size | -125 to +125 | 0 | 0.25 mm | | | | | | | | | | | | |
| <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Left stapling</th> <th>Right stapling</th> <th>Adjustment method</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>Proper</td> </tr> <tr> <td> Upper side is longer.</td> <td> Lower side is longer.</td> <td>Increase the preset value.</td> </tr> <tr> <td> Lower side is longer.</td> <td> Upper side is longer.</td> <td>Decrease the preset value.</td> </tr> </tbody> </table> | | | | | Left stapling | Right stapling | Adjustment method |  |  | Proper |  Upper side is longer. |  Lower side is longer. | Increase the preset value. |  Lower side is longer. |  Upper side is longer. | Decrease the preset value. |
| Left stapling | Right stapling | Adjustment method | | | | | | | | | | | | | | |
|  |  | Proper | | | | | | | | | | | | | | |
|  Upper side is longer. |  Lower side is longer. | Increase the preset value. | | | | | | | | | | | | | | |
|  Lower side is longer. |  Upper side is longer. | Decrease the preset value. | | | | | | | | | | | | | | |
| ④ Press the print key. The value is set. ⑤ To return to the screen for selecting an item, press the stop/clear key. | | | | | | | | | | | | | | | | |
| Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed. | | | | | | | | | | | | | | | | |

3-2-70





2AD-1

2A3/4

| Maintenance item No. | Description | | | | | | | | |
|----------------------|---|-----------------|--------------------------|-----------------|--------------------------|-------------------|----------|-----|---------------|
| U250 | <p>Setting the maintenance cycle</p> <p>Description Displays and changes the maintenance cycle.</p> <p>Purpose To check and change the maintenance cycle.</p> <p>Method Press the print key. The current setting is displayed as follows: Maintenance cycle (number of copies) = setting × 1000</p> <p>Setting ① Change the setting using the Up/Down keys.</p> <table 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> <th style="text-align: center;">Change in value per step</th> </tr> </thead> <tbody> <tr> <td>Maintenance cycle</td> <td>0 to 600</td> <td>150</td> <td>1000 (copies)</td> </tr> </tbody> </table> <p>For example, when set to 120, the maintenance cycle is set to 120000. Pressing the Up key when set to 600 rolls over the setting to 0.</p> <p>② Press the start key. The value is set , and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting an item is displayed.</p> | Description | Setting range | Initial setting | Change in value per step | Maintenance cycle | 0 to 600 | 150 | 1000 (copies) |
| Description | Setting range | Initial setting | Change in value per step | | | | | | |
| Maintenance cycle | 0 to 600 | 150 | 1000 (copies) | | | | | | |
| U251 | <p>Checking/clearing the maintenance count</p> <p>Description Displays, clears and changes the maintenance count.</p> <p>Purpose To check the maintenance count. Also to clear the count during maintenance service.</p> <p>Method Press the print key. The maintenance count is displayed.</p> <p>Clearing ① Press CLEAR on the touch panel. ② Press the print key. The count is set, and the screen for selecting a maintenance item is displayed.</p> <p>Setting ① Enter a six-digit count using the numeric key. ② Press the print key. The count is set , and the screen for selecting a maintenance item is displayed.</p> <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for entering a maintenance item No. is displayed.</p> | | | | | | | | |

3-2-71



2A3/4

| Maintenance item No. | Description | | | | | | | | | | |
|-----------------------------|--|--------------|--------------|------------------------------------|-------------------------------|------|---------------------|---------------|--------------------------------|--------------|--------------------------------------|
| U252 | <p>Setting the destination</p> <p>Description Switches the operations and screens of machines according to the respective destinations.</p> <p>Purpose To be executed after replacing the backup RAM on the main PCB or initializing the backup RAM by running maintenance item U020, in order to return the setting to the value before replacement or initialization.</p> <p>Method Press the print key. The screen for entering an item is displayed.</p> <p>Setting</p> <p>① Select the destination. The selected item is displayed in reverse.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>JAPAN METRIC</td> <td>Metric (Japan) specifications</td> </tr> <tr> <td>INCH</td> <td>Inch 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> <p>② Press the print key. The value is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for entering a maintenance item No. is displayed.</p> <p>Supplement The specified initial settings are provided according to the destinations in the maintenance items below. To change the initial settings in those items, be sure to run maintenance item U021 after changing the destination.</p> <ul style="list-style-type: none"> • Initial setting according to the destinations | Display | Description | JAPAN METRIC | Metric (Japan) specifications | INCH | Inch specifications | EUROPE METRIC | Metric (Europe) specifications | ASIA PACIFIC | Metric (Asia Pacific) specifications |
| Display | Description | | | | | | | | | | |
| JAPAN METRIC | Metric (Japan) specifications | | | | | | | | | | |
| INCH | Inch specifications | | | | | | | | | | |
| EUROPE METRIC | Metric (Europe) specifications | | | | | | | | | | |
| ASIA PACIFIC | Metric (Asia Pacific) specifications | | | | | | | | | | |
| Maintenance item No. | Title | Japan | Inch | Europe Metric, Asia Pacific | | | | | | | |
| 198 | Setting the fixing phase control | ON | OFF | ON | | | | | | | |
| 253 | Switching between double and single counts | SINGLE COUNT | DOUBLE COUNT | DOUBLE COUNT | | | | | | | |
| 255 | Setting auto clear time | 120 s | 90 s | 90 s | | | | | | | |
| 347 | Setting auto drawer size detection | ON | ON | OFF | | | | | | | |
| 348 | Setting copy density adjustment range | NORMAL | SPECIAL AREA | SPECIAL AREA | | | | | | | |

3-2-72





| Maintenance item No. | Description | | | | | | |
|----------------------|---|---------|-------------|--------------|--|--------------|---------------------------------|
| U253 | <p>Switching between double and single counts</p> <p>Description Switches the count system for the total count and other counts.</p> <p>Purpose According to user (copy service provider) request, select if A3/11" x 17" paper is to be counted as one sheet (single count) or two sheets (double count).</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select double or single count.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DOUBLE COUNT</td> <td>Double count for A3/11" x 17" paper only</td> </tr> <tr> <td>SINGLE COUNT</td> <td>Single count for all size paper</td> </tr> </tbody> </table> <p>Initial setting: DOUBLE COUNT</p> <p>② Press the print key. The value is set, and the screen for selecting a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | DOUBLE COUNT | Double count for A3/11" x 17" paper only | SINGLE COUNT | Single count for all size paper |
| Display | Description | | | | | | |
| DOUBLE COUNT | Double count for A3/11" x 17" paper only | | | | | | |
| SINGLE COUNT | Single count for all size paper | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|----|------------------------|-----|-------------------------|
| U254 | <p>Turning auto start function on/off</p> <p>Description Selects if the auto start function is turned on.</p> <p>Purpose Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem.</p> <p>Method Press the start key. The screen for entering an item is displayed.</p> <p>Setting</p> <p>① Select either ON or OFF. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Auto start function on</td> </tr> <tr> <td>OFF</td> <td>Auto start function off</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <p>② Press the print key. The setting is set. The screen for selecting a maintenance item is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | ON | Auto start function on | OFF | Auto start function off |
| Display | Description | | | | | | |
| ON | Auto start function on | | | | | | |
| OFF | Auto start function off | | | | | | |

3-2-74





| Maintenance item No. | Description | | | | | | |
|----------------------|--|-----------------|---------------|-----------------|-----------------|----------|----|
| U255 | <p>Setting auto clear time</p> <p>Description Sets the time to return to initial settings after copying is complete.</p> <p>Purpose To be set according to frequency of use. Set to a comparatively long time for continuous copying at the same settings, and a comparatively short time for frequent copying at various settings.</p> <p>Method Press the print key. The value is set. Current settings are displayed.</p> <p>Setting</p> <p>① Change the setting using the Up/Down key.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Auto clear time</td> <td>0 to 270</td> <td>90</td> </tr> </tbody> </table> <p>The setting can be changed by 30 s per step. Pressing the Up key when set to 270 rolls over the setting to 0.</p> <p>When set to 0, the auto clear function is cancelled.</p> <p>② Press the print key. The value is set. The screen for selecting a maintenance item is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop clear key. The screen for selecting a maintenance item No. is displayed.</p> | Description | Setting range | Initial setting | Auto clear time | 0 to 270 | 90 |
| Description | Setting range | Initial setting | | | | | |
| Auto clear time | 0 to 270 | 90 | | | | | |



2A3/4

| 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 print key. The setting is set. 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"> <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> <p>② Press the print key. The setting is set. The screen for selecting a maintenance item is displayed.</p> <p>When change from OFF to ON, the initial value of 15 min. is set.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop clear key. The screen for selecting a maintenance item No. is displayed.</p> | Display | Description | ON | Auto preheat/energy saver function on | OFF | Auto preheat/energy saver function off |
| Display | Description | | | | | | |
| ON | Auto preheat/energy saver function on | | | | | | |
| OFF | Auto preheat/energy saver function off | | | | | | |

3-2-76





| Maintenance item No. | Description | | | | | | |
|--|---|-----------------|---------------|-----------------|--|-------------------|--|
| U258 | <p>Switching copy operation at toner empty detection</p> <p>Description Selects if continuous copying is enabled after toner empty is detected, and sets the number of copies that can be made after the detection.</p> <p>Method Press the print key. The current setting is displayed.</p> <p>Setting</p> <p>① Select single or continuous copying. The selected item is displayed in reverse.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SINGLE MODE</td> <td>Enables only single copying.</td> </tr> <tr> <td>CONTINUE MODE</td> <td>Enables single and continuous copying.</td> </tr> </tbody> </table> <p>Initial setting: SINGLE MODE</p> <p>② Set the number of copies that can be made using the Up/Down keys.</p> | Display | Description | SINGLE MODE | Enables only single copying. | CONTINUE MODE | Enables single and continuous copying. |
| Display | Description | | | | | | |
| SINGLE MODE | Enables only single copying. | | | | | | |
| CONTINUE MODE | Enables single and continuous copying. | | | | | | |
| | <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial setting</th> </tr> </thead> <tbody> <tr> <td>Number of copies after toner empty detection</td> <td>0 to 200 (copies)</td> <td>0</td> </tr> </tbody> </table> | Description | Setting range | Initial setting | Number of copies after toner empty detection | 0 to 200 (copies) | 0 |
| Description | Setting range | Initial setting | | | | | |
| Number of copies after toner empty detection | 0 to 200 (copies) | 0 | | | | | |
| | <p>The setting can be changed by 5 copies per step.</p> <p>When set to 0, the number of copies is not limited regardless of the setting for single or continuous copying.</p> <p>③ Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|------------|-----------------------------------|------------|----------------------------|
| U260 | <p>Changing the copy count timing</p> <p>Description Changes the copy count timing for the total counter and other counters.</p> <p>Purpose To be set according to user (copy service provider) request.</p> <p>If a paper jam occurs frequently in the finisher when the number of copies is counted at the time of paper ejection, copies are provided without copy counts. The copy service provider cannot charge for such copying. To prevent this, the copy timing should be made earlier.</p> <p>If a paper jam occurs frequently in the paper conveying or fixing sections when the number of copies is counted before the paper reaches those sections, copying is charged without a copy being made. To prevent this, the copy timing should be made later.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the copy count timing.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COUNT:FEED</td> <td>When secondary paper feed starts.</td> </tr> <tr> <td>COUNT:EJEC</td> <td>When the paper is ejected.</td> </tr> </tbody> </table> <p>Initial setting: EJECT</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | COUNT:FEED | When secondary paper feed starts. | COUNT:EJEC | When the paper is ejected. |
| Display | Description | | | | | | |
| COUNT:FEED | When secondary paper feed starts. | | | | | | |
| COUNT:EJEC | When the paper is ejected. | | | | | | |

3-2-78





| Maintenance item No. | Description | | | | | | | | |
|----------------------|--|---------|-------------|--------------------|---------------------|-----------------|------------------------------------|------------------|------------------------------------|
| U263 | <p>Setting DF copy ejection orientation</p> <p>Description Sets the copy paper ejection orientation in DF copying.</p> <p>Purpose To set face up ejection to eject the same order as the originals when using special papers such as tracing paper and film as copy medium.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select an ejection orientation.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FACE-DOWN (NORMAL)</td> <td>Face down ejection.</td> </tr> <tr> <td>FACE-UP (SPEED)</td> <td>Face up ejection with bitmap copy.</td> </tr> <tr> <td>FACE-UP (MEMORY)</td> <td>Face up ejection with memory copy.</td> </tr> </tbody> </table> <p>Initial setting: Face down</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | FACE-DOWN (NORMAL) | Face down ejection. | FACE-UP (SPEED) | Face up ejection with bitmap copy. | FACE-UP (MEMORY) | Face up ejection with memory copy. |
| Display | Description | | | | | | | | |
| FACE-DOWN (NORMAL) | Face down ejection. | | | | | | | | |
| FACE-UP (SPEED) | Face up ejection with bitmap copy. | | | | | | | | |
| FACE-UP (MEMORY) | Face up ejection with memory copy. | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | |
|----------------------|--|---------|-------------|-----------------|--------------------|-----------------|--------------------|-----------------|--------------------|
| U264 | <p>Setting date display order</p> <p>Description Sets the order of year, month, and day for output on a list and the like.</p> <p>Purpose Selects the order according to user request.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the order of display.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</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: inch: Month - day - year metric: Day - month - year</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | YEAR-MONTH-DATE | Year - month - day | MONTH-DATE-YEAR | Month - day - year | DATE-MONTH-YEAR | Day - month - year |
| Display | Description | | | | | | | | |
| YEAR-MONTH-DATE | Year - month - day | | | | | | | | |
| MONTH-DATE-YEAR | Month - day - year | | | | | | | | |
| DATE-MONTH-YEAR | Day - month - year | | | | | | | | |
| U265 | <p>Setting OEM purchaser code</p> <p>Description Sets the OEM purchaser code.</p> <p>Purpose Sets the code when replacing the main PCB and the like.</p> <p>Method Press the print key.</p> <p>Setting</p> <p>① Use the numeric keys or Up/Down keys to adjust the preset value.</p> <p>② Press the print key. The count is set , and the screen for selecting a maintenance item is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | | | | | | | | |

3-2-80





| Maintenance item No. | Description | | | | | | |
|--|--|---------------|---------------|---------------|--|-------------------|-----|
| U330 | <p>Sets the number of copies for switching the copy eject tray in the finisher</p> <p>Description Sets the number of copies at which the copy eject tray will switch from the sub tray to the main tray.</p> <p>Purpose Selects the value according to user request.</p> <p>Method Press the print key. The screen for adjustment is displayed.</p> <p>Setting</p> <p>① Use the numeric keys or Up/Down keys to adjust the preset value.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Initial value</th> </tr> </thead> <tbody> <tr> <td>Number of copies to be ejected on the sub tray</td> <td>1 to 100 (sheets)</td> <td>100</td> </tr> </tbody> </table> <p>The copy eject tray is switched from the sub tray to the main tray when the number of copies ejected to the sub tray exceeds the preset value.</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Description | Setting range | Initial value | Number of copies to be ejected on the sub tray | 1 to 100 (sheets) | 100 |
| Description | Setting range | Initial value | | | | | |
| Number of copies to be ejected on the sub tray | 1 to 100 (sheets) | 100 | | | | | |



2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|----------|---------------------------------------|----------|---------------------------------------|
| U333 | <p>Setting the number of digits of ID-code</p> <p>Description Sets the number of digits of ID-code.</p> <p>Purpose Sets the number of digits according to user request.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select the number of digits.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>4 digits</td> <td>The number of digits of ID-code is 4.</td> </tr> <tr> <td>7 digits</td> <td>The number of digits of ID-code is 7.</td> </tr> </tbody> </table> <p>Initial setting: 4 digits</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | 4 digits | The number of digits of ID-code is 4. | 7 digits | The number of digits of ID-code is 7. |
| Display | Description | | | | | | |
| 4 digits | The number of digits of ID-code is 4. | | | | | | |
| 7 digits | The number of digits of ID-code is 7. | | | | | | |

3-2-82





| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|-------|---|-------|--|
| U334 | <p>Setting the ejection method in the booklet stitcher</p> <p>Description Sets whether or not the eject bin in use is switched to the other bin when the bin in use in the booklet stitcher overflows.</p> <p>Purpose Sets the value to 1 BIN to use one bin only for copying and the other bin only for printing.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select an ejection method.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>2 BIN</td> <td>The eject bin is switched when a bin overflows.</td> </tr> <tr> <td>1 BIN</td> <td>The eject bin is not switched even when a bin overflows.</td> </tr> </tbody> </table> <p>Initial setting: 2 BIN</p> <p>② Press the print key. The setting is set , and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | 2 BIN | The eject bin is switched when a bin overflows. | 1 BIN | The eject bin is not switched even when a bin overflows. |
| Display | Description | | | | | | |
| 2 BIN | The eject bin is switched when a bin overflows. | | | | | | |
| 1 BIN | The eject bin is not switched even when a bin overflows. | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|----|-------------|-----|--------------|
| U343 | <p>Switching between duplex/simplex copy mode</p> <p>Description Switches the initial setting between duplex and simplex copy.</p> <p>Purpose To be set according to frequency of use: set to the more frequently used mode.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select ON or OFF.</p> <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> <p>② Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | ON | Duplex copy | OFF | Simplex copy |
| Display | Description | | | | | | |
| ON | Duplex copy | | | | | | |
| OFF | Simplex copy | | | | | | |

3-2-84





| Maintenance item No. | Description | | | | | | | | | | |
|----------------------|---|---------|-------------------------|---------------|--|-------------|--|--------|--|-------------|-----------------------------------|
| U344 | <p>Setting preheat/energy saver mode</p> <p>Description Changes the control mode for preheat/energy saver, and sets the silent mode (low noise mode).</p> <p>Purpose According to user request, selects which has priority, recovery time from preheat or energy saving. Also sets polygon motor noise elimination in preheat.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting ① Select control mode.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Control in preheat mode</th> </tr> </thead> <tbody> <tr> <td>INSTANT READY</td> <td>Without decreasing the fixing control temperature, the display on the operation panel is turned off.</td> </tr> <tr> <td>ENERGY STAR</td> <td>The fixing control temperature is decreased by 30°C/54°F (42 ppm) or 20°C/36°F (52 ppm) and the copier is forcibly stabilized 30 s after exiting preheat mode.</td> </tr> <tr> <td>E 2000</td> <td>The fixing control temperature is decreased by 40°C/72°F (42 ppm) or 20°C/36°F (52 ppm).</td> </tr> <tr> <td>SILENT MDOE</td> <td>ON: Polygon motor off/OFF: Normal</td> </tr> </tbody> </table> <p style="margin-left: 20px;">Initial setting: Energy Star applied</p> <p>③ Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Control in preheat mode | INSTANT READY | Without decreasing the fixing control temperature, the display on the operation panel is turned off. | ENERGY STAR | The fixing control temperature is decreased by 30°C/54°F (42 ppm) or 20°C/36°F (52 ppm) and the copier is forcibly stabilized 30 s after exiting preheat mode. | E 2000 | The fixing control temperature is decreased by 40°C/72°F (42 ppm) or 20°C/36°F (52 ppm). | SILENT MDOE | ON: Polygon motor off/OFF: Normal |
| Display | Control in preheat mode | | | | | | | | | | |
| INSTANT READY | Without decreasing the fixing control temperature, the display on the operation panel is turned off. | | | | | | | | | | |
| ENERGY STAR | The fixing control temperature is decreased by 30°C/54°F (42 ppm) or 20°C/36°F (52 ppm) and the copier is forcibly stabilized 30 s after exiting preheat mode. | | | | | | | | | | |
| E 2000 | The fixing control temperature is decreased by 40°C/72°F (42 ppm) or 20°C/36°F (52 ppm). | | | | | | | | | | |
| SILENT MDOE | ON: Polygon motor off/OFF: Normal | | | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | |
|---|---|-------------|---------------|---|-----------|
| U345 | <p>Setting the value for maintenance due indication</p> <p>Description Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends.</p> <p>When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message is displayed.</p> <p>Purpose To change the time to display the maintenance due indication.</p> <p>Method Press the print key. The current setting is displayed.</p> <p>Setting ① Change the setting using the numeric or Up/Down keys.</p> | | | | |
| | <table border="1"> <thead> <tr> <th>Description</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>Display period for the next maintenance (remaining count before the end of the maintenance cycle)</td> <td>0 to 9999</td> </tr> </tbody> </table> | Description | Setting range | Display period for the next maintenance (remaining count before the end of the maintenance cycle) | 0 to 9999 |
| Description | Setting range | | | | |
| Display period for the next maintenance (remaining count before the end of the maintenance cycle) | 0 to 9999 | | | | |
| | <p>Initial setting: 0</p> <p>② Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | | | | |

3-2-86





| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|----|---|-----|---|
| U347 | <p>Setting auto drawer size detection</p> <p>Description Turning 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 print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select ON or OFF.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>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 for inch and OFF for metric specifications</p> <p>② Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | ON | Detects the paper sizes in the 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. | | | | | | |



2A3/4

| Maintenance item No. | Description | | | | | | |
|----------------------|--|---------|-------------|--------------|-----------------------------|--------|----------|
| U348 | <p>Setting the copy density adjustment range</p> <p>Description Selects the adjustment range for copy density from NORMAL and SPECIAL AREA (for wider range).</p> <p>Purpose To change the setting according to user request. When especially dark or light density is requested, set to SPECIAL AREA.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting ① Select the density range.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SPECIAL AREA</td> <td>25 steps (enlargement mode)</td> </tr> <tr> <td>NORMAL</td> <td>13 steps</td> </tr> </tbody> </table> <p>Initial setting: SPECIAL AREA</p> <p>② Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | SPECIAL AREA | 25 steps (enlargement mode) | NORMAL | 13 steps |
| Display | Description | | | | | | |
| SPECIAL AREA | 25 steps (enlargement mode) | | | | | | |
| NORMAL | 13 steps | | | | | | |

3-2-88





| Maintenance item No. | Description | | | | | | |
|----------------------|---|---------|-------------|----|-------------------------|-----|-----------------------------|
| U350 | <p>Setting the ID-code error output</p> <p>Description Sets whether or not an error report is output when an ID-code error occurs.</p> <p>Purpose According to user request, changes the setting.</p> <p>Method Press the print key. The screen for selecting an item is displayed.</p> <p>Setting</p> <p>① Select ON or OFF. * The selected item is highlighted.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Error report is output.</td> </tr> <tr> <td>OFF</td> <td>Error report is not output.</td> </tr> </tbody> </table> <p>Initial setting: ON</p> <p>② Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | ON | Error report is output. | OFF | Error report is not output. |
| Display | Description | | | | | | |
| ON | Error report is output. | | | | | | |
| OFF | Error report is not output. | | | | | | |
| U402 | <p>Adjusting margins for image printing</p> <p>Adjustment See page 3-3-20.</p> | | | | | | |
| U403 | <p>Adjusting margins for reading an original on the contact glass</p> <p>Adjustment See page 3-3-40.</p> | | | | | | |
| U404 | <p>Adjusting margins for DF original reading</p> <p>Adjustment See page 3-3-100.</p> | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | | | | | | | | | | | | | |
|----------------------|--|---------|----------------------|--------|--------------|-------|---------------------|--------|---------------------|-------|--------------------------------|-------|--------------------------------|-----|--------------------|--------|-------------|
| U901 | <p>Checking/clearing copy counts by paper feed locations</p> <p>Description Displays or clears copy counts by paper feed locations.</p> <p>Purpose To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The counts by paper feed locations are displayed. ② Change the screen using the Up/Down keys. <table border="1"> <thead> <tr> <th>Display</th> <th>Paper feed locations</th> </tr> </thead> <tbody> <tr> <td>BYPASS</td> <td>Bypass table</td> </tr> <tr> <td>FIRST</td> <td>Copier upper drawer</td> </tr> <tr> <td>SECOND</td> <td>Copier lower drawer</td> </tr> <tr> <td>THIRD</td> <td>Paper feed desk*1 upper drawer</td> </tr> <tr> <td>FORTH</td> <td>Paper feed desk*1 lower drawer</td> </tr> <tr> <td>LCF</td> <td>Large paper deck*2</td> </tr> <tr> <td>DUPLEX</td> <td>Duplex unit</td> </tr> </tbody> </table> <p>*1: Optional for 42 ppm only. *2: 42 ppm: optional/52 ppm: standard.</p> <p>When an optional paper feed device is not installed, the corresponding count is not displayed.</p> <p>Clearing</p> <ol style="list-style-type: none"> ① Select the count to be cleared. The selected item is displayed in reverse. To clear the counts for all paper feed locations, press ALL on the touch panel. ② Press the print key. The setting is set, and the screen for entering a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Paper feed locations | BYPASS | Bypass table | FIRST | Copier upper drawer | SECOND | Copier lower drawer | THIRD | Paper feed desk*1 upper drawer | FORTH | Paper feed desk*1 lower drawer | LCF | Large paper deck*2 | DUPLEX | Duplex unit |
| Display | Paper feed locations | | | | | | | | | | | | | | | | |
| BYPASS | Bypass table | | | | | | | | | | | | | | | | |
| FIRST | Copier upper drawer | | | | | | | | | | | | | | | | |
| SECOND | Copier lower drawer | | | | | | | | | | | | | | | | |
| THIRD | Paper feed desk*1 upper drawer | | | | | | | | | | | | | | | | |
| FORTH | Paper feed desk*1 lower drawer | | | | | | | | | | | | | | | | |
| LCF | Large paper deck*2 | | | | | | | | | | | | | | | | |
| DUPLEX | Duplex unit | | | | | | | | | | | | | | | | |

3-2-90





2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U903 | <p>Checking/clearing the paper jam counts</p> <p>Description Displays or clears the jam counts by jam locations.</p> <p>Purpose To check the paper jam status. Also to clear the jam counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none">① Press the print key. The jam count is displayed by jam codes.② Change the screen using the Up/Down keys. <p>Clearing</p> <ol style="list-style-type: none">① Press ALL on the touch panel. Jam counts cannot be cleared individually.② Press the print key. The count is cleared, and the screen for entering a maintenance item No. is displayed. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> |

3-2-91





2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U904 | <p>Checking/clearing the service call counts</p> <p>Description Displays or clears the service call code counts by types.</p> <p>Purpose To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none">① Press the print key. The jam count is displayed by service call codes.② Change the screen using the Up/Down keys. <p>Clearing</p> <ol style="list-style-type: none">① Select the count to be cleared. The selected count is displayed in reverse. To clear all counts, press ALL on the touch panel.② Press the print key. The count is cleared. When all counts are cleared, the screen for entering a maintenance item No. is displayed. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> |

3-2-92





| Maintenance item No. | Description | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---------|-------------|--------|----------------------------|-----|--|------|--|---------|-------------|------------|-------------------------------|--------|--|-------|--|---------|--|--------|---|
| U905 | <p>Checking/clearing counts by optional devices</p> <p>Description Displays or clears the counts by optional devices.</p> <p>Purpose To check the use of the SRDF, finisher and booklet stitcher. Also to clear the counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> ① Press the print key. The screen for selecting an item is displayed. ② Select the device, the count of which is to be checked. The count of the selected device is displayed. <ul style="list-style-type: none"> • SRDF (DF) <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>CHANGE</td> <td>Original replacement count</td> </tr> <tr> <td>ADF</td> <td>No. of single-sided originals that has passed through the DF in ADF mode</td> </tr> <tr> <td>RADF</td> <td>No. of double-side originals that has passed through the DF in RADF mode</td> </tr> </tbody> </table> • Finisher (SORTER) <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COPY COUNT</td> <td>No. of copies that has passed</td> </tr> <tr> <td>STAPLE</td> <td>Frequency the stapler has been activated</td> </tr> <tr> <td>PUNCH</td> <td>Frequency the punch has been activated</td> </tr> <tr> <td>STACKER</td> <td>Frequency the stacker has been activated</td> </tr> <tr> <td>SADDLE</td> <td>Frequency the booklet stitcher has been activated</td> </tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> ① Select the item to be cleared. The selected item is displayed in reverse. ② Press the print key. The count is cleared. ③ To return to the screen for entering an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item is displayed.</p> | Display | Description | CHANGE | Original replacement count | ADF | No. of single-sided originals that has passed through the DF in ADF mode | RADF | No. of double-side originals that has passed through the DF in RADF mode | Display | Description | COPY COUNT | No. of copies that has passed | STAPLE | Frequency the stapler has been activated | PUNCH | Frequency the punch has been activated | STACKER | Frequency the stacker has been activated | SADDLE | Frequency the booklet stitcher has been activated |
| Display | Description | | | | | | | | | | | | | | | | | | | | |
| CHANGE | Original replacement count | | | | | | | | | | | | | | | | | | | | |
| ADF | No. of single-sided originals that has passed through the DF in ADF mode | | | | | | | | | | | | | | | | | | | | |
| RADF | No. of double-side originals that has passed through the DF in RADF mode | | | | | | | | | | | | | | | | | | | | |
| Display | Description | | | | | | | | | | | | | | | | | | | | |
| COPY COUNT | No. of copies that has passed | | | | | | | | | | | | | | | | | | | | |
| STAPLE | Frequency the stapler has been activated | | | | | | | | | | | | | | | | | | | | |
| PUNCH | Frequency the punch has been activated | | | | | | | | | | | | | | | | | | | | |
| STACKER | Frequency the stacker has been activated | | | | | | | | | | | | | | | | | | | | |
| SADDLE | Frequency the booklet stitcher has been activated | | | | | | | | | | | | | | | | | | | | |



2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U906 | <p>Resetting partial operation control</p> <p>Description Resets the service call code for partial operation control.</p> <p>Purpose To be reset after partial operation is performed due to problems in the drawers or other sections below, and the related parts are serviced.</p> <p>The following sections can be the subject of the partial operation: SRDF Large paper deck Copier upper drawer Copier lower drawer Paper feed desk upper drawer Paper feed desk lower drawer Duplex unit Finisher</p> <p>Method</p> <ol style="list-style-type: none">① Press the print key.② Press RESET on the touch panel.③ Press the print key to reset partial operation control. The maintenance mode is exited, and the machine returns to the same status when the main switch is turned on. |

3-2-94





| 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 print key. * The count value on each ejection location is displayed</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>STRAIGHT</td> <td>Straight ejection count</td> </tr> <tr> <td>SWITCH BACK</td> <td>Reversed ejection count</td> </tr> <tr> <td>AUTO DUPLEX</td> <td>Duplex tray ejection count</td> </tr> </tbody> </table> <p>Clearing</p> <p>① Select the item for which the count value is to be reset. * The selected item is highlighted. * To reset the count values for all ejection locations, press ALL on the touch panel.</p> <p>② Press the print key. The count is cleared.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | 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 | | | | | | | | |





2A3/4

| Maintenance item No. | Description | | | | |
|----------------------|---|---------|-------------|-------|-----------------------------------|
| U908 | <p>Checking the count value of the electronic counter</p> <p>Description Displays the count value of the electronic counter.</p> <p>Purpose Checks the value for maintenance work.</p> <p>Method Press the print key. * The count value of the total counter is displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COUNT</td> <td>Count value of electronic counter</td> </tr> </tbody> </table> <p>.Clearing The count value cannot be changed or cleared.</p> <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> | Display | Description | COUNT | Count value of electronic counter |
| Display | Description | | | | |
| COUNT | Count value of electronic counter | | | | |

3-2-96





2A3/4

| Maintenance item No. | Description |
|----------------------|--|
| U990 | <p>Checking/clearing the time for the exposure lamp to light</p> <p>Description Displays, clears or changes the accumulated time for the exposure lamp to light.</p> <p>Purpose To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement.</p> <p>Method Press the print 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 CLEAR on the touch panel.② Press the print 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 print key. The time is set, and the screen for selecting a maintenance item 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 is displayed.</p> |

3-2-97



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| Maintenance item No. | Description |
|----------------------|---|
| U992 | <p>Checking/clearing the printer count</p> <p>Description Displays, clears or changes the print count of the printer when the optional printer unit is installed.</p> <p>Purpose To check the frequency of use of the printer.</p> <p>Method Press the print key. The printer count is displayed.</p> <p>Clearing</p> <ol style="list-style-type: none">① Press CLEAR on the touch panel.② Press the print key. The count is set, and the screen for selecting a maintenance item is displayed. <p>Setting</p> <ol style="list-style-type: none">① Enter a six-digit numerical value using the numeric keys.② Press the print 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 count, press the stop/clear key. The screen for selecting a maintenance item is displayed.</p> |

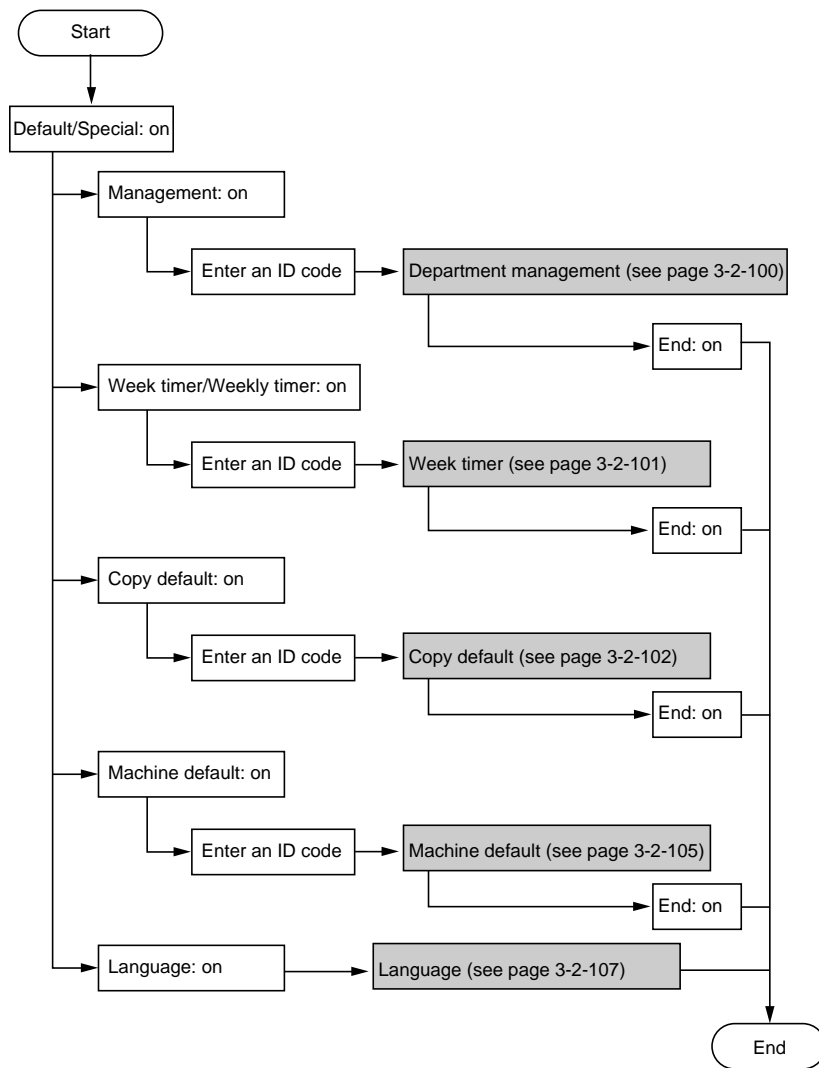
3-2-98



3-2-2 Copier management

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

(1) Executing a copier management item





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(2) Department management

Registering a new department code

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

1. SET CODE: on
2. REGISTER: on
3. Enter a department code using the numeric keys: 7 digits for inch specifications and 4 digits for metric specifications.
4. REGISTER: on
5. Enter the limit using the numeric keys.
Setting range is 1000 to 250000 (in every 1000) copies. Set to 0 for unlimited copies.
6. REGISTER: on
7. END: on
8. END: on

Deleting a department code

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

Altering the copy limit

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

Clearing copy counts

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

Viewing copy counts

1. REFERENCE: on
2. END: on

Printing a copy management report

1. Set A4/8¹/₂" x 11" copy paper.
2. PRINT MANAGEMENT LIST: on

Turning copy management function on/off

1. Select ON or OFF.

3-2-100



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(3) Week timer

Setting the time

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

Programming the week timer

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

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

Canceling the timer function

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

Turning the timer on/off

1. Select ON or OFF.

3-2-101



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(4) Copy default

Exposure mode

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

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

Exposure steps

Sets the exposure steps in manual exposure mode.

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

Toner economy mode

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

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

Auto exposure adjustment

Adjusts the exposure in auto density mode.

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

Manual exposure adjustment.

Adjusts the exposure in manual density mode.

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

Copy quality

Sets the image quality to be selected in initial mode.

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

Output form

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

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

Paper selection

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

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

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**Job programming**

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

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

Default drawer

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

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

Zoom mode

Selects fixed or standard magnifications in reduction/enlargement mode.

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

Copy limit

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

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

Custom size for border erase

Sets the custom size for border erase copying.

1. Display CUSTOM SIZE FOR BORDER ERASE using the Up/Down keys.
2. CHANGE: on
3. Set the paper width by pressing the upper +/- symbols. Setting is available between 94 mm/ $3^{11}/16$ " and 214mm/ $8^{7}/16$ " in 8 mm/ $5}/16$ " steps.
4. Set the paper length by pressing the lower +/- symbols. Setting is available between 60 mm/ $2^{3}/8$ " and 296 mm/ $11^{5}/8$ " in 4 mm/ $2}/16$ ".
5. END: on

Front and back page margin

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

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

Drawer for insert sheet

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

Drawer cover sheet/stitch

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

1. Display DRAWER COVER SHEET using the Up/Down keys.
2. CHANGE: on
3. Select a drawer.



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Rotate sort

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

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

Create shortcut

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

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

Create user choice #1-#5

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

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

3-2-104

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

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

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

APS for special paper

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

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

Auto drawer switching

Sets if the auto drawer switching function is available.

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

Key sound

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

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

Drawer paper size

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

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

Auto preheat time

Sets the auto preheat time.

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

Special paper

Selects the drawer for special paper.

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

Auto shutoff time

Sets the auto shutoff time.

1. Display AUTO SHUT-OFF TIME using the Up/Down keys.
2. Set the time by pressing the +/- symbols. Setting is available between 15 and 270 min. in 15 min. steps.



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Management code change

Changes the management code to be used.

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

Auto shutoff

Sets if the auto shutoff function is available.

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



3-2-106





2A3/4

(6) Language

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

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



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3-3-1 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 .
Never substitute wire for thermostats, as the copier may be seriously damaged.
When installing a thermostat, ensure the correct clearance, if specified, using a thickness gauge.
- Use the following testers when measuring voltages:
 - Hioki 3200
 - Sanwa MD-180C
 - Sanwa YX-360TR
 - Beckman TECH300
 - Beckman DM45
 - Beckman 330 (capable of measuring RMS values)
 - Beckman 3030 (capable of measuring RMS values)
 - Beckman DM850 (capable of measuring RMS values)
 - Fluke 8060A (capable of measuring RMS values)
 - Arlec DMM1050
 - Arlec YF1030C
- Prepare the following as test originals:
 1. NTC (new test chart)
 2. NPTC (newspaper test chart)

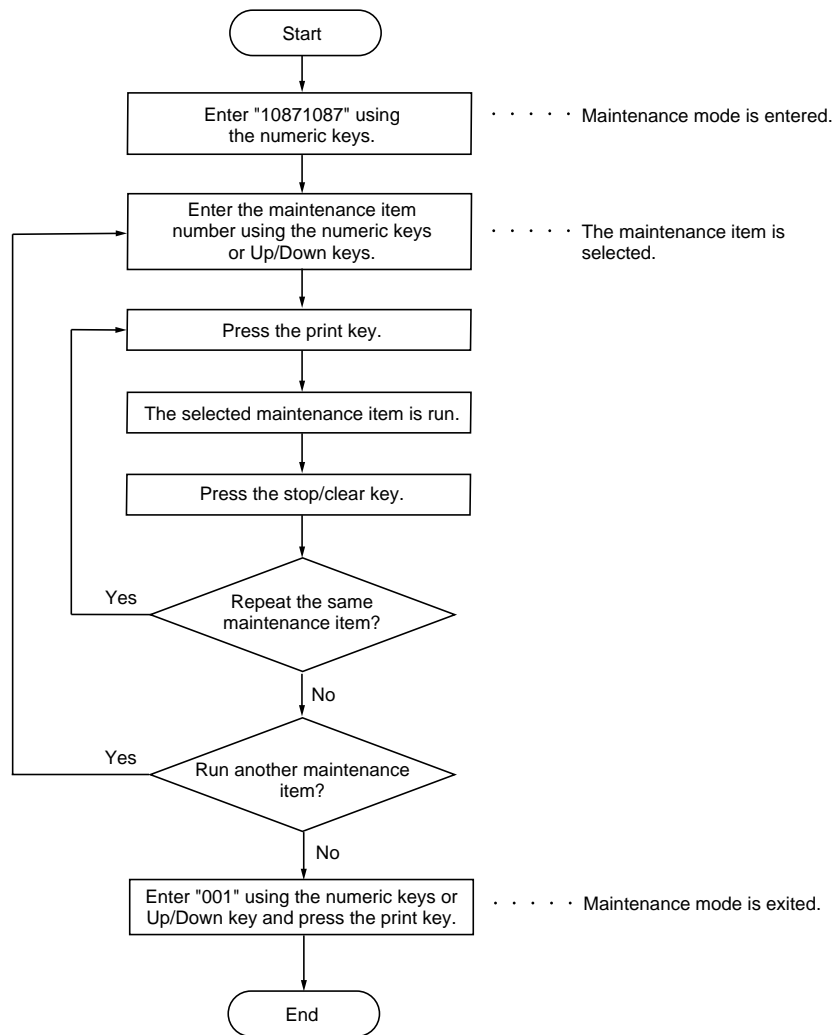
3-3-1





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(2) Running a maintenance item



3-3-2





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3-3-2 Paper feed section

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

Replace the forwarding, upper and lower paper feed pulleys as follows.

<Procedure>

Removing the primary paper feed unit

1. Remove right front lower covers B and A and the right rear lower cover.
2. Open the front cover and the right cover.
3. Open the duplex unit and upper and lower drawer at the same time.
4. Remove the screw holding the primary paper feed unit and then the unit.

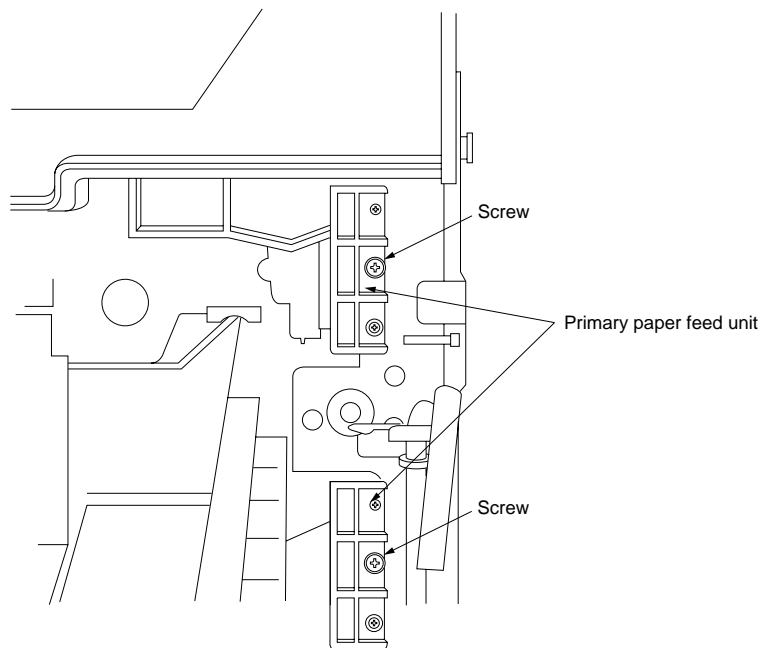


Figure 3-3-1 Detaching the primary paper feed unit

3-3-3





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Removing the forwarding pulley

5. Raise the forwarding pulley retainer in the direction the arrows, and remove it from the primary paper feed unit.

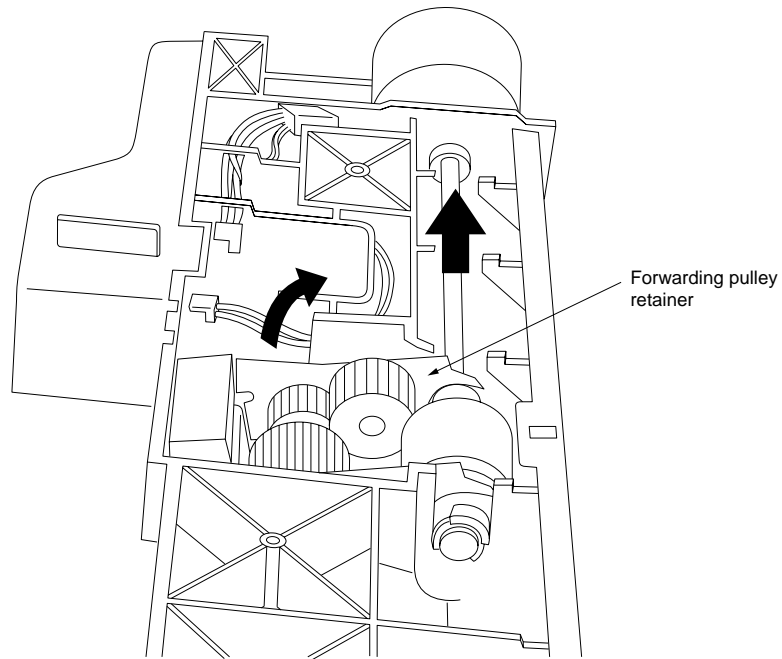


Figure 3-3-2 Detaching the forwarding pulley retainer

3-3-4





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

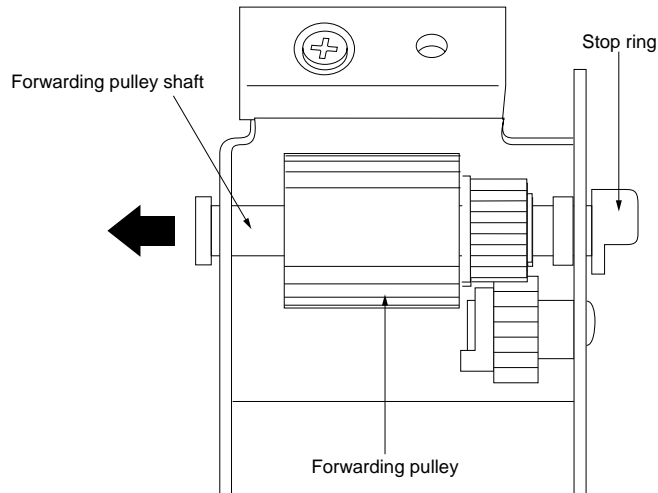


Figure 3-3-3 Detaching the forwarding pulley

Removing the upper paper feed pulley

7. Remove the two stop rings.
8. Remove the paper feed clutch wires from the notches on the rear of the paper feed housing.
9. Pull the upper paper feed shaft toward the rear of the primary paper feed unit (see the arrow below) and remove the upper paper feed pulley.

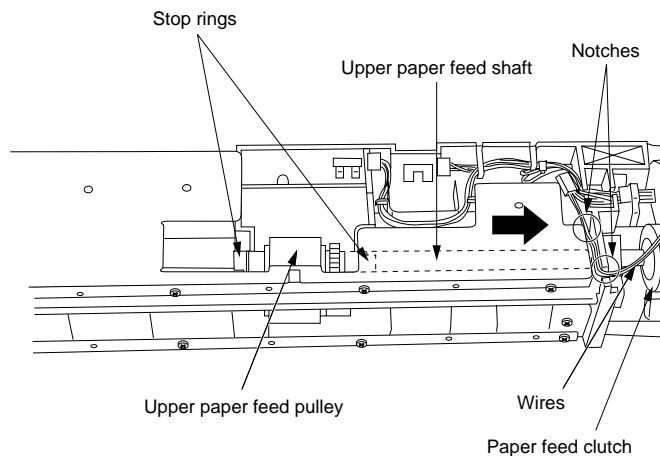


Figure 3-3-4 Detaching the upper paper feed pulley

3-3-5





2A3/4

Removing the lower paper feed pulley

10. Remove the stop ring on the rear of the primary paper feed unit.
11. Pull the lower paper feed shaft to the rear (see the arrow shown below).

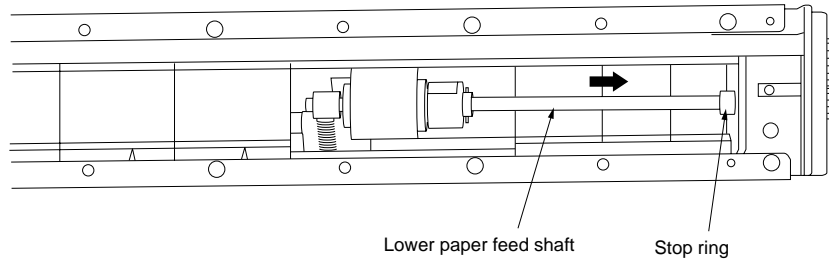


Figure 3-3-5

12. Remove the lower paper feed pulley.

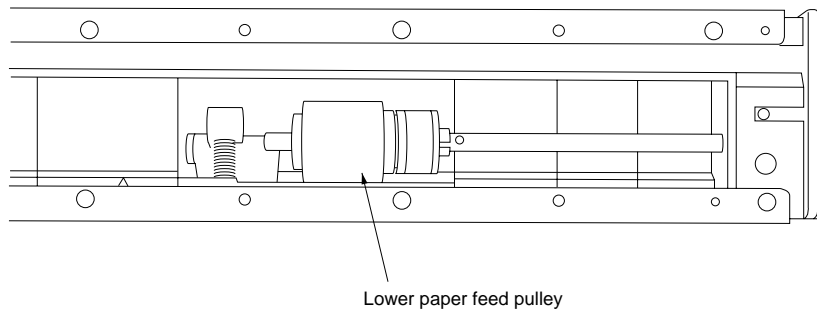


Figure 3-3-6 Detaching the lower paper feed pulley

3-3-6





2A3/4

13. Replace the forwarding pulley and upper and lower paper feed pulleys.
14. Refit all removed parts.

Caution:

- When fitting the forwarding pulley, orient it correctly as shown in Figure 3-3-7.

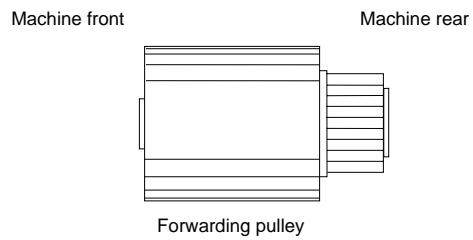


Figure 3-3-7

- When fitting the upper paper feed pulley, keep its blue end toward the machine front.
- After fitting the upper paper feed pulley, refit the wires which were removed in step 8 in the paper feed housing notches.
- When refitting the clutch, be sure to refit the stop.



3-3-7





2A3/4

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

Replace the bypass forwarding, upper and lower paper feed pulleys as follows.

<Procedure>

Removing the bypass paper feed unit

1. Open the right cover and bypass table, and remove right front lower cover B, the right rear lower cover and middle right cover.
2. Detach the connector under the bypass table and then the bypass table.

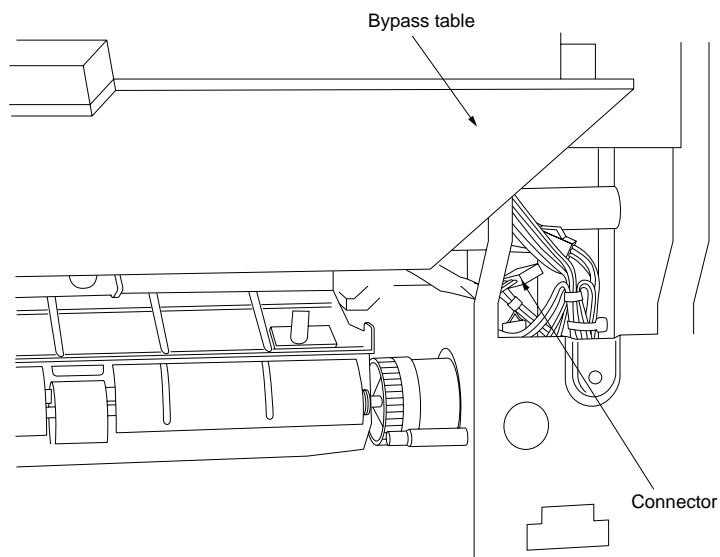


Figure 3-3-8 Detaching the bypass table

3-3-8





2A3/4

3. Remove the connector and four screws holding the bypass paper feed unit, and then the unit.

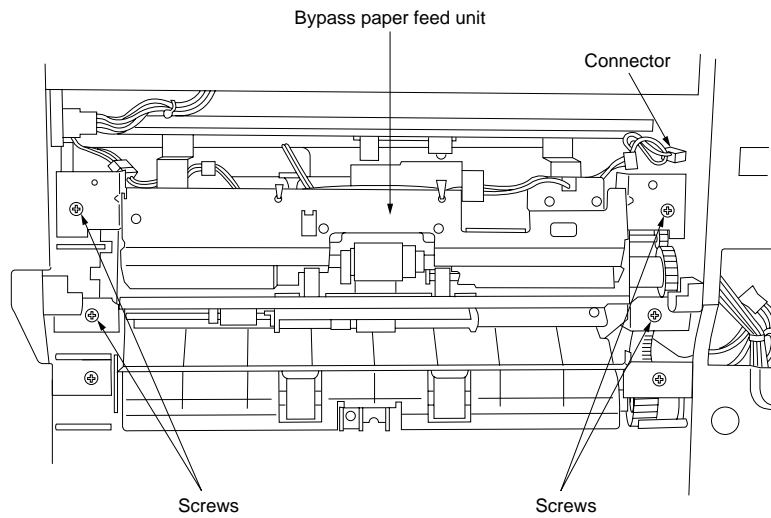


Figure 3-3-9 Detaching the bypass paper feed unit

Removing the bypass forwarding pulley

4. Remove the stop ring at the front of the bypass forwarding pulley retainer.
5. Pull out the bypass forwarding pulley shaft in the direction of the arrow, and remove the bypass forwarding pulley.

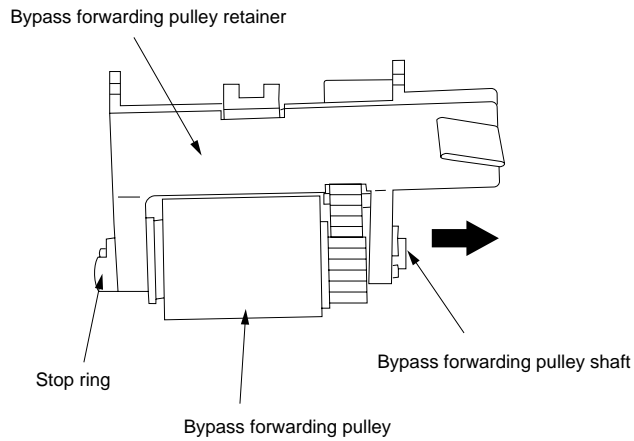


Figure 3-3-10 Detaching the bypass forwarding pulley

3-3-9





2A3/4

Remove the bypass upper paper feed pulley.

6. Remove the spring from the bypass forwarding pulley retainer.

7. Remove the stop ring.

8. Move the bushing in the direction of arrow (A) and remove it from the bypass forwarding pulley retainer.

9. Push the bypass solenoid lever in the direction of arrow (B) and remove the bypass forwarding pulley retainer in the direction of arrow (C).

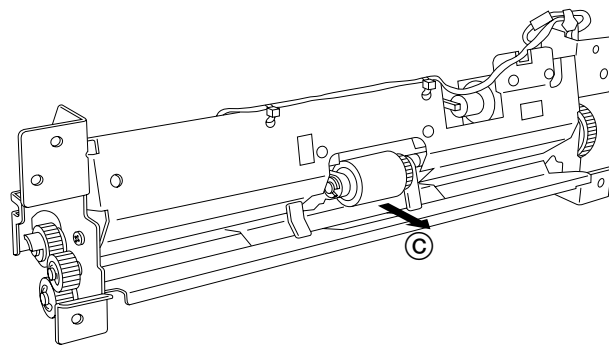
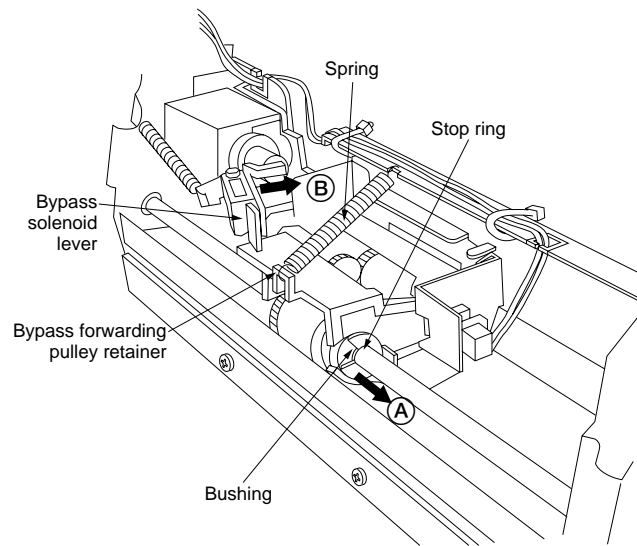


Figure 3-3-11 Detaching the bypass forwarding pulley retainer

3-3-10





2A3/4

10. Remove the stop ring, gear, spring pin and bushing.
11. Slightly move the bypass paper feed shaft in the direction of the arrow and remove the shaft from the bypass front frame.

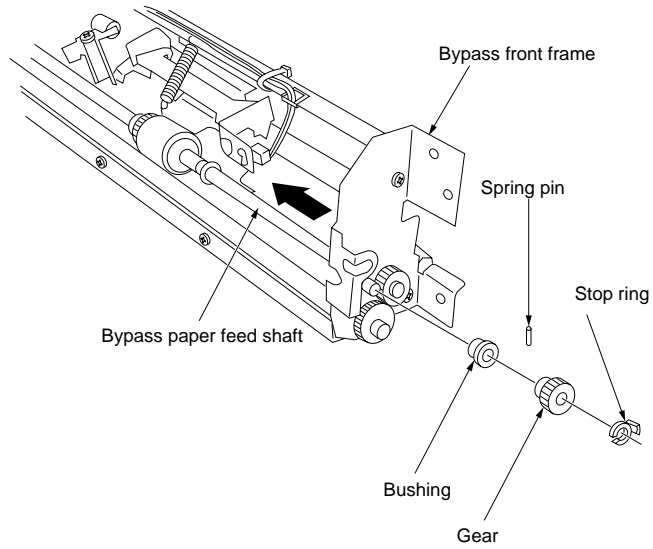


Figure 3-3-12 Detaching the bypass paper feed shaft

3-3-11





2A3/4

12. Remove the bushing and the bypass upper paper feed pulley from the bypass paper feed shaft.

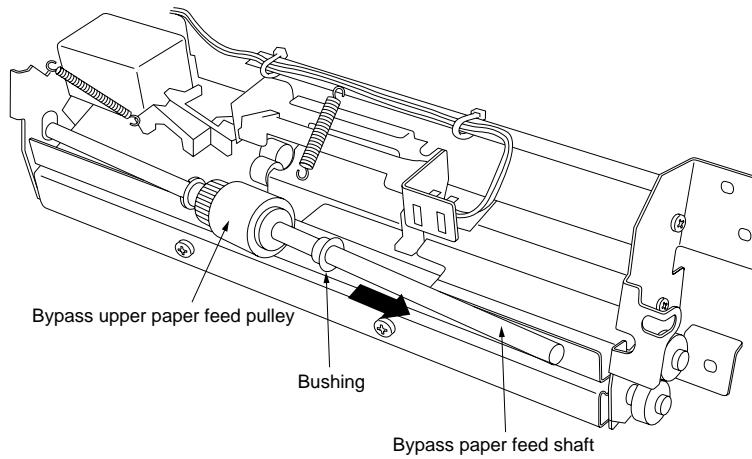


Figure 3-3-13 Detaching the bypass upper paper feed pulley

Removing the bypass lower paper feed pulley

13. Remove the two screws holding the bypass separation retainer and then the retainer.

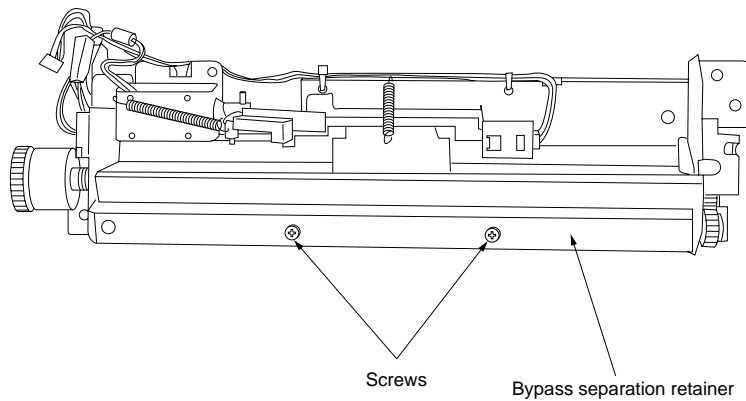


Figure 3-3-14 Detaching the bypass separation retainer

3-3-12





2A3/4

14. Remove the stop ring and pull the joint shaft in the direction of the arrow.

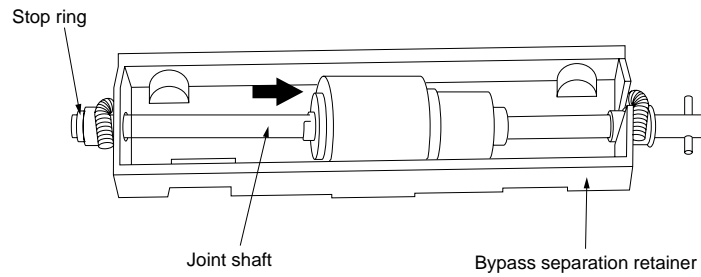


Figure 3-3-15 Detaching the bypass lower paper feed pulley (1)

15. Remove the stop ring and then the bypass lower paper feed pulley.

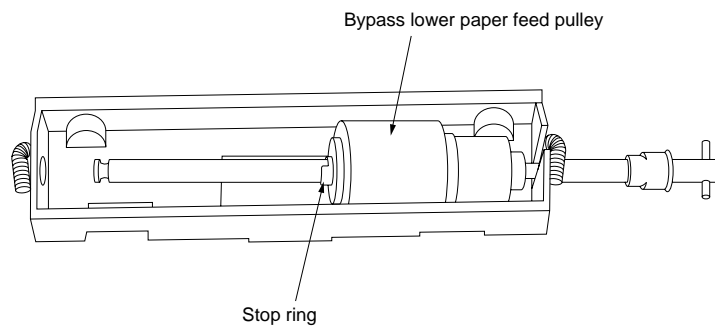


Figure 3-3-16 Detaching the bypass lower paper feed pulley (2)

16. Replace the bypass forwarding, upper and lower paper feed pulleys.
17. Refit all removed parts.

Caution: When refitting the upper paper feed pulley, orient its blue end toward the machine rear.

3-3-13





2A3/4

(3) Replacing the upper and lower paper width switches (Inch models only)

Replace the upper and lower paper width switches as follows.

Caution: After replacing a paper width switch, be sure to perform (5) Adjusting the position of the rack adjuster.

<Procedure>

1. Open the drawer.
2. Remove the four screws and take the drawer out of the machine.

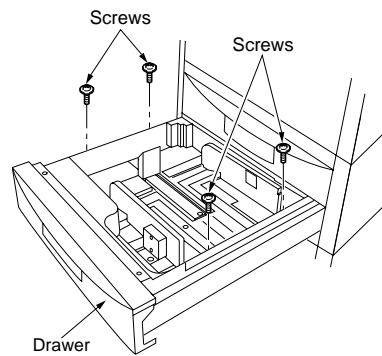


Figure 3-3-17

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

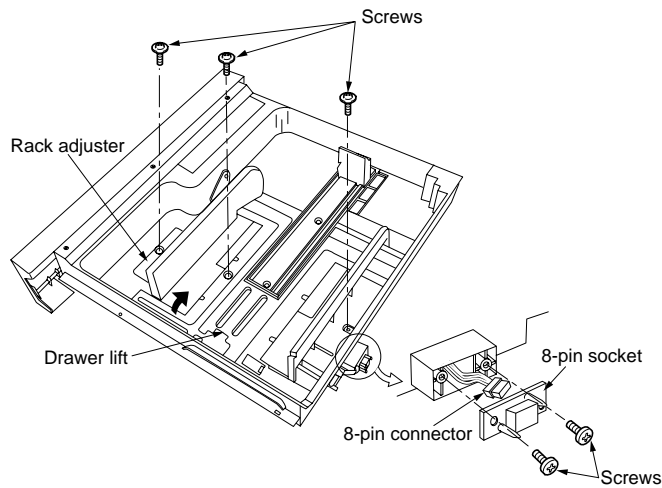


Figure 3-3-18 Detaching the rack adjuster

3-3-14





2A3/4

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

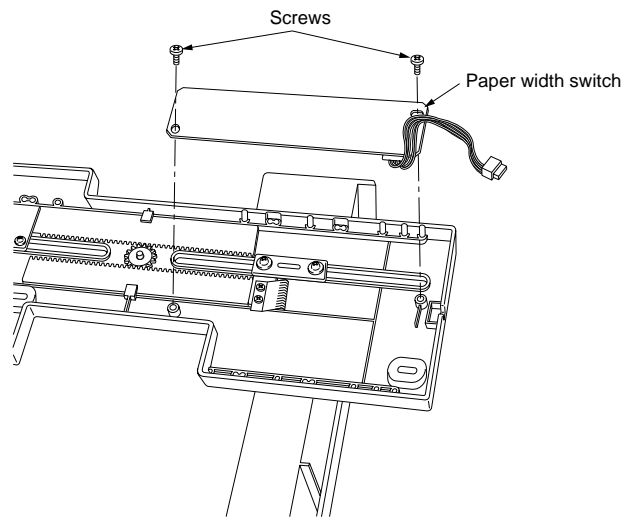


Figure 3-3-19 Detaching the paper width switch

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

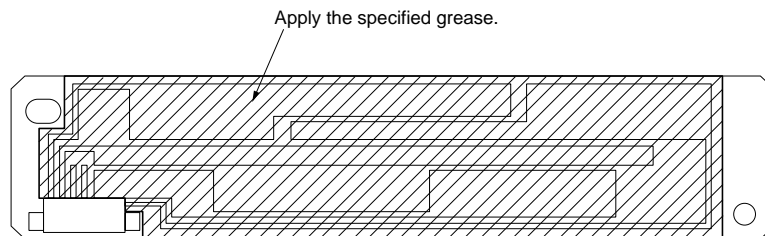


Figure 3-3-20 Paper width switch

9. Refit all removed parts.

3-3-15





2A3/4

(4) Replacing the upper and lower registration cleaner assemblies

Replace the upper and lower registration cleaner assemblies as follows.

<Procedure>

Detaching the upper registration cleaner assembly

1. Open the front cover and pull the image formation unit out.
2. Remove the screw holding the paper feed section knob and then the knob.
3. Remove the screw holding the inner right cover and then the cover.
4. Remove the screw holding the upper registration cleaner assembly. Replace the assembly.
5. Refit all removed parts.

Detaching the lower registration cleaner assembly

1. Open the front cover.
2. Remove the screw holding the lower registration cleaner assembly. Replace the assembly.
3. Refit all removed parts.

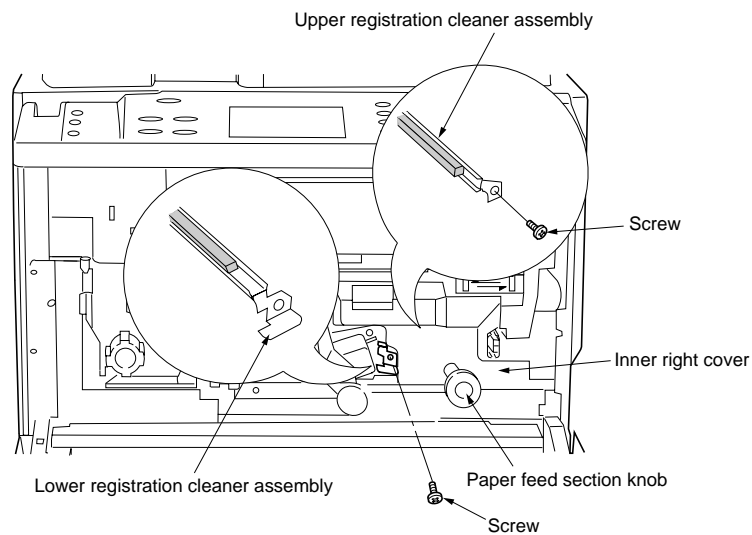


Figure 3-3-21 Replacing the upper and lower registration cleaner assemblies

3-3-16





(5) Adjusting the position of the rack adjuster

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

<Procedure>

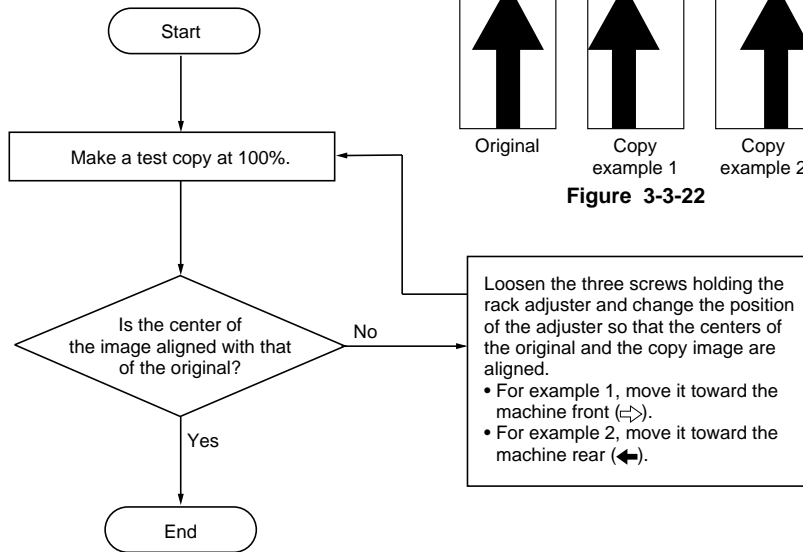


Figure 3-3-22

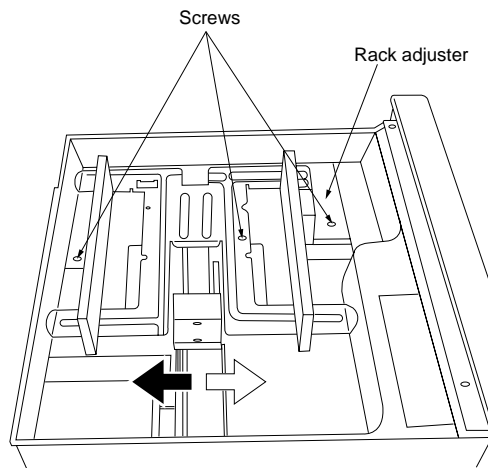


Figure 3-3-23 Adjusting the position of the rack adjuster





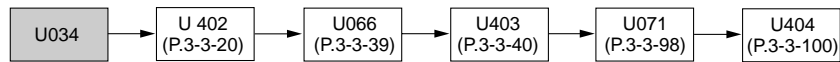
2A3/4

(6) Adjustment after roller and clutch replacement

Perform the following adjustment after refitting rollers and clutches.

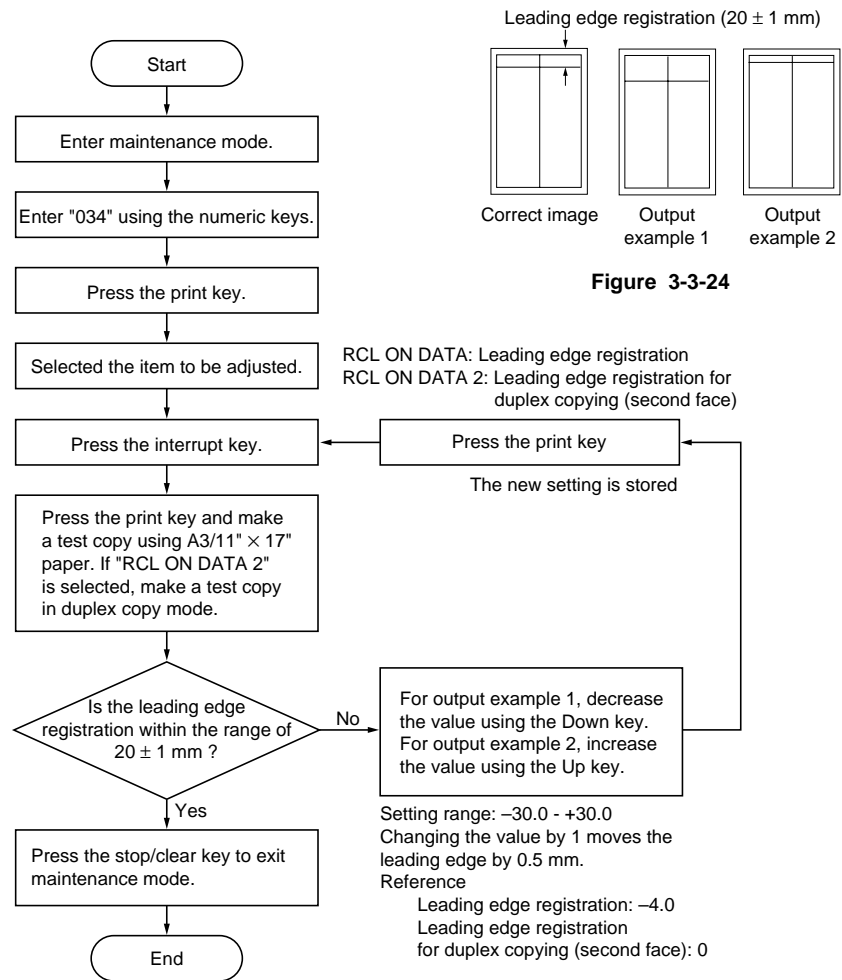
(6-1) Adjusting the leading edge registration

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



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

<Procedure>



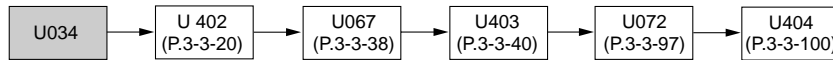
3-3-18





(6-2) 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:

- Perform (5) Adjusting the position of rack adjuster before and after this adjustment.
- Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

<Procedure>

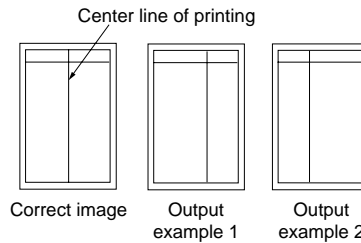
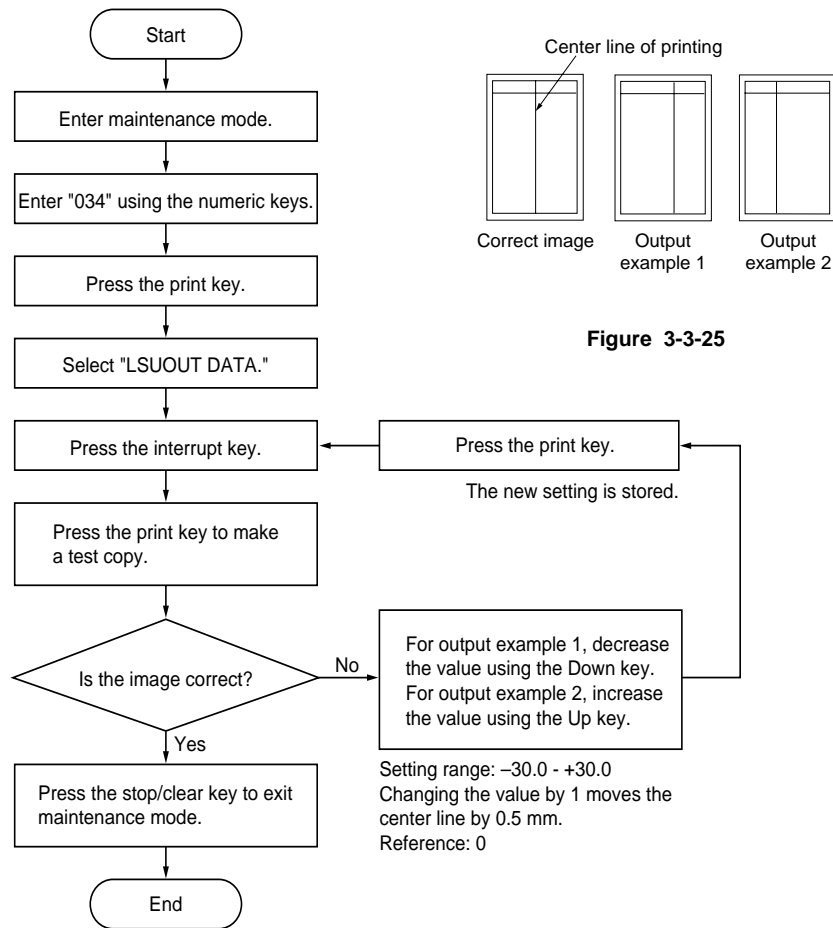


Figure 3-3-25

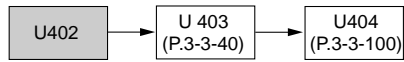




2A3/4

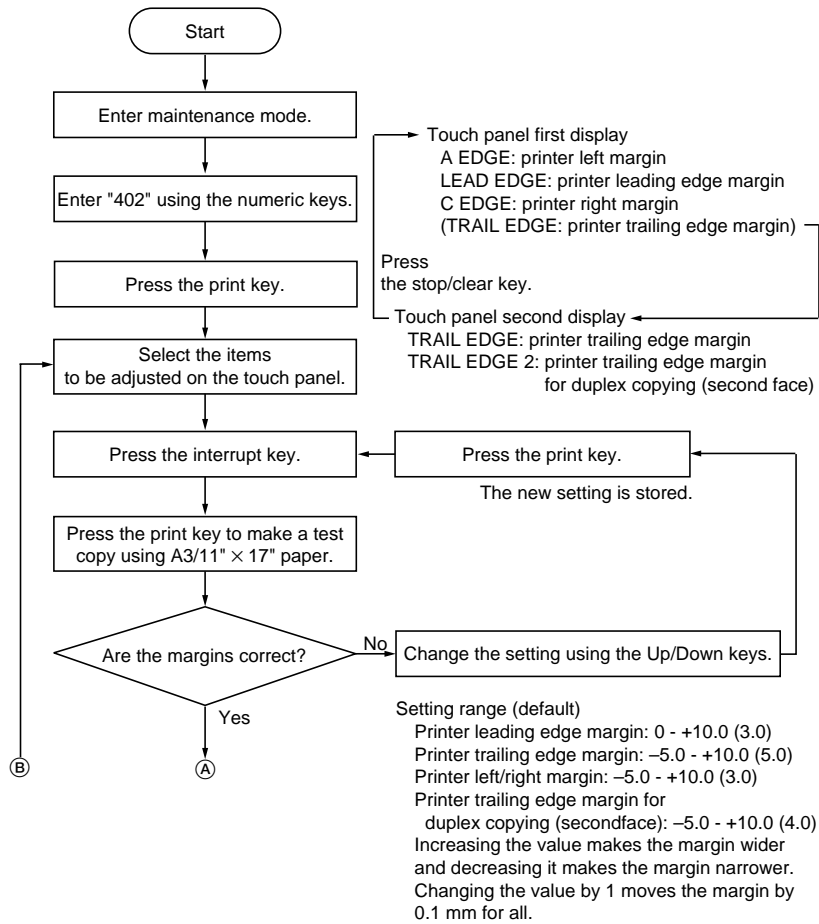
(6-3) Adjusting the margins for printing

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>



3-3-20





2A3/4

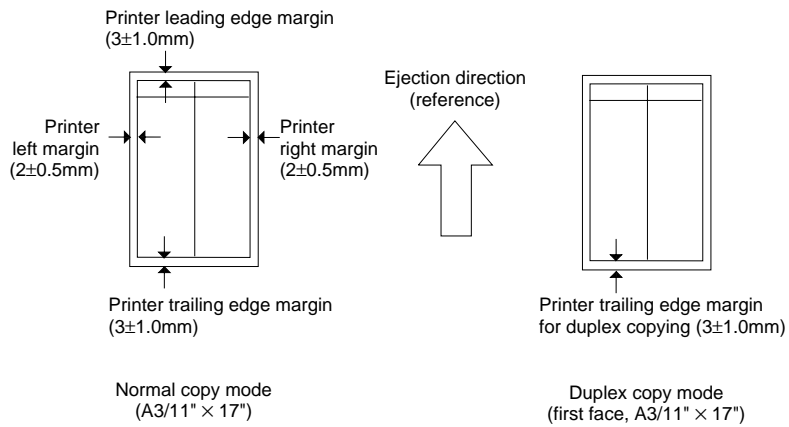
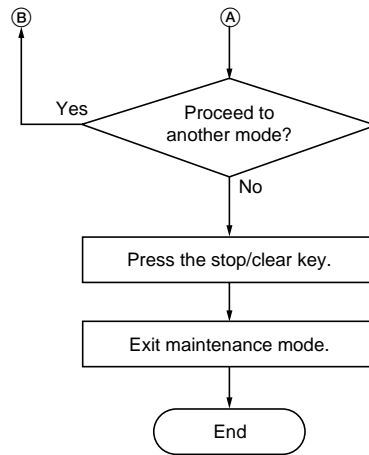


Figure 3-3-26

3-3-21





2A3/4

(6-4) Adjusting the amount of slack in the paper at the registration roller for drawer, bypass and duplex feeds

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

<Procedure>

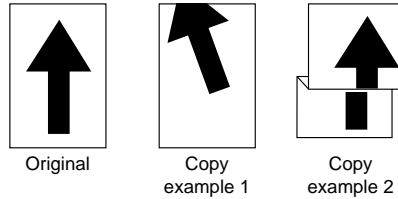
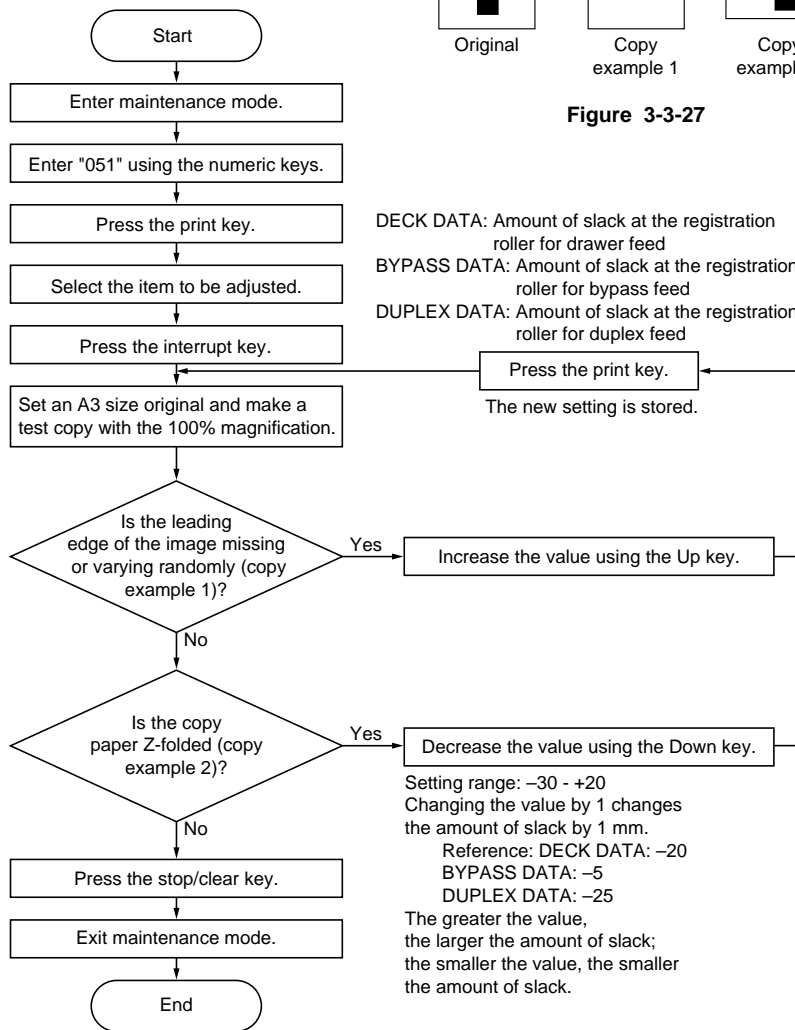


Figure 3-3-27



3-3-22





2A3/4

3-3-3 Optical section

(1) Detaching and refitting the exposure lamp

Clean or replace the exposure lamp as follows.

<Procedure>

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

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

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

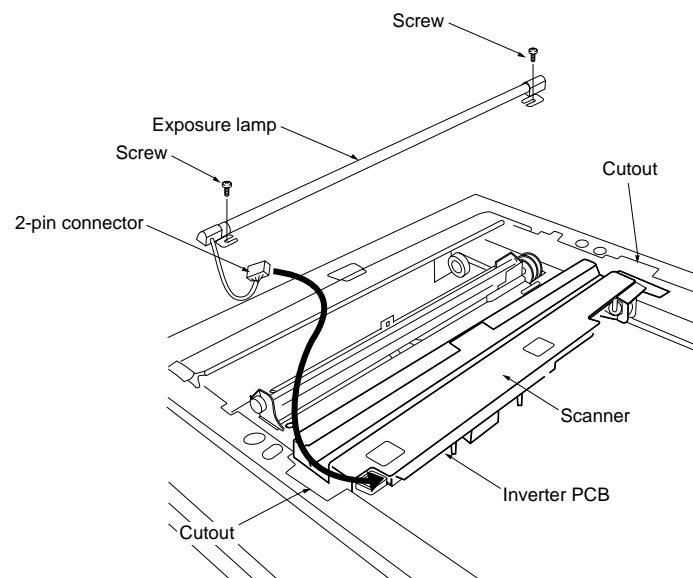


Figure 3-3-28 Detaching the exposure lamp

3-3-23





2A3/4

(2) Detaching and refitting the scanner wires

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

- After replacing the scanner wires, proceed to (5) Adjusting scanner image lateral squareness (reference).

(2-1) Detaching the scanner wires

<Procedure>

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

Caution: Remove the lamp wire completely from the machine.

6. Remove the screws holding the front cover and then the cover.
7. Remove the four screws holding the operation unit lower and inner covers and then the covers.
8. Detach the three connectors and clamp from under the operation unit main PCB.
9. Remove the six screws holding the operation unit and then the unit.
10. Remove the four screws holding the mirror 1 upper frame and then the frame.

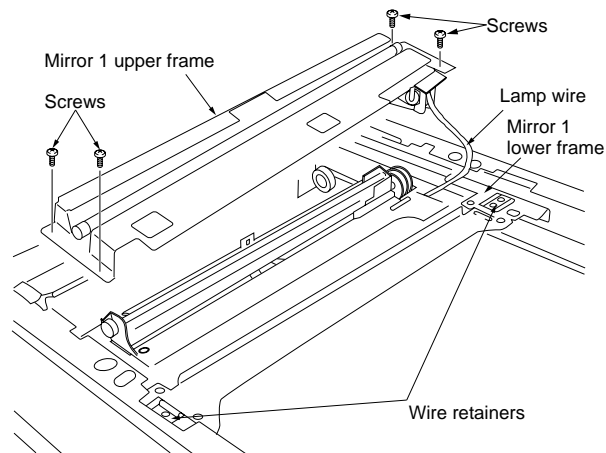


Figure 3-3-29 Detaching the mirror 1 upper frame

11. Remove the two screws from each of the wire retainers and then the retainers from the mirror 1 lower frame.
12. Remove the mirror 1 lower frame from the scanner unit.

3-3-24





2A3/4

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

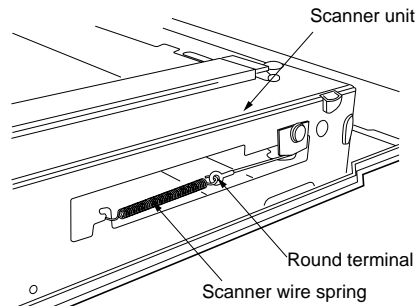


Figure 3-3-30 Detaching the scanner wire

(2-2) Refitting the scanner wires

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

Machine front: 2AC12170

Machine rear: 2AC12420 (black)

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

<Procedure>

At the machine rear:

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

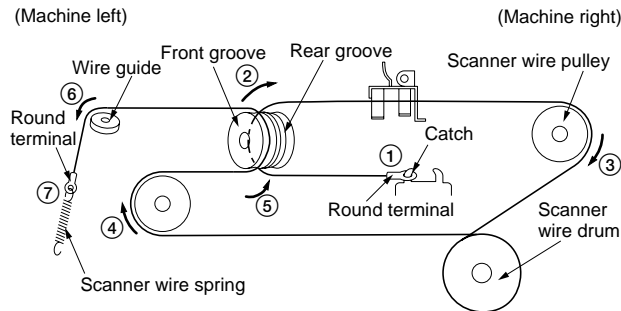


Figure 3-3-31 Refitting the scanner wires

3-3-25





2A3/4

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

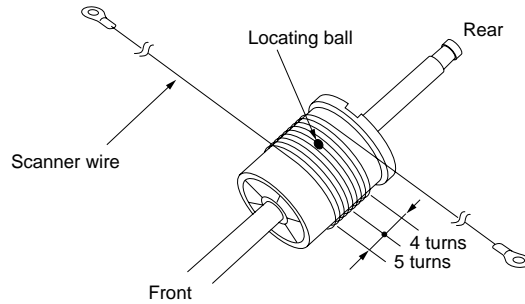


Figure 3-3-32 Winding the scanner wire

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

3-3-26





2A3/4

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.

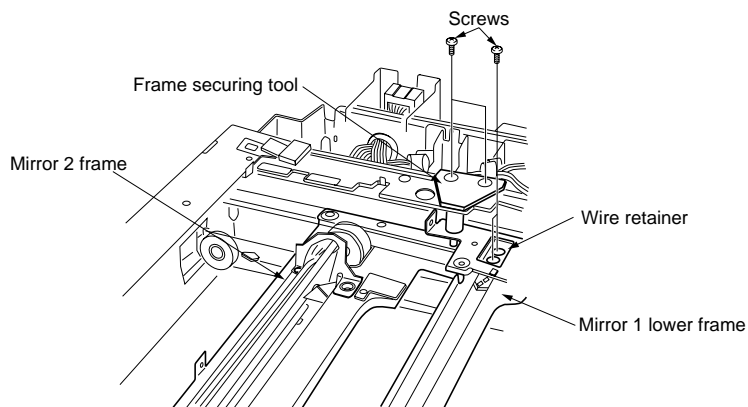
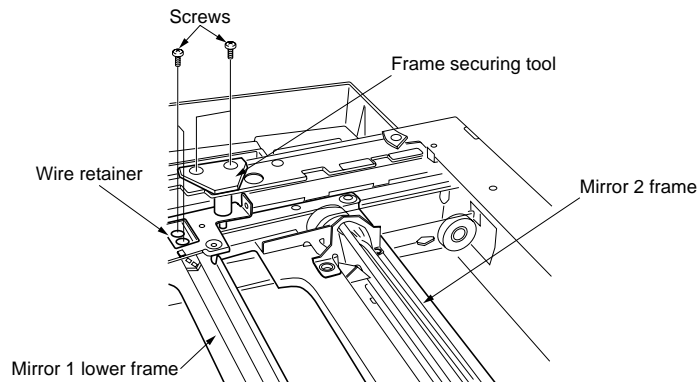


Figure 3-3-33 Securing the scanner wire

21. Retighten the two screws securing the mirror 2 frame.
22. Remove the two screws holding each of the two frame securing tools and then the tools.
23. Refit all removed parts.

3-3-27





2A3/4

(3) Replacing the laser scanner unit

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

Caution: After replacing the laser scanner unit, proceed to (5) Adjusting scanner image lateral squareness (reference).

<Procedure>

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

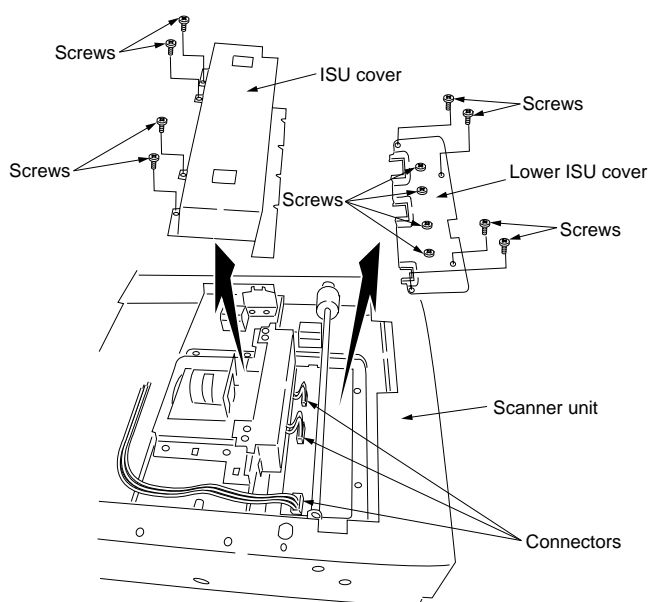


Figure 3-3-34 Detaching the scanner unit

3-3-28





2A3/4

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

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

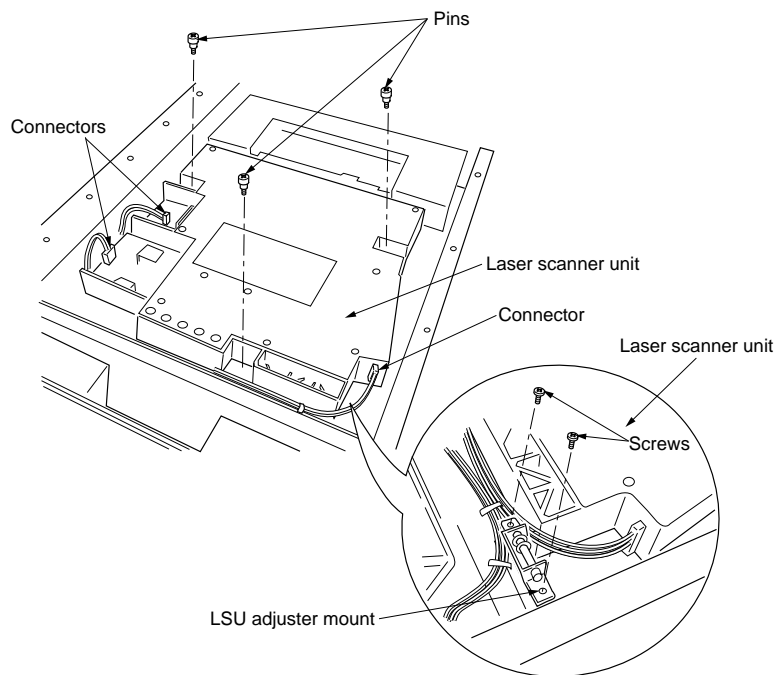


Figure 3-3-35 Replacing the laser scanner unit

3-3-29





2A3/4

(4) Replacing the ISU (reference)

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

Caution: After fitting the ISU, proceed to (5-2) Adjusting the position of the ISU.

<Procedure>

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

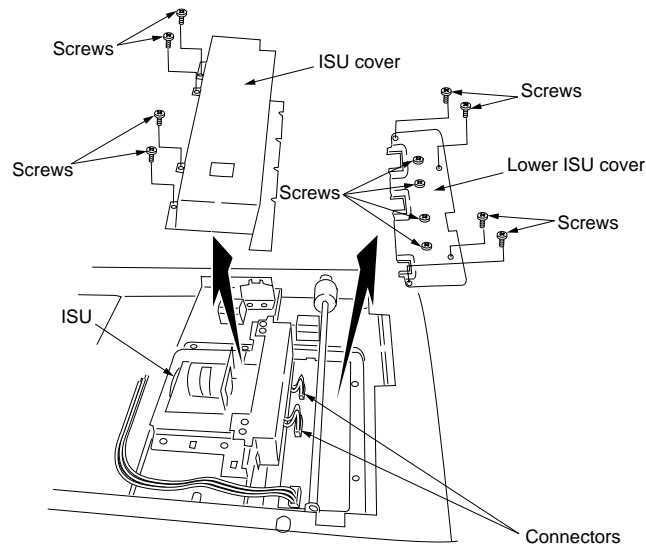


Figure 3-3-36 Detaching the ISU and lower ISU covers

4. Remove the four screws holding the ISU and then the ISU.
5. Check or replace the ISU.
6. Refit all removed parts.

3-3-30





2A3/4

- Securing the ISU

<ISU installation requires the following tools:>
Two (2) positioning pins (P/N 18568120)

<Procedure>

1. Secure the ISU using the two positioning pins.
2. Refit the four screws.
3. Remove the two positioning pins.

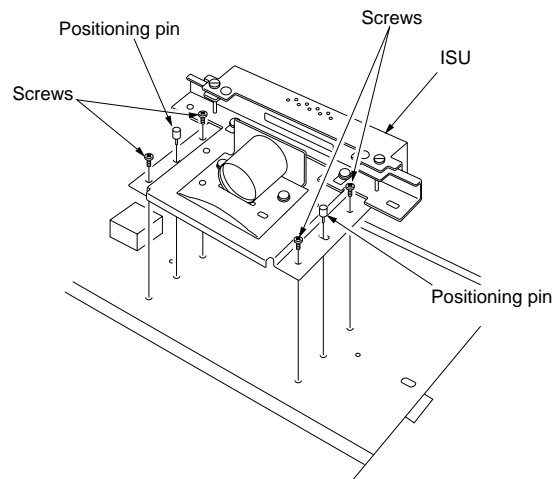


Figure 3-3-37 Installing the ISU

3-3-31





2A3/4

(5) Adjusting the longitudinal squareness (reference)

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

Caution:

- Before making the following adjustment, output a 1 DOT-LINE PG pattern in maintenance item U089 to use as the original for the adjustment.
- Adjust the amount of slack in the paper at the registration roller for drawer, bypass and duplex feeds (page 3-3-22) first. Check for the longitudinal squareness of the copy image, and if it is not obtained, perform the longitudinal squareness adjustment.

<Procedure>

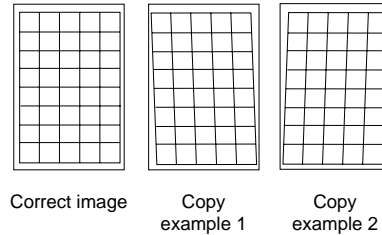
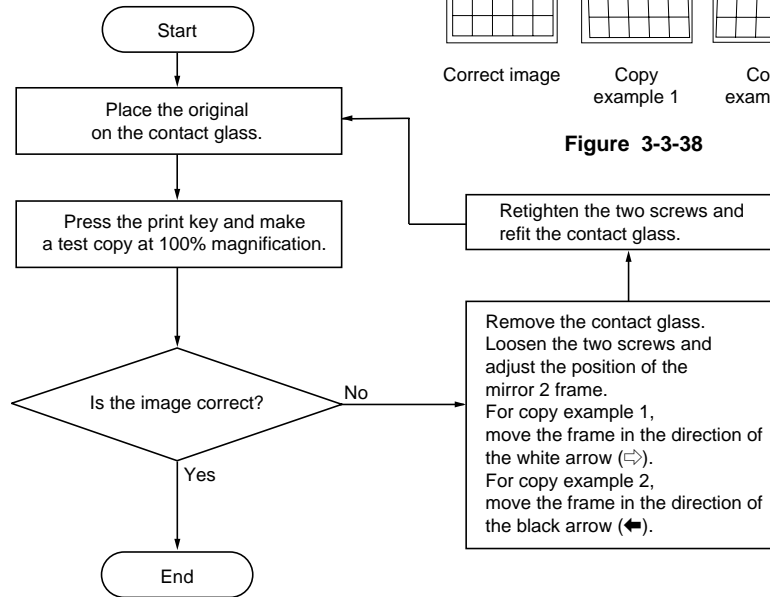


Figure 3-3-38

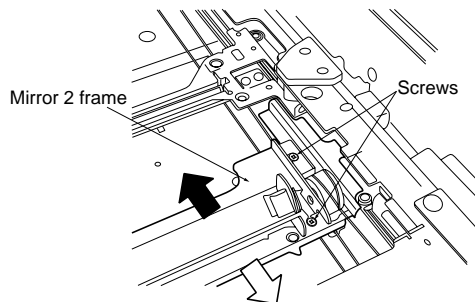


Figure 3-3-39 Adjusting the position of the mirror 2 frame

3-3-32





(6) Adjusting scanner image lateral squareness (reference)

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

Caution:

- Before making the following adjustment, open the front cover and remove the operation unit lower cover.
- Perform (5-1) Adjusting the position of the laser scanner unit first and check for lateral squareness of the copy image. If squareness is not obtained, perform (5-2) Adjusting the position of ISU.

(5-1) Adjusting the position of the laser scanner unit

<Procedure>

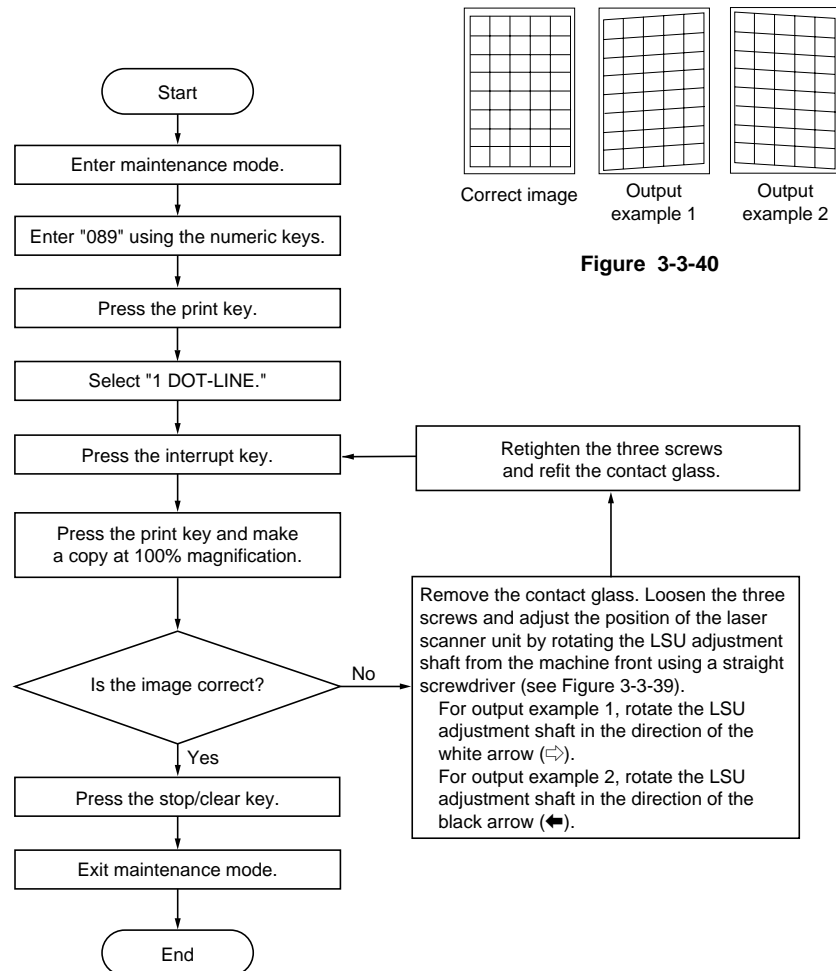


Figure 3-3-40



2A3/4

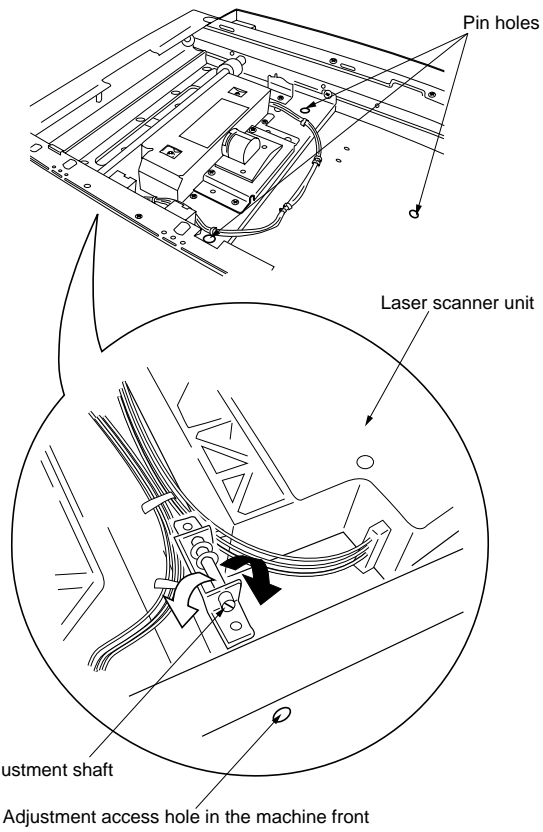


Figure 3-3-41 Adjusting the position of the laser scanner unit

3-3-34





(5-2) Adjusting the position of the ISU

Caution:

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

<Procedure>

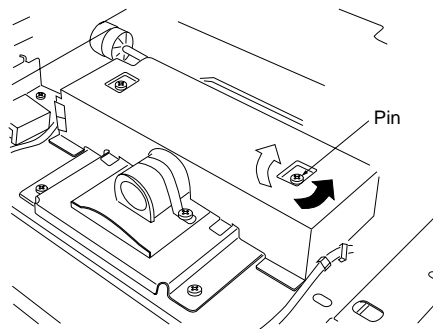
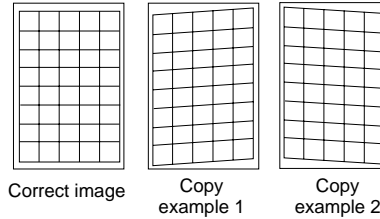
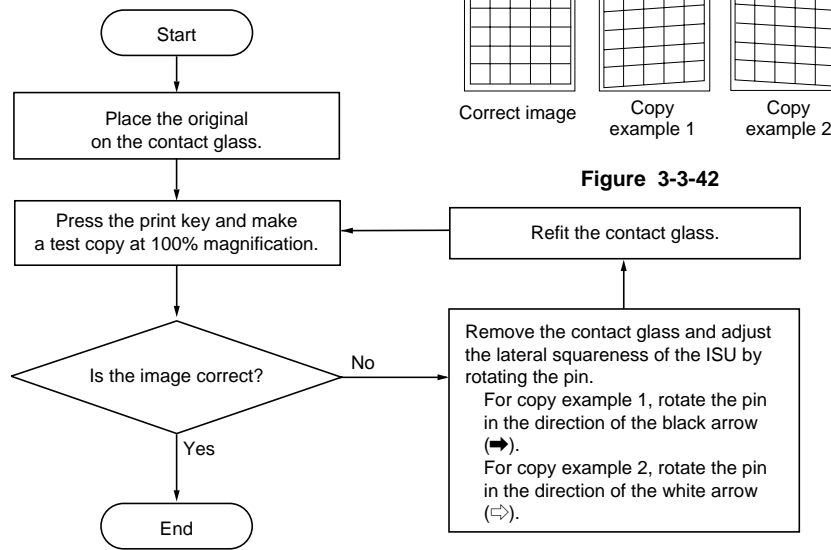


Figure 3-3-43 Adjusting the position of the ISU

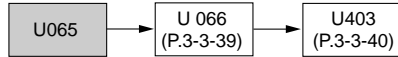




2A3/4

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

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



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

<Procedure>

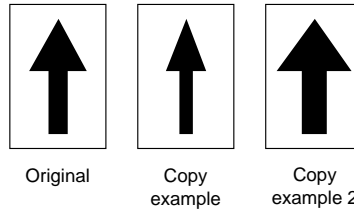
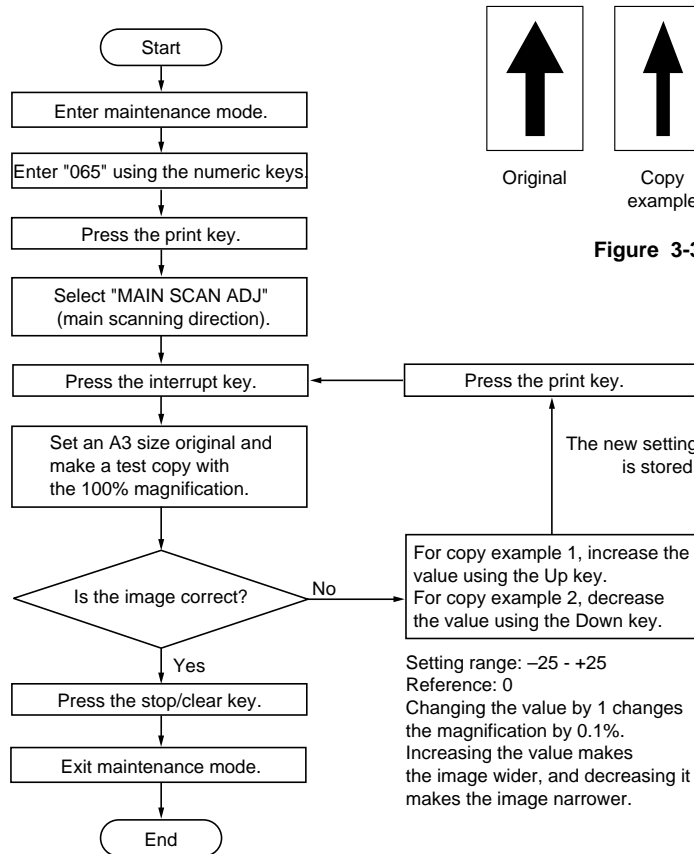


Figure 3-3-44

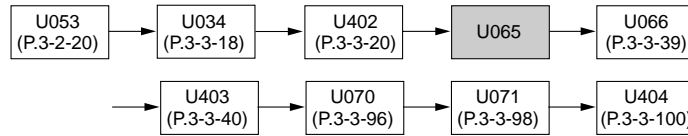
3-3-36





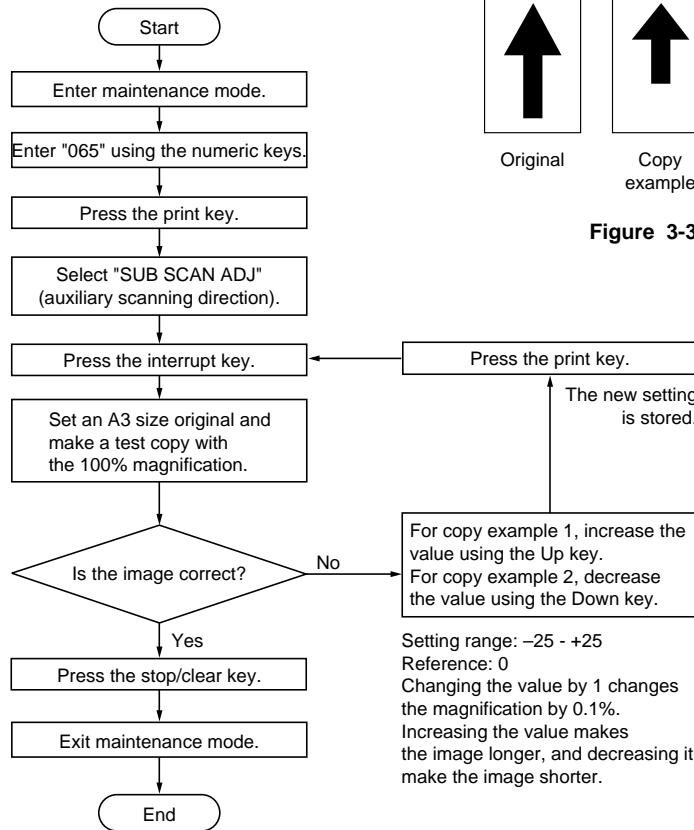
(8) Adjusting magnification of the scanner in the auxiliary scanning direction

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>

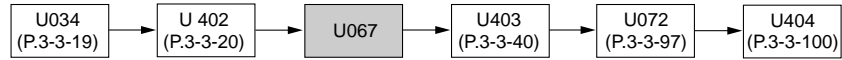




2A3/4

(9) Adjusting the scanner center line

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



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

<Procedure>

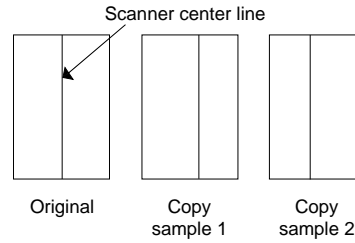
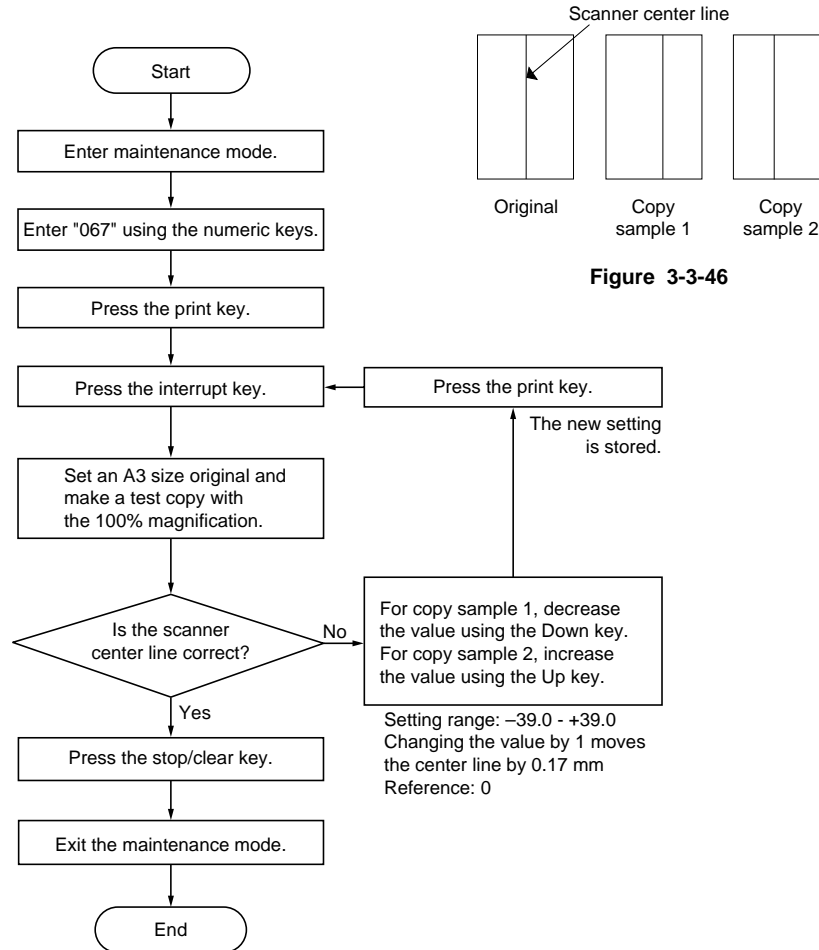


Figure 3-3-46

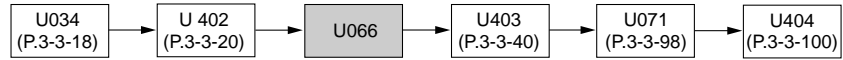
3-3-38





(10) Adjusting the scanner leading edge registration

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



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

<Procedure>

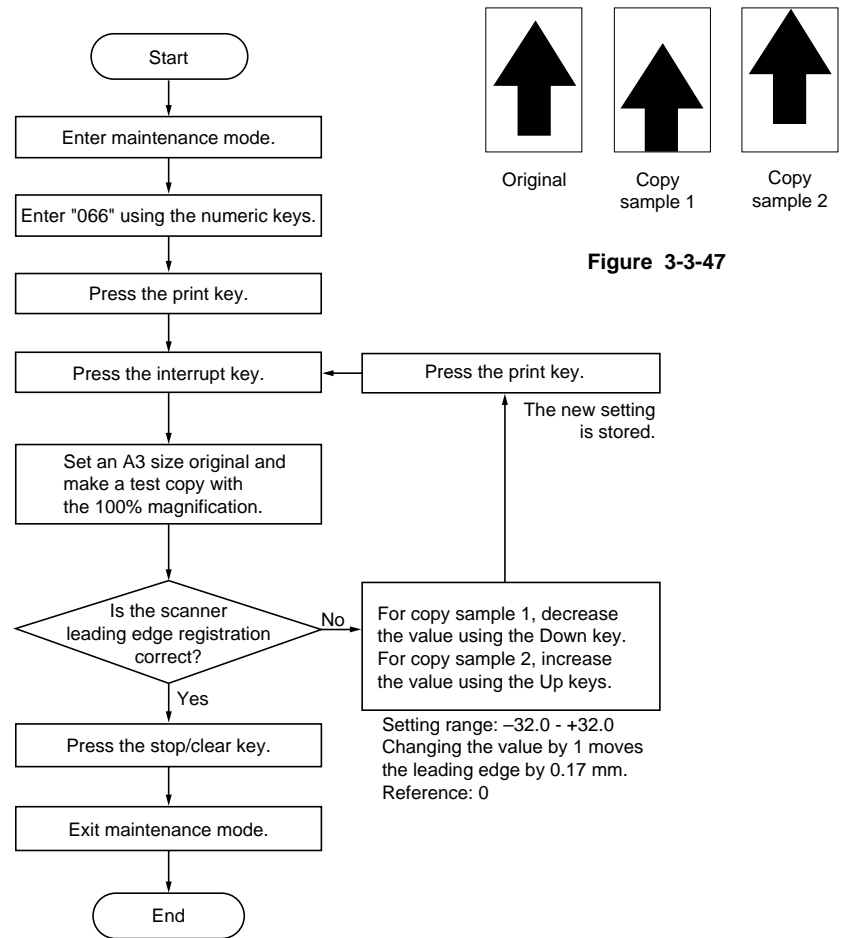


Figure 3-3-47



2A3/4

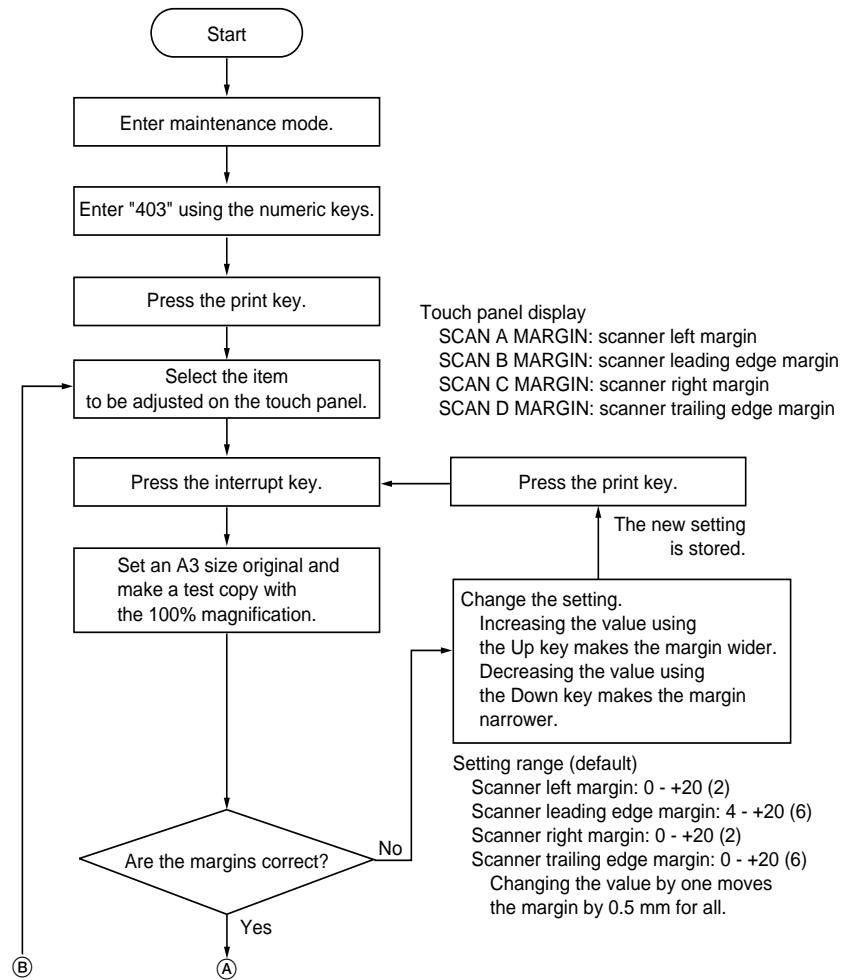
(11) Adjusting the margins for scanning an original on the contact glass

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>



3-3-40





2A3/4

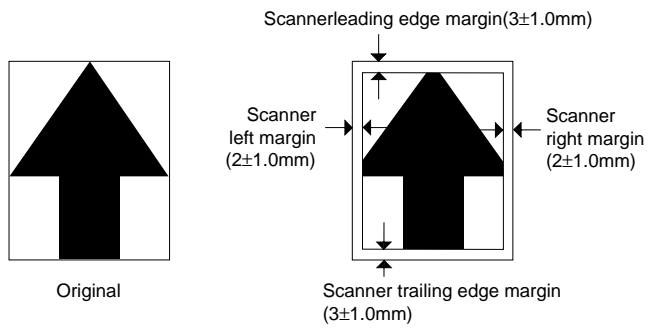
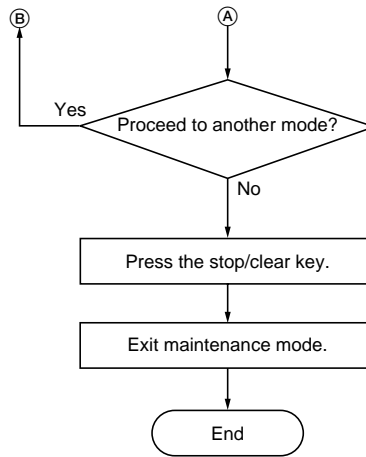


Figure 3-3-48

3-3-41





2A3/4

3-3-4 Main charging section

(1) Replacing the charger wire and main charger grid

Take the following procedure when the charger wire is broken or to be replaced.

<Precautions>

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

<Procedure>

1. Draw the image formation unit out of the machine.
2. Remove the two screws and slide off the main charger assembly toward the machine rear.

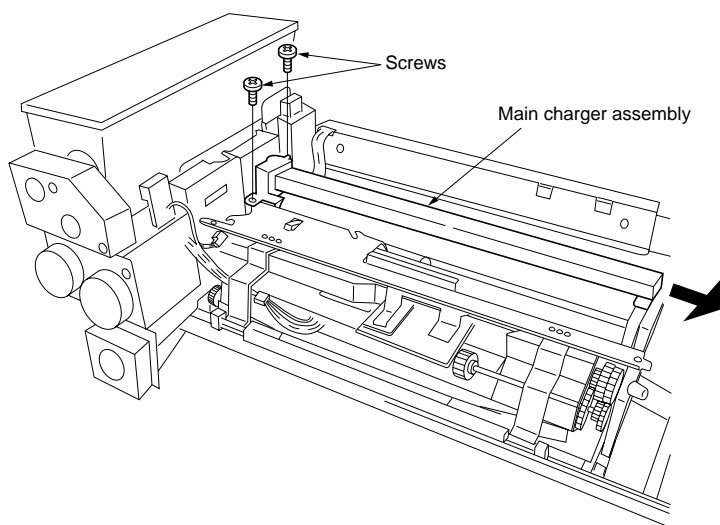


Figure 3-3-49 Detaching the main charger assembly

3-3-42





2A3/4

3. Remove the screw holding the grid tension plate and then the plate and main charge grid.
4. Remove the main charge front and rear lids.
5. Remove the charge spring from the charge wire retainer pin and charge terminal, and then the charge wire.

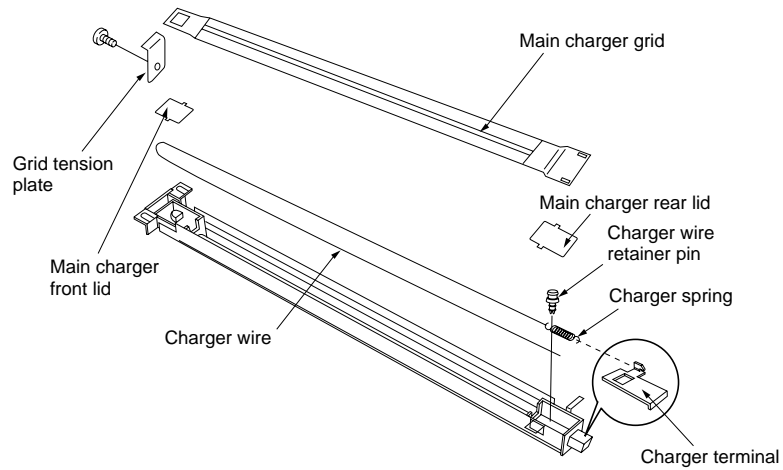


Figure 3-3-50 Detaching the charge wire

3-3-43





2A3/4

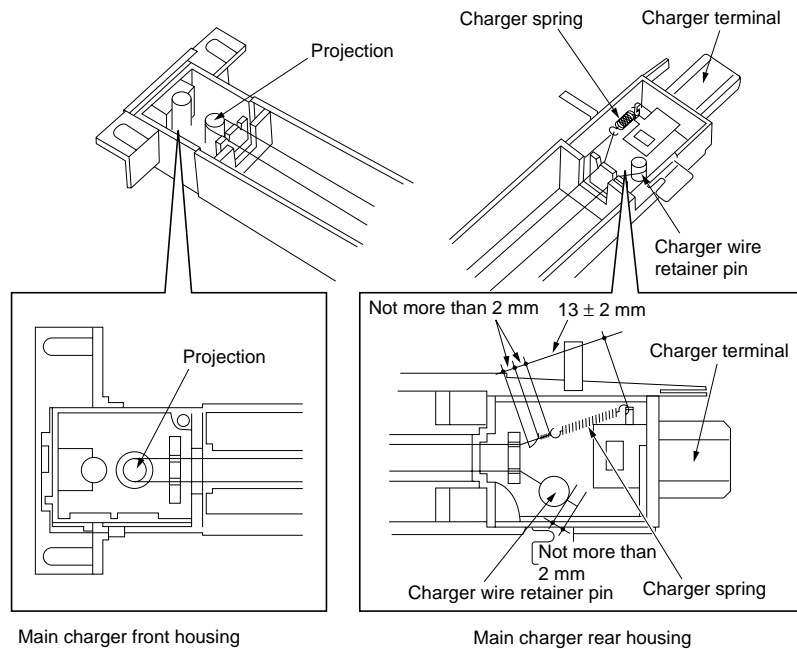


Figure 3-3-51 Installing the charger wire

6. Wind the new tungsten wire at least five turns around one end of the charger spring and trim the end.
 - * The width of the coiled charger wire and the cut end must be within 2 mm.
7. Hook the other end of the charger spring onto the charger terminal of the main charger rear housing.
8. Pass the wire through the notch in the charger wire retainer pin and stretch it taut.
 - * The charger wire must be adjusted so that the charger spring stretches to 13 ± 2 mm and the spring end aligns with the rib on the main charger rear housing.
9. Hook the charger wire onto the projection on the main charger front housing.
10. Insert the charger wire retainer pin into the projection on the main charger rear housing to secure the charger wire.
11. Cut off the excess wire under the charger wire retainer pin.
 - * The cut end of the charger wire must protrude less than 2 mm.
12. Refit the main charger front and rear lids.
13. Refit all removed parts.

3-3-44





2A3/4

3-3-5 Drum section

(1) Replacing the drum.

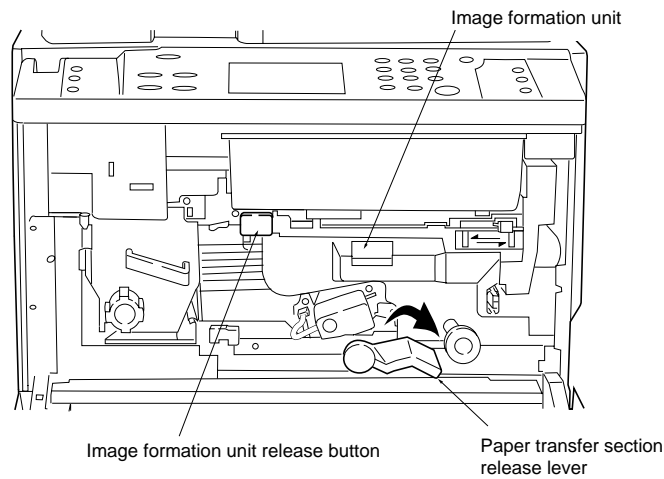
Replace the drum as follows.

<Precautions>

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

<Procedure>

1. Open the front cover.
2. Lower the paper conveying section by turning the paper transfer section release lever as shown in Figure 3-3-52.
 - * While pressing the image formation unit release button, pull the image formation unit out from the machine.



*Illustration shows a 42 ppm.

Figure 3-3-52 Drawing the image formation unit

3-3-45





2A3/4

3. Remove the two screws holding the main charger assembly and then the assembly.

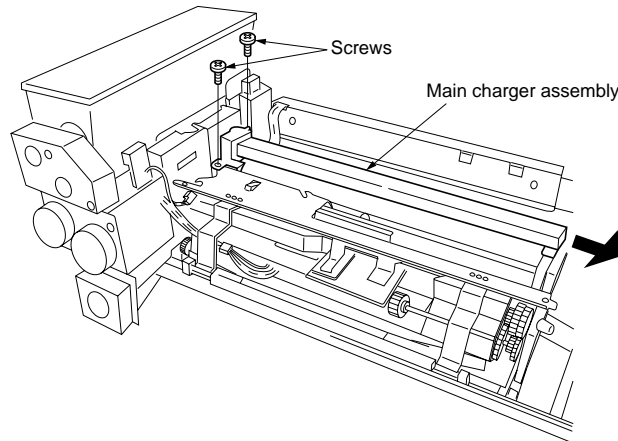


Figure 3-3-53 Detaching the main charger assembly

4. Loosen the cleaning blade pin. Move the cleaning blade lever in the direction of the arrow so that the cleaning blade is kept away from the drum and then tighten the cleaning blade pin.
5. Remove the two screws and open the upper cleaning cover on the left of the drum.
6. Remove the two screws and open the image formation rail in the direction of the arrow.

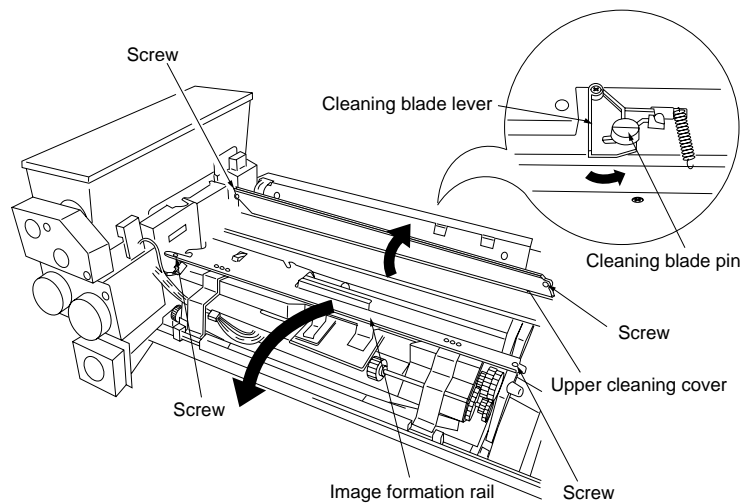


Figure 3-3-54

3-3-46





2A3/4

7. Detach the 1-pin and 4-pin connectors.
8. While raising the toner sub-hopper slightly, slide the hopper toward the front of the image formation unit and turn the image formation unit to the right.

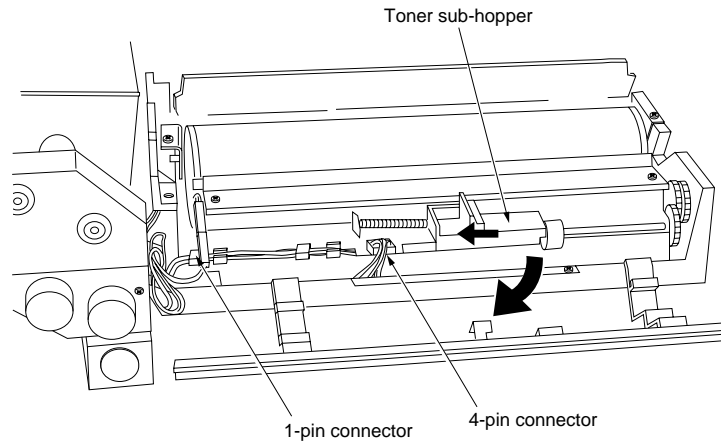


Figure 3-3-55

9. Move the developing unit to the right of the image formation unit and remove it from the unit.
10. Remove one screw each from the drum front and rear retainers and then the drum from the image formation unit.

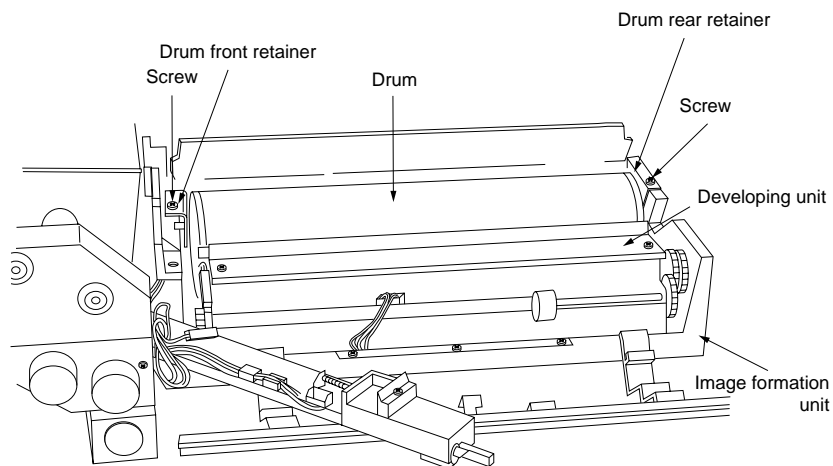


Figure 3-3-56 Detaching the developing unit and the drum

3-3-47





2A3/4

11. Remove the drum front and rear retainers from the drum. Replace the drum.

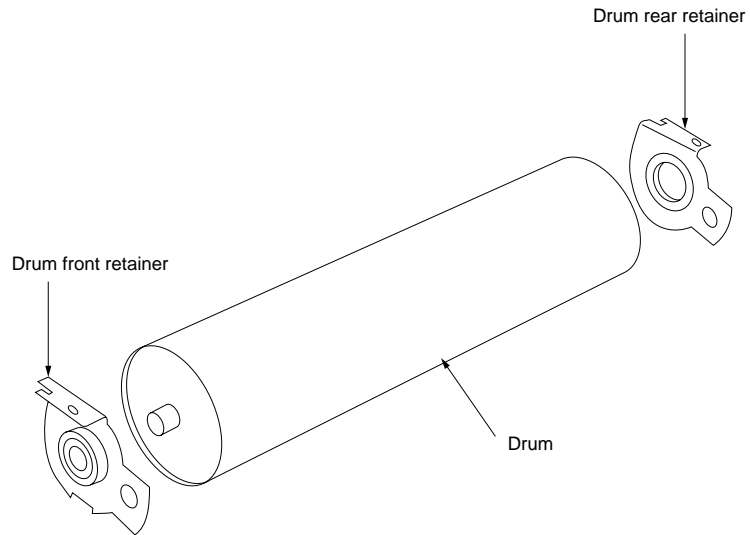


Figure 3-3-57 Detaching the drum front and rear retainers



3-3-48





12. Refit all removed parts.

Important:

- * After replacing the drum, run maintenance items U110 "Checking/clearing the drum count" and U111 "Checking/clearing the drum drive time."
- * After running maintenance item U160, loosen the blade pin and position the cleaning blade against 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.

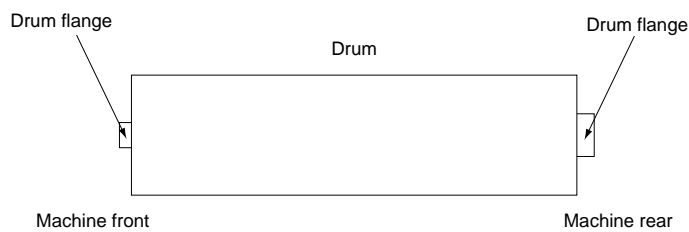


Figure 3-3-58

- * When refitting the toner sub-hopper, align the toner sub-hopper hole with the developing unit hole and connect the coupling to the joint.
- * When installing the main charger assembly, fix the assembly pushed all the way toward the machine front.

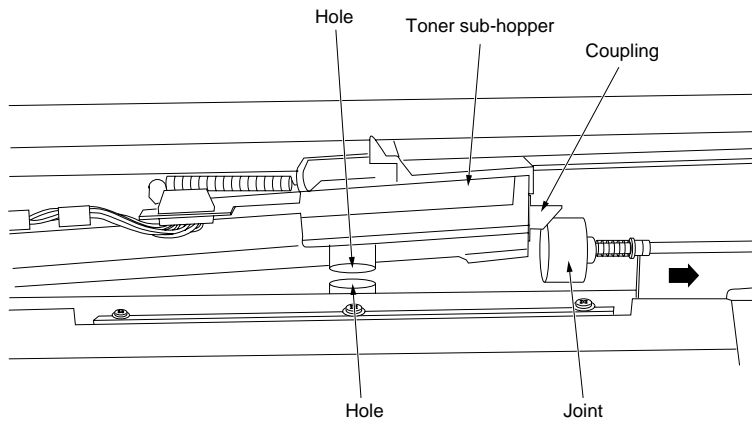


Figure 3-3-59





2A3/4

(2) Cleaning the drum

Clean the drum as follows when an image problem occurs or if the drum is dirty.

<Precautions>

- Avoid direct sunlight and strong light when cleaning the drum.
- Dust in the air and from the cleaning pad may damage the drum during operation. Avoid working in dusty places.
- Clean the drum entirely even if it is only dirty locally.
- Do not clean the drum with alcohol or other organic solvent.

Required supplies:

- Polishing cloth: specified synthetic cotton
- Toner

<Procedure>

1. Remove the drum from the imaging unit (see page 3-3-45).
2. Apply a polishing cloth to the drum and gently wipe the drum taking care not to damage the surface.
3. Apply toner to another cloth and wipe the drum surface with it in the same manner.
4. Refit the drum.
5. Refit all removed parts and let the machine stand for 30 minutes.
6. Make a test copy and check the image.

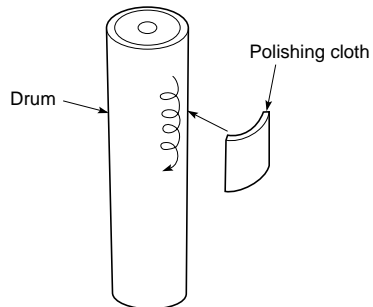


Figure 3-3-60 Cleaning the drum

3-3-50





2A3/4

3-3-6 Developing section

(1) Replacing the developing unit upper seal

Take the following procedure when the developing unit upper seal is soiled.

<Procedure>

1. Draw the image formation unit out and remove the developing unit.
2. Remove the two screws holding the developing unit upper seal and then the seal.
3. Clean or replace the developing unit upper seal.
4. Refit all removed parts.

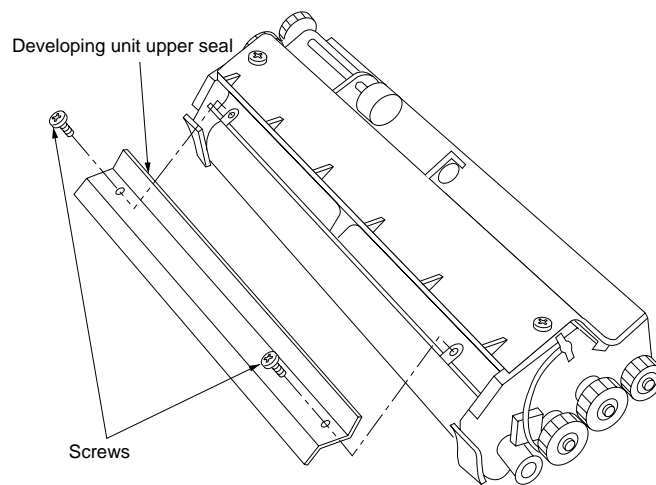


Figure 3-3-61 Detaching the developing unit upper seal

3-3-51





2A3/4

(2) 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, ensure that the doctor blade is installed correctly and that the correct amount of developer is present.

<Procedure>

1. Loosen the hexagonal socket head screw holding the developing sleeve front bushing using a hexagonal wrench.
2. 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 15 mm (reference).
3. Tighten the hexagonal socket head screw to secure the developing roller shaft.
* If the distance is smaller than the specified value, carrier or background appears on the copy image.
4. After adjustment, make a test copy to check for performance.

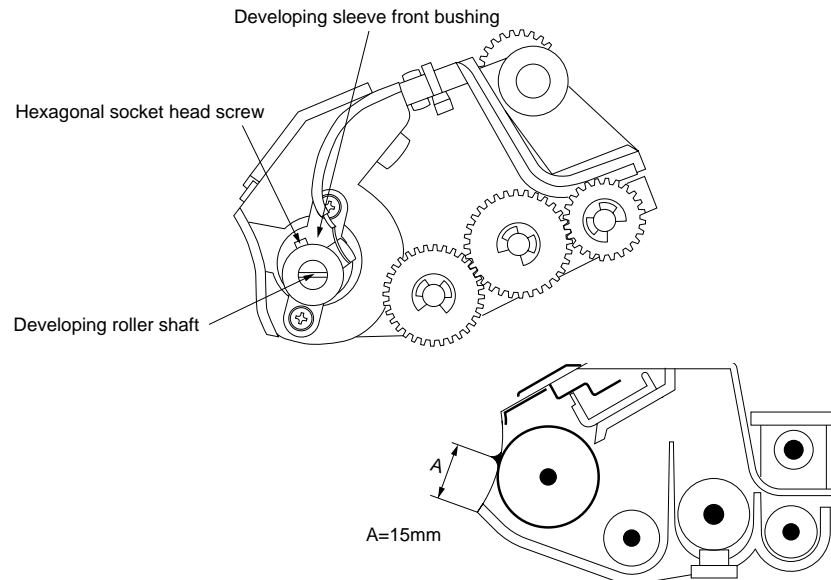


Figure 3-3-62 Adjusting the position of the magnetic brush

3-3-52





2A3/4

(3) 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 two screws holding the developing unit upper seal, and then the seal.
* When refitting the seal, fit while holding it upward.
2. Remove the two screws, disengage the two hooks and detach the developing unit upper cover.

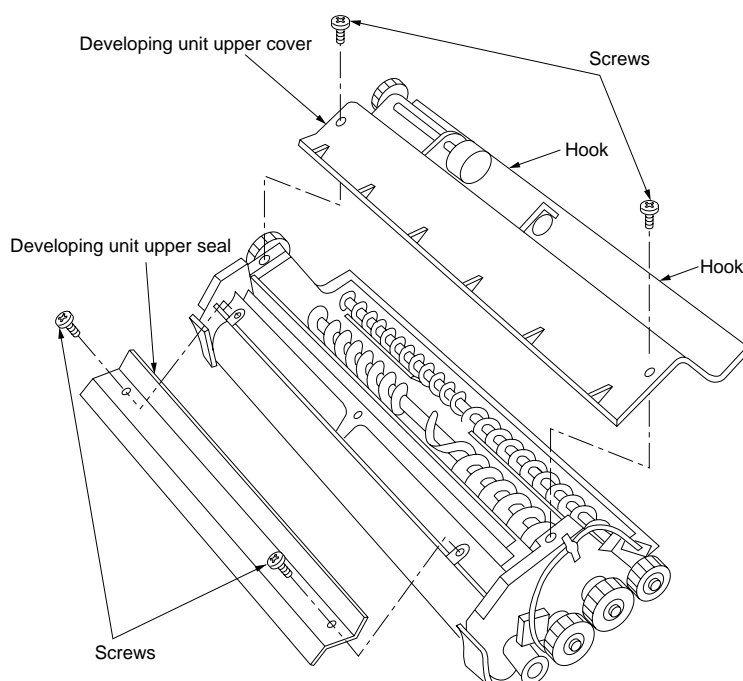


Figure 3-3-63 Detaching the developing unit upper cover

3-3-53





2A3/4

3. Measure the distance between the developing roller and the doctor blade with a thickness gauge as shown in Figure 3-3-64, 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.

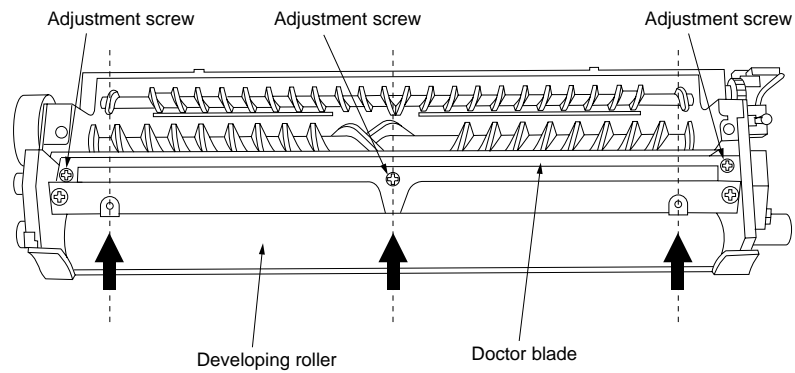


Figure 3-3-64



3-3-54





2A3/4

(4) Replacing the developing duct filter

Replace the developing duct filter as follows.

<Procedure>

1. Open the front cover.
2. Slide off the developing duct cover downward.
3. Replace the developing duct filter.

Caution: When fitting the developing duct filter, ensure that the harder side of the filter faces the fan.

4. Refit all removed parts.

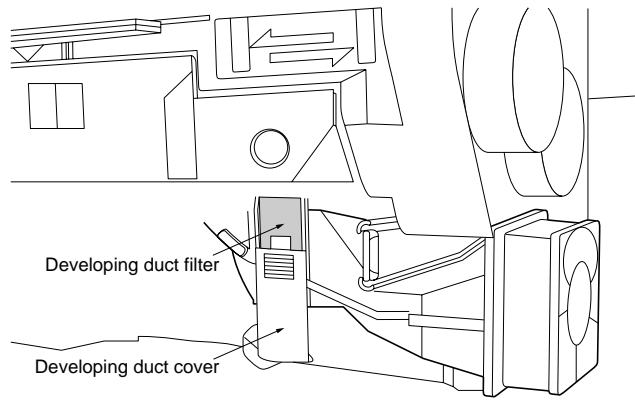


Figure 3-3-65 Detaching the developing duct filter

3-3-55





2A3/4

3-3-7 Transfer and separation section

(1) Replacing the charger wires and cleaning pads

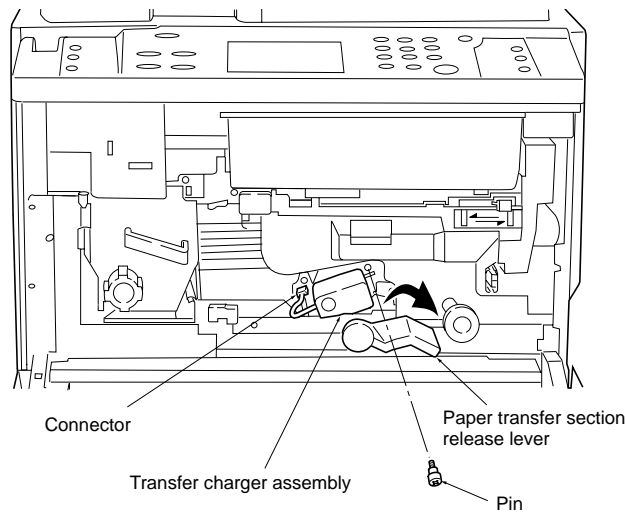
Take the following steps when the charger wire is broken or is to be replaced, or when replacing the cleaning pads.

<Precautions>

- Use only the specified tungsten wire for the charger wire.
- The part of the wire wrapped around the charger spring must not protrude from the rear of the transfer charger housing.
- The cut end of the charger wire must not protrude from under the charger wire retainer pin.
- Keep the charger wire taut by stretching the charger spring.
- Clean the charger shield when replacing the charger wire.

<Procedure>

1. Turn the paper transfer section release lever to the right to lower the paper conveying section.
2. Remove the connector, pin and then the transfer charger assembly.



*Illustration shows a 42 ppm.

Figure 3-3-66 Detaching the transfer charger assembly

3-3-56





2A3/4

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.

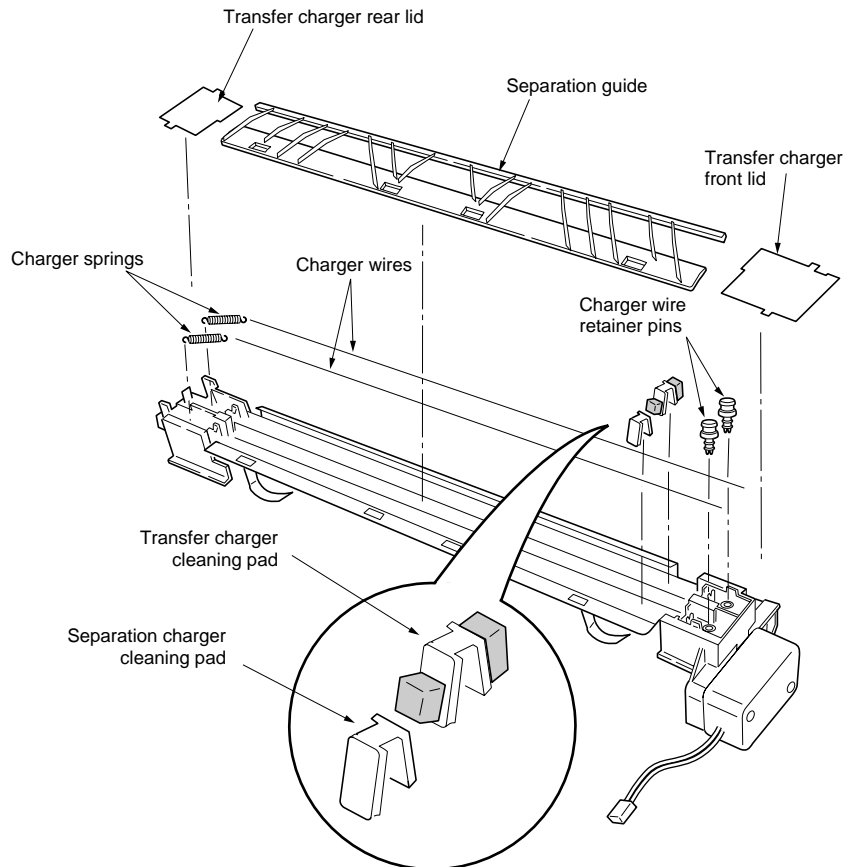


Figure 3-3-67 Detaching the charger wires

3-3-57





2A3/4

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.
 - * When installing the main charger assembly, fix the assembly pushed all the way toward the machine front.

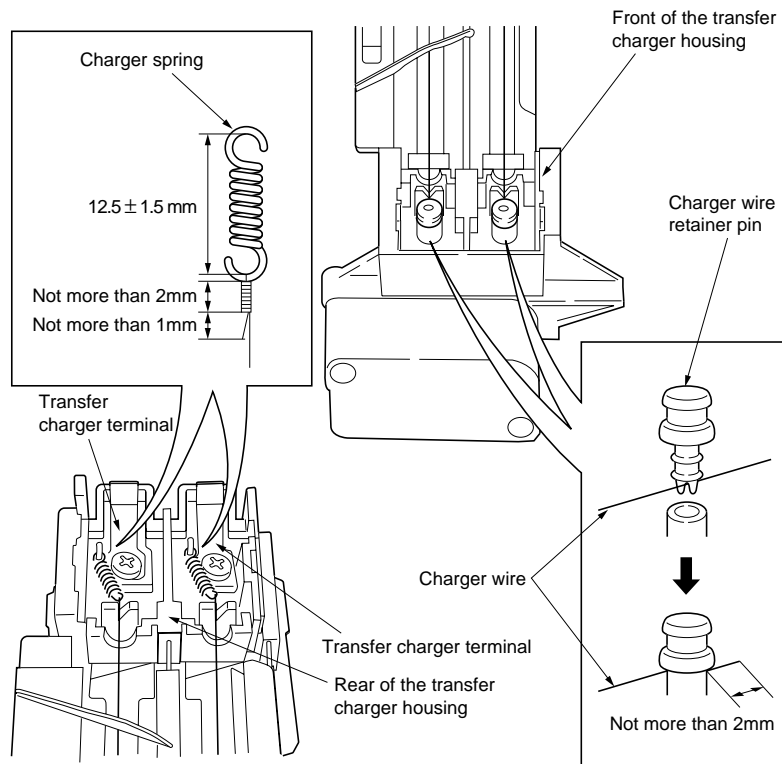


Figure 3-3-68 Installing the charger wire

3-3-58





2A3/4

3-3-8 Cleaning section

(1) Detaching and refitting the cleaning blade

Check or replace the cleaning blade as follows.

<Procedure>

1. Draw the image formation unit out.
2. Remove the developing unit, main charger assembly and drum.
3. Remove the pin holding the cleaning blade and then the blade.
4. Check or replace the cleaning blade.

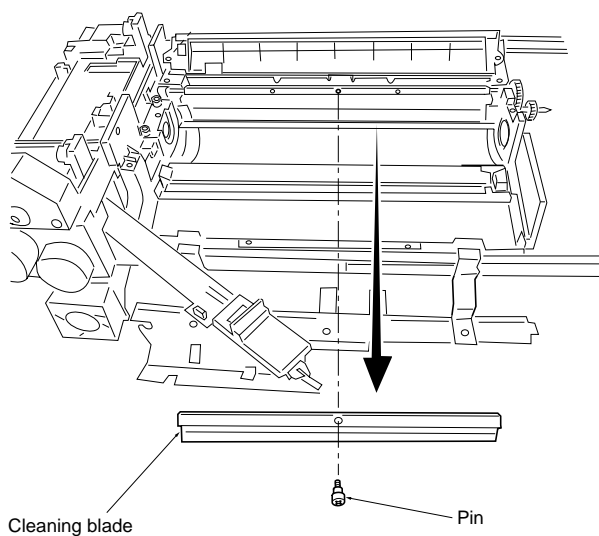


Figure 3-3-69 Detaching the cleaning blade

3-3-59





2A3/4

5. Refit all removed parts.
 - * When installing the cleaning blade, take care not to trap the sponges at both ends.
 - * After replacing the cleaning blade, move it away from the drum and run maintenance item U160 (see page 3-2-50).

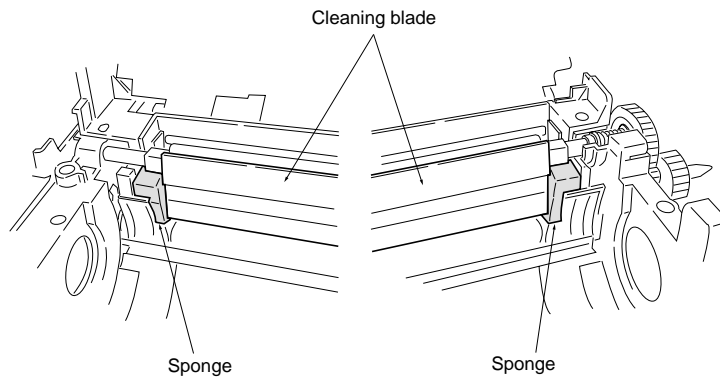


Figure 3-3-70 Installing the cleaning blade



3-3-60





2A3/4

(2) Detaching and refitting the cleaning brush

Clean or replace the cleaning brush as follows.

<Procedure>

1. Remove the developing unit, main charger assembly and drum.
2. Remove the cleaning spring.

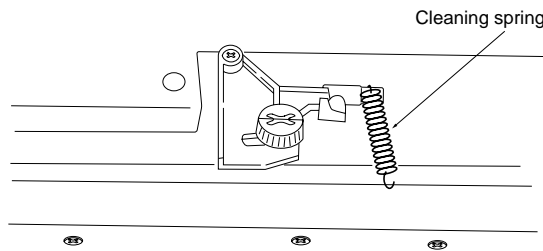


Figure 3-3-71

3. Shift the thrust spring toward the machine rear and detach the cleaning blade shaft.

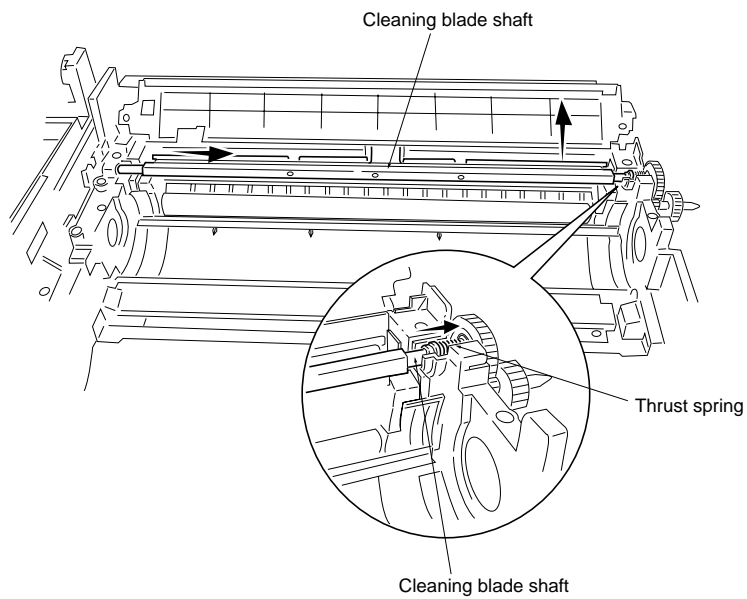


Figure 3-3-72

3-3-61





2A3/4

4. Detach the 2-pin connector and remove the cleaning unit from the image formation unit.
 5. Remove the E-rings, bushings and gear from both ends of the cleaning brush.
 6. Clean or replace the cleaning brush.
 7. Refit all removed parts.
- * When installing the cleaning brush, position the end with the D-section at the machine rear and take care not to pinch the cleaning lower seal assembly.

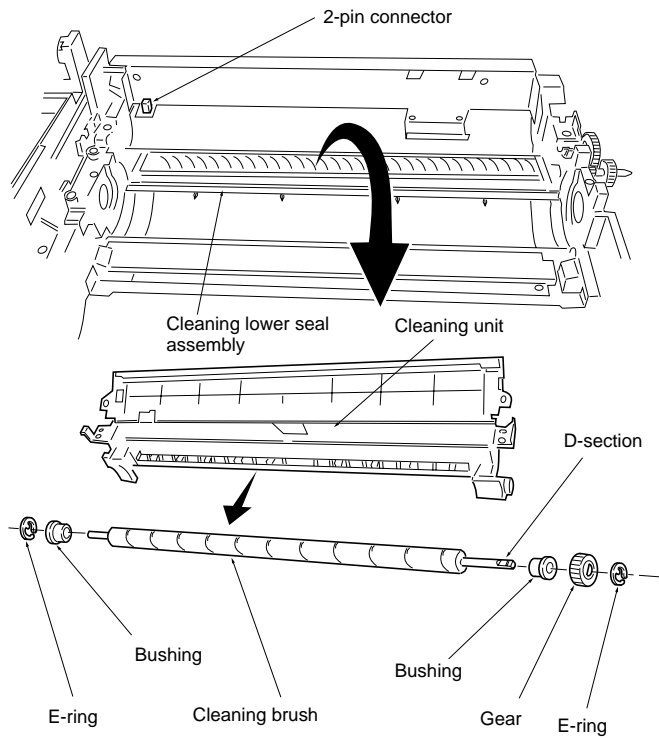


Figure 3-3-73

3-3-62





2A3/4

(3) Detaching and refitting the drum separation claw assembly and cleaning lower seal assembly.

Clean or replace the drum separation claw assembly and cleaning lower seal assembly as follows.

<Procedure>

1. Remove the developing unit, main charger assembly and drum.
2. Remove the four screws holding the drum separation claw assembly and then the assembly.
3. Remove the two screws holding the cleaning lower seal assembly and then the assembly.
4. Replace the drum separation claw assembly and cleaning lower seal assembly.

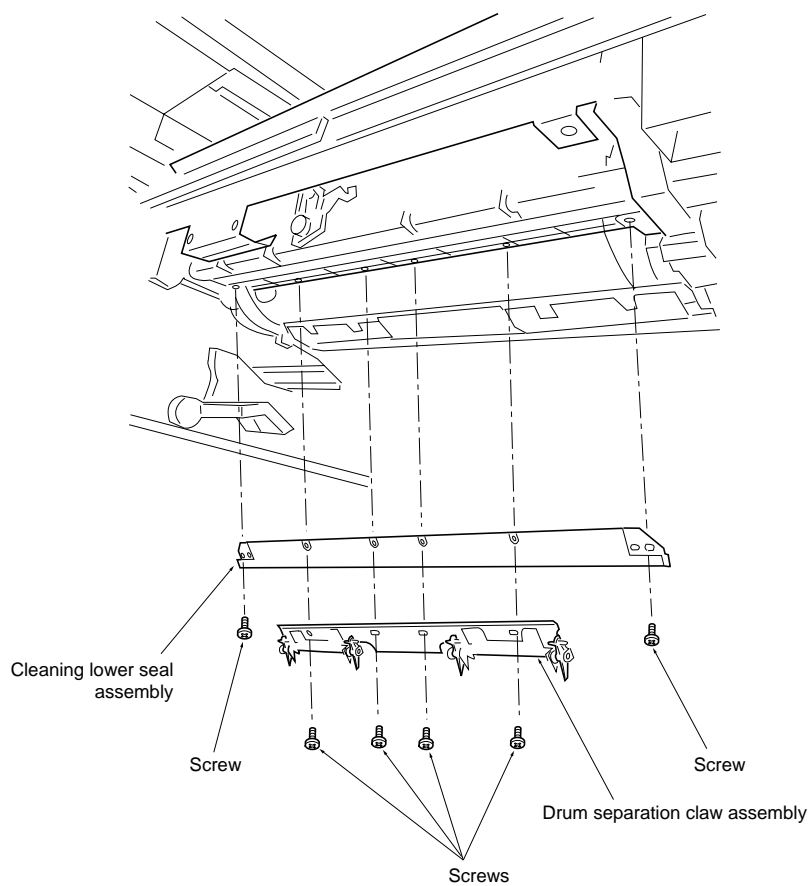


Figure 3-3-74 Detaching the drum claw assembly and cleaning lower seal assembly

5. Refit all removed parts.

3-3-63





2A3/4

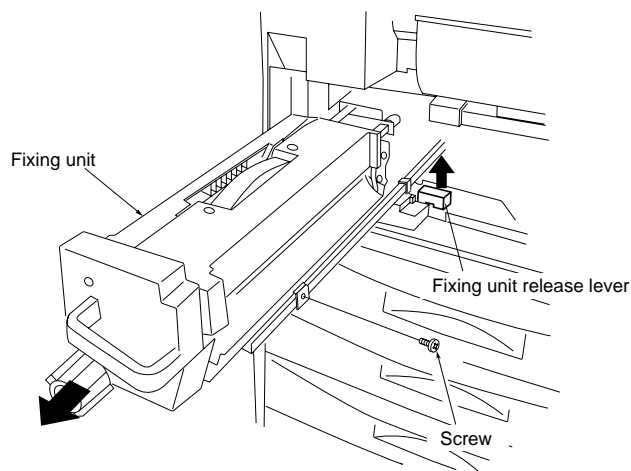
3-3-9 Fixing section

(1) Detaching and refitting fixing heaters M and S

Replace fixing heaters M and S as follows.

<Procedure>

1. While raising the fixing unit release lever, draw the fixing unit out of the machine.
2. Remove the screw holding the fixing unit and then the unit.



*Illustration shows a 42 ppm.

Figure 3-3-75 Detaching the fixing unit

3-3-64





2A3/4

3. Open the fixing unit cover in the direction of the arrow.
4. Remove the two screws holding the fixing unit front cover and then the cover.
5. Remove the screw and two pins holding the fixing unit upper cover, and then the cover.

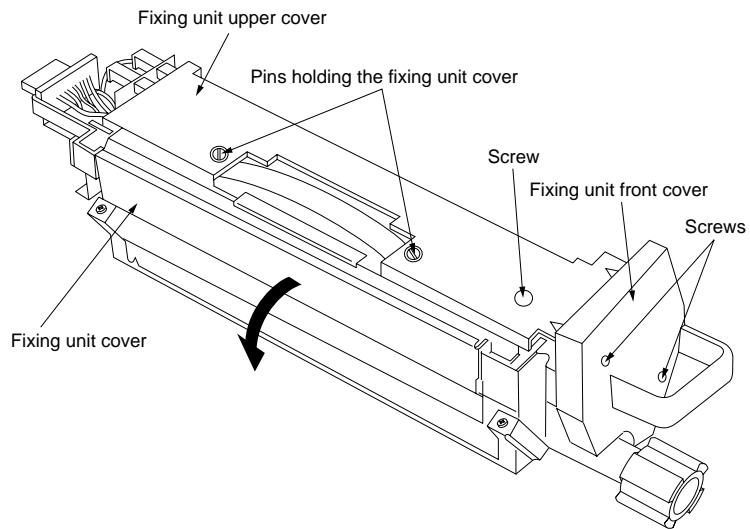


Figure 3-3-76 Detaching the fixing unit front cover and cover

3-3-65





2A3/4

6. Detach the fixing heater wire and the fixing unit wire from the fixing unit thermostat.

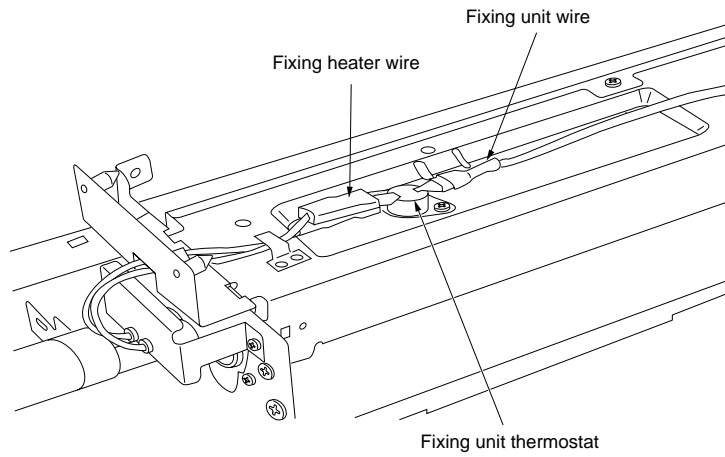


Figure 3-3-77

7. Detach the two connectors on the fixing heater wire on the rear of the fixing unit.

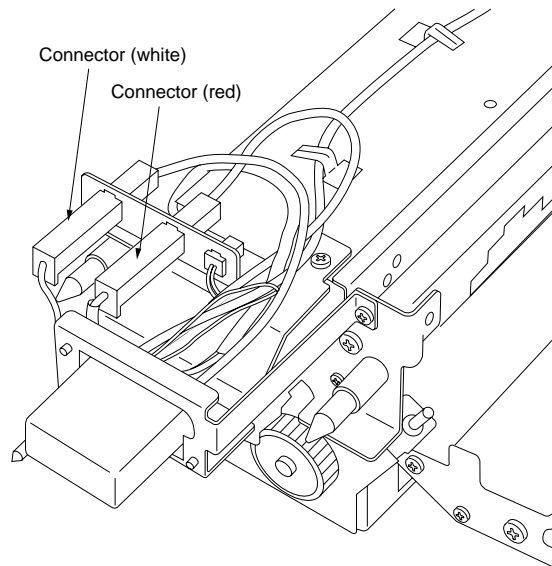


Figure 3-3-78

3-3-66





2A3/4

8. Remove the screw holding the fixing heater front retainer and then the retainer.
9. Pull fixing heaters M and S out from the front of the fixing unit.

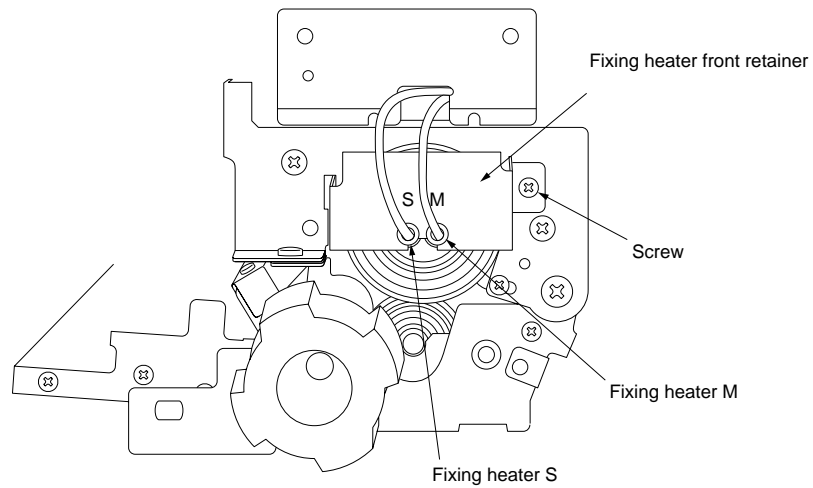


Figure 3-3-79 Detaching fixing heaters M and S

10. Replace fixing heaters M and S.
 - * When fitting, place fixing heater M on the right and S on the left, as viewed from the fixing unit front.
 - * Fit the white connector on the rear of the fixing unit to heater M, and the red one to heater S.
11. Refit all removed parts.

3-3-67





2A3/4

(2) Detaching and refitting the fixing unit thermistor

Replace the fixing unit thermistor as follows.

<Procedure>

1. Detach the connector.
2. Remove the screw holding the fixing unit thermistor and then the thermistor.

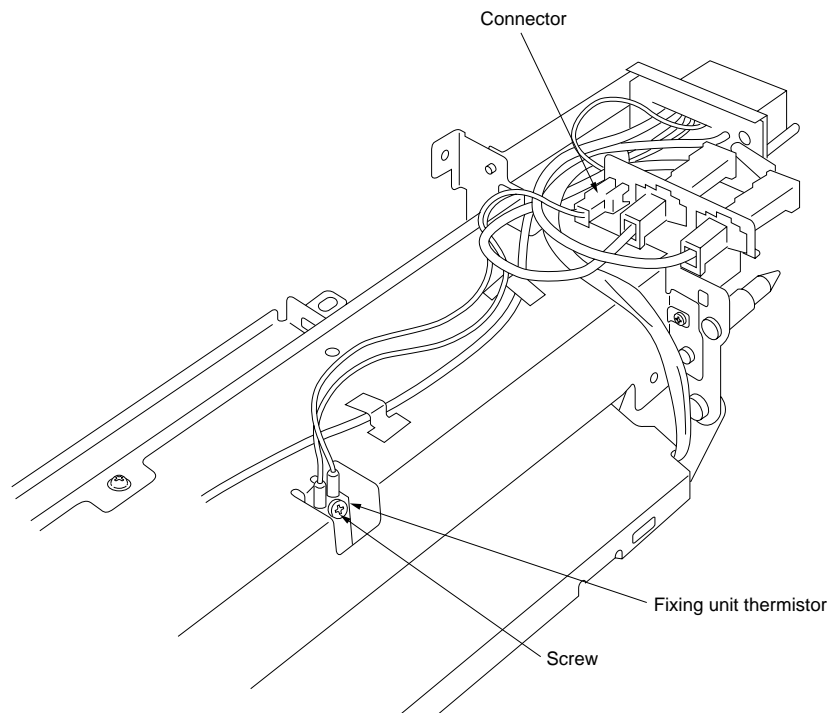


Figure 3-3-80 Detaching the fixing unit thermistor

3-3-68





2A3/4

3. Replace the thermistor.

* When fitting the fixing unit thermistor, pass the projection on the thermistor through the hole in the fixing unit thermistor film and then insert into the cutout in the fixing unit stay.

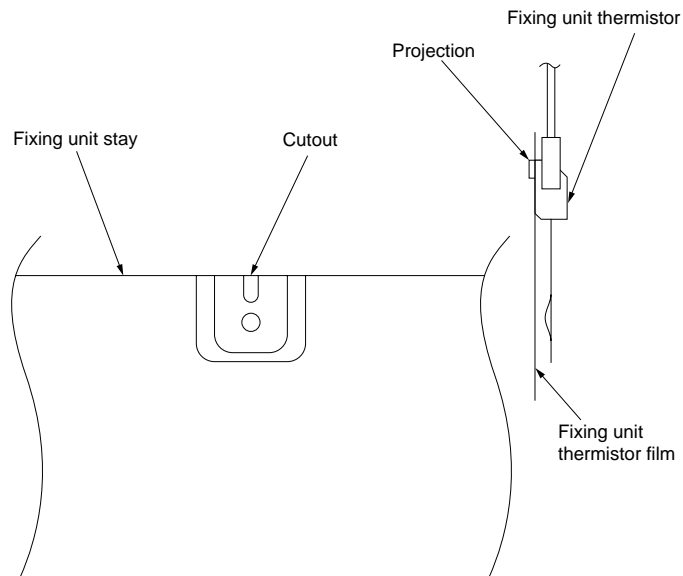


Figure 3-3-81 Installing the fixing unit thermistor

4. Refit all removed parts.

3-3-69





2A3/4

(3) Detaching and refitting the fixing unit thermostats

Replace the fixing unit thermostats as follows.

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

<Procedure>

1. Remove the connectors of the fixing unit wire and the fixing heater wire from the fixing unit thermostat.
Remove the connectors while pushing the projection on each connector.
2. Remove the two screws and then the fixing unit thermostat.
3. Replace the fixing unit thermostat.

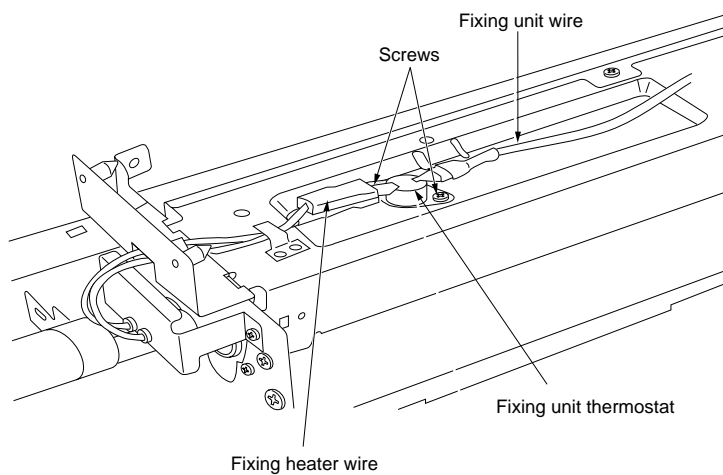


Figure 3-3-82 Detaching the fixing unit thermostats

4. Refit all removed parts.

3-3-70





2A3/4

(4) Replacing the press roller
Replace the press roller as follows.

<Procedure>

1. Remove the two screws and open the fixing unit stay in the direction of the arrow.

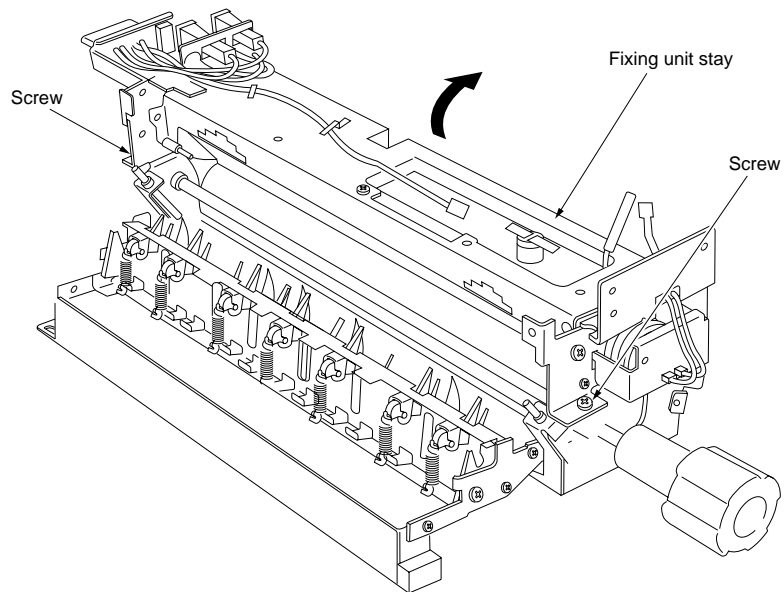


Figure 3-3-83 Detaching the fixing unit stay

3-3-71





2A3/4

2. Remove the press roller.

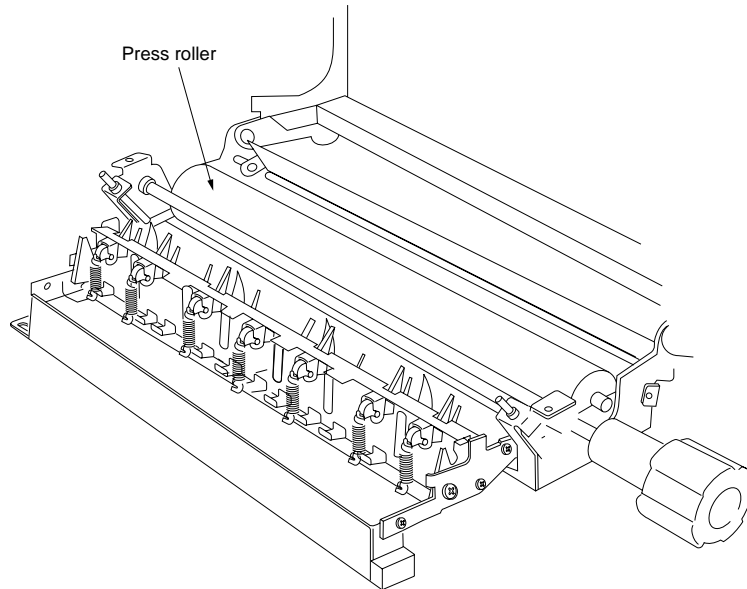


Figure 3-3-84 Detaching the press roller

3. Remove the E-ring on either the front or rear end of the press roller and pull out the press roller shaft.

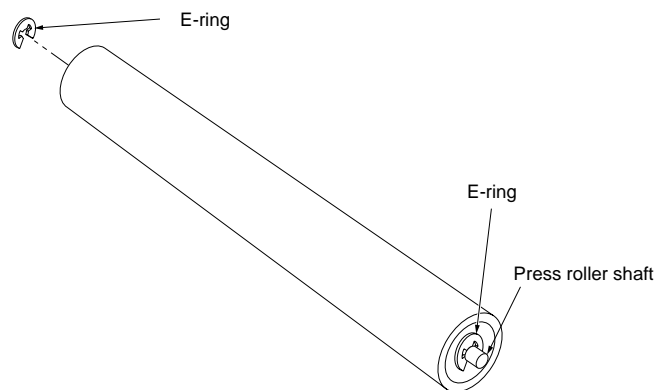


Figure 3-3-85 Detaching the press roller shaft

4. Replace the press roller.
5. Refit all removed parts.

3-3-72





2A3/4

(5) Replacing the heat roller

Replace the heat roller as follows.

<Procedure>

1. Remove fixing heaters M and S (see page 3-3-64).
2. Open the fixing unit stay (see page 3-3-71).
3. Loosen the screw holding each of the fixing unit front and rear frames and move the heat roller stopper in the direction of the arrow.
4. Remove the heat roller.

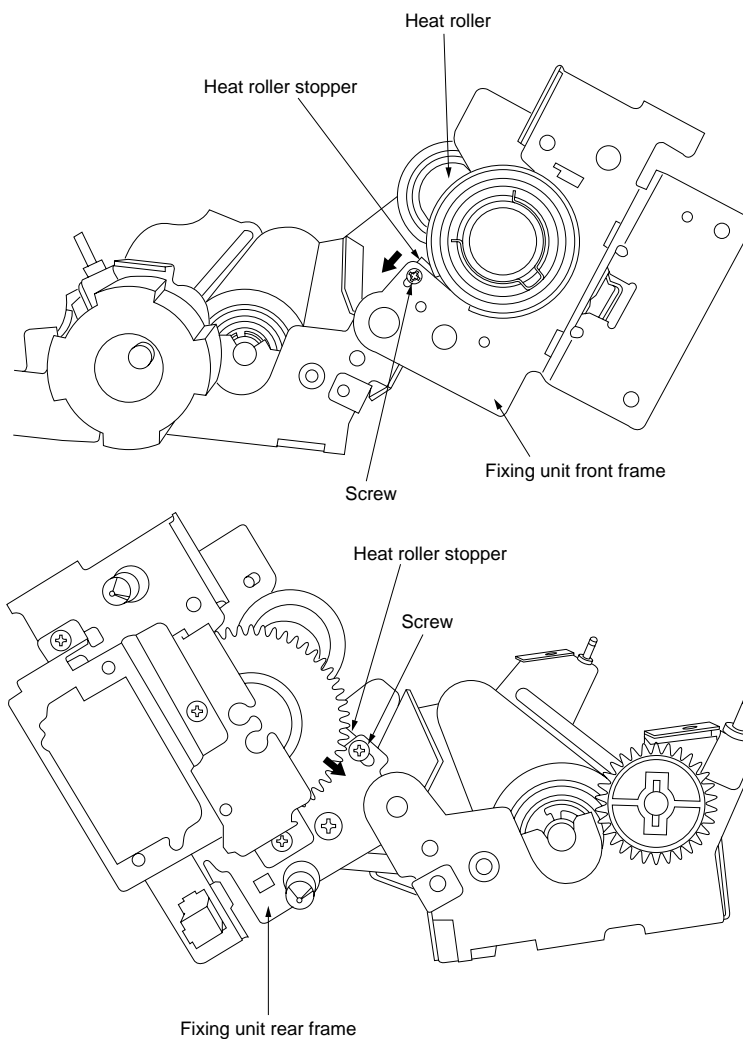


Figure 3-3-86 Detaching the heat roller

3-3-73





2A3/4

5. Remove the circlip, bearing and bushing from the front end of the heat roller.
6. Remove the circlip, gear, bearing and bushing from the rear end of the heat roller.
7. Replace the heat roller.

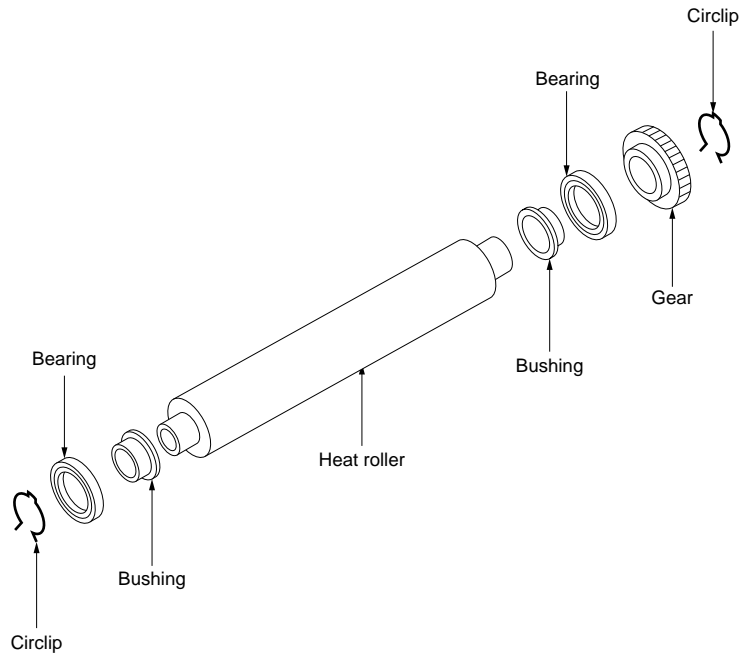


Figure 3-3-87 Refitting the heat roller

8. Refit all removed parts.

3-3-74





2A3/4

(6) Replacing the heat roller separation claws

Replace the heat roller separation claws as follows.

<Procedure>

1. Open the fixing unit cover.
2. Remove the E-ring from the heat roller separation claw shaft and the springs from the seven heat roller separation claws.
3. Remove the heat roller separation claws from the fixing unit upper guide.
4. Replace the heat roller separation claws.

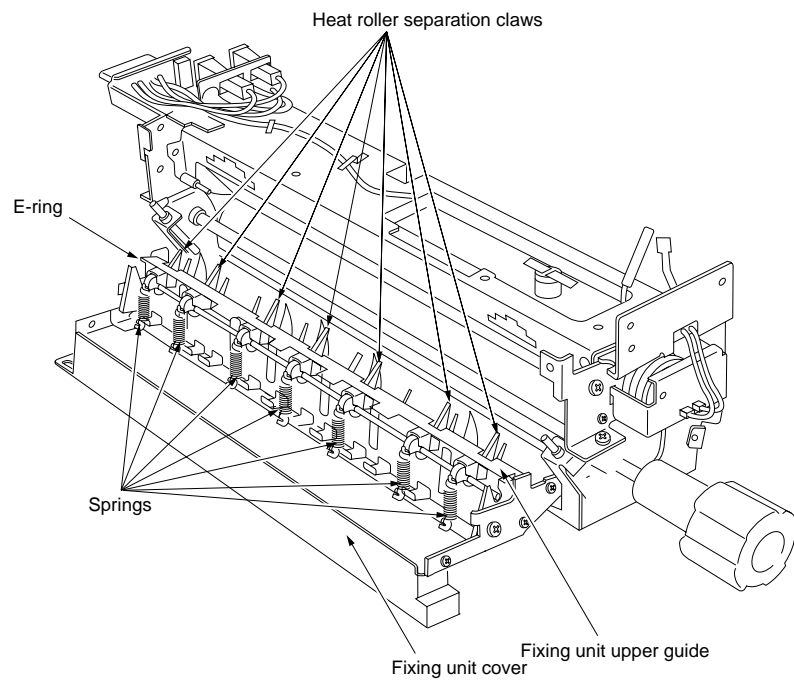


Figure 3-3-88 Detaching the heat roller separation claws

5. Refit all removed parts.

3-3-75





2A3/4

(7) Detaching and refitting the press roller separation claws

Replace the press roller separation claws as follows.

<Procedure>

1. Open the fixing unit cover.
2. Remove the two E-rings from each of the press roller separation claws and then the four claws.
3. Replace the press roller separation claws.

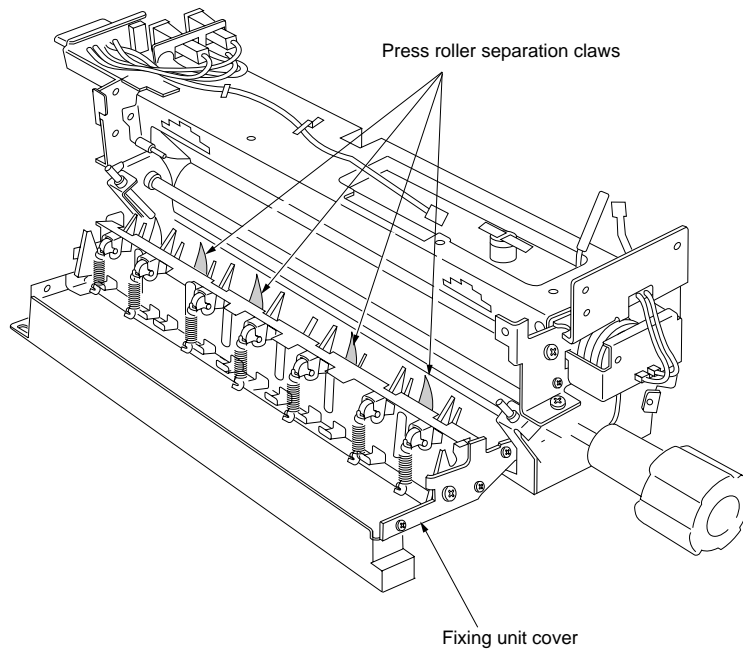


Figure 3-3-89 Detaching the press roller separation claws

4. Refit all removed parts.

3-3-76





2A3/4

(8) Replacing the cooling filter

Replace the cooling filter as follows.

<Procedure>

1. Remove the screw holding the ozone filter retainer and then the retainer.
2. Replace the cooling filter.

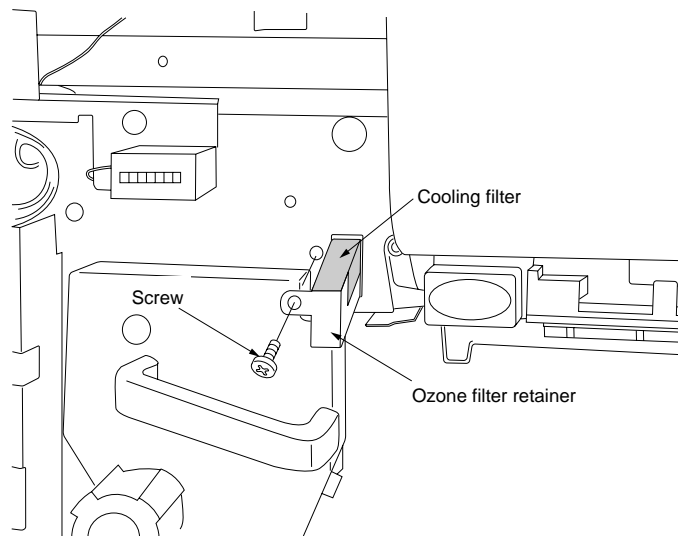


Figure 3-3-90 Detaching the cooling filter

3. Refit all removed parts.

3-3-77





2A3/4

(9) Replacing the ozone filter

Replace the ozone filter as follows.

<Procedure>

1. Remove the two screws holding the lower left cover and then the cover.
2. Remove the four screws holding the middle right cover and then the cover.
3. Replace the ozone filter.

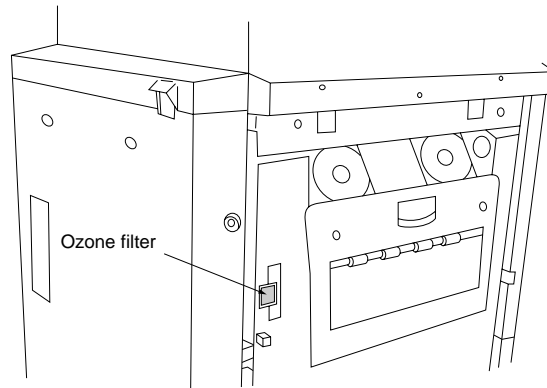


Figure 3-3-91 Fitting the ozone filter

4. Refit all removed parts.

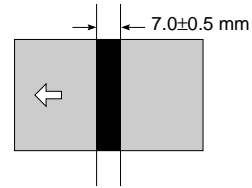
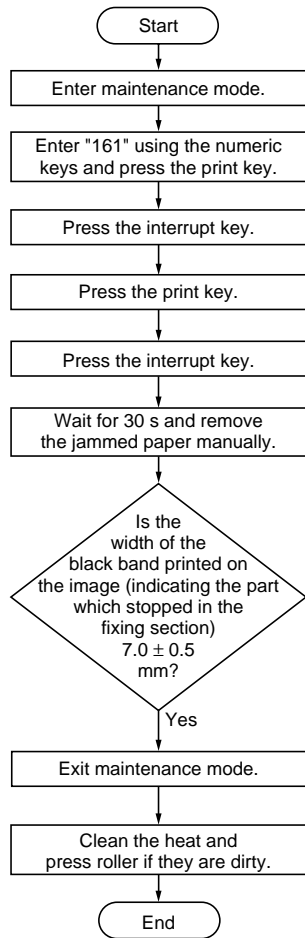
3-3-78



(10) Adjusting the fixing pressure (reference)

Adjust fixing pressure when paper creases, fixing is defective, or after the fixing pressure spring is replaced.

<Procedure>



- Fixing pressure: 210 N (both machine front and rear)

Figure 3-3-92

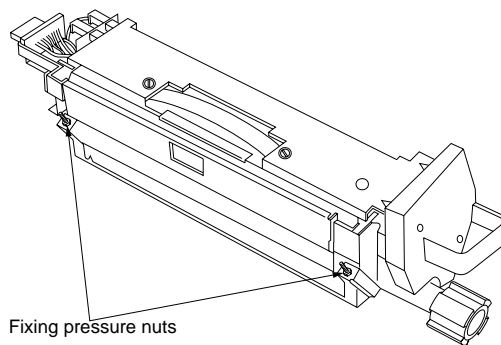


Figure 3-3-93





2A3/4

3-3-10 Feedshift and duplex section

(1) Detaching and refitting the duplex forwarding pulley

Replace the duplex forwarding pulley as follows.

<Procedure>

1. Open the duplex unit.
 2. Remove the stop ring and duplex forwarding pulley.
 3. Refit all removed parts.
- * When fitting the duplex forwarding pulley, align the projections of the duplex forwarding pulley with the slots in the forwarding pulley.

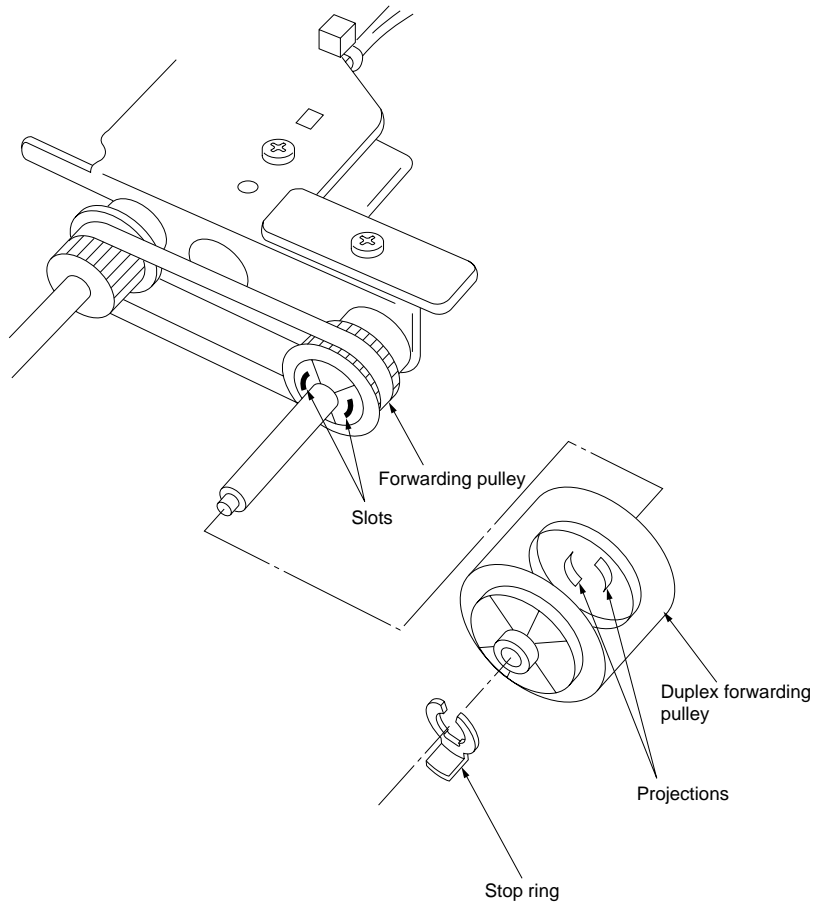


Figure 3-3-94

3-3-80





2A3/4

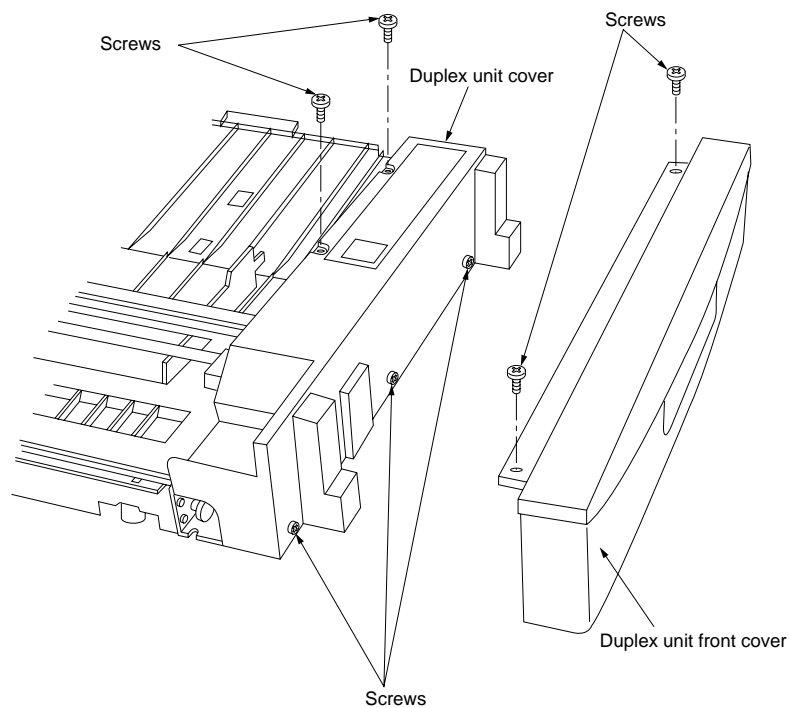
(2) Detaching and refitting the switchback roller, duplex upper registration roller

Replace the switchback roller and duplex registration roller as follows.

<Procedure>

- Detaching the switchback roller

1. Open the duplex unit.
2. Remove the two screws holding the duplex unit front cover and then the cover.
(only for 42 ppm)
3. Loosen the three screws at the front of the duplex unit. Remove the two screws on the top and then the duplex unit cover.



*Illustration shows a 42 ppm.

Figure 3-3-95 Detaching the duplex unit cover

3-3-81





2A3/4

4. Remove the four screws and the duplex unit from the rails.
5. Remove the two screws holding the duplex cover and then the cover.
6. Detach the 6-pin connector of the side registration section and the 3-pin connector of the side registration home position switch, and unlock the edging.
7. Remove the paper tapping guide by gently bending it and taking out of the hole in the machine rear first.
8. Remove the four screws holding the side registration section and slide off the section toward the machine right.
9. Remove the two screws holding the duplex paper conveying upper cover and then the cover.

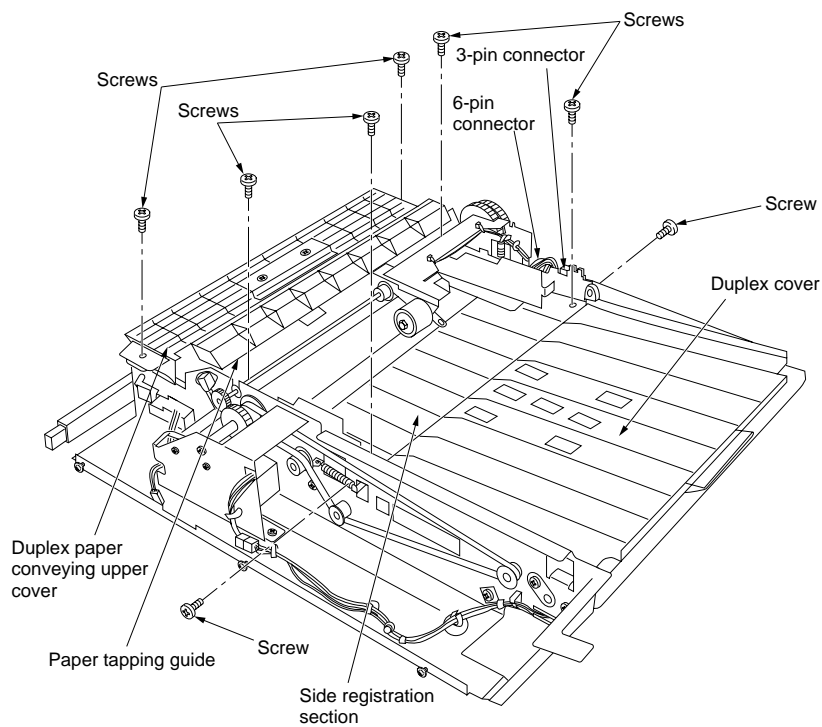


Figure 3-3-96 Detaching the duplex cover and side registration section

3-3-82





2A3/4

10. Remove the screw holding the switchback feedshift solenoid and then the solenoid.

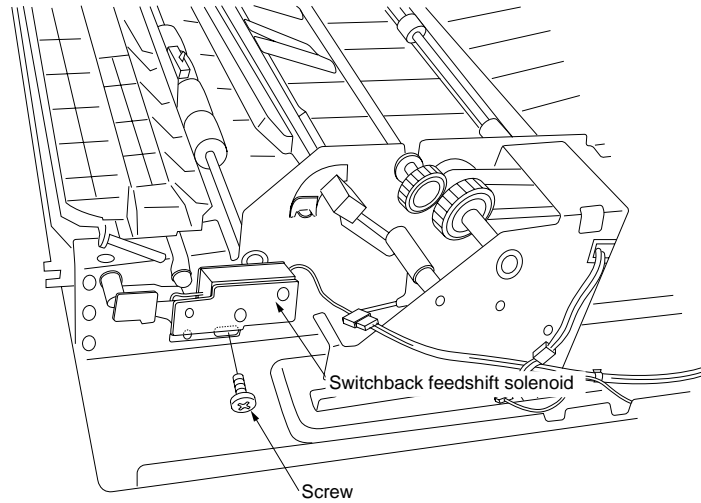


Figure 3-3-97 Detaching the switchback feedshift solenoid

11. Remove the E-ring and then the bushing at the front of the duplex unit.

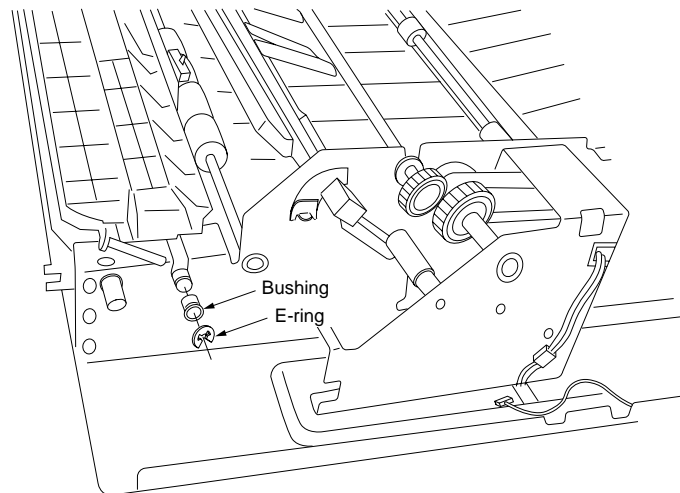


Figure 3-3-98 Detaching the switchback roller (1)

3-3-83





2A3/4

12. Remove the E-ring and then the fixing drive gear at the rear of the duplex unit.
13. Remove the pin, E-ring and bushing.
14. Remove the stop ring holding the switchback roller and then the roller from the shaft.
* When refitting the switchback roller, fit so that it turns in the same direction as the shaft when the shaft is turned in the direction of the white arrow.

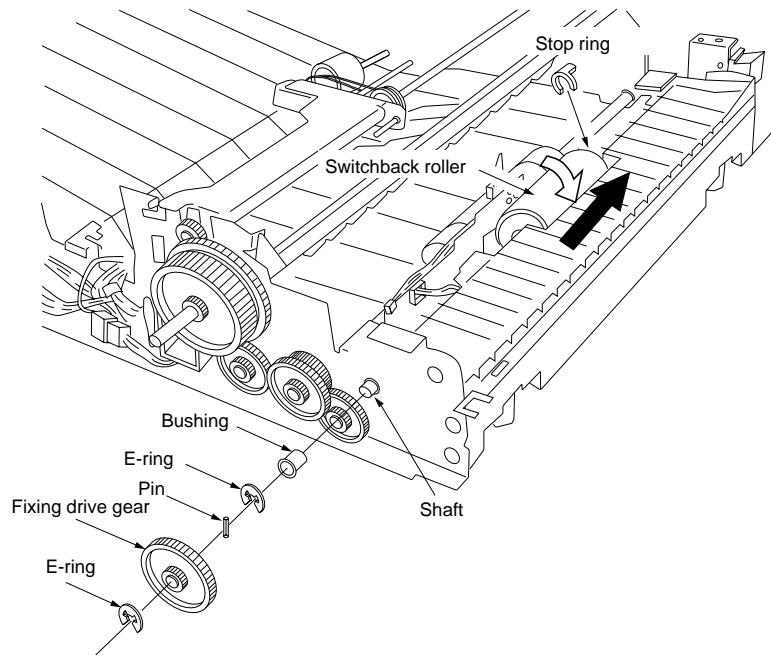


Figure 3-3-99 Detaching the switchback roller (2)

3-3-84





2A3/4

- Detaching the duplex upper registration roller
 1. Remove the duplex unit front cover (42 ppm only) and then the duplex unit cover.
 2. Remove the screw holding the switchback feedshift solenoid and then the solenoid.
 3. Remove the E-ring and then the bushing at the front of the duplex unit.

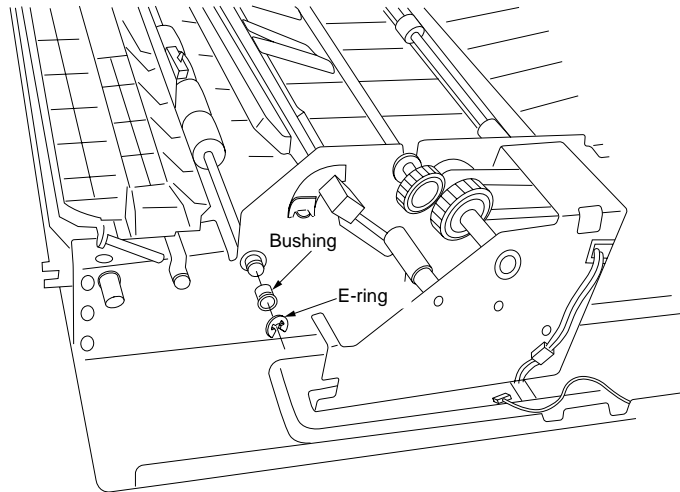


Figure 3-3-100 Detaching the duplex upper registration roller (1)

3-3-85



2A3/4

4. Remove the two screws holding the stock switch mount and then the mount.
5. Remove the E-ring at the rear of the duplex unit and then the duplex registration gear.
6. Remove the spring pin and bushing, and then the duplex upper registration roller.

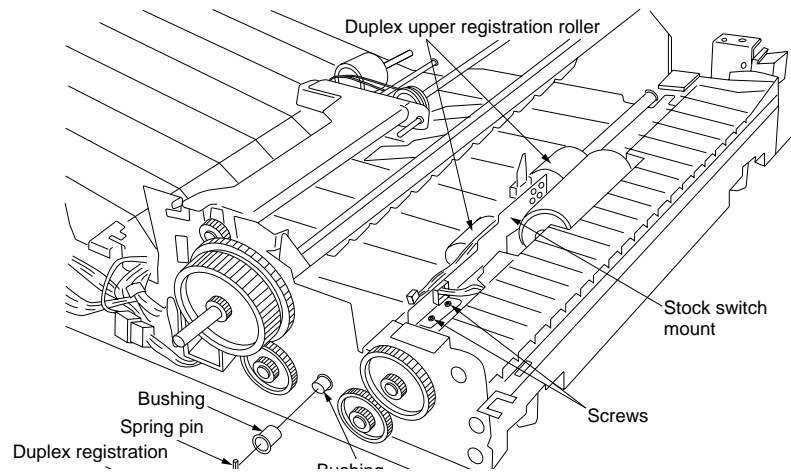


Figure 3-3-101 Detaching the duplex upper registration roller (2)

3-3-86



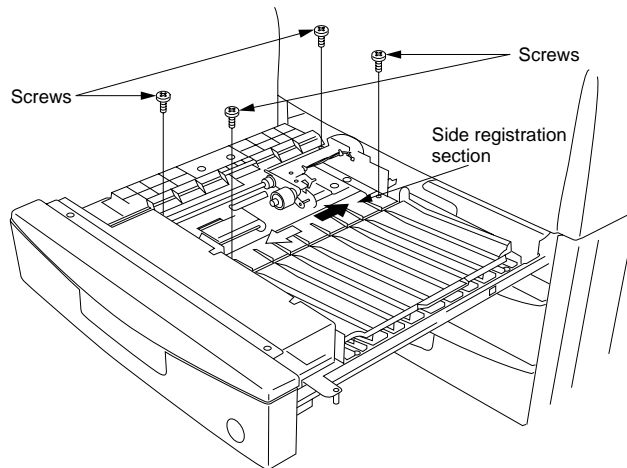
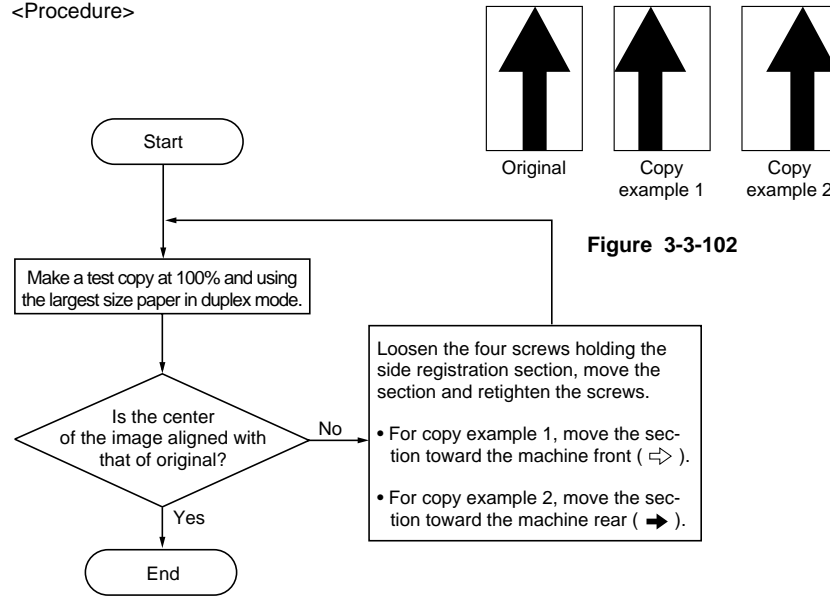


2A3/4

(3) Adjusting the position of the side registration section

Perform the following adjustment if there is a regular error between the centers of the original and copy image during duplex copying (second face).

<Procedure>



*Illustration shows a 42 ppm.

Figure 3-3-103 Adjusting the position of the side registration section

3-3-87





2A3/4

(4) Adjusting the side registration amount

Perform the following adjustment if paper is fed askew during refeed from the duplex unit.

<Procedure>

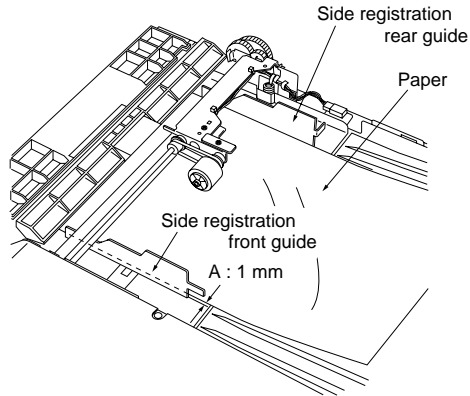
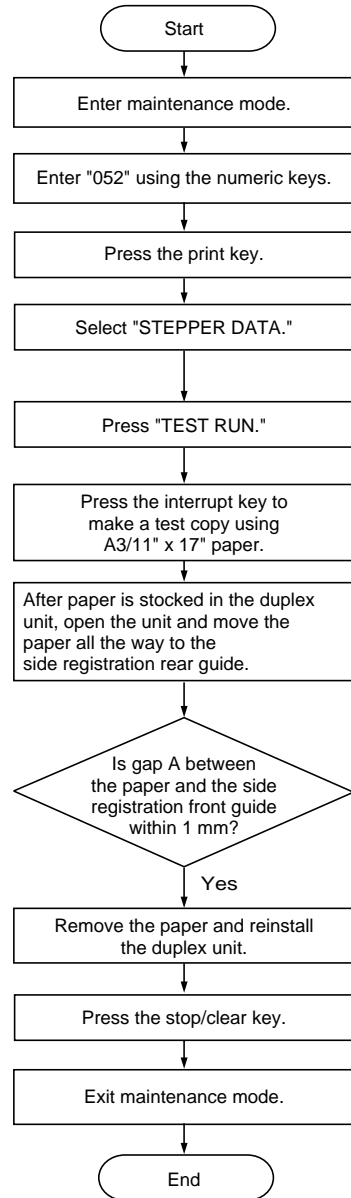


Figure 3-3-104

3-3-88





2A3/4

3-3-11 SRDF section

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

Clean or replace the DF original feed pulley and DF forwarding pulleys as follows.

<Procedure>

1. Open the DF original reversing cover.
2. Remove the two screws holding the upper original feed section cover and then the cover.
3. Remove the two stop rings and then the original feed pulley assembly by sliding out the bushings.

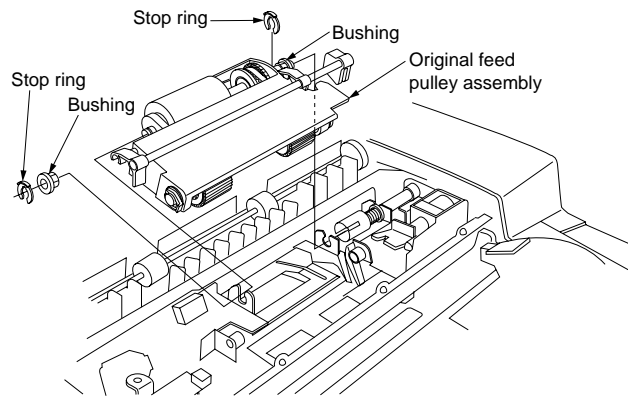


Figure 3-3-105 Detaching the original feed pulley assembly

• Detaching the DF original feed pulley

4. Remove the two stop rings and then the DF original feed pulley from the original feed front shaft.

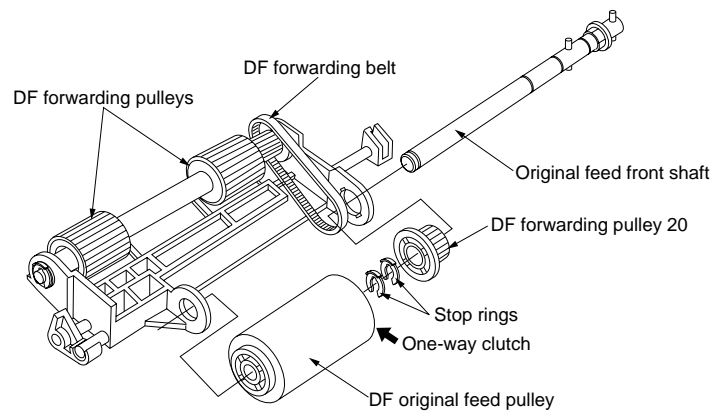


Figure 3-3-106 Detaching the DF original feed pulley

3-3-89





2A3/4

- Detaching DF forwarding pulleys
5. Remove the stop ring and bushing. While lifting the forwarding shaft, remove the DF forwarding pulleys.
 6. Clean or replace the DF original feed pulley and DF forwarding pulleys.
 7. Refit all removed parts.
- * When fitting the DF original feed pulley and DF forwarding pulleys, ensure that the side having the one-way clutch faces the machine rear.

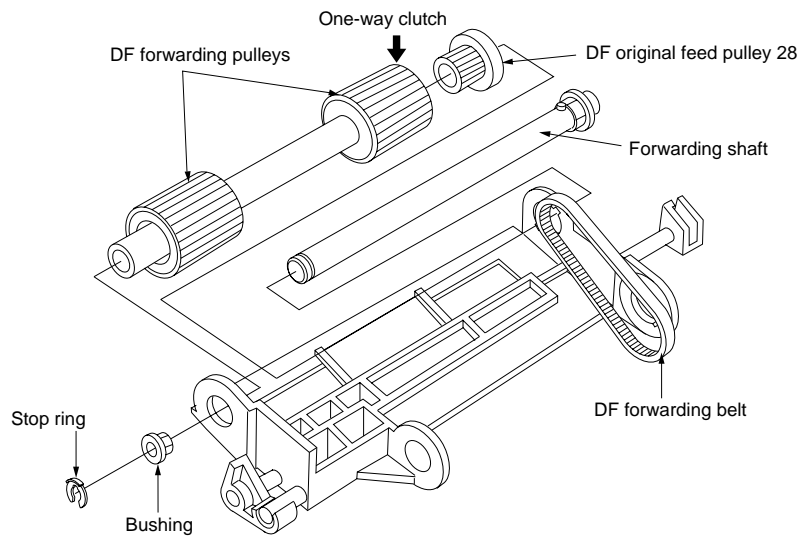


Figure 3-3-107 Detaching the DF forwarding pulleys

3-3-90





2A3/4

(2) Detaching and refitting the DF separation pulley

Clean or replace the DF separation pulley as follows.

<Procedure>

1. Open the DF reversing cover.
2. Remove the two screws holding the upper original feed section cover and then the cover.
3. Remove the two screws holding the DF rear cover.
4. Remove the screw holding the fulcrum pin and then the pin.
5. Detach the 6-pin connector and remove the original table.

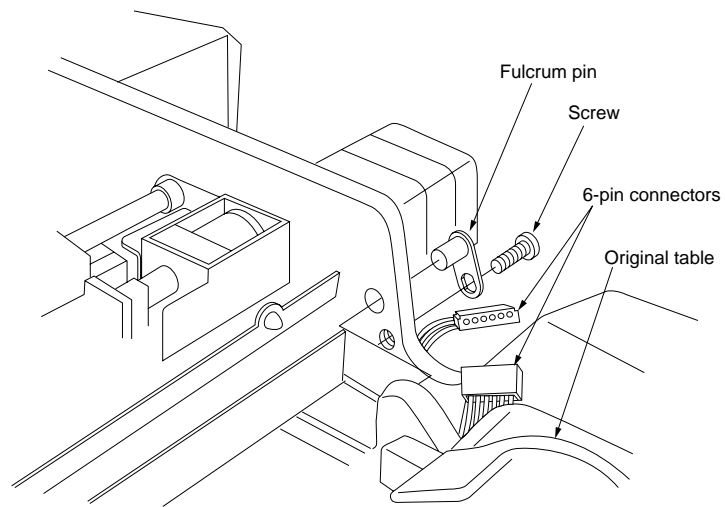


Figure 3-3-108

3-3-91





2A3/4

6. Remove the two screws holding the DF original feed lower guide and the two screws holding the DF original feed upper guide.
7. Loosen the other two screws on the DF original feed lower guide.
8. While lifting the DF original feed upper guide and pressing the original set switch actuator, remove the DF original feed lower guide.

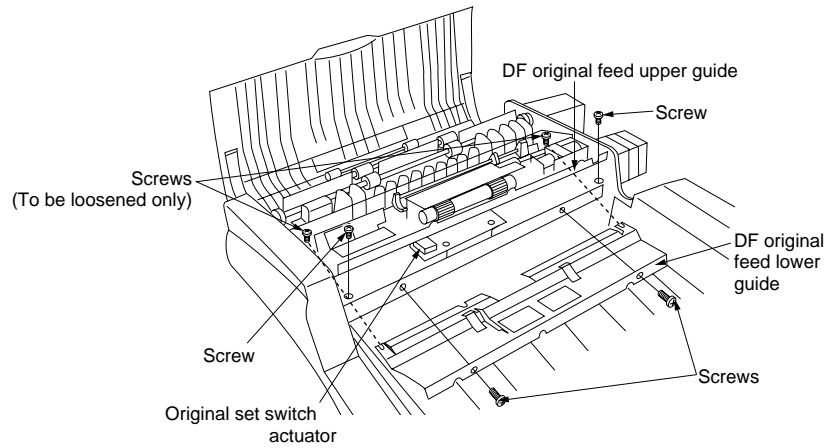


Figure 3-3-109

9. Detach the original set switch 3-pin connector.
10. Remove the two screws holding the separation pulley retainer.

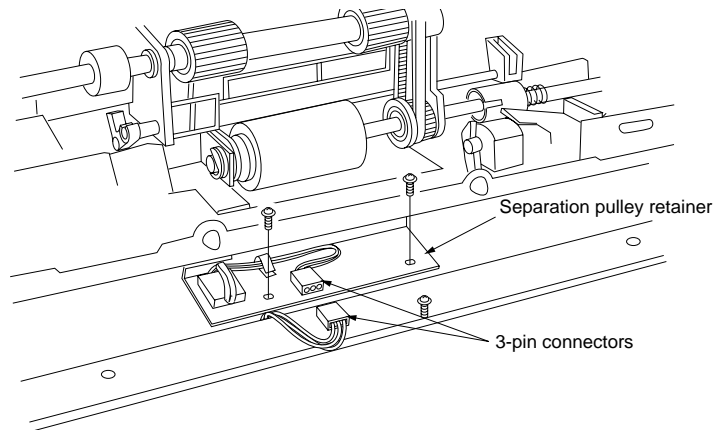


Figure 3-3-110

3-3-92





2A3/4

11. Remove the two stop rings and pin to remove the DF separation pulley from the separation shaft.
 12. Clean or replace the DF separation pulley.
 13. Refit all removed parts.
- * When fitting the DF separation pulley, ensure that the side having the one-way clutch faces the machine rear.

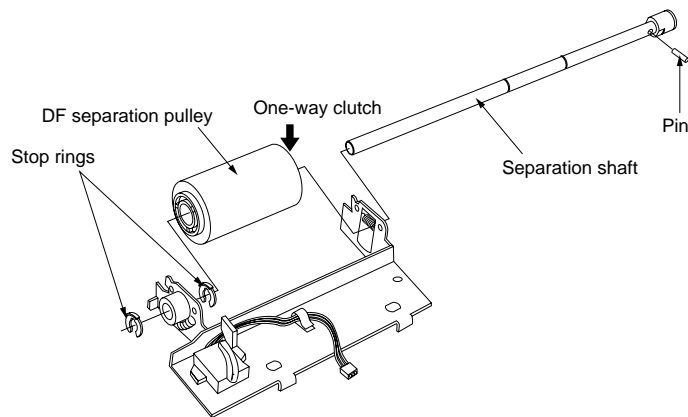


Figure 3-3-111 Detaching the DF separation pulley



3-3-93





2A3/4

(3) Adjusting the lateral squareness of the DF

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

Caution:

- Before making the following adjustment, output a 1 DOT-LINE PG pattern in maintenance item U089 to use as the original for the adjustment.
- Adjust the amount of slack in the paper at the registration roller for drawer, bypass and duplex feeds (page 3-3-22) and the scanner image lateral squareness (reference, page 3-3-33) first. Check for lateral squareness of the copy image and if squareness is not obtained, adjust the lateral squareness of the DF.

<Procedure>

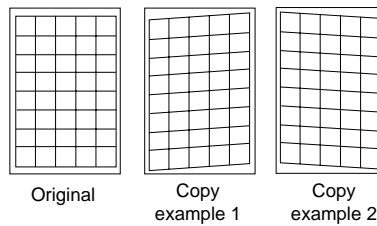
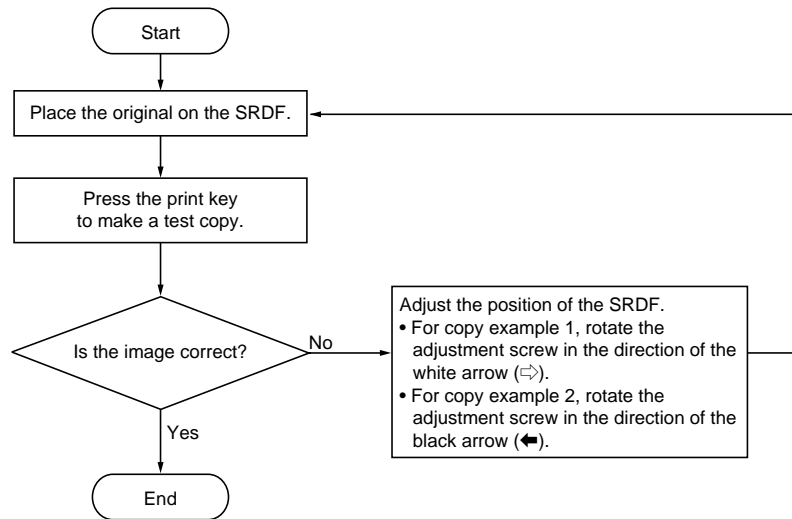


Figure 3-3-112

3-3-94





2A3/4

• Adjusting

1. Open the SRDF.
2. Loosen the screw securing the right leg of the SRDF on the right.
3. Adjust the position of the SRDF by rotating the adjustment screw behind the right leg of the SRDF.
4. Retighten the screw loosened in step 2.
5. Refit all removed parts.

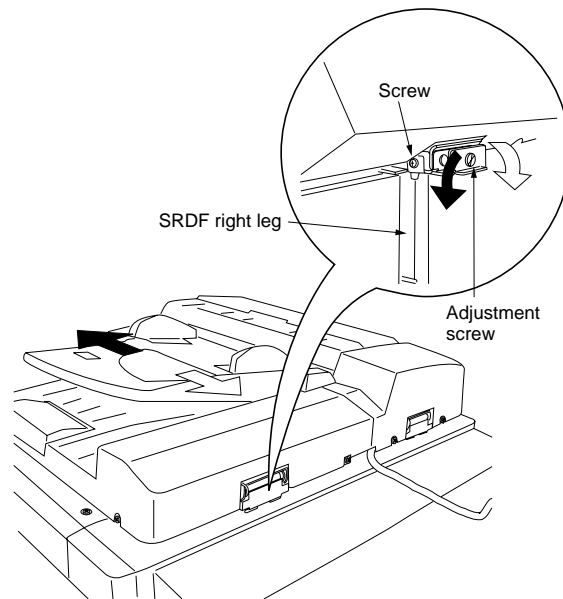


Figure 3-3-113

3-3-95

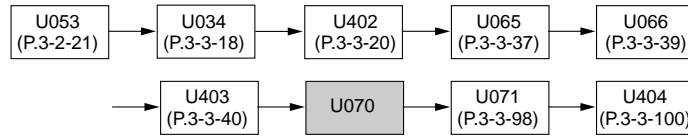




2A3/4

(4) 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>

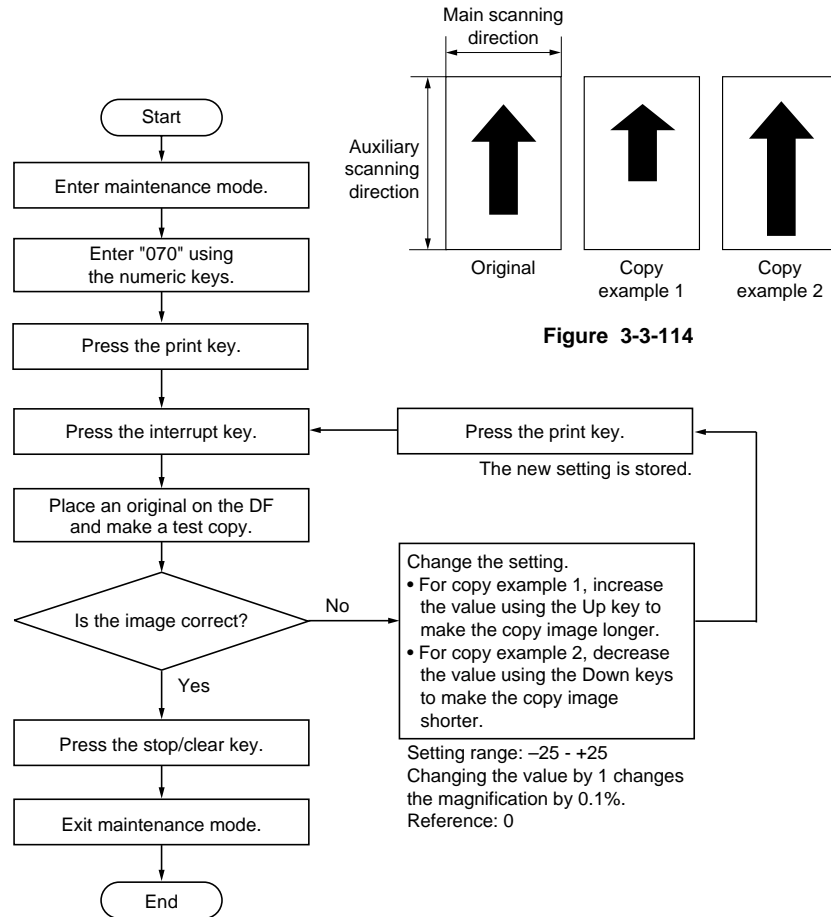


Figure 3-3-114

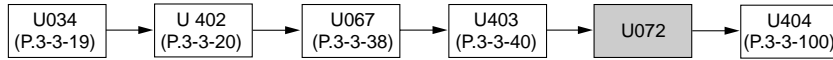
3-3-96





(5) Adjusting the DF center line

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



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

<Procedure>

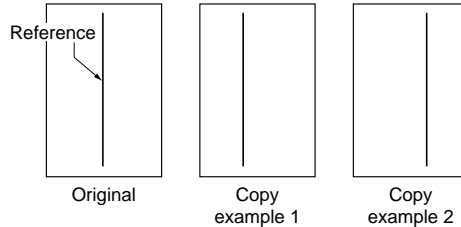
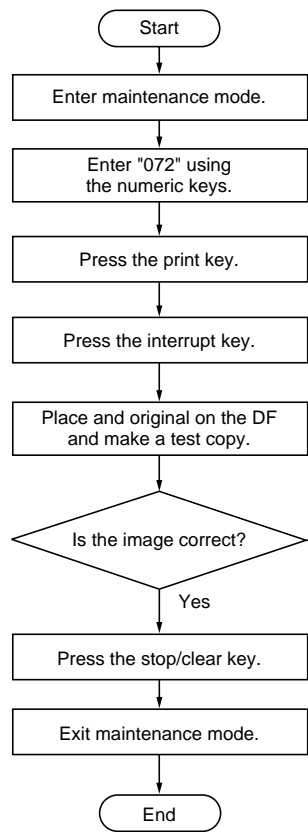


Figure 3-3-115

The new setting is stored.

Change the setting.

- For copy example 1, increase the value using the Up key.
- For copy example 2, decrease the value using the Down key.

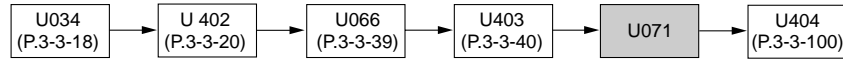
Setting range: -39.0 - +39.0
Changing the value by 1 moves the center line by 0.17 mm.
Reference: 0



2A3/4

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

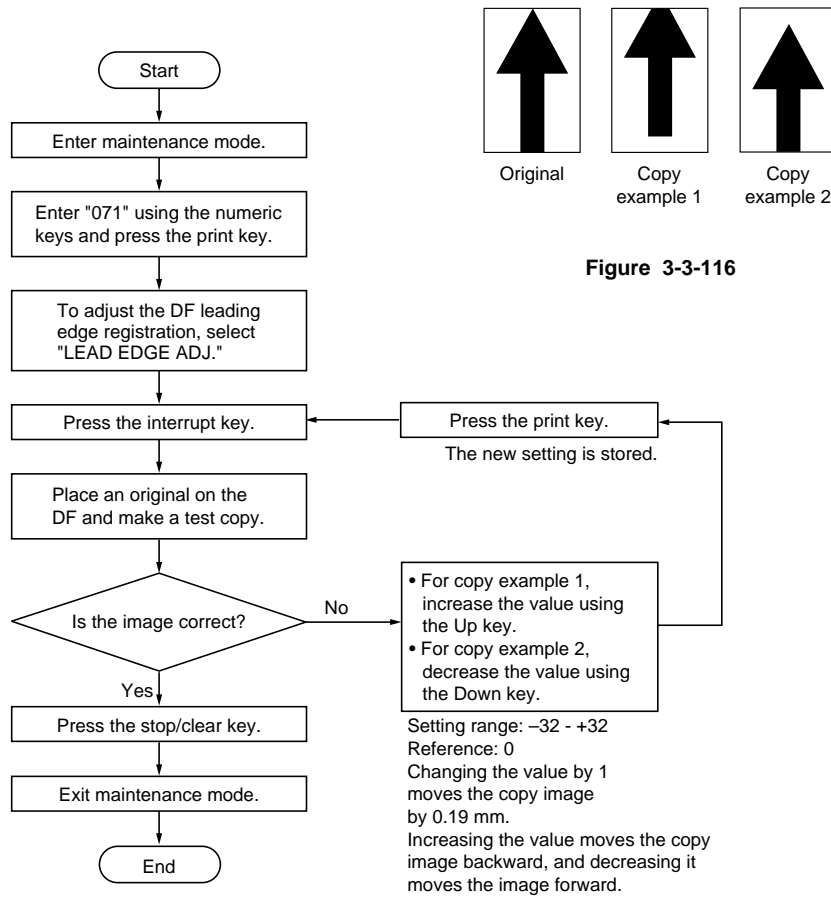
Perform the following adjustment if there is a regular error between the leading or trailing edges of the original and the copy image.



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

(6-1) Adjusting the DF leading edge registration

<Procedure>



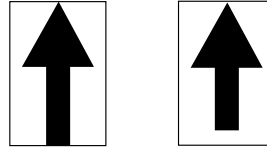
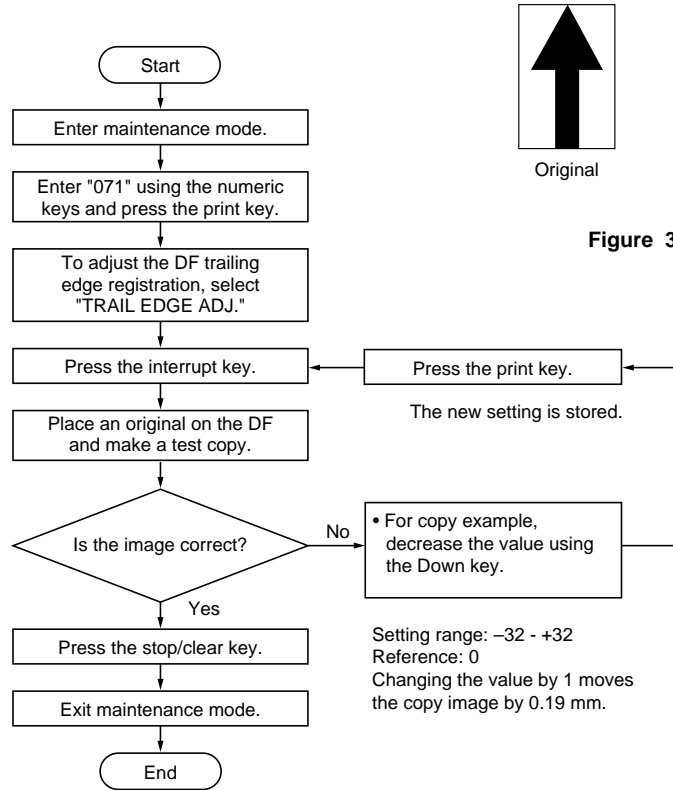
3-3-98





(6-2) Adjusting the DF trailing edge registration

<Procedure>



Original

Copy example

Figure 3-3-117

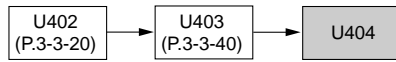
Setting range: -32 - +32
 Reference: 0
 Changing the value by 1 moves the copy image by 0.19 mm.



2A3/4

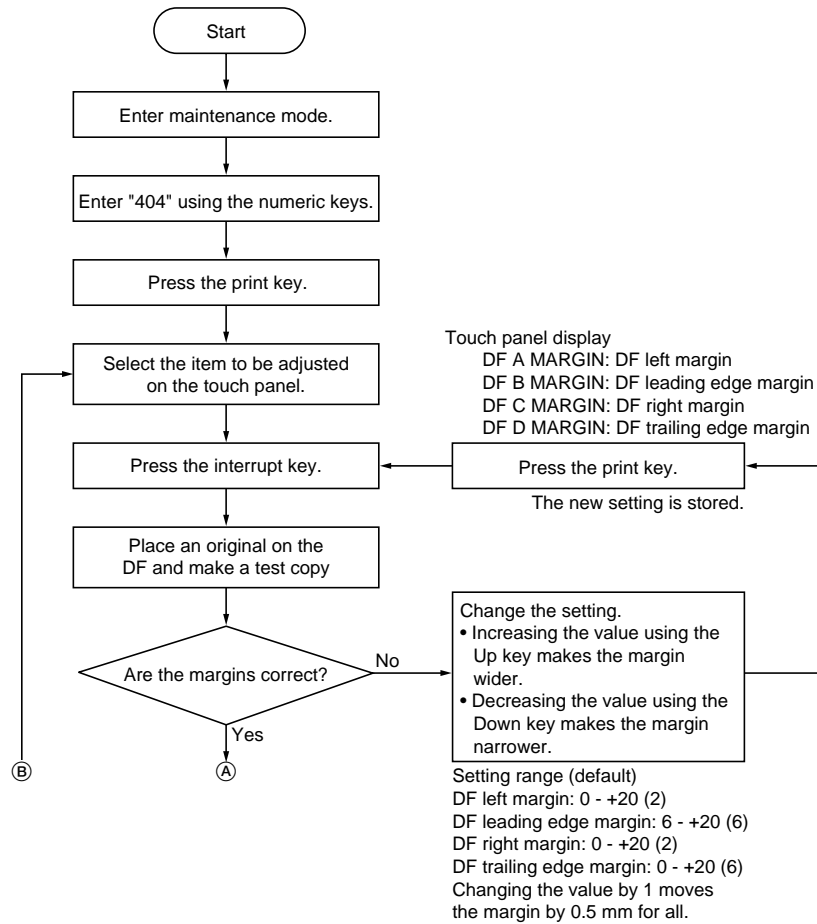
(7) Adjusting the margins for scanning the original from the DF

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>



3-3-100





2A3/4

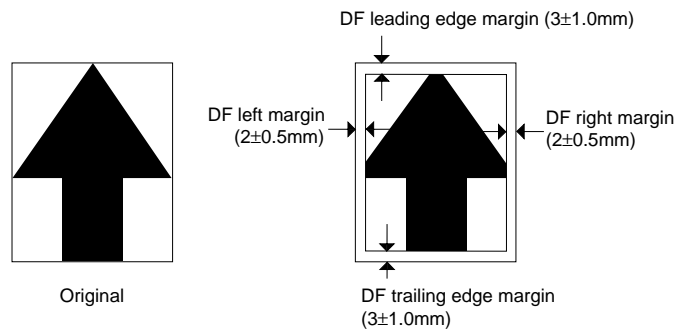
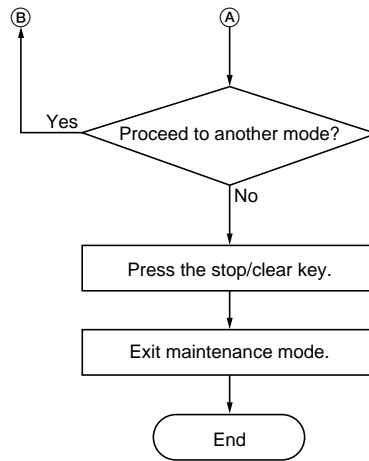


Figure 3-3-118

3-3-101





2A3/4

3-3-12 Large paper deck section (42 ppm: optional/52 ppm: standard)

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

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

<Procedure>

1. Open the large paper feed deck.
2. Open the deck side cover.
3. Remove the stop rings.
4. Remove the one-way drum.
5. Clean or replace the upper and lower deck separation rollers.
6. Refit all removed parts.

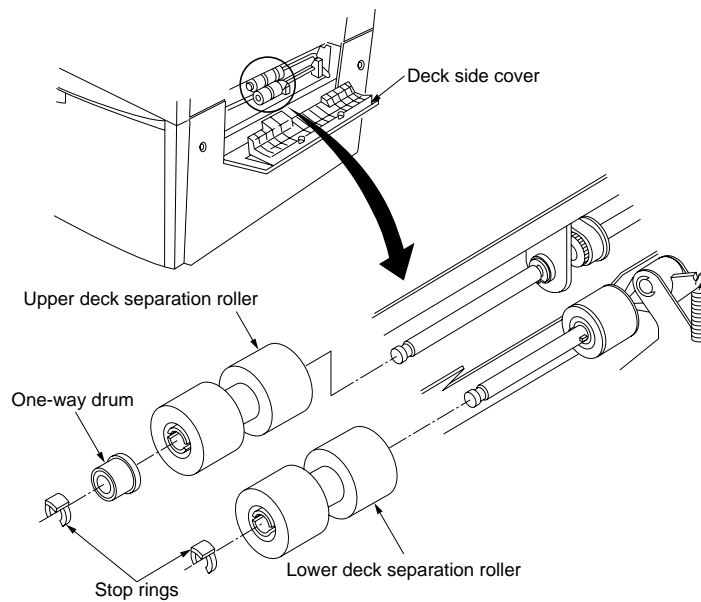


Figure 3-3-119 Detaching and refitting the upper and lower deck separation rollers

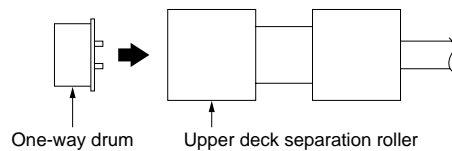


Figure 3-3-120 Installing the one-way drum

* Be sure to orient the one-way drum as shown in the above diagram.

3-3-102





2A3/4

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

<Procedure>

1. Open the large paper deck.
2. Open the deck right cover and remove the deck rear cover.
3. Remove the spring and four screws holding the deck paper conveying motor bracket and then the bracket.
4. Remove the two screws holding the deck paper conveying unit assembly and then the assembly.

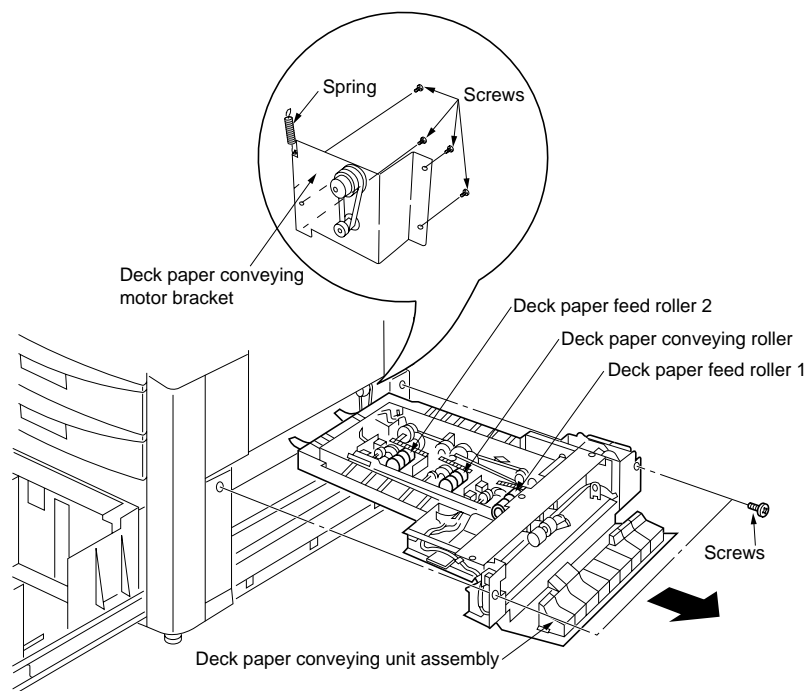


Figure 3-3-121 Detaching and refitting the deck paper conveying unit assembly

3-3-103





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(3) Detaching and refitting deck paper feed roller 1

Clean or replace deck paper feed roller 1 as follows.

<Procedure>

1. Remove the stop ring.
2. While pressing the roller down, pull out the shaft.
3. Take deck paper feed roller 1 out and clean or replace.
4. Refit all removed parts.

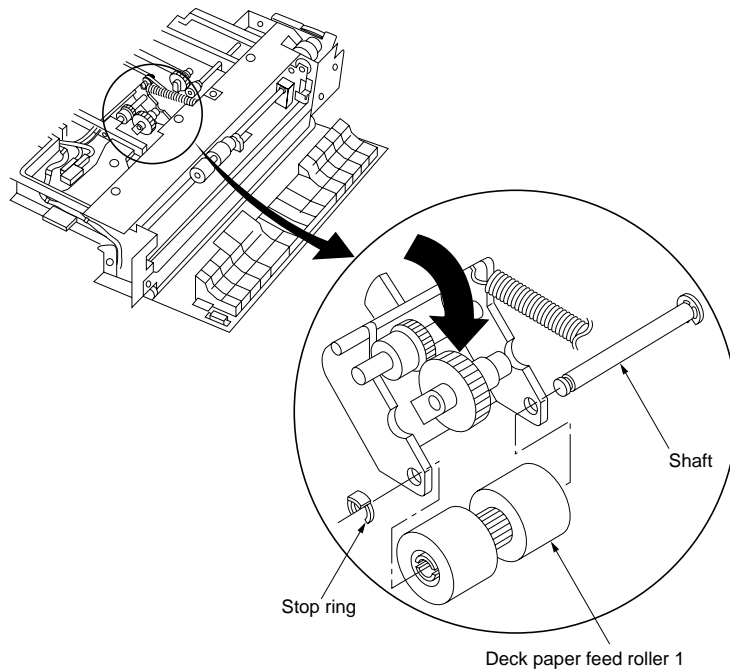


Figure 3-3-122 Detaching and refitting deck paper feed roller 1

* Use the above procedure to detach and refit deck paper feed roller 2 and the paper conveying roller.

3-3-104





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

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

<Procedure>

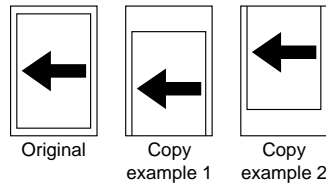
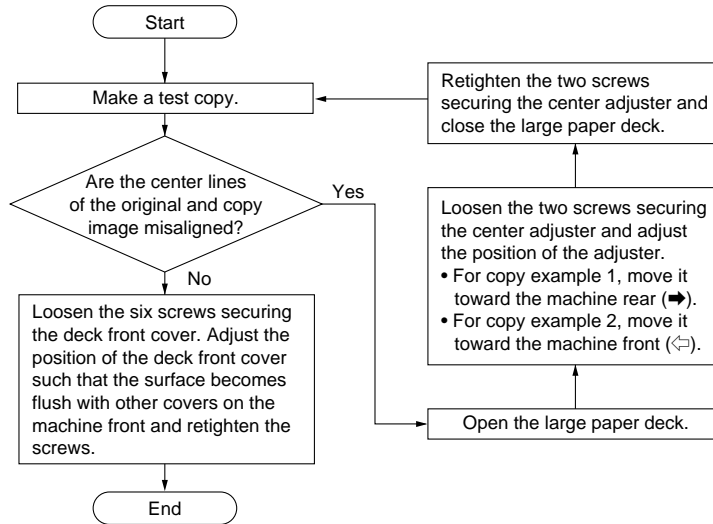


Figure 3-3-123

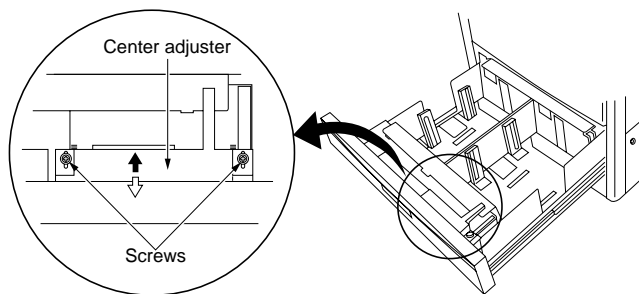


Figure 3-3-124 Adjusting the center of the center adjuster





CONTENTS

3-4 PCB Initial Settings

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3-4-1 Replacing the main PCB

(1) Replacing the main PCB only

After replacing the main PCB, remove the backup RAM (IC15) from the old main PCB and fit it to the new main PCB to maintain the original setting data.

(2) Replacing the main PCB and backup RAM

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

Procedure

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

3-4-1



2A3/4

3-4-2 Replacing the main PCB ROMs

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

Main ROM IC (P/N 2A368010)

Engine ROM IC (P/N 2A368020)

Scanner ROM IC (P/N 2A368060)

Procedure

1. Turn the main switch off and disconnect the power plug.
2. Remove the screw securing the main PCB ROM cover.
3. Replace the main ROM IC (IC45), engine ROM IC (IC57) and scanner ROM IC (IC54).
4. Refit the main PCB ROM cover.
5. Insert the power plug and turn the main switch on.

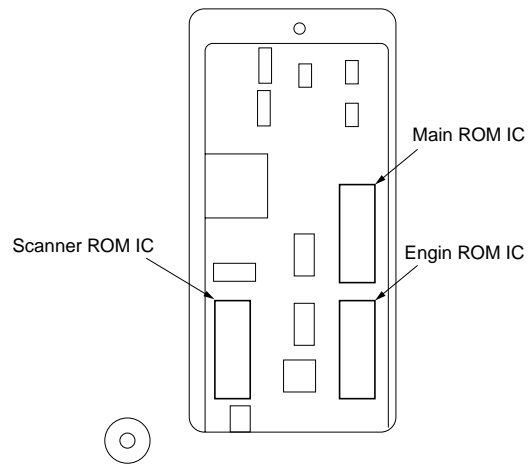


Figure 3-4-1 Replacing the main PCB ROMs

3-4-2





2A3/4

3-4-3 Adjustment-free variable resistors (VR)

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

- High-voltage transformer PCB: VR101, VR102, VR201, VR202, VR301, VR401, VR402
- Power source PCB: VR301



3-4-3





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CONTENTS

3-5 Self-Diagnosis

| | |
|------------------------------------|-------|
| 3-5-1 Self-diagnosis | 3-5-1 |
| (1) Self-diagnostic function | 3-5-1 |





2A3/4

3-5-1 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of "C" followed by a number between 001 and 924, indicating the nature of the problem. A message is also displayed requesting the user to call for service. After removing the problem, the self-diagnostic function can be reset by turning safety switches 1, 2 or 3 off and back on.



Figure 3-5-1 Service call code display

3-5-1





2A3/4

Self diagnostic codes

| Code | Contents | Remarks | |
|------|---|--|---|
| | | Causes | Check procedures/ corrective measures |
| C001 | Memory copy PCB 1 communication problem • Problems with data from memory copy PCB 1. | Defective memory copy PCB 1. | Replace memory copy PCB 1 and check for correct operation. |
| C003 | Memory copy PCB 2 problem*1 • Problems with data from memory copy PCB 2. | Defective memory copy PCB 2. | Replace memory copy PCB 2 and check for correct operation. |
| C010 | RAM/ROM problem • Read and write data does not match. | Defective main PCB. | Replace the main PCB and check for correct operation. |
| C011 | Backup memory data problem • Data in the specified area of the backup memory does not match the specified values. | Problem with the backup memory data. | Turn safety switch 1 off and back on and run maintenance item U020 to set the contents of the backup memory data again. |
| | | Defective backup RAM. | If the C011 is displayed after re-setting the backup memory contents, replace the backup RAM. |
| C021 | Operation unit main PCB communication problem • There is no reply after 20 retries at communication. | Poor contact of the connector terminals. | Check the connection of connectors CN6 on the main PCB and CN6 on the operation unit main PCB, and the continuity across the connector terminals. Repair or replace if necessary. |
| | | Defective main PCB or operation unit main PCB. | Replace the main PCB or operation unit main PCB and check for correct operation. |

*1: 42 ppm: optional/52 ppm: standard.

3-5-2





2A3/4

| Code | Contents | Remarks | |
|------|---|--|---|
| | | Causes | Check procedures/ corrective measures |
| C022 | Communication problem between the engine PCB and main PCB <ul style="list-style-type: none">• There is no reply after 20 retries at communication. | Defective engine ROM IC. | Replace the engine ROM IC on the main PCB and check for correct operation. |
| | | Defective main PCB. | Replace the main PCB and check for correct operation. |
| C023 | Scanner communication problem <ul style="list-style-type: none">• There is no reply after 5 retries at communication. | Defective main PCB. | Replace the main PCB and check for correct operation. |
| C024 | Printer board communication problem*2 <ul style="list-style-type: none">• There is no reply after 20 retries at communication. | Poor contact of the connector terminals. | Check the connection of connector CN4 on the main PCB and the connector on the printer board. Repair or replace if necessary. |
| | | Defective main PCB or printer board. | Replace the main PCB or printer board and check for correct operation. |

*2: Optional.

3-5-3





2A3/4

| Code | Contents | Remarks | |
|------|---|--|---|
| | | Causes | Check procedures/ corrective measures |
| C026 | Memory copy PCB 1 communication problem <ul style="list-style-type: none"> • There is no reply after five retries at transmitting. • There is no reply after five retries at receiving. | Poor contact of the connector terminals. | Check the connection of connector CN2 on the main PCB and the connector on memory copy PCB 1. Repair or replace if necessary. |
| | | Defective main PCB or memory copy PCB 1. | Replace the main PCB or memory copy PCB 1 and check for correct operation. |
| C032 | Large paper deck communication problem*1 <ul style="list-style-type: none"> • Communication errors from the communication micro-computer (IC56) on the main PCB: No communication: there is no replay after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession. | Poor contact of the connector terminals. | Check the connection of connector CN17 on the engine PCB and the connector CN9 on the deck main PCB, and the continuity across the connector terminals. Repair or replace if necessary. |
| | | Defective engine PCB. | Replace the engine PCB and check for correct operation. |
| | | Defective main PCB. | Replace the main PCB and check for correct operation. |
| | | Defective deck main PCB. | Replace the deck main PCB and check for correct operation. |
| C032 | Paper feed desk communication problem*3 <ul style="list-style-type: none"> • An error code from the paper feed desk is detected eight times in succession. No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession. | Poor contact of the connector terminals. | Check the connection of connectors CN17 on the engine PCB and CN2 on the desk main PCB, and the continuity across the connector terminals. Repair or replace if necessary. |
| | | Defective engine PCB. | Replace the engine PCB and check for correct operation. |
| | | Defective main PCB. | Replace the main PCB and check for correct operation. |
| | | Defective desk main PCB. | Replace the desk main PCB and check for correct operation. |

*1: 42 ppm: optional/52 ppm: standard. *3: Optional for 42 ppm only.

3-5-4





| Code | Contents | Remarks | |
|------|---|--|--|
| | | Causes | Check procedures/ corrective measures |
| C034 | Finisher communication problem*2 • Communication errors from the communication micro-computer (IC56) on the main PCB: No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession. | Poor contact of the connector terminals. | Check the connection of connectors CN21 on the engine PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary. |
| | | Defective engine PCB. | Replace the engine PCB and check for correct operation. |
| | | Defective main PCB. | Replace the main PCB and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |
| C036 | Memory copy PCB 2 communication problem*1 • There is no reply after five retries at transmitting. • There is no reply after five retries at receiving. | Poor contact of the connector terminals. | Check the connection of connector CN3 on the main PCB and the connector on memory copy PCB 2. Repair or replace if necessary. |
| C037 | Communication micro-computer problem • A problem is detected with the communication micro-computer (IC56) on the main PCB. | Defective main PCB or memory copy PCB 2. | Replace the main PCB or memory copy PCB 2 and check for correct operation. |
| | | Defective main PCB. | Replace the main PCB and check for correct operation. |
| C104 | Optical system problem • After AGC, correct input is not obtained at CCD. | Insufficient exposure lamp luminosity. | Replace the exposure lamp or inverter PCB. |
| | | Defective main PCB. | Replace the main PCB. |
| | | Incorrect shading position. | Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch. |
| | | CCD PCB output problem. | Replace the ISU. |

*1: 42 ppm: optional/52 ppm: standard. *2: Optional.





2A3/4

| Code | Contents | Remarks | |
|------|--|--|---|
| | | Causes | Check procedures/ corrective measures |
| C200 | Drive motor problem • DM LOCK signal remains high for 1 s, 1 s after the drive motor has turned on. | Poor contact of the drive motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective drive motor rotation control circuit. | Replace the drive motor. |
| | | Defective drive transmission system. | Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any. |
| C210 | Paper conveying motor problem • PCM LOCK signal remains high for 1 s, 1 s after the conveying motor has turned on. | Poor contact of the paper conveying motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective 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. |

3-5-6





| Code | Contents | Remarks | |
|------|---|---|--|
| | | Causes | Check procedures/ corrective measures |
| C220 | Side registration motor problem • A problem where the side registration home position switch does not turn off after the side registration motor has turned 30 steps or the switch does not turn on after the motor has turned 265 steps is detected twice in succession. (The first time, the copier indicates that the duplex unit is not inserted correctly, requesting the user to open and reinsert the duplex unit. After the second detection, the copier enters partial operation control.) | Defective side registration motor. | Check for continuity across the coil. If none, replace the side registration motor. |
| | | Defective side registration home position switch. | Check if CN9-12 on the engine PCB goes high when the side registration home position switch is on and goes low when the switch is off. If not, replace the switch. |
| | | Poor contact of the connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Malfunction of the side registration guides. | Check if the side registration guides operate smoothly. If not, repair. |
| C230 | Paper feed motor problem • PFM LOCK signal remains high for 1 s, 1 s after the paper feed motor has turned on. | Poor contact of the 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. |
| C231 | Desk drive motor problem^{*3} • DDM LOCK signal remains high for 1 s, 2 s after the desk drive motor has turned on. | Poor contact of the desk drive motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective desk drive motor rotation control circuit. | Replace the desk drive motor. |

*3: Optional for 42 ppm only.





2A3/4

| Code | Contents | Remarks | |
|------|--|--|--|
| | | Causes | Check procedures/ corrective measures |
| C231 | Desk drive motor problem ^{*3} • DDM LOCK signal remains high for 1 s, 2 s after the desk drive motor has turned on. | Defective drive transmission system. | Check if rollers and gears rotate smoothly. If not grease the bushings and gears. Check for broken gears and replace if any. |
| C241 | Upper lift motor problem • When the drawer is inserted, the upper lift limit switch does not turn on within 4 to 5 s of the upper lift motor turning on. • During copying, the upper lift limit switch does not turn on within 200 ms of the upper lift motor turning on. | Broken gears or couplings of the upper lift motor. | Replace the upper lift motor. |
| | | Defective upper lift motor. | Check for continuity across the coil. If none, replace the upper lift motor. |
| | | Poor contact of the upper lift motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective upper lift limit switch. | Check if CN15-3 on the engine PCB goes low when the upper lift limit switch is turned on. If not, replace the upper lift limit switch. |
| | | Poor contact of the upper lift limit switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| C242 | Lower lift motor problem • When the drawer is inserted, the lower lift limit switch does not turn on within 4 to 5 s of the lower lift motor turning on. • During copying, the lower lift limit switch does not turn on within 200 ms of the lower lift motor turning on. | Broken gears or couplings of the lower lift motor | Replace the lower lift motor. |
| | | Defective lower lift motor. | Check for continuity across the coil. If none, replace the lower lift motor. |
| | | Poor contact of the lower lift motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |

*3: Optional for 42 ppm only.

3-5-8





| Code | Contents | Remarks | |
|------|---|---|---|
| | | Causes | Check procedures/ corrective measures |
| C242 | Lower lift motor problem <ul style="list-style-type: none"> When the drawer is inserted, the lower lift limit switch does not turn on within 4 to 5 s of the lower lift motor turning on. During copying, the lower lift limit switch does not turn on within 200 ms of the lower lift motor turning on. | Defective lower lift limit switch. | Check if CN15-4 on the engine PCB goes low when the lower lift limit switch is turned on. If not, replace the upper lift limit switch. |
| | | Poor contact of the lower lift limit switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| C243 | Upper desk lift motor problem^{*3} <ul style="list-style-type: none"> When the drawer is inserted, the upper desk lift limit switch does not turn on within 4 to 5 s of the upper desk lift motor turning on. During copying, the upper desk lift limit switch does not turn on within 200 ms of the upper desk lift motor turning on. | Broken gears or couplings of the upper desk lift motor. | Replace the upper desk lift motor. |
| | | Defective upper desk lift motor. | Check for continuity across the coil. If none, replace the upper desk lift motor. |
| | | Poor contact of the upper desk lift motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective upper desk lift limit switch. | Check if CN3-11 on the desk main PCB goes low when the upper desk lift limit switch is turned on. If not, replace the upper desk lift limit switch. |
| | | Poor contact of the upper desk lift limit switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |

*3: Optional for 42 ppm only.





2A3/4

| Code | Contents | Remarks | |
|------|---|---|---|
| | | Causes | Check procedures/ corrective measures |
| C244 | Lower desk lift motor problem^{*3} <ul style="list-style-type: none"> When the drawer is inserted, the lower desk lift limit switch does not turn on within 4 to 5 s of the lower desk lift motor turning on. During copying, the lower desk lift limit switch does not turn on within 200 ms of the lower desk lift motor turning on. | Broken gears or couplings of the lower desk lift motor. | Replace the lower desk lift motor. |
| | | Defective lower desk lift motor. | Check for continuity across the coil. If none, replace the lower desk lift motor. |
| | | Poor contact of the lower desk lift motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective lower desk lift limit switch. | Check if CN3-12 on the desk main PCB goes low when the lower desk lift limit switch is turned on. If not, replace the upper desk lift limit switch. |
| | | Poor contact of the lower desk lift limit switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| C310 | Scanner carriage problem <ul style="list-style-type: none"> The home position is not correct when the power is turned on or at the start of copying using the bypass table. | Poor contact of the connector terminals. | Check the connection of connector CN5 on the main PCB and the continuity across the connector terminals. Repair or replace if necessary. |
| | | Defective scanner home position switch. | Replace the scanner home position switch. |
| | | Defective main PCB or scanner motor PCB. | Replace the main PCB or scanner motor PCB and check for correct operation. |
| | | Defective scanner motor. | Replace the scanner motor. |

*3: Optional for 42 ppm only.

3-5-10





2A3/4

| Code | Contents | Remarks | |
|------|---|--|---|
| | | Causes | Check procedures/ corrective measures |
| C332 | Scanner watchdog problem <ul style="list-style-type: none"> The main routine does not run within 8.192 ms of the main switch being turned on. | Defective main PCB. | Replace the main PCB and check for correct operation. |
| C340 | Original detection position problem <ul style="list-style-type: none"> The original size detection microcomputer in the main PCB cannot store initial data correctly. | Poor contact of the connectors. | Check the connection of connector CN7 on the scanner motor PCB and the continuity across the connector terminals. Repair or replace if necessary. |
| | | Defective original size sensor. | Replace the original size sensor. |
| | | Defective main PCB or scanner motor PCB. | Replace the main PCB or scanner motor PCB and check for correct operation. |
| C400 | Polygon motor synchronization problem <ul style="list-style-type: none"> The polygon motor does not reach the stable speed within 9 s of the polygon motor remote signal turning on. | Poor contact of 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 CN6-5 on the engine PCB. If not, replace the power source PCB. |
| | | Defective engine PCB. | Check if 24 V DC is output from CN7-1 on the engine PCB. If not, replace the engine PCB. |
| C401 | Polygon motor steady-state problem <ul style="list-style-type: none"> The polygon motor rotation is not stable for 600 ms after the polygon motor rotation has been stabilized. | Poor contact of 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. |

3-5-11





2A3/4

| Code | Contents | Remarks | |
|------|---|---|---|
| | | Causes | Check procedures/ corrective measures |
| C401 | Polygon motor steady-state problem • The polygon motor rotation is not stable for 600 ms after the polygon motor rotation has been stabilized. | Defective power source PCB. | Check if 24 V DC is supplied to CN6-5 on the engine PCB. If not, replace the power source PCB. |
| | | Defective engine PCB. | Check if 24 V DC is output from CN7-1 on the engine PCB. If not, replace the engine PCB. |
| C420 | BD steady-state problem • The VTC detects a BD error for 600 ms after the polygon motor rotation has been stabilized. | Defective laser diode. | Replace the LSU. |
| | | Defective polygon motor. | Replace the LSU. |
| | | Defective main PCB. | Replace the main PCB. |
| C510 | Main charger problem • MC ALM signal is detected continuously for 400 ms when MC REM signal is turned on. | Defective high-voltage transformer PCB. | Replace the high-voltage transformer PCB. |
| | | Leakage during main charging. | Check and clean the main charger assembly. |
| C511 | Transfer/separation high-voltage problem • STALM signal is detected continuously for 400 ms when TC/SC REM signal is turned on. | Defective high-voltage transformer PCB. | Replace the high-voltage transformer PCB. |
| | | Leakage during transfer/separation charging. | Check and clean the transfer charger assembly. |
| C610 | Broken fixing unit thermistor wire • 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 of the fixing unit thermistor connector terminals. | Check the connection of connector CN3-B8 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 infinite, 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. |

3-5-12





| Code | Contents | Remarks | |
|------|--|---|---|
| | | Causes | Check procedures/ corrective measures |
| C610 | Broken fixing unit thermistor wire <ul style="list-style-type: none"> The fixing temperature does not increase for 40 s after the fixing heaters have been turned on for warming up. The fixing temperature remains below 50°C/122°F for 10 s continuously after the fixing heaters have been turned on during stabilization. | Fixing unit heater M or S installed incorrectly. | Check and reinstall if necessary. |
| | | Broken fixing unit heater M or S wire. | Check for continuity. If none, replace the fixing unit heater M or S. |
| C620 | Abnormally low fixing temperature <ul style="list-style-type: none"> The fixing temperature remains below 120°C/248°F for 10 s. | Poor contact of the fixing unit thermistor connector terminals. | Check the connection of connector CN3-B8 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 infinite, replace the fixing unit thermistor. |
| | | Fixing unit thermistor installed incorrectly. | Check and reinstall if necessary. |
| | | Fixing unit thermostat triggered. | Check for continuity. If none, replace the fixing unit thermostat. |
| | | Fixing unit heater M or S installed incorrectly. | Check and reinstall if necessary. |
| | | Broken fixing unit heater M or S wire. | Check for continuity. If none, replace the fixing unit heater M or S. |





2A3/4

| Code | Contents | Remarks | |
|------|---|--|---|
| | | Causes | Check procedures/ corrective measures |
| C630 | Abnormally high fixing temperature <ul style="list-style-type: none"> The fixing temperature exceeds 220°C/428°F for 10 s. The fixing unit high temperature detection circuit on the engine PCB detects an abnormally high temperature. | Shorted fixing unit thermistor. | Measure the resistance. If it is infinite, replace the fixing unit thermistor. |
| | | Broken fixing unit heater control circuit on the power source PCB. | Replace the power source PCB. |
| C640 | Zero-crossing signal problem <ul style="list-style-type: none"> The main PCB does not detect the zero-crossing signal (Z CROSS SIG) for the time specified below. At power-on: 3 s Others: 5 s | Poor contact of the connector terminals. | Check the connection of connectors CN10-5 on the main PCB and CN4-3 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 CN4-3 on the power source PCB. If not, replace the power source PCB. |
| | | Defective main PCB. | Replace the main PCB if C640 is detected while CN4-3 on the power source PCB outputs the zero-crossing signal. |
| C710 | Toner sensor problem <ul style="list-style-type: none"> The sensor output voltage is outside the range of 0.5 to 4.5 V during copying or in maintenance item U130. The toner sensor control voltage cannot be set within the range in maintenance item U130. | Defective toner sensor. | Replace the toner sensor. |
| | | Poor contact of the toner sensor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Developer problem. | Replace the developer. |

3-5-14





| Code | Contents | Remarks | |
|------|--|---|---|
| | | Causes | Check procedures/ corrective measures |
| C730 | Broken external temperature thermistor wire • The input voltage is above 4.5 V (230 bits). | Poor contact of the humidity sensor PCB connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective external temperature thermistor. | Replace the humidity sensor PCB. |
| C731 | Short-circuited external temperature thermistor • The input voltage is below 0.5 V (250 bits). | Poor contact of 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. |
| C740 | Toner hopper problem • The toner hopper lockup sensor does not turn off after the toner recycle motor has rotated for at least 1 minute. | Toner main hopper lockup. | Remove the recycled toner in the toner main hopper if it locks up. |
| | | Defective toner hopper lockup sensor. | Replace the toner hopper lockup sensor. |
| | | Poor contact of the toner hopper lockup sensor connector terminals. | Reinsert the connectors. Also check for continuity within the cable. If none, remedy or replace the cable. |
| | | Defective toner recycle motor. | Check for continuity across the coils. If none, replace the recycle motor. |
| | | Poor contact of the toner recycle motor connector terminals. | Reinsert the connectors. Also check for continuity within the cable. If none, remedy or replace the cable. |





2A3/4

| Code | Contents | Remarks | |
|------|---|---|---|
| | | Causes | Check procedures/ corrective measures |
| C801 | Finisher paper conveying motor problem*2 • The paper conveying motor lockup signal is detected for 0.5 s or longer. | The paper conveying motor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The paper conveying motor malfunctions. | Replace the paper conveying motor and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |
| C803 | Finisher paper conveying belt problem*2 • An on-to-off or off-to-on state change of the paper conveying belt home position sensor is not detected within 2 s of the paper conveying belt clutch turning on. | The paper conveying belt is out of phase. | Adjust the paper conveying belt so that it is in phase and check for correct operation. |
| | | The paper conveying belt clutch malfunctions. | Replace the paper conveying belt clutch and check for correct operation. |
| | | The paper conveying belt home position sensor malfunctions. | Replace the paper conveying belt home position sensor and check for correct operation. |
| | | The paper conveying belt home position sensor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The internal tray is incorrectly inserted. | Check whether the internal tray unit or front cover catches are damaged. |

*2: optional.

3-5-16





| Code | Contents | Remarks | |
|------|---|---|---|
| | | Causes | Check procedures/ corrective measures |
| C814 | Finisher tray elevation motor problem*2 • The sort tray is not detected in the home position within 30 s of the start of the tray elevation motor rotation. | The tray elevation motor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The tray elevation motor malfunctions. | Replace the tray elevation motor and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |
| C817 | Finisher front jogger motor problem*2 • While the front jogger is not detected in the home position, the front jogger home position sensor does not detect the jogger within 1.5 s of the start of front jogger motor clockwise rotation. • After the front jogger is detected in the home position, the front jogger home position sensor still detects the jogger within 0.5 s of the start of front jogger motor counterclockwise rotation. | The front jogger motor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The front jogger motor malfunctions. | Replace the front jogger motor and check for correct operation. |
| | | The front jogger motor home position sensor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The front jogger motor home position sensor malfunctions. | Replace the front jogger home position sensor and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |

*2: optional.





2A3/4

| Code | Contents | Remarks | |
|------|---|--|---|
| | | Causes | Check procedures/ corrective measures |
| C818 | Finisher rear jogger motor problem*2 <ul style="list-style-type: none"> While the rear jogger is not detected in the home position, the rear jogger home position sensor does not detect the jogger within 1.5 s of the start of rear jogger motor clockwise rotation. After the rear jogger is detected in the home position, the rear jogger home position sensor still detects the jogger within 0.5 s of the start of rear jogger motor counterclockwise rotation. | The rear jogger motor makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The rear jogger motor malfunctions. | Replace the rear jogger motor and check for correct operation. |
| | | The rear jogger motor home position sensor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The rear jogger motor home position sensor malfunctions. | Replace the rear jogger home position sensor and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |

*2: optional.

3-5-18





| Code | Contents | Remarks | |
|------|--|---|--|
| | | Causes | Check procedures/ corrective measures |
| C821 | Finisher front stapler problem*2 <ul style="list-style-type: none"> The front stapler home position sensor does not change state from non-detection to detection within 0.2 s of the start of front stapler motor counterclockwise (forward) rotation. During initialization, the front stapler home position sensor does not change state from non-detection to detection within 0.6 s of the start of front stapler motor clockwise (reverse) rotation. | The front stapler connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The front stapler malfunctions. <ul style="list-style-type: none"> a) The front stapler is blocked with a staple. b) The front stapler is broken. | <ul style="list-style-type: none"> a) Remove the front stapler cartridge, and check the stapling section of the stapler. b) Replace the front stapler and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |
| C822 | Finisher rear stapler problem*2 <ul style="list-style-type: none"> The rear stapler home position sensor does not change state from non-detection to detection within 0.2 s of the start of rear stapler motor counterclockwise (forward) rotation. During initialization, the rear stapler home position sensor does not change state from non-detection to detection within 0.6 s of the start of rear stapler motor clockwise (reverse) rotation. | The rear stapler connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | The rear stapler malfunctions. <ul style="list-style-type: none"> a) The rear stapler is blocked with a staple. b) The rear stapler is broken. | <ul style="list-style-type: none"> a) Remove the rear stapler cartridge, and check the stapling section of the stapler. b) Replace the rear stapler and check for correct operation. |
| | | Defective finisher main PCB. | Replace the finisher main PCB and check for correct operation. |

*2: optional.





2A3/4

| Code | Contents | Remarks | |
|------|--|---|---|
| | | Causes | Check procedures/ corrective measures |
| C920 | Deck paper conveying motor problem*1 <ul style="list-style-type: none"> • No pulse is input within 500 ms of the start-up. • No pulse is input within 100 ms of the previous pulse input. | The deck paper conveying motor connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Defective deck paper conveying motor PCB. | Replace the deck paper conveying motor PCB and check for correct operation. |
| | | The deck paper conveying motor does not rotate correctly (the motor is overloaded). | Check the gears and remedy if necessary. |
| C921 | Paper deck motor 1 problem*1 <ul style="list-style-type: none"> • No pulse is input within 20 ms of the start-up. • No pulse is input within 400 ms of the previous pulse input. | Paper deck motor 1 connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Paper deck motor 1 does not rotate correctly (the motor is overloaded). | Check the gears and remedy if necessary. |

*1: 42 ppm: optional/52 ppm: standard.

3-5-20





| Code | Contents | Remarks | |
|------|---|---|---|
| | | Causes | Check procedures/ corrective measures |
| C922 | Paper deck motor 2 problem*1 • No pulse is input within 20 ms of the start-up. • No pulse is input within 400 ms of the previous pulse input. | Paper deck motor 2 connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Paper deck motor 2 does not rotate correctly (the motor is overloaded). | Check the gears and remedy if necessary. |
| C923 | Right lift position problem*1 • While the paper deck motor is driving, lift upper limit switch 1 detects the right lift reaching the upper limit. | Upper limit switch 1 connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Deck level switch 1 connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| C924 | Left lift position problem*1 • While the paper deck motor is driving, lift upper limit switch 2 detects the left lift reaching the upper limit. | Upper limit switch 2 connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | | Deck level switch 2 connector makes poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |

*1: 42 ppm: optional/52 ppm: standard.





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 - (4) Paper jams. 3-6-102
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3-6-1 Image formation problems

(1) No image appears (entirely white).



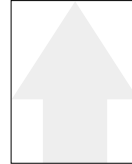
See page 3-6-4

(2) No image appears (entirely black).



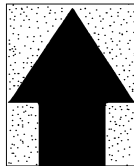
See page 3-6-5

(3) Image is too light.



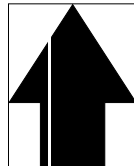
See page 3-6-6

(4) Background is visible.



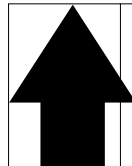
See page 3-6-6

(5) A white line appears longitudinally.



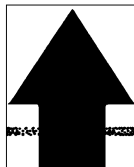
See page 3-6-7

(6) A black line appears longitudinally.



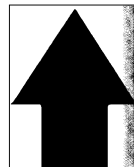
See page 3-6-7

(7) A black line appears laterally.



See page 3-6-8

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



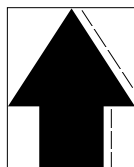
See page 3-6-8

(9) Black dots appear on the image.



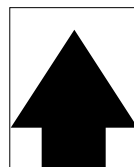
See page 3-6-9

(10) Image is blurred.



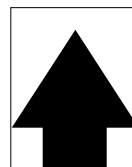
See page 3-6-9

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



See page 3-6-10

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



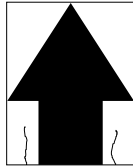
See page 3-6-10





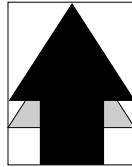
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(13) Paper creases.



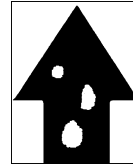
See page 3-6-11

(14) Offset occurs.



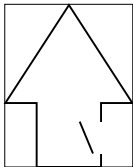
See page 3-6-11

(15) Image is partly missing.



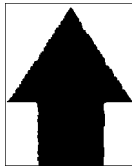
See page 3-6-12

(16) Fixing is poor.



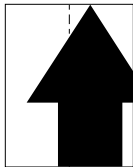
See page 3-6-12

(17) Image is out of focus.



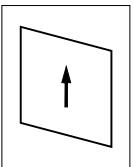
See page 3-6-13

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



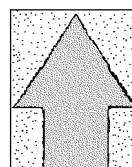
See page 3-6-13

(19) Image is not square.



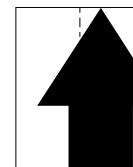
See page 3-6-14

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



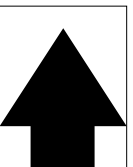
See page 3-6-14

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



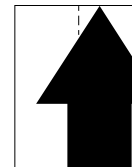
See page 3-6-15

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



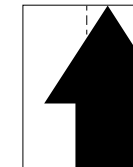
See page 3-6-15

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



See page 3-6-16

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



See page 3-6-16

3-6-2





2A3/4

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



See page 3-6-17



3-6-3





2A3/4

(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 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 main PCB. | Check if CN1-84 on the main PCB goes low when maintenance item U101 is run. If not, replace the main PCB. |
| D. Defective engine PCB. | Check if CN5-B7 on the engine PCB goes low when CN1-84 on the main PCB is held low while maintenance item U101 is run. If not, replace the engine PCB. |
| E. 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. |

3-6-4





(2) No image appears (entirely black).



Causes

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

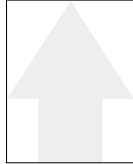
| Causes | Check procedures/corrective measures |
|---|--|
| 1. No main charging. | |
| A. Broken main charger wire. | Replace the wire. |
| B. Leaking main charger housing. | Clean the main charger wire, grid and shield. |
| C. The connector terminals of the high-voltage transformer PCB make poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| D. Defective main PCB. | Check if CN1-86 on the main PCB goes low when maintenance item U100 is run. If not, replace the main PCB. |
| E. Defective engine PCB. | Check if CN5-B13 on the engine PCB goes low when CN1-86 on the main PCB is held low while maintenance item U100 is run. If not, replace the engine PCB. |
| F. Defective high-voltage transformer PCB. | Check if main charging takes place when CN1-1 on the high-voltage transformer PCB goes low while maintenance item U100 is run. If not, replace the high-voltage transformer PCB. |
| 2. Exposure lamp fails to light. | |
| A. The connector terminals of the exposure lamp make poor contact. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| B. Defective inverter PCB. | Check if the exposure lamp lights when CN1-5 and 1-6 on the inverter PCB go low while maintenance item U061 is run. If not, replace the inverter PCB. |
| C. Defective scanner control PCB. | Check if CN 5-14 on the main PCB goes low when maintenance item U061 is run. If not, replace the main PCB. |





2A3/4

(3) Image is too light.

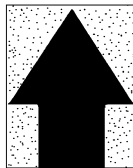


Causes

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 3-3-45). |

(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. |

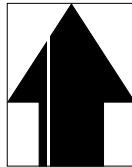
3-6-6





2A3/4

(5) A white line appears longitudinally.

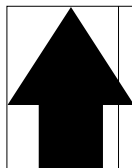


Causes

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 3-3-45). |
| 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 3-3-45). |
| 3. Deformed or worn cleaning blade. | Replace the cleaning blade (see page 3-3-59). |
| 4. Dirty scanner mirror. | Clean the scanner mirror. |

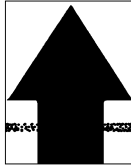
3-6-7





2A3/4

(7) A black line appears laterally.

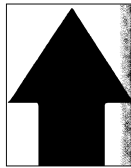


Causes

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 3-3-45). |
| 2. Dirty developing section. | Clean any part contaminated with toner or carrier in the developing section. |
| 3. Leaking main charger housing. | Clean the main charger wire, grid and shield. |

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



Causes

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

| Causes | Check procedures/corrective measures |
|-----------------------------|--|
| 1. Dirty main charger wire. | Clean the wire or, if it is extremely dirty, replace it. |
| 2. Defective exposure lamp. | Check if the exposure lamp light is distributed evenly. If not, replace the exposure lamp (see page 3-3-23). |

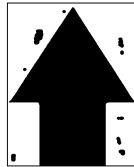
3-6-8





2A3/4

(9) Black dots appear on the image.

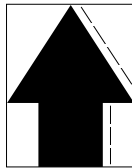


Causes

1. Dirty or flawed drum.
2. 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 3-3-45). |
| 2. Deformed or worn cleaning blade. | Replace the cleaning blade (see page 3-3-59). |

(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 3-3-71). |
| 3. Paper conveying section drive problem. | Check the gears and belts and, if necessary, grease them. |

3-6-9



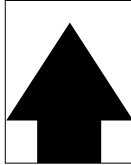


2A3/4

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

Causes

1. Misadjusted leading edge registration.

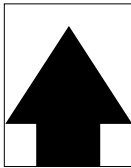


| Causes | Check procedures/corrective measures |
|---|---|
| 1. Misadjusted leading edge registration. | Readjust the leading edge registration (see pages 3-3-18 and 39). |

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

Causes

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



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

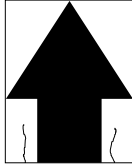
3-6-10





2A3/4

(13) Paper creases.

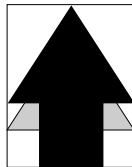


Causes

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 3-3-59). |

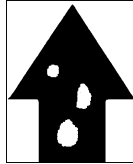
3-6-11





2A3/4

(15) Image is partly missing.

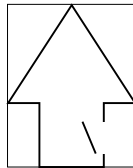


Causes

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 (see page 3-3-50). |
| 4. Flawed drum. | Replace the drum (see page 3-3-45). |

(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 3-3-71). |

3-6-12



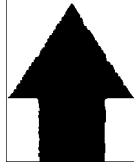


2A3/4

(17) Image is out of focus.

Causes

1. Defective image scanning unit.

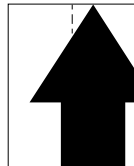


| Causes | Check procedures/corrective measures |
|-----------------------------------|--------------------------------------|
| 1. Defective image scanning unit. | Replace the image scanning unit. |

(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 3-3-19). |
| 2. Misadjusted scanner center line. | Readjust the scanner center line (see page 3-3-38). |
| 3. Original placed incorrectly. | Place the original correctly. |

3-6-13



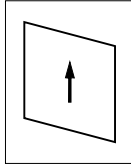


2A3/4

(19) Image is not square.

Causes

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

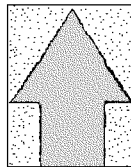


| Causes | Check procedures/corrective measures |
|--|--|
| 1. Laser scanner unit positioned incorrectly. | Adjust the installation position of the laser scanner unit (see page 3-3-33). |
| 2. Image scanning unit positioned incorrectly. | Adjust the installation position of the image scanning unit (see page 3-3-35). |

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

Causes

1. No developing bias output.



| Causes | Check procedures/corrective measures |
|---|---|
| 1. No developing bias output. | |
| A. Developing bias wire makes poor contact. | Check the developing bias wire. If there are any problems, replace it. |
| B. Defective main PCB. | Check if CN1-85 on the main PCB goes low when maintenance item U030 is run. If not, replace the main 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. |

3-6-14



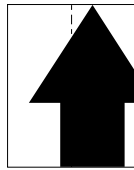


2A3/4

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

Causes

- 1. Misadjusted DF center line.

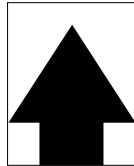


| Causes | Check procedures/corrective measures |
|--------------------------------|--|
| 1. Misadjusted DF center line. | Readjust the DF center line (see page 3-3-97). |

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

Causes

- 1. Misadjusted DF original scanning start position.



| Causes | Check procedures/corrective measures |
|---|---|
| 1. Misadjusted DF original scanning start position. | Readjust the DF original scanning start position (see page 3-3-98). |

3-6-15



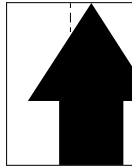


2A3/4

(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.

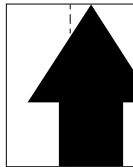


| Causes | Check procedures/corrective measures |
|---|--|
| 1. Side registration section installed incorrectly. | Adjust the installation position of the side registration section (see page 3-3-87). |

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

Causes

- 1. Center adjuster installed incorrectly.



| Causes | Check procedures/corrective measures |
|---|---|
| 1. Center adjuster installed incorrectly. | Adjust the installation position of the center adjuster (see page 3-3-105). |

3-6-16





2A3/4

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

Causes

1. Upper registration cleaner assembly soiled with paper powder.



| Causes | Check procedures/corrective measures |
|--|---|
| 1. Upper registration cleaner assembly soiled with paper powder. | Vacuum clean the paper powder from the upper registration cleaner assembly. |



3-6-17





2A3/4

3-6-2 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, the feed switch, registration switch or eject switch. | Check visually and remove it, if any. |
| | Defective paper feed switch 1. | With 5 V DC present at CN13-5 on the engine PCB, check if CN13-4 on the engine PCB remains low when paper feed switch 1 is turned on and off. If it does, replace paper feed switch 1. |
| | Defective paper feed switch 2. | With 5 V DC present at CN13-8 on the engine PCB, check if CN13-7 on the engine PCB remains low when paper feed switch 2 is turned on and off. If it does, replace paper feed switch 2. |
| | Defective paper feed switch 3. | With 5 V DC present at CN13-11 on the engine PCB, check if CN13-10 on the engine PCB remains low when paper feed switch 3 is turned on and off. If it does, replace paper feed switch 3. |
| | Defective feed switch. | With 5 V DC present at CN13-2 on the engine PCB, check if CN13-1 on the engine PCB remains low when the feed switch is turned on and off. If it does, replace the feed switch. |
| | Defective registration switch. | With 5 V DC present at CN8-B1 on the engine PCB, check if CN8-B2 on the engine PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch. |

3-6-18





2A3/4

| 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. | Defective eject switch. | With 5 V DC present at CN3-B10 on the engine PCB, check if CN3-B9 on the engine PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch. |
| (2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier upper drawer). | Paper in the upper drawer is extremely curled. | Change the paper. |
| | Check if the upper paper feed pulley, lower paper feed pulley or upper forwarding pulley of the upper drawer are deformed. | Check visually and replace any deformed pulleys. |
| | Broken paper feed switch 2 actuator. | Check visually and replace paper feed switch 1 if its actuator is broken. |
| | Defective paper feed switch 2. | With 5 V DC present at CN13-8 on the engine PCB, check if CN13-7 on the engine PCB goes low when paper feed switch 2 is turned on. If not, replace paper feed switch 2. |
| | Check if the upper paper feed clutch malfunctions. | Check and repair if necessary. |
| | Electrical problem with the upper paper feed clutch. | Check (see page 3-6-79). |

3-6-19



2A3/4

| Problem | Causes/check procedures | Corrective measures |
|--|--|--|
| (3) A paper jam in the paper feed section is indicated during copying (no paper feed from copier lower drawer). | Paper in the lower drawer is extremely curled. | Change the paper. |
| | Check if the upper paper feed pulley, lower paper feed pulley or upper forwarding pulley of the lower drawer 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. | With 5 V DC present at CN13-11 on the engine PCB, check if CN13-10 on the engine PCB goes low when paper feed switch 3 is turned on. If not, replace paper feed switch 3. |
| | Check if the lower paper feed clutch malfunctions. | Check and repair if necessary. |
| | Electrical problem with the lower paper feed clutch. | Check (see page 3-6-80). |
| (4) A paper jam in the paper feed section is indicated during copying (no paper feed from bypass). | Paper on the bypass table is extremely curled. | Change the paper. |
| | Check if the forwarding pulley, upper or lower paper feed pulleys of the bypass are deformed. | Check visually and replace any deformed pulleys. |
| | Broken feed switch actuator. | Check visually and replace the feed switch if its actuator is broken. |
| | Defective feed switch. | With 5 V DC present at CN13-2 on the engine PCB, check if CN13-1 on the engine PCB remains low when the feed switch is turned on and off. If it does, replace the feed switch. |
| | Check if the bypass paper feed clutch malfunctions. | Check and repair if necessary. |
| Electrical problem with the bypass paper feed clutch. | Check (see page 3-6-81). | |

3-6-20





| Problem | Causes/check procedures | Corrective measures |
|--|--|---|
| (5) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section). | Broken feed switch actuator. | Check visually and replace the feed switch if its actuator is broken. |
| | Defective feed switch. | With 5 V DC present at CN13-2 on the engine PCB, check if CN13-1 on the engine PCB goes low when the feed switch is turned on. If not, replace the feed switch. |
| | Broken paper feed switch 1 actuator. | Check visually and replace paper feed switch 1 if its actuator is broken. |
| | Defective paper feed switch 1. | With 5 V DC present at CN13-5 on the engine PCB, check if CN13-4 on the engine PCB goes low when paper feed switch 1 is turned on. If not, replace paper feed switch 1. |
| | Broken paper feed switch 2 actuator. | Check visually and replace paper feed switch 2 if its actuator is broken. |
| | Defective paper feed switch 2. | With 5 V DC present at CN13-8 on the engine PCB, check if CN13-7 on the engine PCB goes low when paper feed switch 2 is turned on. If not, replace paper feed switch 2. |
| | Broken paper feed switch 3 actuator. | Check visually and replace paper feed switch 3 if its actuator is broken. |
| | Defective paper feed switch 3. | With 5 V DC present at CN13-11 on the engine PCB, check if CN13-10 on the engine PCB goes low when paper feed switch 3 is turned on. If not, replace paper feed switch 3. |
| | Check if the feed pulleys and feed rollers 1, 2 and 3 do not contact each other. | Check visually and remedy if necessary. |
| Check if the feed pulleys and feed rollers 1, 2 and 3 are deformed. | Repair or replace if necessary. | |



2A3/4

| Problem | Causes/check procedures | Corrective measures |
|--|--|---|
| (6) A paper jam in the paper feed section is indicated during copying (jam in converging section). | Broken registration switch actuator. | Check visually and replace the registration switch if its actuator is broken. |
| | Defective registration switch. | With 5 V DC present at CN8-B1 on the engine PCB, check if CN8-B2 on the engine PCB goes low when the registration switch is turned on. If not, replace the registration switch. |
| (7) A paper jam in the paper feed section is indicated during copying (multiple sheets in paper feed section). | Check if the feed pulleys and feed rollers 1, 2 and 3 are deformed. | Repair or replace if necessary. |
| | Check if the feed pulleys and feed rollers 1, 2 and 3 do not contact each other. | Check visually and remedy if necessary. |
| | Check if the feed guides are deformed. | Check visually and remedy if necessary. |
| (8) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section). | Check if the feed guides are deformed. | Check visually and remedy if necessary. |
| (9) A paper jam in the paper feed section is indicated during copying (multiple sheets before registration section). | Check if the upper, middle and lower feed guide plates are deformed. | Check visually and remedy if necessary. |

3-6-22





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|--|---|---|
| (10) A paper jam in the paper conveying section is indicated during copying (jam in registration/transfer section). | Check if the registration clutch malfunctions. | Check visually and remedy if necessary. |
| | Electrical problem with the registration clutch. | Check (see page 3-6-81). |
| | 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. |
| (11) A paper jam in the fixing section is indicated during copying (jam in fixing section). | Check if the registration clutch malfunctions. | Check and remedy if necessary. |
| | Electrical problem with the registration clutch. | Check (see page 3-6-81). |
| | 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. |
| | 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. |
| (12) A paper jam in the eject section is indicated during copying (jam in eject section). | Check if the heat roller and its separation claws contact each other. | Remedy if the separation claw springs are out of place. |
| | Check if the eject roller and eject pulley contact each other. | Remedy. |

3-6-23



2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---|--|---|
| <p>(13) A paper jam in the eject section is indicated during copying (jam in switchback eject section).</p> | <p>Broken switchback eject switch actuator.</p> | <p>Check visually and replace the switchback eject switch if its actuator is broken.</p> |
| | <p>Defective switchback eject switch.</p> | <p>With 5 V DC present at CN3-A2 on the engine PCB, check if CN3-A1 on the engine PCB remains low when the switchback eject switch is turned on and off. If it does, replace the switchback eject switch.</p> |
| | <p>Check if the left or right switchback feed roller is deformed.</p> | <p>Check visually and replace any deformed rollers.</p> |
| | <p>Check if the right middle or left switchback eject guide is deformed.</p> | <p>Check visually and remedy if necessary.</p> |

3-6-24





• SRDF

| Problem | Causes/check procedures | Corrective measures |
|--|---|--|
| (1) An original jams when the main switch is turned on. | A piece of paper torn from an original is caught around the original feed switch. | Remove any found. |
| | Defective original feed switch. | With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 on the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch. |
| | A piece of paper torn from an original is caught around the original switchback switch. | Remove any found. |
| | Defective original switchback switch. | With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch. |
| | A piece of paper torn from an original is caught around the DF timing switch. | Remove any found. |
| | Defective DF timing switch. | With 5 V DC present at CN6-A15 on the DF driver PCB, check if CN6-A14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch. |
| (2) An original jams during continuous copying of multiple originals. | Defective original feed switch. | With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 on the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch. |
| | Check if the original feed motor or the original conveying motor malfunction. | Check and remedy. |





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---|--|--|
| <p>(3) An original jams in the SRDF during copying (a jam in the original feed/ conveying section).</p> | Defective DF timing switch. | With 5 V DC present at CN6-A15 on the DF driver PCB, check if CN6-A14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch. |
| | Defective original feed switch. | With 5 V DC present at CN6-B4 on the DF driver PCB, check if CN6-B5 on the DF driver PCB remains low when the original feed switch is turned on and off. If it does, replace the original feed switch. |
| | Defective original switchback switch. | With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch. |
| | Check if the original feed motor malfunctions. | Check and remedy. |
| | Check if the DF original feed pulley or the DF separation pulley is deformed. | Check visually and replace the deformed pulley. |
| | 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. |

3-6-26





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|--|--|--|
| (3) An original jams in the SRDF during copying (a jam in the original feed/conveying section). | Check if the original conveying motor malfunctions. | Check and remedy. |
| | Check if the middle original conveying roller and middle original conveying pulley contact each other correctly. | Check and remedy. |
| (4) An original jams in the SRDF during copying (a jam in the original switchback section). | Defective original switchback switch. | With 5 V DC present at CN6-A6 on the DF driver PCB, check if CN6-A5 on the DF driver PCB remains low when the original switchback switch is turned on and off. If it does, replace the original switchback switch. |
| | Defective DF timing switch. | With 5 V DC present at CN6-A15 on the DF driver PCB, check if CN6-A14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch. |
| | Check if the original feed motor malfunctions. | Check and remedy. |
| | Check if the original conveying motor malfunctions. | Check and remedy. |
| (5) Original jams frequently. | An original outside the specifications is used. | Use only originals conforming to the specifications. |
| | The DF forwarding pulleys, DF original feed pulley or DF switchback pulley is dirty with paper powder. | Clean with isopropyl alcohol. |
| | The DF original feed pulley and the DF separation pulley do not contact correctly. | Remedy. |

3-6-27





2A3/4

• Feedshift and duplex sections

| Problem | Causes/check procedures | Corrective measures |
|---|--|---|
| (1) A paper jam in the feedshift section is indicated during copying (jam in feedshift section). | Broken feedshift switch actuator. | Check visually and replace the feedshift switch if its actuator is broken. |
| | Defective feedshift switch. | With 5 V DC present at CN3-A5 on the engine PCB, check if CN3-A4 on the engine PCB goes low when the feedshift switch is turned on. If not, replace the feedshift switch. |
| | Electrical problem with the feedshift solenoid. | Check (see page 3-6-94). |
| | Deformed lower feedshift guide. | Check and remedy. |
| | Incorrect contact between the feedshift lower roller and pulley. | Check and remedy. |
| (2) A paper jam in the duplex section is indicated during copying (jam in duplex conveying section). | Broken duplex paper conveying switch actuator. | Check visually and replace the duplex paper conveying switch if its actuator is broken. |
| | Defective duplex paper conveying switch. | With 5 V DC present at CN9-6 on the engine PCB, check if CN9-8 on the engine PCB goes low when the duplex paper conveying switch is turned on. If not, replace the duplex paper conveying switch. |
| | Broken duplex registration switch actuator. | Check visually and replace the duplex registration switch if its actuator is broken. |
| | Defective duplex registration switch. | With 5 V DC present at CN9-5 on the engine PCB, check if CN9-7 on the engine PCB goes low when the duplex registration switch is turned on. If not, replace the duplex registration switch. |
| | Broken duplex eject switch actuator. | Check visually and replace the duplex eject switch if its actuator is broken. |

3-6-28





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---|---|---|
| (2) A paper jam in the duplex section is indicated during copying (jam in duplex conveying section). | Defective duplex eject switch. | With 5 V DC present at CN9-13 on the engine PCB, check if CN9-11 on the engine PCB goes low when the duplex eject switch is tuned on. If not, replace the duplex eject switch. |
| | Check if upper and lower duplex registration rollers, duplex paper conveying roller and pulley, and duplex eject roller and pulley contact each other correctly. | Check and remedy. |
| | Check if upper or lower duplex registration roller, duplex paper conveying roller or pulley, or duplex eject roller or pulley are deformed. | Check visually and remedy if necessary. |
| (3) A paper jam in the duplex section is indicated during copying (jam in duplex stock section). | Check if the duplex forward solenoid malfunctions. | Check and remedy. |
| | Electrical problem with the duplex forward solenoid. | Check (see page 3-6-94). |
| | Broken switchback eject switch actuator. | Check visually and replace the switchback eject switch if its actuator is broken. |
| | Defective switchback eject switch. | With 5 V DC present at CN3-A2 on the engine PCB, check if CN3-A1 on the engine PCB goes low when the switchback eject switch is turned on. If not, replace the switchback eject switch. |
| | Broken duplex registration switch actuator. | Check visually and replace the duplex registration switch if its actuator is broken. |
| Defective duplex registration switch. | With 5 V DC present at CN9-5 on the engine PCB, check if CN9-7 on the engine PCB goes low when the duplex registration switch is turned on. If not, replace the duplex registration switch. | |

3-6-29



2A3/4

• Large paper deck (42 ppm: optional/52 ppm: standard)

| Problem | Causes/check procedures | Corrective measures |
|---|---|---|
| (1) A paper jam in the large paper deck is indicated during copying (paper failing to reach PPS0 in large paper deck horizontal paper path). | Broken deck paper conveying motor gear. | Check visually and replace the deck paper conveying motor or its gear if necessary. |
| | Paper is extremely curled. | Change the paper. |
| | Defective paper path sensor 1. | With a 5/0 V DC pulse signal output at CN1-1 on the deck main PCB, check if a 2/0 V DC pulse signal is output at CN4-9 on the deck main PCB when paper path sensor 1 is turned on by holding a sheet of paper level about 10 to 20 mm below the bottom of the paper conveying base. If not, paper path sensor 1 or the interface PCB is defective. Check the interface PCB and, if it is okay, replace paper path sensor 1. |
| | Electrical problem with paper feed clutch 1. | Check (see page 3-6-96). |
| | The paper side guides are deformed. | Remedy or replace. |
| | Mechanical problem with paper feed clutch 1. | Check the installation condition. |
| | Defective interface PCB. | Check for continuity across CN1-9 & CN7-2 and CN1-4 & CN5-6 on the interface PCB. If none, replace the interface PCB. |
| Defective deck main PCB. | Check if the voltage at CN4-9 on the deck main PCB changes in the pattern 2 V DC/0 V DC (pulse) /0 V DC. If it does, replace the deck main PCB. | |

3-6-30





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---|---|---|
| (2) A paper jam in the large paper deck is indicated during copying (paper failing to reach PPS1 in large paper deck horizontal paper path). | Broken deck paper conveying motor gear. | Check visually and replace the deck paper conveying motor or its gear if necessary. |
| | Paper is extremely curled. | Change the paper. |
| | Defective paper path sensor 2. | With a 5/0 V DC pulse signal output at CN1-1 on the deck main PCB, check if a 2/0 V DC pulse signal is output at CN1-6 on the deck main PCB with paper path sensor 2 is turned on by holding a sheet of paper level about 10 to 20 mm below the bottom of the paper conveying base. If not, paper path sensor 2 or the interface PCB is defective. Check the interface PCB and, if it is okay, replace paper path sensor 2. |
| | Electrical problem with the paper conveying clutch. | Check (see page 3-6-98). |
| | The paper side guides are deformed. | Remedy or replace. |
| | Mechanical problem with the paper conveying clutch. | Check the installation condition. |
| | Defective interface PCB. | Check for continuity across CN1-6 & CN5-2 and CN2-6 & CN4-8 on the interface PCB. If none, replace the interface PCB. |
| Defective deck main PCB. | Check if the voltage at CN1-6 on the deck main PCB changes in the pattern 2 V DC/0 V DC (pulse) /0 V DC. If it does, replace the deck main PCB. | |

3-6-31



2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---|--|--|
| (3) A paper jam in the large paper deck is indicated during copying (paper failing to reach PPS2 in large paper deck horizontal paper path). | Broken deck paper conveying motor gear. | Check visually and replace the deck paper conveying motor or its gear if necessary. |
| | Paper is extremely curled. | Change the paper. |
| | Defective paper path sensor 3. | With a 5/0 V DC pulse signal output at CN1-1 on the deck main PCB, check if a 2/0 V DC pulse signal is output at CN1-11 on the deck main PCB when paper path sensor 3 is turned on by holding a sheet of paper level about 10 to 20 mm below the bottom of the paper conveying base. If not, paper path sensor 3 or the interface PCB is defective. Check the interface PCB and, if it is okay, replace paper path sensor 3. |
| | Electrical problem with paper feed clutch 2. | Check (see page 3-6-97). |
| | Mechanical problem with paper feed clutch 2. | Check the installation condition. |
| | The paper side guides are deformed. | Remedy or replace. |
| | Defective interface PCB. | Check for continuity across CN1-5 & CN5-4 and CN2-11 & CN4-2 on the interface PCB. If none, replace interface the PCB. |
| Defective deck main PCB. | Check if the voltages at CN1-11 on the deck main PCB change in the pattern 2 V DC/0 V DC (pulse) /0 V DC. If it does, replace the deck main PCB. | |

3-6-32



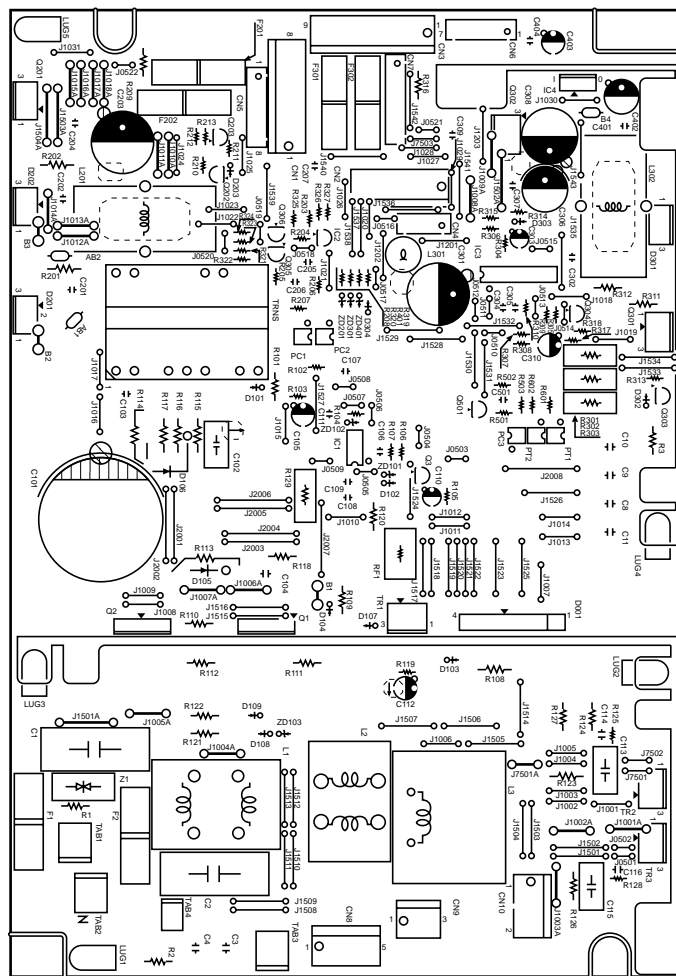


3-6-3 PCB terminal voltages

Precautions

- When handling the circuit boards, do not touch the components with bare hands.
- ICs can be damaged by static discharges. If a PCB contains ICs, do not touch the ICs, cable connectors or edge connectors.
- Store the circuit boards wrapped in aluminum foil, conductive sponge rubber, or similar material.

(1) Power source PCB





2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-----------------|----------------------------|--|
| TB1 | TB2 | 120 V AC 220 - 240 V AC | 120 V AC supply, input (120 V specs) 220 - 240 V AC supply, input (220 - 240 V specs) |
| TB3 | TB4 | 120 V AC 220 - 240 V AC | 120 V AC supply, output (120 V specs) 220 - 240 V AC supply, output (220 - 240 V specs) |
| 1-1 | 1-5 | 24 V DC | 24 V DC supply for OMPCB, output |
| 1-2 | 1-5 | 24 V DC | 24 V DC supply for PRY, output |
| 1-3 | 1-6 | 24 V DC | 24 V DC supply for EPCB, output |
| 1-4 | 1-8 | 24 V DC | 24 V DC supply for SMPCB, output |
| 2-1 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for OMPCB, output |
| 2-2 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for MPCB, output |
| 2-3 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for printer board*1, output |
| 2-4 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for MPCB, output |
| 2-5 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for MCPCB1, output |
| 2-6 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for MCPCB2*2, output |
| 2-7 | 3-2, -3, -4, -5 | 5 V DC | 5 V DC supply for EPCB, output |
| 4-1 | 3-1 | 12 V DC | 12 V DC supply for SMPCB, output |
| 4-2 | 3-3 | 0/5 V DC | PSPCB SLEEP SIG signal, input |
| 4-3 | 3-3 | 0/5 V DC (pulse) | PSPCB zero-cross signal, input |
| 4-4 | 3-7 | 0/5 V DC | H1 on/off, input |
| 4-5 | 3-7 | 0/5 V DC | H2 on/off, input |
| 5-1 | 6-1, -2, -3 | 24 V DC | 24 V DC supply for finisher*, output |
| 5-2 | 6-1, -2, -3 | 24 V DC | 24 V DC supply for finisher*, output |
| 5-3 | 6-1, -2, -3 | 24 V DC | 24 V DC supply for finisher*, output |
| 5-4 | 6-1, -2, -3 | 24 V DC | 24 V DC supply for finisher*, output |
| 5-5 | 6-6, -7 | 24 V DC | 24 V DC supply for SRDF, output |
| 5-6 | 6-6, -7 | 24 V DC | 24 V DC supply for SRDF, output |
| 5-8 | 6-5 | 24 V DC | 24 V DC supply for SMPCB, output |
| 7-1 | 7-5 | 5 V DC | 5 V DC supply for finisher*, output |
| 7-3 | 7-6, -7 | 5 V DC | 5 V DC supply for SRDF, output |
| 7-4 | 7-6, -7 | 5 V DC | 5 V DC supply for SRDF, output |
| 7-9 | 3-8 | 5 V DC | 5 V DC supply for SMPCB, output |
| 8-1 | 8-5 | 120 V AC 220 - 240 V AC | 120 V AC supply for MSW, output (120 V specs) 220 - 240 V AC supply for MSW, output (220 - 240 V specs) |

*1: Optional. *2: 42 ppm: optional/52 ppm: standard.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-----|------------------|---------------------------------------|
| 10-1 | 9-1 | 120/0 V AC | H1 on/off, output (120 V specs) |
| | | 220 - 240/0 V AC | H1 on/off, output (220 - 240 V specs) |
| 10-2 | 9-1 | 120/0 V AC | H2 on/off, output (120 V specs) |
| | | 220 - 240/0 V AC | H2 on/off, output (220 - 240 V specs) |

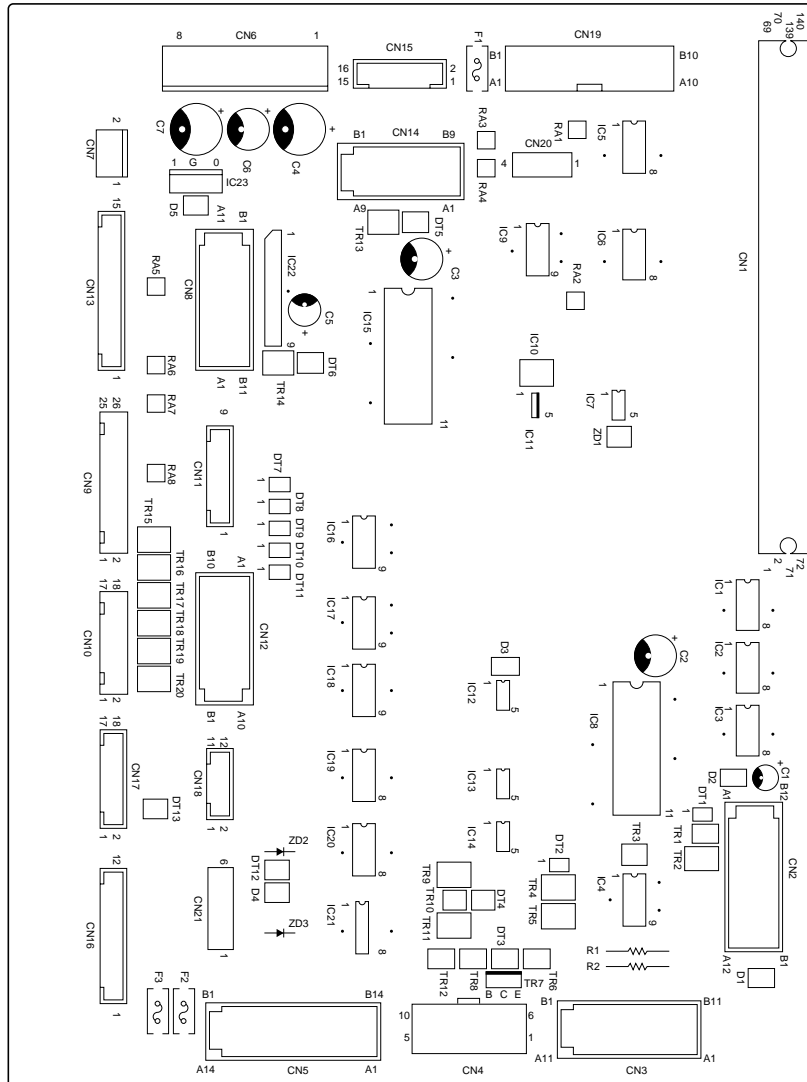
3-6-35





2A3/4

(2) Engine PCB



3-6-36





2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------|--|
| 1-1 | 2-B10 | 0 - 5 V DC | TNS detection voltage, output |
| 1-3 | 2-B10 | 0/5 V DC | TLDS toner absent/present detection, output |
| 1-4 | 2-B10 | 0/5 V DC | TLS on/off, output |
| 1-5 | 2-B10 | 0/5 V DC | SBESW on/off, output |
| 1-6 | 2-B10 | 0/5 V DC | ESW on/off, output |
| 1-7 | 2-B10 | 0/5 V DC | FSSW on/off, output |
| 1-8 | 2-B10 | 0 - 5 V DC | FTH detection voltage, output |
| 1-9 | 2-B10 | 24/0 V DC | SSW2 on/off, output |
| 1-10 | 2-B10 | 24/0 V DC | SSW3 on/off, output |
| 1-11 | 2-B10 | 24/0 V DC | SSW1 on/off, output |
| 1-12 | 2-B10 | 5 V DC | 5 V DC control voltage for MSW, input |
| 1-13 | 2-B10 | 0 - 5 V DC | TNS control voltage, input |
| 1-14 | 2-B10 | 0 - 5 V DC | HVTPCB SC control voltage, input |
| 1-15 | 2-B10 | 0 - 5 V DC | HVTPCB TC control voltage, input |
| 1-16 | 2-B10 | 0 - 5 V DC | HVTPCB DB control voltage, input |
| 1-17 | 2-B10 | 0 - 5 V DC | HVTPCB GRID control voltage, input |
| 1-18 | 2-B10 | | ETTH detection voltage, output |
| 1-19 | 2-B10 | 0 - 5 V DC | EHUMSENS detection voltage, output |
| 1-20 | 2-B10 | 24 V DC | Control voltage for MPCB, output |
| 1-21 | 2-B10 | 0 - 5 V DC | H ALARM signal, output |
| 1-23 | 2-B10 | 0/5 V DC | TC on/off, output |
| 1-24 | 2-B10 | 0/5 V DC | MMD* ³ connected/not connected, output |
| 1-25 | 2-B10 | 0/5 V DC | Finisher* ¹ connected/not connected, output |
| 1-28 | 2-B10 | 0/5 V DC | STKSW on/off, output |
| 1-29 | 2-B10 | 0/5 V DC | DUPRSW on/off, output |
| 1-30 | 2-B10 | 0/5 V DC | DUPESW on/off, output |
| 1-31 | 2-B10 | 0/5 V DC | DUPPCSW on/off, output |
| 1-32 | 2-B10 | 0/5 V DC | PFM LOCK signal, output |
| 1-33 | 2-B10 | 0/5 V DC | RSW on/off, output |
| 1-34 | 2-B10 | 0/5 V DC | FSW on/off, output |
| 1-35 | 2-B10 | 0/5 V DC | PFSW4 on/off, output |
| 1-36 | 2-B10 | 0/5 V DC | PFSW3 on/off, output |
| 1-37 | 2-B10 | 0/5 V DC | PFSW2 on/off, output |
| 1-38 | 2-B10 | 0/5 V DC | PFSW1 on/off, output |
| 1-39 | 2-B10 | 0/5 V DC | HVTPCB MC ALM, output |
| 1-40 | 2-B10 | 0/5 V DC | HVTPCB ST ALM, output |
| 1-41 | 2-B10 | 0/5 V DC | PCM LOCK signal, output |

*1: Optional. *3: Optional for 120 V specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|---|
| 1-42 | 2-B10 | 0/5 V DC | DM LOCK signal, output |
| 1-43 | 2-B10 | 0/5 V DC | PWSW-L (DIG2) on/off, output (inch specs) |
| 1-44 | 2-B10 | 0/5 V DC | PWSW-L (DIG1) on/off, output (inch specs) |
| 1-45 | 2-B10 | 0/5 V DC | PWSW-L (DIG0) on/off, output (inch specs) |
| 1-46 | 2-B10 | 0/5 V DC | PLSW-L on/off, output |
| 1-47 | 2-B10 | 0/5 V DC | PWSW-U (DIG2) on/off, output (inch specs) |
| 1-48 | 2-B10 | 0/5 V DC | PWSW-U (DIG1) on/off, output (inch specs) |
| 1-49 | 2-B10 | 0/5 V DC | PWSW-U (DIG0) on/off, output (inch specs) |
| 1-50 | 2-B10 | 0/5 V DC | PLSW-U on/off, output |
| 1-51 | 2-B10 | 0/5 V DC | BYPPWSW (DIG2) on/off, output |
| 1-52 | 2-B10 | 0/5 V DC | BYPPWSW (DIG1) on/off, output |
| 1-53 | 2-B10 | 0/5 V DC | BYPPWSW (DIG0) on/off, output |
| 1-54 | 2-B10 | 0/5 V DC | BYPPLSW on/off, output |
| 1-55 | 2-B10 | 0/5 V DC | PSW-L on/off, output |
| 1-56 | 2-B10 | 0/5 V DC | PSW-U on/off, output |
| 1-57 | 2-B10 | 0/5 V DC | BYPPSW on/off, output |
| 1-58 | 2-B10 | 5/0 V DC | LICSW-L on/off, output |
| 1-59 | 2-B10 | 5/0 V DC | LICSW-U on/off, output |
| 1-60 | 2-B10 | 0/5 V DC | BYPEDSW on/off, output |
| 1-61 | 2-B10 | 5/0 V DC | SRHPSW on/off, output |
| 1-62 | 2-B10 | 0/5 V DC | Duplex unit installed/not installed, output |
| 1-63 | 2-B10 | 0/5 V DC | Key card*3 ENABLE signal, output |
| 1-64 | 2-B10 | 0/5 V DC | Key card*3, key counter*1 connected/not connected, output |
| 1-65 | 2-B10 | 0/5 V DC | Key card*3 control signal, input |
| 1-66 | 2-B10 | 0/5 V DC | Key card*3 control signal, input |
| 1-67 | 2-B10 | 0/5 V DC | Key card*3 control signal, input |
| 1-68 | 2-B10 | 0/5 V DC | Key card*3 control signal, input |
| 1-69 | 2-B10 | 5 V DC | Control voltage for MPCB, output |
| 1-70 | 2-B10 | 5/0 V DC | Control voltage for MPCB, output |
| 1-71 | 2-B10 | 0/24 V DC | IFFM on/off, input |
| 1-72 | 2-B10 | 0/24 V DC | CL on/off, input |
| 1-73 | 2-B10 | 0/5 V DC (pulse) | TFM/TRM drive clock pulse, input |
| 1-75 | 2-B10 | 0/5 V DC | TFM drive control signal, input |
| 1-76 | 2-B10 | 0/5 V DC | TRM drive control signal, input |

*1: Optional. *3: Optional for 120 V specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|---------------------------------------|
| 1-77 | 2-B10 | 0/24 V DC | SCL on/off, input |
| 1-78 | 2-B10 | 0/24 V DC | FSSOL latch-on signal, input |
| 1-79 | 2-B10 | 0/24 V DC | FSSOL release signal, input |
| 1-80 | 2-B10 | 24/0 V DC | PRY on/off, input |
| 1-81 | 2-B10 | 0/24 V DC | SSW1 control voltage, input |
| 1-82 | 2-B10 | 24/0 V DC | MSW OFF signal, input |
| 1-83 | 2-B10 | 0/24 V DC | HVTPCB (SC) on/off, input |
| 1-84 | 2-B10 | 0/15 V DC | HVTPCB (TC) on/off, input |
| 1-85 | 2-B10 | 0/20 V DC | HVTPCB (DB) on/off, input |
| 1-86 | 2-B10 | 0/20 V DC | HVTPCB (MC) on/off, input |
| 1-87 | 2-B10 | 0/5 V DC | PFM on/off, input |
| 1-88 | 2-B10 | 0/5 V DC (pulse) | PFM drive clock pulse, input |
| 1-89 | 2-B10 | 0/5 V DC (pulse) | MMD*3 serial signal, input |
| 1-90 | 2-B10 | 0/5 V DC (pulse) | MMD*3 serial signal, output |
| 1-91 | 2-B10 | 0/5 V DC (pulse) | Finisher*1 serial signal, input |
| 1-92 | 2-B10 | 0/5 V DC (pulse) | Finisher*1 serial signal, output |
| 1-93 | 2-B10 | 0/5 V DC (pulse) | Paper feed desk*4 OE signal, input |
| 1-94 | 2-B10 | 0/5 V DC (pulse) | Paper feed desk*4 SCLK signal, input |
| 1-95 | 2-B10 | 0/5 V DC (pulse) | Paper feed desk*4 SOUT signal, input |
| 1-96 | 2-B10 | 0/5 V DC (pulse) | Paper feed desk*4 SIN signal, output |
| 1-97 | 2-B10 | 0/5 V DC (pulse) | MMD*3 count on/off, input |
| 1-101 | 2-B10 | 0/5 V DC | TC on/off, input |
| 1-102 | 2-B10 | 0/5 V DC | Finisher*1 RESET signal, input |
| 1-103 | 2-B10 | 0/5 V DC | Paper feed desk*4 RESET signal, input |
| 1-104 | 2-B10 | 0/24 V DC | FCL3 on/off, input |
| 1-105 | 2-B10 | 0/24 V DC | FCL2 on/off, input |
| 1-106 | 2-B10 | 0/24 V DC | FCL1 on/off, input |
| 1-107 | 2-B10 | 0/24 V DC | FCL5 on/off, input |
| 1-108 | 2-B10 | 0/5 V DC | H2 on/off, input |
| 1-109 | 2-B10 | 0/5 V DC | H1 on/off, input |
| 1-110 | 2-B10 | 0/5 V DC (pulse) | PCM drive clock pulse, input |
| 1-111 | 2-B10 | 0/5 V DC | PCM on/off, input |
| 1-112 | 2-B10 | 0/5 V DC (pulse) | DM drive clock pulse, input |
| 1-113 | 2-B10 | 0/5 V DC | DM on/off, input |
| 1-114 | 2-B10 | 0/24 V DC | PCFM on/off, input |
| 1-115 | 2-B10 | 0/24 V DC | RCL on/off, input |
| 1-116 | 2-B10 | 0/5 V DC | CCM forward rotation signal, input |

*1: Optional. *3: Optional for 120 V specifications only. *4: Optional for 42 ppm only.

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| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|---|
| 1-117 | 2-B10 | 0/5 V DC | CCM reverse rotation signal, input |
| 1-118 | 2-B10 | 0/24 V DC | CLM-L on/off, input |
| 1-119 | 2-B10 | 0/24 V DC | CLM-U on/off, input |
| 1-120 | 2-B10 | 0/5 V DC (pulse) | SRM coil energization pulse, input (B_) |
| 1-121 | 2-B10 | 0/5 V DC (pulse) | SRM coil energization pulse, input (A_) |
| 1-122 | 2-B10 | 0/5 V DC (pulse) | SRM coil energization pulse, input (B) |
| 1-123 | 2-B10 | 0/5 V DC (pulse) | SRM coil energization pulse, input (A) |
| 1-125 | 2-B10 | 0/24 V DC | SBFSSOL release signal, input |
| 1-126 | 2-B10 | 0/24 V DC | SBFSSOL latch-on signal, input |
| 1-127 | 2-B10 | 0/24 V DC | DUPPTSOL on/off, input |
| 1-128 | 2-B10 | 0/24 V DC | DUPFWSOL on/off, input |
| 1-130 | 2-B10 | 0/24 V DC | FCL4 on/off, input |
| 1-131 | 2-B10 | 0/24 V DC | PFCL-L on/off, input |
| 1-132 | 2-B10 | 0/24 V DC | PFCL-U on/off, input |
| 1-133 | 2-B10 | 0/24 V DC | BYPSOL on/off, input |
| 1-134 | 2-B10 | 0/24 V DC | BYPPFCL on/off, input |
| 1-135 | 2-B10 | 0/5 V DC | Key card* ³ control signal, input |
| 1-136 | 2-B10 | 0/5 V DC | Key card* ³ control signal, input |
| 1-137 | 2-B10 | 0/5 V DC | Key card* ³ control signal, input |
| 1-138 | 2-B10 | 0/5 V DC | Key card* ³ control signal, input |
| 1-139 | 2-B10 | 0/5 V DC | Key card* ³ , key counter* ¹ copy count signal, input |
| 1-140 | 2-B10 | 0/24 V DC | Key card* ³ on/off, output |
| 2-A1 | 2-A11 | 24 V DC | 24 V DC supply for CL, output |
| 2-A2 | 2-A11 | 0/24 V DC | CL on/off, output |
| 2-A3 | 2-A11 | 24 V DC | 24 V DC supply for IFFM, output |
| 2-A4 | 2-A11 | 0/24 V DC | IFFM on/off, output |
| 2-A5 | 2-A11 | 0/5 V DC (pulse) | TFM drive control signal (-), output |
| 2-A6 | 2-A11 | 0/5 V DC (pulse) | TFM drive control signal (+), output |
| 2-A7 | 2-A11 | 0/5 V DC (pulse) | TRM drive control signal (-), output |
| 2-A8 | 2-A11 | 0/5 V DC (pulse) | TRM drive control signal (+), output |
| 2-A9 | 2-A11 | 5 V DC | 5 V DC supply for TLS, output |
| 2-A10 | 2-A11 | 0/5 V DC | TLS on/off, input |
| 2-B3 | 2-B2 | 0/5 V DC | TLDS toner absent/present, input |
| 2-B4 | 2-B2 | 5 V DC | 5 V DC supply for TLDS, output |
| 2-B9 | 2-B10 | 0 - 15 V DC | TNS control voltage, output |
| 2-B11 | 2-B10 | 0 - 5 V DC | TNS detection voltage, input |

*1: Optional. *3: Optional for 120 V specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|--|
| 2-B12 | 2-B10 | 24 V DC | 24 V DC supply for TNS, output |
| 3-A1 | 3-A3 | 0/5 V DC | SBESW on/off, input |
| 3-A2 | 3-A3 | 5 V DC | 5 V DC supply for SBESW, output |
| 3-A4 | 3-A6 | 0/5 V DC | FSSW on/off, input |
| 3-A5 | 3-A6 | 5 V DC | 5 V DC supply for FSSW, output |
| 3-A7 | 3-A6 | 24 V DC | 24 V DC supply for FSSOL, output |
| 3-A8 | 3-A6 | 0/24 V DC | FSSOL latch-on signal, output |
| 3-A9 | 3-A6 | 0/24 V DC | FSSOL release signal, output |
| 3-A10 | 3-A6 | 0/24 V DC | 24 V DC supply for ESCL, output |
| 3-A11 | 3-A6 | 0/24 V DC | ESCL on/off, output |
| 3-B1 | 3-A6 | 24 V DC | 24 V DC supply for TC, output |
| 3-B2 | 3-A6 | 0/5 V DC | TC on/off, input |
| 3-B3 | 3-A6 | 24 V DC | 24 V DC supply for CFM1, output |
| 3-B4 | 3-A6 | 0/5 V DC | CFM1 on/off, output |
| 3-B5 | 3-A6 | 24 V DC | 24 V DC supply for CFM2, output |
| 3-B6 | 3-A6 | 0/5 V DC | CFM2 on/off, output |
| 3-B7 | 3-B11 | 5 V DC | 5 V DC supply for FTH, output |
| 3-B8 | 3-B11 | 0 - 5 V DC | FTH detection voltage, input |
| 3-B9 | 3-B11 | 0/5 V DC | ESW on/off, input |
| 3-B10 | 3-B11 | 5 V DC | 5 V DC supply for ESW, output |
| 4-1 | 3-B11 | 24/0 V DC | SSW1 on/off, input |
| 4-2 | 3-B11 | 24/0 V DC | SSW2 on/off SOURCE, output |
| 4-3 | 3-B11 | 24/0 V DC | SSW3 on/off, input |
| 4-4 | 3-B11 | 24/0 V DC | PRY on/off SOURCE, output |
| 4-5 | 3-B11 | 24/0 V DC | 24 V DC supply for MSW, output |
| 4-6 | 3-B11 | 0/24 V DC | Control voltage for SSW1, output |
| 4-7 | 3-B11 | 24/0 V DC | SSW2 on/off, input |
| 4-8 | 3-B11 | 24/0 V DC | SSW3 on/off SOURCE, output |
| 4-9 | 3-B11 | 24/0 V DC | PRY on/off, output |
| 4-10 | 3-B11 | 24/0 V DC | MSW off signal, output |
| 5-A1 | 5-A2 | | ETTH detection voltage, input |
| 5-A3 | 5-A2 | 0 - 5 V DC | EHUMSENS detection voltage, input |
| 5-A4 | 5-A2 | 5 V DC | 5 V DC supply for HUMPCB, output |
| 5-A6 | 5-A10 | 0/5 V DC (pulse) | PCM drive clock pulse, output |
| 5-A7 | 5-A10 | 0/5 V DC | PCM LOCK signal, output |
| 5-A8 | 5-A10 | 0/5 V DC | PCM on/off, input |
| 5-A9 | 5-A10 | 5 V DC | 5 V DC control voltage for PCM, output |

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| Terminals (CN) | | Voltage | Remarks |
|----------------|-------------|------------|---|
| 5-A13, -A14 | 5-A11, -A12 | 24 V DC | 24 V DC supply for PCM, output |
| 5-B1 | 5-B2 | 24 V DC | 24 V DC supply for HVTPCB, output |
| 5-B3 | 5-B9 | 0/5 V DC | HVTPCB ST ALM, input |
| 5-B4 | 5-B9 | 0 - 5 V DC | HVTPCB SC control voltage, output |
| 5-B5 | 5-B9 | 0/24 V DC | HVTPCB (SC) on/off, output |
| 5-B6 | 5-B9 | 0 - 5 V DC | HVTPCB TC control voltage, output |
| 5-B7 | 5-B9 | 0/15 V DC | HVTPCB (TC) on/off, output |
| 5-B8 | 5-B9 | 0 - 5 V DC | HVTPCB DB control voltage, output |
| 5-B10 | 5-B9 | 0/20 V DC | HVTPCB (DB) on/off, output |
| 5-B11 | 5-B9 | 0/5 V DC | HVTPCB MC ALM, input |
| 5-B12 | 5-B9 | 0 - 5 V DC | HVTPCB GRID control voltage, output |
| 5-B13 | 5-B9 | 0/20 V DC | HVTPCB (MC) on/off, output |
| 6-1 | 6-2, -6 | 24 V DC | 24 V DC supply for EPCB, input |
| 6-3 | 6-4 | 5 V DC | 5 V DC supply for EPCB, input |
| 6-5 | 6-2, -6 | 24 V DC | 24 V DC supply for PRY, output |
| 6-7 | 6-4 | 0/5 V DC | H1 on/off, output |
| 6-8 | 6-4 | 0/5 V DC | H2 on/off, output |
| 7-1 | 7-2 | 24 V DC | 24 V DC supply for LSU, output |
| 8-A2 | 8-B3 | 24 V DC | 24 V DC supply for CLM-U, output |
| 8-A3 | 8-B3 | 0/24 V DC | CLM-U on/off, output |
| 8-A4 | 8-B3 | 24 V DC | 24 V DC supply for CLM-L, output |
| 8-A5 | 8-B3 | 0/24 V DC | CLM-L on/off, output |
| 8-A8 | 8-A7 | 0/5 V DC | PLSW-U on/off, input |
| 8-A10 | 8-A9 | 0/5 V DC | PLSW-L on/off, input |
| 8-B1 | 8-B3 | 5 V DC | 5 V DC supply for RSW, output |
| 8-B2 | 8-B3 | 0/5 V DC | RSW on/off, input |
| 8-B4 | 8-B3 | 0/5 V DC | CCM forward rotation signal, output |
| 8-B5 | 8-B3 | 0/5 V DC | CCM reverse rotation signal, output |
| 8-B6 | 8-B3 | 24 V DC | 24 V DC supply for PCFM, output |
| 8-B7 | 8-B3 | 0/24 V DC | PCFM on/off, output |
| 8-B8 | 8-B3 | 24 V DC | 24 V DC supply for FCL4, output |
| 8-B9 | 8-B3 | 0/24 V DC | FCL4 on/off, output |
| 8-B10 | 8-B3 | 24 V DC | 24 V DC supply for RCL, output |
| 8-B11 | 8-B3 | 0/24 V DC | RCL on/off, output |
| 9-1 | 9-2 | 0/5 V DC | Finisher*1 connected/not connected, input |
| 9-5 | 9-3 | 5 V DC | 5 V DC supply for DUPRSW, output |
| 9-6 | 9-4 | 5 V DC | 5 V DC supply for DUPPCSW, output |

*1: Optional.

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| Terminals (CN) | | Voltage | Remarks |
|----------------|----------|------------------|--|
| 9-7 | 9-3 | 0/5 V DC | DUPRSW on/off, input |
| 9-8 | 9-4 | 0/5 V DC | DUPPCSW on/off, input |
| 9-11 | 9-9 | 0/5 V DC | DUPESW on/off, input |
| 9-12 | 9-10 | 5/0 V DC | SRHPSW on/off, input |
| 9-13 | 9-9 | 5 V DC | 5 V DC supply for DUPESW, output |
| 9-14 | 9-10 | 5 V DC | 5 V DC supply for SRHPSW, output |
| 9-15 | 9-17 | 5 V DC | 5 V DC supply for STKSW, output |
| 9-16 | 9-17 | 0/5 V DC | STKSW on/off, input |
| 9-19 | 9-22 | 0/5 V DC | PWSW-U (DIG0) on/off, input (inch specs) |
| 9-20 | 9-22 | 0/5 V DC | PWSW-U (DIG1) on/off, input (inch specs) |
| 9-21 | 9-22 | 0/5 V DC | PWSW-U (DIG2) on/off, input (inch specs) |
| 9-23 | 9-26 | 0/5 V DC | PWSW-L (DIG0) on/off, input (inch specs) |
| 9-24 | 9-26 | 0/5 V DC | PWSW-L (DIG1) on/off, input (inch specs) |
| 9-25 | 9-26 | 0/5 V DC | PWSW-L (DIG2) on/off, input (inch specs) |
| 10-1 | 12-B6 | 0/5 V DC (pulse) | SRM coil energization pulse, output (B_) |
| 10-2 | 12-B6 | 0/5 V DC (pulse) | SRM coil energization pulse, output (A_) |
| 10-3 | 12-B6 | 0/5 V DC (pulse) | SRM coil energization pulse, output (B) |
| 10-4 | 12-B6 | 0/5 V DC (pulse) | SRM coil energization pulse, output (A) |
| 10-5, -6 | 12-B7 | 24 V DC | 24 V DC supply for SRM, output |
| 10-7 | 12-B7 | 24 V DC | 24 V DC supply for DUPFWDSOL, output |
| 10-8 | 12-B7 | 0/24 V DC | DUPFWDSOL on/off, output |
| 10-9 | 12-B7 | 24 V DC | 24 V DC supply for SBFSSOL, output |
| 10-10 | 12-B7 | 0/24 V DC | SBFSSOL latch-on signal, output |
| 10-12 | 12-B7 | 0/24 V DC | SBFSSOL release signal, output |
| 10-13 | 12-B7 | 24 V DC | 24 V DC supply for DUPPTSOL, output |
| 10-14 | 12-B7 | 0/24 V DC | DUPPTSOL on/off, output |
| 11-1 | 11-5 | 0/5 V DC (pulse) | PFM drive clock pulse, output |
| 11-2 | 11-5 | 0/5 V DC | PFM LOCK signal, input |
| 11-3 | 11-5 | 0/5 V DC | PFM on/off, output |
| 11-4 | 11-5 | 5 V DC | 5 V DC supply for PFM, output |
| 11-8, -9 | 11-6, -7 | 24 V DC | 24 V DC supply for PFM, output |
| 12-A1 | 12-B7 | 24 V DC | 24 V DC supply for FCL5, output |
| 12-A2 | 12-B7 | 0/24 V DC | FCL5 on/off, output |
| 12-A3 | 12-B7 | 24 V DC | 24 V DC supply for FCL1, output |
| 12-A4 | 12-B7 | 0/24 V DC | FCL1 on/off, output |
| 12-A7 | 12-B7 | 24 V DC | 24 V DC supply for FCL2, output |
| 12-A8 | 12-B7 | 0/24 V DC | FCL2 on/off, output |

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| Terminals (CN) | | Voltage | Remarks |
|----------------|------------|------------------|------------------------------------|
| 12-A9 | 12-B7 | 24 V DC | 24 V DC supply for FCL3, output |
| 12-A10 | 12-B7 | 0/24 V DC | FCL3 on/off, output |
| 12-B2 | 12-B6 | 0/5 V DC (pulse) | DM drive clock pulse, output |
| 12-B3 | 12-B6 | 0/5 V DC | DM LOCK signal, input |
| 12-B4 | 12-B6 | 0/5 V DC | DM on/off, output |
| 12-B5 | 12-B6 | 5 V DC | 5 V DC supply for DM, output |
| 12-B9, -B10 | 12-B7, -B8 | 24 V DC | 24 V DC supply for DM, output |
| 13-1 | 13-3 | 0/5 V DC | FSW on/off, input |
| 13-2 | 13-3 | 5 V DC | 5 V DC supply for FSW, output |
| 13-4 | 13-6 | 0/5 V DC | PFSW1 on/off, input |
| 13-5 | 13-6 | 5 V DC | 5 V DC supply for PFSW1, output |
| 13-7 | 13-9 | 0/5 V DC | PFSW2 on/off, input |
| 13-8 | 13-9 | 5 V DC | 5 V DC supply for PFSW2, output |
| 13-10 | 13-12 | 0/5 V DC | PFSW3 on/off, input |
| 13-11 | 13-12 | 5 V DC | 5 V DC supply for PFSW3, output |
| 13-13 | 13-15 | 0/5 V DC | PFSW4 on/off, input |
| 13-14 | 13-15 | 5 V DC | 5 V DC supply for PFSW4, output |
| 14-A2 | 14-A3 | 5 V DC | 5 V DC supply for BYPPSW, output |
| 14-A4 | 14-A3 | 0/5 V DC | BYPPSW on/off, input |
| 14-A5 | 14-A9 | 24 V DC | 24 V DC supply for BYPPFCL, output |
| 14-A6 | 14-A9 | 24 V DC | 24 V DC supply for BYPSOL, output |
| 14-A7 | 14-A9 | 0/24 V DC | BYPPFCL on/off, output |
| 14-A8 | 14-A9 | 0/24 V DC | BYPSOL on/off, output |
| 14-B2 | 14-B1 | 0/5 V DC | BYPPWSW (DIG2) on/off, input |
| 14-B3 | 14-B1 | 0/5 V DC | BYPPWSW (DIG1) on/off, input |
| 14-B4 | 14-B1 | 0/5 V DC | BYPPWSW (DIG0) on/off, input |
| 14-B5 | 14-B6 | 0/5 V DC | BYPEDSW on/off, input |
| 14-B8 | 14-B7 | 0/5 V DC | BYPPLSW on/off, input |
| 14-B9 | 14-B7 | 5 V DC | 5 V DC supply for BYPPLSW, output |
| 15-1 | 15-5 | 5 V DC | 5 V DC supply for LICSW-U, output |
| 15-2 | 15-6 | 5 V DC | 5 V DC supply for LICSW-L, output |
| 15-3 | 15-5 | 5/0 V DC | LICSW-U on/off, input |
| 15-4 | 15-6 | 5/0 V DC | LICSW-L on/off, input |
| 15-7 | 15-11 | 5 V DC | 5 V DC supply for PSW-U, output |
| 15-8 | 15-12 | 5 V DC | 5 V DC supply for PSW-L, output |
| 15-9 | 15-11 | 0/5 V DC | PSW-U on/off, input |
| 15-10 | 15-12 | 0/5 V DC | PSW-L on/off, input |

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| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|---|
| 15-13 | 15-12 | 0/24 V DC | PFCL-U on/off, output |
| 15-14 | 15-12 | 0/24 V DC | PFCL-L on/off, output |
| 15-15 | 15-12 | 24 V DC | 24 V DC supply for PFCL-U, output |
| 15-16 | 15-12 | 24 V DC | 24 V DC supply for PFCL-L, output |
| 16-1 | 16-6 | 24 V DC | 24 V DC supply for MMD* ³ , output |
| 16-2 | 16-7 | 0/5 V DC (pulse) | MMD* ³ count on/off, output |
| 16-5 | 16-6 | 24 V DC | 24 V DC supply for MMD* ³ , output |
| 16-8 | 16-7 | 0/5 V DC | MMD* ³ connected/not connected, input |
| 16-10 | 16-9 | 0/5 V DC (pulse) | Serial signal MMD* ³ , output |
| 16-12 | 16-11 | 0/5 V DC (pulse) | MMD* ³ serial signal, input |
| 17-2 | 17-1 | 5 V DC | 5 V DC supply for large paper deck* ² or Paper feed desk* ⁴ , output |
| 17-4 | 17-5 | 0/5 V DC (pulse) | Large paper deck* ² serial signal, input |
| 17-6 | 17-5 | 0/5 V DC (pulse) | Large paper deck* ² serial signal, output |
| 17-7 | 17-3 | 0/5 V DC | Large paper deck* ² PFSW4 on/off, output |
| 17-8 | 17-1 | 0/5 V DC | Paper feed desk* ⁴ RESET signal, output |
| 17-9 | 17-1 | 0/5 V DC (pulse) | Paper feed desk* ⁴ OE signal, output |
| 17-10 | 17-1 | 0/5 V DC (pulse) | Paper feed desk* ⁴ SCLK signal, output |
| 17-11 | 17-1 | 0/5 V DC (pulse) | Paper feed desk* ⁴ SOUT signal, output |
| 17-12 | 17-1 | 0/5 V DC (pulse) | Paper feed desk* ⁴ SIN signal, input |
| 17-17 | 17-18 | 24 V DC | 24 V DC supply for large paper deck* ² or Paper feed desk* ⁴ , output |
| 19-A1 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A2 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A3 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A4 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A5 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A6 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A7 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A8 | 19-B9 | 5 V DC | 5 V DC control voltage for key card* ³ , output |
| 19-A9 | 19-B9 | 0/5 V DC | Key card* ³ ENABLE signal, input |

*2: 42 ppm: optional/52 ppm: standard. *3: Optional for 120 V specifications only.

*4: Optional for 42 ppm.





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| Terminals (CN) | | Voltage | Remarks |
|----------------|--------|------------------|--|
| 19-A10 | 19-B9 | 24 V DC | 24 V DC supply for key card*3, output |
| 19-B1 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B2 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B3 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B4 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B5 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B6 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B7 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B8 | 19-B9 | 0/5 V DC | Key card*3 control signal, output |
| 19-B10 | 19-B10 | 0/5 V DC | Key card*3 on/off, output |
| 20-1 | 20-4 | 24 V DC | 24 V DC supply for key card*3, output |
| 20-2 | 20-4 | 0/5 V DC | Key card*3, key counter*1 copy count signal, output |
| 20-3 | 20-4 | 0/5 V DC | Key card*3, key counter*1 connected/not connected, input |
| 21-2 | 21-1 | 0/5 V DC (pulse) | Finisher*1 serial signal, output |
| 21-4 | 21-3 | 0/5 V DC (pulse) | Finisher*1 serial signal, input |
| 21-5 | 21-1 | 0/5 V DC | Finisher*1 RESET signal, output |
| 21-6 | 21-1 | 0/5 V DC | Finisher*1 connected/not connected, input |

*1: Optional. *3: Optional for 120 V specifications only.

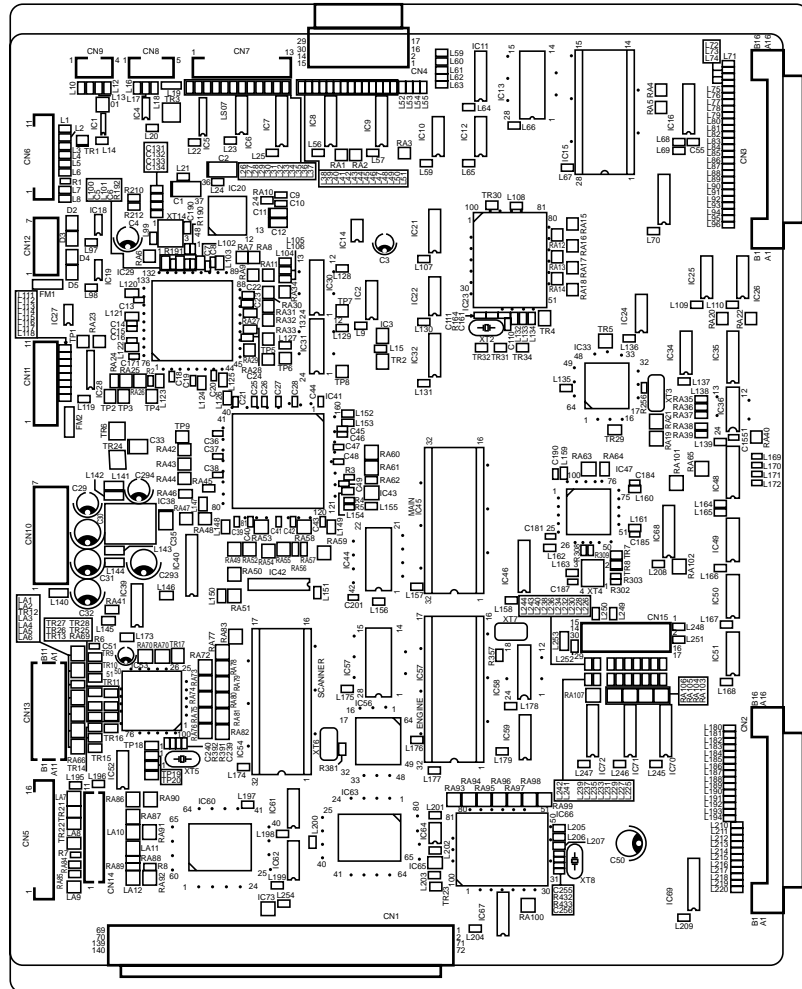
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2A3/4

(3) Main PCB



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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------|---|
| 1-1 | 2-A4 | 0 - 5 V DC | TNS detection voltage, input |
| 1-3 | 2-A4 | 0/5 V DC | TLDS toner absent/present, input |
| 1-4 | 2-A4 | 0/5 V DC | TLS on/off, input |
| 1-5 | 2-A4 | 0/5 V DC | SBESW on/off, input |
| 1-6 | 2-A4 | 0/5 V DC | ESW on/off, input |
| 1-7 | 2-A4 | 0/5 V DC | FSSW on/off, input |
| 1-8 | 2-A4 | 0 - 5 V DC | FTH detection voltage, input |
| 1-9 | 2-A4 | 24/0 V DC | SSW2 on/off, input |
| 1-10 | 2-A4 | 24/0 V DC | SSW3 on/off, input |
| 1-11 | 2-A4 | 24/0 V DC | SSW1 on/off, input |
| 1-12 | 2-A4 | 5 V DC | 5 V DC control voltage for MSW, output |
| 1-13 | 2-A4 | 0 - 5 V DC | TNS control voltage, output |
| 1-14 | 2-A4 | 0 - 5 V DC | HVTPCB SC control voltage, output |
| 1-15 | 2-A4 | 0 - 5 V DC | HVTPCB TC control voltage, output |
| 1-16 | 2-A4 | 0 - 5 V DC | HVTPCB DB control voltage, output |
| 1-17 | 2-A4 | 0 - 5 V DC | HVTPCB GRID control voltage, output |
| 1-18 | 2-A4 | | ETTH detection voltage, input |
| 1-19 | 2-A4 | 0 - 5 V DC | EHUMSENS detection voltage, input |
| 1-20 | 2-A4 | 24 V DC | Control voltage for MPCB, input |
| 1-21 | 2-A4 | 0 - 5 V DC | H ALARM control voltage, input |
| 1-23 | 2-A4 | 0/5 V DC | TC on/off, input |
| 1-24 | 2-A4 | 0/5 V DC | MMD*3 connected/not connected, input |
| 1-25 | 2-A4 | 0/5 V DC | Finisher*1 connected/not connected, input |
| 1-28 | 2-A4 | 0/5 V DC | STKSW on/off, input |
| 1-29 | 2-A4 | 0/5 V DC | DUPRSW on/off, input |
| 1-30 | 2-A4 | 0/5 V DC | DUPESW on/off, input |
| 1-31 | 2-A4 | 0/5 V DC | DUPPCSW on/off, input |
| 1-32 | 2-A4 | 0/5 V DC | PFM LOCK signal, input |
| 1-33 | 2-A4 | 0/5 V DC | RSW on/off, input |
| 1-34 | 2-A4 | 0/5 V DC | FSW on/off, input |
| 1-35 | 2-A4 | 0/5 V DC | PFSW4 on/off, input |
| 1-36 | 2-A4 | 0/5 V DC | PFSW3 on/off, input |
| 1-37 | 2-A4 | 0/5 V DC | PFSW2 on/off, input |
| 1-38 | 2-A4 | 0/5 V DC | PFSW1 on/off, input |
| 1-39 | 2-A4 | 0/5 V DC | HVTPCB MC ALM, input |
| 1-40 | 2-A4 | 0/5 V DC | HVTPCB ST ALM, input |
| 1-41 | 2-B10 | 0/5 V DC | PCM LOCK signal, input |

*1: Optional. *3: Optional for 120 V specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|--|
| 1-42 | 2-B10 | 0/5 V DC | DM LOCK signal, input |
| 1-43 | 2-B10 | 0/5 V DC | PWSW-L (DIG2) on/off, input (inch specs) |
| 1-44 | 2-B10 | 0/5 V DC | PWSW-L (DIG1) on/off, input (inch specs) |
| 1-45 | 2-B10 | 0/5 V DC | PWSW-L (DIG0) on/off, input (inch specs) |
| 1-46 | 2-B10 | 0/5 V DC | PLSW-L on/off, input |
| 1-47 | 2-B10 | 0/5 V DC | PWSW-U (DIG2) on/off, input (inch specs) |
| 1-48 | 2-B10 | 0/5 V DC | PWSW-U (DIG1) on/off, input (inch specs) |
| 1-49 | 2-B10 | 0/5 V DC | PWSW-U (DIG0) on/off, input (inch specs) |
| 1-50 | 2-B10 | 0/5 V DC | PLSW-U on/off, input |
| 1-51 | 2-B10 | 0/5 V DC | BYPPWSW (DIG2) on/off, input |
| 1-52 | 2-B10 | 0/5 V DC | BYPPWSW (DIG1) on/off, input |
| 1-53 | 2-B10 | 0/5 V DC | BYPPWSW (DIG0) on/off, input |
| 1-54 | 2-B10 | 0/5 V DC | BYPPLSW on/off, input |
| 1-55 | 2-B10 | 0/5 V DC | PSW-L on/off, input |
| 1-56 | 2-B10 | 0/5 V DC | PSW-U on/off, input |
| 1-57 | 2-B10 | 0/5 V DC | BYPPSW on/off, input |
| 1-58 | 2-B10 | 5/0 V DC | LICSW-L on/off, input |
| 1-59 | 2-B10 | 5/0 V DC | LICSW-U on/off, input |
| 1-60 | 2-B10 | 0/5 V DC | BYPEDSW on/off, input |
| 1-61 | 2-B10 | 5/0 V DC | SRHPSW on/off, input |
| 1-62 | 2-B10 | 0/5 V DC | Duplex unit installed/not installed, input |
| 1-63 | 2-B10 | 0/5 V DC | Key card*3 ENABLE signal, input |
| 1-64 | 2-B10 | 0/5 V DC | Key card*3, key counter*1 connected/not connected, input |
| 1-65 | 2-B10 | 0/5 V DC | Key card*3 control signal, output |
| 1-66 | 2-B10 | 0/5 V DC | Key card*3 control signal, output |
| 1-67 | 2-B10 | 0/5 V DC | Key card*3 control signal, output |
| 1-68 | 2-B10 | 0/5 V DC | Key card*3 control signal, output |
| 1-69 | 2-B10 | 5 V DC | Control voltage for MPCB, input |
| 1-70 | 2-B10 | 5/0 V DC | Control voltage for MPCB, input |
| 1-71 | 2-B10 | 0/24 V DC | IFFM on/off, output |
| 1-72 | 2-B10 | 0/24 V DC | CL on/off, output |
| 1-73 | 2-B10 | 0/5 V DC (pulse) | TFM/TRM drive clock pulse, output |
| 1-75 | 2-B10 | 0/5 V DC | TFM drive control signal, output |
| 1-76 | 2-B10 | 0/5 V DC | TRM drive control signal, output |
| 1-77 | 2-B10 | 0/24 V DC | SCL on/off, output |
| 1-78 | 2-B10 | 0/24 V DC | FSSOL latch-on signal, output |
| 1-79 | 2-B10 | 0/24 V DC | FSSOL release signal, output |

*1: Optional. *3: Optional for 120 V specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|------|------------------|--|
| 1-80 | 2-A4 | 24/0 V DC | PRY on/off, output |
| 1-81 | 2-A4 | 0/24 V DC | SSW1 control voltage, output |
| 1-82 | 2-A4 | 24/0 V DC | MSW OFF signal, output |
| 1-83 | 2-A4 | 0/24 V DC | HVTPCB (SC) on/off, output |
| 1-84 | 2-A4 | 0/15 V DC | HVTPCB (TC) on/off, output |
| 1-85 | 2-A4 | 0/20 V DC | HVTPCB (DB) on/off, output |
| 1-86 | 2-A4 | 0/20 V DC | HVTPCB (MC) on/off, output |
| 1-87 | 2-A4 | 0/5 V DC | PFM on/off, output |
| 1-88 | 2-A4 | 0/5 V DC (pulse) | PFM drive clock pulse, output |
| 1-89 | 2-A4 | 0/5 V DC (pulse) | MMD* ³ serial signal, output |
| 1-90 | 2-A4 | 0/5 V DC (pulse) | MMD* ³ serial signal, input |
| 1-91 | 2-A4 | 0/5 V DC (pulse) | Finisher* ¹ serial signal, output |
| 1-92 | 2-A4 | 0/5 V DC (pulse) | Finisher* ¹ serial signal, input |
| 1-93 | 2-A4 | 0/5 V DC (pulse) | Paper feed desk* ⁴ OE signal, output |
| 1-94 | 2-A4 | 0/5 V DC (pulse) | Paper feed desk* ⁴ SCLK signal, output |
| 1-95 | 2-A4 | 0/5 V DC (pulse) | Paper feed desk* ⁴ SOUT signal, output |
| 1-96 | 2-A4 | 0/5 V DC (pulse) | Paper feed desk* ⁴ SIN signal, input |
| 1-97 | 2-A4 | 0/5 V DC (pulse) | MMD* ³ count on/off, output |
| 1-101 | 2-A4 | 0/5 V DC | TC on/off, output |
| 1-102 | 2-A4 | 0/5 V DC | Finisher* ¹ RESET signal, output |
| 1-103 | 2-A4 | 0/5 V DC | Paper feed desk* ⁴ RESET signal, output |
| 1-104 | 2-A4 | 0/24 V DC | FCL3 on/off, output |
| 1-105 | 2-A4 | 0/24 V DC | FCL2 on/off, output |
| 1-106 | 2-A4 | 0/24 V DC | FCL1 on/off, output |
| 1-107 | 2-A4 | 0/24 V DC | FCL5 on/off, output |
| 1-108 | 2-A4 | 0/5 V DC | H2 on/off, output |
| 1-109 | 2-A4 | 0/5 V DC | H1 on/off, output |
| 1-110 | 2-A4 | 0/5 V DC (pulse) | PCM drive clock pulse, output |
| 1-111 | 2-A4 | 0/5 V DC | PCM on/off, output |
| 1-112 | 2-A4 | 0/5 V DC (pulse) | DM drive clock pulse, output |
| 1-113 | 2-A4 | 0/5 V DC | DM on/off, output |
| 1-114 | 2-A4 | 0/24 V DC | PCFM on/off, output |
| 1-115 | 2-A4 | 0/24 V DC | RCL on/off, output |
| 1-116 | 2-A4 | 0/5 V DC | CCM forward rotation signal, output |
| 1-117 | 2-A4 | 0/5 V DC | CCM reverse rotation signal, output |
| 1-118 | 2-A4 | 0/24 V DC | CLM-L on/off, output |
| 1-119 | 2-A4 | 0/24 V DC | CLM-U on/off, output |

*1: Optional. *3: Optional for 120 V specifications only. *4: Optional for 42 ppm only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|--|
| 1-120 | 2-A4 | 0/5 V DC (pulse) | SRM coil energization pulse, output (B_) |
| 1-121 | 2-A4 | 0/5 V DC (pulse) | SRM coil energization pulse, output (A_) |
| 1-122 | 2-A4 | 0/5 V DC (pulse) | SRM coil energization pulse, output (B) |
| 1-123 | 2-A4 | 0/5 V DC (pulse) | SRM coil energization pulse, output (A) |
| 1-125 | 2-A4 | 0/24 V DC | SBFSSOL release signal, output |
| 1-126 | 2-A4 | 0/24 V DC | SBFSSOL latch-on signal, output |
| 1-127 | 2-A4 | 0/24 V DC | DUPPTSOL on/off, output |
| 1-128 | 2-A4 | 0/24 V DC | DUPFWSOL on/off, output |
| 1-130 | 2-A4 | 0/24 V DC | FCL4 on/off, output |
| 1-131 | 2-A4 | 0/24 V DC | PFCL-L on/off, output |
| 1-132 | 2-A4 | 0/24 V DC | PFCL-U on/off, output |
| 1-133 | 2-A4 | 0/24 V DC | BYPSSOL on/off, output |
| 1-134 | 2-A4 | 0/24 V DC | BYPPFCL on/off, output |
| 1-135 | 2-A4 | 0/5 V DC | Key card* ³ control signal, output |
| 1-136 | 2-A4 | 0/5 V DC | Key card* ³ control signal, output |
| 1-137 | 2-A4 | 0/5 V DC | Key card* ³ control signal, output |
| 1-138 | 2-A4 | 0/5 V DC | Key card* ³ control signal, output |
| 1-139 | 2-A4 | 0/5 V DC | Key card* ³ , key counter* ¹ copy count signal, output |
| 1-140 | 2-A4 | 0/24 V DC | Key card* ³ on/off, input |
| 2-A1 | 2-A4 | 0/5 V DC | MCPCB1 image control signal MCPSEL, output |
| 2-A2 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 serial communication signal, output |
| 2-A3 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 communication control signal MCP1 ACK, input |
| 2-A5 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 serial communication signal, input |
| 2-A6 | 2-A4 | 0/5 V DC | MCPCB1 control signal ENGACK MCP1, output |
| 2-A7 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 communication control signal R RDY MCP1, input |
| 2-A8 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 communication control signal W RDY MCP1, input |
| 2-A9 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 control signal PVSYNCR, output |
| 2-A10 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 image control signal PHSYNCR, output |
| 2-A11 | 2-A4 | 0/5 V DC (pulse) | MCPCB1 image control clock pulse, input |
| 2-A12 | 2-A13 | 0/5 V DC | MCPCB1 control signal MCP MREW, input |

*1: Optional. *3: Optional for 120 V specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|---|
| 2-A14 | 2-A13 | 0/5 V DC | MCPCB1 control signal MCP IDA, input |
| 2-A16 | 2-A15 | 0/5 V DC | MCPCB1 control signal MCP IDB, input |
| 2-B1 | 2-B6 | 0/5 V DC | MCPCB1 control signal SEMCP MCP1, input |
| 2-B2 | 2-B6 | 0/5 V DC | MCPCB1 RESET signal, output |
| 2-B3 | 2-B6 | 0/5 V DC | MCPCB1 image control signal WCK, output |
| 2-B4 | 2-B6 | 0/5 V DC (pulse) | MCPCB1 control signal OVSYNC, output |
| 2-B5 | 2-B6 | 0/5 V DC | MCPCB1 image control signal MRE, output |
| 2-B8 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA0, output |
| 2-B9 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA1, output |
| 2-B10 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA2, output |
| 2-B11 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA3, output |
| 2-B12 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA4, output |
| 2-B13 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA5, output |
| 2-B14 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA6, output |
| 2-B15 | 2-B7 | 0/5 V DC (pulse) | MCPCB1 image control signal DATA7, output |
| 3-A1 | 3-A4 | 0/5 V DC | MCPCB2*2 image control signal MCPSEL, output |
| 3-A2 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 serial communication signal, output |
| 3-A3 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 communication control signal MCP2 ACK, input |
| 3-A5 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 serial communication signal, input |
| 3-A6 | 3-A4 | 0/5 V DC | MCPCB2*2 control signal ENGACK MCP2, output |
| 3-A7 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 communication control signal R RDY MCP2, input |
| 3-A8 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 communication control signal W RDY MCP2, input |
| 3-A9 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 control signal PVSYN, output |
| 3-A10 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 image control signal PHSYN, output |

*2: 42 ppm: optional/52 ppm: standard.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|--------------------|---|
| 3-A11 | 3-A4 | 0/5 V DC (pulse) | MCPCB2*2 image control clock pulse, input |
| 3-A12 | 3-A13 | 0/5 V DC | MCPCB2*2 control signal MCP MREW, input |
| 3-A14 | 3-A13 | 0/5 V DC | MCPCB2*2 control signal MCP IDA, input |
| 3-A16 | 3-A15 | 0/5 V DC | MCPCB2*2 control signal MCP IDB, input |
| 3-B1 | 3-B6 | 0/5 V DC | MCPCB2*2 control signal SEMCP MCP2, input |
| 3-B2 | 3-B6 | 0/5 V DC | MCPCB2*2 RESET signal, output |
| 3-B3 | 3-B6 | 0/5 V DC | MCPCB2*2 image control signal WCK, output |
| 3-B4 | 3-B6 | 0/5 V DC (pulse) | MCPCB2*2 control signal OVSYNC, output |
| 3-B5 | 3-B6 | 0/5 V DC | MCPCB2*2 image control signal MRE, output |
| 3-B8 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA0, output |
| 3-B9 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA1, output |
| 3-B10 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA2, output |
| 3-B11 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA3, output |
| 3-B12 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA4, output |
| 3-B13 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA5, output |
| 3-B14 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA6, output |
| 3-B15 | 3-B7 | 0/5 V DC (pulse) | MCPCB2*2 image control signal DATA7, output |
| 4-2 | 4-1 | 0/3.3 V DC (pulse) | Printer board*1 serial signal, input |
| 4-3 | 4-1 | 0/5 V DC | Printer board*1 ENGACK PRT signal, output |
| 4-5 | 4-4 | 0/5 V DC (pulse) | Printer board*1 serial signal, output |
| 4-6 | 4-4 | 0/3.3 V DC | Printer board*1 PRT ACK signal, input |
| 4-8 | 4-7 | 0/3.3 V DC | Printer board*1 PRINT signal, input |
| 4-9 | 4-7 | 0/3.3 V DC | Printer board*1 SETPRT signal, input |
| 4-10 | 4-7 | 0/5 V DC | Printer board*1 MRDY signal, output |
| 4-11 | 4-7 | 0/3.3 V DC | Printer board*1 P1 signal, input |
| 4-12 | 4-7 | 0/5 V DC | Printer board*1 P2 signal, output |
| 4-14 | 4-13 | 0/5 V DC | Printer board*1 PRTRST signal, output |

*1: Optional. *2: 42 ppm: optional/52 ppm: standard.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|------|--------------------|--|
| 4-16 | 4-17 | 0/3.3 V DC (pulse) | Printer board*1 clock pulse, input |
| 4-18 | 4-17 | 0/3.3 V DC (pulse) | Printer board*1 POVSYNCR signal, input |
| 4-20 | 4-19 | 0/3.3 V DC | Printer board*1 PMRE signal, input |
| 4-22 | 4-21 | 0/3.3 V DC (pulse) | Printer board*1 PID0 signal, input |
| 4-23 | 4-21 | 0/3.3 V DC (pulse) | Printer board*1 PID1 signal, input |
| 4-24 | 4-21 | 0/3.3 V DC (pulse) | Printer board*1 PID2 signal, input |
| 4-25 | 4-26 | 0/3.3 V DC (pulse) | Printer board*1 PID3 signal, input |
| 4-27 | 4-26 | 0/3.3 V DC (pulse) | Printer board*1 PID4 signal, input |
| 4-28 | 4-26 | 0/3.3 V DC (pulse) | Printer board*1 PID5 signal, input |
| 4-29 | 4-26 | 0/3.3 V DC (pulse) | Printer board*1 PID6 signal, input |
| 4-30 | 4-26 | 0/3.3 V DC (pulse) | Printer board*1 PID7 signal, input |
| 5-1 | 5-16 | 0/5 V DC (pulse) | OSD2*5 on/off, input |
| 5-2 | 5-16 | 0/5 V DC (pulse) | OSD1 on/off, input |
| 5-3 | 5-16 | 0/5 V DC | ODSW on/off, input |
| 5-4 | 5-16 | | SM current control voltage SM Vref, output |
| 5-5 | 5-16 | 0/5 V DC | SM drive control signal SM M1, output |
| 5-6 | 5-16 | 0/5 V DC | SM drive control signal SM M2, output |
| 5-7 | 5-16 | 0/5 V DC | SM drive control signal SM M3, output |
| 5-8 | 5-16 | 0/5 V DC | SM drive control signal SM M4, output |
| 5-9 | 5-16 | 0/5 V DC | SM drive control signal SM M5, output |
| 5-10 | 5-16 | 0/5 V DC (pulse) | SM drive clock pulse, output |
| 5-11 | 5-16 | 0/5 V DC | SM rotation direction switching signal SMOT CWB, output |
| 5-12 | 5-16 | 0/5 V DC | SM control signal SMOT RET, output |
| 5-13 | 5-16 | 0/5 V DC | SM enable signal, output |
| 5-14 | 5-16 | 5/0 V DC | EL on/off, output |
| 5-15 | 5-16 | 5/0 V DC | SHPSW on/off, input |
| 6-2 | 6-1 | 0/5 V DC (pulse) | OMPCB serial communication signal, output |
| 6-3 | 6-4 | 0/5 V DC | OMPCB MMI ACK signal, input |
| 6-5 | 6-4 | 0/5 V DC (pulse) | OMPCB serial communication signal, input |
| 6-6 | 6-4 | 0/5 V DC | OMPCB ENGACK MMI signal, output |
| 6-7 | 6-4 | 0/5 V DC | OMPCB MMI ERROR signal, input |
| 6-8 | 6-10 | 0/5 V DC | OMPCB ENG ERROR MMI signal, output |
| 6-9 | 6-10 | 0/5 V DC | OMPCB RESET MMI signal, output |
| 7-2 | 7-1 | 0/5 V DC | LSU VD2 – signal, output |
| 7-3 | 7-1 | 0/5 V DC | LSU VD2 + signal, output |

*1: Optional. *5: For inch specifications only.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|----------|------------------|---|
| 7-4 | 7-1 | 0/5 V DC | LSU VD1 – signal, output |
| 7-5 | 7-1 | 0/5 V DC | LSU VD1 + signal, output |
| 7-7 | 7-6 | 0/5 V DC | LSU ENABLE signal, output |
| 7-9 | 7-8 | 0/5 V DC | LSU ADJUST2 signal, output |
| 7-11 | 7-10 | 0/5 V DC | LSU ADJUST1 signal, output |
| 7-13 | 7-12 | 5 V DC | 24 V DC supply for LSU, output |
| 8-2 | 8-1 | 0/5 V DC | LSU BD – signal, input |
| 8-3 | 8-1 | 0/5 V DC | LSU BD + signal, input |
| 8-5 | 8-4 | 5 V DC | 24 V DC supply for LSU, output |
| 9-1 | 9-2 | 0/5 V DC (pulse) | LSU clock pulse, output |
| 9-3 | 9-2 | 0/5 V DC | LSU START signal, output |
| 9-4 | 9-2 | 0/5 V DC | LSU READY signal, output |
| 10-1 | 10-3 | 5 V DC | 5 V DC supply for MPCB, input |
| 10-2 | 10-3 | 0/5 V DC | PSPCB SLEEP SIG, output |
| 10-4 | 10-3 | 5 V DC | 5 V DC supply for MPCB, input |
| 10-5 | 10-3 | 0/5 V DC (pulse) | Zero-cross signal, output |
| 10-6 | 10-7 | 12 V DC | 12 V DC supply for MPCB, input |
| 11-1, -2, -3 | 11-1, -2 | 5 V DC | 5 V DC supply for CCDPCB, output |
| 11-4 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ SHIFT –, output |
| 11-5 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ SHIFT +, output |
| 11-6 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ CLP –, output |
| 11-7 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ CLP +, output |
| 11-8 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ RS –, output |
| 11-9 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ RS +, output |
| 11-10 | 11-1, -2 | 0/5 V DC | CCD drive clock signal ϕ CLK –, output |
| 11-11 | 11-1, -2 | 0/5 V DC | CCD drive clock signal f CLK +, output |
| 12-3 | 12-1, -2 | 12 V DC | +12 V DC supply for CCDPCB, output |
| 12-4 | 12-1, -2 | | CCD control signal VO_E –, input |
| 12-5 | 12-1, -2 | | CCD control signal VO_E +, input |
| 12-6 | 12-1, -2 | | CCD control signal VO_O –, input |
| 12-7 | 12-1, -2 | | CCD control signal VO_O +, input |
| 13A-1 | 5-16 | 0/5 V DC | OSLED (red) on/off, output |
| 13A-2 | 5-16 | 0/5 V DC | OSLED (green) on/off, output |
| 13A-3 | 5-16 | 0/5 V DC | SBPSOL release signal, output |
| 13A-4 | 5-16 | 0/5 V DC | SBPSOL latch-on signal, output |
| 13A-5 | 5-16 | 0/5 V DC | OFCL on/off, output |
| 13A-6 | 5-16 | 0/5 V DC | EFSSOL on/off, output |

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|------|------------------|--|
| 13A-7 | 5-16 | 0/5 V DC | SBFSSOL on/off, output |
| 13A-9 | 5-16 | 0/5 V DC | OFSOL release signal, output |
| 13A-10 | 5-16 | 0/5 V DC | OFSOL latch-on signal, output |
| 13A-11 | 5-16 | 0/5 V DC | OFM enable signal, output |
| 13B-1 | 5-16 | 0/5 V DC | OFM control signal OFM RET, output |
| 13B-2 | 5-16 | 0/5 V DC (pulse) | OFM drive clock pulse, output |
| 13B-3 | 5-16 | 0/5 V DC | OFM rotation direction switching signal OFM CWB, output |
| 13B-4 | 5-16 | 0/5 V DC | OCM enable signal, output |
| 13B-5 | 5-16 | 0/5 V DC | OCM control signal OCM RET, output |
| 13B-6 | 5-16 | 0/5 V DC (pulse) | OCM drive clock pulse, output |
| 13B-7 | 5-16 | 0/5 V DC | OCM rotation direction switching signal OCM CWB, output |
| 13B-8 | 5-16 | | OCM current control voltage OCM Vref, output |
| 13B-9 | 5-16 | 0/5 V DC | OCM drive control signal OCM M3, output |
| 13B-10 | 5-16 | 0/5 V DC | OCM drive control signal OCM M2, output |
| 13B-11 | 5-16 | 0/5 V DC | OCM drive control signal OCM M1, output |
| 14-1 | 5-16 | 0/5 V DC | OSBSW on/off, input |
| 14-2 | 5-16 | 0/5 V DC | OFSW on/off, input |
| 14-3 | 5-16 | 0/5 V DC | OSSW on/off, input |
| 14-6 | 5-16 | 0/5 V DC | SRDF installed/not installed signal, input |
| 14-7 | 5-16 | 0/5 V DC | OSWSW on/off, input |
| 14-8 | 5-16 | 5/0 V DC | DFSSW2 off/on, input |
| 14-9 | 5-16 | 5/0 V DC | DFSSW1 off/on, input |
| 14-10 | 5-16 | 5/0 V DC | OSLSW off/on, input |
| 14-11 | 5-16 | 5/0 V DC | DFTSW off/on, input |

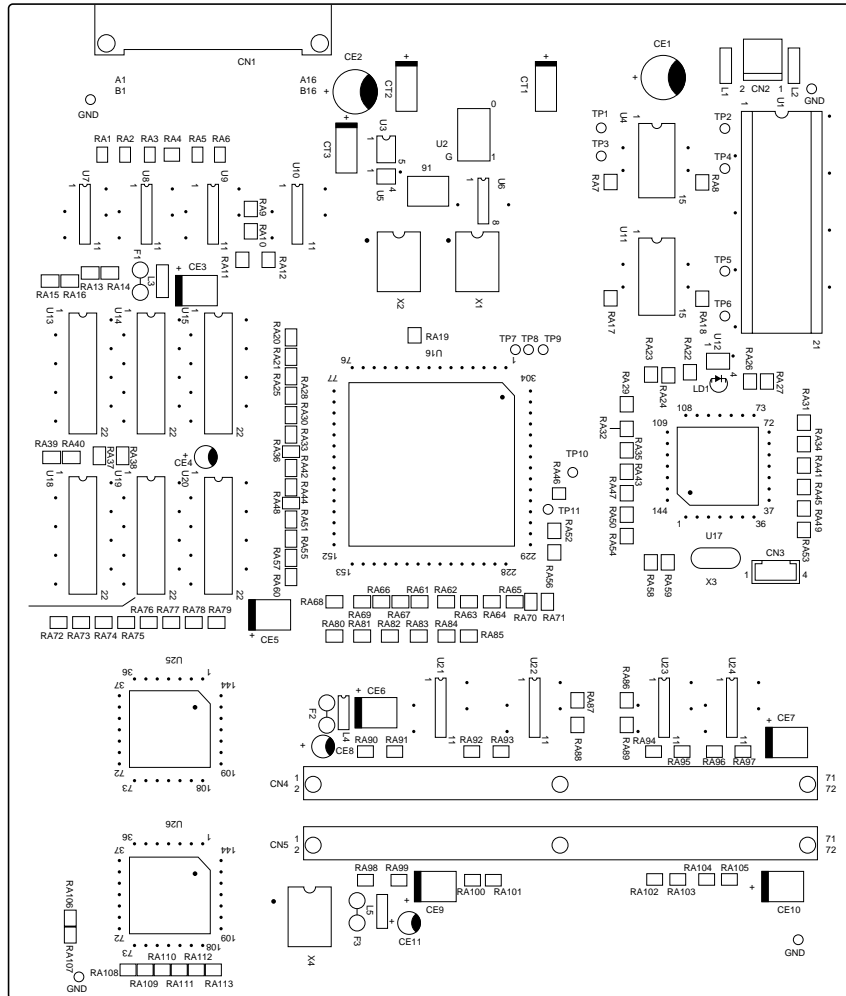
3-6-56





2A3/4

(4) Memory copy PCB



3-6-57





2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-------|------------------|---|
| 1-A1 | 1-A4 | 0/5 V DC | MCPCB1, 2*2 image control signal MCPSEL, input |
| 1-A2 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 serial communication signal, input |
| 1-A3 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 communication control signal MCP1 ACK, output |
| 1-A5 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 serial communication signal, output |
| 1-A6 | 1-A4 | 0/5 V DC | MCPCB1, 2*2 control signal ENGACK MCP1, input |
| 1-A7 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 communication control signal R RDY MCP1, output |
| 1-A8 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 communication control signal W RDY MCP1, output |
| 1-A9 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 control signal PVSYNC, input |
| 1-A10 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal PHSYNC, input |
| 1-A11 | 1-A4 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control clock pulse, output |
| 1-A12 | 1-A13 | 0/5 V DC | MCPCB1, 2*2 control signal MCP MREW, output |
| 1-A14 | 1-A13 | 0/5 V DC | MCPCB1, 2*2 control signal MCP IDA, output |
| 1-A16 | 1-A15 | 0/5 V DC | MCPCB1, 2*2 control signal MCP IDB, output |
| 1-B1 | 1-B6 | 0/5 V DC | MCPCB1, 2*2 control signal SEMCP MCP1, output |
| 1-B2 | 1-B6 | 0/5 V DC | MCPCB1, 2*2 RESET signal, input |
| 1-B3 | 1-B6 | 0/5 V DC | MCPCB1, 2*2 image control signal WCK, input |
| 1-B4 | 1-B6 | 0/5 V DC (pulse) | MCPCB1, 2*2 control signal OVSYNC, input |
| 1-B5 | 1-B6 | 0/5 V DC | MCPCB1, 2*2 image control signal MRE, input |
| 1-B8 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA0, input |
| 1-B9 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA1, input |
| 1-B10 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA2, input |
| 1-B11 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA3, input |

*2: 42 ppm: optional/52 ppm: standard.

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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|------|------------------|---|
| 1-B12 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA4, input |
| 1-B13 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA5, input |
| 1-B14 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA6, input |
| 1-B15 | 1-B7 | 0/5 V DC (pulse) | MCPCB1, 2*2 image control signal DATA7, input |
| 2-1 | 2-2 | 5 V DC | 5 V DC supply for MCPCB1, 2*2, input |

*2: 42 ppm: optional/52 ppm: standard.

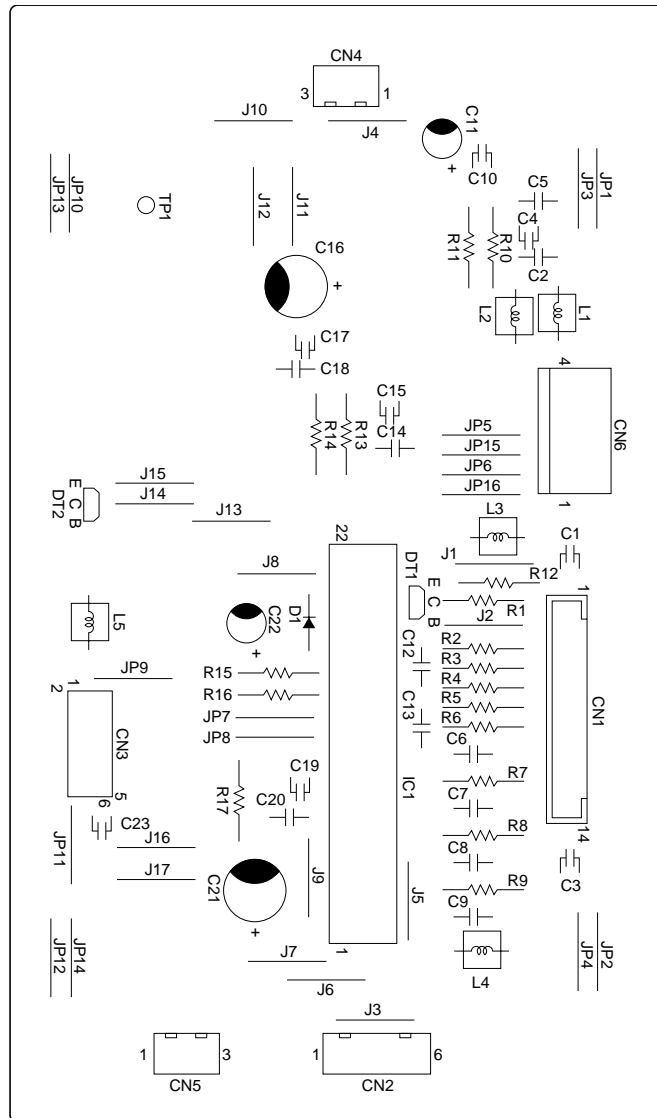
3-6-59





2A3/4

(5) Scanner motor PCB



3-6-60





2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|---------|------------------|---|
| 1-2 | 1-1 | 0/5 V DC | SHPSW on/off, output |
| 1-3 | 1-1 | 0/5 V DC | EL on/off, input |
| 1-4 | 1-1 | 0/5 V DC | SM enable signal, input |
| 1-5 | 1-1 | 0/5 V DC | SM control signal SMOT RET, input |
| 1-6 | 1-1 | 0/5 V DC | SM rotation direction switching signal SMOT CWB, input |
| 1-7 | 1-1 | 0/5 V DC (pulse) | SM drive clock pulse, input |
| 1-8 | 1-1 | 0/5 V DC | SM drive control signal SM M5, input |
| 1-9 | 1-1 | 0/5 V DC | SM drive control signal SM M4, input |
| 1-10 | 1-1 | 0/5 V DC | SM drive control signal SM M3, input |
| 1-11 | 1-1 | 0/5 V DC | SM drive control signal SM M2, input |
| 1-12 | 1-1 | 0/5 V DC | SM drive control signal SM M1, input |
| 1-13 | 1-1 | | SM current control voltage SM Vref, input |
| 1-14 | 1-1 | 0/5 V DC | ODSW on/off, output |
| 1-15 | 1-1 | 0/5 V DC | OSD1 on/off, output |
| 1-16 | 1-1 | 0/5 V DC | OSD2*5 on/off, output |
| 2-1 | 3-5, -6 | 0/5 V DC (pulse) | SM coil energization pulse, output (B_) |
| 2-2 | 3-5, -6 | 24 V DC | 24 V DC supply for SM, output |
| 2-3 | 3-5, -6 | 0/5 V DC (pulse) | SM coil energization pulse, output (B) |
| 2-4 | 3-5, -6 | 0/5 V DC (pulse) | SM coil energization pulse, output (A) |
| 2-5 | 3-5, -6 | 24 V DC | 24 V DC supply for SM, output |
| 2-6 | 3-5, -6 | 0/5 V DC (pulse) | SM coil energization pulse, output (A_) |
| 3-1 | 3-5, -6 | 0/5 V DC | EL on/off, output |
| 3-2 | 3-5, -6 | 0/5 V DC | EL on/off, output |
| 3-3 | 3-5, -6 | 24 V DC | 24 V DC supply for INPCB, output |
| 3-4 | 3-5, -6 | 24 V DC | 24 V DC supply for INPCB, output |
| 4-1 | 4-3 | 5 V DC | 5 V DC supply for SHPSW, output |
| 4-2 | 4-3 | 0/5 V DC | SHPSW on/off, input |
| 5-1 | 5-3 | 5 V DC | 5 V DC supply for ODSW, output |
| 5-2 | 5-3 | 0/5 V DC | ODSW on/off, input |
| 6-2 | 6-1 | 24 V DC | 24 V DC supply for SMPCB, input |
| 6-4 | 6-3 | 5 V DC | 5 V DC supply for SMPCB, input |
| 6-6 | 6-5 | 5 V DC | 5 V DC supply for SMPCB, input |
| 7-2 | 7-1 | 5 V DC | 5 V DC supply for OSD1, output |
| 7-3 | 7-1 | 0/5 V DC | OSD1 detection data, input |
| 7-5 | 7-4 | 5 V DC | 5 V DC supply for OSD2*5, output |
| 7-6 | 7-4 | 0/5 V DC | OSD2*5 detection data, input |

*5: For inch specifications only.

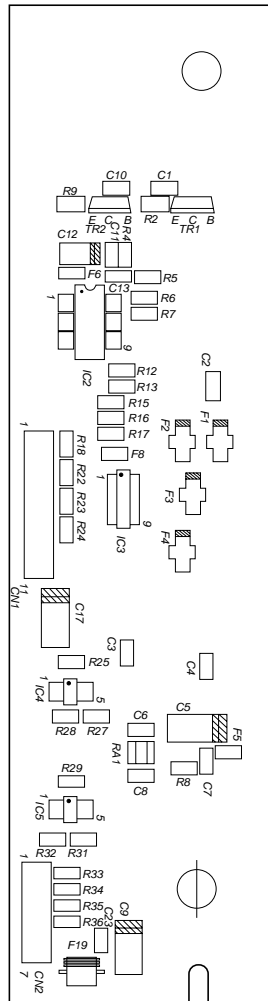
3-6-61





2A3/4

(6) CCD PCB



3-6-62



2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-----------|----------|--|
| 1-1 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ CLK +, input |
| 1-2 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ CLK -, input |
| 1-3 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ RS +, input |
| 1-4 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ RS -, input |
| 1-5 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ CLP +, input |
| 1-6 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ CLP -, input |
| 1-7 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ SHIFT +, input |
| 1-8 | 1-10, -11 | 0/5 V DC | CCD drive clock signal ϕ SHIFT -, input |
| 1-9 | 1-10, -11 | 5 V DC | 5 V DC supply for CCDPCB, input |
| 2-1 | 2-6, -7 | 12 V DC | CCD control signal VO_O +, output |
| 2-2 | 2-6, -7 | | CCD control signal VO_O -, output |
| 2-3 | 2-6, -7 | | CCD control signal VO_E +, output |
| 2-4 | 2-6, -7 | | CCD control signal VO_E -, output |
| 2-5 | 2-6, -7 | | +12 V DC supply for CCDPCB, input |

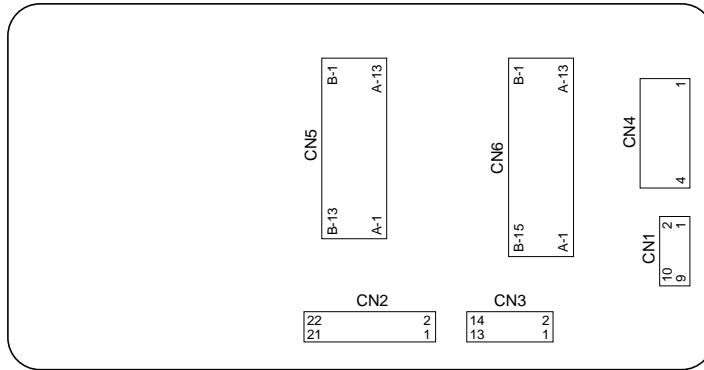
3-6-63





2A3/4

(7) DF driver PCB



| Terminals (CN) | | Voltage | Remarks |
|----------------|----------|------------------|--|
| 1-1 | 1-3, -4 | 24 V DC | 24 V DC supply, input |
| 1-2 | 1-3, -4 | 24 V DC | 24 V DC supply, input |
| 1-7 | 1-9, -10 | 5 V DC | 5 V DC supply, input |
| 1-8 | 1-9, -10 | 5 V DC | 5 V DC supply, input |
| 2-1 | 1-9, -10 | 0/5 V DC | OCM control signal OCM M1, input |
| 2-2 | 1-9, -10 | 0/5 V DC | OCM control signal OCM M2, input |
| 2-3 | 1-9, -10 | 0/5 V DC | OCM control signal OCM M3, input |
| 2-6 | 1-9, -10 | | OCM current control voltage OCM Vref, input |
| 2-7 | 1-9, -10 | 0/5 V DC | OCM rotation direction switching signal OCM CWB, input |
| 2-8 | 1-9, -10 | 0/5 V DC (pulse) | OCM drive clock pulse, input |
| 2-9 | 1-9, -10 | 0/5 V DC | OCM control signal OCM RET, input |
| 2-10 | 1-9, -10 | 0/5 V DC | OCM enable signal, input |
| 2-11 | 1-9, -10 | 0/5 V DC | OFM rotation direction switching signal OFM CWB, input |
| 2-12 | 1-9, -10 | 0/5 V DC (pulse) | OFM drive clock pulse, input |
| 2-13 | 1-9, -10 | 0/5 V DC | OFM control signal OFM RET, input |

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| Terminals (CN) | | Voltage | Remarks |
|----------------|----------|-------------------|--|
| 2-14 | 1-9, -10 | 0/5 V DC | OFM enable signal, input |
| 2-15 | 1-9, -10 | 0/5 V DC | OF SOL latch-on signal, input |
| 2-16 | 1-9, -10 | 0/5 V DC | OF SOL release signal, input |
| 2-17 | 1-9, -10 | 0/5 V DC | SBFSSOL on/off, input |
| 2-19 | 1-9, -10 | 0/5 V DC | EFSSOL on/off, input |
| 2-20 | 1-9, -10 | 0/5 V DC | OFCL on/off, input |
| 2-21 | 1-9, -10 | 0/5 V DC | SBPSOL latch-on signal, input |
| 2-22 | 1-9, -10 | 0/5 V DC | SBPSOL release signal, input |
| 3-1 | 1-9, -10 | 0/5 V DC | OSSW on/off, output |
| 3-2 | 1-9, -10 | 0/5 V DC | OFSW on/off, output |
| 3-3 | 1-9, -10 | 0/5 V DC | OSBSW on/off, output |
| 3-4 | 1-9, -10 | 0/5 V DC | DFTSW on/off, output |
| 3-5 | 1-9, -10 | 0/5 V DC | OSLSW on/off, output |
| 3-6 | 1-9, -10 | 0/5 V DC | DFSSW1 on/off, output |
| 3-7 | 1-9, -10 | 0/5 V DC | DFSSW2 on/off, output |
| 3-8 | 1-9, -10 | | Size detection voltage, output |
| 3-9 | 1-9, -10 | 0/5 V DC | OSLED (green) off/on, input |
| 3-10 | 1-9, -10 | 0/5 V DC | OSLED (red) off/on, input |
| 3-11 | 1-9, -10 | 0/5 V DC | SRDF installed/not installed signal |
| 4-3 | 4-2 | 0/24 V DC | DFSSW1 on/off, output |
| 4-4 | 4-2 | 0/24 V DC | DFSSW2 on/off, output |
| 5-A1 | 1-3, -4 | 0/24 V DC | 24 V DC supply for SBPSOL, output |
| 5-A2 | 1-3, -4 | 0/24 V DC | SBPSOL latch-on signal, output |
| 5-A3 | 1-3, -4 | 0/24 V DC | SBPSOL release signal, output |
| 5-A4 | 1-3, -4 | 24 V DC | 24 V DC supply for OFCL, output |
| 5-A5 | 1-3, -4 | 0/24 V DC | OFCL on/off, output |
| 5-A6 | 1-3, -4 | 24 V DC | 24 V DC supply for EFSSOL, output |
| 5-A7 | 1-3, -4 | 0/24 V DC | EFSSOL on/off, output |
| 5-A8 | 1-3, -4 | 24 V DC | 24 V DC supply for OCM, output (A) |
| 5-A9 | 1-3, -4 | 24 V DC | 24 V DC supply for OCM, output (B) |
| 5-A10 | 1-3, -4 | 0/24 V DC (pulse) | OCM motor coil energization pulse, output (A) |
| 5-A11 | 1-3, -4 | 0/24 V DC (pulse) | OCM motor coil energization pulse, output (B) |
| 5-A12 | 1-3, -4 | 0/24 V DC (pulse) | OCM motor coil energization pulse, output (A_) |
| 5-A13 | 1-3, -4 | 0/24 V DC (pulse) | OCM motor coil energization pulse, output (B_) |





2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|---------|-------------------|--|
| 5-B1 | 1-3, -4 | 24 V DC | 24 V DC supply for OFM, output (A) |
| 5-B2 | 1-3, -4 | 24 V DC | 24 V DC supply for OFM, output (B) |
| 5-B3 | 1-3, -4 | 0/24 V DC (pulse) | OFM motor coil energization pulse, output (A) |
| 5-B4 | 1-3, -4 | 0/24 V DC (pulse) | OFM motor coil energization pulse, output (B) |
| 5-B5 | 1-3, -4 | 0/24 V DC (pulse) | OFM motor coil energization pulse, output (A_) |
| 5-B6 | 1-3, -4 | 0/24 V DC (pulse) | OFM motor coil energization pulse, output (B_) |
| 5-B7 | 1-3, -4 | 24 V DC | 24 V DC supply for SBFSSOL, output |
| 5-B8 | 1-3, -4 | 0/24 V DC | SBFSSOL on/off, output |
| 5-B11 | 1-3, -4 | 24 V DC | 24 V DC supply for OFSOL, output |
| 5-B12 | 1-3, -4 | 0/24 V DC | OFSOL latch-on signal, output |
| 5-B13 | 1-3, -4 | 0/24 V DC | OFSOL release signal, output |
| 6-A5 | 6-A4 | 0/5 V DC | OSBSW on/off, input |
| 6-A6 | 6-A4 | 5 V DC | 5 V DC supply for OSBSW, output |
| 6-A8 | 6-A7 | 0/5 V DC | OSWSW on/off, input |
| 6-A9 | 6-A7 | 5 V DC | 5 V DC supply for OSWSW, output |
| 6-A11 | 6-A10 | 0/5 V DC | OSLSW on/off, input |
| 6-A12 | 6-A10 | 5 V DC | 5 V DC supply for OSLSW, output |
| 6-A14 | 6-A13 | 0/5 V DC | DFTSW on/off, input |
| 6-A15 | 6-A13 | 5 V DC | 5 V DC supply for DFTSW, output |
| 6-B1 | 6-B3 | 5 V DC | 5 V DC supply for OSSW, output |
| 6-B2 | 6-B3 | 0/5 V DC | OSSW on/off, input |
| 6-B4 | 6-B6 | 5 V DC | 5 V DC supply for OFSW, output |
| 6-B5 | 6-B6 | 0/5 V DC | OFSW on/off, input |
| 6-B7 | 6-B8 | 0/5 V DC | OSLEDPCB (red) on/off, output |
| 6-B9 | 6-B8 | 0/5 V DC | OSLEDPCB (green) on/off, output |

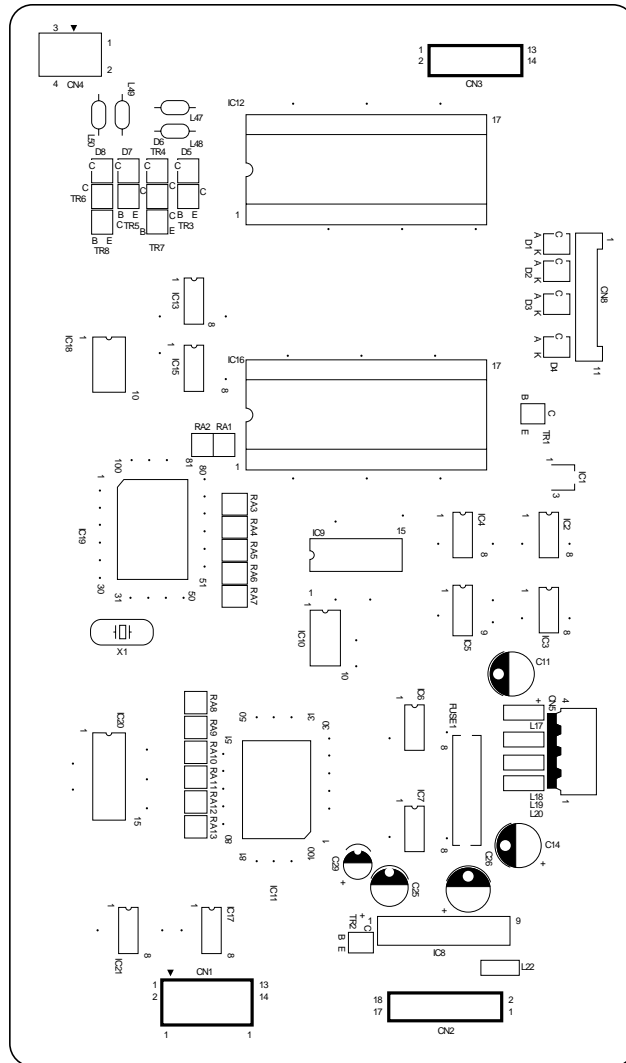
3-6-66





2A3/4

(8) Operation unit main PCB



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2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|-----|------------------|---|
| 1-1 | 1-8 | 0/5 V DC | LCD control voltage, output |
| 1-2 | 2-3 | -23 V DC | -23 V supply for LCD, output |
| 1-3 | 1-8 | 0/5 V DC (pulse) | LCD (XD3) data, output |
| 1-4 | 1-8 | 0/5 V DC (pulse) | LCD (XD2) data, output |
| 1-5 | 1-8 | 0/5 V DC (pulse) | LCD (XD1) data, output |
| 1-6 | 1-8 | 0/5 V DC (pulse) | LCD (XD0) data, output |
| 1-7 | 2-3 | -23 V DC | -23 V supply for LCD, output |
| 1-9 | 1-8 | 5 V DC | 5 V DC supply for LCD, output |
| 1-10 | 1-8 | 0/5 V DC (pulse) | LCD control signal XSCL, output |
| 1-11 | 1-8 | 0/5 V DC (pulse) | LCD control signal LP, output |
| 1-12 | 1-8 | 0/5 V DC (pulse) | LCD control signal DIN, output |
| 1-14 | 1-8 | 0/5 V DC | LCD control signal LCD REM, output |
| 2-1 | 2-3 | 24 V DC | 24 V DC supply for OLPCB, output |
| 2-2 | 2-3 | -23 V DC | -23 V DC supply for OLPCB, output |
| 2-4 | 2-3 | | OLPCB contrast adjustment VR supply, output |
| 2-5 | 1-8 | 0/5 V DC | OLPCB key return signal DIGKEY L1, input |
| 2-6 | 1-8 | 0/5 V DC | OLPCB key return signal DIGKEY L2, input |
| 2-7 | 1-8 | 0/5 V DC | OLPCB key return signal DIGKEY L3, input |
| 2-8 | 1-8 | 0/5 V DC (pulse) | OLPCB scan signal SCAN L1, output |
| 2-9 | 1-8 | 0/5 V DC (pulse) | OLPCB scan signal SCAN L2, output |
| 2-10 | 1-8 | 0/5 V DC (pulse) | OLPCB scan signal SCAN L3, output |
| 2-11 | 1-8 | 0/5 V DC (pulse) | OLPCB LED on DIG LED L1, output |
| 2-12 | 1-8 | 0/5 V DC (pulse) | OLPCB LED on DIG LED L2, output |
| 2-13 | 1-8 | 0/5 V DC (pulse) | OLPCB LED on DIG LED L3, output |
| 2-14 | 1-8 | 0/5 V DC (pulse) | OLPCB LED on DIG LED L4, output |
| 2-15 | 1-8 | 0/5 V DC | OLPCB CFL on/off, output |
| 2-16 | 1-8 | 5 V DC | 5 V DC supply for OLPCB, output |
| 2-17 | 1-8 | 5 V DC | 5 V DC supply for OLPCB, output |
| 3-1 | 6-2 | 0/5 V DC | ORPCB key return signal DIGKEY R1, input |
| 3-2 | 6-2 | 0/5 V DC | ORPCB key return signal DIGKEY R2, input |
| 3-3 | 6-2 | 0/5 V DC | ORPCB key return signal DIGKEY R3, input |
| 3-4 | 6-2 | 0/5 V DC | ORPCB key return signal DIGKEY R4, input |
| 3-5 | 6-2 | 0/5 V DC (pulse) | ORPCB scan signal SCAN R1, output |

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2A3/4

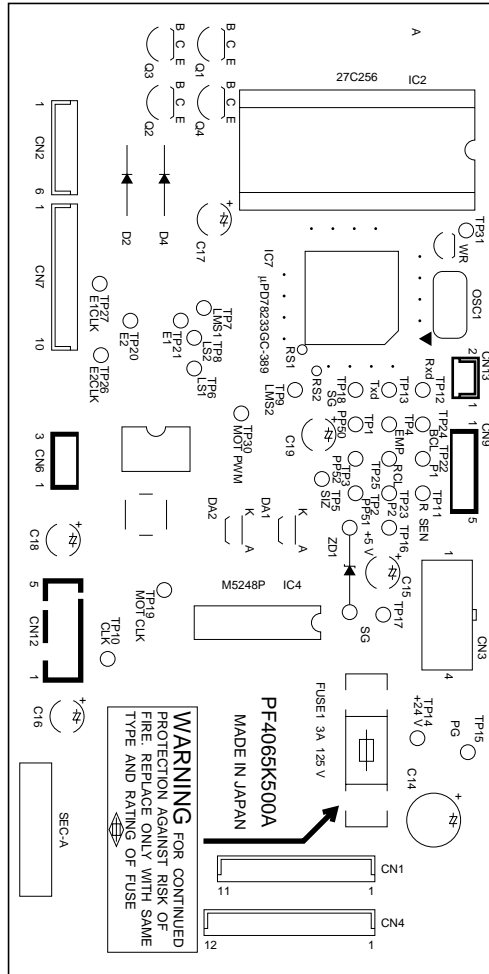
| Terminals (CN) | | Voltage | Remarks |
|----------------|------|------------------|---|
| 3-6 | 6-2 | 0/5 V DC (pulse) | ORPCB scan signal SCAN R2, output |
| 3-7 | 6-2 | 0/5 V DC (pulse) | ORPCB scan signal SCAN R3, output |
| 3-8 | 6-2 | 0/5 V DC (pulse) | ORPCB scan signal SCAN R4, output |
| 3-9 | 6-2 | 0/5 V DC (pulse) | ORPCB LED on DIG LED R1, output |
| 3-10 | 6-2 | 0/5 V DC (pulse) | ORPCB LED on DIG LED R2, output |
| 3-11 | 6-2 | 0/5 V DC (pulse) | ORPCB LED on DIG LED R3, output |
| 3-12 | 6-2 | 0/5 V DC | ORPCB BZ1 on/off, output |
| 3-14 | 6-2 | 5 V DC | 5 V DC supply for ORPCB, output |
| 4-1 | 6-2 | 0/5 V DC (pulse) | Touch panel detection voltage Y2, output |
| 4-2 | 6-2 | 0/5 V DC (pulse) | Touch panel detection voltage X1, input |
| 4-3 | 6-2 | 0/5 V DC (pulse) | Touch panel detection voltage Y1, input |
| 4-4 | 6-2 | 0/5 V DC (pulse) | Touch panel detection voltage X2, output |
| 5-3 | 5-2 | 5 V DC | 5 V DC supply for OMPCB, input |
| 5-4 | 5-1 | 24 V DC | 24 V DC supply for OMPCB, input |
| 6-3 | 6-2 | 0/5 V DC | OMPCB RESET MMI signal, input |
| 6-4 | 6-2 | 0/5 V DC | OMPCB ENG ERROR MMI signal, input |
| 6-5 | 6-8 | 0/5 V DC | OMPCB MMI ERROR signal, output |
| 6-6 | 6-8 | 0/5 V DC | OMPCB ENGACK MMI signal, input |
| 6-7 | 6-8 | 0/5 V DC (pulse) | OMPCB serial communication signal, output |
| 6-9 | 6-8 | 0/5 V DC | OMPCB MMI ACK signal, output |
| 6-10 | 6-11 | 0/5 V DC (pulse) | OMPCB serial communication signal, input |

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2A3/4

(9) Deck main PCB (42 ppm: optional/52 ppm: standard)



3-6-70





2A3/4

| Terminals (CN) | | Voltage | Remarks |
|----------------|---------|--------------------|--|
| 1-1 | 1-1 | 5/0 V DC (pulse) | Clock signal for PPSSENS1 - 3 and PESENS, output |
| 1-4 | 4-8 | 24/0 V DC | DOSSW signal on/off, input |
| 1-5 | 4-8 | 2/0 (pulse)/0 V DC | PESENS signal input, paper present/absent, input |
| 1-6 | 4-8 | 2/0 (pulse)/0 V DC | PPSENS2 signal input, paper present/absent, input |
| 1-7 | 4-8 | 5/0 V DC | DLSW1 on/off, input |
| 1-8 | 4-8 | 5/0 V DC | UPSW1 on/off, input |
| 1-9 | 4-8 | 5/0 V DC | DLSW2 on/off, input |
| 1-10 | 4-8 | 5/0 V DC | UPSW2 on/off, input |
| 1-11 | 4-8 | 2/0 (pulse)/0 V DC | PPSENS3 paper present/absent, input |
| 2-3 | 2-2 | 5/0 V DC | PLDSENS1 on/off, input |
| 2-6 | 2-5 | 5/0 V DC | PLDSENS2 on/off, input |
| 3-1 | 3-2 | 5 V DC | 5 V DC supply, input |
| 3-3 | 3-4 | 24 V DC | 24 V DC supply, input |
| 4-1 | 4-8 | 24 V DC | Power supply for RCL, PFCL1, PFCL2 and CCL, output |
| 4-2 | 4-8 | 24 V DC | Power supply for RCL, PFCL1, PFCL2 and CCL, output |
| 4-4 | 4-8 | 24/0 V DC | PFCL1 off/on, output |
| 4-5 | 4-8 | 24/0 V DC | PFCL2 off/on, output |
| 4-6 | 4-8 | 24/0 V DC | CCL off/on, output |
| 4-7 | 4-8 | 5 V DC | Power supply for PPSSENS1 - 3, PESENS, SCSW, UPSW1 - 2 and DLSW1 - 2, output |
| 4-9 | 4-8 | 2/0 (pulse)/0 V DC | PPSENS1 paper present/absent, input |
| 4-11 | 4-8 | 5/0 V DC | SCSW on/off, input |
| 7-1 | 7-6, -9 | 24/0 V DC | PDM1 off/on, output |
| 7-2 | 7-6, -9 | 24 V DC | Power supply for PDM1, output |
| 7-3 | 7-6, -9 | 24 V DC | Power supply for PDM2, output |
| 7-4 | 7-6, -9 | 24/0 V DC | PDM2 off/on, output |
| 7-5 | 7-6, -9 | 1.1 V DC | Power supply for PDMSSENS1, output |
| 7-7 | 7-6, -9 | 5/0 V DC | PDMSSENS1 on/off, input |
| 7-8 | 7-6, -9 | 1.1 V DC | Power supply for PDMSSENS2, output |
| 7-10 | 7-6, -9 | 5/0 V DC | PDMSSENS2 on/off, input |
| 9-1 | 9-2 | 5/0 V DC (pulse) | Serial data signal to EPCB (TXD) |
| 9-3 | 9-4 | 5/0 V DC (pulse) | Serial data signal from EPCB (RXD) |
| 9-5 | 9-2, -4 | 0/5 V DC | PFSW4 on/off, input |

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| Terminals (CN) | | Voltage | Remarks |
|----------------|------|------------------|-----------------------------|
| 12-1 | 12-2 | 24 V DC | Power supply for CM, output |
| 12-3 | 12-2 | 5/0 V DC (pulse) | CM drive PWM signal, output |
| 12-4 | 12-2 | 5 V DC | Power supply for CM, output |
| 12-5 | 12-2 | 5/0 V DC (pulse) | CM FG signal, input |

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3-6-4 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 cover, left cover and/or right cover are/is not closed completely. | Check the front, left 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, 2 or 3. | Check for continuity across the contacts of each switch. If none, replace the switch. |
| | Defective power source PCB. | With AC present, check for 5 V DC at CN2-1 on the power source PCB, 12 V DC at CN4-1 and 24 V DC at CN1-1. If none, replace the power source PCB. |
| (2) The drive motor does not operate (C200). | Poor contact in the drive motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken drive motor gear. | Check visually and replace the drive motor if necessary. |





2A3/4

| Problem | Causes | Check procedures/corrective measures |
|---|---|--|
| (2) The drive motor does not operate (C200). | Defective drive motor. | Run maintenance item U030 and check if the drive motor operates when CN12-B4 on the engine PCB goes low. If not, replace the drive motor. |
| | Defective main PCB. | Run maintenance item U030 and check if CN1-113 on the main PCB goes low. If not, replace the main PCB. |
| (3) The scanner motor does not operate. | Broken scanner motor coil. | Check for continuity across the coil. If none, replace the scanner motor. |
| | Poor contact in the scanner motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective scanner control PCB. | Check if the motor drive coil energization pulse signals are output at CN5-5, CN5-6, CN5-7, CN5-8 and CN5-9 on the main PCB when maintenance item U073 is run. If not, replace the main PCB. |
| (4) The upper lift motor does not operate. | 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 CN8-A2 and CN8-A3 on the engine PCB right after the upper drawer is installed. If not, replace the engine PCB. |
| (5) The lower lift motor does not operate. | 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 CN8-A4 and CN8-A5 on the engine PCB right after the lower drawer is installed. If not, replace the engine PCB. |

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| Problem | Causes | Check procedures/corrective measures |
|--|--|---|
| (6) 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 CN2-A5 and CN2-A6 on the engine PCB. If not, replace the engine PCB. |
| (7) The paper conveying section fan motor does not operate. | Broken paper conveying section fan motor coil. | Check for continuity across the coil. If none, replace the paper conveying section fan motor. |
| | Poor contact in the paper conveying section fan motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U030. If 24 V DC is always present at CN8-B7 on the engine PCB, replace the engine PCB. |
| (8) Cooling fan motor 1 does not operate at all or does not turn at full speed. | Broken cooling fan motor 1 coil. | Check for continuity across the coil. If none, replace cooling fan motor 1. |
| | Poor contact in the cooling fan motor 1 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U030 and check if CN3-B4 on the engine PCB goes low. If not, replace the engine PCB. |
| (9) Cooling fan motor 2 does not operate at all or does not turn at full speed. | Broken cooling fan motor 2 coil. | Check for continuity across the coil. If none, replace cooling fan motor 2. |
| | Poor contact in the cooling fan motor 2 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U030 and check if CN3-B6 on the engine PCB goes low. If not, replace the engine PCB. |

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2A3/4

| Problem | Causes | Check procedures/corrective measures |
|--|--|---|
| (10) Paper feed motor does not operate (C230). | Broken paper feed motor coil. | Check for continuity across the coil. If none, replace the paper feed motor. |
| | 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. | Check if the paper feed motor rotates when CN11-3 on the engine PCB goes low while maintenance item U030 is run. If not replace the paper feed motor. |
| | Defective main PCB. | Run maintenance item U030 and check if CN1-87 on the main PCB goes low. If not, replace the main PCB. |
| (11) The paper conveying motor does not operate (C210). | Broken paper conveying motor coil. | Check for continuity across the coil. If none, replace the paper conveying motor. |
| | 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 feed motor. | Check if the paper feed motor rotates when CN5-A8 on the engine PCB goes low while maintenance item U030 is run. If not, replace the paper conveying motor. |
| | Defective main PCB. | Run maintenance item U030 and check if CN1-111 on the main PCB goes low. If not, replace the main PCB. |
| (12) The toner recycle motor does not operate. | Broken toner recycle motor coil. | Check for continuity across the coil. If none, replace the toner recycle motor. |
| | Poor contact in the toner recycle 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 CN2-A7 and CN2-A8 on the engine PCB. If not, replace the engine PCB. |

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2A3/4

| Problem | Causes | Check procedures/corrective measures |
|--|---|---|
| (13) The charger cleaning motor does not operate. | Broken charger cleaning motor coil. | Check for continuity across the coil. If none, replace the charger cleaning motor. |
| | Poor contact in the charger cleaning motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U102 and check if CN8-B4 and CN8-B5 on the engine PCB go low. If not, replace the engine PCB. |
| (14) The image formation unit fan motor does not operate. | Broken image formation unit fan motor coil. | Check for continuity across the coil. If none, replace the image formation unit fan motor. |
| | Poor contact in the image formation unit fan motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U135 and check if CN2-A4 on the engine PCB goes low. If not, replace the engine PCB. |
| (15) The upper paper feed clutch does not operate. | Broken upper paper feed clutch coil. | Check for continuity across the coil. If none, replace the upper paper feed clutch. |
| | Poor contact in the upper paper feed clutch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U032 and check if CN15-13 on the engine PCB goes low. If not, replace the engine PCB. |

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2A3/4

| Problem | Causes | Check procedures/corrective measures |
|---|--|---|
| (16) The lower paper feed clutch does not operate. | Broken lower paper feed clutch coil. | Check for continuity across the coil. If none, replace the lower paper feed clutch. |
| | Poor contact in the lower paper feed clutch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U032 and check if CN15-14 on the engine PCB goes low. If not, replace the engine PCB. |
| (17) Feed clutch 1 does not operate. | Broken feed clutch 1 coil. | Check for continuity across the coil. If none, replace feed clutch 1. |
| | Poor contact in feed clutch 1 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U032 and check if CN12-A4 on the engine PCB goes low. If not, replace the engine PCB. |
| (18) Feed clutch 2 does not operate. | Broken feed clutch 2 coil. | Check for continuity across the coil. If none, replace feed clutch 2. |
| | Poor contact in feed clutch 2 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U032 and check if CN12-A8 on the engine PCB goes low. If not, replace the engine PCB. |
| (19) Feed clutch 3 does not operate. | Broken feed clutch 3 coil. | Check for continuity across the coil. If none, replace feed clutch 3. |
| | Poor contact in feed clutch 3 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U032 and check if CN12-A10 on the engine PCB goes low. If not, replace the engine PCB. |

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| Problem | Causes | Check procedures/corrective measures |
|--|---|---|
| (20) 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 CN8-B9 on the engine PCB goes low. If not, replace the engine PCB. |
| (21) 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 CN12-A2 on the engine PCB goes low. If not, replace the engine PCB. |
| (22) The registration clutch does not operate. | Broken registration clutch coil. | Check for continuity across the coil. If none, replace the registration clutch. |
| | Poor contact in the registration clutch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective engine PCB. | Run maintenance item U032 and check if CN8-B11 on the engine PCB goes low. If not, replace the engine PCB. |
| (23) 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 CN14-A7 on the engine PCB goes low. If not, replace the engine PCB. |





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| Problem | Causes | Check procedures/corrective measures |
|--|---|--|
| (24) The eject speed switching clutch does not operate. | Broken eject speed switching clutch coil. | Check for continuity across the coil. If none, replace the eject speed switching clutch. |
| | Poor contact in the eject speed switching 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 CN3-A11 on the engine PCB goes low. If not, replace the engine PCB. |
| (25) 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 CN14-A8 on the engine PCB goes low. If not, replace the engine PCB. |
| (26) The cleaning lamp does not turn on. | Poor contact in the cleaning lamp connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective cleaning lamp. | Check for one-way continuity across each LED comprising the cleaning lamp. If none, replace the cleaning lamp. |
| | Defective engine PCB. | If the cleaning lamp turns on when CN2-A2 on the engine PCB is held low, replace the engine PCB. |
| (27) The exposure lamp does not turn on. | Poor contact in the exposure lamp connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective inverter PCB. | If the exposure lamp does not turn on when CN1-5 and CN1-6 on the inverter PCB are held low, replace the inverter PCB. |
| | Defective scanner motor PCB. | If the exposure lamp turns on when CN3-1 and 3-2 on the scanner motor PCB are held low, replace the scanner motor PCB. |

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| Problem | Causes | Check procedures/corrective measures |
|--|---|---|
| (28) 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 motor PCB. | If CN3-1 and CN3-2 on the scanner motor PCB are always low, replace the scanner motor PCB. |
| (29) Fixing heater M or S does not turn on (C620). | Broken wire in fixing heater M or S. | Check for continuity across each heater. If none, replace the heater (see page 3-3-63). |
| | Fixing unit thermostat triggered. | Check for continuity across thermostat. If none, remove the cause and replace the thermostat. |
| | Broken fixing unit thermistor wire. | Measure the resistance. If it is $\infty \Omega$, replace the fixing unit thermistor. |
| (30) Fixing heater M or S does not turn off (fixing unit thermostat triggered; C620). | 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 CN6-7 and CN6-8 on the engine PCB go high, replace the engine PCB. |
| (31) Main charging is not performed (C510). | Broken main charger wire. | See page 3-6-5. |
| | Leaking main charger housing. | |
| | Poor contact in the high-voltage transformer PCB connector terminals. | |
| | Defective main PCB. | |
| | Defective engine PCB. | |
| | Defective high-voltage transformer PCB. | |





2A3/4

| Problem | Causes | Check procedures/corrective measures |
|--|---|--|
| (32) Transfer charging is not performed (C511). | Broken transfer charger wire. | See page 3-6-4. |
| | Poor contact in the high-voltage transformer PCB connector terminals. | |
| | Defective main PCB. | |
| | Defective engine PCB. | |
| (33) Separation charging is not performed (C511). | Defective high-voltage transformer PCB. | See page 3-3-56). |
| | Broken separation charger wire. | |
| | Poor contact in the high-voltage transformer PCB connector terminals. | |
| | Defective high-voltage transformer PCB. | |
| (34) No developing bias is output. | Defective engine PCB. | Run maintenance item U101 and check if CN5-B5 on the engine PCB goes low. If not, replace the engine PCB. |
| | 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. | Defective high-voltage transformer PCB. | Check if the developing bias is output when CN1-4 on the high-voltage transformer PCB goes low while maintenance item U030 is run. If not, replace the high-voltage transformer PCB. |

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| Problem | Causes | Check procedures/corrective measures |
|---|--|--|
| (34) No developing bias is output. | Defective engine PCB. | Check if CN5-B10 on the engine PCB goes low during copying. If not, replace the engine PCB. |
| (35) The original size is not detected. | Defective original detection switch. | If the level of CN5-2 on the scanner motor PCB does not change when the original detection switch is turned on and off, replace the original detection switch. |
| (36) The original size is not detected correctly. | Original is not placed correctly. | Check the original and correct if necessary. |
| | Poor contact in the original size sensors connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective original size sensor or the scanner motor PCB. | Check if sensor operates correctly. If not, replace it or, if necessary, the scanner motor PCB. |
| (37) The touch panel keys do not work. | Poor contact in the touch panel connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective touch panel or operation unit main PCB. | If any keys do not work after the touch panel has been initialized, replace the touch panel or operation unit main PCB. |
| (38) The message requesting paper to be loaded is shown when paper is present in the upper drawer. | Poor contact in the upper paper switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective upper paper switch. | Check if CN15-9 on the engine PCB goes low when the upper paper switch is turned on with 5 V DC present at CN15-7 on the engine PCB. If not, replace the upper paper switch. |





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| Problem | Causes | Check procedures/corrective measures |
|---|--|--|
| (39) The message requesting paper to be loaded is shown when paper is present in the lower drawer. | Poor contact in the lower paper switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective lower paper switch. | Check if CN15-10 on the engine PCB goes low when the lower paper switch is turned on with 5 V DC present at CN15-8 on the engine PCB. If none, replace the lower paper switch. |
| (40) The message requesting paper to be loaded is shown when paper is present on the bypass table. | Poor contact in the bypass paper switch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective bypass paper switch. | Check if CN14-A4 on the engine PCB goes low when the bypass paper switch is turned on with 5 V DC present at CN14-A2 on the engine PCB. If not, replace the bypass paper switch. |
| (41) The size of paper in the upper drawer is not displayed correctly. | Poor contact in the upper paper length switch* connector terminals (inch specs). | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Poor contact in the upper paper width switch* connector terminals (inch specs). | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective upper paper length switch* (inch specs). | Check if CN8-A8 on the engine PCB goes low when the upper paper length switch is turned on. If not, replace the upper paper length switch. |
| | Defective upper paper width switch* (inch specs). | Check if the levels of CN9-19, CN9-20 and CN9-21 on the engine PCB change alternately when the width guide in the upper drawer is moved. If not, replace the upper paper width switch. |
| | Incorrectly set drawer paper size in copier management mode (metric specs). | Check the drawer paper size and reset. |

* For inch specifications only.

3-6-84





2A3/4

| Problem | Causes | Check procedures/corrective measures |
|---|---|---|
| <p>(42) The size of paper in the lower drawer is not displayed correctly.</p> | <p>Poor contact in the lower paper length switch* connector terminals (inch specs).</p> | <p>Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.</p> |
| | <p>Poor contact in the lower paper width switch* connector terminals (inch specs).</p> | <p>Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.</p> |
| | <p>Defective lower paper length switch* (inch specs).</p> | <p>Check if CN8-A10 on the main PCB goes low when the lower paper length switch is turned on. If not, replace the lower paper length switch.</p> |
| | <p>Defective lower paper width switch* (inch specs).</p> | <p>Check if the levels of CN9-23, CN9-24 and CN9-25 on the engine PCB change alternately when the width guide in the lower drawer is moved. If not, replace the lower paper width switch.</p> |
| | <p>Incorrectly set drawer paper size in copier management mode (metric specs).</p> | <p>Check the drawer paper size and reset.</p> |

* For inch specifications only.

3-6-85





2A3/4

| Problem | Causes | Check procedures/corrective measures |
|--|---|---|
| <p>(43) 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.</p> | <p>A piece of paper torn from copy paper is caught around paper feed switch 1/2/3, the feed switch or the eject switch.</p> | <p>Check and remove if any.</p> |
| | <p>Defective paper feed switch 1.</p> | <p>With 5 V DC present at CN13-5 on the engine PCB, check if CN13-4 on the engine PCB remains low when paper feed switch 1 is turned on and off. If it does, replace paper feed switch 1.</p> |
| | <p>Defective paper feed switch 2.</p> | <p>With 5 V DC present at CN13-8 on the engine PCB, check if CN13-7 on the engine PCB remains low when paper feed switch 2 is turned on and off. If it does, replace paper feed switch 2.</p> |
| | <p>Defective paper feed switch 3.</p> | <p>With 5 V DC present at CN13-11 on the engine PCB, check if CN13-10 on the engine PCB remains low when paper feed switch 3 is turned on and off. If it does, replace paper feed switch 3.</p> |
| | <p>Defective feed switch.</p> | <p>With 5 V DC present at CN13-2 on the engine PCB, check if CN13-1 on the engine PCB remains low when the feed switch is turned on and off. If it does, replace the feed switch.</p> |
| | <p>Defective registration switch.</p> | <p>With 5 V DC present at CN8-B1 on the engine PCB, check if CN8-B2 on the engine PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.</p> |
| | <p>Defective eject switch.</p> | <p>With 5 V DC present at CN3-B10 on the engine PCB, check if CN3-B9 on the engine PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch.</p> |

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2A3/4

| Problem | Causes | Check procedures/corrective measures |
|---|---|---|
| (44) The message requesting covers to be closed is displayed when the front, left and right covers are closed. | Poor contact in the connector terminals of safety switch 1, 2 or 3. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective safety switch 1, 2 or 3. | Check for continuity across each switch. If there is no continuity when the switch is on, replace it. |
| (45) Others. | Wiring is broken, shorted or makes poor contact. | Check for continuity. If none, repair. |
| | Noise. | Locate the source of noise and remove. |

3-6-87





2A3/4

• SRDF

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

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| Problem | Causes | Check procedures/corrective measures |
|--|---|--|
| (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. |





2A3/4

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

3-6-90





2A3/4

| Problem | Causes | Check procedures/corrective measures |
|--|---|--|
| (9) An original jams when the main switch is turned on. | A piece of paper torn from an original is caught around the DF timing switch. | Remove any found. |
| | Defective DF timing switch. | With 5 V DC present at CN6-A15 on the DF driver PCB, check if CN6-A14 on the DF driver PCB remains low when the DF timing switch is turned on and off. If it does, replace the DF timing switch. |

3-6-91





2A3/4

• Feedshift and duplex sections

| Problem | Causes | Check procedures/corrective measures |
|--|--|---|
| (1) The side registration motor does not rotate (C220). | Poor contact in the side registration motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken side registration motor gear. | Check visually and replace the side registration motor if necessary. |
| | Defective side registration motor. | Check for continuity across the coil. If none, replace the side registration motor. |
| (2) The feedshift solenoid does not operate. | Broken feedshift solenoid coil. | Check for continuity across the coil. If none, replace the feedshift solenoid. |
| | Poor contact 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-A8 on the engine PCB goes low. If not, replace the engine PCB. |
| (3) The duplex forward solenoid does not operate. | Broken duplex forward solenoid coil. | Check for continuity across the coil. If none, replace the duplex forward solenoid. |
| | Poor contact in the duplex forward 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 CN10-8 on the engine PCB goes low. If not, replace the engine PCB. |

3-6-92





| Problem | Causes | Check procedures/corrective measures |
|---|--|---|
| (4) The switchback feedshift solenoid does not operate. | Broken switchback feedshift solenoid coil. | Check for continuity across the coil. If none, replace the switchback feedshift solenoid. |
| | Poor contact in the switchback 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 CN10-10 on the engine PCB goes low. If not, replace the engine PCB. |
| (5) The duplex paper tapping solenoid does not operate. | Broken duplex paper tapping solenoid coil. | Check for continuity across the coil. If none, replace the duplex paper tapping solenoid. |
| | Poor contact in the duplex paper tapping 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 CN10-14 on the engine PCB goes low. If not, replace the engine PCB. |
| (6) The message requesting covers to be closed is displayed when the left cover is closed. | Poor contact in safety switch 2 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Defective safety switch 2. | Check for continuity across the contacts. If there is no continuity when safety switch 2 is on, replace it. |
| (7) Others. | Wiring is broken, shorted or makes poor contact. | Check for continuity. If none, repair. |
| | Noise. | Locate the source of noise and remove. |





2A3/4

• Large paper deck (42 ppm: optional/52 ppm: standard)

| Problem | Causes | Check procedures/corrective measures |
|---|---|--|
| (1) The large paper deck does not operate when the print key is pressed. | Incorrect connection with the engine PCB. | Check the connector. |
| (2) The deck paper conveying motor does not operate (C920). | Poor contact in the deck paper conveying motor connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | The deck paper conveying motor drive system overloaded. | Check the drive system. |
| | Defective deck main PCB. | Check if the motor drive clock signal is present at CN12-3 on the deck main PCB when maintenance item U247 is run. If not, replace the deck main PCB. |
| | Defective deck paper conveying motor. | Check if the deck paper conveying motor rotates while the motor drive clock signal is present at CN12-3 on the deck main PCB when maintenance item U247 is run. If not, replace the deck paper conveying motor. |
| (3) Paper deck motor 1 does not operate (C921). | Poor contact in the paper deck motor 1 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken paper deck motor 1 coil. | Check for continuity across the coil. If none, replace paper deck motor 1. |
| | Defective deck main PCB. | Check if CN7-1 on the deck main PCB goes low when paper deck motor 1 is turned on (placing paper on the right cassette lift and closing the large paper deck will turn paper deck motor 1 on until deck level switch 1 turns on) while the deck open/closed safety switch is on and 24 V DC is present at CN1-4 on the deck main PCB. If not, replace the deck main PCB. |

3-6-94





| Problem | Causes | Check procedures/corrective measures |
|--|--|---|
| (4) Paper deck motor 2 does not operate (C922). | Poor contact in the paper deck motor 2 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken paper deck motor 2 coil. | Check for continuity across the coil. If none, replace paper deck motor 2. |
| | Defective deck main PCB. | Check if CN7-4 on the deck main PCB goes low when paper deck motor 2 is turned on (placing paper on the left cassette lift and closing the large paper deck will turn paper deck motor 2 on until deck level switch 2 turns on) while the deck open/closed safety switch is on and 24 V DC is present at CN1-4 on the deck main PCB. If not, replace the deck main PCB. |
| (5) Paper feed clutch 1 does not operate. | Poor contact in the paper feed clutch 1 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken paper feed clutch 1 coil. | Check for continuity across the coil. If none, replace paper feed clutch 1. |
| | Defective deck main PCB. | Check if CN4-4 on the deck main PCB goes low when maintenance item U247 is run. If not, replace the deck main PCB. |
| | Wiring problem. | Check for continuity across CN4-4 on the deck main PCB and CN1-4 on the interface PCB. If none, check the wiring. |
| | Defective interface PCB. | Run maintenance item U247. If paper feed clutch 1 does not operate while CN4-4 on the deck main PCB is low, check for continuity across CN5-5 & CN1-1 and CN5-6 & CN1-4 on the interface PCB. If none, replace the interface PCB. |
| (6) Paper feed clutch 2 does not operate. | Poor contact in the paper feed clutch 2 connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken paper feed clutch 2 coil. | Check for continuity across the coil. If none, replace paper feed clutch 2. |





2A3/4

| Problem | Causes | Check procedures/corrective measures |
|---|---|---|
| (6) Paper feed clutch 2 does not operate. | Defective deck main PCB. | Check if CN4-5 on the deck main PCB goes low when maintenance item U247 is run. If not, replace the deck main PCB. |
| | Wiring problem. | Check for continuity across CN4-5 on the deck main PCB and CN1-5 on the interface PCB. If none, check the wiring. |
| | Defective interface PCB. | Run maintenance item U247. If paper feed clutch 2 does not operate while CN4-5 on the deck main PCB is low, check for continuity across CN5-3 & CN1-1 and CN5-4 & CN1-5 on the interface PCB. If none, replace the interface PCB. |
| (7) The paper conveying clutch does not operate. | Poor contact in the paper conveying clutch connector terminals. | Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable. |
| | Broken paper conveying clutch coil. | Check for continuity across the coil. If none, replace the paper conveying clutch. |
| | Defective deck main PCB. | Check if CN4-6 on the deck main PCB goes low when maintenance item U247 is run. If not, replace the deck main PCB. |
| | Wiring problem. | Check for continuity across CN4-6 on the deck main PCB and CN1-6 on the interface PCB. If none, check the wiring. |
| | Defective interface PCB. | Run maintenance item U247. If the paper conveying clutch does not operate while CN4-6 on the deck main PCB is low, check for continuity across CN5-1 & CN1-1 and across CN5-2 & CN1-6 on the interface PCB. If none, replace the interface PCB. |

3-6-96



**3-6-5 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, feed rollers 1/2/3/4, feed pulleys, bypass forwarding pulley and bypass upper/lower paper feed pulleys. | Clean with isopropyl alcohol. |
| | Check if the upper or lower paper feed pulley is deformed. | Replace if necessary (see page 3-3-3). |
| | Check if the forwarding pulley is deformed. | Replace if necessary (see page 3-3-3). |
| | Electrical problem with the following electromagnetic clutches: upper/lower paper feed clutches, feed clutches 1/2/3/4/5 and bypass paper feed clutch. | See pages 3-6-77 – 79. |
| (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 3-6-79. |
| (3) Skewed paper feed. | Width guide in a drawer installed incorrectly. | Check the width guide visually and correct or replace if necessary. |
| | Deformed width guide in a drawer. | Check the width guide visually and correct or replace if it is deformed. |
| | Check if a pressure spring along the paper conveying path is deformed or out of place. | Repair or replace. |





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|--|---|--|
| (4) The scanner does not travel. | Check if the scanner wire is loose. | Reinstall the scanner wire (see page 3-3-24). |
| | The scanner motor malfunctions. | See page 3-6-74. |
| (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 3-3-3). |
| | Check if the paper is curled. | Change the paper. |
| (6) Paper jams. | Check if the paper is excessively curled. | Change the paper. |
| | Deformed guides along the paper conveying path. | Check visually and repair or replace any deformed guides. |
| | Check if the contact between the upper and lower registration rollers is correct. | Remedy if necessary. Replace the pressure spring if it is deformed. |
| | Check if the separation charger wire in the transfer charger assembly is broken. | Replace the separation charger wire if it is broken (see page 3-3-56). |
| | Check if the paper conveying belt is off the paper conveying pulleys. | Remedy. |
| | Check if the fixing unit upper or lower left guide is deformed. | Repair or replace. |
| | 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. | Repair if a pressure spring is off the eject pulley. |
| (7) Toner drops on the paper conveying path. | Check if the developing unit is extremely dirty. | Clean the developing unit. |

3-6-98





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---------------------------------|--|--------------------------------|
| (8) Abnormal noise is heard. | Check if the pulleys, rollers and gears operate smoothly. | Grease the bearings and gears. |
| | Check if the following electro-magnetic clutches are installed correctly: upper/lower paper feed clutches, feed clutches 1/2/3/4/5 and bypass paper feed clutch. | Correct. |

3-6-99





2A3/4

• SRDF

| Problem | Causes/check procedures | Corrective measures |
|------------------------------------|--|--|
| (1) No primary original feed. | The surfaces of the DF forwarding pulleys, DF original feed pulley or DF separation pulley are dirty with paper powder. | Check and clean them with isopropyl alcohol if they are dirty. |
| | Check if the DF original feed pulley or the DF separation pulley is deformed. | If so, replace (see pages 3-3-89 and 91). |
| | Check if the DF forwarding pulleys are deformed. | If so, replace (see page 3-3-89). |
| | Electrical problem with the following clutch or solenoid: <ul style="list-style-type: none"> • Original feed solenoid • Original feed clutch | See pages 3-6-88 and 90. |
| (2) No secondary original feed. | The DF registration pulley and the DF registration roller do not contact each other correctly. | Remedy. |
| (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. | Remedy. |

3-6-100





• Feedshift and duplex sections

| Problem | Causes/check procedures | Corrective measures |
|---------------------------------|---|--|
| (1) No refeed. | Check if the surfaces of the following rollers and pulleys are dirty with paper powder: duplex forwarding pulley, refeed pulley, switchback roller and duplex upper/lower registration rollers. | Clean with isopropyl alcohol. |
| | Check if the duplex forwarding pulley is deformed. | Replace (see page 3-3-80). |
| | Electrical problem with the paper tapping solenoid. | See page 3-6-93. |
| (2) Paper is refeed askew. | Side registration amount adjusted incorrectly. | Run maintenance item U052 and adjust the side registration amount (see page 3-3-88). |
| (3) Paper jams. | Check if the paper is excessively curled. | Change the paper. |
| | Deformed guides along the paper conveying path. | Check visually and repair or replace any deformed guides. |
| | The feedshift solenoid malfunctions. | See page 3-6-92. |
| | Check if the contact between the feedshift lower roller and feedshift pulley is correct. | Repair if the mount has come off the feedshift pulley. |
| (4) Abnormal noise is heard. | Check if pulleys, rollers and gears operate smoothly. | Grease the bushings and gears. |

3-6-101



2A3/4

• Large paper deck (42 ppm: optional/52 ppm: standard)

| Problem | Causes/check procedures | Corrective measures |
|--|---|-------------------------------|
| (1) No primary paper feed. | Check if the upper or lower deck separation roller is dirty with paper powder. | Clean with isopropyl alcohol. |
| | Check if deck paper feed roller 1, 2 or the deck paper conveying roller is dirty with paper powder. | Clean with isopropyl alcohol. |
| | Check if the upper or lower deck separation roller is worn or deformed. | Replace (see page 3-3-102). |
| | Check if deck paper feed roller 1, 2 or the deck paper conveying roller is worn or deformed. | Replace (see page 3-3-104). |
| | Check if paper feed clutch 1, 2 or the paper conveying clutch malfunctions. | Remedy or replace. |
| (2) Paper is fed askew. | Check if the upper or lower deck separation roller is worn or deformed. | Replace (see page 3-3-102). |
| | Check if deck paper feed roller 1, 2 or the deck paper conveying roller is worn or deformed. | Replace (see page 3-3-104). |
| | Check if the paper side guides are deformed. | Remedy or replace. |
| (3) Multiple sheets of paper are fed at one time. | Check if the paper is excessively curled. | Change the paper. |
| | Paper is not loaded correctly. | Correct. |
| | Check if the upper or lower deck separation roller is worn or deformed. | Replace (see page 3-3-102). |
| (4) Paper jams. | Check if the paper is excessively curled. | Change the paper. |
| | Check if the upper and lower deck separation rollers contact each other when the deck is installed correctly. | Remedy if necessary. |

3-6-102





2A3/4

| Problem | Causes/check procedures | Corrective measures |
|---------------------------------|---|--------------------------------|
| (4) Paper jams. | Check if the paper side guides are deformed. | Remedy or replace. |
| (5) Abnormal noise is heard. | Check if rollers and gears operate smoothly. | Grease the bushings and gears. |
| | Check for any abnormality with motors and clutches. | Replace. |
| | Check for any drive belt out of place. | Remedy if necessary. |

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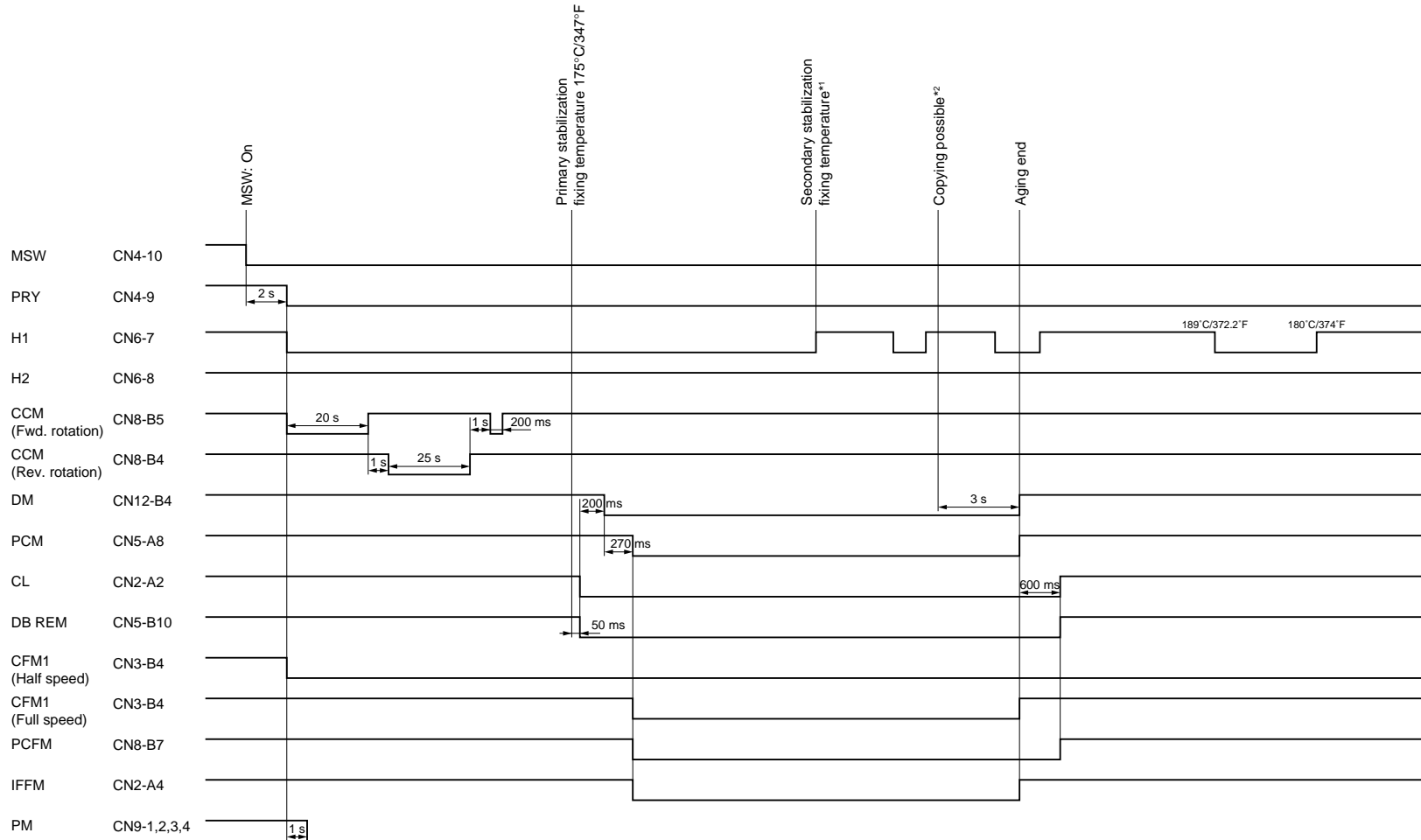


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| | |
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Timing chart No. 1 From the main switch turned on to machine stabilization

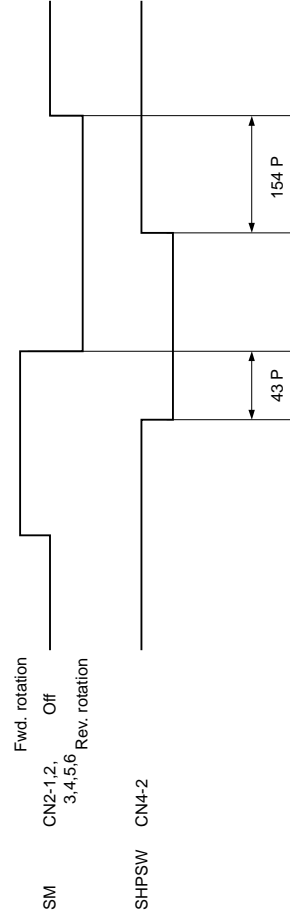


*1: 180°C/356°F (42 ppm) or 190°C/374°F (52 ppm)

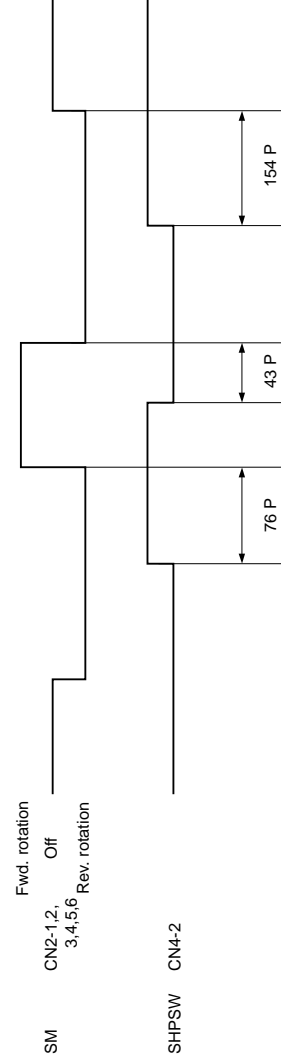
*2: Copying is possible at the earlier timing of 60 s (42 ppm) or 120 s (52 ppm) after secondary stabilization or 116 s (42 ppm) or 176 s (52 ppm) after PRY turning on.

Timing chart No. 2 Scanner operation

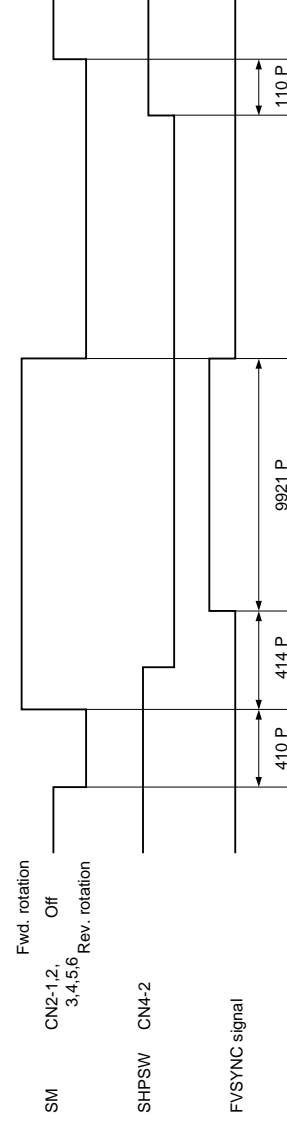
Scanner initialization (SHPSW: ON)



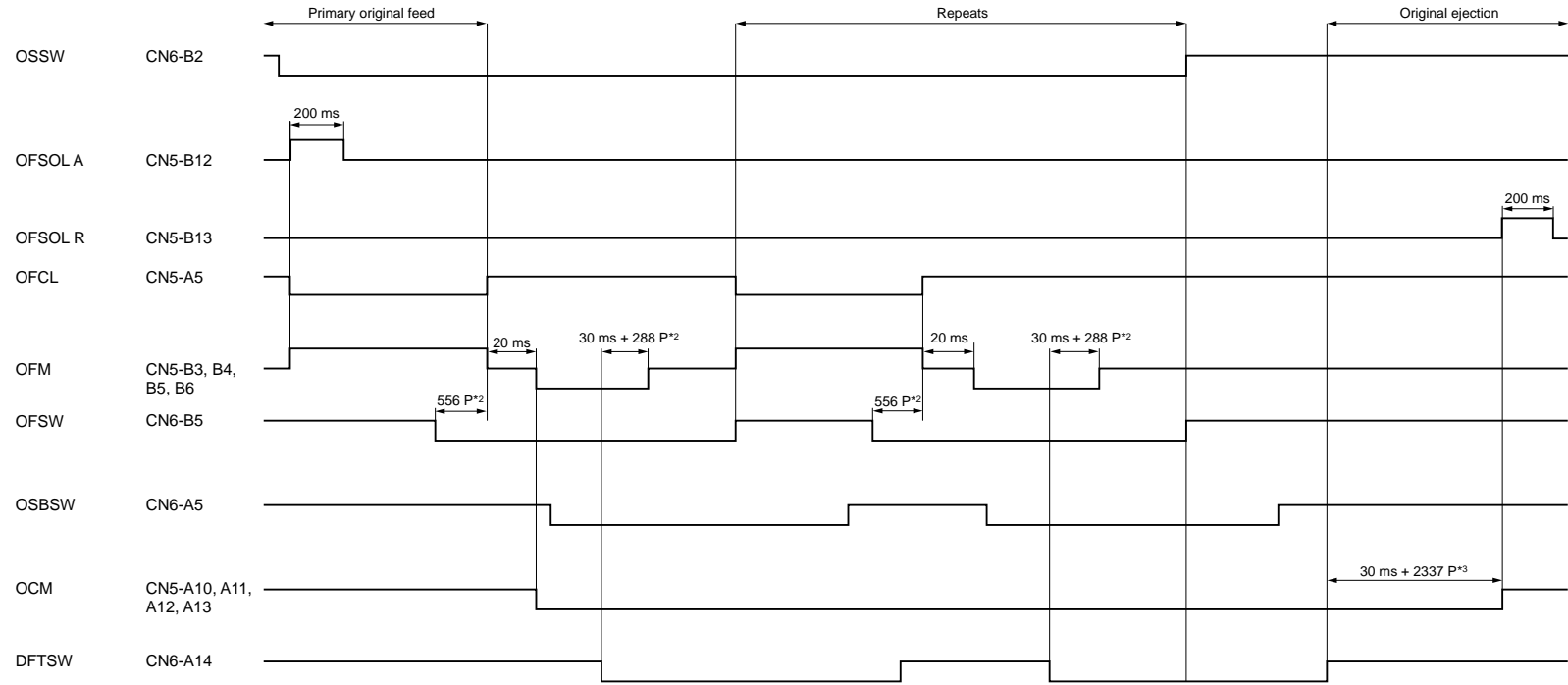
Scanner initialization (SHPSW: OFF)



Original scanning operation (A3/11" x 17" original, magnification ratio 100%, manual copy density control)



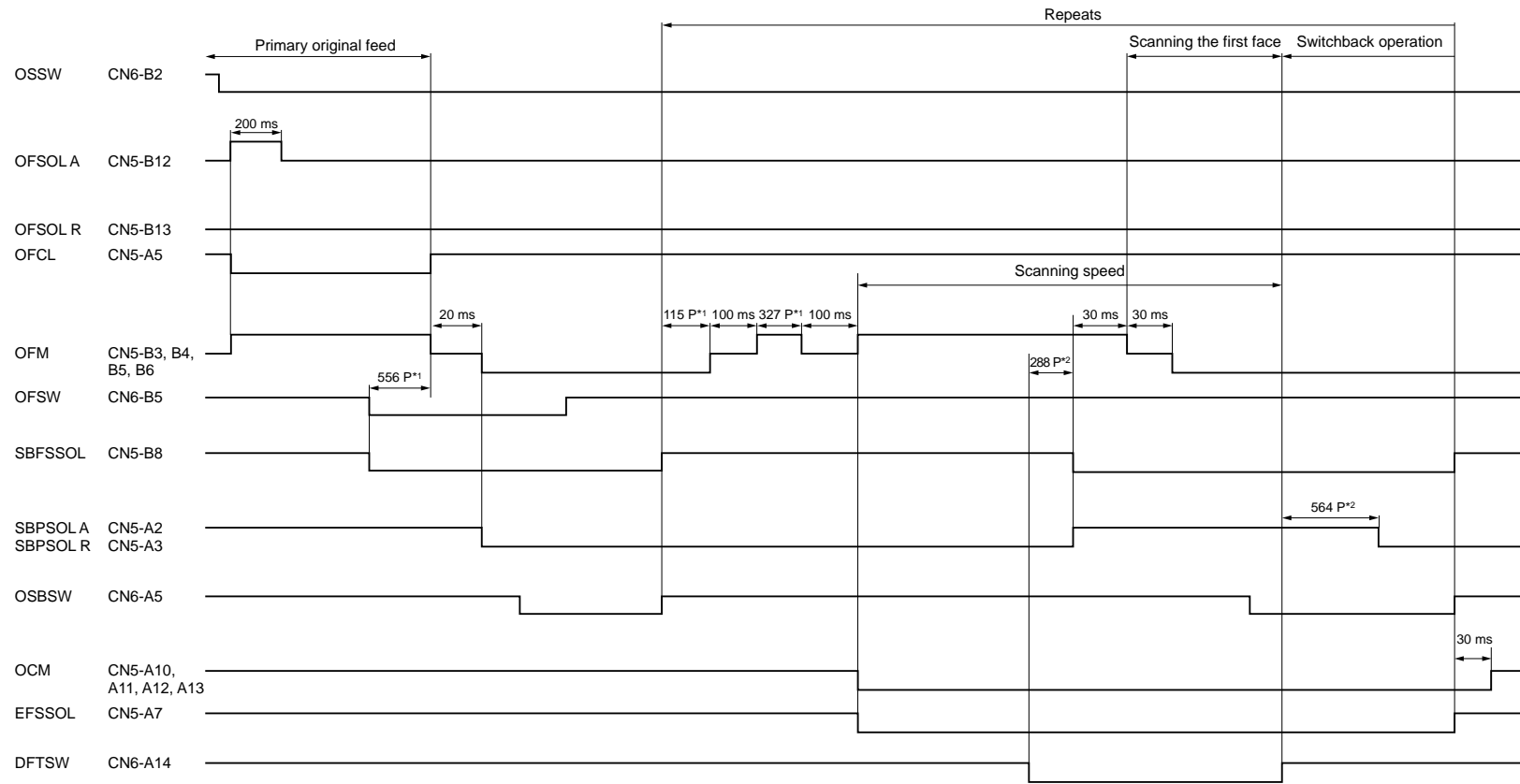
Timing chart No. 3 Original feed operation 1: single-side original mode, multiple originals



*1 During enlargement copying: (magnification $\times 10 - 530$) ms
 *2 Burst of OFM pulses
 *3 Burst of OCM pulses

2A3/4

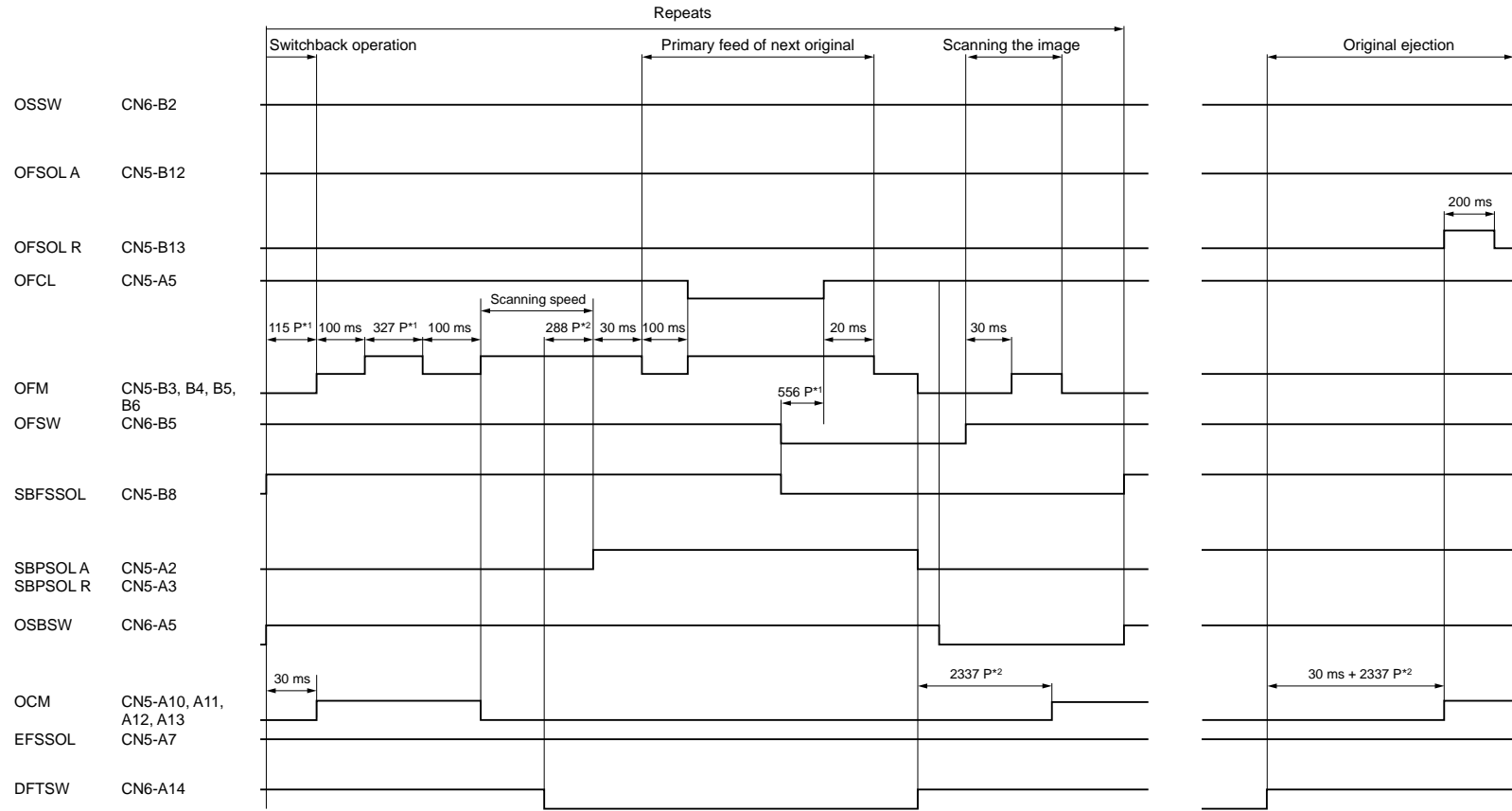
Timing chart No. 4 Original feed operation 2: double-sided original mode, multiple originals (1/2)



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

3-7-4

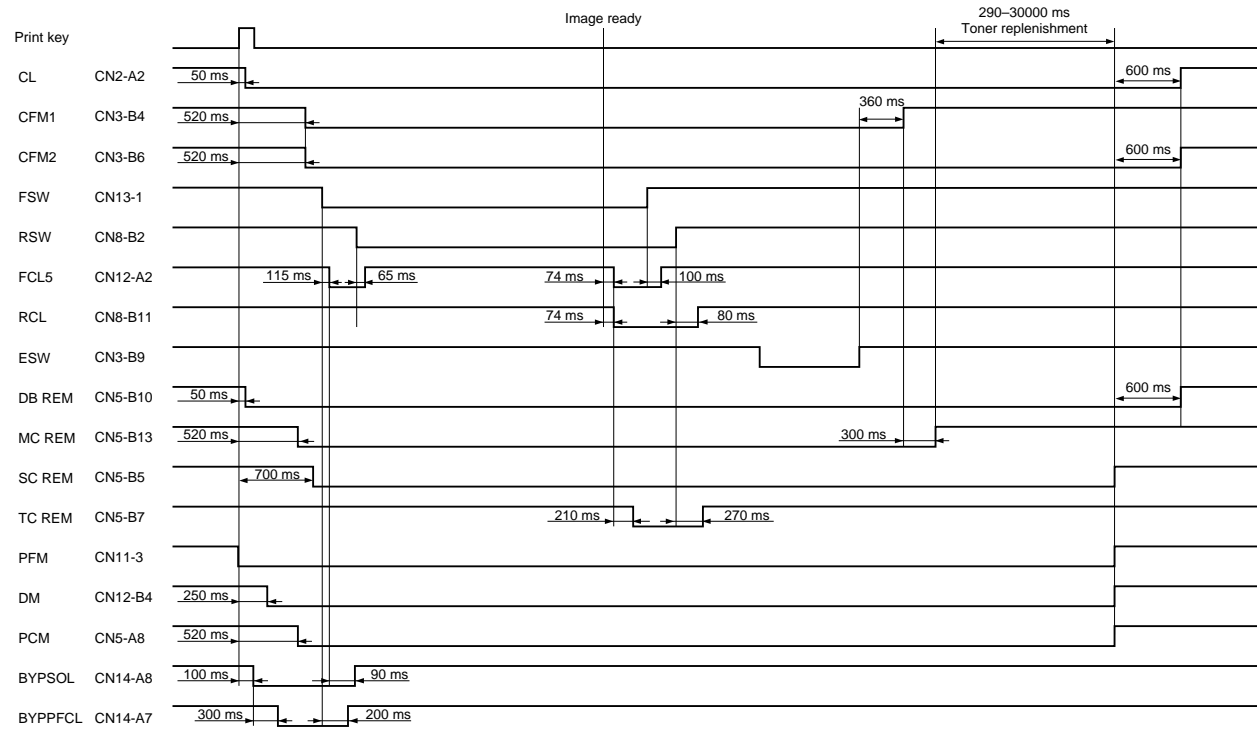
Timing chart No. 5 Original feed operation 2: double-sided original mode, multiple originals (2/2)



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

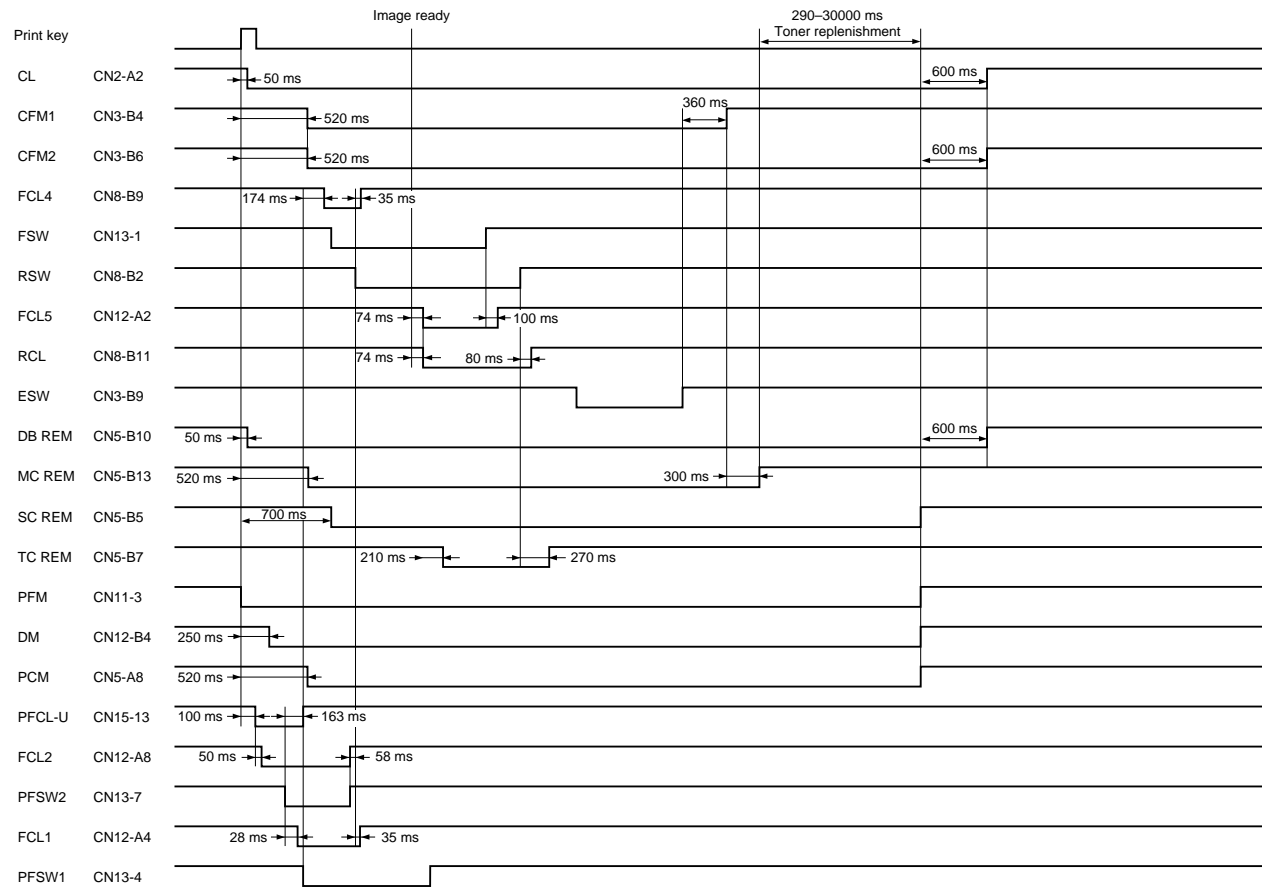
2A3/4

Timing chart No. 6 Copying an A3/11" × 17" original onto an A5R/5¹/₂" × 8¹/₂" copy paper from the bypass table, magnification ratio 25%, manual copy density control



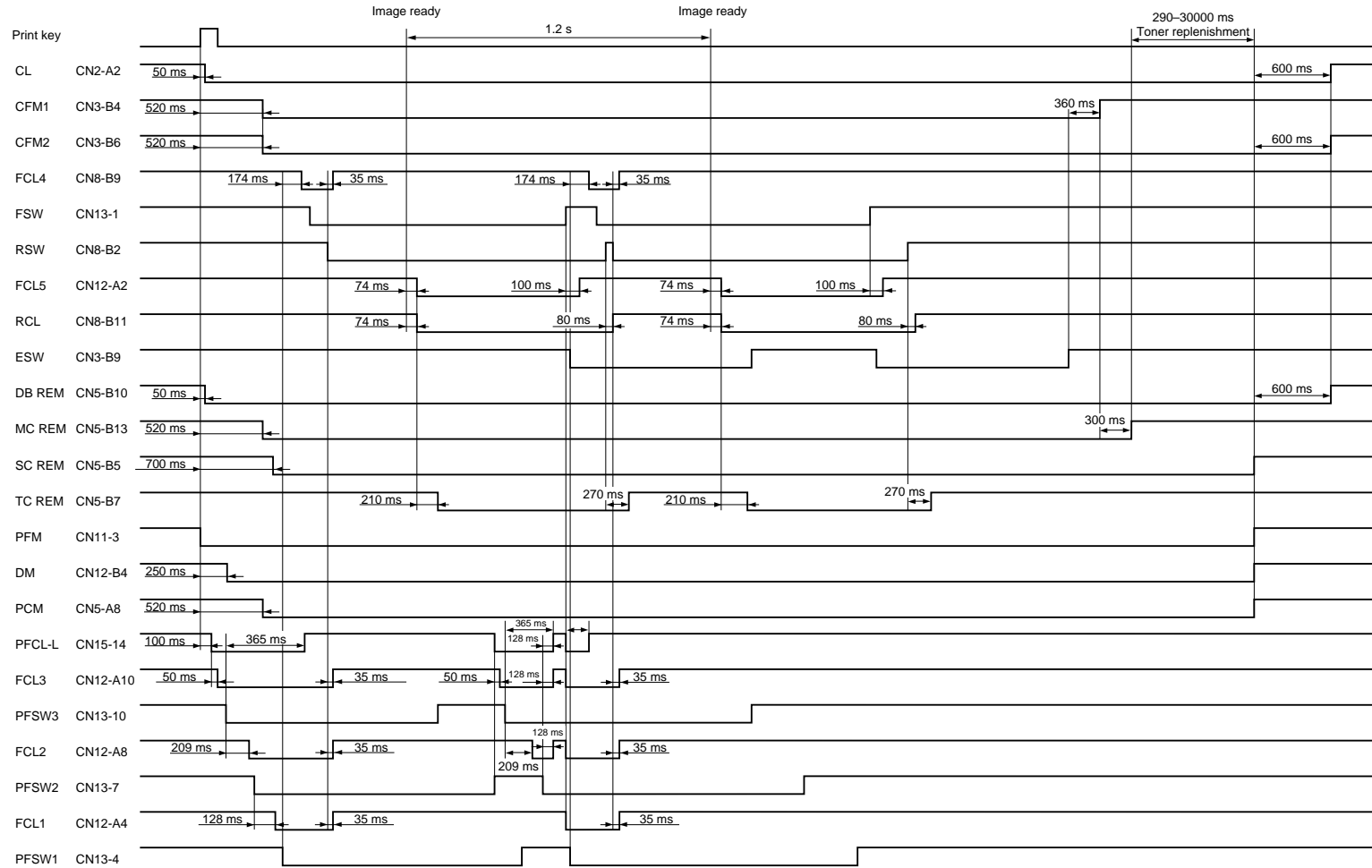
3-7-6

Timing chart No. 7 Copying an A4/11" x 8 1/2" original onto an A4/11" x 8 1/2" copy paper from the copier upper drawer, magnification ratio 100%, auto copy density control



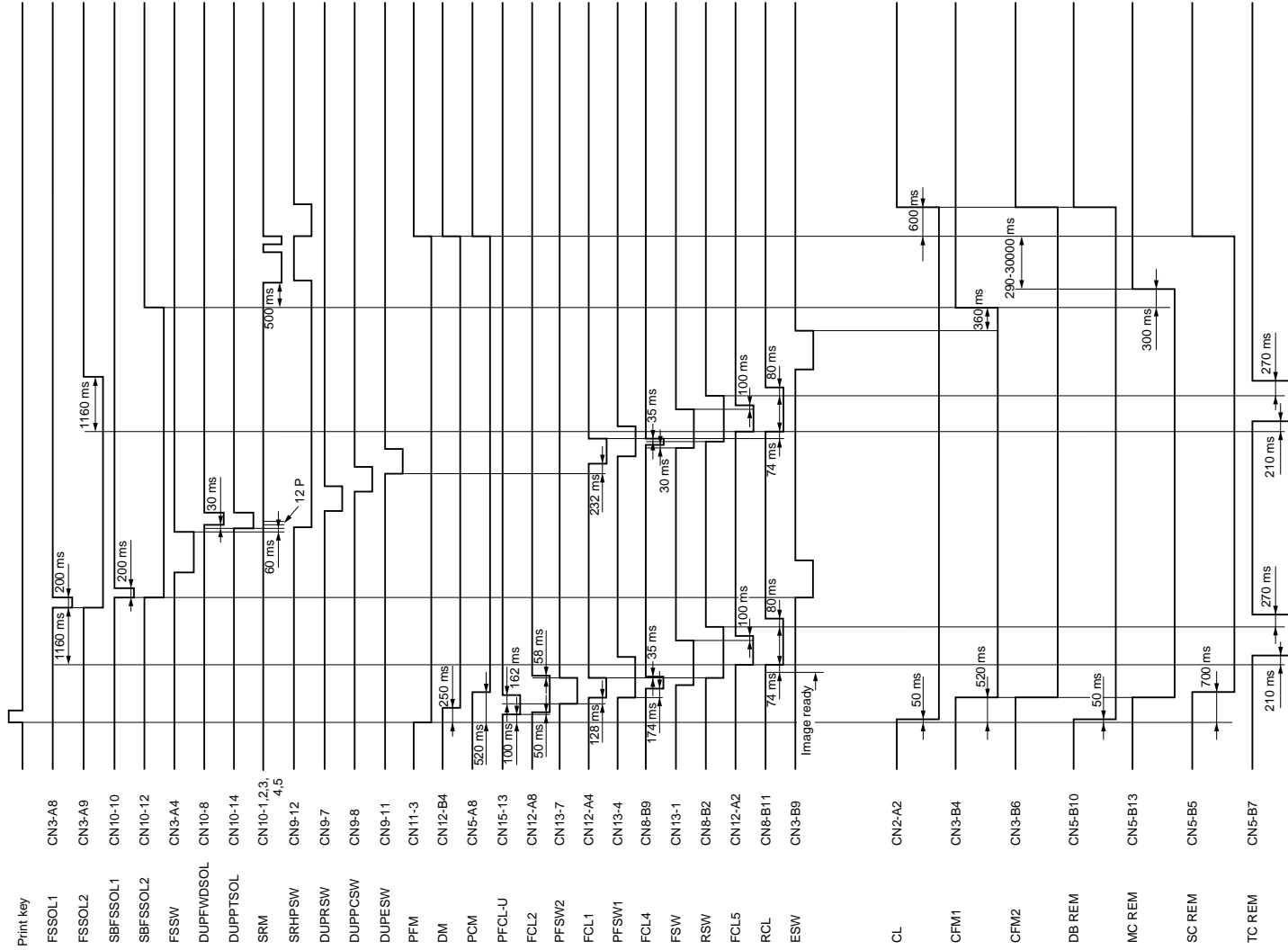
2A3/4

Timing chart No. 8 Continuous copying of an A5R/5 1/2" x 8 1/2" original onto two sheets of A3/11" x 17" copy paper from the copier lower drawer, magnification ratio 400%, manual copy density control

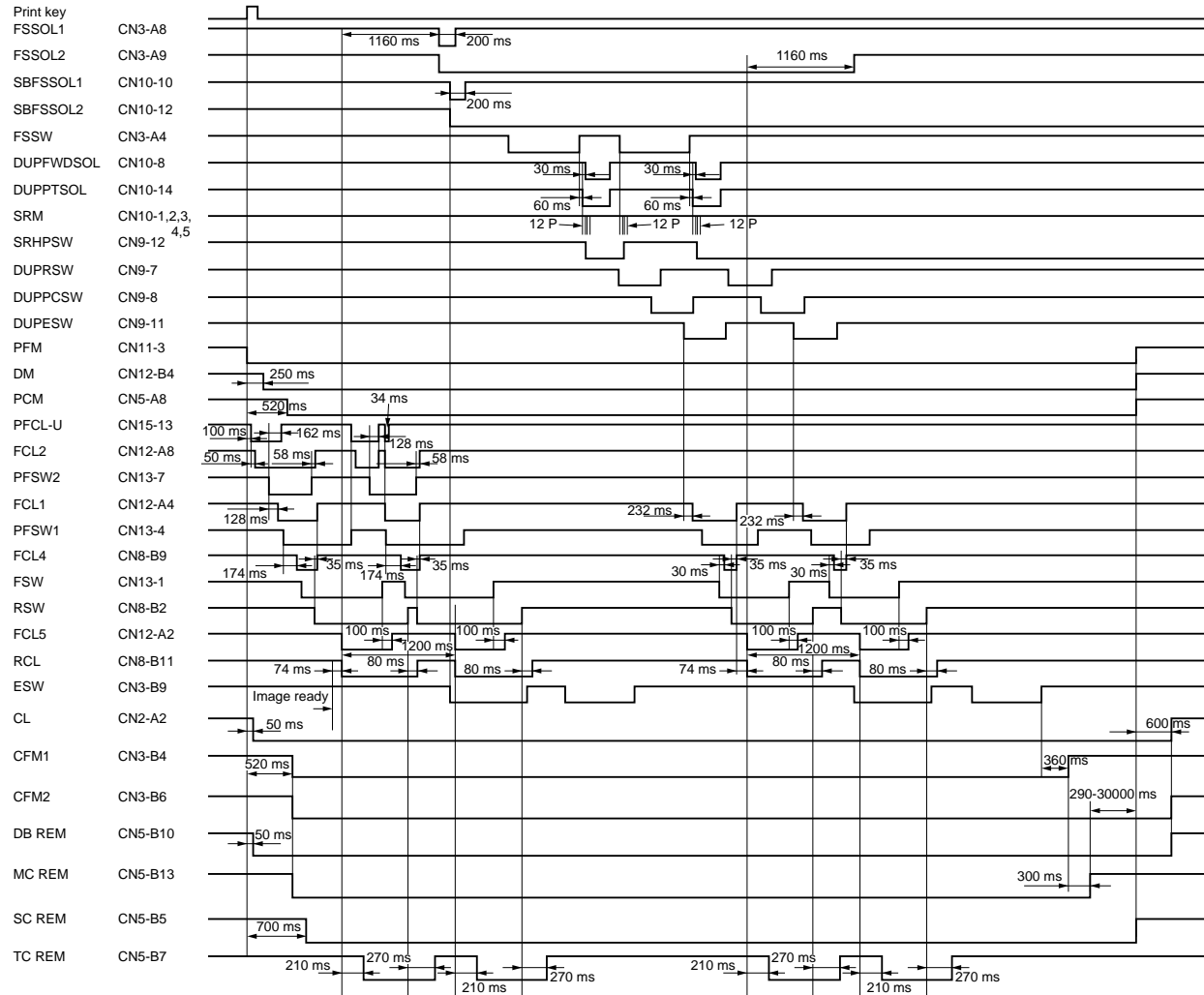


3-7-8

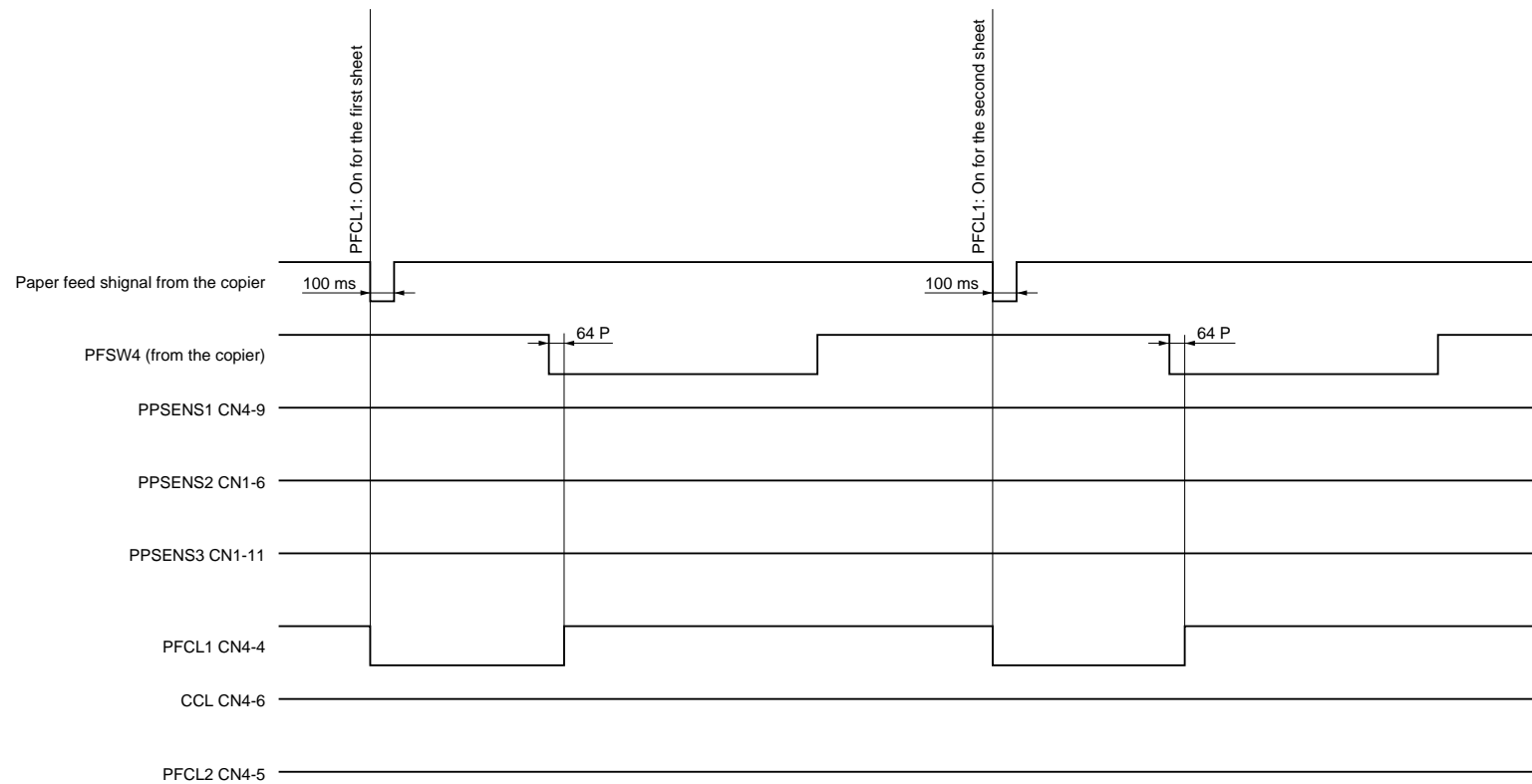
Timing chart No. 9 Duplex copying of an A3/11" x 17" book original onto one duplex A4/11" x 8 1/2" copy from the copier upper drawer, magnification ratio 100%, auto copy density control



Timing chart No. 10 Continuous, duplex copying of two single-sided A4/11" x 8 1/2" originals onto two duplex A4/11" x 8 1/2" copies from the copier upper drawer, magnification ratio 100%, auto copy density control

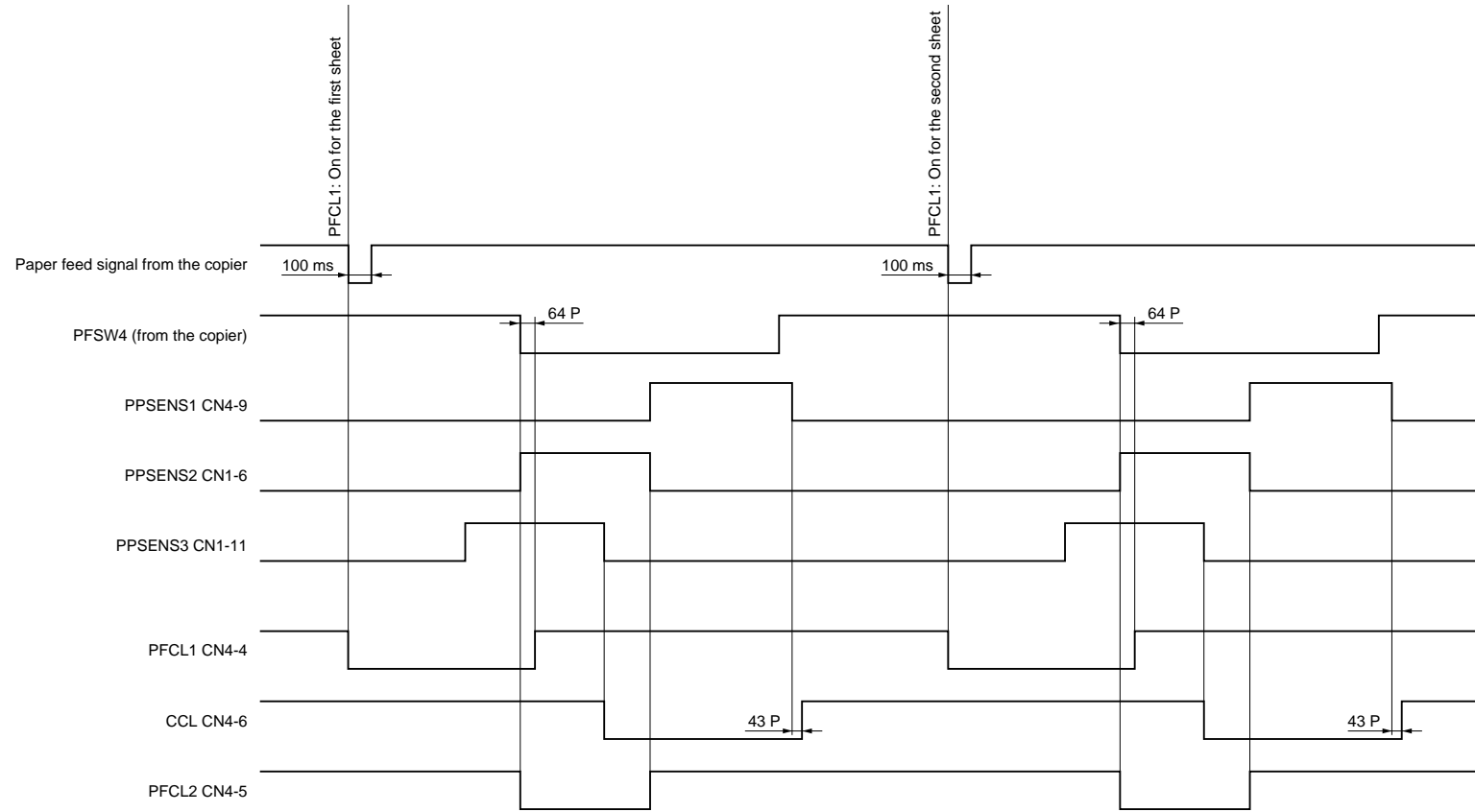


Timing chart No. 11 Primary paper feed from large paper deck right cassette

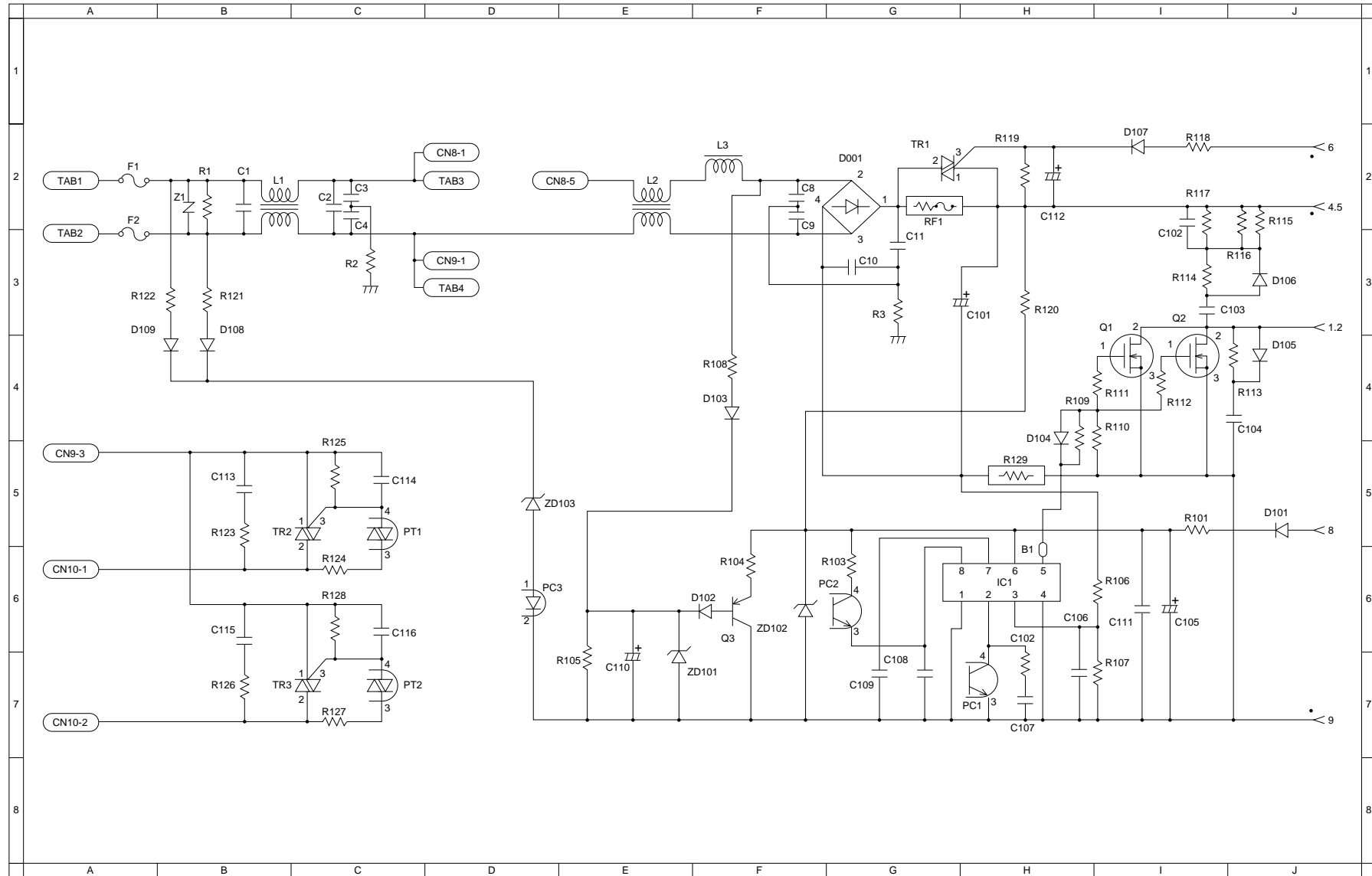


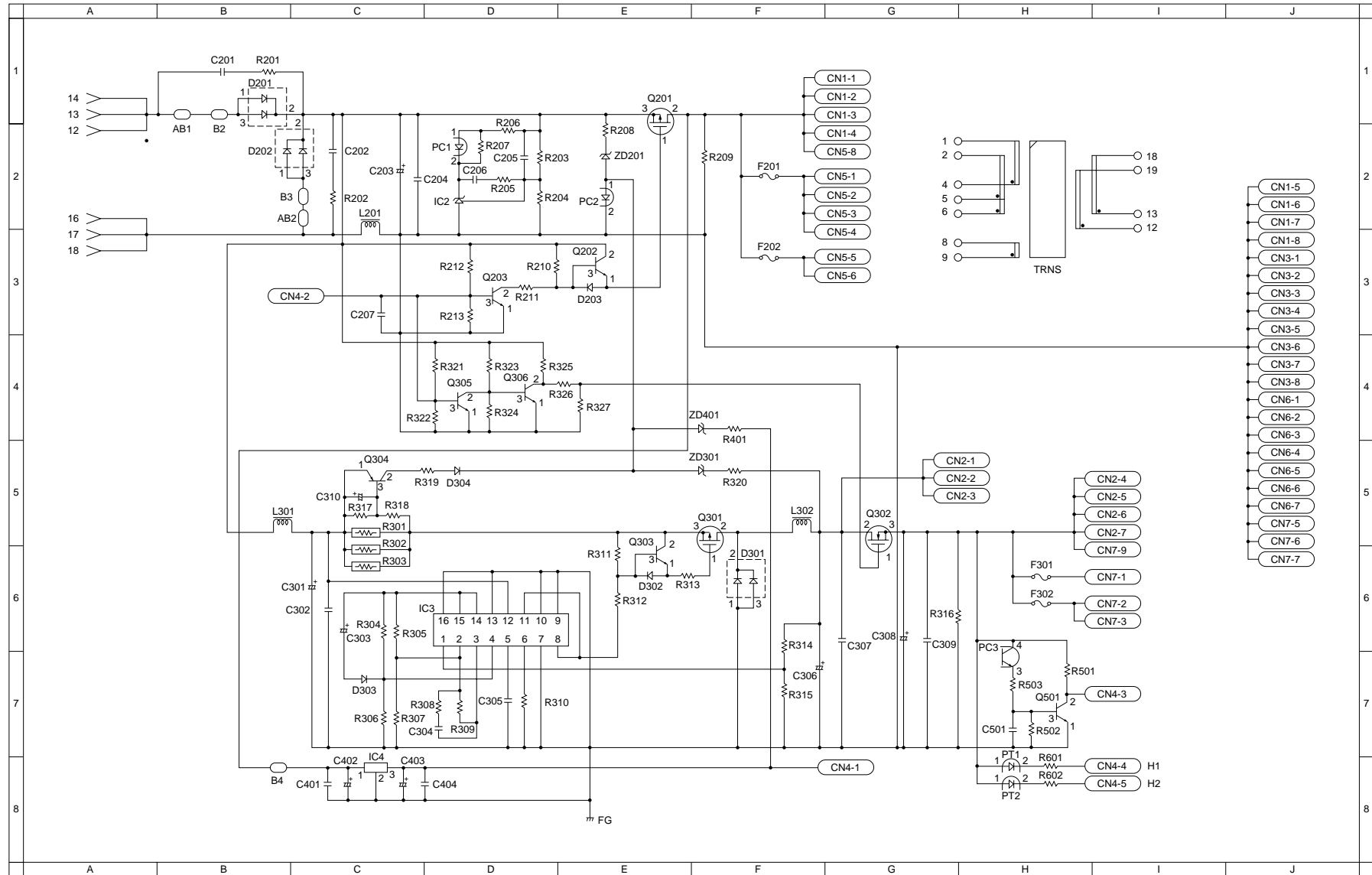
2A3/4

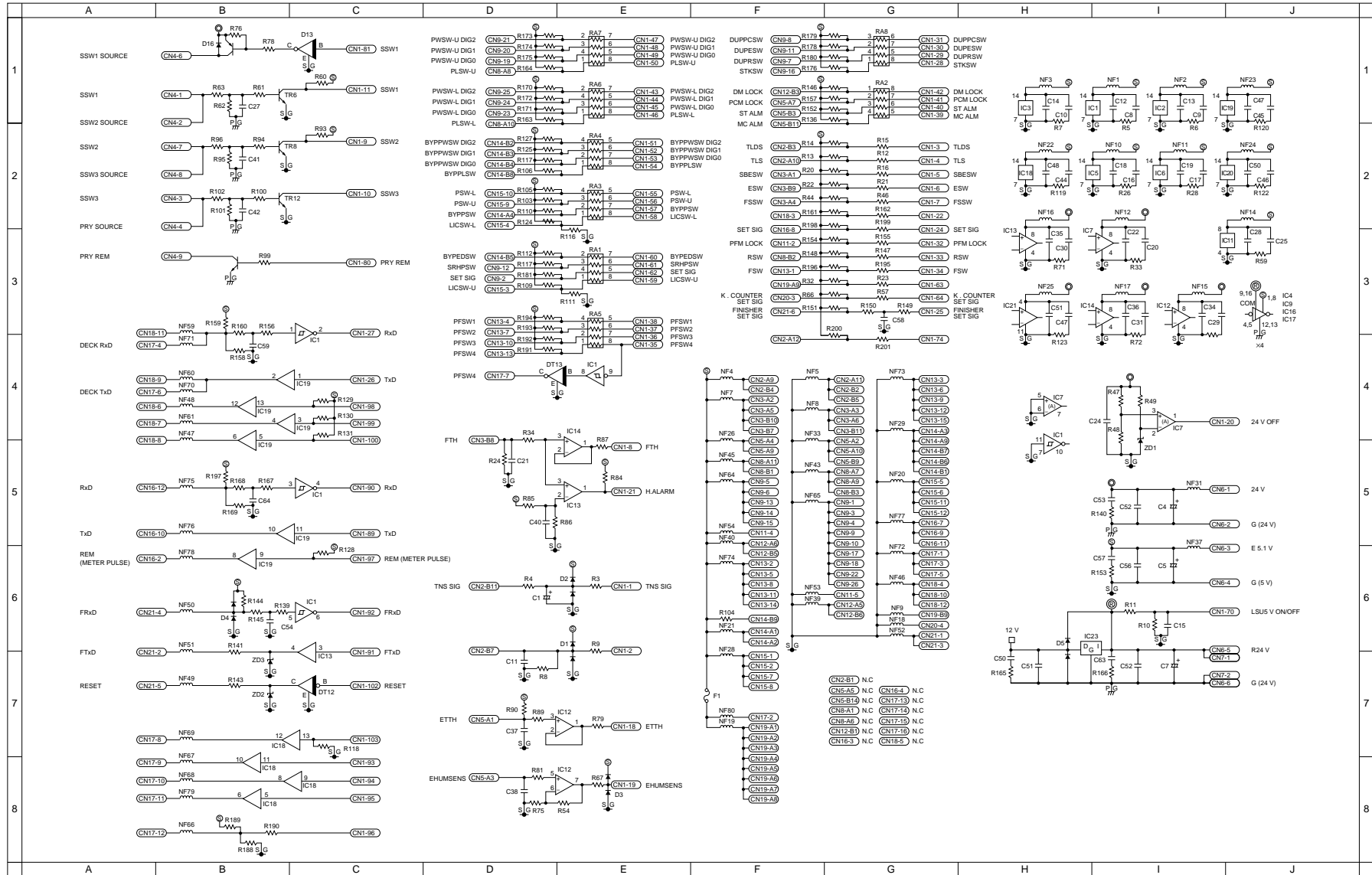
Timing chart No. 12 Primary paper feed from large paper deck left cassette

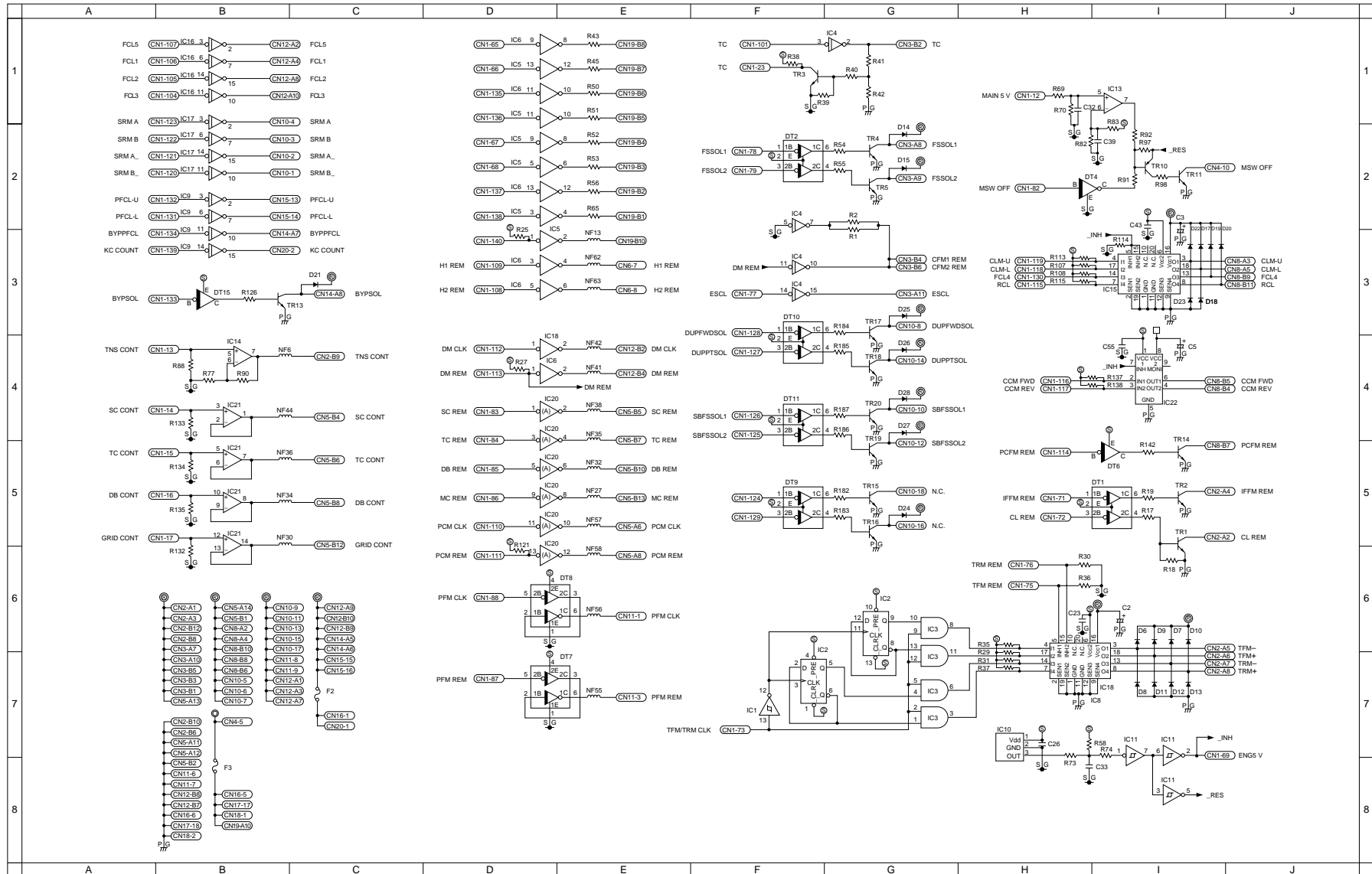


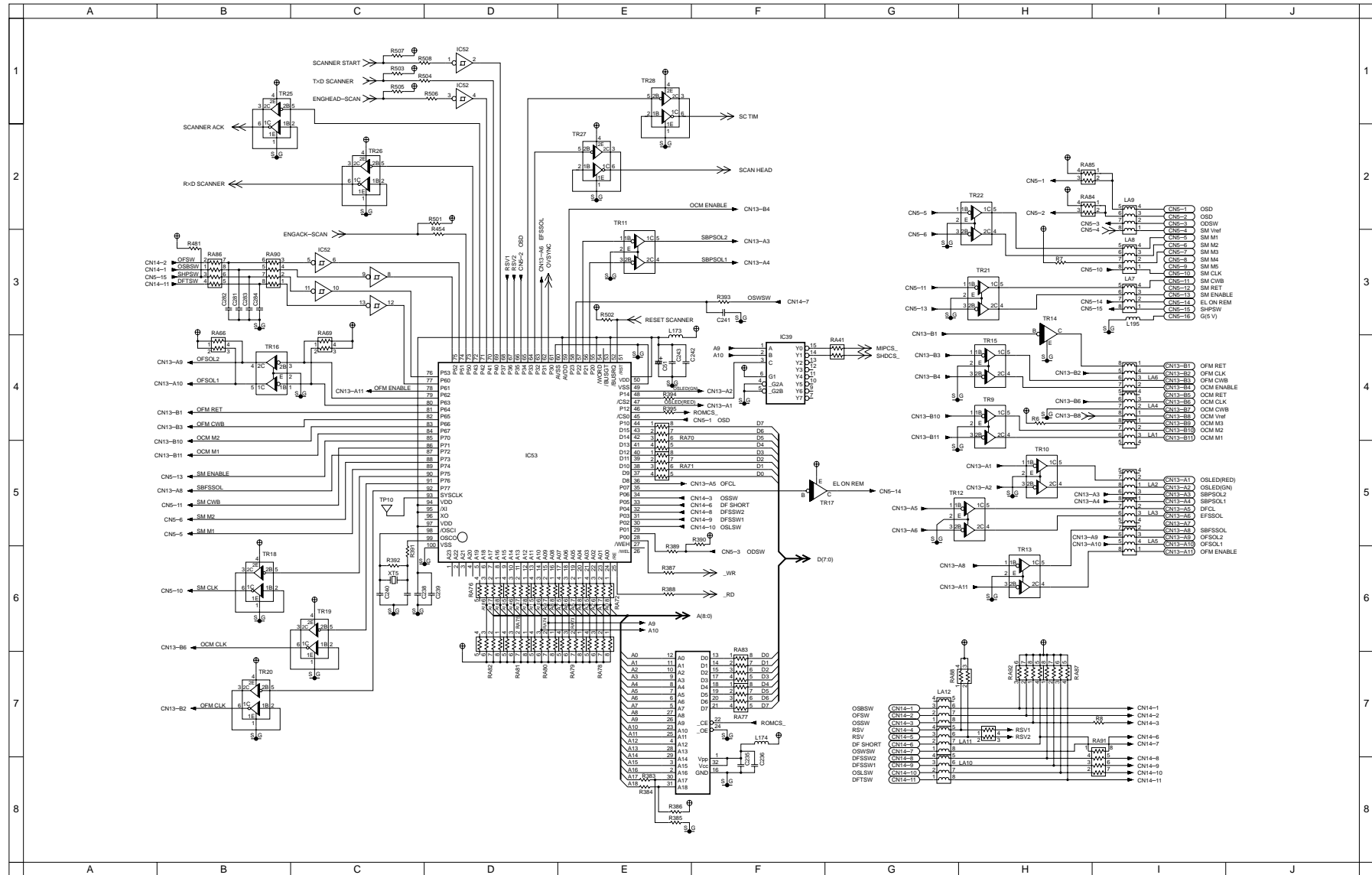
3-7-12

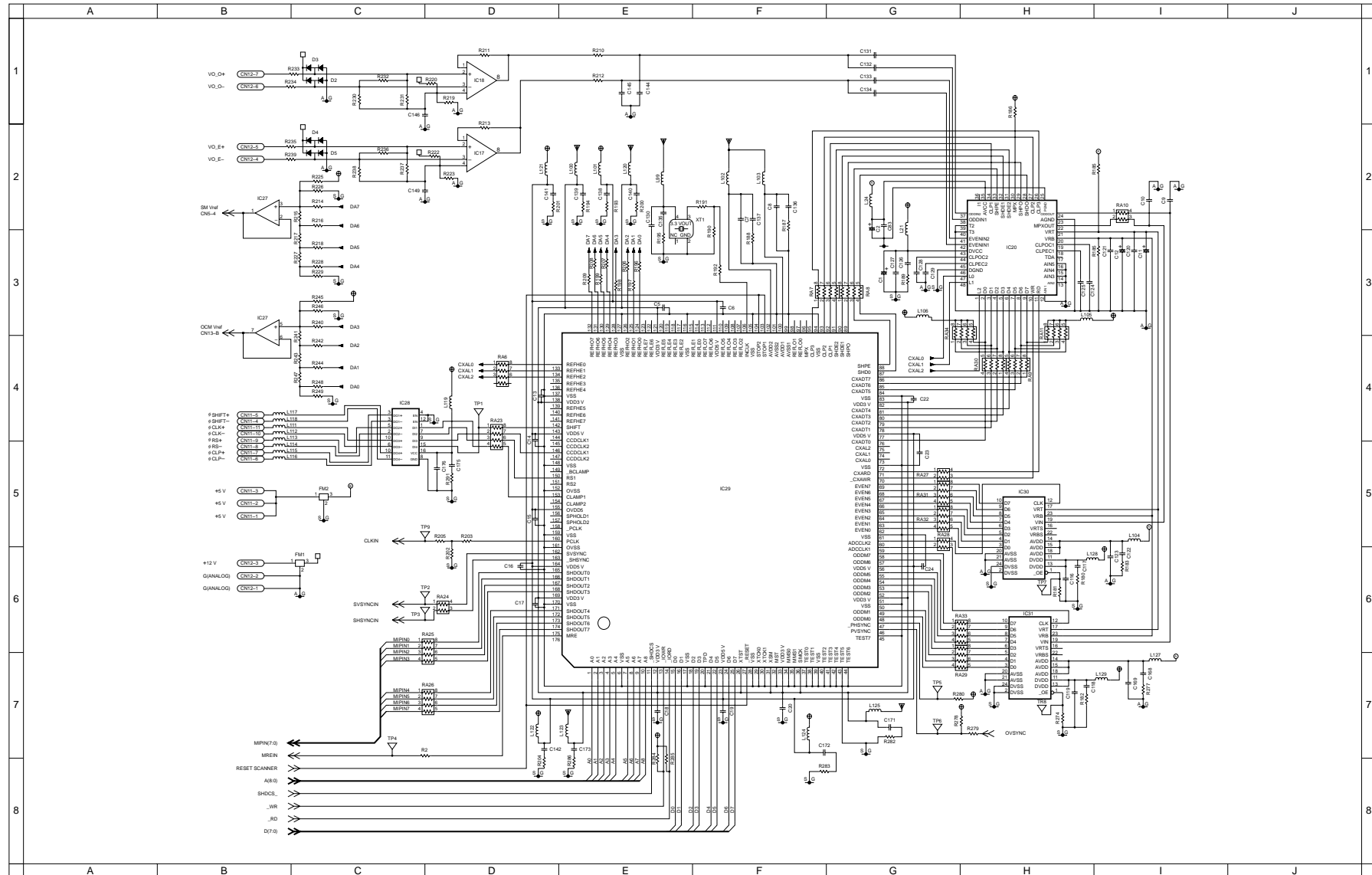


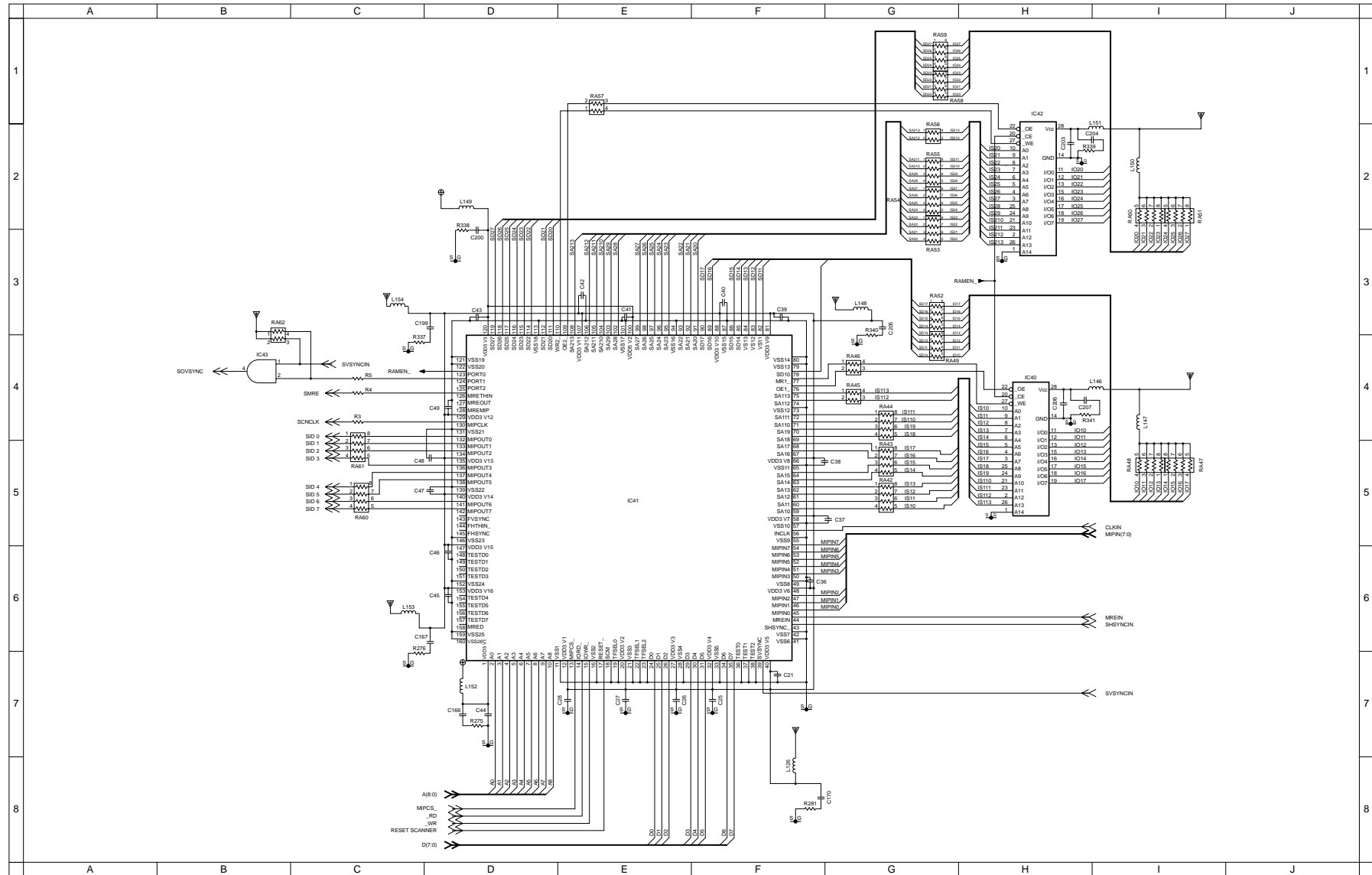




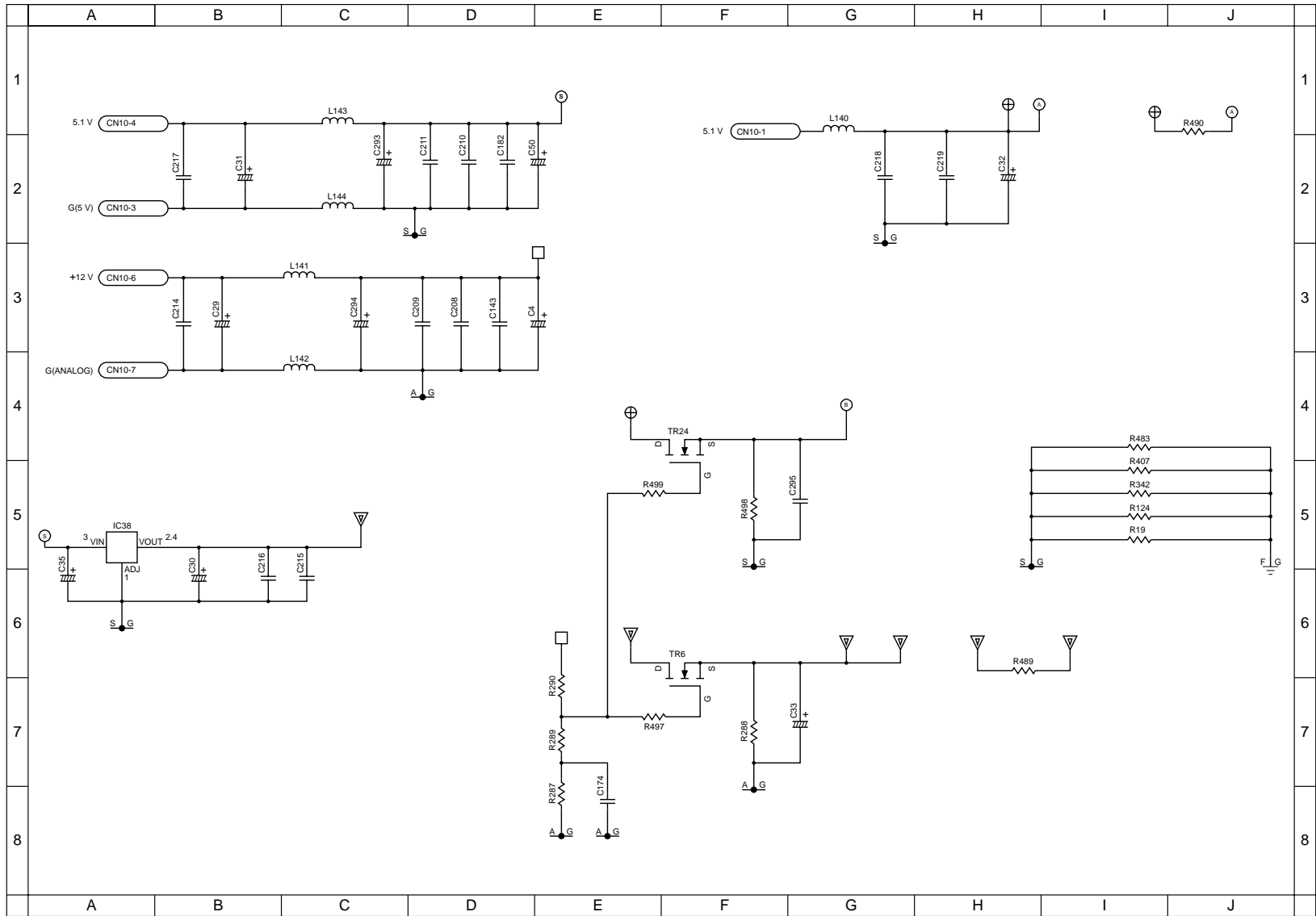


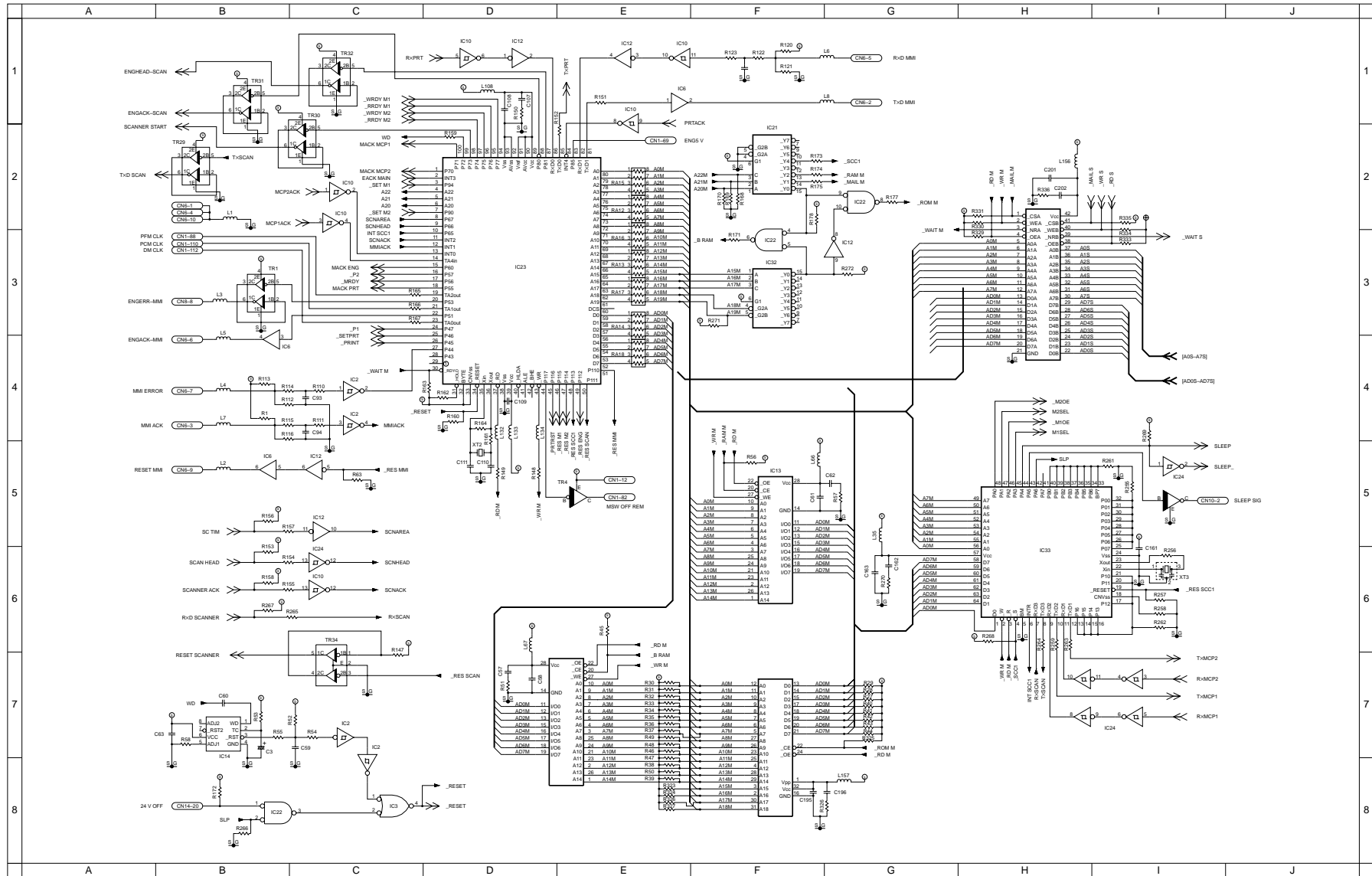


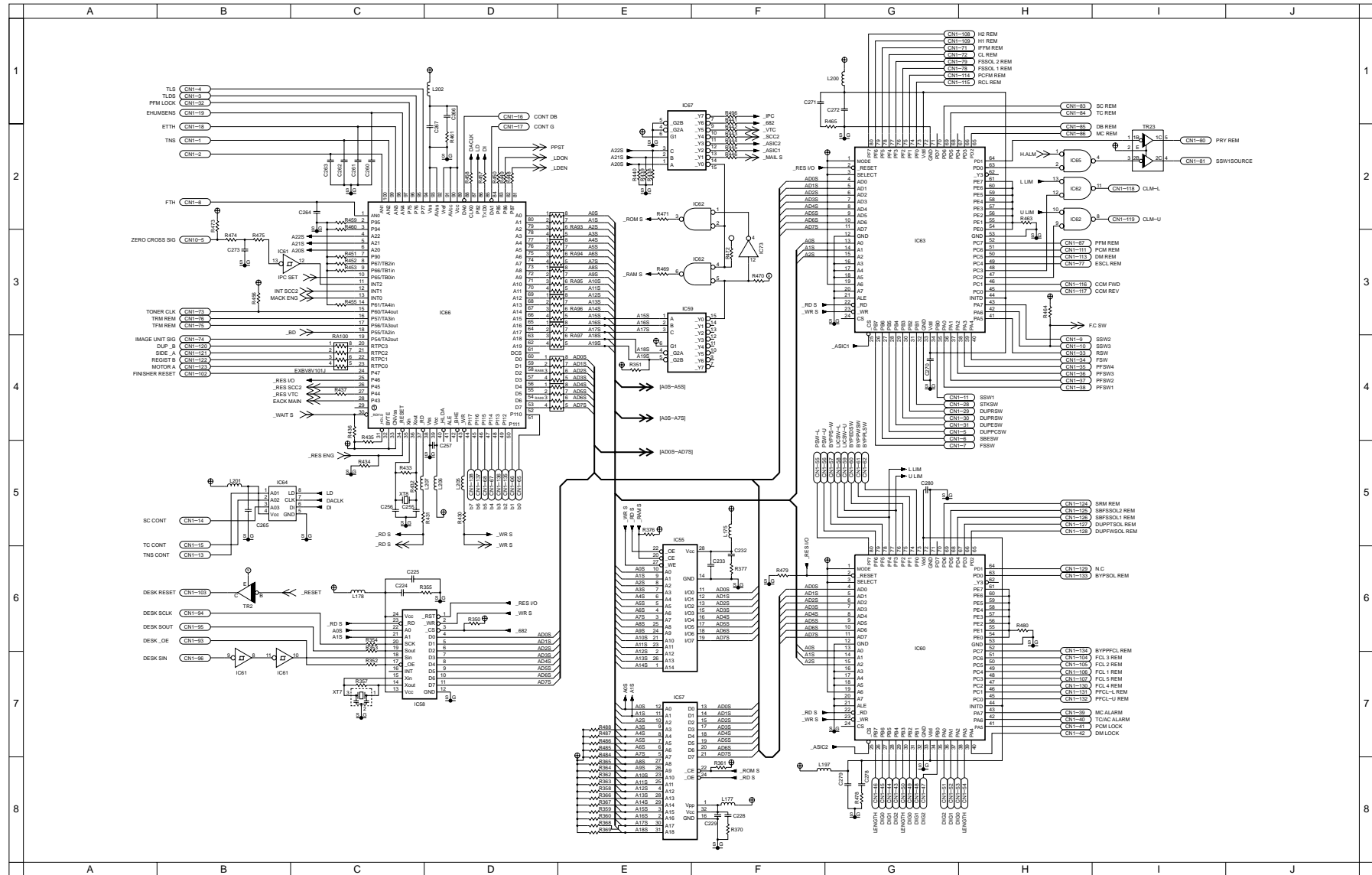


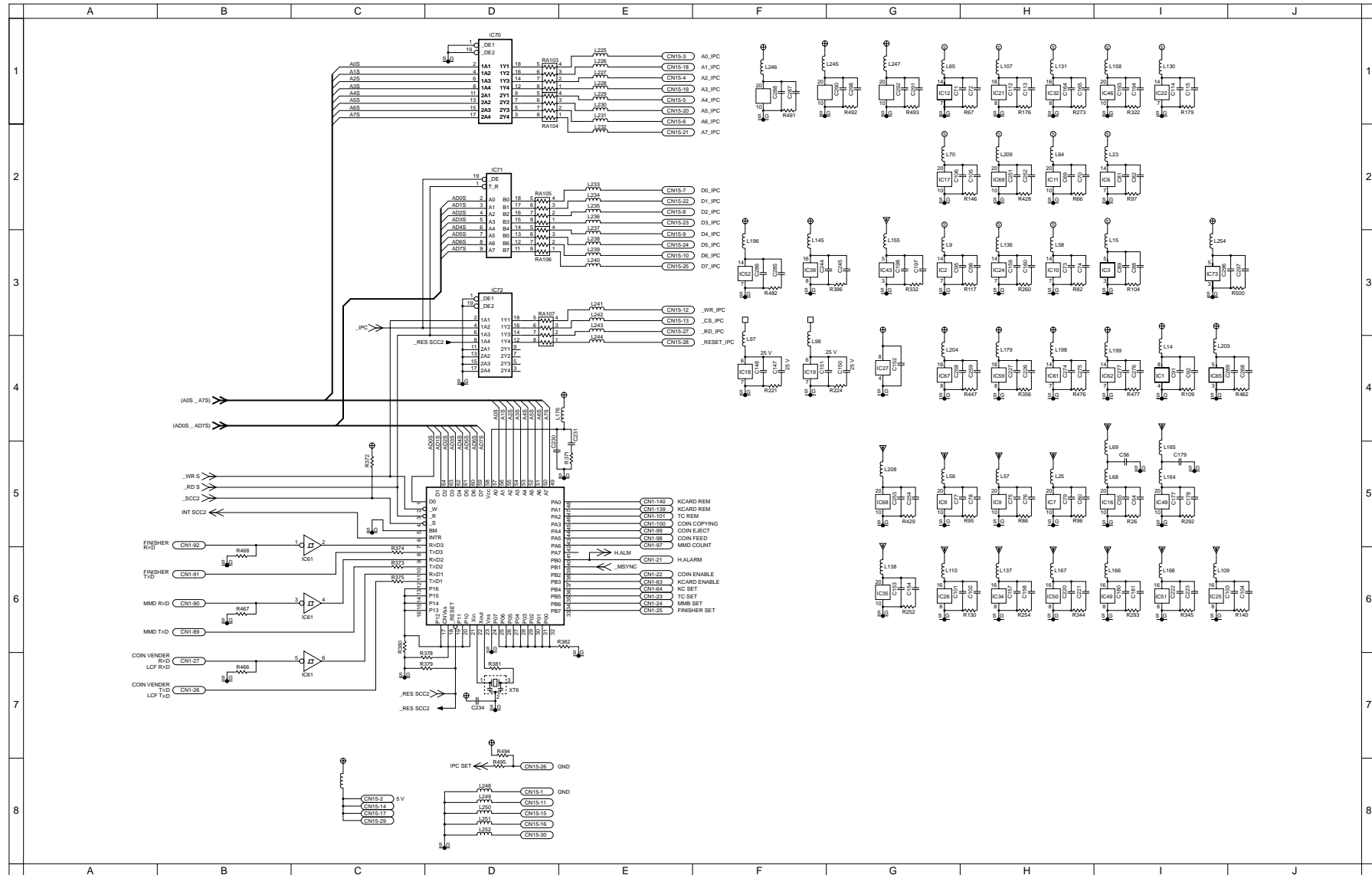


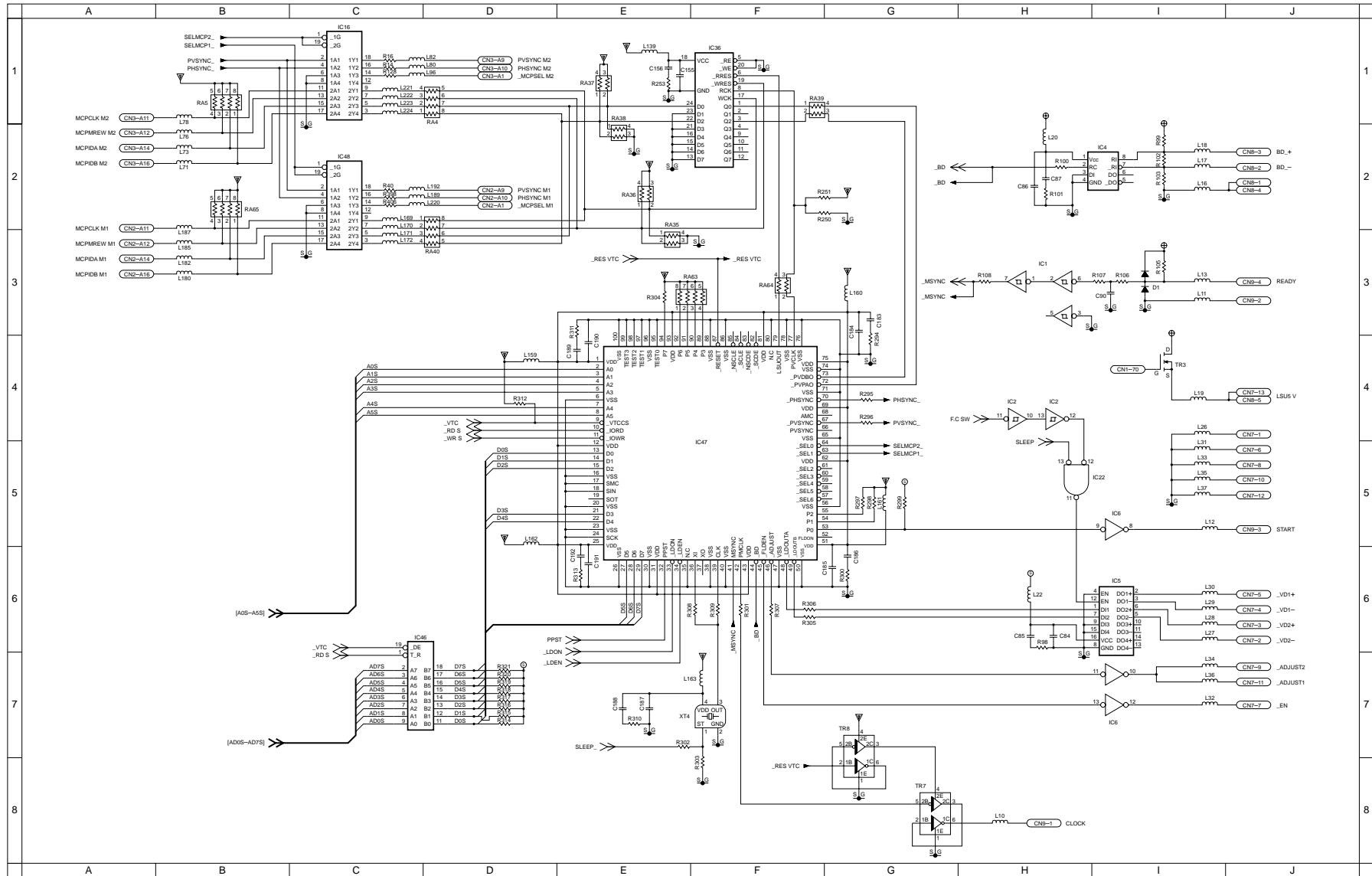
Main PCB 4/9

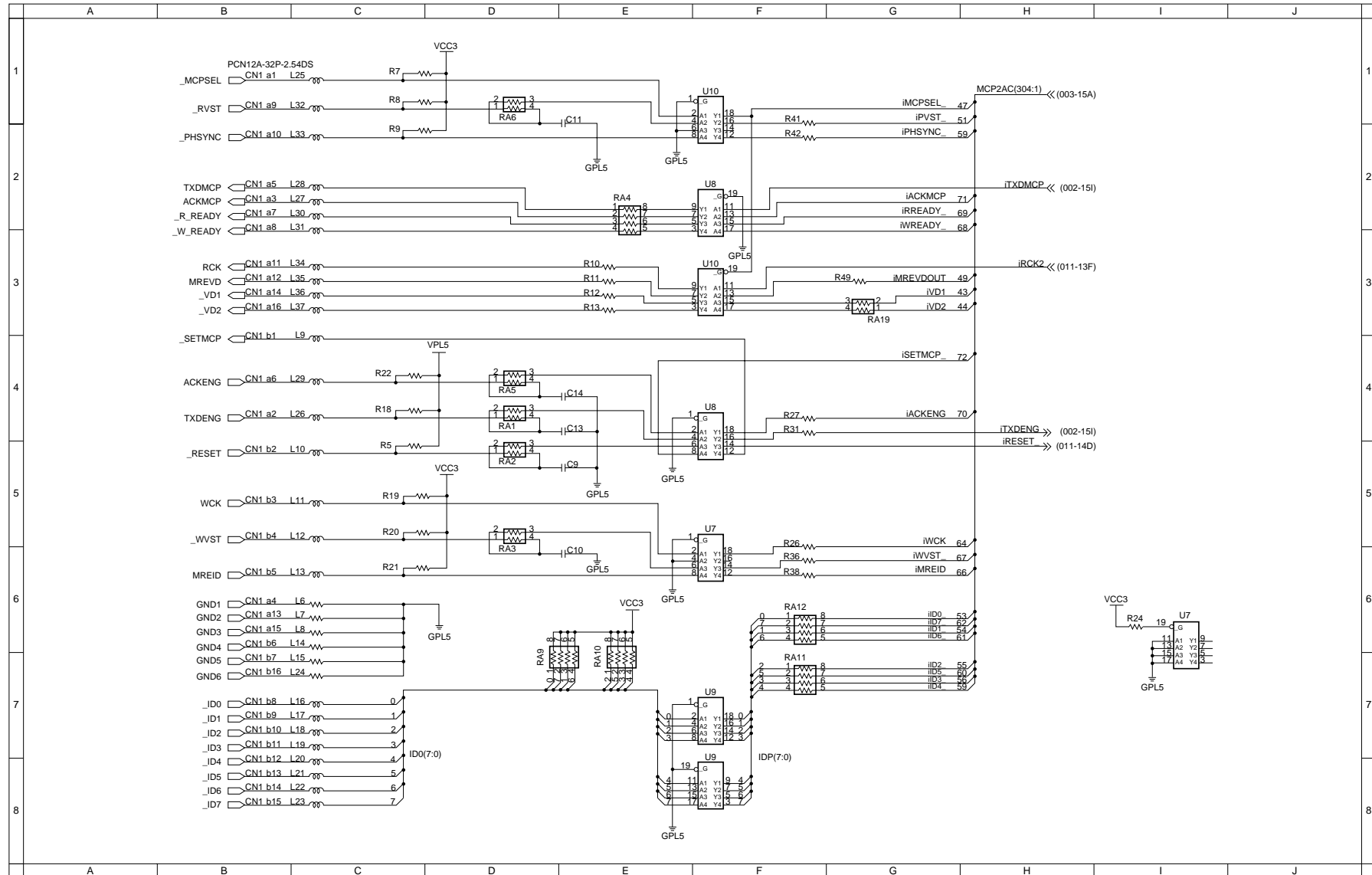


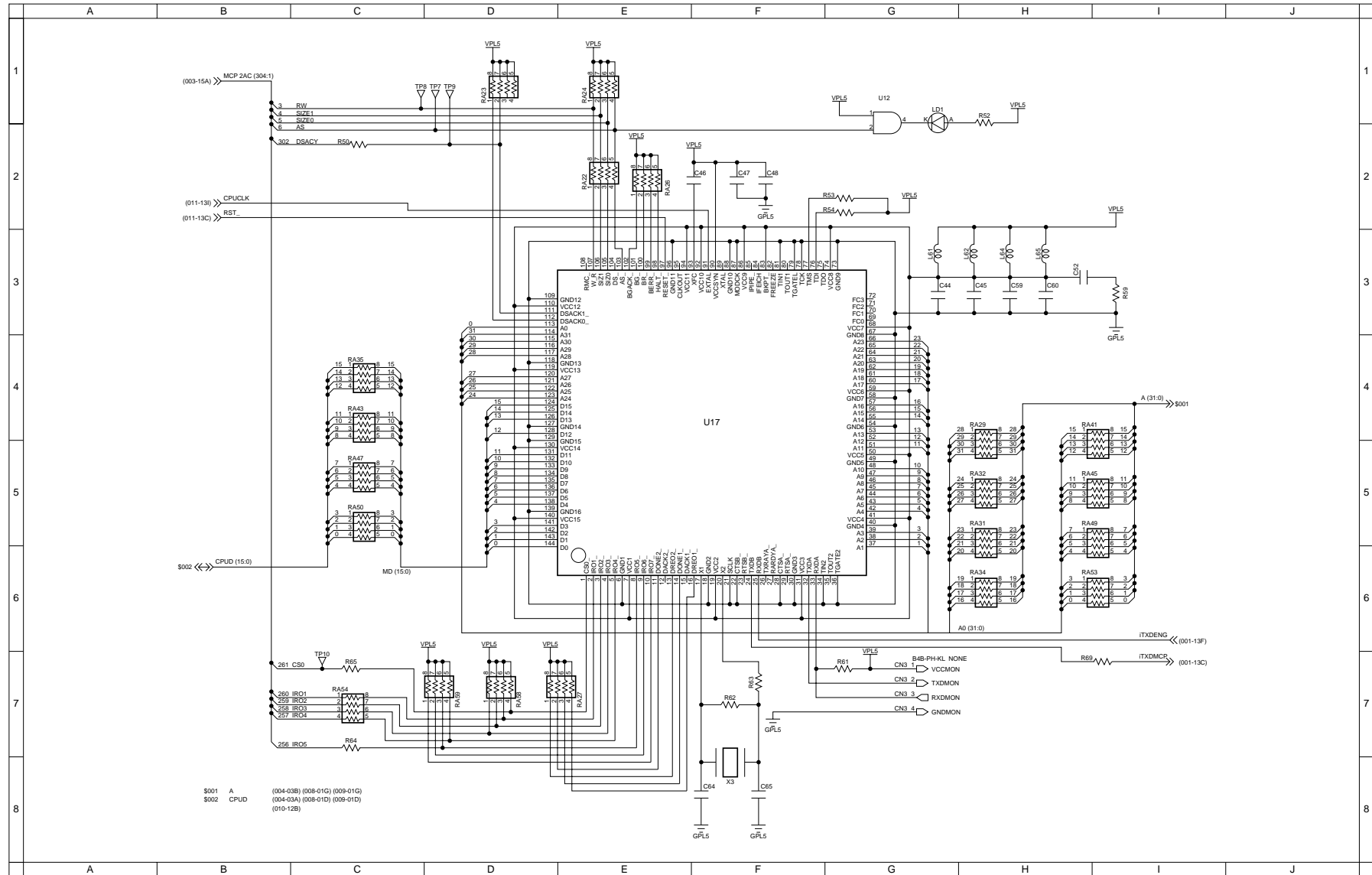


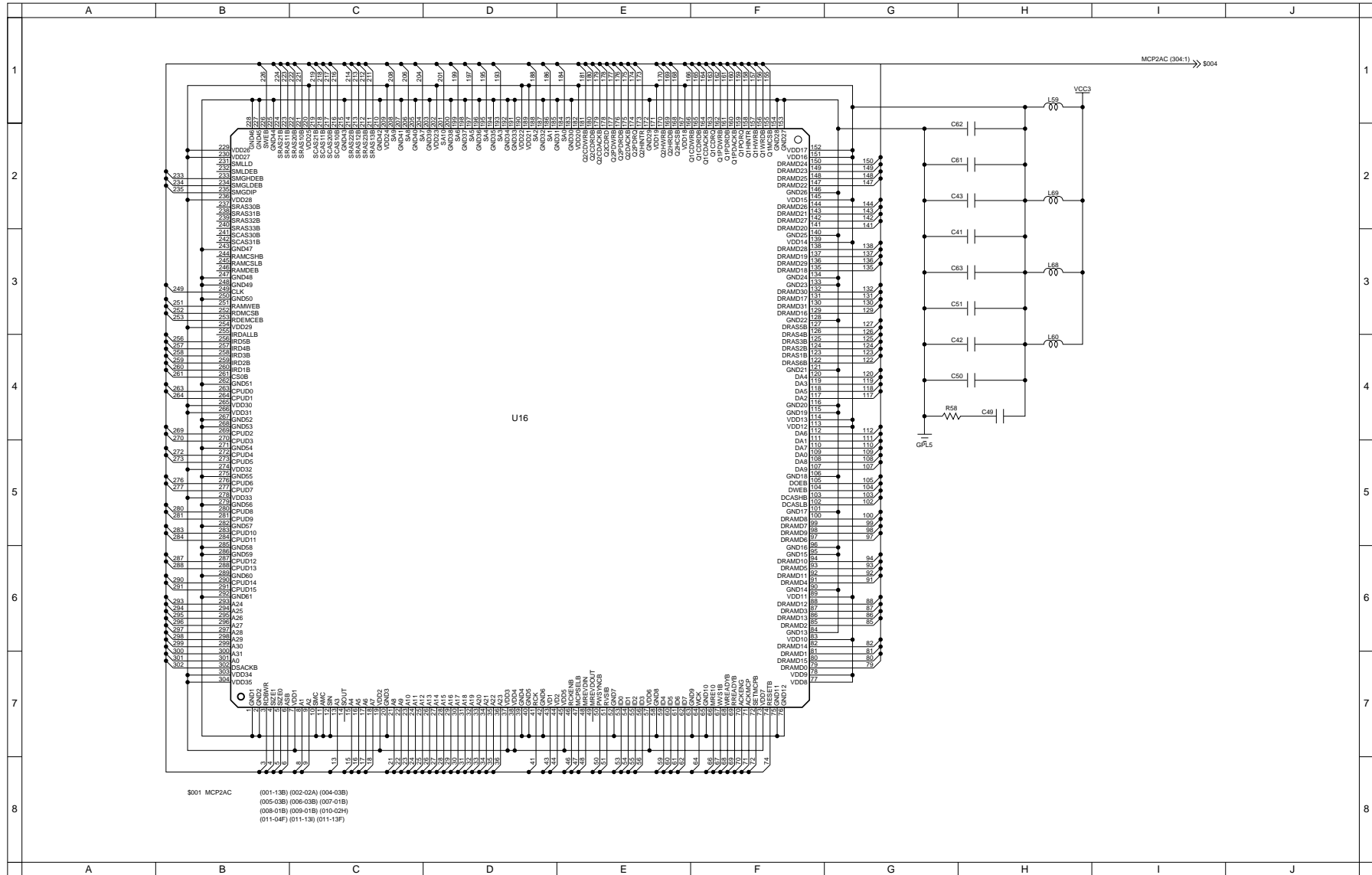


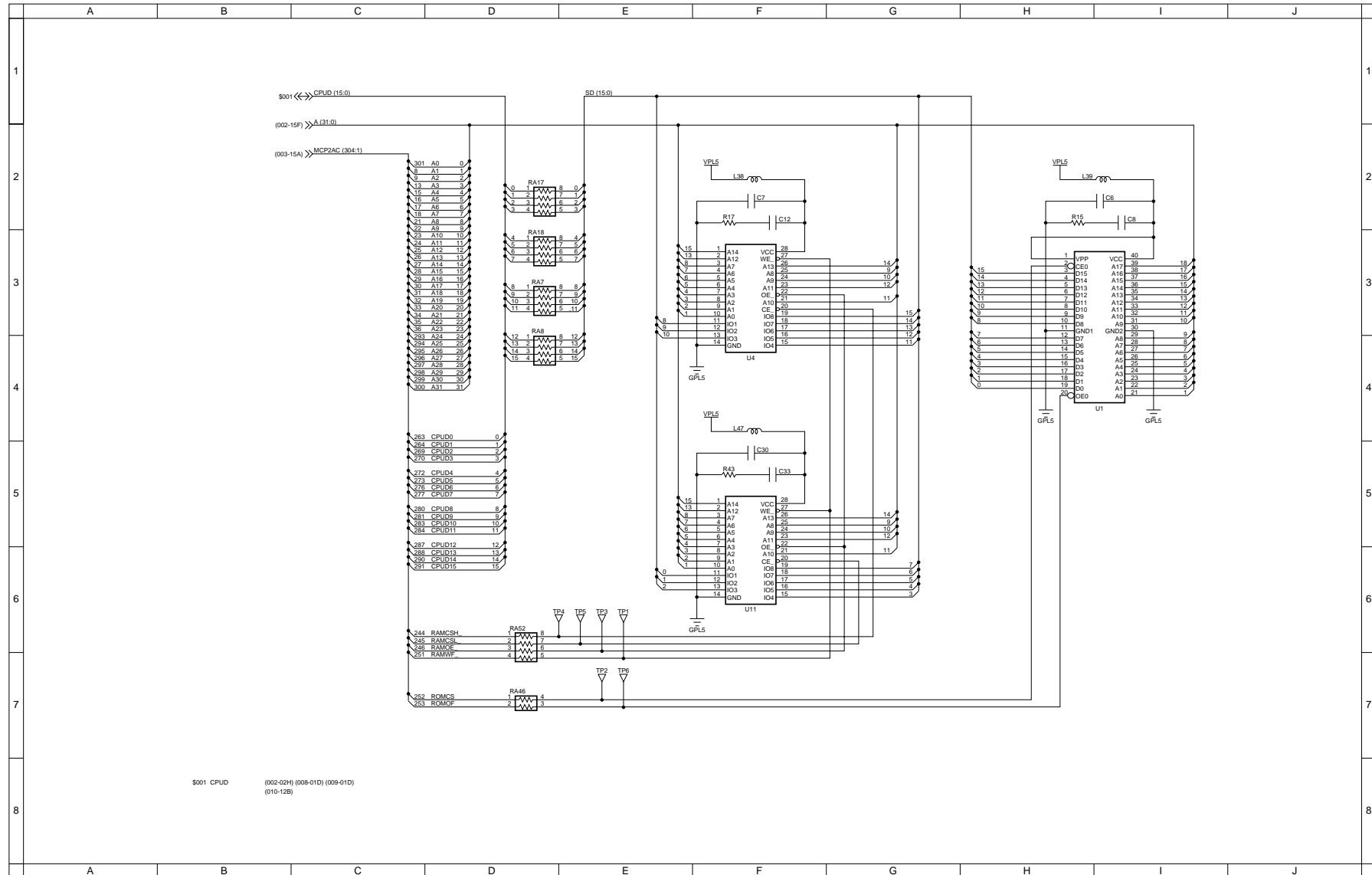


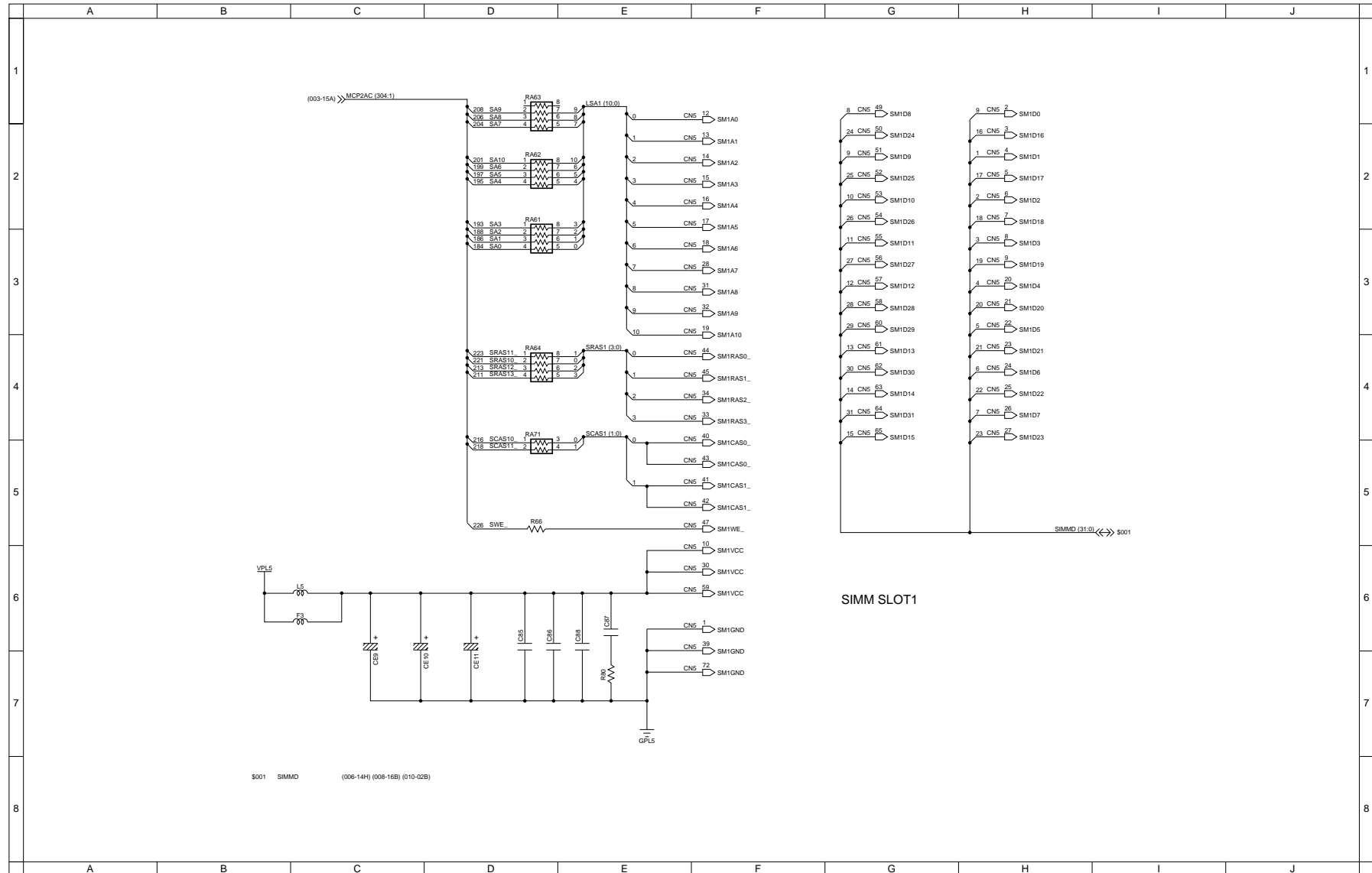


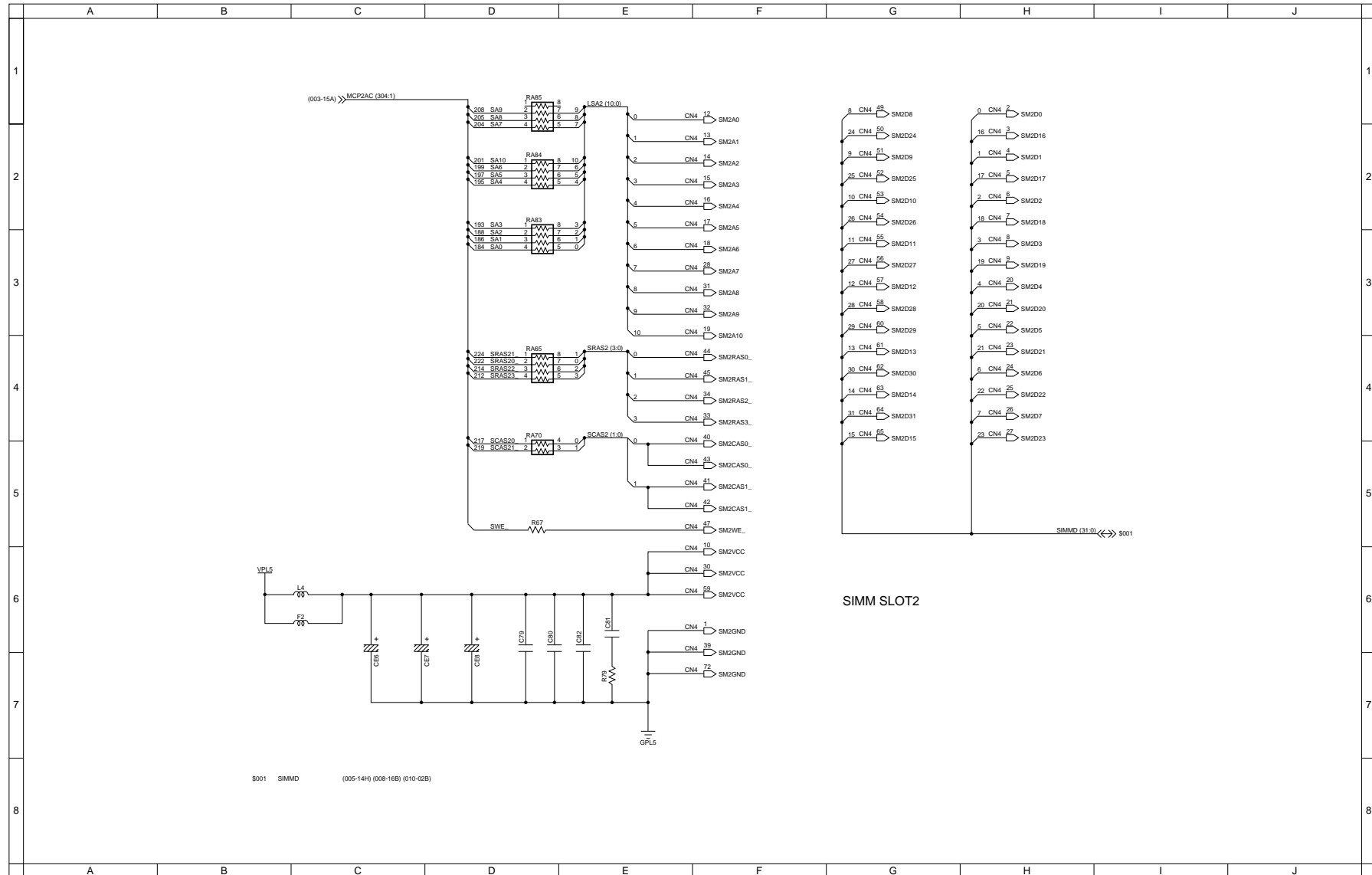


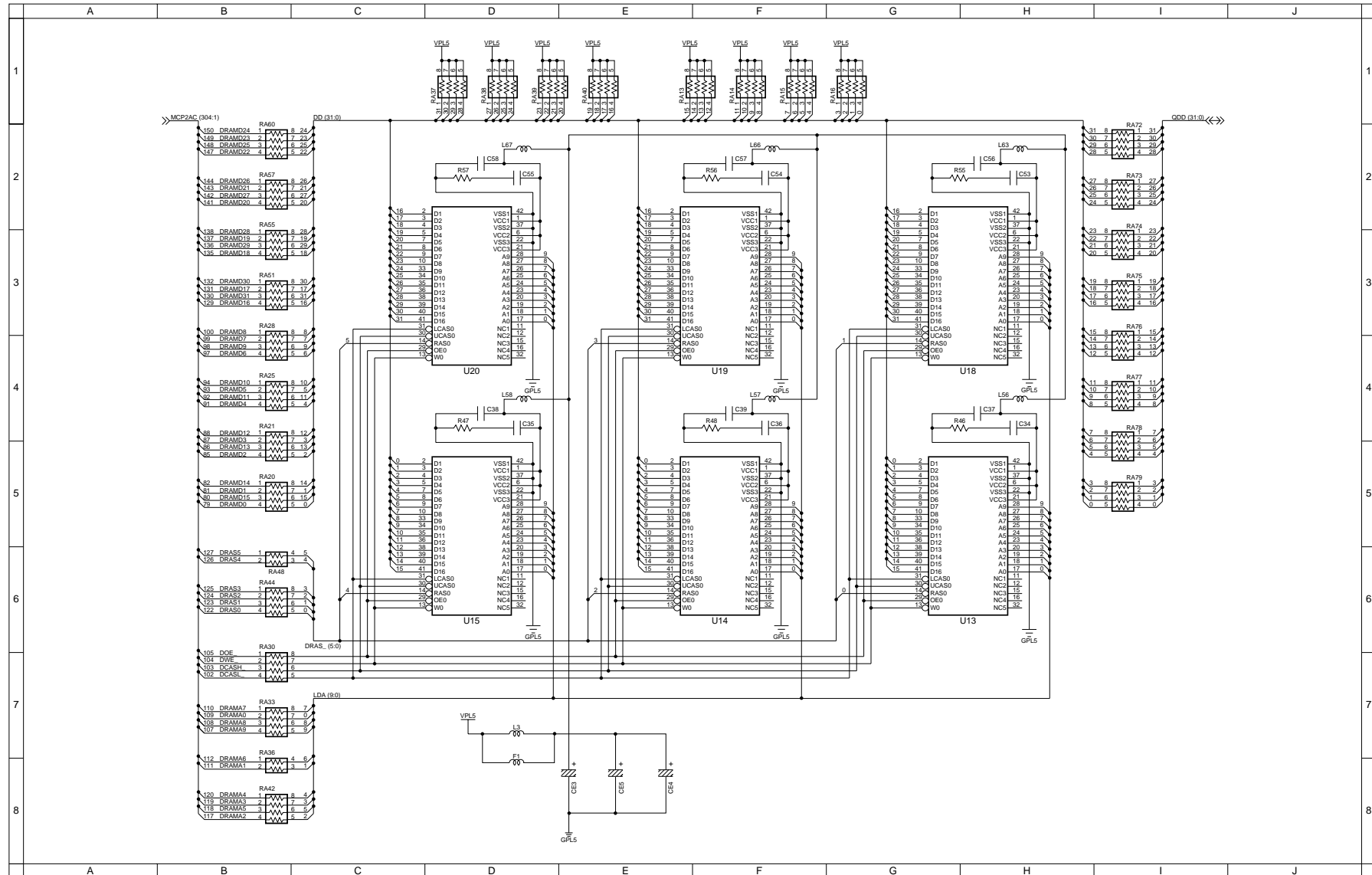


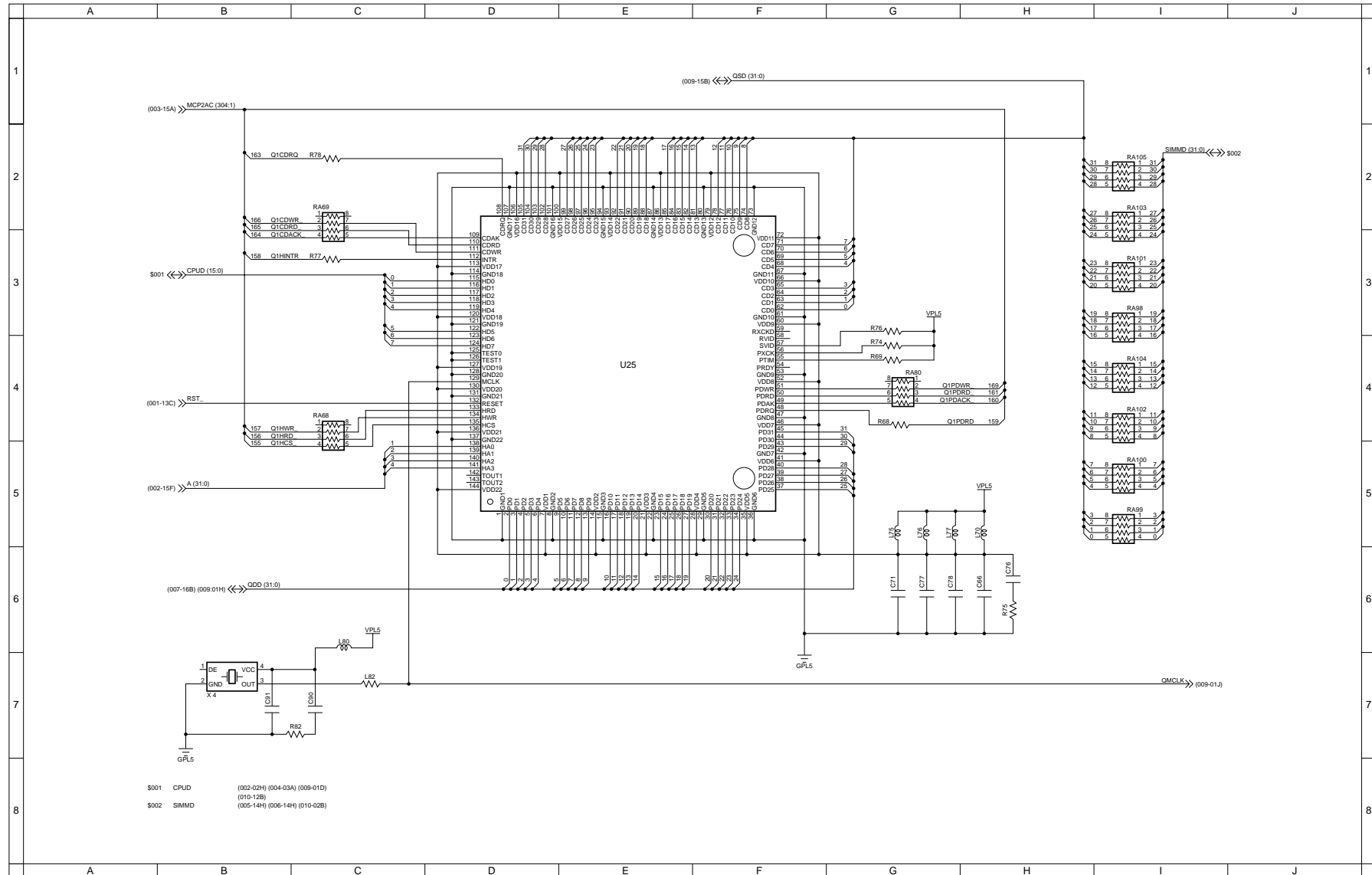


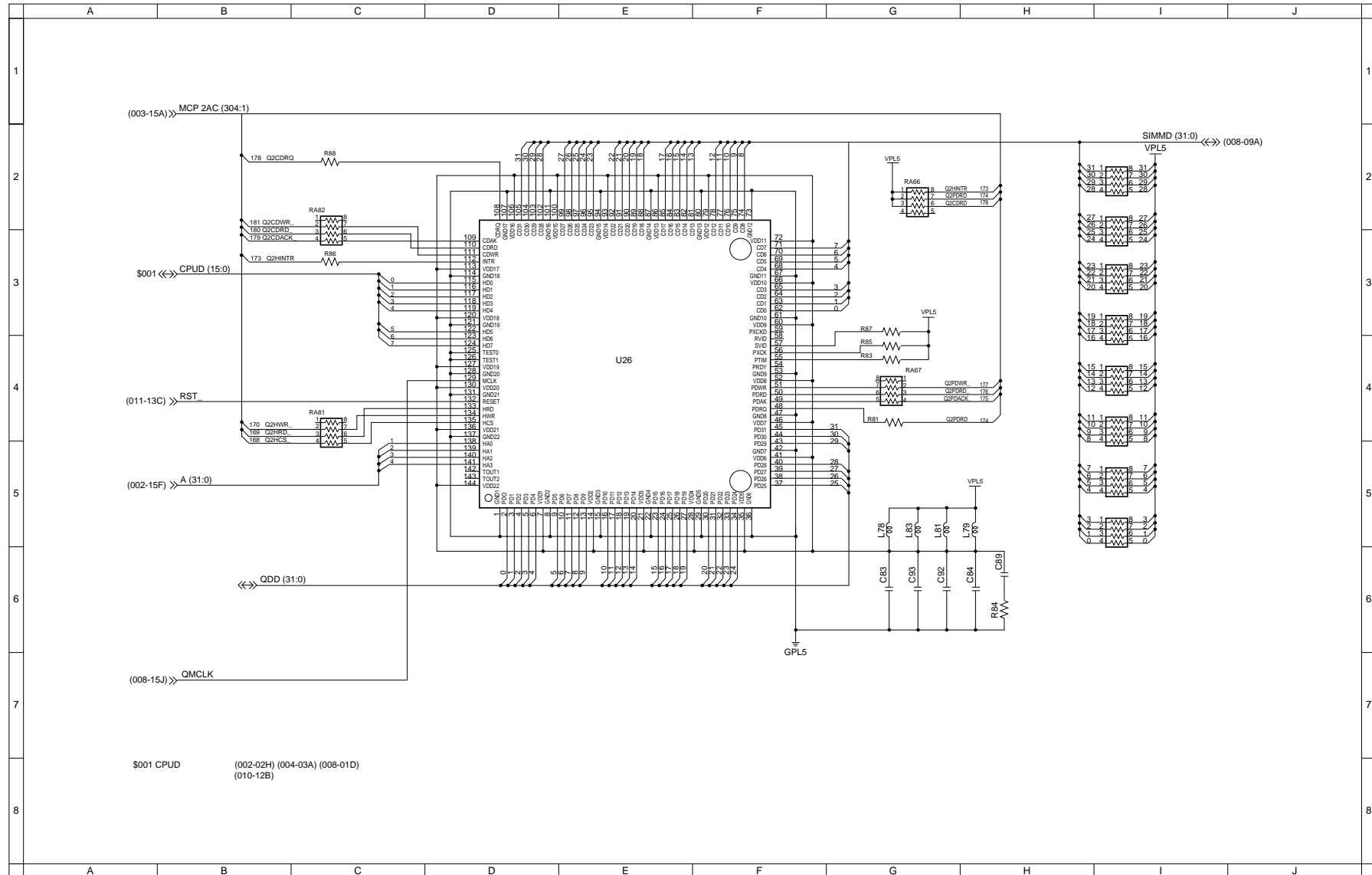


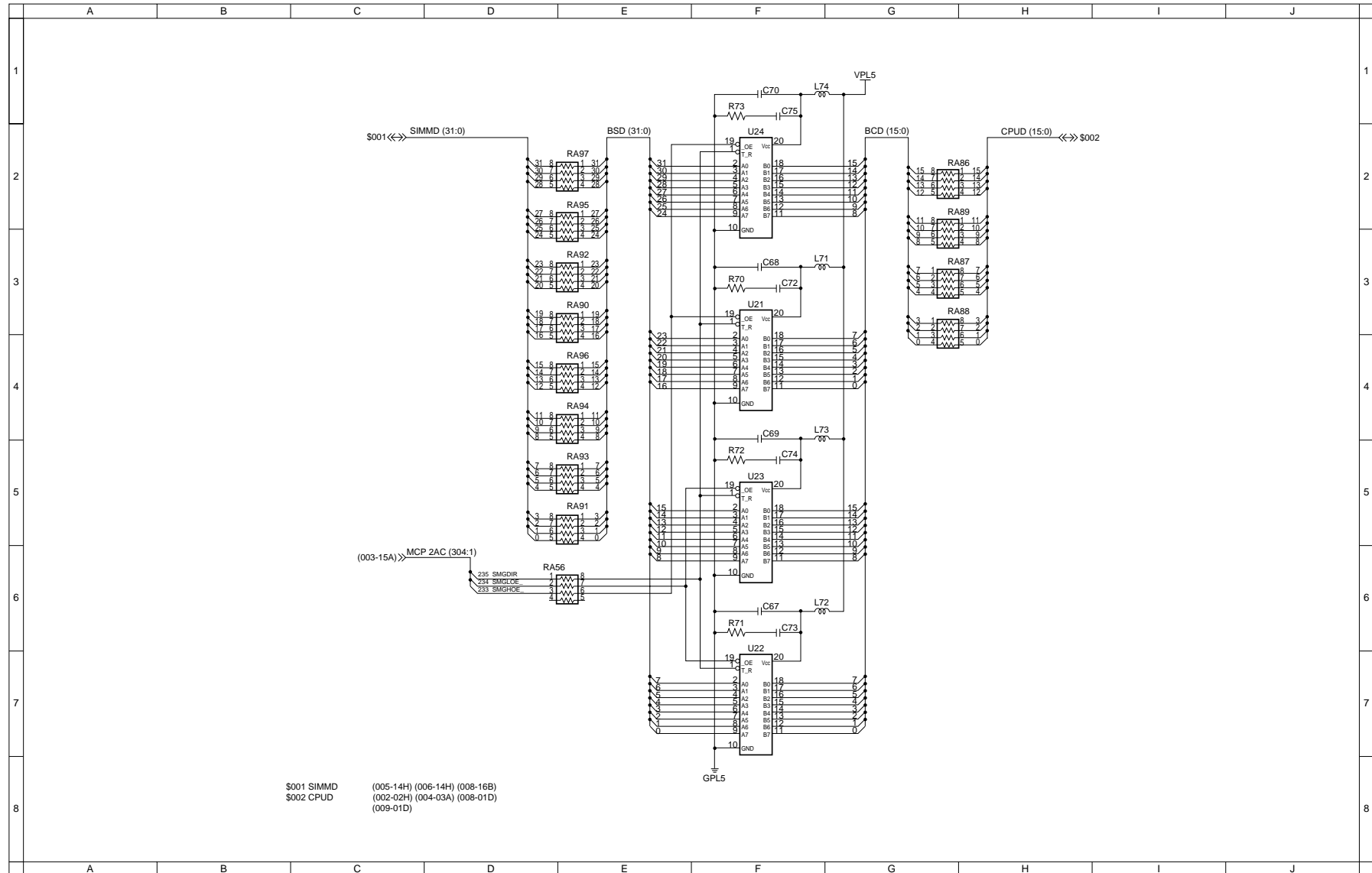


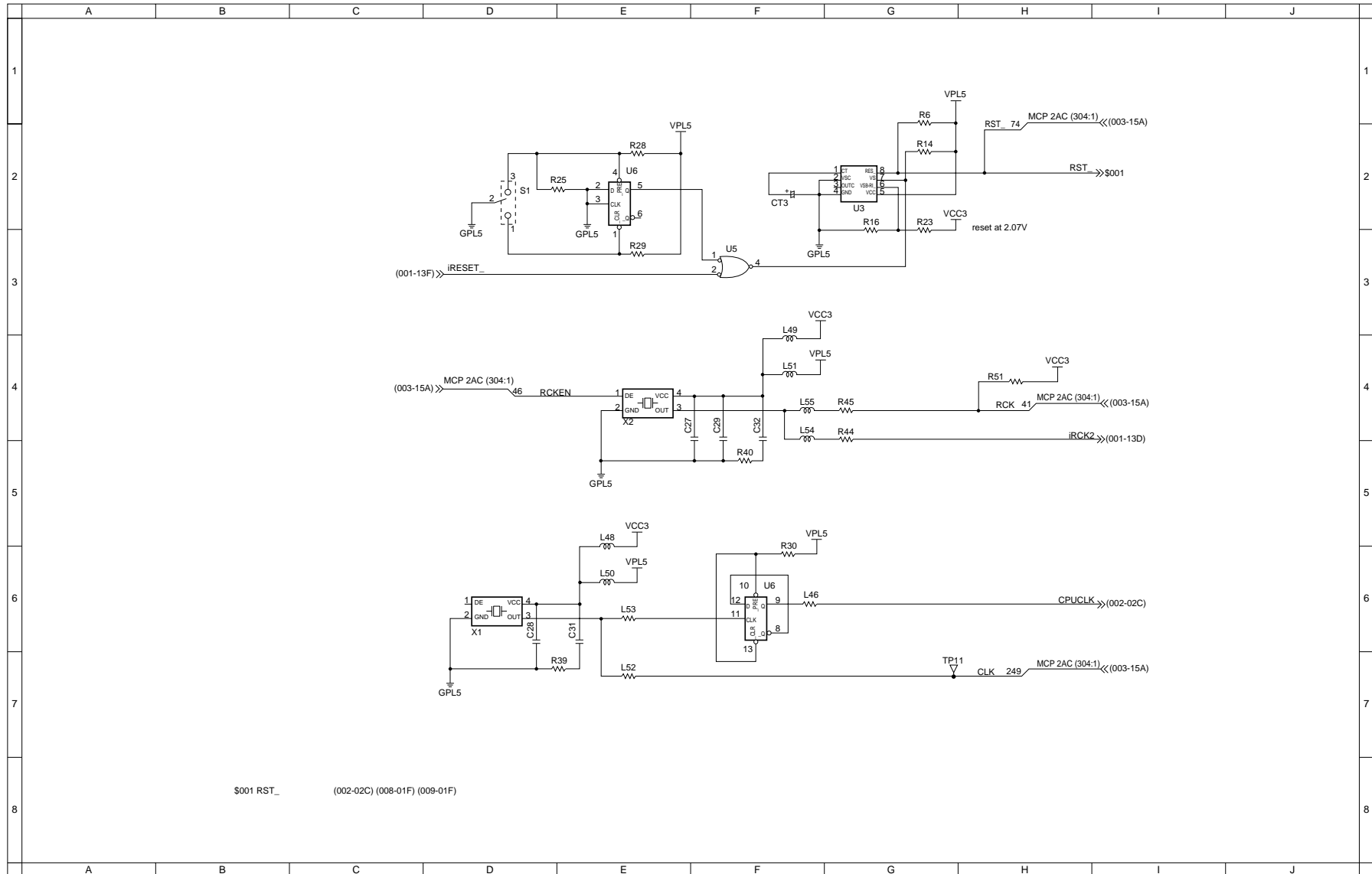


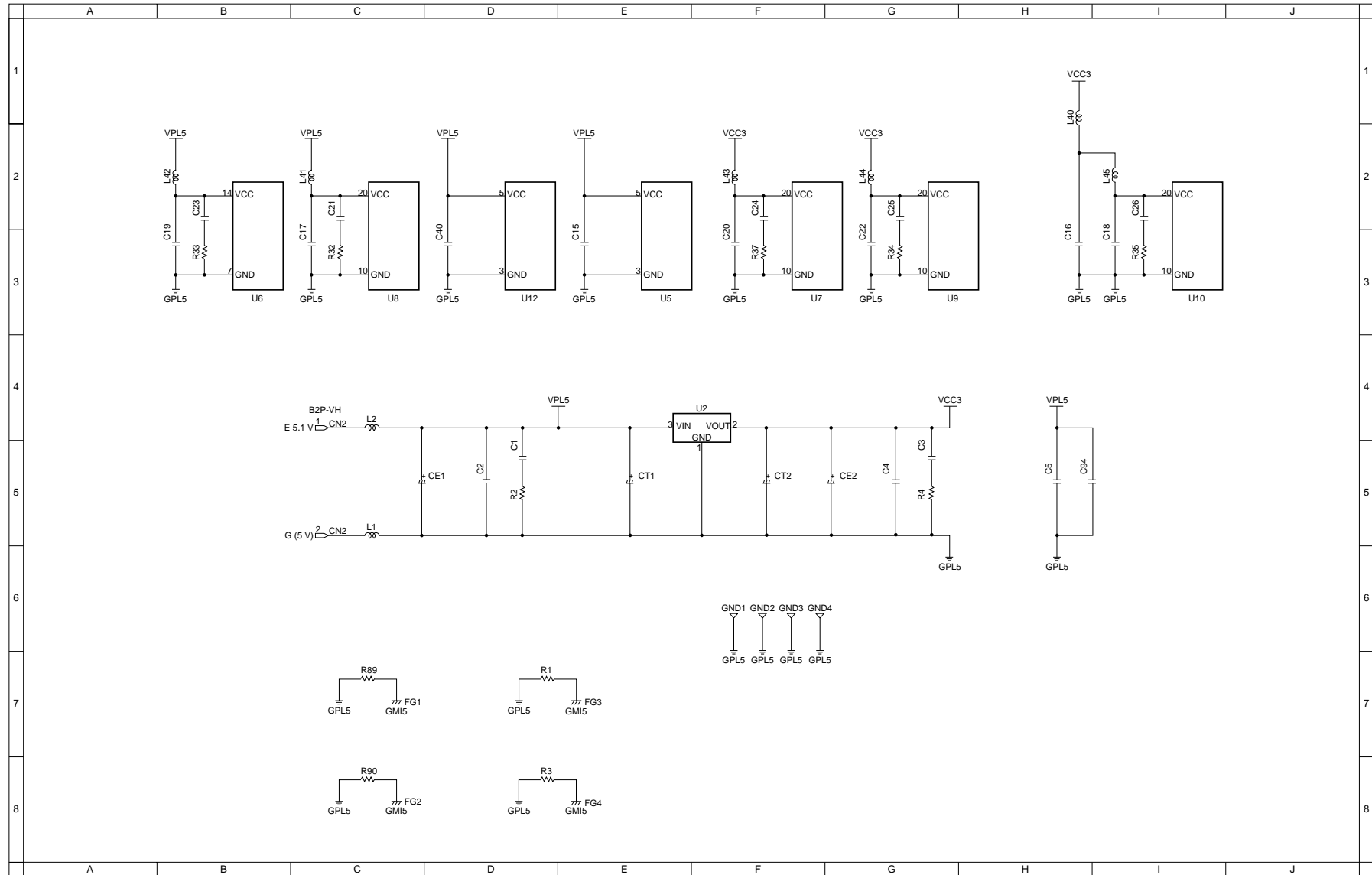


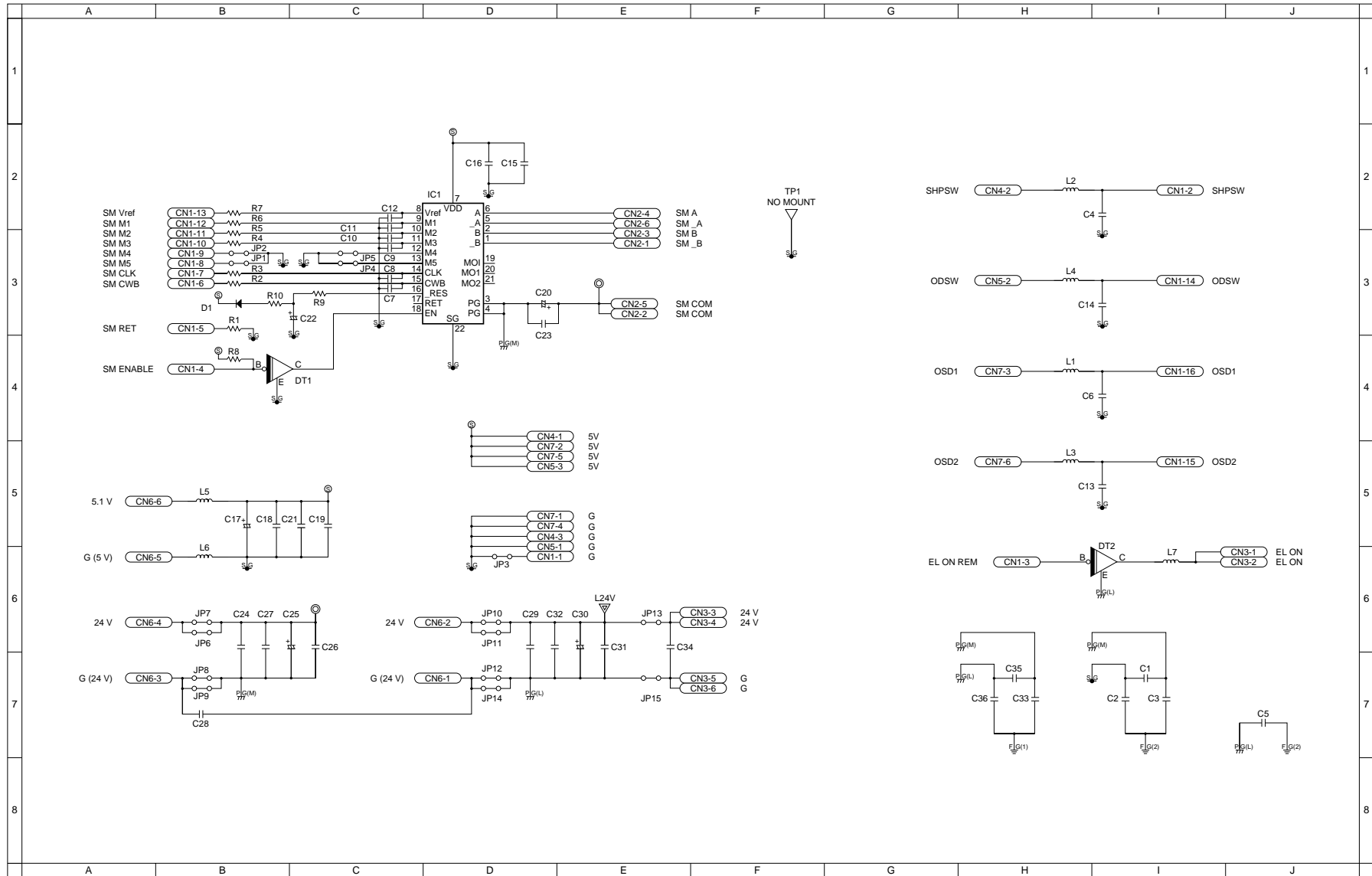






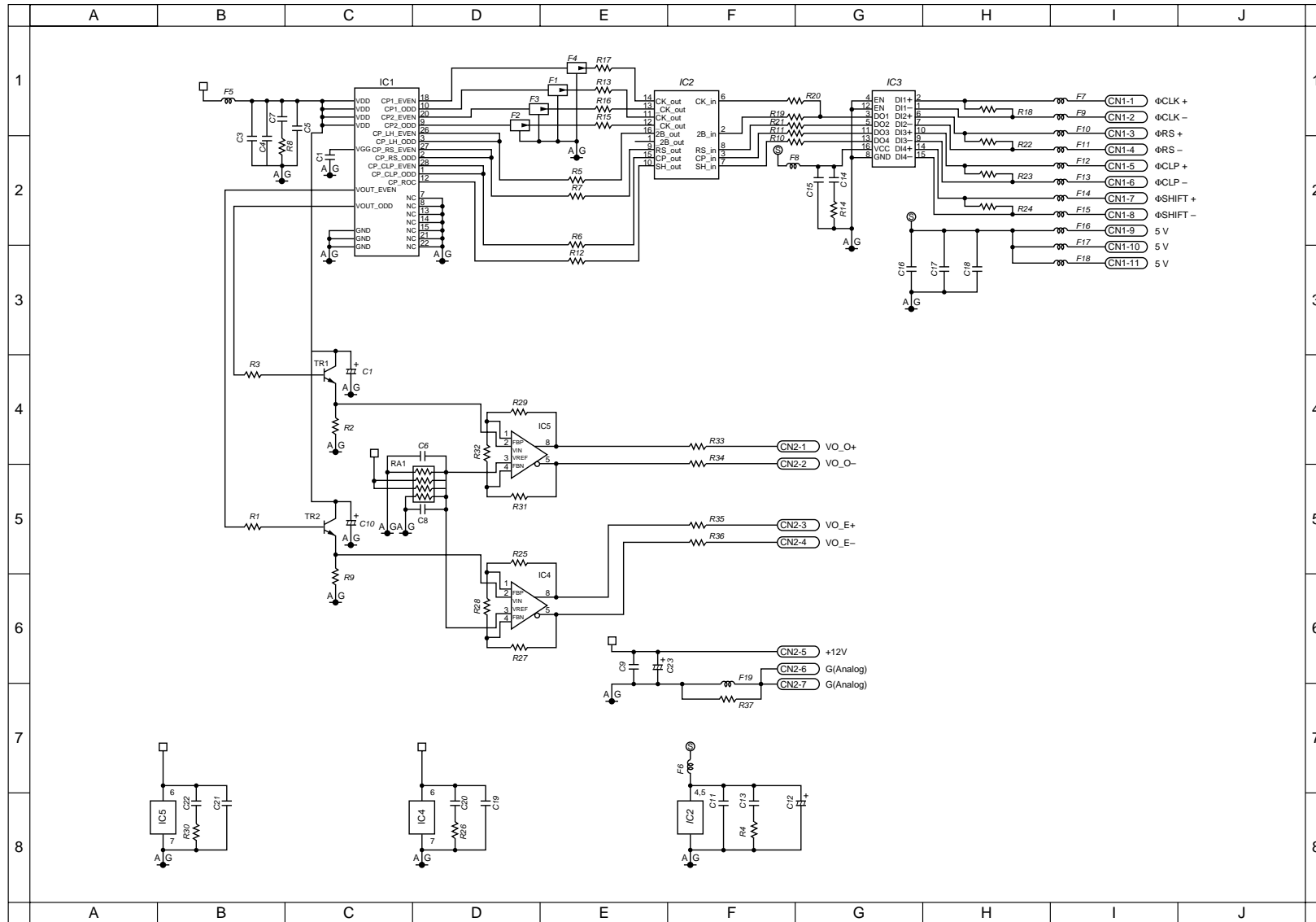






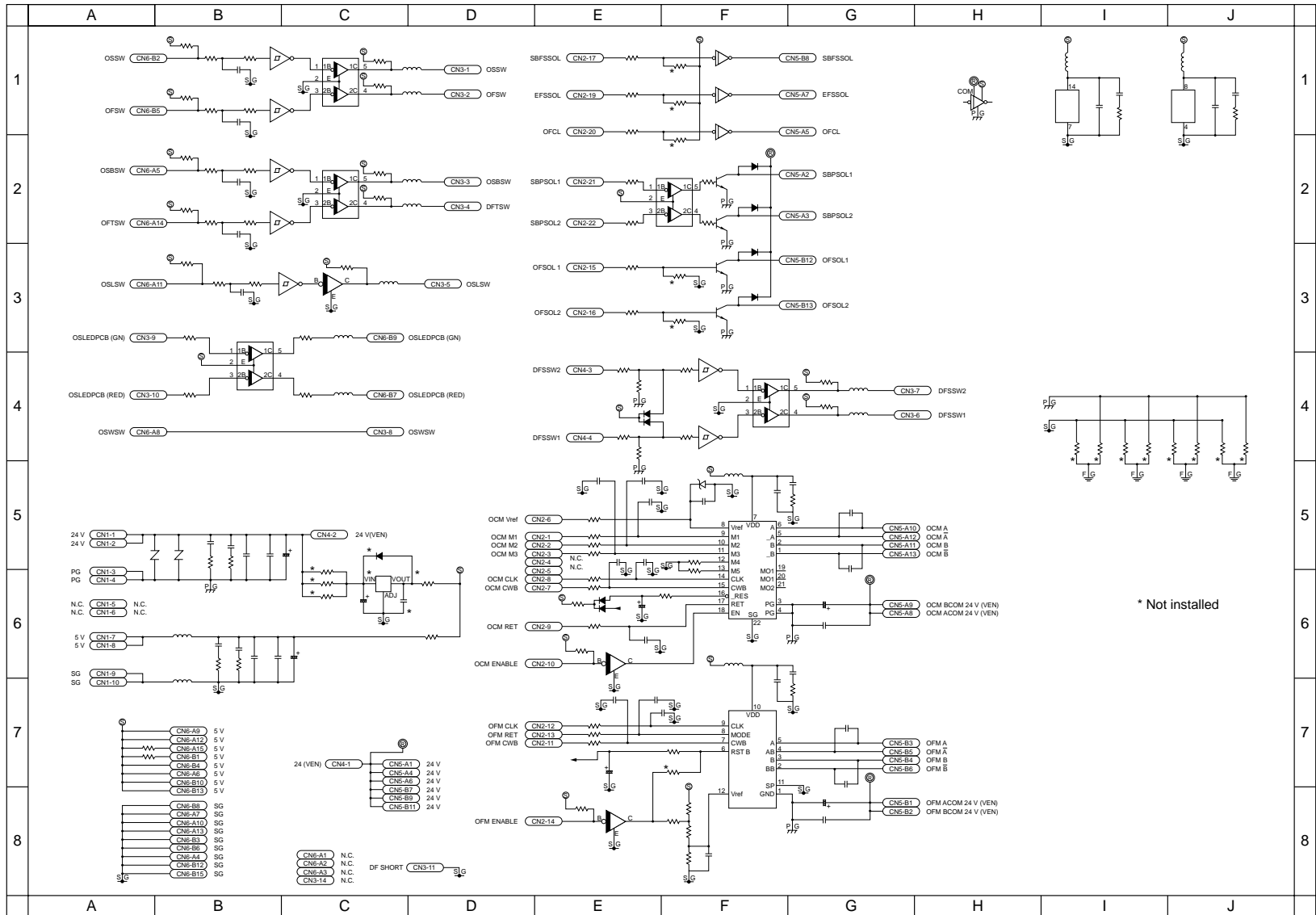
2A3/4

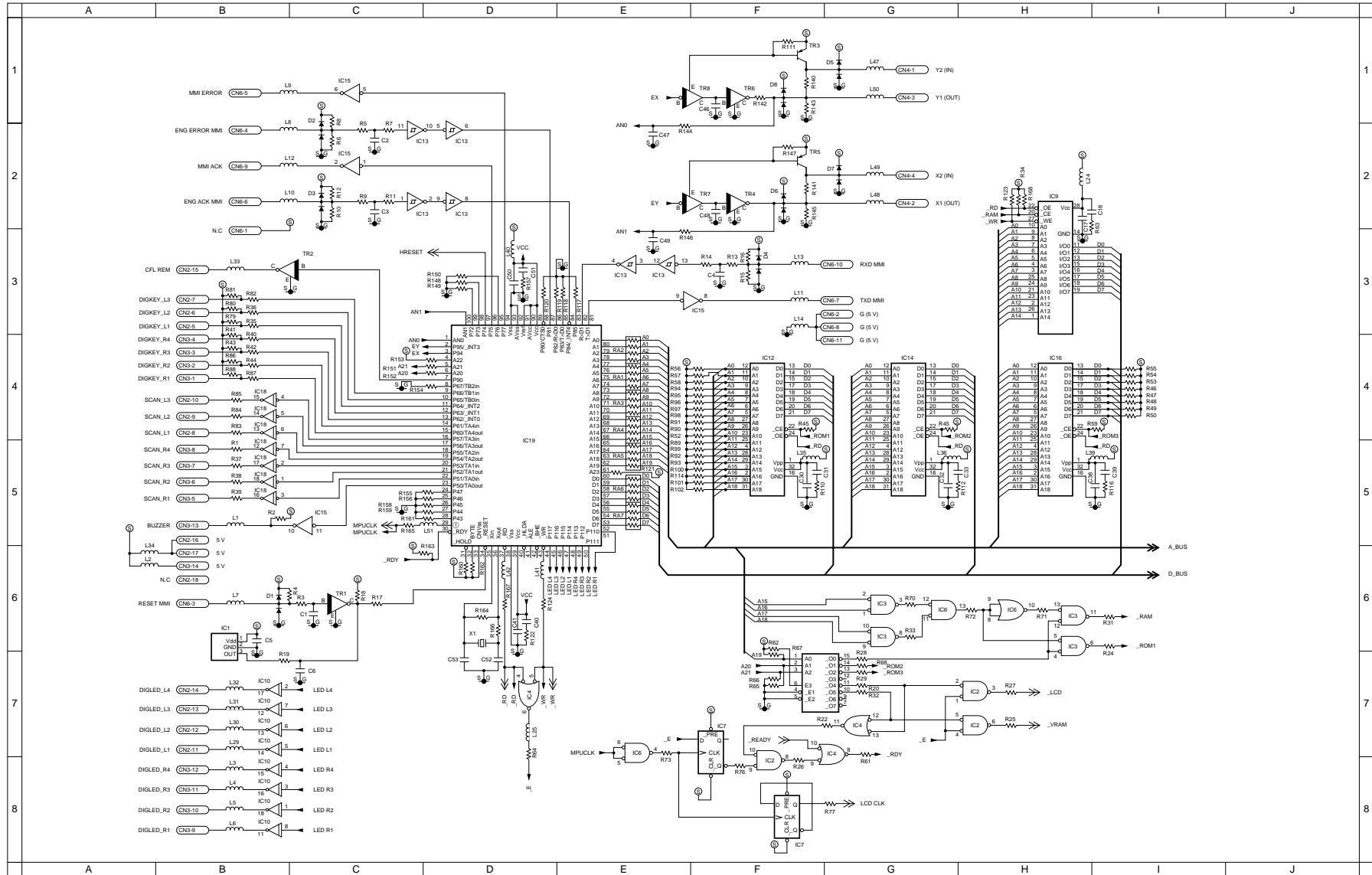
CCD PCB



3-7-39

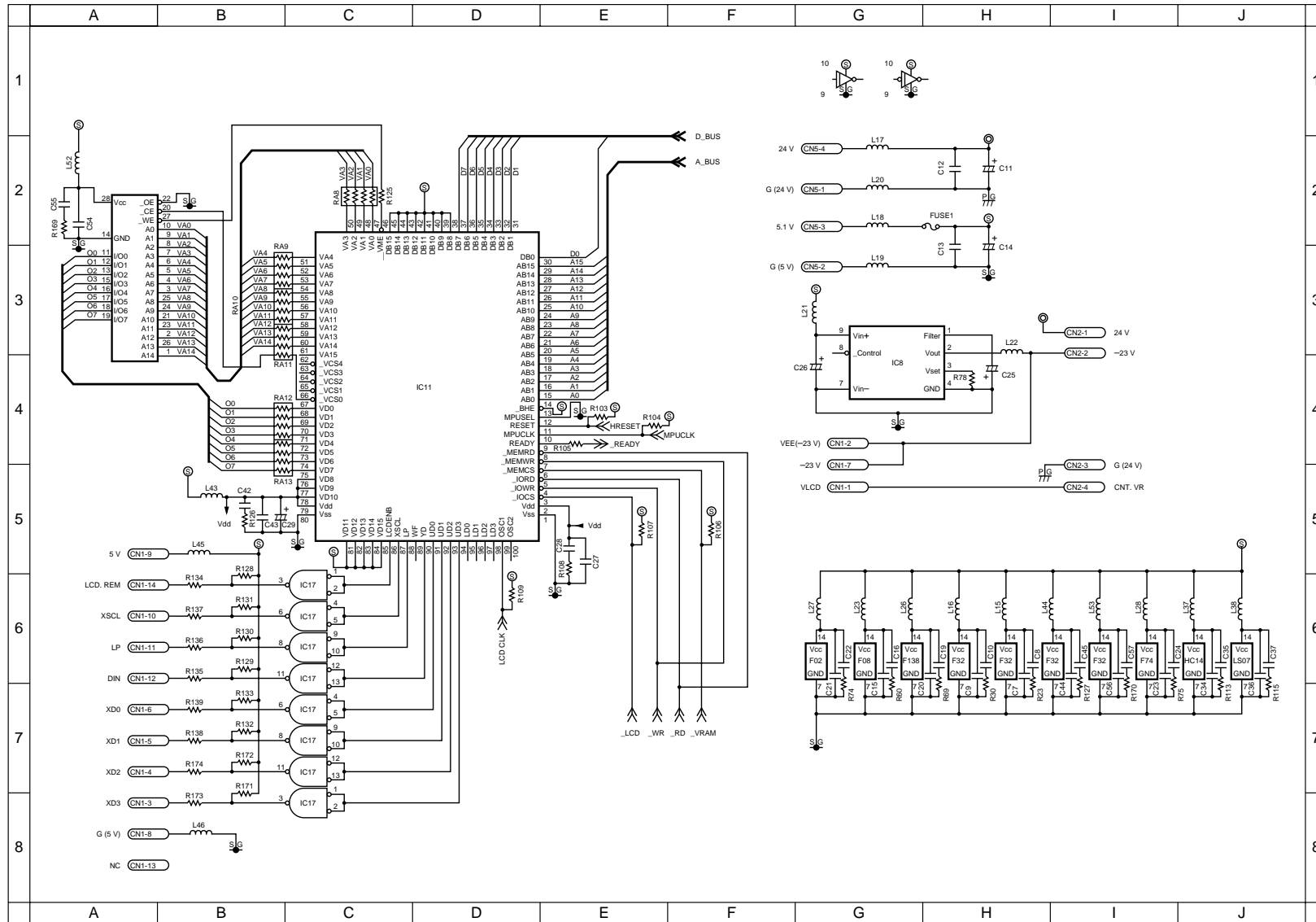
DF driver PCB





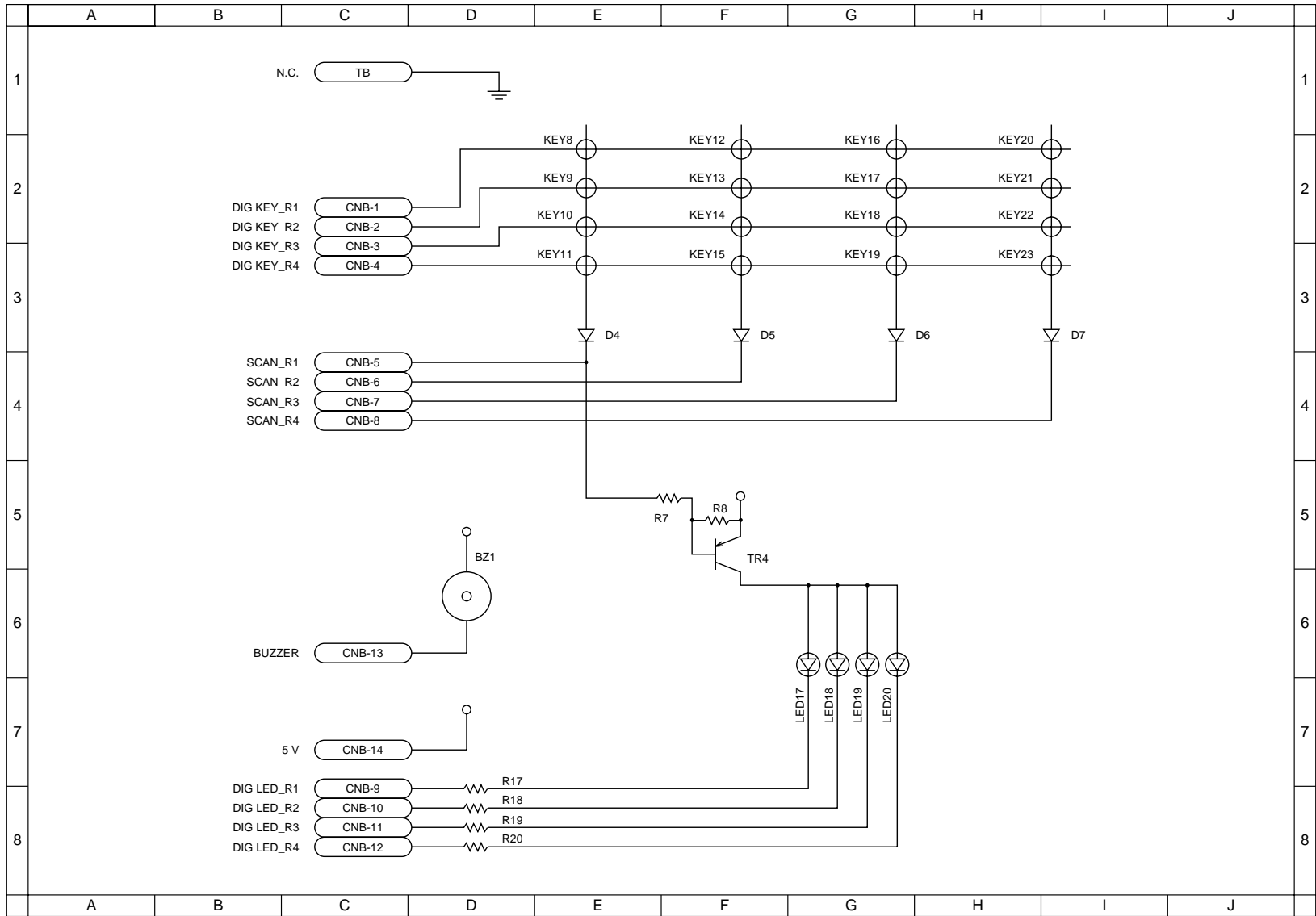
2A3/4

Operation unit main PCB 2/2



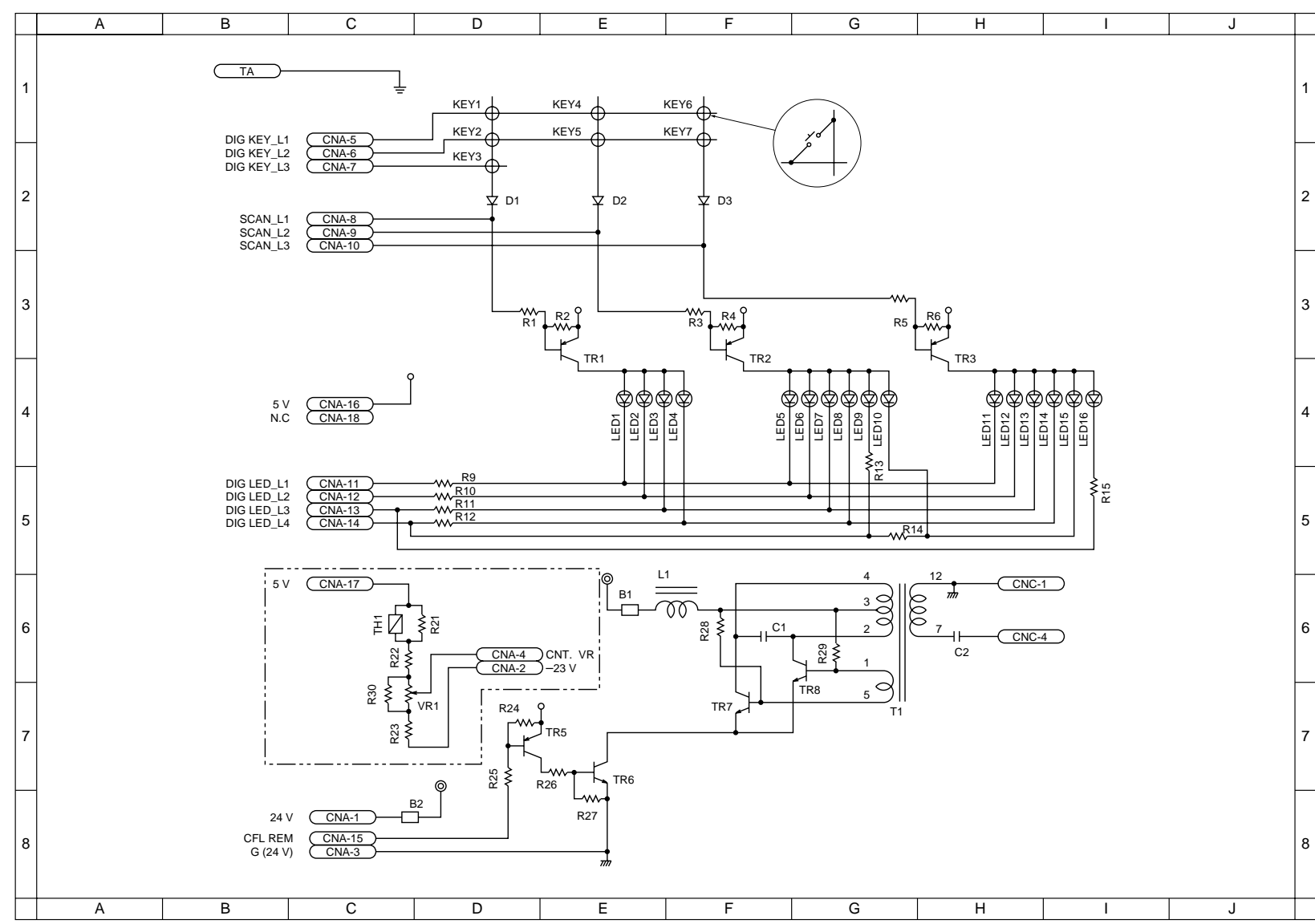
3-7-42

Operation unit right PCB

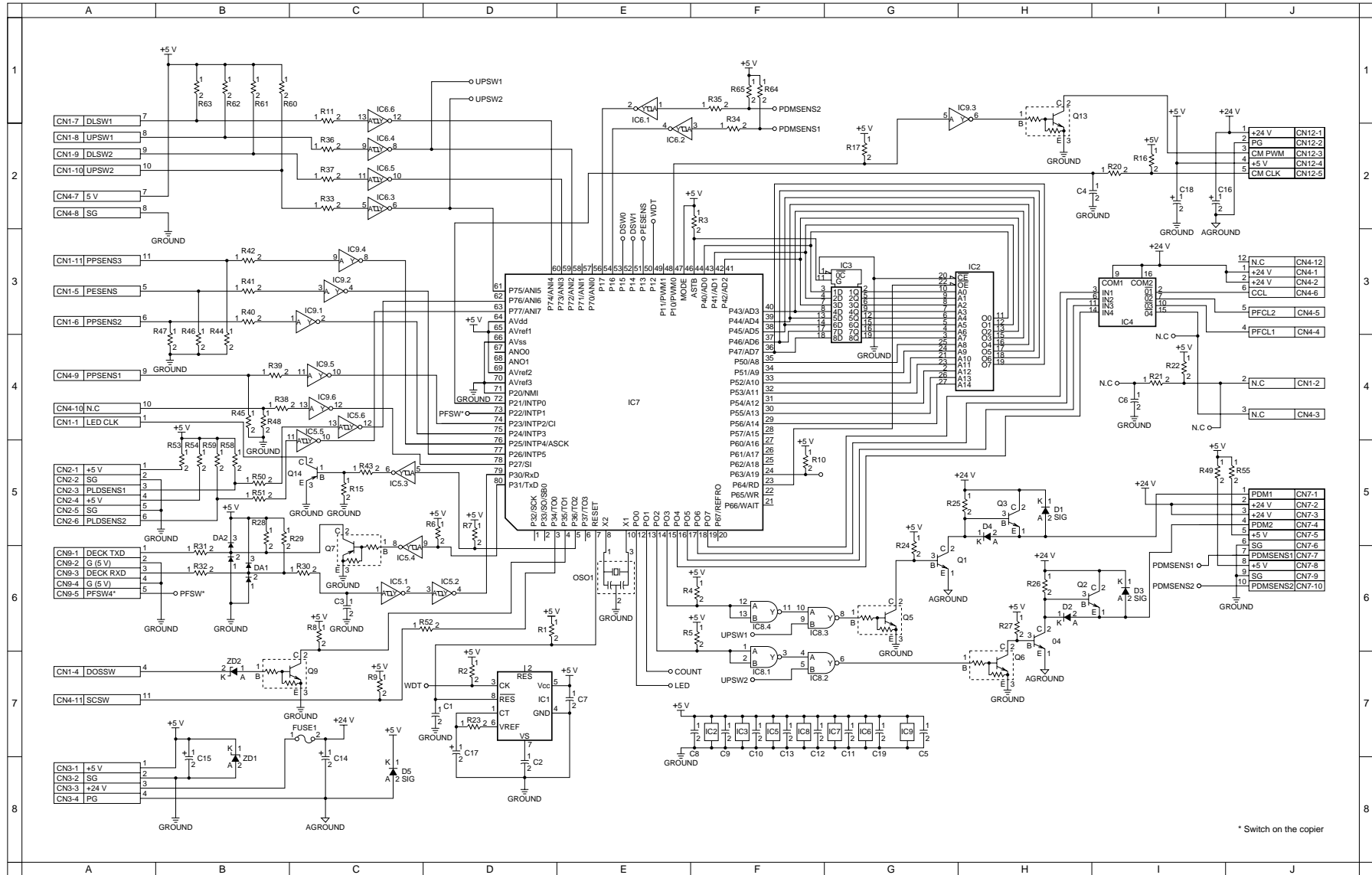


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Operation unit left PCB

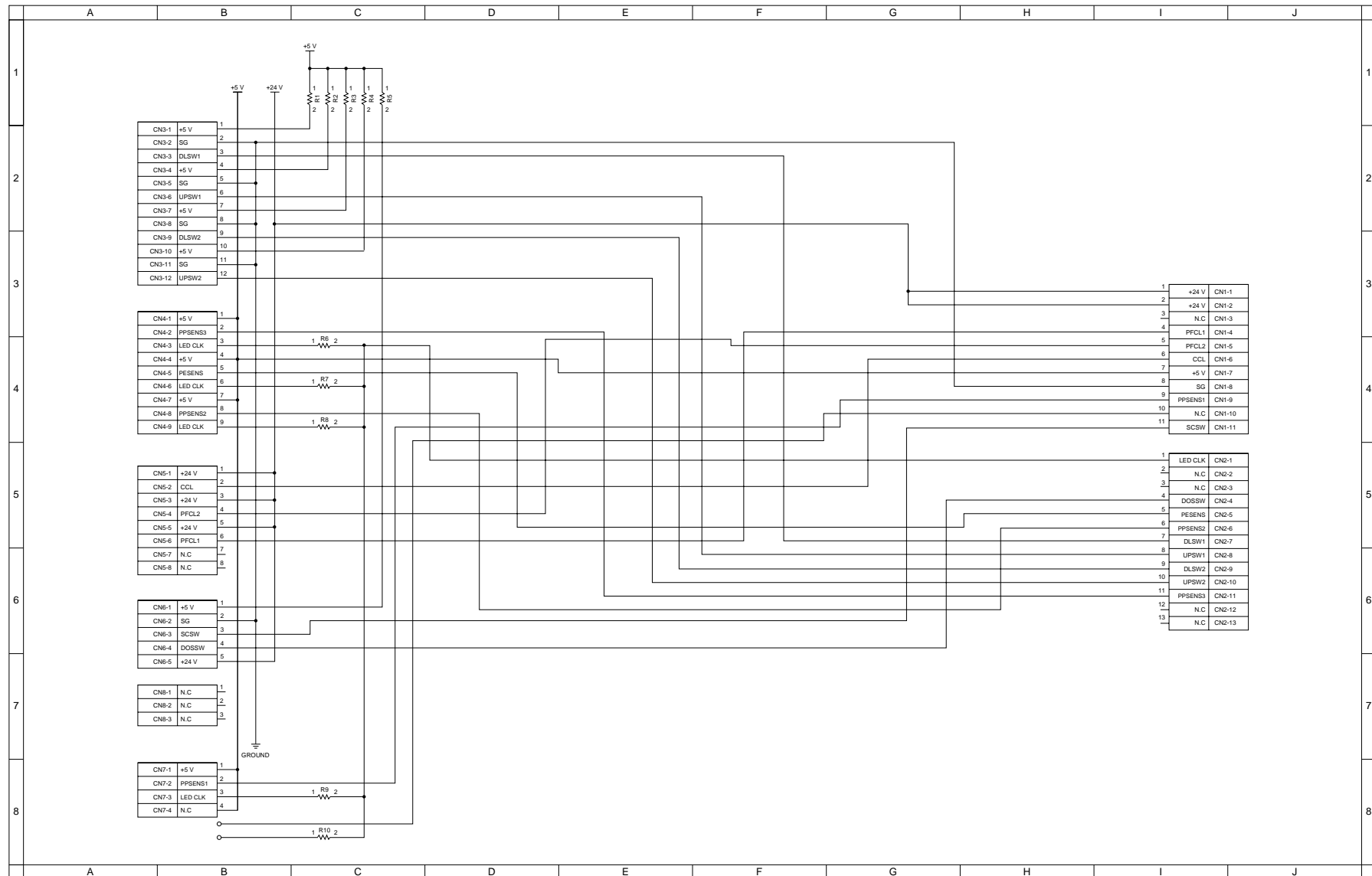


3-7-44



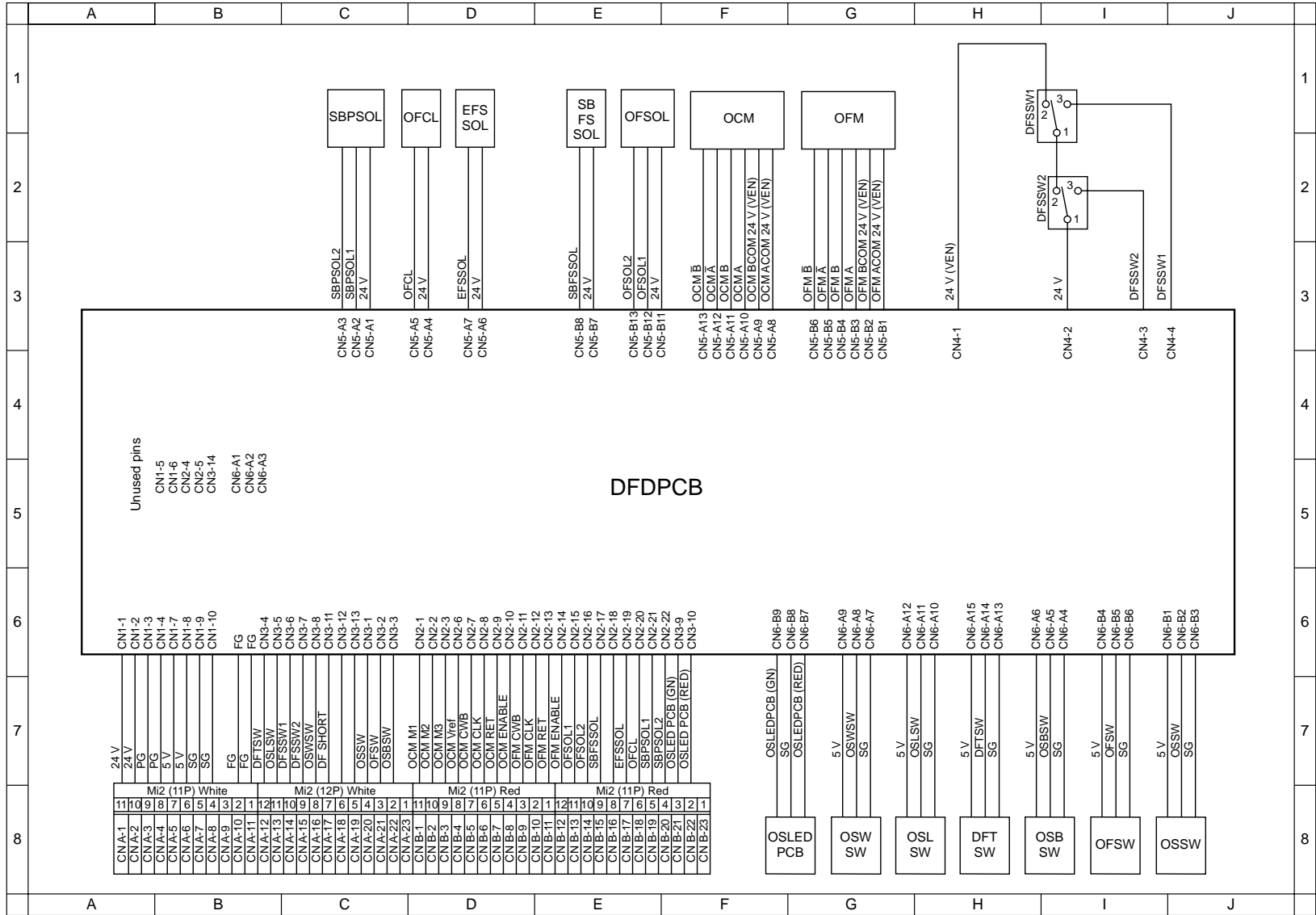
Interface PCB

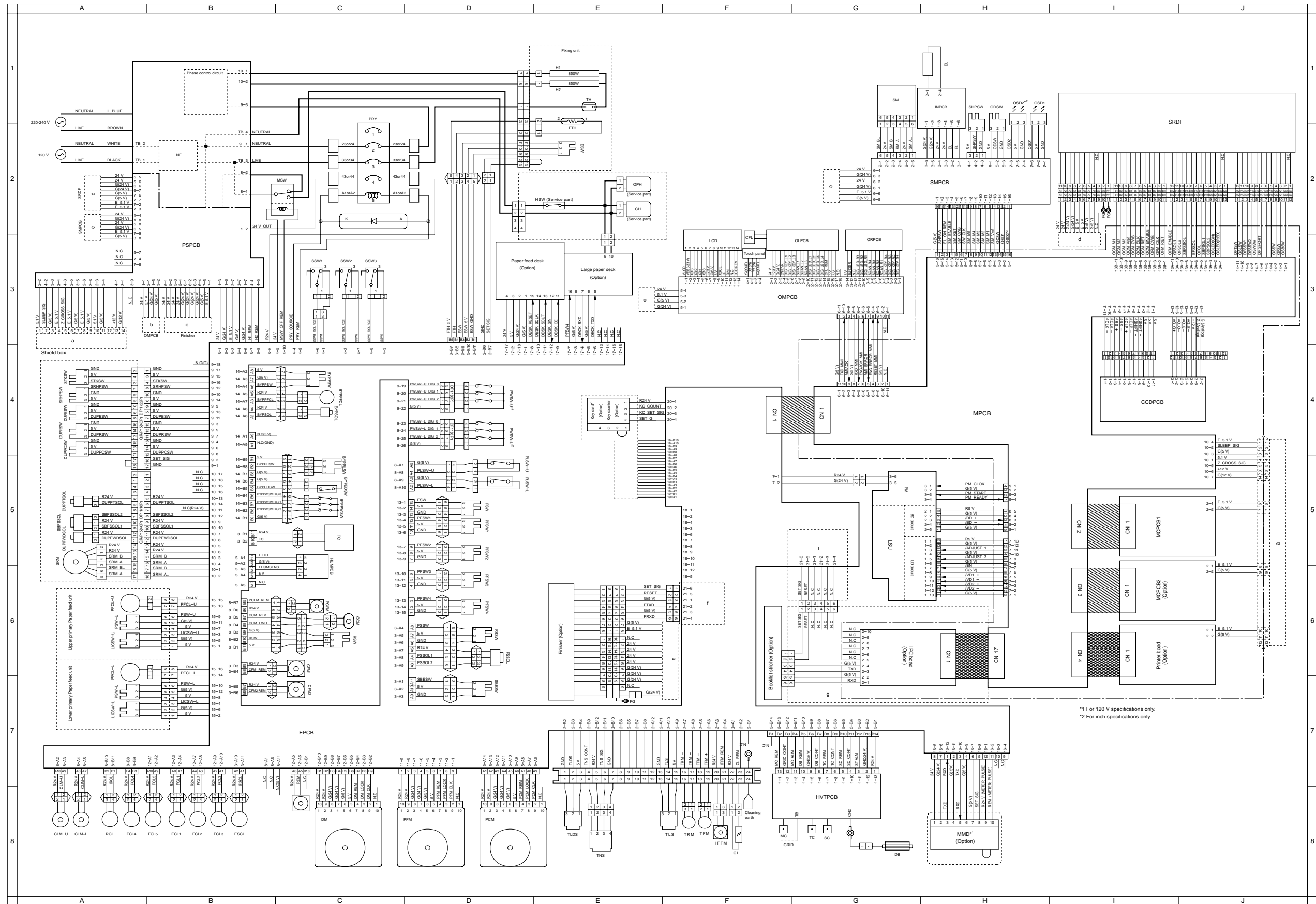
2A3/4



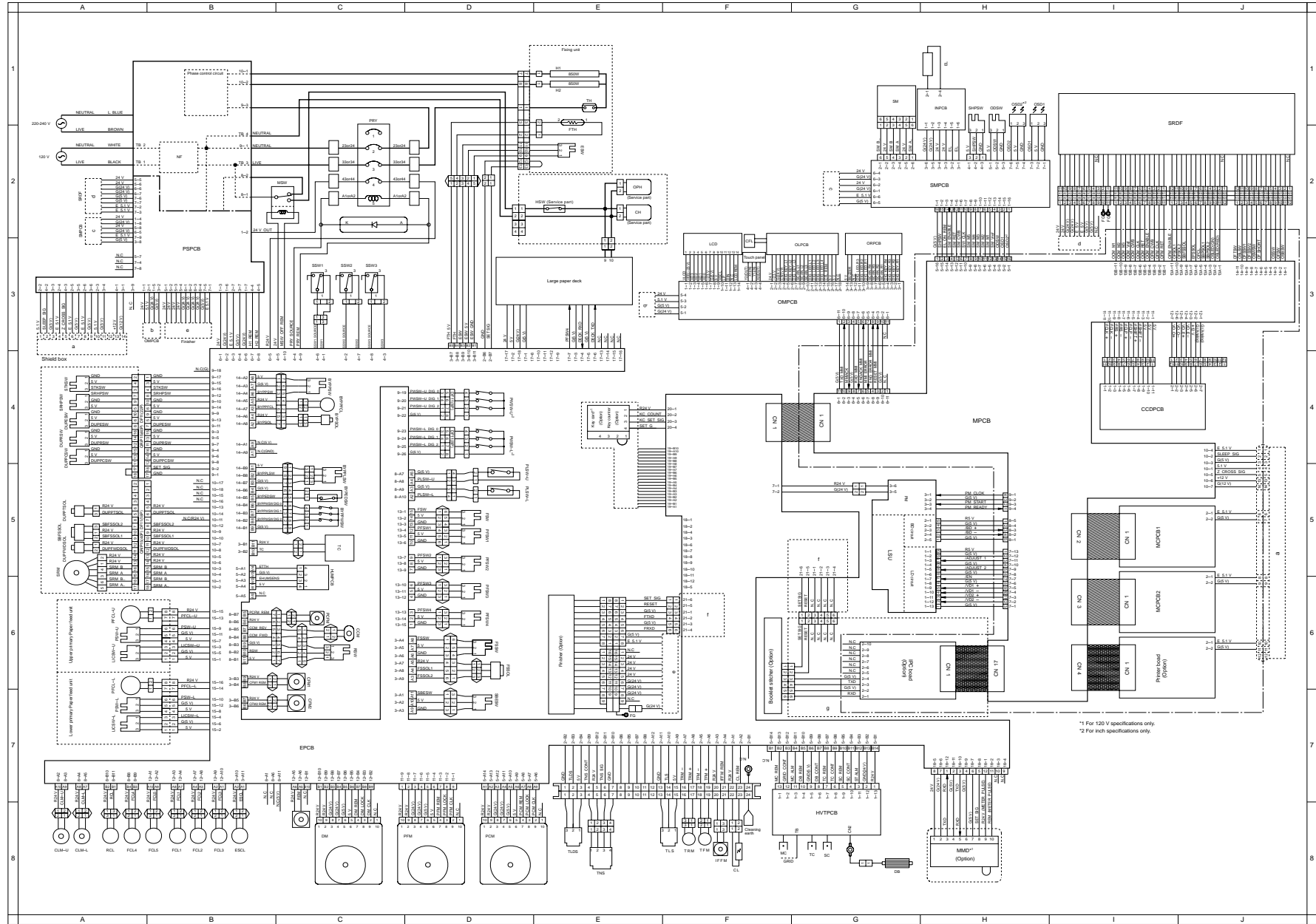
3-7-46

SRDF connection diagram

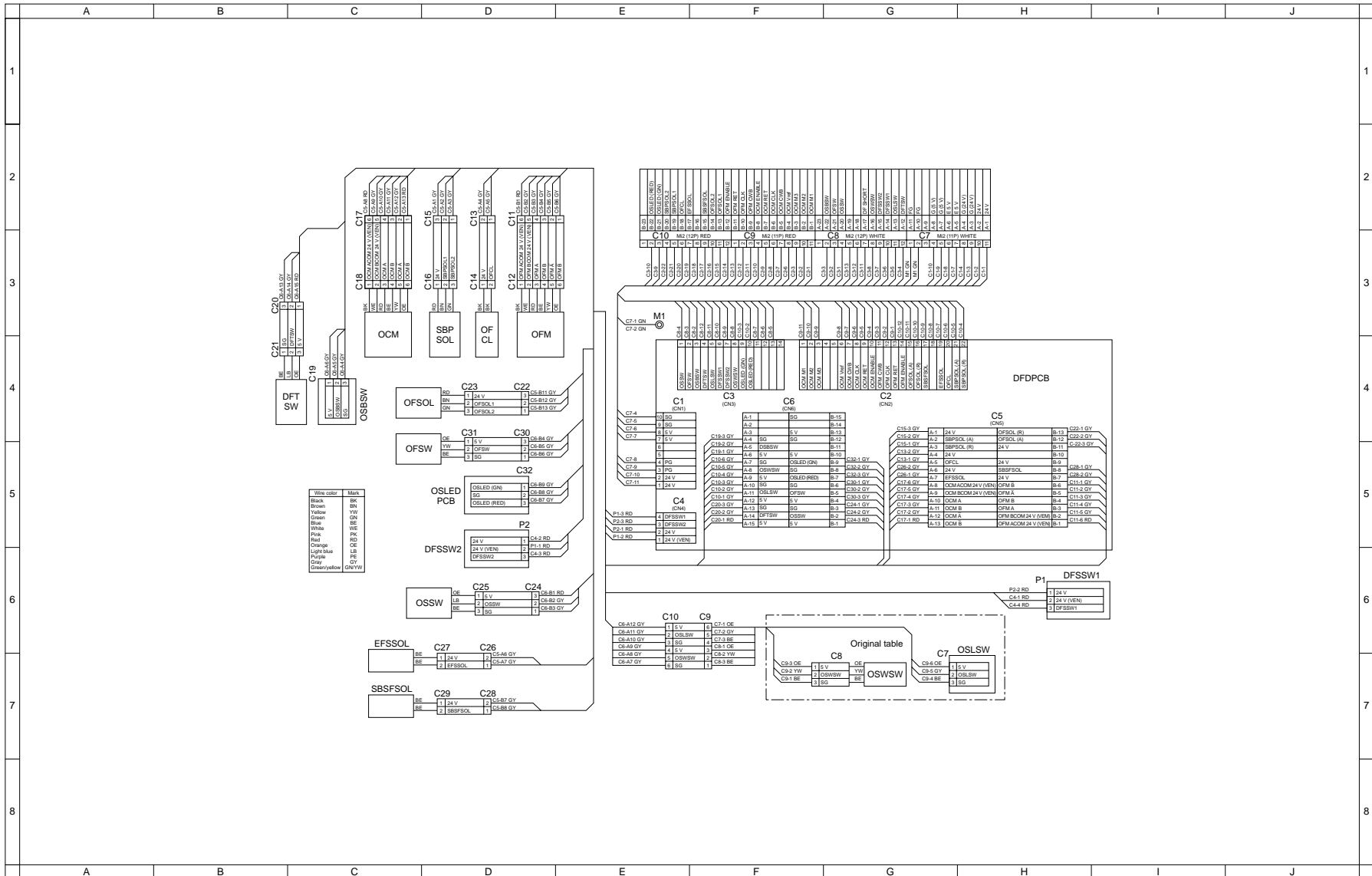




*1 For 120 V specifications only.
*2 For inch specifications only.

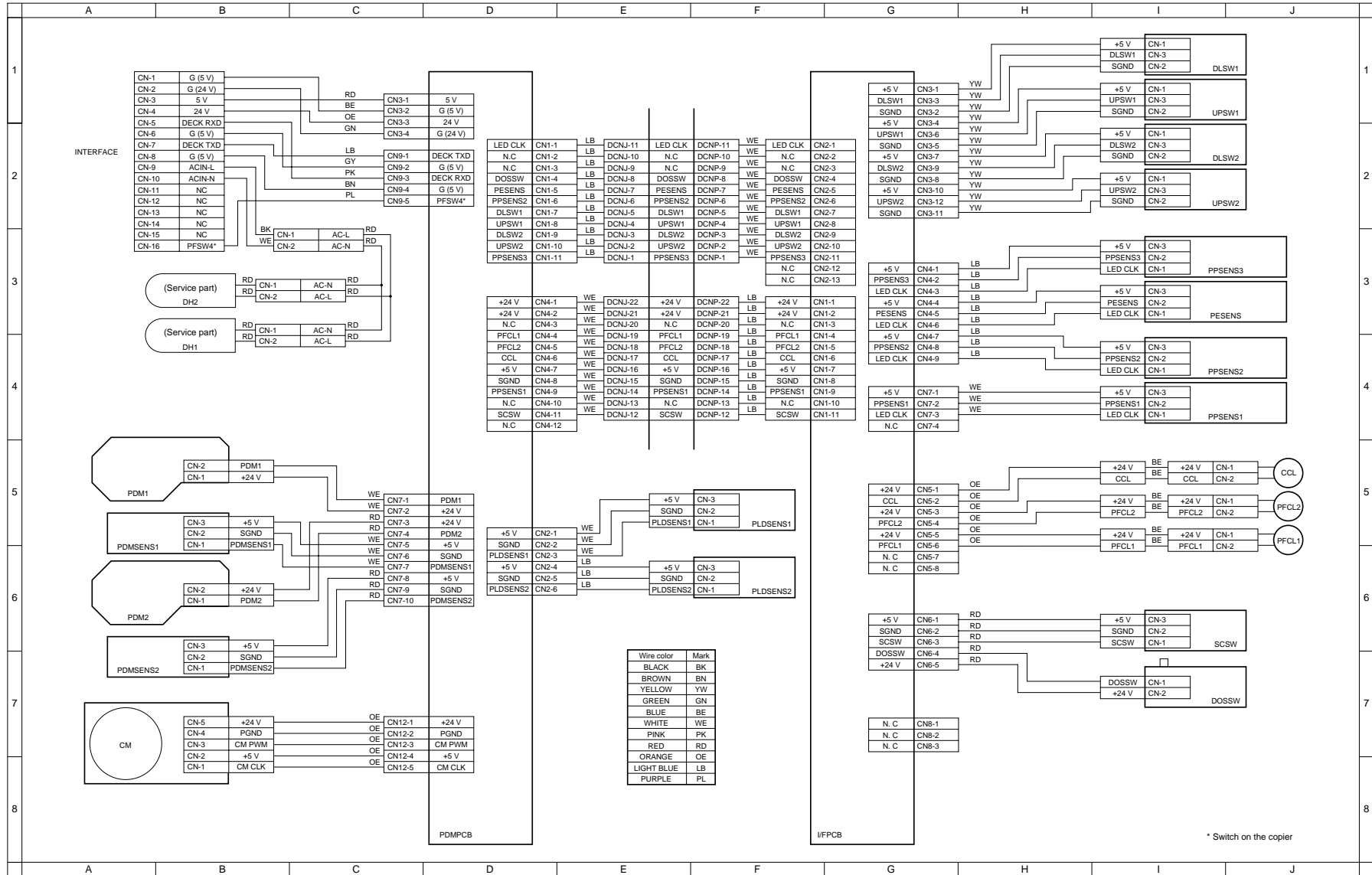


*1 For 120 V specifications only.
 *2 For rich specifications only.



Large paper deck wiring diagram

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