



PointSource Ai 3010

SERVICE MANUAL

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Revision 5

Service Manual

PointSource
Ai 3010

CAUTION

DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

ATTENTION

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

Safety precautions

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

Safety warnings and precautions

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

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

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

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

Symbols

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



General warning.



Warning of risk of electric shock.



Warning of high temperature.

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



General prohibited action.



Disassembly prohibited.

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



General action required.



Remove the power plug from the wall outlet.



Always ground the copier.

1. Installation Precautions

WARNING

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



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



CAUTION:

- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury.
- Do not install the copier in a humid or dusty place. This may cause fire or electric shock.
- Do not install the copier near a radiator, heater, other heat source or near flammable material. This may cause fire.
- Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool as possible. Insufficient ventilation may cause heat buildup and poor copying performance.



- Always handle the machine by the correct locations when moving it.
- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury.
- Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention.
- Advise customers that they must always follow the safety warnings and precautions in the copier's instruction handbook.



2. Precautions for Maintenance

WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly.
- Always follow the procedures for maintenance described in the service manual and other related brochures.
- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits.
- Always use parts having the correct specifications.
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident.
- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully.
- Always check that the copier is correctly connected to an outlet with a ground connection.



- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. 
- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. 
- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. 

CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. 
- Use utmost caution when working on a powered machine. Keep away from chains and belts. 
- Handle the fixing section with care to avoid burns as it can be extremely hot. 
- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. 
- Do not remove the ozone filter, if any, from the copier except for routine replacement. 
- Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself. 
- Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item. 
- Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks. 
- Remove toner completely from electronic components. 
- Run wire harnesses carefully so that wires will not be trapped or damaged. 

- After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws. 
- Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary. 
- Handle greases and solvents with care by following the instructions below: 
 - Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
 - Ventilate the room well while using grease or solvents.
 - Allow applied solvents to evaporate completely before refitting the covers or turning the main switch on.
 - Always wash hands afterwards.
- Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc. 
- Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately. 

3. Miscellaneous

 WARNING

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

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I

THEORY AND CONSTRUCTION SECTION

I Theory and
Construction Section

CONTENTS

1-1 Specifications

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1-1-1 Specifications

Type	Desktop
Copying system	Dry, indirect electrostatic system
Originals	Sheets and books
	Maximum size: A3/11" x 17"
Original feed system	Fixed
Copy paper	Drawer: Plain paper (64 – 80 g/m ²)
	Bypass table (optional for 120 V specifications):
	Plain paper (60 – 160 g/m ²)
	Special paper: Transparencies, tracing paper, colored paper and letterhead
	Note: Use the bypass table for special paper.
Copying sizes	Maximum: A3/11" x 17"
	Minimum: A6R (<i>when the bypass table is used</i>) / 5½" x 8½"
Magnification ratios	Manual mode: 25 – 400%, 1% increments (25 – 200%, <i>when the SRDF is used</i>)
	Auto copy mode: fixed ratios
	Metric
	1:1 ± 1.0%, 1:4.00/1:2.00/1:1.41/1:1.27/1:1.06/1:0.90/1:0.75/1:0.70/1:0.50/1:0.25
	Inch
	1:1 ± 1.0%, 1:4.00/1:2.00/1:1.54/1:1.29/1:1.21/1:0.78/1:0.77/1:0.64/1:0.50/1:0.25
Copy speed	At 100% magnification in memory copy mode:
	A4: 31 copies/min.
	A4R: 23 copies/min.
	A3: 17 copies/min.
	B4 (257 x 364 mm): 19 copies/min.
	11" x 8½": 30 copies/min.
	8½" x 11": 24 copies/min.
	11" x 17": 16 copies/min.
	8½" x 14": 19 copies/min.
First copy time	From 5 to 6 s (A4/11" x 8½", 100% magnification, upper drawer, ejection to the eject tray)
Warm-up time	45 s or less (room temperature 20°C/68°F, 65% RH)
	In preheat/energy saver mode: 30 s or less (room temperature 20°C/68°F, 65% RH)
Paper feed system	Automatic feed
	Capacity:
	Drawers: 550 sheets
	Manual feed
	Capacity:
	Bypass: 200 sheets

Continuous copying	1 – 999 sheets
Photoconductor	OPC (drum diameter 30 mm)
Charging system	Single positive corona charging
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 Toner density control: toner sensor Toner replenishing: automatic from a toner cartridge
Transfer system	Transfer roller
Fixing system	Heat roller Heat source: halogen heaters (main 550 W, sub 400 W) Control temperature: 175°C/347°F (at normal ambient temperature) Abnormally high temperature protection device: 140°C/284°F thermostat Fixing pressure: 49 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	16 MB (standard)
Resolution	600 x 600 dpi
Light source	Inert gas lamp
Dimensions	585 (W) x 600 (D) x 745 (H) mm 23 ³ / ₁₆ " (W) x 23 ⁵ / ₈ " (D) x 29 ⁵ / ₁₆ " (H)
Weight	Approx. 81 kg/178.2 lbs
Floor requirements	585 (W) x 600 (D) mm 23 ³ / ₁₆ " (W) x 23 ⁵ / ₈ " (D)
Functions	Self-diagnostics, preheat, automatic copy density control, original size detection, automatic paper selection, automatic magnification selection, enlargement/reduction copy, fixed ratio selection, XY zoom mode, photo mode, margin copy, print page numbers function, split copy, border erasing, form overlay, combine copy, sort copy, invert copy, mirror image mode, program copy, department control and language selection
Power source	120 V AC, 60 Hz, 10 A 220 – 240 V AC, 50/60 Hz, 5.5 A
Power consumption	1200 W (120V) 1320W (220 – 240V)

Options SRDF, duplex unit, job separator, mailbox,
eject unit, feedshift unit, paper feed desk,
large paper deck, finisher, key counter, key card*,
add-on memory SIMM,
bypass unit*, original cover, *fax board, printerboard
and network board.*
* Optional for 120 V specifications only.

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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 0°C/32°F and 35°C/95°F and at a relative humidity not higher than 85% RH. Avoid abrupt changes in temperature and humidity.
- Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
- Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.
- 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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	(8) Fixing section	1-3-35

1-3-1 Part names and their functions

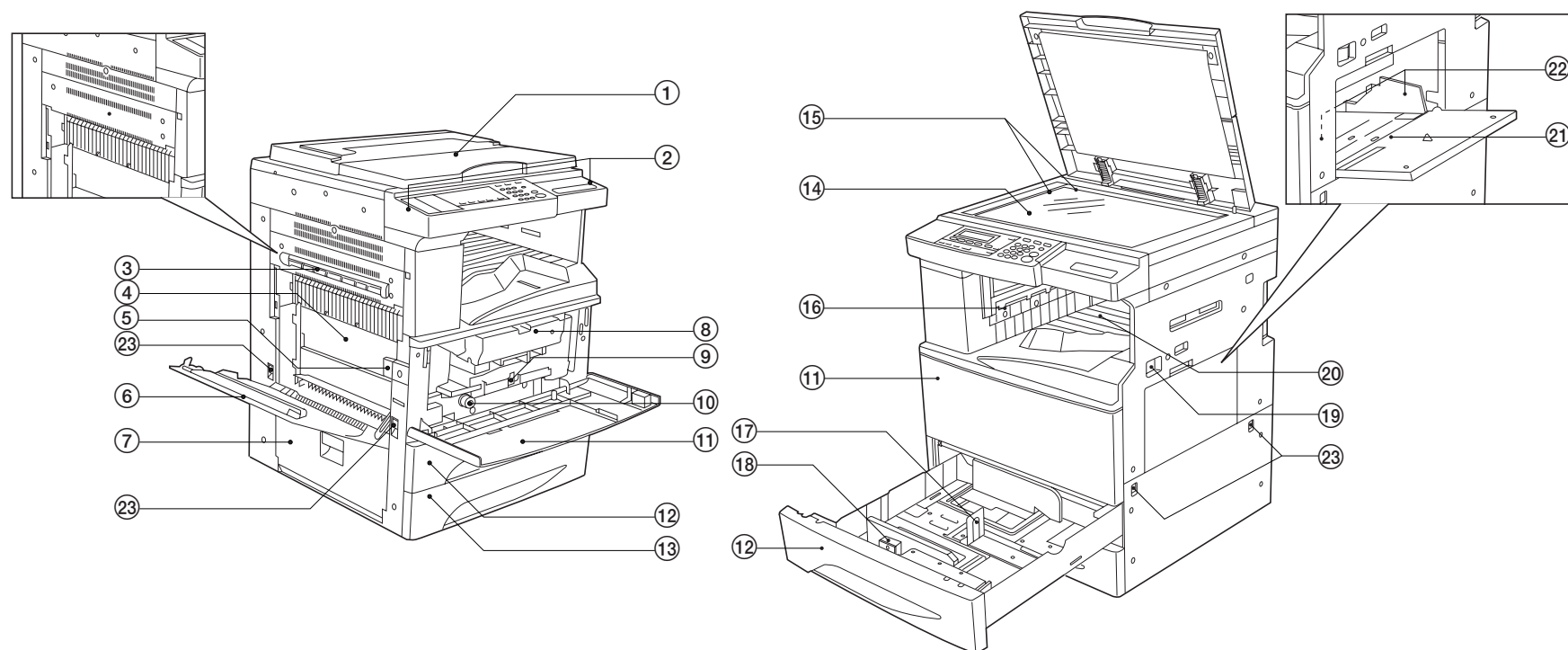


Figure 1-3-1

- ① Original cover
- ② Operation panel
- ③ Feedshift unit (eject unit)*2
- ④ Paper transfer section cover
- ⑤ Paper transfer section cover release lever
- ⑥ Left 1 cover
- ⑦ Left 2 cover

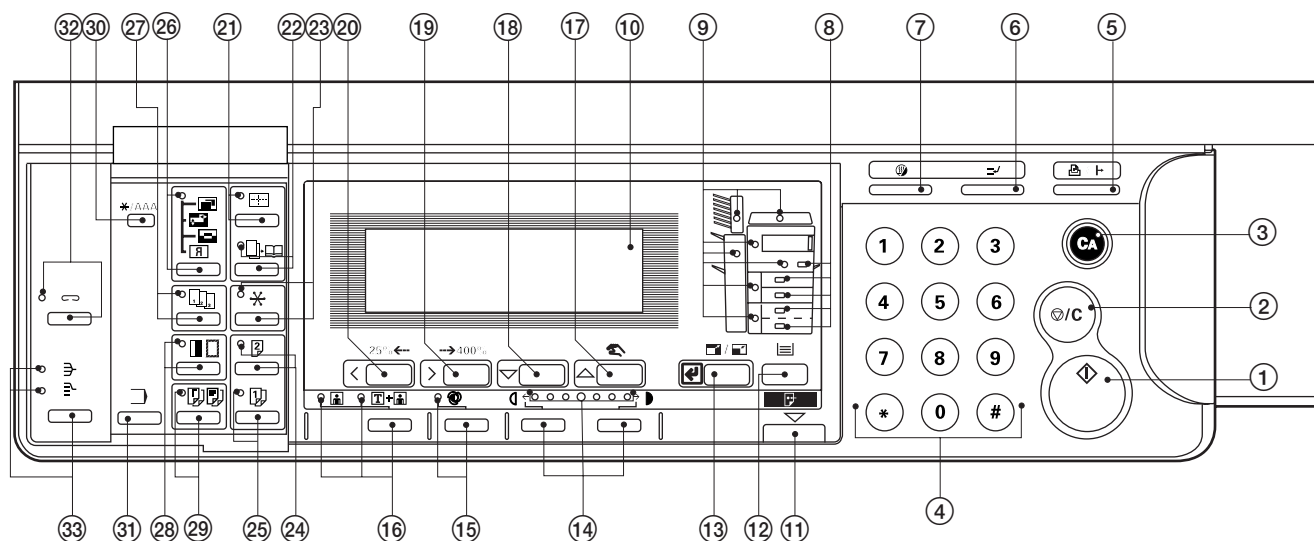
- ⑧ Toner cartridge
- ⑨ Toner cartridge release lever
- ⑩ Paper feed section knob*1
- ⑪ Front cover
- ⑫ Upper drawer
- ⑬ Lower drawer
- ⑭ Contact glass

- ⑮ Original size scales
- ⑯ Ejection section
- ⑰ Length adjustment lever
- ⑱ Width adjustment lever
- ⑲ Main switch
- ⑳ Eject tray
- ㉑ Bypass table*1

- ㉒ Insert guides*1
 - ㉓ Handles for transport
- *1: Optional for 120 V specifications.
*2: Optional.

2AR

Metric



Inch

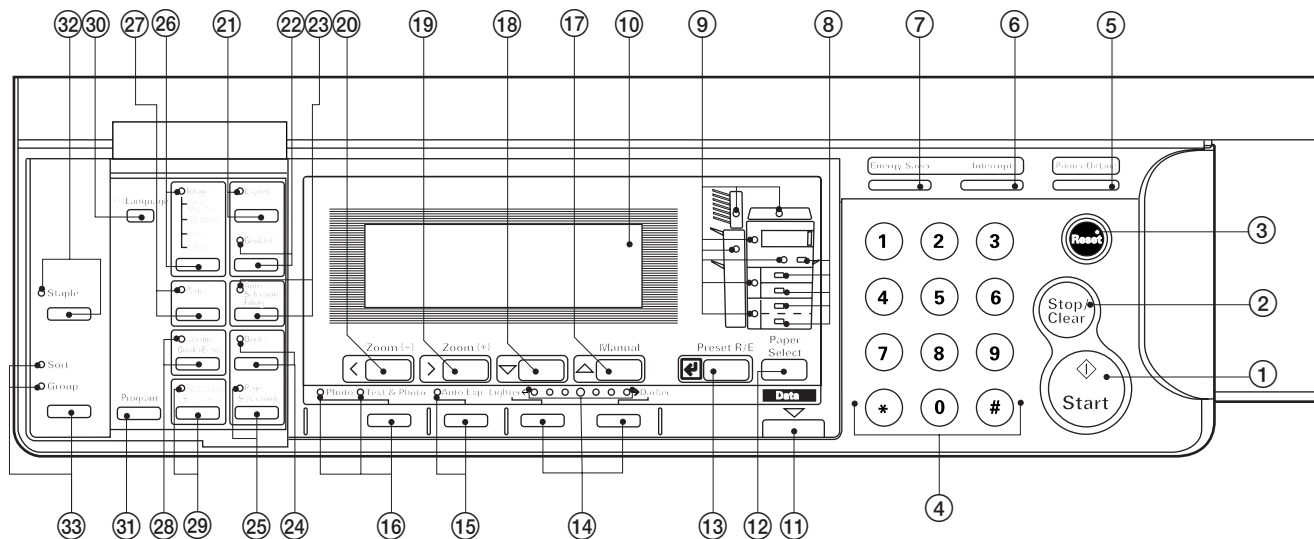


Figure 1-3-2 Operation panel

- ① Start key
- ② Stop/clear key
- ③ Reset key
- ④ Numeric keys
- ⑤ Printer/on line key (indicator)
- ⑥ Interrupt key (indicator)
- ⑦ Energy saver (preheat) key (indicator)
- ⑧ Drawer select indicators
- ⑨ Misfeed location indicators
- ⑩ Message display
- ⑪ Data indicator
- ⑫ Paper select key
- ⑬ Preset R/E/enter key
- ⑭ Copy exposure adjustment keys/Copy exposure indicators
- ⑮ Auto Exp. key (indicator)
- ⑯ Copy quality selection key/Photo/text & photo indicators
- ⑰ Manual/cursor up key
- ⑱ Cursor down key
- ⑲ Zoom (+)/cursor right key
- ⑳ Zoom (-)/cursor left key
- ㉑ Layout key (indicator)
- ㉒ Booklet key (indicator)
- ㉓ Auto selection/filing key (indicator)
- ㉔ Duplex key (indicator)
- ㉕ Page separation key (indicator)
- ㉖ Image key (indicator)
- ㉗ Page # key (indicator)
 - Margin/border erase key (indicator)
- ㉙ Presentation/sheet/insert key (indicator)
- ㉚ */language key
- ㉛ Program key
- ㉜ Staple key (indicator)
- ㉝ Sort key/Sort indicator/Group indicator

1-3-2

1-3-2 Machine cross section

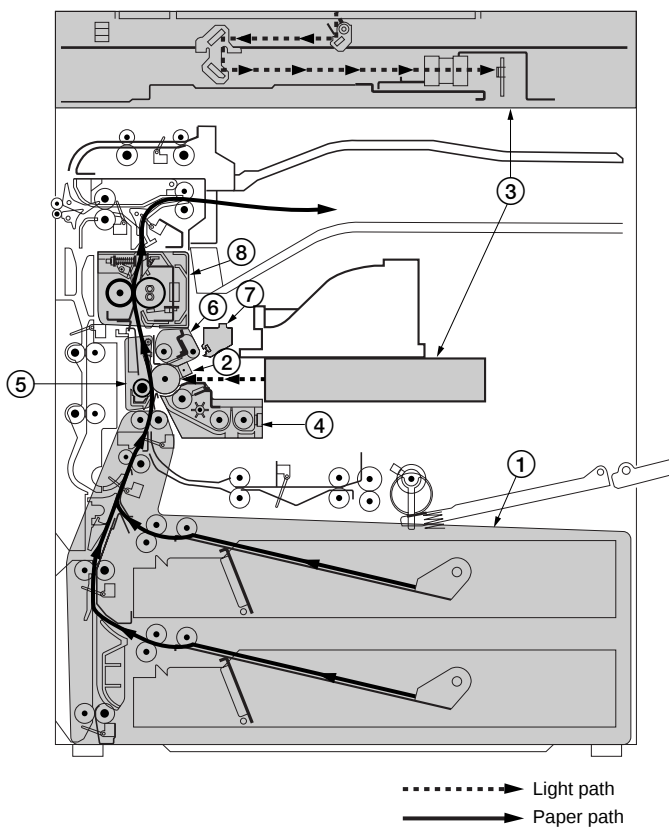
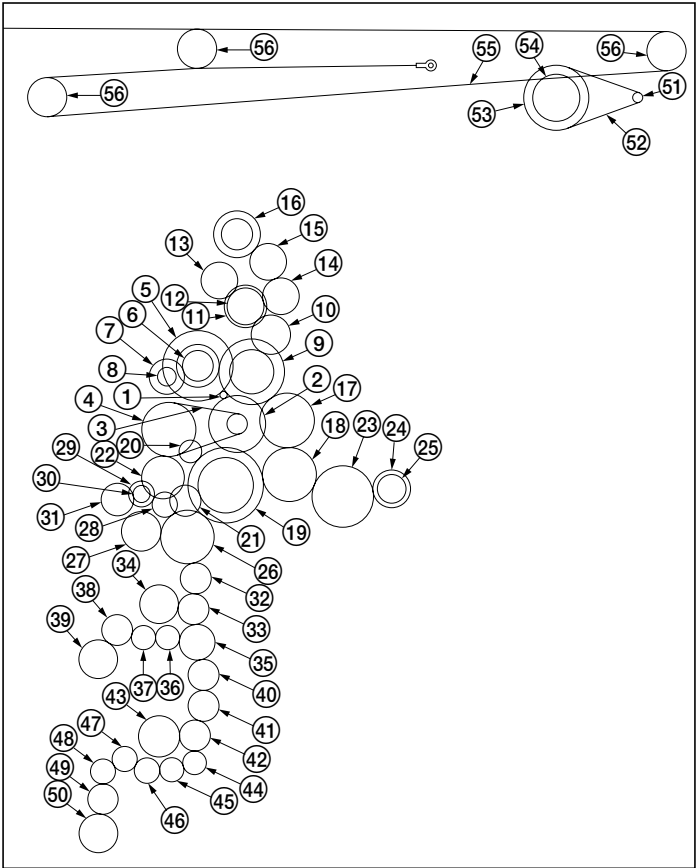


Figure 1-3-3 Machine cross section

- ① Paper feed section (page 1-3-6)
- ② Main charging section (page 1-3-10)
- ③ Optical section (page 1-3-13)
- ④ Developing section (page 1-3-19)
- ⑤ Transfer and separation section (page 1-3-29)
- ⑥ Cleaning section (page 1-3-32)
- ⑦ Charge erasing section (page 1-3-33)
- ⑧ Fixing section (page 1-3-35)

1-3-3 Drive system



As viewed from the machine front

Figure 1-3-4 Drive system

- | | |
|-----------------------|-----------------------------|
| ① Drive motor gear | ⑪ Gear 32 |
| ② Gear 67/20 | ⑫ Gear 30 |
| ③ Drum drive belt | ⑬ Fixing drive gear |
| ④ Drum drive pulley | ⑭ Gear 30 |
| ⑤ Gear 92/35 | ⑮ Gear 30 |
| ⑥ Cleaning drive gear | ⑯ Eject gear 39/25 |
| ⑦ Gear 30 | ⑰ Gear 45 |
| ⑧ Gear 16 | ⑱ Image formation idle gear |
| ⑨ Gear 53/37 | ⑲ Gear 62/46 |
| ⑩ Gear 30 | ⑳ Developing drive gear 18 |

- ②1 Gear 25
- ②2 Registration clutch gear
- ②3 Gear 50T
- ②4 Bypass idle gear
- ②5 Bypass drive gear 24
- ②6 Feed drive gear
- ②7 Feed clutch 1 gear
 - ° Duplex idle gear
- ②9 Gear 24
- ③0 Gear 18
- ③1 Duplex drive gear 25
- ③2 Gear 25
- ③3 Gear 25
- ③4 Upper paper feed clutch gear
- ③5 Gear 30
- ③6 Feed idle gear 1
- ③7 Feed idle gear 2
- ③8 Feed gear 25
- ③9 Feed clutch 2 gear
- Π Gear 25
- ④1 Gear 25
- ④2 Gear 25
- ④3 Lower paper feed clutch gear
- ④4 Feed idle gear 3
- ④5 Feed idle gear 4
- ④6 Feed idle gear 5
- ④7 Feed idle gear 6
 - Feed idle gear 7
- ④9 Gear 25
- ⑤0 Feed clutch 3 gear
- ⑤1 Scanner motor pulley
- ⑤2 Scanner drive belt
- ⑤3 Scanner drive pulley
- ◇ Scanner wire drum
- ⑤5 Scanner wire
- ⑤6 Scanner wire pulley

1-3-4 Mechanical construction

(1) Paper feed section

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

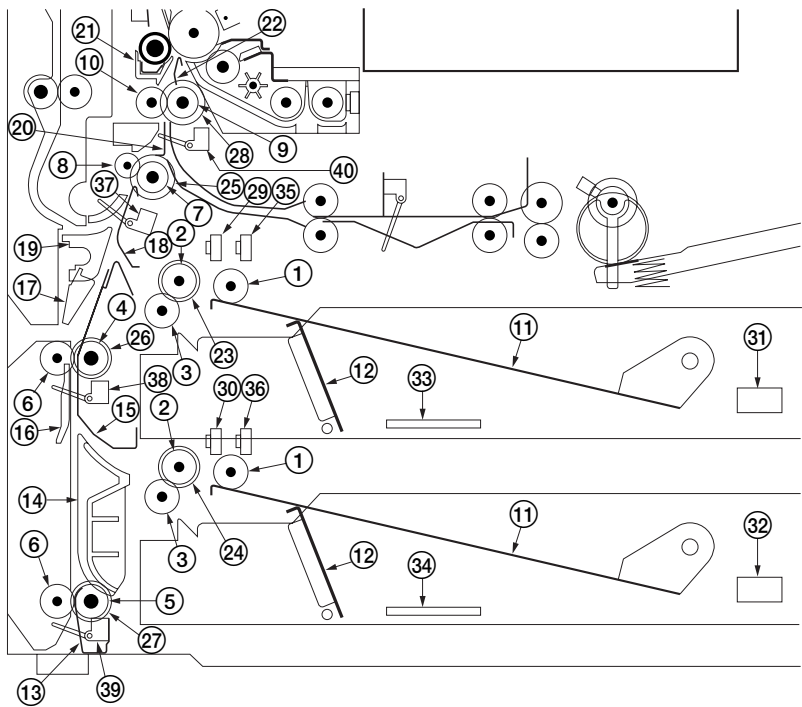


Figure 1-3-5 Paper feed section

- ① Forwarding pulley
- ② Paper feed pulley
- ③ Separation pulley
- ④ Feed roller 1
- ⑤ Feed roller 2
- ⑥ Feed pulley
- ⑦ Right feed roller
- ⑧ Left feed roller
- ⑨ Right registration roller
- ⑩ Left registration roller
- ⑪ Drawer lift
- ⑫ Lift operation plate
- ⑬ Desk paper conveying guide
- ⑭ Lower left vertical paper conveying guide
- ⑮ Upper vertical paper conveying guide
- ⑯ Vertical paper conveying guide
- ⑰ Left vertical paper conveying guide
- ⑱ Lower feed guide
- ⑲ Duplex junction guide
- ⑳ Feed guide
- ㉑ Transfer guide
- ㉒ Right transfer guide
- ㉓ Upper paper feed clutch (PFCL-U)
- ㉔ Lower paper feed clutch (PFCL-L)
- ㉕ Feed clutch 1 (FCL1)
- ㉖ Feed clutch 2 (FCL2)
- ㉗ Feed clutch 3 (FCL3)
- ° Registration clutch (RCL)
- ㉙ Upper paper switch (PSW-U)
- ㉚ Lower paper switch (PSW-L)
- ㉛ Upper paper length switch (PLSW-U)
- ㉜ Lower paper length switch (PLSW-L)
- ㉝ Upper paper width switch (PWSW-U)
- ㉞ Lower paper width switch (PWSW-L)
- ㉟ Upper lift limit switch (LICSW-U)
- ㊱ Lower lift limit switch (LICSW-L)
- ㊲ Feed switch 1 (FSW1)
- ㊳ Feed switch 2 (FSW2)
- ㊴ Feed switch 3 (FSW3)
- II Registration switch (RSW)

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 paper feed pulley. The separation pulley prevents multiple sheets from being fed at one time, via the torque limiter.

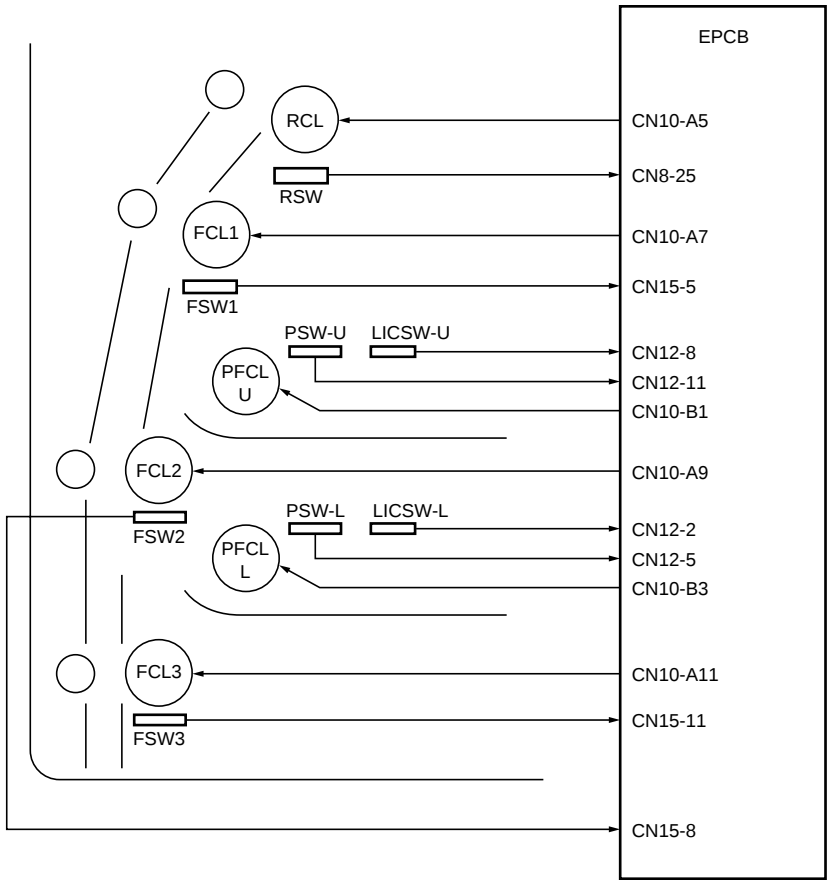
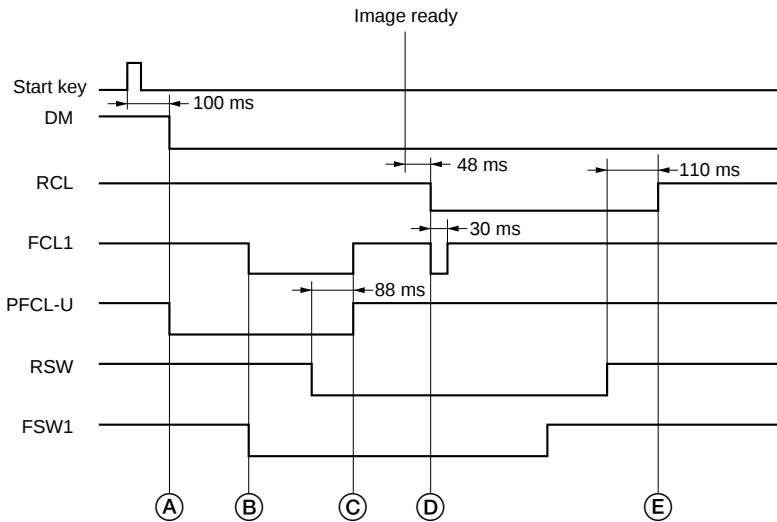


Figure 1-3-6 Paper feed section block diagram



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

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

- Ⓐ 100 ms after the start key is pressed, the drive motor (DM) turns on to start the drive for the paper feed section. At the same time, the upper paper feed clutch (PFCL-U) turns on, and the forwarding and paper feed pulleys rotate to start primary paper feed.
- Ⓑ At the same time as the leading edge of the paper turns feed switch 1 (FSW1) on, feed clutch 1 (FCL1) turns on, and the right feed roller rotates.
- Ⓒ 88 ms after the leading edge of the paper turns the registration switch (RSW) on, the upper paper feed clutch (PFCL-U) and feed clutch 1 (FCL1) turn off.
- Ⓓ 48 ms after image ready signal turns on, the registration clutch (RCL) turns on, and the right registration roller rotates to start secondary paper feed. At the same time, feed clutch 1 (FCL1) turns on for 30 ms.
- Ⓔ 110 ms after the trailing edge of the paper turns the registration switch (RSW) off, the registration clutch (RCL) turns off.

(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 shield grid ensuring the charge is applied uniformly.

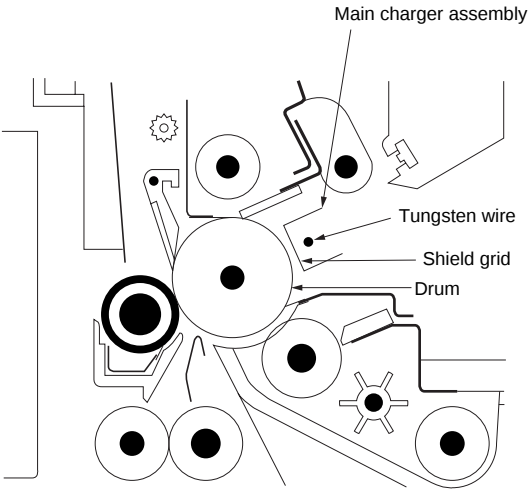


Figure 1-3-7 Main charging section

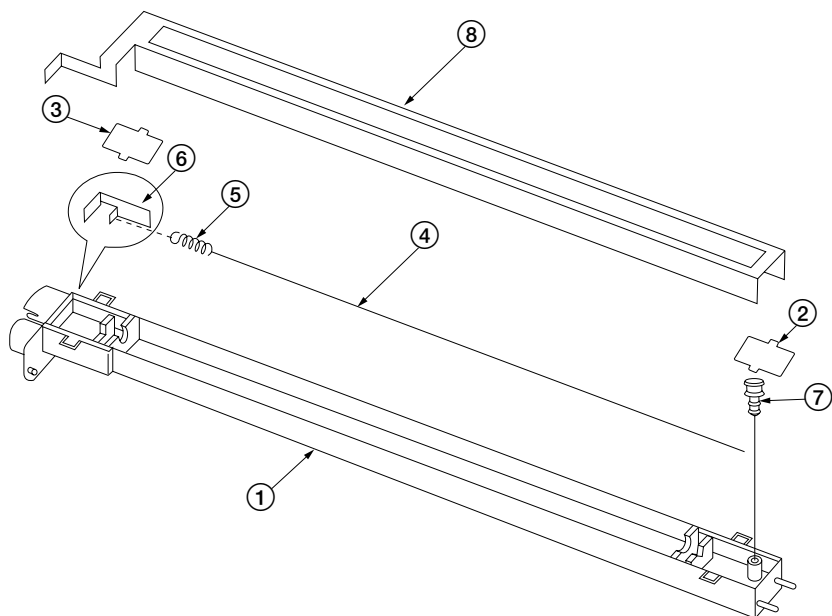


Figure 1-3-8 Main charger

- | | |
|--------------------------|--------------------|
| ① Main charger housing | ⑤ Charger spring |
| ② Main charger front lid | ⑥ Charger terminal |
| ③ Main charger rear lid | ⑦ Charger pin |
| ④ Tungsten wire | ⑧ Shield grid |

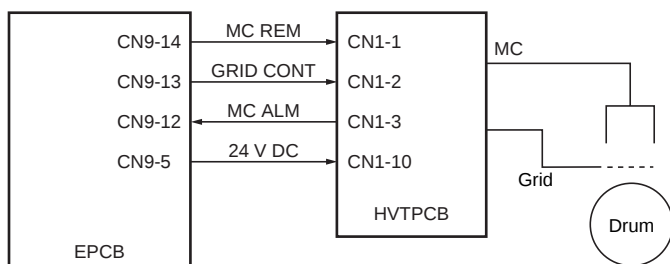
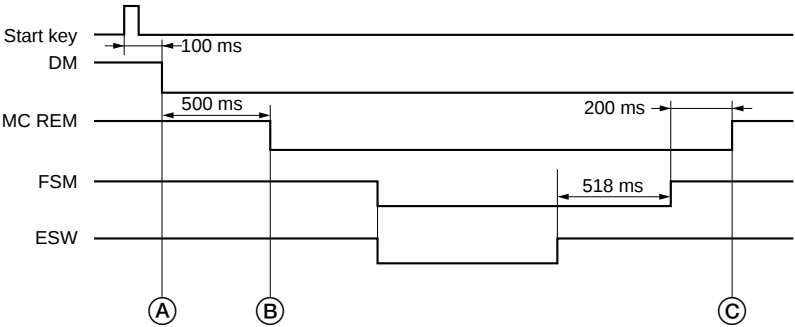


Figure 1-3-9 Main charging section block diagram



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

Timing chart 1-3-2 Main charging

- Ⓐ 100 ms after the start key is pressed, the drive motor (DM) turns on.
- Ⓑ 500 ms after the drive motor (DM) turns on, main charging (MC REM) starts.
- Ⓒ 200 ms after paper is ejected and the feedshift motor (FSM) turns off, main charging (MC REM) is completed.

(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.

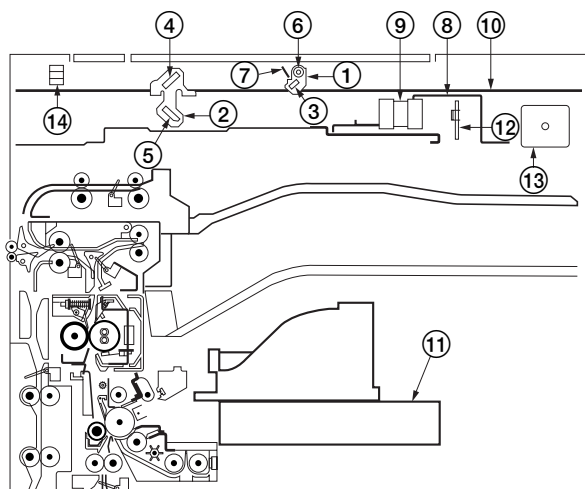


Figure 1-3-10 Optical section

- | | |
|----------------------|--|
| 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) |

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.

* Optional.

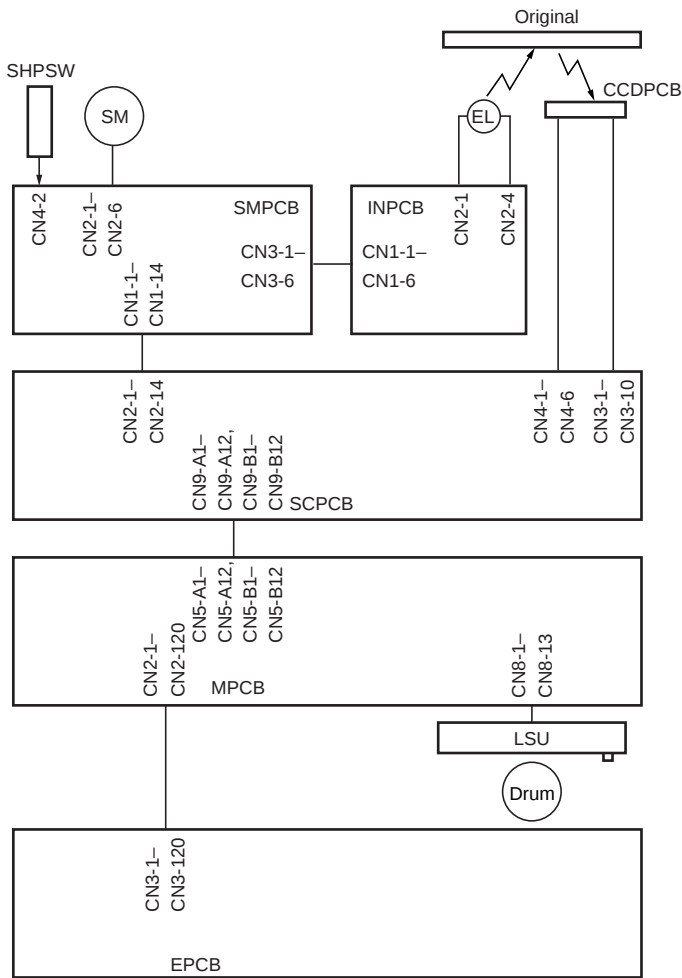
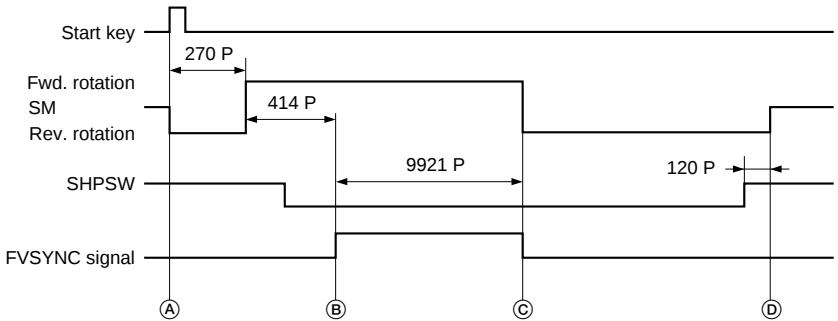


Figure 1-3-11 Optical section block diagram



Original: A3/11" ¥ 17", magnification ratio 100%

Timing chart 1-3-3 Scanner operation

- Ⓐ When the start key is pressed, the scanner motor (SM) reverses for 270 pulses and then rotates forward.
- Ⓑ 414 pulses after the scanner motor (SM) starts rotating forward, the FVSYNC signal turns on for 9921 pulses for scanning.
- Ⓒ The scanner motor (SM) reverses to return the scanner to the home position.
- Ⓓ 120 pulses after the scanner home position switch (SHPSW) turns on, the scanner motor (SM) turns off, and the scanner stops at its home position.

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

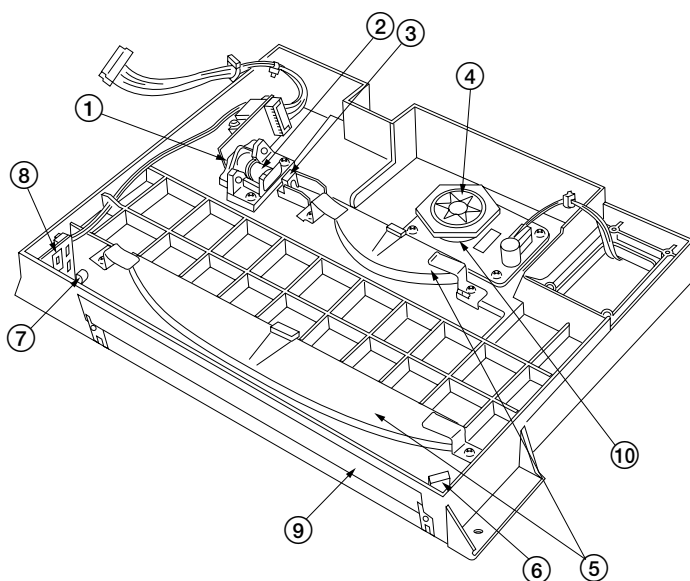


Figure 1-3-12 Laser scanner unit (1)

- ① Laser diode (laser diode PCB)
- ② Collimator lens
- ③ Cylindrical lens
- ④ Polygon mirror
- ⑤ Lenses
- ⑥ BD sensor mirror
- ⑦ Cylindrical correcting lens
- ⑧ BD sensor (beam detection PCB)
- ⑨ Glass dust filter
- ⑩ Polygon motor (PM)

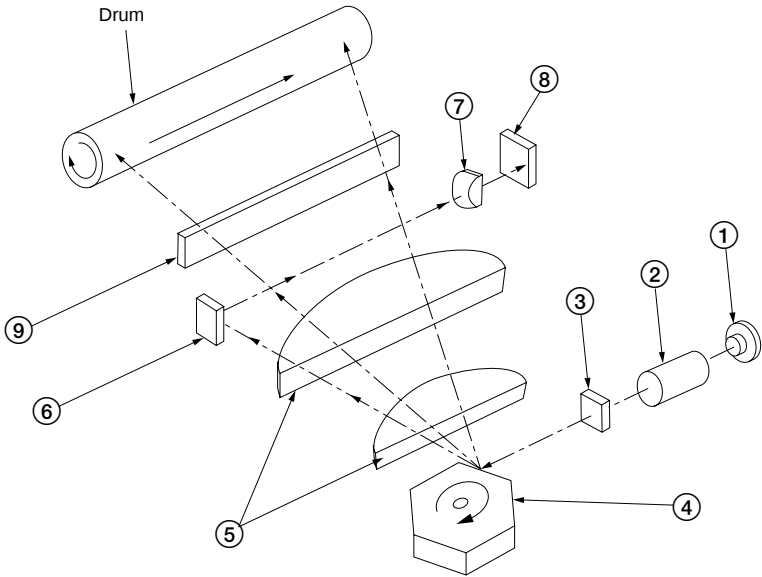


Figure 1-3-13 Laser scanner unit (2)

- ① Laser diode: Generates the laser beam which forms a latent image on the drum.
- ② Collimator lens: Collimates the diffused laser beam emitted from the laser diode to convert it into a cylindrical beam.
- ③ Cylindrical lens: Shapes the collimated laser beam to suit the printing resolution.
- ④ Polygon mirror: Six-facet mirror that rotates at approximately 31890 rpm with each face reflecting the laser beam toward the drum for one main-direction scan.
- ⑤ Lens: Corrects for non-linearity of the laser beam scanning speed on the drum surface, keeps the beam diameter constant and corrects for the vertical alignment of the polygon mirror to ensure that the focal plane of the laser beam is on the drum surface.
- ⑥ BD sensor mirror: Reflects the laser beam to the BD sensor to generate the main-direction (horizontal) sync signal.
- ⑦ Cylindrical correcting lens: Corrects for the deviation of the laser beam reflected by the BD sensor mirror to the BD sensor.
- ⑧ BD sensor: Detects the beam reflected by the BD sensor mirror, outputting a signal to the main PCB (MPCB) to provide timing for the main-direction sync signal.
- ⑨ Glass dust filter: Prevents dust from entering the unit.

The dimensions of the laser beam are as shown in Figure 1-3-14.

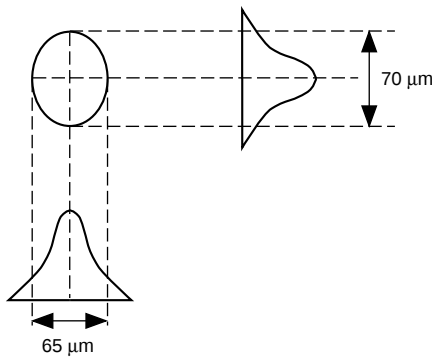


Figure 1-3-14

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 1-3-15. 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.

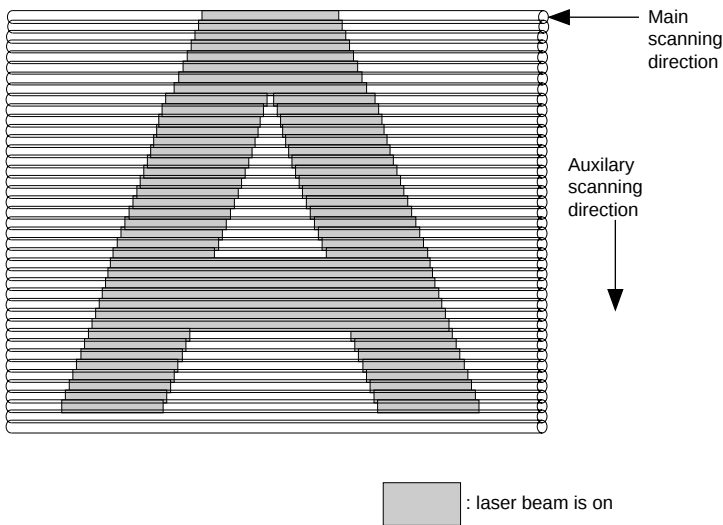


Figure 1-3-15

(4) Developing section

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

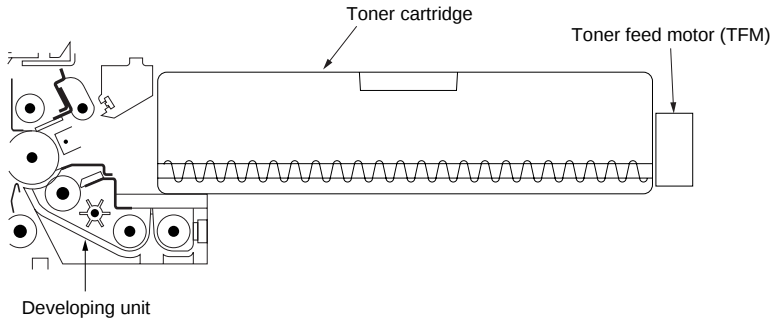


Figure 1-3-16 Developing section

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.

In the toner recycling assembly, new toner from the toner cartridge is mixed with the residual toner recovered from the cleaning section. This mixture is conveyed to the developing unit.

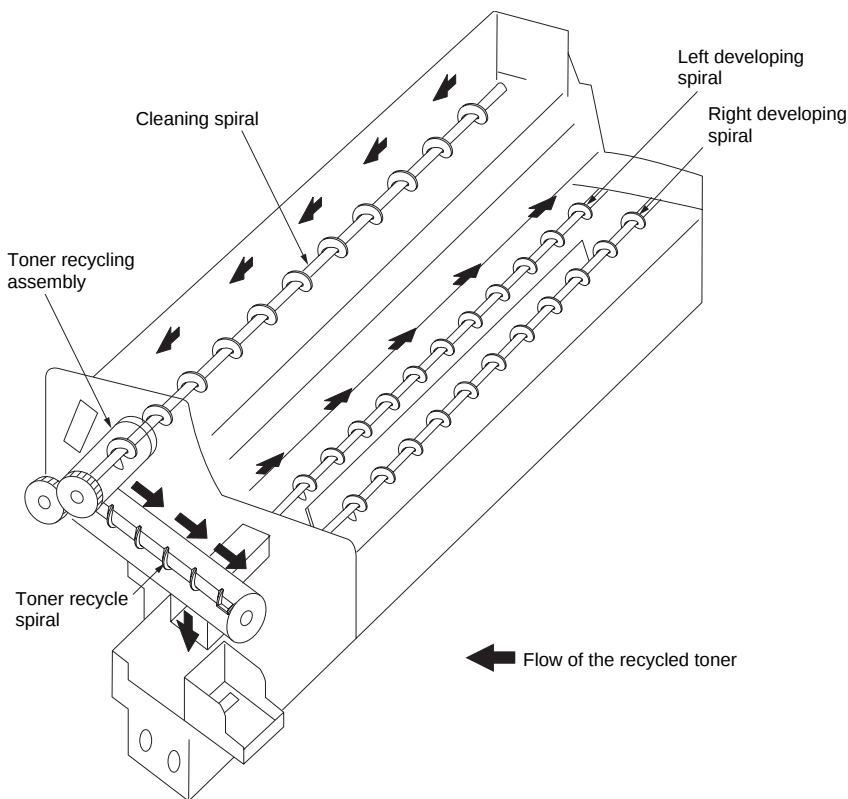
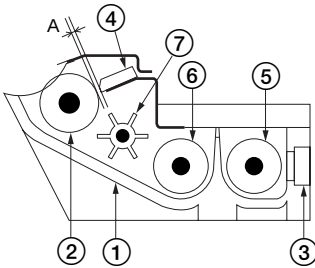


Figure 1-3-17 Toner recycling

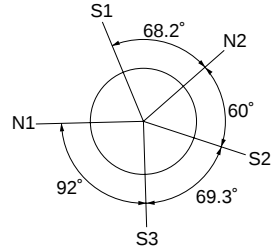
Formation of magnetic brush

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.



A: Distances between the doctor blade and developing roller: $0.6 \pm 0.05 \text{ mm}$

Magnetic poles on the developing roller



N1: $860 \times 10^{-4} \text{ T}$
 N2: $640 \times 10^{-4} \text{ T}$
 S1: $590 \times 10^{-4} \text{ T}$
 S2: $485 \times 10^{-4} \text{ T}$
 S3: $605 \times 10^{-4} \text{ T}$

Figure 1-3-18 Forming a magnetic brush

- | | |
|---------------------------|---------------------------|
| ① Developing unit housing | ⑤ Right developing spiral |
| ② Developing roller | ⑥ Left developing spiral |
| ③ Toner sensor (TNS) | ⑦ Developing paddle |
| ④ Doctor blade | |

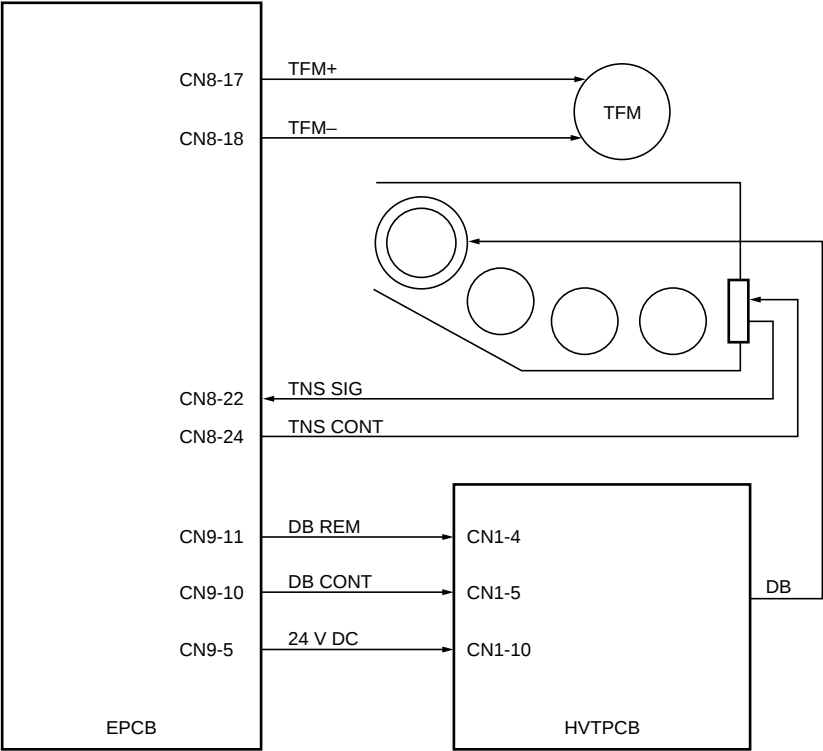


Figure 1-3-19 Developing section block diagram

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.

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.

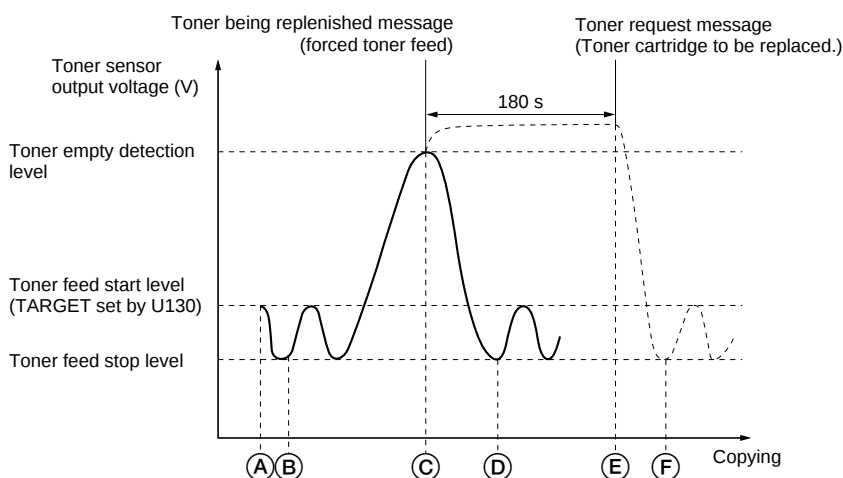


Figure 1-3-20 Toner density control

- Ⓐ If the toner sensor output voltage exceeds the toner feed start level 3 s after the drive motor (DM) has turned on (end of toner empty detection inhibit time), the toner feed motor (TFM) turns on to replenish toner.
- Ⓑ As toner is replenished, the toner sensor output voltage falls until it drops below the toner feed stop level and replenishing stops.
- Ⓒ When the toner sensor output voltage exceeds the toner empty detection level after toner replenishing is carried out, the toner being replenished message appears disabling copying and forced toner feed starts. If the toner sensor output voltage fails to fall to the toner feed stop level within 180 s of the start of forced toner feed, the toner request message appears.
- Ⓓ When toner is replenished, the toner sensor output voltage falls until it drops below the toner feed stop level and replenishing stops. After 60 s aging (15 s while copying) the toner being replenished message disappears and copying is enabled.

- Ⓔ After replacing the toner cartridge, the toner feed motor (TFM) turns on to replenish toner.
- Ⓕ When toner is replenished, the toner sensor output voltage falls until it drops to the toner feed stop level. The toner being replenished message disappears and replenishing stops.

Correcting the toner sensor control voltage

The toner sensor control voltage is corrected based on the absolute humidity and the total drive motor time so that the toner density is kept constant regardless of the changes in humidity and the total drive motor time.

Toner sensor control voltage after correction = A + B + C

A: Toner sensor control voltage before correction (value set by maintenance item 131)

B: Correction data based on the absolute humidity

C: Correction data based on the total drive motor time

• Correction based on the absolute humidity

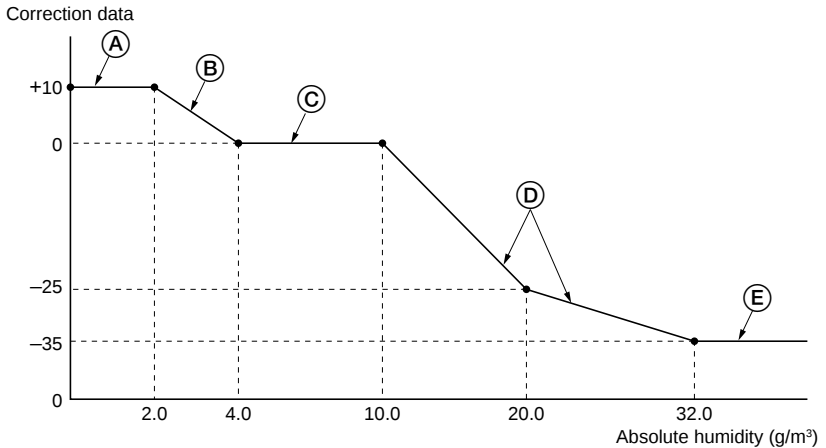


Figure 1-3-21 Correction based on the absolute humidity

- Ⓐ When the absolute humidity is between 0 and 2.0 g/m³, a constant value of +10 is added to the toner sensor control voltage.
- Ⓑ When the absolute humidity is between 2.0 and 4.0 g/m³, the correction data is reduced according to the rise in absolute humidity.
- Ⓒ When the absolute humidity is between 4.0 and 10.0 g/m³, the correction data becomes 0.
- Ⓓ When the absolute humidity is between 10.0 and 32.0 g/m³, the correction data is decreased according to the rise in absolute humidity, reducing the toner sensor control voltage.
- Ⓔ When the absolute humidity exceeds 32.0 g/m³, the correction data becomes a constant value of -35, decreasing the toner sensor control voltage.

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).

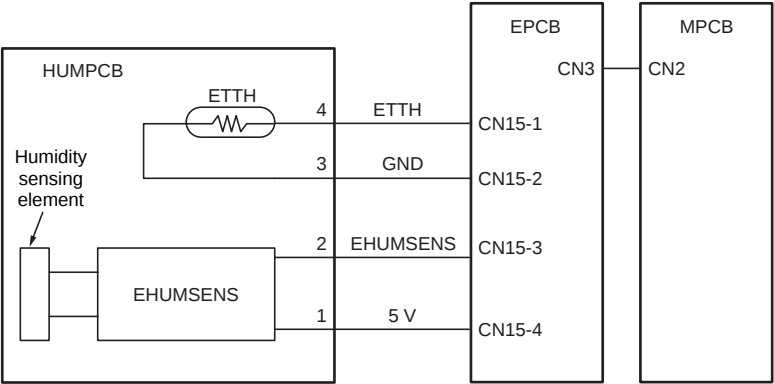


Figure 1-3-22 Absolute humidity computation block diagram

• Correction based on the total drive motor time

The toner sensor control voltage 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 voltage is regulated properly.

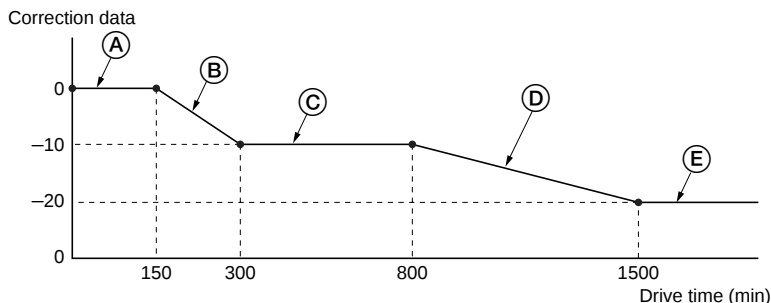


Figure 1-3-23 Correction based on the total drive motor time

- (A) When maintenance item U130 is run for initial developer setting, the total drive motor time is cleared and the toner sensor control voltage correction data becomes 0.
- (B) When the total drive motor time is between 150 and 300 min., the correction data is decreased according to the increase in the total drive motor time.
- (C) When the total drive motor time is between 300 and 800 min., the toner sensor control voltage is corrected with a constant value of -10.
- (D) When the total drive motor time is between 800 and 1500 min., the correction data is decreased according to the increase in the total drive motor time.
- (E) When the total drive motor time exceeds 1500 min., the toner sensor control voltage is corrected with a constant value of -20.

Correcting toner sensor output voltage

The toner sensor output voltage is corrected according to the absolute humidity at power-on (the main switch turning on), fixing temperature and accumulated drive time.

Toner sensor output voltage after correction = Toner sensor output voltage before correction – Correction data at power-on

Correction data at power-on = A – B

If $A - B \leq 0$, the correction data at power-on is 0

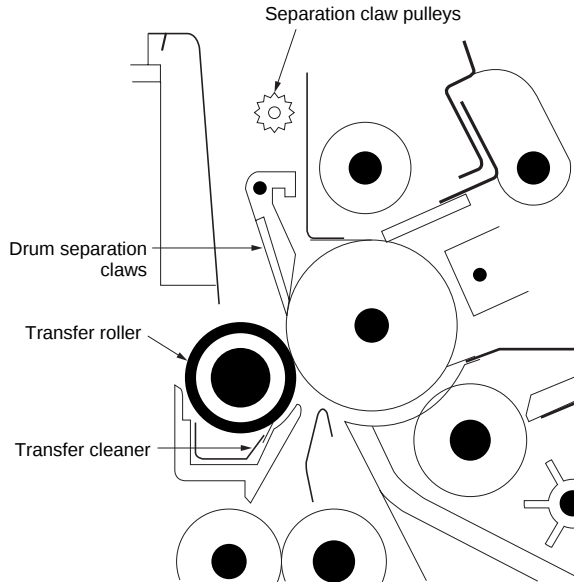
A: Correction data based on the absolute humidity and fixing temperature

B: Accumulated drive time from the main switch turning on (total drive motor on-time)

If the fixing temperature at the main switch turning on is 50°C/122°F or below, correction data A is determined as follows:

Condition	Correction data A
The absolute humidity at the last main switch turning off was 14 g/m ³ or below.	+12
The absolute humidity at the main switch turning on was 14 g/m ³ or below.	+12
Other cases than above.	0

If the fixing temperature at the main switch turning on is 50°C/122°F or above, the value of correction data A applied when the main switch was last turned off is used.

(5) Transfer and separation section**Figure 1-3-24 Transfer and separation section**

The transfer and separation section consists mainly of the transfer roller and drum separation claws.

A high voltage generated by the high-voltage transformer PCB (HVTPCB) is applied to the transfer roller for transfer charging.

Toner adhered to the transfer roller is removed by the transfer cleaner.

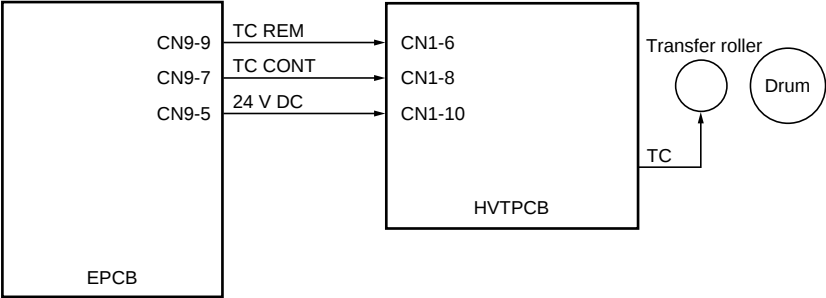
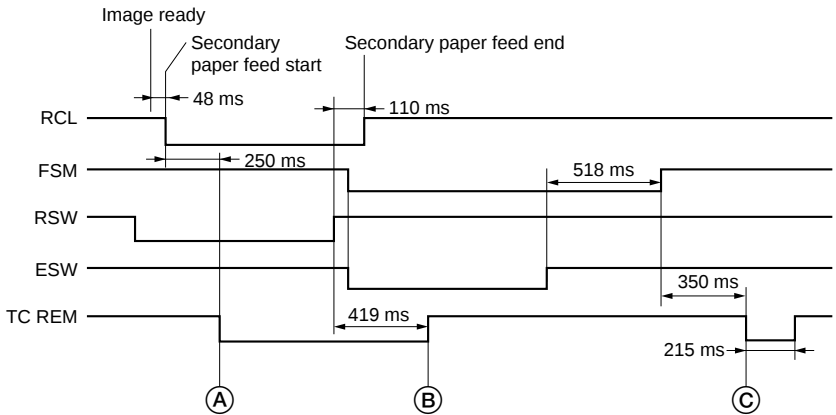


Figure 1-3-25 Transfer and separation section block diagram



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

Timing chart 1-3-4 Transfer

- Ⓐ 250 ms after the registration clutch (RCL) turns on to start secondary paper feed, transfer charging (TC REM) starts.
- Ⓑ 419 ms after the trailing edge of the paper turns the registration switch (RSW) off, transfer charging (TC REM) ends.
- Ⓒ 350 ms after the paper is ejected and the feedshift motor (FSM) turns off, transfer charging (TC REM) is conducted again for 215 ms.

(6) Cleaning section

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

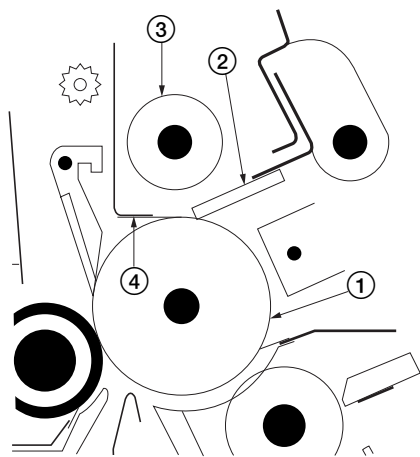


Figure 1-3-26 Cleaning section

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

(7) Charge erasing section

The cleaning lamp (CL) consists of 47 LEDs which remove residual charge from the drum surface.

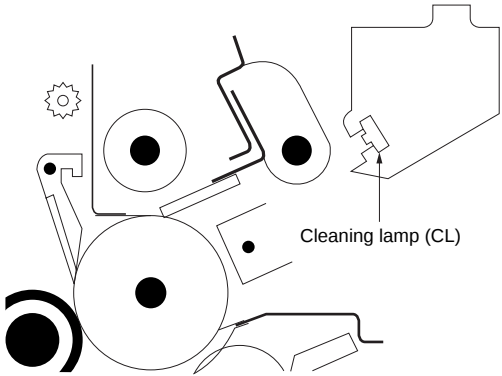


Figure 1-3-27 Charge erasing section

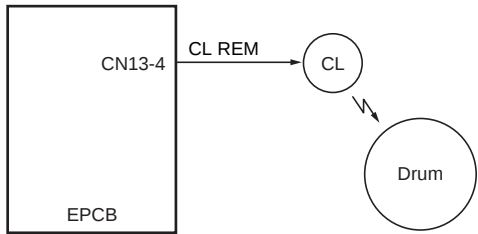
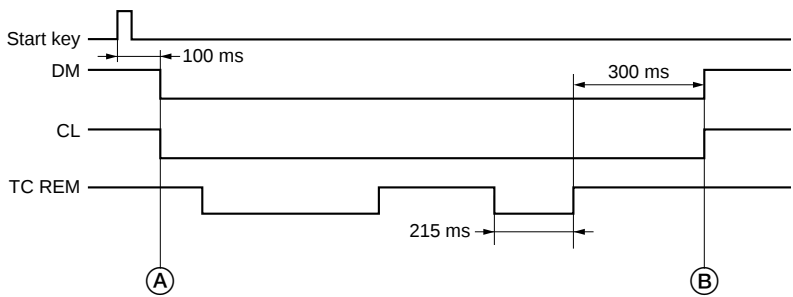


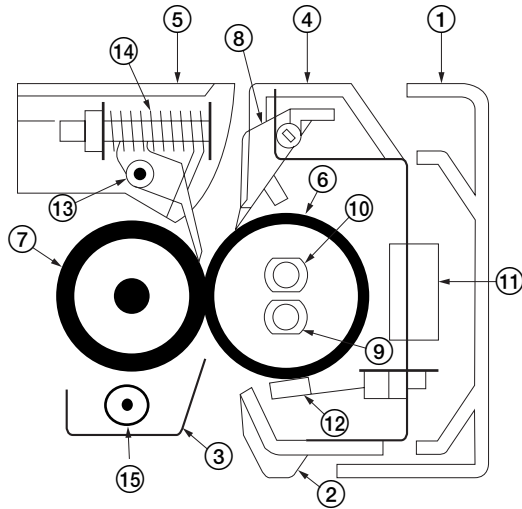
Figure 1-3-28 Charge erasing section block diagram



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

Timing chart 1-3-5 Charge erasing

- Ⓐ 100 ms after the start key is pressed, the drive motor (DM) and cleaning lamp (CL) turn on simultaneously to remove the residual charge from the drum surface after the residual toner has been removed in the cleaning section.
- Ⓑ 300 ms after 215 ms of transfer charging (TC REM) ends, the drive motor (DM) and cleaning lamp (CL) turn off simultaneously.

(8) Fixing section**Figure 1-3-29 Fixing section**

- | | |
|---------------------------------|---------------------------------|
| ① Fixing unit cover | ⑧ Heat roller separation claws |
| ② Fixing unit front right guide | ⑨ Fixing heater M (H1) |
| ③ Fixing unit front left guide | ⑩ Fixing heater S (H2) |
| ④ Fixing unit rear right guide | ⑪ Fixing unit thermostat (TH) |
| ⑤ Fixing unit rear left guide | ⑫ Fixing unit thermistor (FTH) |
| ⑥ Heat roller | ⑬ Press roller separation claws |
| ⑦ Press roller | ⑭ Fixing unit pressure spring |
| | ⑮ Fixing Cleaning Roller |

The fixing section consists of the parts shown in Figure 1-3-29. 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 fixing unit 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 unit* or feedshift unit*

* Optional

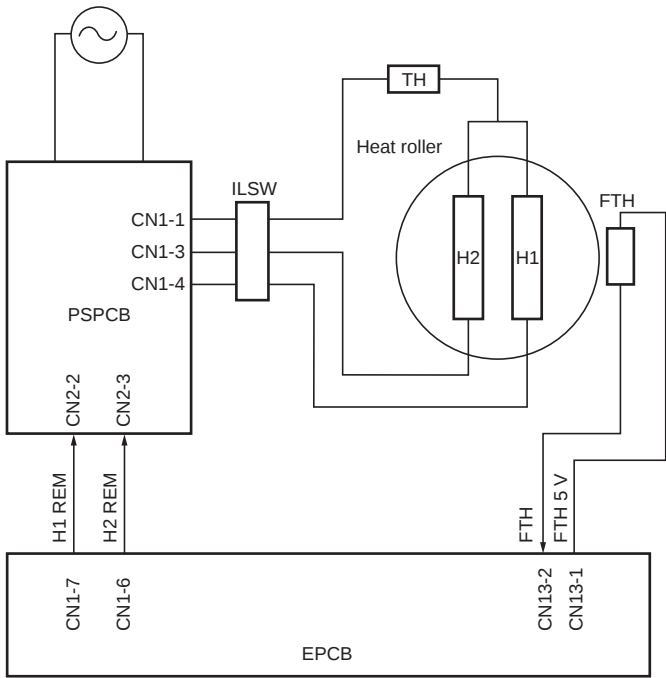


Figure 1-3-30 Fixing section block diagram

Heating the heat roller and detecting temperature

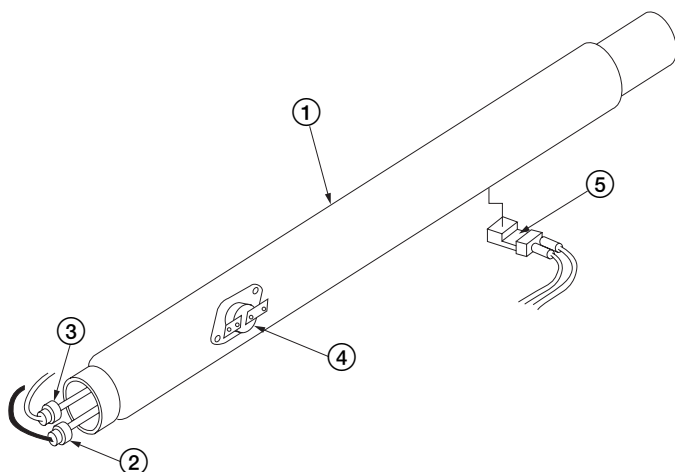


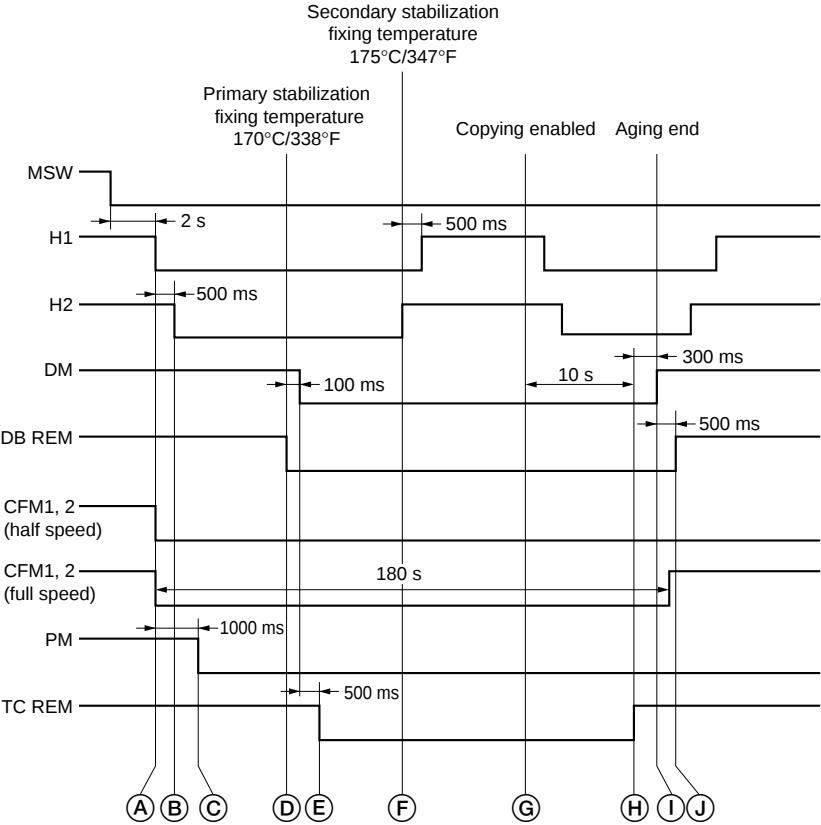
Figure 1-3-31 Heating the heat roller and detecting temperature

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

Fixing temperature control



Timing chart 1-3-6 Fixing temperature control

- Ⓐ 2 s after the main switch (MSW) is turned on, fixing heater M (H1) turns on to heat the heat roller. At the same time, cooling fan motors 1 and 2 (CFM1 and 2) turn on. When the fixing temperature is 100°C/212°F or lower at the main switch (MSW) turning on, and the absolute humidity is 15 g/m³ or higher, cooling fan motors 1 and 2 (CFM1 and 2) rotate for 180 s at full speed. Otherwise, the motors rotate at half speed.
- Ⓑ 500 ms after fixing heater M (H1) turns on, fixing heater S (H2) turns on.
- Ⓒ 1000 ms after fixing heater M (H1) turns on, the polygon motor (PM) of the laser scanner unit turns on.
- Ⓓ When the fixing temperature reaches 170°C/338°F, the copier enters primary stabilization. The developing bias (DB REM) turns on and, 100 ms later, the drive motor (DM) turns on and primary stabilization starts.

- Ⓔ 500 ms after the drive motor (DM) turns on, transfer charging (TC REM) starts.
- Ⓕ When the fixing temperature reaches 175°C/347°F, the copier enters secondary stabilization. Fixing heaters M and S (H1 and H2) are turned on and off to keep the fixing temperature at 175°C/347°F and aging starts.
- Ⓖ Copying is enabled as follows:
 1. When fixing temperature at the main switch turning on is 100°C/212°F or lower
Absolute humidity is 15 g/m³ or higher:
Copying is enabled 120 s after fixing heater M (H1) turning on.
 2. When fixing temperature at the main switch turning on is 100°C/212°F or lower
The fixing temperature at the main switch turning on is 13°C/55.4°F or higher and the ambient temperature is 18°C/64.4°F or higher:
Copying is enabled at the earlier timing of either 41 s after fixing heater M (H1) turning on or when the copier enters secondary stabilization.
Other than the above:
Copying is enabled at the later timing of either 69 s after fixing heater M (H1) turning on or when the copier enters secondary stabilization.
 3. Other conditions than 1 and 2
Copying is enabled when the copier enters secondary stabilization.
- Ⓗ 10 s after copying is enabled, transfer charging (TC REM) ends.
Note: If the fixing temperature at main switch (MSW) turning on is 100°C/212°F or lower and the absolute humidity is 15 g/m³ or higher, transfer charging (TC REM) ends 60 s after the copying is enabled.
- Ⓘ 300 ms after transfer charging (TC REM) ends, the drive motor (DM) turns off and aging ends.
- Ⓙ 500 ms after aging ends, developing bias (DB REM) turns off.

Paper separation

Paper is separated in the fixing section by the separation claws as shown in Figure 1-3-32.

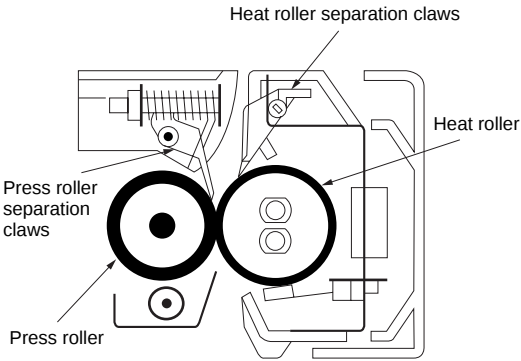


Figure 1-3-32 Paper separation

II

ELECTRICAL SECTION

II Electrical Section

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2-1-1 Electrical parts layout

(1) Copier

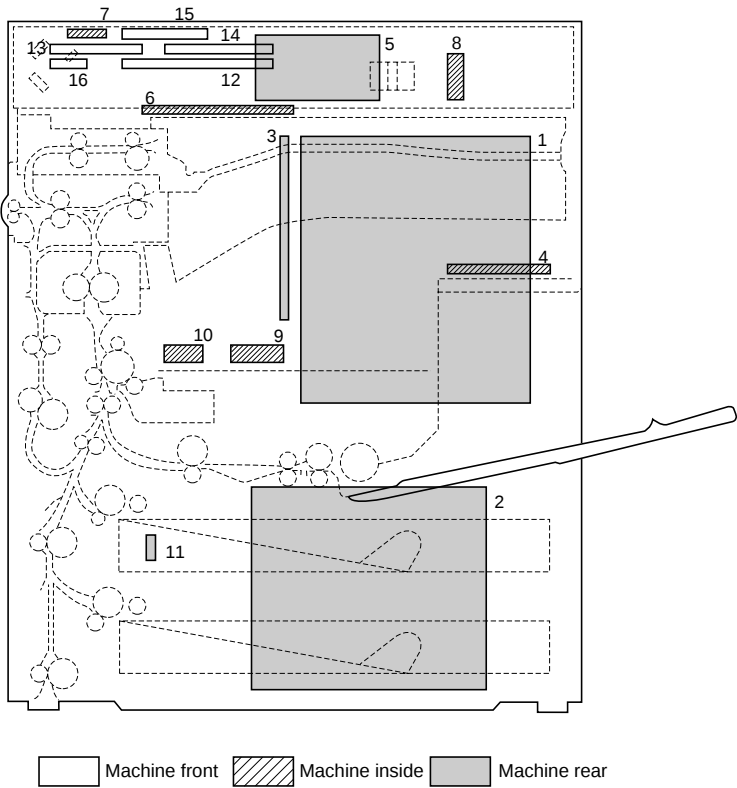


Figure 2-1-1 Copier (PCBs)

- 1. Main PCB (MPCB) Controls the other PCBs, electrical components and optional devices; modifies and modulates image signal.
- SIMM Stores data during memory copying.
- 2. Power source PCB (PSPCB) Generates 24 V DC, +12 V DC, 5V DC and 3.3 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.
- 5. Scanner motor PCB (SMPCB) Controls the scanner motor.
- 6. Scanner control PCB (SCPCB) Controls the scanning section, SRDF* and image processing.
- 7. Inverter PCB (INPCB) Controls the exposure lamp.
- 8. CCD PCB (CCDPCB) Reads the image off originals.
- 9. Laser diode PCB (LDPCB) Generates and controls the laser light.
- 10. Beam detection PCB (BDPCB). Detects the laser light.
- 11. Humidity sensor PCB (HUMPCB) Detects the absolute humidity.
 - External humidity sensor (EHUMSENS) ... Detects the external humidity.
 - External temperature thermistor (ETTH) ... Detects the external temperature.
- 12. Operation unit main PCB (OMPCB) Controls the operation unit.
- 13. Operation unit left PCB (OLPCB) Consists of operation keys and display LEDs.
- 14. *Operation unit right PCB (ORPCB)..... Consists of operation keys and display LEDs.*
- 15. LCD Displays copy modes and messages.
- 16. *LCD inverter PCB (LCDINPCB) Controls lighting of the CFL.*

* Optional.

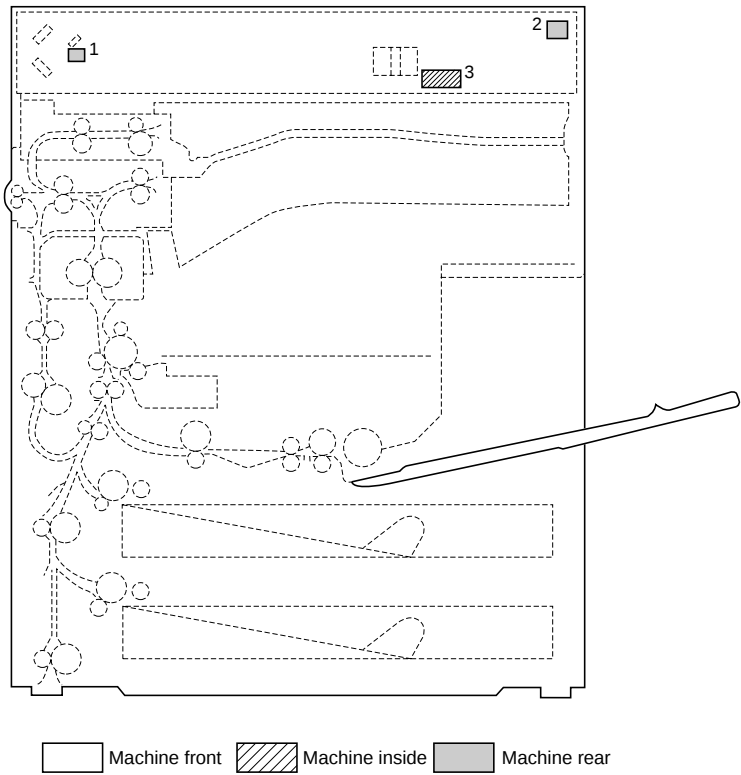


Figure 2-1-2 Copier (switches and sensors in the scanning system)

1. Scanner home position switch (SHPSW) Detects the scanner in the home position.
2. Original detection switch (ODSW) Operates the original size sensor.
3. Original size sensor (OSS) Detects the length of the original on the contact glass.

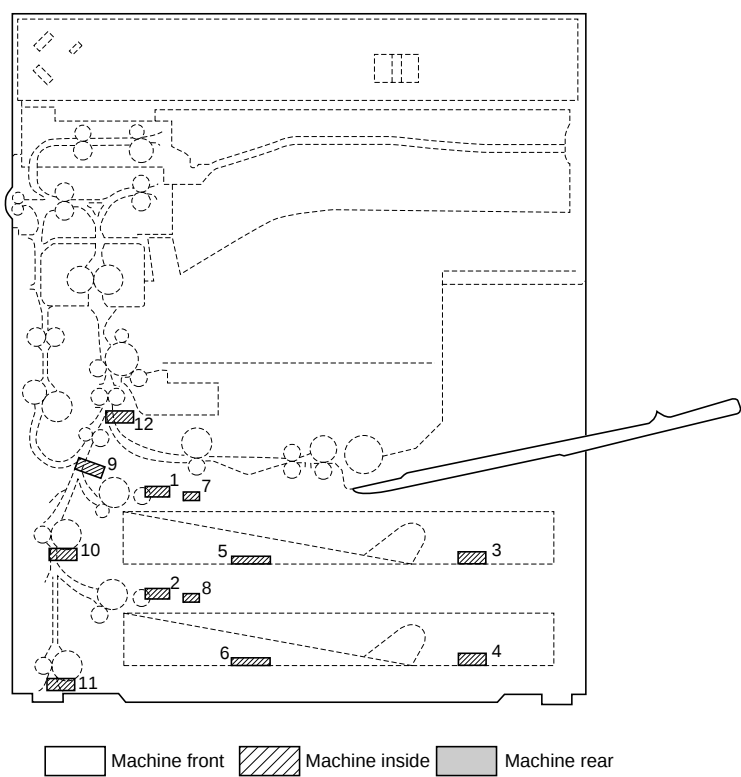


Figure 2-1-3 Copier (switches and sensors in the paper feed and conveying system)

- 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.
- 4. Lower paper length switch (PLSW-L) Detects the length of paper in the lower drawer.
- 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. Upper lift limit switch (LICSW-U) Detects the upper drawer lift reaching the upper limit.
- 8. Lower lift limit switch (LICSW-L) Detects the lower drawer lift reaching the upper limit.
- 9. *Feed switch 1 (FSW1) Controls the feed clutch 1 drive timing.*
- 10. *Feed switch 2 (FSW2) Controls the feed clutch 2 drive timing.*
- 11. *Feed switch 3 (FSW3) Controls the feed clutch 3 drive timing.*
- 12. *Registration switch (RSW) Controls the primary paper feed end timing.*

* Optional.

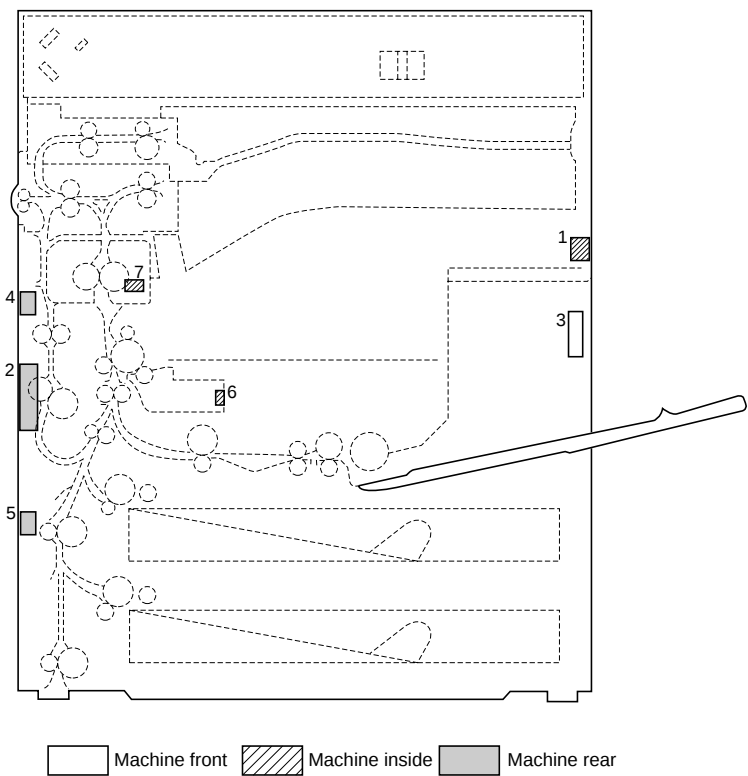


Figure 2-1-4 Copier (switches and sensors)

- | | |
|---------------------------------------|---|
| 1. Main switch (MSW) | Turns the AC power on and off. |
| 2. Interlock switch (ILSW) | Turns the AC power for the fixing heaters on and off. |
| 3. Safety switch 1 (SSW1) | Breaks the safety circuit when the front cover is opened; resets paper jam detection. |
| 4. Safety switch 2 (SSW2) | Breaks the safety circuit when left 1 cover is opened; resets paper jam detection. |
| 5. Safety switch 3 (SSW3) | Breaks the safety circuit when left 2 cover is opened; resets paper jam detection. |
| 6. Toner sensor (TNS) | Detects the toner density in the developing section. |
| 7. Fixing unit thermistor (FTH) | Detects the heat roller temperature. |

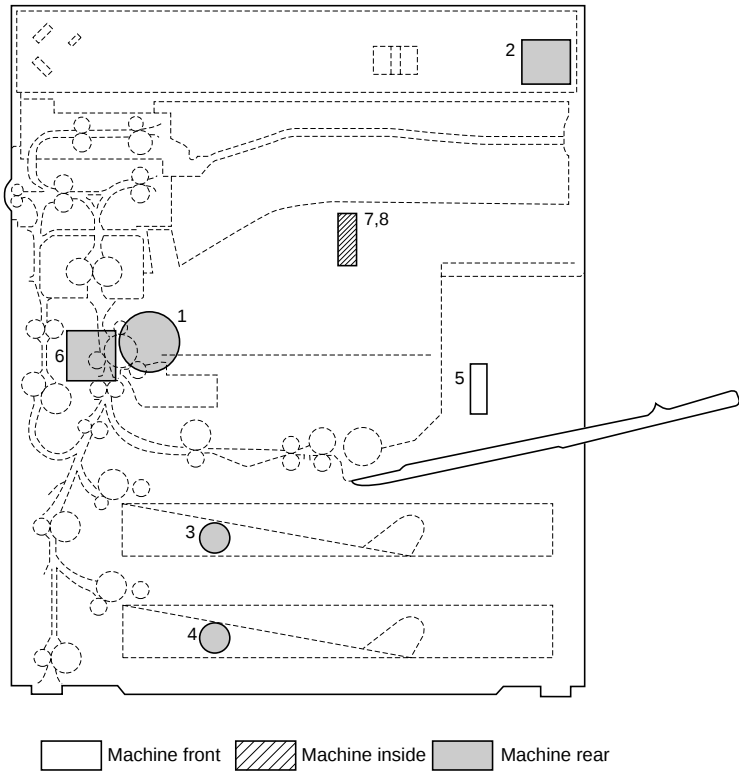


Figure 2-1-5 Copier (motors)

1. Drive motor (DM) Drives each section of the copier.
2. Scanner motor (SM) Drives the scanner.
3. Upper lift motor (CLM-U) Drives the upper drawer lift.
4. Lower lift motor (CLM-L) Drives the lower drawer lift.
5. Toner feed motor (TFM) Replenishes toner.
6. Paper conveying section fan motor Assists paper advance along the paper
(PCFM) conveying path and exhausts heat.
7. Cooling fan motor 1 (CFM1) Cools the machine interior.
8. Cooling fan motor 2 (CFM2) Cools the machine interior.

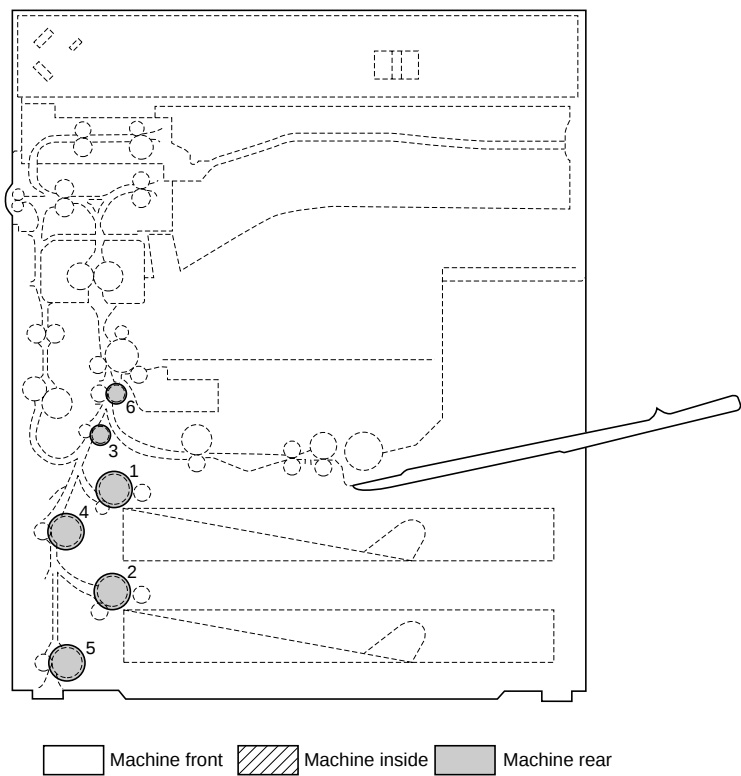


Figure 2-1-6 Copier (clutches and solenoids)

- 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 the right feed roller.
- 4. Feed clutch 2 (FCL2) Controls the drive of feed roller 1.
- 5. Feed clutch 3 (FCL3) Controls the drive of feed roller 2.
- 6. Registration clutch (RCL) Secondary paper feed.

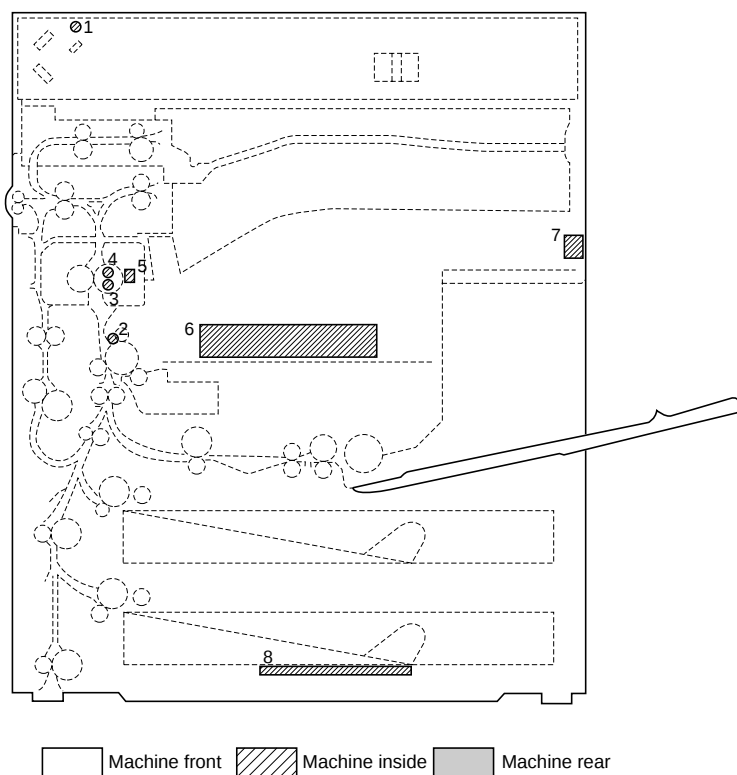


Figure 2-1-7 Copier (other components)

- | | |
|--------------------------------------|--|
| 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. Laser scanner unit (LSU) | Writes image. |
| • Polygon motor (PM) | Drives the polygon mirror. |
| • Laser diode PCB (LDPCB) | Generates and controls the laser light. |
| • Beam detection PCB (BDPCB) | Detects the laser light. |
| 7. Total counter (TC) | Displays the total number of copies produced. |
| 8. Drawer heater (CH) | Dehumidifies drawer section (optional). |

CONTENTS

2-2 Detection of Paper Misfeed

2-2-1 Paper misfeed detection 2-2-1

2-2-2 Paper misfeed detection conditions 2-2-2

2-2-1 Paper misfeed detection

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

To remove the jammed paper, open the drawer, front cover, left 1 cover or left 2 cover as necessary.

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

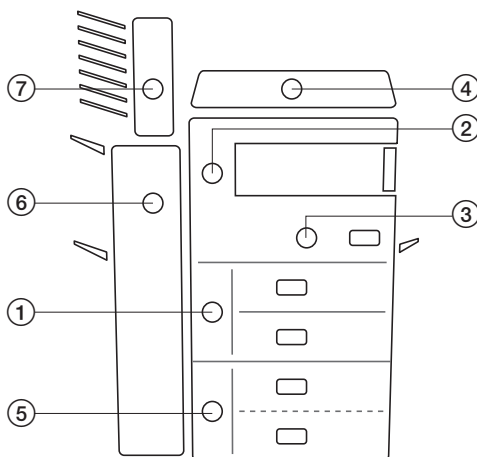


Figure 2-2-1 Misfeed location indication

- | | |
|---|--------------------|
| ① Paper feed section | ⑤ Paper feed unit* |
| ② Paper conveying section,
fixing section, feedshift unit*
or eject unit* | ⑥ Finisher* |
| ③ Bypass unit | ⑦ Mailbox* |
| ④ SRDF* | |

* Optional.

2-2-2 Paper misfeed detection conditions

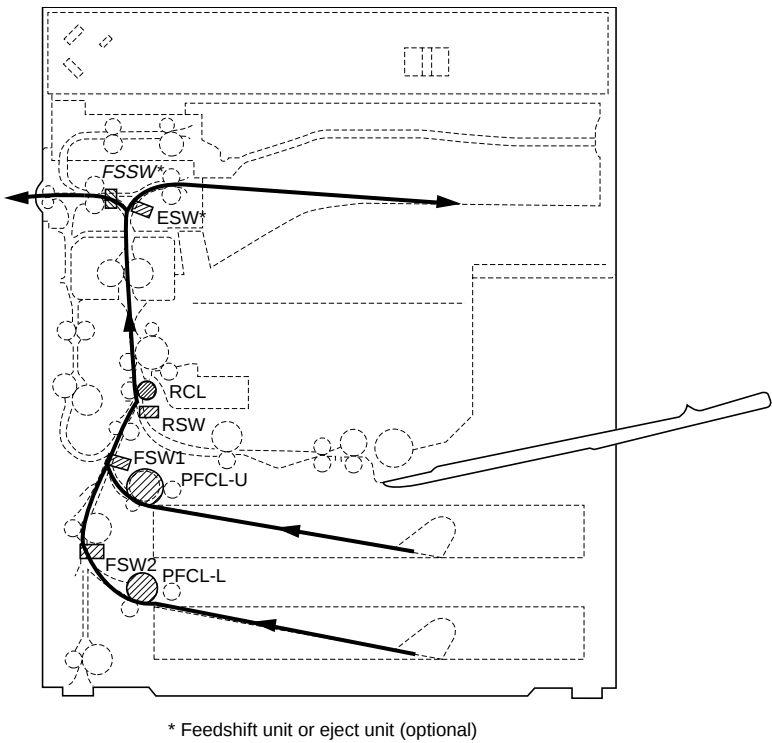


Figure 2-2-2

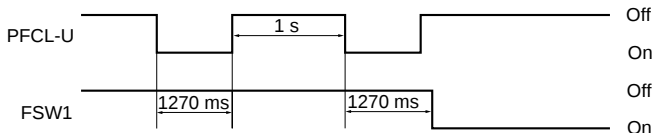
1. Jam at power-on

- One or more of the switches in the paper feed conveying system is on when the main switch is turned on. (**jam code 00**)

2. Paper feed section [The detection time (ms) is for A4 (lateral)/8¹/₂"×11" paper]

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

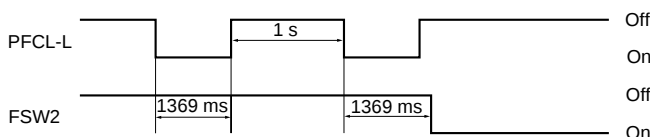
Feed switch 1 (FSW1) does not turn on within 1270 ms of the upper paper feed clutch (PFCL-U) turning on; the clutch is then held off for 1 s and turned back on, but the switch again fails to turn on within 1270 ms of the retry.



Timing chart 2-2-1

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

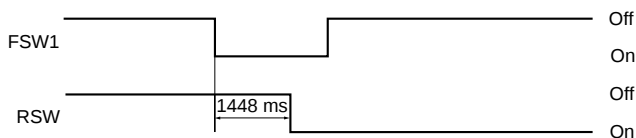
Feed switch 2 (FSW2) does not turn on within 1369 ms of the lower paper feed clutch (PFCL-L) turning on; the clutch is then held off for 1 s and turned back on, but the switch again fails to turn on within 1369 ms of the retry.



Timing chart 2-2-2

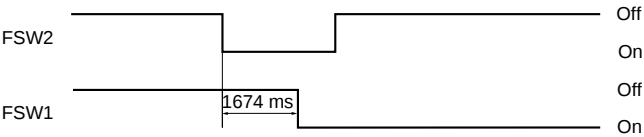
- Jam in copier vertical paper conveying section (**jam code 18**)

The registration switch (RSW) does not turn on within 1448 ms of feed switch 1 (FSW1) turning on.



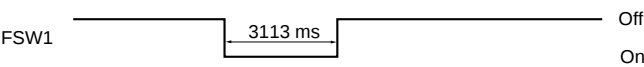
Timing chart 2-2-3

Feed switch 1 (FSW1) does not turn on within 1674 ms of feed switch 2 (FSW2) turning on.



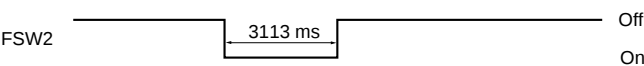
Timing chart 2-2-4

- Multiple sheets in paper feed section (**jam code 21**)
When paper is fed from the upper drawer, feed switch 1 (FSW1) does not turn off within 3113 ms of turning on.



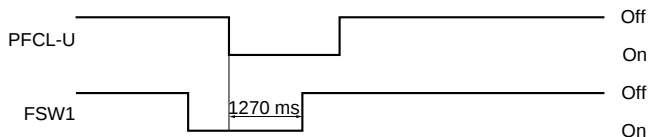
Timing chart 2-2-5

When paper is fed from the lower drawer, feed switch 2 (FSW2) does not turn off within 3113 ms of turning on.



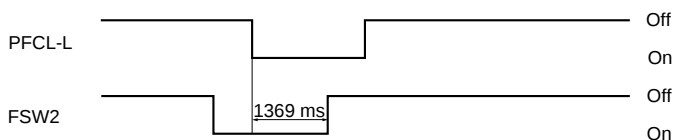
Timing chart 2-2-6

Feed switch 1 (FSW1) does not turn off within 1270 ms of the upper paper feed clutch (PFCL-U) turning on.



Timing chart 2-2-7

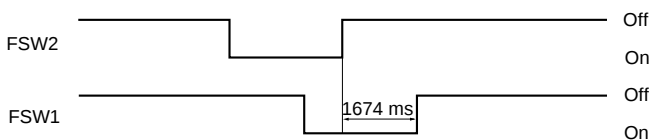
Feed switch 2 (FSW2) does not turn off within 1369 ms of the lower paper feed clutch (PFCL-L) turning on.



Timing chart 2-2-8

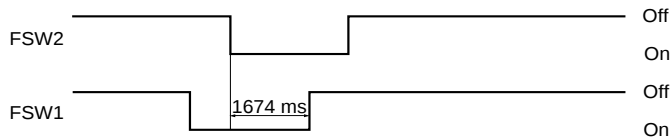
- Multiple sheets in copier vertical conveying section (**jam code 22**)

Feed switch 1 (FSW1) does not turn off within 1674 ms of feed switch 2 (FSW2) turning off.



Timing chart 2-2-9

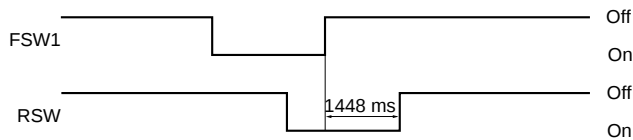
Feed switch 1 (FSW1) does not turn off within 1674 ms of feed switch 2 (FSW2) turning on.



Timing chart 2-2-10

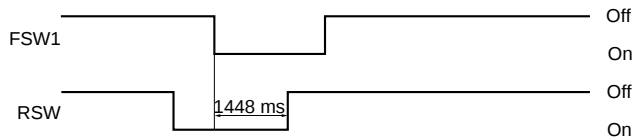
3. Paper conveying section [The detection time (ms) is for A4 (lateral)/8½"×11" paper]

- Jam in registration/transfer section (jam code 30)
The registration switch (RSW) does not turn off within 1448 ms of feed switch 1 (FSW1) turning off.



Timing chart 2-2-11

The registration switch (RSW) does not turn off within 1448 ms of feed switch 1 (FSW1) turning on.

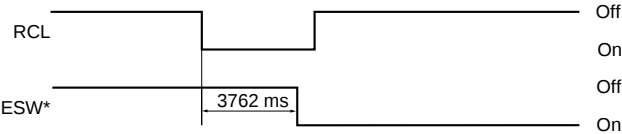


Timing chart 2-2-12

4. Fixing section [The detection time (ms) is for A4 (lateral)/8¹/₂"×11" paper]

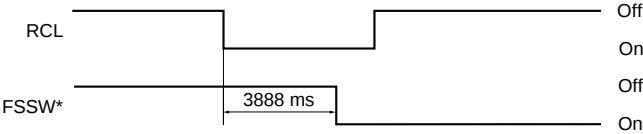
• Jam in fixing section (**jam code 40**)

The eject switch (ESW) does not turn on within 3762 ms of the registration clutch (RCL) turning on.



Timing chart 2-2-13

The feedshift switch (FSSW) does not turn on within 3888 ms of the registration clutch (RCL) turning on.



Timing chart 2-2-14

* Feedshift unit or eject unit (optional)

CONTENTS

2-3 Operation of the PCBs

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The power source PCB (PSPCB) is a switching regulator which converts an AC input to generate 24 V DC, 5 V DC, 3.3 V DC and 12 V DC. It consists of a noise filter circuit, rectifier circuit, switching control circuit, 24 V DC output circuit, 5 V DC output circuit, 3.3 V DC output circuit, 12 V DC output circuit and fixing heater control circuit.

The noise filter circuit, which consists mainly of the line filters L1 and L2 and capacitors, attenuates external noise, and prevents the switching noise generated on the power source PCB 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 DB1. The smoothing capacitor C6 smoothes out the pulsed voltage from the diode bridge.

The switching control circuit turns on/off the power MOSFET Q1 and Q2 via the PWM controller IC1 to switch the current induced in the secondary coil of the transformer T1.

The 24 V DC output circuit smoothes out the voltage from the current induced in the secondary coil of the transformer T1 via diode D30 and smoothing capacitors C30, C32, C36, C40 and C48, and outputs a stable 24 V DC by the function of shunt regulator IC30. The output status of the 24 V DC is fed back to the PWM controller IC1 in the switching control circuit via the photo-coupler PC1. Based on the feedback, the PWM controller IC1 changes the duty cycle of the pulse that turns power MOSFET Q1 and Q2 on/off in order to adjust the 24 V DC output.

The 5 V DC output circuit converts the 24 V DC from the 24 V DC output circuit to a stable 5 V DC by means of the 4-pin regulator IC40.

The 3.3 V DC output circuit converts the 5 V DC from the 5 V DC output circuit to a stable 3.3 V DC by means of the 4-pin regulator IC41.

The 12 V DC output circuit smoothes out the voltage from the current induced in the secondary coil of the transformer T1 via diodes D50 and D51 and smoothing capacitor C53, and generates a stable 12 V DC by the function of the 4-pin regulator IC51.

The fixing heater control circuit is controlled by the fixing heater M light signal H1 REM from the engine PCB (EPCB). The phototriac PC20 turns on when this signal goes low. When phototriac PC20 turns on, it will turn the triac TRC20 on (continuity present), which then passes AC current. The fixing heater M (H1) then turns on. The sub fixing heater control circuit is controlled by the fixing heater S light signal H2 REM. Its components include phototriac PC21 and triac TRC21.

2-3-2 Main PCB

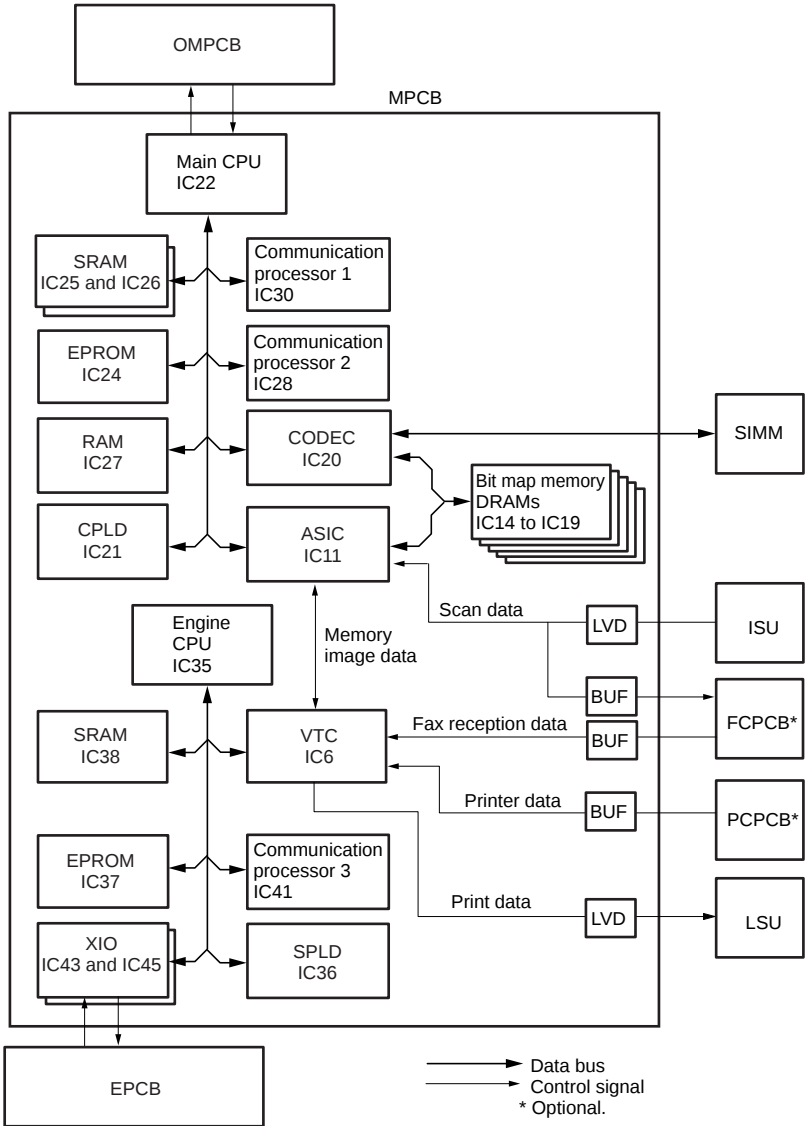


Figure 2-3-2 Main PCB block diagram

The main PCB (MPCB) consists of the main CPU IC22 and the engine CPU IC35. The main CPU IC22 controls the memory copying and communication with other PCBs. The engine CPU IC35 controls the engine drive system and communication with other PCBs.

The main CPU IC22 operates basically on a 16-bit bus (8 bits for some devices). It uses SRAM IC25 and IC26 for work memory. In accordance with the control program in EPROM IC24, the main CPU IC22 communicates with the engine CPU IC35, the operation unit main PCB (OMPCB), fax control PCB (FCPCB)*, and printer control PCB (PCPCB)* via the serial communication function in the CPU, communication processor 1 IC30, and communication processor 2 IC28. The main CPU IC22 also controls the ASIC IC11 and CODEC IC20 during memory copying for sort and rotation copies. The main CPU IC22 is connected to the backup RAM IC27 that stores the machine status.

The engine CPU IC35 operates on an 8-bit bus, using SRAM IC38 for work memory. In accordance with the control program in EPROM IC37, the engine CPU IC35 communicates with the main CPU IC22 and external devices such as the paper feed unit* and the finisher* via the serial communication function of the CPU and communication processor 3 IC41. The engine CPU IC35 also controls the LSU via VTC IC6, which is for the image output control, and drives the machine, conveys paper and detects abnormality via XIO IC43 and IC45.

* Optional

2-3-3 Scanner control PCB

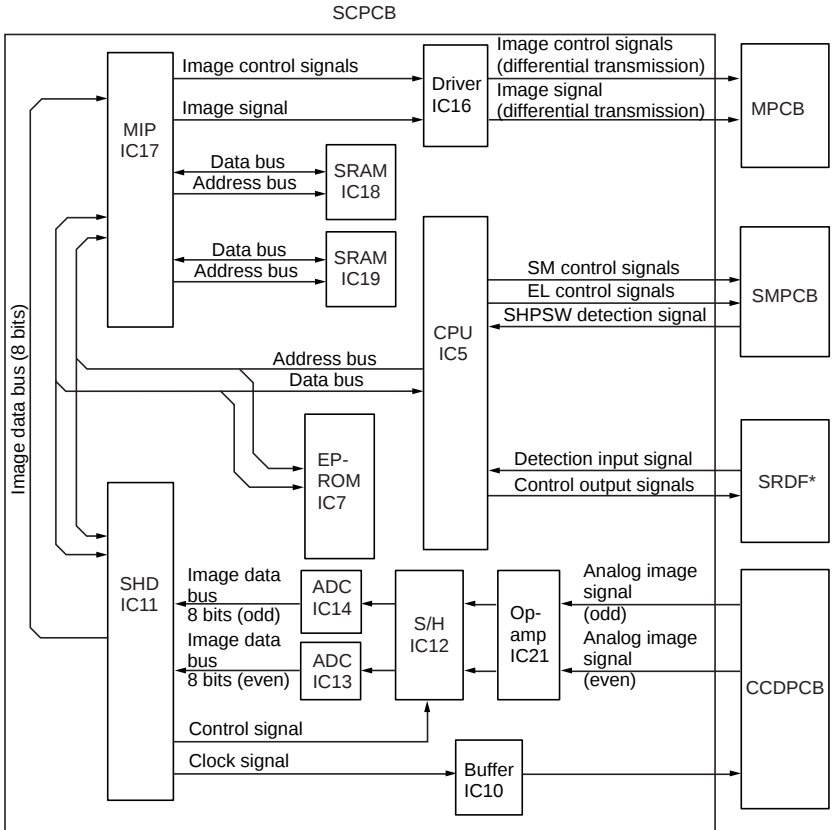


Figure 2-3-3 Scanner control PCB block diagram

The scanner control PCB (SCPCB) consists of CPU IC5, MIP IC17, SHD IC11, and EPROM IC7. In accordance with the control program in EPROM IC7, the CPU IC5 controls the scanner motor PCB (SMPCB), SRDF*, MIP IC17 and SHD IC11. SHD IC11 outputs clock signals to the CCD PCB (CCDPCB) to drive the CCD, which produces analog image signals (odd and even) according to the scanned image. The analog signals are converted to a digital image data by ADC IC13 and IC14 via operational amplifier IC21 and S/H IC12, and fed to SHD IC11. The digital image data obtained is processed by SHD IC11 and MIP IC17, serialized by driver IC16 in LVDS (Low Voltage Differential Signaling), and then differentially transmitted to the main PCB (MPCB).

* Optional

2-3-4 Engine PCB

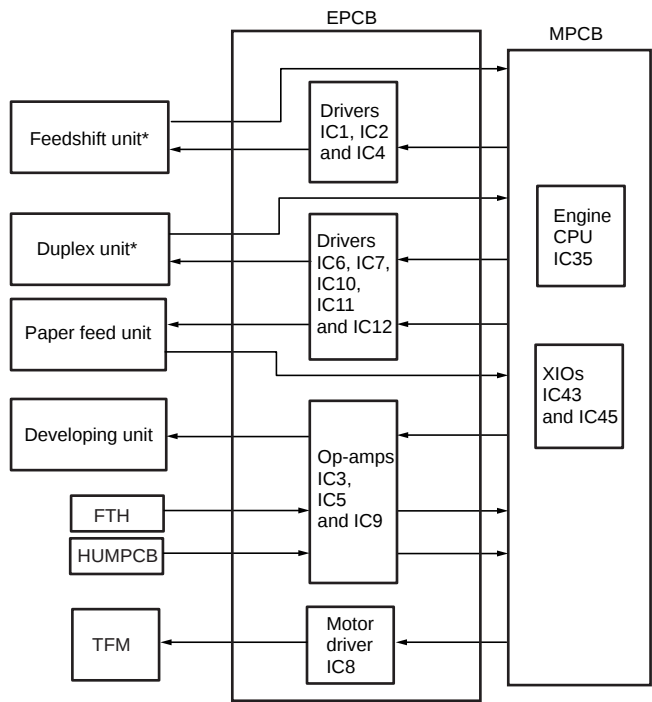


Figure 2-3-4 Engine PCB block diagram

The engine PCB (EPCB), which is directly connected to the main PCB (MPCB) via connectors, serves to interface control signals between the engine CPU IC35 on the main PCB (MPCB) and each drive system unit.

The control signal from the main PCB (MPCB) controls the drive system units via drivers IC1, IC2, and IC4, and drivers IC6, IC7, IC10, IC11, and IC12.

The control signal from the main PCB (MPCB) also controls the toner feed motor (TFM) via the motor driver IC8.

The detection signals from components such as the fixing unit thermistor (FTH) and humidity sensor PCB (HUMPCB) are sent to the main PCB (MPCB) via operational amplifiers IC3, IC5 and IC9.

2-3-5 Scanner motor PCB

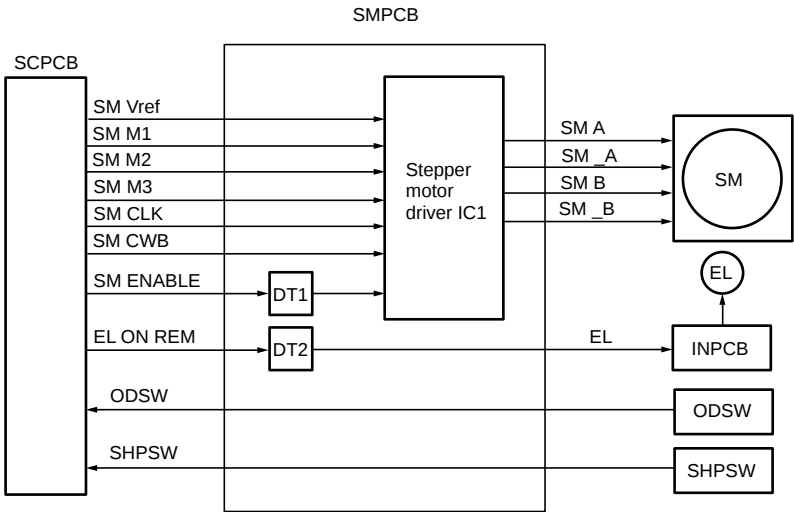


Figure 2-3-5 Scanner motor PCB block diagram

The scanner motor PCB (SMPCB) consists of the stepper motor driver IC1 and digital transistors DT1 and DT2.

The current setting voltage SM Vref, mode signals SM M1, SM M2, SM M3, and SM CWB, phase switching clock signal SM CLK, and drive/stop signal SM ENABLE from the scanner control PCB (SCPCB) control the scanner motor (SM).

The control signal EL REM sent from the scanner control PCB (SCPCB) to the inverter PCB (INPCB) via the digital transistor DT2 controls the exposure lamp (EL).

The scanner motor PCB (SMPCB) is also a relay circuit that transmits signals from the original detection switch (ODSW) and scanner home position switch (SHPSW).

2-3-6 Operation unit main PCB, operation unit right PCB and operation unit left PCB

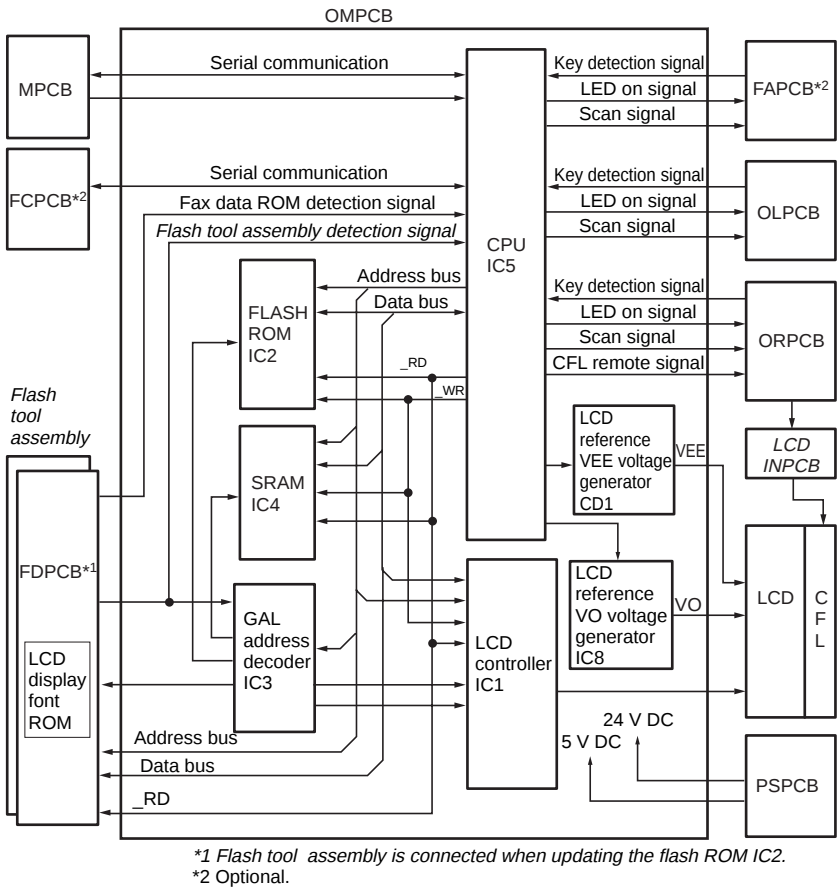


Figure 2-3-6 Operation unit main PCB, operation unit right PCB and operation unit left PCB block diagram

The operation unit main PCB (OMPCB) consists of the CPU IC5; flash ROM IC2, which contains the control program and LCD display font; SRAM IC4 for executing the control program and LCD controller IC1. The CPU IC5 controls the entire operation unit directly or via LCD controller IC1, driver IC and transistors.

The operation unit right PCB (ORPCB), operation unit left PCB (OLPCB), and fax operation unit PCB (FAPCB)* consist of key switches and LEDs. They are controlled by the scan signals and LED lighting signals from the operation unit main PCB (OMPCB).

The LCD inverter PCB (LCDINPCB) is turned on/off by the CFL remote signals from the operation unit main PCB (OMPCB) via the operation unit right PCB (ORPCB).

For operation of fax, the operation unit main PCB (OMPCB) selects the ROM on the fax data ROM PCB (FDPCB)* for LCD display font. Upon detection of the flash tool assembly (which is connected when it is required to update the flash ROM), the operation unit main PCB (OMPCB) writes to the flash ROM IC2.*

* Optional.

2-3-7 CCD PCB

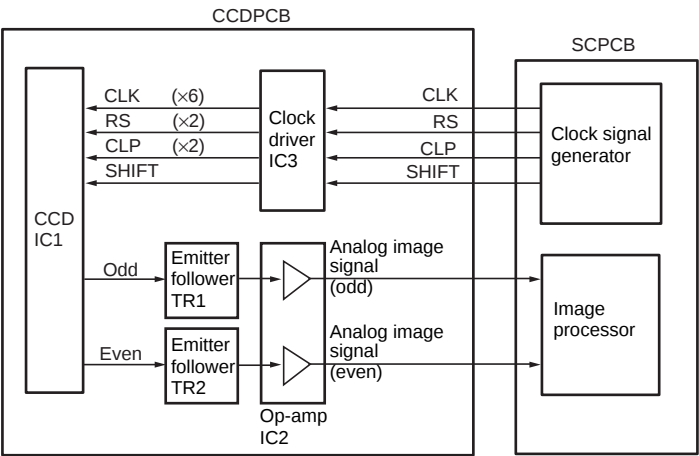


Figure 2-3-7 CCD PCB block diagram

The clock signals SHIFT, CLP, RS and CLK from the clock signal generator on the scanner control PCB (SCPCB) are sent to the CCD PCB (CCDPCB), where clock driver IC3 generates eleven clock signals to drive CCD IC1. Upon reception of clock signals, the CCD IC1 outputs analog image signals according to the density of the image. Even- and odd-numbered pixels are output separately. These analog image signals are amplified by the operational amplifier IC2 via the emitter followers TR1 and TR2, and then sent to the image processor of the scanner control PCB (SCPCB).

2-3-8 Laser diode PCB and beam detection PCB

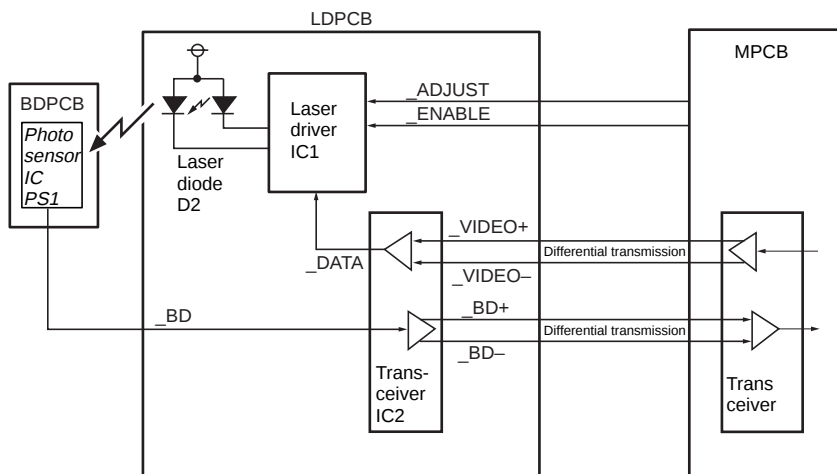


Figure 2-3-8 Laser diode PCB and beam detection PCB block diagram

The laser diode PCB (LDPCB) consists of laser diode D2, laser driver IC1, and transceiver IC2.

The laser driver IC1 on the laser diode PCB (LDPCB) turns the laser diode D1 on/off according to the image data (*_DATA*) differentially transmitted from the main PCB (MPCB) transceiver to the laser diode PCB (LDPCB) transceiver IC2.

Upon detection of laser beam from the laser diode D2 of the laser diode PCB (LDPCB), the beam detection PCB (BDPCB), on which photo sensor IC PS1 is mounted, outputs horizontal sync signal (*_BD*). This signal is sent to the laser diode PCB (LDPCB), and differentially transmitted from the transceiver IC2 to the main PCB (MPCB) transceiver. The laser diode PCB (LDPCB) adjusts the laser diode drive current (APC) for each line scanned outside the image area when *_ADJUST* is low to keep the laser beam output constant.

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 - 85%RH
3. Power supply: 120 V AC, 10 A
220 - 240 V AC, 5.5 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"

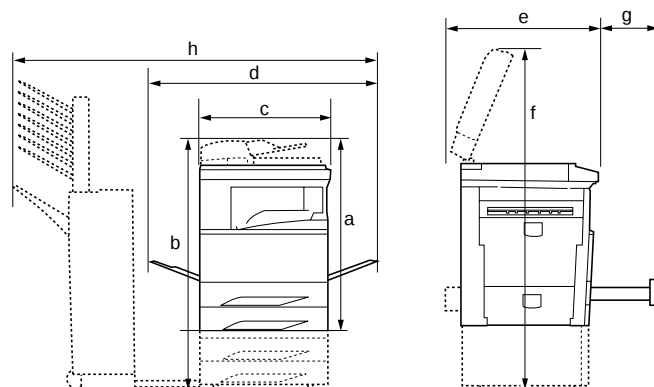


Figure 3-1-1 Installation dimensions

a: 855 mm/33¹¹/₁₆"

d: 1010 mm/39³/₄"

g: 423 mm/16⁵/₈"

b: 1170 mm/46¹/₁₆"

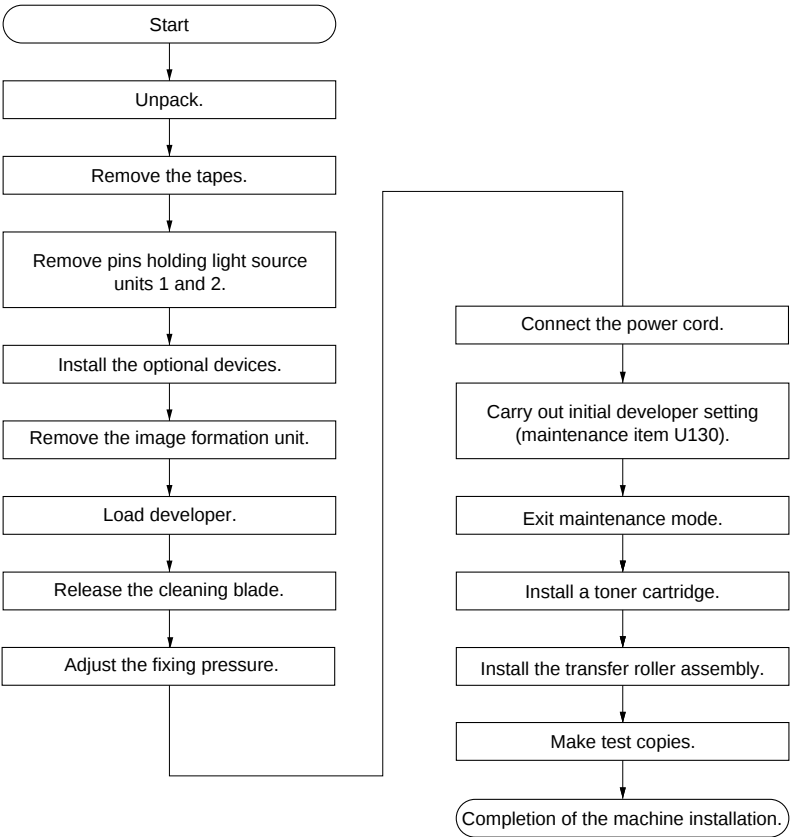
e: 633 mm/24¹⁵/₁₆"

h: 1630 mm/64³/₁₆"

c: 585 mm/23¹/₁₆"

f: 1530 mm/60¹/₄"

(2) Installation procedure



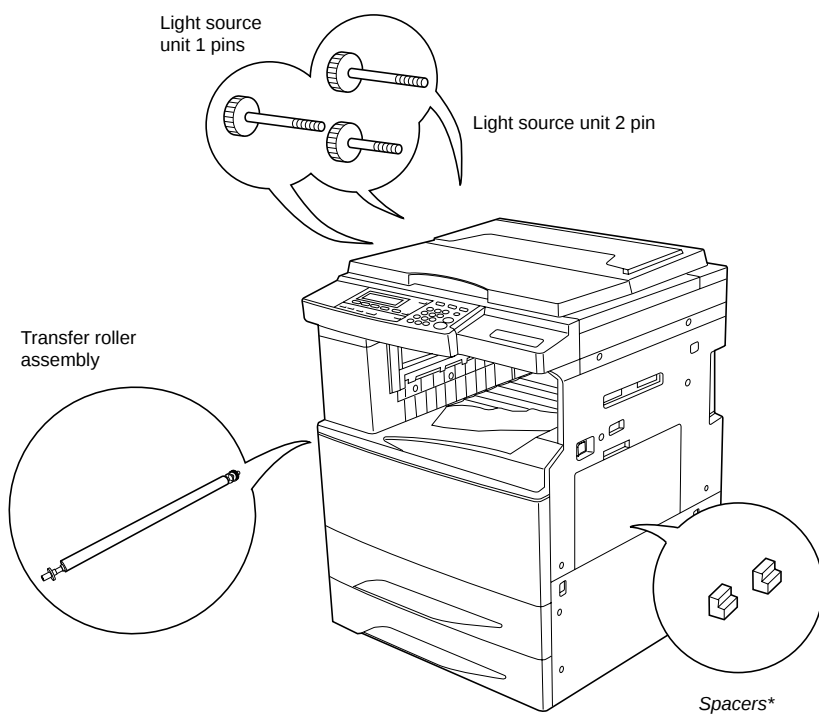


Figure 3-1-2

** For 220 - 240 V specifications only.*

Note: The original cover is standard for 220 - 240 V specifications.

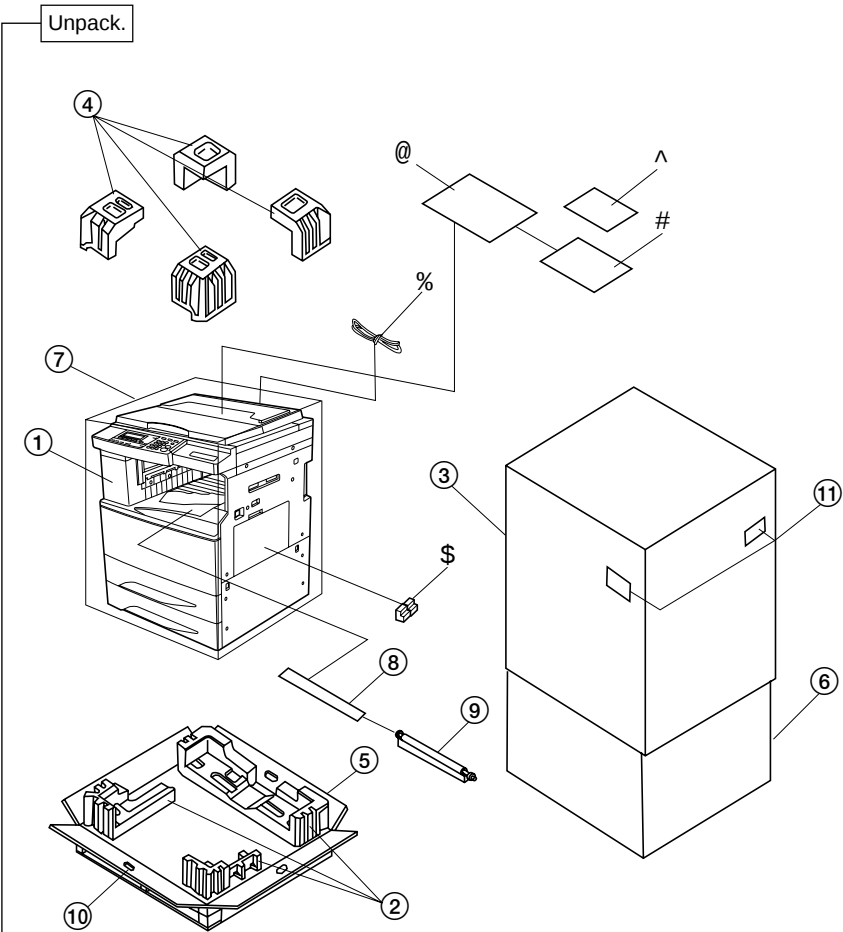


Figure 3-1-3 Unpacking

- ① Copier
- ② Bottom pads
- ③ Outer case
- ④ Top pads
- ⑤ Skid
- ⑥ Inner frame
- ⑦ Machine cover
- ⑧ Air-padded bag
- ⑨ Transfer roller assembly
- ⑩ Hinge joint
- ⑪ Bar code labels
- ⑫ Plastic bag
- ⑬ Instruction handbook
- ⑭ Spacers*¹
- ⑮ Power cord*¹
- ⑯ Business reply mail*²

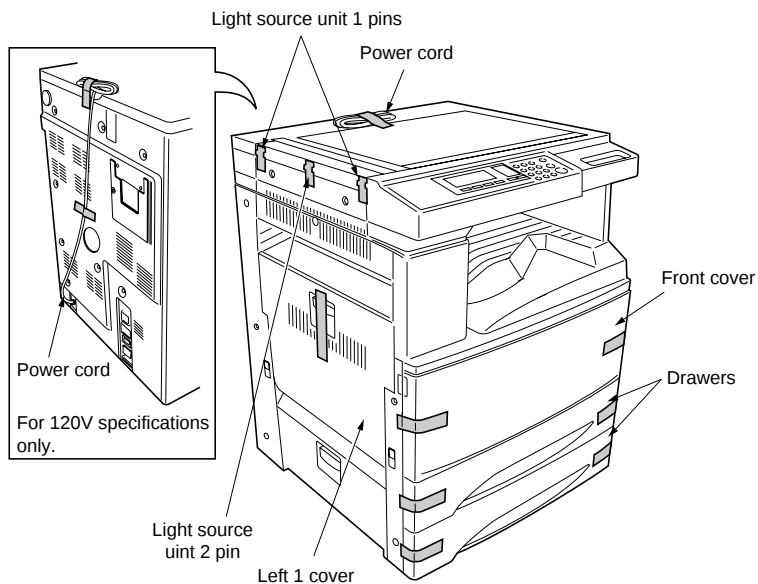
*1: For 220 - 240 V specifications only.

*2: For 120 V specifications only.

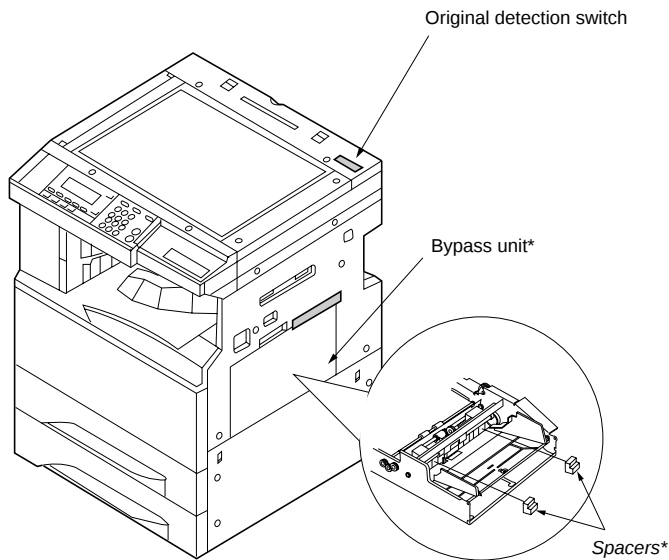
Note: The original cover is standard for 220 - 240 V specifications.

Remove the tapes.

1. Remove the two tapes holding the front cover.
2. Remove the two tapes each holding the drawers.
3. Remove the tape holding the left 1 cover.
4. Remove the two tapes holding the power cord.
5. Remove the three tapes holding the pins for light source units 1 and 2.

**Figure 3-1-4**

- 6. Remove the tapes covering the original detection switch and bypass unit*.
- 7. *Open the bypass table and remove the two spacers.**



* For 220 - 240 V specifications only.

Figure 3-1-5

- 8. Open the front cover and remove the tape holding the cartridge mount.

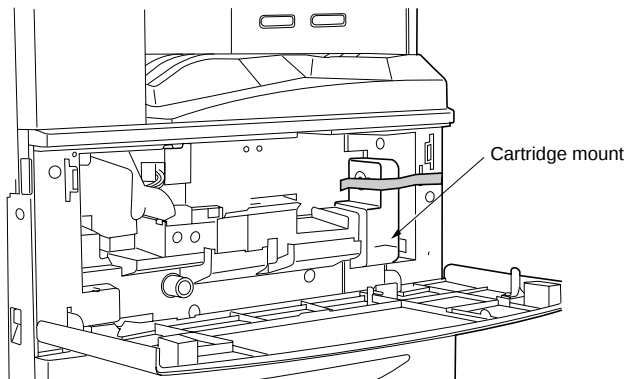


Figure 3-1-6

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

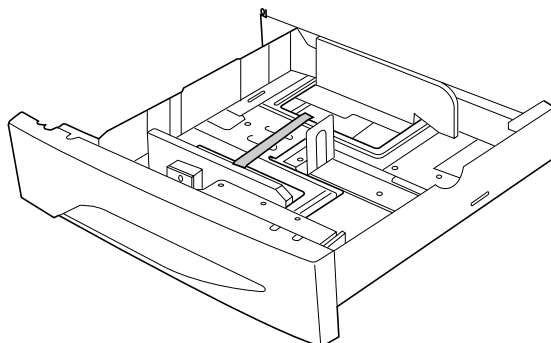


Figure 3-1-7

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.

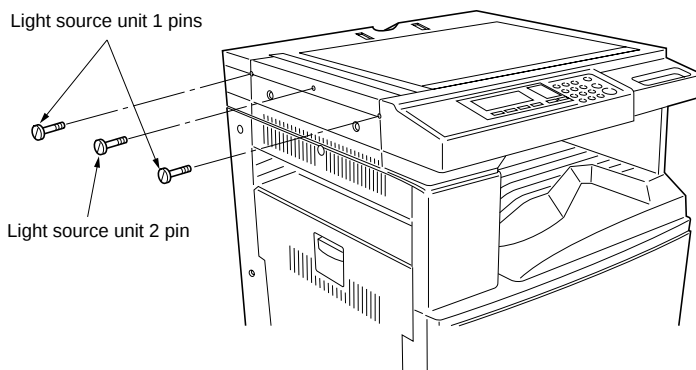


Figure 3-1-8

Install the optional devices.

1. Install the optional devices (eject unit, feedshift unit, bypass unit*, job separator, duplex unit, SRDF and/or original cover*) as necessary (see the respective installation manuals or service manuals).

Note: Be sure to install either the eject unit or feedshift unit.

* Standard for 220 - 240 V specifications.

Remove the image formation unit.

1. Open the front cover, left 1 cover and the paper transfer section cover.
2. Remove the two screws and detach the image formation unit.

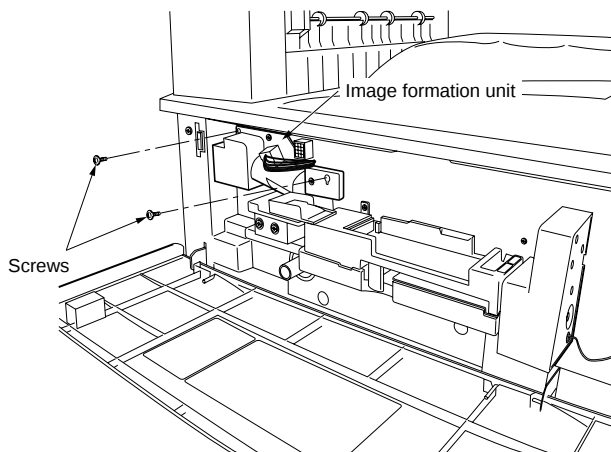


Figure 3-1-9

Load developer.

1. Remove the four screws and detach the developing unit upper cover.

Caution: Be sure to place the image formation unit on a level surface when loading developer.

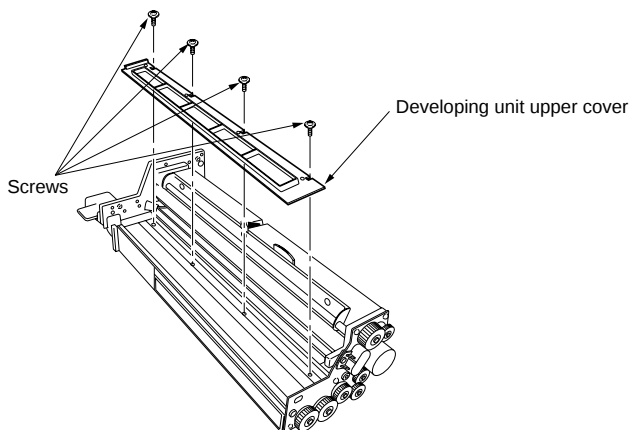


Figure 3-1-10

2. Shake the developer bottle well to agitate the developer.
3. While turning the magnet roller gear in the direction of the arrow in the diagram, uniformly pour developer into the image formation unit.

Caution: Never turn the magnet roller gear in the reverse direction.

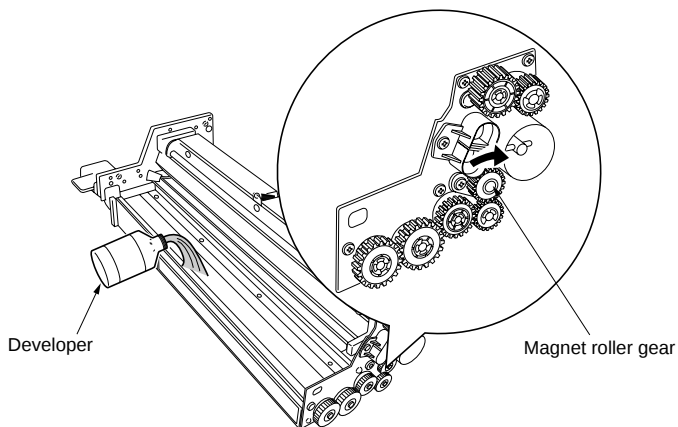


Figure 3-1-11 Loading developer

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

Release the cleaning blade.

1. Slide the cleaning blade release lever in the direction of the arrow in the diagram.

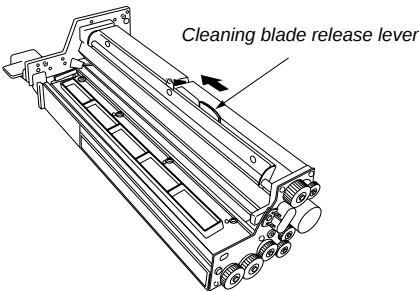


Figure 3-1-12

2. Refit the image formation unit using the two screws.
3. Connect the 12-pin connector.

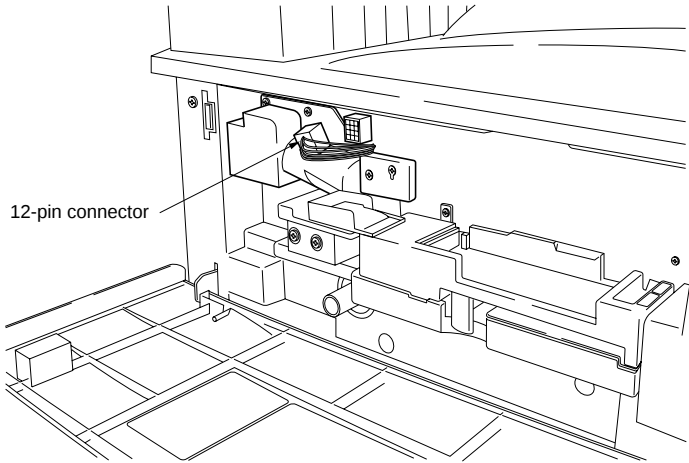


Figure 3-1-13

4. Close the front cover.

Adjust the fixing pressure.

1. Adjust the fixing pressure by turning the fixing pressure pins on the front and rear of the fixing unit clockwise until each pin stops.

Caution: Never turn the fixing pressure nuts.

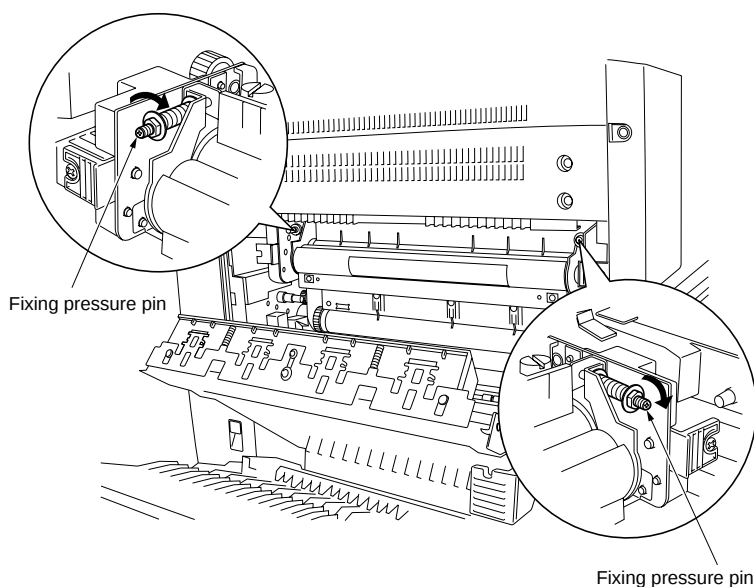


Figure 3-1-14 Adjusting the fixing pressure

2. Close the paper transfer section cover and left 1 cover.

Connect the power cord.

1. Connect the power cord to the connector on 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.
2. Enter "130" using the numeric keys and press the start key.
3. Press the start key to execute the maintenance item.
 - The drive stops within approximately 2 minutes and the toner feed start level and toner sensor control voltage are automatically set. The settings are displayed on the message display.
Display example
INPUT: 135 (Toner sensor input level)
CONTROL: 181 (Toner sensor control voltage)
TARGET: 138 (Toner feed start level)
HUMID: 57 (Absolute humidity)
4. Press the stop/clear key.

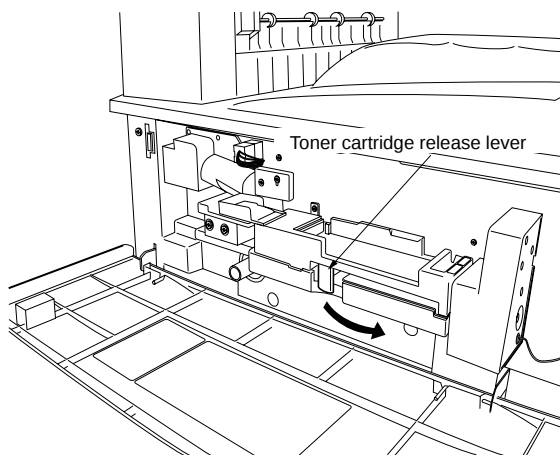
Exit maintenance mode.

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

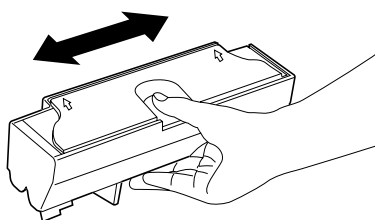
* For 220 - 240 V specifications only.

Install a toner cartridge.

1. Open the front cover.
2. Shift the toner cartridge release lever to the right until it stops.

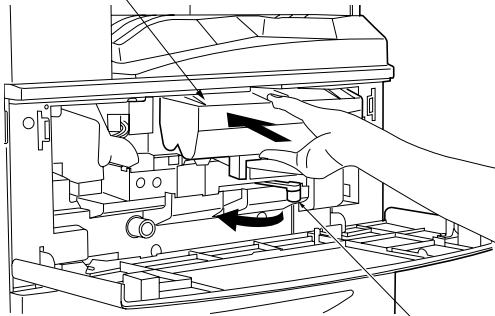
**Figure 3-1-15**

3. Shake the toner cartridge horizontally eight to ten times to agitate the toner.

**Figure 3-1-16**

- 4. Insert the toner cartridge in the direction of the arrows on the top of the toner cartridge by fitting the projection on the cartridge bottom into the groove inside the machine.
- 5. Secure the toner cartridge by shifting the toner cartridge release lever to the left until it stops.

Toner cartridge



Toner cartridge release lever

Figure 3-1-17

- 6. Close the front cover.

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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 s
U256	Turning auto preheat/energy saver function on/off	ON
U258	Switching copy operation at toner empty detection	SINGLE MODE, 70
U260	Changing the copy count timing	EJECT
U343	Switching between duplex/simplex copy mode	Simplex copy
U344	Setting preheat/energy saver mode	Energy Star
U347	Setting auto drawer size detection	ON
U348	Setting the copy density adjustment range	SPECIAL AREA

3-1-3 Installing the add-on memory SIMM (option)

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

<Procedure>

1. Remove the eight screws holding the rear cover and then the cover.
2. Remove the eleven screws holding the upper shield and then the shield.

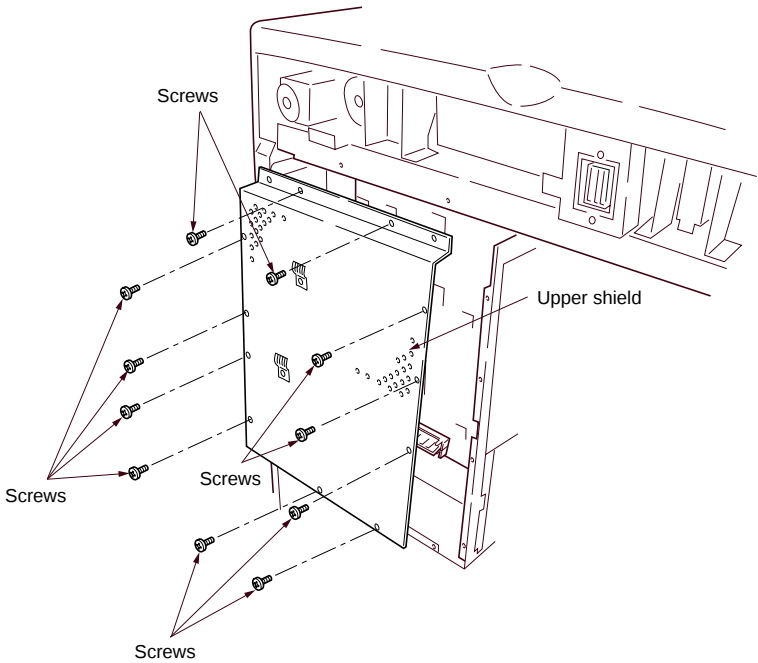


Figure 3-1-19

3. Fit the add-on memory into the add-on memory slot on the main PCB.

Caution: The add-on memory should only be inserted into add-on memory slot CN7 when a memory has already been inserted into memory slot CN6. If add-on memory slot CN7 is used only, the main PCB does not recognize the presence of the add-on memory.

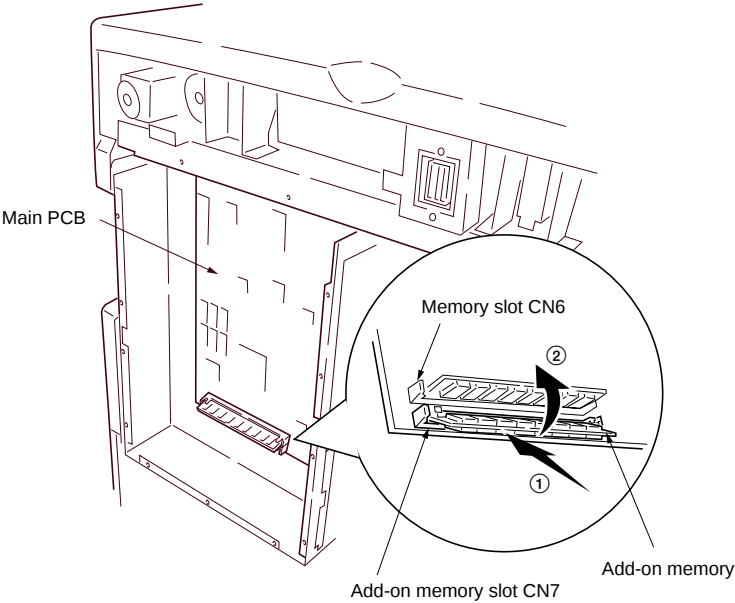


Figure 3-1-20

4. Refit all removed parts.

3-1-4 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

Two (2) BVM4 × 6 bronze binding screws (P/N B1304060)

ON/OFF sticker (P/N 3A105020)

<Procedure>

1. Remove the eight screws holding the rear cover and then the cover.
2. Pull the upper and lower drawers out.
3. Pass the 2-pin connector of the drawer heater cable to the machine rear through the cable hole.
4. Fit the drawer heater using the two screws.

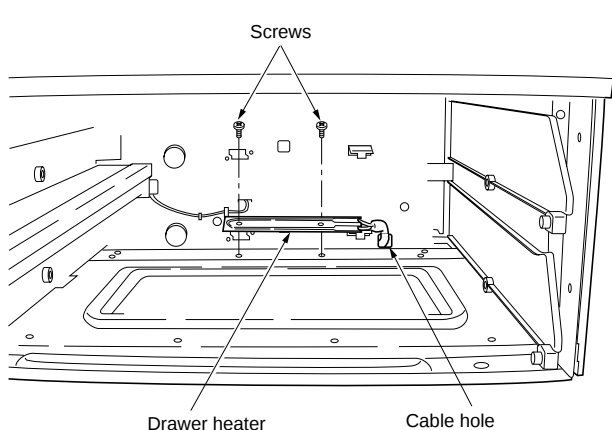


Figure 3-1-21

5. Remove the open connector from the 2-pin connector of the relay cable clamped to the option connector attachment panel, and insert the 2-pin connector of the drawer heater into the 2-pin connector of the relay cable.

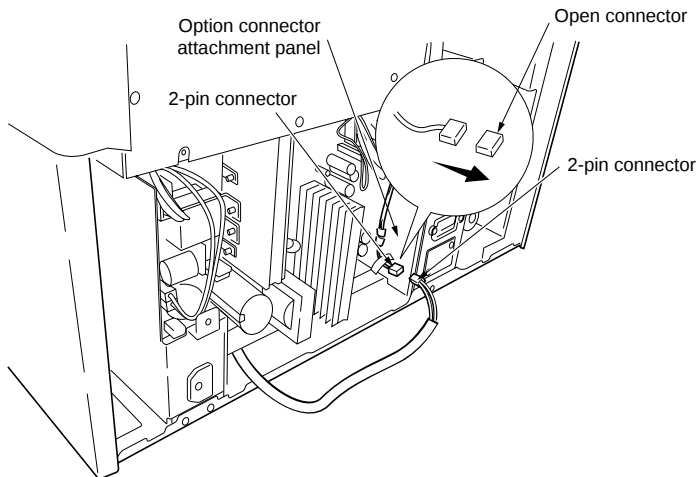


Figure 3-1-22

6. Refit all removed parts.
7. Affix the ON/OFF sticker exactly onto the marked area above the main switch.

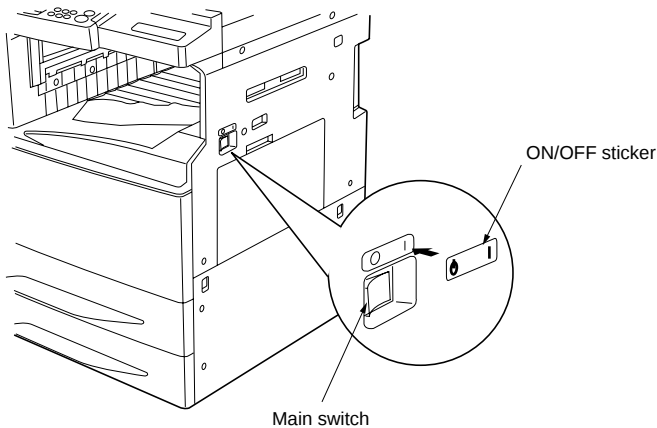


Figure 3-1-23

3-1-5 Installing the key counter (option)

Key counter installation requires the following parts:

Key counter set (P/N 66069782)

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 × 20 bronze TP-A screws (P/N B4304200)
- 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.

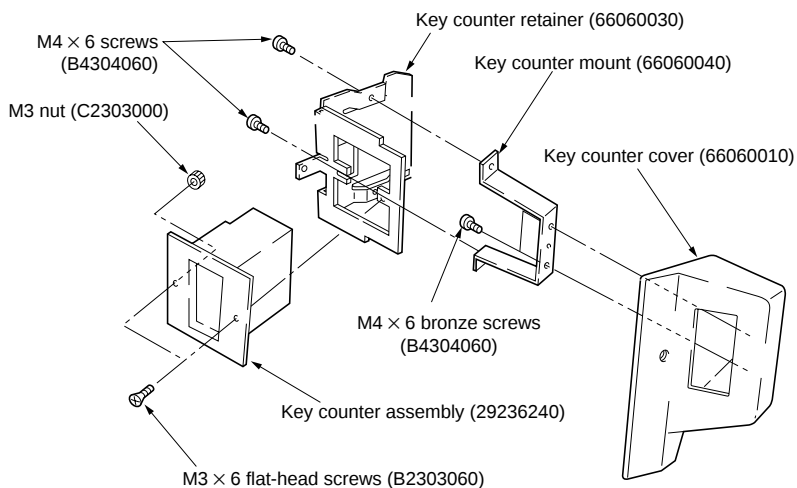


Figure 3-1-24

- 3. Remove the six screws holding the upper right cover and then the cover.
- 4. Cut out the aperture plate on the upper right cover using nippers.
- 5. Pass the 4-pin connector inside the machine through the aperture.

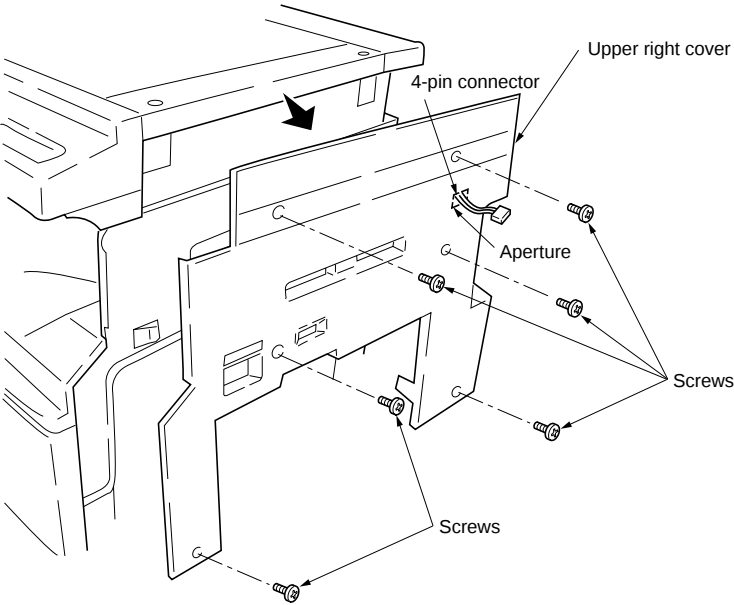


Figure 3-1-25

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

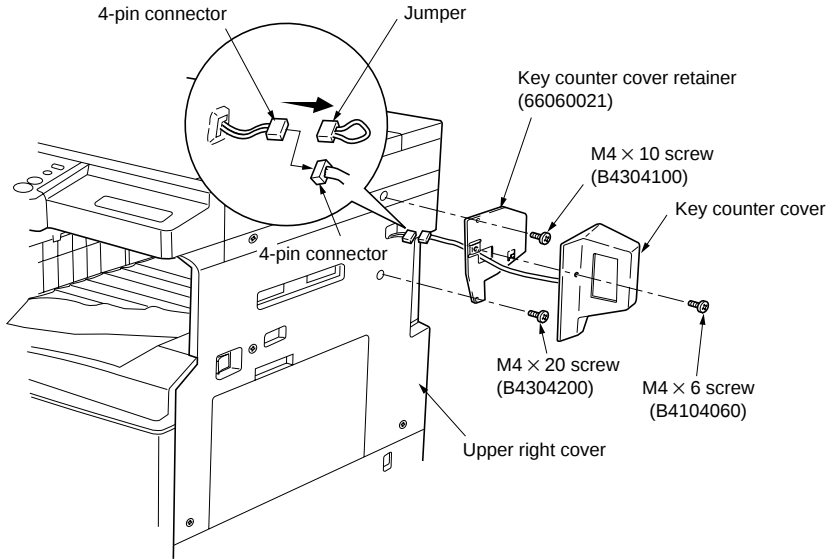


Figure 3-1-26

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

3-1-6 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.

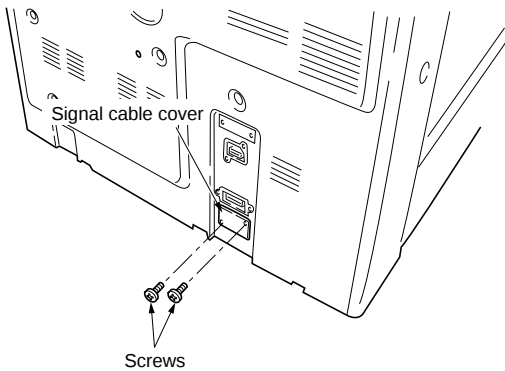


Figure 3-1-27

- 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.

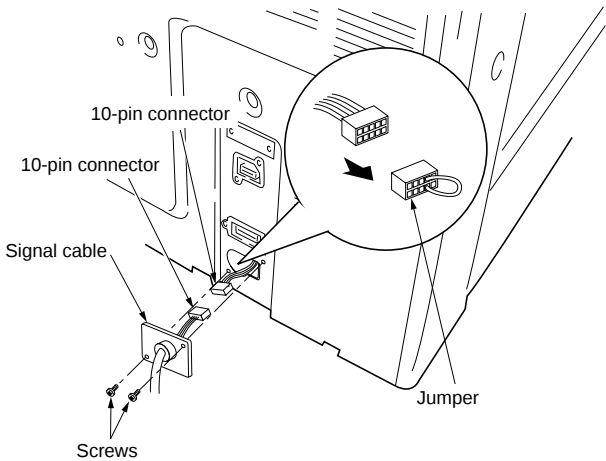


Figure 3-1-28

3. Fit the MMD host monitoring system device to the rear cover using the two screws.
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.

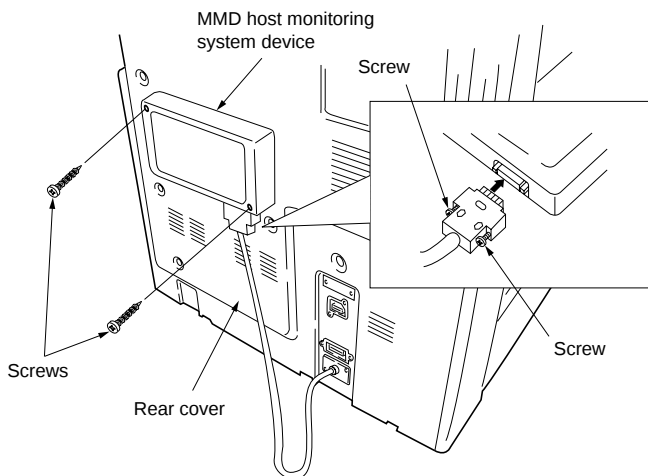


Figure 3-1-29

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.

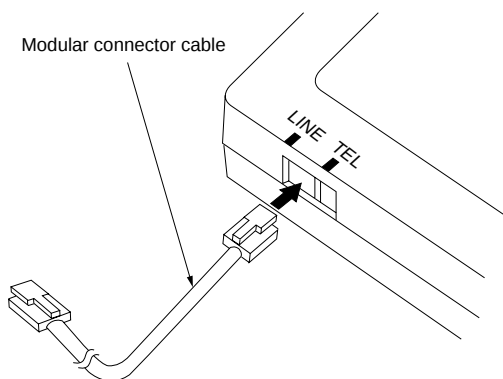


Figure 3-1-30

3-1-7 Installing the DF (option)

<Procedure>

1. Insert the DF into the machine.

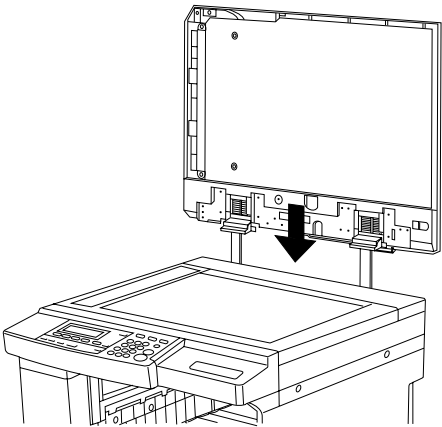


Figure 3-1-31

2. Close the DF.
Remove the two screws holding the cover and then the cover.

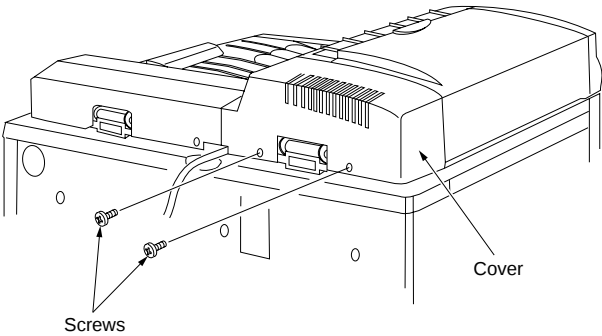


Figure 3-1-32

3. Remove the screw holding the tray mounting fixture and then the fixture.

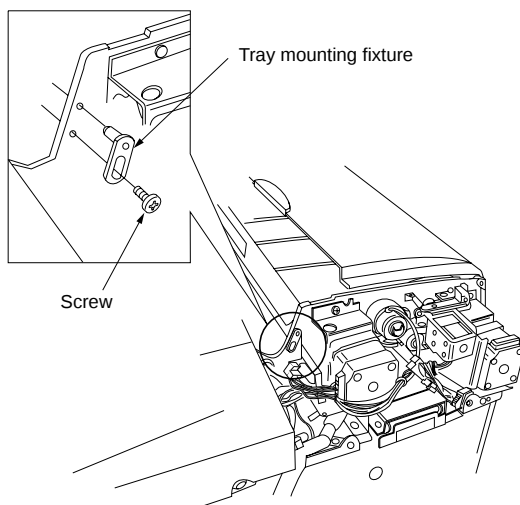


Figure 3-1-33

4. Insert the tray assembly over the pin on the front of the DF.
5. Fit the rear of the tray assembly to the DF using the tray mounting fixture removed in step 3 and the screw.

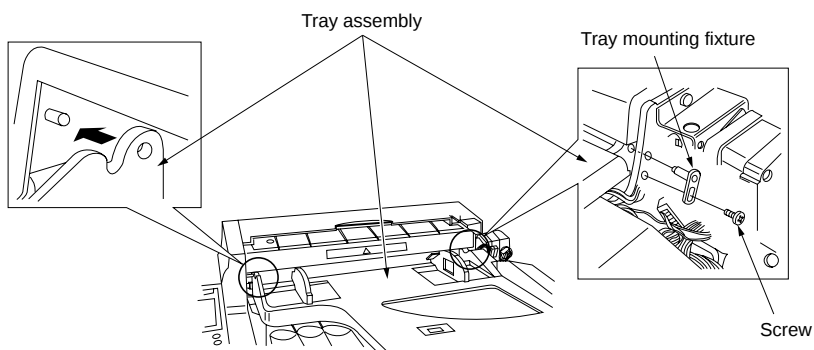


Figure 3-1-34

- 6. Insert the tray assembly connector into the DF connector.

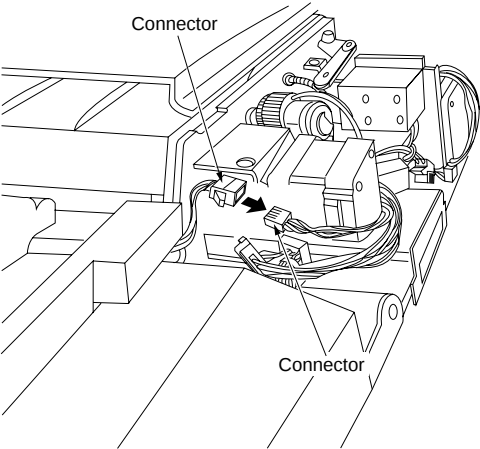


Figure 3-1-35

- 7. Refit the cover removed in step 3.
- 8. Insert the DF connector into the machine.

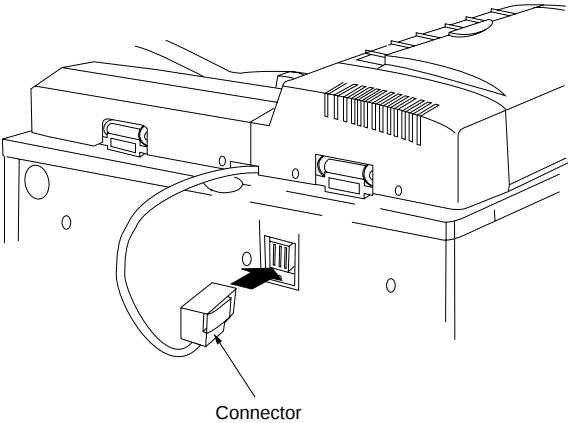


Figure 3-1-36

9. Prepare an original with four lines drawn 15 mm from the edges and one center line (see Figure 3-1-37).

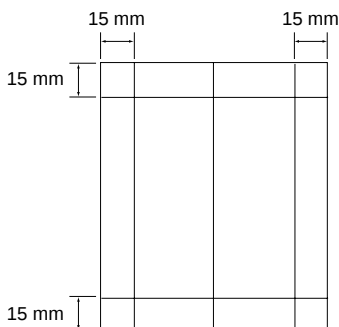


Figure 3-1-37

10. Place the original on the DF and make a test copy.
If the copy image is different from the original, run maintenance item U070 "Adjusting the DF magnification," U071 "Adjusting the DF scanning timing" or U072 "Adjusting the DF center line" as necessary (see the SRDF service manual).
11. If the leading or trailing edge of the copy image is skewed (the lateral squareness is not correct), adjust the lateral squareness of the DF.

Caution:

- Before performing this adjustment, output a VTC-PG2 pattern in maintenance item U993 to use as the original for the adjustment.
- Adjust the amount of slack in the paper (see page 3-3-22) and the lateral squareness (reference) (see page 3-3-35) first. Check for lateral squareness of the copy image and if squareness is not obtained, adjust the lateral squareness of the DF.

<Procedure>

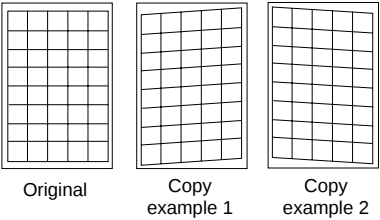
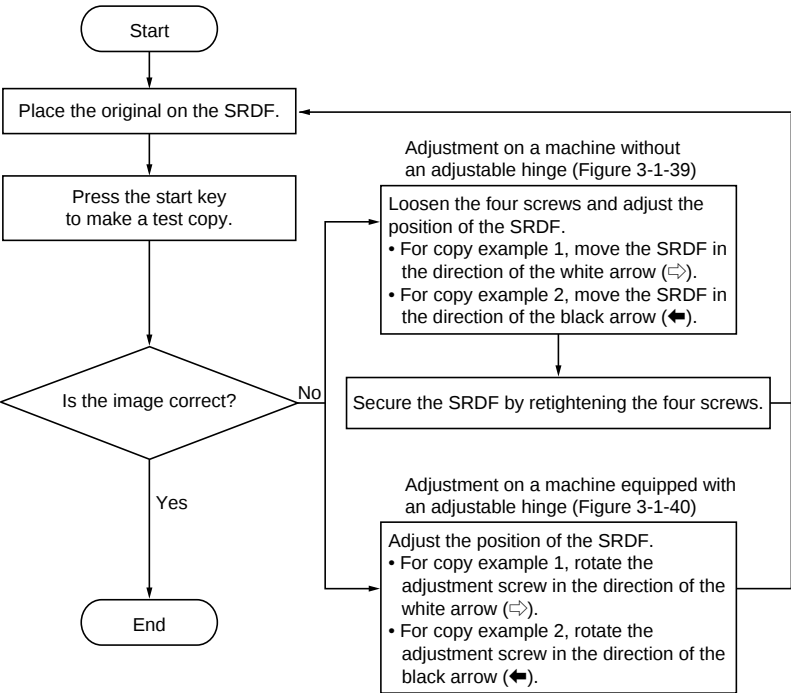


Figure 3-1-38

- Adjustment on a machine without an adjustable hinge (Figure 3-1-39):
 1. Disconnect the SRDF connector and remove the SRDF from the machine.
 2. Loosen the four screws securing the right leg of the SRDF.
 3. Adjust the position of the SRDF by moving the right leg back and forth.
 4. Retighten the four screws loosened in step 2.
 5. Refit all removed parts.
- Adjustment on a machine equipped with an adjustable hinge (Figure 3-1-40):
 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.

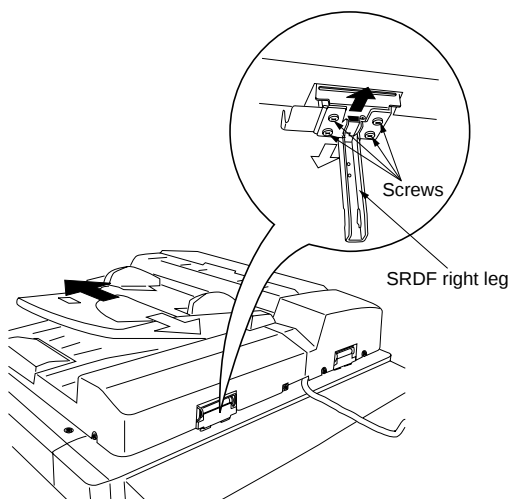


Figure 3-1-39

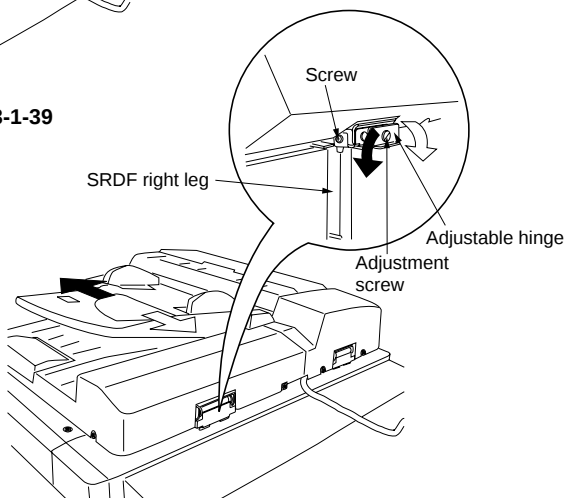


Figure 3-1-40

CONTENTS

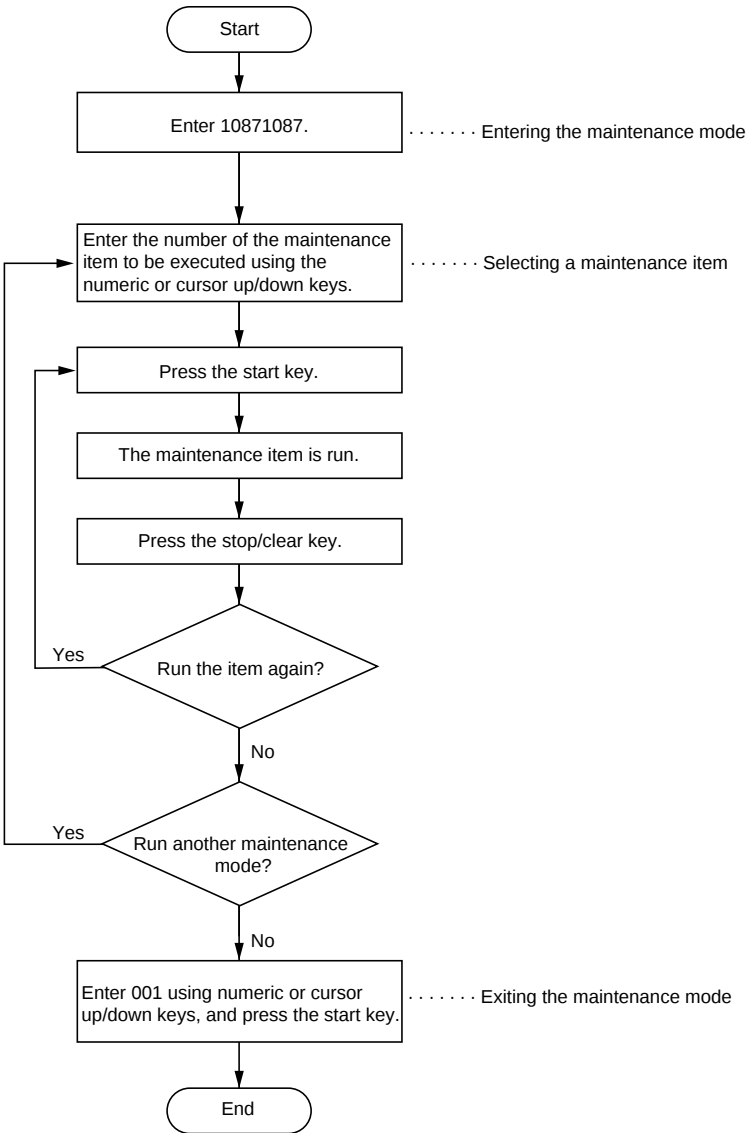
3-2 Maintenance Mode

3-2-1	Maintenance mode	3-2-1
	(1) Executing a maintenance item	3-2-1
	(2) Maintenance mode item list	3-2-4
	(3) Contents of maintenance mode items	3-2-8
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	(2) Department management	3-2-87
	(3) Copy default	3-2-89
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	(5) Language	3-2-94

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



• Data setting
Data is changed by pressing the cursor left/right keys, and the new data is set by pressing the start key. In a maintenance item where multiple items can be changed, the item to be changed is selected by pressing the cursor up/down keys.

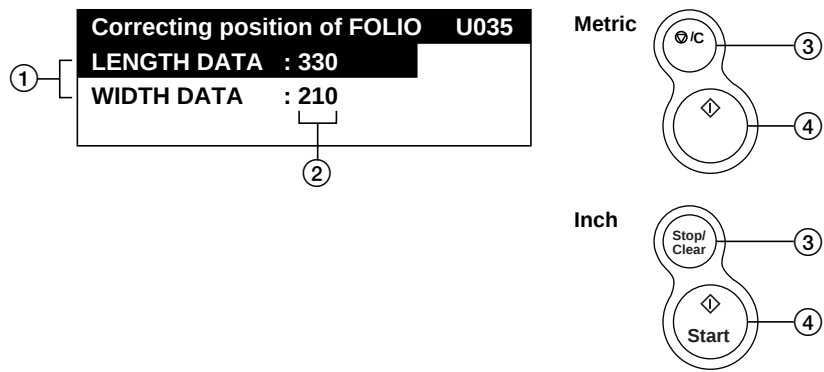


Figure 3-2-1

- ① Items Displays the selected item in reverse.
- ② Setting Displays the current setting.
- ③ Stop/clear key Cancels the change.
- ④ Start key Sets the changed setting.

- Operation execution

The specified operations and auto adjustments are performed by pressing the start key. In a maintenance item where multiple operations can be performed, the item to be executed is selected by pressing the cursor up/down keys.

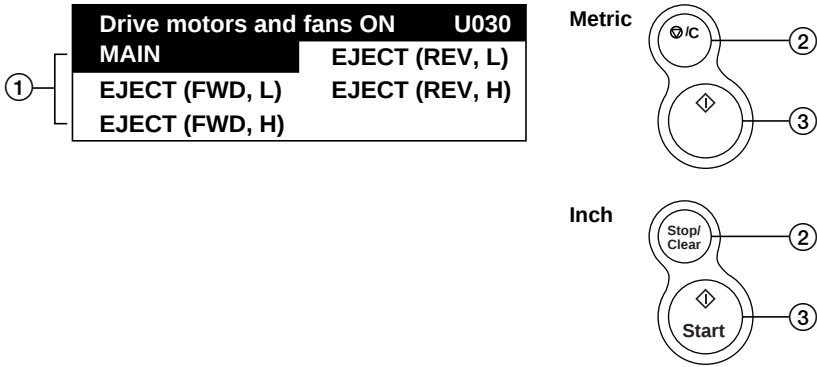


Figure 3-2-2

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

- Interrupt copy mode

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

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

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

(2) Maintenance mode item list

Section	Item No.	Maintenance item contents	Initial setting*
General	U000	Outputting an own-status report	_____
	U001	Exiting the maintenance mode	_____
	U003	Setting the service telephone number	_____
	U004	Setting the machine number	_____
	U005	Copying without paper	_____
	U019	Displaying the ROM version	_____
Initializa- tion	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 the leading edge registration of image printing • Adjusting the leading edge registration of image printing for duplex copying • Adjusting the center line of image printing • Adjusting the center line of image printing for duplex copying	+0.5 0 -0.5 0.0
	U035	Setting folio size • Length • Width	330 210
	U051	Adjusting the amount of slack in the paper • Regist data • Feed data	_____ _____
	U053	Performing fine adjustment of the motor speed • Drive motor • Feedshift motor • Polygon motor	3 7 0
	U059	Setting the cooling fan mode	MODE 0
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

Section	Item No.	Maintenance item contents	Initial setting*
Optical	U065	Adjusting the scanner magnification • Main scanning direction/auxiliary scanning direction	0
	U066	Adjusting the leading edge registration for scanning an original on the contact glass	0
	U067	Adjusting the center line for scanning an original on the contact glass	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	———
	U074	Adjusting the DF input light luminosity	4
	U087	Turning the DF scanning position adjust mode on/off	OFF
	U088	Setting the input filter (moiré reduction mode)	OFF
	U091	Checking shading	———
	U092	Adjusting the scanner automatically	———
	U093	Setting the exposure density gradient • Text/text and photo/photo mode	0
	U099	Checking the original size detection	———
High voltage	U100	Setting the surface potential	193
	U101	Setting high voltages • Developing bias • Transfer voltage • Transfer voltage output timing	191/34 168 0
	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	170
	U132	Replenishing toner forcibly	———
	U135	Checking toner feed motor operation	———
	U155	Displaying the toner sensor output	———
	U156	Changing the toner control level • Toner feed start level • Toner empty level	138 44
	U157	Checking/clearing the developing drive time	———
	U158	Checking/clearing the developing count	———

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Fixing and cleaning	U161	Setting the fixing control temperature • Normal stabilization fixing temperature • Primary stabilization fixing temperature • Secondary stabilization fixing temperature • Degree of temperature to be reduced from CONT TEMP during duplex copying • Aging time after secondary stabilization	175 170 175 10 30
	U162	Stabilizing fixing forcibly	_____
	U196	Turning the fixing heater on	_____
	U199	Checking the fixing temperature	_____
Operation panel and support equipment	U200	Turning all LEDs on	_____
	U202	<i>Setting the MMD host monitoring system</i>	_____
	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
	U208	Setting the paper size for the large paper deck	A4
	U210	<i>Reversing the LCD</i>	OFF
	U243	Checking the operation of the DF motors, solenoids and clutch	_____
	U244	Checking the DF switches	_____
	U245	Checking messages	_____
	U247	Checking the operation of the large paper deck and paper feed desk	_____
	U249	Checking the paper ejection to optional devices	_____
Mode setting	U250	Setting the maintenance cycle	50
	U251	Checking/clearing the maintenance count	_____
	U252	Setting the destination	JAPAN
	U253	Switching between double and single counts	DOUBLE COUNT
	U254	Turning auto start function on/off	ON
	U255	Setting auto clear time	120
	U256	Turning auto preheat/energy saver function on/off	ON
	U258	Switching copy operation at toner empty detection	SINGLE MODE, 70
	U260	Changing the copy count timing	EJECT
	U343	Switching between duplex/simplex copy mode	OFF

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Mode setting	U344	Setting preheat/energy saver mode	ENERGY STAR
	U345	Setting the value for maintenance due indication	0
	U347	Setting auto drawer size detection	ON
	U348	Setting the copy density adjustment range	SPECIAL AREA
Image processing	U402	Adjusting margins of image printing	_____
	U403	Adjusting margins for scanning an original on the contact glass	_____
	U404	Adjusting margins for scanning an original from the DF	_____
	U407	Adjusting the leading edge registration for memory image printing	_____
Fax board	U600	Initializing all data	_____
	U601	Initializing permanent data	_____
	U602	Setting factory defaults	_____
	U603	Setting the user registration data • Setting the self telephone number • Setting the type of telephone line • Setting the number of rings in fax/telephone auto select mode • Setting remote diagnostic transmission	_____ _____ _____ _____
	U604	Clearing data • Clearing transmission history • Initializing the cipher key password • Initializing the confidential box ID • Initializing the F-code confidential box ID	_____ _____ _____ _____
	U605	Setting the system (operational) • Setting how to proceed if memory becomes full during memory transmission • Setting an alarm for when reception is completed • Selecting if auto reduction in the auxiliary direction is to be performed • Setting the addition of an image to the report • Setting the error report display format • Setting the line-monitoring period • Setting the one-shot detection time for remote switching • Setting the continuous detection time for remote switching • Setting the initial condition of fax image scanning quality	_____ _____ _____ _____ _____ _____ _____ _____ _____

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Fax board	U606	Setting the system (operation unit and display) • Setting the conditions under which an error indicator turns off • Setting the date format • Setting if the image scanning quality in fax mode is initialized • Setting if the scanning density in fax mode is initialized	_____ _____ _____ _____
	U607	Setting the system (communication 1) • Setting the auto redialing interval • Setting the number of times of auto redialing • Setting the voice response • Setting the communication starting speed • Setting the reception speed • Setting no-ring reception when using the F network • Setting the mode for remote switching • Setting the transmission intervals	_____ _____ _____ _____ _____ OFF _____ _____
	U608	Setting transmission • Setting the method to process errors • Setting the number of times of DIS signal reception • Setting the reference for RTN signal output • Setting the waiting period to prevent echo problem at the sender • Setting the waiting period to prevent echo problem at the receiver • Setting ECM transmission • Setting ECM reception • Setting the criteria for receiving a TCF signal 1 • Setting the frequency of the CED signal	_____ _____ _____ _____ _____ _____ _____ _____
	U609	Setting communication time • Setting the T0 time-out time • Setting the T1 time-out time • Setting the T2 time-out time • Setting the Ta time-out time • Setting the Tb time-out time • Setting the Tc time-out time • Setting the Td time-out time	_____ _____ 60 30 50 60 _____
	U610	Setting the modem output level • Setting the modem output level • Adjusting the modem output level • Setting the voice response level	_____ _____ _____
	U612	Setting the modem detection level	_____

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Fax board	U613	Setting the DTMF output level • Setting the DTMF (high-frequency group) output level • Setting the DTMF (low-frequency group) output level	_____ _____
	U614	Adjusting the DTMF output level • Adjusting the DTMF (high-frequency group) output level • Adjusting the DTMF (low-frequency group) output level	_____ _____
	U615	Setting the NCU • Setting the connection to PBX/PSTN • Setting PSTN dial tone detection • Setting the busy tone detection • Setting for a PBX	_____ _____ _____ _____
	U616	Adjusting the ratio of make-to-break of dial pulses • Make time (10 PPS) • Make time (20 PPS)	_____ _____
	U617	Outputting lists • Settings list • Action list • Monitor list • Own-status report • Protocol list	_____ _____ _____ _____ _____
	U650	Setting the fax paper size • Setting the number of lines to be ignored when receiving a fax at 100% magnification • Setting the number of lines to be ignored when receiving a fax in auto reduction mode • Setting the number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode • Setting the recording width for inch specifications	3 3 3 _____
	U651	Setting the number of lines to be ignored in rotation mode	3
	U660	Setting the system (communication 2) • Setting the criteria for receiving a TCF signal 2 • Setting the reception of a short protocol transmission • Setting the CNG detection times in fax/telephone auto select mode	_____ _____ _____
	U670	Setting if V.34 transmission is available	_____

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Fax board	U680	Displaying the fax board ROM version	_____
	U894	Performing board test • Performing tests on SRAM and DRAM • Performing tests on optional memories	_____ _____
Others	U901	Checking/clearing copy counts by paper feed locations	_____
	U903	Checking/clearing the paper jam counts	_____
	U904	Checking/clearing the service call counts	_____
	U905	Checking/clearing counts by optional devices	_____
	U907	Setting the paper eject location when used as a printer/fax • Printer • Fax	INNER TRAY INNER TRAY
	U910	Switching between fax/copier modes	Copier
	U906	Resetting partial operation control	_____
	U990	Checking/clearing the time for the exposure lamp to light	_____
	U992	Checking or clearing the printer/fax count	_____
	U993	Outputting a VTC-PG pattern	_____

* Initial setting for executing maintenance item U020

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(3) Contents of maintenance mode items

Maintenance item No.	Description								
U000	Outputting an own-status report Description Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences. Purpose To check the current setting of the maintenance items, or paper jam or service call occurrences. Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be output using the cursor up/down keys. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Output list</th></tr> </thead> <tbody> <tr> <td>MAINTENANCE</td><td>List of the current settings of the maintenance modes</td></tr> <tr> <td>JAM</td><td>List of the paper jam occurrences</td></tr> <tr> <td>SERVICE CALL</td><td>List of the service call occurrences</td></tr> </tbody> </table> 3. Press the start key. The interrupt copy mode is entered and a list is output. When A4/11" × 8½" paper is available, a report of this size is output. If not, specify the paper feed location. When output is complete, the screen for selecting an item is displayed. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	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								

Maintenance item No.	Description														
U001	Exiting the maintenance mode Description Exits the maintenance mode and returns to the normal copy mode. Purpose To exit the maintenance mode. Method Press the start key. The normal copy mode is entered.														
U003	Setting the service telephone number Description Sets the telephone number to be displayed when a service call code is detected. Purpose To set the telephone number to call service when installing the machine. Method Press the start key. The currently set telephone number is displayed. Setting - Enter a telephone number (up to 16 digits) using the numeric keys. Move the cursor using the cursor left/right keys and select a number or symbol using the cursor up/down keys. To enter symbols, press the keys shown below as required. <table border="1"> <thead> <tr> <th>Key</th><th>Symbol</th></tr> </thead> <tbody> <tr> <td>* key</td><td>*</td></tr> <tr> <td># key</td><td>#</td></tr> <tr> <td>Copy quality selection key</td><td>(</td></tr> <tr> <td>Auto Exp. key</td><td>)</td></tr> <tr> <td>Copy exposure adjustment key (lighter)</td><td>–</td></tr> <tr> <td>Copy exposure adjustment key (darker)</td><td>(Space)</td></tr> </tbody> </table> - Press the start key. The phone number is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Key	Symbol	* key	*	# key	#	Copy quality selection key	(	Auto Exp. key	)	Copy exposure adjustment key (lighter)	–	Copy exposure adjustment key (darker)	(Space)
Key	Symbol														
* key	*														
# key	#														
Copy quality selection key	(														
Auto Exp. key	)														
Copy exposure adjustment key (lighter)	–														
Copy exposure adjustment key (darker)	(Space)														

Maintenance item No.	Description
U004	Setting the machine number Description Displays and changes the machine number. Purpose To check or set the machine number. Method Press the start key. The currently set machine number is displayed. Setting 1. Enter the last six digits of the machine number using the numeric key. Do not enter the first two digits, 3 and 7. 2. Press the start key. The machine number is set. 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.

Maintenance item No.	Description						
U005	Copying without paper Description Simulates the copy operation without paper feed. Purpose To check the overall operation of the machine. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated using the cursor up/down keys. 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> 3. Press the interrupt key. The copy mode screen is displayed. 4. Set the operation conditions required on the copy mode screen. Changes in the following settings can be made. • Paper feed locations • Magnifications • Simplex or duplex copy mode • Number of copies: continuous copying is performed when set to 999. • Copy density • Keys on the operation panel other than the energy saver (preheat) key 5. To control the paper feed pulley, remove all the paper in the drawers, or the drawers. With the paper present, the paper feed pulley does not operate. 6. Press the start key. The operation starts. Copy operation is simulated without paper under the set conditions. When operation is complete, the screen for selecting an item is displayed. 7. To stop continuous operation, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Operation	PPC	Only the copier operates.	PPC + DF	Both the copier and SRDF operate (continuous operation).
Display	Operation						
PPC	Only the copier operates.						
PPC + DF	Both the copier and SRDF operate (continuous operation).						

Maintenance item No.	Description										
U019	Displaying the ROM version Description Displays the part number of the ROM fitted to each PCB. Purpose To check the part number or to decide if the ROM version is new from the last digit of the number. Method Press the start key. The last six digits of the part number indicating the ROM version are displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>MAIN</td><td>Main ROM IC</td></tr><tr><td>ENGINE</td><td>Engine ROM IC</td></tr><tr><td>SCAN.</td><td>Scanner ROM IC</td></tr><tr><td>MMI</td><td>Operation 1 ROM IC</td></tr></table> Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	MAIN	Main ROM IC	ENGINE	Engine ROM IC	SCAN.	Scanner ROM IC	MMI	Operation 1 ROM IC
Display	Description										
MAIN	Main ROM IC										
ENGINE	Engine ROM IC										
SCAN.	Scanner ROM IC										
MMI	Operation 1 ROM IC										
U020	Initializing all data Description Initializes all the backup RAM on the main PCB to return to the original settings. Purpose Used when replacing the backup RAM on the main PCB. Method 1. Press the start key. The screen for executing is displayed. 2. Select EXECUTE using the cursor up/down keys. It is displayed in reverse. 3. Press the start key. All data in the backup RAM is initialized, and the original settings for Japan specifications are set. When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on and the display language to the initial setting of English. Completion To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.										

Maintenance item No.	Description
U021	Initializing memories Description Initializes the setting data other than that for adjustments due to variations between respective machines, i.e., settings for counters, service call history and mode settings. As a result, initializes the backup RAM according to the specifications depending on the destination selected in U252. Purpose Used to return the machine settings to the factory settings. Method 1. Press the start key. The screen for executing is displayed. 2. Select EXECUTE using the cursor up/down keys. It is displayed in reverse. 3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U022	Initializing backup data Description Initializes only the data set for the optical section. Purpose To be executed after replacing the scanner unit. Method 1. Press the start key. The screen for executing is displayed. 2. Select SCANNER using the cursor up/down keys. 3. Press the start key. 4. Select EXECUTE using the cursor up/down keys. It is displayed in reverse. 5. Press the start key. The data for the optical section (U060 to 099, U403, U404 and U990) is initialized. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description												
U030	Checking motor operation Description Drives each motor. Purpose To check the operation of each motor. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the motor to be operated using the cursor up/down keys. 3. Press the start key. The selected item is displayed in reverse and the operation starts. <table> <tr> <th>Display</th><th>Operation</th></tr> <tr> <td>MAIN</td><td>Drive motor turns on and developing bias turns on</td></tr> <tr> <td>EJECT (FWD, L)</td><td>Feedshift motor* rotates forward at low speed</td></tr> <tr> <td>EJECT (FWD, H)</td><td>Feedshift motor* rotates forward at high speed</td></tr> <tr> <td>EJECT (REV, L)</td><td>Feedshift motor* rotates in reverse at low speed</td></tr> <tr> <td>EJECT (REV, H)</td><td>Feedshift motor* rotates in reverse at high speed</td></tr> </table> * Optional. 4. To stop operation, press the stop/clear key. Completion Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.	Display	Operation	MAIN	Drive motor turns on and developing bias turns on	EJECT (FWD, L)	Feedshift motor* rotates forward at low speed	EJECT (FWD, H)	Feedshift motor* rotates forward at high speed	EJECT (REV, L)	Feedshift motor* rotates in reverse at low speed	EJECT (REV, H)	Feedshift motor* rotates in reverse at high speed
Display	Operation												
MAIN	Drive motor turns on and developing bias turns on												
EJECT (FWD, L)	Feedshift motor* rotates forward at low speed												
EJECT (FWD, H)	Feedshift motor* rotates forward at high speed												
EJECT (REV, L)	Feedshift motor* rotates in reverse at low speed												
EJECT (REV, H)	Feedshift motor* rotates in reverse at high speed												

Maintenance item No.	Description																						
U031	Checking switches for paper conveying Description Displays the on-off status of each paper detection switch on the paper path. Purpose To check if the switches for paper conveying operate correctly. Method 1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed. 2. Turn each switch on and off manually to check the status. When the on-status of a switch is detected, that switch is displayed in reverse. <table><tr><th>Display</th><th>Switches</th></tr><tr><td>F1</td><td>Feed switch 1 (FSW1)</td></tr><tr><td>F2</td><td>Feed switch 2 (FSW2)</td></tr><tr><td>F3</td><td>Feed switch 3 (FSW3)</td></tr><tr><td>F4</td><td>Desk feed switch*1 (DFSW)</td></tr><tr><td>BYP</td><td>Bypass feed switch*2 (BYPFSW)</td></tr><tr><td>RES</td><td>Registration switch (RSW)</td></tr><tr><td>EJE</td><td>Eject switch*1 (ESW)</td></tr><tr><td>BRA</td><td>Feedshift switch*1 (FSSW)</td></tr><tr><td>DUP</td><td>Duplex paper conveying switch*1 (DUPPCSW)</td></tr><tr><td>JOB</td><td>Job separator eject switch*1 (JBESW)</td></tr></table> *1: Optional. *2: Optional for 120 V specifications only. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Switches	F1	Feed switch 1 (FSW1)	F2	Feed switch 2 (FSW2)	F3	Feed switch 3 (FSW3)	F4	Desk feed switch*1 (DFSW)	BYP	Bypass feed switch*2 (BYPFSW)	RES	Registration switch (RSW)	EJE	Eject switch*1 (ESW)	BRA	Feedshift switch*1 (FSSW)	DUP	Duplex paper conveying switch*1 (DUPPCSW)	JOB	Job separator eject switch*1 (JBESW)
Display	Switches																						
F1	Feed switch 1 (FSW1)																						
F2	Feed switch 2 (FSW2)																						
F3	Feed switch 3 (FSW3)																						
F4	Desk feed switch*1 (DFSW)																						
BYP	Bypass feed switch*2 (BYPFSW)																						
RES	Registration switch (RSW)																						
EJE	Eject switch*1 (ESW)																						
BRA	Feedshift switch*1 (FSSW)																						
DUP	Duplex paper conveying switch*1 (DUPPCSW)																						
JOB	Job separator eject switch*1 (JBESW)																						

Maintenance item No.	Description																				
U032	Checking clutch operation Description Turns each clutch on. Purpose To check the operation of each clutch. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the clutch to be operated using the cursor up/down keys. 3. Press the start key. The selected item is displayed in reverse, and the clutch turns on for 1 s. <table border="1"> <thead> <tr> <th>Display</th><th>Clutches</th></tr> </thead> <tbody> <tr> <td>PF1</td><td>Upper paper feed clutch (PFCL-U)</td></tr> <tr> <td>PF2</td><td>Lower paper feed clutch (PFCL-L)</td></tr> <tr> <td>PFBYP</td><td>Bypass paper feed clutch*2 (BYPPFCL)</td></tr> <tr> <td>FEED1</td><td>Feed clutch 1 (FCL1)</td></tr> <tr> <td>FEED2</td><td>Feed clutch 2 (FCL2)</td></tr> <tr> <td>FEED3</td><td>Feed clutch 3 (FCL3)</td></tr> <tr> <td>BYPF</td><td>Bypass feed clutch*2 (BYPFCL)</td></tr> <tr> <td>RES</td><td>Registration clutch (RCL)</td></tr> <tr> <td>DUPF</td><td>Duplex clutch*1 (DUPCL)</td></tr> </tbody> </table> *1: Optional. *2: Optional for 120 V specifications only. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Clutches	PF1	Upper paper feed clutch (PFCL-U)	PF2	Lower paper feed clutch (PFCL-L)	PFBYP	Bypass paper feed clutch*2 (BYPPFCL)	FEED1	Feed clutch 1 (FCL1)	FEED2	Feed clutch 2 (FCL2)	FEED3	Feed clutch 3 (FCL3)	BYPF	Bypass feed clutch*2 (BYPFCL)	RES	Registration clutch (RCL)	DUPF	Duplex clutch*1 (DUPCL)
Display	Clutches																				
PF1	Upper paper feed clutch (PFCL-U)																				
PF2	Lower paper feed clutch (PFCL-L)																				
PFBYP	Bypass paper feed clutch*2 (BYPPFCL)																				
FEED1	Feed clutch 1 (FCL1)																				
FEED2	Feed clutch 2 (FCL2)																				
FEED3	Feed clutch 3 (FCL3)																				
BYPF	Bypass feed clutch*2 (BYPFCL)																				
RES	Registration clutch (RCL)																				
DUPF	Duplex clutch*1 (DUPCL)																				

Maintenance item No.	Description								
U033	Checking solenoid operation Description Turns each solenoid on. Purpose To check the operation of each solenoid. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the solenoid to be operated using the cursor up/down keys. 3. Press the start key. The selected item is displayed in reverse, and the solenoid turns on for 1 s. <table><tr><th>Display</th><th>Solenoids</th></tr><tr><td>BRANCH1 SOL</td><td>Feedshift solenoid 1* (FSSOL1)</td></tr><tr><td>BRANCH2 SOL</td><td>Feedshift solenoid 2* (FSSOL2)</td></tr><tr><td>MAIN SW SOL</td><td>Main switch turns off</td></tr></table> * Optional. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Solenoids	BRANCH1 SOL	Feedshift solenoid 1* (FSSOL1)	BRANCH2 SOL	Feedshift solenoid 2* (FSSOL2)	MAIN SW SOL	Main switch turns off
Display	Solenoids								
BRANCH1 SOL	Feedshift solenoid 1* (FSSOL1)								
BRANCH2 SOL	Feedshift solenoid 2* (FSSOL2)								
MAIN SW SOL	Main switch turns off								
U034	Adjusting the print start timing Adjustment See pages 3-3-18 and 20.								

Maintenance item No.	Description												
U035	Setting folio size Description Changes the image area for copying onto folio size paper. Purpose To prevent the image at the trailing edge, or right or left side of the paper from not being copied by setting the actual size of the folio paper used. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. <table><tr><th>Display</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>LENGTH DATA</td><td>Length</td><td>330 to 356 mm</td><td>330</td></tr><tr><td>WIDTH DATA</td><td>Width</td><td>200 to 220 mm</td><td>210</td></tr></table> 3. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Setting	Setting range	Initial setting	LENGTH DATA	Length	330 to 356 mm	330	WIDTH DATA	Width	200 to 220 mm	210
Display	Setting	Setting range	Initial setting										
LENGTH DATA	Length	330 to 356 mm	330										
WIDTH DATA	Width	200 to 220 mm	210										

Maintenance item No.	Description
U051	Adjusting the amount of slack in the paper Adjustment See page 3-3-22.
U053	Performing fine adjustment of the motor speed Description Performs fine adjustment of the speeds of the motors. Purpose Used to adjust the speed of the respective motors when the magnification is not correct. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys.

Display	Description	Setting range	Initial setting
MAIN MOTOR	Drive motor speed adjustment	0 to 14	3
EJECT MOTOR	Feedshift motor* speed adjustment	0 to 14	7
POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0

* Optional.

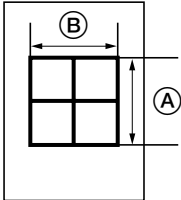
MAIN MOTOR

Increasing the setting makes the image shorter in the auxiliary scanning direction, and decreasing it makes the image longer in the auxiliary scanning direction.

POLYGON MOTOR

Increasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction; decreasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction.

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

Maintenance item No.	Description
U053 (cont.)	Interrupt copy mode While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode. Correct values for an A3/11" × 17" output are: Ⓐ = 300 ± 0.75 mm Ⓑ = 260 ± 1.3 mm  Figure 3-2-3 Adjustment 1. Output an A3/11" × 17" VTC pattern in interrupt mode. 2. Measure Ⓐ and Ⓑ on the VTC pattern (Figure 3-2-3), and perform the following adjustments if they are different from the correct sizes: Ⓐ: Drive motor speed adjustment Ⓑ: Polygon motor speed adjustment Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description						
U059	Setting the cooling fan mode Description Switches the fixing temperature control method when the absolute humidity is 15 g/m³ or higher. Purpose Used to reduce the time between main switch turning on and copying enabled by switching to MODE 1 if the user wishes to have the time shortened. Note that in MODE 1, black dots may appear on the copy image under high humidity since the drum may not be cooled down sufficiently. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the control mode using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th><th>Operation</th></tr> </thead> <tbody> <tr> <td>MODE 0</td><td>Regular operation (When the absolute humidity is 15 g/m³ or higher, copying is enabled 120 s after the main switch turning on.)</td></tr> <tr> <td>MODE 1</td><td>When the absolute humidity is 15 g/m³ or higher, only the control of cooling fan motors 1 and 2 changes to that for high humidity but others operate on the same control as when humidity is low (copying is enabled 43 s after the main switch turning on even when the absolute humidity is 15 g/m³ or higher).</td></tr> </tbody> </table> Initial setting: MODE 0 2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Operation	MODE 0	Regular operation (When the absolute humidity is 15 g/m ³ or higher, copying is enabled 120 s after the main switch turning on.)	MODE 1	When the absolute humidity is 15 g/m ³ or higher, only the control of cooling fan motors 1 and 2 changes to that for high humidity but others operate on the same control as when humidity is low (copying is enabled 43 s after the main switch turning on even when the absolute humidity is 15 g/m ³ or higher).
Display	Operation						
MODE 0	Regular operation (When the absolute humidity is 15 g/m ³ or higher, copying is enabled 120 s after the main switch turning on.)						
MODE 1	When the absolute humidity is 15 g/m ³ or higher, only the control of cooling fan motors 1 and 2 changes to that for high humidity but others operate on the same control as when humidity is low (copying is enabled 43 s after the main switch turning on even when the absolute humidity is 15 g/m ³ or higher).						

Maintenance item No.	Description																
U060	Adjusting the scanner input properties Description Adjusts the image scanning density in text, text and photo, or photo mode. Purpose Used when the entire image appears too dark or light in the specified mode. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><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></table> Increasing the setting makes the density lower, and decreasing it makes the density higher. 3. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed. Caution The following settings are also reset to the initial values by performing this maintenance item: • Exposure density gradient set in maintenance mode (U093) • 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														

Maintenance item No.	Description								
U061	Turning the exposure lamp on Description Turns the exposure lamp on. Purpose To check the exposure lamp. Method 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The exposure lamp lights. 3. To turn the exposure lamp off, press the stop/clear key. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.								
U063	Adjusting the shading position Description Changes the shading position. Purpose Used when white lines continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains. Method 1. Press the start key. The screen for adjustment is displayed. 2. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Shading position</td><td>−2 to +2</td><td>0</td><td>0.17 mm</td></tr></table> Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left. 3. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. Completion Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.	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						

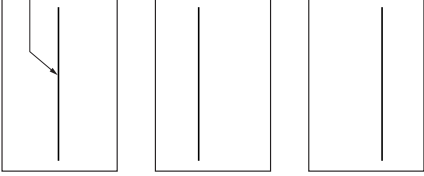
Maintenance item No.	Description
U065	Adjusting the scanner magnification Adjustment See pages 3-3-38 and 39.
U066	Adjusting the leading edge registration for scanning an original on the contact glass Adjustment See page 3-3-40.
U067	Adjusting the center line for scanning an original on the contact glass Adjustment See page 3-3-41.

Maintenance item No.	Description										
U070	Adjusting the DF magnification Description Adjusts the DF original scanning speed. Purpose To be executed if the correct magnification is not obtained in the auxiliary scanning direction when the optional SRDF is used. Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 → U034 → U402 → U070 → U071 → U072 → U404 Method Press the start key. Setting 1. Change the setting using the cursor left/right keys.										
	<table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>CONVEY SPEED</td><td>Original conveying motor speed</td><td>−25 to +25</td><td>0</td><td>0.1%</td></tr></table> Increasing the setting makes the image longer, and decreasing it makes the image shorter. 2. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	Setting range	Initial setting	Change in value per step	CONVEY SPEED	Original conveying motor speed	−25 to +25	0	0.1%
Display	Description	Setting range	Initial setting	Change in value per step							
CONVEY SPEED	Original conveying motor speed	−25 to +25	0	0.1%							

Maintenance item No.	Description															
U071	Adjusting the DF scanning timing Description Adjusts the DF original scanning timing. Purpose To be executed if there is a regular error between the leading or trailing edges of the original and the copy image when the optional SRDF is used. Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 → U034 → U402 → U070 → U071 → U072 → U404 Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys.															
	<table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>LEAD EDGE ADJ</td><td>DF leading edge registration</td><td>-32 to +32</td><td>0</td><td>0.17 mm</td></tr><tr><td>TRAIL EDGE ADJ</td><td>DF trailing edge registration</td><td>-32 to +32</td><td>0</td><td>0.17 mm</td></tr></table>	Display	Description	Setting range	Initial setting	Change in value per step	LEAD EDGE ADJ	DF leading edge registration	-32 to +32	0	0.17 mm	TRAIL EDGE ADJ	DF trailing edge registration	-32 to +32	0	0.17 mm
Display	Description	Setting range	Initial setting	Change in value per step												
LEAD EDGE ADJ	DF leading edge registration	-32 to +32	0	0.17 mm												
TRAIL EDGE ADJ	DF trailing edge registration	-32 to +32	0	0.17 mm												
	Increasing the setting moves the copy image backward, and decreasing it moves the copy image forward. 3. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.															

Maintenance item No.	Description
U071 (cont.)	Adjustment 1. In interrupt copy mode, make a copy using the DF. 2. Check the copy image and adjust the registration as follows. For copy example 1, increase the setting of LEAD EDGE ADJ. For copy example 2, decrease the setting of LEAD EDGE ADJ.  Original  Copy example 1  Copy example 2 Figure 3-2-4 Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description								
U072	Adjusting the DF center line Description Adjusts the scanning start position for the DF original. Purpose To be executed if there is a regular error between the centers of the original and the copy image when the optional SRDF is used. Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 → U034 → U402 → U070 → U071 → U072 → U404 Method Press the start key. Setting 1. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>DF center line</td><td>−39 to +39</td><td>0</td><td>0.17 mm</td></tr></table> Increasing the setting moves the image to the right, and decreasing it moves the image to the left. 2. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.	Description	Setting range	Initial setting	Change in value per step	DF center line	−39 to +39	0	0.17 mm
Description	Setting range	Initial setting	Change in value per step						
DF center line	−39 to +39	0	0.17 mm						

Maintenance item No.	Description
U072 (cont.)	Adjustment 1. In interrupt copy mode, make a copy using the DF. 2. Check the copy image and adjust the center line as follows. For copy example 1, increase the setting. For copy example 2, decrease the setting. Reference  Original Copy example 1 Copy example 2 Figure 3-2-5 Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description																																												
U073	Checking scanner operation Description Simulates the scanner operation under arbitrary conditions. Purpose To check scanner operation. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be changed using the cursor up/down keys. The selected item is displayed in reverse. 3. Change the setting using the cursor left/right keys. <table><tr><th>Display</th><th>Operating conditions</th><th>Setting range</th></tr><tr><td>ZOOM</td><td>Magnification</td><td>25 to 400%</td></tr><tr><td>SIZE</td><td>Paper size</td><td>See below.</td></tr><tr><td>LAMP</td><td>On and off of the exposure lamp</td><td>0 (off) or 1 (on)</td></tr></table> Paper sizes for each setting in SIZE <table><tr><th>Setting</th><th>Paper size</th><th>Setting</th><th>Paper size</th></tr><tr><td>8</td><td>A4</td><td>42</td><td>A5R</td></tr><tr><td>9</td><td>B5</td><td>47</td><td>Folio</td></tr><tr><td>24</td><td>11" × 8½"</td><td>52</td><td>11" × 17"</td></tr><tr><td>36</td><td>A3</td><td>53</td><td>11" × 15"</td></tr><tr><td>39</td><td>B4</td><td>55</td><td>8½" × 14"</td></tr><tr><td>40</td><td>A4R</td><td>56</td><td>8½" × 11"</td></tr><tr><td>41</td><td>B5R</td><td>58</td><td>5½" × 8½"</td></tr></table> 4. Press the start key. Scanning starts under the selected conditions. 5. To stop operation, press the stop/clear key. Completion Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.	Display	Operating conditions	Setting range	ZOOM	Magnification	25 to 400%	SIZE	Paper size	See below.	LAMP	On and off of the exposure lamp	0 (off) or 1 (on)	Setting	Paper size	Setting	Paper size	8	A4	42	A5R	9	B5	47	Folio	24	11" × 8½"	52	11" × 17"	36	A3	53	11" × 15"	39	B4	55	8½" × 14"	40	A4R	56	8½" × 11"	41	B5R	58	5½" × 8½"
Display	Operating conditions	Setting range																																											
ZOOM	Magnification	25 to 400%																																											
SIZE	Paper size	See below.																																											
LAMP	On and off of the exposure lamp	0 (off) or 1 (on)																																											
Setting	Paper size	Setting	Paper size																																										
8	A4	42	A5R																																										
9	B5	47	Folio																																										
24	11" × 8½"	52	11" × 17"																																										
36	A3	53	11" × 15"																																										
39	B4	55	8½" × 14"																																										
40	A4R	56	8½" × 11"																																										
41	B5R	58	5½" × 8½"																																										

Maintenance item No.	Description						
U074	Adjusting the DF input light luminosity Description Adjusts the luminosity of the exposure lamp for scanning originals from the optional SRDF. Purpose Used if the exposure amount differs significantly between when scanning an original on the contact glass and when scanning an original from the DF. Method Press the start key. Setting 1. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DF input light luminosity</td><td>0 to 8</td><td>4</td></tr></table> Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower. 2. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	DF input light luminosity	0 to 8	4
Description	Setting range	Initial setting					
DF input light luminosity	0 to 8	4					

Maintenance item No.	Description												
U087	Turning the DF scanning position adjust mode on/off Description Turns on or off the DF scanning position adjust mode, in which the DF original scanning position is adjusted automatically by determining the presence or absence of dust on the slit glass. Also changes the reference data for identifying dust. Reference In the DF original scanning position adjust mode, the presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DF original scanning position. If dust is identified, the DF original scanning position is adjusted for the following originals. Purpose Used to prevent appearance of black lines due to dust adhering in the original scanning position on the slit glass when the DF is used. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be set using the cursor up/down keys. The screen for the selected item is displayed. <table> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ON/OFF</td><td>Setting the mode on/off</td></tr> <tr> <td>DATA</td><td>Setting the reference data for identifying dust</td></tr> </table> Setting the mode on/off 1. Select ON or OFF using the cursor up/down keys. The selected item is displayed in reverse. <table> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ON</td><td>DF scanning position adjust mode on</td></tr> <tr> <td>OFF</td><td>DF scanning position adjust mode off</td></tr> </table> Initial setting: OFF 2. Press the start key. The setting is set. The screen for selecting an item is displayed.	Display	Description	ON/OFF	Setting the mode on/off	DATA	Setting the reference data for identifying dust	Display	Description	ON	DF scanning position adjust mode on	OFF	DF scanning position adjust mode off
Display	Description												
ON/OFF	Setting the mode on/off												
DATA	Setting the reference data for identifying dust												
Display	Description												
ON	DF scanning position adjust mode on												
OFF	DF scanning position adjust mode off												

Maintenance item No.	Description																		
U087 (cont.)	Setting the reference data for identifying dust Available only when the mode is turned on. 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys.																		
	<table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DOT WIDTH</td><td>Minimum dot width to be regarded as image</td><td>2 to 15</td><td>8</td></tr><tr><td>DENSITY</td><td>Minimum density to be regarded as dust</td><td>10 to 95</td><td>35</td></tr><tr><td>BACKGROUND</td><td>Density difference between background and detection dot</td><td>-1 to -20</td><td>-5</td></tr></table>	Display	Description	Setting range	Initial setting	DOT WIDTH	Minimum dot width to be regarded as image	2 to 15	8	DENSITY	Minimum density to be regarded as dust	10 to 95	35	BACKGROUND	Density difference between background and detection dot	-1 to -20	-5		
Display	Description	Setting range	Initial setting																
DOT WIDTH	Minimum dot width to be regarded as image	2 to 15	8																
DENSITY	Minimum density to be regarded as dust	10 to 95	35																
BACKGROUND	Density difference between background and detection dot	-1 to -20	-5																
	Example DOT WIDTH: When the setting is 8, 8-dot data or larger is regarded as image and data of less than 8 dots is regarded as dust on the slit glass. DENSITY: The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original). BACK GROUND: When the setting is -5, data of the level of that set for DENSITY minus 5 is regarded as the background. 3. Press the start key. The value is set. 4. Press the stop/clear key. The screen for selecting an item is displayed. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.																		

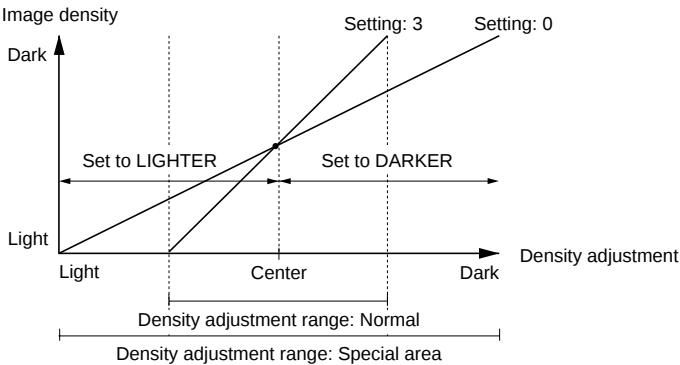
Maintenance item No.	Description						
U088	Setting the input filter (moiré reduction mode) Description Turns moiré reduction mode on and off by switching the input filter on and off. Purpose Used to prevent regular density unevenness (moiré) on halftone image areas of the copy image in text mode and 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. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select ON or OFF using the cursor up/down keys. The selected item is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ON</td><td>Moiré reduction mode</td></tr> <tr> <td>OFF</td><td>Normal copy mode</td></tr> </tbody> </table> Initial setting: OFF If moiré on the copy image is significant, change the setting to ON. Note that when the moiré reduction mode is turned on, the resolution may be slightly reduced. 2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	ON	Moiré reduction mode	OFF	Normal copy mode
Display	Description						
ON	Moiré reduction mode						
OFF	Normal copy mode						

Maintenance item No.	Description						
U091	Checking shading Description Performs scanning under the same conditions as before and after shading is performed, displaying the original scanning values at nine points of the contact glass. Purpose To check the change in original scanning values before and after shading. The results may be used to decide the causes for fixing unevenness (uneven density) of the gray area of an image: either due to optical (shading or CCD) or other problems. Also to check the causes for a white or black line appearing longitudinally. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated using the cursor up/down keys. The selected item is displayed in reverse. <table><tr><th>Display</th><th>Output list</th></tr><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></table>	Display	Output list	SHD BEFORE	Performs scanning before shading and displays the result.	SHD AFTER	Performs scanning after shading and displays the result.
Display	Output list						
SHD BEFORE	Performs scanning before shading and displays the result.						
SHD AFTER	Performs scanning after shading and displays the result.						

Maintenance item No.	Description												
U091 (cont.)	3. Press the start key. Scanning is performed under the selected conditions and the result is displayed. When scanning is performed before shading, the scan value at the machine center should be slightly different from those at the machine front and rear. When scanning is performed after shading, there should be no difference between respective values. Any differences between the values at machine front and rear indicates that scanner problem causes the fixing unevenness. If the displayed results indicate no shading problems, the fixing unevenness (uneven copy density) is caused by factors other than in the scanner section (shading or CCD). <i>If a black line appears, the cause may be assumed 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.</i> 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. <table><tr><td>20 mm from the machine left</td><td>011</td><td>024</td><td>015</td></tr><tr><td>200 mm from the machine left</td><td>001</td><td>000</td><td>000</td></tr><tr><td>400 mm from the machine left</td><td>004</td><td>004</td><td>000</td></tr></table> 100 mm from the machine center toward machine front Machine center 100 mm from machine center toward machine rear Figure 3-2-6 4. Press the stop/clear key. The screen for selecting an item is displayed. Completion Press the stop/clear key. The screen for entering a maintenance item is displayed.	20 mm from the machine left	011	024	015	200 mm from the machine left	001	000	000	400 mm from the machine left	004	004	000
20 mm from the machine left	011	024	015										
200 mm from the machine left	001	000	000										
400 mm from the machine left	004	004	000										

Maintenance item No.	Description								
U092	Adjusting the scanner automatically Description Makes auto scanner adjustments in the order below using the specified original. • Adjusting the scanner center line (U067) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) When this maintenance item is performed, the settings in U065, U066 and U067 are also changed. Purpose Used to make respective auto adjustments for the scanner. Method 1. Place the specified original (P/N: 2AC68240) on the contact glass. 2. Press the start key. The screen for executing is displayed. 3. Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>SCAN CENTER</td><td>Scanner center line</td></tr><tr><td>SCAN TIMING</td><td>Scanner leading edge registration</td></tr><tr><td>SUB SCAN</td><td>Scanner magnification in the auxiliary scanning direction</td></tr></table> If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items. Completion Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed. If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.	Display	Description	SCAN CENTER	Scanner center line	SCAN TIMING	Scanner leading edge registration	SUB SCAN	Scanner magnification in the auxiliary scanning direction
Display	Description								
SCAN CENTER	Scanner center line								
SCAN TIMING	Scanner leading edge registration								
SUB SCAN	Scanner magnification in the auxiliary scanning direction								

Maintenance item No.	Description																				
U093	Setting the exposure density gradient Description Changes the exposure density gradient in manual density mode, depending on respective image modes (text, text and photo, photo). Purpose To set how the image density is altered by a change of one step in the manual density adjustment. Also used to make copy image darker or lighter. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select the image mode to be adjusted using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>TEXT</td><td>Density in text mode</td></tr><tr><td>MIXED</td><td>Density in text and photo mode</td></tr><tr><td>PHOTO</td><td>Density in photo mode</td></tr></table> Setting 1. Select the item to be adjusted using the cursor up/down keys. The selected item is displayed in reverse. 2. Adjust the setting using the cursor left/right keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DARKER</td><td>Change in density when manual density is set dark</td><td>0 to 3</td><td>0</td></tr><tr><td>LIGHTER</td><td>Change in density when manual density is set light</td><td>0 to 3</td><td>0</td></tr></table> Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.	Display	Description	TEXT	Density in text mode	MIXED	Density in text and photo mode	PHOTO	Density in photo mode	Display	Description	Setting range	Initial setting	DARKER	Change in density when manual density is set dark	0 to 3	0	LIGHTER	Change in density when manual density is set light	0 to 3	0
Display	Description																				
TEXT	Density in text mode																				
MIXED	Density in text and photo mode																				
PHOTO	Density in photo mode																				
Display	Description	Setting range	Initial setting																		
DARKER	Change in density when manual density is set dark	0 to 3	0																		
LIGHTER	Change in density when manual density is set light	0 to 3	0																		

Maintenance item No.	Description
U093 (cont.)	 Figure 3-2-7 Exposure density gradient 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description													
U099	Checking the original size detection Description Displays the original width detection data and sets the original width detection threshold. Purpose To check the original width detection. Also to change the original size detection threshold if the size of the original on the contact glass is detected incorrectly. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item. 3. Press the start key. The screen for executing is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>DATA B/W LEVEL</td><td>Checking the original width detection data Setting or checking the original width detection threshold</td></tr></table> Method to display the original width detection data 1. Place an original on the contact glass and turn the original detection switch on. The exposure lamp turns on and the width of the original is detected. The scanner data taken at the nine points from (1) at the machine rear to (9) at the machine front is displayed on the message display as follows. The data is displayed within the range of 000 to 255, 000 indicating white (original present) and 255 indicating black (no original). <table><tr><td>(1)</td><td>(2)</td><td>(3)</td></tr><tr><td>(4)</td><td>(5)</td><td>(6)</td></tr><tr><td>(7)</td><td>(8)</td><td>(9)</td></tr></table> Figure 3-2-8 2. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	DATA B/W LEVEL	Checking the original width detection data Setting or checking the original width detection threshold	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Display	Description													
DATA B/W LEVEL	Checking the original width detection data Setting or checking the original width detection threshold													
(1)	(2)	(3)												
(4)	(5)	(6)												
(7)	(8)	(9)												

Maintenance item No.	Description			
U099 (cont.)	Method to set or check the original size detection threshold 1. Place an original on the contact glass and turn the original detection switch on. The original size detection starts and detection data is displayed.			
Display	Description	Data range	Remarks	
LEVEL	Scanner data threshold	0 to 255	Adjustable	
WAIT TIME	Time between original detection switch turning on and reading-in of scanner data	0 to 100 ms	Adjustable	
ORIGINAL AREA	Detected original width	0 to 350 mm		
SIZE	Original size detected by scanner data and original size sensor detection data	0 to 63*		
B_DATA	Black (no original) data at the point on the boundary between original area and no original area	0 to 255		
W_DATA	White (original present) data at the point on the boundary between original area and no original area	0 to 255		
* See Paper size in U073 for the paper size for each setting. 2. To change the original size detection threshold, select LEVEL or WAIT TIME using the cursor up/down keys and change the setting using the cursor left/right keys. 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.				

Maintenance item No.	Description														
U100	Setting the surface potential Description Changes the surface potential by changing the grid control voltage. Also performs main charging. 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. Start Press the start key. The screen for selecting an item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>MC 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>LASER ON/OFF</td><td>Turning the main charger on and the laser scanner unit on and off</td></tr></table> Method for main charger output 1. Select either MC ON or LASER ON/OFF using the cursor up/down keys. 2. Press the start key. The selected operation starts. 3. To stop operation, press the stop/clear key. Setting the grid control voltage 1. Select MC DATA using the cursor up/down keys. 2. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Grid control voltage</td><td>0 to 255</td><td>193</td></tr></table> Increasing the setting makes the surface potential higher, and decreasing it makes the potential lower. Change in value per step: approximately 3.6 V 3. Press the start key. The value is set. Interrupt copy mode While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. Completion Press the stop/clear key at the screen for selecting an item when main charger output stops. The screen for selecting a maintenance item No. is displayed.	Display	Description	MC DATA	Changing the grid control voltage	MC ON	Turning the main charger on	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	193
Display	Description														
MC DATA	Changing the grid control voltage														
MC ON	Turning the main charger on														
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	193													

Maintenance item No.	Description																		
U101	Setting high voltages Description Changes the developing bias voltage and transfer voltage by changing the developing bias control voltage and transfer control voltage. Also checks the transfer output voltage. Purpose To check and change high voltages other than the main charger voltage. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be set or checked using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><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></table> Setting the developing bias 1. Select the item to be adjusted using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>DB DATA</td><td>Developing bias control voltage during image formation</td><td>0 to 255</td><td>191</td></tr><tr><td>DB DATA2</td><td>Developing bias control voltage during no image formation</td><td>0 to 255</td><td>34</td></tr></table> <i>DB DATA values corresponding to the drum ranks are displayed on the message display. When replacing the drum, be sure to set the DB DATA value to the figure corresponding to the letter (A, B or C) situated at the left end of the figure printed on the drum flange.</i> drum rank A: 191 B: 188 C: 185 DB DATA : 191 DB DATA2 : 34 Figure 3-2-8 (a) 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	DEV BIAS SET	Setting the developing bias	TC SET	Setting and checking the transfer voltage	Display	Description	Setting range	Initial setting	DB DATA	Developing bias control voltage during image formation	0 to 255	191	DB DATA2	Developing bias control voltage during no image formation	0 to 255	34
Display	Description																		
DEV BIAS SET	Setting the developing bias																		
TC SET	Setting and checking the transfer voltage																		
Display	Description	Setting range	Initial setting																
DB DATA	Developing bias control voltage during image formation	0 to 255	191																
DB DATA2	Developing bias control voltage during no image formation	0 to 255	34																

Maintenance item No.	Description												
U101 (cont.)	Setting the transfer voltage 1. Select the item to be adjusted using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the TC DATA setting using the cursor left/right keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>TC DATA</td><td>Transfer control voltage</td><td>0 to 255</td><td>168</td></tr><tr><td>TC TIMING</td><td>Transfer voltage output timing</td><td>-100 to +100</td><td>0</td></tr></table> Increasing the TC DATA setting makes the transfer voltage higher, and decreasing it makes the voltage lower. Increasing the TC TIMING setting makes the transfer voltage output timing later and improves paper separation performance. 3. Press the start key. The value is set. 4. To check the transfer voltage output, select TC ON using the cursor up/down keys and press the start key. The currently set transfer voltage is output. 5. To stop the transfer voltage output, press the stop/clear key. 6. To return to the screen for selecting an item, press the stop/clear key after the transfer voltage output is stopped. 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.	Display	Description	Setting range	Initial setting	TC DATA	Transfer control voltage	0 to 255	168	TC TIMING	Transfer voltage output timing	-100 to +100	0
Display	Description	Setting range	Initial setting										
TC DATA	Transfer control voltage	0 to 255	168										
TC TIMING	Transfer voltage output timing	-100 to +100	0										

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

Maintenance item No.	Description
U111	Checking/clearing the drum drive time Description Displays the drum drive time for checking, clearing or changing a figure, which is used as a reference when correcting the high voltage based on time. Purpose To check the drum status. Also used to clear the drive time after replacing the drum. Method Press the start key. The drum drive time is displayed in minutes. Clearing 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The time is cleared, and the screen for selecting a maintenance item No. is displayed. Setting 1. Enter a five-digit drive time (in minutes) using the numeric keys. 2. Press the start key. The time is set, and the screen for selecting a maintenance No. is displayed. Completion To exit this maintenance item without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description										
U130	Initial setting for the developer Description Automatically sets the toner sensor control voltage and toner feed start level for the installed developer. Purpose To set the initial settings for the developer when installing the machine or replacing the developer. Method 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The initial settings for the developer is set, and the result is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>INPUT</td><td>Toner sensor output value</td></tr><tr><td>CONTROL</td><td>Toner sensor control voltage</td></tr><tr><td>TARGET</td><td>Toner feed start level</td></tr><tr><td>HUMID</td><td>Absolute humidity</td></tr></table> Supplement The following data is also renewed or cleared by performing this maintenance item: • 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 Completion After initial setting is complete, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	INPUT	Toner sensor output value	CONTROL	Toner sensor control voltage	TARGET	Toner feed start level	HUMID	Absolute humidity
Display	Description										
INPUT	Toner sensor output value										
CONTROL	Toner sensor control voltage										
TARGET	Toner feed start level										
HUMID	Absolute humidity										

Maintenance item No.	Description						
U131	Setting the toner sensor control voltage Description Displays or changes the toner sensor control voltage automatically set in maintenance item U130. Purpose To check the automatically set toner sensor control voltage. Also to change the toner density if an image is too dark or light. Method Press the start key. The current setting for the toner sensor control voltage is displayed. Setting 1. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Toner sensor control voltage</td><td>0 to 255</td><td>170</td></tr></table> Increasing the setting makes the density higher, and decreasing it makes the density lower. Increasing the setting too high may result in toner scattering. 2. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	Toner sensor control voltage	0 to 255	170
Description	Setting range	Initial setting					
Toner sensor control voltage	0 to 255	170					

Maintenance item No.	Description										
U132	Replenishing toner forcibly Description Replenishes toner forcibly until the toner sensor output value reaches the toner feed start level. Purpose Used when the toner empty is detected frequently. Method 1. Press the start key. The screen for executing is displayed. 2. Press the start key. Operation starts, and the current data is displayed. Toner is replenished until the toner sensor output value reaches the toner feed start level. <table><tr><th>Display</th><th>Description</th></tr><tr><td>INPUT</td><td>Toner sensor output value after start key is pressed</td></tr><tr><td>TARGET</td><td>Current toner feed start level</td></tr><tr><td>CONTROL</td><td>Current toner sensor control voltage</td></tr><tr><td>HUMID</td><td>Absolute humidity</td></tr></table> 3. To stop operation, press the stop/clear key. Completion Press the stop/clear key when toner replenishment stops. The screen for selecting a maintenance item No. is displayed.	Display	Description	INPUT	Toner sensor output value after start key is pressed	TARGET	Current toner feed start level	CONTROL	Current toner sensor control voltage	HUMID	Absolute humidity
Display	Description										
INPUT	Toner sensor output value after start key is pressed										
TARGET	Current toner feed start level										
CONTROL	Current toner sensor control voltage										
HUMID	Absolute humidity										

Maintenance item No.	Description										
U135	Checking toner feed motor operation Description Drives the toner feed motor. Purpose To check the operation of the toner feed motor. Caution Note that driving the motor unnecessarily long may cause a toner jam, resulting in machine lockup. Be sure to drive the motor for only a few seconds. Method 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The toner feed motor turns on. 3. To stop operation, press the stop/clear key. Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.										
U155	Displaying the toner sensor output Description Displays the toner sensor output value, and related data. Purpose To check the toner sensor output value. Method 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The current data is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>INPUT</td><td>Toner sensor output value after start key is pressed</td></tr> <tr> <td>TARGET</td><td>Current toner feed level (value corrected based on humidity and drive time)</td></tr> <tr> <td>CONTROL</td><td>Current toner sensor control voltage</td></tr> <tr> <td>HUMID</td><td>Absolute humidity</td></tr> </tbody> </table> 3. Press the stop/clear key. The sampling operation stops. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	INPUT	Toner sensor output value after start key is pressed	TARGET	Current toner feed level (value corrected based on humidity and drive time)	CONTROL	Current toner sensor control voltage	HUMID	Absolute humidity
Display	Description										
INPUT	Toner sensor output value after start key is pressed										
TARGET	Current toner feed level (value corrected based on humidity and drive time)										
CONTROL	Current toner sensor control voltage										
HUMID	Absolute humidity										

Maintenance item No.	Description														
U156	Changing the toner control level 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. Purpose To check the toner feed start level and toner empty level. Method Press the start key. The screen for selecting an item is displayed. <table><tr><th>Display</th><th>Description</th></tr><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></table> Setting for the toner feed start level 1. Select TARGET using the cursor up/down keys. 2. Change the setting using the cursor left/right key. <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>Toner feed start level</td><td>0 to 255</td></tr></table> Increasing the setting makes the toner density lower. 3. Press the start key. The value is set. Setting for the toner empty level 1. Select EMPTY using the cursor up/down keys. 2. Change the setting using the cursor left/right key. <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>Difference between the toner feed start level and the toner empty level</td><td>0 to 255</td></tr></table> Increasing the setting makes the toner empty level higher: the toner density is lower when the toner empty is detected. 3. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting maintenance item No. is displayed.	Display	Description	TARGET	Toner feed start level	EMPTY	Difference between the toner feed start level and toner empty level	Description	Setting range	Toner feed start level	0 to 255	Description	Setting range	Difference between the toner feed start level and the toner empty level	0 to 255
Display	Description														
TARGET	Toner feed start level														
EMPTY	Difference between the toner feed start level and toner empty level														
Description	Setting range														
Toner feed start level	0 to 255														
Description	Setting range														
Difference between the toner feed start level and the toner empty level	0 to 255														

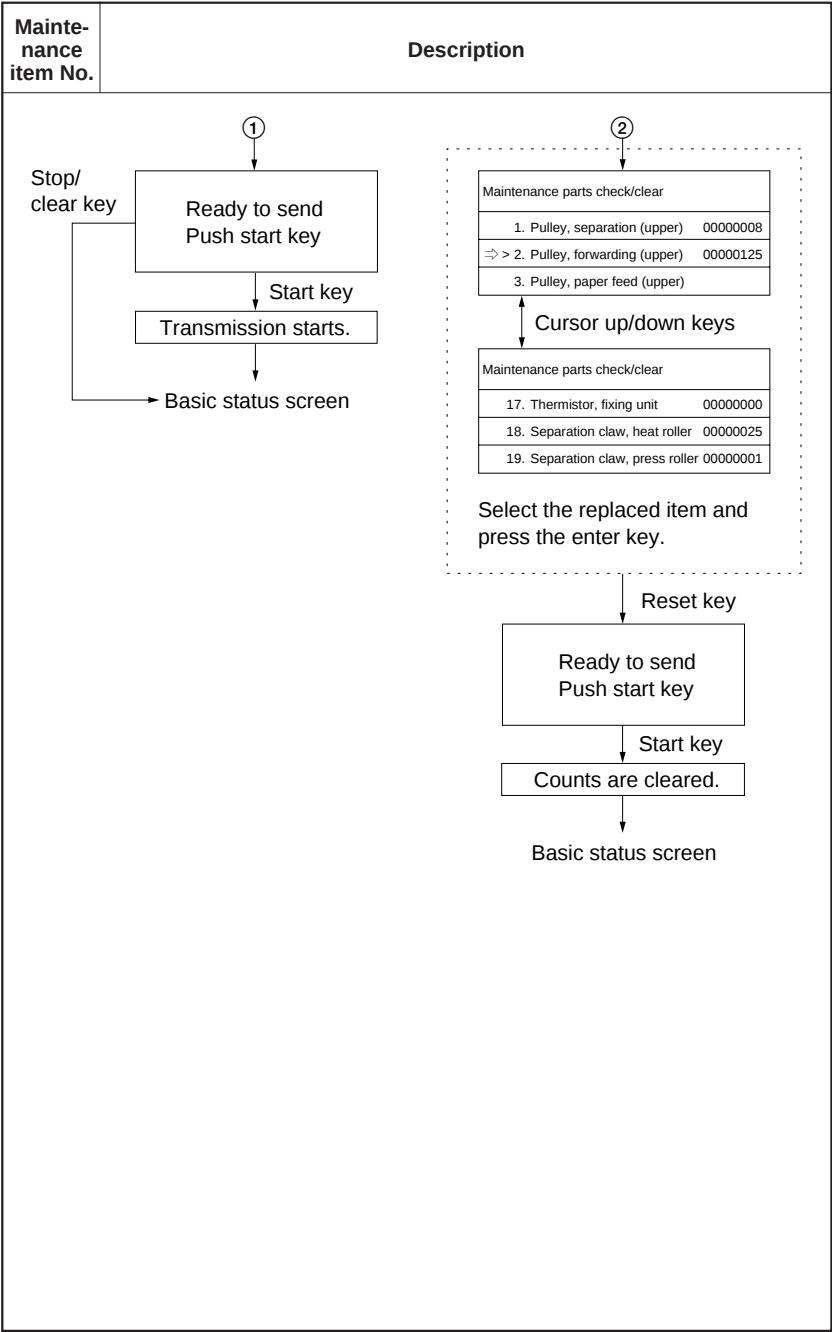
Maintenance item No.	Description
U157	Checking/clearing the developing drive time Description Displays the developing drive time for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed. Purpose To check the developing drive time after replacing the developer. Method Press the start key. The developing drive time is displayed in minutes. Clearing 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The time is cleared, and the screen for selecting a maintenance item No. is displayed. Setting 1. Enter a five-digit drive time (in minutes) using the numeric keys. 2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U158	Checking/clearing the developing count Description Displays the developing count for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed. Purpose To check the developing count after replacing the developer. Method Press the start key. The developing count is displayed. Clearing 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. Setting 1. Enter a six-digit count using the numeric keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

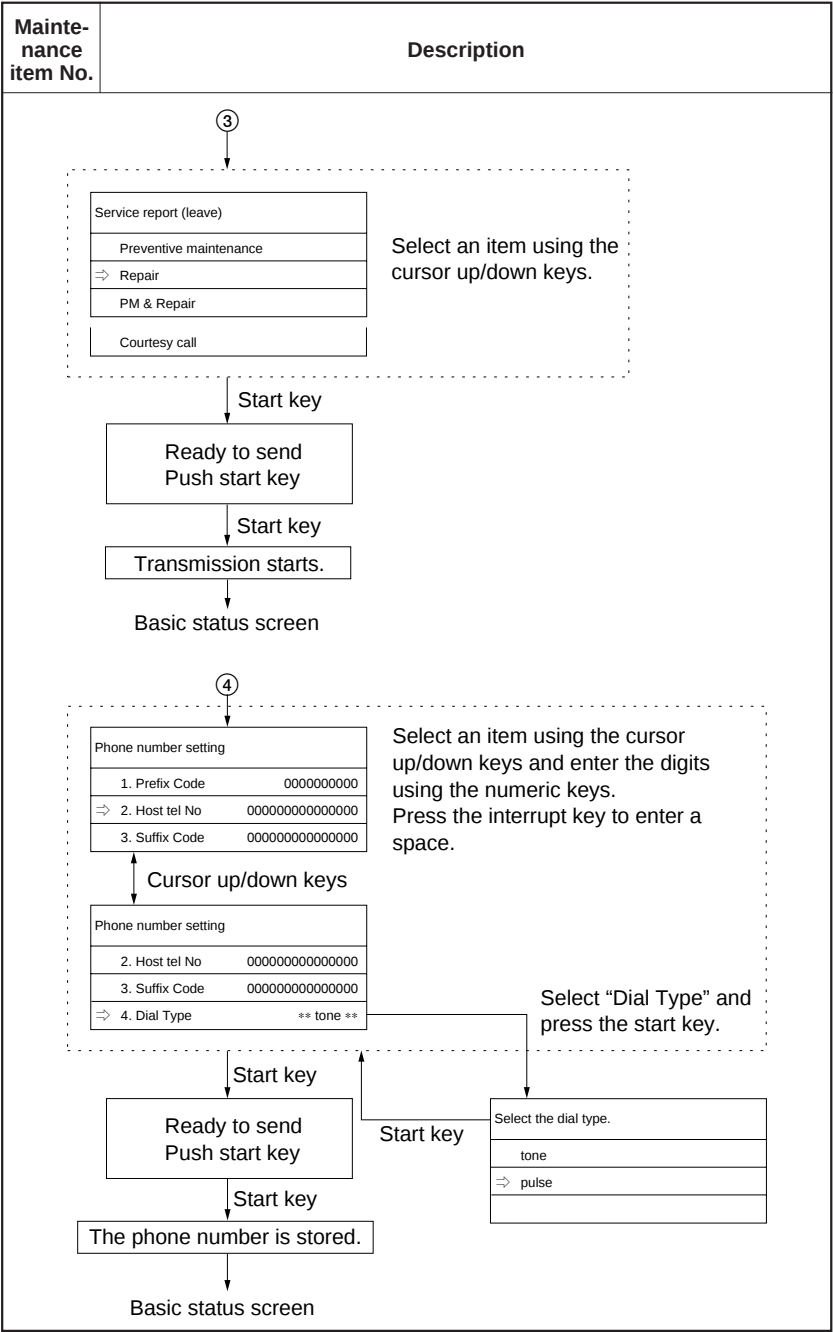
Maintenance item No.	Description																								
U161	Setting the fixing control temperature Description Changes the fixing control temperature. Purpose Normally no change is necessary. However, can be used to prevent curling or creasing of paper, or solve a fixing problem on thick paper. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. <table><tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>CONT TEMP</td><td>Normal stabilization fixing temperature</td><td>160 to 190 (°C)</td><td>175</td></tr><tr><td>1ST TEMP</td><td>Primary stabilization fixing temperature</td><td>150 to 180 (°C)</td><td>170</td></tr><tr><td>2ND TEMP</td><td>Secondary stabilization fixing temperature</td><td>160 to 190 (°C)</td><td>175</td></tr><tr><td>DUP TEMP</td><td>Degree of temperature to be reduced from CONT TEMP during duplex copying</td><td>0 to 20 (°C)</td><td>10</td></tr><tr><td>RUN TIME</td><td>Aging time after secondary stabilization</td><td>0 to 120 (s)</td><td>30</td></tr></table> The respective temperatures are to be set such that CONT TEMP ≥ 2ND TEMP ≥ 1ST TEMP. 3. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting maintenance item No. is displayed.	Display	Description	Setting range	Initial setting	CONT TEMP	Normal stabilization fixing temperature	160 to 190 (°C)	175	1ST TEMP	Primary stabilization fixing temperature	150 to 180 (°C)	170	2ND TEMP	Secondary stabilization fixing temperature	160 to 190 (°C)	175	DUP TEMP	Degree of temperature to be reduced from CONT TEMP during duplex copying	0 to 20 (°C)	10	RUN TIME	Aging time after secondary stabilization	0 to 120 (s)	30
Display	Description	Setting range	Initial setting																						
CONT TEMP	Normal stabilization fixing temperature	160 to 190 (°C)	175																						
1ST TEMP	Primary stabilization fixing temperature	150 to 180 (°C)	170																						
2ND TEMP	Secondary stabilization fixing temperature	160 to 190 (°C)	175																						
DUP TEMP	Degree of temperature to be reduced from CONT TEMP during duplex copying	0 to 20 (°C)	10																						
RUN TIME	Aging time after secondary stabilization	0 to 120 (s)	30																						

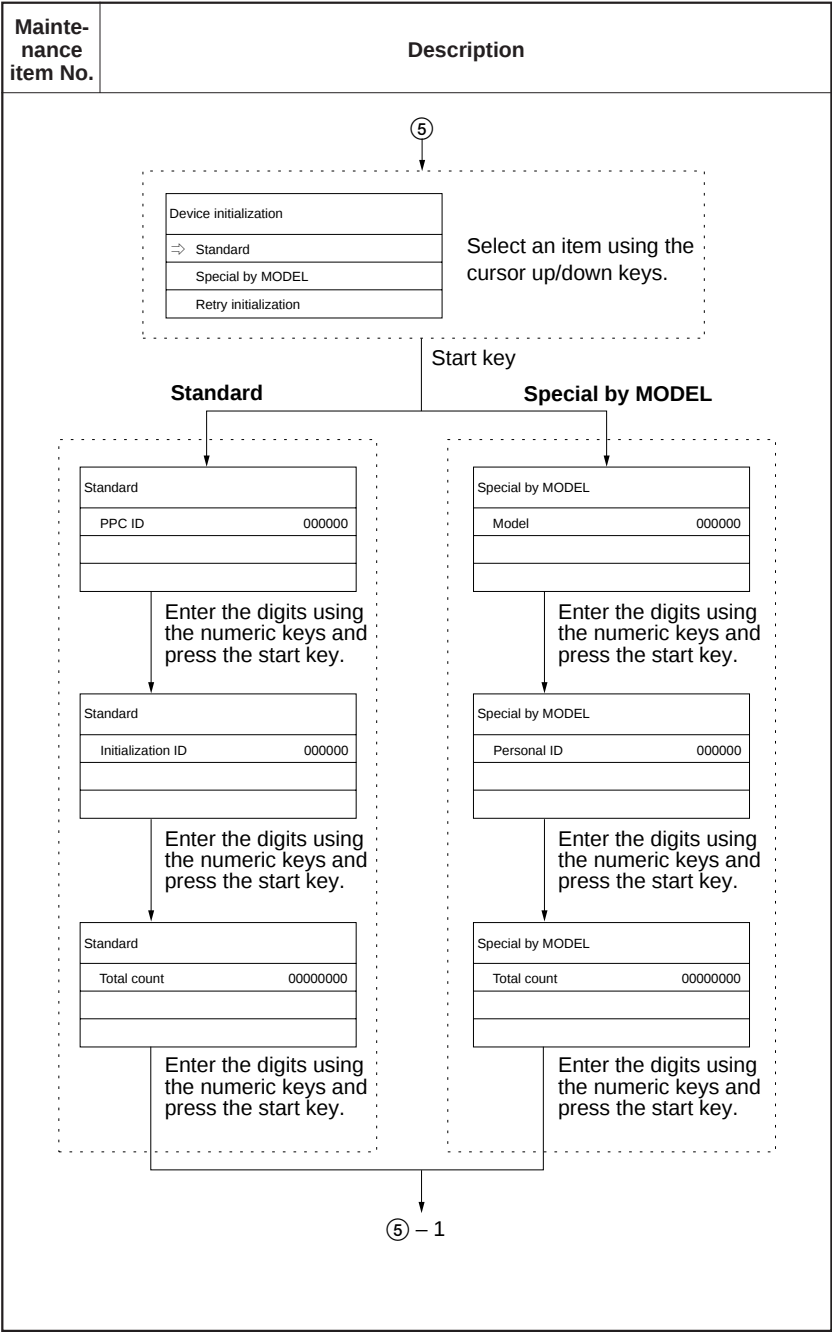
Maintenance item No.	Description						
U162	Stabilizing fixing forcibly Description Stops the stabilization fixing drive forcibly, regardless of fixing temperature. Purpose To forcibly stabilize the machine before the fixing section reaches stabilization temperature. Method 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The forced stabilization mode is entered, and stabilization operation stops regardless of fixing temperature. The screen for selecting a maintenance item No. is displayed. To exit the forced stabilization mode, turn the power off and on. Completion To exit this maintenance item without executing forced fixing stabilization, press the stop/clear key.						
U196	Turning the fixing heater on Description Turns the fixing heater M or S on. Purpose To check fixing heaters. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the heater to be turned on using the cursor up/down keys. 3. Press the start key. The selected heater turns on for 3 s and then turns off. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MAIN</td><td>Fixing heater M (H1)</td></tr> <tr> <td>SUB</td><td>Fixing heater S (H2)</td></tr> </tbody> </table> Completion Press the stop/clear key when fixing heaters M and S are off. The screen for selecting the maintenance item No. is displayed.	Display	Description	MAIN	Fixing heater M (H1)	SUB	Fixing heater S (H2)
Display	Description						
MAIN	Fixing heater M (H1)						
SUB	Fixing heater S (H2)						

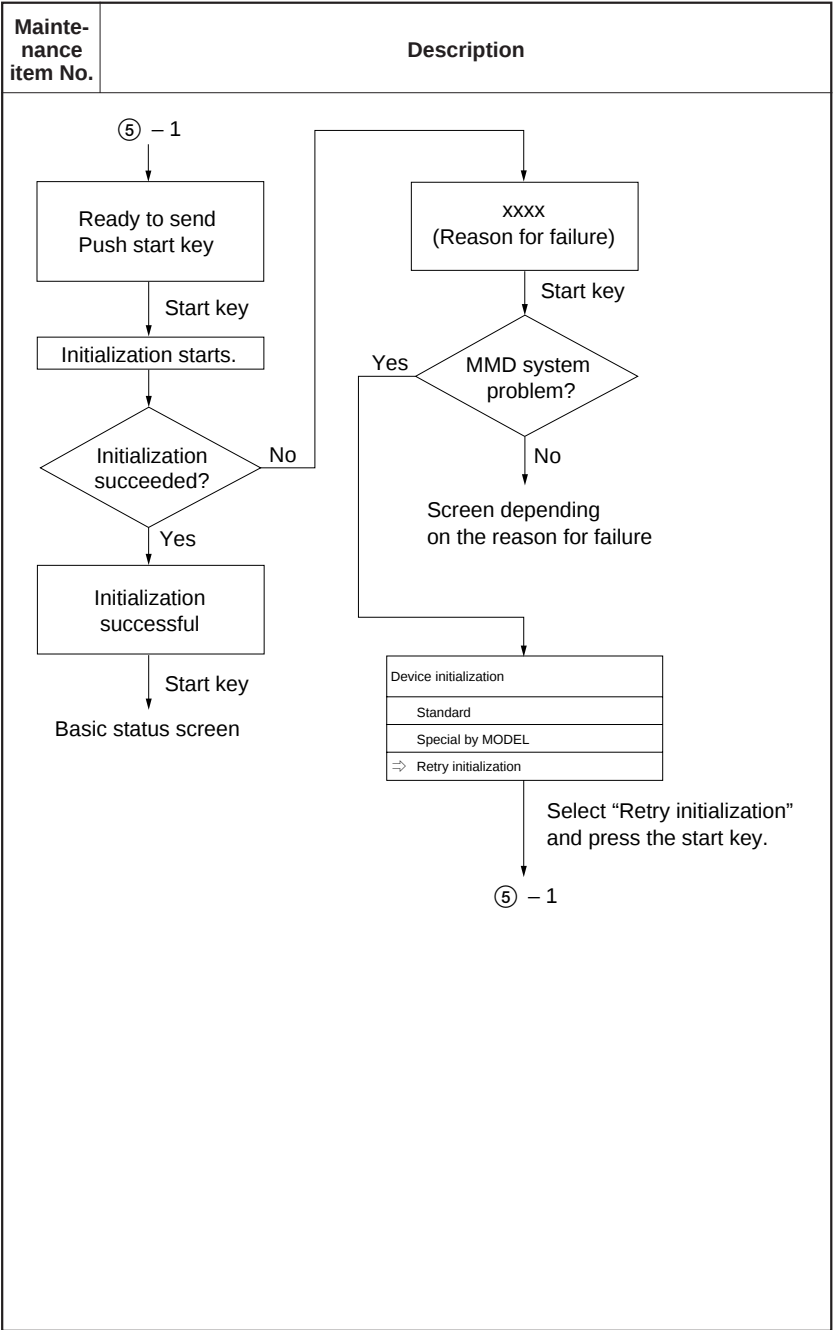
Maintenance item No.	Description
U199	Checking the fixing temperature Description Displays the fixing temperature and the ambient temperature. Purpose To check the fixing temperature and the ambient temperature. Method Press the start key. The fixing temperature and ambient temperature are displayed in centigrade (°C). Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U200	Turning all LEDs on Description Turns all the LEDs on the operation panel on. Purpose To check if all the LEDs on the operation panel light. Method Press the start key. All the LEDs on the operation panel light. Press the stop/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description																
U202	Setting the MMD host monitoring system Description Initializes and operates the MMD host monitoring system*. * Optional for 120 V specifications only. Purpose Used when setting up the machine or during regular maintenance or repair. Method 1. Press the start key. The basic status screen is displayed. 2. Select the item to be executed using the cursor up/down keys and press the start key. The screen for executing is displayed. 3. Operate the device following the instructions on the screen. Completion Press the stop/clear key on the basic status screen. The screen for selecting a maintenance item No. is displayed. [Basic status] <table border="1"> <tr><td>MMD initialization</td><td></td></tr> <tr><td>Technician arrive</td><td>..... ①</td></tr> <tr><td>Maintenance count clear</td><td>..... ②</td></tr> <tr><td>Service report (leave)</td><td>..... ③</td></tr> </table> ↑ Cursor up/down keys ↓ <table border="1"> <tr><td>MMD initialization</td><td></td></tr> <tr><td>Service report (leave)</td><td></td></tr> <tr><td>Phone number setting</td><td>..... ④</td></tr> <tr><td>Device initialization</td><td>..... ⑤</td></tr> </table> • During regular maintenance or service, run the following items in order: · Technician arrive ① · Maintenance count clear ② · Service report (leave) ③ • To initialize the MMD host monitoring system, run the following items in order: · Phone number setting ④ · Device initialization ⑤	MMD initialization		Technician arrive	 ①	Maintenance count clear	 ②	Service report (leave)	 ③	MMD initialization		Service report (leave)		Phone number setting	 ④	Device initialization	 ⑤
MMD initialization																	
Technician arrive	 ①																
Maintenance count clear	 ②																
Service report (leave)	 ③																
MMD initialization																	
Service report (leave)																	
Phone number setting	 ④																
Device initialization	 ⑤																









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Maintenance item No.	Description										
U203	Operating DF separately Description Simulates the original conveying operation separately in the optional SRDF. Purpose To check the SRDF. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Place an original in the SRDF if running this simulation with paper. 3. Select the item to be operated using the cursor up/down keys. The selected item is displayed in reverse. <table> <tr> <th>Display</th><th>Operation</th></tr> <tr> <td>ADF</td><td>With paper, single-sided original</td></tr> <tr> <td>RADF</td><td>With paper, double-sided original</td></tr> <tr> <td>ADF (NON-P)</td><td>Without paper, single-sided original (continuous operation)</td></tr> <tr> <td>RADF (NON-P)</td><td>Without paper, double-sided original (continuous operation)</td></tr> </table> 4. Press the start key. The operation starts. 5. To stop continuous operation, press the stop/clear key. Completion Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.	Display	Operation	ADF	With paper, single-sided original	RADF	With paper, double-sided original	ADF (NON-P)	Without paper, single-sided original (continuous operation)	RADF (NON-P)	Without paper, double-sided original (continuous operation)
Display	Operation										
ADF	With paper, single-sided original										
RADF	With paper, double-sided original										
ADF (NON-P)	Without paper, single-sided original (continuous operation)										
RADF (NON-P)	Without paper, double-sided original (continuous operation)										

Maintenance item No.	Description						
U204	Setting the presence or absence of a key card or key counter Description Sets the presence or absence of the optional key card or key counter. Purpose <i>It is not necessary to run this maintenance item if a key card is installed on a 120 V specification machine. A key card is not available for 220 – 240 V specifications.</i> Method Press the start key. Setting 1. Select the optional counter to be installed using the cursor up/down keys. The selected counter is displayed in reverse. <table><tr><th>Display</th><th>Description</th></tr><tr><td>KEY CARD</td><td>The key card is installed</td></tr><tr><td>KEY COUNTER</td><td>The key counter is installed</td></tr></table> 2. Press the start key. The setting is set and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	KEY CARD	The key card is installed	KEY COUNTER	The key counter is installed
Display	Description						
KEY CARD	The key card is installed						
KEY COUNTER	The key counter is installed						

Maintenance item No.	Description
U206	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.
U208	Setting the paper size for the large paper deck Description Sets the size of paper used in the optional large paper deck. Note that the setting cannot be changed on inch-specification machines since the paper size for the large paper deck is fixed. Purpose To change the setting when the size of paper used in the large paper deck is changed. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the paper size (A4 or B5) using the cursor up/down keys. Initial setting: A4 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description						
U210	Reversing the LCD Description Sets whether to reverse the message display (LCD) in the operation panel. Purpose To reverse the message display. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select ON or OFF using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>ON</td><td>Reverse</td></tr><tr><td>OFF</td><td>Normal</td></tr></table> Initial setting: OFF 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	ON	Reverse	OFF	Normal
Display	Description						
ON	Reverse						
OFF	Normal						

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Maintenance item No.	Description																								
U243	Checking the operation of the DF motors, solenoids and clutch Description Turns the motors, solenoids or clutch in the optional SRDF on. Purpose To check the operation of the SRDF motors, solenoids and clutch. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated using the cursor up/down keys. 3. Press the start key. The operation starts. <table><tr><th>Display</th><th>Motors, solenoids and clutch</th><th>Operation</th></tr><tr><td>F MOT</td><td>Original feed motor (OFM)</td><td>In operation</td></tr><tr><td>C MOT</td><td>Original paper conveying motor (OCM)</td><td>In operation</td></tr><tr><td>FD CL</td><td>Original feed clutch (OFCL)</td><td>On for 0.5 s</td></tr><tr><td>EJ SL</td><td>Eject feedshift solenoid (EFSSOL)</td><td>On for 0.5 s</td></tr><tr><td>RJ SL</td><td>Switchback feedshift solenoid (SBFSSOL)</td><td>On for 0.5 s</td></tr><tr><td>FD SL</td><td>Original feed solenoid (OFSOL)</td><td>On and off</td></tr><tr><td>RP SL</td><td>Switchback pressure solenoid (SBPSOL)</td><td>On and off</td></tr></table> 4. To turn each motor off, press the stop/clear key. Completion Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.	Display	Motors, solenoids and clutch	Operation	F MOT	Original feed motor (OFM)	In operation	C MOT	Original paper conveying motor (OCM)	In operation	FD CL	Original feed clutch (OFCL)	On for 0.5 s	EJ SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s	RJ SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s	FD SL	Original feed solenoid (OFSOL)	On and off	RP SL	Switchback pressure solenoid (SBPSOL)	On and off
Display	Motors, solenoids and clutch	Operation																							
F MOT	Original feed motor (OFM)	In operation																							
C MOT	Original paper conveying motor (OCM)	In operation																							
FD CL	Original feed clutch (OFCL)	On for 0.5 s																							
EJ SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s																							
RJ SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s																							
FD SL	Original feed solenoid (OFSOL)	On and off																							
RP SL	Switchback pressure solenoid (SBPSOL)	On and off																							

Maintenance item No.	Description																		
U244	Checking the DF switches Description Displays the status of the respective switches in the optional SRDF. Purpose To check if respective switches in the optional SRDF operate correctly. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select the type of switches (SW or VR) to be checked using the cursor up/down keys. 3. Press the start key. 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> Method for the on/off switches 1. Turn the respective switches on and off manually to check the status. If the on-status of a switch is detected, the corresponding switch is displayed in reverse. <table border="1"> <thead> <tr> <th>Display</th><th>Switches</th></tr> </thead> <tbody> <tr> <td>SET SW</td><td>Original set switch (OSSW)</td></tr> <tr> <td>FEED SW</td><td>Original feed switch (OFSW)</td></tr> <tr> <td>REV SW</td><td>Original switchback switch (OSBSW)</td></tr> <tr> <td>TMG SW</td><td>DF timing switch (DFTSW)</td></tr> <tr> <td>SZ A SW</td><td>Original size length switch (OSLSW)</td></tr> </tbody> </table> 2. To return to the screen for selecting an item, press the stop/clear key. Method for the volume switch 1. Move the original insertion guides to check the detection status of the original size width switch. The detected original width is displayed as a numerical value with the decimals omitted.	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)																		

Maintenance item No.	Description																																									
U244 (cont.)	<table><tr><th>Numerical value</th><th colspan="2">Original width to be detected</th></tr><tr><td>000</td><td rowspan="4"></td><td></td></tr><tr><td>49.664</td><td></td></tr><tr><td>50.176</td><td></td></tr><tr><td>61.440</td><td></td></tr><tr><td>61.952</td><td rowspan="4"></td><td rowspan="8"></td></tr><tr><td>103.936</td><td></td></tr><tr><td>104.448</td><td></td></tr><tr><td>139.264</td><td></td></tr><tr><td>139.776</td><td colspan="2" rowspan="4"></td></tr><tr><td>146.432</td><td></td></tr><tr><td>146.994</td><td></td></tr><tr><td>197.120</td><td></td></tr><tr><td>197.632</td><td rowspan="2"></td><td rowspan="5"></td></tr><tr><td>197.720</td><td></td></tr><tr><td>223.232</td><td colspan="2" rowspan="2"></td></tr><tr><td>256</td><td></td></tr></table>	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		
Numerical value	Original width to be detected																																									
000																																										
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104.448																																										
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146.432																																										
146.994																																										
197.120																																										
197.632																																										
197.720																																										
223.232																																										
256																																										
For example, if any value between 105 and 139 is displayed when the original insertion guides are adjusted for A4R paper, it indicates that the original width is detected correctly. 2. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.																																										

Maintenance item No.	Description				
U245	Checking messages Description Displays a list of messages and graphics to be displayed. Purpose To check the messages and graphics to be displayed. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select either messages or graphics using the cursor up/down keys. 3. Press the start key. The message display screen or graphic display screen is displayed. 4. Enter the message number or graphic number to be checked using the numeric keys and press the start key. The selected message or graphic is displayed. 5. To check the messages in the listing order, use the cursor up/down keys. 6. 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.				
U247	Checking the operation of the large paper deck and paper feed desk Description Turns on motors and clutches of the optional large paper deck or the optional paper feed desk. Purpose To check the operation of motors and clutches of the respective paper feed devices. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select the paper feed device to be checked using the cursor up/down keys. 3. Press the start key. The screen for executing is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Paper feed device</th></tr> </thead> <tbody> <tr> <td>3000 DECK 500 × 2 DESK</td><td>Large paper deck Paper feed desk</td></tr> </tbody> </table>	Display	Paper feed device	3000 DECK 500 × 2 DESK	Large paper deck Paper feed desk
Display	Paper feed device				
3000 DECK 500 × 2 DESK	Large paper deck Paper feed desk				

Maintenance item No.	Description															
U247 (cont.)	Method 1. Select the item to be operated using the cursor up/down keys. 2. Press the start key. The operation starts.															
	• Large paper deck															
	<table><tr><th>Display</th><th>Motors and clutches</th><th>Operation</th></tr><tr><td>LCF MOT</td><td>Deck paper conveying motor (CM)</td><td>On for 5 s</td></tr><tr><td>B CL</td><td>Paper conveying clutch (CCL)</td><td>On for 1 s</td></tr><tr><td>PCL1</td><td>Paper feed clutch 1 (PFCL1)</td><td>On for 1 s</td></tr><tr><td>PCL2</td><td>Paper feed clutch 2 (PFCL2)</td><td>On for 1 s</td></tr></table>	Display	Motors and clutches	Operation	LCF MOT	Deck paper conveying motor (CM)	On for 5 s	B CL	Paper conveying clutch (CCL)	On for 1 s	PCL1	Paper feed clutch 1 (PFCL1)	On for 1 s	PCL2	Paper feed clutch 2 (PFCL2)	On for 1 s
	Display	Motors and clutches	Operation													
	LCF MOT	Deck paper conveying motor (CM)	On for 5 s													
B CL	Paper conveying clutch (CCL)	On for 1 s														
PCL1	Paper feed clutch 1 (PFCL1)	On for 1 s														
PCL2	Paper feed clutch 2 (PFCL2)	On for 1 s														
• Paper feed desk																
<table><tr><th>Display</th><th>Motors and clutches</th><th>Operation</th></tr><tr><td>DESK MOT</td><td>Desk drive motor (DDM)</td><td>On for 5 s</td></tr><tr><td>FEED CL</td><td>Desk feed clutch (DFCL)</td><td>On for 1 s</td></tr><tr><td>UPP CL</td><td>Upper desk paper feed clutch (DPFCL-U)</td><td>On for 1 s</td></tr><tr><td>LOW CL</td><td>Lower desk paper feed clutch (DPFCL-L)</td><td>On for 1 s</td></tr></table>	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 1 s	LOW CL	Lower desk paper feed clutch (DPFCL-L)	On for 1 s	
Display	Motors and clutches	Operation														
DESK MOT	Desk drive motor (DDM)	On for 5 s														
FEED CL	Desk feed clutch (DFCL)	On for 1 s														
UPP CL	Upper desk paper feed clutch (DPFCL-U)	On for 1 s														
LOW CL	Lower desk paper feed clutch (DPFCL-L)	On for 1 s														
	3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.															

Maintenance item No.	Description				
U249	Checking the paper ejection to optional devices Description Ejects paper to an optional mailbox or job separator, or to the ejection slot at the machine left. Purpose To check paper conveying operation to optional paper eject devices or the ejection slot at the machine left. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the paper eject location using the cursor up/down keys. <table> <tr> <th>Display</th><th>Paper eject device</th></tr> <tr> <td>MAIL BOX JOB SEPARATOR LEFT BIN OUTPUT</td><td>Mailbox Job separator Ejection slot at the machine left (finisher not installed)</td></tr> </table> 3. When selecting the mailbox, specify the mail tray number (1 to 7) to which paper is to be ejected by using the cursor left/right keys. If 0 is selected, paper is ejected to the mail trays in ascending order from mail tray 1 to mail tray 7 repeatedly. 4. Press the interrupt key to enter interrupt copy mode. 5. Make a test copy and check paper ejection. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Paper eject device	MAIL BOX JOB SEPARATOR LEFT BIN OUTPUT	Mailbox Job separator Ejection slot at the machine left (finisher not installed)
Display	Paper eject device				
MAIL BOX JOB SEPARATOR LEFT BIN OUTPUT	Mailbox Job separator Ejection slot at the machine left (finisher not installed)				

Maintenance item No.	Description								
U250	Setting the maintenance cycle Description Displays and changes the maintenance cycle. Purpose To check and change the maintenance cycle. Method Press the start key. The current setting is displayed as follows: Maintenance cycle (number of copies) = setting × 1000 Setting 1. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Maintenance cycle</td><td>0 to 600</td><td>50</td><td>1000 (copies)</td></tr></table> For example, when set to 120, the maintenance cycle is set to 120000. 2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	Change in value per step	Maintenance cycle	0 to 600	50	1000 (copies)
Description	Setting range	Initial setting	Change in value per step						
Maintenance cycle	0 to 600	50	1000 (copies)						
U251	Checking/clearing the maintenance count Description Displays, clears and changes the maintenance count. Purpose To check the maintenance count. Also to clear the count during maintenance service. Method Press the start key. The maintenance count is displayed. Clearing 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. Setting 1. Enter a six-digit count using the numeric keys. 2. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.								

Maintenance item No.	Description																				
U252	Setting the destination Description Switches the operations and screens of the machine according to the destination. Purpose To be executed after replacing the backup RAM on the main PCB or initializing the backup RAM by running maintenance item U020, in order to return the setting to the value before replacement or initialization. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the destination using the cursor up/down keys. The selected item is displayed in reverse. <table><tr><th>Display</th><th>Description</th></tr><tr><td>JAPAN METRIC</td><td>Metric (Japan) specifications</td></tr><tr><td>INCH</td><td>Inch (North America) specifications</td></tr><tr><td>EUROPE METRIC</td><td>Metric (Europe) specifications</td></tr><tr><td>ASIA PACIFIC</td><td>Metric (Asia Pacific) specifications</td></tr></table> 2. Press the start key. The setting is set, and the machine automatically returns to the same status as when the power is turned on. Completion To exit this maintenance item without changing the current count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed. Supplement The specified initial settings are provided according to the destinations in the maintenance items below. To change the initial settings in those items, be sure to run maintenance item U021 after changing the destination. • Initial setting according to the destinations	Display	Description	JAPAN METRIC	Metric (Japan) specifications	INCH	Inch (North America) specifications	EUROPE METRIC	Metric (Europe) specifications	ASIA PACIFIC	Metric (Asia Pacific) specifications										
Display	Description																				
JAPAN METRIC	Metric (Japan) specifications																				
INCH	Inch (North America) specifications																				
EUROPE METRIC	Metric (Europe) specifications																				
ASIA PACIFIC	Metric (Asia Pacific) specifications																				
	<table><tr><th>Maintenance item No.</th><th>Title</th><th>Japan</th><th>Inch</th><th>Europe Metric, Asia Pacific</th></tr><tr><td>253</td><td>Switching between double and single counts</td><td>Single</td><td>Double</td><td>Double</td></tr><tr><td>255</td><td>Setting auto clear time</td><td>120 s</td><td>90 s</td><td>90 s</td></tr><tr><td>348</td><td>Setting the copy density adjustment range</td><td>Normal</td><td>Special area</td><td>Special area</td></tr></table>	Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific	253	Switching between double and single counts	Single	Double	Double	255	Setting auto clear time	120 s	90 s	90 s	348	Setting the copy density adjustment range	Normal	Special area	Special area
Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific																	
253	Switching between double and single counts	Single	Double	Double																	
255	Setting auto clear time	120 s	90 s	90 s																	
348	Setting the copy density adjustment range	Normal	Special area	Special area																	

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

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

Maintenance item No.	Description						
U255	Setting auto clear time Description Sets the time to return to initial settings after copying is complete. Purpose To be set according to frequency of use. Set to a comparatively long time for continuous copying at the same settings, and a comparatively short time for frequent copying at various settings. Method Press the start key. The current setting is displayed. Setting 1. Change the setting using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Auto clear time</td><td>0 to 270</td><td>90</td></tr></table> The setting can be changed by 30 s per step. When set to 0, the auto clear function is cancelled. 2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	Auto clear time	0 to 270	90
Description	Setting range	Initial setting					
Auto clear time	0 to 270	90					

Maintenance item No.	Description				
U256	Turning auto preheat/energy saver function on/off 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. Purpose According to user request, to set the preheat time to save energy, or enable copying promptly without the recovery time from preheat mode. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select ON or OFF using the cursor up/down keys. The selected item is displayed in reverse. <table> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>ON OFF</td><td>Auto preheat/energy saver function on Auto preheat/energy saver function off</td></tr> </table> Initial setting: ON 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. When the setting is changed from OFF to ON, the auto preheat time is set to the initial setting of 15 minutes. 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.	Display	Description	ON OFF	Auto preheat/energy saver function on Auto preheat/energy saver function off
Display	Description				
ON OFF	Auto preheat/energy saver function on Auto preheat/energy saver function off				

Maintenance item No.	Description												
U258	Switching copy operation at toner empty detection Description Selects if continuous copying is enabled after toner empty is detected, and sets the number of copies that can be made after the detection. Method Press the start key. The current setting is displayed. Setting 1. Select single or continuous copying using the cursor up/down keys. The selected item is displayed in reverse. <table><tr><th>Display</th><th>Description</th></tr><tr><td>SINGLE MODE</td><td>Enables only single copying.</td></tr><tr><td>CONTINUE MODE</td><td>Enables single and continuous copying.</td></tr></table> Initial setting: SINGLE MODE 2. Set the number of copies that can be made using the cursor left/right keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Number of copies after toner empty detection</td><td>0 to 200 (copies)</td><td>70</td></tr></table> The setting can be changed by 5 copies per step. When set to 0, the number of copies is not limited regardless of the setting for single or continuous copying. 3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	SINGLE MODE	Enables only single copying.	CONTINUE MODE	Enables single and continuous copying.	Description	Setting range	Initial setting	Number of copies after toner empty detection	0 to 200 (copies)	70
Display	Description												
SINGLE MODE	Enables only single copying.												
CONTINUE MODE	Enables single and continuous copying.												
Description	Setting range	Initial setting											
Number of copies after toner empty detection	0 to 200 (copies)	70											

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

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

Maintenance item No.	Description								
U344	Setting preheat/energy saver mode Description Changes the control for preheat/energy saver mode. Purpose According to user request, selects which has priority, the recovery time from preheat or energy saver. Method Press the start key. The screen for selecting an item is displayed. Setting - Select control mode using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th><th>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 80°C/144°F. When the ambient temperature at main switch turning on is 18°C/64.4°F or higher, the copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.</td></tr> <tr> <td>E 2000</td><td>The fixing control temperature is decreased by 80°C/144°F.</td></tr> </tbody> </table> Initial setting: ENERGY STAR - Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	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 80°C/144°F. When the ambient temperature at main switch turning on is 18°C/64.4°F or higher, the copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.	E 2000	The fixing control temperature is decreased by 80°C/144°F.
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 80°C/144°F. When the ambient temperature at main switch turning on is 18°C/64.4°F or higher, the copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.								
E 2000	The fixing control temperature is decreased by 80°C/144°F.								

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

Maintenance item No.	Description						
U347	Setting auto drawer size detection Description Turns the auto drawer size detection function on/off. Purpose To be used when turning the auto paper size (in the drawers) detection off and making copies onto only the specified size paper. Method Press the start key. The screen for selecting an item is displayed. Setting - Select ON or OFF using the cursor up/down keys. <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> Initial setting: ON - Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	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.						

Maintenance item No.	Description						
U348	Setting the copy density adjustment range Description Selects the adjustment range for copy density from NORMAL and SPECIAL AREA (for wider range). Purpose To change the setting according to user request. When especially dark or light density is requested, set to SPECIAL AREA. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the density range using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>SPECIAL AREA</td><td>25 steps (enlargement mode)</td></tr><tr><td>NORMAL</td><td>13 steps</td></tr></table> Initial setting: SPECIAL AREA 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	SPECIAL AREA	25 steps (enlargement mode)	NORMAL	13 steps
Display	Description						
SPECIAL AREA	25 steps (enlargement mode)						
NORMAL	13 steps						
U402	Adjusting margins of image printing Adjustment See page 3-3-21.						
U403	Adjusting margins for scanning an original on the contact glass Adjustment See page 3-3-42.						
U404	Adjusting margins for scanning an original from the DF Description Adjusts margins for scanning the original from the DF. Purpose Used if margins are not correct when the optional SRDF is used. Caution Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 → U034 → U402 → U070 → U071 → U072 → U404 Method Press the start key. The screen for selecting an item is displayed.						

Maintenance item No.	Description			
U404 (cont.)	Setting 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys.			
Display	Description	Setting range	Initial setting	Change in value per step
A MARGIN	Left margin	0 to 20	2	0.5 mm
B MARGIN	Leading edge margin	6 to 20	6	0.5 mm
C MARGIN	Right margin	0 to 20	2	0.5 mm
D MARGIN	Trailing edge margin	0 to 20	6	0.5 mm

Ejection direction (reference)

DF leading edge margin (3 ± 1.0 mm)

DF left margin (2 ± 0.5 mm)

DF right margin (2 ± 0.5 mm)

DF trailing edge margin (3 ± 1.0 mm)

Figure 3-2-9 Correct margin amount

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

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

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

Maintenance item No.	Description
U407	Adjusting the leading edge registration for memory image printing Adjustment See page 3-3-19.
U600	Initializing all data Description Initializes software switches and all the data in SRAM on the optional fax board according to the destination and OEM. Purpose Used to initialize the fax board. Method - Press the start key. The screen for entering the destination code is displayed. Default: USA: 181 Europe: 004 There is no operation necessary on this screen. INI. ALL DATA COUNTRY CODE:000 - Press the start key. The screen for entering the OEM code is displayed. Default: 000 There is no operation necessary on this screen. INI. ALL DATA OEM CODE:000 - Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key. - After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed after two seconds. INI. ALL DATA COMPLETED 000 000 INI. ALL DATA COMPLETED V1.00

Maintenance item No.	Description
U601	Initializing permanent data Description Initializes software switches other than that for machine data on the optional fax board according to the destination and OEM. Purpose Used to initialize the fax board without changing the user registration data and factory settings. Method 1. Press the start key. The screen for entering the destination code is displayed. Default: USA: 181 Europe: 004 There is no operation necessary on this screen. INI. KEEP DATA COUNTRY CODE:000 2. Press the start key. The screen for entering the OEM code is displayed. Default: 000 There is no operation necessary on this screen. INI. KEEP DATA OEM CODE:000 3. Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key. 4. After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed after two seconds. INI. KEEP DATA COMPLETED 000 000 INI. KEEP DATA COMPLETED V1.00

Maintenance item No.	Description										
U602	Setting factory defaults Description Initializes software switches other than that for machine data and SRAM on the optional fax board according to the destination and OEM. Purpose Used to initialize the fax board to the factory default. Method 1. Press the start key. Data initialization starts. To cancel data initialization, press the stop/clear key. 2. After data initialization, the entered destination and OEM codes are displayed, and the ROM version is displayed after two seconds. INI. SHIP DATA COMPLETED 000 000 INI. SHIP DATA COMPLETED V1.00										
U603	Setting the user registration data Description Makes user settings to enable the use of the copier as a fax. Purpose To be run after installation of the optional fax board. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>SELF TEL No.</td><td>Sets the self telephone number.</td></tr><tr><td>LINE TYPE</td><td>Sets the type of telephone line.</td></tr><tr><td>RINGS (F/T) #</td><td>Sets the number of rings in fax/telephone auto select mode.</td></tr><tr><td>REMOTE DIAG</td><td>Sets remote diagnostic transmission.</td></tr></table>	Display	Description	SELF TEL No.	Sets the self telephone number.	LINE TYPE	Sets the type of telephone line.	RINGS (F/T) #	Sets the number of rings in fax/telephone auto select mode.	REMOTE DIAG	Sets remote diagnostic transmission.
Display	Description										
SELF TEL No.	Sets the self telephone number.										
LINE TYPE	Sets the type of telephone line.										
RINGS (F/T) #	Sets the number of rings in fax/telephone auto select mode.										
REMOTE DIAG	Sets remote diagnostic transmission.										

Maintenance item No.	Description																		
U603 (cont.)	Setting the self telephone number - Enter the telephone number using the numeric keys. Up to 20 digits can be entered. To correct the entered telephone number or to delete the stored telephone number, reset by pressing the stop/clear key. - Press the start key. - To return to the screen for selecting an item, press the stop/clear key. Setting the type of telephone line - Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: DTMF</td><td>DTMF</td></tr> <tr> <td>2: 10</td><td>10 PPS</td></tr> <tr> <td>3: 20</td><td>20 PPS</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting the number of rings in fax/telephone auto select mode According to the user request, used to increase or decrease the time required to switch to a fax. - Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of fax/telephone rings</td><td>0 to 15</td></tr> </tbody> </table> When set to 0, a fax is selected immediately after receiving a ring tone. - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting remote diagnostic transmission - Enter 1 or 2 using the numeric keys to select if remote diagnostic transmission is to be enabled. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Remote diagnostic transmission is enabled.</td></tr> <tr> <td>2: OFF</td><td>Remote diagnostic transmission is disabled.</td></tr> </tbody> </table> - Press the start key. The value is set. - 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.	Display	Description	1: DTMF	DTMF	2: 10	10 PPS	3: 20	20 PPS	Description	Setting range	Number of fax/telephone rings	0 to 15	Display	Description	1: ON	Remote diagnostic transmission is enabled.	2: OFF	Remote diagnostic transmission is disabled.
Display	Description																		
1: DTMF	DTMF																		
2: 10	10 PPS																		
3: 20	20 PPS																		
Description	Setting range																		
Number of fax/telephone rings	0 to 15																		
Display	Description																		
1: ON	Remote diagnostic transmission is enabled.																		
2: OFF	Remote diagnostic transmission is disabled.																		

Maintenance item No.	Description										
U604	Clearing data Description Initializes data related to the fax transmission such as transmission history and IDs. Purpose Used to clear the transmission history or if an ID has been forgotten. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>COMM. REC</td><td>Clears activity report; error list; action list; line setting list; transmission history of each department as listed on the department control report; transmission history for displaying the transmission results; and other transmission history such as document numbers, excluding items regarding the machine variation adjustment.</td></tr><tr><td>MANAGE PW</td><td>Initializes the cipher key password.</td></tr><tr><td>CONFI ID</td><td>Initializes the confidential box ID.</td></tr><tr><td>F-CODE ID</td><td>Initializes the F-code confidential box ID.</td></tr></table> 3. Press the start key. Initialization starts. When initialized, "COMPLETED" is displayed. 4. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	COMM. REC	Clears activity report; error list; action list; line setting list; transmission history of each department as listed on the department control report; transmission history for displaying the transmission results; and other transmission history such as document numbers, excluding items regarding the machine variation adjustment.	MANAGE PW	Initializes the cipher key password.	CONFI ID	Initializes the confidential box ID.	F-CODE ID	Initializes the F-code confidential box ID.
Display	Description										
COMM. REC	Clears activity report; error list; action list; line setting list; transmission history of each department as listed on the department control report; transmission history for displaying the transmission results; and other transmission history such as document numbers, excluding items regarding the machine variation adjustment.										
MANAGE PW	Initializes the cipher key password.										
CONFI ID	Initializes the confidential box ID.										
F-CODE ID	Initializes the F-code confidential box ID.										

Maintenance item No.	Description																										
U605	Setting the system (operational) Description Makes settings for fax transmission regarding operation. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>MEM. FULL</td><td>Sets how to proceed if memory becomes full during memory transmission.</td></tr> <tr> <td>FIN. ALARM</td><td>Sets an alarm for when reception is completed.</td></tr> <tr> <td>AUTO REDU</td><td>Selects if auto reduction in the auxiliary direction is to be performed.</td></tr> <tr> <td>ADD IMAGE</td><td>Sets for the addition of an image to the report.</td></tr> <tr> <td>ERR. CODE</td><td>Sets the error report display format.</td></tr> <tr> <td>MONITOR</td><td>Sets the line-monitoring period.</td></tr> <tr> <td>TIME (ONE)</td><td>Sets the one-shot detection time for remote switching.</td></tr> <tr> <td>TIME (CON)</td><td>Sets the continuous detection time for remote switching.</td></tr> <tr> <td>RESOLUT</td><td>Sets the initial condition of fax image scanning quality.</td></tr> </tbody> </table> Setting how to proceed if memory becomes full during memory transmission Used to select whether to send only stored data or to display an error indication and cancel transmission if memory becomes full during memory transmission. 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: CONT</td><td>Whether to continue memory transmission or to clear the memory can be selected by the user.</td></tr> <tr> <td>2: STOP</td><td>Memory is forcibly cleared.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	MEM. FULL	Sets how to proceed if memory becomes full during memory transmission.	FIN. ALARM	Sets an alarm for when reception is completed.	AUTO REDU	Selects if auto reduction in the auxiliary direction is to be performed.	ADD IMAGE	Sets for the addition of an image to the report.	ERR. CODE	Sets the error report display format.	MONITOR	Sets the line-monitoring period.	TIME (ONE)	Sets the one-shot detection time for remote switching.	TIME (CON)	Sets the continuous detection time for remote switching.	RESOLUT	Sets the initial condition of fax image scanning quality.	Display	Description	1: CONT	Whether to continue memory transmission or to clear the memory can be selected by the user.	2: STOP	Memory is forcibly cleared.
Display	Description																										
MEM. FULL	Sets how to proceed if memory becomes full during memory transmission.																										
FIN. ALARM	Sets an alarm for when reception is completed.																										
AUTO REDU	Selects if auto reduction in the auxiliary direction is to be performed.																										
ADD IMAGE	Sets for the addition of an image to the report.																										
ERR. CODE	Sets the error report display format.																										
MONITOR	Sets the line-monitoring period.																										
TIME (ONE)	Sets the one-shot detection time for remote switching.																										
TIME (CON)	Sets the continuous detection time for remote switching.																										
RESOLUT	Sets the initial condition of fax image scanning quality.																										
Display	Description																										
1: CONT	Whether to continue memory transmission or to clear the memory can be selected by the user.																										
2: STOP	Memory is forcibly cleared.																										

Maintenance item No.	Description																										
U605 (cont.)	Setting an alarm for when reception is completed 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: ON</td><td>An alarm rings.</td></tr><tr><td>2: OFF</td><td>An alarm does not ring.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Selecting if auto reduction in the auxiliary direction is to be performed Sets whether to receive a long document by automatically reducing in the auxiliary direction or at 100% magnification. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: ON</td><td>Auto reduction is performed if the received document is longer than the fax paper.</td></tr><tr><td>2: OFF</td><td>Auto reduction is not performed.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the addition of an image to the report Selects if an image is to be added to the transmission report. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: ON</td><td>Image added.</td></tr><tr><td>2: OFF</td><td>Image not added.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the error report display format Selects the format of the transmission report when a transmission error occurs. 1. Change the setting using the numeric keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: WORDS</td><td>Records an error message (BUSY, OK, ERROR or STOP).</td></tr><tr><td>2: CODE</td><td>Records a six-digit error code.</td></tr><tr><td>3: MIX</td><td>Records either an error message or code.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	1: ON	An alarm rings.	2: OFF	An alarm does not ring.	Display	Description	1: ON	Auto reduction is performed if the received document is longer than the fax paper.	2: OFF	Auto reduction is not performed.	Display	Description	1: ON	Image added.	2: OFF	Image not added.	Display	Description	1: WORDS	Records an error message (BUSY, OK, ERROR or STOP).	2: CODE	Records a six-digit error code.	3: MIX	Records either an error message or code.
Display	Description																										
1: ON	An alarm rings.																										
2: OFF	An alarm does not ring.																										
Display	Description																										
1: ON	Auto reduction is performed if the received document is longer than the fax paper.																										
2: OFF	Auto reduction is not performed.																										
Display	Description																										
1: ON	Image added.																										
2: OFF	Image not added.																										
Display	Description																										
1: WORDS	Records an error message (BUSY, OK, ERROR or STOP).																										
2: CODE	Records a six-digit error code.																										
3: MIX	Records either an error message or code.																										

Maintenance item No.	Description														
U605 (cont.)	Setting the line-monitoring period Sets the period to monitor the line. By monitoring a transmission from the start to the end, it can be checked whether the transmission was correct or not. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: END</td><td>Until transmission is completed.</td></tr> <tr> <td>2: DIS</td><td>After dialing is completed until reception of a DIS signal.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the one-shot detection time for remote switching Sets the detection time when one-shot detection is selected for remote switching. Used to change the setting if malfunction occurs due to external noise during remote switching. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>One-shot detection time for remote switching</td><td>0 to 255 ms</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the continuous detection time for remote switching Sets the detection time when continuous detection is selected for remote switching. Used to change the setting if malfunction occurs due to external noise during remote switching. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Continuous detection time for remote switching</td><td>0 to 255 ms</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	1: END	Until transmission is completed.	2: DIS	After dialing is completed until reception of a DIS signal.	Description	Setting range	One-shot detection time for remote switching	0 to 255 ms	Description	Setting range	Continuous detection time for remote switching	0 to 255 ms
Display	Description														
1: END	Until transmission is completed.														
2: DIS	After dialing is completed until reception of a DIS signal.														
Description	Setting range														
One-shot detection time for remote switching	0 to 255 ms														
Description	Setting range														
Continuous detection time for remote switching	0 to 255 ms														

Maintenance item No.	Description																
U605 (cont.)	Setting the initial condition of fax image scanning quality Set to the resolution that is most frequently used by the user. 1. Change the setting using the numeric keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: S</td><td>Standard</td></tr><tr><td>2: F</td><td>Fine</td></tr><tr><td>3: SF</td><td>Super fine</td></tr><tr><td>4: UF</td><td>Ultra fine</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	1: S	Standard	2: F	Fine	3: SF	Super fine	4: UF	Ultra fine						
Display	Description																
1: S	Standard																
2: F	Fine																
3: SF	Super fine																
4: UF	Ultra fine																
U606	Setting the system (operation unit and display) Description Makes settings for fax transmission regarding the operation unit and display. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>ALARM LED OFF</td><td>Sets the conditions under which an error indicator turns off.</td></tr><tr><td>DATE PATTERN</td><td>Sets the date format.</td></tr><tr><td>RESO. LOCK</td><td>Sets if the image scanning quality in fax mode is initialized.</td></tr><tr><td>DENS. LOCK</td><td>Sets if the scanning density in fax mode is initialized.</td></tr></table> Setting the conditions under which an error indicator turns off 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: RESET</td><td>An error indicator turns off only when the reset key is pressed.</td></tr><tr><td>2: COMM</td><td>An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	ALARM LED OFF	Sets the conditions under which an error indicator turns off.	DATE PATTERN	Sets the date format.	RESO. LOCK	Sets if the image scanning quality in fax mode is initialized.	DENS. LOCK	Sets if the scanning density in fax mode is initialized.	Display	Description	1: RESET	An error indicator turns off only when the reset key is pressed.	2: COMM	An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.
Display	Description																
ALARM LED OFF	Sets the conditions under which an error indicator turns off.																
DATE PATTERN	Sets the date format.																
RESO. LOCK	Sets if the image scanning quality in fax mode is initialized.																
DENS. LOCK	Sets if the scanning density in fax mode is initialized.																
Display	Description																
1: RESET	An error indicator turns off only when the reset key is pressed.																
2: COMM	An error indicator turns off when any key is pressed, an original is inserted or the next transmission is started.																

Maintenance item No.	Description																				
U606 (cont.)	Setting the date format Selects the date format on the respective reports and sender's information record. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Order</th></tr> </thead> <tbody> <tr> <td>1: YMD</td><td>Year/month/day</td></tr> <tr> <td>2: MDY</td><td>Month/day/year</td></tr> <tr> <td>3: DMY</td><td>Day/month/year</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting if the image scanning quality in fax mode is initialized Sets if the resolution is to be initialized when fax operation is complete. 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Resolution is initialized.</td></tr> <tr> <td>2: OFF</td><td>Resolution is not initialized.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting if the scanning density in fax mode is initialized Sets if the scanning density is initialized when fax operation is complete. 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Density is initialized.</td></tr> <tr> <td>2: OFF</td><td>Density is not initialized.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Order	1: YMD	Year/month/day	2: MDY	Month/day/year	3: DMY	Day/month/year	Display	Description	1: ON	Resolution is initialized.	2: OFF	Resolution is not initialized.	Display	Description	1: ON	Density is initialized.	2: OFF	Density is not initialized.
Display	Order																				
1: YMD	Year/month/day																				
2: MDY	Month/day/year																				
3: DMY	Day/month/year																				
Display	Description																				
1: ON	Resolution is initialized.																				
2: OFF	Resolution is not initialized.																				
Display	Description																				
1: ON	Density is initialized.																				
2: OFF	Density is not initialized.																				

Maintenance item No.	Description																										
U607	Setting the system (communication 1) Description Makes settings for fax transmission regarding the communication. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>INTERVAL</td><td>Sets the auto redialing interval.</td></tr> <tr> <td>TIMES</td><td>Sets the number of times of auto redialing.</td></tr> <tr> <td>VOICE RES</td><td>Sets the voice response.</td></tr> <tr> <td>TX SPEED</td><td>Sets the communication starting speed.</td></tr> <tr> <td>RX SPEED</td><td>Sets the reception speed.</td></tr> <tr> <td>F-NET</td><td>Sets no-ring reception when using the F network.</td></tr> <tr> <td>REMOTE</td><td>Sets the mode for remote switching.</td></tr> <tr> <td>CALL INT</td><td>Sets the transmission intervals.</td></tr> </tbody> </table> Setting the auto redialing interval Change the setting to prevent the following problems: fax transmission is not possible due to too short redial interval, or fax transmission takes too much time to complete due to too long redial interval. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Redialing interval</td><td>1 to 9 min.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the number of times of auto redialing 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of redialing</td><td>0 to 9</td></tr> </tbody> </table> When set to 0, no redialing is performed. 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	INTERVAL	Sets the auto redialing interval.	TIMES	Sets the number of times of auto redialing.	VOICE RES	Sets the voice response.	TX SPEED	Sets the communication starting speed.	RX SPEED	Sets the reception speed.	F-NET	Sets no-ring reception when using the F network.	REMOTE	Sets the mode for remote switching.	CALL INT	Sets the transmission intervals.	Description	Setting range	Redialing interval	1 to 9 min.	Description	Setting range	Number of redialing	0 to 9
Display	Description																										
INTERVAL	Sets the auto redialing interval.																										
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Description	Setting range																										
Redialing interval	1 to 9 min.																										
Description	Setting range																										
Number of redialing	0 to 9																										

Maintenance item No.	Description																										
U607 (cont.)	Setting the voice response - Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Voice response is performed.</td></tr> <tr> <td>2: OFF</td><td>Voice response is not performed.</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting the communication starting speed Sets the initial communication speed when starting transmission. When the destination unit has V.34 capability, V.34 is selected for transmission, regardless of this setting. - Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 144</td><td>V.17, 14400 bps</td></tr> <tr> <td>2: 96</td><td>V.17, 9600 bps</td></tr> <tr> <td>3: 48</td><td>V.27ter, 4800 bps</td></tr> <tr> <td>4: 24</td><td>V.27ter, 2400 bps</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting the reception speed Sets the reception speed that the sender is informed of using the DIS or NSF signal. When the destination unit has V.34 capability, V.34 is selected, regardless of the setting. - Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 144</td><td>V.17, V.33, V.29, V.27ter</td></tr> <tr> <td>2: 96</td><td>V.29, V.27ter</td></tr> <tr> <td>3: 48</td><td>V.27ter</td></tr> <tr> <td>4: 24</td><td>V.27ter (fallback only)</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key.	Display	Description	1: ON	Voice response is performed.	2: OFF	Voice response is not performed.	Display	Description	1: 144	V.17, 14400 bps	2: 96	V.17, 9600 bps	3: 48	V.27ter, 4800 bps	4: 24	V.27ter, 2400 bps	Display	Description	1: 144	V.17, V.33, V.29, V.27ter	2: 96	V.29, V.27ter	3: 48	V.27ter	4: 24	V.27ter (fallback only)
Display	Description																										
1: ON	Voice response is performed.																										
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3: 48	V.27ter, 4800 bps																										
4: 24	V.27ter, 2400 bps																										
Display	Description																										
1: 144	V.17, V.33, V.29, V.27ter																										
2: 96	V.29, V.27ter																										
3: 48	V.27ter																										
4: 24	V.27ter (fallback only)																										

Maintenance item No.	Description																						
U607 (cont.)	Setting no-ring reception when using the F network Sets whether to enable no-ring reception (a fax is received without the machine ringing) when using F network. Note that since the F network is only available in Japan, no setting is necessary for other destinations. - Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>No-ring reception is enabled.</td></tr> <tr> <td>2: OFF</td><td>No-ring reception is disabled.</td></tr> </tbody> </table> Initial setting: 2 - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting the mode for remote switching Sets the signal detection method for remote switching. Be sure to change the setting according to the type of telephone connected to the machine. - Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ONE</td><td>One-shot detection</td></tr> <tr> <td>2: CONT</td><td>Continuous detection</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting the transmission intervals Sets the minimum time required for connection to the line for the next transmission after the previous transmission was completed. Change the setting if transmission problems occur during multi-transmission, such as broadcasting and polling transmission, or reserved transmission. - Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 10</td><td>10 s</td></tr> <tr> <td>2: 30</td><td>30 s</td></tr> <tr> <td>3: 70</td><td>70 s</td></tr> <tr> <td>4: 120</td><td>120 s</td></tr> </tbody> </table> - Press the start key. The value is set. - 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.	Display	Description	1: ON	No-ring reception is enabled.	2: OFF	No-ring reception is disabled.	Display	Description	1: ONE	One-shot detection	2: CONT	Continuous detection	Display	Description	1: 10	10 s	2: 30	30 s	3: 70	70 s	4: 120	120 s
Display	Description																						
1: ON	No-ring reception is enabled.																						
2: OFF	No-ring reception is disabled.																						
Display	Description																						
1: ONE	One-shot detection																						
2: CONT	Continuous detection																						
Display	Description																						
1: 10	10 s																						
2: 30	30 s																						
3: 70	70 s																						
4: 120	120 s																						

Maintenance item No.	Description																																
U608	Setting transmission Description Makes settings regarding fax transmission. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>ERROR</td><td>Sets the method to process errors.</td></tr> <tr> <td>DIS-2 RES</td><td>Sets the number of times of DIS signal reception.</td></tr> <tr> <td>RTN CHECK</td><td>Sets the reference for RTN signal output.</td></tr> <tr> <td>TX ECHO</td><td>Sets the waiting period to prevent echo problems at the sender.</td></tr> <tr> <td>RX ECHO</td><td>Sets the waiting period to prevent echo problems at the receiver.</td></tr> <tr> <td>ECM TX</td><td>Sets ECM transmission.</td></tr> <tr> <td>ECM RX</td><td>Sets ECM reception.</td></tr> <tr> <td>TCF CHECK</td><td>Sets the criteria for receiving a TCF signal 1.</td></tr> <tr> <td>CED FREQ.</td><td>Sets the frequency of the CED signal.</td></tr> </tbody> </table> Setting the method to process errors Selects if transmission is to be treated as in error if a RTN or PIN signal is received. If it is treated as in error, an alarm sounds and a transmission report is output. 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: OK</td><td>Transmission is not treated as in error.</td></tr> <tr> <td>2: ERROR</td><td>Transmission is treated as in error.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the number of times of DIS signal reception Sets the number of times to receive the DIS signal to once or twice. Used as one of the correction measures for transmission errors and other problems. 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ONCE</td><td>Responds to the first signal.</td></tr> <tr> <td>2: TWICE</td><td>Responds to the second signal.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	ERROR	Sets the method to process errors.	DIS-2 RES	Sets the number of times of DIS signal reception.	RTN CHECK	Sets the reference for RTN signal output.	TX ECHO	Sets the waiting period to prevent echo problems at the sender.	RX ECHO	Sets the waiting period to prevent echo problems at the receiver.	ECM TX	Sets ECM transmission.	ECM RX	Sets ECM reception.	TCF CHECK	Sets the criteria for receiving a TCF signal 1.	CED FREQ.	Sets the frequency of the CED signal.	Display	Description	1: OK	Transmission is not treated as in error.	2: ERROR	Transmission is treated as in error.	Display	Description	1: ONCE	Responds to the first signal.	2: TWICE	Responds to the second signal.
Display	Description																																
ERROR	Sets the method to process errors.																																
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Display	Description																																
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Display	Description																																
1: ONCE	Responds to the first signal.																																
2: TWICE	Responds to the second signal.																																

Maintenance item No.	Description																						
U608 (cont.)	Setting the reference for RTN signal output Sets the error line rate as the reference for RTN signal output. If transmission errors occur frequently due to the quality of the line, these can be reduced by lowering the setting. 1. Change the setting using the numeric keys. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: 5</td><td>Error line rate of 5%</td></tr><tr><td>2: 10</td><td>Error line rate of 10%</td></tr><tr><td>3: 15</td><td>Error line rate of 15%</td></tr><tr><td>4: 20</td><td>Error line rate of 20%</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the waiting period to prevent echo problems at the sender Sets the period before a DCS signal is sent after a DIS signal is received. Used when problems occur due to echoes at the sender. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: 500</td><td>Sends a DCS 500 ms after receiving a DIS.</td></tr><tr><td>2: 200</td><td>Sends a DCS 200 ms after receiving a DIS.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the waiting period to prevent echo problems at the receiver Sets the period before an NSF, CSI or DIS signal is sent after a CED signal is received. Used when problems occur due to echoes at the receiver. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: 500</td><td>Sends an NSF, CSI or DIS 500 ms after receiving a CED.</td></tr><tr><td>2: 75</td><td>Sends an NSF, CSI or DIS 75 ms after receiving a CED.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	1: 5	Error line rate of 5%	2: 10	Error line rate of 10%	3: 15	Error line rate of 15%	4: 20	Error line rate of 20%	Display	Description	1: 500	Sends a DCS 500 ms after receiving a DIS.	2: 200	Sends a DCS 200 ms after receiving a DIS.	Display	Description	1: 500	Sends an NSF, CSI or DIS 500 ms after receiving a CED.	2: 75	Sends an NSF, CSI or DIS 75 ms after receiving a CED.
Display	Description																						
1: 5	Error line rate of 5%																						
2: 10	Error line rate of 10%																						
3: 15	Error line rate of 15%																						
4: 20	Error line rate of 20%																						
Display	Description																						
1: 500	Sends a DCS 500 ms after receiving a DIS.																						
2: 200	Sends a DCS 200 ms after receiving a DIS.																						
Display	Description																						
1: 500	Sends an NSF, CSI or DIS 500 ms after receiving a CED.																						
2: 75	Sends an NSF, CSI or DIS 75 ms after receiving a CED.																						

Maintenance item No.	Description																
U608 (cont.)	Setting ECM transmission To be set to OFF when reduction of transmission costs is of higher priority than image quality. - Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM transmission is enabled.</td></tr> <tr> <td>2: OFF</td><td>ECM transmission is disabled.</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting ECM reception To be set to OFF when reduction of transmission costs is of higher priority than image quality. - Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>ECM reception is enabled.</td></tr> <tr> <td>2: OFF</td><td>ECM reception is disabled.</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key. Setting the criteria for receiving a TCF signal 1 Sets the maximum number of error bytes judged acceptable when receiving a TCF signal. Used as a measure to ease transmission conditions if transmission errors occur. - Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>Number of errors as a criterion for a TCF signal</td><td>0 to 255</td></tr> </tbody> </table> - Press the start key. The value is set. - To return to the screen for selecting an item, press the stop/clear key.	Display	Description	1: ON	ECM transmission is enabled.	2: OFF	ECM transmission is disabled.	Display	Description	1: ON	ECM reception is enabled.	2: OFF	ECM reception is disabled.	Description	Setting range	Number of errors as a criterion for a TCF signal	0 to 255
Display	Description																
1: ON	ECM transmission is enabled.																
2: OFF	ECM transmission is disabled.																
Display	Description																
1: ON	ECM reception is enabled.																
2: OFF	ECM reception is disabled.																
Description	Setting range																
Number of errors as a criterion for a TCF signal	0 to 255																

Maintenance item No.	Description						
U608 (cont.)	Setting the frequency of the CED signal Sets the frequency of the CED signal. Used as one of the measures to improve transmission performance for international communication. 1. Enter 1 or 2 using the numeric keys to change the frequency. <table><tr><th>Display</th><th>Frequency of the CED signal</th></tr><tr><td>1: 2100</td><td>2100 Hz</td></tr><tr><td>2: 1100</td><td>1100 Hz</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Frequency of the CED signal	1: 2100	2100 Hz	2: 1100	1100 Hz
Display	Frequency of the CED signal						
1: 2100	2100 Hz						
2: 1100	1100 Hz						

Maintenance item No.	Description																								
U609	Setting communication time Description Sets the time-out time for fax transmission. Purpose Used mainly to improve transmission performance for international communication. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>T0</td><td>Sets the T0 time-out time.</td></tr> <tr> <td>T1</td><td>Sets the T1 time-out time.</td></tr> <tr> <td>T2</td><td>Sets the T2 time-out time.</td></tr> <tr> <td>Ta</td><td>Sets the Ta time-out time.</td></tr> <tr> <td>Tb</td><td>Sets the Tb time-out time.</td></tr> <tr> <td>Tc</td><td>Sets the Tc time-out time.</td></tr> <tr> <td>Td</td><td>Sets the Td time-out time.</td></tr> </tbody> </table> Setting the T0 time-out time Sets the time before detecting a DIS signal after a dialing signal is sent. Depending on the quality of the exchange, or when the auto select function is selected at the destination unit, a line can be disconnected. Change the setting to prevent this problem. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>T0 time-out time</td><td>30 to 90 s</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the T1 time-out time Sets the time before receiving the correct signal after detecting a CED signal. No change is necessary for this maintenance item. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Description</th><th>Setting range</th></tr> </thead> <tbody> <tr> <td>T1 time-out time</td><td>30 to 90 s</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	T0	Sets the T0 time-out time.	T1	Sets the T1 time-out time.	T2	Sets the T2 time-out time.	Ta	Sets the Ta time-out time.	Tb	Sets the Tb time-out time.	Tc	Sets the Tc time-out time.	Td	Sets the Td time-out time.	Description	Setting range	T0 time-out time	30 to 90 s	Description	Setting range	T1 time-out time	30 to 90 s
Display	Description																								
T0	Sets the T0 time-out time.																								
T1	Sets the T1 time-out time.																								
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Ta	Sets the Ta time-out time.																								
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Tc	Sets the Tc time-out time.																								
Td	Sets the Td time-out time.																								
Description	Setting range																								
T0 time-out time	30 to 90 s																								
Description	Setting range																								
T1 time-out time	30 to 90 s																								

Maintenance item No.	Description								
U609 (cont.)	Setting the T2 time-out time The T2 time-out time decides the following. • From CFR signal output to image data reception • From image data reception to the next signal reception • In ECM, from RNR signal detection to the next signal reception 1. Change the setting using the numeric keys.								
	<table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>T2 time-out time</td><td>1 to 255</td><td>60</td><td>100 ms</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Change in value per step	T2 time-out time	1 to 255	60	100 ms
Description	Setting range	Initial setting	Change in value per step						
T2 time-out time	1 to 255	60	100 ms						
	Setting the Ta time-out time In fax/telephone auto select mode, sets the time during which rings to call an operator continue through the connected telephone after receiving a call as a fax machine (see the diagram on the following page). A fax signal is received within the Ta set time, or fax mode is selected automatically when the time elapses. In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. 1. Change the setting using the numeric keys.								
	<table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Ta time-out time</td><td>1 to 255 s</td><td>30</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Ta time-out time	1 to 255 s	30		
Description	Setting range	Initial setting							
Ta time-out time	1 to 255 s	30							
	Setting the Tb time-out time In fax/telephone auto select mode, sets the time to start rings to call an operator through the connected telephone after receiving a call as a fax machine (see the diagram on the following page). In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. 1. Change the setting using the numeric keys.								
	<table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Tb time-out time</td><td>1 to 255</td><td>50</td><td>100 ms</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Description	Setting range	Initial setting	Change in value per step	Tb time-out time	1 to 255	50	100 ms
Description	Setting range	Initial setting	Change in value per step						
Tb time-out time	1 to 255	50	100 ms						

Maintenance item No.	Description										
U609 (cont.)	Figure 3-2-10 Ta/Tb time-out time Setting the Tc time-out time In TAD mode, set the time to check if there are any triggers to shift to fax reception after a connected telephone receives a call. Only the telephone function is available if shifting is not made within the set Tc time. In TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. 1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Tc time-out time</td><td>1 to 255 s</td><td>60</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the Td time-out time Sets the length of the time required to determine silent status (fax), one of the triggers for Tc time check. In TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. Be sure not to set too short; otherwise, the mode may be shifted to fax while the unit is being used as a telephone. 1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>Td time-out time</td><td>1 to 255 s</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	Tc time-out time	1 to 255 s	60	Description	Setting range	Td time-out time	1 to 255 s
Description	Setting range	Initial setting									
Tc time-out time	1 to 255 s	60									
Description	Setting range										
Td time-out time	1 to 255 s										

Maintenance item No.	Description																								
U610	Setting the modem output level Description Sets the modem output level. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>SGL LEVEL MODEM</td><td>Sets the modem output level.</td></tr><tr><td>SGL OUTPUT ADJ</td><td>Adjusts the modem output level.</td></tr><tr><td>VOICE RES. LEVEL</td><td>Sets the voice response level.</td></tr></table> Setting the modem output level To be set when installing the machine to adapt to the line characteristics. 1. Change the setting using numeric keys 1 to 6. The bit setting in accordance with the entered number is displayed. SGL LEVEL MODEM XXXX XXXX <table><tr><th>Display</th><th>Output level setting</th></tr><tr><td>bit 1</td><td>1: -0.25 dB 0: 0 dB</td></tr><tr><td>bit 2</td><td>1: -0.5 dB 0: 0 dB</td></tr><tr><td>bit 3</td><td>1: -1 dB 0: 0 dB</td></tr><tr><td>bit 4</td><td>1: -2 dB 0: 0 dB</td></tr><tr><td>bit 5</td><td>1: -4 dB 0: 0 dB</td></tr><tr><td>bit 6</td><td>1: -8 dB 0: 0 dB</td></tr><tr><td>bit 7</td><td>Setting is inhibited.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	SGL LEVEL MODEM	Sets the modem output level.	SGL OUTPUT ADJ	Adjusts the modem output level.	VOICE RES. LEVEL	Sets the voice response level.	Display	Output level setting	bit 1	1: -0.25 dB 0: 0 dB	bit 2	1: -0.5 dB 0: 0 dB	bit 3	1: -1 dB 0: 0 dB	bit 4	1: -2 dB 0: 0 dB	bit 5	1: -4 dB 0: 0 dB	bit 6	1: -8 dB 0: 0 dB	bit 7	Setting is inhibited.
Display	Description																								
SGL LEVEL MODEM	Sets the modem output level.																								
SGL OUTPUT ADJ	Adjusts the modem output level.																								
VOICE RES. LEVEL	Sets the voice response level.																								
Display	Output level setting																								
bit 1	1: -0.25 dB 0: 0 dB																								
bit 2	1: -0.5 dB 0: 0 dB																								
bit 3	1: -1 dB 0: 0 dB																								
bit 4	1: -2 dB 0: 0 dB																								
bit 5	1: -4 dB 0: 0 dB																								
bit 6	1: -8 dB 0: 0 dB																								
bit 7	Setting is inhibited.																								

Maintenance item No.	Description														
U610 (cont.)	Adjusting the modem output level No change is necessary from the factory default. 1. Change the setting using the numeric keys. <table border="1"> <tr> <th>Description</th><th>Setting range</th></tr> <tr> <td>Modem output level</td><td>4 to 12</td></tr> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the voice response level Sets the attenuation level for voice response. 1. Change the setting using the numeric keys. <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>1: 0</td><td>0 dB</td></tr> <tr> <td>2: -6</td><td>-6 dB</td></tr> <tr> <td>3: -12</td><td>-12 dB</td></tr> <tr> <td>4: -18</td><td>-18 dB</td></tr> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Modem output level	4 to 12	Display	Description	1: 0	0 dB	2: -6	-6 dB	3: -12	-12 dB	4: -18	-18 dB
Description	Setting range														
Modem output level	4 to 12														
Display	Description														
1: 0	0 dB														
2: -6	-6 dB														
3: -12	-12 dB														
4: -18	-18 dB														
U612	Setting the modem detection level Description Sets the modem detection level. Purpose Used to improve the transmission performance when a low quality line is used. Method Press the start key. The current setting is displayed. Setting 1. Change the setting using the numeric keys. <table border="1"> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>1: 33</td><td>-33 dBm</td></tr> <tr> <td>2: 38</td><td>-38 dBm</td></tr> <tr> <td>3: 43</td><td>-43 dBm</td></tr> <tr> <td>4: 47</td><td>-47 dBm</td></tr> </table> 2. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	1: 33	-33 dBm	2: 38	-38 dBm	3: 43	-43 dBm	4: 47	-47 dBm				
Display	Description														
1: 33	-33 dBm														
2: 38	-38 dBm														
3: 43	-43 dBm														
4: 47	-47 dBm														

Maintenance item No.	Description										
U613	Setting the DTMF output level Description Sets the DTMF output level of a push-button dial. Purpose Used if problems occur when sending a signal with a push-button dial. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>DTMF TX LEVEL (H)</td><td>Sets the DTMF (high-frequency group) output level.</td></tr><tr><td>DTMF TX LEVEL (L)</td><td>Sets the DTMF (low-frequency group) output level.</td></tr></table> Setting 1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>DTMF (high-/low-frequency group) output level</td><td>0 to 255</td></tr></table> E.g.: When set to 8, the DTMF output level is –8 dBm. 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	DTMF TX LEVEL (H)	Sets the DTMF (high-frequency group) output level.	DTMF TX LEVEL (L)	Sets the DTMF (low-frequency group) output level.	Description	Setting range	DTMF (high-/low-frequency group) output level	0 to 255
Display	Description										
DTMF TX LEVEL (H)	Sets the DTMF (high-frequency group) output level.										
DTMF TX LEVEL (L)	Sets the DTMF (low-frequency group) output level.										
Description	Setting range										
DTMF (high-/low-frequency group) output level	0 to 255										

Maintenance item No.	Description										
U614	<i>Adjusting the DTMF output level</i> Description Adjusts the DTMF output level of a push-button dial. Purpose No change is necessary from the factory default. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table> <tr> <th>Display</th><th>Description</th></tr> <tr> <td>SGL LVL DTMF (H)</td><td>Adjusts the DTMF (high-frequency group) output level.</td></tr> <tr> <td>SGL LVL DTMF (L)</td><td>Adjusts the DTMF (low-frequency group) output level.</td></tr> </table> Setting 1. Change the setting using the numeric keys. <table> <tr> <th>Description</th><th>Setting range</th></tr> <tr> <td>DTMF (high-/low-frequency group) output level</td><td>4 to 12</td></tr> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	SGL LVL DTMF (H)	Adjusts the DTMF (high-frequency group) output level.	SGL LVL DTMF (L)	Adjusts the DTMF (low-frequency group) output level.	Description	Setting range	DTMF (high-/low-frequency group) output level	4 to 12
Display	Description										
SGL LVL DTMF (H)	Adjusts the DTMF (high-frequency group) output level.										
SGL LVL DTMF (L)	Adjusts the DTMF (low-frequency group) output level.										
Description	Setting range										
DTMF (high-/low-frequency group) output level	4 to 12										

Maintenance item No.	Description																						
U615	Setting the NCU Description Makes setting regarding the network control unit (NCU). Purpose To be set when installing the optional fax board. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>EXCHANGE</td><td>Sets the connection to PBX/PSTN.</td></tr><tr><td>DIAL TONE</td><td>Sets PSTN dial tone detection.</td></tr><tr><td>BUSY TONE</td><td>Sets the busy tone detection.</td></tr><tr><td>PBX SETTING</td><td>Setting for a PBX.</td></tr></table> Setting the connection to PBX/PSTN Selects if a fax is to be connected to either a PBX or public switched telephone network. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: PSTN</td><td>Connected to the public switched telephone network.</td></tr><tr><td>2: PBX</td><td>Connected to a PBX.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting PSTN dial tone detection Selects if the dial tone is detected to check off-hook when a fax is connected to a public switched telephone network. According to user request, set to 2 when sending a fax without dial tone. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: ON</td><td>Detects the dial tone.</td></tr><tr><td>2: OFF</td><td>Does not detect the dial tone.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	EXCHANGE	Sets the connection to PBX/PSTN.	DIAL TONE	Sets PSTN dial tone detection.	BUSY TONE	Sets the busy tone detection.	PBX SETTING	Setting for a PBX.	Display	Description	1: PSTN	Connected to the public switched telephone network.	2: PBX	Connected to a PBX.	Display	Description	1: ON	Detects the dial tone.	2: OFF	Does not detect the dial tone.
Display	Description																						
EXCHANGE	Sets the connection to PBX/PSTN.																						
DIAL TONE	Sets PSTN dial tone detection.																						
BUSY TONE	Sets the busy tone detection.																						
PBX SETTING	Setting for a PBX.																						
Display	Description																						
1: PSTN	Connected to the public switched telephone network.																						
2: PBX	Connected to a PBX.																						
Display	Description																						
1: ON	Detects the dial tone.																						
2: OFF	Does not detect the dial tone.																						

Maintenance item No.	Description														
U615 (cont.)	Setting the busy tone detection When a fax signal is sent, sets whether the line is disconnected immediately after a busy tone is detected, or the busy tone is not detected and the line remains connected until T0 time-out time. Fax transmission may fail due to incorrect busy tone detection. When set to 2, this problem may be prevented. However, the line is not disconnected within the T0 time-out time even if the destination line is busy. 1. Enter 1 or 2 using the numeric keys to change the setting. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Detects busy tone.</td></tr> <tr> <td>2: OFF</td><td>Does not detect busy tone.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting for a PBX Selects the mode to connect an outside call when connected to a PBX. According to the type of the PBX connected, select the mode to connect an outside call. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: EARTH</td><td>Earth mode</td></tr> <tr> <td>2: FLS</td><td>Flashing mode</td></tr> <tr> <td>3: LOOP</td><td>Code number mode</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	1: ON	Detects busy tone.	2: OFF	Does not detect busy tone.	Display	Description	1: EARTH	Earth mode	2: FLS	Flashing mode	3: LOOP	Code number mode
Display	Description														
1: ON	Detects busy tone.														
2: OFF	Does not detect busy tone.														
Display	Description														
1: EARTH	Earth mode														
2: FLS	Flashing mode														
3: LOOP	Code number mode														

Maintenance item No.	Description												
U616	Adjusting the ratio of make-to-break of dial pulses Description Adjusts the ratio of make-to-break (ratio of make in pulse cycles) of dial pulses. Purpose Change the setting if dial pulse transmission problems occur. Note that 20 PPS is for Japanese specifications only and no setting is necessary for other specifications. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>MAKE TIME (10 PPS)</td><td>Make time (10 PPS)</td></tr><tr><td>MAKE TIME (20 PPS)</td><td>Make time (20 PPS)</td></tr></table> Setting 1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th></tr><tr><td>Make time in the pulse cycle (10 PPS)</td><td>1 to 99 (ms)</td></tr><tr><td>Make time in the pulse cycle (20 PPS)</td><td>1 to 49 (ms)</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	MAKE TIME (10 PPS)	Make time (10 PPS)	MAKE TIME (20 PPS)	Make time (20 PPS)	Description	Setting range	Make time in the pulse cycle (10 PPS)	1 to 99 (ms)	Make time in the pulse cycle (20 PPS)	1 to 49 (ms)
Display	Description												
MAKE TIME (10 PPS)	Make time (10 PPS)												
MAKE TIME (20 PPS)	Make time (20 PPS)												
Description	Setting range												
Make time in the pulse cycle (10 PPS)	1 to 99 (ms)												
Make time in the pulse cycle (20 PPS)	1 to 49 (ms)												

Maintenance item No.	Description												
U617	Outputting lists Description Outputs a list of data regarding fax transmissions. Purpose Used to check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>SETTING LIST</td><td>Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.</td></tr> <tr> <td>ACTION LIST</td><td>Outputs a list of error history, transmission line details and other information.</td></tr> <tr> <td>MONITOR LIST</td><td>Outputs a list of transmission speeds, resolutions, minimum transmission time and other information.</td></tr> <tr> <td>SELF ST RPT</td><td>Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.</td></tr> <tr> <td>PROTOCOL LIST</td><td>Outputs a list of transmission procedures.</td></tr> </tbody> </table> 3. Press the start key. The selected list is output.	Display	Description	SETTING LIST	Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.	ACTION LIST	Outputs a list of error history, transmission line details and other information.	MONITOR LIST	Outputs a list of transmission speeds, resolutions, minimum transmission time and other information.	SELF ST RPT	Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.	PROTOCOL LIST	Outputs a list of transmission procedures.
Display	Description												
SETTING LIST	Outputs a list of software switches, self telephone number, confidential boxes, ROM versions and other information.												
ACTION LIST	Outputs a list of error history, transmission line details and other information.												
MONITOR LIST	Outputs a list of transmission speeds, resolutions, minimum transmission time and other information.												
SELF ST RPT	Outputs a list of settings in maintenance mode (own-status report) regarding fax transmission only.												
PROTOCOL LIST	Outputs a list of transmission procedures.												

Maintenance item No.	Description																		
U650	Setting the fax paper size Description Makes settings for fax reception regarding the sizes of the fax paper and received images. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>CUT LINE (100%)</td><td>Sets the number of lines to be ignored when receiving a fax at 100% magnification.</td></tr><tr><td>CUT LINE (AUTO)</td><td>Sets the number of lines to be ignored when receiving a fax in auto reduction mode.</td></tr><tr><td>CUT LINE (A4)</td><td>Sets the number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode.</td></tr><tr><td>RX WIDTH 11"</td><td>Sets the recording width for inch specifications.</td></tr></table> Setting the number of lines to be ignored when receiving a fax at 100% magnification Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when recording the data at 100% magnification. If the number of exceeded lines is below the setting, those lines are ignored. If over the setting, they are recorded on the next page. 1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving at 100%</td><td>0 to 22</td><td>3</td><td>6 lines</td></tr></table> Increase the setting if a blank second page is received, and decrease it if the received image does not include the entire transmitted data. 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	CUT LINE (100%)	Sets the number of lines to be ignored when receiving a fax at 100% magnification.	CUT LINE (AUTO)	Sets the number of lines to be ignored when receiving a fax in auto reduction mode.	CUT LINE (A4)	Sets the number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode.	RX WIDTH 11"	Sets the recording width for inch specifications.	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving at 100%	0 to 22	3	6 lines
Display	Description																		
CUT LINE (100%)	Sets the number of lines to be ignored when receiving a fax at 100% magnification.																		
CUT LINE (AUTO)	Sets the number of lines to be ignored when receiving a fax in auto reduction mode.																		
CUT LINE (A4)	Sets the number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode.																		
RX WIDTH 11"	Sets the recording width for inch specifications.																		
Description	Setting range	Initial setting	Change in value per step																
Number of lines to be ignored when receiving at 100%	0 to 22	3	6 lines																

Maintenance item No.	Description
U650 (cont.)	Setting the number of lines to be ignored when receiving a fax in auto reduction mode Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in auto reduction mode. If the number of exceeded lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page. 1. Change the setting using the numeric keys.

Description	Setting range	Initial setting	Change in value per step
Number of lines to be ignored when receiving in auto reduction mode	0 to 22	3	6 lines

Increase the setting if a page received in reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include the entire transmitted data.

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

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

Maintenance item No.	Description														
U650 (cont.)	Setting the number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in auto reduction mode onto A4R or letter-size paper under the conditions below. If the number of exceeded lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page. • With A4R present and folio absent in the drawers • With letter-size paper present and legal-size paper absent in the drawers 1. Change the setting using the numeric keys.														
	<table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr><tr><td>Number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode</td><td>0 to 22</td><td>3</td><td>6 lines</td></tr></table> Increase the setting if a page received in reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include the entire transmitted data. 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the recording width for inch specifications Sets the maximum recording width and processing method when 11" width fax paper is loaded on a inch-specification machine. 1. Enter 1 or 2 using the numeric keys to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: 11 × 17</td><td>Detects 11" width as A3 width and records at 100% magnifications.</td></tr><tr><td>2: B4</td><td>Detects 11" width as B4 width.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	Change in value per step	Number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode	0 to 22	3	6 lines	Display	Description	1: 11 × 17	Detects 11" width as A3 width and records at 100% magnifications.	2: B4	Detects 11" width as B4 width.
Description	Setting range	Initial setting	Change in value per step												
Number of lines to be ignored when receiving a fax (A4R, letter) in auto reduction mode	0 to 22	3	6 lines												
Display	Description														
1: 11 × 17	Detects 11" width as A3 width and records at 100% magnifications.														
2: B4	Detects 11" width as B4 width.														

Maintenance item No.	Description						
U651	<i>Setting the number of lines to be ignored in rotation mode</i> Description Sets the maximum number of lines to be ignored when the received data volume exceeds capacity in rotation mode. When the number of the exceeded lines is below the setting, those lines are ignored and the remaining data only is received in rotation mode. If over the setting, reception in rotation mode is disabled. Purpose Increase the setting if reception in rotation mode is disabled. However, this can result in partially missing transmission data on the received image. Method Press the start key. The current setting is displayed. Setting 1. Change the setting using the numeric keys. <table><tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr><tr><td>Number of lines to be ignored in the auxiliary direction</td><td>0 to 255</td><td>3</td></tr></table> 2. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Description	Setting range	Initial setting	Number of lines to be ignored in the auxiliary direction	0 to 255	3
Description	Setting range	Initial setting					
Number of lines to be ignored in the auxiliary direction	0 to 255	3					

Maintenance item No.	Description														
U660	Setting the system (communication 2) Description Makes settings for fax transmission regarding the communication. Purpose To reduce transmission errors when a low quality line is used. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. <table><tr><th>Display</th><th>Description</th></tr><tr><td>TCF CHECK 2</td><td>Sets the criteria for receiving a TCF signal 2.</td></tr><tr><td>SHORT PROTOCOL RX</td><td>Sets the reception of short protocol transmission.</td></tr><tr><td>NUMBER of CNG (TEL/FAX)</td><td>Sets the CNG detection times in fax/telephone auto select mode.</td></tr></table> Setting the criteria for receiving a TCF signal 2 Sets the signal checking time as a criterion for a received TCF signal. 1. Enter 1 or 2 using the numeric key to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: LONG</td><td>Checks for 1.2 s.</td></tr><tr><td>2: SHORT</td><td>Checks for 1.0 s.</td></tr></table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	TCF CHECK 2	Sets the criteria for receiving a TCF signal 2.	SHORT PROTOCOL RX	Sets the reception of short protocol transmission.	NUMBER of CNG (TEL/FAX)	Sets the CNG detection times in fax/telephone auto select mode.	Display	Description	1: LONG	Checks for 1.2 s.	2: SHORT	Checks for 1.0 s.
Display	Description														
TCF CHECK 2	Sets the criteria for receiving a TCF signal 2.														
SHORT PROTOCOL RX	Sets the reception of short protocol transmission.														
NUMBER of CNG (TEL/FAX)	Sets the CNG detection times in fax/telephone auto select mode.														
Display	Description														
1: LONG	Checks for 1.2 s.														
2: SHORT	Checks for 1.0 s.														

Maintenance item No.	Description												
U660 (cont.)	Setting the reception of a short protocol transmission Selects whether to receive or ignore transmission using short protocol. If a short protocol transmission is received when an auto switching device is attached to the machine, communication problems, including auto switching inability, sometimes occur. Change the setting to ignore short protocol transmission to prevent such problems. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: ON</td><td>Receives short protocol transmission.</td></tr> <tr> <td>2: OFF</td><td>Ignores short protocol transmission.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Setting the CNG detection times in fax/telephone auto select mode Sets the CNG detection times in fax/telephone auto select mode. 1. Change the setting using the numeric keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>1: 1 TIME</td><td>Detects CNG once.</td></tr> <tr> <td>2: 2 TIMES</td><td>Detects CNG twice.</td></tr> </tbody> </table> 2. Press the start key. The value is set. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	1: ON	Receives short protocol transmission.	2: OFF	Ignores short protocol transmission.	Display	Description	1: 1 TIME	Detects CNG once.	2: 2 TIMES	Detects CNG twice.
Display	Description												
1: ON	Receives short protocol transmission.												
2: OFF	Ignores short protocol transmission.												
Display	Description												
1: 1 TIME	Detects CNG once.												
2: 2 TIMES	Detects CNG twice.												

Maintenance item No.	Description						
U670	Setting if V.34 transmission is available Description Selects if transmission by V.34 is available. Purpose Depending on the quality of the line to be used, change the setting to 2 if any problems occur during transmission. Method Press the start key. The current setting is displayed. Setting 1. Enter 1 or 2 using the numeric key to change the setting. <table><tr><th>Display</th><th>Description</th></tr><tr><td>1: ON</td><td>V.34 transmission is available.</td></tr><tr><td>2: OFF</td><td>V.34 transmission is inhibited.</td></tr></table> 2. Press the start key. The value is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Description	1: ON	V.34 transmission is available.	2: OFF	V.34 transmission is inhibited.
Display	Description						
1: ON	V.34 transmission is available.						
2: OFF	V.34 transmission is inhibited.						
U680	Displaying the fax board ROM version Description Displays the version of the ROM on the optional fax board. Purpose Used to check the version of the ROM on the fax board. Method 1. Press the start key. The version of the ROM on the fax board is displayed. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.						

Maintenance item No.	Description						
U894	Performing board test Description Performs tests on SRAM, DRAM (image memory, bitmap memory) and optional memories on the optional fax board. Purpose Used to check if reading and writing are performed correctly in respective installed memories. Start 1. Press the start key. The screen for selecting an item is displayed. 2. Select an item using the cursor up/down keys. <table border="1"> <thead> <tr> <th>Display</th><th>Description</th></tr> </thead> <tbody> <tr> <td>BOARD MEMORY</td><td>Performs tests on SRAM and DRAM.</td></tr> <tr> <td>BOARD OP. MEM</td><td>Performs tests on optional memories.</td></tr> </tbody> </table> Performing tests on SRAM and DRAM 1. Press the start key. The test is performed and the results displayed as follows. • When the test result is OK: <pre>TEST MEMORY OK</pre> • If the test result is NG: <pre>TEST MEMORY NG DRAM IMG 0x*****</pre> *****: address DRAM IMG: DRAM (image memory) error DRAM B.M: DRAM (bitmap memory) error SRAM: SRAM error 2. To return to the screen for selecting an item, press the stop/clear key.	Display	Description	BOARD MEMORY	Performs tests on SRAM and DRAM.	BOARD OP. MEM	Performs tests on optional memories.
Display	Description						
BOARD MEMORY	Performs tests on SRAM and DRAM.						
BOARD OP. MEM	Performs tests on optional memories.						

Maintenance item No.	Description
U894 (cont.)	Performing tests on optional memories 1. Press the start key. The test is performed and the result is displayed as follows. - When the test result is OK: TEST OPTION MEMORY OK - If the test result is NG: TEST OPTION MEMORY NG DRAM IMG 0x***** *****: address IMG: Image memory error B.M: Bitmap memory error - If the test result is NG (memory is not installed): TEST OPTION MEMORY NG DRAM <u>IMG</u> IMG: Image memory is not installed. B.M: Bitmap memory is not installed. 2. To return to the screen for selecting an item, press the stop/clear key. Completion If the test result is OK, press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed. If the test result is NG, reset by turning the main switch off and on.

Maintenance item No.	Description																
U901	Checking/clearing copy counts by paper feed locations Description Displays or clears copy counts by paper feed locations. Purpose To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts. Method 1. Press the start key. The counts by paper feed locations are displayed. 2. Change the screen using the cursor left/right keys. <table border="1"> <thead> <tr> <th>Display</th><th>Paper feed locations</th></tr> </thead> <tbody> <tr> <td>BYPASS*2</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*1</td><td>Paper feed desk upper drawer</td></tr> <tr> <td>FORTH*1</td><td>Paper feed desk lower drawer</td></tr> <tr> <td>LCF*1</td><td>Large paper deck</td></tr> <tr> <td>DUPLEX*1</td><td>Duplex unit</td></tr> </tbody> </table> *1: Optional. *2: Optional for 120 V specifications only. When an optional paper feed device is not installed, the corresponding count is not displayed. Clearing 1. Select the count to be cleared using the cursor up/down keys. The selected item is displayed in reverse. To clear the counts for all paper feed locations, select ALL using the cursor up/down keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.	Display	Paper feed locations	BYPASS*2	Bypass table	FIRST	Copier upper drawer	SECOND	Copier lower drawer	THIRD*1	Paper feed desk upper drawer	FORTH*1	Paper feed desk lower drawer	LCF*1	Large paper deck	DUPLEX*1	Duplex unit
Display	Paper feed locations																
BYPASS*2	Bypass table																
FIRST	Copier upper drawer																
SECOND	Copier lower drawer																
THIRD*1	Paper feed desk upper drawer																
FORTH*1	Paper feed desk lower drawer																
LCF*1	Large paper deck																
DUPLEX*1	Duplex unit																

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Maintenance item No.	Description
U903	Checking/clearing the paper jam counts Description Displays or clears the jam counts by jam locations. Purpose To check the paper jam status. Also to clear the jam counts after replacing consumable parts. Method 1. Press the start key. The jam count is displayed by jam codes. 2. Change the screen using the cursor left/right keys. Clearing 1. Select ALL using the cursor up/down keys. Jam counts cannot be cleared individually. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. 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.
U904	Checking/clearing the service call counts Description Displays or clears the service call code counts by types. Purpose To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts. Method 1. Press the start key. The service call count is displayed by service call codes. 2. Change the screen using the cursor left/right keys. Clearing 1. Select the count to be cleared using the cursor up/down keys. The selected count is displayed in reverse. To clear all counts, select ALL using the cursor up/down keys. 2. Press the start key. The count is cleared. When all counts are cleared, the screen for selecting a maintenance item No. is displayed. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

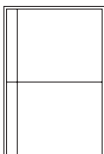
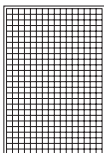
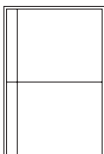
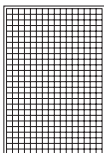
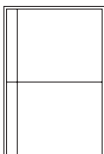
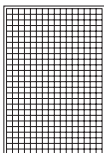
Maintenance item No.	Description																
U905	Checking/clearing counts by optional devices Description Displays or clears the counts of the optional SRDF or finisher. Purpose To check the use of the SRDF and finisher. Also to clear the counts after replacing consumable parts. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the device, the count of which is to be checked using the cursor up/down keys. The count of the selected device is displayed. • SRDF (DF) <table><tr><th>Display</th><th>Description</th></tr><tr><td>CHANGE</td><td>Original replacement count</td></tr><tr><td>ADF</td><td>No. of single-sided originals that has passed through the DF in ADF mode</td></tr><tr><td>RADF</td><td>No. of double-sided originals that has passed through the DF in RADF mode</td></tr></table> • Finisher (SORTER) <table><tr><th>Display</th><th>Description</th></tr><tr><td>CP CNT</td><td>No. of copies that has passed</td></tr><tr><td>STAPLE</td><td>Frequency the stapler has been activated</td></tr><tr><td>STACK</td><td>Frequency the stacker has been activated</td></tr></table> Clearing 1. Select the item to be cleared using the cursor up/down keys. The selected item is displayed in reverse. 2. Press the start key. The count is cleared. 3. To return to the screen for selecting an item, press the stop/clear key. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Description	CHANGE	Original replacement count	ADF	No. of single-sided originals that has passed through the DF in ADF mode	RADF	No. of double-sided originals that has passed through the DF in RADF mode	Display	Description	CP CNT	No. of copies that has passed	STAPLE	Frequency the stapler has been activated	STACK	Frequency the stacker has been activated
Display	Description																
CHANGE	Original replacement count																
ADF	No. of single-sided originals that has passed through the DF in ADF mode																
RADF	No. of double-sided originals that has passed through the DF in RADF mode																
Display	Description																
CP CNT	No. of copies that has passed																
STAPLE	Frequency the stapler has been activated																
STACK	Frequency the stacker has been activated																

Maintenance item No.	Description
U906	Resetting partial operation control Description Resets the service call code for partial operation control. Purpose To be reset after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced. Method 1. Press the start key. 2. Select EXECUTE using the cursor up/down keys. 3. Press the start key to reset partial operation control. The maintenance mode is exited, and the machine returns to the same status as when the main switch is turned on.

Maintenance item No.	Description																					
U907	Setting the paper eject location when used as a printer/fax Description Sets the paper eject location when an optional device for using the copier as a printer or fax is installed. Purpose Used to change the paper eject location when the copier is used as a printer or fax. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item (printer or fax) to be set using the cursor up/down keys. 3. Press the start key. The screen for the selected item is displayed. Setting 1. Select the paper eject location using the cursor up/down keys. • Printer <table><tr><th>Display</th><th>Paper eject location</th></tr><tr><td>INNER TRAY JOB SEPARATOR</td><td>Eject tray Job separator</td></tr></table> • Fax <table><tr><th>Display</th><th>Paper eject location</th></tr><tr><td>IINNER TRAY OTHER</td><td>Eject tray Other paper eject locations*</td></tr></table> * Other paper feed locations <table><tr><th colspan="2" rowspan="2"></th><th colspan="2">Mailbox</th></tr><tr><th>Present</th><th>Not present</th></tr><tr><td rowspan="2">Job separator</td><td>Present</td><td>Job separator</td><td>Job separator</td></tr><tr><td>Not present</td><td>Mailbox mail tray 1</td><td>Eject tray</td></tr></table> 2. Press the start key. The value is set, and the screen for selecting an item is displayed. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.	Display	Paper eject location	INNER TRAY JOB SEPARATOR	Eject tray Job separator	Display	Paper eject location	IINNER TRAY OTHER	Eject tray Other paper eject locations*			Mailbox		Present	Not present	Job separator	Present	Job separator	Job separator	Not present	Mailbox mail tray 1	Eject tray
Display	Paper eject location																					
INNER TRAY JOB SEPARATOR	Eject tray Job separator																					
Display	Paper eject location																					
IINNER TRAY OTHER	Eject tray Other paper eject locations*																					
		Mailbox																				
		Present	Not present																			
Job separator	Present	Job separator	Job separator																			
	Not present	Mailbox mail tray 1	Eject tray																			

Maintenance item No.	Description
U910	<i>Switching between fax/copier modes</i> Description Switches between fax and copier modes when the optional fax board is installed to use the copier as a fax. Purpose To be set according to frequency of use: set to the more frequently used mode. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the mode (copier or fax) to be given priority using the cursor up/down keys. 2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

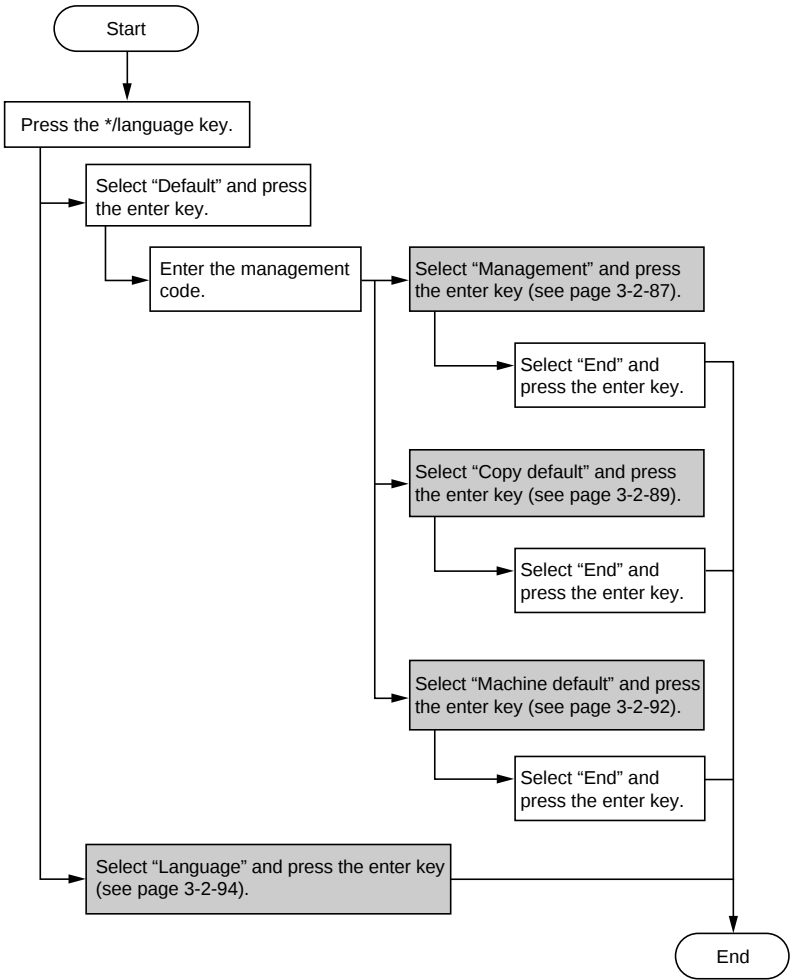
Maintenance item No.	Description
U990	Checking/clearing the time for the exposure lamp to light Description Displays, clears or changes the accumulated time for the exposure lamp to light. Purpose To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement. Method Press the start key. The accumulated time of illumination for the exposure lamp is displayed in minutes. Clearing 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The accumulated time is cleared, and the screen for selecting a maintenance item No. is displayed. Setting 1. Enter a six-digit accumulated time using the numeric keys. 2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed. Completion To exit this maintenance item without changing the accumulated time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U992	Checking or clearing the printer/fax count Description Displays, clears or changes the print count of the printer or fax when the optional printer board or fax board is installed. Purpose To check the condition of use of the printer or fax. Method Press the start key. The print count of the printer or fax is displayed. Setting 1. Select the count to be changed using the cursor up/down keys. 2. Enter a six-digit numerical value using the numeric keys. To clear both of the printer and fax counts, press the reset key. 3. Press the start key. The count is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description										
U993	Outputting a VTC-PG pattern Description Selects and outputs a VTC-PG pattern created in the copier. Purpose When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output VTC-PG pattern. Method 1. Press the start key. The screen for selecting an item is displayed. 2. Select the VTC-PG pattern to be output using the cursor up/down keys.										
	<table><thead><tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr></thead><tbody><tr><td>VTC-PG1</td><td></td><td> • Center line adjustment </td></tr><tr><td>VTC-PG2</td><td></td><td> • Lateral squareness adjustment • Magnification adjustment </td></tr></tbody></table>	Display	PG pattern to be output	Purpose	VTC-PG1		• Center line adjustment	VTC-PG2		• Lateral squareness adjustment • Magnification adjustment	
Display	PG pattern to be output	Purpose									
VTC-PG1		• Center line adjustment									
VTC-PG2		• Lateral squareness adjustment • Magnification adjustment									
	 3. Press the interrupt key. The copy mode screen is displayed. 4. Press the start key. A VTC-PG pattern is output. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.										

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, settings such as default settings can be changed.

(1) Executing a copier management item



(2) Department management

Registering a new department code

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

1. Select "Management setting" and press the enter key.
2. Select "Register" and press the enter key.
3. Enter a department code using the numeric keys: 7 digits for inch specifications and 4 digits for metric specifications.
4. Select "Copy limit."
5. Enter the number of copies limit using the numeric keys. Setting is possible within the range of 1,000 to 999,000 sheets in increments of 1,000 sheets. Set to 0 for unlimited copies.
6. Press the enter key.
7. Select "End" and press the enter key.

Deleting a department code

1. Select "Management setting" and press the enter key.
2. Select "Code delete" and press the enter key.
3. Select the department code to be deleted.
4. Press the enter key.
5. Select "Yes" and press the enter key.
6. Select "End" and press the enter key.

Altering the copy limit

1. Select "Management setting" and press the enter key.
2. Select "Copy limit correction" and press the enter key.
3. Select the department code to be altered.
4. Press the enter key.
5. Enter the number of copies limit using the numeric keys.
6. Press the enter key.
7. Select "End" and press the enter key.
8. Select "End" and press the enter key.

Clearing copy counts

1. Select "Management setting" and press the enter key.
2. Select "Count delete" and press the enter key.
3. Select "Yes" and press the enter key.
4. Select "End" and press the enter key.

Viewing copy counts

1. Select "Reference" and press the enter key.
2. Select "All Department total" or "Department."
All Department total: Copy count by paper size
Department: Copy count by department
3. Press the enter key.
4. Select "End" and press the enter key.
5. Select "End" and press the enter key.

Printing management list

1. Set A4/11" $\times$ 8 $\frac{1}{2}$ " copy paper.
2. Select "Printer management list" and press the enter key.
3. Select "End" and press the enter key.

Turning copy management
function on/off

1. Select "Management on/off" and press the enter key.
2. Select "On" or "Off."
3. Press the enter key.

(3) Copy default

Exposure mode

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

1. Select "Exposure mode" and press the enter key.
2. Select "Auto" or "Manual."
3. Press the enter key.

Exposure steps

Sets the exposure steps in manual exposure mode.

1. Select "Exposure step" and press the enter key.
2. Select "7 steps" or "13 steps."
3. Press the enter key.

Auto exposure adjustment

Adjusts the exposure in auto density mode.

1. Select "Auto exposure" and press the enter key.
2. Adjust the exposure using the cursor left/right keys.
3. Press the enter key.

Mix size density

Adjusts the exposure to be used when text and photo mode is selected as the original quality.

1. Select "Mix size den." and press the enter key.
2. Adjust the exposure using the cursor left/right keys.
3. Press the enter key.

Text original density

Adjusts the exposure to be used when text mode is selected as the original quality.

1. Select "Txt ori density" and press the enter key.
2. Adjust the exposure using the cursor left/right keys.
3. Press the enter key.

Photo original density

Adjusts the exposure to be used when photo mode is selected as the original quality.

1. Select "Pho ori density" and press the enter key.
2. Adjust the exposure using the cursor left/right keys.
3. Press the enter key.

Original quality

Sets which original quality is to be given priority in initial mode.

1. Select "Orig. quality" and press the enter key.
2. Select "Auto," "Text" or "Photo."
3. Press the enter key.

Paper selection

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

1. Select "Paper selection" and press the enter key.
2. Select "Auto" or "Manual."
3. Press the enter key.

Default drawer

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

1. Select "Default drawer" and press the enter key.
2. Select the default drawer.
3. Press the enter key.

AMS mode

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

1. Select "AMS mode" and press the enter key.
2. Select "AMS" or "100%."
3. Press the enter key.

Copy limit

Sets the number of copies limit for multiple copying.

1. Select "Copy limit" and press the enter key.
2. Enter the number of copies limit up to 999 using the numeric keys.
3. Press the enter key.

Margin width

Sets the default settings for the left and top margins for margin copying.

1. Select "Margin width" and press the enter key.
2. Select the margin width.
For metric specifications, select from 3, 6, 9, 12, 15 or 18 mm.
For inch specifications, select from $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ " or $\frac{3}{4}$ ".
3. Press the enter key.

Border erase width

Sets the default setting of the border width for sheet border erase copying or book border erase copying.

1. Select "Border Erase w" and press the enter key.
2. Select the erasing boarder width.
For metric specifications, select from 6, 12 or 18 mm.
For inch specifications, select from $\frac{1}{4}$ ", $\frac{1}{2}$ " or $\frac{3}{4}$ ".
3. Press the enter key.

Erase size

Sets the original size for "Custom" of the border erase copying.

1. Select "Erase size" and press the enter key.
2. Select the original length using the cursor up/down keys.
3. Set the length using the cursor left/right keys.
For metric specifications, setting is possible within the range of 94 to 214 mm in increments of 8 mm.
For inch specifications, setting is possible within the range of $3\frac{11}{16}$ " to $8\frac{7}{16}$ " in increments of $\frac{5}{16}$ ".
4. Select the original width using the cursor up/down keys.
5. Set the width using the cursor left/right keys.
For metric specifications, setting is possible within the range of 60 to 296 mm in increments of 4 mm.
For inch specifications, setting is possible within the range of $2\frac{3}{8}$ " to $11\frac{5}{8}$ " in increments of $\frac{1}{8}$ ".
6. Press the enter key.

Insert tray

1. Select "Insert tray" and press the enter key.
2. Select the paper source.
3. Press the enter key.

Rotate sort

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

1. Select "Rotate sort" and press the enter key.
2. Select "On" or "Off."
3. Press the enter key.

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

Sets if the auto drawer switching function is available.

1. Select "Auto drawer SW" and press the enter key.
2. Select "On" or "Off."
3. Press the enter key.

Auto shutoff

Sets if the auto shutoff function is available.

1. Select "Auto shut-off" and press the enter key.
2. Select "On" or "Off."
3. Press the enter key.

Special paper

Selects the paper source for special paper. (A sign indicating special paper can appear on the message display.)

1. Select "Special paper" and press the enter key.
2. Select the paper source.
3. Select whether to display the sign using the cursor left/right keys.
4. Select "End" and press the enter key.

APS for special paper

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

1. Select "APS" and press the enter key.
2. Select "On" or "Off."
3. Press the enter key.

Auto preheat time

Sets the auto preheat time.

Setting is not available when the preheat/energy saver function is turned off in maintenance item U256.

1. Select "Auto preheat" and press the enter key.
2. Set the auto preheat time.
Setting is possible within the range of 5 to 45 minutes in increments of 5 minutes.
3. Press the enter key.

Auto shutoff time

Sets the auto shutoff time.

Setting is not available when the auto shutoff function is turned off.

1. Select "Auto shut-off time" and press the enter key.
2. Set the auto shutoff time. Setting is possible within the range of 15 to 240 minutes in increments of 15 minutes.
3. Press the enter key.

Display contrast adjustment

Adjusts the contrast of the LCD if the message display is not clear.

1. Select "Display contrast adj." and press the enter key.
2. Adjust the LCD density using the cursor left/right keys.
3. Press the enter key.

Management code change

Changes the management code to be used.

1. Select "Management code change" and press the enter key.
2. Enter the new management code using the numeric keys.
3. Press the enter key.

Silent mode

Sets if the silent mode is available.

1. Select "Silent mode" and press the enter key.
2. Select "On" or "Off."
3. Press the enter key.

(5) Language

Switches the language to be displayed.

- 1. Select the language to be displayed.
 - Available languages are as follows.

Metric	Inch
English	English
German	French
French	Spanish
Italian	Japanese
Spanish	

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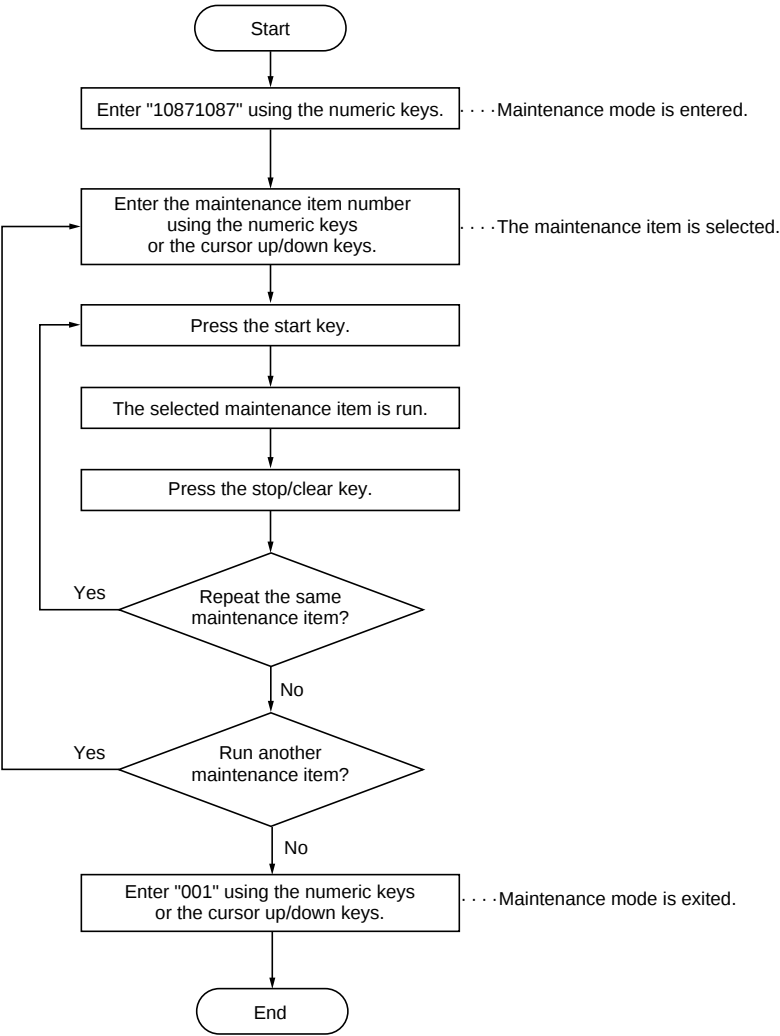
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3-3-1 Precautions for assembly and disassembly

(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 PCBs containing ICs with bare hands or any object prone to static charge.
- Use only the specified parts to replace the fixing unit thermostat.
Never substitute 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)

(2) Running a maintenance item



3-3-2 Paper feed section

(1) Replacing the forwarding, paper feed and separation pulleys

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

<Procedure>

Removing the primary paper feed units

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

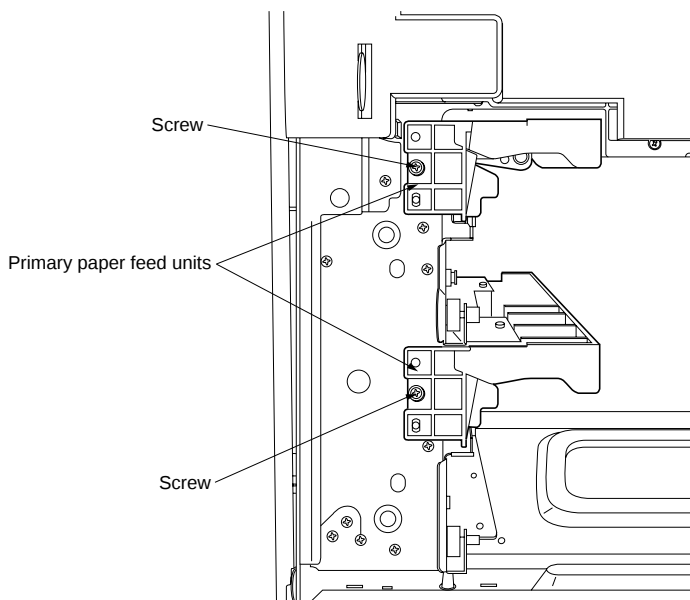


Figure 3-3-1 Detaching the primary paper feed units

Removing the forwarding pulley

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

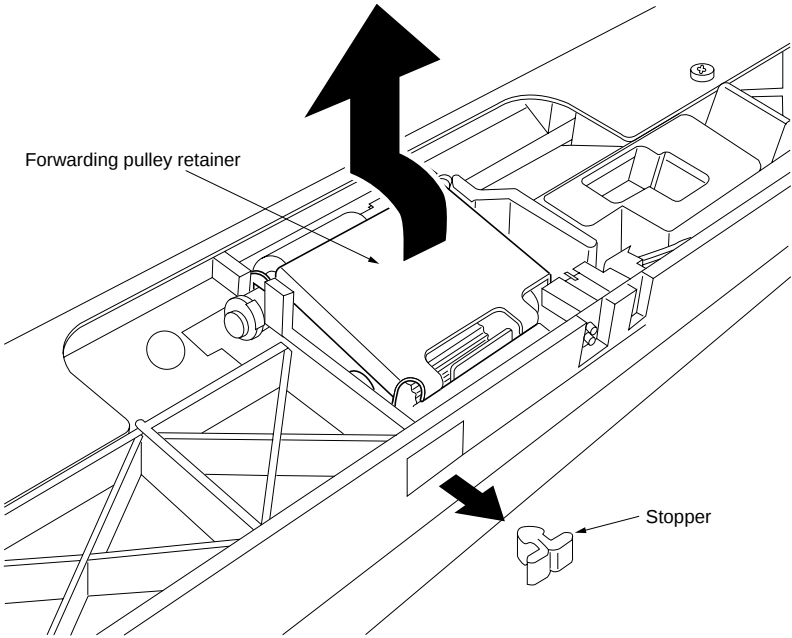


Figure 3-3-2 Detaching the forwarding pulley retainer

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

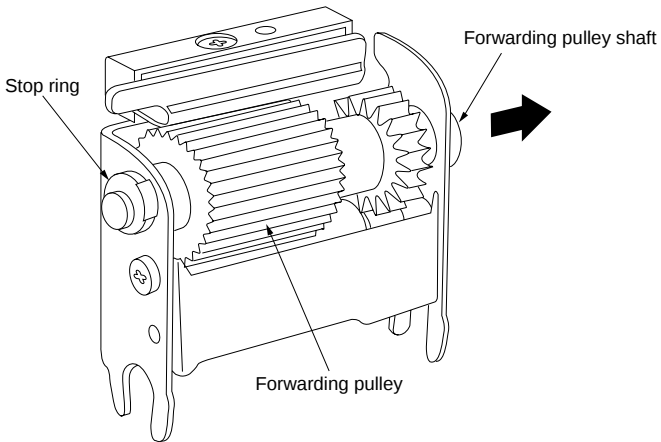


Figure 3-3-3 Detaching the forwarding pulley

Removing the paper feed pulley

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

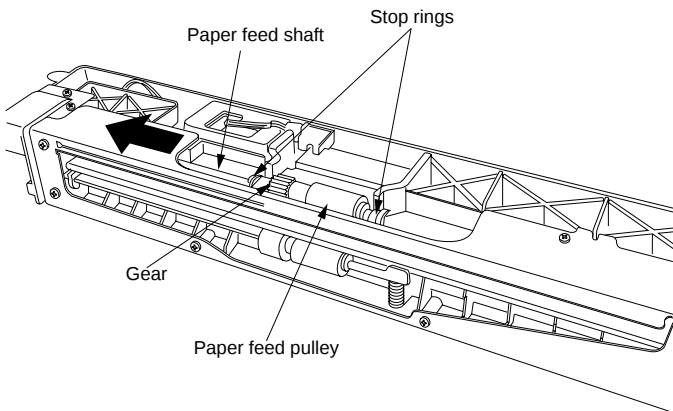


Figure 3-3-4 Detaching the paper feed pulley

Removing the separation pulley

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

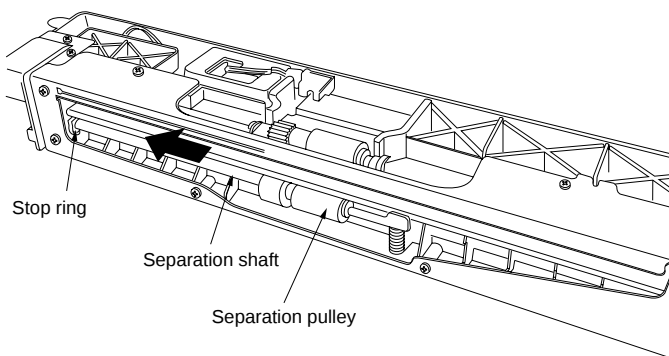


Figure 3-3-5 Detaching the separation pulley

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

Caution:

- When fitting the forwarding pulley, orient it correctly as shown in Figure 3-3-6.

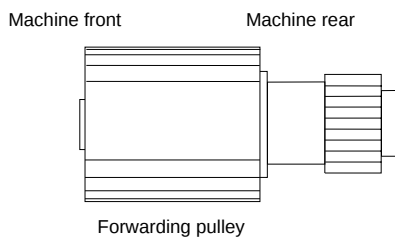


Figure 3-3-6

- When fitting the paper feed pulley and gear, keep the blue end of the paper feed pulley and the black end of the gear toward the machine rear.
12. Refit all removed parts.

(2) Replacing the upper and lower paper width switches

Replace the upper and lower paper width switches as follows.

Caution: After replacing a paper width switch, be sure to perform (8) Adjusting the position of the rack adjuster.

<Procedure>

1. Remove the drawer.

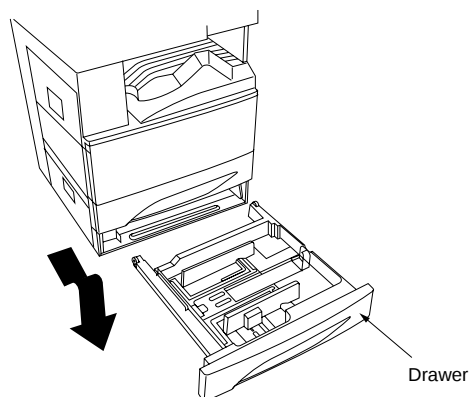


Figure 3-3-7

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

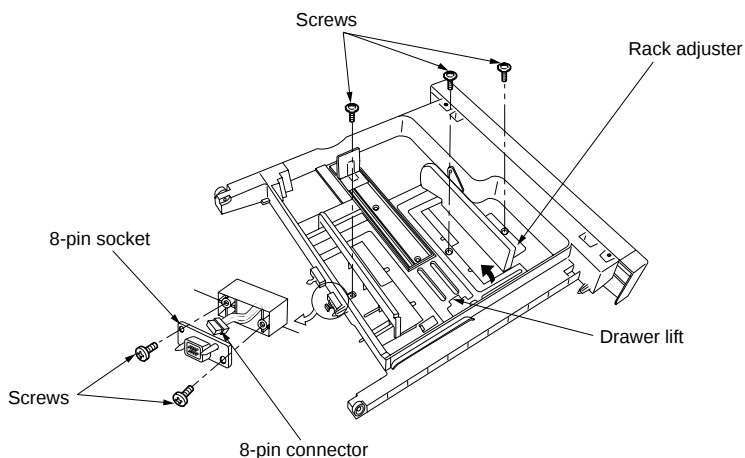


Figure 3-3-8 Detaching the rack adjuster

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

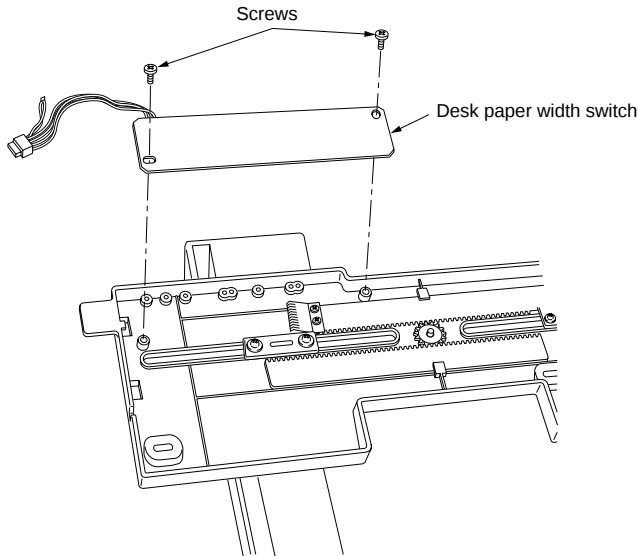


Figure 3-3-9 Detaching the paper width switch

7. 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.

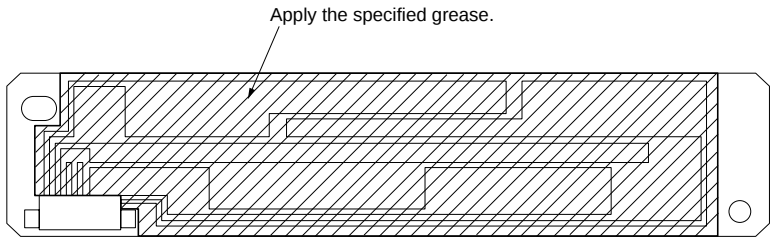


Figure 3-3-10 Paper width switch

8. Refit all removed parts.

(3) Replacing the upper and lower paper feed clutches

Replace the upper and lower paper feed clutches as follows.

<Procedure>

- Replacing the upper paper feed clutch
 1. Remove the eight screws holding the rear cover and then the cover.
 2. Remove the upper paper feed clutch wire from the clamp and then detach the connector.
 3. Remove the two screws holding the upper paper feed clutch retainer and then the retainer.
 4. Remove the stop ring and then the upper paper feed clutch.
 5. Replace the upper paper feed clutch.
 6. Refit all removed parts.

Caution: When fitting the clutch, be sure to refit the whirl-stop.

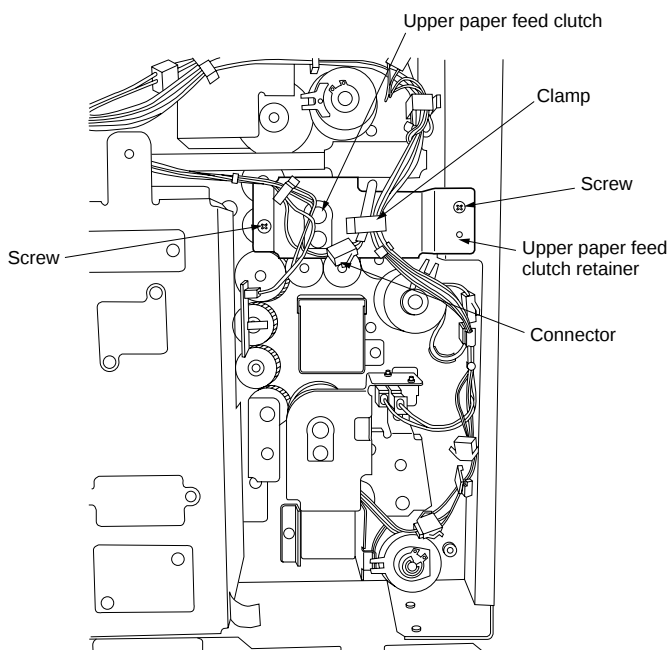


Figure 3-3-11 Detaching the upper paper feed clutch

- Replacing the lower paper feed clutch
 1. Open the left 2 cover and the lower drawer.
 2. Remove the eight screws holding the rear cover and then the cover.
 3. Remove the stop ring and then feed clutch 3.
 4. Remove the three screws holding the lower paper feed clutch retainer and then the retainer.
 5. Detach the connector of the lower paper feed clutch.
 6. Remove the stop ring and then the lower paper feed clutch.
 7. Replace the lower paper feed clutch.
 8. Refit all removed parts.

Caution: When fitting the clutch, be sure to refit the whirl-stop.

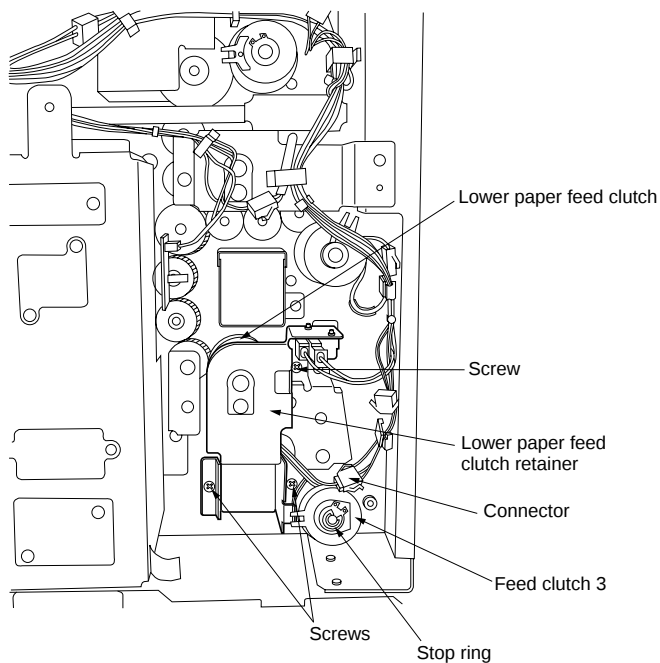


Figure 3-3-12 Detaching the lower paper feed clutch

(4) Replacing feed clutches 1, 2 and 3

Replace feed clutches 1, 2 and 3 as follows.

<Procedure>

1. Remove the eight screws holding the rear cover and then the cover.
2. Remove the wires of the feed clutches from the clamps and then detach the connectors.
3. Remove the stop rings and then the feed clutches.
4. Replace the feed clutches.
5. Refit all removed parts.

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

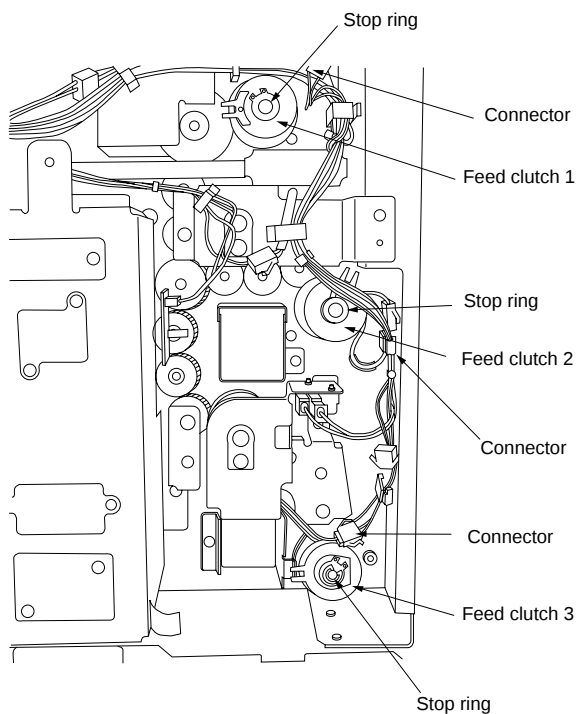


Figure 3-3-13 Replacing feed clutches 1, 2 and 3

(5) Replacing the registration clutch

Replace the registration clutch as follows.

<Procedure>

1. Remove the eight screws holding the rear cover and then the cover.
2. Remove the paper conveying fan wire from the clamp.

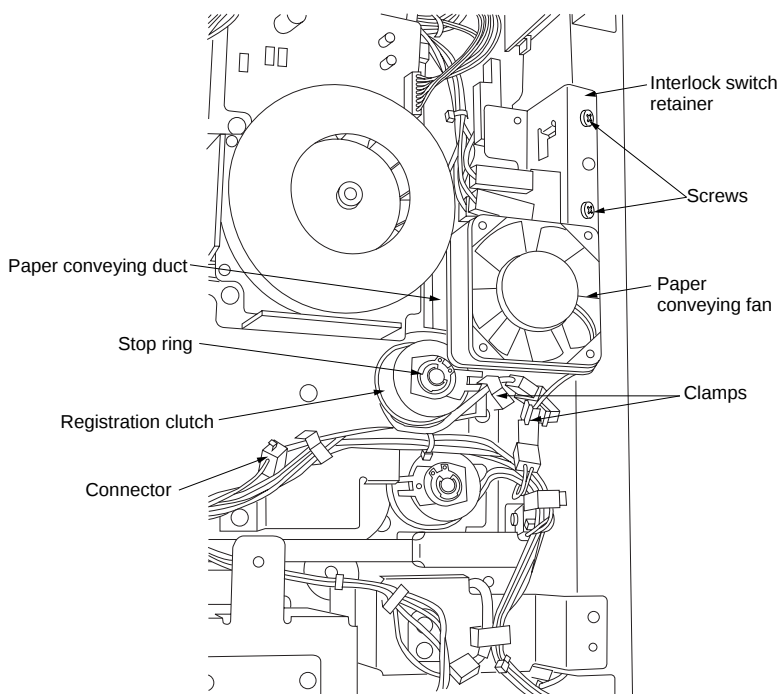


Figure 3-3-14 Replacing the registration clutch

3. Remove the two screws. Remove the interlock switch retainer while raising it.
4. Remove the paper conveying duct.
5. Remove the registration clutch wire from the clamp and then detach the connector.
6. Remove the stop ring and then the registration clutch.
7. Replace the registration clutch.
8. Refit all removed parts.

Caution: When fitting the clutch, be sure to refit the whirl-stop.

(6) Replacing the left feed cleaner assembly and left registration cleaner assembly

Replace the left feed cleaner assembly and left registration cleaner assembly as follows.

<Procedure>

1. Open the left 1 cover. Remove the stop ring and then the left 1 cover slide.
2. While lifting the paper transfer section cover release lever, open the paper transfer section cover.
3. Remove the stop rings and then the paper conveying arms from the machine front and rear.

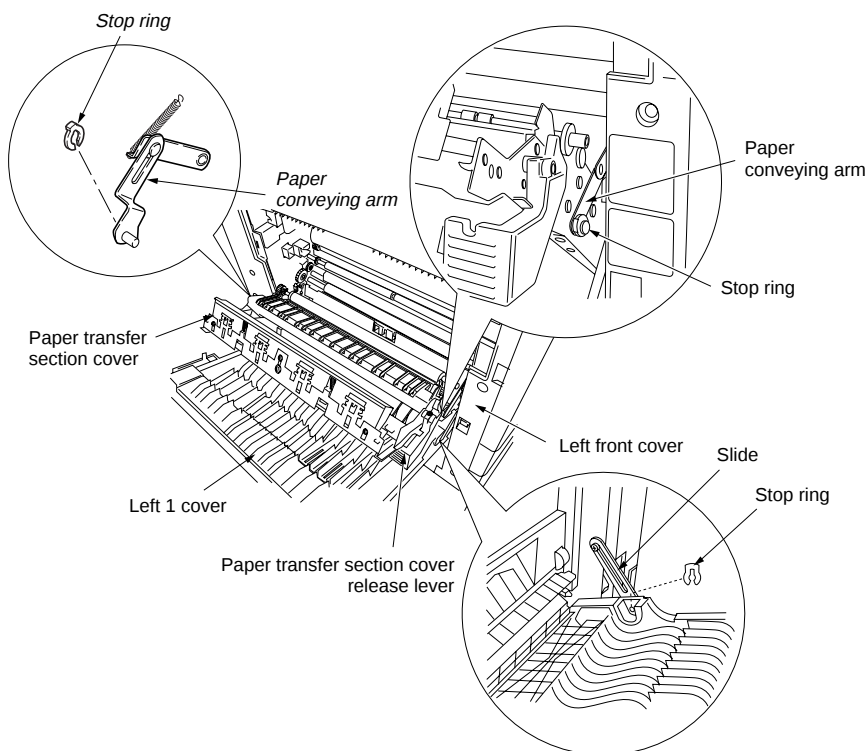


Figure 3-3-15 Replacing the left feed cleaner assembly and left registration cleaner assembly (1)

- 4. Remove the two screws holding the left front cover and then the cover.
- 5. Remove the one screw from each of the left feed and left registration cleaner assemblies and then the assemblies.

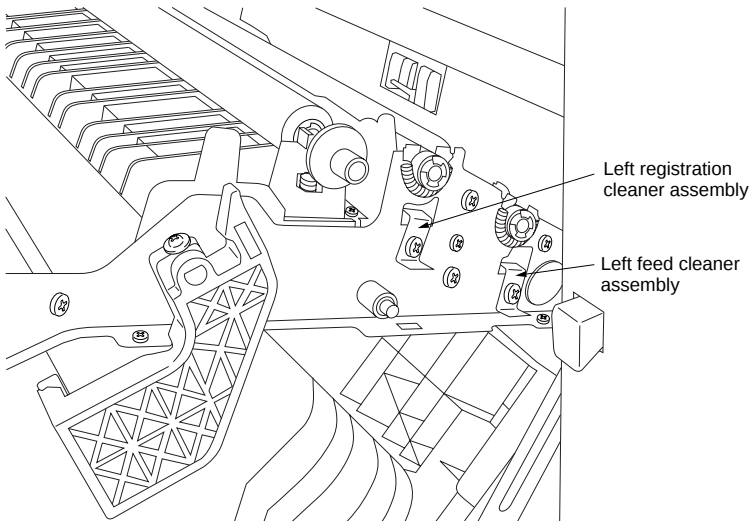


Figure 3-3-16 Replacing the left feed cleaner assembly and left registration cleaner assembly (2)

- 6. Refit all removed parts.

(7) Replacing the right feed cleaner assembly and right registration cleaner assembly

Replace the right feed clear assembly and right registration cleaner assembly as follows.

<Procedure>

- Removing the right feed cleaner assembly
 1. Open the left 1 cover. Remove the stop ring and then the left 1 cover slide.
 2. While lifting the paper transfer section cover release lever, open the paper transfer section cover.
 3. Remove the stop rings and then the paper conveying arms from the machine front and rear.
 4. Remove the two screws and then the lower feed guide.

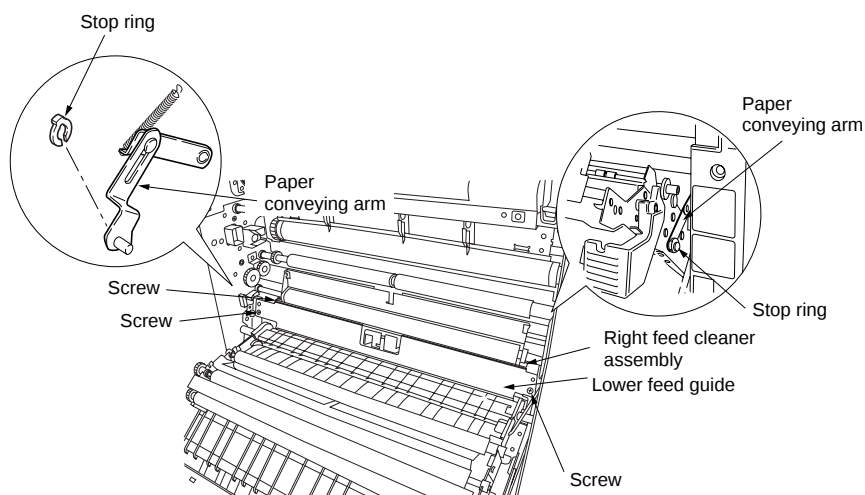


Figure 3-3-17 Replacing the right feed cleaner assembly

5. Remove the screw holding the right feed cleaner assembly and then the assembly.
6. Refit all removed parts.

- Removing the right registration cleaner assembly
 1. Open the left 1 cover and then while lifting the paper transfer section cover release lever, open the paper transfer section cover.
 2. Open the front cover and then detach the connector.
 3. Remove the two screws holding the image formation unit and then the unit.
 4. Remove the screw holding the right registration cleaner assembly and then the assembly.

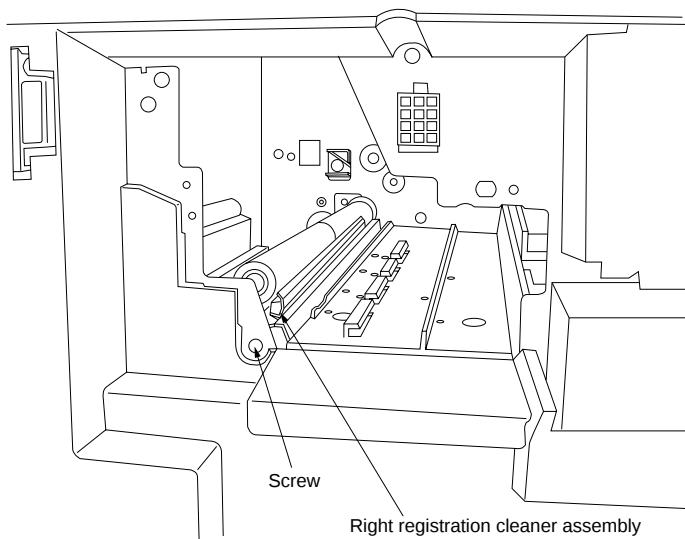


Figure 3-3-18 Replacing the right registration cleaner assembly

5. Refit all removed parts.

Caution: Fit the right registration cleaner assembly in to the hook on the back.

(8) Adjusting the position of the rack adjuster

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

<Procedure>

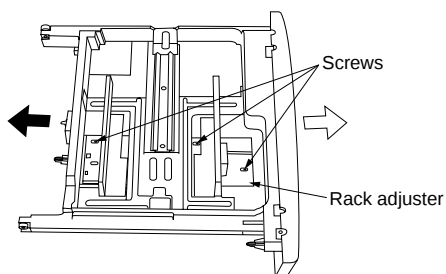
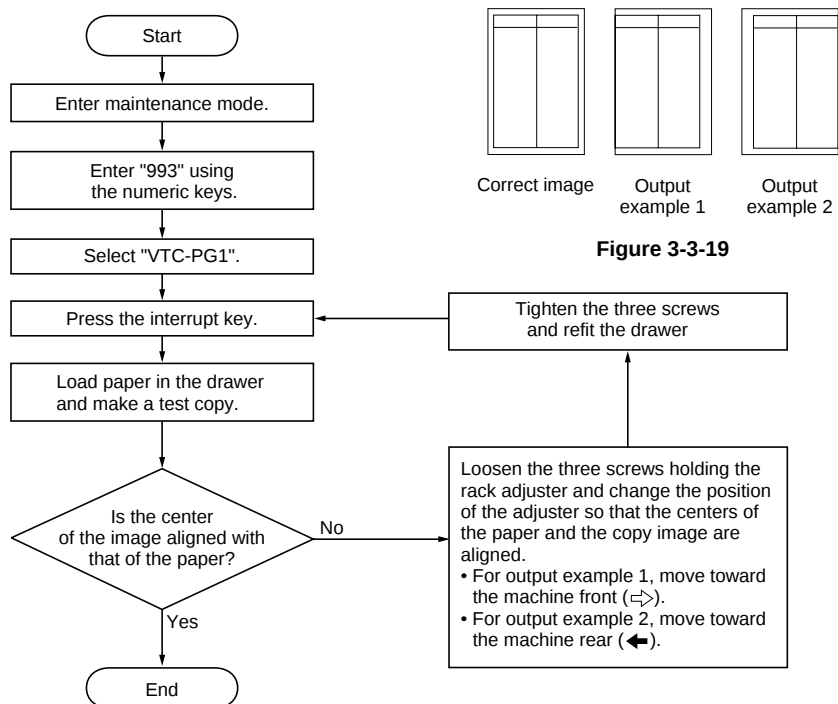


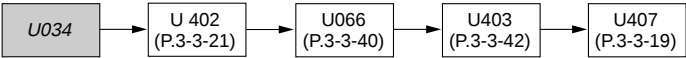
Figure 3-3-20 Adjusting the position of the rack adjuster

(9) Adjustment after roller and clutch replacement

Perform the following adjustment after installing rollers and clutches.

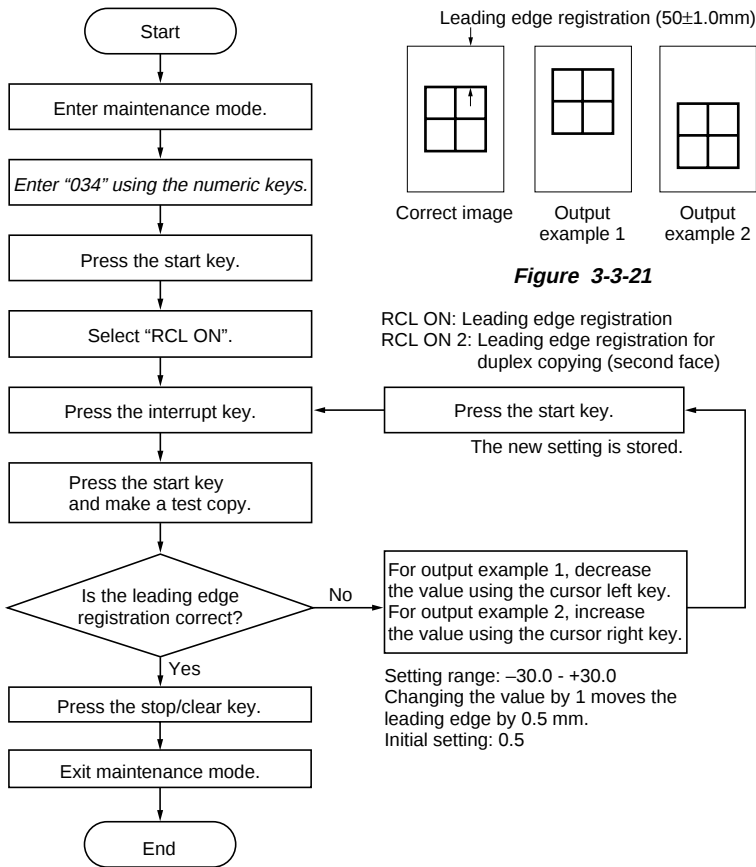
(9-1) Adjusting the leading edge registration of image printing

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



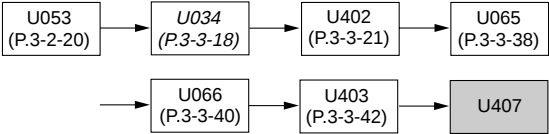
Caution: Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

<Procedure>



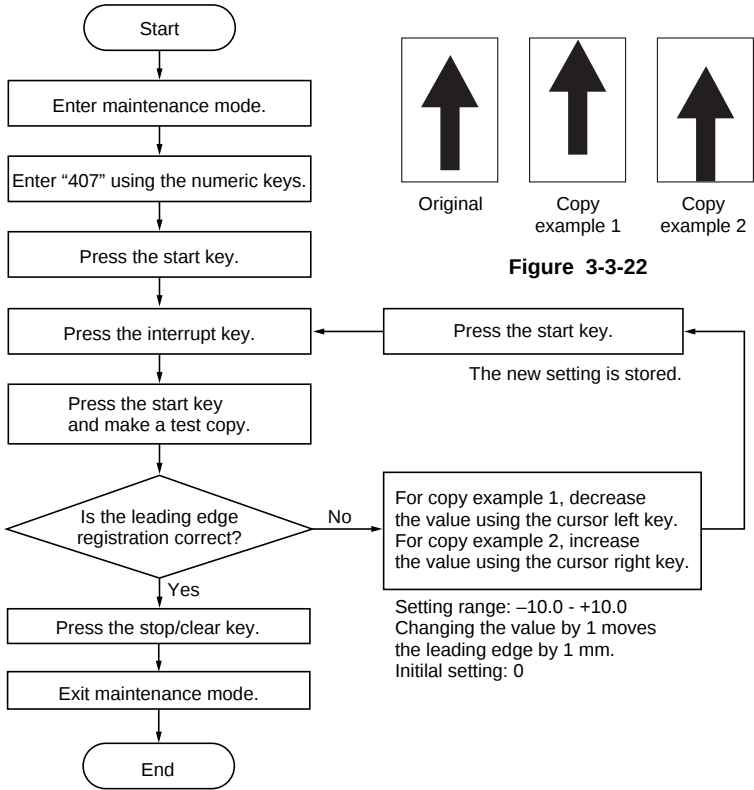
(9-2) Adjusting the leading edge registration for memory image printing

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



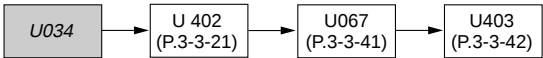
Caution: Before performing the following adjustment, ensure that the above adjustments have been made in maintenance mode.

<Procedure>



(9-3) Adjusting the center line of image printing

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



Caution:

- Before and after performing this adjustment, be sure to perform (8) Adjusting the position of rack adjuster.
- Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

<Procedure>

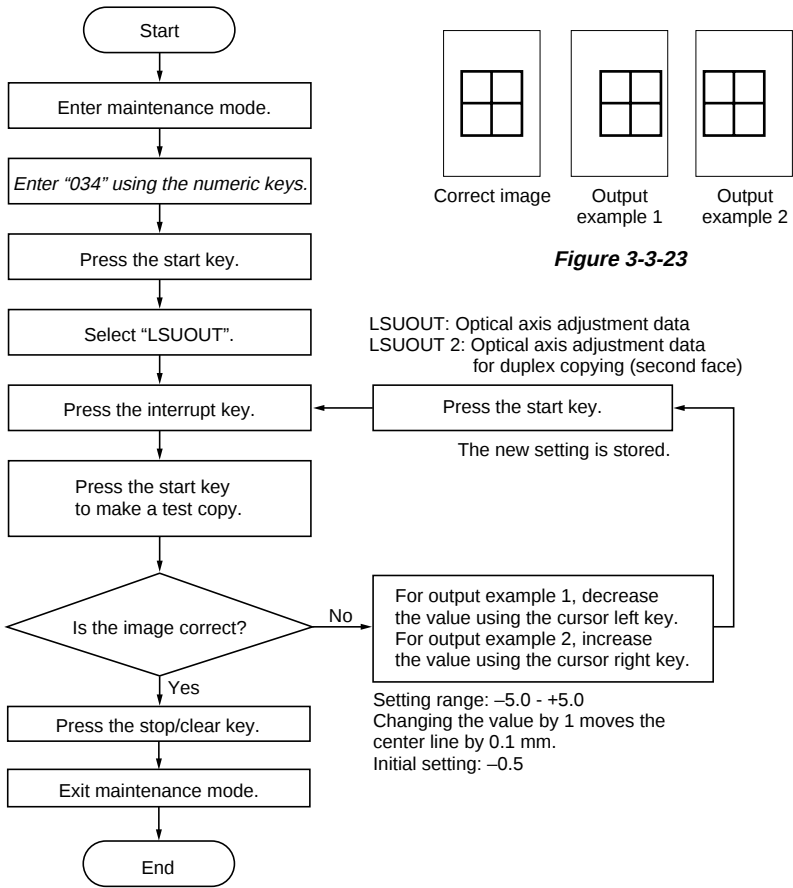


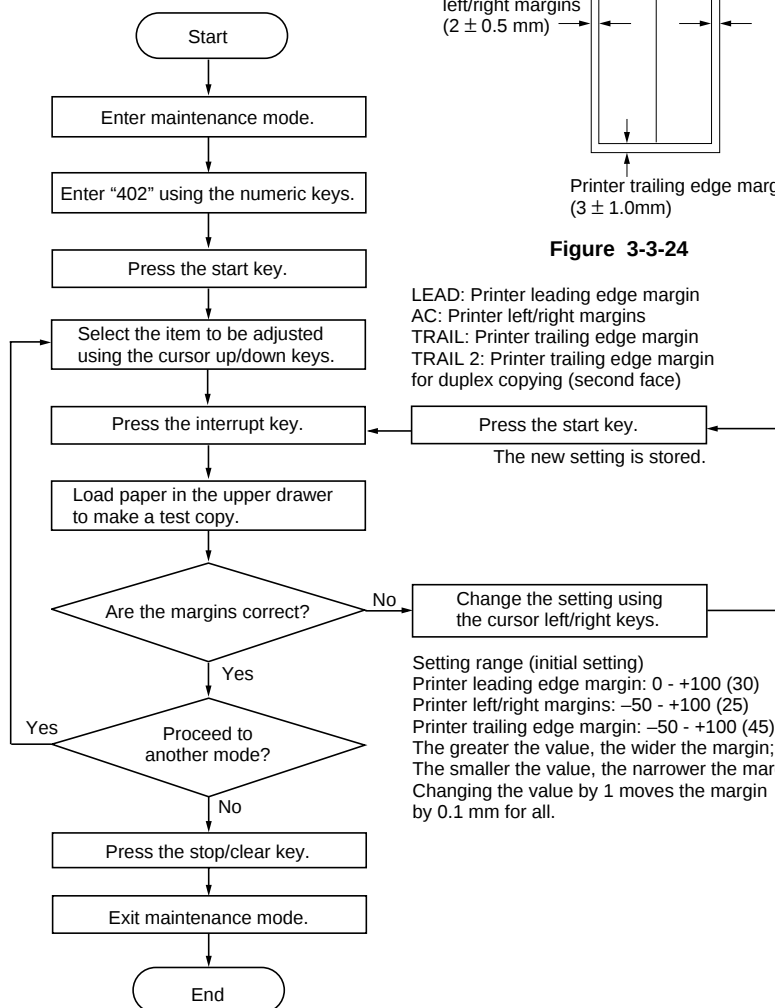
Figure 3-3-23

(9-4) Adjusting the margins of image 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 (11) Adjusting the margins for scanning an original on the contact glass (p. 3-3-42).

<Procedure>

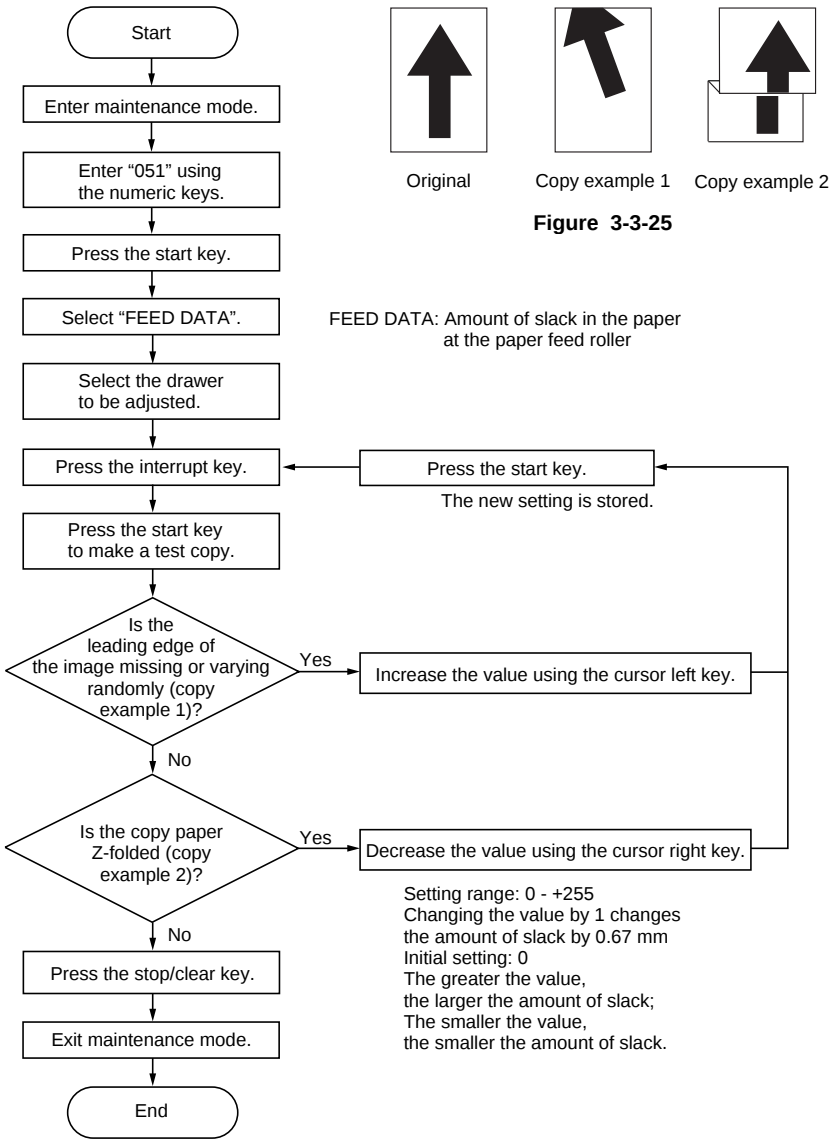


(9-5) Adjusting the amount of slack in the paper

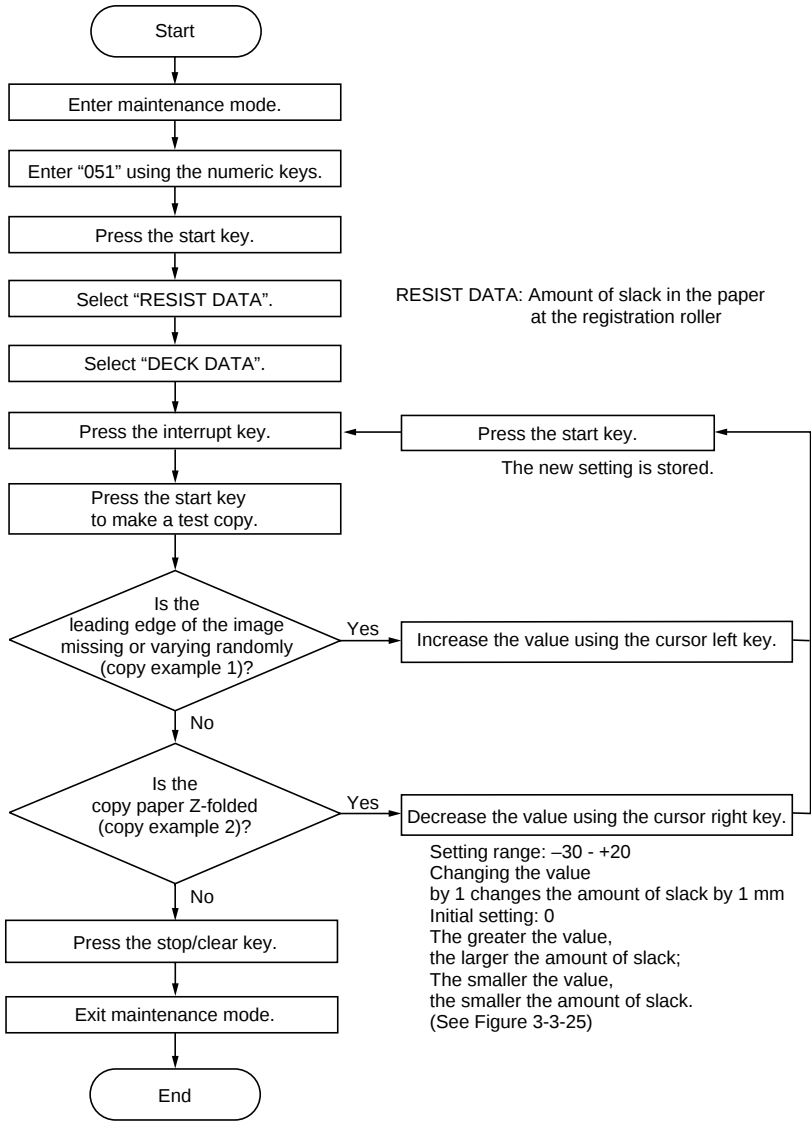
Make the following adjustment if the leading edge of the copy image is missing or varies randomly, or if the copy paper is Z-folded.

<Procedure>

- Adjusting the amount of slack in the paper at the paper feed roller



- Adjusting the amount of slack in the paper at the registration roller



3-3-3 Optical section

(1) Detaching and refitting the exposure lamp

Clean or replace the exposure lamp as follows.

<Procedure>

1. Remove the two screws holding the contact glass right cover and then the cover.
2. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
3. 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.

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

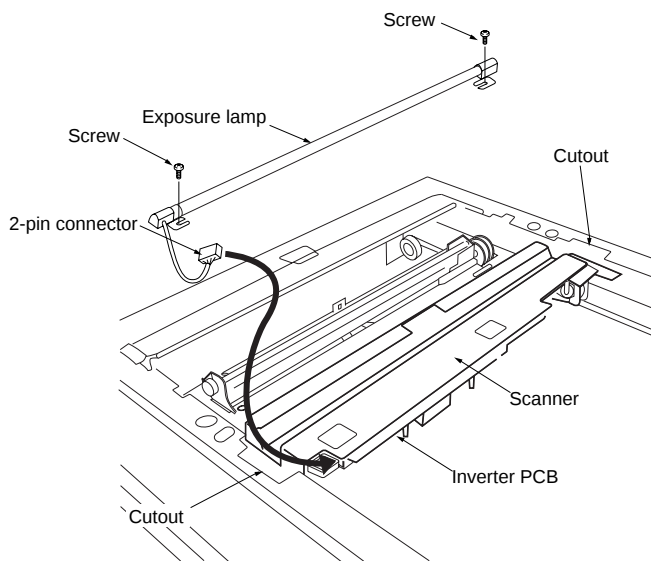


Figure 3-3-26 Detaching the exposure lamp

(2) Replacing the scanner wires

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

Caution: After replacing the scanner wires, be sure to perform (5) Adjusting the longitudinal squareness (reference).

(2-1) Detaching the scanner wires

<Procedure>

1. Remove the rear cover and the contact glass left, right, and rear covers.
2. While taking care not to touch the shading plate or rear face of the contact glass, remove the contact glass.
3. Remove the two screws holding the slit glass and then the glass.
4. Remove the screw holding the front middle cover and then the cover.
5. Remove the three screws holding the operation unit lower cover and then the cover.
6. Detach the clamp and two connectors from under the operation unit main PCB.
7. Remove the five screws holding the operation unit and then the unit.
8. 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. *Be sure not to straighten the curved part.*

9. Remove the four screws holding the mirror 1 upper frame and then the frame.

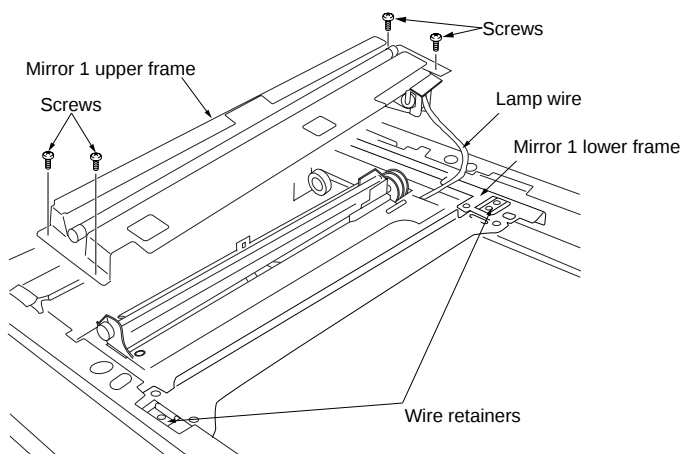


Figure 3-3-27 Detaching the mirror 1 upper frame

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

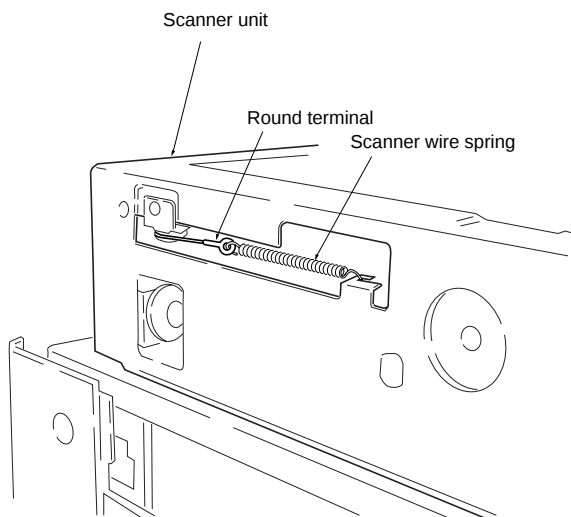


Figure 3-3-28 Detaching the scanner wire

(2-2) Fitting the scanner wires

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

Machine front: 2AR12100

Machine rear: 2AR12180 (black)

Fitting requires the following tool: Two frame securing tools (P/N: 2AC68230)

<Procedure>

- At the machine rear:
 1. Insert the two frame securing tools into the positioning holes at the centers of the scanner unit front and rear 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 right of the scanner unit, winding from above to below. ③

(Machine left)

(Machine right)

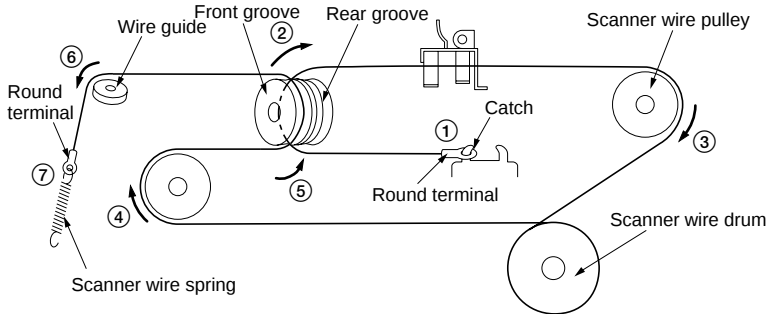


Figure 3-3-29 Fitting the scanner wires

- 6. Wind the scanner wire around the scanner wire drum six 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 two turns from the locating ball toward the machine front.

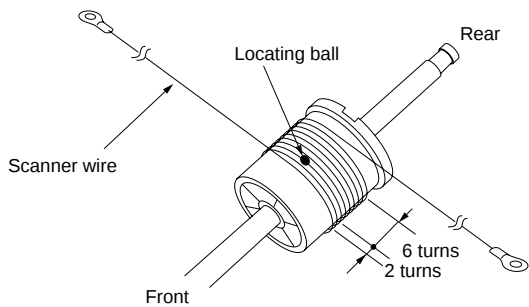


Figure 3-3-30 Winding the scanner wire

- 9. Loop the scanner wire around the groove in the scanner wire pulley at the left of the scanner unit, 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 left of the scanner unit. ⑥
- 12. Hook the round terminal onto the scanner wire spring. ⑦
- 13. Hook the other end of the scanner wire spring onto the catch at the machine left.
- 14. Repeat steps 2 to 13 for the scanner wire at the machine front.
- 15. Remove the two screws from each of the frame securing tools and then the tools.
- 16. Move the scanner from side to side to correctly locate the wire in position.

17. Loosen the two screws holding the mirror 2 frame.
18. Insert the mirror 1 lower frame into the scanner unit and seat it to the left of the positioning holes.
19. Insert the two frame securing tools into the positioning holes in the front and rear of the left 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 scanner unit using the two screws for each.

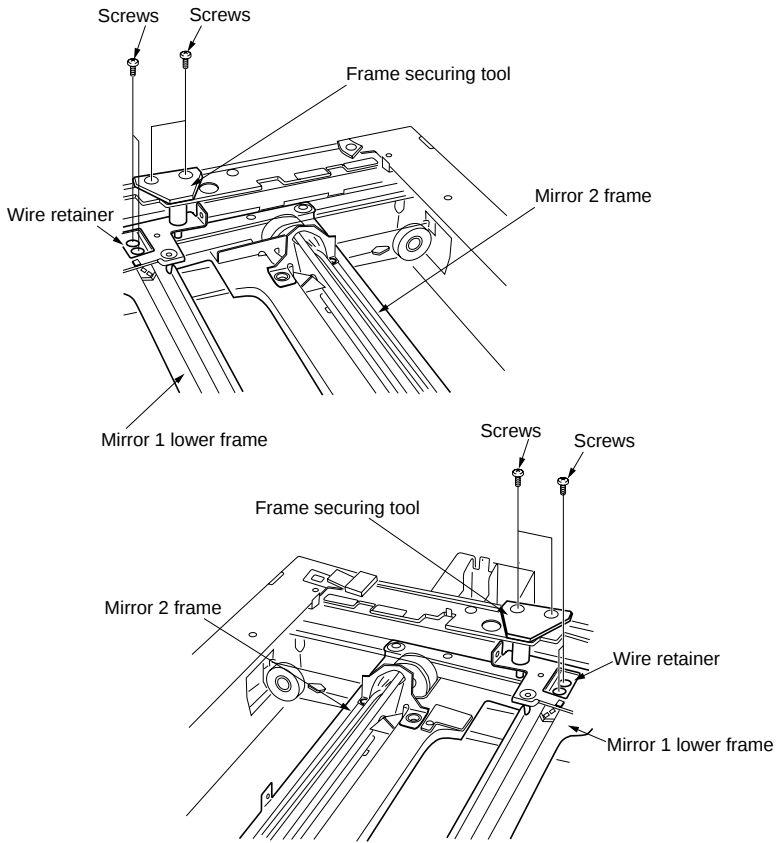


Figure 3-3-31 Securing the scanner wire

21. Retighten the two screws holding 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) Replacing the laser scanner unit

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

Caution: After installing the laser scanner unit, be sure to perform (6) Adjusting the lateral squareness (reference).

<Procedure>

1. Remove the screw and then the upper front cover.
2. Open the left 1 cover and remove the optional feedshift unit or eject unit.
3. Open the front cover and remove the pin and the screw holding the eject tray and then the tray.

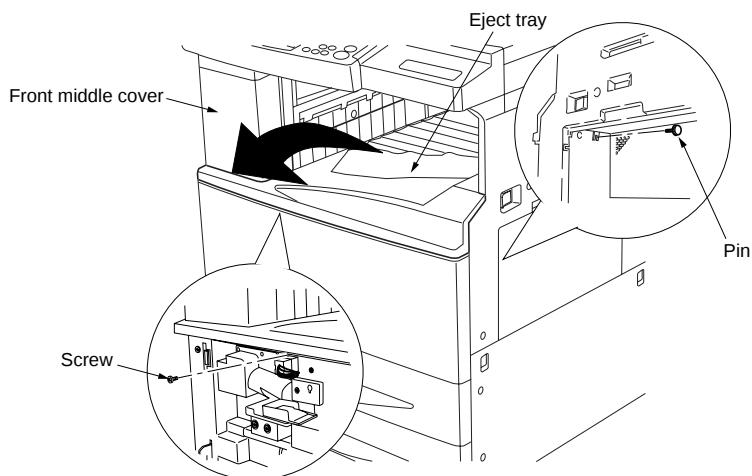


Figure 3-3-32 Detaching the eject tray

4. Remove the wire from the clamp and then detach the connector.
5. Detach the two connectors, and remove the two screws holding the cooling duct assembly and then the assembly.
6. Detach the 10 pin connector and remove the two pins, two springs and the screw holding the laser scanner unit and then the unit.

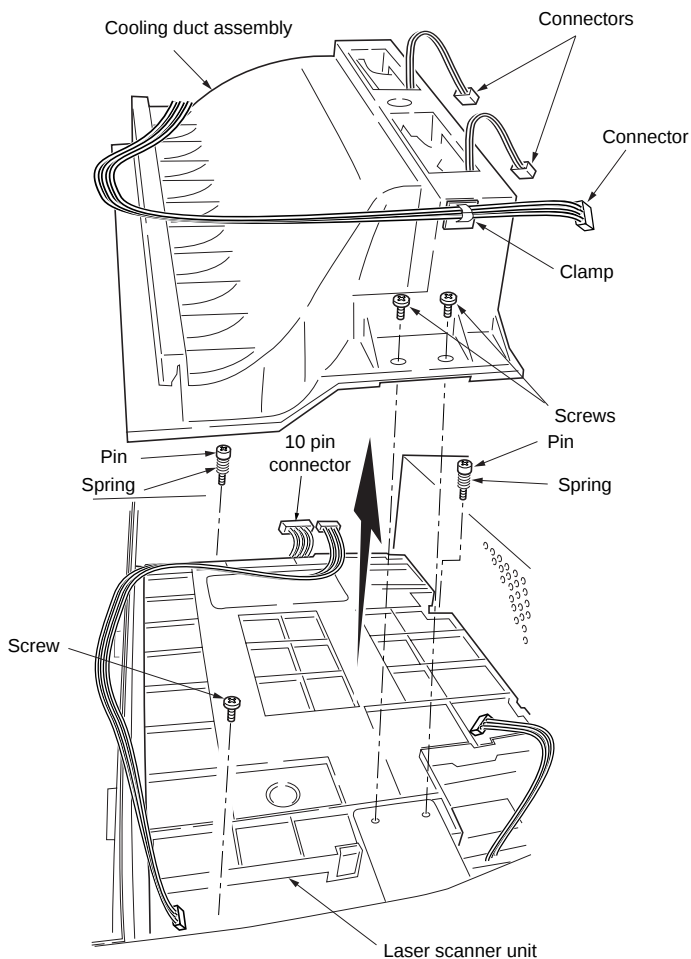


Figure 3-3-33 Replacing the laser scanner unit

7. Check or replace the laser scanner unit.
8. Refit all removed parts.

(4) Replacing the ISU (reference)

Check or replace the ISU as follows.

Caution: After installing the ISU, be sure to perform (6-2) Adjusting the position of the ISU.

Fitting requires the following tool:

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

<Procedure>

• Removing the ISU

1. Remove the contact glass 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 eight screws holding the scanner control PCB cover and then the cover.
4. Detach the two connectors from the scanner control PCB.
5. Remove the five screws holding the ISU cover and then the cover.

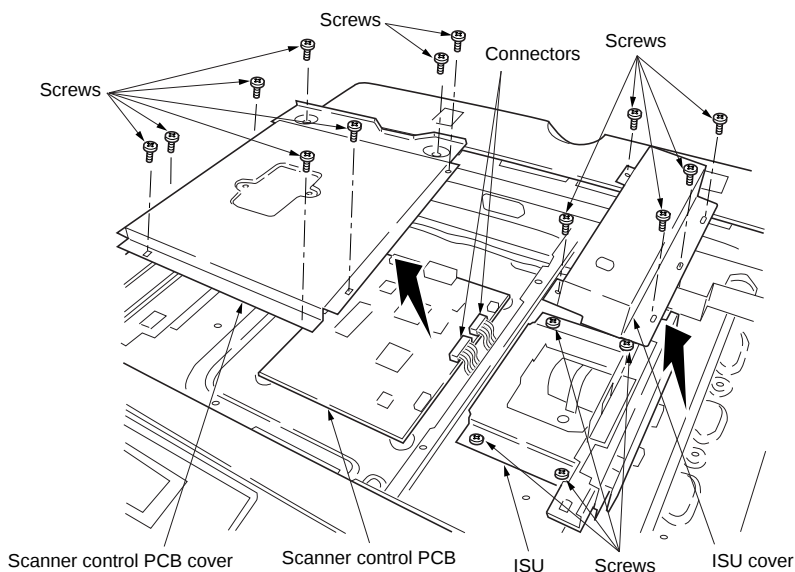


Figure 3-3-34 Removing the ISU

6. Remove the four screws holding the ISU and then the ISU.
7. Check or replace the ISU.

- Fitting the ISU
 8. Fit the ISU with two positioning pins.
 9. Refit the four screws.
 10. Remove the two positioning pins.

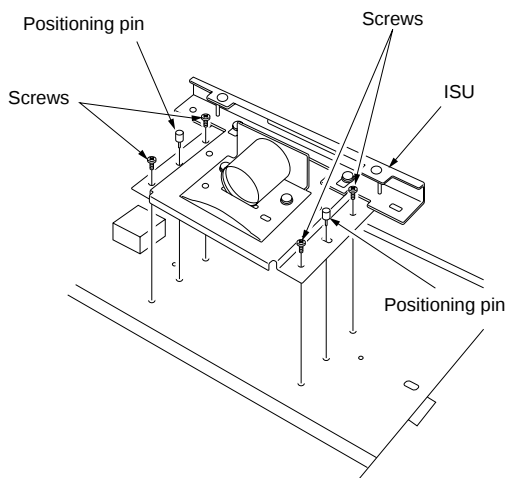


Figure 3-3-35 Fitting the ISU

11. Refit all removed parts.

(5) Adjusting the longitudinal squareness (reference)

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

Caution:

- Before performing the following adjustment, output a VTC-PG2 pattern in maintenance item U993 to use as the original for the adjustment.
- Perform “Adjusting the amount of slack in the paper” (page 3-3-22) first and check for longitudinal squareness of the copy image. If squareness is not obtained, perform the longitudinal squareness adjustment.

<Procedure>

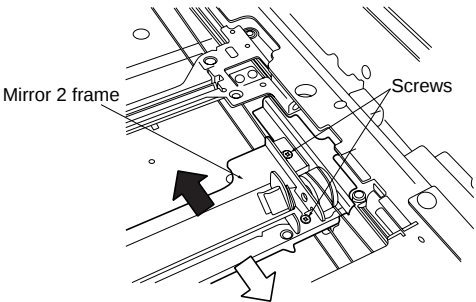
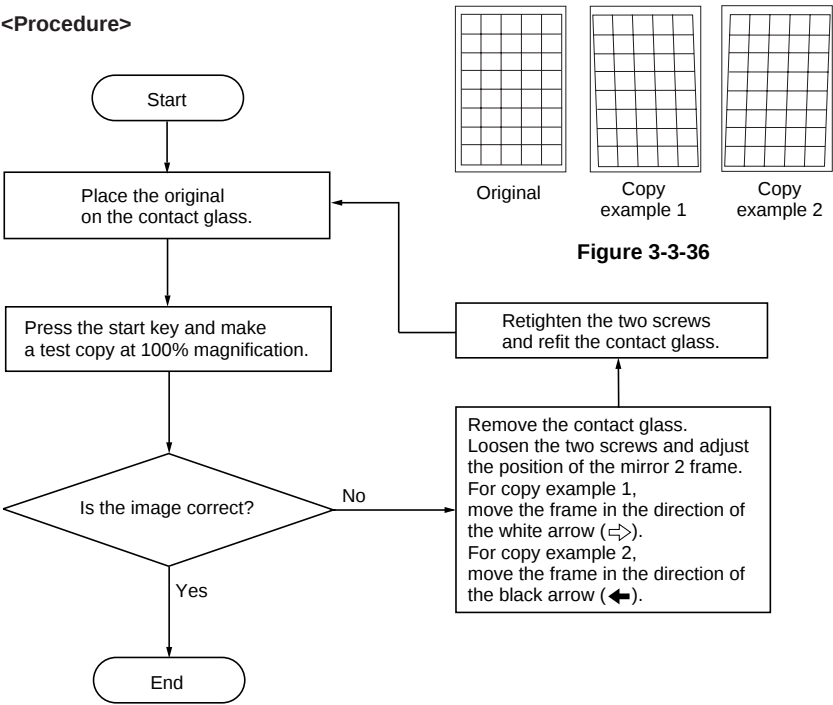


Figure 3-3-37 Adjusting the position of the mirror 2 frame

(6) Adjusting the lateral squareness (reference)

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

Caution:

- Perform (6-1) Adjusting the position of the laser scanner unit first and check for lateral squareness of the copy image. If squareness is not obtained, perform (6-2) Adjusting the position of ISU.

(6-1) Adjusting the position of the laser scanner unit

<Procedure>

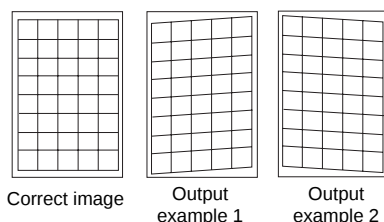
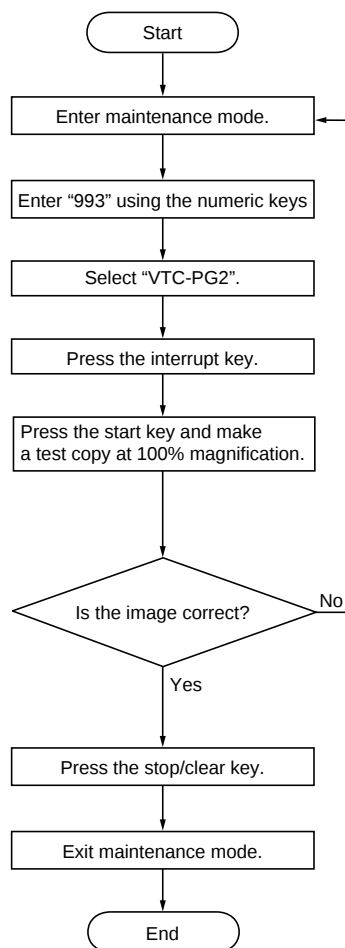
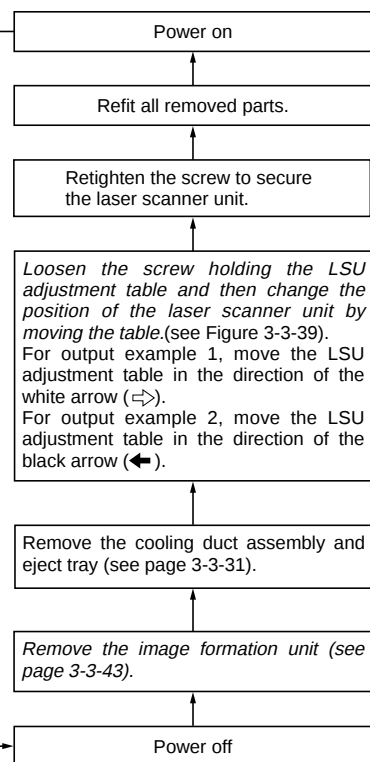
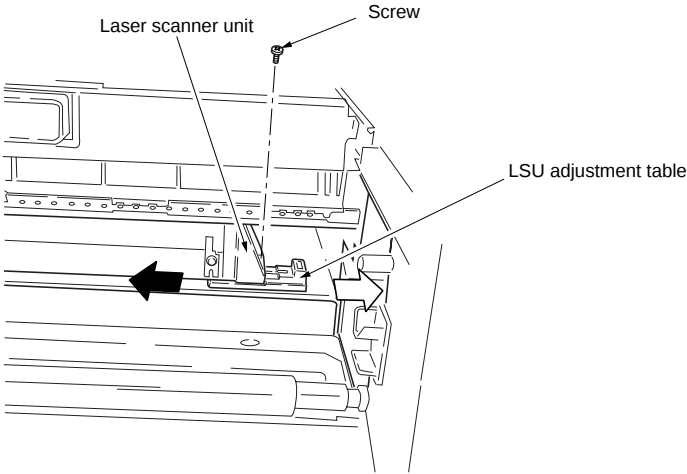


Figure 3-3-38





(As viewed from machine left)

Figure 3-3-39 Adjusting the position of the laser scanner unit

(6-2) Adjusting the position of the ISU

Caution: Before performing the following adjustment, output a VTC-PG2 pattern in maintenance item U993 to use as the original for the adjustment.

<Procedure>

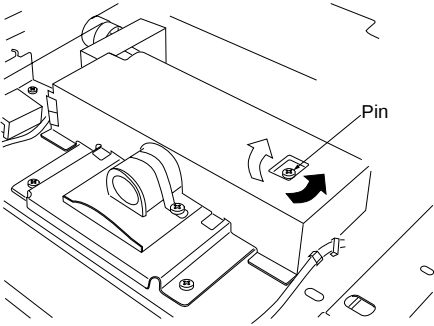
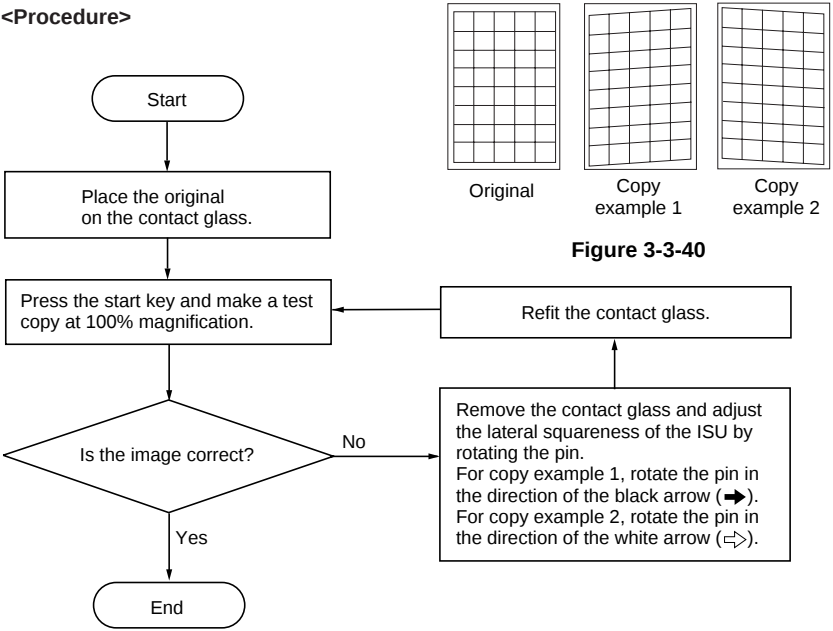
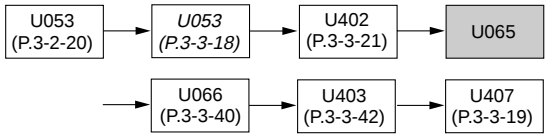


Figure 3-3-41 Adjusting the position of the ISU

(7) 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 performing the following adjustment, ensure that the above adjustments have been made in maintenance mode.

<Procedure>

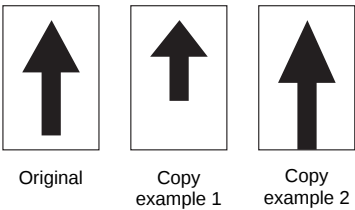
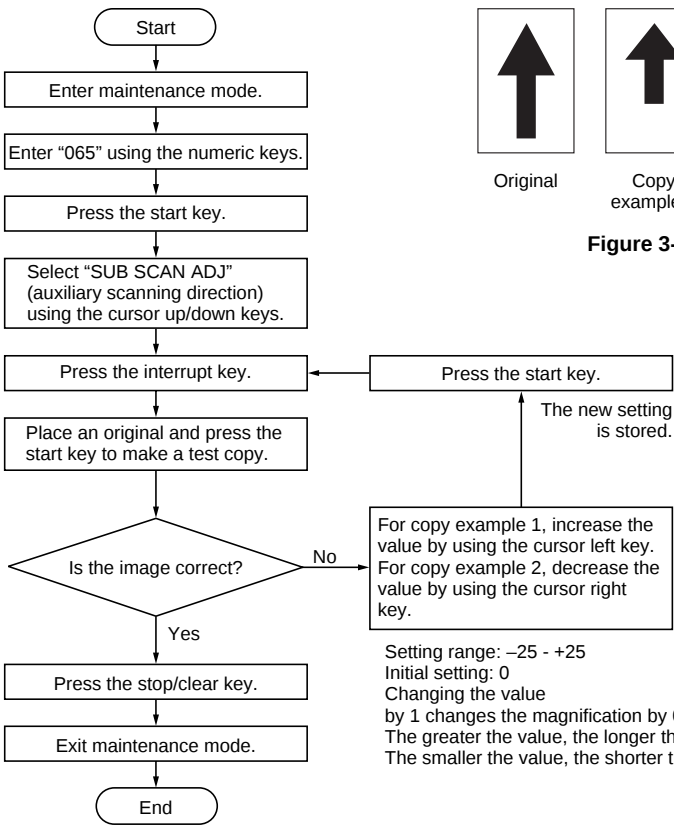
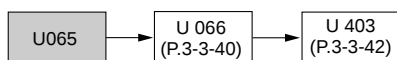


Figure 3-3-42

Setting range: -25 - +25
Initial setting: 0
Changing the value by 1 changes the magnification by 0.1%
The greater the value, the longer the image;
The smaller the value, the shorter the image.

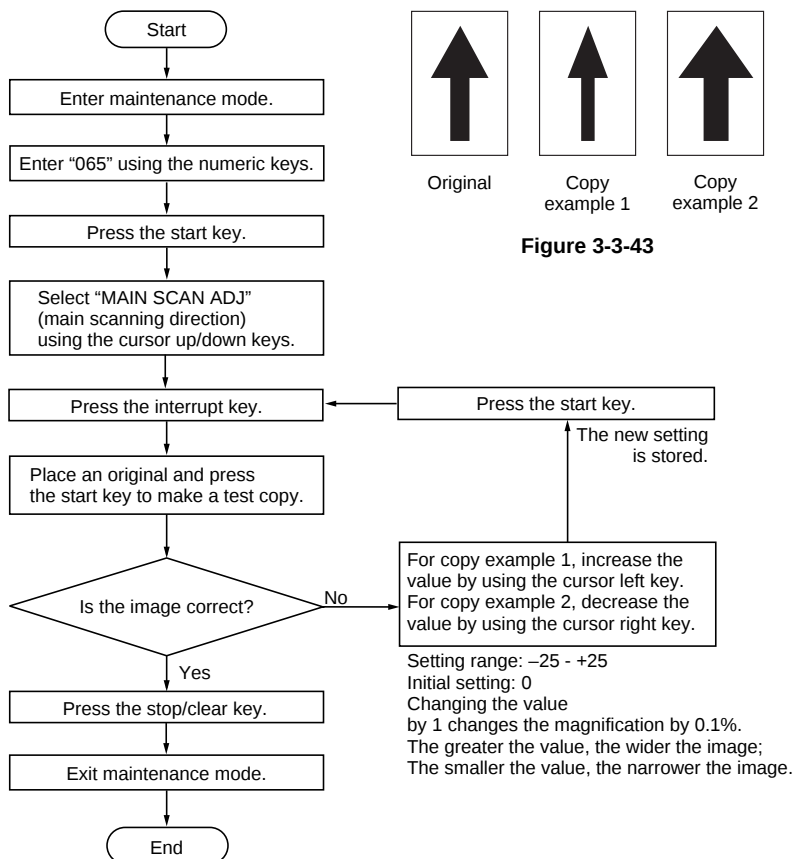
(8) Adjusting magnification of the scanner in the main scanning direction

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



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

<Procedure>



(9) Adjusting the leading edge registration for scanning an original on the contact glass

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



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

<Procedure>

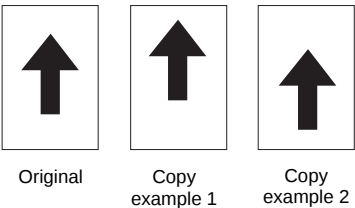
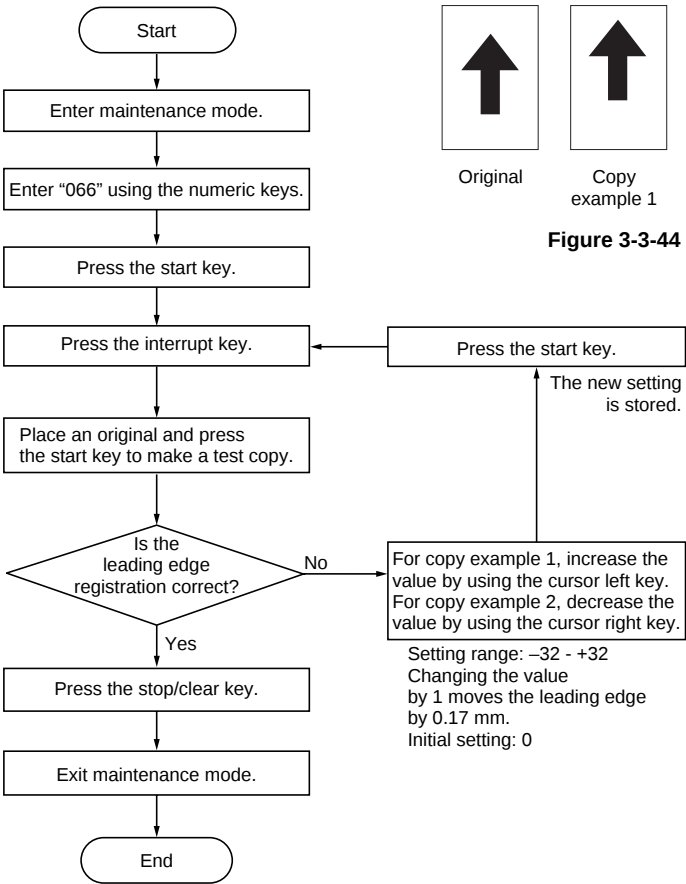
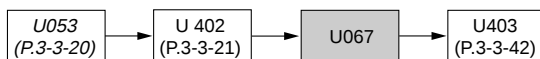


Figure 3-3-44

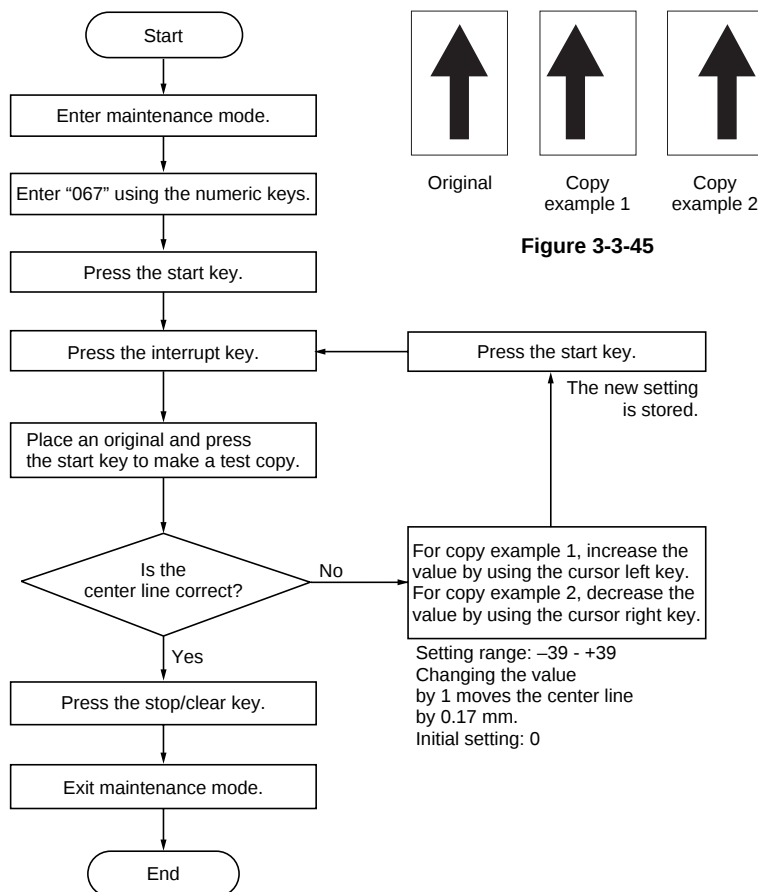
(10) Adjusting the center line for scanning an original on the contact glass

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



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

<Procedure>



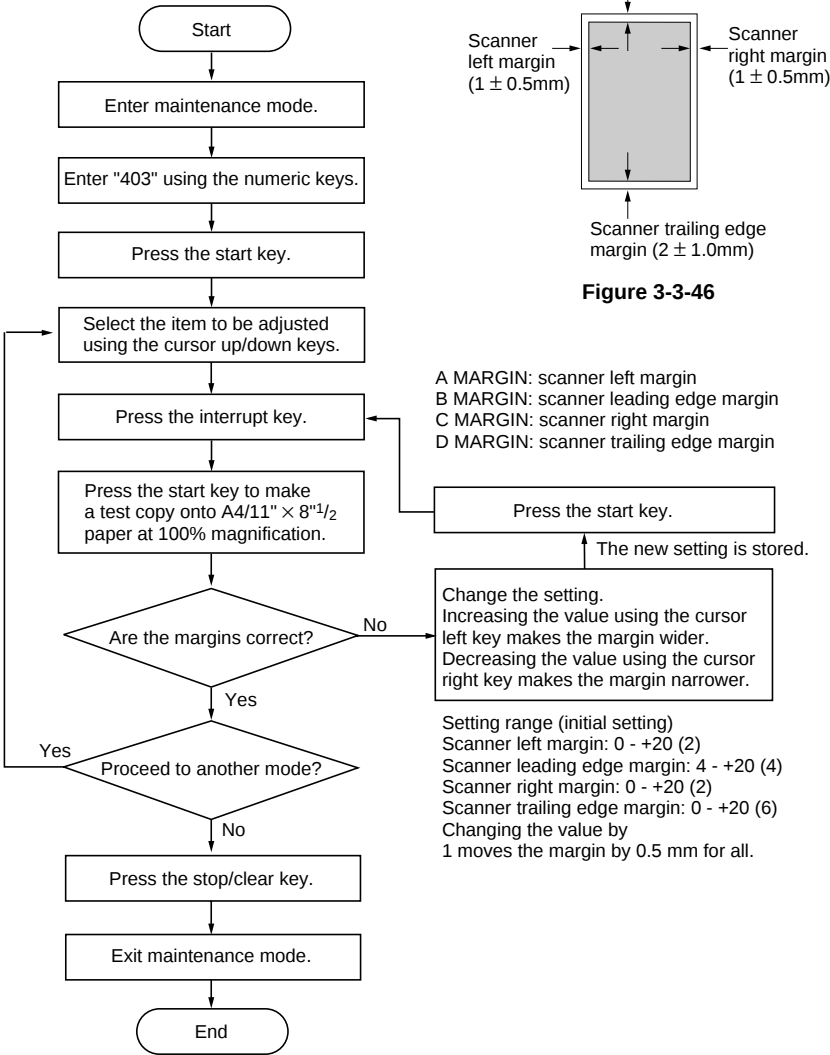
(11) Adjusting the margins for scanning an original on the contact glass

Perform the following adjustment if the margins are not correct.

Caution: Before performing the following adjustment, be sure to perform "Adjusting the margins of image printing." (P.3-3-21).

Before performing the following adjustment, make a copy onto A3/11" × 17" paper without an original on the contact glass to use as the original for the adjustment.

<Procedure>



3-3-4 Main charging section

(1) Replacing the charger assembly

Replace the charger assembly as follows.

<Procedure>

1. Open the left 1 cover and then while lifting the paper transfer section cover release lever, open the paper transfer section cover.
2. Open the front cover and then detach the connector.
3. Remove the two screws holding the image formation unit and then the unit.

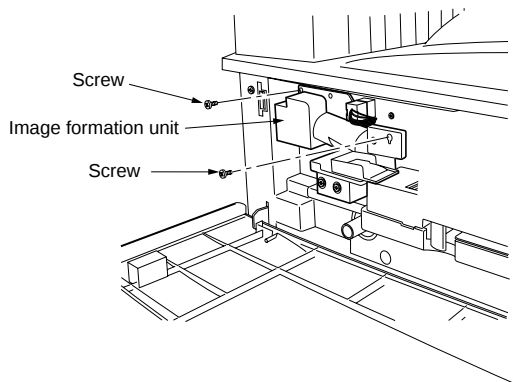


Figure 3-3-47 Detaching the image formation unit

- 4. Remove the screw holding the charger assembly and then the assembly.

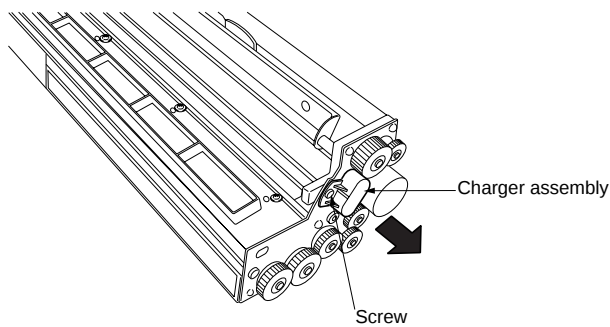


Figure 3-3-48 Detaching the charger assembly

- 5. Replace the charger assembly.
- 6. Refit all removed parts.

(2) Replacing the tungsten wire and shield grid (reference)

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

<Precautions>

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

<Procedure>

1. Remove the two screws holding the image formation unit and then the unit.
2. Remove the screw and slide off the charger assembly from the image formation unit.
3. Remove the main charger front and rear lids.
4. *Remove the shield grid from the front of the charger assembly.*
5. Remove the tungsten wire retainer pin and the charger spring from the charger terminal, and then the tungsten wire.

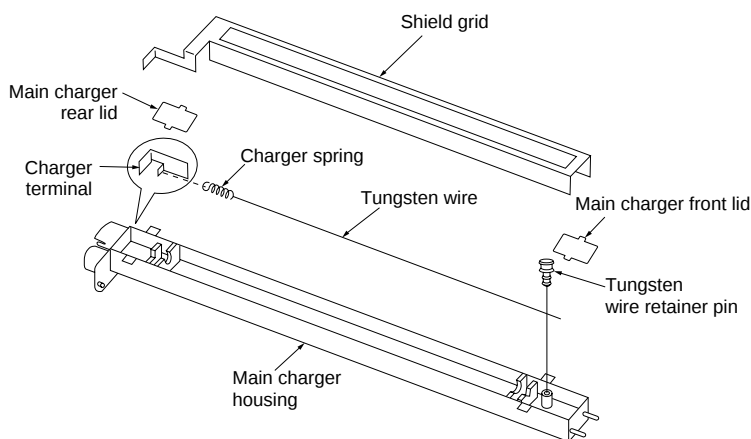


Figure 3-3-49 Detaching the tungsten wire

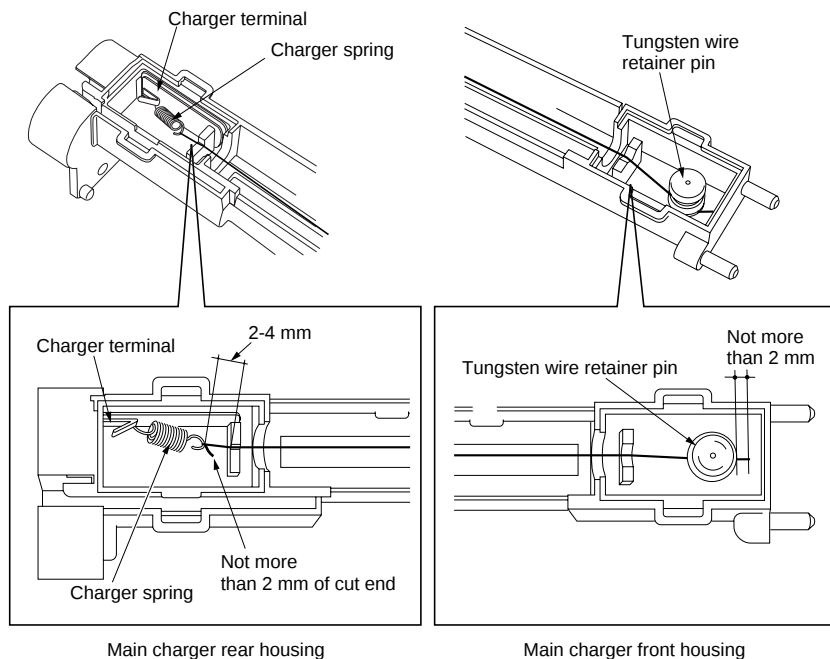


Figure 3-3-50 Installing the tungsten wire

6. Wind the new tungsten wire six turns around one end of the charger spring and trim the end.
 - The width of the coiled tungsten wire and the cut end must be less than 2 mm.
7. Hook the other end of the charger spring onto the charger terminal of the main charger rear housing.
8. Pass the tungsten wire through the V-shaped notch in the tungsten wire retainer pin and stretch it taut.
 - The tungsten wire must be adjusted so that the distance between the spring end and the rib on the main charger rear housing is 2-4 mm.
9. Insert the tungsten wire retainer pin into the projection on the main charger rear housing to secure the tungsten wire.
10. Cut off the excess wire under the tungsten wire retainer pin.
 - The cut end of the tungsten wire must protrude less than 2 mm.
11. Refit the main charger front and rear lids.
12. Refit all removed parts.

3-3-5 Drum section

(1) Replacing the drum

Replace the drum as follows.

<Precautions>

- Avoid direct sunlight or strong light when detaching and fitting 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 left 1 cover and then while lifting the paper transfer section cover release lever, open the paper transfer section cover.
2. Open the front cover and then detach the connector.
3. Remove the two screws holding the image formation unit and then the unit.
4. Move the cleaning blade release lever in the direction of the arrow to move the cleaning blade away from the drum.

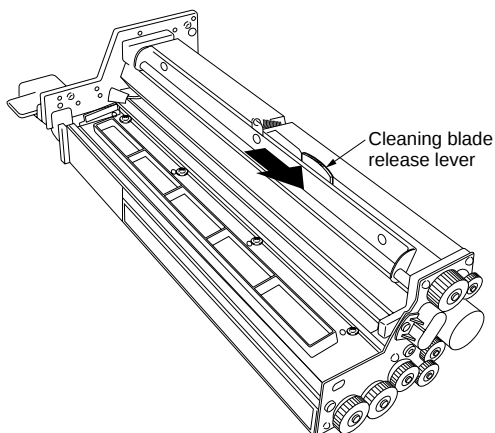


Figure 3-3-51 Cleaning blade release lever

5. Remove the two screws holding the transfer right guide.

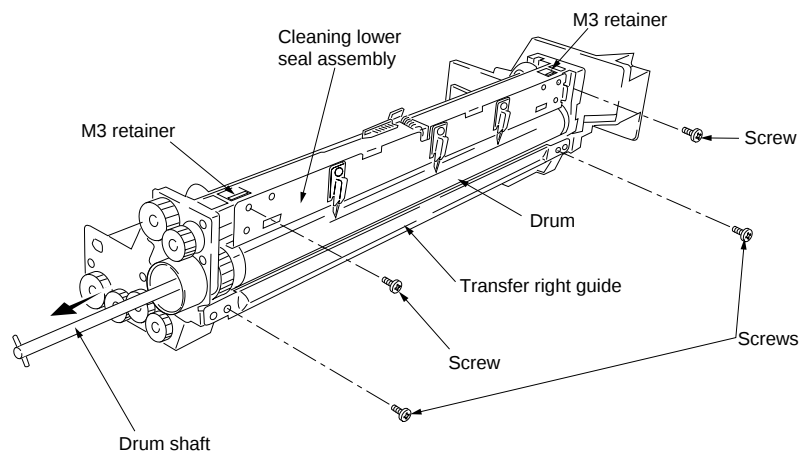
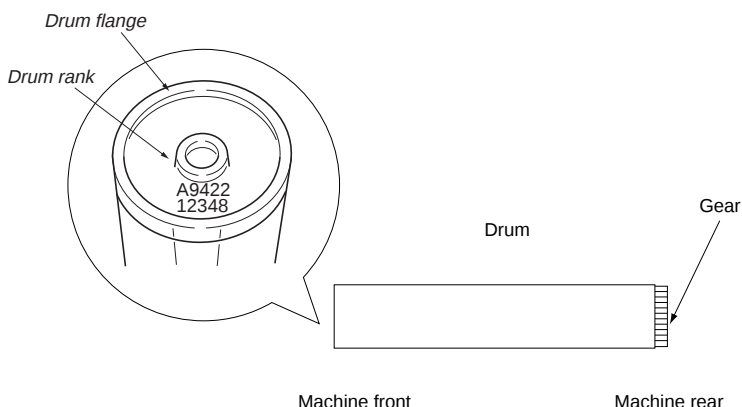


Figure 3-3-52 Detaching the drum

- 6. Remove the two screws holding the cleaning lower seal assembly and then the assembly.
- 7. Pull out the drum shaft and remove the drum.
- 8. Refit all removed parts.

Caution:

- After replacing the drum, run maintenance items U110 "Checking/clearing the drum count" and U111 "Checking/clearing the drum drive time."
- When fitting the drum, orient it correctly so that the gear is positioned at the machine rear.
- After replacing the drum, run maintenance item U101 and set the DB DATA value to the figure corresponding to the letter indicating the drum rank (A, B or C) printed on the drum flange (see page 3-2-44).

**Figure 3-3-53**

- When detaching and refitting the drum separation claw assemblies, take care not to lose the M3 retainer (P/N 33302080).

*Fitting the drum***<Procedure>**

1. Remove the one screw from each of the drum separation claw assemblies and then the assemblies from the cleaning lower seal assembly.
2. Refit the cleaning lower seal assembly using the two screws.
3. Fit the drum.
4. Insert the drum shaft into the drum by turning in the forward direction only.
 - Never allow the drum to turn in the reverse direction when the drum shaft is inserted.
5. Refit the transfer right guide using the two screws.
6. Refit the separation claw assemblies using one screw for each.
7. After replacing the drum, secure the cleaning blade release lever so that the cleaning blade makes contact with the drum.

(2) Cleaning the drum

Clean the drum as follows when an image formation problems occur or if the drum is soiled.

<Precautions>

- Avoid direct sunlight or strong light when cleaning the drum.
- Dust in the air and from the polishing cloth may damage the drum during subsequent operation. Avoid working in a dusty environment.
- Clean the drum entirely even if it is soiled only locally.
- Do not use organic solvents such as alcohol or thinner to clean the drum.

<Required supplies>

- Polishing cloth: specified synthetic cotton
- Toner

<Procedure>

1. Remove the drum from the image formation unit (see page 3-3-47).
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.

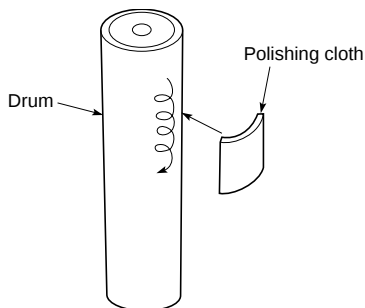


Figure 3-3-54 Cleaning the drum

3-3-6 Developing section

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

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

<Procedure>

1. *Open the left 1 cover and then while lifting the paper transfer section cover release lever, open the paper transfer section cover.*
2. *Open the front cover and then detach the connector.*
3. Remove the two screws holding the image formation unit and then the unit.
4. *Remove the two screws holding the charger assembly and MC rail and then the assembly and rail.*
5. Remove the screw holding the MC rail and then the rail.

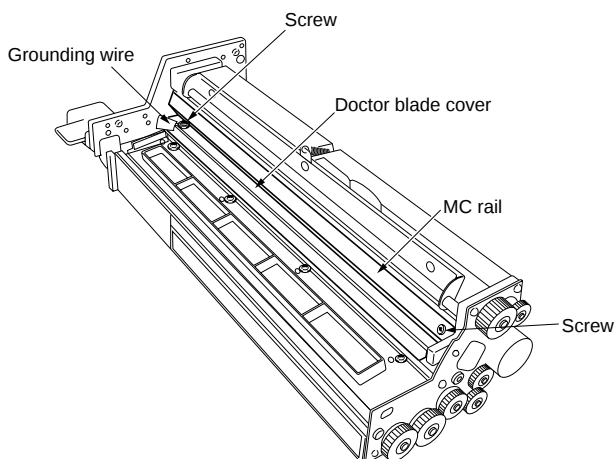


Figure 3-3-55 Detaching the doctor blade cover

6. Remove the screw holding the doctor blade cover and then the cover.
 - When refitting the doctor blade cover, be sure to refit the grounding wire.

7. Measure the distance between the doctor blade and the developing roller at the three points indicated by the white arrows using a thickness gauge. Adjust the distances with the three screws until the correct measurements are obtained; the 0.55 mm gauge should go into the gap and the 0.65 mm one should not.
- The smaller the distance, the lighter the image; the larger the distance, the darker the image.

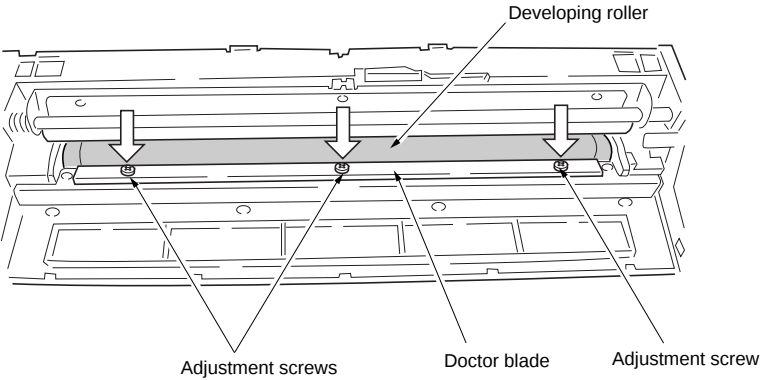


Figure 3-3-56

3-3-7 Transfer section

(1) Replacing the transfer roller assembly

Clean or replace the transfer roller assembly as follows.

<Procedure>

1. Open the left 1 cover.
2. While lifting the paper transfer section cover release lever, open the paper transfer section cover.
3. Remove the transfer roller assembly.

Caution: Remove the transfer roller assembly carefully to prevent the residual toner in the transfer roller assembly from spilling.

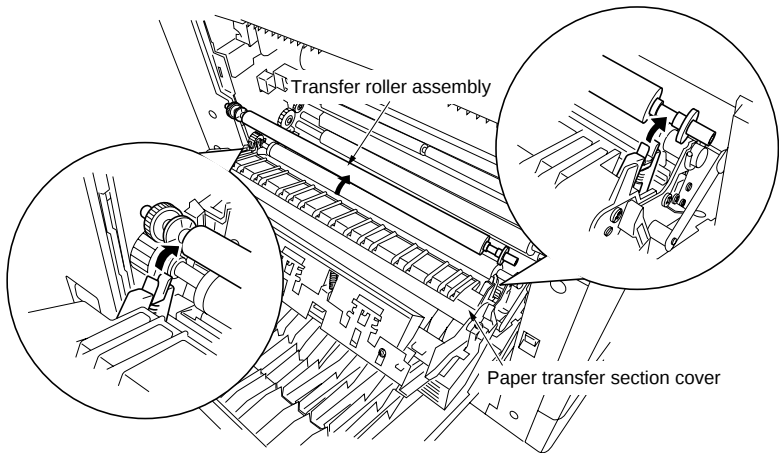


Figure 3-3-57 Detaching the transfer roller assembly

4. Replace the transfer roller assembly.
5. Refit all removed parts.

3-3-8 Cleaning section

(1) Detaching and refitting the cleaning blade

Check or replace the cleaning blade as follows.

<Procedure>

1. Open the left 1 cover and then while lifting the paper transfer section cover release lever, open the paper transfer section cover.
2. Open the front cover and then detach the connector.
3. Remove the two screws holding the image formation unit and then the unit.
4. Remove the two screws holding the charger assembly and MC rail and then the assembly and rail.
5. Remove the cleaning lower seal assembly and the transfer right guide (see page 3-3-48).
6. Loosen the cleaning blade release lever (see page 3-3-47).
7. Pull out the drum shaft and remove the drum.
8. Remove the three screws holding the cleaning blade and then the blade.
 - When detaching and refitting the cleaning blade, take care not to touch the blade.
 - Do not clean the cleaning blade edge. If cleaned, apply toner or setting powder P/N 66000670 to the edge before refitting the cleaning blade.

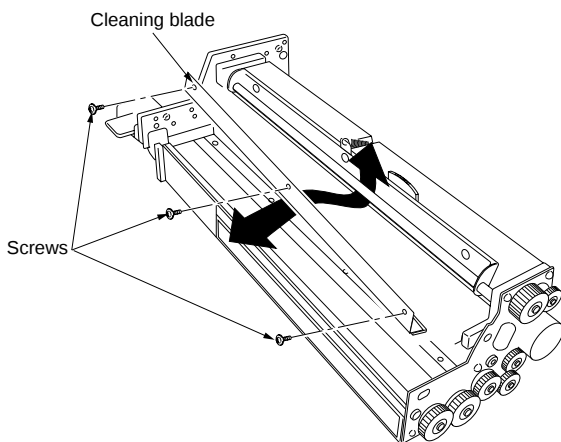


Figure 3-3-58 Detaching the cleaning blade

9. Refit all removed parts and secure the cleaning blade release lever.
- When installing the cleaning blade, take care not to trap the sponges at either end.

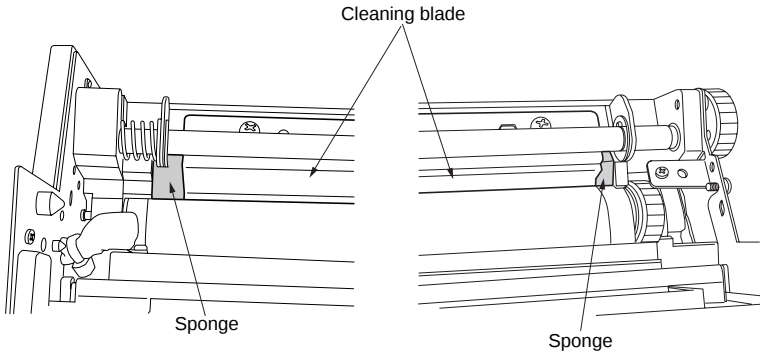


Figure 3-3-59 Installing the cleaning blade

(2) Detaching the drum separation claw assemblies and the cleaning lower seal assembly

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

<Procedure>

1. Open the left 1 cover and then while lifting the paper transfer section cover release lever, open the paper transfer section cover.
2. Open the front cover and then detach the connector.
3. Remove the two screws holding the image formation unit and then the unit.
4. Remove the one screw from each of the drum separation claw assemblies and then the assemblies.
5. Remove the drum separation claws from the drum separation claw assemblies.
6. Remove the two screws holding the transfer right guide (see page 3-3-48).
7. Pull out the drum shaft and remove the drum.
8. Remove the two screws holding the cleaning lower seal assembly and then the assembly.

- When detaching and refitting the cleaning lower seal assembly, take care not to lose the M3 retainers (P/N 33302080).

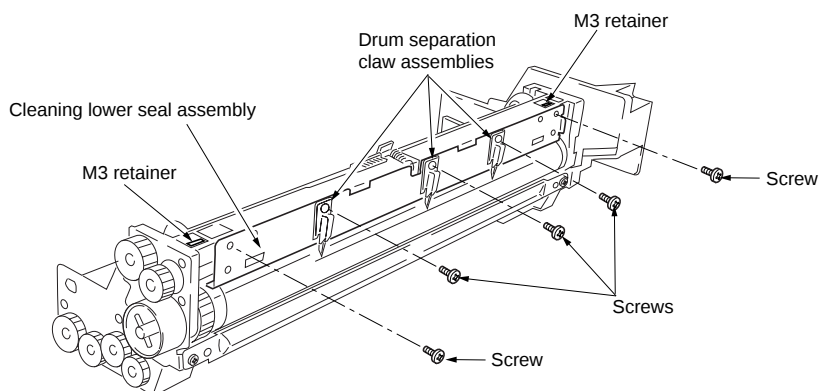


Figure 3-3-60 Detaching the drum separation claw assemblies and the cleaning lower seal assembly

9. Refit all removed parts.

3-3-9 Fixing section

(1) Replacing fixing heaters M and S

Replace fixing heaters M and S as follows.

<Procedure>

1. Open the left 1 cover.
2. While lifting the paper transfer section cover release lever, open the paper transfer section cover.
3. Loosen the screws at the front and rear of the fixing unit and remove the fixing unit stoppers.

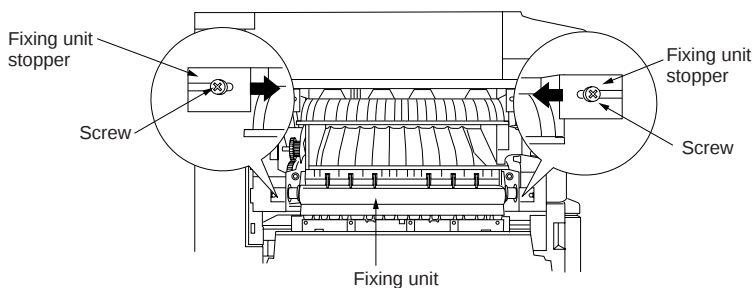


Figure 3-3-61 Detaching the fixing unit

4. Remove the fixing unit.
5. Remove the three screws holding the fixing unit cover and then the cover.

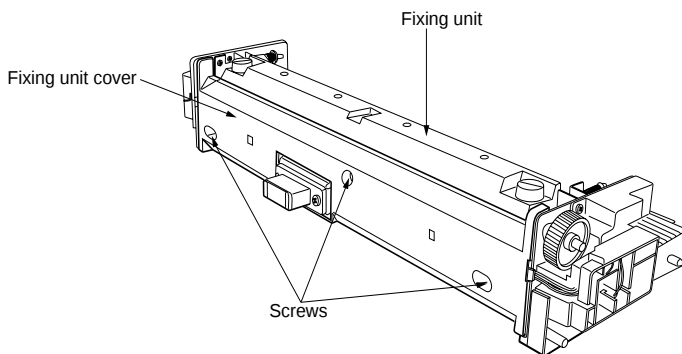


Figure 3-3-62 Detaching the fixing unit cover

6. Detach the two connectors (white) and remove the clamps. Disconnect the wires of fixing heaters M and S from the fixing unit front housing. Then remove the two screws and the fixing unit front housing.

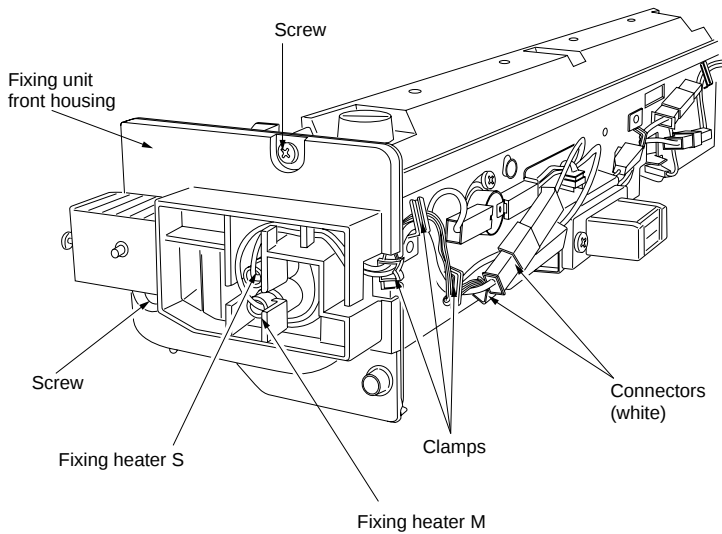


Figure 3-3-63 Detaching the fixing unit front housing

7. Detach the two connectors (blue) and remove the clamps. Disconnect the wires of fixing heaters M and S from the fixing unit rear housing. Then remove the two screws and the fixing unit rear housing.

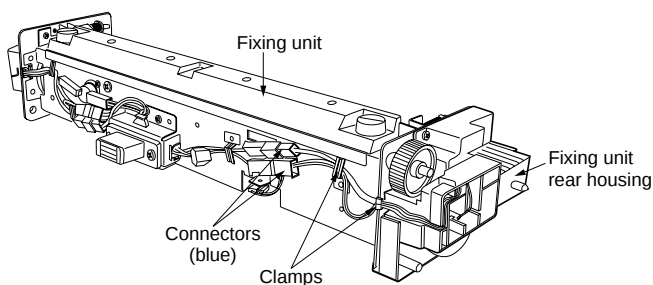


Figure 3-3-64 Detaching the fixing unit rear housing

8. Remove and replace fixing heaters M and S.
- When fitting, place fixing heater M (black wire) on the lower side, and heater S (white wire) on the upper side.
 - Insert the white connectors at the front of the fixing unit and the blue ones at the rear.
9. Refit all removed parts.

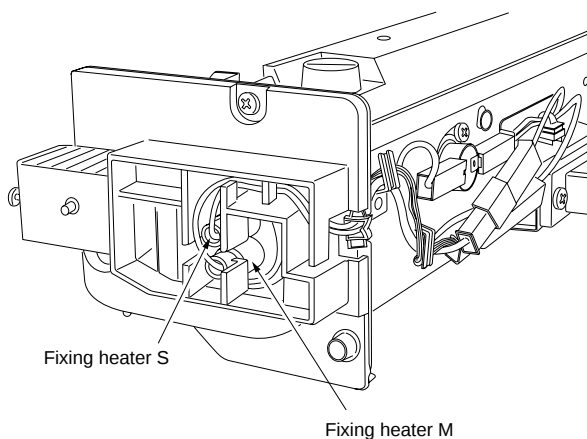


Figure 3-3-65 Fixing heaters M and S

(2) Replacing the fixing unit thermistor

Replace the fixing unit thermistor as follows.

<Procedure>

1. Remove the screw holding the fixing unit front right guide and then the guide.
2. Detach the connector and remove the clamp of the fixing unit thermistor.
3. Remove the screw holding the fixing unit thermistor and then the thermistor.

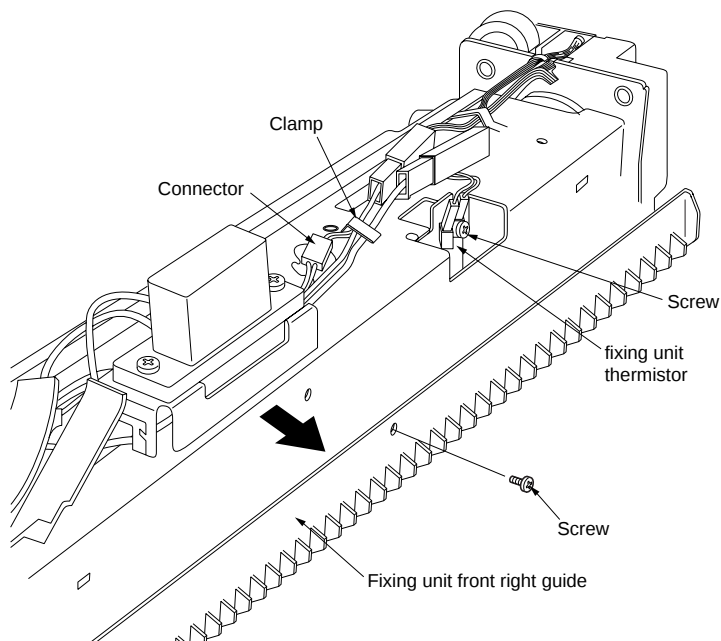


Figure 3-3-66 Detaching the fixing unit thermistor

4. Replace the fixing unit thermistor.
 - When fitting the fixing unit thermistor, insert the projection on the thermistor into the cutout in the fixing unit stay.
5. Refit all removed parts.

(3) Replacing the fixing unit thermostat

Replace the fixing unit thermostat 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. Detach the connectors of the fixing unit wire and fixing heater wire from the fixing unit thermostat.
2. Remove the two screws holding the fixing unit thermostat and then the thermostat.

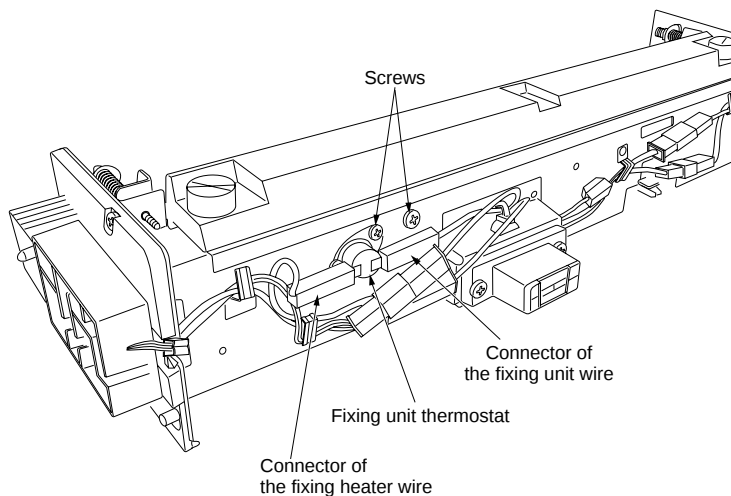


Figure 3-3-67 Detaching the fixing unit thermostat

3. Replace the fixing unit thermostats.
4. Refit all removed parts.

(4) Replacing the press roller separation claws

Replace the press roller separation claws as follows.

<Procedure>

1. Open the left 1 cover.
2. While lifting the paper transfer section cover release lever, open the paper transfer section cover.
3. Remove the screw and two pins each at the front and rear of the paper transfer section cover, and then the fixing unit left guide.

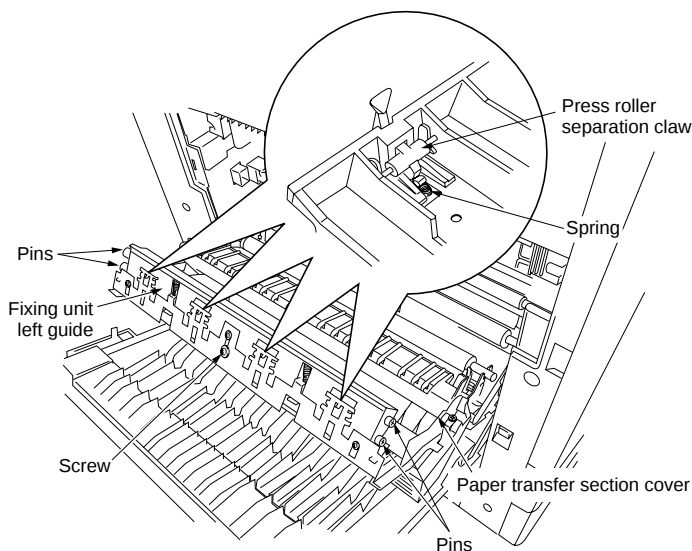


Figure 3-3-68 Detaching the press roller separation claws

4. Remove the springs and then the four press roller separation claws.
5. Replace the press roller separation claws.
6. Refit all removed parts.

(5) Replacing the heat roller separation claws

Replace the heat roller separation claws as follows.

<Procedure>

1. Remove the fixing unit (see page 3-3-57).
2. Remove the two fixing guide pins holding the fixing unit right guide and then the guide.

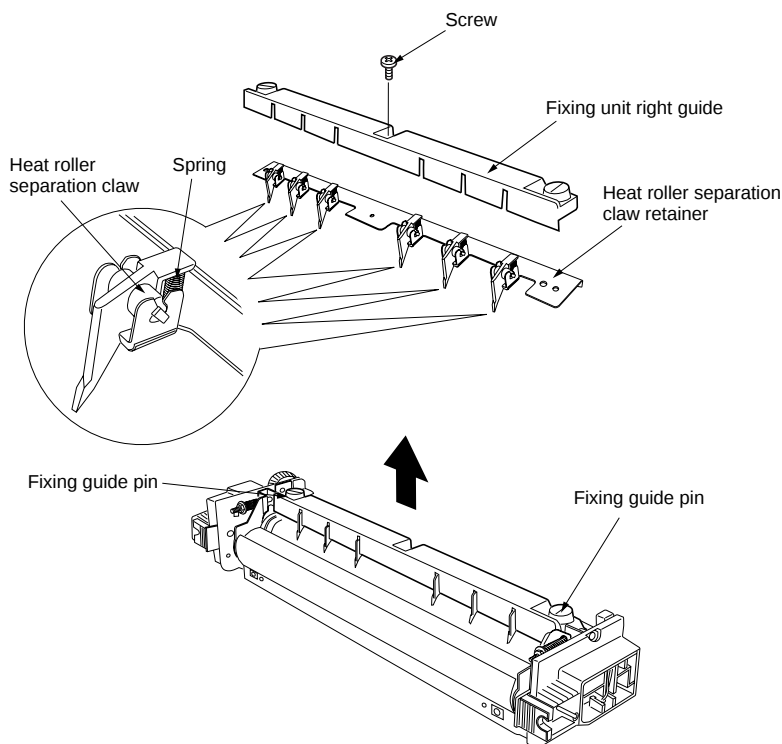


Figure 3-3-69 Detaching the heat roller separation claws

3. Remove the screw holding the heat roller separation claw retainer.
4. Remove the springs from the heat roller separation claws.
5. Remove the six heat roller separation claws from the heat roller separation claw retainer.
6. Replace the heat roller separation claws.
7. Refit all removed parts.

Caution: While fitting the heat roller separation claws, take care not to touch the edges of the claws.

(6) Replacing the press roller and press roller bearings

Replace the press roller and press roller bearings as follows.

<Procedure>

- 1. Remove the two screws holding the press roller cover and then the cover.
- 2. Remove the two fixing pressure pins holding the front and rear fixing pressure plates and then the plates.

Caution: When detaching and refitting the fixing pressure pins, do not turn the nuts of the pins. Also, be sure to refit the pins to the front and rear respectively.

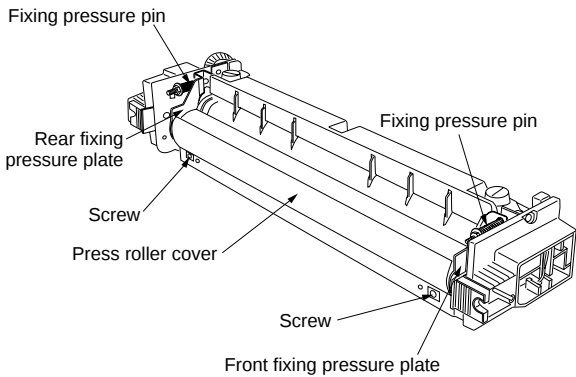


Figure 3-3-70 Detaching the fixing pressure pins

- 3. Replace the press roller and the press roller bearings.

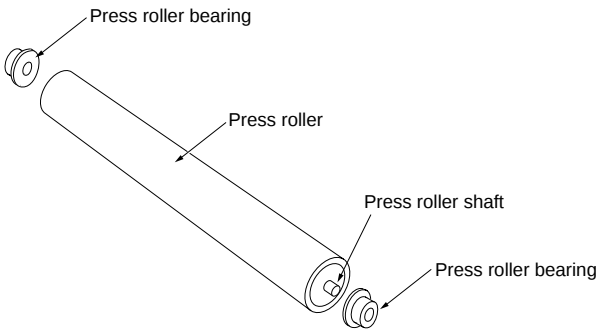


Figure 3-3-71 Detaching the press roller bearings

- 4. Refit all removed parts.

(7) Replacing the heat roller, heat roller bearings, heat roller bushings, and fixing unit gear

Replace the heat roller, heat roller bearings, heat roller bushings and fixing unit gear as follows.

<Procedure>

1. Remove the fixing heaters M and S (see P.3-3-57).
2. Remove the fixing unit right guide and press roller (see p.3-3-64).
3. Remove the two circlips.
4. Remove the fixing unit gear, heat roller bearings, heat roller bushings and heat roller .

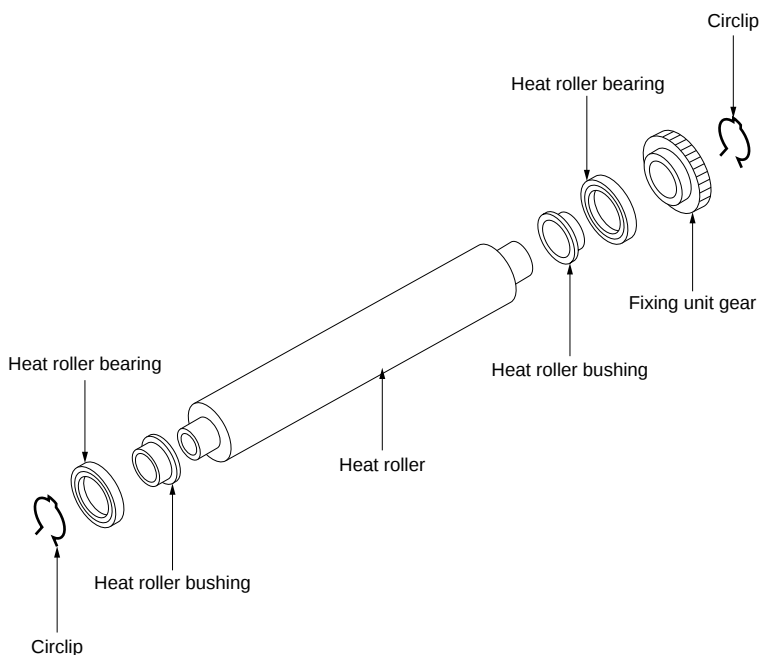


Figure 3-3-72 Detaching the heat roller

5. Refit all removed parts.

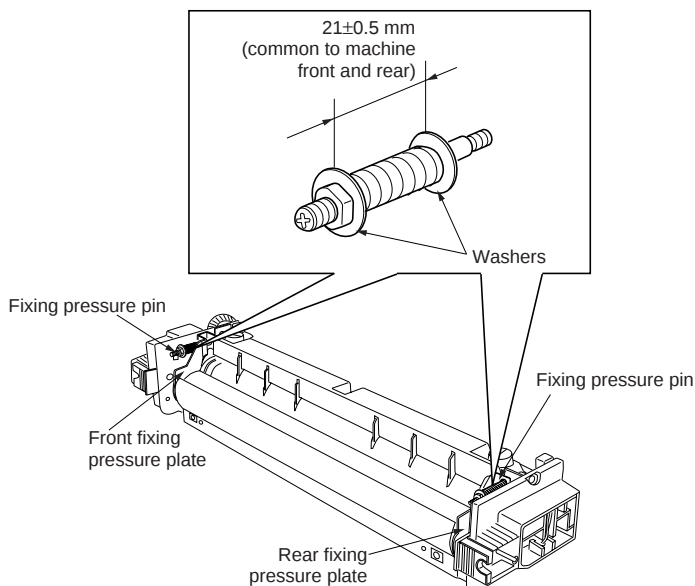
(8) Adjusting the fixing pressure (reference)

Perform the following adjustment if the copy paper creases, fixing is poor, or when the fixing pressure spring has been replaced.

If the copy image is distorted at 32 mm from the trailing edge of the paper, follow the step on page 3-3-67.

<Procedure>

1. Remove the fixing unit.
2. Remove the fixing pressure pins and then adjust the distance between the two washers.



- Fixing pressure: 49 N (common to machine front and rear)
- Distance between the washers: 21 ± 0.5 mm (common to machine front and rear)

Figure 3-3-73

3. Refit all removed parts.

<Procedure>

1. Make one turn counterclockwise of the fixing pressure pin at, according to the direction of the distortion of the copy image, the machine front or rear.
 - For copy example 1, turn the fixing pressure pin at the machine front.
 - For copy example 2, turn the fixing pressure pin at the machine rear.

Caution: Never turn the nuts of the fixing pressure pins.

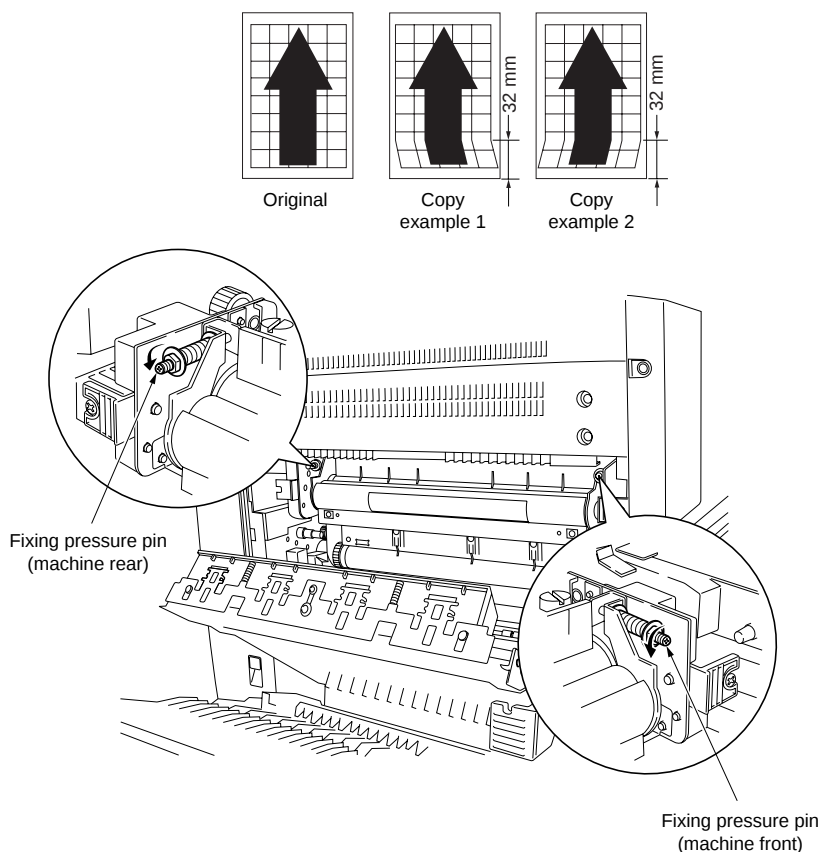


Figure 3-3-74

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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 (IC27) from the old main PCB and fit it to the new main PCB to maintain the original settings 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 the maintenance mode.
 8. Execute maintenance item U020.
 9. Execute maintenance item U252 and select the destination.
 10. Execute maintenance item U000 to 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.

3-4-2 Upgrading the firmware in the flash ROM (operation unit main PCB)

Perform the steps below when upgrading the firmware in the flash ROM (operation unit main PCB).

Firmware upgrading requires the following tools:

Flash tool assembly (P/N 35968010)

Flash data change harness (P/N 18568060)

Operation 1 ROM IC for 120 V specifications (P/N 2AR68040)

Operation 2 ROM IC for 120 V specifications (P/N 2AR68050)

Operation 1 ROM IC for 220 - 240 V specifications (P/N 2AR68060)

Operation 2 ROM IC for 220 - 240 V specifications (P/N 2AR68070)

Caution:

- Turn the main switch off before disconnecting or inserting connectors.
- Do not allow the flash tool assembly to make contact with any metal parts of the copier during firmware upgrading.

Procedure

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. Remove the screw holding the upper front cover. Remove the cover by shifting to the left.
6. Remove the three screws holding the operation unit lower cover and then the cover.
7. Fit the operation 1 ROM IC into the IC3 socket on the flash tool assembly.
8. Insert the connector of the flash data change harness into CN2 on the flash tool assembly.

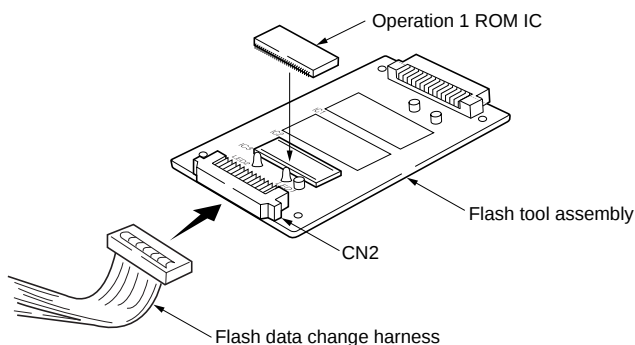


Figure 3-4-1

9. Insert the other connector of the flash data change harness into CN7 on the operation unit main PCB.

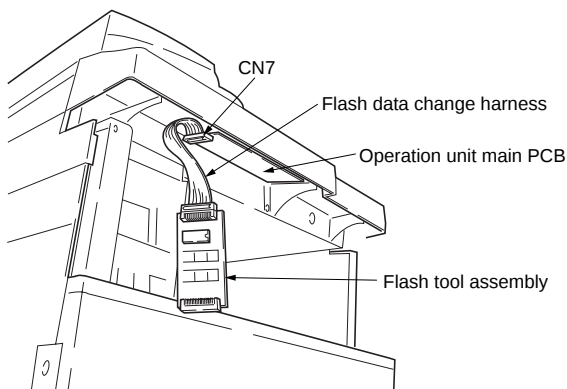


Figure 3-4-2

10. Open the left 1 cover to prevent malfunctioning of the copier during the firmware upgrading.
11. Connect the power plug and turn the main switch on. Upgrading of the operation 1 ROM IC starts and LED2 on the flash tool assembly flashes for 1 minute. LED2 remains on when upgrading is complete.
12. Turn the main switch off.
13. Remove the operation 1 ROM IC from the flash tool assembly and fit the operation 2 ROM IC into the IC3 socket on the flash tool assembly.
14. Turn the main switch on. Upgrading of the operation 2 ROM IC starts and LED2 on the flash tool assembly flashes for 3 minutes. LED2 remains on when upgrading is complete.
15. Turn the main switch off.
16. Detach the connector of the flash data change harness from the operation unit main PCB.
17. Close the left 1 cover and refit the removed covers.
18. Turn the main switch on.
19. Enter the maintenance mode.
20. Execute maintenance item U000 to output a list of the current settings for maintenance items.
21. Compare the lists output in steps 2 and 20. If there are any differences, reenter the data in accordance with the values on the list output in step 2.
22. Exit the maintenance mode.

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, VR301 and VR302
- Power source PCB: VR2
- Laser diode PCB: VR1

CONTENTS

3-5 Self Diagnostics

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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 010 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.

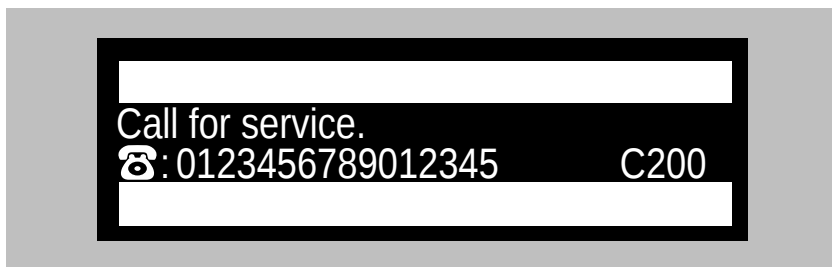


Figure 3-5-1 Service call code display

Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C005	Operation Unit Main PCB Communication Problem (to Fax Control PCB) Communication between the operation unit main PCB and the Fax control PCB cannot be normally performed.	Defective Fax control PCB.	Replace the Fax control PCB and check for correct operation.
C006	Main PCB communication problem (to Fax Control PCB) Communication between the main PCB and the Fax control PCB cannot be normally performed.	Defective Fax control PCB	Replace the Fax control PCB and check for correct operation.
C007	Checksum error (program area) Checksum error (softswitch area) The checksum value stored at power off does not match the checksum value found at power on.	Defective Fax control PCB or SRAM.	Replace the Fax control PCB and check for correct operation.

Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
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 IC27.
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 CN9 on the main PCB and CN8 on the operation unit main PCB, and the continuity across the connector terminals. Remedy 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.
C022	Communication problem between the engine PCB and main PCB There is no reply after 20 retries at communication.	Defective engine ROM IC.	Replace the engine ROM IC37 on the main PCB and check for correct operation.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C023	Scanner control PCB communication problem There is no reply after 5 retries at communication.	Poor contact of the connector terminals.	Check the connection of connectors CN5 on the main PCB and CN9 on the scanner control PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective main PCB or scanner control PCB.	Replace the main PCB or scanner control PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C024*	Printer board communication problem There is no reply after 20 retries at communication.	Poor contact of the connector terminals.	Check the connection of connector CN3 on the main PCB and the connector CN2 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.
C032*	Large paper deck communication problem Communication errors from the communication microcomputer IC41 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 CN11 on the main PCB and CN1 on the deck main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		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*	Large paper deck sequence problem	Operation start request is sent from the copier to the large paper deck while paper feed is disabled.	Turn the power off and back on (reset request is sent from the copier to the large paper deck to cancel operation start request).
		Paper feed request is sent to the large paper deck before operation start request.	Turn the power off and back on (reset request is sent from the copier to the large paper deck to cancel operation start request).

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C032*	Paper feed desk communication problem An error code from the paper feed desk is detected eight times in succession. No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN11 on the main PCB and CN5 on the desk main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		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.
C034*	Finisher communication problem Communication errors from the communication micro-computer IC41 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 CN10 on the copier main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C035*	Mailbox communication problem Communication errors from the communication microcomputer IC41 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. <i>The presence of the mailbox has been detected although the communication microcomputer IC41 on the main PCB did not detect the connection of the mailbox during initial communication.</i>	Poor contact of the connector terminals.	Check the connection of the connector CN10 on the copier main PCB, connector CN1 on the mailbox main PCB and the connector on the signal cable connecting the mailbox and the copier, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB and check for correct operation.
		Defective mailbox main PCB.	Run a simulation of the mailbox (communication test mode). If there is any problem with the communication, replace the mailbox main PCB.
C037	Communication microcomputer problem A problem is detected with the communication microcomputer IC41 on the main PCB.	Defective main PCB.	Replace the main PCB and check for correct operation.
C040	SIMM problem SIMM inserted incorrectly. There is a problem with the data or address bus.	SIMM inserted incorrectly.	Check the insertion of the SIMM into connectors CN6 and CN7 on the main PCB. If the SIMM is incorrectly or insufficiently inserted, reinsert correctly (be sure to insert the first SIMM into CN6).
		Defective main PCB.	Replace the main PCB and check for correct operation.
C041	Bitmap problem There is a problem with the data or address bus of the bitmap DRAM.	Defective main PCB.	Replace the main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C042	Memory input interface problem Reading-in of an image does not complete within 10 s of the start of image transmission.	Defective main PCB.	Replace the main PCB and check for correct operation.
C043	DMA problem DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time.	Defective main PCB.	Replace the main PCB and check for correct operation.
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 scanner control PCB.	Replace the scanner control PCB.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.
		CCD PCB output problem.	Replace the ISU.
C200	Drive motor problem DM LOCK signal remains high for 1 s or longer, 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, repair 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.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C231*	Desk drive motor problem <i>DDM LOCK signal remains high for 2 s or longer, 1 s after the desk drive motor has turned on.</i>	Poor contact of the desk drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk drive motor rotation control circuit.	Replace the desk 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.
C241	Upper lift motor problem When the drawer is inserted, the upper lift limit switch does not turn on within 4.6 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, repair or replace the cable.
		Defective upper lift limit switch.	Check if CN12-8 on the engine PCB goes low when the upper lift limit switch is turned off. If not, replace the upper lift limit switch.
		Poor contact of the upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C242	Lower lift motor problem When the drawer is inserted, the lower lift limit switch does not turn on within 4.6 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, repair or replace the cable.
		Defective lower lift limit switch.	Check if CN12-2 on the engine PCB goes low when the lower lift limit switch is turned off. If not, replace the lower lift limit switch.
		Poor contact of the lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C243*	Desk upper lift motor problem When the drawer is inserted, the desk upper lift limit switch does not turn on within 4.6 s of the desk upper lift motor turning on. During copying, the desk upper lift limit switch does not turn on within 200 ms of the desk upper lift motor turning on.	Broken gears or couplings of the desk upper lift motor.	Replace the desk upper lift motor.
		Defective desk upper lift motor.	Check for continuity across the coil. If none, replace the desk upper lift motor.
		Poor contact of the desk upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk upper lift limit switch.	Check if CN1-5 on the desk main PCB goes low when the desk upper lift limit switch is turned off. If not, replace the desk upper lift limit switch.
		Poor contact of the desk upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C244*	Desk lower lift motor problem When the drawer is inserted, the desk lower lift limit switch does not turn on within 4.6 s of the desk lower lift motor turning on. During copying, the desk lower lift limit switch does not turn on within 200 ms of the desk lower lift motor turning on.	Broken gears of couplings of the desk lower lift motor.	Replace the desk lower lift motor.
		Defective desk lower lift motor.	Check for continuity across the coil. If none, replace the desk lower lift motor.
		Poor contact of the desk lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk lower lift limit switch.	Check if CN1-7 on the desk main PCB goes low when the desk lower lift limit switch is turned off. If not, replace the desk lower lift limit switch.
		Poor contact of the desk lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C310	Scanner carriage problem The home position is not correct when the power is turned on or at the start of copying using the bypass table.	Poor contact of the connector terminals.	Check the connection of connector CN4 on the scanner motor PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective main PCB, scanner control PCB or scanner motor PCB.	Replace the main PCB, scanner control PCB or scanner motor PCB and check for correct operation.
		Defective scanner motor.	Replace the scanner motor.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C332	Scanner watchdog problem The main routine does not run within 8.192 ms of the main switch being turned on.	Defective scanner control PCB.	Replace the scanner control PCB and check for correct operation.
C340	Original detection position problem The CPU IC5 in the scanner control PCB cannot store initial data from the original size sensor correctly.	Poor contact of the connector terminals.	Check the connection of connector CN8 on the scanner control PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective original size sensor.	Replace the original size sensor.
		Defective main PCB or scanner control PCB.	Replace the main PCB or scanner control PCB and check for correct operation.
C400	Polygon motor synchronization problem The polygon motor does not reach the stable speed within 20 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, repair or replace the cable.
		Defective polygon motor.	Replace the LSU.
		Defective power source PCB.	Check if 24 V DC is present at CN6-1 on the power source PCB. If not, replace the power source PCB.
C401	Polygon motor steady-state problem 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, repair or replace the cable.
		Defective polygon motor.	Replace the LSU.
		Defective power source PCB.	Check if 24 V DC is present at CN6-1 on the power source PCB. If not, replace the power source PCB.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C420	BD steady-state problem The VTC detects a BD error for 1000 ms during copying.	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.
C610	Broken fixing heater wire Warm-up does not end within 90 s. The secondary stabilization fixing temperature drops to 100°C/212°F or below.	Fixing heater M or S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater M or S wire.	Check for continuity. If none, replace fixing heater M or S.
		Poor contact of the fixing unit thermistor connector terminals.	Check the connection of connector CN13-2 on the engine PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is $\infty \Omega$, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C620	Abnormally low fixing temperature The fixing temperature drops to 100°C/212°F or below during copying. While the fixing heaters are turned on, the temperature does not change for 7 s or longer from 40°C/104°F or below.	Fixing heater M or S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater M or S wire.	Check for continuity. If none, replace the fixing heater M or S.
		Poor contact of the fixing unit thermistor connector terminals.	Check the connection of connector CN13-2 on the engine PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is $\infty \Omega$, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.
C630	Abnormally high fixing temperature The fixing temperature exceeds 240°C/464°F.	Shorted fixing unit thermistor.	Measure the resistance. If it is $\infty \Omega$, replace the fixing unit thermistor.
		Broken fixing heater control circuit on the power source PCB.	Replace the power source PCB.
C710	Toner sensor problem The toner sensor output voltage is outside the range of 0.5 to 4.5 V during toner control. The toner sensor control voltage cannot be set within the setting range when maintenance item U130 is run.	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, repair or replace the cable.
		Developer problem.	Replace the developer.

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, repair 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 (25 bits).	Poor contact of the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.
C740	Image formation unit connector insertion problem Absence of the image formation unit is detected continuously for 1500 ms while there is no error on the copier.	Image formation unit connector installed incorrectly.	Reinstall the image formation unit connector if necessary.
		Defective image formation unit.	Replace the image formation unit.
C801*	Finisher paper conveying motor problem PCM LOCK 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, repair or replace the cable.
		The paper conveying motor mal-functions.	Replace the paper conveying motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C803*	Finisher paper conveying belt problem An on-to-off or off-to-on state change of the paper conveying belt home position sensor is not detected within 2 s of the paper conveying belt clutch turning on.	The paper conveying belt is out of phase.	Adjust the paper conveying belt so that it is in phase and check for correct operation.
		The paper conveying belt clutch malfunctions.	Replace the paper conveying belt clutch and check for correct operation.
		The paper conveying belt home position sensor malfunctions.	Replace the paper conveying belt home position sensor and check for correct operation.
		The paper conveying belt home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The internal tray is incorrectly inserted.	Check whether the internal tray unit or front cover catches are damaged.
C814*	Finisher tray elevation motor problem The sort tray is not detected in the home position within 30 s of the start of the tray elevation motor rotation.	The tray elevation motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair 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.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C817*	Finisher front jogger motor problem 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, repair or replace the cable.
		The front jogger motor malfunctions.	Replace the front jogger motor and check for correct operation.
		The front jogger home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The front jogger 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.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C818*	Finisher rear jogger motor problem While the rear jogger is not detected in the home position, the rear jogger home position sensor does not detect the jogger within 1.5 s of the start of rear jogger motor clockwise rotation. After the rear jogger is detected in the home position, the rear jogger home position sensor still detects the jogger within 0.5 s of the start of rear jogger motor counterclockwise rotation.	The rear jogger motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The rear jogger motor malfunctions.	Replace the rear jogger motor and check for correct operation.
		The rear jogger home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The rear jogger 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.
C822*	Finisher stapler problem The stapler home position sensor does not change state from non-detection to detection within 0.2 s of the start of stapler motor counterclockwise (forward) rotation. During initialization, the stapler home position sensor does not change state from non-detection to detection within 0.6 s of the start of stapler motor clockwise (reverse) rotation.	The stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The stapler malfunctions. a) The stapler is blocked with a staple. b) The stapler is broken.	a) Remove the stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C850*	Mailbox drive motor problem While the mailbox drive motor is driving, synchronization signals do not synchronize continually for 464 ms (motor lockup).	Defective mailbox drive motor or mailbox main PCB.	Run a simulation of the mailbox (communication test mode). If there is any problem with the communication, replace the mailbox drive motor or the mailbox main PCB and check for correct operation.
		The deck paper conveying motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective deck paper conveying motor PCB.	Replace the deck paper conveying motor PCB and check for correct operation.
C920*	Deck paper conveying motor problem No pulse is input within 500 ms of the start-up. No pulse is input within 100 ms of the previous pulse input.	The deck paper conveying motor does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
		Paper deck motor 1 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Paper deck motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C921*	Paper deck motor 1 problem A motor over-current signal is detected continuously for 1 s or longer.	Paper deck motor 1 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Paper deck motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C922*	Paper deck motor 2 problem A motor over-current signal is detected continuously for 1 s or longer.	Paper deck motor 2 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Paper deck motor 2 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C923*	Right lift position problem Deck level switch 2 does not turn on within 20 s of paper deck motor 2 turning on.	Deck level switch 2 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C924*	Left lift position problem Deck level switch 1 does not turn on within 20 s of paper deck motor 1 turning on.	Deck level switch 1 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

* If the optional device is attached.

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3-6-1 Image formation problems

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



See page 3-6-3

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



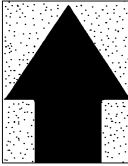
See page 3-6-4

- (3) Image is too light.



See page 3-6-5

- (4) Background is visible.



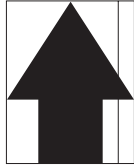
See page 3-6-5

- (5) A white line appears
longitudinally.



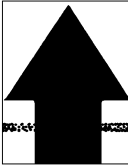
See page 3-6-6

- (6) A black line appears
longitudinally.



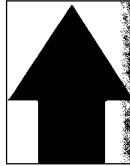
See page 3-6-6

- (7) A black line appears
laterally.



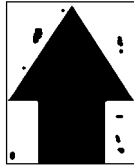
See page 3-6-7

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



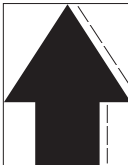
See page 3-6-7

- (9) Black dots appear on
the image.



See page 3-6-8

- (10) Image is blurred.



See page 3-6-8

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



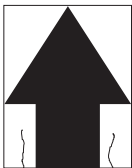
See page 3-6-9

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



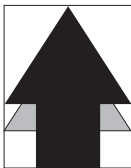
See page 3-6-9

(13) Paper creases.



See page 3-6-10

(14) Offset occurs.



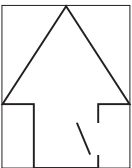
See page 3-6-10

(15) Image is partly missing.



See page 3-6-11

(16) Fixing is poor.



See page 3-6-11

(17) Image is out of focus.



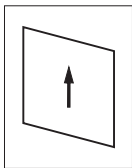
See page 3-6-12

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



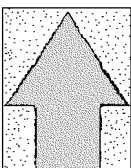
See page 3-6-12

(19) Image is not square.



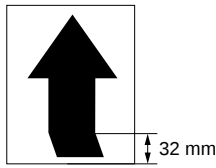
See page 3-6-13

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



See page 3-6-13

(21) Image is distorted at 32 mm from the trailing edge of the paper.



See page 3-6-13-1

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

Causes

1. No transfer charging.



Causes	Check procedures/corrective measures
1. No transfer charging.	
A. Broken transfer wire.	Replace or repair 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, repair or replace the cable.
C. Defective main PCB.	Check if CN2-B53 on the main PCB goes low when maintenance item U101 is run. If not, replace the main PCB.
D. Defective engine PCB.	Check if CN9-9 on the engine PCB goes low when CN2-B53 on the main PCB goes 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 CN1-6 on the high-voltage transformer PCB goes low while maintenance item U101 is run. If not, replace the high-voltage transformer PCB.

(2) No image appears
(entirely black).



Causes

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

Causes	Check procedures/corrective measures
1. No main charging.	
A. Broken main charger wire.	Replace the wire.
B. Leaking main charger housing.	Clean the main charger wire and shield grid.
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, repair or replace the cable.
D. Defective main PCB.	Check if CN2-B58 on the main PCB goes low when maintenance item U100 is run. If not, replace the main PCB.
E. Defective engine PCB.	Check if CN9-14 on the engine PCB goes low when CN2-B58 on the main PCB goes 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, repair 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 CN2-12 on the scanner control PCB goes low when maintenance item U061 is run. If not, replace the scanner control PCB.

(3) Image is too light.

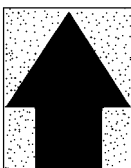


Causes

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

Causes	Check procedures/corrective measures
1. Insufficient toner.	If the display shows the message requesting toner replenishment, replace the cartridge.
2. Deteriorated developer.	Check the number of copies made with the current developer. If it has reached the specified limit, replace the developer.
3. Dirty or deteriorated drum.	Clean the drum or, if the maintenance level has been reached, replace the drum (see page 3-3-47).

(4) Background is visible.



Causes

1. Deteriorated developer.

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

- (5) A white line appears longitudinally.

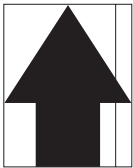


Causes

- 1. Dirty or flawed main charger wire.
- 2. Foreign matter in the image formation unit.
- 3. Flawed drum.
- 4. Dirty shading plate.

Causes	Check procedures/corrective measures
1. Dirty or flawed main charger wire.	Clean the main charger wire or, if it is flawed, replace it.
2. Foreign matter in the image formation unit.	Check if the magnetic brush is formed uniformly. If not, replace the developer.
3. Flawed drum.	Replace the drum (see page 3-3-47).
4. Dirty shading plate.	Clean the shading plate.

- (6) A black line appears longitudinally.

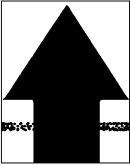


Causes

- 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 3-3-47).
3. Deformed or worn cleaning blade.	Replace the cleaning blade (see page 3-3-54).
4. Dirty scanner mirror.	Clean the scanner mirror.

(7) A black line appears laterally.

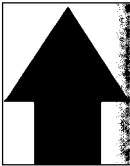


Causes

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

Causes	Check procedures/corrective measures
1. Flawed drum.	Replace the drum (see page 3-3-47).
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 and shield grid.

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

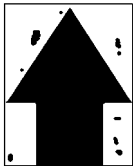


Causes

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

Causes	Check procedures/corrective measures
1. Dirty main charger wire.	Clean the main charger wire or, if it is extremely dirty, replace it.
2. Defective exposure lamp.	Check if the exposure lamp light is distributed evenly. If not, replace the exposure lamp (see page 3-3-24).

(9) Black dots appear on the image.

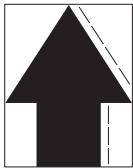


Causes

- 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 3-3-47).
2. Deformed or worn cleaning blade.	Replace the cleaning blade (see page 3-3-54).

(10) Image is blurred.



Causes

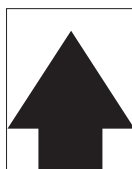
- 1. Scanner moves erratically.
- 2. Deformed press roller.
- 3. Paper conveying section drive problem.

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 3-3-64).
3. Paper conveying section drive problem.	Check the gears and belts and, if necessary, grease them.

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

Causes

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

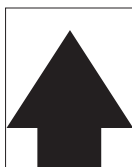


Causes	Check procedures/corrective measures
1. Misadjusted leading edge registration.	Readjust the leading edge registration (see pages 3-3-18 and 19).
2. Misadjusted scanner leading edge registration.	Readjust the scanner leading edge registration (see page 3-3-40.)

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

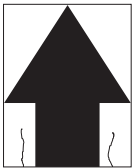
Causes

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



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

(13) Paper creases.

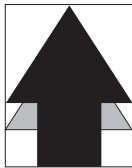


Causes

- 1. Paper curled.
- 2. Paper damp.
- 3. Defective fixing unit 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 fixing unit pressure springs.	Replace the fixing unit 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 3-3-54).

(15) Image is partly missing.

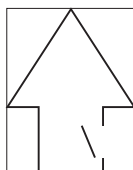


Causes

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 3-3-47).

(16) Fixing is poor.



Causes

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

Causes	Check procedures/corrective measures
1. Wrong paper.	Check if the paper meets specifications.
2. Defective fixing unit pressure springs.	Replace the fixing unit pressure springs.
3. Flawed press roller.	Replace the press roller (see page 3-3-64).

(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 center line of image printing.
- 2. Misadjusted scanner center line.
- 3. Original placed incorrectly.

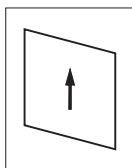


Causes	Check procedures/corrective measures
1. Misadjusted center line of image printing.	Readjust the center line of image printing (see page 3-3-20).
2. Misadjusted scanner center line.	Readjust the scanner center line (see page 3-3-41).
3. Original placed incorrectly.	Place the original correctly.

(19) Image is not square.

Causes

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

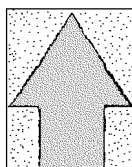


Causes	Check procedures/corrective measures
1. Laser scanner unit positioned incorrectly.	Adjust the installation position of the laser scanner unit (see page 3-3-35).
2. Image scanning unit positioned incorrectly.	Adjust the installation position of the image scanning unit (see page 3-3-37).

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

Causes

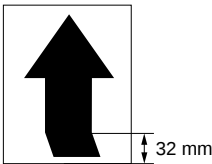
1. No developing bias output.



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 CN2-B55 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 CN1-4 on the high-voltage transformer PCB is low while maintenance item U030 is run. If not, replace the high-voltage transformer PCB.

(21) Image is distorted at 32 mm from the trailing edge of the paper.

- Causes**
- 1. Misadjusted fixing pressure.



Causes	Check procedures/corrective measures
1. Misadjusted fixing pressure.	Readjust the fixing pressure at the machine front or rear according to the direction of the distortion of the image (see page 3-3-66).

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3-6-2 Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed or conveying section is indicated when the main switch is turned on.	A piece of paper torn from copy paper is caught around feed switch 1/2/3 or the registration switch.	Check and remove if any.
	Defective feed switch 1.	With 5 V DC present at CN15-6 on the engine PCB, check if CN15-5 on the engine PCB remains low when feed switch 1 is turned on and off. If it does, replace feed switch 1.
	Defective feed switch 2.	With 5 V DC present at CN15-9 on the engine PCB, check if CN15-8 on the engine PCB remains low when feed switch 2 is turned on and off. If it does, replace feed switch 2.
	Defective feed switch 3.	With 5 V DC present at CN15-12 on the engine PCB, check if CN15-11 on the engine PCB remains low when feed switch 3 is turned on and off. If it does, replace feed switch 3.
	Defective registration switch.	With 5 V DC present at CN8-26 on the engine PCB, check if CN8-25 on the engine PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.

Problem	Causes/check procedures	Corrective measures
(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 paper feed pulley, separation pulley or forwarding pulley of the upper drawer is deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if the actuator is broken.
	Defective feed switch 1.	With 5 V DC present at CN15-6 on the engine PCB, check if CN15-5 on the engine PCB goes low when feed switch 1 is turned on. If not, replace feed switch 1.
	Check if the upper paper feed clutch malfunctions.	Check and remedy if necessary.
	Electrical problem with the upper paper feed clutch.	Check (see page 3-6-48).
(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 paper feed pulley, separation pulley or forwarding pulley of the lower drawer is deformed.	Check visually and replace any deformed pulleys.
	Broken feed switch 2 actuator.	Check visually and replace feed switch 2 if the actuator is broken.
	Defective feed switch 2.	With 5 V DC present at CN15-9 on the engine PCB, check if CN15-8 on the engine PCB goes low when feed switch 2 is turned on. If not, replace feed switch 2.
	Check if the lower paper feed clutch malfunctions.	Check and remedy if necessary.
	Electrical problem with the lower paper feed clutch.	Check (see page 3-6-48).

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section).	Broken registration switch actuator.	Check visually and replace the registration switch if the actuator is broken.
	Defective registration switch.	With 5 V DC present at CN8-26 on the engine PCB, check if CN8-25 on the engine PCB goes low when the registration switch is turned on. If not, replace the registration switch.
	Broken feed switch 1 actuator.	Check visually and replace feed switch 1 if the actuator is broken.
	Defective feed switch 1.	With 5 V DC present at CN15-6 on the engine PCB, check if CN15-5 on the engine PCB goes low when feed switch 1 is turned on. If not, replace feed switch 1.
	Broken feed switch 2 actuator.	Check visually and replace feed switch 2 if the actuator is broken.
	Defective feed switch 2.	With 5 V DC present at CN15-9 on the engine PCB, check if CN15-8 on the engine PCB goes low when feed switch 2 is turned on. If not, replace feed switch 2.
	Check if the feed pulleys and feed rollers 1 and 2 do not contact each other.	Check visually and remedy if necessary.
	Check if the feed pulleys and feed rollers 1 and 2 are deformed.	Remedy or replace if necessary.
(5) 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 and 2 are deformed.	Remedy or replace if necessary.
	Check if the feed pulleys and feed rollers 1 and 2 do not contact each other.	Check visually and remedy if necessary.
	Check if the feed guides are deformed.	Check visually and remedy if necessary.

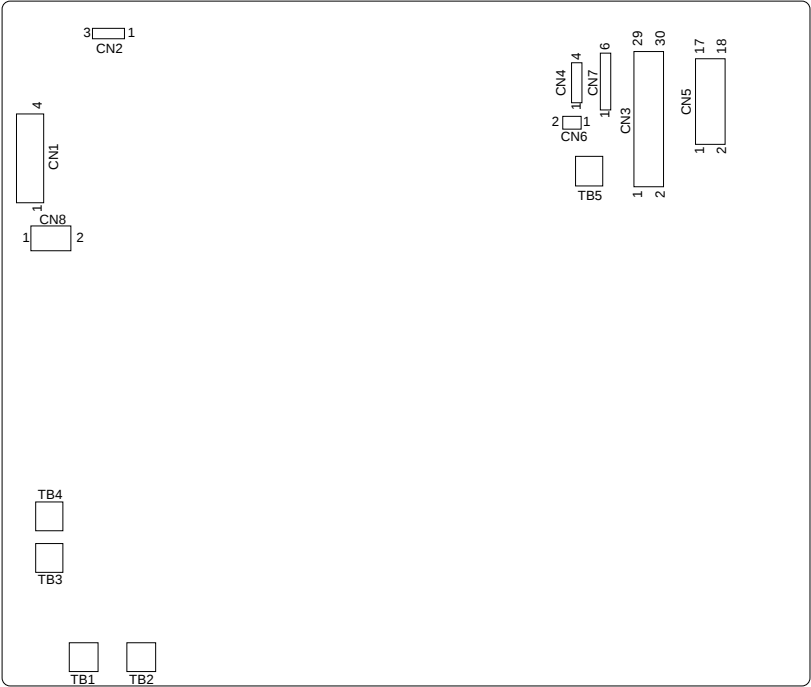
Problem	Causes/check procedures	Corrective measures
(6) A paper jam in the paper feed section is indicated during copying (multiple sheets in copier vertical conveying section).	Check if the feed guides are deformed.	Check visually and remedy if necessary.
(7) A paper jam in the paper conveying section 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 3-6-49).
	Check if the left and right registration rollers contact each other.	Check visually and remedy if necessary.
	Check if the left and right feed rollers contact each other.	Check visually and remedy if necessary.
(8) 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 3-6-49).
	Check if the left and right registration rollers contact each other.	Check visually and remedy if necessary.
	Check if the left and right feed rollers contact each other.	Check visually and remedy if necessary.
	Check if the fixing unit front right and front left guides are deformed.	Remedy or replace if necessary.
	Check if the press roller is extremely dirty or deformed.	Clean or replace if necessary.
	Check if the heat roller separation claws are dirty or deformed.	Clean or replace if necessary.
	Check if the heat roller and its separation claws contact each other.	Remedy if the separation claw springs are out of place.

3-6-3 PCB terminal voltages

Precautions

- When handling PCBs, do not touch connectors with bare hands or damage the board.
- Do not touch PCBs containing ICs with bare hands or any object prone to static charge.
- Store PCBs wrapped in aluminum foil, conductive sponge rubber, or similar material.

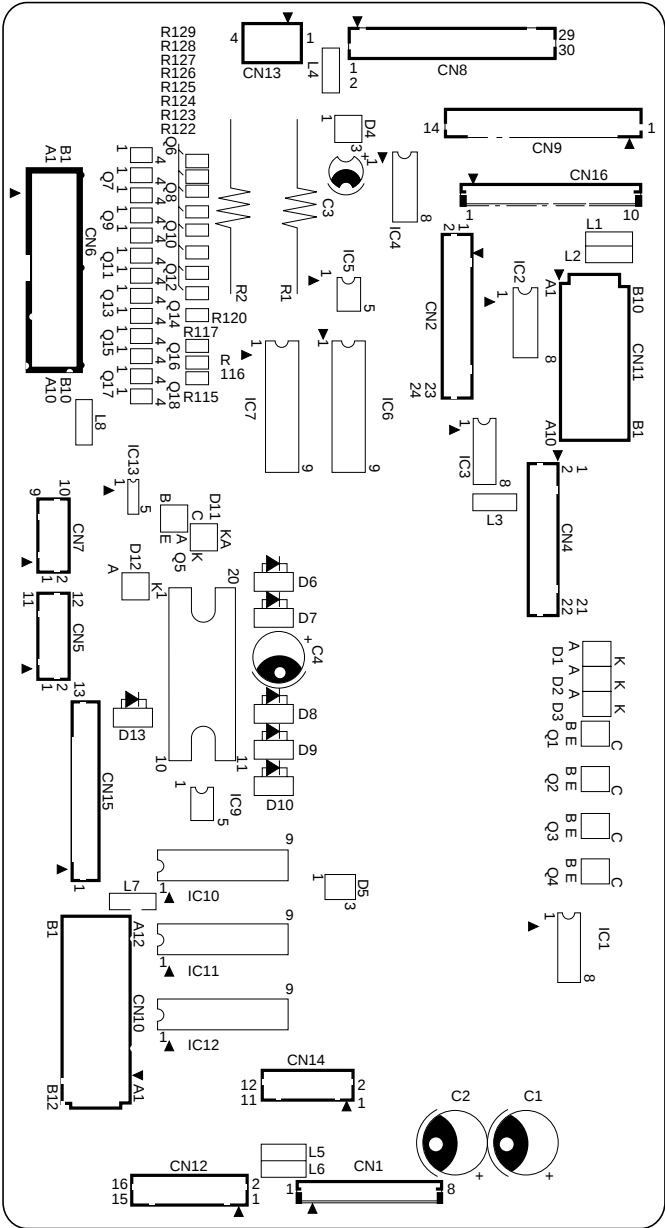
(1) Power source PCB



Terminals (CN)		Voltage	Remarks
TB1	TB2	120 V AC 220 – 240 V AC	AC supply, input
TB3	TB4	120 V AC 220 – 240 V AC	AC supply for MSW, output
1-3	1-1	120 V AC 220 – 240 V AC	AC supply for H2, output
1-4	1-1	120 V AC 220 – 240 V AC	AC supply for H1, output
2-1	3-12	5 V DC	5 V DC supply, input
2-2	3-12	0/5 V DC	H1 on/off, input
2-3	3-12	0/5 V DC	H2 on/off, input
3-1, 2	3-18, 19	24 V DC	24 V DC supply for SRDF*, output
3-4	3-20, 21	24 V DC	24 V DC supply for EPCB, output
3-5, 6	3-10, 11	5 V DC	5 V DC supply for SRDF*, output
3-7	3-22	24 V DC	24 V DC supply for SMPCB, output
3-8	3-11	24 V DC	24 V DC supply for SSW1, output
3-23	3-12	5 V DC	5 V DC supply for EPCB, output
3-24	3-13	5 V DC	5 V DC supply for SMPCB, output
3-25, 26	3-14, 15	5 V DC	5 V DC supply for SCPCB, output
3-27	3-14, 15	3.4 V DC	3.4 V DC supply for SCPCB, output
3-28	3-16, 17	5 V DC	5 V DC supply for MPCB, output
3-29	3-16, 17	3.4 V DC	3.4 V DC supply for MPCB, output
3-30	3-14	+12 V DC	+12 V DC supply for SCPCB, output
4-1	4-2	24 V DC	24 V DC supply for OMPCB, output
4-4	4-3	5 V DC	5 V DC supply for OMPCB, output
5-1, 2	5-14, 15	24 V DC	24 V DC supply for mailbox*, output
5-3, 4, 5, 6	5-10, 18	24 V DC	24 V DC supply for finisher*, output
5-7	5-13	5 V DC	5 V DC supply for mailbox*, output
5-8	5-12	5 V DC	5 V DC supply for finisher*, output
5-9	5-16	24 V DC	24 V DC supply for large paper deck*/ paper feed desk*, output
5-17	5-11	5 V DC	5 V DC supply for large paper deck*/ paper feed desk*, output
6-1	6-2	24 V DC	24 V DC supply for PM, output

* Optional.

(2) Engine PCB



Terminals (CN)		Voltage	Remarks
1-1	1-2	24 V DC	24 V DC supply for MPCB, input
1-5	1-4	5 V DC	5 V DC supply for MPCB, input
1-6	1-4	0/5 V DC	H2 on/off, output
1-7	1-4	0/5 V DC	H1 on/off, output
1-8	1-4	5 V DC	5 V DC supply for EPCB, output
2-1	2-13	0/5 V DC	Feedshift unit*1/eject unit*1 connected signal, input
2-2	2-13	0/5 V DC	FSSW*1 on/off, input
2-3	2-11	0/5 V DC	FSSOL2*1 latch-on signal, output
2-4	2-11	0/24 V DC	FSFM*1 on/off, output
2-5	2-11	0/5 V DC	FSSOL1*1 latch-on signal, output
2-6	2-11	5 V DC	FSSOL1*1, FSSOL2*1 release signal, output
2-7	2-11	0/24 V DC (pulse)	FSM*1 coil energization pulse, output (B̄)
2-8	2-11	0/24 V DC (pulse)	FSM*1 coil energization pulse, output (B)
2-9	2-11	0/24 V DC (pulse)	FSM*1 coil energization pulse, output (Ā)
2-10	2-11	0/24 V DC (pulse)	FSM*1 coil energization pulse, output (A)
2-12	2-11	24 V DC	24 V DC supply for FSPCB*1, output
2-14	2-13	5 V DC	5 V DC supply for FSPCB*1, output
2-15	2-13	0/5 V DC	ESW*1 on/off, input
2-16	2-13	5 V DC	5 V DC supply for ESW*1, output
2-19, 24	2-11	24 V DC	24 V DC supply for feedshift unit*1/eject unit*1, output
3-A2	3-A24	0/5 V DC	CLM-U on/off, input
3-A3	3-A24	0/5 V DC	CLM-L on/off, input
3-A4	3-A24	0/5 V DC	BYPFCL*2 on/off, input
3-A5	3-A24	0/5 V DC	FCL1 on/off, input
3-A6	3-A24	0/5 V DC	FCL2 on/off, input
3-A7	3-A24	0/5 V DC	FCL3 on/off, input
3-A8	3-A24	0/5 V DC	PFCL-U on/off, input
3-A9	3-A24	0/5 V DC	PFCL-L on/off, input
3-A10	3-A24	0/5 V DC	DUPCL*1 on/off, input
3-A11	3-A24	0/5 V DC	DUPPCSW*1 on/off, output
3-A12	3-A24	0/5 V DC	Duplex unit*1 connected signal, output
3-A13	3-A24		ETTH detection voltage, output
3-A14	3-A24		EHUMSENS detection voltage, output
3-A15	3-A24	0/5 V DC	FSW1 on/off, output
3-A16	3-A24	0/5 V DC	FSW2 on/off, output
3-A17	3-A24	0/5 V DC	FSW3 on/off, output
3-A18	3-A24	0/5 V DC	FSW3 on/off, output

*1: Optional. *2: Optional for 120 V specifications only.

Terminals (CN)		Voltage	Remarks
3-A27	3-A24	0/5 V DC (pulse)	MMD* ² serial signal, input
3-A29	3-A24	0/5 V DC (pulse)	MMD* ² serial signal, output
3-A31	3-A24	0/5 V DC	MMD* ² connected signal, output
3-A32	3-A24	0/5 V DC	MMD* ² count signal, input
3-A46	3-A24		FTH detection voltage, output
3-A47	3-A24	0/5 V DC	CFM1, CFM2 HIGH SPEED signal, input
3-A48	3-A24	0/5 V DC	CFM1, CFM2 LOW SPEED signal, input
3-A49	3-A24	0/5 V DC	Total counter on/off, output
3-A50	3-A24	0/5 V DC	Total counter connected signal, output
3-A51	3-A24	0/5 V DC	Key counter* ¹ connected signal, output
3-A52	3-A24	0/5 V DC	Key card* ² on/off, input
3-A53	3-A24	0/5 V DC	MSW on/off, input
3-A54	3-A24	0/5 V DC	FUSW* ¹ on/off, input
3-A55	3-A24	0/5 V DC	TFM drive control signal (+), input
3-A56	3-A24	0/5 V DC	TFM drive control signal (-), input
3-A57	3-A24	0/5 V DC	DEV DET signal, output
3-A58	3-A24		TNS detection voltage, output
3-A59	3-A24	0 – 15 V DC	TNS control voltage, input
3-A60	3-A24	0/5 V DC	RSW on/off, output
3-B1	3-A24	24 V DC	24 V DC supply, input
3-B4	3-A24	0/5 V DC	H2 on/off, input
3-B5	3-A24	0/5 V DC	H1 on/off, input
3-B6	3-A24	0/5 V DC	PLSW-U on/off, output
3-B7	3-A24	0/5 V DC	PLSW-L on/off, output
3-B8	3-A24	0/5 V DC	PSW-U on/off, output
3-B9	3-A24	5/0 V DC	LICSW-U on/off, output
3-B10	3-A24	0/5 V DC	PSW-L on/off, output
3-B11	3-A24	5/0 V DC	LICSW-L on/off, output
3-B12	3-A24	0/5 V DC	PWSW-U (DIG0) on/off, output
3-B13	3-A24	0/5 V DC	PWSW-U (DIG1) on/off, output
3-B14	3-A24	0/5 V DC	PWSW-U (DIG2) on/off, output
3-B15	3-A24	0/5 V DC	PWSW-L (DIG0) on/off, output
3-B16	3-A24	0/5 V DC	PWSW-L (DIG1) on/off, output
3-B17	3-A24	0/5 V DC	PWSW-L (DIG2) on/off, output
3-B18	3-A24	0/5 V DC	<i>Bypass table*² connected signal, output</i>
3-B19	3-A24	0/5 V DC	BYPPLSW* ² on/off, output
3-B20	3-A24	0/5 V DC	BYPFSW* ² on/off, output
3-B21	3-A24	0/5 V DC	BYPPSW* ² on/off, output
3-B22	3-A24	0/5 V DC	BYPPLSW* ² (DIG0) on/off, output
3-B23	3-A24	0/5 V DC	BYPPLSW* ² (DIG1) on/off, output

*1: Optional. *2: Optional for 120 V specifications only.

Terminals (CN)		Voltage	Remarks
3-B24	3-A24	0/5 V DC	BYPPWSW* ² (DIG2) on/off, output
3-B25	3-A24	0/5 V DC	BYPLCL* ² on/off, input
3-B26	3-A24	0/5 V DC	BYPPFCL* ² on/off, input
3-B27	3-A24	0/5 V DC	JBESW* ¹ on/off, output
3-B28	3-A24	0/5 V DC	Job separator* ¹ connected signal, input
3-B29	3-A24	0/5 V DC	JOFSW* ¹ on/off, output
3-B30	3-A24	0/5 V DC	LED* ¹ on/off, input
3-B31	3-A24	0/5 V DC	DM, CL on/off, input
3-B32	3-A24	0/5 V DC	DM LOCK signal, output
3-B33	3-A24	0/5 V DC (pulse)	DM drive clock pulse, input
3-B34	3-A24	0/5 V DC	Feedshift unit* ¹ /eject unit* ¹ connected signal, output
3-B35	3-A24	0/5 V DC	FSSW* ¹ on/off, output
3-B36	3-A24	0/5 V DC	FSSOL2* ¹ latch-on signal, input
3-B37	3-A24	0/5 V DC	RCL on/off, input
3-B38	3-A24	0/5 V DC	FSSOL1* ¹ latch-on signal, input
3-B39	3-A24	0/5 V DC	FSFM* ¹ on/off, input
3-B40	3-A24	0/5 V DC (pulse)	FSM* ¹ coil energization pulse, input (B̄)
3-B41	3-A24	0/5 V DC (pulse)	FSM* ¹ coil energization pulse, input (B)
3-B42	3-A24	0/5 V DC (pulse)	FSM* ¹ coil energization pulse, input (Ā)
3-B43	3-A24	0/5 V DC (pulse)	FSM* ¹ coil energization pulse, input (A)
3-B44	3-A24	0/5 V DC	ESW* ¹ on/off, output
3-B45	3-A24	0/5 V DC	PCFM on/off, input
3-B46	3-A24	5/0 V DC	SSW3 on/off, output
3-B47	3-A24	5/0 V DC	SSW1 on/off, output
3-B48	3-A24	5/0 V DC	SSW2 on/off, output
3-B51	3-A24	0 – 5 V DC	TC control voltage, input
3-B53	3-A24	0/5V DC	TC on/off, input
3-B54	3-A24	0 – 5 V DC	DB control voltage, input
3-B55	3-A24	0/5 V DC	DB on/off, input
3-B56	3-A24	0/5 V DC	MC ALM signal, output
3-B57	3-A24	0 – 5 V DC	GRID control voltage, input
3-B58	3-A24	0/5 V DC	MC on/off, input
3-B60	3-A24	24 V DC	24 V DC supply, output
4-1	4-7	24/0 V DC	BYPPFCL* ² on/off, output
4-2	4-7	24 V DC	24 V DC supply for BYPPFCL* ² , output
4-3	4-7	24 V DC	24 V DC supply for BYPLCL* ² , output
4-4	4-7	24/0 V DC	BYPLCL* ² on/off, output
4-5	4-7	24/0 V DC	BYPFCL* ² on/off, output
4-6	4-7	24 V DC	24 V DC supply for BYPFCL* ² , output

*1: Optional. *2: Optional for 120 V specifications only.

Terminals (CN)		Voltage	Remarks
4-8	4-7	0/5 V DC	BYPPWSW*2 (DIG2) on/off, input
4-9	4-7	0/5 V DC	BYPPWSW*2 (DIG1) on/off, input
4-10	4-7	0/5 V DC	BYPPWSW*2 (DIG0) on/off, input
4-11	4-13	5 V DC	5 V DC supply for BYPPSW*2, output
4-12	4-13	5/0 V DC	BYPPSW*2 on/off, input
4-15	4-14	5 V DC	5 V DC supply for BYPFSW*2, output
4-16	4-14	0/5 V DC	BYPFSW*2 on/off, input
4-17	4-19	5 V DC	5 V DC supply for BYPPLSW*2, output
4-18	4-19	0/5 V DC	BYPPLSW*2 on/off, input
4-20	4-21	0/5 V DC	<i>Bypass table*2 connected signal, input</i>
7-1	7-2	24 V DC	24 V DC supply for MMD*2, output
7-3	7-4	0/5 V DC (pulse)	MMD*2 serial signal, input
7-5	7-6	0/5 V DC (pulse)	MMD*2 serial signal, output
7-8	7-7	0/5 V DC	MMD*2 connected signal, input
7-9	7-2	24 V DC	24 V DC supply for MMD*2, output
7-10	7-7	0/5 V DC (pulse)	MMD*2 count on/off, output
8-1	8-7	24 V DC	24 V DC supply for CFM1, output
8-2	8-7	0/13 V DC	<i>CFM1 half speed/full speed, output</i>
8-3	8-7	24 V DC	24 V DC supply for CFM2, output
8-4	8-7	0/13 V DC	<i>CFM2 half speed/full speed, output</i>
8-5	8-7	24 V DC	24 V DC supply for total counter, output
8-6	8-7	0/24 V DC	Total counter on/off, input
8-8	8-7	0/5 V DC	Total counter connected signal, input
8-9	8-10	0/5 V DC	Key card*2, key counter*1 connected signal, input
8-11	8-10	24 V DC	24 V DC supply for key card*2, key counter*1, output
8-12	8-10	0/5 V DC	Key card*2, key counter*1 copy count signal, output
8-13	8-15	24 V DC	24 V DC supply for MSW, output
8-14	8-15	0/24 V DC	MSW on/off, output
8-16	8-15	0/5 V DC	<i>FUSW*1 on/off, output</i>
8-17	8-15	14/24 V DC	TFM drive control signal (+), output
8-18	8-15	14/24 V DC	TFM drive control signal (-), output
8-19	8-20	0/5 V DC	DEV DET signal, input
8-22	8-21		TNS detection voltage, input
8-23	8-21	24 V DC	24 V DC supply for TNS, output
8-24	8-21	0 – 15 V DC	TNS control voltage, output
8-25	8-27	0/5 V DC	RSW on/off, input
8-26	8-27	5 V DC	5 V DC supply for RSW, output

*1: Optional. *2: Optional for 120 V specifications only.

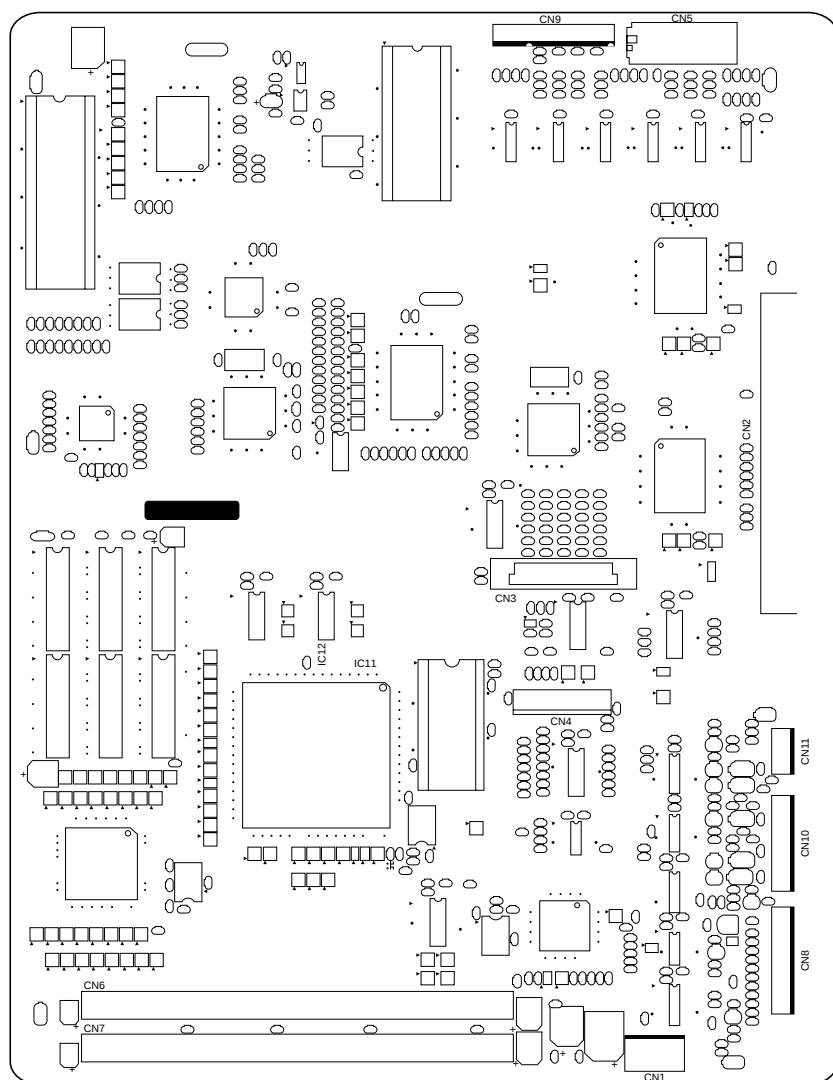
Terminals (CN)		Voltage	Remarks
9-5	9-6	24 V DC	24 V DC supply for HVTPCB, output
9-7	9-6	0 – 5 V DC	TC control voltage, output
9-9	9-6	0/13 V DC	TC on/off, output
9-10	9-6	0 – 5 V DC	DB control voltage, output
9-11	9-6	0/23 V DC	DB on/off, output
9-12	9-6	0/5 V DC	MC ALM signal, input
9-13	9-6	0 – 15 V DC	GRID control voltage, output
9-14	9-6	0/18 V DC	MC on/off, output
10-A1	10-B9	24 V DC	24 V DC supply for CLM-U, output
10-A2	10-B9	0/24 V DC	CLM-U on/off, output
10-A3	10-B9	24 V DC	24 V DC supply for CLM-L, output
10-A4	10-B9	0/24 V DC	CLM-L on/off, output
10-A5	10-B9	0/24 V DC	RCL on/off, output
10-A6	10-B9	24 V DC	24 V DC supply for RCL, output
10-A7	10-B9	0/24 V DC	FCL1 on/off, output
10-A8	10-B9	24 V DC	24 V DC supply for FCL1, output
10-A9	10-B9	0/24 V DC	FCL2 on/off, output
10-A10	10-B9	24 V DC	24 V DC supply for FCL2, output
10-A11	10-B9	0/24 V DC	FCL3 on/off, output
10-A12	10-B9	24 V DC	24 V DC supply for FCL3, output
10-B1	10-B9	0/24 V DC	PFCL-U on/off, output
10-B2	10-B9	24 V DC	24 V DC supply for PFCL-U, output
10-B3	10-B9	0/24 V DC	PFCL-L on/off, output
10-B4	10-B9	24 V DC	24 V DC supply for PFCL-L, output
10-B5	10-B9	0/24 V DC	DUPCL* on/off, output
10-B6	10-B9	24 V DC	24 V DC supply for DUPCL*, output
10-B7	10-B9	0/5 V DC	DUPPCSW* on/off, input
10-B8	10-B9	5 V DC	5 V DC supply for DUPPCSW*, output
10-B11	10-B9	0/5 V DC	Duplex unit* connected signal, input
11-A1	11-A5	0/5 V DC (pulse)	DM drive clock pulse, output
11-A2	11-A5	0/5 V DC	DM LOCK signal, input
11-A3	11-A5	0/5 V DC	DM on/off, output
11-A4	11-A5	5 V DC	5 V DC supply for DM, output
11-A8, A9	11-A5	24 V DC	24 V DC supply for DM, output
11-B1	11-B8	5 V DC	5 V DC supply for LED*, output
11-B2	11-B8	0/5 V DC	LED* on/off, output
11-B3	11-B8	5 V DC	5 V DC supply for JOFSW*, output
11-B4	11-B8	0/5 V DC	JOFSW* on/off, input
11-B6	11-B8	0/5 V DC	Job separator* connected signal, input
11-B9	11-B8	5 V DC	5 V DC supply for JBESW*, output

* Optional.

Terminals (CN)		Voltage	Remarks
11-B10	11-B8	0/5 V DC	JBESW* on/off, input
12-2	12-1	5/0 V DC	LICSW-L on/off, input
12-3	12-1	5 V DC	5 V DC supply for LICSW-L, output
12-5	12-1	0/5 V DC	PSW-L on/off, input
12-6	12-1	5 V DC	5 V DC supply for PSW-L, output
12-8	12-7	5/0 V DC	LICSW-U on/off, input
12-9	12-7	5 V DC	5 V DC supply for LICSW-U, output
12-11	12-10	0/5 V DC	PSW-U on/off, input
12-12	12-10	5 V DC	5 V DC supply for PSW-U, output
12-13	12-14	0/5 V DC	PLSW-L on/off, input
12-15	12-16	0/5 V DC	PLSW-U on/off, input
13-1	12-16	5 V DC	5 V DC supply for FTH, output
13-2	12-16		FTH detection voltage, input
13-3	12-16	24 V DC	24 V DC supply for CL, output
13-4	12-16	0/24 V DC	CL on/off, output
14-2	14-1	0/5 V DC	PWSW-L (DIG2) on/off, input
14-3	14-1	0/5 V DC	PWSW-L (DIG1) on/off, input
14-4	14-1	0/5 V DC	PWSW-L (DIG0) on/off, input
14-5, 6	14-1	24 V DC	24 V DC supply, output
14-8	14-7	0/5 V DC	PWSW-U (DIG2) on/off, input
14-9	14-7	0/5 V DC	PWSW-U (DIG1) on/off, input
14-10	14-7	0/5 V DC	PWSW-U (DIG0) on/off, input
14-11, 12	14-7	24 V DC	24 V DC supply, output
15-1	15-2		ETTH detection voltage, input
15-3	15-2		EHUMSENS detection voltage, input
15-4	15-2	5 V DC	5 V DC supply for HUMPCB, output
15-5	15-7	0/5 V DC	FSW1 on/off, input
15-6	15-7	5 V DC	5 V DC supply for FSW1, output
15-8	15-10	0/5 V DC	FSW2 on/off, input
15-9	15-10	5 V DC	5 V DC supply for FSW2, output
15-11	15-13	0/5 V DC	FSW3 on/off, input
15-12	15-13	5 V DC	5 V DC supply for FSW3, output
16-1	9-6	24/0 V DC	SSW2 on/off, input
16-2	9-6	24/0 V DC	SSW2 on/off, output
16-4	9-6	24/0 V DC	SSW1 on/off, input
16-5	9-6	24/0 V DC	SSW1 on/off, output
16-7	9-6	24/0 V DC	SSW3 on/off, input
16-9	9-6	0/24 V DC	PCFM on/off, output
16-10	9-6	24 V DC	24 V DC supply for PCFM, output

* *Optional.*

(3) Main PCB



Terminals (CN)		Voltage	Remarks
1-1	1-2	3.4 V DC	3.4 V DC supply, input
1-4	1-3	5 V DC	5 V DC supply, input
2-A2	2-A24	0/5 V DC	CLM-U on/off, output
2-A3	2-A24	0/5 V DC	CLM-L on/off, output
2-A4	2-A24	0/5 V DC	BYPFCL*2 on/off, output
2-A5	2-A24	0/5 V DC	FCL1 on/off, output
2-A6	2-A24	0/5 V DC	FCL2 on/off, output
2-A7	2-A24	0/5 V DC	FCL3 on/off, output
2-A8	2-A24	0/5 V DC	PFCL-U on/off, output
2-A9	2-A24	0/5 V DC	PFCL-L on/off, output
2-A10	2-A24	0/5 V DC	DUPCL*1 on/off, output
2-A11	2-A24	0/5 V DC	DUPPCSW*1 on/off, input
2-A12	2-A24	0/5 V DC	Duplex unit*1 connected signal, input
2-A13	2-A24		ETTH detection voltage, input
2-A14	2-A24		EHUMSENS detection voltage, input
2-A15	2-A24	0/5 V DC	FSW1 on/off, input
2-A16	2-A24	0/5 V DC	FSW2 on/off, input
2-A17	2-A24	0/5 V DC	FSW3 on/off, input
2-A18	2-A24	0/5 V DC	FSW3 on/off, input
2-A27	2-A24	0/5 V DC (pulse)	MMD*2 serial signal, output
2-A29	2-A24	0/5 V DC (pulse)	MMD*2 serial signal, input
2-A31	2-A24	0/5 V DC	MMD*2 connected signal, input
2-A32	2-A24	0/5 V DC	MMD*2 count signal, output
2-A46	2-A24		FTH detection voltage, input
2-A47	2-A24	0/5 V DC	CFM1, CFM2 HIGH SPEED signal, output
2-A48	2-A24	0/5 V DC	CFM1, CFM2 LOW SPEED signal, output
2-A49	2-A24	0/5 V DC	Total counter on/off, input
2-A50	2-A24	0/5 V DC	Total counter connected signal, input
2-A51	2-A24	0/5 V DC	Key counter*1 connected signal, input
2-A52	2-A24	0/5 V DC	Key card*2 on/off, output
2-A53	2-A24	0/5 V DC	MSW on/off, output
2-A54	2-A24	0/5 V DC	FUSW*1 on/off, output
2-A55	2-A24	0/5 V DC	TFM drive control signal (+), output
2-A56	2-A24	0/5 V DC	TFM drive control signal (-), output
2-A57	2-A24	0/5 V DC	DEV DET signal, input
2-A58	2-A24		TNS detection voltage, input
2-A59	2-A24	0 – 15 V DC	TNS control voltage, output
2-A60	2-A24	0/5 V DC	RSW on/off, input
2-B1	2-A24	24 V DC	24 V DC supply, output
2-B4	2-A24	0/5 V DC	H2 on/off, output

*1: Optional. *2: Optional for 120 V specifications only.

Terminals (CN)		Voltage	Remarks
2-B5	2-A24	0/5 V DC	H1 on/off, output
2-B6	2-A24	0/5 V DC	PLSW-U on/off, input
2-B7	2-A24	0/5 V DC	PLSW-L on/off, input
2-B8	2-A24	0/5 V DC	PSW-U on/off, input
2-B9	2-A24	5/0 V DC	LICSW-U on/off, input
2-B10	2-A24	0/5 V DC	PSW-L on/off, input
2-B11	2-A24	5/0 V DC	LICSW-L on/off, input
2-B12	2-A24	0/5 V DC	PWSW-U (DIG0) on/off, input
2-B13	2-A24	0/5 V DC	PWSW-U (DIG1) on/off, input
2-B14	2-A24	0/5 V DC	PWSW-U (DIG2) on/off, input
2-B15	2-A24	0/5 V DC	PWSW-L (DIG0) on/off, input
2-B16	2-A24	0/5 V DC	PWSW-L (DIG1) on/off, input
2-B17	2-A24	0/5 V DC	PWSW-L (DIG2) on/off, input
2-B18	2-A24	0/5 V DC	<i>Bypass table*2 connected signal, input</i>
2-B19	2-A24	0/5 V DC	BYPLSW*2 on/off, input
2-B20	2-A24	0/5 V DC	BYPPSW*2 on/off, input
2-B21	2-A24	0/5 V DC	BYPPSW*2 on/off, input
2-B22	2-A24	0/5 V DC	BYPPWSW*2 (DIG0) on/off, input
2-B23	2-A24	0/5 V DC	BYPPWSW*2 (DIG1) on/off, input
2-B24	2-A24	0/5 V DC	BYPPWSW*2 (DIG2) on/off, input
2-B25	2-A24	0/5 V DC	BYPLCL*2 on/off, output
2-B26	2-A24	0/5 V DC	BYPPFCL*2 on/off, output
2-B27	2-A24	0/5 V DC	JBESW*1 on/off, input
2-B28	2-A24	0/5 V DC	Job separator*1 connected signal, output
2-B29	2-A24	0/5 V DC	JOFSW*1 on/off, input
2-B30	2-A24	0/5 V DC	LED*1 on/off, output
2-B31	2-A24	0/5 V DC	DM, CL on/off, output
2-B32	2-A24	0/5 V DC	DM LOCK signal, input
2-B33	2-A24	0/5 V DC (pulse)	DM drive clock pulse, output
2-B34	2-A24	0/5 V DC	Feedshift unit*1/eject unit*1 connected signal, input
2-B35	2-A24	0/5 V DC	FSSW*1 on/off, input
2-B36	2-A24	0/5 V DC	FSSOL2*1 latch-on signal, output
2-B37	2-A24	0/5 V DC	RCL on/off, output
2-B38	2-A24	0/5 V DC	FSSOL1*1 latch-on signal, output
2-B39	2-A24	0/5 V DC	FSFM*1 on/off, output
2-B40	2-A24	0/5 V DC (pulse)	FSM*1 coil energization pulse, output (B)
2-B41	2-A24	0/5 V DC (pulse)	FSM*1 coil energization pulse, output (B)
2-B42	2-A24	0/5 V DC (pulse)	FSM*1 coil energization pulse, output (A)
2-B43	2-A24	0/5 V DC (pulse)	FSM*1 coil energization pulse, output (A)

*1: Optional. *2: Optional for 120 V specifications only.

Terminals (CN)		Voltage	Remarks
2-B44	2-A24	0/5 V DC	ESW* on/off, input
2-B45	2-A24	0/5 V DC	PCFM on/off, output
2-B46	2-A24	5/0 V DC	SSW3 on/off, input
2-B47	2-A24	5/0 V DC	SSW1 on/off, input
2-B48	2-A24	5/0 V DC	SSW2 on/off, input
2-B51	2-A24	0 – 5 V DC	TC control voltage, output
2-B53	2-A24	0/5 V DC	TC on/off, output
2-B54	2-A24	0 – 5 V DC	DB control voltage, output
2-B55	2-A24	0/5 V DC	DB on/off, output
2-B56	2-A24	0/5 V DC	MC ALM signal, input
2-B57	2-A24	0 – 5 V DC	GRID control voltage, output
2-B58	2-A24	0/5 V DC	MC on/off, output
2-B60	2-A24	24 V DC	24 V DC supply, input
3-1, 11, 12	3-2	5 V DC	5 V DC supply for printer board*, output
3-4	3-2	0/5 V DC	Printer board* control signal, input
3-5	3-2	0/5 V DC	Printer board* RESET signal, output
3-6	3-2	0/5 V DC	Printer board* control signal, output
3-7	3-2	0/5 V DC	Printer board* PRINT signal, input
3-8	3-2	0/5 V DC	Printer board* control signal, output
3-9	3-2	0/5 V DC	Printer board* control signal, input
3-10	3-2	0/5 V DC	Printer board* control signal, output
3-14	3-2	0/5 V DC	Printer board* control signal, input
3-15	3-2	0/5 V DC	Printer board* control signal, output
3-16	3-2	0/5 V DC	Printer board* control signal, input
3-17	3-2	0/5 V DC	Printer board* control signal, input
3-18	3-2	0/5 V DC	Printer board* control signal, output
3-19	3-2	0/5 V DC	Printer board* control signal, input
3-20	3-2	0/5 V DC	Printer board* connected signal, input
4-3	4-1	0/5 V DC	FCPCB* control signal, input
4-5	4-1	0/5 V DC	FCPCB* control signal, output
4-7	4-1	0/5 V DC	FCPCB* control signal, output
4-8	4-1	0/5 V DC	FCPCB* connected signal, input
4-9	4-1	0/5 V DC	FCPCB* SCAN signal, input
4-10	4-1	0/5 V DC	FCPCB* PRINT signal, input
4-11	4-1	0/5 V DC	FCPCB* READY signal, input
4-12	4-1	0/5 V DC	FCPCB* RESET signal, output
4-14	4-1	0/5 V DC (pulse)	FCPCB* serial signal, input
4-16	4-1	0/5 V DC (pulse)	FCPCB* serial signal, output
4-18	4-1	0/5 V DC	FCPCB* control signal, output

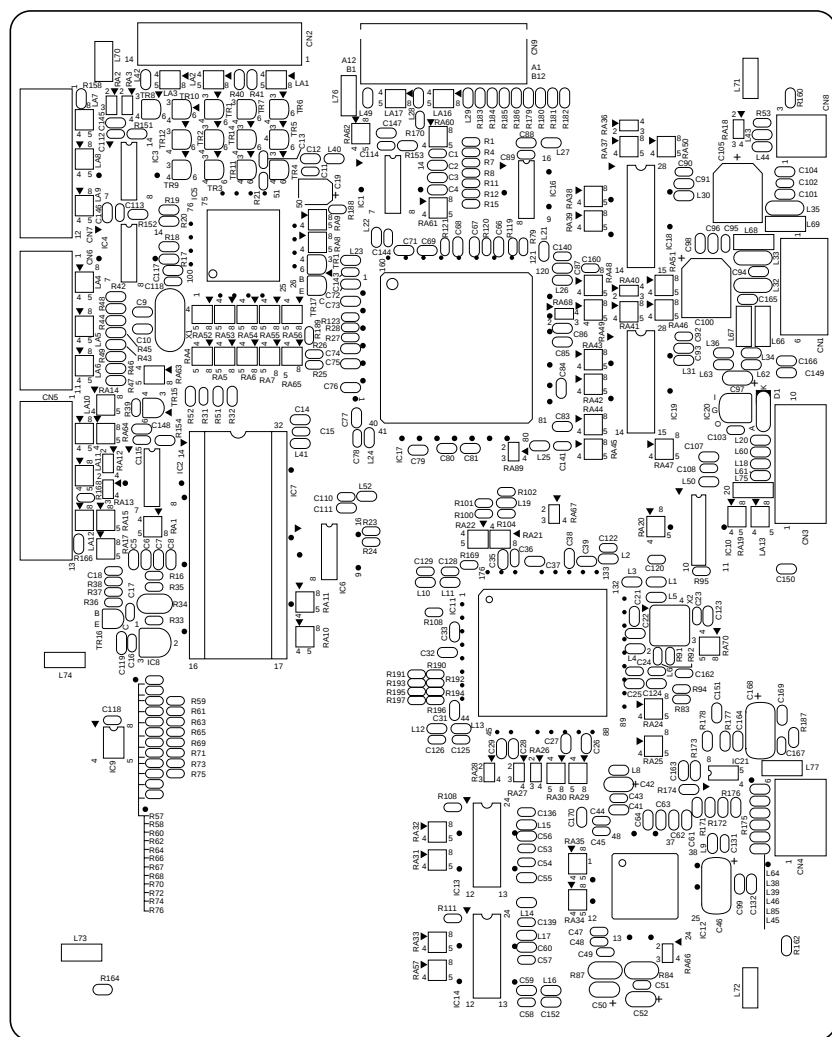
* Optional.

Terminals (CN)		Voltage	Remarks
4-20	4-1	0/5 V DC	FCPCB* PGEN signal, output
4-21	4-1	0/5 V DC (pulse)	FCPCB* PGCLK signal, output
4-22	4-1	0/5 V DC	FCPCB* control signal, output
4-23	4-1	0/5 V DC	FCPCB* control signal, input
4-25	4-1	0/5 V DC (pulse)	FCPCB* MAIN CLK signal, output
4-27	4-1	0/5 V DC	FCPCB* control signal, output
4-28	4-1	0/5 V DC	FCPCB* control signal, output
4-29	4-1	0/5 V DC	FCPCB* control signal, output
4-31	4-1	0/5 V DC	FCPCB* control signal, output
4-33	4-1	0/5 V DC	FCPCB* control signal, output
4-35	4-1	0/5 V DC	FCPCB* control signal, output
4-37	4-1	0/5 V DC	FCPCB* control signal, output
4-38	4-1	0/5 V DC (pulse)	FCPCB* FAX ID signal, output
4-41	4-1	0/5 V DC	FCPCB* control signal, output
4-43	4-1	0/5 V DC	FCPCB* control signal, output
5-A2	5-A1	0/5 V DC	SCPCB SCN ACK signal, input
5-A4	5-A3	0/5 V DC	SCPCB MAIN SCN ACK signal, output
5-A5	5-A3	0/5 V DC	SCPCB MAIN SCN HEADER signal, output
5-A6	5-A3	0/5 V DC	SCPCB SCN START signal, output
5-A7	5-A3	0/5 V DC	SCPCB SCN HEADER signal, input
5-A8	5-A3	0/5 V DC	SCPCB SCN ENABLE signal, input
5-A9	5-A3	0/5 V DC	SCPCB SMRE + signal, input
5-A10	5-A3	0/5 V DC	SCPCB SMRE – signal, input
5-A11	5-A3	0/5 V DC	SCPCB SOHSYNC – signal, input
5-A12	5-A3	0/5 V DC	SCPCB SOHSYNC + signal, input
5-B1	5-B6	0/5 V DC (pulse)	SCPCB image control signal SID –, input
5-B2	5-B6	0/5 V DC (pulse)	SCPCB image control signal SID +, input
5-B3	5-B6	0/5 V DC (pulse)	SCPCB clock pulse +, input
5-B4	5-B6	0/5 V DC (pulse)	SCPCB clock pulse –, input
5-B5	5-B6	0/5 V DC	SCPCB SOVST signal, input
5-B7	5-B6	0/5 V DC	SCPCB SCN RESET signal, output
5-B9	5-B10	0/5 V DC (pulse)	Serial signal to SCPCB, output
5-B11	5-B12	0/5 V DC (pulse)	Serial signal from SCPCB, input
8-1	8-4	0/5 V DC	PM S/S signal, output
8-2	8-4	0/5 V DC	PM LD signal, input
8-3	8-4	0/5 V DC (pulse)	PM clock pulse, output
8-5	8-4	5 V DC	5 V DC supply for LDPCB, output
8-6	8-4	0/5 V DC	LDPCB BD + signal, input
8-7	8-4	0/5 V DC	LDPCB BD – signal, input
8-9	8-8	0/5 V DC	LDPCB VIDEO – signal, output

* Optional.

Terminals (CN)		Voltage	Remarks
8-13	8-8	5 V DC	5 V DC supply for LDPCB, output
9-1	9-2	0/5 V DC (pulse)	Serial signal to OMPCB, output
9-3	9-4	0/5 V DC (pulse)	Serial signal from OMPCB, input
9-5	9-4	0/5 V DC	OMPCB ACK FOR MAIN signal, input
9-6	9-4	0/5 V DC	OMPCB ACK FROM MAIN signal, output
9-7	9-4	0/5 V DC	OMPCB ERROR FOR MAIN signal, input
9-8	9-4	0/5 V DC	OMPCB ERROR FROM MAIN signal, output
9-9	9-4	0/5 V DC	OMPCB DET SIG signal, input
9-10	9-4	0/5 V DC	OMPCB MMI STS signal, input
9-11	9-4	0/5 V DC	OMPCB RESET MAIN signal, output
10-1	10-2	0/5 V DC (pulse)	Serial signal from finisher*, input
10-3	10-4	0/5 V DC (pulse)	Serial signal to finisher*, output
10-5	10-4	0/5 V DC	Finisher* F RESET signal, output
10-6	10-4	0/5 V DC	Finisher* connected signal, input
10-7	10-8	0/5 V DC (pulse)	Serial signal from mailbox*, input
10-9	10-10	0/5 V DC (pulse)	Serial signal to mailbox*, output
10-11	10-10	0/5 V DC	Mailbox* connected signal, input
10-12	10-10	0/5 V DC	Mailbox* M RESET signal, output
11-1	11-2	0/5 V DC (pulse)	Serial signal to paper feed desk*/large paper deck*, output
11-3	11-4	0/5 V DC (pulse)	Serial signal from paper feed desk*/large paper deck*, input
11-5	11-4	0/5 V DC	FSW3 on/off, output

* Optional.



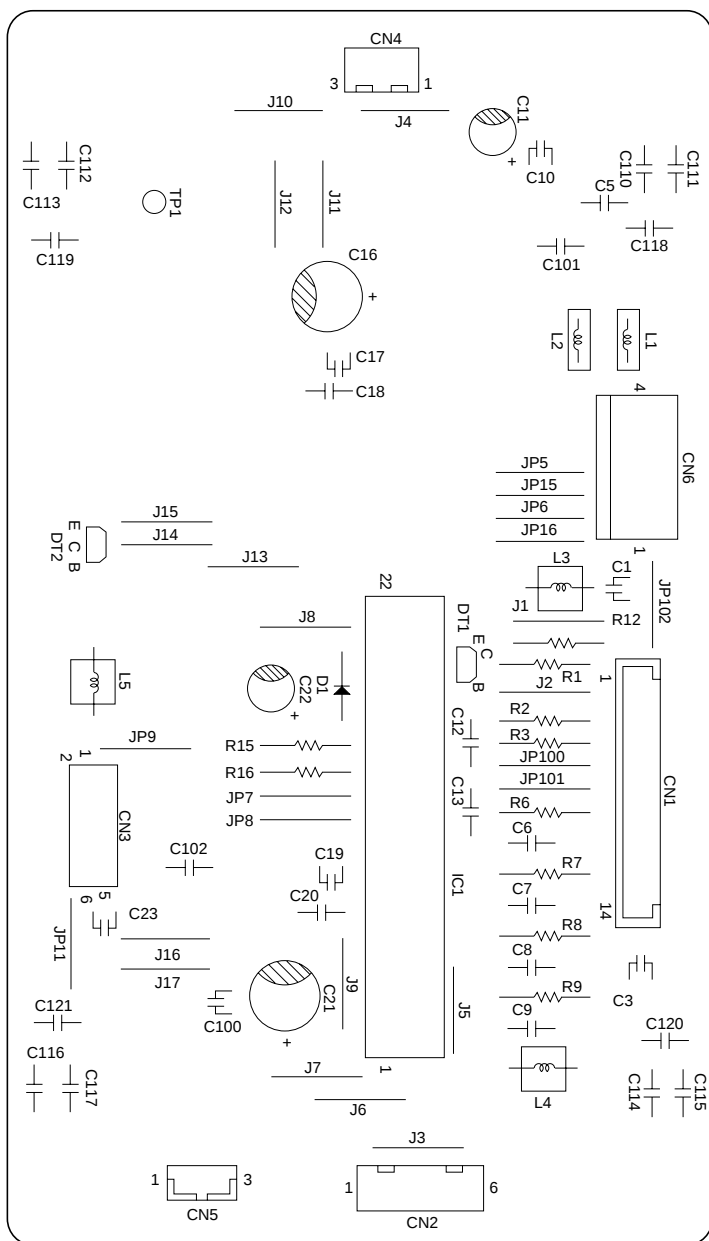
Terminals (CN)		Voltage	Remarks
1-1, 5	1-3	5 V DC	5 V DC supply from PSPCB, input
1-2	1-3	3.4 V DC	3.4 V DC supply from PSPCB, input
1-6	1-4	+12 V DC	+12 V DC supply from PSPCB, input
2-1	2-14	0/5 V DC	ODSW on/off, input
2-2	2-14		SM current control voltage SM Vref, output
2-3	2-14	0/5 V DC	SM drive control signal SM M1, output
2-4	2-14	0/5 V DC	SM drive control signal SM M2, output
2-5	2-14	0/5 V DC	SM drive control signal SM M3, output
2-6	2-14	0/5 V DC	SM drive control signal SM M4, output
2-7	2-14	0/5 V DC	SM drive control signal SM M5, output
2-8	2-14	0/5 V DC (pulse)	SM drive clock pulse, output
2-9	2-14	0/5 V DC	SM rotation direction switching signal SM CWB, output
2-10	2-14	0/5 V DC	SM control signal SM RET, output
2-11	2-14	0/5 V DC	SM enable signal, output
2-12	2-14	5/0 V DC	EL on/off, output
2-13	2-14	5/0 V DC	SHPSW on/off, input
3-1	3-2	0/5 V DC (pulse)	CCD drive clock signal, output
3-3	3-2	0/5 V DC	CCDPCB RS signal, output
3-5	3-4	0/5 V DC	CCDPCB CLP signal, output
3-7	3-6	0/5 V DC	CCDPCB SHIFT signal, output
3-9	3-10	5 V DC	5 V DC supply for CCDPCB, output
4-1	4-2		CCD control signal VO_O, input
4-3	4-4		CCD control signal VO_E, input
4-5	4-6	+12 V DC	+12 V DC supply for CCDPCB, output
5-2	4-6	0/5 V DC	OSBSW* on/off, input
5-3	4-6	0/5 V DC	OFSW* on/off, input
5-4	4-6	0/5 V DC	OSSW* on/off, input
5-7	4-6	0/5 V DC	SRDF* installed/not installed signal, input
5-8	4-6	0/5 V DC	OSWSW* on/off, input
5-9	4-6	5/0 V DC	DFSSW2* off/on, input
5-10	4-6	5/0 V DC	DFSSW1* off/on, input
5-11	4-6	5/0 V DC	OSLSW* off/on, input
5-12	4-6	5/0 V DC	DFTSW* off/on, input
6-1	4-6	0/5 V DC	OFM* control signal OFM RET, output
6-2	4-6	0/5 V DC (pulse)	OFM* drive clock pulse, output
6-3	4-6	0/5 V DC	OFM* rotation direction switching signal OFM CWB, output
6-4	4-6	0/5 V DC	OCM* enable signal, output
6-5	4-6	0/5 V DC	OCM* control signal OCM RET, output

* Optional.

Terminals (CN)		Voltage	Remarks
6-6	4-6	0/5 V DC (pulse)	OCM* drive clock pulse, output
6-7	4-6	0/5 V DC	OCM* rotation direction switching signal
6-8	4-6		OCM CWB, output
6-9	4-6	0/5 V DC	OCM* current control voltage OCM Vref, output
6-10	4-6	0/5 V DC	OCM* drive control signal OCM M3, output
6-11	4-6	0/5 V DC	OCM* drive control signal OCM M2, output
			OCM* drive control signal OCM M1, output
7-2	4-6	0/5 V DC	OSLED* (red) on/off, output
7-3	4-6	0/5 V DC	OSLED* (green) on/off, output
7-4	4-6	0/5 V DC	SBPSOL* release signal, output
7-5	4-6	0/5 V DC	SBPSOL* latch-on signal, output
7-6	4-6	0/5 V DC	OFCL* on/off, output
7-7	4-6	0/5 V DC	EFSSOL* on/off, output
7-9	4-6	0/5 V DC	SBFSSOL* on/off, output
7-10	4-6	0/5 V DC	OFSOL* release signal, output
7-11	4-6	0/5 V DC	OFSOL* latch-on signal, output
7-12	4-6	0/5 V DC	OFM* enable signal, output
8-2	8-1	5 V DC	5 V DC supply for OSS, output
8-3	8-1	0/5 V DC	OSS on/off, input
9-A1	9-A10	0/5 V DC	MPCB SOHSYNC + signal, output
9-A2	9-A10	0/5 V DC	MPCB SOHSYNC – signal, output
9-A3	9-A10	0/5 V DC	MPCB SMRE – signal, output
9-A4	9-A10	0/5 V DC	MPCB SMRE + signal, output
9-A5	9-A10	0/5 V DC	MPCB SCN ENABLE signal, output
9-A6	9-A10	0/5 V DC	MPCB SCN HEADER signal, output
9-A7	9-A10	0/5 V DC	MPCB SCN START signal, input
9-A8	9-A10	0/5 V DC	MPCB MAIN SCN HEADER signal, input
9-A9	9-A10	0/5 V DC	MPCB MAIN SCN ACK signal, input
9-A11	9-A12	0/5 V DC	MPCB SCN ACK signal, output
9-B2	9-B1	0/5 V DC (pulse)	Serial signal to MPCB, output
9-B4	9-B3	0/5 V DC (pulse)	Serial signal from MPCB, input
9-B6	9-B7	0/5 V DC	MPCB SCN RESET signal, input
9-B9	9-B7	0/5 V DC (pulse)	MPCB clock pulse –, output
9-B10	9-B7	0/5 V DC (pulse)	MPCB clock pulse +, output
9-B11	9-B7	0/5 V DC (pulse)	MPCB image control signal SID +, output
9-B12	9-B7	0/5 V DC (pulse)	MPCB image control signal SID –, output

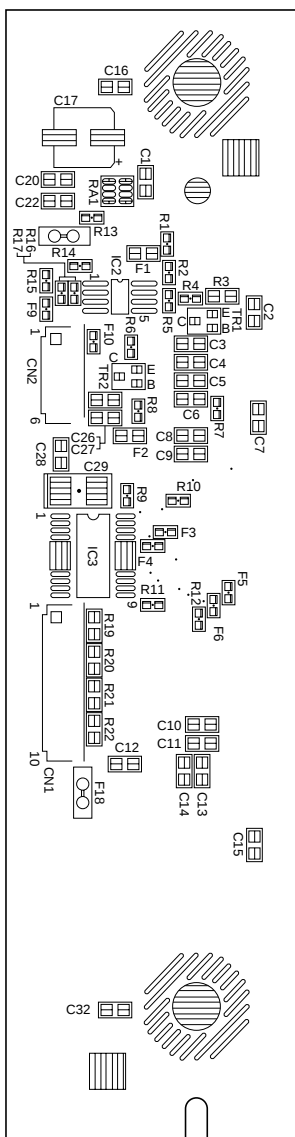
* Optional.

(5) Scanner motor PCB



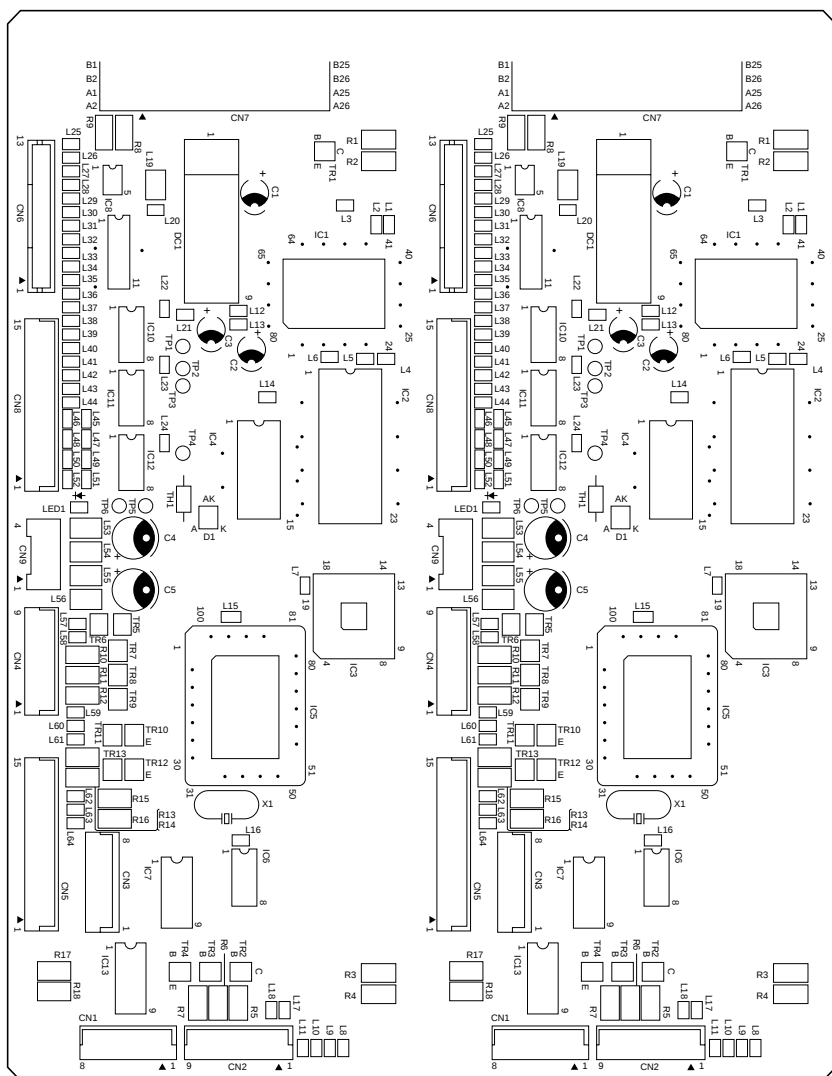
Terminals (CN)		Voltage	Remarks
1-2	1-1	5/0 V DC	SHPSW on/off, output
1-3	1-1	5/0 V DC	EL on/off, input
1-4	1-1	0/5 V DC	SM enable signal, input
1-5	1-1	0/5 V DC	SM control signal SM RET, input
1-6	1-1	0/5 V DC	SM rotation direction switching signal SM CWB, input
1-7	1-1	0/5 V DC (pulse)	SM drive clock 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
2-1	3-6	0/24 V DC (pulse)	SM coil energization pulse, output ($\bar{B}$)
2-2	3-6	24 V DC	24 V DC supply for SM, output
2-3	3-6	0/24 V DC (pulse)	SM coil energization pulse, output (B)
2-4	3-6	0/24 V DC (pulse)	SM coil energization pulse, output (A)
2-5	3-6	24 V DC	24 V DC supply for SM, output
2-6	3-6	0/24 V DC (pulse)	SM coil energization pulse, output ($\bar{A}$)
3-1	3-5	0/5 V DC	EL on/off, output
3-2	3-5	0/5 V DC	EL on/off, output
3-3	3-5	24 V DC	24 V DC supply for INPCB, output
3-4	3-5	24 V DC	24 V DC supply for INPCB, output
4-1	4-3	5 V DC	5 V DC supply for SHPSW, output
4-2	4-3	5/0 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 from PSPCB, input
6-4	6-3	5 V DC	5 V DC supply from PSPCB, input

(6) CCD PCB



Terminals (CN)		Voltage	Remarks
1-1	1-2	0/5 V DC (pulse)	CCD drive clock signal, input
1-3	1-2	0/5 V DC	CCDPCB RS signal, input
1-5	1-4	0/5 V DC	CCDPCB CLP signal, input
1-7	1-6	0/5 V DC	CCDPCB SHIFT signal, input
1-9	1-10	5 V DC	5 V DC supply from SCPCB, input
2-1	2-2	+12 V DC	CCD control signal VO_O, input
2-3	2-4		CCD control signal VO_E, input
2-5	2-6		+12 V DC supply from SCPCB, input

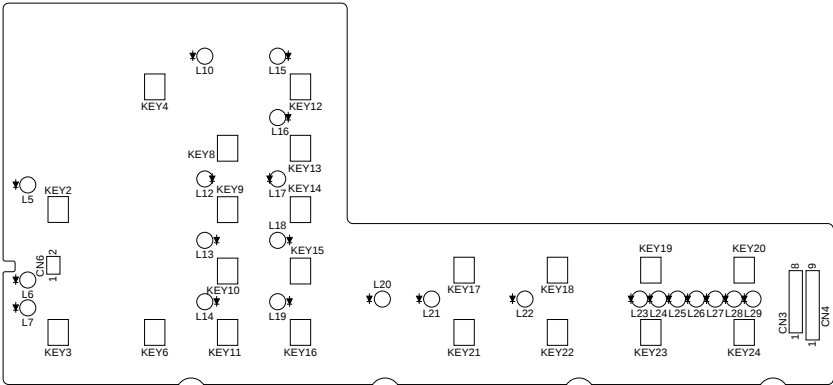
(7) Operation unit main PCB



Terminals (CN)		Voltage	Remarks
3-1	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN0, output
3-2	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN1, output
3-3	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN2, output
3-4	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN3, output
3-5	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN4, output
3-6	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN5, output
3-7	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN6, output
3-8	6-12	0/5 V DC (pulse)	OLPCB scan signal SCAN7, output
4-1	6-12	0/5 V DC	OLPCB KEY SENSE0 signal, input
4-2	6-12	0/5 V DC	OLPCB KEY SENSE1 signal, input
4-3	6-12	0/5 V DC	OLPCB KEY SENSE2 signal, input
4-4	6-12	0/5 V DC	OLPCB LDONX0 signal, input
4-5	6-12	0/5 V DC	OLPCB LDONX1 signal, input
4-6	6-12	0/5 V DC	OLPCB LDONX2 signal, input
4-7	6-12	0/5 V DC	OLPCB LDONX3 signal, input
4-8	6-12	24 V DC	24 V DC supply for OLPCB, output
4-9	6-12	0/5 V DC	CFL on/off, output
5-1	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN0, output
5-2	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN1, output
5-3	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN2, output
5-4	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN3, output
5-5	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN4, output
5-6	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN5, output
5-7	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN6, output
5-8	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN7, output
5-9	6-12	0/5 V DC	ORPCB KEY SENSE3 signal, input
5-10	6-12	0/5 V DC	ORPCB KEY SENSE4 signal, input
5-11	6-12	0/5 V DC	ORPCB KEY SENSE5 signal, input
5-12	6-12	0/5 V DC	ORPCB LDONX3 signal, input
5-13	6-12	0/5 V DC	ORPCB LDONX4 signal, input
5-14	6-12	0/5 V DC	ORPCB LDONX5 signal, input
5-15	6-12	0/5 V DC	ORPCB LDONX6 signal, input
6-1	6-12	5 V DC	5 V DC supply for LCD, output
6-2	6-1	0 – 30 V DC	LCD VEE signal, output
6-3	6-12	0/5 V DC (pulse)	LCD UD3 data, output
6-4	6-12	0/5 V DC (pulse)	LCD UD2 data, output
6-5	6-12	0/5 V DC (pulse)	LCD UD1 data, output
6-6	6-12	0/5 V DC (pulse)	LCD UD0 data, output
6-7	6-12	0/5 V DC	LCD CP signal, output
6-8	6-12	0/5 V DC	LCD FLM signal, output

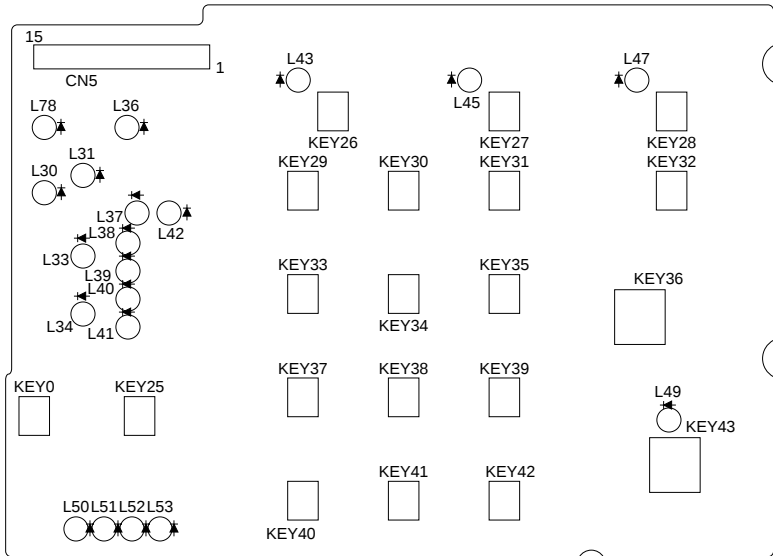
Terminals (CN)		Voltage	Remarks
6-9	6-12	0/5 V DC	LCD DISP OFF signal, output
6-10	6-12	0/5 V DC	LCD LP signal, output
6-11	6-1	0 – 22 V DC	LCD VO signal, output
8-5	8-12	0/5 V DC	OMPCB RESET MAIN signal, input
8-7	8-12	0/5 V DC	OMPCB MMI STS signal, output
8-7	8-12	0/5 V DC	OMPCB DET SIG signal, output
8-8	8-12	0/5 V DC	OMPCB ERROR FROM MAIN signal, input
8-9	8-12	0/5 V DC	OMPCB ERROR FOR MAIN signal, output
8-10	8-12	0/5 V DC	OMPCB ACK FROM MAIN signal, input
8-11	8-12	0/5 V DC	OMPCB ACK FOR MAIN signal, output
8-13	8-12	0/5 V DC (pulse)	Serial signal to MPCB, output
8-15	8-14	0/5 V DC (pulse)	Serial signal from MPCB, input
9-1	9-4	24 V DC	24 V DC supply from PSPCB, input
9-2	9-3	5 V DC	5 V DC supply from PSPCB, input

(8) Operation unit left PCB

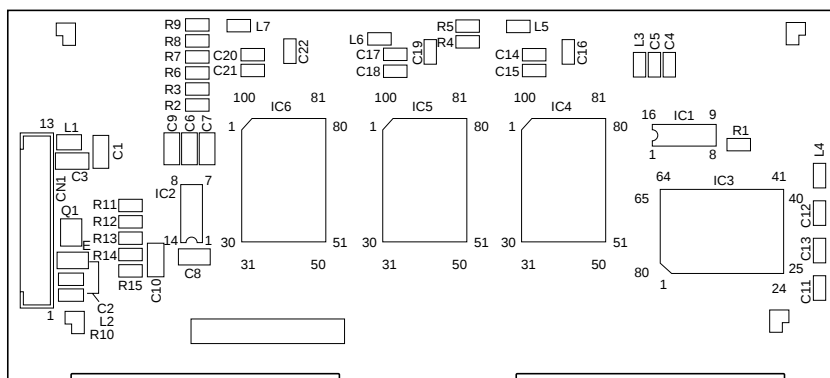


Terminals (CN)		Voltage	Remarks
3-1	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN7, input
3-2	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN6, input
3-3	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN5, input
3-4	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN4, input
3-5	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN3, input
3-6	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN2, input
3-7	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN1, input
3-8	GND	0/5 V DC (pulse)	OLPCB scan signal SCAN0, input
4-1	GND	0/5 V DC	CFL on/off, input
4-2	GND	24 V DC	24 V DC supply from OMPCB, input
4-3	GND	0/5 V DC	OLPCB LDONX3 signal, output
4-4	GND	0/5 V DC	OLPCB LDONX2 signal, output
4-5	GND	0/5 V DC	OLPCB LDONX1 signal, output
4-6	GND	0/5 V DC	OLPCB LDONX0 signal, output
4-7	GND	0/5 V DC	OLPCB KEY SENSE2 signal, output
4-8	GND	0/5 V DC	OLPCB KEY SENSE1 signal, output
4-9	GND	0/5 V DC	OLPCB KEY SENSE0 signal, output
6-1	GND	24 V DC	24 V DC supply for LCDINPCB, output
6-2	GND	0/5 V DC	CFL on/off, output

(9) Operation unit right PCB



Terminals (CN)		Voltage	Remarks
5-1	6-12	0/5 V DC	ORPCB LDONX6 signal, input
5-2	6-12	0/5 V DC	ORPCB LDONX5 signal, input
5-3	6-12	0/5 V DC	ORPCB LDONX4 signal, input
5-4	6-12	0/5 V DC	ORPCB LDONX3 signal, input
5-5	6-12	0/5 V DC	ORPCB KEY SENSE5 signal, input
5-6	6-12	0/5 V DC	ORPCB KEY SENSE4 signal, input
5-7	6-12	0/5 V DC	ORPCB KEY SENSE3 signal, input
5-8	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN7, output
5-9	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN6, output
5-10	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN5, output
5-11	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN4, output
5-12	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN3, output
5-13	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN2, output
5-14	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN1, output
5-15	6-12	0/5 V DC (pulse)	ORPCB scan signal SCAN0, output



Terminals (CN)		Voltage	Remarks
1-3	1-13	0 – 22 V DC	LCD VO signal, input
1-4	1-2	0/5 V DC	LCD LP signal, input
1-5	1-2	0/5 V DC	LCD DISP OFF signal, input
1-6	1-2	0/5 V DC	LCD FLM signal, input
1-7	1-2	0/5 V DC	LCD CP signal, input
1-8	1-2	0/5 V DC (pulse)	LCD UD0 data, input
1-9	1-2	0/5 V DC (pulse)	LCD UD1 data, input
1-10	1-2	0/5 V DC (pulse)	LCD UD2 data, input
1-11	1-2	0/5 V DC (pulse)	LCD UD3 data, input
1-12	1-13	0 – 30 V DC	LCD VEE signal, input
1-13	1-2	5 V DC	5 V DC supply from OMPCB, input
2-1	2-5	0/5 V DC	CFL on/off, input

3-6-4 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The machine does not operate when the main switch is turned on.	No electricity at the power outlet.	Measure the input voltage.
	The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	The front cover, left 1 cover or left 2 cover is not closed completely.	Check the front cover, left 1 cover and left 2 cover.
	Broken power cord.	Check for continuity. If none, replace the cord.
	Defective main switch.	Check for continuity across the contacts. If none, replace the main switch.
	Blown fuse in the power source PCB.	Check for continuity. If none, remove the cause of blowing and replace the fuse.
	Defective safety switch 1, 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 CN3-28 on the power source PCB, 12 V DC at CN3-30, 24 V DC at CN3-7 and 3.4 V DC at CN3-29. If none, replace the power source PCB.
(2) The drive motor does not operate (C200).	Poor contact of the drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Broken drive motor gear.	Check visually and replace the drive motor if necessary.
	Defective drive motor.	Run maintenance item U030 and check if the drive motor operates when CN11-A3 on the engine PCB goes low. If not, replace the drive motor.
	Defective main PCB.	Run maintenance item U030 and check if CN2-B31 on the main PCB goes low. If not, replace the main PCB.

Problem	Causes	Check procedures/corrective measures
(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 of 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 CN2-3, CN2-4, CN2-5, CN2-6 and CN2-7 on the scanner control PCB when maintenance item U073 is run. If not, replace the scanner control PCB.
(4) The upper lift motor does not operate (C241).	Broken upper lift motor coil.	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 engine PCB.	Check if 24 V DC is output across CN10-A1 and CN10-A2 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 (C242).	Broken lower lift motor coil.	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.
	Defective engine PCB.	Check if 24 V DC is output across CN10-A3 and CN10-A4 on the engine PCB right after the lower drawer is installed. If not, replace the engine PCB.

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 of the toner feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U135 and check if drive pulse signal is output across CN8-17 and CN8-18 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 of the paper conveying section fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U030. If 24 V DC is always present at CN16-9 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 of the cooling fan motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U030 and check if CN8-2 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 of the cooling fan motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U030 and check if CN8-4 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(10) 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 of the upper paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-B1 on the engine PCB goes low. If not, replace the engine PCB.
(11) 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 of the lower paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-B3 on the engine PCB goes low. If not, replace the engine PCB.
(12) 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 of feed clutch 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-A7 on the engine PCB goes low. If not, replace the engine PCB.
(13) 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 of feed clutch 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-A9 on the engine PCB goes low. If not, replace the engine PCB.

Problem	Causes	Check procedures/corrective measures
(14) 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 of feed clutch 3 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-A11 on the engine PCB goes low. If not, replace the engine PCB.
(15) The registration clutch does not operate.	Broken registration clutch coil.	Check for continuity across the coil. If none, replace the registration clutch.
	Poor contact of the registration clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	Run maintenance item U032 and check if CN10-A5 on the engine PCB goes low. If not, replace the engine PCB.
(16) The cleaning lamp does not turn on.	Poor contact of the cleaning lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective engine PCB.	If the cleaning lamp turns on when CN13-4 on the engine PCB is low, replace the engine PCB.
(17) The exposure lamp does not turn on.	Poor contact of the exposure lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair 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 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 low, replace the scanner motor PCB.

Problem	Causes	Check procedures/corrective measures
(18) The exposure lamp does not turn off.	Defective inverter PCB.	If the exposure lamp does not turn off when CN1-5 and CN1-6 on the inverter PCB are 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.
(19) 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 3-3-57).
	Fixing unit thermostat triggered.	Check for continuity across the 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.
(20) Fixing heater M or S does not turn off (fixing unit thermostat triggered; C630).	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 when CN1-6 and CN1-7 on the engine PCB are high, replace the engine PCB.
(21) Main charging is not performed (C510).	Broken main charger wire.	See page 3-6-4.
	Leaking main charger housing.	
	Poor contact of the high-voltage transformer PCB connector terminals.	
	Defective main PCB.	
	Defective engine PCB.	
	Defective high-voltage transformer PCB.	

Problem	Causes	Check procedures/corrective measures
(22) Transfer charging is not performed.	Broken transfer wire.	See page 3-6-3.
	Poor contact of the high-voltage transformer PCB connector terminals.	
	Defective main PCB.	
	Defective engine PCB.	
	Defective high-voltage transformer PCB.	
(23) No developing bias is output.	Poor contact of the developing bias wire.	Check the developing bias wire. If there is any problem, replace it.
	Poor contact of the high-voltage transformer PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective high-voltage transformer PCB.	Check if the developing bias is output when CN1-4 on the high-voltage transformer PCB is low while maintenance item U030 is run. If not, replace the high-voltage transformer PCB.
	Defective engine PCB.	Check if CN9-11 on the engine PCB goes low during copying. If not, replace the engine PCB.
(24) 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.

Problem	Causes	Check procedures/corrective measures
(25) The original size is not detected correctly.	Original is not placed correctly.	Check the original and correct if necessary.
	Poor contact of the original size sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective original size sensor or the scanner control PCB.	Check if the original size sensor operates correctly. If not, replace it or, if necessary, the scanner control PCB.
(26) The message requesting paper to be loaded is shown when paper is present in the upper drawer.	Poor contact of the upper paper switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective upper paper switch.	Check if CN12-11 on the engine PCB goes low when the upper paper switch is turned on with 5 V DC present at CN12-12 on the engine PCB. If not, replace the upper paper switch.
(27) The message requesting paper to be loaded is shown when paper is present in the lower drawer.	Poor contact of the lower paper switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective lower paper switch.	Check if CN12-5 on the engine PCB goes low when the lower paper switch is turned on with 5 V DC present at CN12-6 on the engine PCB. If none, replace the lower paper switch.

Problem	Causes	Check procedures/corrective measures
(28) The size of paper in the upper drawer is not displayed correctly.	Poor contact of the upper paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Poor contact of the upper paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective upper paper length switch.	Check if CN12-15 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.	Check if the levels of CN14-8, CN14-9 and CN14-10 on the engine PCB change alternately when the width guide in the upper drawer is moved. If not, replace the upper paper width switch.
(29) The size of paper in the lower drawer is not displayed correctly.	Poor contact of the lower paper length switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Poor contact of the lower paper width switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
	Defective lower paper length switch.	Check if CN12-13 on the engine PCB goes low when the lower paper length switch is turned on. If not, replace the lower paper length switch.
	Defective lower paper width switch.	Check if the levels of CN14-2, CN14-3 and CN14-4 on the engine PCB change alternately when the width guide in the lower drawer is moved. If not, replace the lower paper width switch.

Problem	Causes	Check procedures/corrective measures
(30) A paper jam in the paper feed or paper conveying section is indicated when the main switch is turned on.	A piece of paper torn from copy paper is caught around feed switch 1/2/3 or the registration switch.	Check and remove if any.
	Defective feed switch 1.	With 5 V DC present at CN15-6 on the engine PCB, check if CN15-5 on the engine PCB remains low when feed switch 1 is turned on and off. If it does, replace feed switch 1.
	Defective feed switch 2.	With 5 V DC present at CN15-9 on the engine PCB, check if CN15-8 on the engine PCB remains low when feed switch 2 is turned on and off. If it does, replace feed switch 2.
	Defective feed switch 3.	With 5 V DC present at CN15-12 on the engine PCB, check if CN15-11 on the engine PCB remains low when feed switch 3 is turned on and off. If it does, replace feed switch 3.
	Defective registration switch.	With 5 V DC present at CN8-26 on the engine PCB, check if CN8-25 on the engine PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
(31) The message requesting covers to be closed is displayed when the front, left 1 and left 2 covers are closed.	Poor contact of the connector terminals of safety switch 1, 2 or 3.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair 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.
(32) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

3-6-5 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers or pulleys are dirty with paper powder: forwarding pulleys, paper feed pulleys, separation pulleys, left/right feed rollers, feed rollers 1/2 and feed pulley.	Clean with isopropyl alcohol.
	Check if the paper feed pulleys or separation pulleys are deformed.	Replace if necessary (see page 3-3-3).
	Check if the forwarding pulleys are 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.	See pages 3-6-48 and 49.
(2) No secondary paper feed.	Check if the surfaces of the left or right registration roller is dirty with paper powder.	Clean with isopropyl alcohol.
	Electrical problem with the registration clutch.	See page 3-6-49.
(3) Skewed paper feed.	Width guide in a drawer installed incorrectly.	Check the width guide visually and remedy or replace if necessary.
	Deformed width guide in a drawer.	Check the width guide visually and remedy or replace if it is deformed.
	Check if a pressure spring along the paper conveying path is deformed or out of place.	Remedy or replace.

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 3-3-25).
	The scanner motor malfunctions.	See page 3-6-46.
(5) Multiple sheets of paper are fed at one time.	Check if the separation pulleys are worn.	Replace the separation pulleys if they are 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 remedy or replace any deformed guides.
	Check if the contact between the left and right registration rollers is correct.	Remedy if necessary. Replace the pressure spring if it is deformed.
	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.
(7) Toner drops on the paper conveying path.	Check if the developing section of the image formation unit is extremely dirty.	Clean the developing section of the image formation unit.
(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 and feed clutches 1/2/3.	Remedy.

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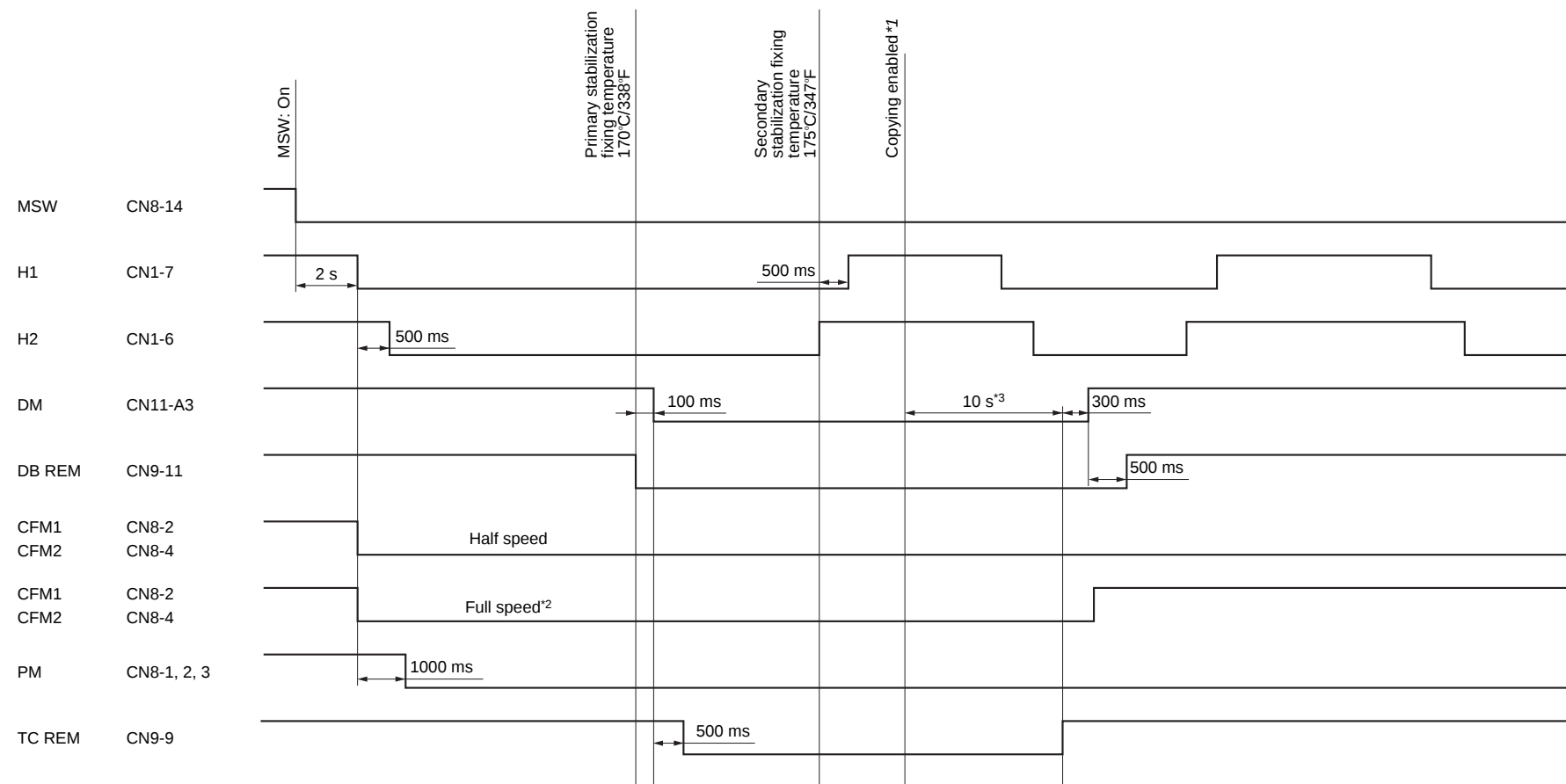
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Timing chart No. 1 From the main switch turned on to machine stabilization



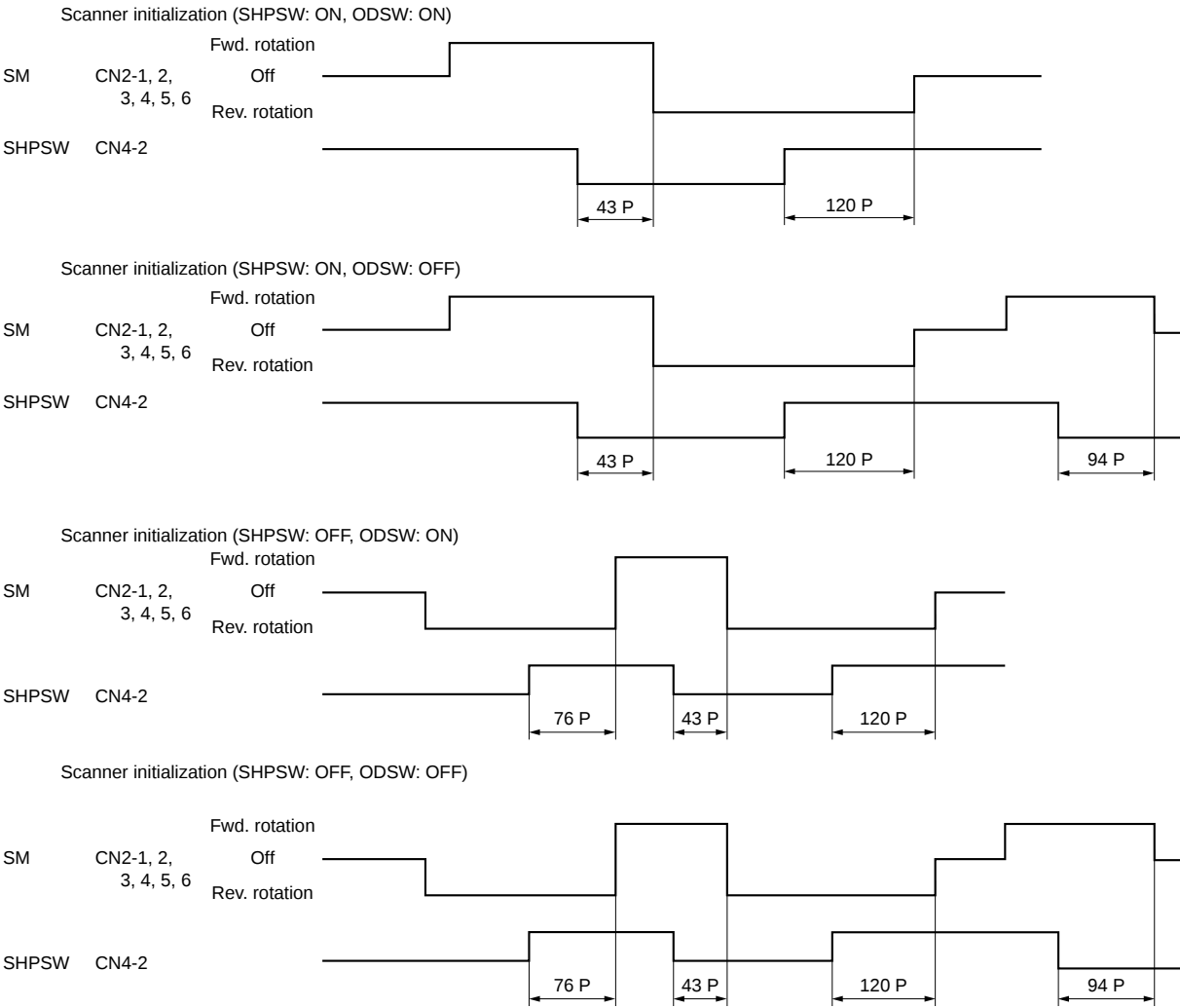
*1: Copying is enabled as follows:
1. When fixing temperature at the main switch turning on is 100°C/212°F or lower
Absolute humidity is 15 g/m³ or higher:
Copying is enabled 120 s after fixing heater M (H1) turning on.
2. When fixing temperature at the main switch turning on is 100°C/212°F or lower
The fixing temperature at the main switch turning on is 13°C/55.4°F or higher and the ambient temperature is 18°C/64.4°F or higher:
Copying is enabled at the earlier timing of either 41 s after fixing heater M (H1) turning on or when the copier enters secondary stabilization.
Other than the above:
Copying is enabled at the later timing of either 69 s after fixing heater M (H1) turning on or when the copier enters secondary stabilization.
3. Other conditions than 1 and 2
Copying is enabled when the copier enters secondary stabilization.

*2: Rotates for 180 s at full speed when the fixing temperature at the main switch turning on is 100°C/212°F or lower, and the absolute humidity is 15 g/m³ or higher.

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

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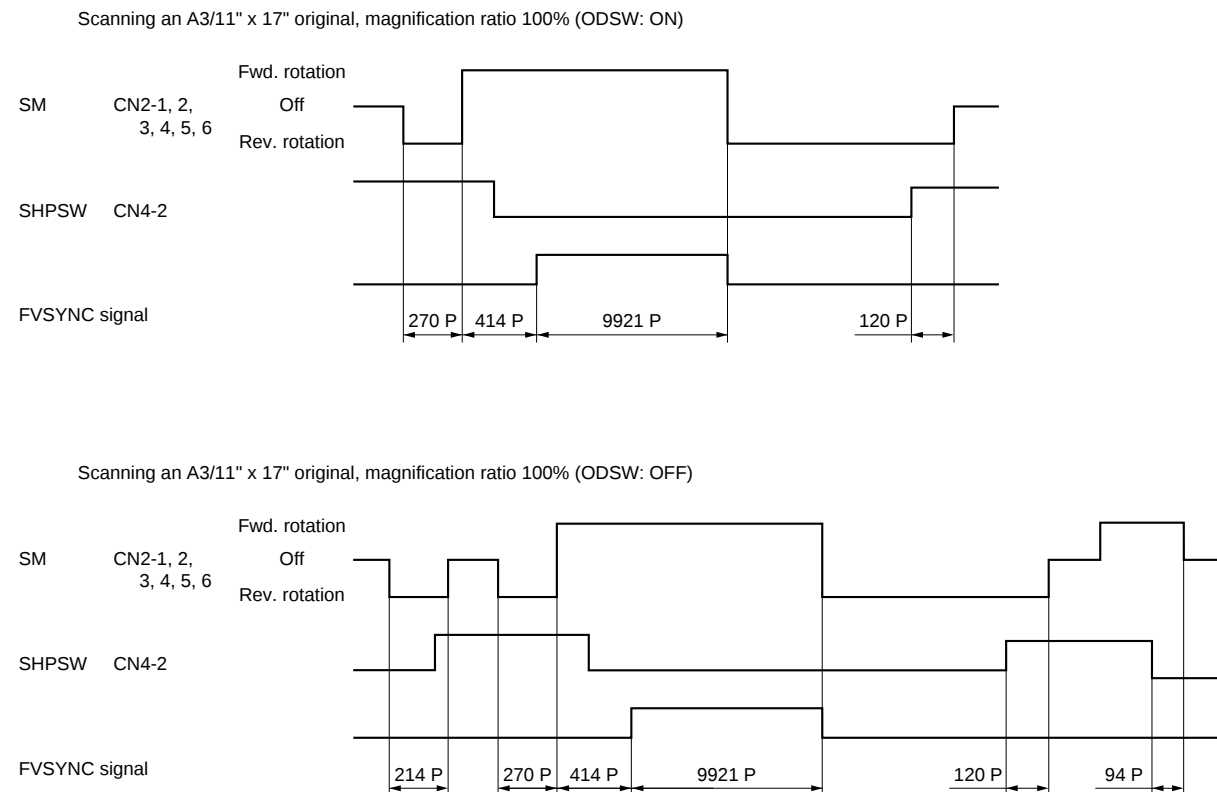
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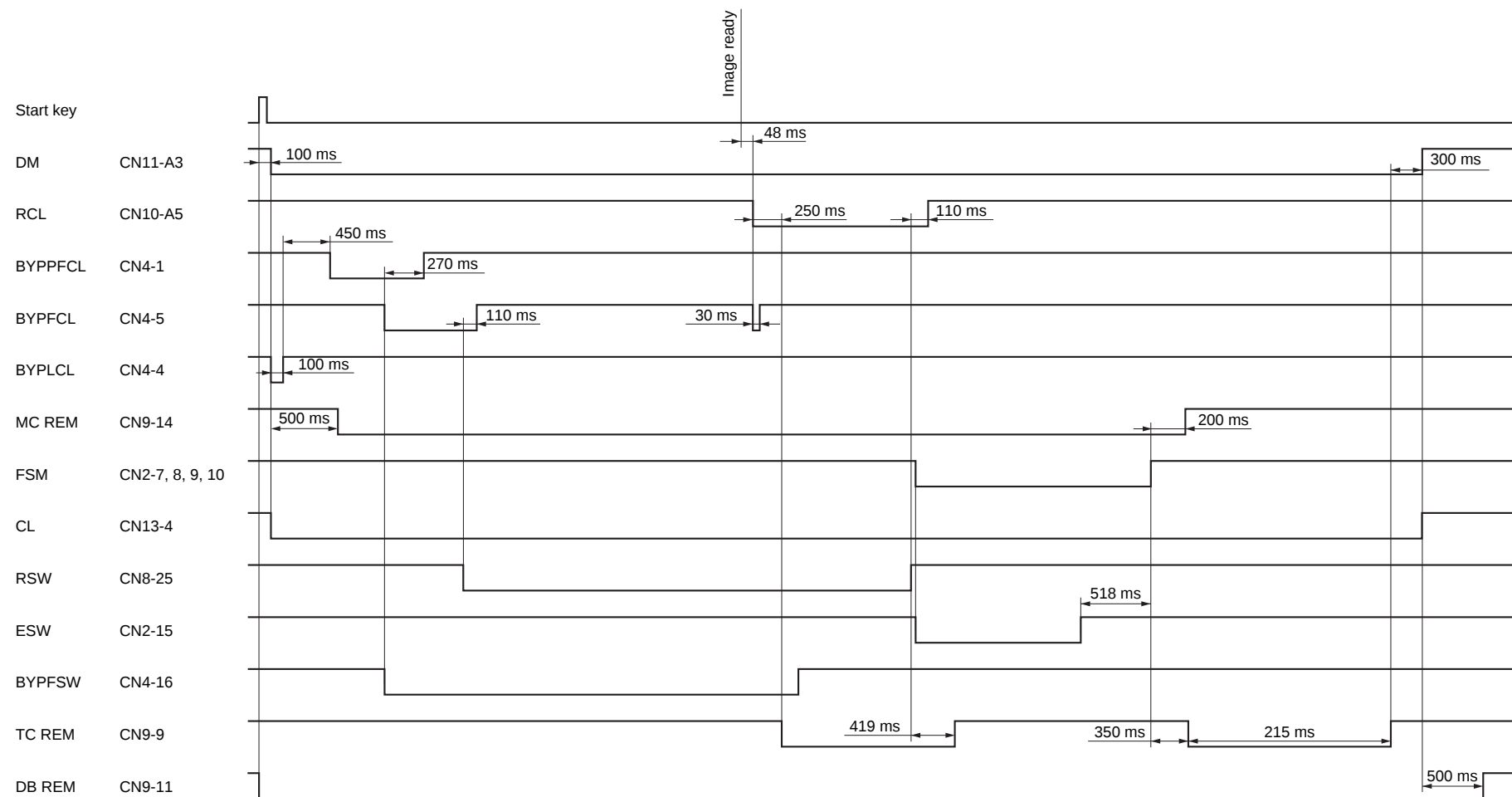
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Timing chart No. 3 Original scanning operation



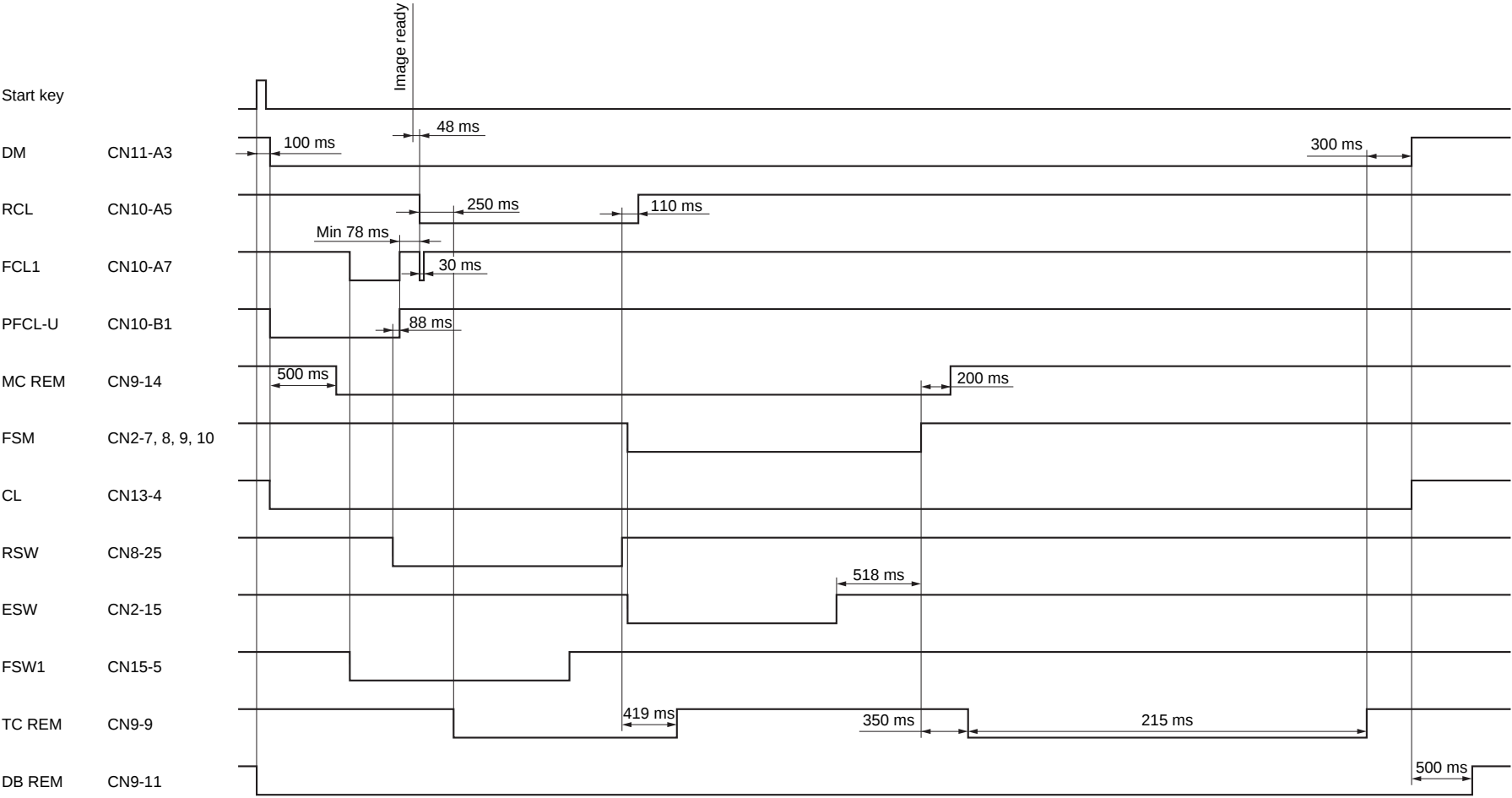
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Timing chart No. 4 Copying an A3/11"×17" original onto an A5R/5¹/₂"×8¹/₂" copy paper from the bypass table, magnification ratio 25%, manual copy density control



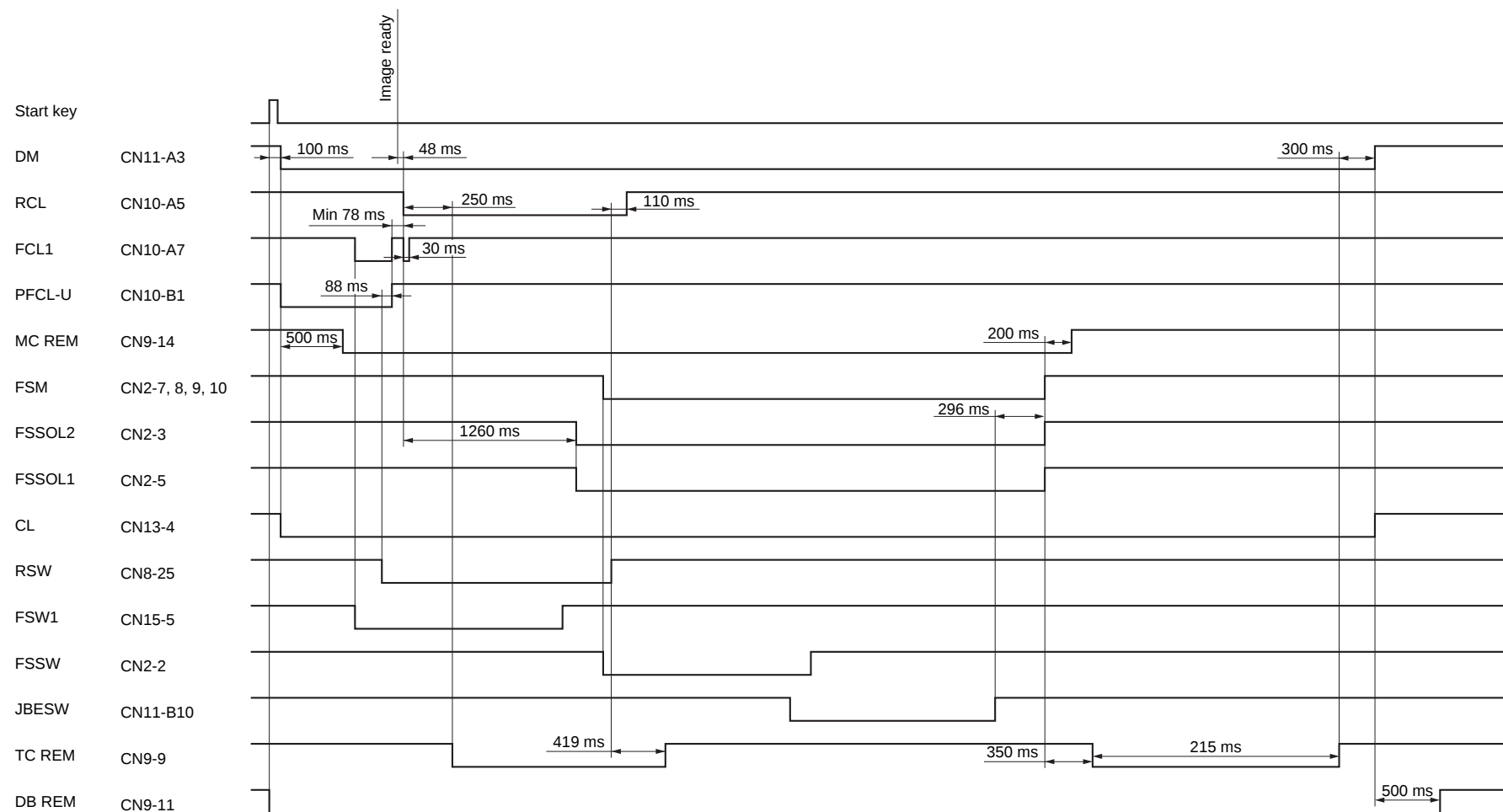
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Timing chart No. 5 Copying an A4/11"×8¹/₂" original onto an A4/11"×8¹/₂" copy paper from the copier upper drawer, magnification ratio 100%, auto copy density control



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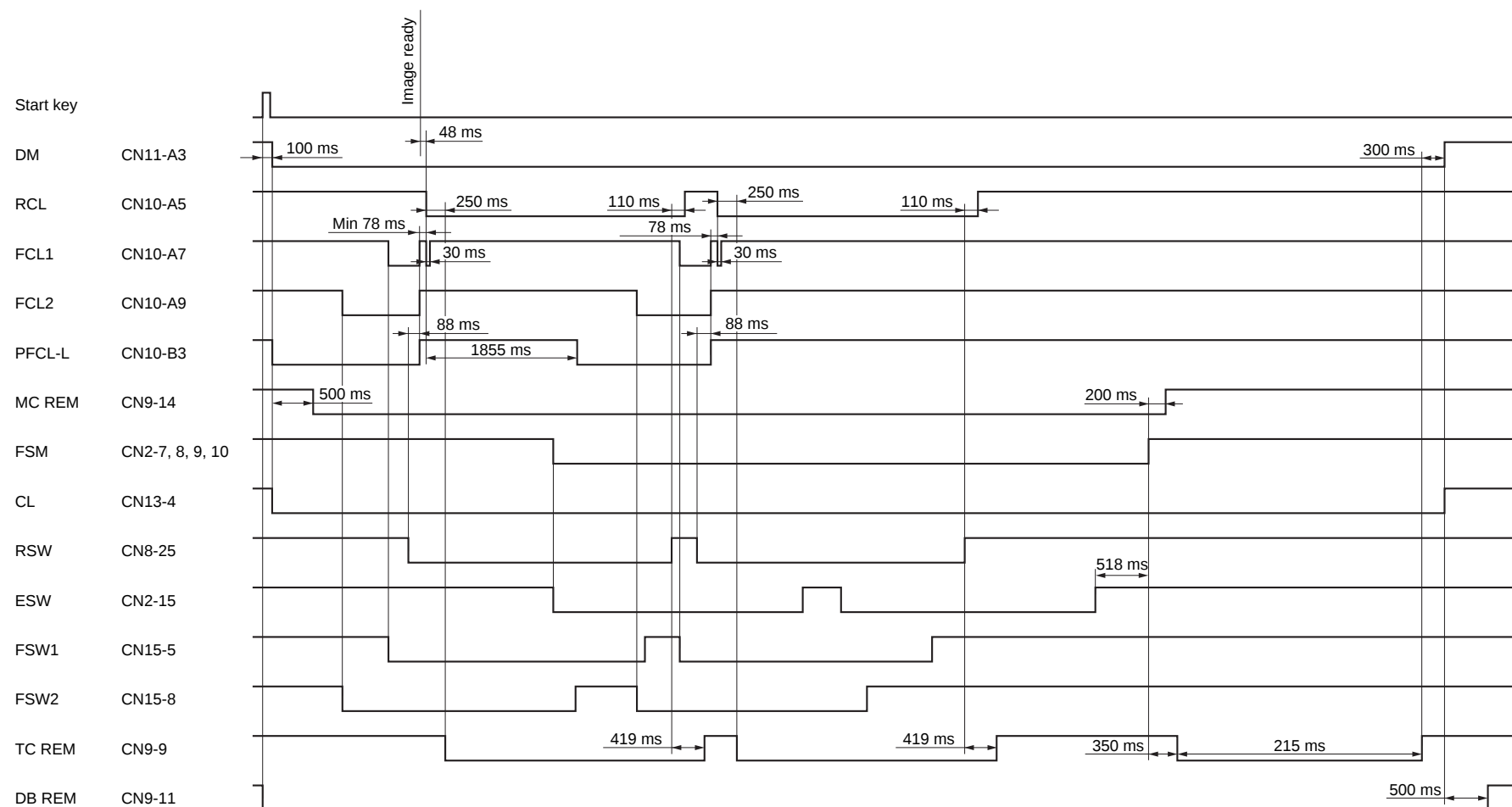
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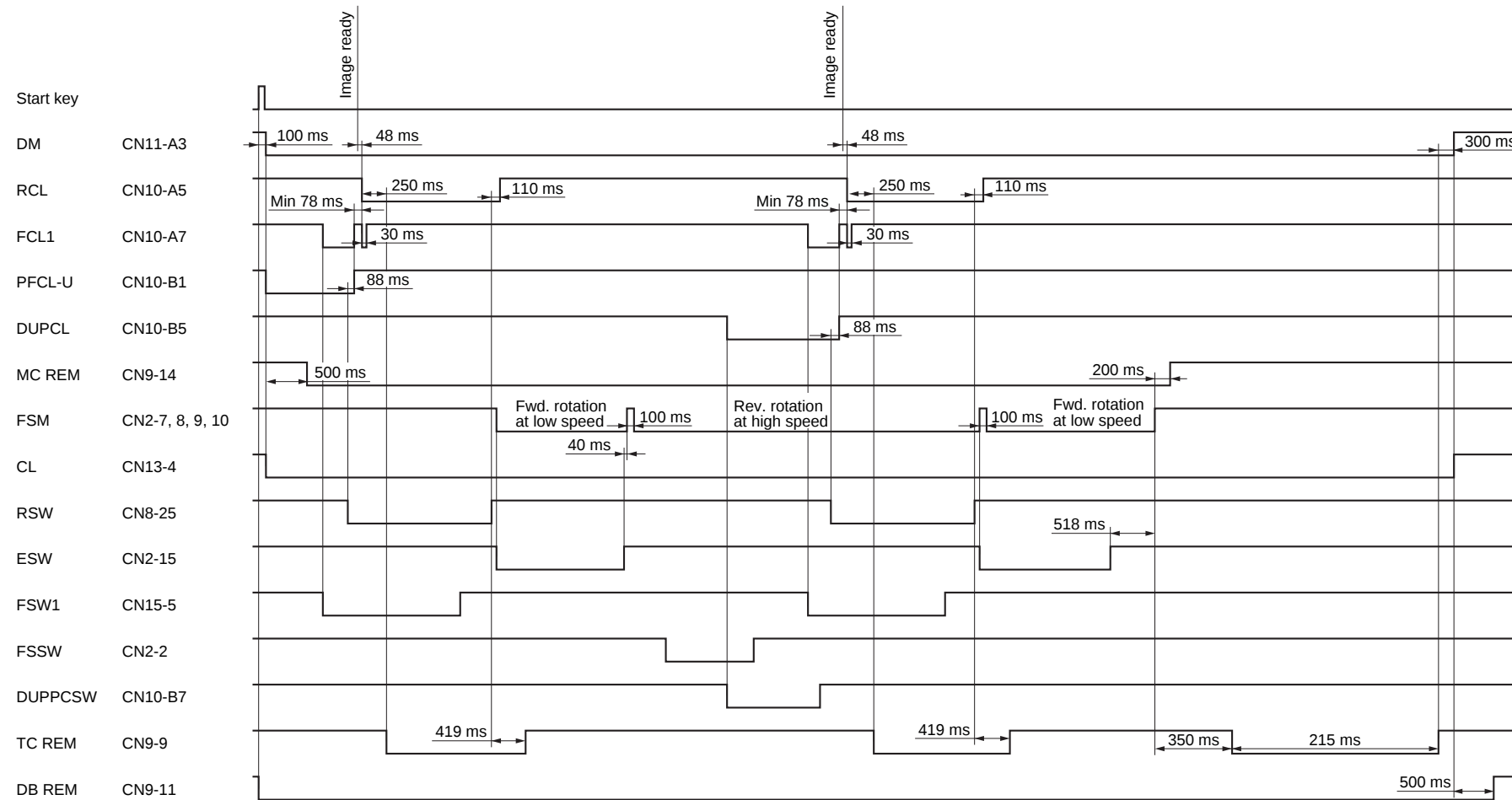
Timing chart No. 7 Continuous copying of an A5R/5¹/₂"×8¹/₂" original onto two sheets of A3/11"×17" copy paper from the copier lower drawer, magnification ratio 400%, manual copy density control



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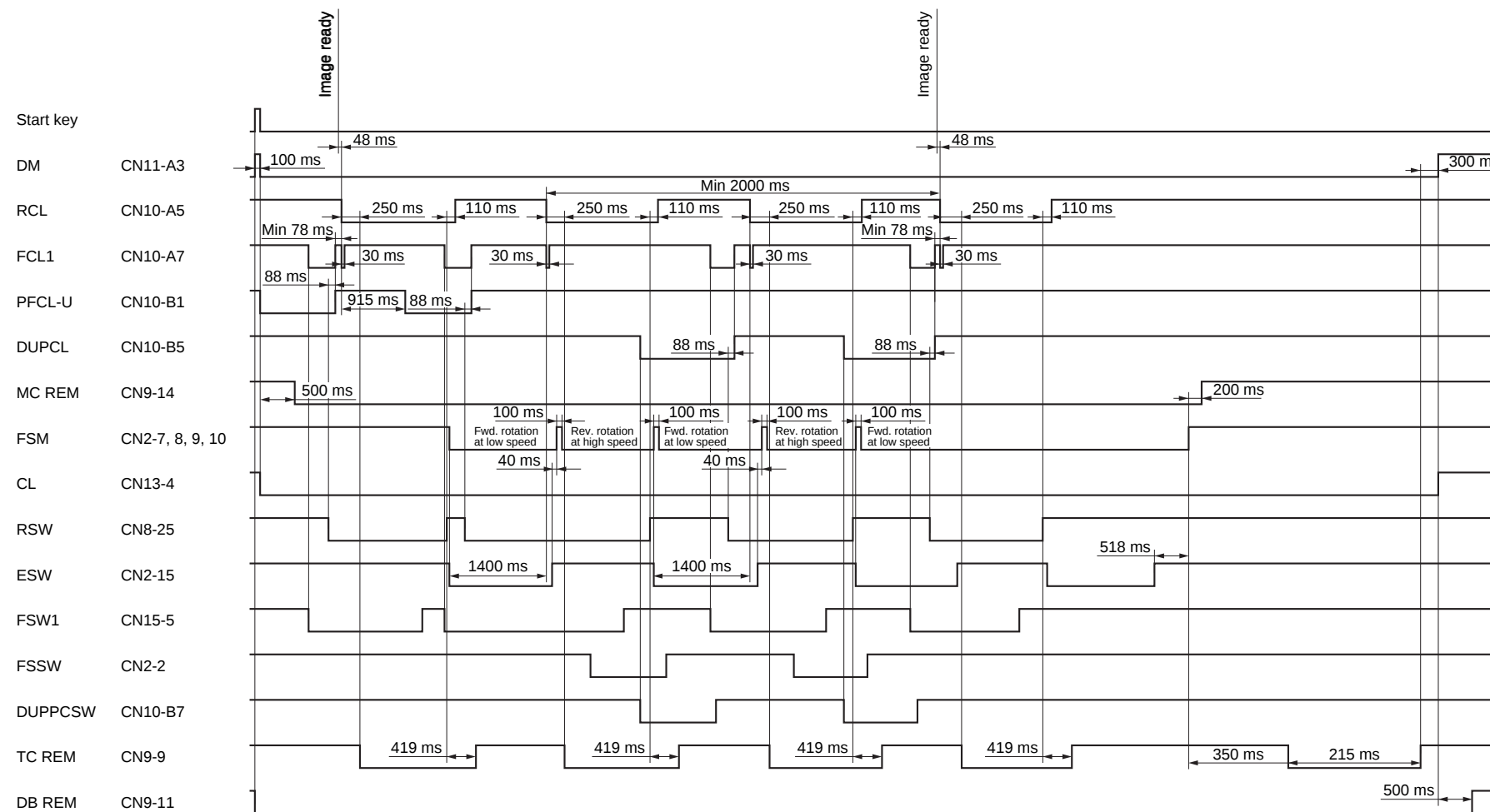
Timing chart No. 8 Duplex copying of an A3/11"×17" book original onto one duplex A4/11"×8¹/₂" copy from the copier upper drawer, magnification ratio 100%, auto copy density control



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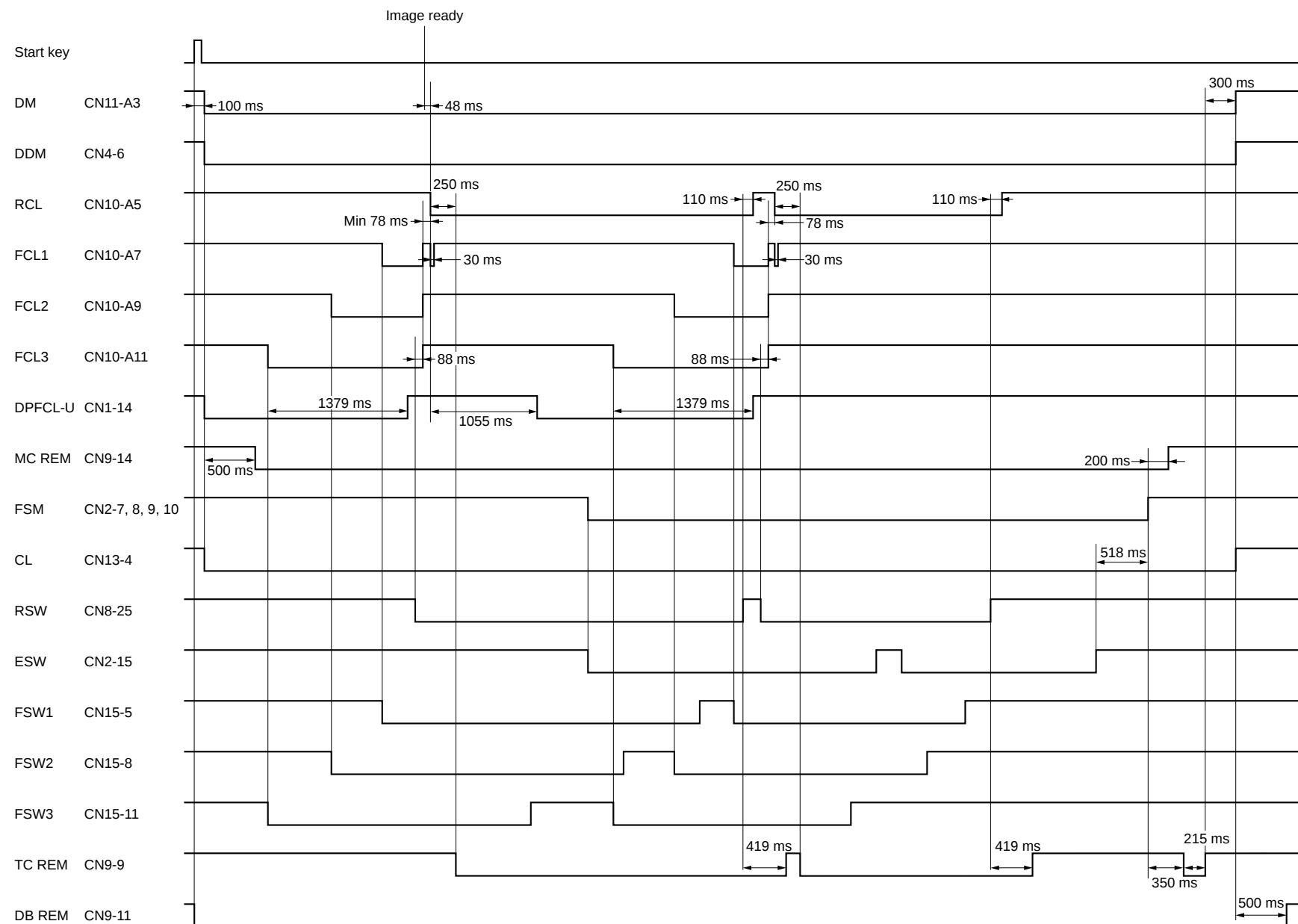
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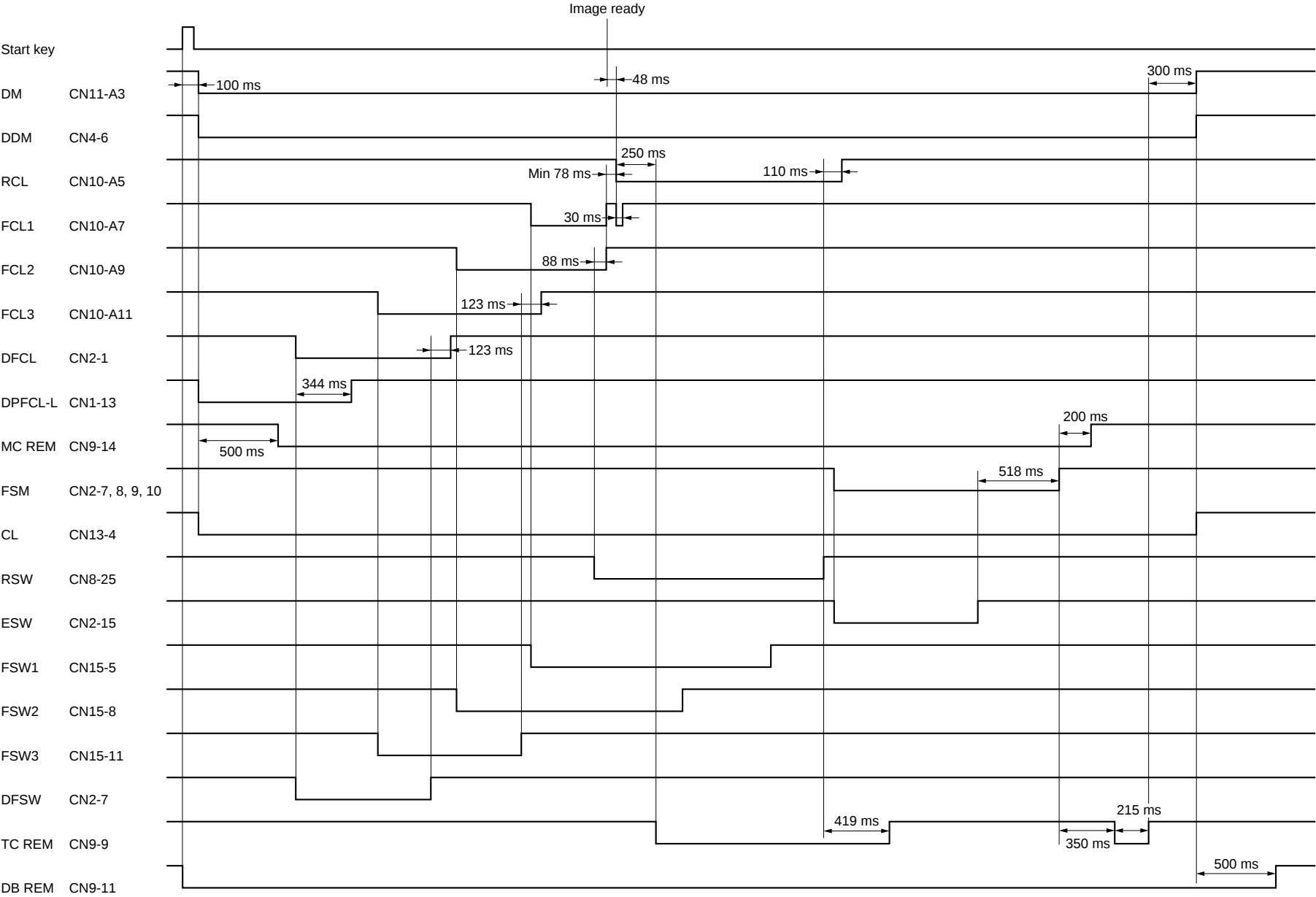
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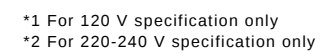
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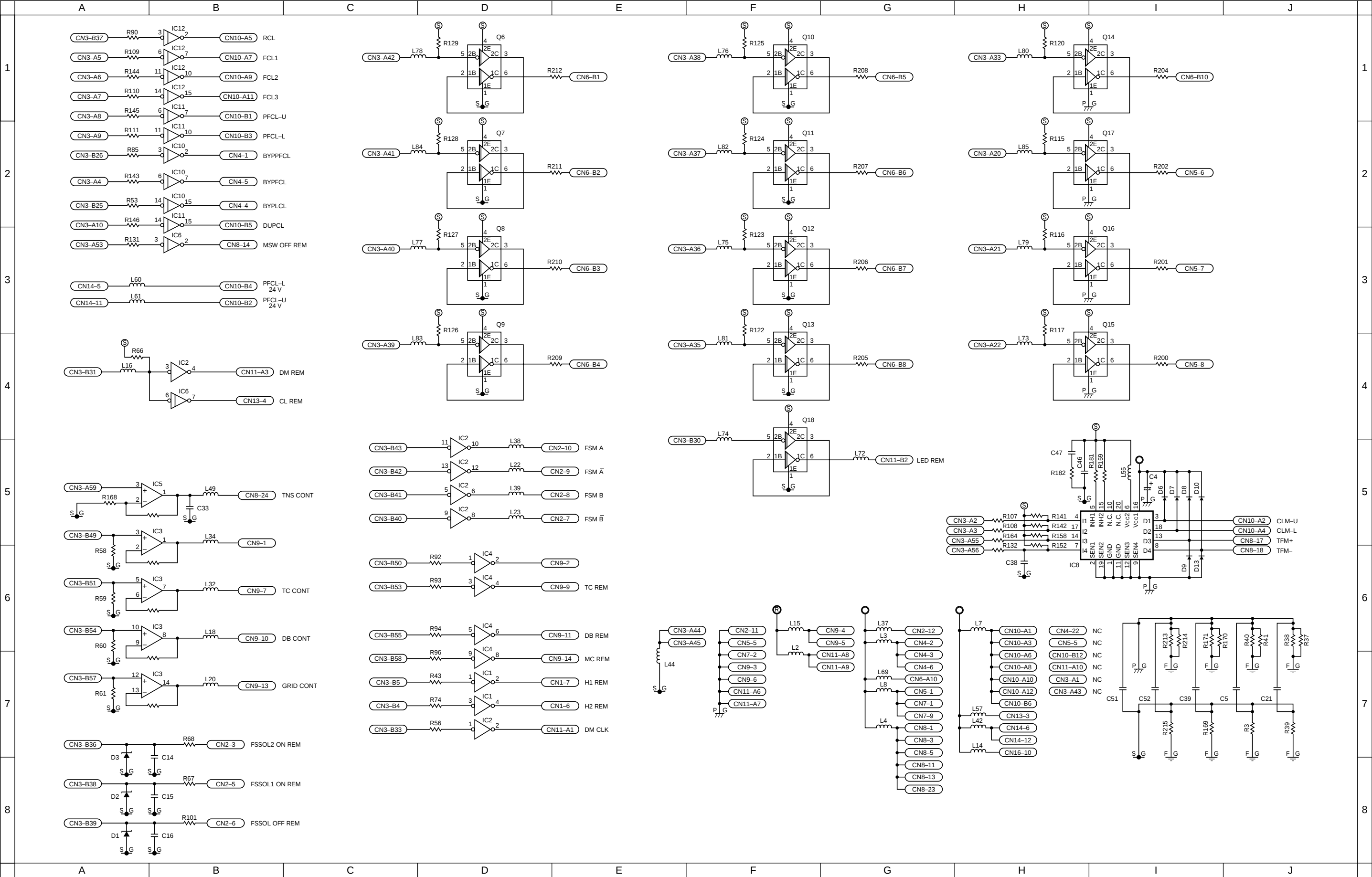
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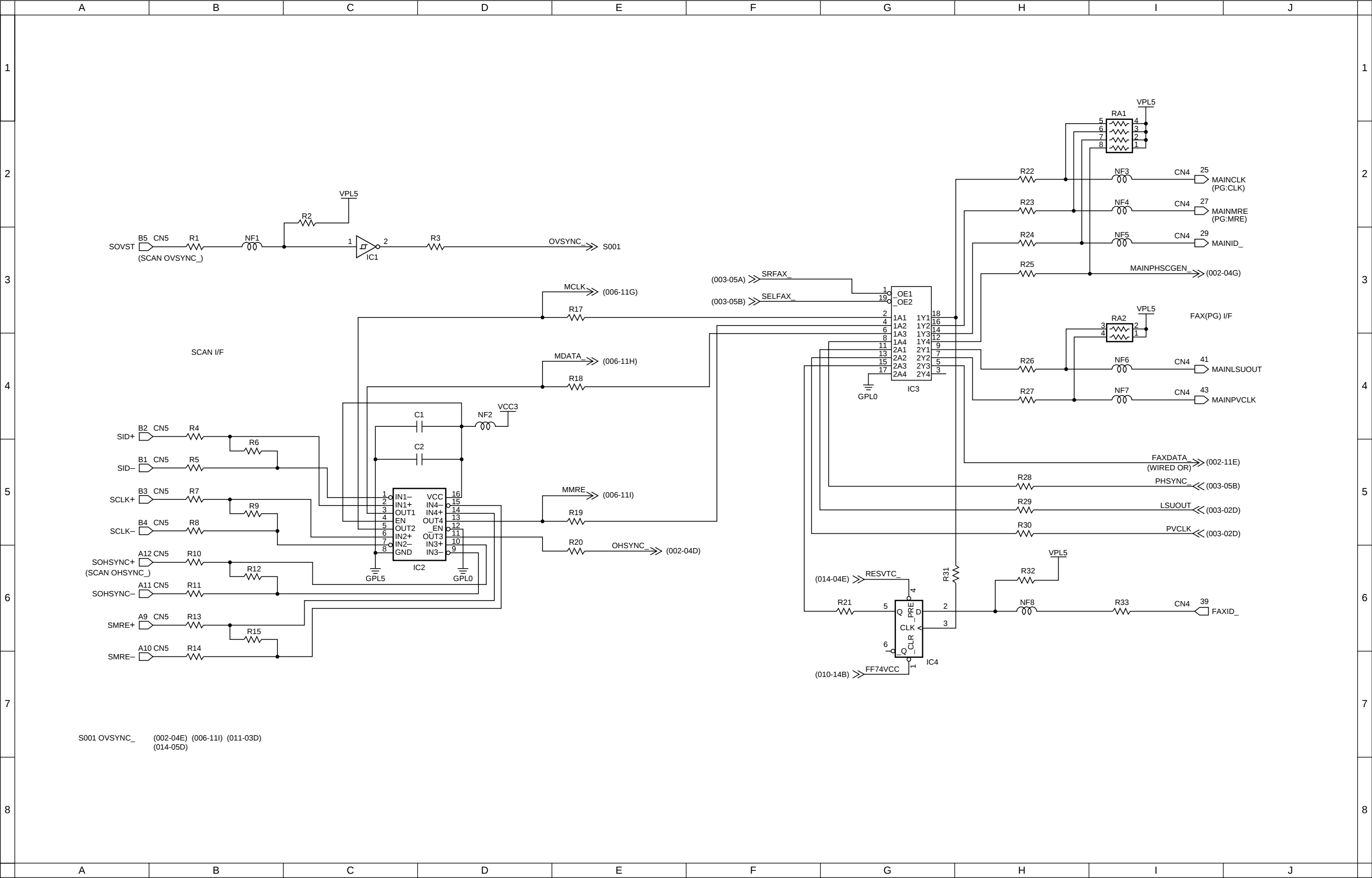
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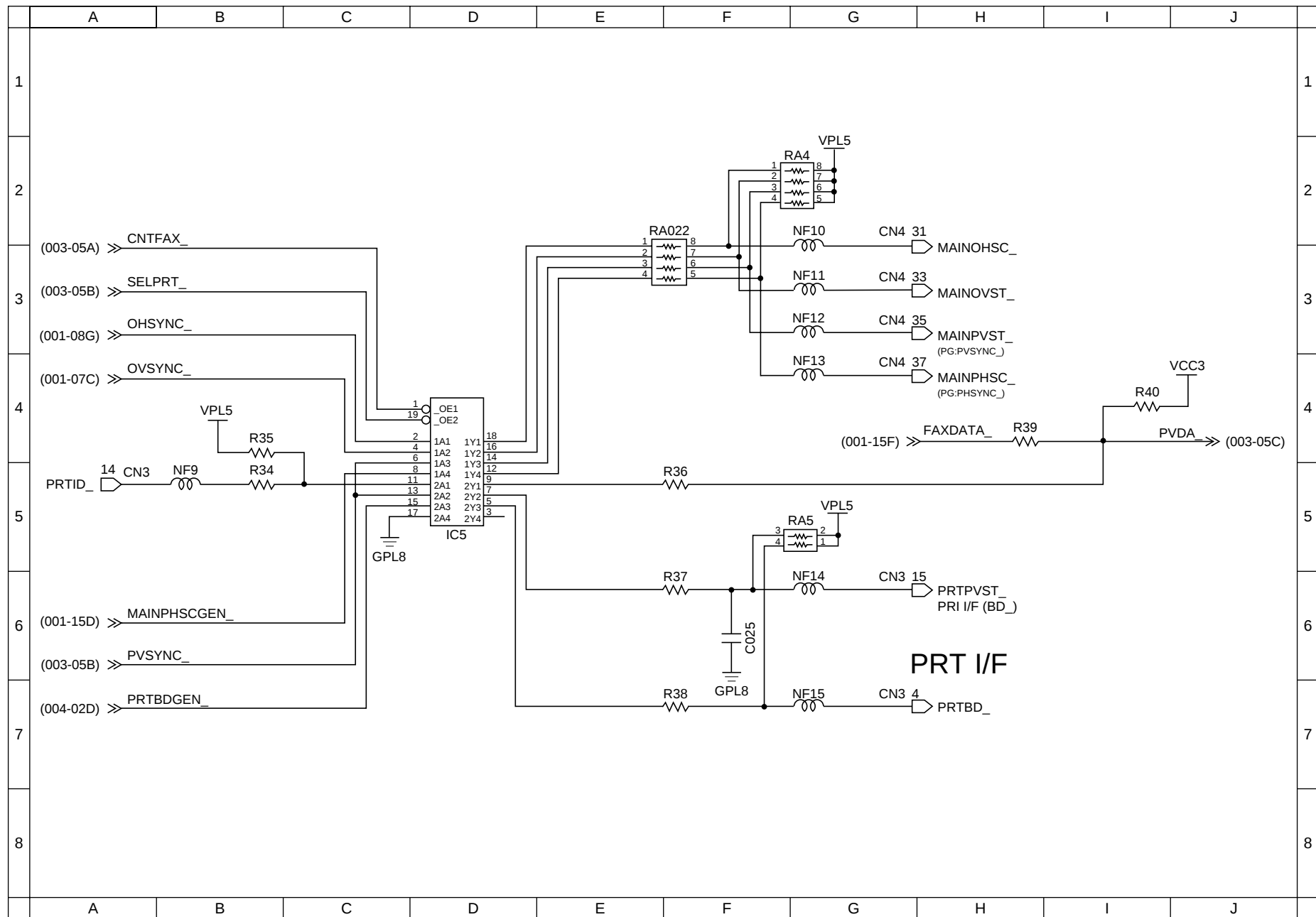






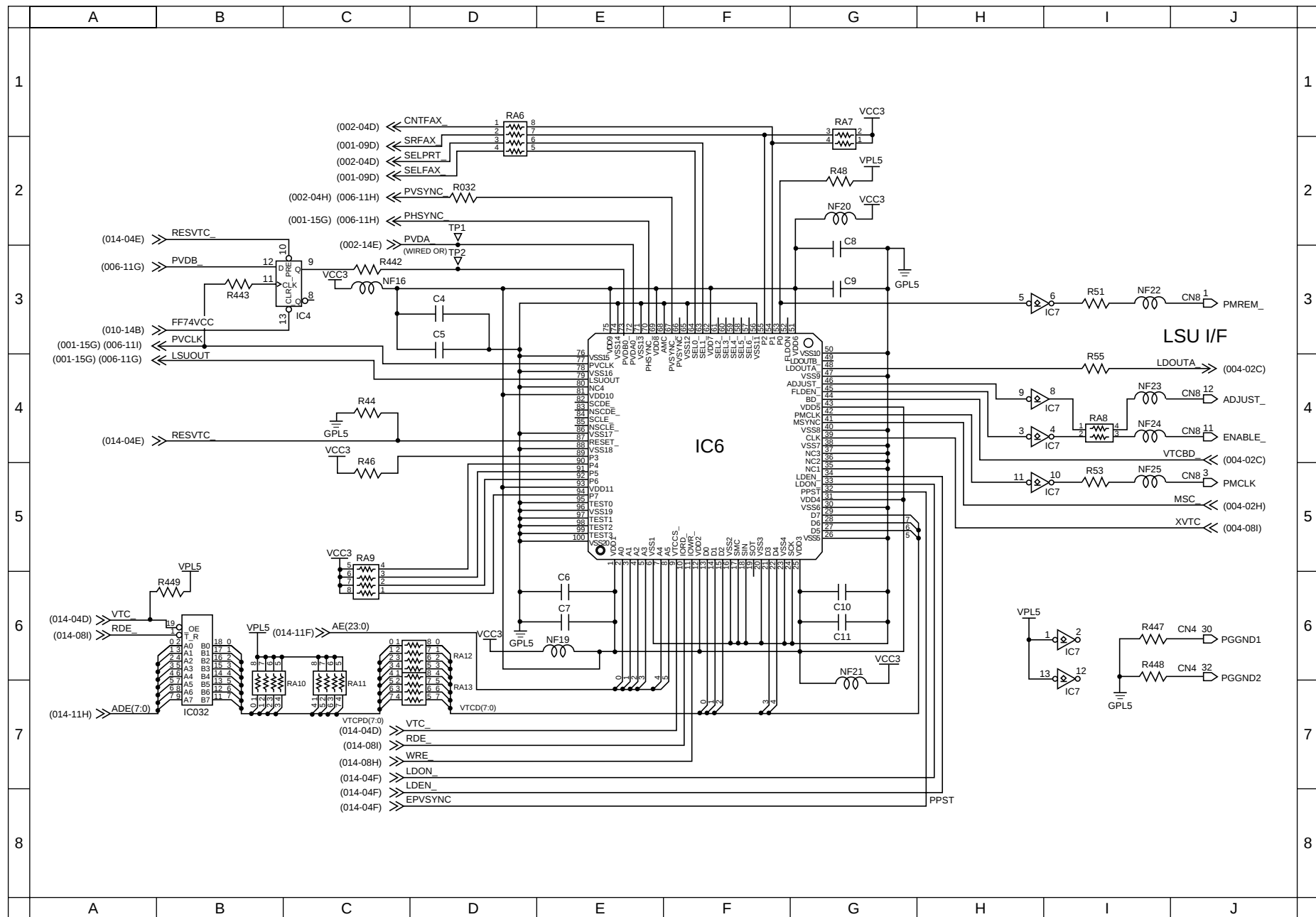
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Main PCB 2/20

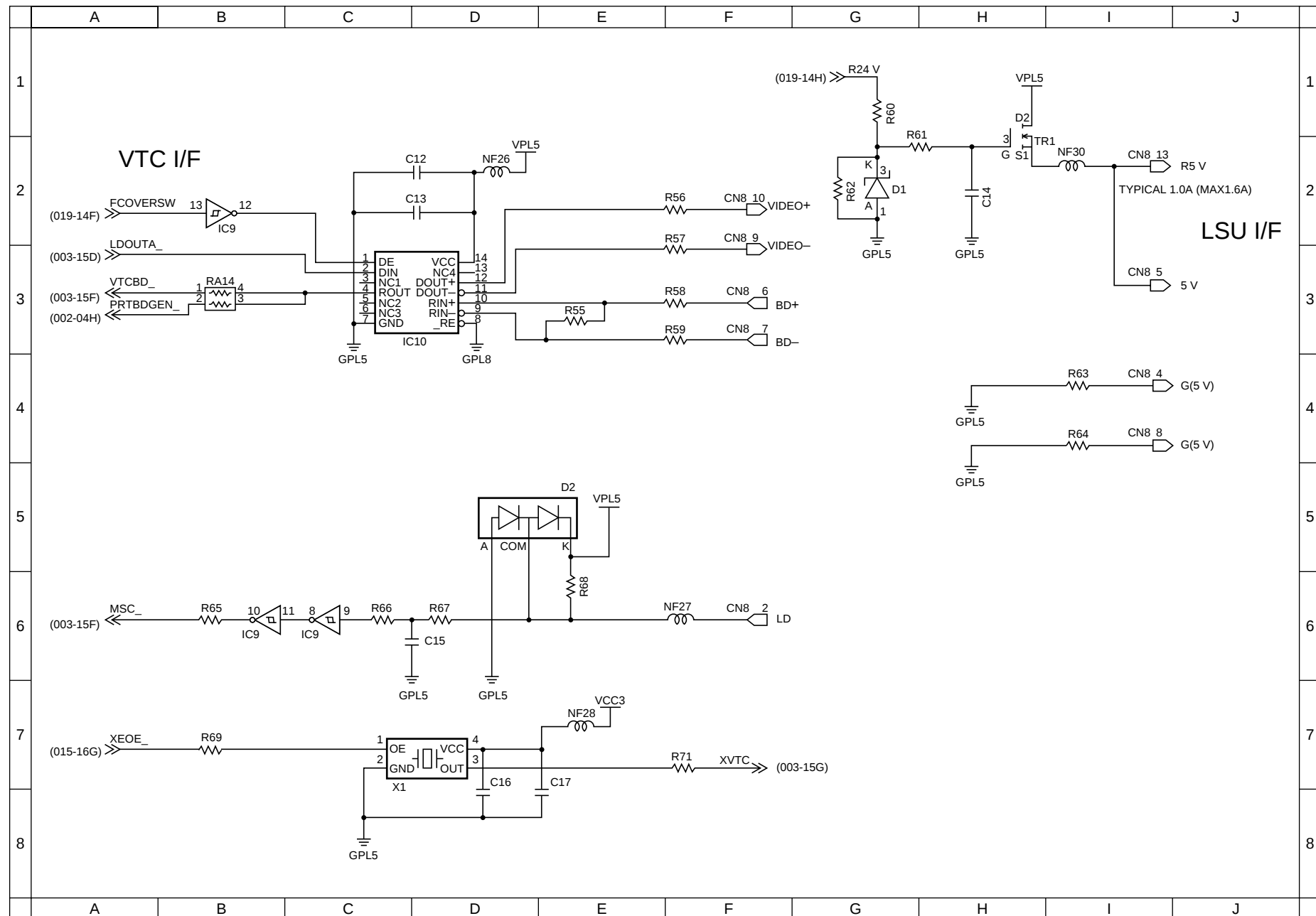


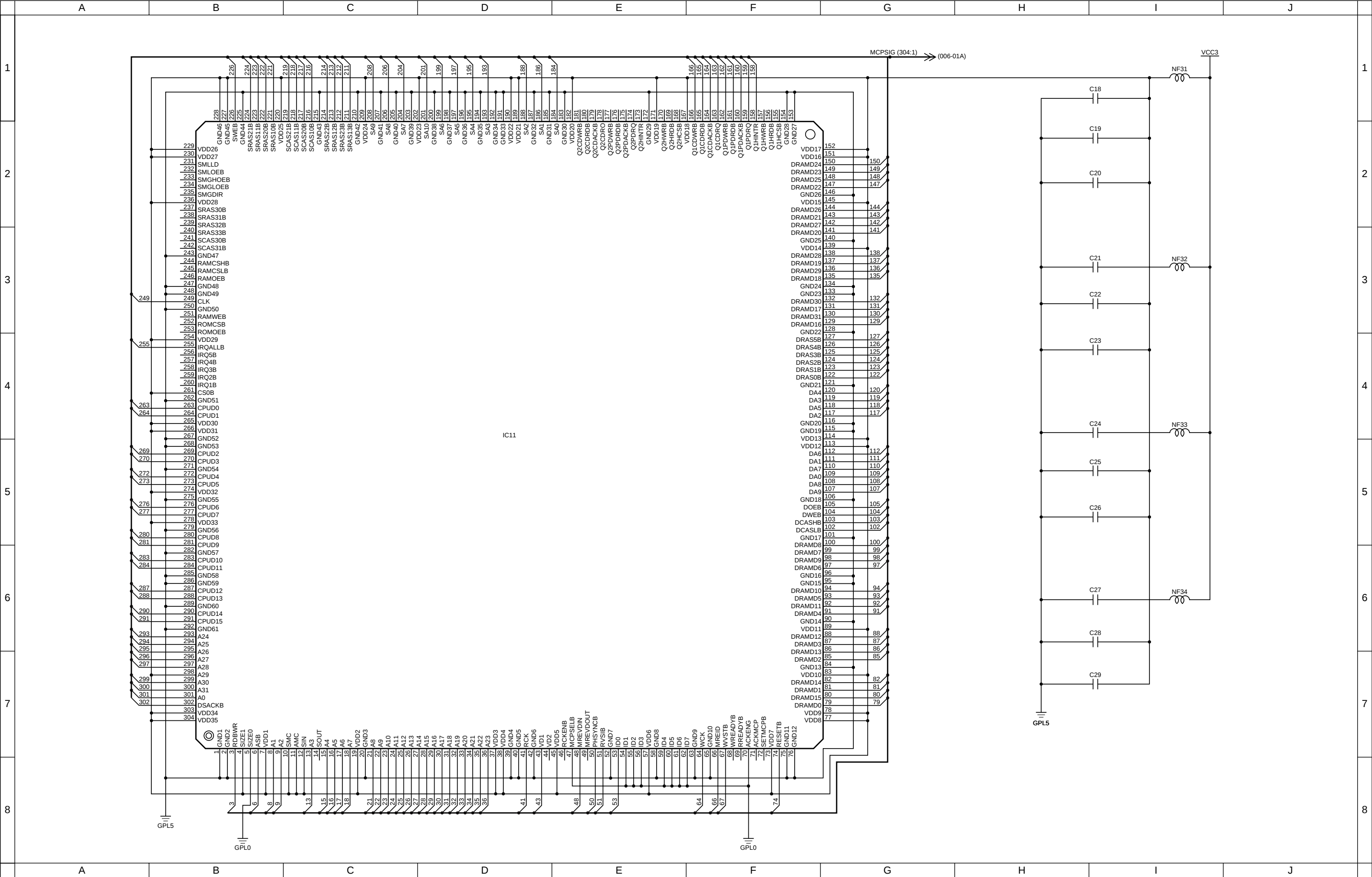
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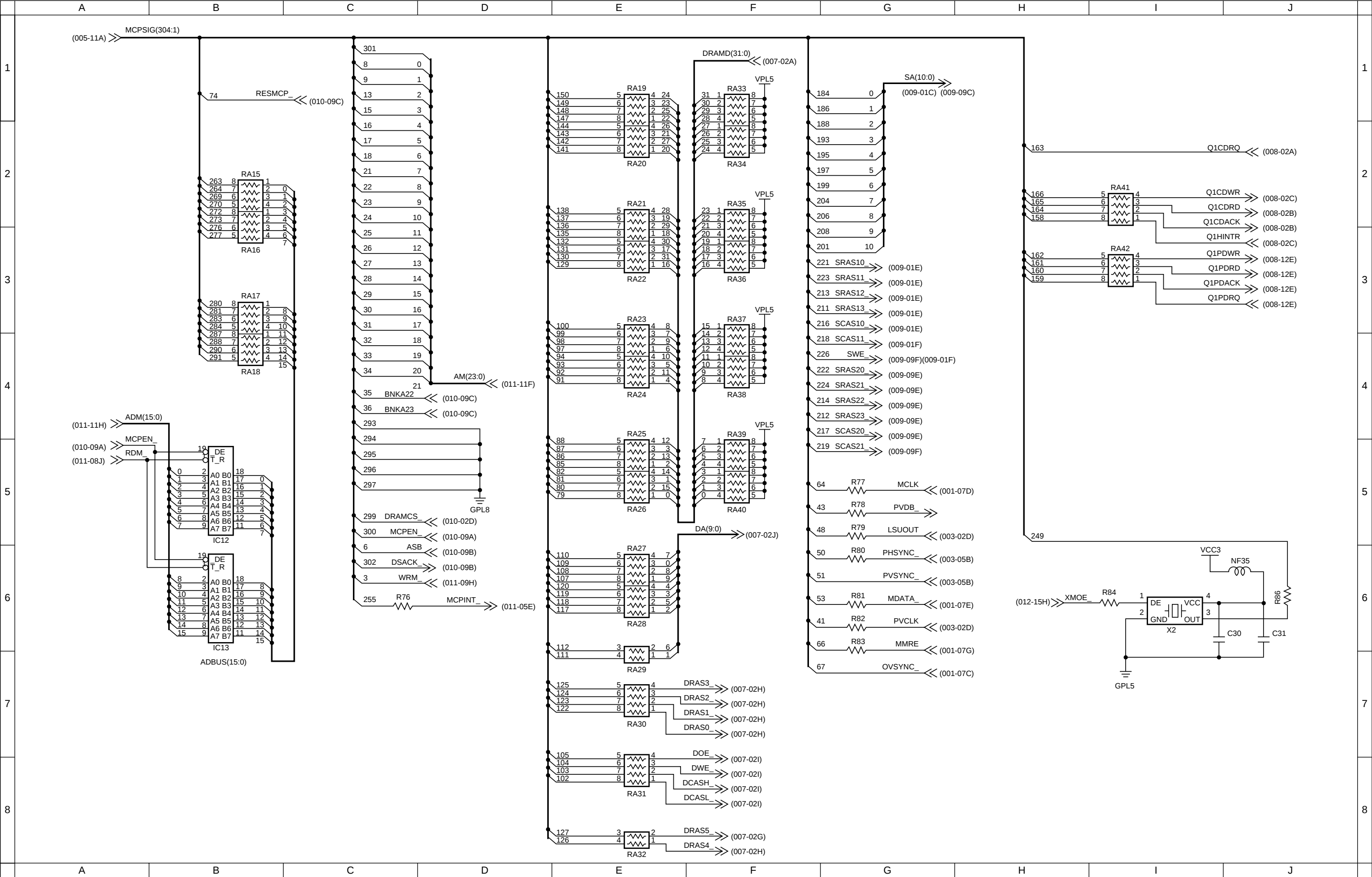
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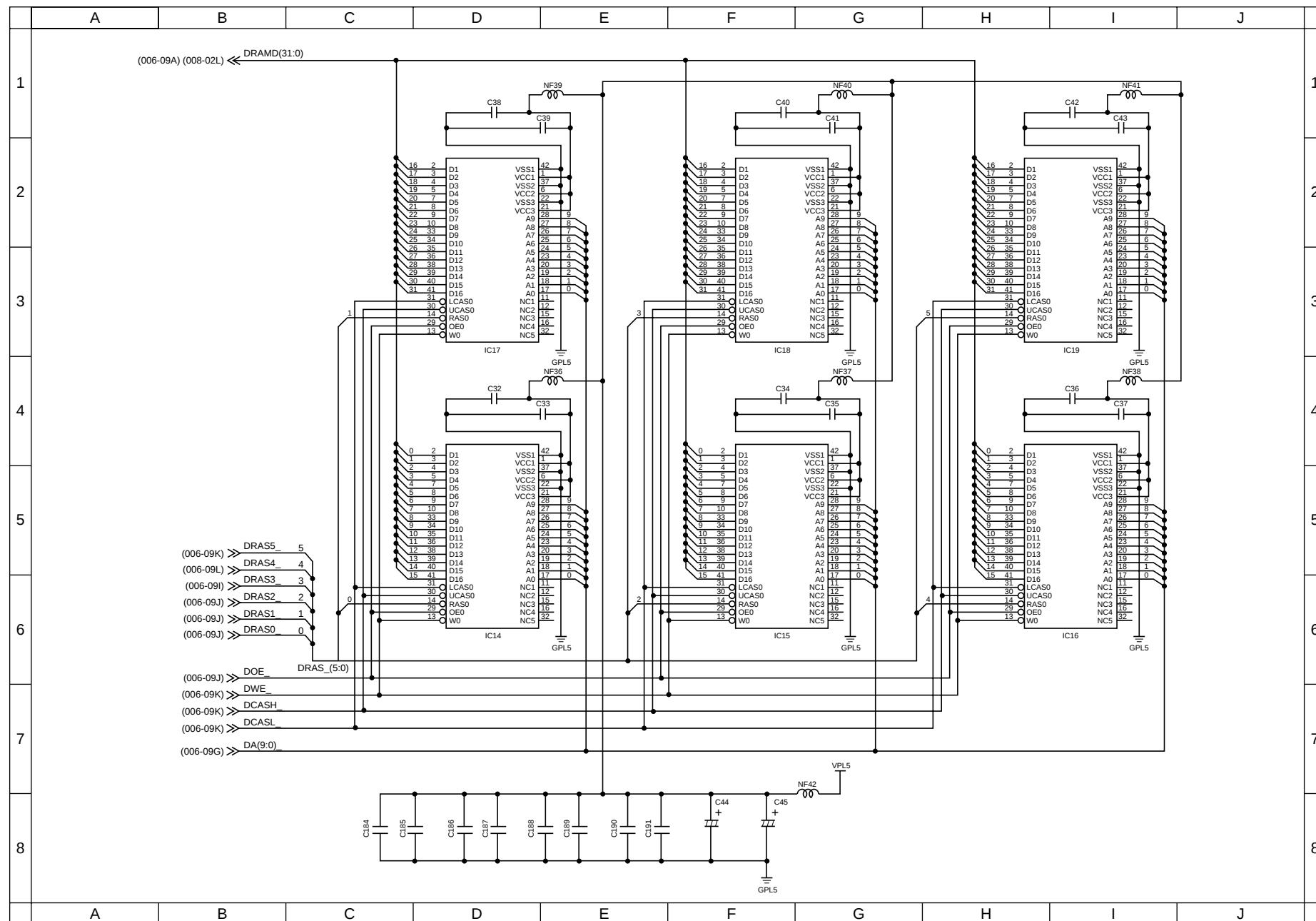






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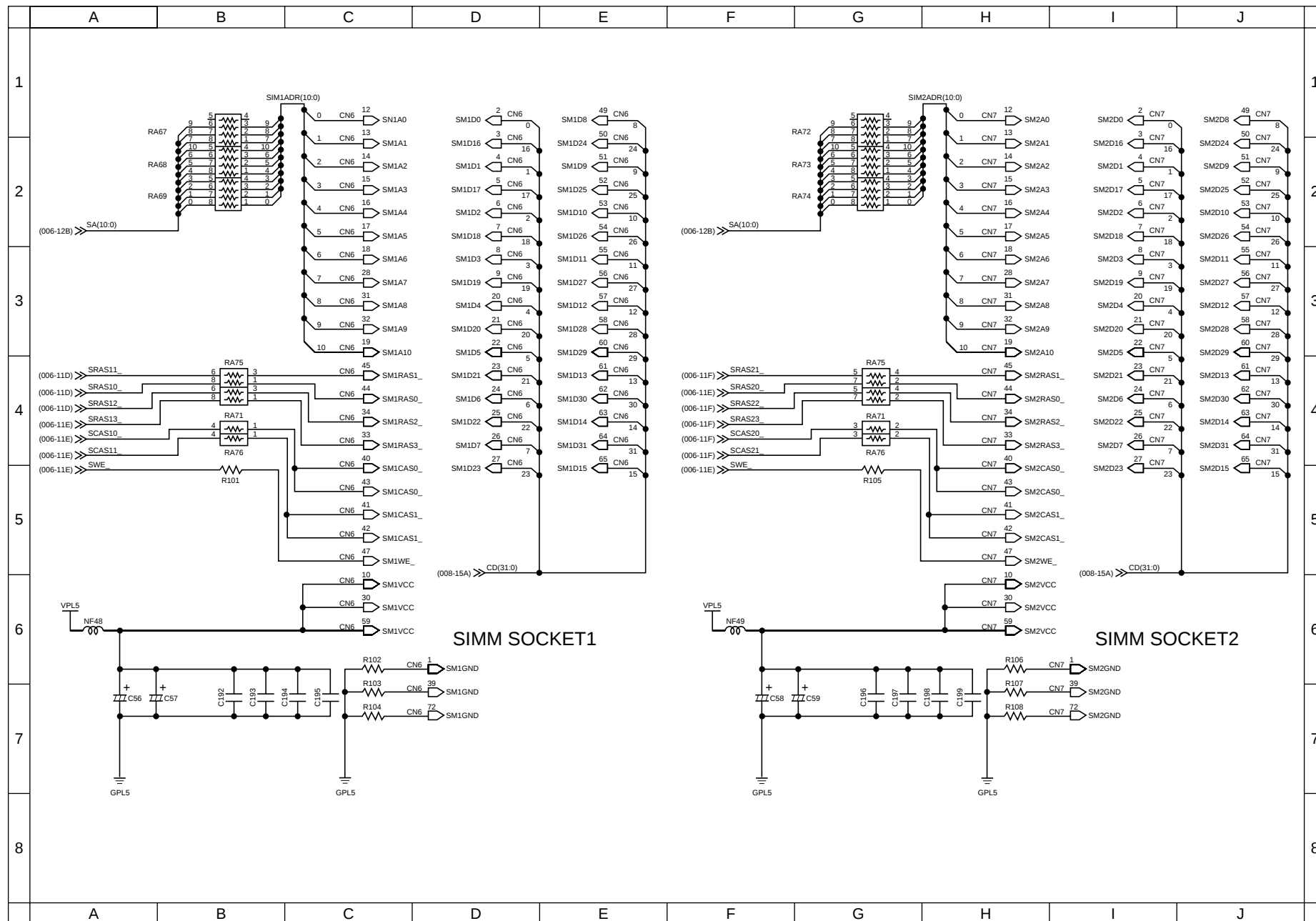


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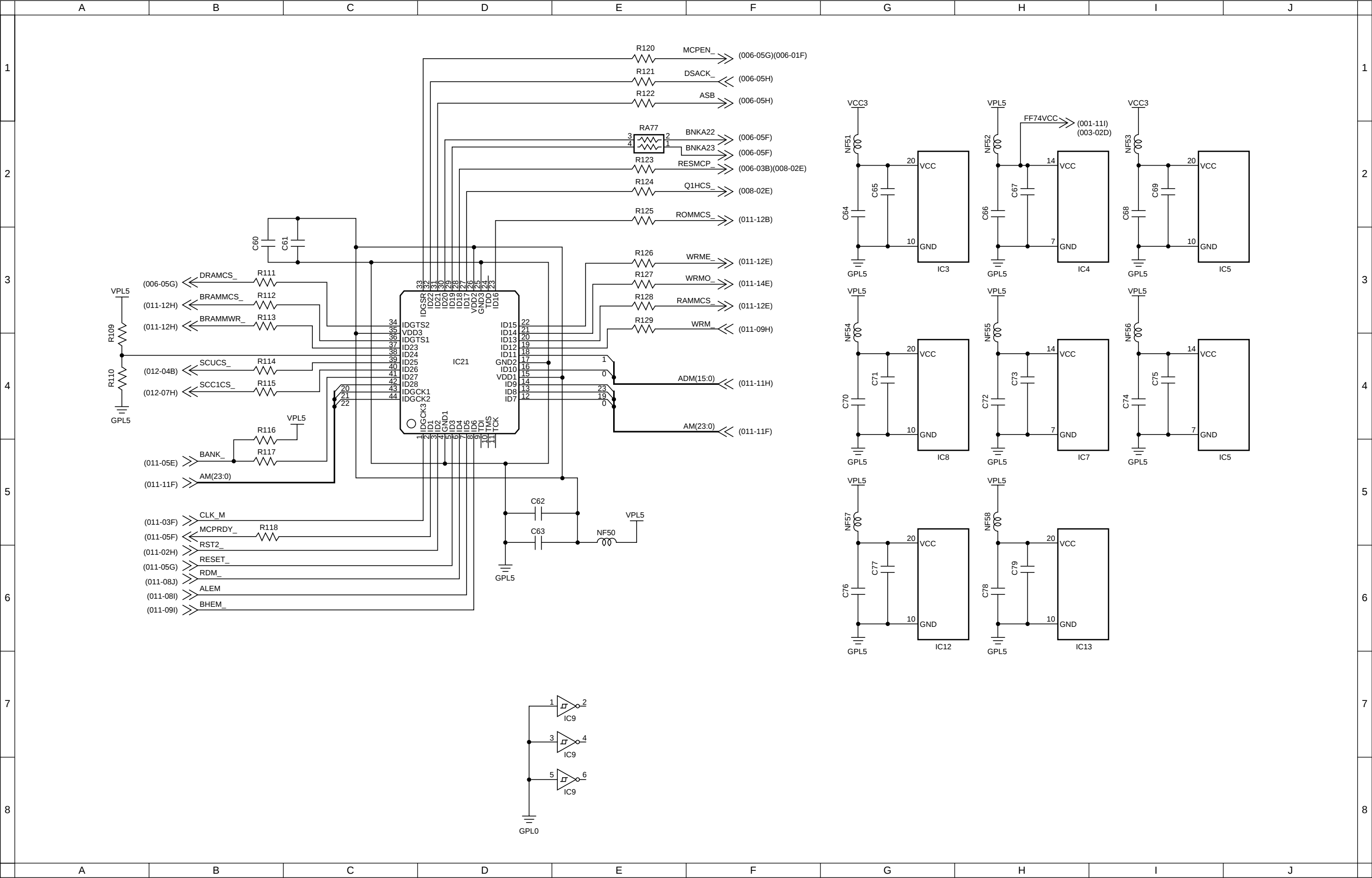


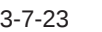
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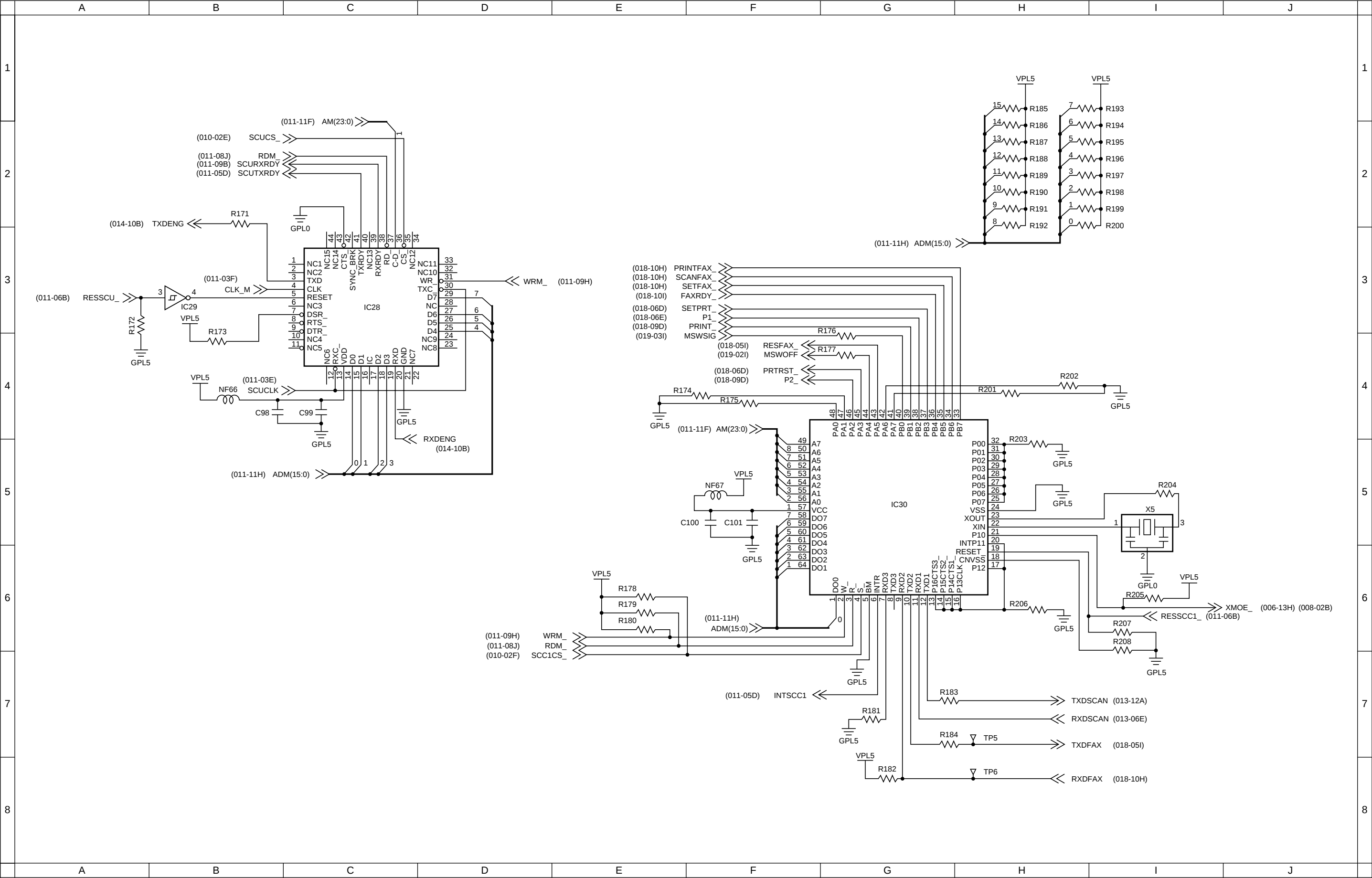
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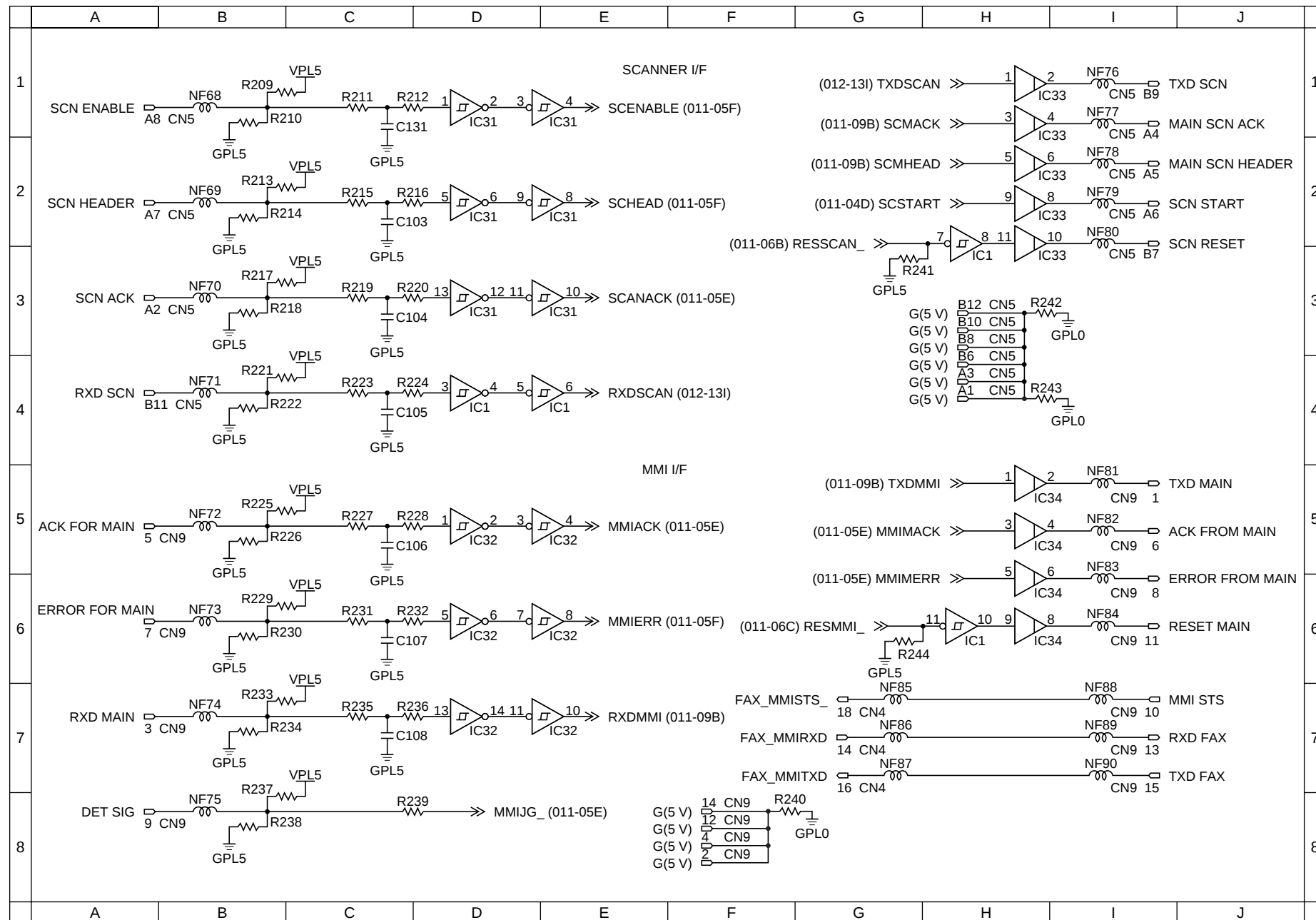






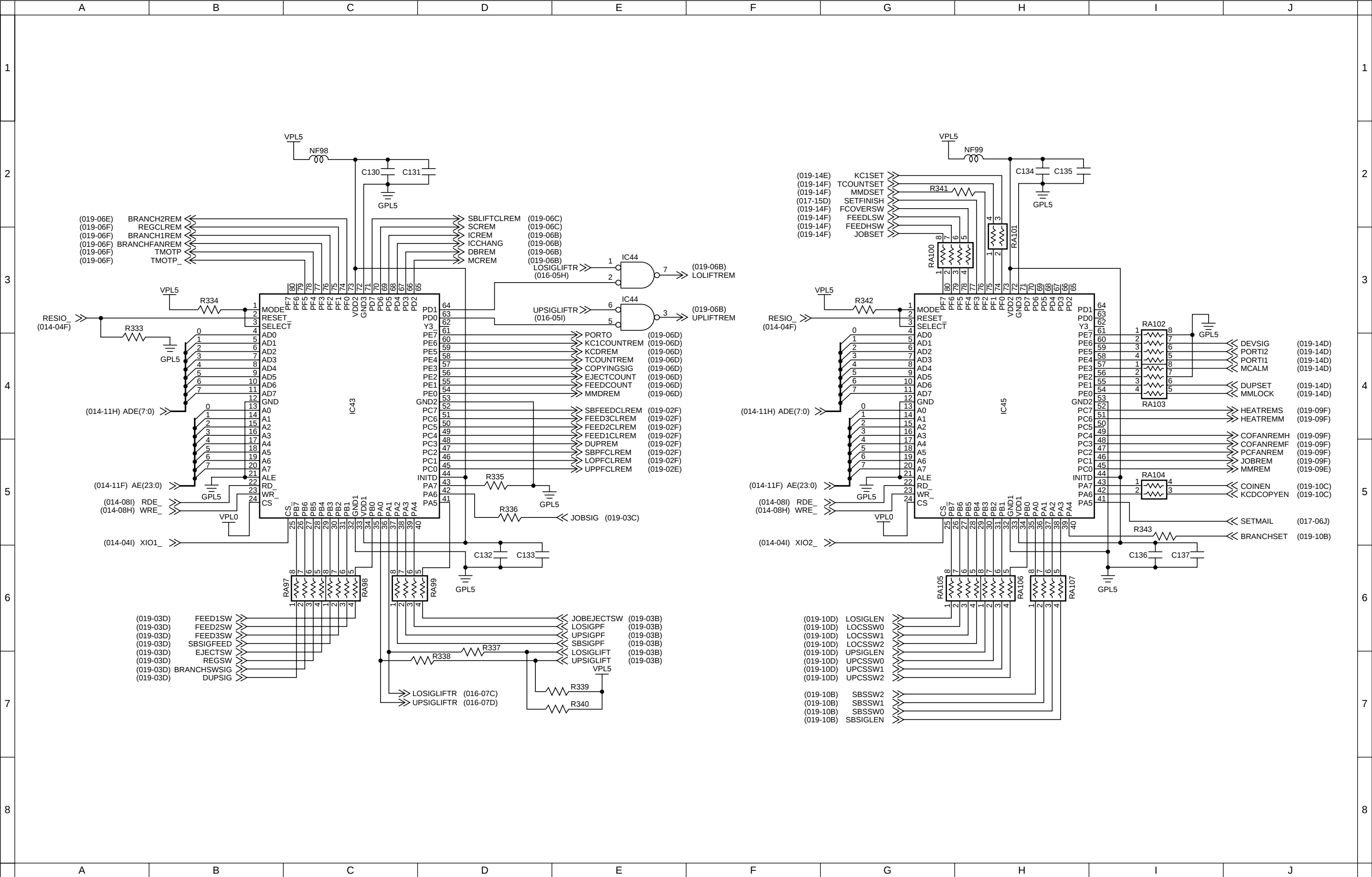
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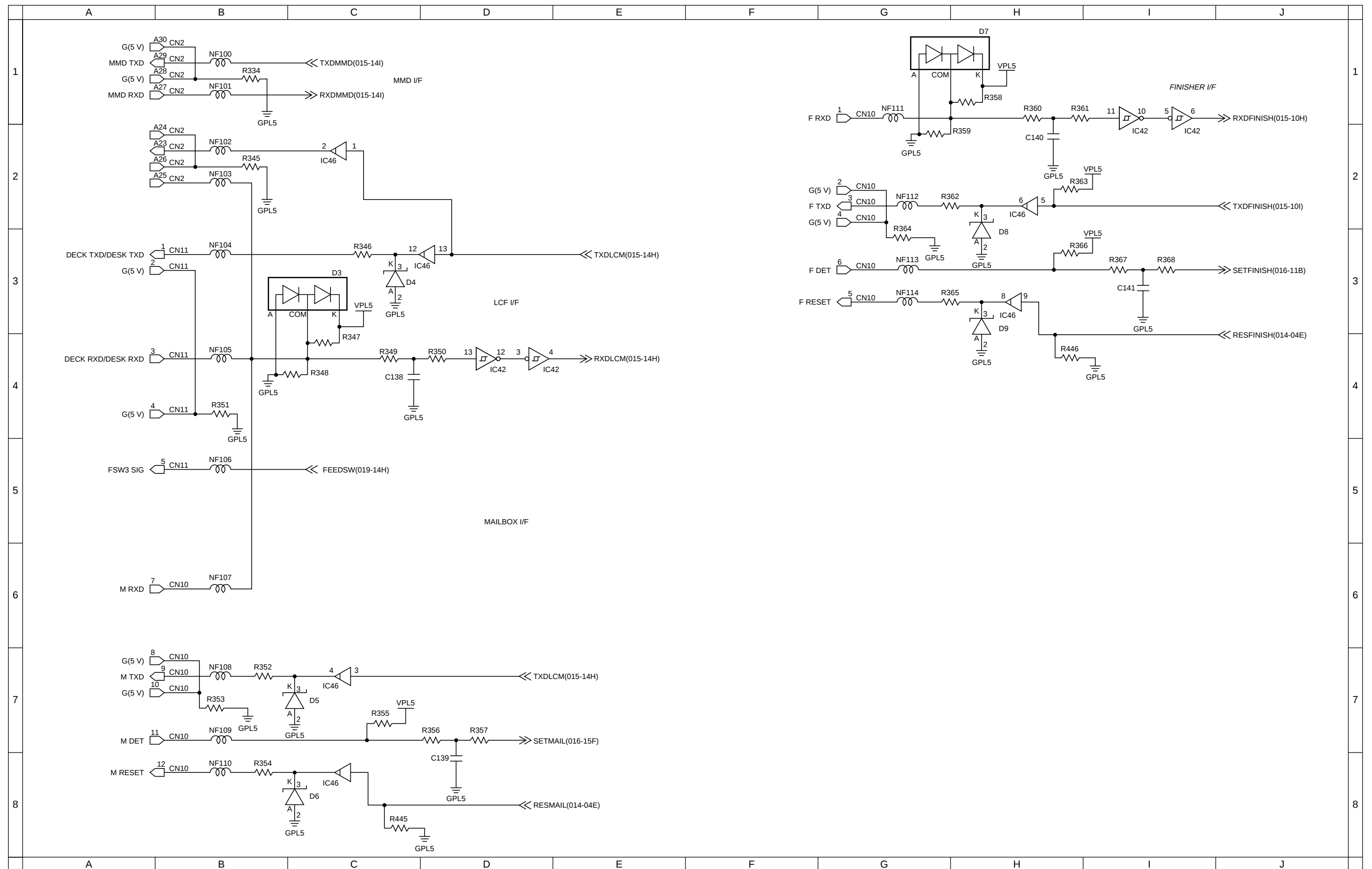
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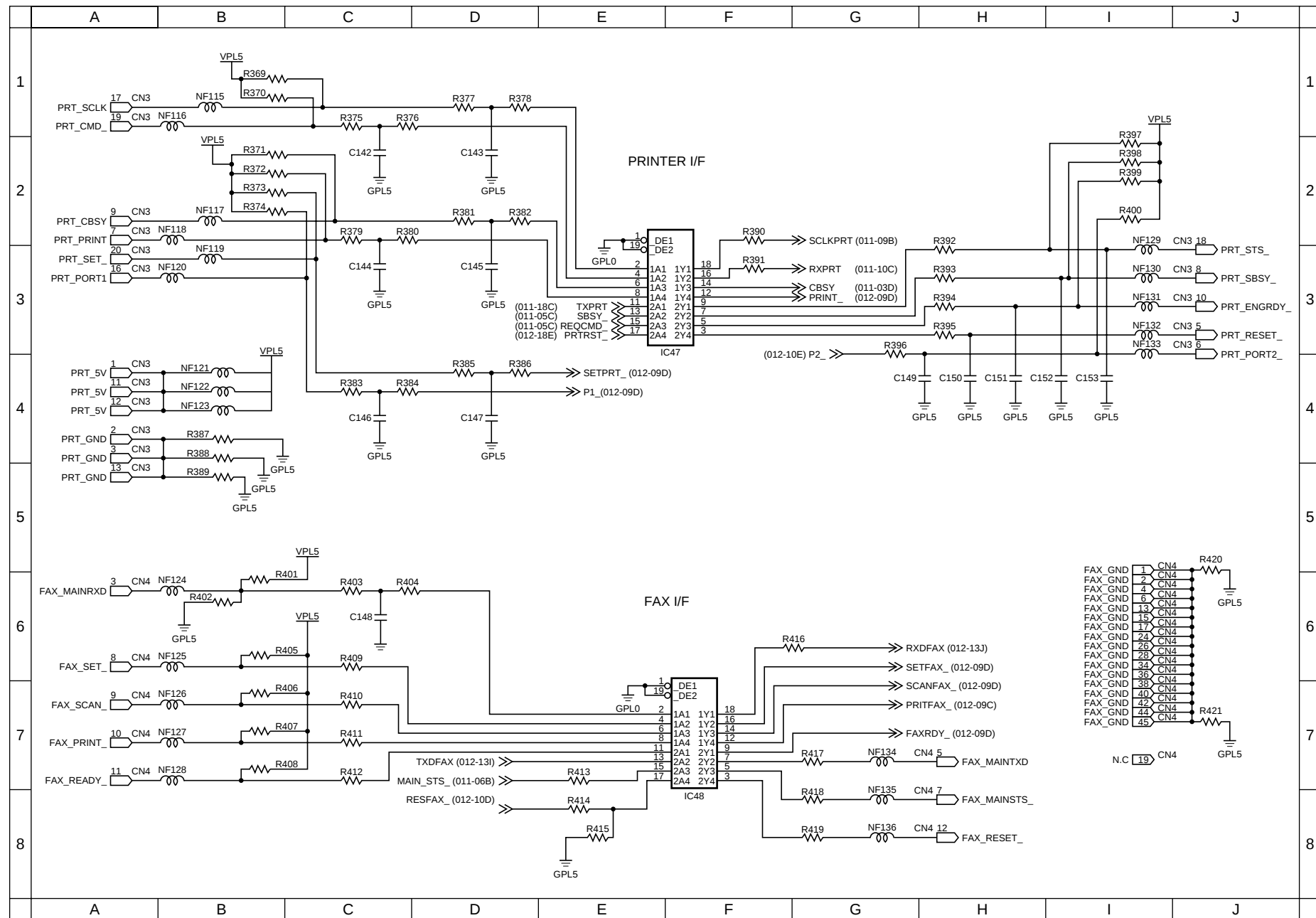






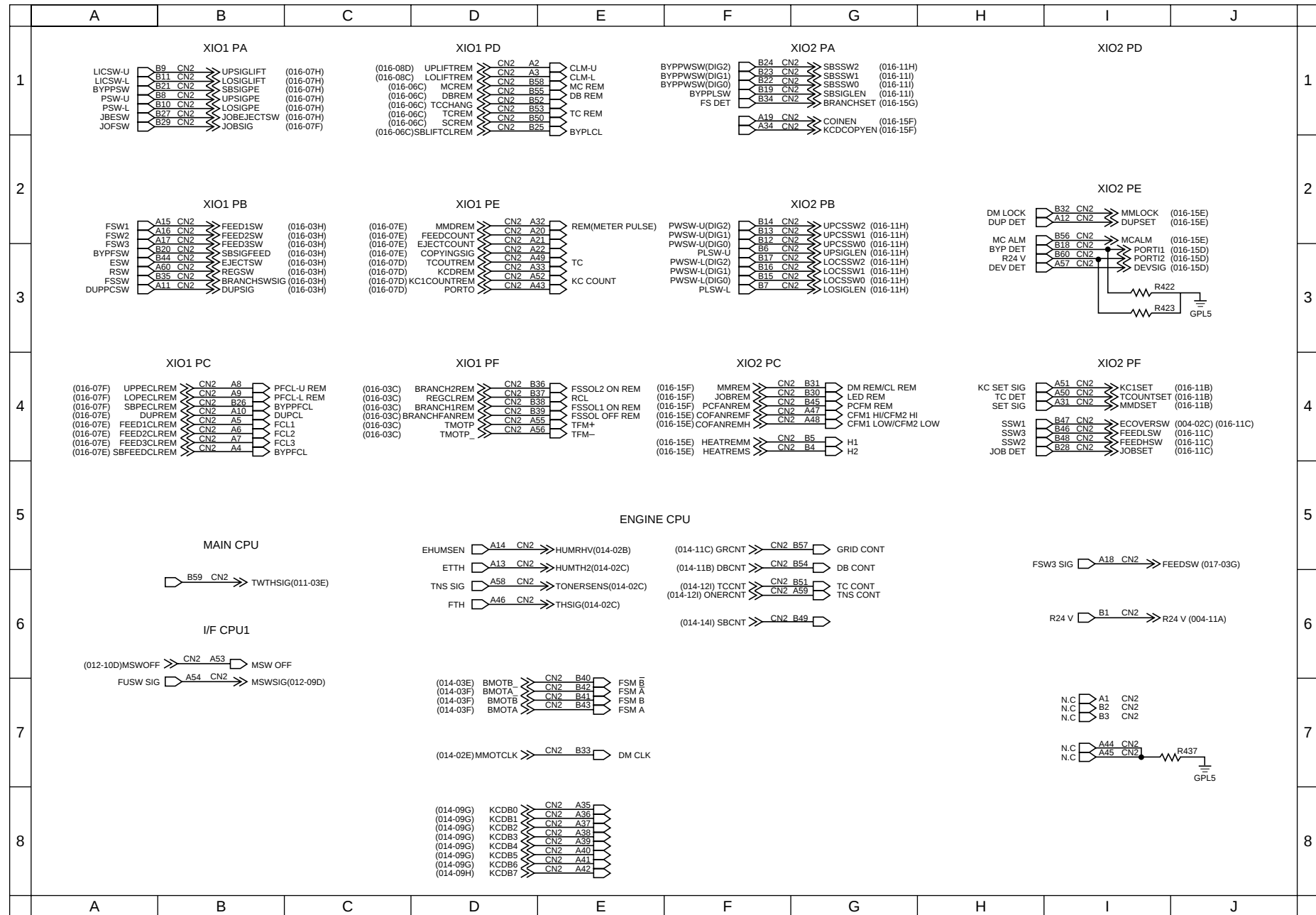
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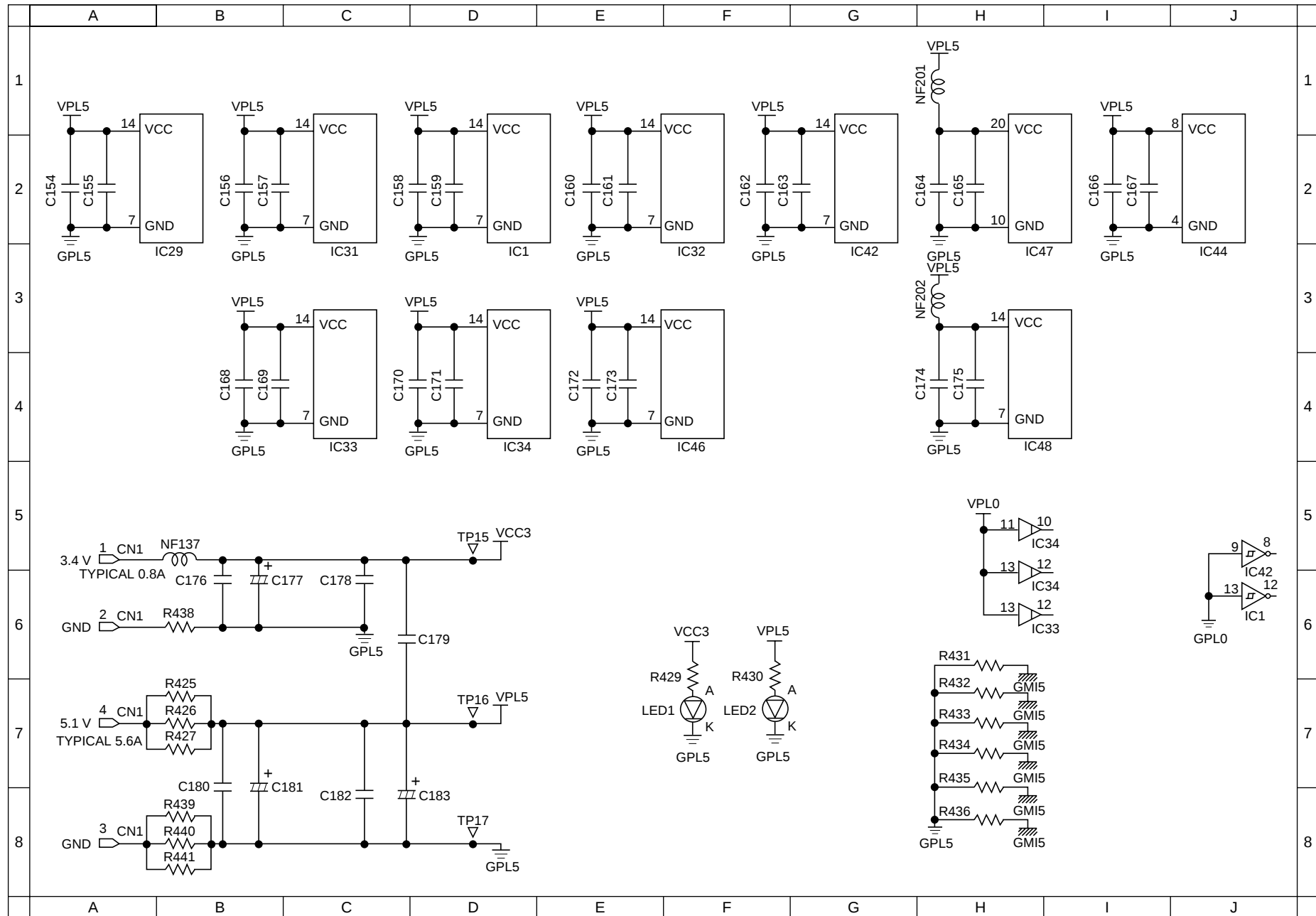
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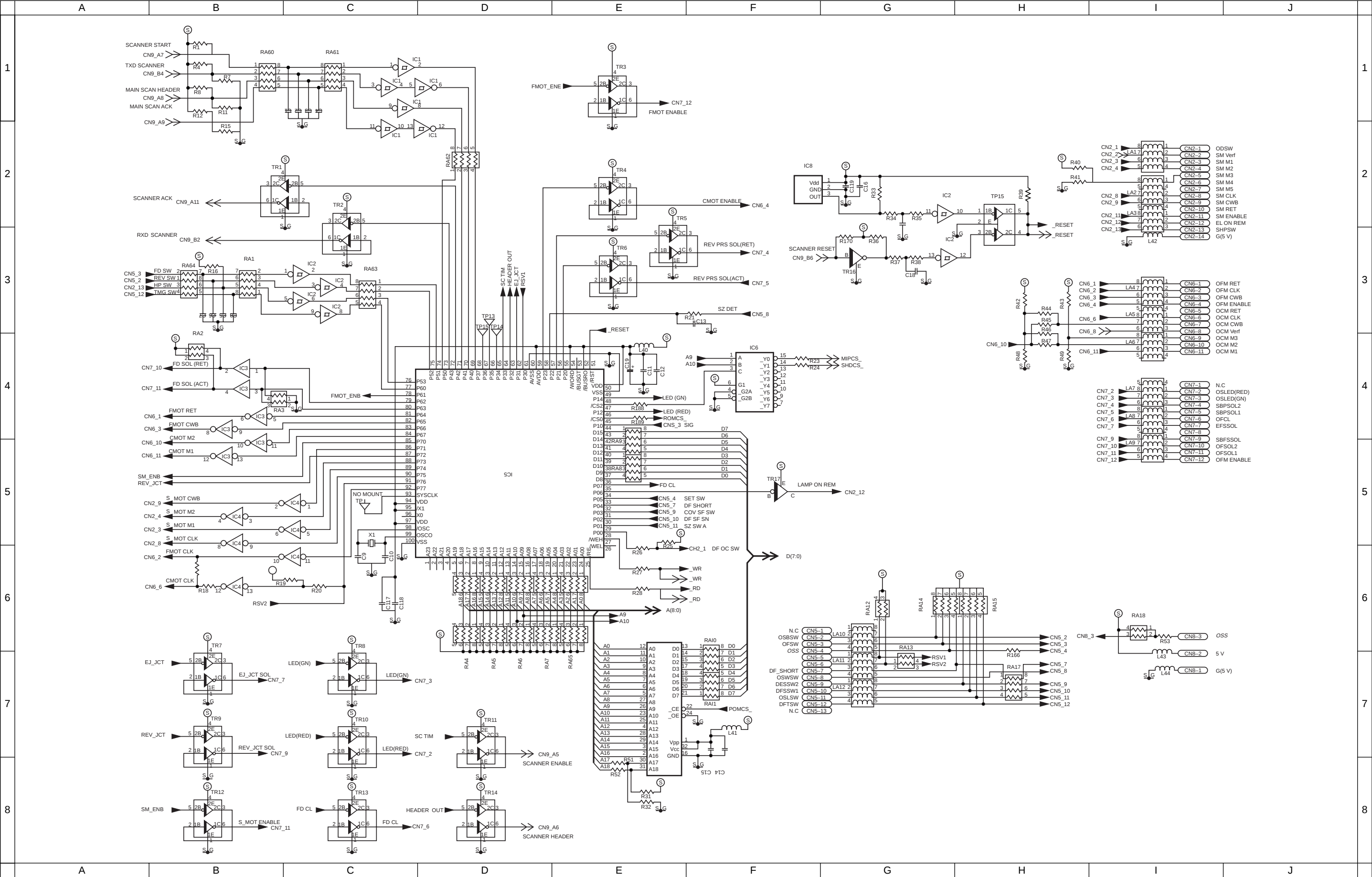


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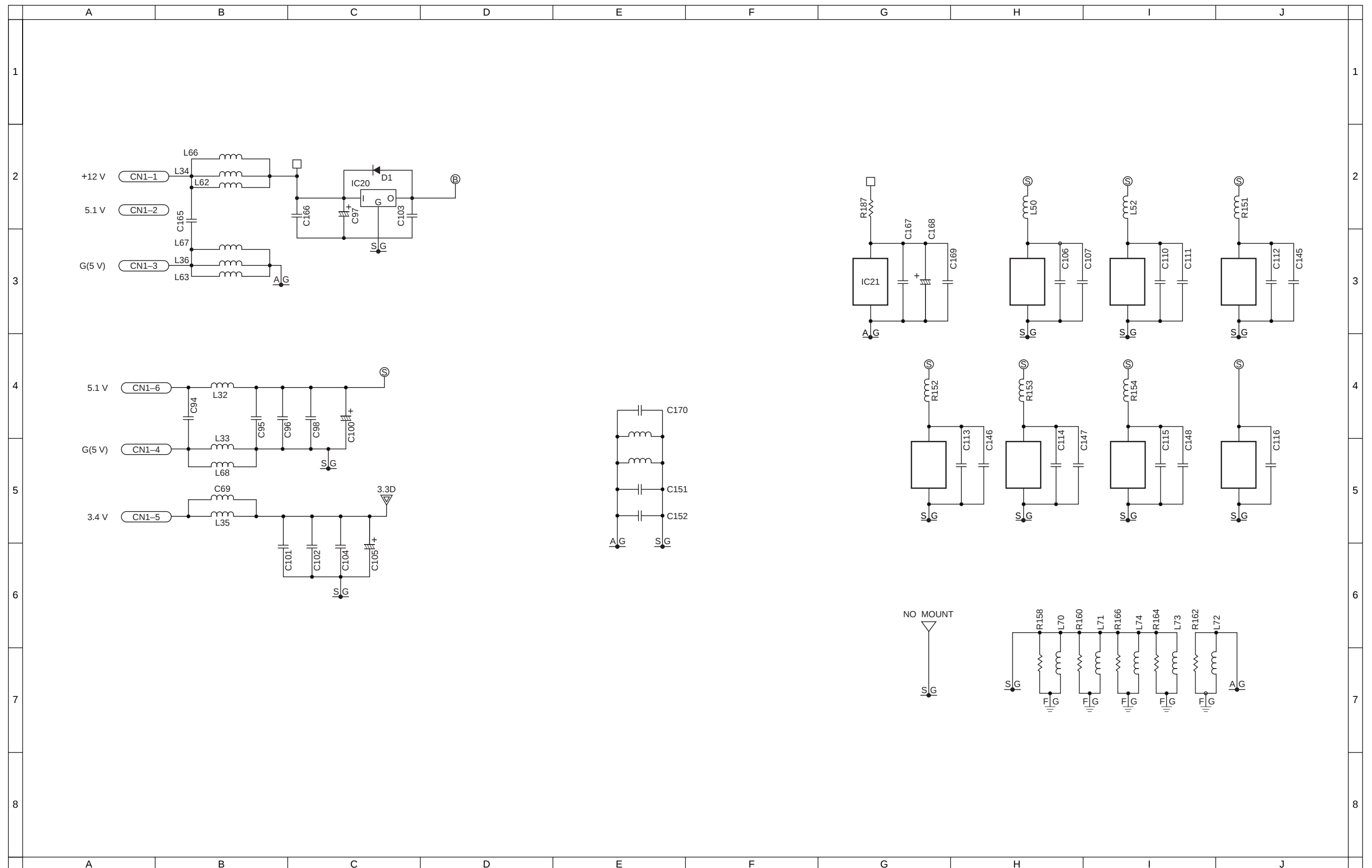


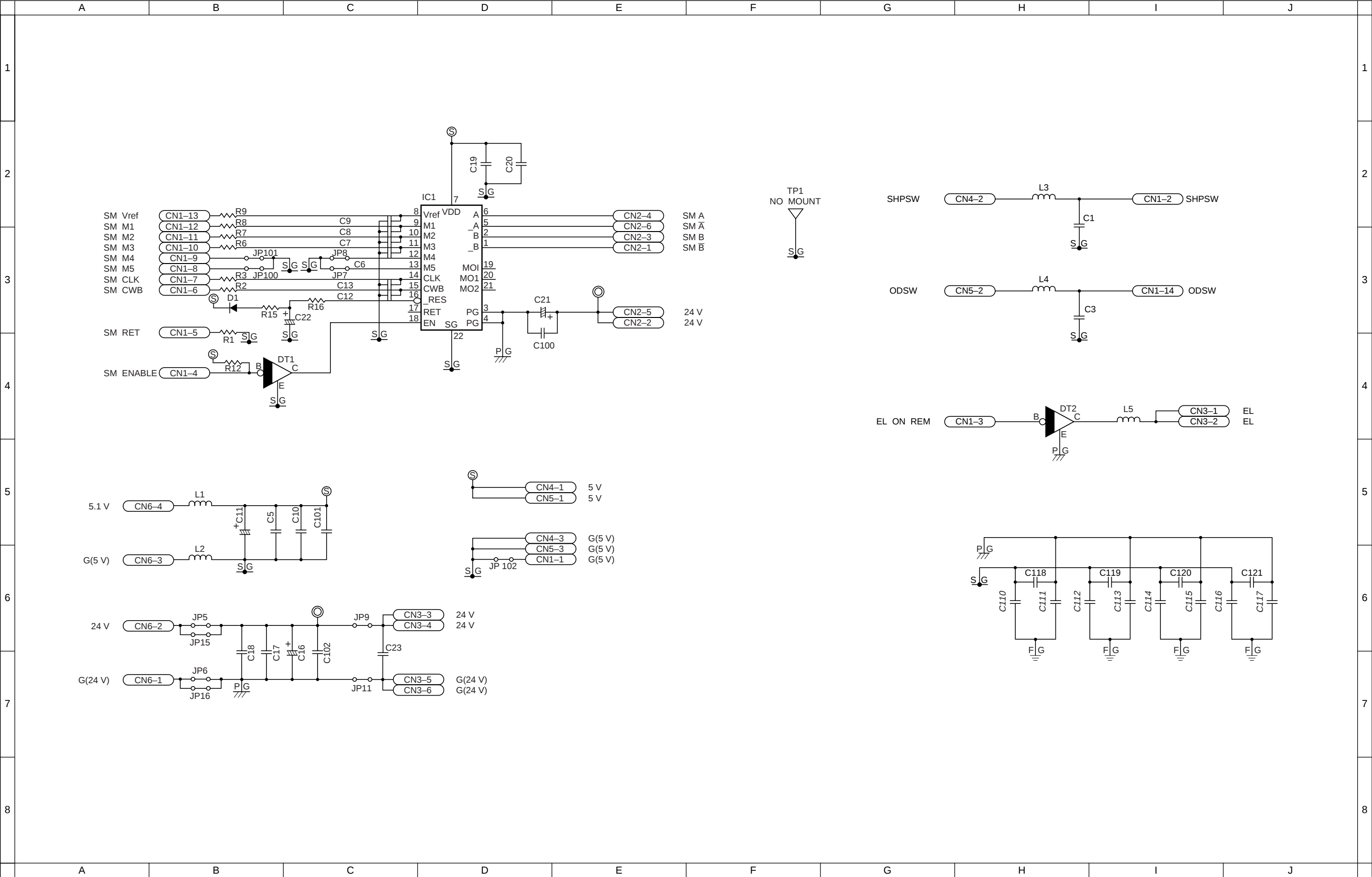
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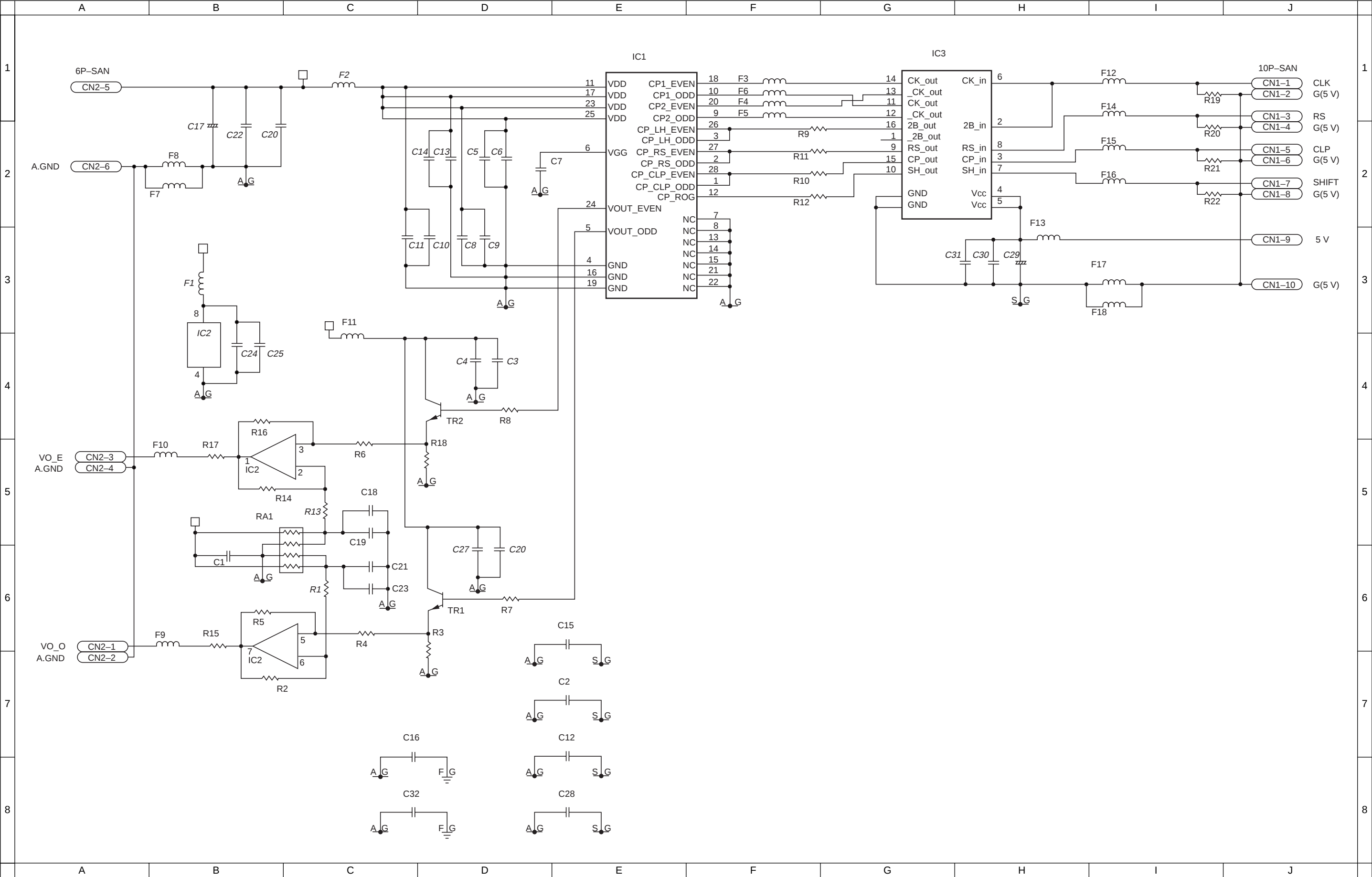


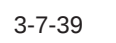


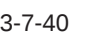


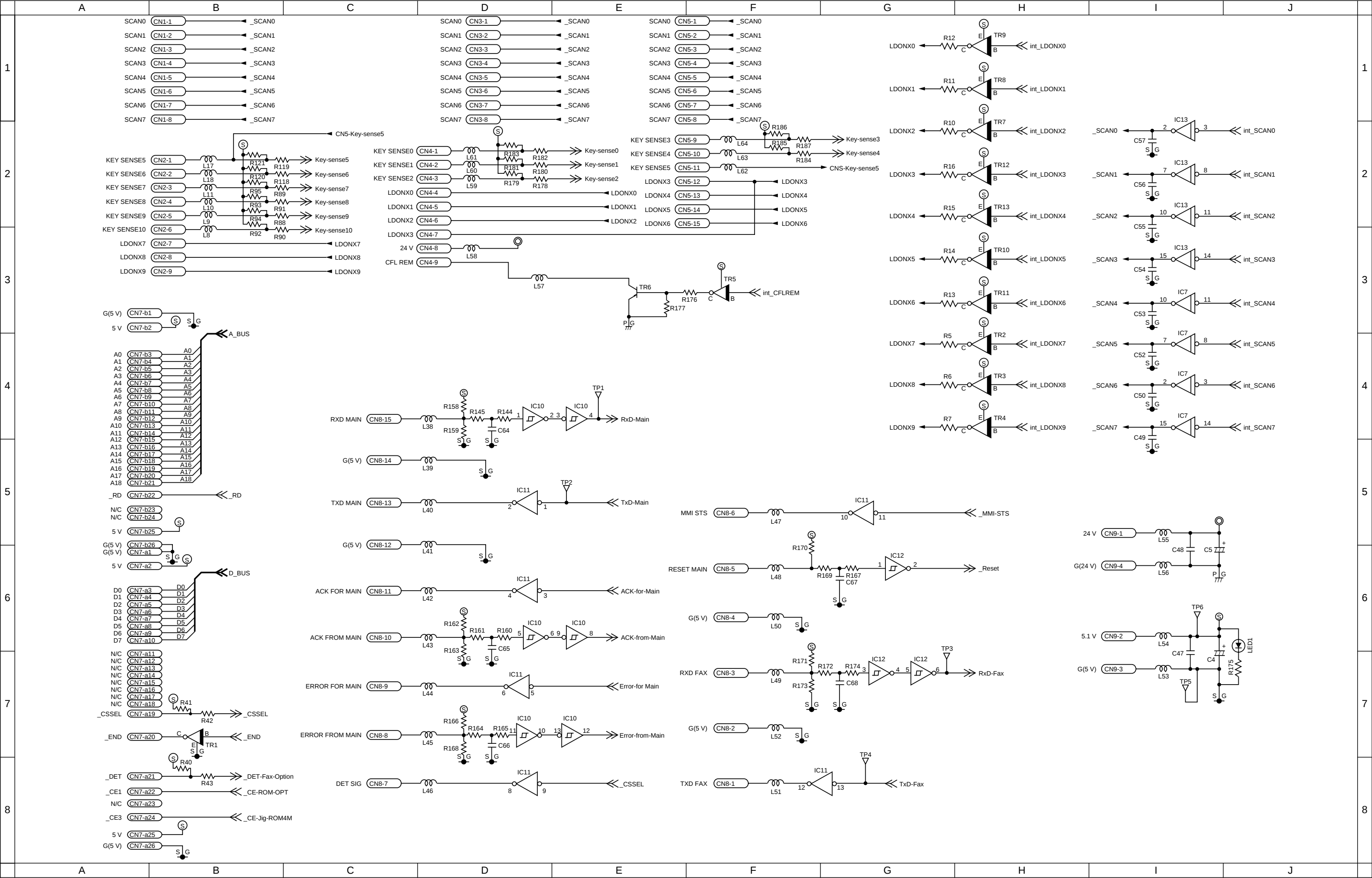


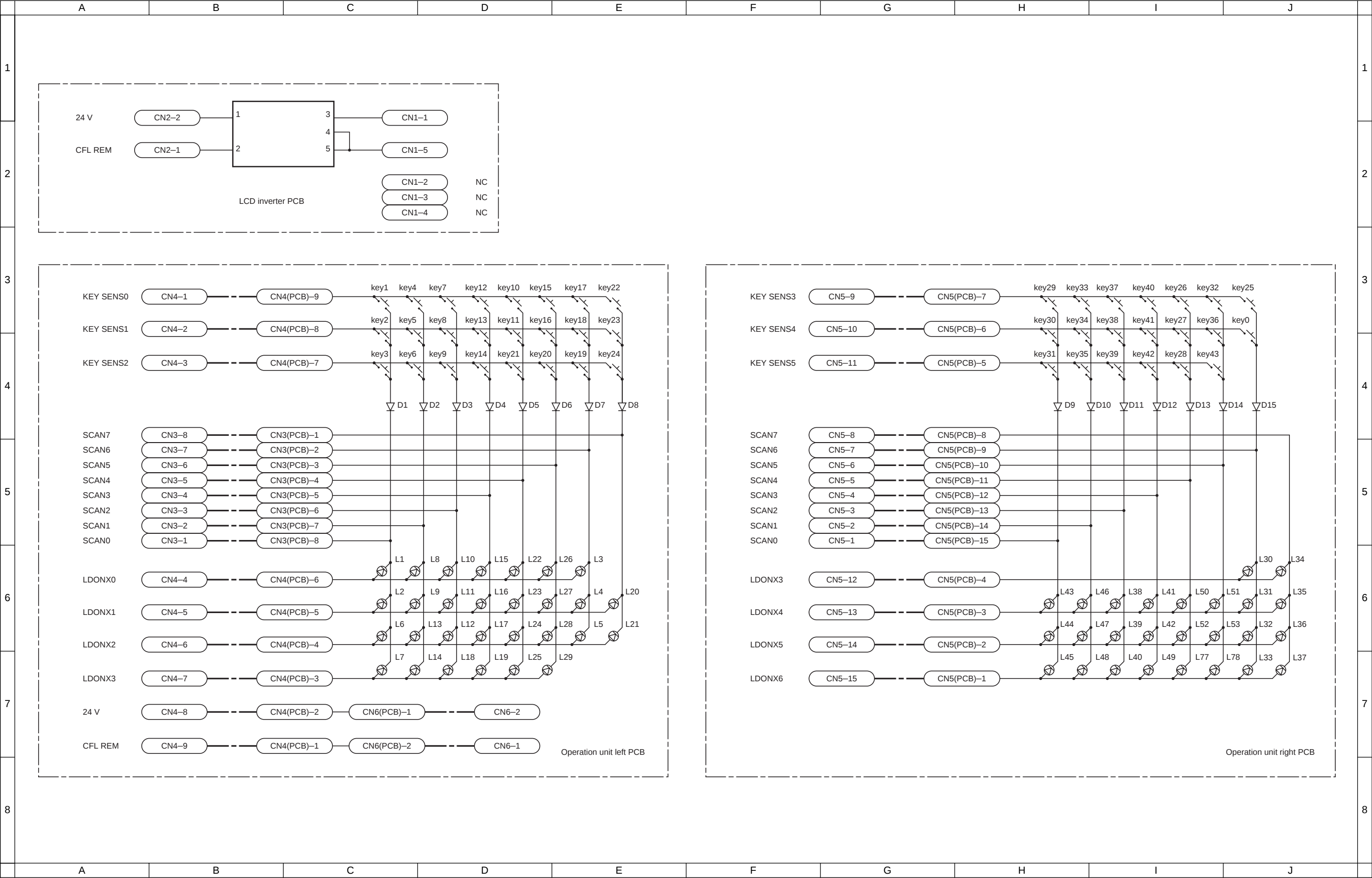


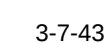






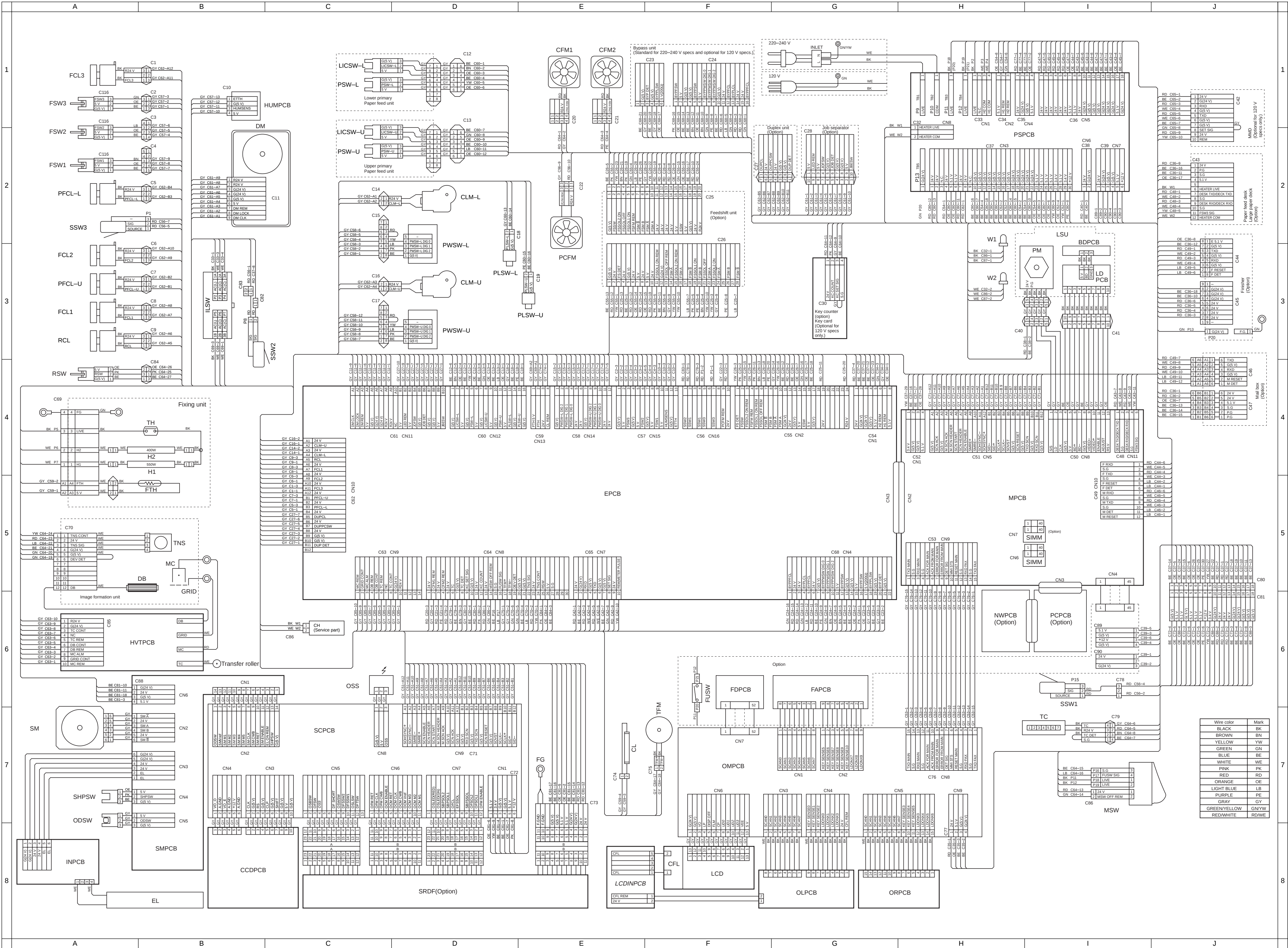






General wiring diagram

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