



KM-C830
KM-C830D

**SERVICE
MANUAL**

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CAUTION

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

CAUTION

Double-pole/neutral fusing.





Safety precautions


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

Safety warnings and precautions


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

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

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

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

Symbols

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



General warning.



Warning of risk of electric shock.



Warning of high temperature.

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



General prohibited action.



Disassembly prohibited.

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



General action required.



Remove the power plug from the wall outlet.



Always ground the copier.

1. Installation Precautions

WARNING

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



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



CAUTION:

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



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



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



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



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



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



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













• Advise customers that they must always follow the safety warnings and precautions in the copier's instruction handbook.








2. Precautions for Maintenance

WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. 
- Always follow the procedures for maintenance described in the service manual and other related brochures. 
- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. 
- Always use parts having the correct specifications. 
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. 
- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. 
- Always check that the copier is correctly connected to an outlet with a ground connection. 
- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. 
- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. 
- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. 

CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. 
- Use utmost caution when working on a powered machine. Keep away from chains and belts. 
- Handle the fixing section with care to avoid burns as it can be extremely hot. 
- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. 
- Do not remove the ozone filter, if any, from the copier except for routine replacement. 

• Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself.



• Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item.



• Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks.



• Remove toner completely from electronic components.



• Run wire harnesses carefully so that wires will not be trapped or damaged.



• After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws.



• Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary.



• Handle greases and solvents with care by following the instructions below:



- Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
- Ventilate the room well while using grease or solvents.
- Allow applied solvents to evaporate completely before refitting the covers or turning the main switch on.
- Always wash hands afterwards.

• Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc.



• Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately.



3. Miscellaneous

WARNING

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



CONTENTS

1-1 Specifications	
1-1-1 Specifications	1-1-1
1-1-2 Parts names	1-1-3
(1) Copier	1-1-3
(2) Operation panel	1-1-4
1-1-3 Machine cross section	1-1-5
1-2 Handling Precautions	
1-2-1 Drum	1-2-1
1-2-2 Developer and toner	1-2-1
1-2-3 Installation environment	1-2-1
1-3 Installation	
1-3-1 Unpacking and installation	1-3-1
(1) Installation procedure	1-3-1
1-3-2 Setting initial copy modes	1-3-22
1-3-3 Copier management	1-3-23
(1) Using the copier management mode	1-3-23
(2) Setting department management items	1-3-24
(3) Copy default	1-3-25
(4) Machine default	1-3-27
(5) Language	1-3-29
1-3-4 Installing the key counter (option)	1-3-30
1-3-5 Installing the bar code reader (option)	1-3-32
1-3-6 Installing the document finisher (option)	1-3-34
1-3-7 Installing the memory copy board/network scanner board (option)	1-3-45
1-3-8 Installing the printer board (option)	1-3-49
1-3-9 Installing the Fax kit (option)	1-3-51
1-3-10 Installing the paper feeder (option)	1-3-57
1-4 Maintenance Mode	
1-4-1 Maintenance mode	1-4-1
(1) Executing a maintenance item	1-4-1
(2) Maintenance mode item list	1-4-2
(3) Contents of maintenance mode items	1-4-5
1-5 Troubleshooting	
1-5-1 Paper misfeed detection	1-5-1
(1) Paper misfeed indication	1-5-1
(2) Paper misfeed detection conditions	1-5-3
(3) Paper misfeeds	1-5-14
1-5-2 Self-diagnosis	1-5-25
(1) Self-diagnostic function	1-5-25
(2) Self-diagnostic codes	1-5-26
1-5-3 Image formation problems	1-5-52
(1) No image appears (entirely white).	1-5-53
(2) No image appears (entirely black).	1-5-54
(3) Dirty on the top edge.	1-5-54
(4) Dirty on the back side.	1-5-55
(5) Image is too light.	1-5-55
(6) Background is visible.	1-5-56
(7) A white line appears longitudinally.	1-5-56
(8) A black line appears longitudinally.	1-5-57
(9) Oily streaks appears at the top of the page longitudinally.	1-5-57
(10) A black line appears laterally.	1-5-57

(11) One side of the copy image is darker than the other.	1-5-58
(12) Black dots appear on the image.	1-5-58
(13) Image is blurred.	1-5-58
(14) The leading edge of the image is consistently misaligned with the original.	1-5-59
(15) Paper creases.	1-5-59
(16) Offset occurs.	1-5-59
(17) Image is partly missing.	1-5-60
(18) Fixing is poor.	1-5-60
(19) Image is out of focus.	1-5-60
(20) Image center does not align with the original center.	1-5-61
1-5-4 Electrical problems	1-5-62
(1) The machine does not operate when the main switch is turned on.	1-5-62
(2) The main drive motor does not operate (C2000).	1-5-62
(3) The paper feed motor does not operate (C2500).	1-5-62
(4) The fuser unit drive motor does not operate.	1-5-63
(5) The black developer drive motor does not operate (C2101).	1-5-63
(6) The color developers drive motor does not operate (C2102).	1-5-63
(7) The upper intermediate feed motor does not operate.	1-5-63
(8) The lower intermediate feed motor does not operate.	1-5-64
(9) The duplexer drive motor does not operate.	1-5-64
(10) The yellow toner feed motor does not operate.	1-5-64
(11) The magenta toner feed motor does not operate.	1-5-64
(12) The cyan toner feed motor does not operate.	1-5-64
(13) The black toner feed motor does not operate.	1-5-64
(14) The face-down unit fan motor does not operate.	1-5-65
(15) The power supply unit fan motor does not operate.	1-5-65
(16) The main controller box fan motor does not operate.	1-5-65
(17) The fuser unit fan motor does not operate.	1-5-65
(18) Paper conveying fan motor 1 or 2 does not operate.	1-5-65
(19) The scanner motor does not operate.	1-5-65
(20) The scanner unit fan motor does not operate.	1-5-65
(21) The electric component unit fan motor does not operate.	1-5-65
(22) The paper feed clutch does not operate.	1-5-66
(23) The bypass paper feed clutch does not operate.	1-5-66
(24) The registration clutch does not operate.	1-5-66
(25) The yellow developer drive clutch does not operate.	1-5-66
(26) The magenta developer drive clutch does not operate.	1-5-67
(27) The cyan developer drive clutch does not operate.	1-5-67
(28) The black developer drive clutch does not operate.	1-5-67
(29) The duplexer feed clutch does not operate.	1-5-67
(30) The duplexer refeed clutch does not operate.	1-5-68
(31) The secondary transfer unit shift clutch does not operate.	1-5-68
(32) The cleaning brush unit drive clutch does not operate.	1-5-68
(33) Transfer charging is not performed.	1-5-68
(34) The yellow developer magnet solenoid does not operate.	1-5-68
(35) The magenta developer magnet solenoid does not operate.	1-5-69
(36) The cyan developer magnet solenoid does not operate.	1-5-69
(37) The black developer magnet solenoid does not operate.	1-5-69
(38) The cleaning brush unit shift solenoid does not operate.	1-5-69
(39) The bypass tray bottom plate solenoid does not operate.	1-5-70
(40) The face up/down solenoid does not operate.	1-5-70
(41) The oil roller up/down solenoid does not operate.	1-5-70
(42) The duplex paper exit selection solenoid does not operate.	1-5-70
(43) The cleaning lamp does not turn on.	1-5-71
(44) The exposure lamp does not turn on.	1-5-71
(45) The exposure lamp does not turn off.	1-5-71
(46) The fuser heater does not turn on.	1-5-71
(47) The fuser heater does not turn off.	1-5-71

(48) Main charging is not performed.	1-5-72
(49) Transfer charging is not performed.	1-5-72
(50) No developing bias is output.	1-5-72
(51) The original size is not detected.	1-5-72
(52) The original size is not detected correctly.	1-5-72
(53) The message requesting paper to be loaded is shown when paper is present on the bypass tray.	1-5-72
(54) The size of paper on the bypass tray is not displayed correctly.	1-5-72
(55) A paper jam in the paper feed, paper conveying or fuser section is indicated when the main switch is turned on.	1-5-73
(56) The message requesting cover to be closed is displayed when the front cover is closed.	1-5-73
(57) Others.	1-5-73
1-5-5 Mechanical problems	1-5-74
(1) No primary paper feed.	1-5-74
(2) No secondary paper feed.	1-5-74
(3) Skewed paper feed.	1-5-74
(4) The scanner does not travel.	1-5-74
(5) Multiple sheets of paper are fed at one time.	1-5-74
(6) Paper jams.	1-5-74
(7) Toner drops on the paper conveying path.	1-5-75
(8) Abnormal noise is heard.	1-5-75

1-6 Assembly and Disassembly

1-6-1 Precautions for assembly and disassembly	1-6-1
(1) Precautions	1-6-1
(2) Running a maintenance item	1-6-2
1-6-2 Paper feed section	1-6-3
(1) Detaching and refitting the bypass tray unit	1-6-3
(2) Detaching and refitting the bypass feed roller and bypass retard roller	1-6-5
(3) Detaching and refitting the face-down unit	1-6-6
(4) Detaching and refitting the drive assembly B	1-6-8
(5) Detaching and refitting the drive assembly A	1-6-8
(6) Detaching and refitting the paper conveying belts	1-6-9
(7) Detaching and refitting the paper conveying fan motors 1 and 2	1-6-10
(8) Detaching and refitting the upper and lower registration rollers	1-6-11
(9) Detaching and refitting the middle roller	1-6-12
(10) Adjustment after roller and clutch replacement	1-6-13
(10-1) Adjusting the leading edge registration of image printing	1-6-13
(10-2) Adjusting the center line of image printing	1-6-14
(10-3) Adjusting the margins for printing	1-6-15
(10-4) Adjusting the amount of slack in the paper	1-6-16
1-6-3 Optical section	1-6-17
(1) Detaching and refitting the exposure lamp	1-6-17
(2) Detaching and refitting the scanner wires	1-6-19
(2-1) Detaching the scanner wires	1-6-19
(2-2) Fitting the scanner wires	1-6-23
(3) Detaching and refitting the ISU (reference)	1-6-28
(4) Detaching and refitting the original size detection switch	1-6-29
(5) Detaching and refitting the laser scanner unit	1-6-30
(6) Adjusting magnification of the scanner in the main scanning direction	1-6-32
(7) Adjusting magnification of the scanner in the auxiliary scanning direction	1-6-33
(8) Adjusting the scanner leading edge registration	1-6-34
(9) Adjusting the scanner center line	1-6-35
(10) Adjusting the margins for scanning an original on the contact glass	1-6-36
1-6-4 Main charger unit	1-6-37
(1) Detaching and refitting the main charger unit	1-6-37
(2) Detaching and refitting the main charger grid	1-6-37

1-6-5	Drum section	1-6-38
	(1) Detaching and refitting the drum unit	1-6-38
1-6-6	Primary transfer section	1-6-39
	(1) Detaching and refitting the primary transfer unit	1-6-39
	(2) Detaching and refitting the cleaning brush unit	1-6-39
1-6-7	Developing section	1-6-40
	(1) Detaching and refitting the developers	1-6-40
	(2) Detaching and refitting the waste toner duct assembly	1-6-42
	(3) Detaching and refitting the black toner feed assembly	1-6-43
	(4) Detaching and refitting the black toner container feed assembly	1-6-43
	(5) Detaching and refitting the black toner feed drive assembly	1-6-44
1-6-8	Secondary transfer section	1-6-45
	(1) Detaching and refitting the transfer roller and the separation charger unit	1-6-45
	(2) Detaching and refitting the secondary transfer unit shift clutch	1-6-47
1-6-9	Fuser section	1-6-48
	(1) Detaching and refitting the fuser unit	1-6-48
	(2) Detaching and refitting the fuser top cover and upper separator bracket	1-6-48
	(3) Detaching and refitting the upper and lower fuser thermistors	1-6-50
	(4) Detaching and refitting the upper and lower thermostats	1-6-52
	(5) Detaching and refitting the upper and lower heater lamps	1-6-53
	(6) Detaching and refitting the heat roller and the press/heat roller	1-6-54
	(7) Detaching and refitting the separators of lower separator bracket	1-6-58
	(8) Detaching and refitting the drive assembly C	1-6-59
1-6-10	PCBs	1-6-60
	(1) Detaching and refitting the scanner main PCB	1-6-60
	(2) Detaching and refitting the engine controller PCB	1-6-61
	(3) Detaching and refitting the power supply unit	1-6-62
	(4) Detaching and refitting the developing/cleaning brush bias high voltage PCB	1-6-64
	(5) Detaching and refitting the main charger high voltage unit	1-6-65
	(6) Detaching and refitting the separation charger high voltage PCB	1-6-66
	(7) Detaching and refitting the paper feeder/options relay PCB	1-6-68
	(8) Detaching and refitting the transfer roller bias high voltage PCB	1-6-68

1-7 Requirements on PCB Replacement

1-7-1	Upgrading the firmware	1-7-1
1-7-2	Adjustment-free variable resistors (VR)	1-7-3

2-1 Mechanical construction

2-1-1	Paper feed unit and transfer unit	2-1-1
	(1) Paper feed unit	2-1-1
	(2) Secondary transfer unit	2-1-4
2-1-2	Bypass tray unit	2-1-5
2-1-3	Scanner unit	2-1-7
2-1-4	Developing section	2-1-11
	(1) Yellow developer	2-1-12
	(2) Magenta developer	2-1-15
	(3) Cyan developer	2-1-18
	(4) Black developer	2-1-21
	(5) Transition of toner for development	2-1-25
2-1-5	Drum unit and main charger unit	2-1-26
	(1) Drum unit	2-1-26
	(2) Main charger unit	2-1-30
2-1-6	Primary transfer unit	2-1-31
	(1) Primary transfer unit	2-1-31
	(2) Cleaning brush unit	2-1-31
2-1-7	Fuser unit	2-1-36
2-1-8	Face-down tray unit	2-1-39

2-2 Electrical Parts Layout

2-2-1 Electrical parts layout	2-2-1
(1) Main frame front, face-down unit and bypass tray unit	2-2-1
(2) Developers, drum unit and main charger unit	2-2-3
(3) Primary transfer, secondary transfer, paper feeder and fuser units	2-2-5
(4) Main frame rear and controller box	2-2-7
(5) Scanner unit, electric component unit and operation unit	2-2-9

2-3 Operation of the PCBs

2-3-1 Power source PCB	2-3-1
2-3-2 Engine controller PCB	2-3-4
2-3-3 Scanner main PCB	2-3-13
2-3-4 Operation unit PCB	2-3-27
2-3-5 CCD PCB	2-3-29

2-4 Appendixes

Timing chart No. 1	2-4-1
Timing chart No. 2	2-4-2
Timing chart No. 3	2-4-3
Timing chart No. 4	2-4-4
Timing chart No. 5	2-4-5
Maintenance parts list	2-4-6
Maintenance kits	2-4-6
Wiring diagram (1)	2-4-9
Wiring diagram (2)	2-4-10

1-1-1 Specifications

Type	Desktop
Copying system	Indirect electrostatic, intermediate transfer drum
Originals	Sheets of paper, books and 3-dimensional objects Maximum size: A3/11" × 17"
Original feed system	Fixed
Copy paper	Drawer: Plain paper (64 – 90 g/m ²) Bypass table: Plain paper (60 – 220 g/m ²) Special paper: Transparencies, tracing paper, colored paper, letterhead and envelopes (when using the printer function only) Note: Use the bypass table for special paper.
Copying sizes	Maximum: A3/11" × 17" Minimum: A6R/5 ¹ / ₂ " × 8 ¹ / ₂ " (When the bypass table is used)
Magnification ratios	Manual mode: 25 – 400%, 1% increments Auto copy mode: fixed ratios Metric 1:1 ± 1.0%, 1:4.00/1:2.00/1:1.41/1:1.15/1:0.81/1:0.70/1:0.50/1:0.25 Inch 1:1 ± 1.0%, 1:4.00/1:2.00/1:1.29/1:1.21/1:0.78/1:0.64/1:0.50/1:0.25
Copy speed	At 100% magnification in copy mode: A3/11" × 17": 4 copies/15 copies per min. [Color/Monochrome] A4R/8 ¹ / ₂ " × 11": 4 copies/15 copies per min. [Color/Monochrome] A4/11" × 8 ¹ / ₂ " : 8 copies/30 copies per min. [Color/Monochrome] A5/5 ¹ / ₂ " × 8 ¹ / ₂ " : 8 copies/30 copies per min. [Color/Monochrome]
First copy time	Approx. 22 s/10.8 s [Color/Monochrome]
Warm-up time	Within 300 s (room temperature 20°C/68°F, 65% RH)
Paper feed system	Automatic feeding from drawers (Duplex copiers: 2 drawers, Simplex copiers: 1 drawer; each with a 500 sheet capacity [75 – 90 g/m ²]) or manual feed from the Bypass table (150 sheet capacity [75 – 90 g/m ²])
Paper eject system	Face-down tray: 250 sheets Face-up tray: 150 sheets
Continuous copying	1 - 999 sheets
Photoconductor	a-Si (drum diameter 80 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 Toner replenishing: automatic from a toner container
Transfer system	Primary: Intermediate transfer drum (diameter 160 mm) Secondary: Transfer roller
Separation system	AC corona separation charging
Fixing system	Heat roller and press/heat roller (soft type, diameter 45 mm) Heat source: 2 halogen heaters (500 W) Control temperature: 185°C/365°F (at normal ambient temperature) Abnormally high temperature protection device: thermostat
Charge erasing system	Exposure by cleaning lamp (LED array)
Cleaning system	Drum: Cleaning blade Primary (intermediate) transfer drum: Fur brush
Scanning system	Flat bed scanning by CCD image sensor
Resolution	600 × 600 dpi
Light source	Rare gas lamp
Dimensions	590 (W) × 585 (D) × 853 (H) mm 23 ¹ / ₄ " (W) × 23 ¹ / ₁₆ " (D) × 33 ⁹ / ₁₆ " (H)
Weight	Approx. 115 kg/253 lbs. (Simplex copier with the optional paper feeder installed)
Floor requirements	1288 (W) × 585 (D) mm 50 ¹¹ / ₁₆ " (W) × 23 ¹ / ₁₆ " (D)

Functions	Self-diagnosis function, preheat function, auto exposure adjustment function, original size detection function, auto paper selection mode, original mode, mono-color mode, auto color original detection function, color image quality adjustment function, auto magnification selection mode, zoom mode, preset zoom mode, XY zoom mode, interrupt copying, 2-sided copy modes* ¹ , page separation modes, margin mode* ² , border erase modes* ² , invert mode, mirror image mode, print page numbers mode* ² , transparency + backing sheet mode* ² , presentation mode* ² , insert sheet modes* ² , layout modes* ² , booklet mode (sheet originals)* ¹ , booklet mode (book originals)* ¹ , BW/Selection mode* ² , poster mode* ² , program function, recall function, sort mode* ² , copy management function* ² , language selection function *1: Only available in duplex copiers *2: Requires the optional memory copy board in simplex copiers
Power source	120 V AC, 60 Hz, 12.0 A 220 – 240 V AC, 50/60 Hz, 6.0 A
Power consumption	Maximum rated power consumption 1260 W
Options	DF, Paper feeder, Document Finisher, Memory Copy Board*, Casters, Key Counter, Printer Board, Fax Kit (only available in inch specification copiers), Network Scanner Board, Bar Cord Reader *: Standard equipment in duplex copiers

1-1-2 Parts names

(1) Copier

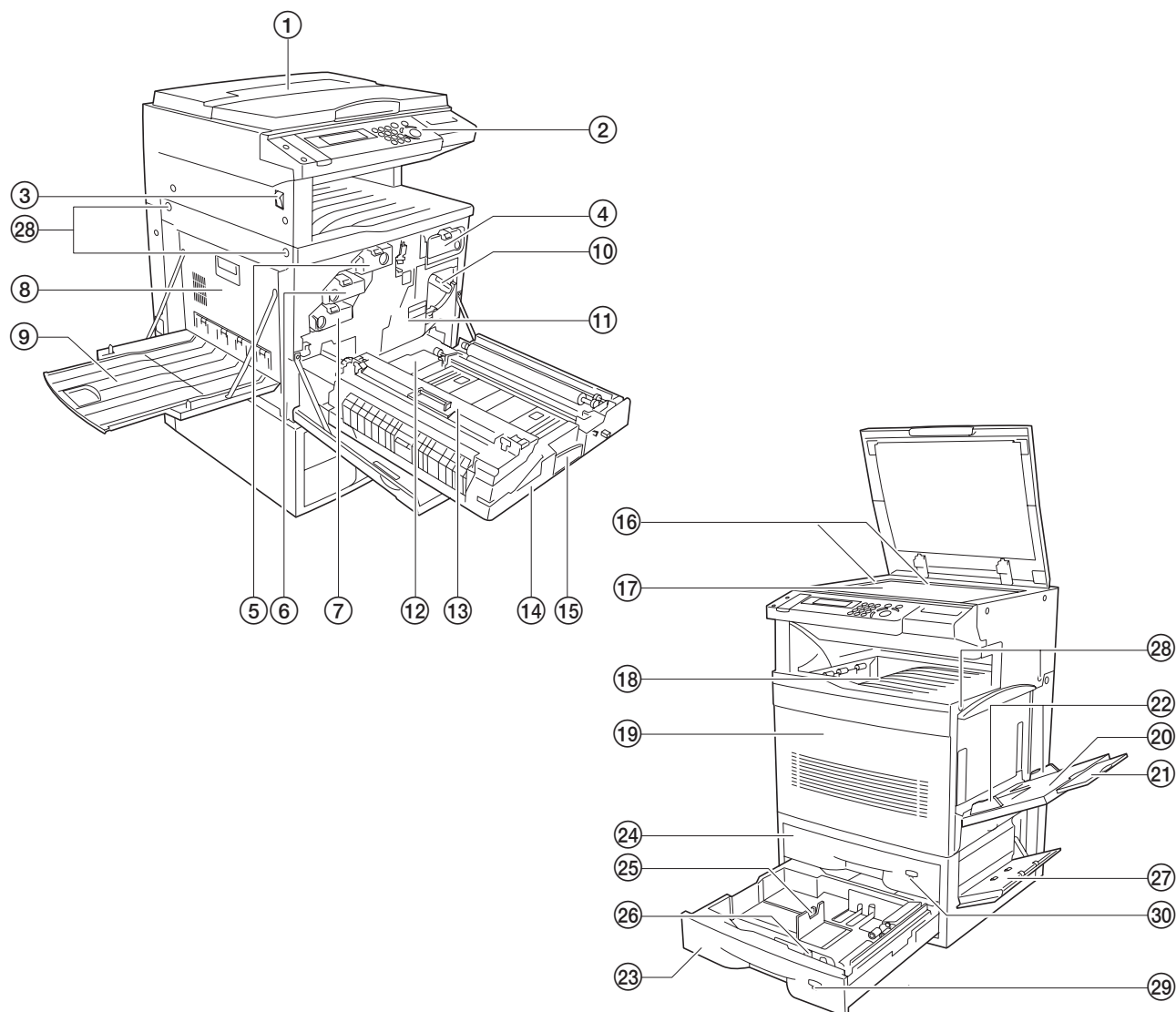
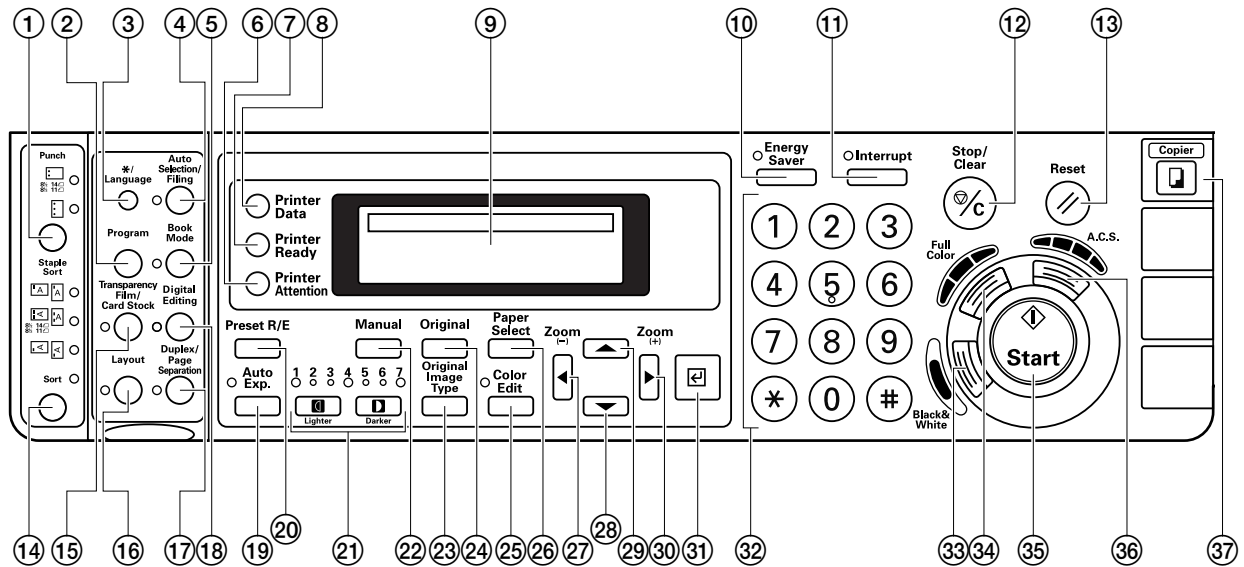


Figure 1-1-1

- | | |
|---------------------------------------|---|
| ① Original cover | ①⑦ Platen |
| ② Operation panel | ①⑧ Face-down tray |
| ③ Main switch | ①⑨ Front cover |
| ④ Toner container (black) | ①⑩ Bypass tray |
| ⑤ Toner container (yellow) | ①⑪ Bypass extension |
| ⑥ Toner container (magenta) | ①⑫ Insert guides |
| ⑦ Toner container (cyan) | ①⑬ Drawer 2 |
| ⑧ Conveying cover | ①⑭ Drawer 1 (in simplex copiers)
Duplex unit (in duplex copiers) |
| ⑨ Face-up tray | ①⑮ Paper length guide release levers |
| ⑩ Primary transfer unit release lever | ①⑯ Paper width guide release levers |
| ⑪ Primary transfer unit | ①⑰ Side cover |
| ⑫ Waste toner tank | ①⑱ Handles for transport |
| ⑬ Oil roller unit | ①⑲ Paper size indicator |
| ⑭ Paper feed unit | ①⑳ Paper size indicator (in simplex copiers)
Duplex unit indicator (in duplex copiers) |
| ⑮ Paper feed unit release lever | |
| ⑯ Original size indicator lines | |

(2) Operation panel

• Inch specifications



• Metric specifications

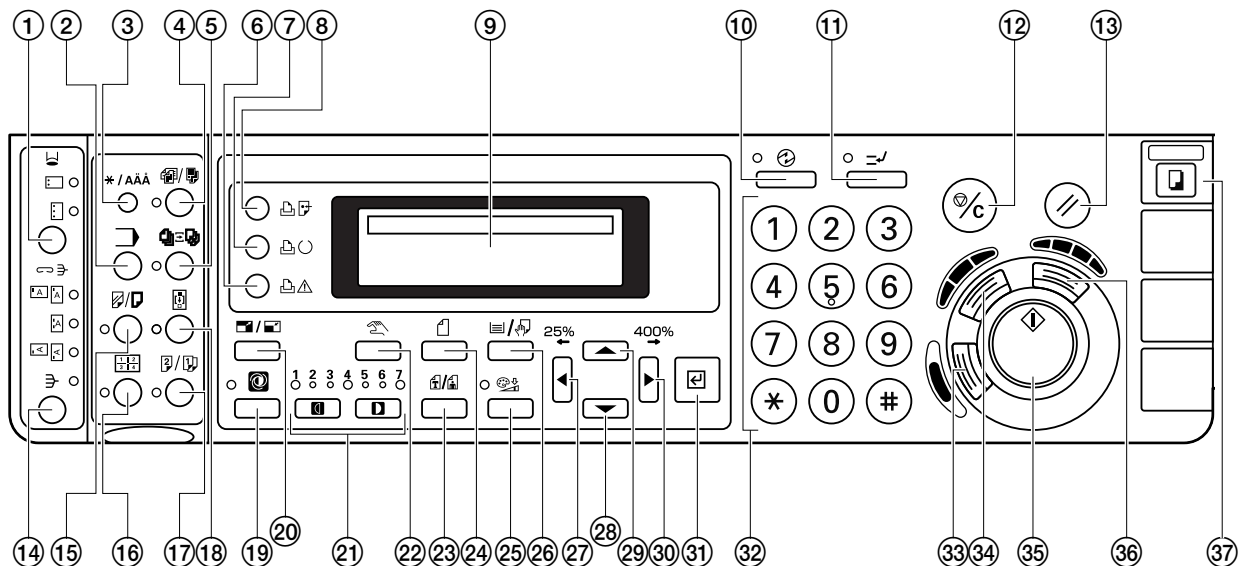


Figure 1-1-2

- | | | |
|---|--|---|
| ① Punch key | ⑮ Transparency film/Card stock key (indicator) | ⑳ Left cursor key/Zoom(-) key (indicator) |
| ② Program key | ⑯ Layout key (Indicator) | ㉑ Down cursor key |
| ③ */Language key | ⑰ Duplex/Page separation key (Indicator) | ㉒ Up cursor key |
| ④ Auto selection key (Indicator) | ⑱ Digital editing key (Indicator) | ㉓ Right cursor key/Zoom(+) |
| ⑤ Book mode key (Indicator) | ⑲ Auto exp. key (Indicator) | ㉔ Enter key |
| ⑥ Printer attention indicator | ㉑ Preset R/E key | ㉕ Numeric keys |
| ⑦ Printer ready indicator | ㉒ Copy exposure adjustment keys (Indicators) | ㉖ Black & white key |
| ⑧ Printer data indicator | ㉓ Manual key | ㉗ Full color key |
| ⑨ Message display | ㉔ Original image type key | ㉘ Start key |
| ⑩ Energy saver key (Indicator) | ㉕ Original key | ㉙ A.C.S. key |
| ⑪ Interrupt key (Indicator) | ㉖ Color edit key (Indicator) | ㉚ Copier key |
| ⑫ Stop/Clear key | ㉗ Paper select key | |
| ⑬ Reset key | | |
| ⑭ Sort key/Sort indicator/Group indicator | | |

1-1-3 Machine cross section

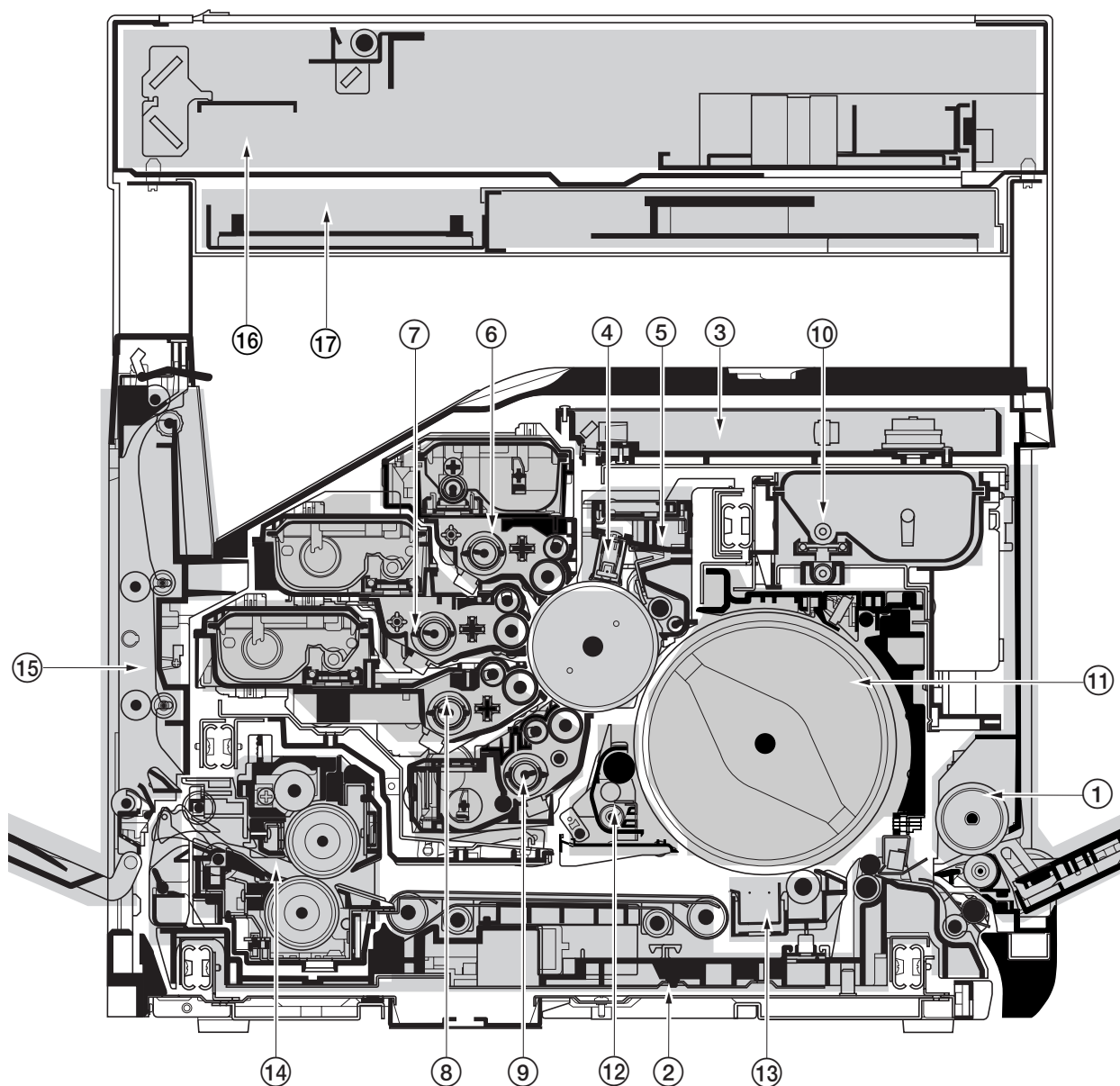


Figure 1-1-4 Machine cross section

- | | |
|---|-----------------------------|
| ① Bypass tray unit | ⑩ Black toner container |
| ② Paper feed unit | ⑪ Primary transfer unit |
| ③ Laser scanner unit | ⑫ Cleaning brush unit |
| ④ Main charger unit | ⑬ Secondary transfer unit |
| ⑤ Drum unit | ⑭ Fuser unit |
| ⑥ Yellow developer and yellow toner container | ⑮ Face-down unit |
| ⑦ Magenta developer and magenta toner container | ⑯ Scanner unit |
| ⑧ Cyan developer and cyan toner container | ⑰ Electrical component unit |
| ⑨ Black developer | |

1-2-1 Drum

Note the following when handling or storing the drum.

- When removing the drum unit, never expose the drum surface to strong direct light.
- Keep the drum at an ambient temperature between -20°C/-4°F and 40°C/104°F and at a relative humidity not higher than 85% RH. Avoid abrupt changes in temperature and humidity.
- Avoid exposure to any substance which is harmful to or may affect the quality of the drum.
- Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.

1-2-2 Developer and toner

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

1-2-3 Installation environment

1. Temperature: 10 - 32.5°C/50 - 90.5°F
2. Humidity: 20 - 80%RH
3. Power supply: 120 V AC, 12.0 A
220 - 240 V AC, 6.0 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 of alkaline vapors, inorganic gasses, NO_x, SO_x 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: 600 mm/23⁵/₈" Machine rear: 300 mm/11¹³/₁₆"
Machine right: 500 mm/19¹¹/₁₆" Machine left: 500 mm/19¹¹/₁₆"

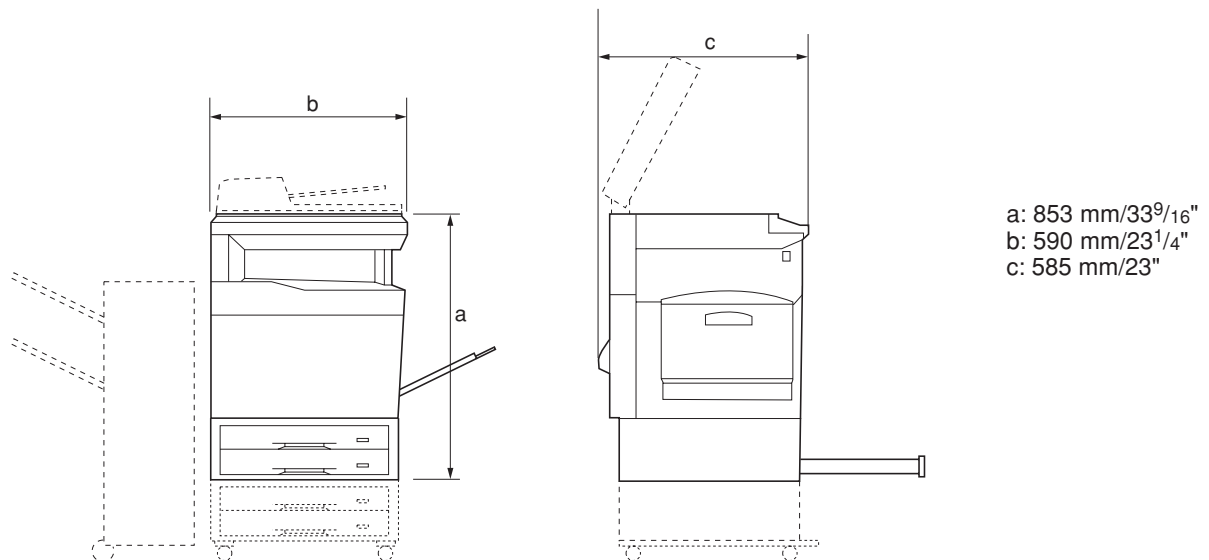
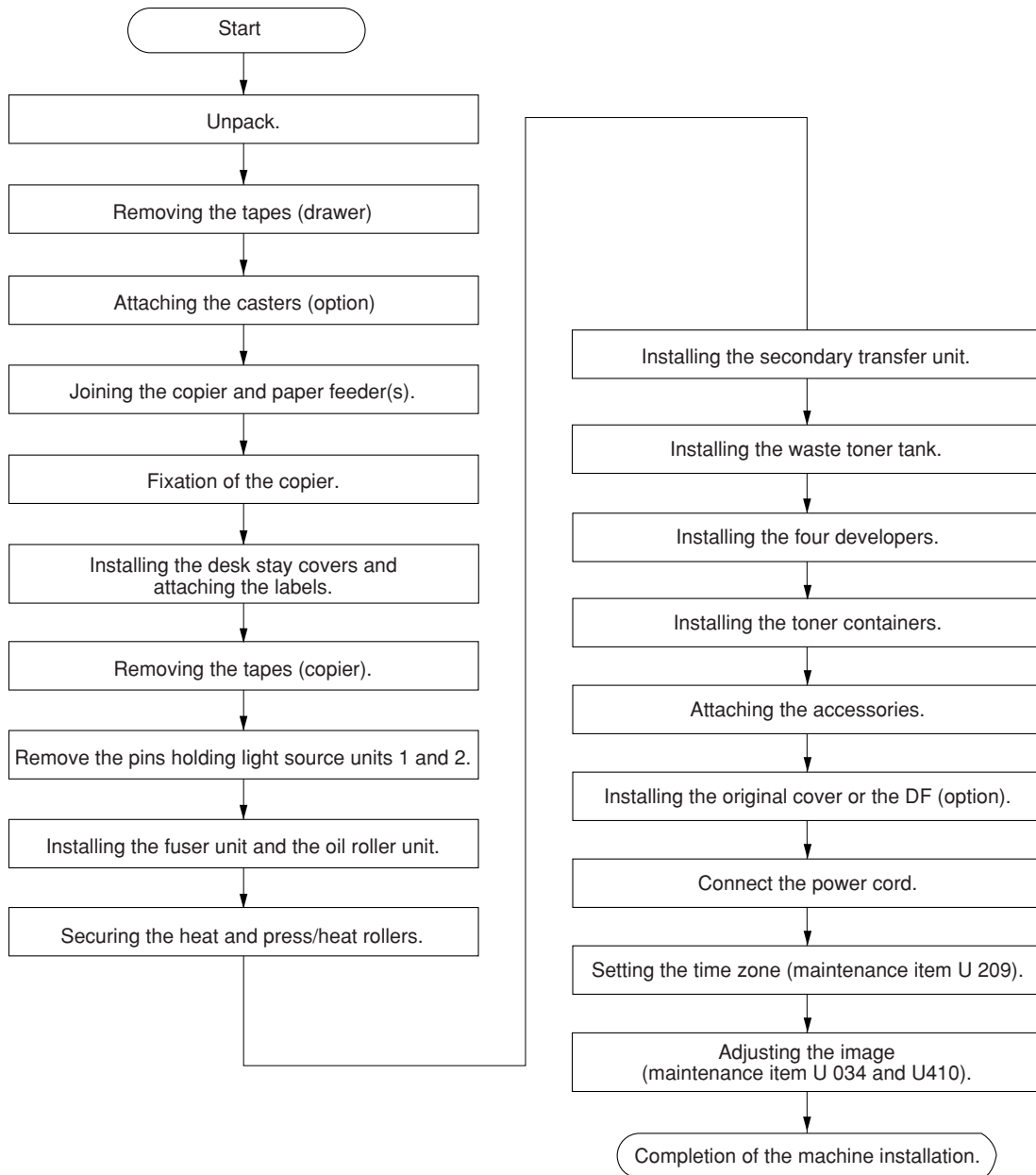


Figure 1-2-1 Installation dimensions

1-3-1 Unpacking and installation

(1) Installation procedure



Moving the machine

When moving the machine during installation, pull out the four handles for transport on the right and left sides and hold them.

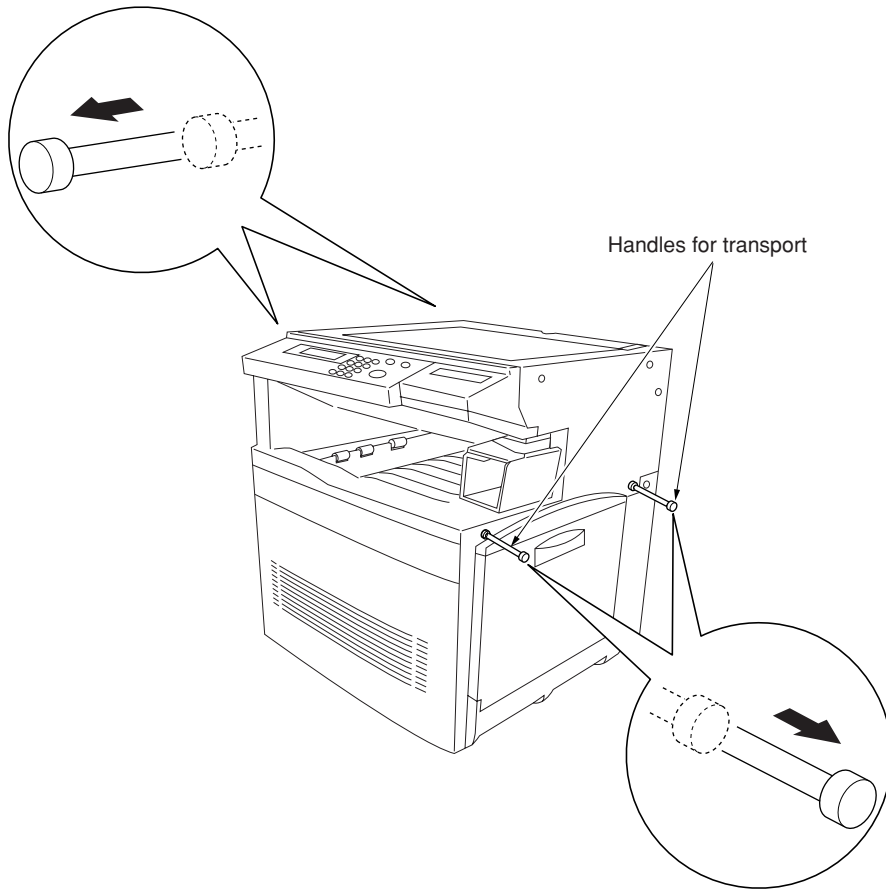


Figure 1-3-1

Removing the tapes (drawer).

1. Pull upper and lower drawers out and remove the tape holding each of the drawer lift.
Remove the paper size indication plate.

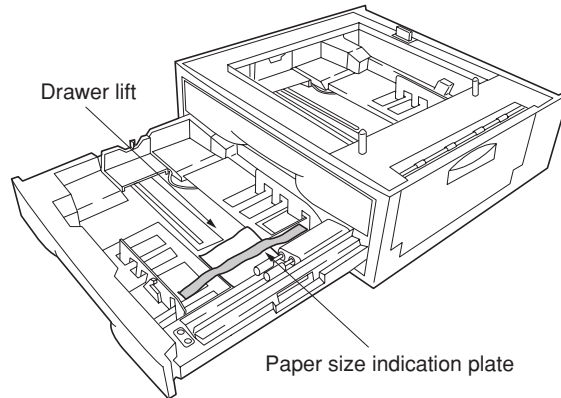


Figure 1-3-3

Attaching the casters (option).

Caution: To prevent the copier from tipping over, the optional caster kit must be installed when the copier is installed with an optional paper feeder.

1. Stand the 500 × 2 paper feeder /duplex paper feeder/optional paper feeder upright on its left side.
2. Remove each one screw to remove four rubber pads.
3. Install two optional caster bases onto the bottom of the paper feeder by using four screws for each. Be sure to face the longer end towards the front of the paper feeder.

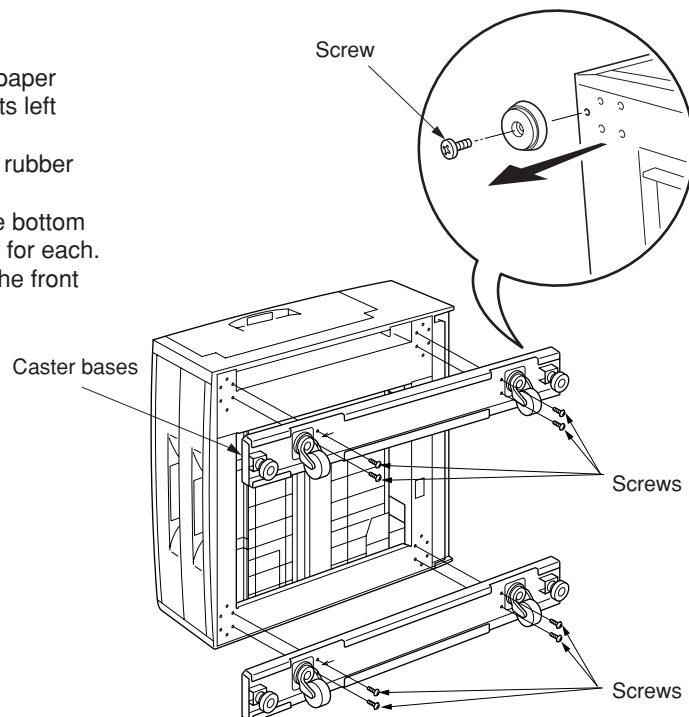


Figure 1-3-4

Fitting the shield gaskets
(220-240 V specifications only)

1. Remove the release coated paper of the double-faced tape located on the rear face of the shield gaskets.
 2. Stick two shield gaskets to the top surface of the paper feeder as shown in the diagram.
- * When installing an optional paper feeder, be sure to fit also two shield gaskets to the optional paper feeder.

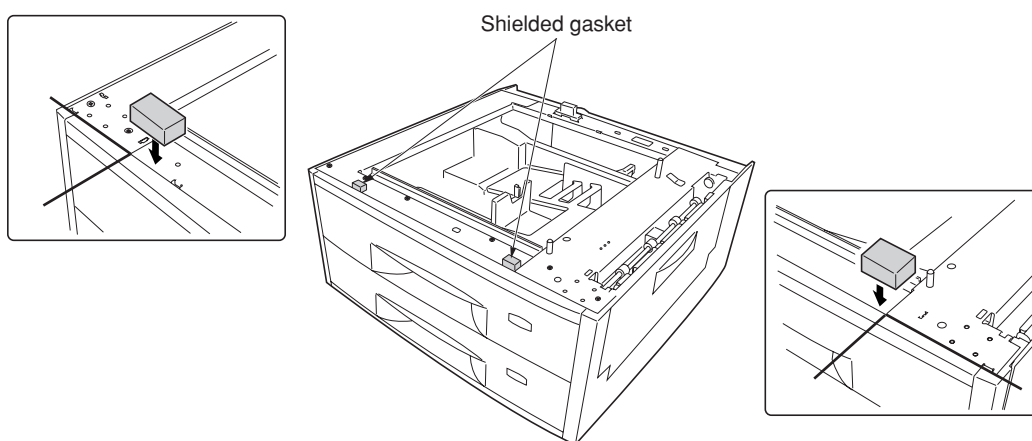


Figure 1-3-5

Joining the copier and paper feeder(s).

1. When installing the optional paper feeder, stack and join 500 × 2 or duplex paper feeder and optional paper feeder using the clamp.

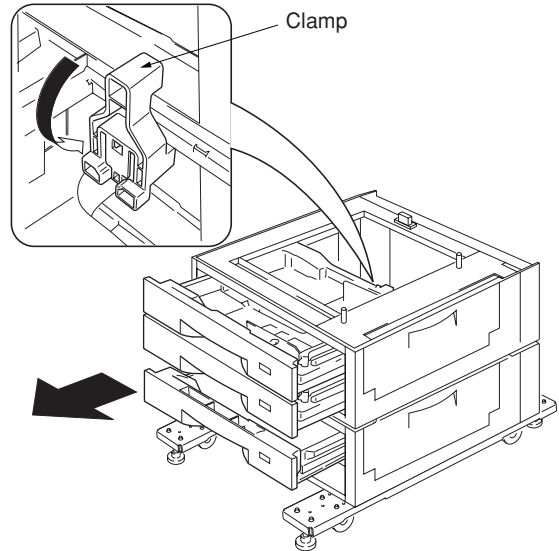


Figure 1-3-6

2. Place the copier on top of the 500 × 2 or duplex paper feeder.
3. Join the copier and 500 × 2 or duplex paper feeder with the junction plate using the binding tap tight screw M4 × 8.

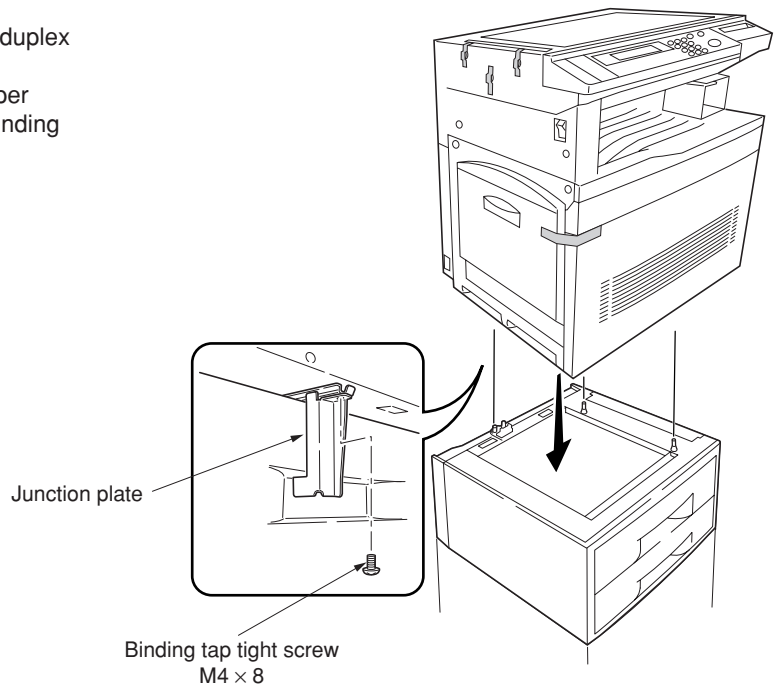


Figure 1-3-7

Fixation of the copier.

1. Turn the adjusters to adjust the level of the overall machine.

Caution: To prevent the possibility of accidents due to tilting the copier body, turn the adjusters until they make firm contact with the floor.

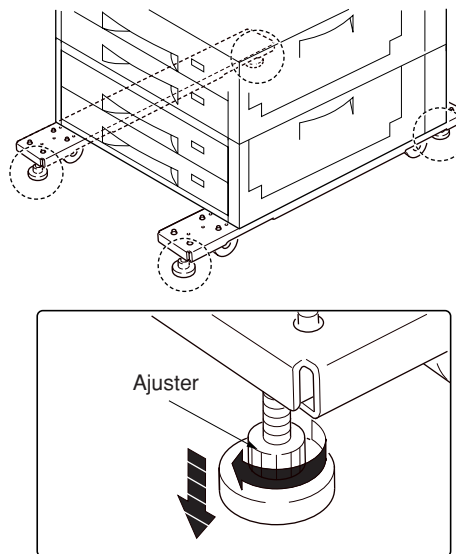


Figure 1-3-8

Installing the desk stay covers and attaching the labels.

1. Attach the two desk stay covers to the front part of the two caster stays using the two M4 × 8 chrome screws (1 screw for each cover).

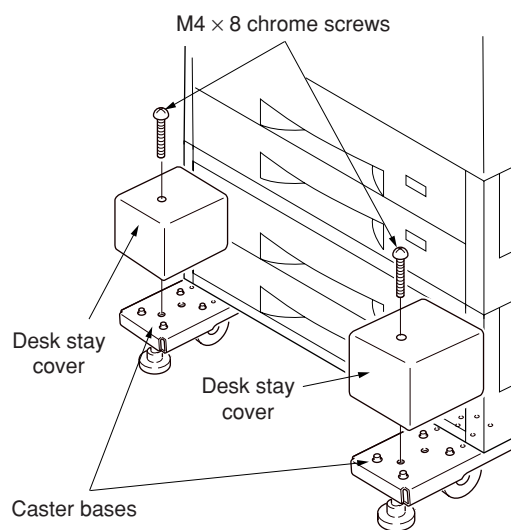


Figure 1-3-9

2. Attach the four labels at the locations shown in the diagram.

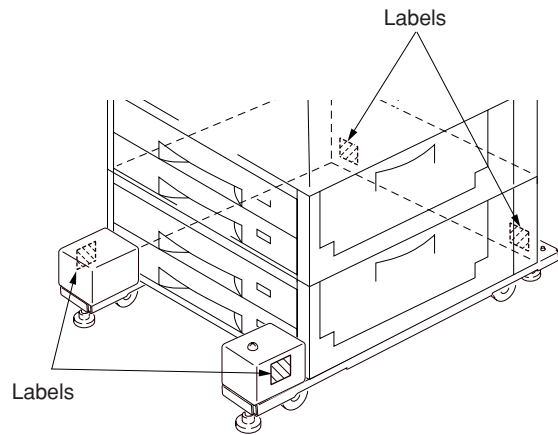


Figure 1-3-10

3. Attach the caution label at the shown in the diagram.

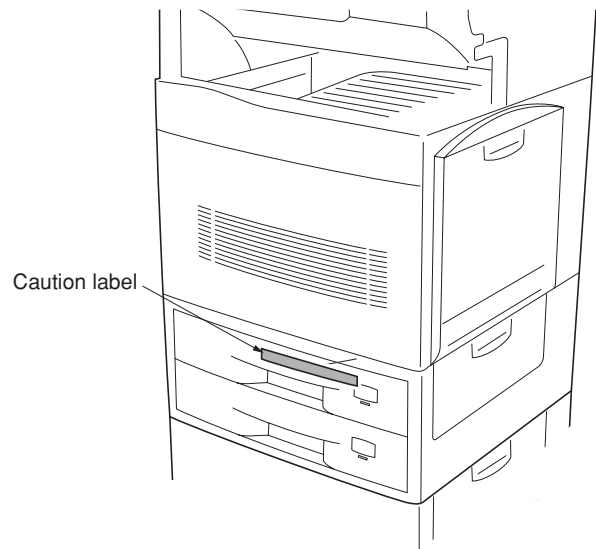


Figure 1-3-11

Removing the tape (copier).

1. Remove the tape holding the front cover and face-up tray.
2. Remove the tape holding the bottom of the face-up tray.
3. Remove the three tapes holding the pins for light source units 1 and 2.

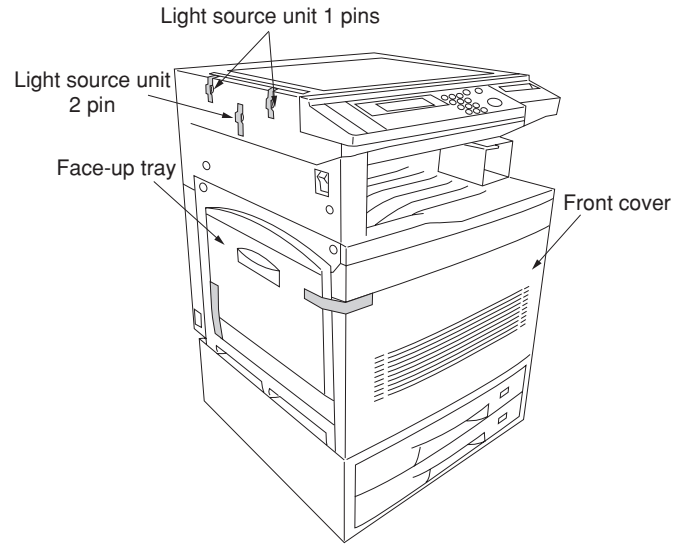


Figure 1-3-12

4. Remove the tape holding the original detection switch.
5. Remove the tape holding the lower scanner spacer and then remove the spacer.
6. Open the bypass tray and remove the paper.

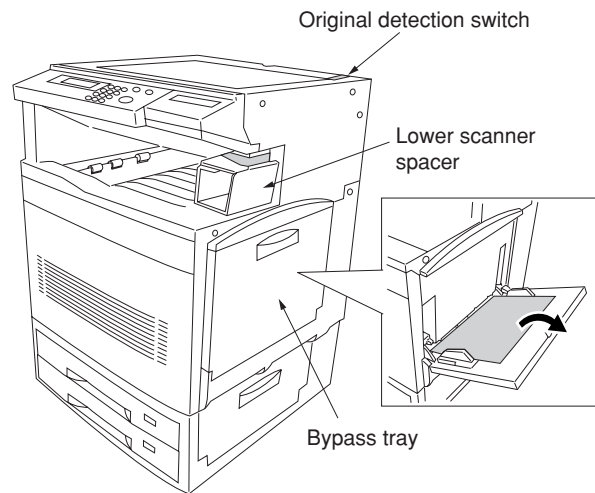


Figure 1-3-13

Remove the pins holding light source units 1 and 2.

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

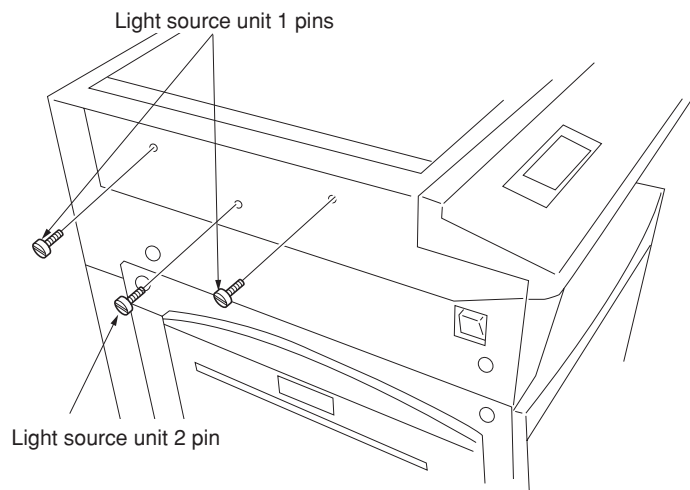


Figure 1-3-14

Installing the fuser unit and the oil roller unit.

1. Open the front cover.
2. Pull out thoroughly the paper feed unit.

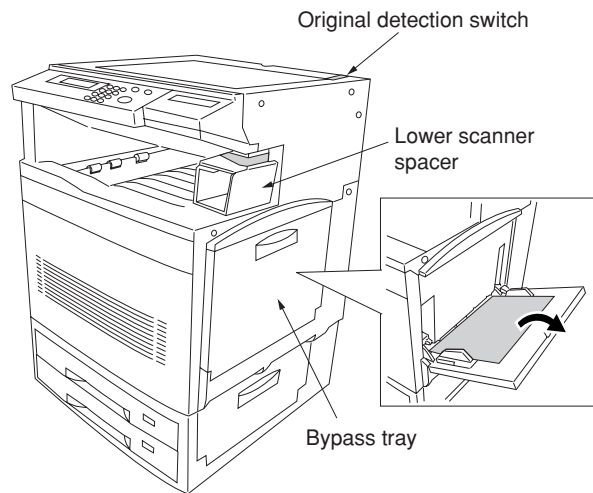


Figure 1-3-15

3. Open the left paper guide by pulling down the green-colored handle.
4. Insert the fuser unit onto the paper feed unit.
5. Secure the fuser unit with the binding tap tight screw M3 × 8.

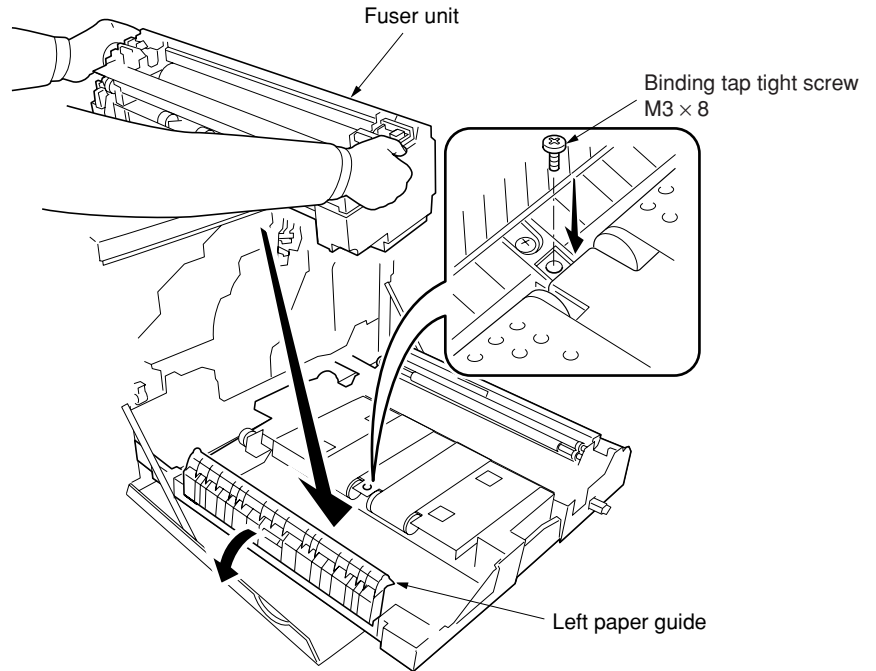


Figure 1-3-16

6. Remove the oil seal tapes at both ends of the oil roller unit.
7. Take out the oil roller unit from the case.

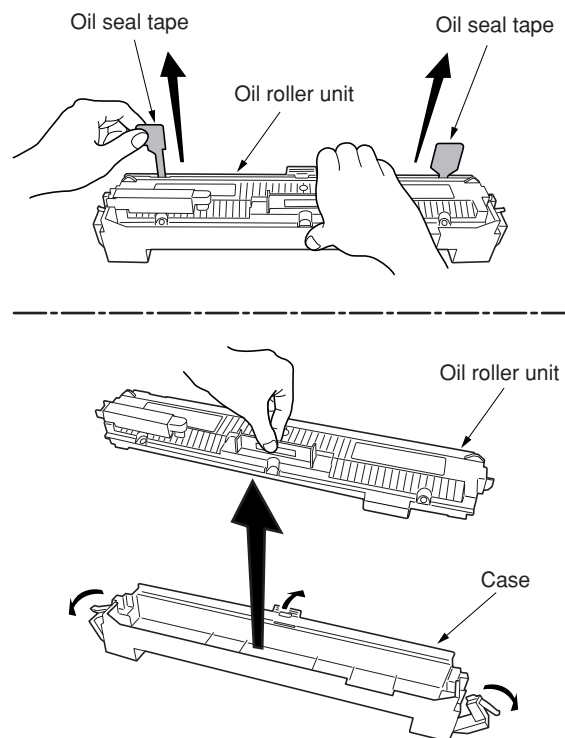


Figure 1-3-17

8. Install the oil roller unit onto the fuser unit until it is locked at both ends.

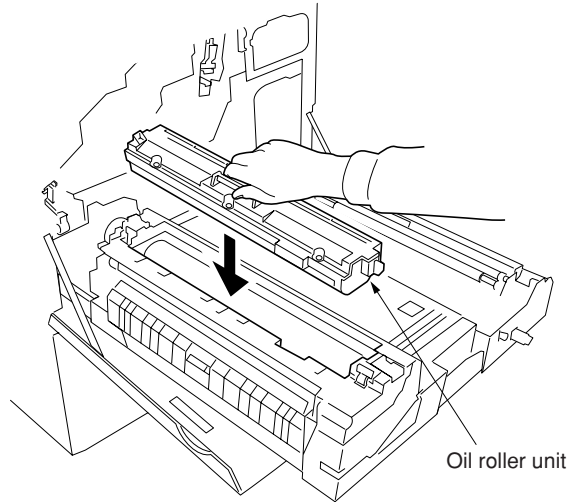


Figure 1-3-18

Securing the heat and press/heat rollers.

1. Open the fuser top cover by lowering the lock buttons.
2. Firmly tighten two screws until they stop.
3. Close the left paper guide.

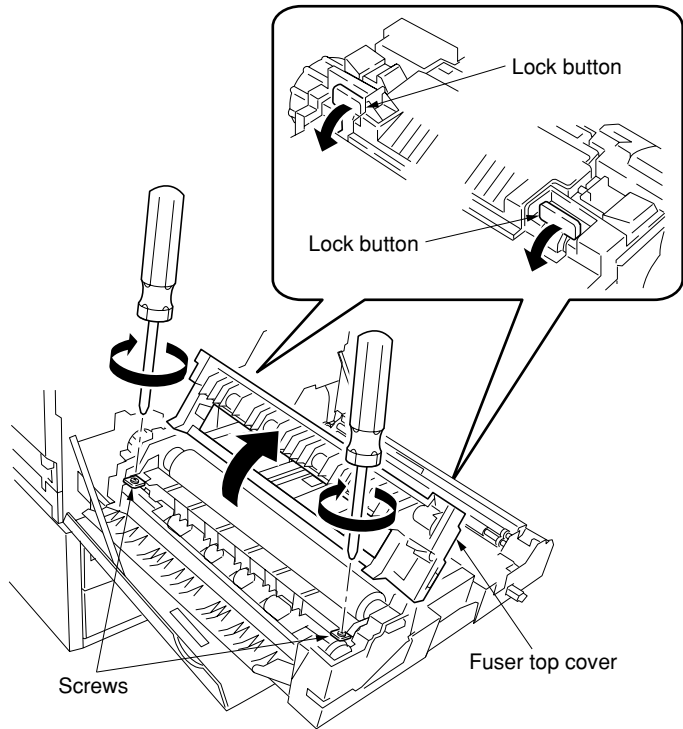


Figure 1-3-19

Installing the secondary transfer unit.

1. Removing the tape holding the secondary transfer unit.

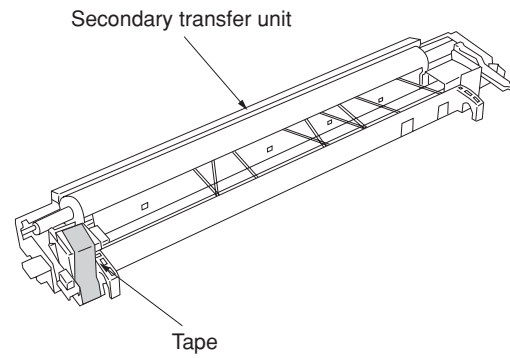


Figure 1-3-20

2. Connect the tab from the paper feed unit to the terminal of the secondary transfer unit.
3. Fit the fulcrums of secondary transfer unit on the bushes and then put it on the paper feed unit.

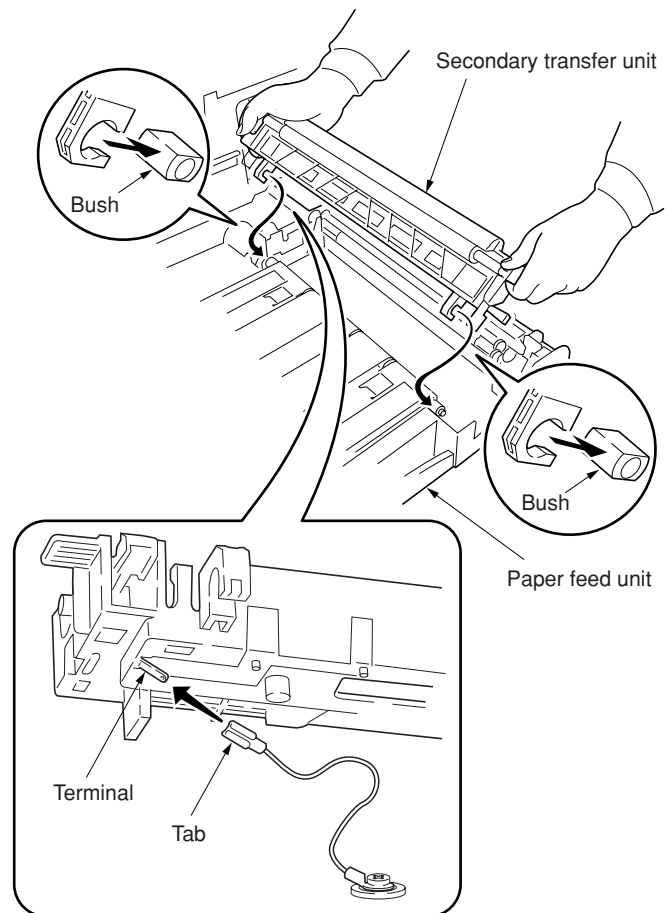


Figure 1-3-21

Installing the waste toner tank.

1. Install the waste toner tank.

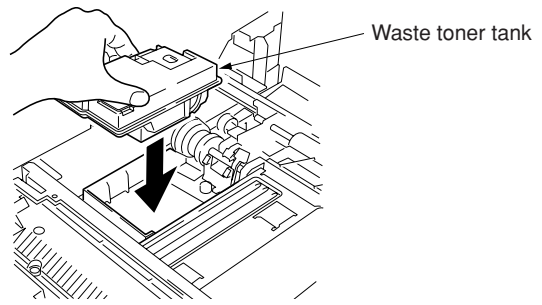


Figure 1-3-22

Installing the four developers.

1. Remove the screw.
2. Remove the lock pin from the primary transfer unit.
Caution: Be sure to keep the lock pin in order to become necessary for the transportation.
3. Turn the (green-colored) transfer unit release lever to the direction of the arrow.
4. Draw the primary transfer until it stops.
5. While pushing the gray lever, pull out the primary transfer unit.
6. Pull out the primary transfer unit from the copier.
Make sure not to scratch the round surface, especially at its bottom.
7. Close the paper feed unit.

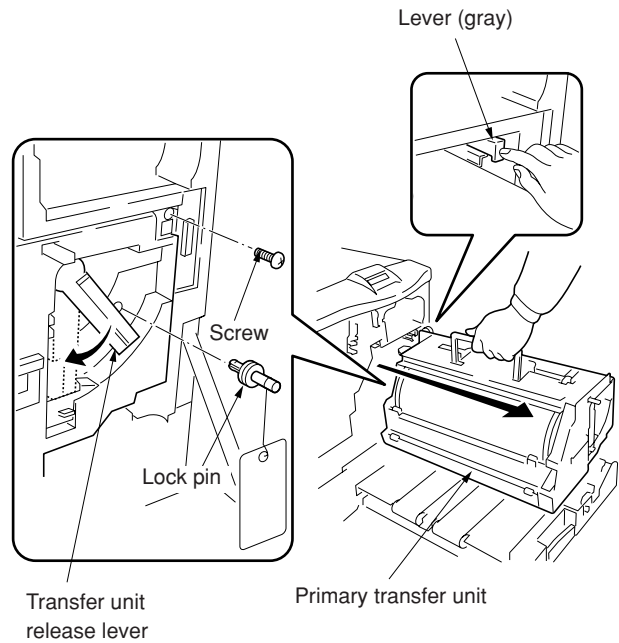


Figure 1-3-23

8. Remove the screws A and B. Free the two stoppers to the direction of the arrow.
9. Pull out the process frame.
10. Detach the two tags.
11. Remove the front and rear stoppers.

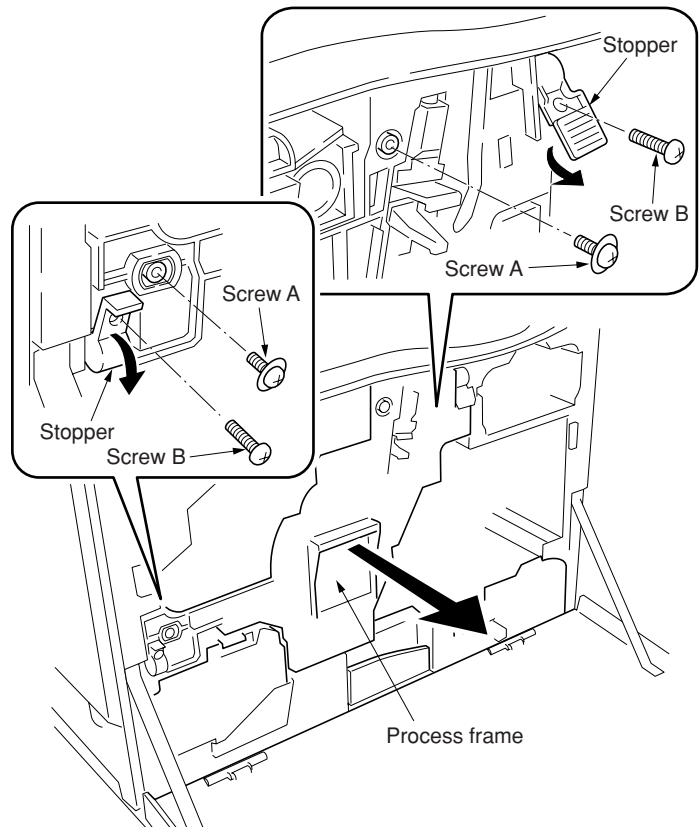


Figure 1-3-24

12. Take up the four developers from the protective bags. Remove for each two of tape and the protective film.

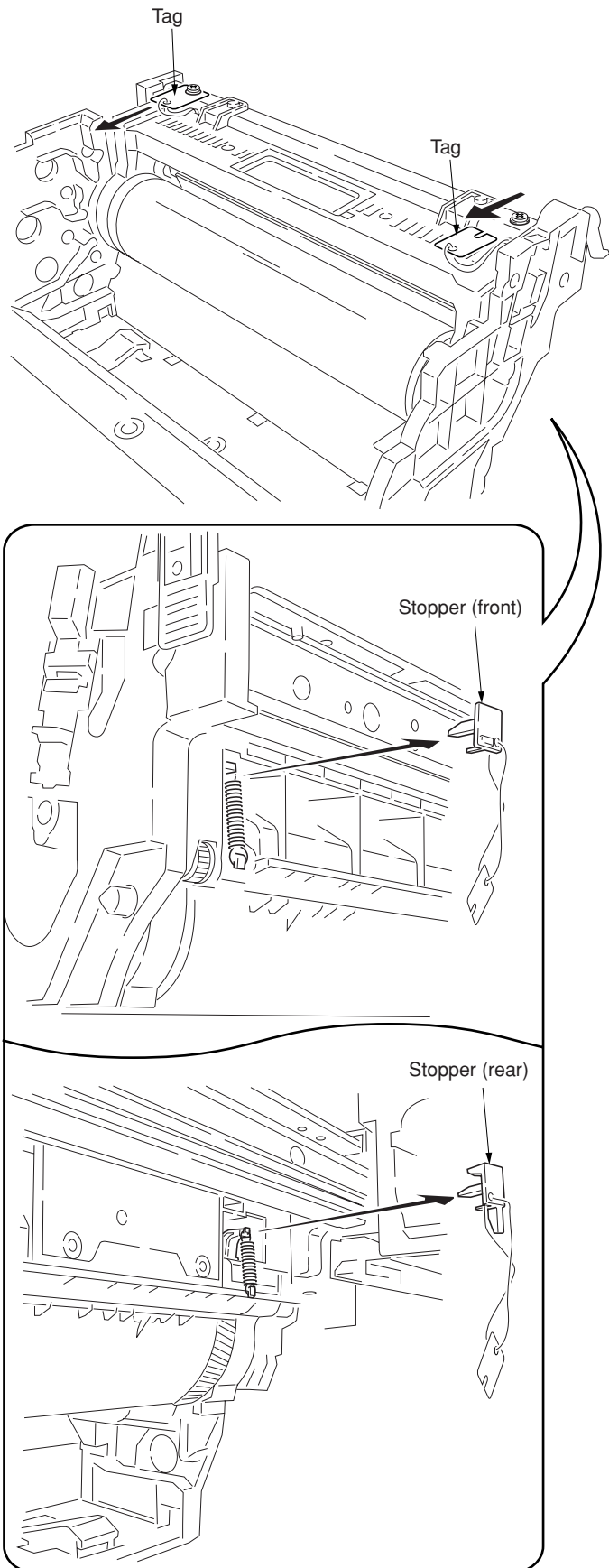


Figure 1-3-25

13. Fit the four developers to the process frame in the order of black, cyan, magenta, and yellow as shown in the diagram.

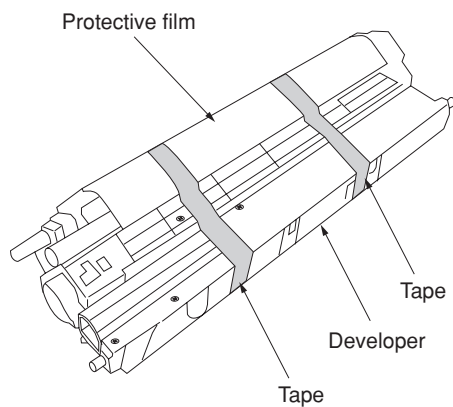


Figure 1-3-26

- 14. Close the process frame and then lock the two stoppers.
- 15. Fix the two screws A first, and then fix the two B screws.

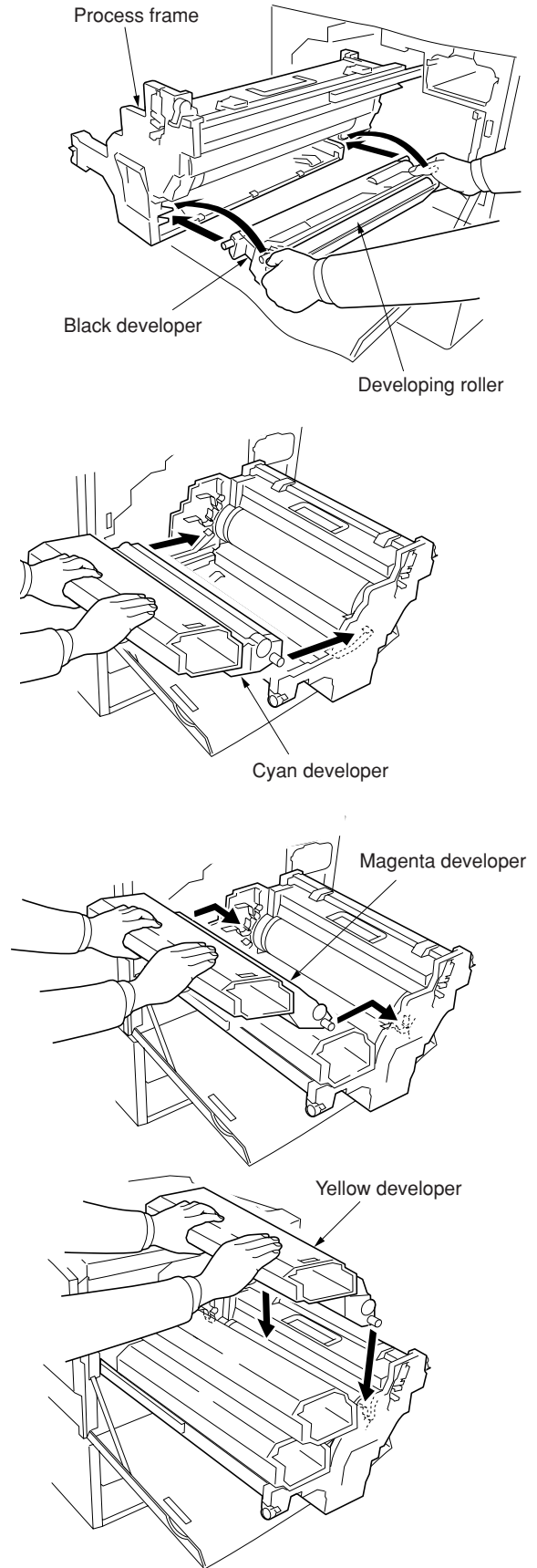


Figure 1-3-27

16. Pull out the paper feed unit.
17. Replace the primary transfer unit.
18. Press to lower the lock lever and return the transfer unit release lever to its original position.

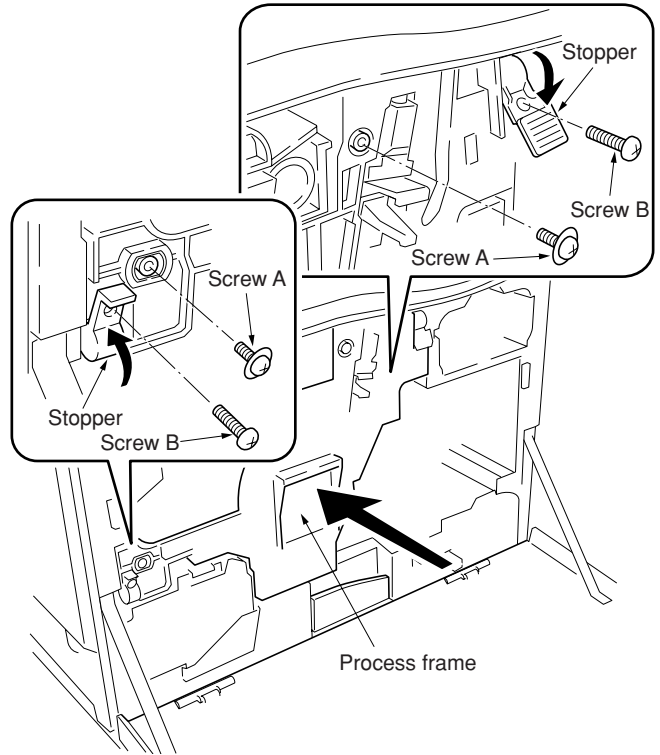


Figure 1-3-28

19. Close the paper feed unit.
20. Secure the screw.

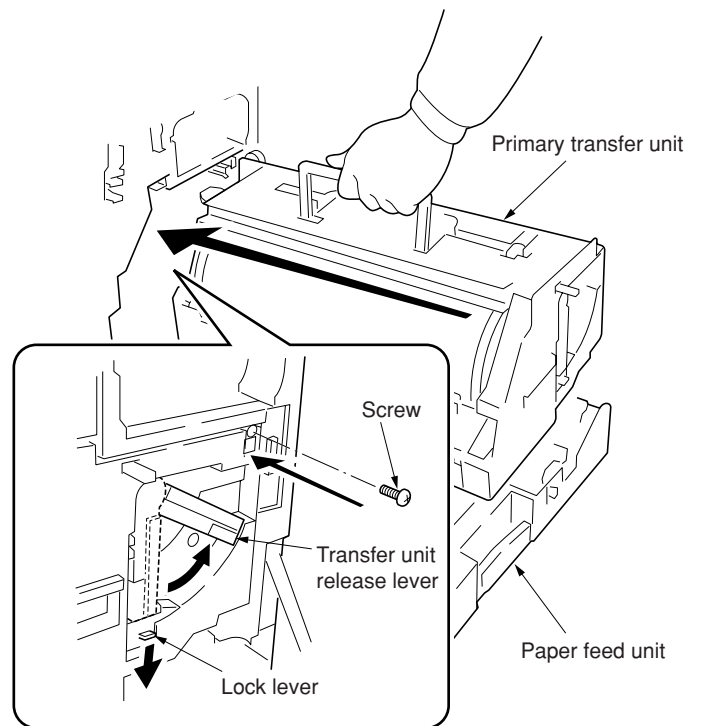


Figure 1-3-29

Installing the toner containers.

1. Shake each toner container five times or more from side to side.
2. Install the four toner containers into their corresponding developers shown in the diagram.
3. Close the front cover.

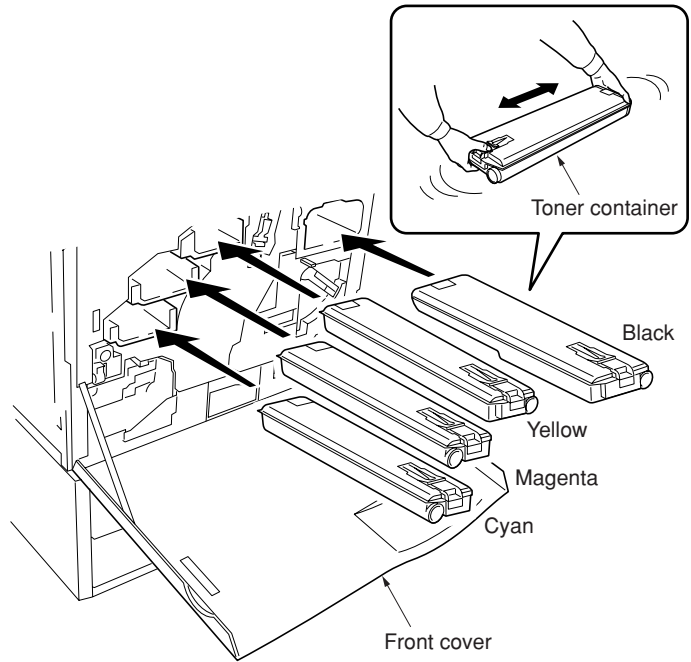


Figure 1-3-30

Attaching the accessories.

1. Install the filter duct to the rear of the copier.

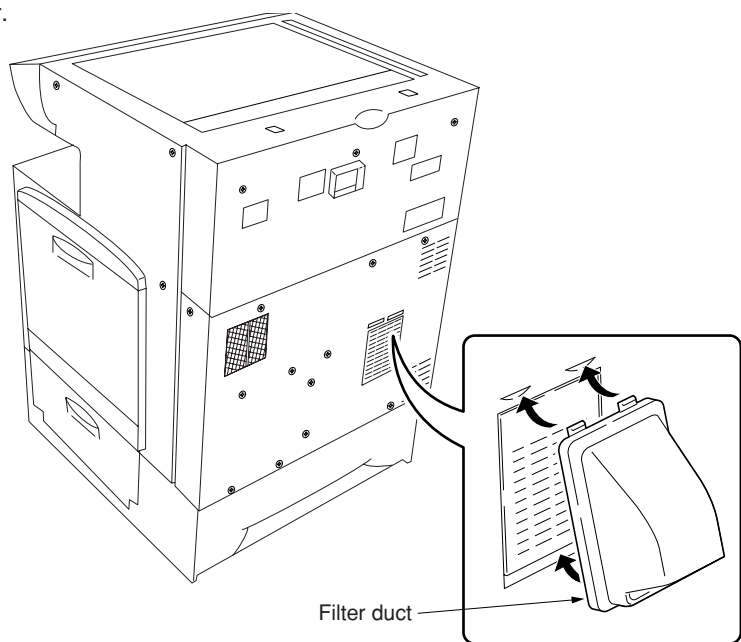


Figure 1-3-31

Installing the original cover or the DF (option).

1. Install the original cover or the DF.

Connect the power cord.

1. Connect the power cord to the connector on the copier and insert the power plug into the wall outlet.
2. Turn the main switch on.

Setting the time zone (maintenance item U 209).

1. Enter the maintenance mode by entering "10871087" using the numeric keys.
2. Enter "209" using the numeric keys and press the start key.
Setting the current time zone, date, and time (see page 1-4-X).

Adjusting the image (maintenance item U 034 and U410).

1. Enter "034" using the numeric keys and press the start key. Firstly, perform the adjusting the leading edge registration of image printing. Select "ADJ. READ EDGE TIMING" using the cursor up/down keys and press the start key. Select "Cassette" using the cursor up/down keys and press the interrupt key. Set A3/11" × 17" paper on the drawer and press the start key to output a test pattern. Check the leading edge registration is correct and if it is, perform the same adjustment in case of paper is fed from the bypass tray.
2. Perform the adjusting the center line. Select "ADJ. MIDDLE LINE TIMING" using the cursor up/down keys and press the start key. Select "Cassette" using the cursor up/down keys and press the interrupt key. Press the start key to output a test pattern. Check the center line is correct and if it is, perform the same adjustment in case of paper is fed from the bypass tray.
3. Enter "410" using the numeric keys and press the start key to perform the adjusting the halftone automatically. Select "Continuation adjust" using the cursor up/down keys and set A4/11" × 8 1/2" paper on the drawer. Press the start key to output a test pattern. Place the output test pattern as the original and press the start key (first time).
4. Press the stop/clear key and press the start key to output a test pattern. Place the output test pattern as the original and press the start key (second time).
5. Press the stop/clear key and press the start key to output a test pattern. Place the output test pattern as the original and press the start key (third time). Press the enter key to set the data.
6. Next, perform the adjustment in the text & photo mode.
Press the start key to output a test pattern. Place the output test pattern as the original and press the start key (first time).
7. Press the stop/clear key and press the start key to output a test pattern. Place the output test pattern as the original and press the start key (second time). Press the enter key to set the data. Perform the adjustment of photo and printed photo modes in the same way.
8. Select "Engine adjust" using the cursor up/down keys and press the start key.
Select "Acquire a proper data" using the cursor up/down keys and press the enter key.
9. Enter "001" using the numeric keys to exit the maintenance mode.

Completion of the machine installation.

1-3-2 Setting initial copy modes

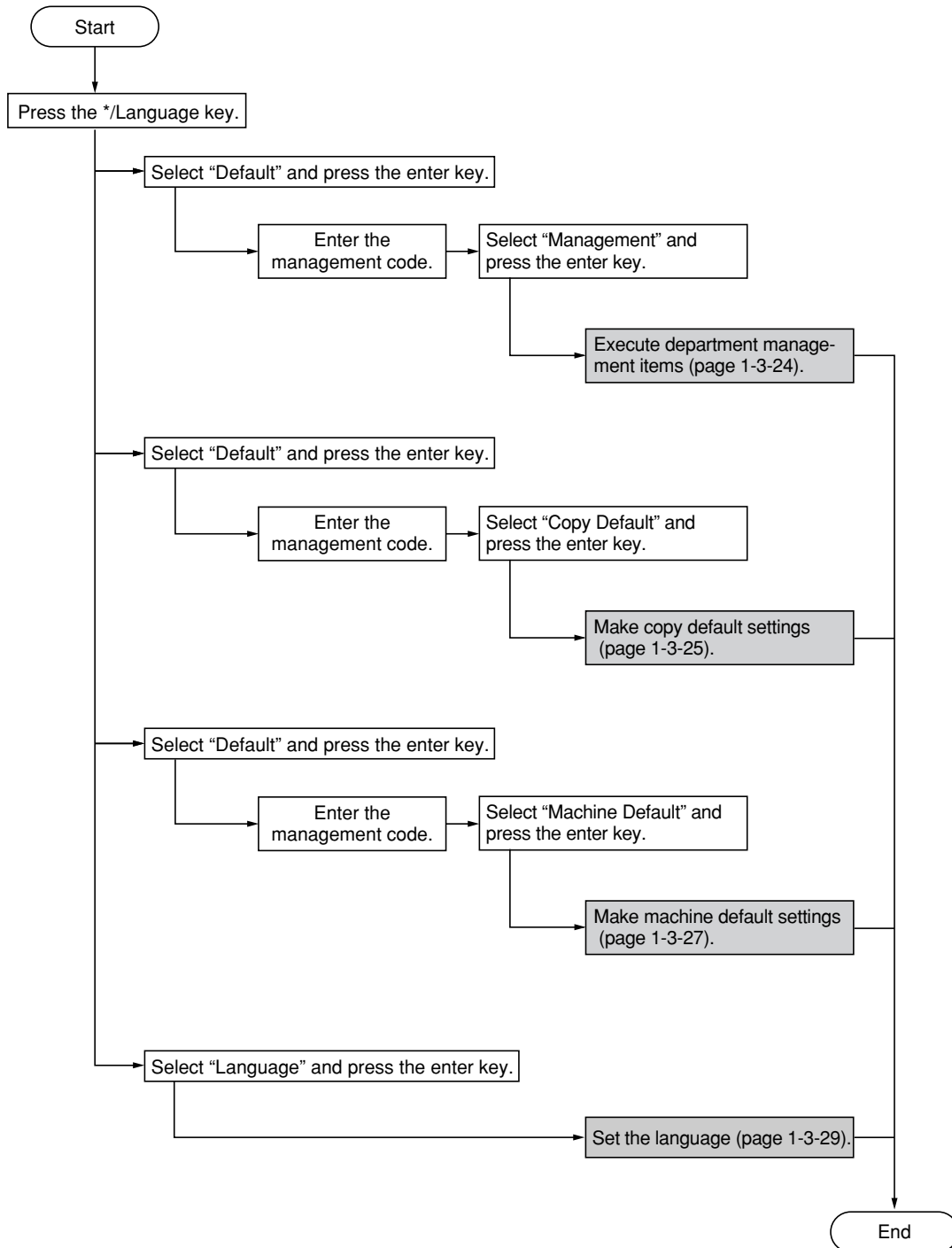
Factory settings are as follows:

Maintenance item No.	Contents	Factory setting
U253	Switching between double and single counts Maintenance count Total count Full-color copy count Monochrome copy count Black/white copy count Color printer count Black/white printer count Fax count Full-color key card count RGB-color key card count Monochrome/black & white key card count	Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only Double count for A3/11" × 17" paper only
U254	Turning auto start function on/off	ON
U255	Setting auto clear time	90s
U256	Turning auto preheat function on/off	ON
U259	Displaying the economy mode	ON
U260	Selecting the timing for copy counting	After ejection
U263	Setting the paper ejection when copying from the DF	Normal
U264	Setting the display order of the date	M/D/Y (inch), D/M/Y (metric)
U276	Setting the copy count mode	2 count rate
U330	Setting the number of copies to be handled by the stacking mode during sorting	100
U333	Setting the digit of the department code	7-digit (inch), 4-digit (metric)
U339	Setting the thermal heater	ON
U343	Switching between duplex/simplex copy mode	OFF
U344	Setting the preheat mode	30 seconds
U345	Setting the value for maintenance due indication	0
U348	Setting the copy density adjustment range	7 steps

1-3-3 Copier management

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

(1) Using the copier management mode



(2) Setting department management items

Registering a new department code

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

1. Select "Management Setting" ("COPY MGMT SETTING") and press the enter key.
2. Select "Register" and press the enter key.
3. Enter a department code* using the numeric keys and press the enter key.
*4 digits for metric specifications and 7 digits for inch specifications.
4. Enter the number of copies limit using the numeric keys. Setting range is 1 page increment between 1 and 999999 pieces. Entering "0" enables unlimited copying.
5. Press the enter key.

Deleting a department code

1. Select "Management Setting" ("COPY MGMT SETTING") and press the enter key.
2. Select "Delete Code" ("CODE DELETE") and press the enter key.
3. Enter a department code* to be deleted using the numeric keys.
*4 digits for metric specifications and 7 digits for inch specifications.
4. Press the enter key.
5. Select "Yes" or "No" and press the enter key.

Altering the copy limit

1. Select "Management Setting" ("COPY MGMT SETTING") and press the enter key.
2. Select "Copy Limit Correction" and press the enter key.
3. Enter a department code* to be altered using the numeric keys.
*4 digits for metric specifications and 7 digits for inch specifications.
4. Press the enter key.
5. Enter the new number of copies limit using the numeric keys. Setting range is 1 page increment between 1 and 999999 pieces. Entering "0" enables unlimited copying.
6. Press the enter key.

Clearing copy counts

1. Select "Management Setting" ("COPY MGMT SETTING") and press the enter key.
2. Select "Delete Count" ("COUNTS CLEAR") and press the enter key.
3. Select "Yes" or "No" and press the enter key.

Print management list

1. Select "Management Setting" ("COPY MGMT SETTING") and press the enter key.
2. Select "Printer Code List" ("PRINT MANAGEMENT LIST") and press the enter key.
The list is automatically printed out.

Turning department management on/off

1. Select "Management on/off" ("COPY MANAGEMENT ON/OFF") and press the enter key.
2. Select "On" or "Off" and press the enter key.

Turning printer department management on/off

Note: This setting item will not be displayed if the optional printer board is not installed.

Turning printer error report function on/off

Note: This setting item will not be displayed if the optional printer board is not installed.

(3) Copy default**Exposure mode**

Selects the exposure mode at power-on.

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

Exposure steps

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

1. Select "Exposure step" and press the enter key.
2. Select "7 Steps" or "13 Steps" and press the enter key.

Auto exposure adjustment (color)

Changes the overall exposure when using the auto exposure mode for full color copies.

1. Select "Auto Exposure Set (4C)"["A. E. (4-COL)"] and press the enter key.
2. Select the exposure using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Auto exposure adjustment (b/w)

Changes the overall exposure when using the auto exposure mode for black and white copies.

1. Select "Auto Exposure Set (B/W)"["A. E. (B/W)"] and press the enter key.
2. Select the exposure using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Mixed original density

Adjusts the exposure of the original when the text & photo mode is selected for the image quality.

1. Select "Mixed original density set" and press the enter key.
2. Select the exposure using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Text original density

Adjusts the exposure of the original when the text mode is selected for the image quality.

1. Select "Text original density set" and press the enter key.
2. Select the exposure using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Photo original density

Adjusts the exposure of the original when the photo mode is selected for the image quality.

1. Select "Photo Original Density Set" and press the enter key.
2. Select the exposure using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Map original density

Adjusts the exposure of the original when the map mode is selected for the image quality.

1. Select "Map Original Density Set" and press the enter key.
2. Select the exposure using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Color mode

Sets the default mode for color copying.

1. Select "Default Copy Set" and press the enter key.
2. Select the setting using the cursor up/down keys and press the enter key.
Settings: Full-Color (FULL COLOUR)/Black & White/Auto color selection (AUTO COLOUR SELECTION)

Original quality

Sets the default mode for the image quality.

1. Select "Original quality" and press the enter key.
2. Select the setting using the cursor up/down keys and press the enter key.
Settings: Mixed/Text/Photo/Print/Map/Eco

Default drawer (b/w)

Sets the location that will be automatically selected when the reset key is pressed, for feeding paper in black and white copying.

1. Select "Default drawer" and press the enter key.
2. Select the drawer using the cursor up/down keys and press the enter key.
Settings: 1 paper (SOURCE 1)/2 paper (SOURCE 2)/3 paper (SOURCE 3)/4 paper (SOURCE 4)
* The "1 paper" ("SOURCE 1") will not be displayed in duplex copiers.

Default drawer (color)

Sets the location that will be automatically selected when the reset key is pressed, for feeding paper in color copying.

1. Select "Extra White Paper Default Cas."("DEFAULT DRAWER COLOUR") and press the enter key.
2. Select the drawer using the cursor up/down keys and press the enter key.
Settings: 1 paper (SOURCE 1)/2 paper (SOURCE 2)/3 paper (SOURCE 3)/4 paper (SOURCE 4)
* The "1 paper" ("SOURCE 1") will not be displayed in duplex copiers.

Copy limit

Sets a limit to the number of copies that can be made at one time.

1. Select "Copy limit" and press the enter key.
2. Enter the setting using the numeric keys and press the enter key.
Setting range: 1 to 999 copies

Margin width

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

1. Select "Margin width" and press the enter key.
2. Press the cursor left/right keys to adjust default margin width.
Setting range: $\frac{1}{4}$ to $\frac{3}{4}$ " (inch specifications)
6 to 18 mm (metric specifications)

Border erase width

Sets the default setting of the border erase width for the border erase modes (sheet erase and book erase).

1. Select "Border Erase width" and press the enter key.
2. Select the setting using the cursor up/down keys and press the enter key.
Setting range: $\frac{1}{4}$ "/ $\frac{1}{2}$ "/ $\frac{3}{4}$ "(inch specifications)
6/12/18 mm (metric specifications)

Custom erase size

Sets the size of the original that is to be used in the custom erase mode.

1. Select "Custom sheet (Border erase)" ("CUSTOM ERASE SIZE") and press the enter key.
2. Press the cursor left/right keys to select the length and press the cursor down key.
3. Press the cursor left/right keys to select the width and press the enter key.
Setting range
inch specifications
Length: $3\frac{1}{16}$ " to $8\frac{7}{16}$ " (in $\frac{5}{16}$ " increments)
Width: $2\frac{3}{8}$ " to $11\frac{5}{8}$ " (in $\frac{1}{8}$ " increments)
metric specifications
Length: 94 to 214 mm (in 8 mm increments)
Width: 60 to 296 mm (in 4 mm increments)

Insert tray

Sets the location that contains the paper which will be fed in the insert sheet modes.

1. Select "Drawer for insert sheet" and press the enter key.
2. Select the location using the cursor up/down keys and press the enter key.
Settings: 1 paper (SOURCE 1)/2 paper (SOURCE 2)/3 paper (SOURCE 3)/4 paper (SOURCE 4)/Bypass
* The "1 paper" ("SOURCE 1") will not be displayed in duplex copiers.

Output form

Sets the default setting for the sort mode at the time power is turned on.

1. Select "Output Form" and press the enter key.
2. Select "On" or "Off" and press the enter key.

Eject destination

Sets the location for ejection of finished copies.

1. Select "Output Selection" and press the enter key.
2. Select "Inner Eject" or "Side Eject" and press the enter key.

ACS adjust

Adjusts the level of detection between color and black&white originals in the auto color selection mode.

1. Select "ACS Adjustment" and press the enter key.
2. Select the level using the cursor left/right keys and press the enter key.
Setting range: 1 to 5.

Auto color adjustment

Adjusts the color if the color on the originals and that which appears on the copies begins to differ greatly.

1. Select "Auto Adjustment" and press the enter key.
2. Select the image quality ("Text+Photo/Text/Map/Eco" or "Photo") using the cursor up/down keys and press the enter key.
3. Press the start key.
A PG color pattern will be printed out.
4. Set the printed color pattern on the contact glass and press the start key.
5. Select "Adjust Finish"("ADJUSTMENT COMPLETED") or "Test Copy" or "Adjust Again" using the cursor up/down keys and press the enter key.

Drum refresh

This operation should be performed when high humidity causes the copy image to become blurred or faded.

1. Select "Drum refresh" and press the enter key.
2. Press the enter key.
The drum refresh operation will begin. It will be about 5 minutes.

Rotate sort

Selects between standard sorting or rotate-sorting as the default sort mode whenever the sort mode is selected.

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

(4) Machine default

Status report

Prints out a list of all machine default settings.

1. Select "Status Report" and press the enter key.
2. Press the enter key.
The status report will be printed out.

Auto drawer switching

Sets whether the auto drawer switching function is available.

1. Select "Auto drawer switching" and press the enter key.
2. Select "On" or "Off" and press the enter key.

Auto shutoff

Sets whether the auto shutoff function is available.

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

Special paper

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

1. Select "Special paper" and press the enter key.
2. Select the location using the cursor up/down keys and press the cursor right key.

Settings: 1 paper (SOURCE 1)/2 paper (SOURCE 2)/3 paper (SOURCE 3)/4 paper (SOURCE 4)/Bypass.

* The "1 paper" ("SOURCE 1") will not be displayed in duplex copiers.

APS for special paper

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

1. Select "APS for special paper" and press the enter key.
2. Select "On" or "Off" and press the enter key.

Color copy paper location

Sets the location where paper will be loaded for color copying.

1. Select "Extra White Paper Copy/Print" ("COLOUR PAPER CASSETTE") and press the enter key.
2. Select the location using the cursor up/down keys and press the cursor right key.

Settings: 1 paper (SOURCE 1)/2 paper (SOURCE 2)/3 paper (SOURCE 3)/4 paper (SOURCE 4)/Bypass

* The "1 paper" ("SOURCE 1") will not be displayed in duplex copiers.

Auto preheat time

Sets the auto preheat time.

1. Select "Auto preheat time" and press the enter key.
2. Select the time using the cursor up/down keys and press the enter key.
Setting range: 5 to 45 minutes (in 5-minute increments)
Note: Set the auto preheat time to be shorter than the auto shutoff time.

Auto shutoff time

Sets the auto shutoff time.

1. Select "Auto shut-off time" and press the enter key.
2. Select the time using the cursor up/down keys and press the enter key.
Setting range: 15 to 240 minutes (in 15-minute increments)

Display contrast adjustment

Adjusts the contrast of the LCD display.

1. Select "Display contrast adjustment" ("DISPLAY CONTRAST ADJUST") and press the enter key.
2. Select the setting using the cursor left/right keys and press the enter key.
Setting range: 1 to 7

Management code change

Changes the management code.

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

Silent mode

Selects whether or not to enter silent mode after copying.

1. Select "Silent Mode" and press the enter key.
2. Select "On" or "Off" and press the enter key.

Day and time

Sets the current date and time and other related settings.

1. Select "Day/Time" and press the enter key.
2. Select "Time" using the cursor up/down keys.
3. Set the current time using the cursor left/right keys. Perform other settings "DST" ("SUMMERTIME"), "Time Zone", "Year", "Month" and "Day" in the same way.

Checking the total counter

Checks the total number of black and white copies, mono-color copies and full color copies made.

1. Select "Overview by Total counter" and press the enter key.
The number of each copies is displayed.

Counter report

Prints out reports on toner usage for each of the copy, printer and fax functions of the machine.

1. Select "Toner coverage inf" ("COUNTER REPORT") and press the enter key.
2. Select "Total" or "Copies" and press the enter key.
The selected report will be printed out.

Paper type

Sets the type of paper that is loaded in each drawer.

1. Select "Paper type" and press the enter key.
2. Select the paper type using the cursor up/down keys and press the enter key.

(5) Language

Switches the language to be displayed on the press panel.

1. Select "Language" and press the enter key.
2. Select the display language and press the enter key.

1-3-4 Installing the key counter (option)

Key counter installation requires the following parts:

Key counter set (P/N 2A369703)

Contents of the set:

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

Procedure

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

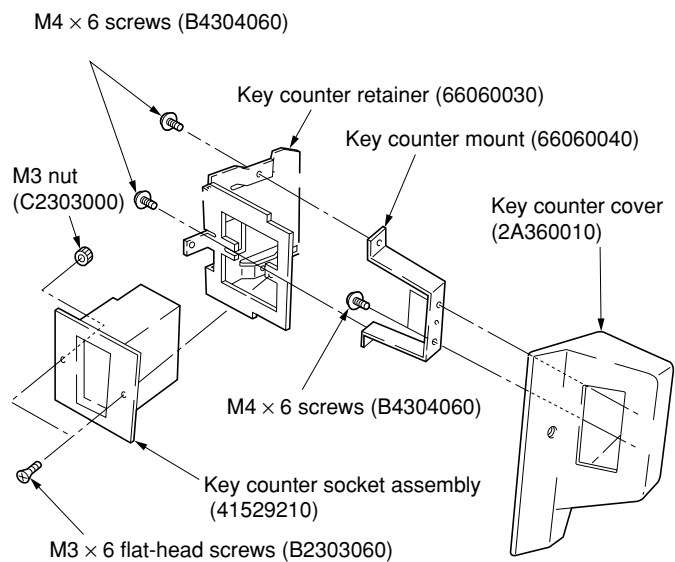


Figure 1-3-32

3. Remove the two screws holding the upper right cover and then the cover.
4. Cut out the aperture plate on the upper right cover using nippers. Also remove the two blanking seals.
5. Refit the upper right cover.

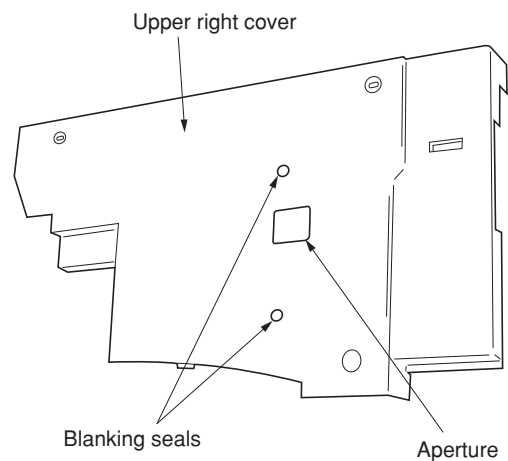


Figure 1-3-33

6. Seat the projection of the key counter cover retainer in the aperture in the upper right cover, and fasten it to the copier using two screws.

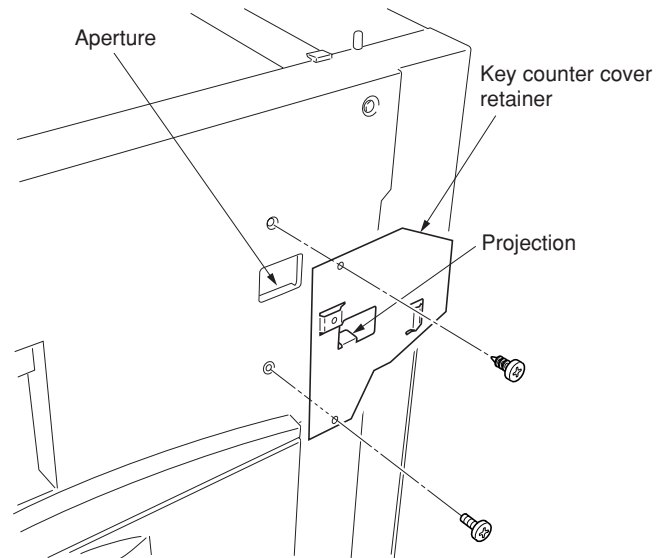


Figure 1-3-34

7. Connect the connector of the key counter to the connector pulled out from inside the machine.
8. Fit the key counter cover with the key counter socket assembly inserted to the key counter cover retainer on the copier using the screw.

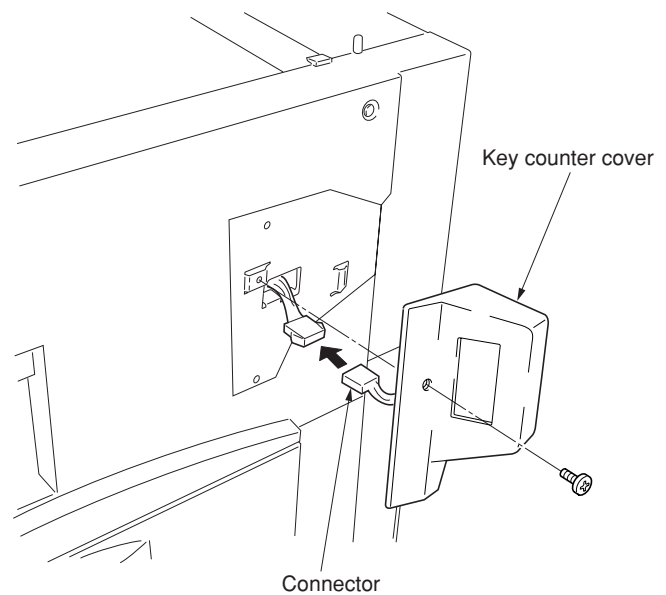


Figure 1-3-35

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

1-3-5 Installing the bar code reader (option)

Bar code reader installation requires the following parts:

Bar code reader

Bar code reader holder

Note: The bar code reader can be installed only if the printer board has been installed.

Procedure

1. Stick the bar code reader holder to the copier using double-faced tape.

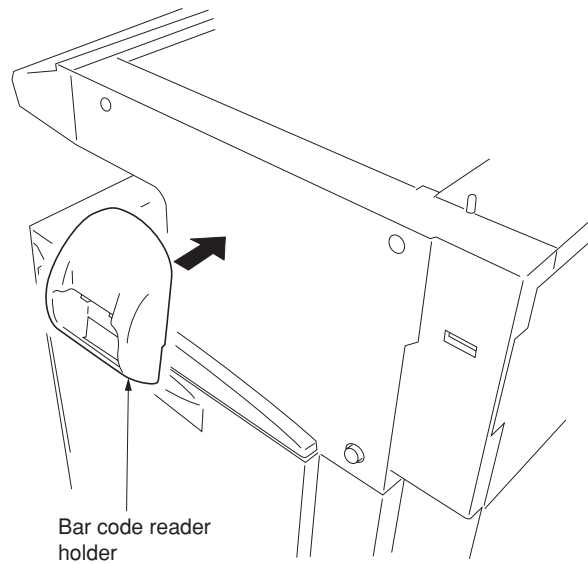


Figure 1-3-36

2. Connect the cable of the bar code reader to the connector of rear right of the copier.

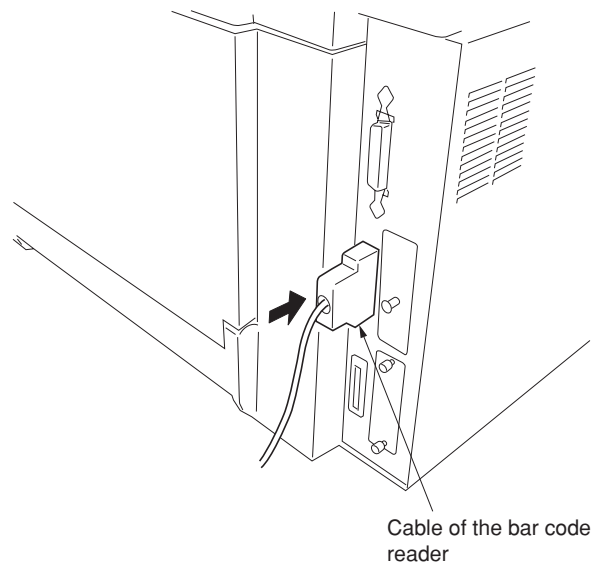


Figure 1-3-37

3. Place the bar code reader to the bar code reader holder.

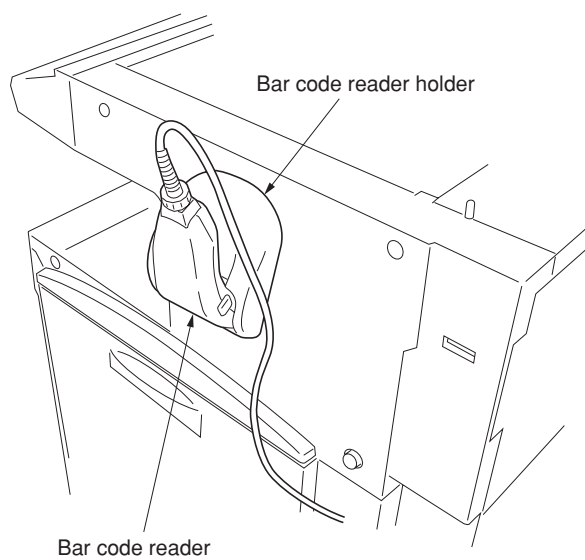


Figure 1-3-38

1-3-6 Installing the document finisher (option)

Preparation

[Attaching the mount assembly to the copier]

1. Open the copier's face-up tray and conveying cover.
2. Lift the conveying cover, and turn the two strap mounts toward the inside of the copier to detach them.

Note: To detach, turn each strap mount so that it aligns with the catch on the copier.

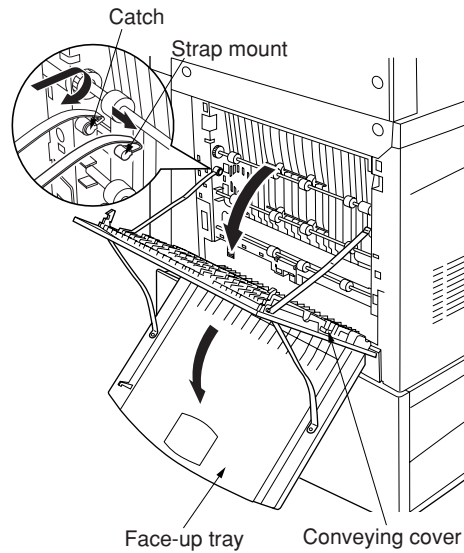


Figure 1-3-39

3. Hold the face-up tray and conveying cover so that they are horizontal, and remove them from the copier.

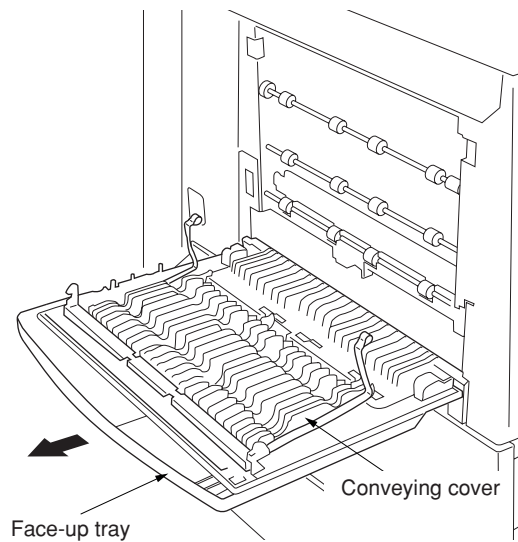


Figure 1-3-40

4. Hold the exit cover assembly so that it is horizontal, and attach it to the copier.

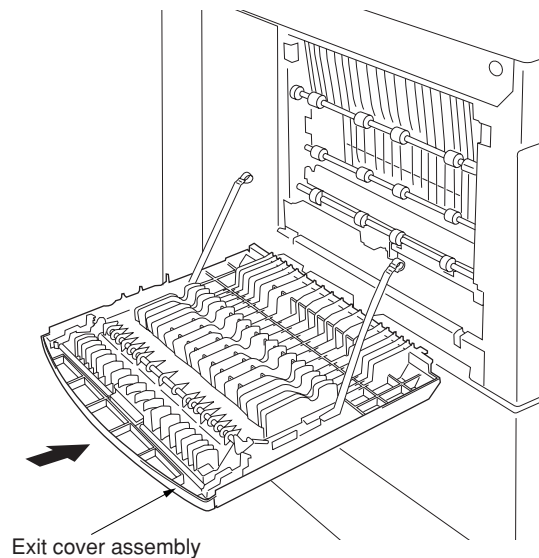


Figure 1-3-41

5. Lift the exit cover assembly, turn the assembly's two mount pieces toward the inside of the copier and attach them to the copier.

Note: To attach, turn each mount piece so that it aligns with the catch on the copier.

6. Close the exit cover assembly.

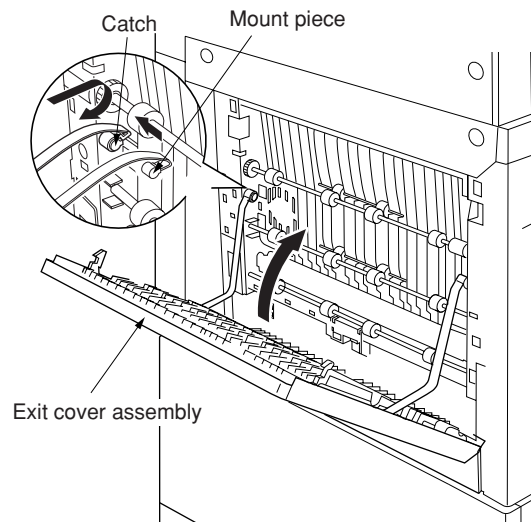


Figure 1-3-42

7. Fasten the retainer to the copier's exit cover using the 4 M4 × 8 TP-A chrome screws.

Note: Fasten at the center of the oblong holes.

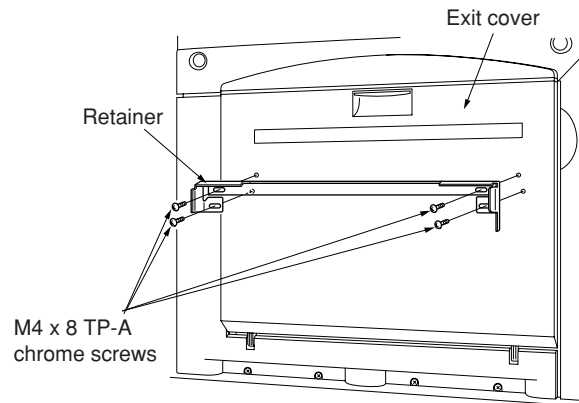


Figure 1-3-43

[Mounting the finisher]

1. Unscrew 2 blue screws and remove the 2 metal fittings holding the rail unit to the finisher.

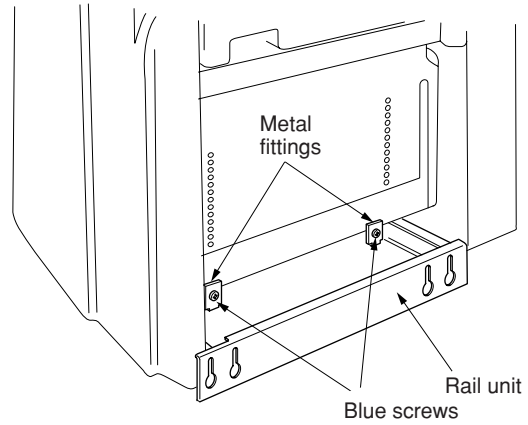


Figure 1-3-44

2. Unscrew the transport fastening screw from the rail unit, move it into the front screw hole, and screw it in.

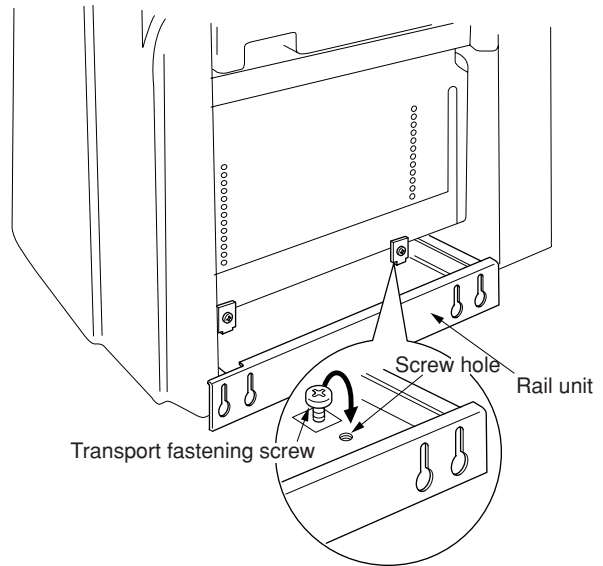


Figure 1-3-45

3. Pull out the 2 fastening pins holding the collection tank in place, and take the collection tank out of the finisher.

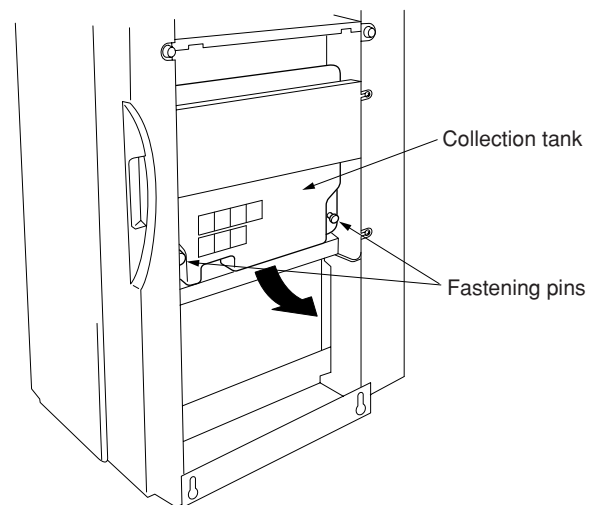


Figure 1-3-46

4. Remove the tape securing the solenoid, and the tape securing the shifting guide.
5. Set the collection tank back into the finisher, and fasten it into place with the 2 fastening pins.

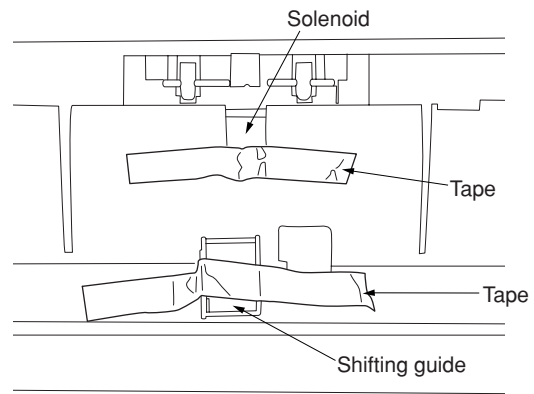


Figure 1-3-47

6. Pull the rail unit out of the finisher.
7. Loosely fasten the rail unit to the copier's finisher-attachment area with the 2 M4 x 10 TP-A bronze screws.

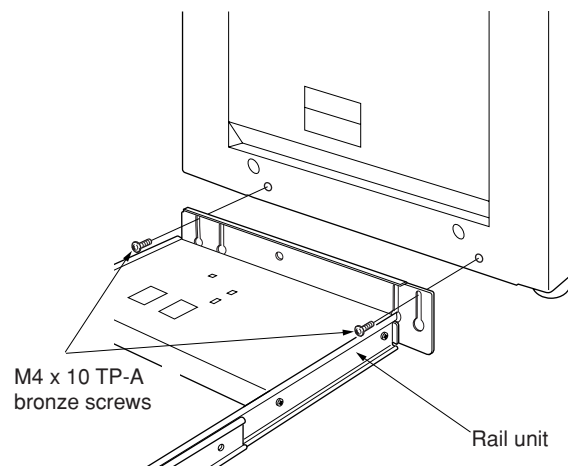


Figure 1-3-48

8. Move the finisher next to the copier, and open the finisher's front cover. Adjust the height-adjustment screw in the rail unit until the guideline marked on the retainer is aligned with the center of the height-adjustment plate.

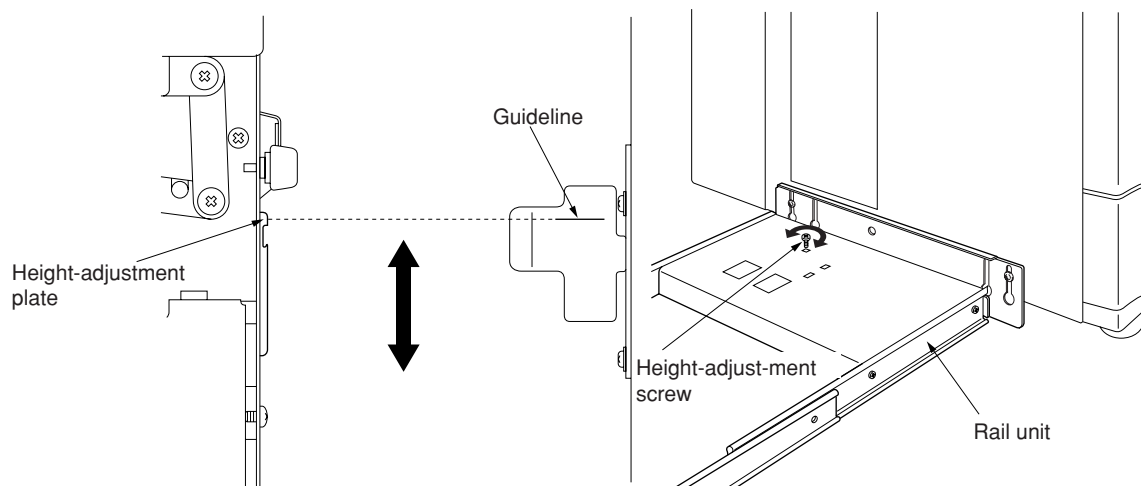


Figure 1-3-49

2A6

9. Pull the finisher away, and tighten up the 2 screws to securely fasten the rail unit to the copier's finisher-attachment area.
10. Set the finisher against the copier.

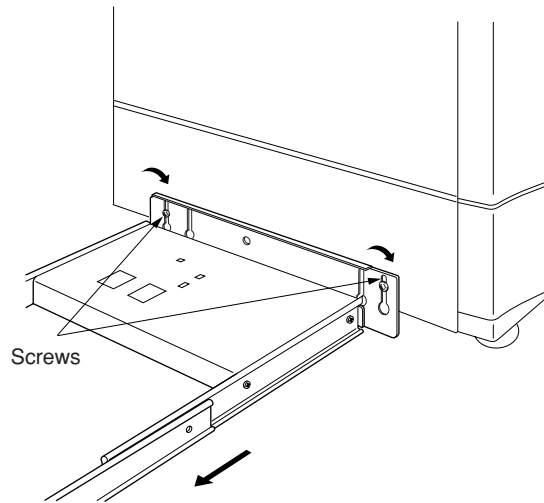


Figure 1-3-50

11. Open the finisher's front cover.
12. Remove the tape securing the internal tray unit.
13. Remove the fastening pin holding the internal tray unit in place, and pull out the middle tray unit.

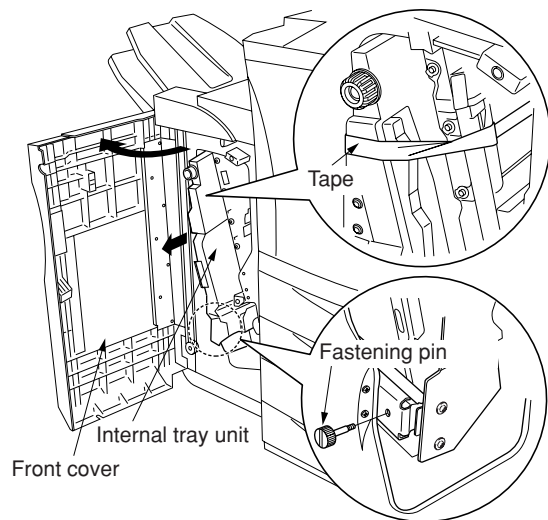


Figure 1-3-51

14. Remove the tape securing the cushioning material for the stapler unit, and remove the cushioning material.

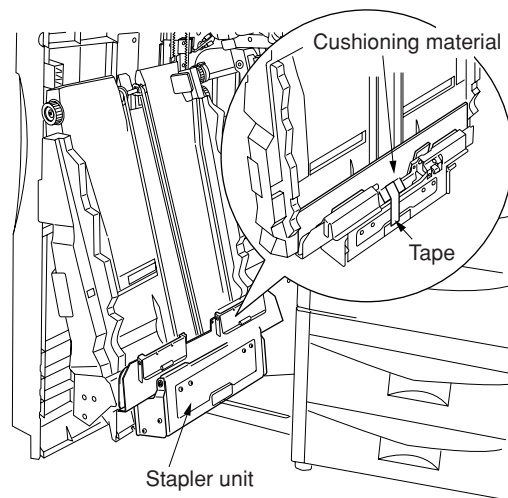


Figure 1-3-52

15. Remove the 2 fastening pins securing the stapler unit at the bottom of the intermediate tray unit.
16. Raise the stapler unit in the indicated direction, and load the 2 stapler cartridges into it.

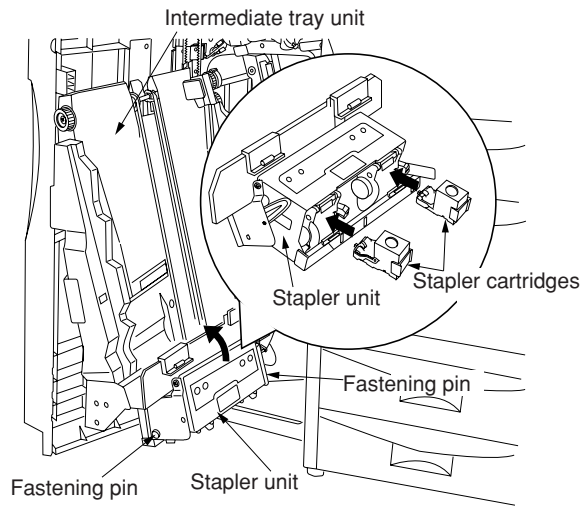


Figure 1-3-53

17. Lift the stapler unit further up, and then lower it.
18. Set the intermediate tray unit back into the finisher, and close the front cover.

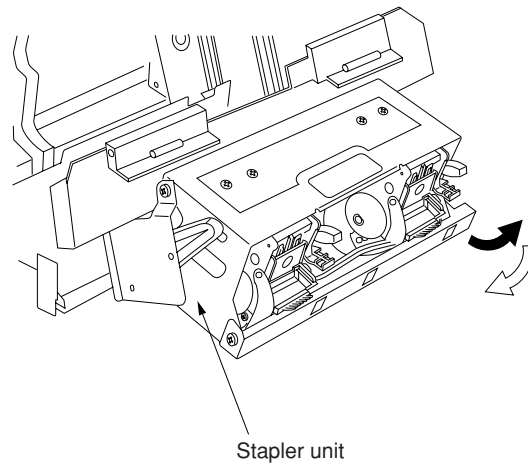


Figure 1-3-54

19. Fasten the main tray to the finisher using the 2 fixing guide pins and the 2 hexagonal cap nuts.

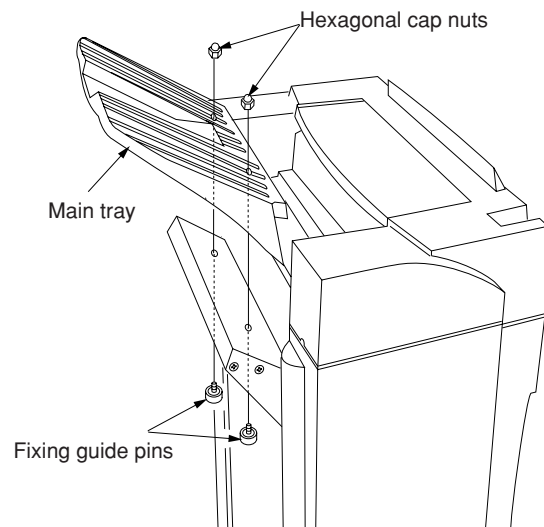


Figure 1-3-55

20. Hold the auxiliary tray vertically, attach it to the top of the finisher, and lower it toward the exit side.

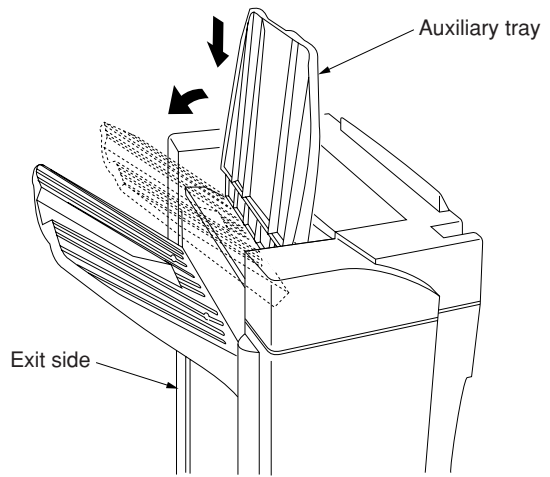


Figure 1-3-56

[Mounting the option power assembly]

1. Use a screwdriver to remove the screw securing connector to the rear of the copier, and remove the connector.

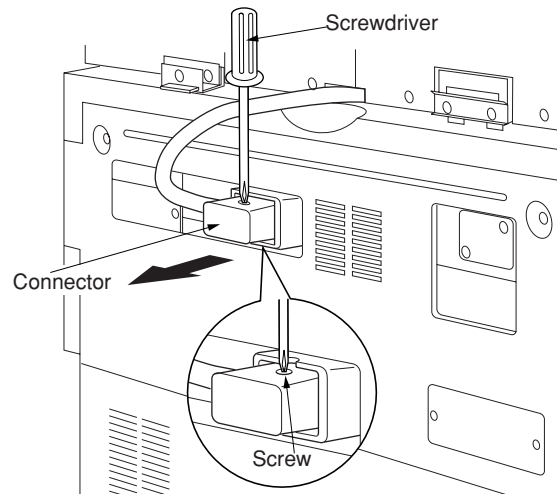


Figure 1-3-57

2. Remove 3 screws and take off the copier's middle rear cover.
3. Disconnect the 4-pin connector.

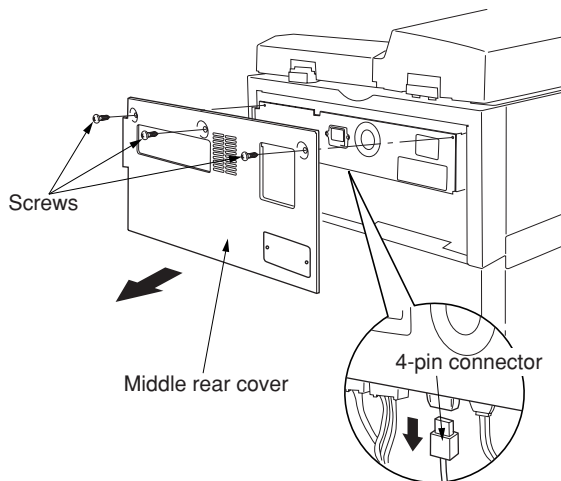


Figure 1-3-58

4. Fasten the option power assembly to the copier with the 2 M3 × 8 tap-tight binding screws.

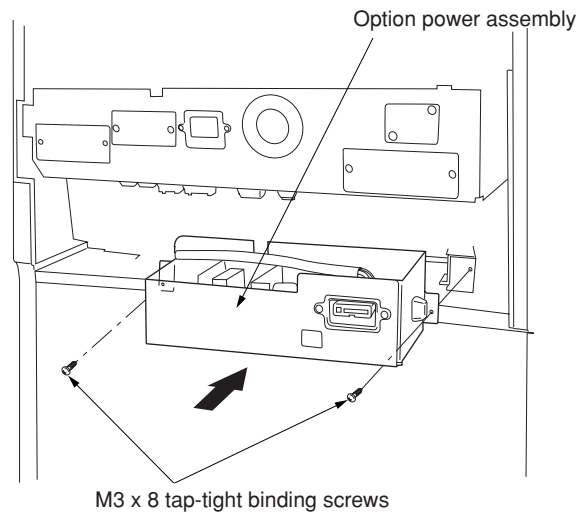


Figure 1-3-59

5. Connect the option power assembly's 2-pin and 6-pin connectors, and reconnect the 4-pin connector that you removed at Step 3 above.

Note: Pass the 4-pin connector through the option power assembly's edge saddle.

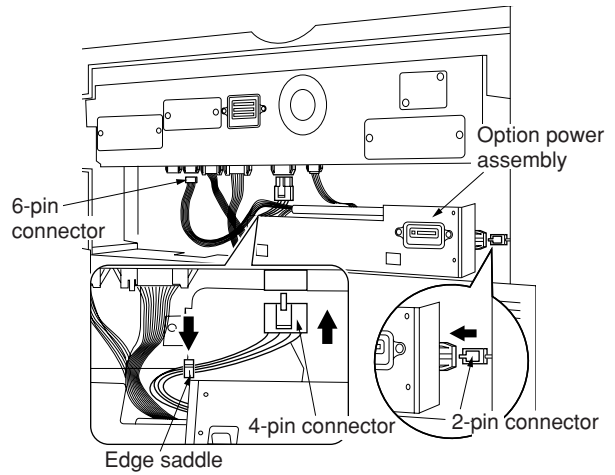


Figure 1-3-60

6. Reattach the copier's middle rear cover using the 3 screws you removed at Step 2.

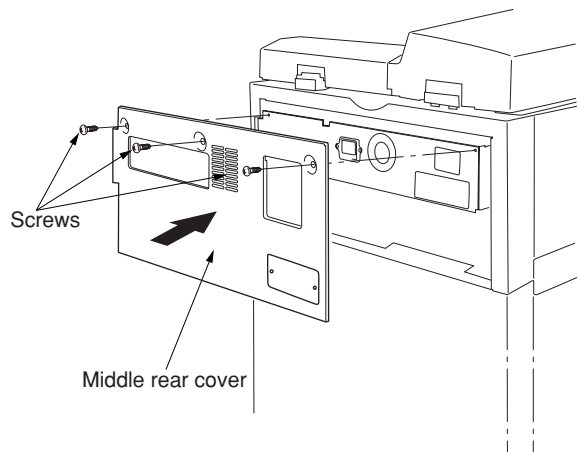


Figure 1-3-61

7. Remove 2 screws and take off the cover plate on the middle rear cover.

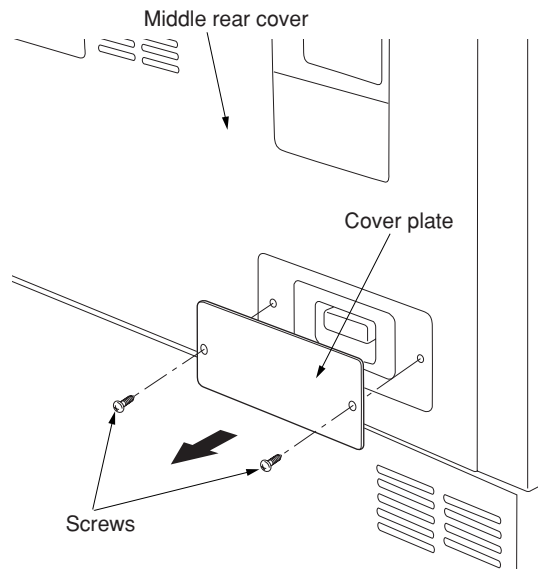


Figure 1-3-62

8. Reconnect connector to the rear of the copier, and fasten it into place with the connector screw.

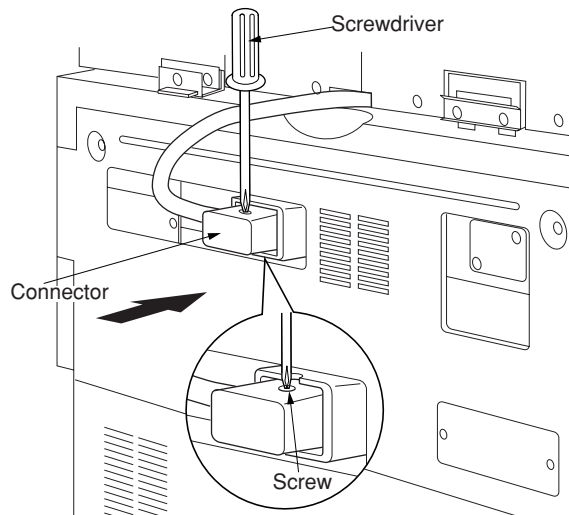


Figure 1-3-63

[Connecting the signal cable]

1. Connect the finisher's signal cable to the connector on the copier.
2. Plug the copier into a wall outlet, and turn the copier's main switch on.

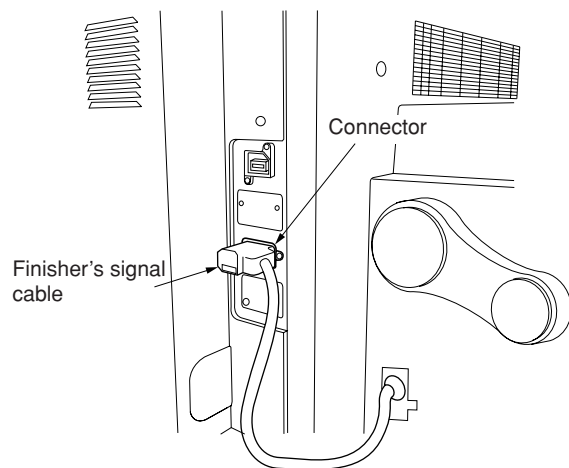


Figure 1-3-64

[Checking and adjusting]

- Adjust the punch-hole centering.
1. Set the machine into punch mode, and make a test copy using manual feed.
 - Note:** Perform this check after checking that the center position of each drawer in the copier is correct.
 2. Check the centering of the punch-holes on the test copy.
 3. Loosen the 4 screws securing the retainer, move the retainer as necessary to adjust the centering, and then retighten the screws.
 - If holes are off-center toward the front of the copier (case [a] in illustration): Move the retainer toward the rear of the machine (in the direction of the ← in the illustration.)
 - If holes are off-center toward the rear of the copier (case [b] in illustration): Move the retainer toward the rear of the machine (in the direction of the ⇨ in the illustration).

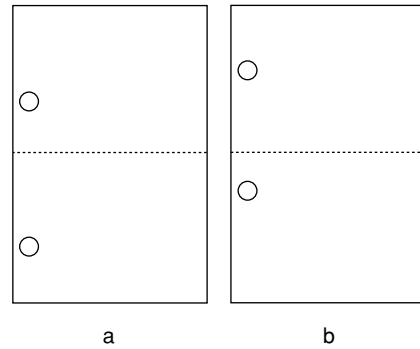


Figure 1-3-65

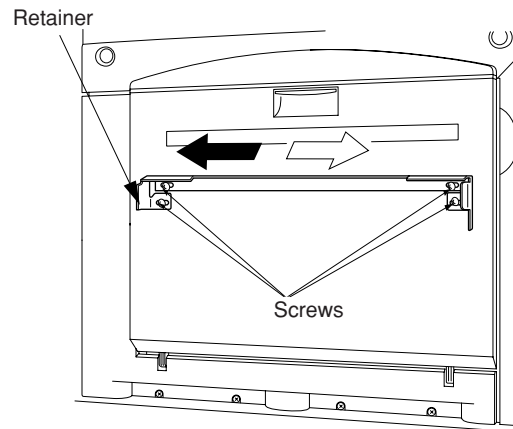


Figure 1-3-66

- Adjust the paper curl
1. Run paper through the machine.
 2. Check the curl on the paper ejected onto the finisher's auxiliary tray. clamp to the wing tray and pass the wire through both clamps.

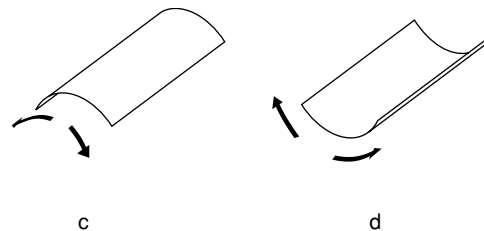


Figure 1-3-67

- If excessive downward curl (case [c] in illustration):
- (1) Open the finisher's front cover.
 - (2) Move the lower lever one step to the left. The lever is initially set to position "1," and can be adjusted to five positions ("1" to "5").
 - (3) Run paper through the machine.
 - (4) Check the downward curl on the ejected paper.
 - (5) Repeat steps 2 to 4 until there is no curl.
 - (6) Close the finisher's front cover.

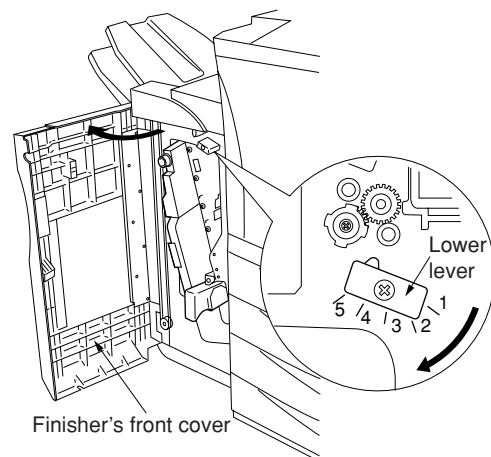


Figure 1-3-68

- If excessive upward curl (case [d] in illustration):
- (1) Loosen 4 screws and remove the finisher's upper cover.

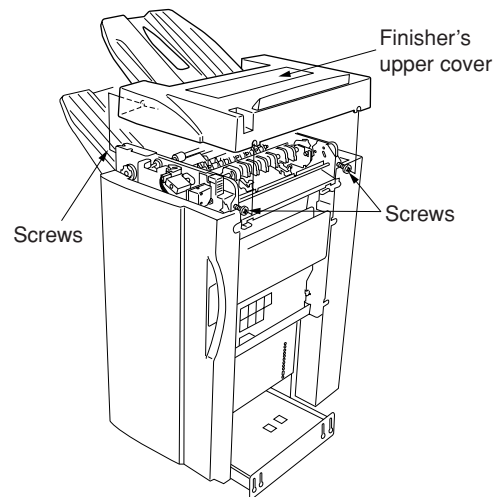


Figure 1-3-69

- (2) Move the upper lever m one step to the right. The lever is initially set to position "1," and can be adjusted to five positions ("1" to "5").
- (3) Run paper through the machine.
- (4) Check the upward curl on the ejected paper.
- (5) Repeat steps 2 to 4 until there is no curl.
- (6) Reattach the finisher's upper cover, and tighten the 4 screws.

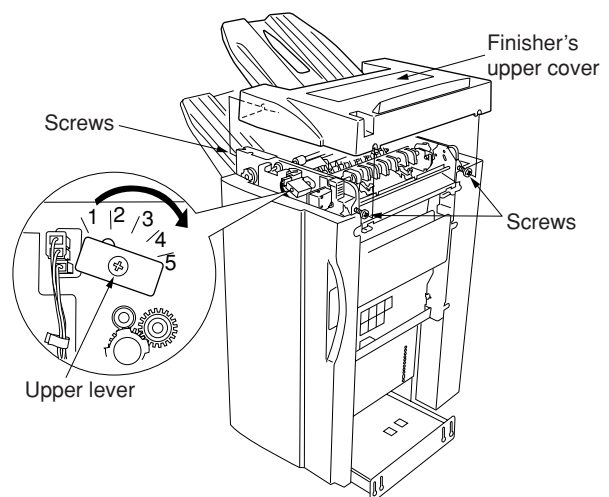


Figure 1-3-70

1-3-7 Installing the memory copy board/network scanner board (option)

Preparation

1. Remove the two screws and remove the operation section lower cover.

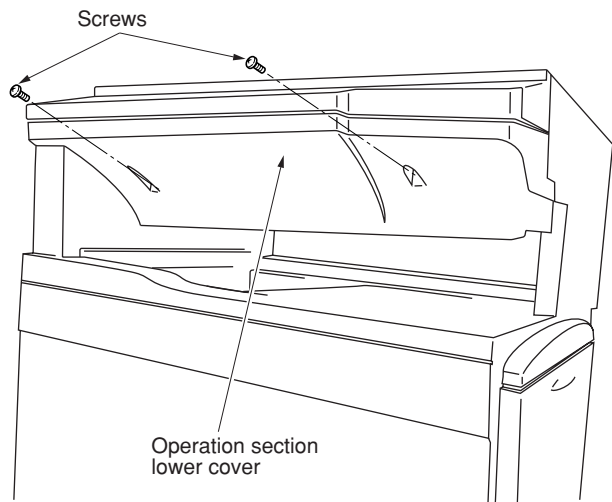


Figure 1-3-71

2. Remove the three connectors under the panel.
Remove the screw.
If a fax kit has been installed, also remove its connector.

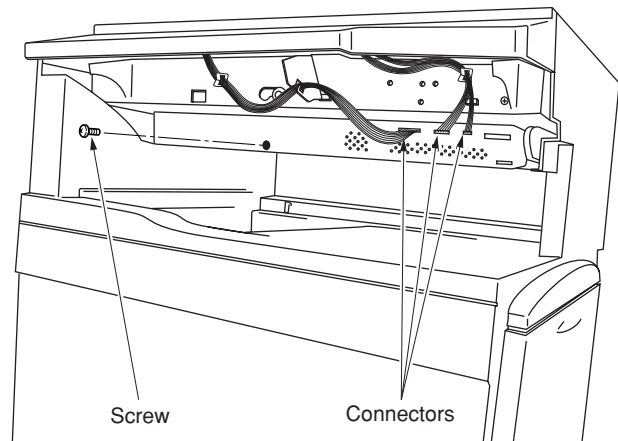


Figure 1-3-72

3. Remove the three screws and remove the middle rear cover.

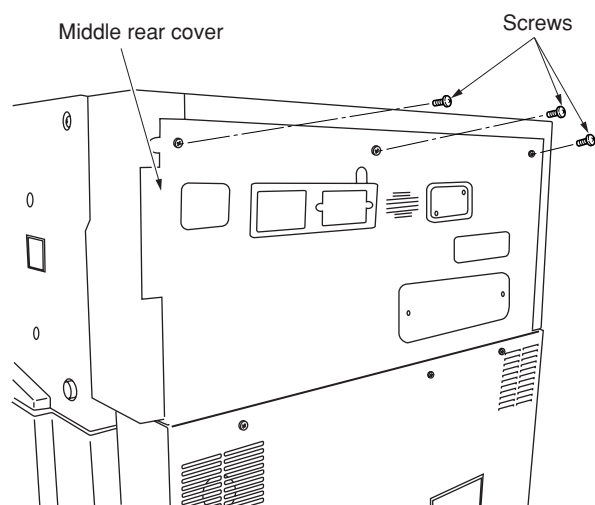


Figure 1-3-73

- Remove the four connectors and two screws, and pull out the electrical component unit a little.
If a fax kit, and a finisher have been installed, remove their respective connectors.
Remove the two screws and then remove the upper right cover.

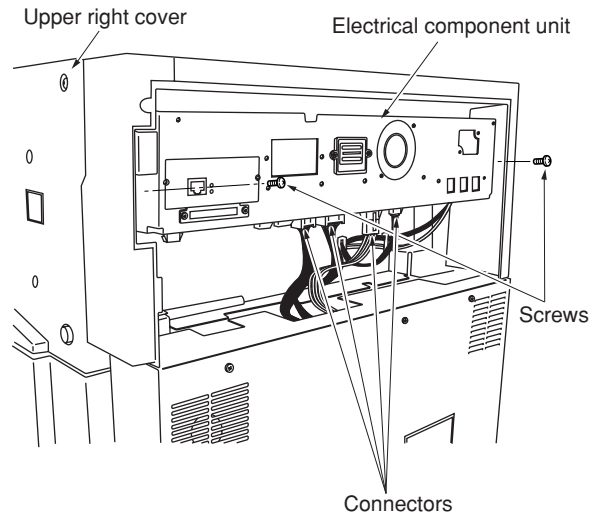


Figure 1-3-74

- Remove the seven connectors and then pull out the electrical component unit.

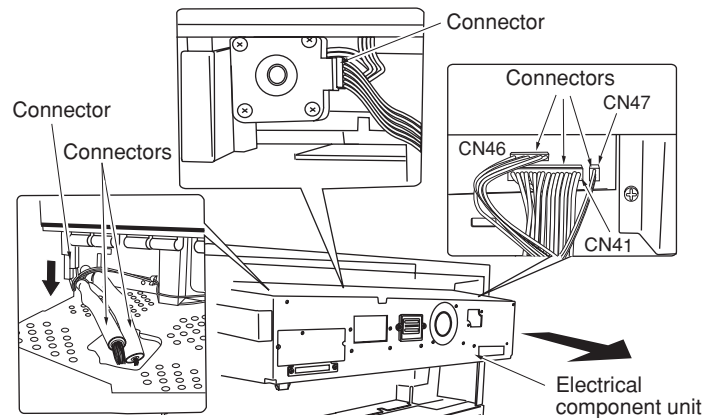


Figure 1-3-75

- Remove the 15 screws and then remove the electrical component cover.

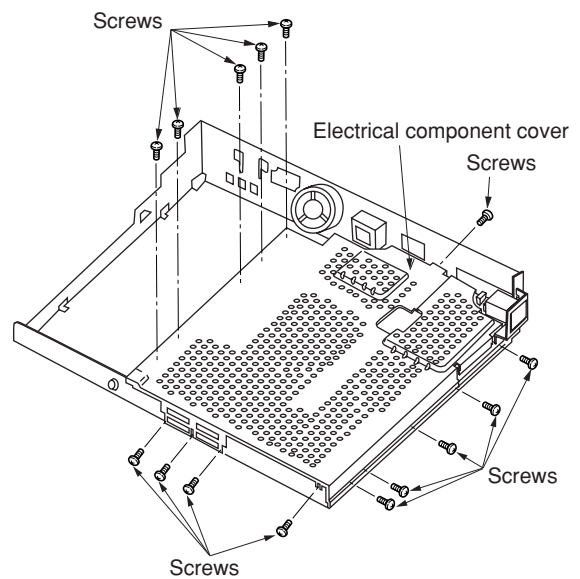


Figure 1-3-76

To install a memory copy board, proceed to step 7.
To install a network scanner board, proceed to step 9.
To install both units, follow step 7 and after sequentially.

[Installation of memory copy board]

- Fit the notch of the DIMM memory to the memory slot of the scanner main PCB and insert at an angle. Push both ends of the DIMM memory strongly toward the inner part along the socket rails to fix the memory.

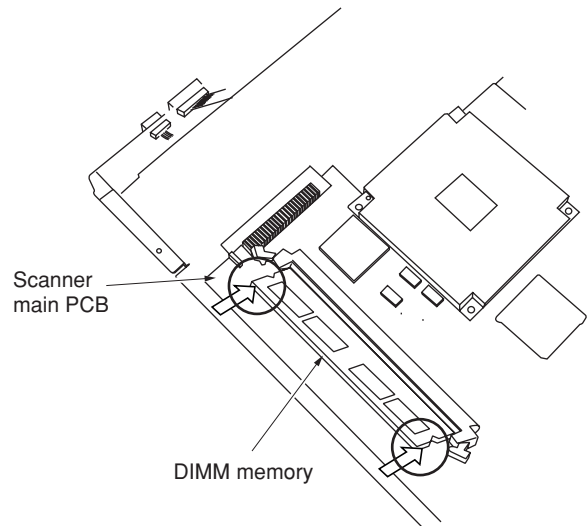


Figure 1-3-77

- Connect the memory copy board to the connector shown in the scanner main PCB. Ensure that the connector is inserted all the way into the other connector. Fix the memory copy board with the three pieces of binding Taptite M3 × 06. Take care not to get the wire caught. Execute maintenance item U024 (HDD format). See page 1-4-x. Check that "0000" is displayed after completing of initialization.

If installation of a network scanner board is not needed, proceed to step 13.

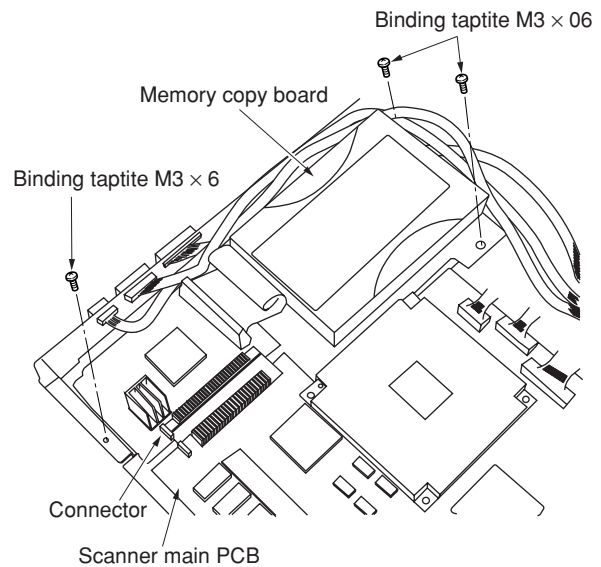


Figure 1-3-78

[Installation of network scanner board]

- Remove the two screws from the electrical component unit and then remove the rear cover.

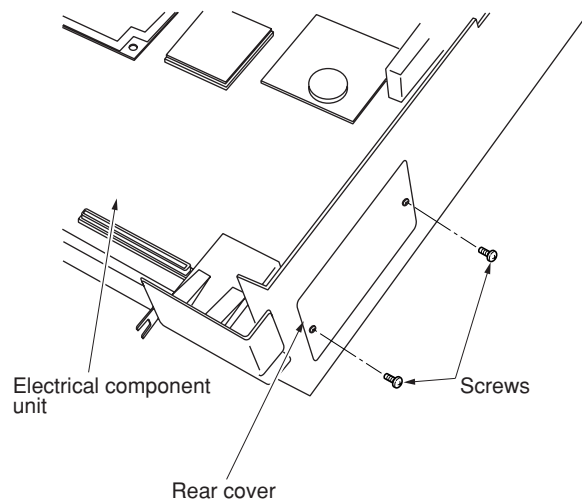


Figure 1-3-79

10. Insert the network scanner board and fix it to the connector as shown in the illustration. Ensure that the connector is inserted all the way into the other connector.

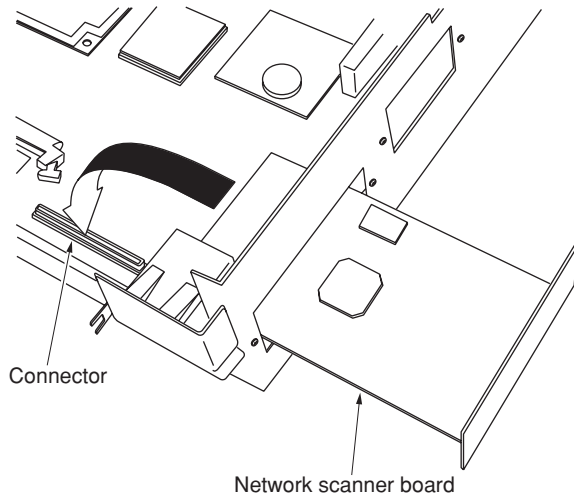


Figure 1-3-80

11. Fix the network scanner board with the two screws that have been removed in step 9.

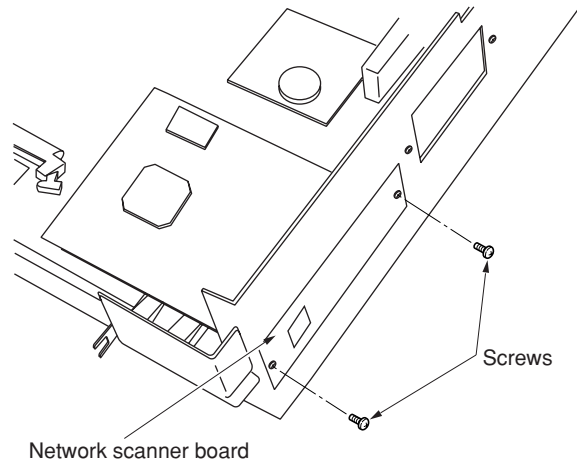


Figure 1-3-81

12. Remove the third slot cover at the side of the operation section with a flat-blade screwdriver, insert the scanner key, and fit the scanner cover.

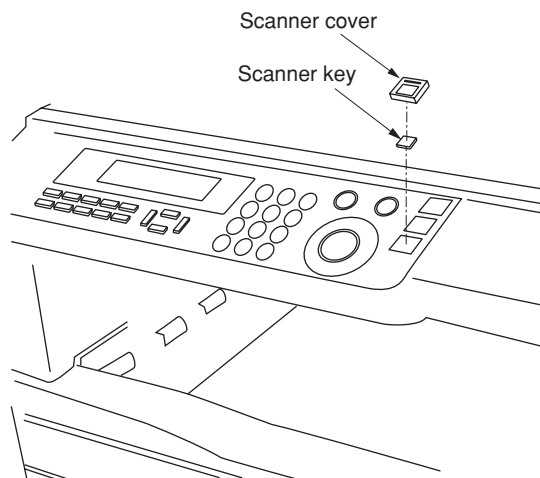


Figure 1-3-82

13. Reattach the electrical component unit to its original position.
14. Reattach the connectors that have been removed in steps 2, 4, and 5.
15. Reattach the middle rear cover to its original position.
16. Reattach the operation section lower cover to its original position.

1-3-8 Installing the printer board (option)

Preparation

1. Remove the two screws and open the right rear cover.

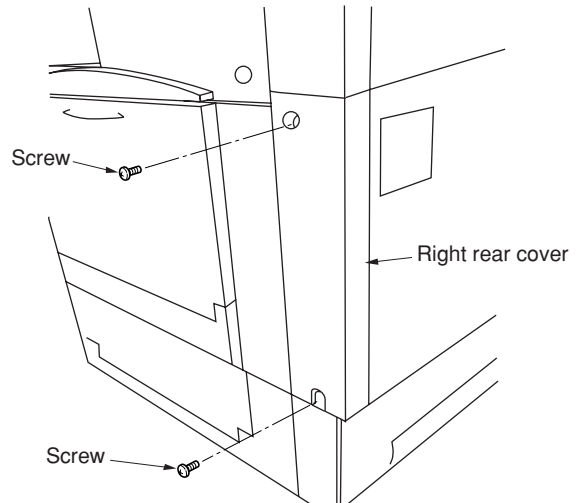


Figure 1-3-83

2. Insert the printer board all the way into the copier.

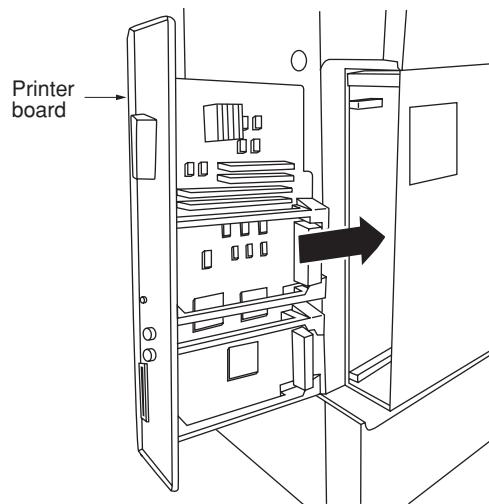


Figure 1-3-84

3. Fix the printer board with the two screws that have been removed in step 1 and the Binding taptite M4 x 10.

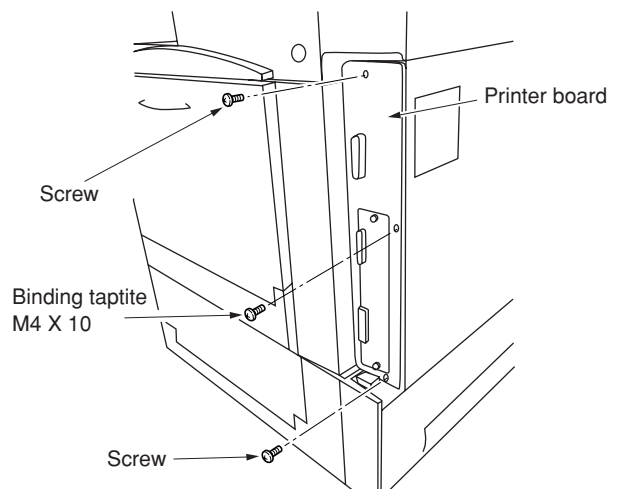


Figure 1-3-85

2A6

4. Remove the second slot cover at the side of the operation section with a flat-blade screwdriver, insert the printer key, and fit the printer cover.

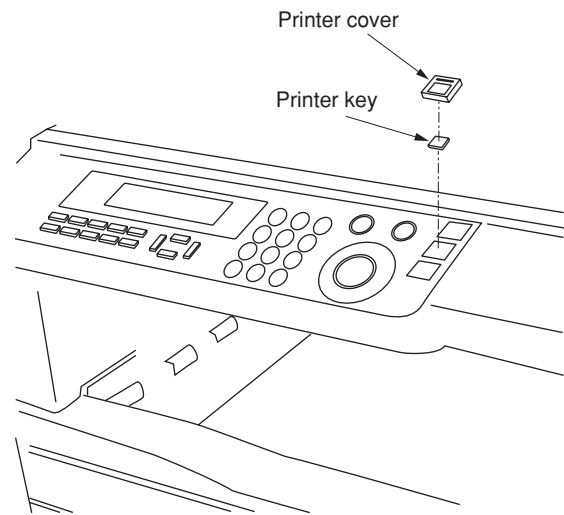


Figure 1-3-86

1-3-9 Installing the Fax kit (option)

Preparation

1. Remove the two screws and remove the operation section lower cover.

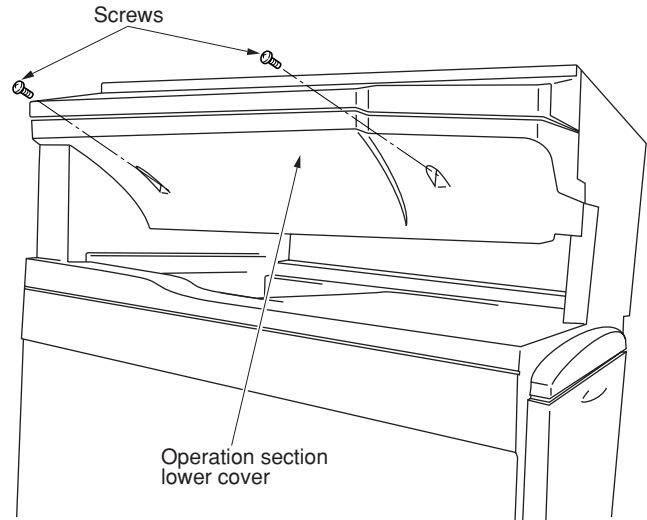


Figure 1-3-87

2. Remove the three connectors under the panel.
Remove the screw.

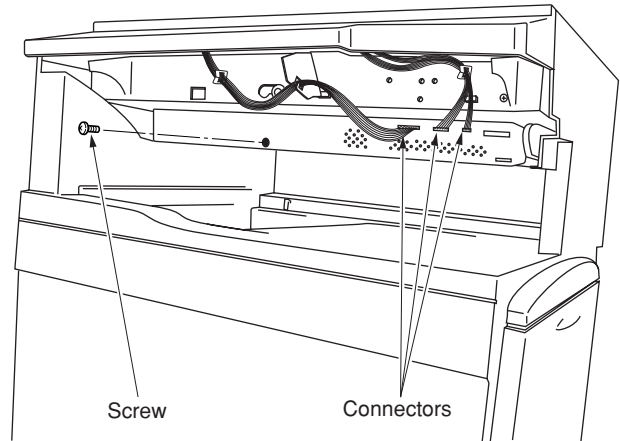


Figure 1-3-88

3. Remove the three screws and remove the middle rear cover.

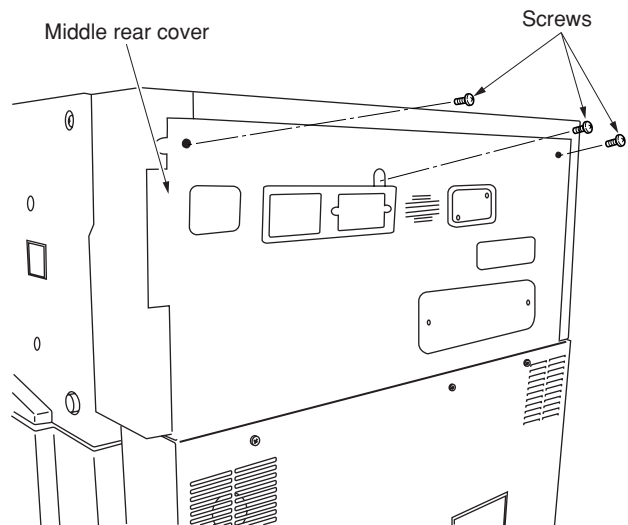


Figure 1-3-89

- Remove the four connectors and two screws, and pull out the electrical component unit a little.
If a finisher have been installed, remove their respective connectors.
Remove the two screws and remove the upper right cover.

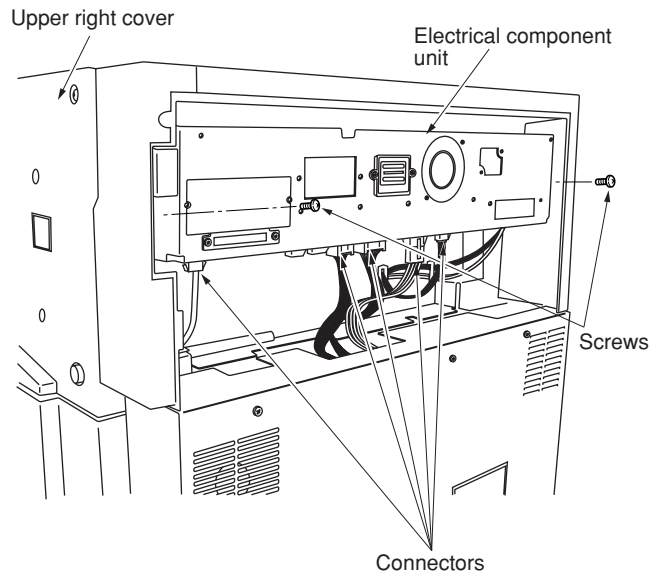


Figure 1-3-90

- Remove the seven connectors and then pull out the electrical component unit.

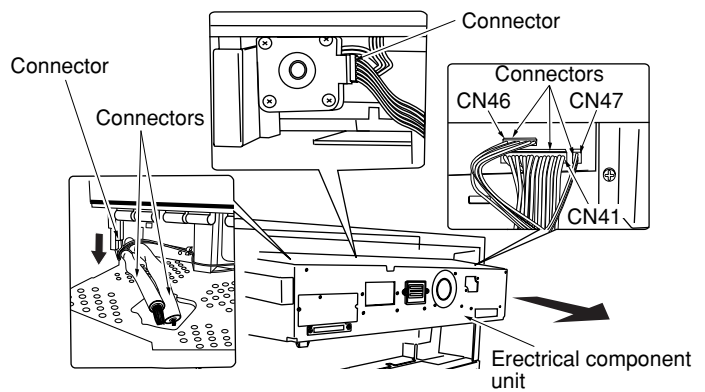


Figure 1-3-91

- Remove the 15 screws and then remove the electrical component cover.

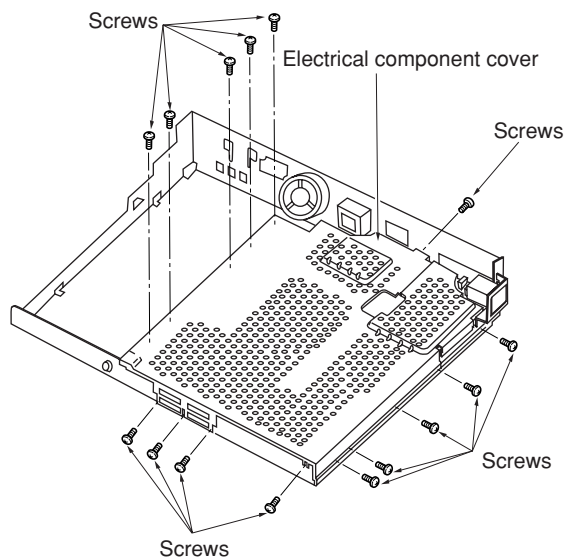


Figure 1-3-92

- Remove the 2 screws and then remove the cover.

Note: For the inch specifications, since the left modular is not used, stick the FAX sheet after removing the cover.

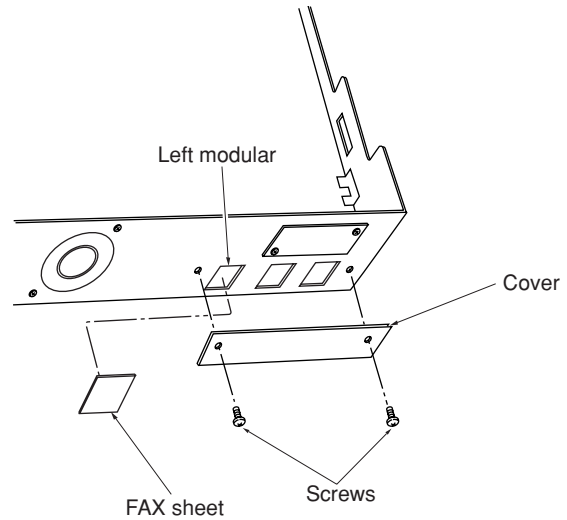


Figure 1-3-93

- Use the screw that has been removed in step 7 to fix the FAX board to the electrical component unit.

When fitting the FAX board, place it once vertically, then slide it in the horizontal direction (to the modular side), and hang the three claws of the electrical component unit on the FAX board.

Fit the FAX board so that the modular section enters the hole of the electrical component unit.

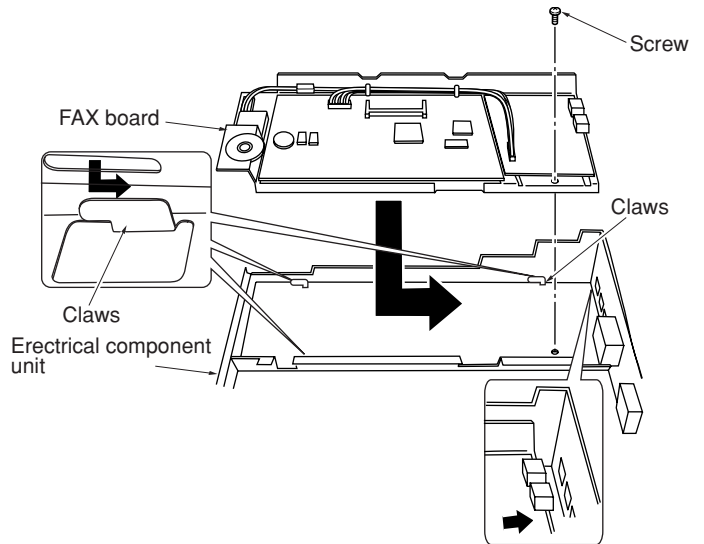


Figure 1-3-94

- Connect the wire FAX operation section to the CN1 of the scanner main PCB and the unoccupied panel cut portion.

- Fix the wire FAX operation section with three wire saddles.

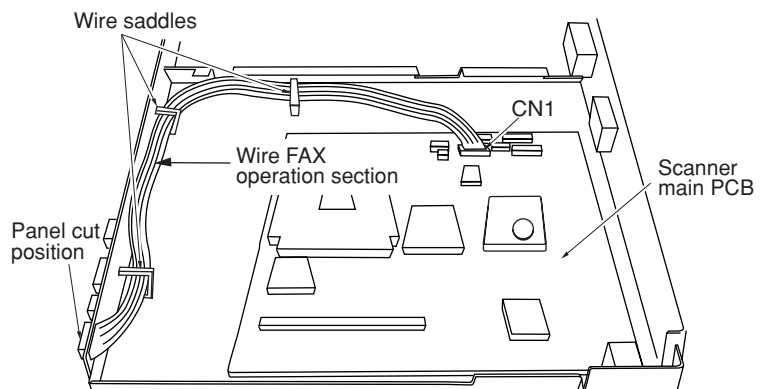


Figure 1-3-95

11. Connect the wire FAX relay to the CN8 of the FAX board.
12. Connect the FAX wire to the CN1 of the FAX board and the CN26 of the scanner main PCB.

Note: Insert the FAX wire firmly all the way into the connectors. Improper connection such as oblique insertion may cause various types of trouble. The front and the back of the FAX wire are not identical. Fit it so that the side with characters is placed as the back side.

13. Reattach the remove the electrical component cover to its original position.

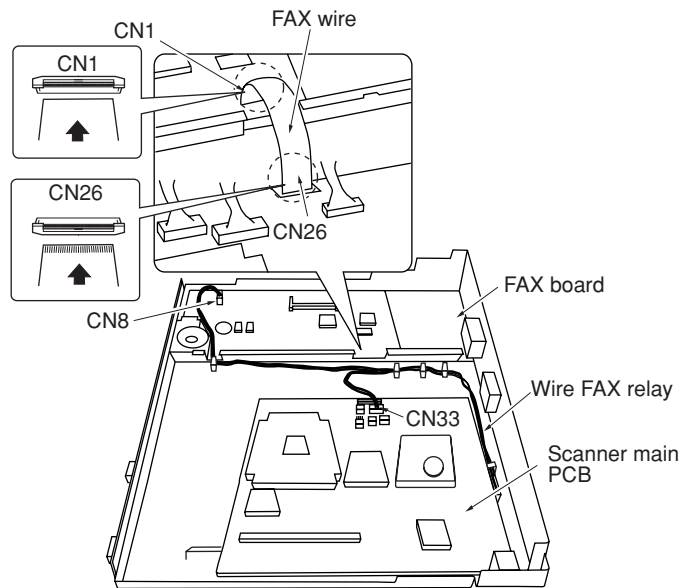


Figure 1-3-96

14. Remove the third slot cover at the side of the operation section with a flat-blade screwdriver, insert the FAX key, and fit the FAX cover.
15. Remove the cables from the two wire saddles and notch. Remove the five screws and raise the operation section to remove it.

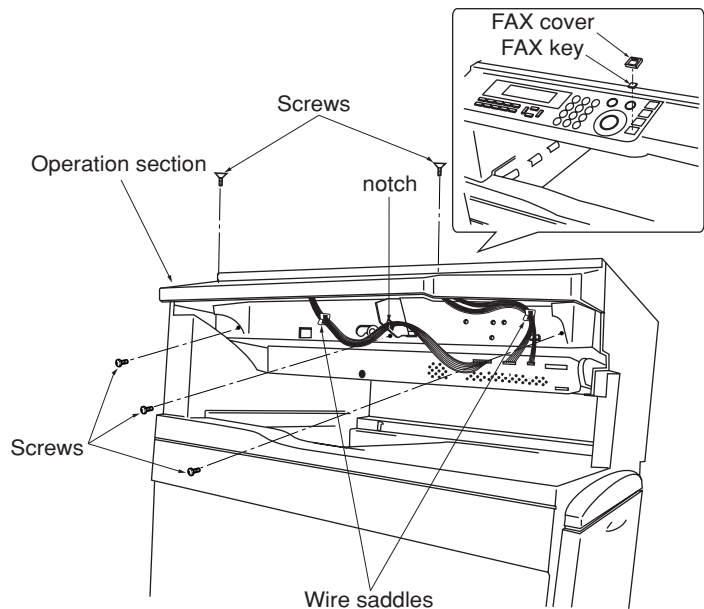


Figure 1-3-97

16. Remove the two screws from the mounting plate operation section on the back of the operation section.
17. Remove the claw from the cover of the operation section.

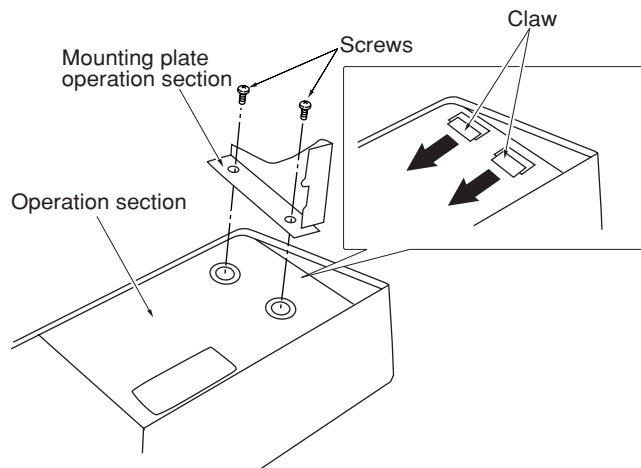


Figure 1-3-98

18. Remove the cover of the operation section.
19. Fit the FAX operation section so that its connector passes through the hole of the operation section.
20. Attach the mounting plate operation section.
21. Reattach the operation section.

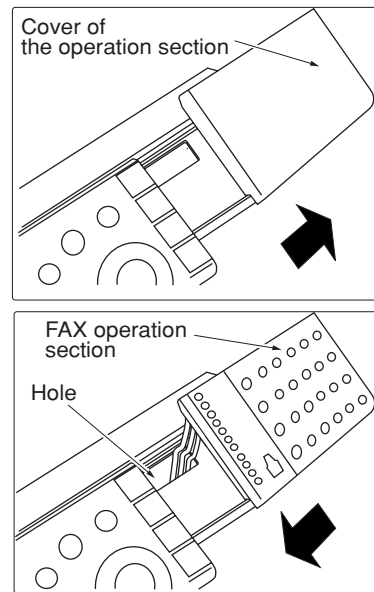


Figure 1-3-99

22. Reattach the electrical component unit to its original position.
23. Reattach the connectors that have been removed in steps 2, 4, and 5.
24. Connect the connector of the FAX operation section that has been fitted in step 19 to the connector under the panel, and fix the cables with wire saddle.

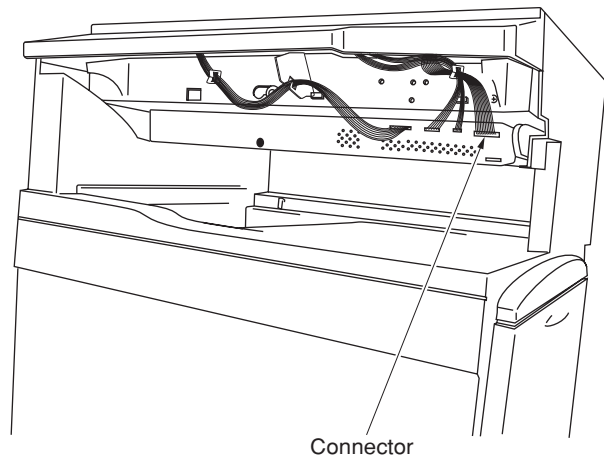


Figure 1-3-100

25. Fit the notch of the FAX power supply to the corresponding portion of the main body. Fix the FAX power supply with the screws that have been removed in step 7 and the supplied screw.
26. Connect the connector of the FAX power supply to the connector of the electrical component unit and the 3-pin connector.

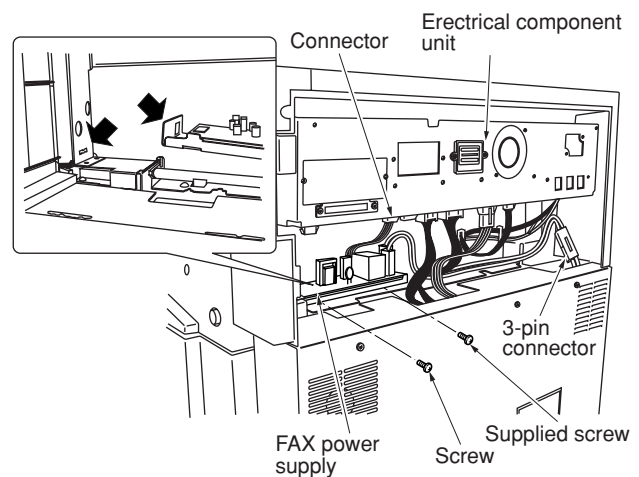


Figure 1-3-101

2A6

27. Reattach the upper right cover to its original position.
28. Reattach the middle rear cover to its original position.
29. Reattach the operation section lower cover to its original position.
30. Stick the supplied label (provisional name).

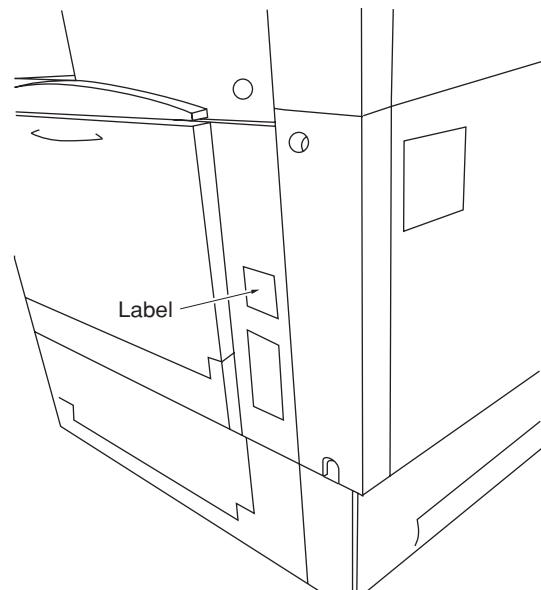


Figure 1-3-102

31. Connect the L terminal to a telephone line using the modular cord.
32. After completing all installation work, carry out a communication test to check that the facsimile function operates normally.

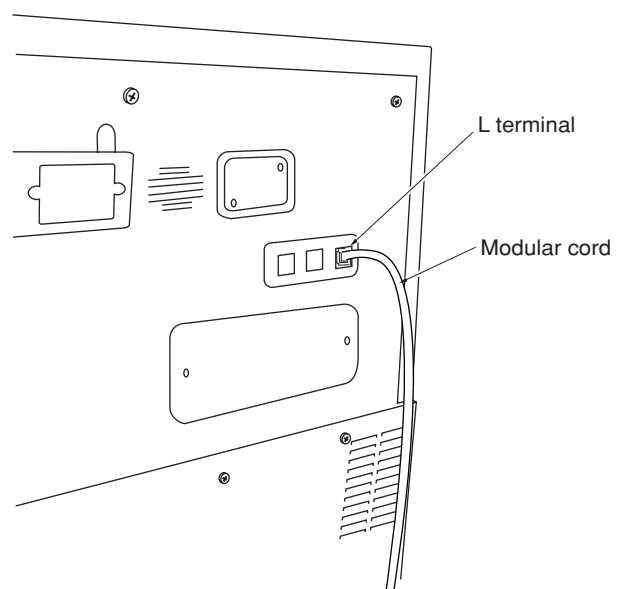


Figure 1-3-103

1-3-10 Installing the paper feeder (option)

Preparation

[Procedure if Installing one paper feeder only]

1. Set the paper feeder at the location where it is to be used following the installation.
Note: You can install any one of the following:
 500 × 2 paper feeder or duplex paper feeder.
2. Pull out the copier's four handles.

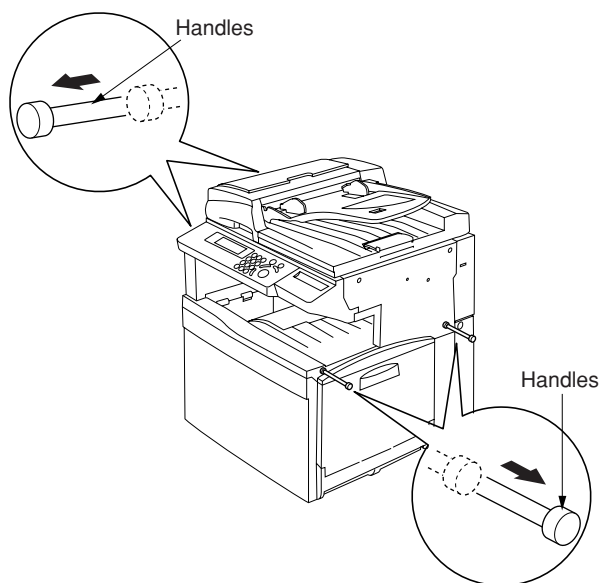


Figure 1-3-104

3. Lift the copier over the paper feeder, hold it so that the front of the copier is aligned with the front of the desk, and lower the copier onto the paper feeder so that the two pins and the connector fit into place.

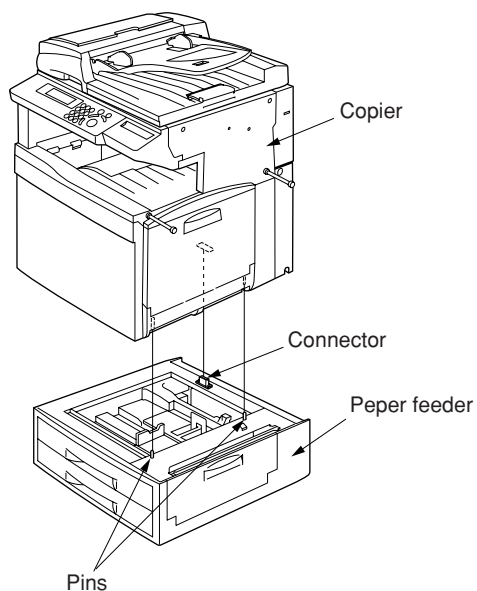


Figure 1-3-105

4. At the rear of the copier, remove the screw that you will use to secure the junction plate.

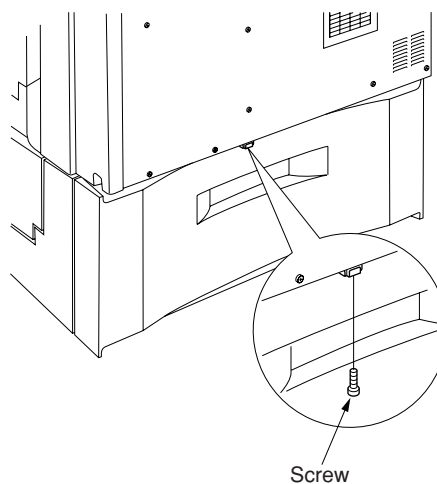


Figure 1-3-106

2A6

- Using the screw you just removed, fasten the junction plate to the rear of the copier and paper feeder.

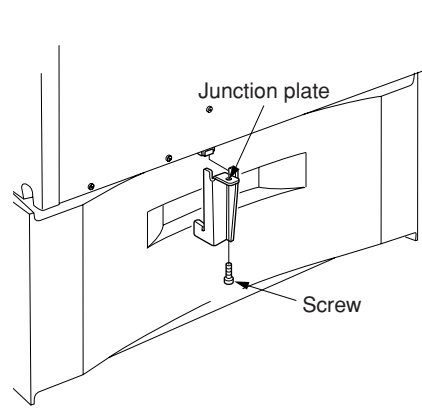


Figure 1-3-107

- Push the four handles back into the copier.
- Plug the copier's power cord back into the wall outlet, and turn on the copier's main switch.
- Make some test copies.

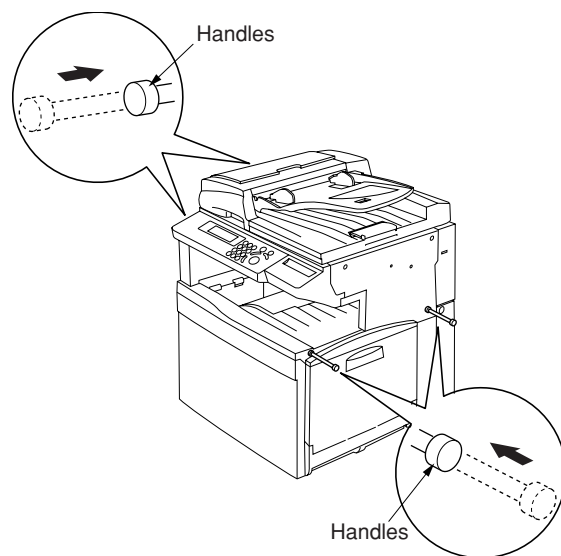


Figure 1-3-108

[Procedure if Installing two paper feeders]

Note: Casters can be installed only on the 250 × 2 paper feeder.

1. Set the (lower) paper feeder at the location where it is to be used following installation.
2. Stand the lower paper feeder upright on its left side.

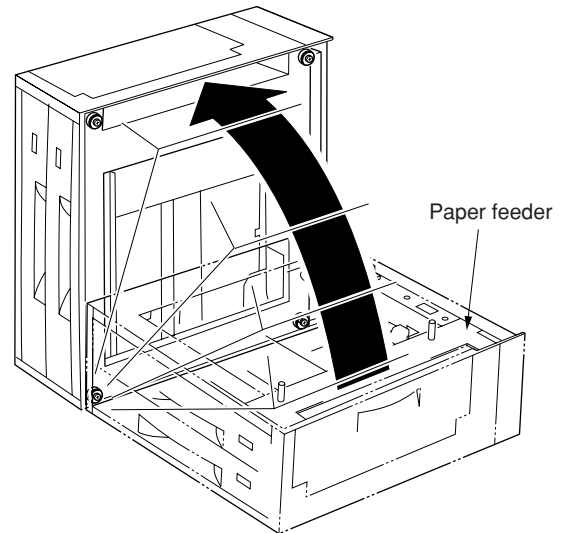


Figure 1-3-109

3. Remove the screws holding the four rubber pads (1 screw for each pad) on the bottom of the lower paper feeder, and take the pads off.

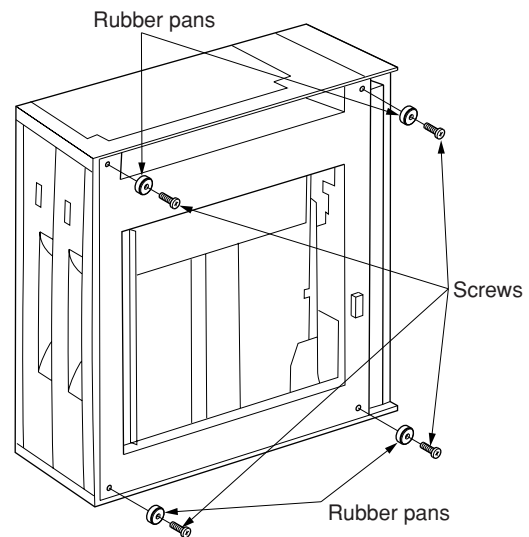


Figure 1-3-110

4. Position the two caster stays so that the arrow on the underside of the stay is pointing toward the front of the paper feeder (toward).
5. Fasten the two caster stays to the lower paper feeder using the eight M4 × 12 bronze screws (4 screws for each stay).

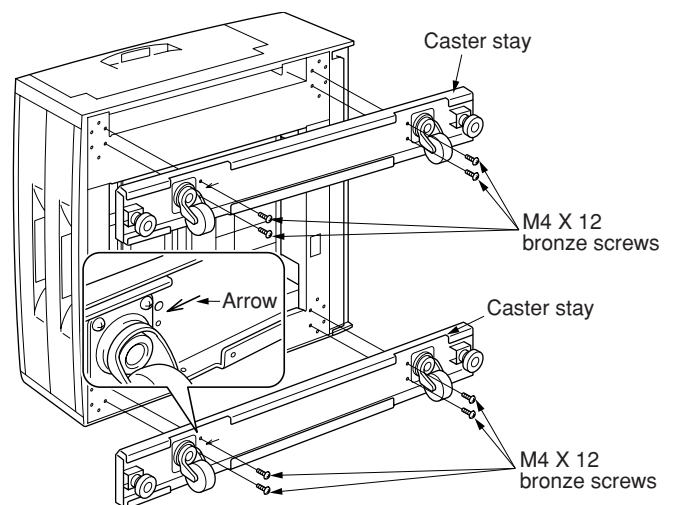


Figure 1-3-111

6. Lay the lower paper feeder back down in its original position.

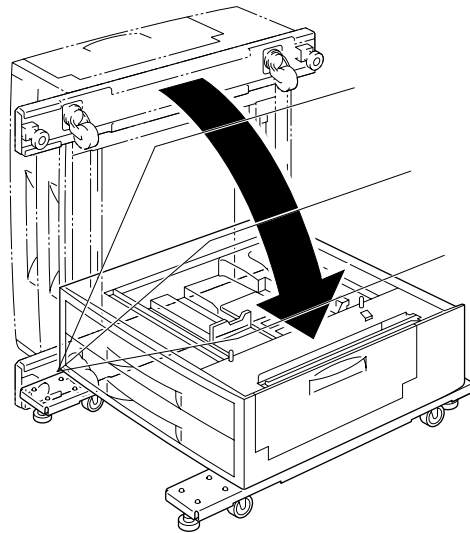


Figure 1-3-112

7. Set the upper paper feeder down onto the lower paper feeder so that the two pins and the connector fit into place.
Note: For the upper paper feeder, you can install any one of the following: 500 × 2 paper feeder or duplex paper feeder.

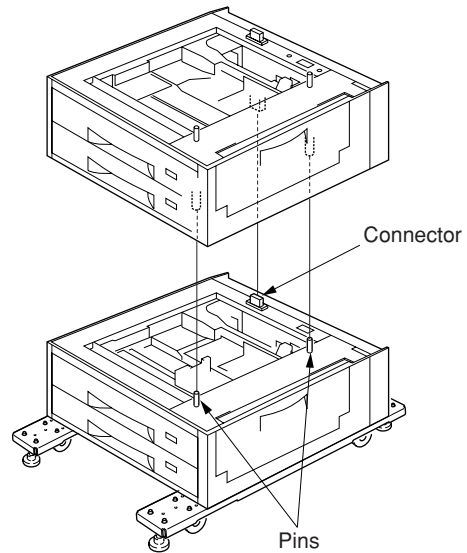


Figure 1-3-113

8. Pull out the upper three drawers, and secure the upper paper feeder to the lower paper feeder using the clamp.

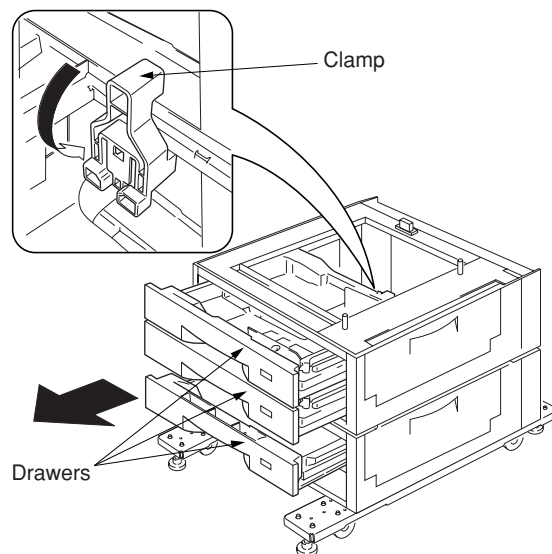


Figure 1-3-114

9. Pull out the copier's four handles.

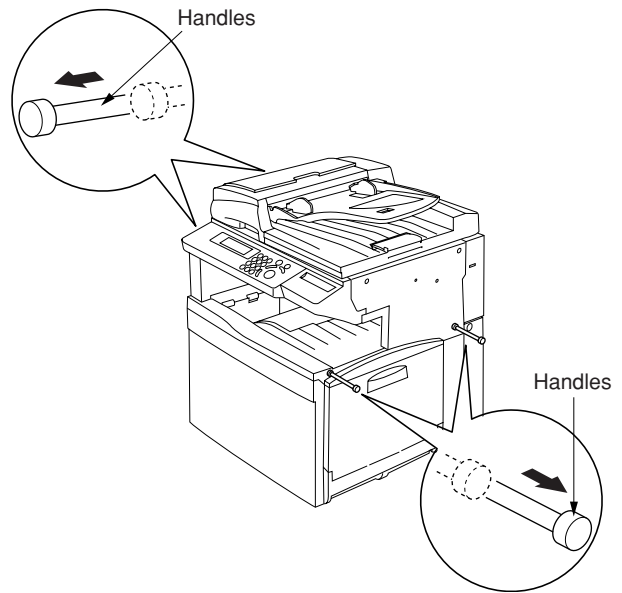


Figure 1-3-115

10. Lift the copier over the upper paper feeder, hold it so that the front of the copier is aligned with the front of the paper feeder, and lower the copier onto the paper feeder so that the two pins and the connector fit into place.

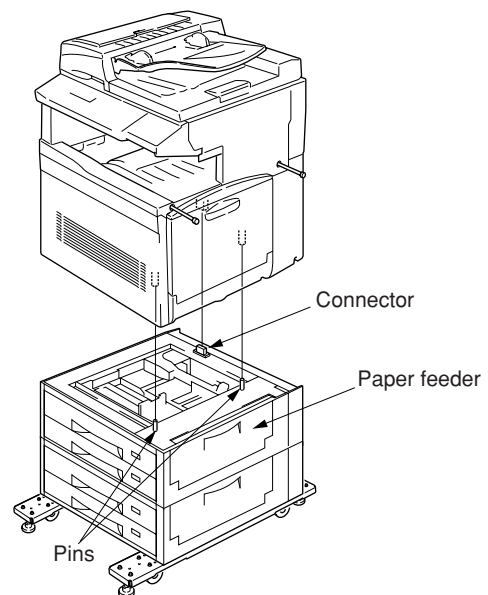


Figure 1-3-116

11. At the rear of the copier, remove the screw that you will use to secure the junction plate.

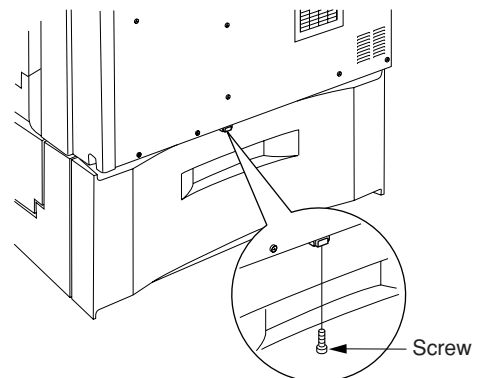


Figure 1-3-117

2A6

- Using the screw you just removed, fasten the junction plate to the rear of the copier and (upper) paper feeder.

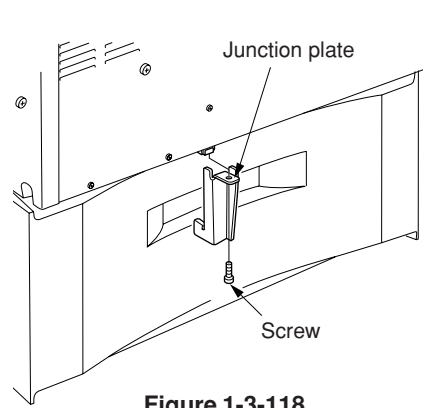


Figure 1-3-118

- Push the four handles back into the copier.
- Lower the four adjusters so they are flush with the ground.

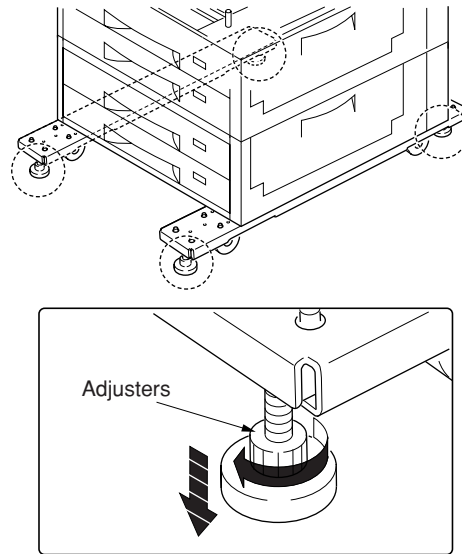


Figure 1-3-119

- Attach the two desk stay covers to the front part of the two caster stays using the two M4 × 8 chrome screws (1 screw for each cover).

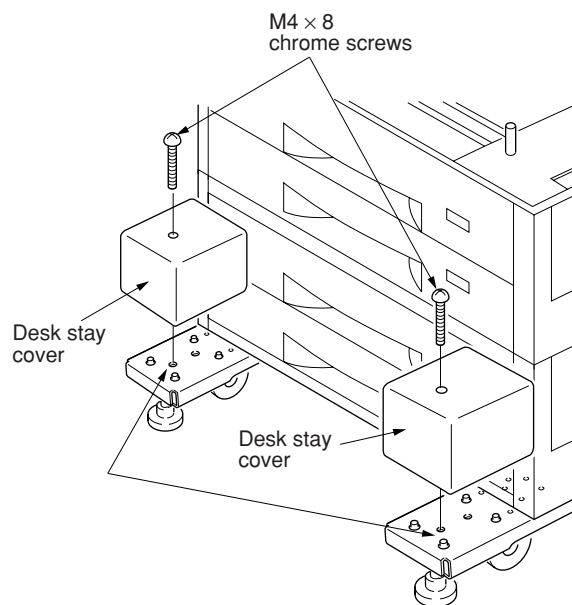


Figure 1-3-120

16. Attach the four labels at the locations shown in the illustration.

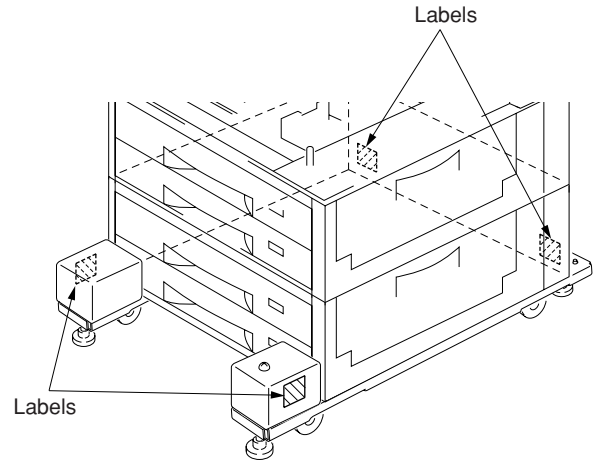


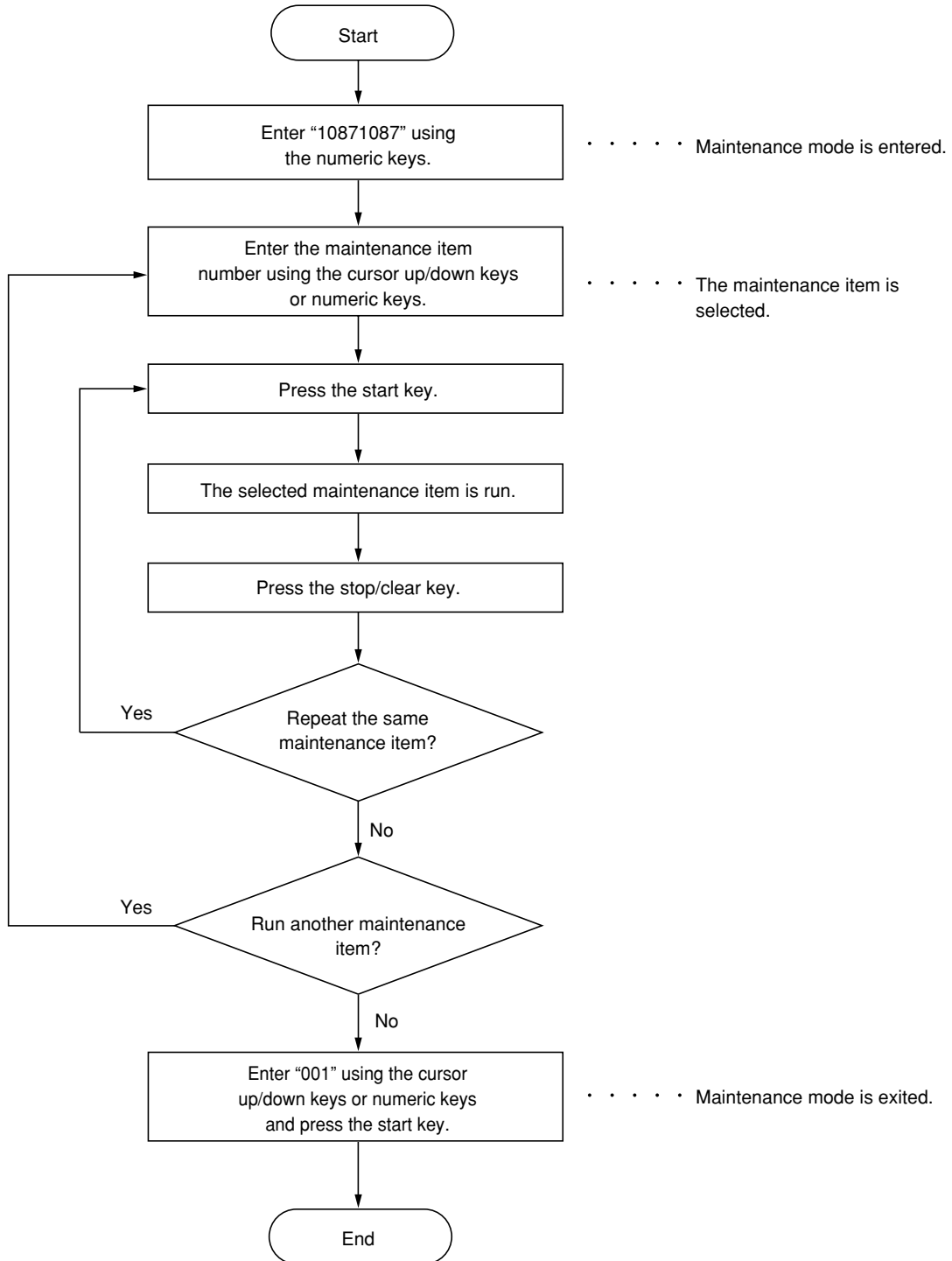
Figure 1-3-121

17. Plug the copier's power cord back into the wall outlet, and turn on the copier's main switch.
18. Make some test copies.

1-4-1 Maintenance mode

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

(1) Executing a maintenance item



(2) Maintenance mode item list

Section	Item No.	Content of maintenance item	Initial setting*
General	U000	Printing out an own-status report	—
	U001	Exiting the maintenance mode	—
	U003	Setting the service telephone number	*****
	U004	Setting the machine model number	000000
	U018	Displaying the ROM checksum	—
	U019	Displaying the ROM version	—
Initialization	U020	Initializing all data	—
	U021	Memory initializing	—
	U024	HDD formatting	—
Drive, paper feed, paper conveying and cooling systems	U030	Checking the operation of the motors	—
	U031	Checking sensors for paper conveying	—
	U032	Checking the operation of the clutches	—
	U033	Checking the operation of the solenoids	—
	U034	Adjusting the print start timing • Leading edge adjustment • Center line adjustment	0 0
	U035	Setting the printing area for folio paper • Length • Width	330 210
	U051	Adjusting the amount of slack in the paper	0
	U053	Performing fine adjustment of the motor speed	0
Optical	U061	Checking the operation of the exposure lamps	—
	U063	Adjusting the shading position	10
	U065	Adjusting the scanning magnification • Main direction/auxiliary direction	0
	U066	Adjusting the scanner leading edge registration	0
	U067	Adjusting the optical axis (center line)	0
	U068	Adjusting the DF scanning start position	0
	U070	Adjusting the DF magnification	0
	U071	Adjusting the DF scanning timing • DF leading edge registration • DF trailing edge registration	0 0
	U072	Adjusting the DF center line	0
	U073	Checking the scanner operation	—
	U080	Setting the economy mode	0
	U089	Outputting the MIP-PG pattern	—
	U093	Adjusting the exposure density gradient • Text mode • Text and photo mode • Other modes • Text in fax mode • Photo in fax mode	0 0 0 2 3
	U099	Adjusting original size detection	—
High voltage	U101	Setting the voltage for the primary transfer	—
	U106	Setting the voltage for the secondary transfer	—
	U107	Setting the middle transfer cleaning voltage	—
	U108	Setting the separation shift bias voltage	—
	U110	Checking/clearing the drum count	—
	U127	Checking/clearing the transfer count	—

* Initial setting when executing maintenance item U020.

Section	Item No.	Maintenance item contents	Initial setting*
Developing	U139	Displaying the temperature and humidity inside the machine	—
	U144	Setting the charged toner applying ON/OFF	ON
	U155	Displaying the toner sensor output	—
	U156	Setting the toner replenishment level	414
	U158	Checking/clearing the developing count	—
Fixing and cleaning	U161	Setting the fixing control temperature <ul style="list-style-type: none"> • Upper fixing heater control temperature while standby 145 • Upper fixing heater primary stabilization temperature 100 • Upper fixing heater secondary stabilization temperature 150 • Lower fixing heater stabilization temperature while standby 165 • Lower fixing heater primary stabilization temperature 115 • Lower fixing heater secondary stabilization temperature 170 	
	U162	Forced stabilization of the fixer	—
	U167	Checking and setting the fixing count	—
Operation panel/Optional units	U200	Turning all LEDs ON	—
	U202	Setting the KMAS host monitoring system	—
	U203	Operating the DF separately	—
	U204	Setting the presence or absence of a key card or key counter	OFF
	U206	Setting the presence or absence of the coin vender	OFF
	U207	Checking the keys on the operation panel	—
	U209	Setting the date and time	—
	U216	Setting the paper feeder type	500 sheets
	U237	Setting the maximum number of sheets for finisher stacking.	—
	U240	Checking the operation of the finisher	—
	U241	Checking the operation of the switches of the finisher	—
	U243	Checking the operation of the DF motors, clutch and solenoids	—
	U244	Checking the operation of the DF switches	—
	U245	Checking messages	—
	U248	Changing the paper ejection device settings	—
Mode setting	U250	Setting the maintenance cycle	—
	U251	Checking/Clearing the maintenance count	—
	U252	Setting the destination	—
	U253	Switching between double and single counts	—
	U254	Turning the auto start function ON/OFF	ON
	U255	Setting auto clear time	90 seconds
	U256	Tuning auto preheat function ON/OFF	—
	U259	Displaying the economy mode	ON
	U260	Selecting the timing for copy counting	EJECT
	U263	Setting the paper ejection when copying from the DF	TRAY (NORMAL)
	U264	Setting the display order of the date	Inch specifications: M/D/Y Metric specifications: D/M/Y
	U265	Setting the code for OEM destination	0
	U276	Setting the copy count mode	1
	U330	Setting the number of copies to be handled by the stacking mode during sorting	100
U332	Setting the size coefficient	—	

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Mode setting	U333	Setting the digit of the department code	Inch specifications: 7-DIGIT code Metric specifications: 4-DIGIT code
	U339	Setting the thermal heater	ON
	U343	Switching between duplex/simplex copy mode	OFF
	U344	Setting the preheat mode	30 seconds
	U345	Setting the value for maintenance due indication	—
	U348	Setting the copy density adjustment range	NORMAL
Printer	U350	Printer setting for duplex printing using the bypass tray	1-side mode
Image processing	U402	Adjusting the margins for the image printing	—
	U403	Adjusting the margins for scanning an original on the contact glass	—
	U404	Adjusting the margins for scanning an original from the DF	—
	U410	Adjusting the halftone automatically	—
	U411	Adjusting the scanner automatically	—
	U416	Changing the base curve for scanner output	0
	U425	Setting the target	—
	U427	Setting the UCR multiplication coefficient for black generation	—
	U429	Setting the offset for the color balance	0
	U432	Setting the center offset for the exposure	—
	U464	Setting the ID correction operation	—
	U465	Data reference for ID correction	—
	U470	Setting the compression ratio	—
Network scanner	U500	Setting the limit on data size for email transmission	—
	U501	Turning image area adjustment ON/OFF	ON
	U504	Initializing the scanner NIC	—
Other	U901	Checking/clearing total copy counts by paper feed location	—
	U903	Checking/clearing the paper jam counts	—
	U904	Checking/clearing the call for service counts	—
	U905	Checking/clearing count by optional devices	—
	U906	Resetting partial operational control	—
	U908	Checking/clearing the total count	—
	U910	Clearing the black ratio data	—
	U911	Checking/clearing the paper feed counts by paper size	—
	U914	Fax/copier preference setting	—
	U919	Setting for toner coverage report output	Inch specifications: ON Metric specifications: OFF
	U920	Checking/clearing the copy counts	—
	U991	Checking/clearing the scanner operation count	—
	U992	Checking/clearing the operation count when using the printer or fax kit	—
	U998	Printing from memory	—
	U999	Checking the memory	—

* Initial setting when executing maintenance item U020.

(3) Contents of the maintenance mode items

Maintenance item No.	Description								
U000	<p>Printing out an own-status report</p> <p>[Description] Prints out a list of the current settings of all maintenance items, and occurrences of paper jams and service calls.</p> <p>[Purpose] To check the current setting of the maintenance items, or the occurrences of paper jams and service calls. Before initializing or replacing the backup RAM, print out a list of the current settings of the maintenance items so that you can reenter the same settings after initialization or replacement.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to print out. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>List to be printed out</th> </tr> </thead> <tbody> <tr> <td>MAINTENANCE</td> <td>List of the current settings of all maintenance items</td> </tr> <tr> <td>JAM</td> <td>List of paper jams</td> </tr> <tr> <td>SERVICE CALL</td> <td>List of service calls</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. * The machine will enter the interrupt copy mode and the list will be output. When A4/11" × 8¹/₂" paper is available, a report of this size will be output. If not, you will need to specify the paper feed location. * Once the output is complete, the screen for selecting an item will be displayed again. <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	List to be printed out	MAINTENANCE	List of the current settings of all maintenance items	JAM	List of paper jams	SERVICE CALL	List of service calls
Display	List to be printed out								
MAINTENANCE	List of the current settings of all maintenance items								
JAM	List of paper jams								
SERVICE CALL	List of service calls								
U001	<p>Exiting the maintenance mode</p> <p>[Description] Exits the maintenance mode and returns to the normal copy mode.</p> <p>[Purpose] To exit the maintenance mode.</p> <p>[Method] Press the start key. * The machine will enter the normal copy mode.</p>								

Maintenance item No.	Description						
<p>U003</p>	<p>Setting the service telephone number</p> <p>[Description] Sets the telephone number to be displayed when a service call code is detected.</p> <p>[Purpose] To set (during initial set-up of the machine) the telephone number for contacting service.</p> <p>[Method] Press the start key. * The currently set telephone number will be displayed.</p> <p>[Setting] 1. Use the numeric keys to enter the telephone number (up to 16 digits). * You can the cursor left/right keys to move the cursor and the cursor up/down keys to select the desired symbol (*, #, (,), - and a space). 2. Press the start key to set the entered telephone number. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the telephone number setting, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>						
<p>U004</p>	<p>Setting the machine model number</p> <p>[Description] Displays and sets the machine model number.</p> <p>[Purpose] To check, as well as to set, the machine model number.</p> <p>[Method] Press the start key. * The current machine model number will be displayed.</p> <p>[Setting] 1. Use the numeric keys to enter the 6-digit machine number. * It is not necessary to enter the first 2 digits ("37") of the machine's model number. 2. Press the start key and set the machine model number. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the machine model number setting, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>						
<p>U018</p>	<p>Displaying the ROM checksum</p> <p>[Description] Displays the checksum of ROM.</p> <p>[Purpose] To check the checksum.</p> <p>[Method] Press the start key. * The ROM checksum will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SCN</td> <td>Scanner main PCB ROM checksum</td> </tr> <tr> <td>ENGIN</td> <td>Engin PCB ROM checksum</td> </tr> </tbody> </table> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	SCN	Scanner main PCB ROM checksum	ENGIN	Engin PCB ROM checksum
Display	Description						
SCN	Scanner main PCB ROM checksum						
ENGIN	Engin PCB ROM checksum						

Maintenance item No.	Description										
U019	<p>Displaying the ROM version</p> <p>[Description] Displays the part number for the ROM fitted to each PCB.</p> <p>[Purpose] To check the part number or to decide, based on the last digit of the number, if the newest version of ROM is installed.</p> <p>[Method] Press the start key. * The ROM version (the last 6 digits of the part number) will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SCN</td> <td>Scanner main PCB ROM IC</td> </tr> <tr> <td>ENGIN</td> <td>Engine ROM IC</td> </tr> <tr> <td>BOOT</td> <td>Scanner main PCB booting</td> </tr> <tr> <td>NWSNIC</td> <td>Network scanner ROM IC</td> </tr> </tbody> </table> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	SCN	Scanner main PCB ROM IC	ENGIN	Engine ROM IC	BOOT	Scanner main PCB booting	NWSNIC	Network scanner ROM IC
Display	Description										
SCN	Scanner main PCB ROM IC										
ENGIN	Engine ROM IC										
BOOT	Scanner main PCB booting										
NWSNIC	Network scanner ROM IC										

Maintenance item No.	Description
<p>U020</p>	<p>Initializing all data</p> <p>[Description] Initializes the backup RAM on the scanner main PCB in order to return to the factory default settings. Also checks the accuracy of the real-time clock (RTC).</p> <p>[Purpose] Used when replacing backup RAM on the scanner main PCB.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down/right/left keys to enter the current date, and then press the start key. <ul style="list-style-type: none"> * Be sure to enter the date. If the date is not entered and initialization is executed, RTC PCB problem will be detected. * The screen for initializing will be displayed. 3. Use the cursor up/down keys to select "EXECUTE". <ul style="list-style-type: none"> * "EXECUTE" will be highlighted. 4. Press the start key. <ul style="list-style-type: none"> * All data in the backup RAM will be initialized and the default setting for the inch specifications will be registered. Run maintenance item U020 to return the setting according to the destination. * The date in the real time clock is compared with the entered date. * When initializing is complete, the machine will automatically return to the same status as when the power is first turned ON. <p>[Completion] If you want to cancel the initialization, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
<p>U021</p>	<p>Memory initializing</p> <p>[Description] Initializes all settings, except those pertinent to the type of copier, namely each counter, service call history and mode setting. Also initializes backup RAM according to region specification selected in maintenance item U252 "Setting the region of use."</p> <p>[Purpose] Used to return the machine settings to their factory default.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. Use the cursor up/down keys to select "EXECUTE". <ul style="list-style-type: none"> * "EXECUTE" will be highlighted. 3. Press the start key. <ul style="list-style-type: none"> * All data except that pertinent to the type of copier will be initialized and the default setting for each destination will be registered. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description																		
U024	<p>HDD formatting</p> <p>[Description] Formats the HDD backup data areas for the network scanner and department administration.</p> <p>[Purpose] To initialize the HDD when installing or replacing the HDD after shipping.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. Use the cursor up/down keys to select "EXECUTE". * "EXECUTE" will be highlighted. 3. Press the start key to initialize the hard disk. * The "EXECUTE" display flashes during initializing. * Initialization results will be displayed when initializing is completed. 4. Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the initialization, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>																		
U030	<p>Checking the operation of the motors</p> <p>[Description] Drives each motor.</p> <p>[Description] To check the operation of each motor.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the motor that you want to check. * The display for the selected motor will be highlighted. 3. The selected motor will be turned ON. <table border="1"> <thead> <tr> <th>Display</th> <th>Sensor</th> </tr> </thead> <tbody> <tr> <td>MAIN</td> <td>The main drive motor (MDM) is turned ON.</td> </tr> <tr> <td>FIX</td> <td>The fuser unit drive motor (FUDM) is turned ON.</td> </tr> <tr> <td>DEV BK</td> <td>The black developer drive motor (KDLPDM) is turned ON.</td> </tr> <tr> <td>DEV CMY</td> <td>The color developers drive motor CDLPDM) is turned ON.</td> </tr> <tr> <td>FEED</td> <td>The paper feed motor (PFM) is turned ON.</td> </tr> <tr> <td>DESK1</td> <td>The upper intermediate motor (UIFM) is turned ON.</td> </tr> <tr> <td>DESK2</td> <td>The lower intermediate motor (LIFM)* is turned ON.</td> </tr> <tr> <td>DUP</td> <td>The duplex drive motor (DDM) is turned ON.</td> </tr> </tbody> </table> <p>* Optional</p> <ol style="list-style-type: none"> 4. When you want to stop the motor, press the stop/clear key. <p>[Completion] Press the stop/clear key with the motor stopped. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Sensor	MAIN	The main drive motor (MDM) is turned ON.	FIX	The fuser unit drive motor (FUDM) is turned ON.	DEV BK	The black developer drive motor (KDLPDM) is turned ON.	DEV CMY	The color developers drive motor CDLPDM) is turned ON.	FEED	The paper feed motor (PFM) is turned ON.	DESK1	The upper intermediate motor (UIFM) is turned ON.	DESK2	The lower intermediate motor (LIFM)* is turned ON.	DUP	The duplex drive motor (DDM) is turned ON.
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DUP	The duplex drive motor (DDM) is turned ON.																		

Maintenance item No.	Description																								
<p>U031</p>	<p>Checking sensors for paper conveying</p> <p>[Description] Displays the ON/OFF status of each paper detection sensor on the paper conveying path.</p> <p>[Purpose] To check the operation of the switches for paper conveying.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. * The list of sensors that you can check their ON/OFF statuses will be displayed. 2. Turn each switch ON and OFF manually to check the status of the sensor. * When a sensor is detected to be in the ON position, the display for that sensor will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Sensor</th> </tr> </thead> <tbody> <tr> <td>F1</td> <td>Jam sensor 1 (JS1)</td> </tr> <tr> <td>F2</td> <td>Jam sensor 2 (JS2)</td> </tr> <tr> <td>F3</td> <td>Jam sensor 3 (JS3)*1</td> </tr> <tr> <td>RES</td> <td>Registration sensor (REGS)</td> </tr> <tr> <td>EJL</td> <td>Lower paper exit sensor (LPEXS)</td> </tr> <tr> <td>EJU</td> <td>Upper paper exit sensor (UPEXS)</td> </tr> <tr> <td>EJD</td> <td>Duplex paper exit sensor (DUPEXS)*2</td> </tr> <tr> <td>FULL</td> <td>Paper full sensor (PFS)</td> </tr> <tr> <td>DUP1</td> <td>Duplex unit entrance sensor (DES)*2</td> </tr> <tr> <td>DUP2</td> <td>Duplexer intermediate sensor (DIS)*2</td> </tr> <tr> <td>DUP3</td> <td>Duplexer paper refeed sensor (DPRFS)*2</td> </tr> </tbody> </table> <p>*1: Optional *2: For duplex copier only</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Sensor	F1	Jam sensor 1 (JS1)	F2	Jam sensor 2 (JS2)	F3	Jam sensor 3 (JS3)*1	RES	Registration sensor (REGS)	EJL	Lower paper exit sensor (LPEXS)	EJU	Upper paper exit sensor (UPEXS)	EJD	Duplex paper exit sensor (DUPEXS)*2	FULL	Paper full sensor (PFS)	DUP1	Duplex unit entrance sensor (DES)*2	DUP2	Duplexer intermediate sensor (DIS)*2	DUP3	Duplexer paper refeed sensor (DPRFS)*2
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DUP3	Duplexer paper refeed sensor (DPRFS)*2																								


Maintenance item No.	Description																						
U032	<p>Checking the operation of the clutches</p> <p>[Description] Turns each clutch ON.</p> <p>[Purpose] To check the operation of each clutch.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the clutch that you want to check. * The display for the selected clutch will be highlighted. 3. The selected clutch will be turned ON for 1 second. <table border="1"> <thead> <tr> <th>Display</th> <th>Clutch name</th> </tr> </thead> <tbody> <tr> <td>RES</td> <td>Registration clutch (REGCL)</td> </tr> <tr> <td>K MAG</td> <td>Black developer drive clutch (KDLPDCL)</td> </tr> <tr> <td>C MAG</td> <td>Cyan developer drive clutch (CDLPDCL)</td> </tr> <tr> <td>M MAG</td> <td>Magenta developer drive clutch (MDLPDCL)</td> </tr> <tr> <td>Y MAG</td> <td>Yellow developer drive clutch (YDLPDCL)</td> </tr> <tr> <td>BYPASS</td> <td>Bypass paper feed clutch (BYPFCL)</td> </tr> <tr> <td>CONV</td> <td>Paper feed clutch (PFCL)</td> </tr> <tr> <td>DUP IN</td> <td>Duplexer feed clutch (DFCL)*</td> </tr> <tr> <td>DUP OUT</td> <td>Duplexer refeed clutch (DRFCL)*</td> </tr> </tbody> </table> <p>* For duplex copier only</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Clutch name	RES	Registration clutch (REGCL)	K MAG	Black developer drive clutch (KDLPDCL)	C MAG	Cyan developer drive clutch (CDLPDCL)	M MAG	Magenta developer drive clutch (MDLPDCL)	Y MAG	Yellow developer drive clutch (YDLPDCL)	BYPASS	Bypass paper feed clutch (BYPFCL)	CONV	Paper feed clutch (PFCL)	DUP IN	Duplexer feed clutch (DFCL)*	DUP OUT	Duplexer refeed clutch (DRFCL)*		
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DUP OUT	Duplexer refeed clutch (DRFCL)*																						
U033	<p>Checking the operation of the solenoids</p> <p>[Description] Applies current to each solenoid in order to check its ON status.</p> <p>[Purpose] To check the operation of each solenoid.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the solenoid that you want to check and then press the start key. * The setting screen for the selected solenoid will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>DEV</td> <td>Checks the operation of the solenoids and clutches in the developing section.</td> </tr> <tr> <td>FEED</td> <td>Checks the operation of the solenoids along the paper conveying path.</td> </tr> </tbody> </table> <p>[Method: Operation check for the solenoids and clutches in the developing section] Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the solenoid or clutch that you want to check. * The display for the selected solenoid or clutch will be highlighted. 2. Press the start key. * The selected solenoid or clutch will be turned ON for 1 second. <table border="1"> <thead> <tr> <th>Display</th> <th>Solenoid/clutch</th> </tr> </thead> <tbody> <tr> <td>KSOL</td> <td>Black developer magnet solenoid (KDLPMSOL)</td> </tr> <tr> <td>CSOL</td> <td>Cyan developer magnet solenoid (CDLPMSOL)</td> </tr> <tr> <td>MSOL</td> <td>Magenta developer magnet solenoid (MDLPMSOL)</td> </tr> <tr> <td>YSOL</td> <td>Yellow developer magnet solenoid (YDLPMSOL)</td> </tr> <tr> <td>MPF</td> <td>Bypass tray bottom plate solenoid (BYPBPSOL)</td> </tr> <tr> <td>CLEAN</td> <td>Cleaning brush unit shift solenoid (CBSSOL)</td> </tr> <tr> <td>T2</td> <td>Secondary transfer unit shift clutch (STRSCL)</td> </tr> </tbody> </table>	Display	Setting	DEV	Checks the operation of the solenoids and clutches in the developing section.	FEED	Checks the operation of the solenoids along the paper conveying path.	Display	Solenoid/clutch	KSOL	Black developer magnet solenoid (KDLPMSOL)	CSOL	Cyan developer magnet solenoid (CDLPMSOL)	MSOL	Magenta developer magnet solenoid (MDLPMSOL)	YSOL	Yellow developer magnet solenoid (YDLPMSOL)	MPF	Bypass tray bottom plate solenoid (BYPBPSOL)	CLEAN	Cleaning brush unit shift solenoid (CBSSOL)	T2	Secondary transfer unit shift clutch (STRSCL)
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KSOL	Black developer magnet solenoid (KDLPMSOL)																						
CSOL	Cyan developer magnet solenoid (CDLPMSOL)																						
MSOL	Magenta developer magnet solenoid (MDLPMSOL)																						
YSOL	Yellow developer magnet solenoid (YDLPMSOL)																						
MPF	Bypass tray bottom plate solenoid (BYPBPSOL)																						
CLEAN	Cleaning brush unit shift solenoid (CBSSOL)																						
T2	Secondary transfer unit shift clutch (STRSCL)																						

Maintenance item No.	Description														
<p>U033</p>	<p>[Method: Operation check for the solenoids along the paper conveying path]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the solenoid that you want to check. * The display for the selected solenoid will be highlighted. Press the start key. * The selected solenoid will be turned ON for 1 second. <table border="1"> <thead> <tr> <th>Display</th> <th>Solenoid</th> </tr> </thead> <tbody> <tr> <td>FACE UP</td> <td>Face up/down solenoid (FUDSOL) for facing up</td> </tr> <tr> <td>FACE DOWN</td> <td>Face up/down solenoid (FUDSOL) for facing down</td> </tr> <tr> <td>OIL SET</td> <td>Oil roller up/down solenoid (ORUDSOL) for setting</td> </tr> <tr> <td>OIL RESET</td> <td>Oil roller up/down solenoid (ORUDSOL) for resetting</td> </tr> <tr> <td>BRA EJE</td> <td>Duplex paper exit selection solenoid (DUPEXSSOL) (eject direction)</td> </tr> <tr> <td>BRA DUP</td> <td>Duplex paper exit selection solenoid (DUPEXSSOL) (duplex copy direction)</td> </tr> </tbody> </table> <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Solenoid	FACE UP	Face up/down solenoid (FUDSOL) for facing up	FACE DOWN	Face up/down solenoid (FUDSOL) for facing down	OIL SET	Oil roller up/down solenoid (ORUDSOL) for setting	OIL RESET	Oil roller up/down solenoid (ORUDSOL) for resetting	BRA EJE	Duplex paper exit selection solenoid (DUPEXSSOL) (eject direction)	BRA DUP	Duplex paper exit selection solenoid (DUPEXSSOL) (duplex copy direction)
Display	Solenoid														
FACE UP	Face up/down solenoid (FUDSOL) for facing up														
FACE DOWN	Face up/down solenoid (FUDSOL) for facing down														
OIL SET	Oil roller up/down solenoid (ORUDSOL) for setting														
OIL RESET	Oil roller up/down solenoid (ORUDSOL) for resetting														
BRA EJE	Duplex paper exit selection solenoid (DUPEXSSOL) (eject direction)														
BRA DUP	Duplex paper exit selection solenoid (DUPEXSSOL) (duplex copy direction)														
<p>U034</p>	<p>Adjusting the print start timing</p> <p>[Adjustment] See pages p.1-6-13 and 14.</p>														
<p>U035</p>	<p>Setting the printing area for folio paper</p> <p>[Description] Changes the printing area for copying on folio paper</p> <p>[Purpose] To prevent cropped images on the trailing edge or left/right side of copy paper by setting the actual printing area for folio paper.</p> <p>[Method] Press the start key. The setting screen will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>LENGTH DATA</td> <td>Length</td> <td>330 to 356 (mm)</td> <td>330</td> </tr> <tr> <td>WIDTH DATA</td> <td>Width</td> <td>200 to 220 (mm)</td> <td>210</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting	LENGTH DATA	Length	330 to 356 (mm)	330	WIDTH DATA	Width	200 to 220 (mm)	210		
Display	Setting	Setting range	Default setting												
LENGTH DATA	Length	330 to 356 (mm)	330												
WIDTH DATA	Width	200 to 220 (mm)	210												
<p>U051</p>	<p>Adjusting the amount of slack in the paper</p> <p>[Adjustment] See page p.1-6-16.</p>														

Maintenance item No.	Description												
U053	<p>Performing fine adjustment of the motor speed</p> <p>[Description] Performs fine adjustment of the speeds of the motors.</p> <p>[Purpose] Used to adjust the speed of the respective motors when the magnification is not correct.</p> <p>[Method] Press the start key. The screen for selecting an item is displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> 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 border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>POLYGON MOTOR</td> <td>Polygon motor speed adjustment</td> <td>-20 to +20</td> <td>0</td> </tr> <tr> <td>MAIN MOTOR</td> <td>Main drive motor speed adjustment</td> <td>-10 to +10</td> <td>0</td> </tr> </tbody> </table> <p>POLYGON MOTOR Increasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction; decreasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction.</p> <p>MAIN MOTOR Increasing the setting makes the image longer in the auxiliary scanning direction, and decreasing it makes the image shorter in the auxiliary scanning direction.</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. <p>[Interrupt copy mode] While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode. Correct values for an A3/11" × 17" output are: A = 300 ± 1.5 mm B = 260 ± 1.0 mm</p> <div style="text-align: center;"> <p>The diagram shows a rectangular VTC pattern divided into four quadrants. Dimension A is indicated by a vertical double-headed arrow on the right side, representing the height of the pattern. Dimension B is indicated by a horizontal double-headed arrow at the top, representing the width of the pattern.</p> </div> <p>Figure 1-4-1</p> <p>[Adjustment]</p> <ol style="list-style-type: none"> 1. Output an A3/11" × 17" VTC pattern in interrupt mode. 2. Measure A and B on the VTC pattern (Figure 1-4-1), and perform the following adjustments if they are different from the correct sizes: A: Main drive motor speed adjustment B: Polygon motor speed adjustment <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	Setting range	Default setting	POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0	MAIN MOTOR	Main drive motor speed adjustment	-10 to +10	0
Display	Description	Setting range	Default setting										
POLYGON MOTOR	Polygon motor speed adjustment	-20 to +20	0										
MAIN MOTOR	Main drive motor speed adjustment	-10 to +10	0										

Maintenance item No.	Description								
U061	<p>Checking the operation of the exposure lamps</p> <p>[Description] Lights the exposure lamps.</p> <p>[Purpose] To check whether the exposure lamps are turned ON.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. Press the start key. <ul style="list-style-type: none"> * The exposure lamps will light. 3. To turn the exposure lamps OFF, press the stop/clear key. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>								
U063	<p>Adjusting the shading position</p> <p>[Description] Changes the shading position of the scanner.</p> <p>[Purpose] Used when the white line continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The setting screen will be displayed. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>Shading position</td> <td>-12 to 32</td> <td>10</td> <td>0.23288 mm</td> </tr> </tbody> </table> <p>* Increasing the value moves the shading position toward the machine right, and decreasing it moves the position toward the machine left.</p> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	Change in value per step	Shading position	-12 to 32	10	0.23288 mm
Setting item	Setting range	Default setting	Change in value per step						
Shading position	-12 to 32	10	0.23288 mm						
U065	<p>Adjusting the scanning magnification</p> <p>[Adjustment] See pages p.1-6-32 and 33.</p>								
U066	<p>Adjusting the scanner leading edge registration</p> <p>[Adjustment] See page p.1-6-34.</p>								
U067	<p>Adjusting the optical axis (center line)</p> <p>[Adjustment] See page p.1-6-35.</p>								

Maintenance item No.	Description										
U068	<p>Adjusting the DF scanning start position</p> <p>[Description] Adjust the scanning start position of originals fed from the optional DF</p> <p>[Purpose] Used if there is a regular error between the leading edge of the original and that of the copy image when the optional DF is used.</p> <p>[Method] Press the start key. The setting screen will be displayed.</p> <p>[Setting] 1. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>DF original scanning position</td> <td>-17 to 17</td> <td>0</td> <td>0.169 mm</td> </tr> </tbody> </table> <p>* Increasing the value moves the copy image toward the trailing edge, and decreasing it moves the copy image toward the leading edge.</p> <p>2. Press the start key to activate the selected setting.</p> <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	Change in value per step	DF original scanning position	-17 to 17	0	0.169 mm		
Setting item	Setting range	Default setting	Change in value per step								
DF original scanning position	-17 to 17	0	0.169 mm								
U070	<p>Adjusting the DF magnification</p> <p>[Description] Adjusts the DF original scanning speed.</p> <p>[Purpose] Used if the correct magnification is not obtained in the auxiliary scanning direction when the optional DF is used.</p> <p>[Caution] Before performing this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <p>U053 → U065 → U070</p> <p>[Method] Press the start key. The setting screen will be displayed.</p> <p>[Setting] 1. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Initial setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>CONVEY SPEED</td> <td>DF original conveying motor speed</td> <td>-2.5 to 2.5</td> <td>0</td> <td>0.1%</td> </tr> </tbody> </table> <p>* Increasing the value makes the image longer, and decreasing it makes the image shorter.</p> <p>2. Press the start key to activate the selected setting.</p> <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Completion] Press the stop/clear key when the setting screen is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Initial setting	Change in value per step	CONVEY SPEED	DF original conveying motor speed	-2.5 to 2.5	0	0.1%
Display	Setting	Setting range	Initial setting	Change in value per step							
CONVEY SPEED	DF original conveying motor speed	-2.5 to 2.5	0	0.1%							

Maintenance item No.	Description															
<p>U071</p>	<p>Adjusting the DF scanning timing</p> <p>[Description] Adjust the DF original scanning timing.</p> <p>[Purpose] Used if there is a regular error between the leading or trailing edge of the copy image and the leading edge of the original when the optional DF is used.</p> <p>[Caution] Before performing this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <p>U034 → U066 → U071</p> <p>[Method] Press the start key. The setting screen will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>* Increasing the value moves the image backward, and decreasing the value moves the image forward.</p> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Method]</p> <ol style="list-style-type: none"> In the interrupt copy mode, make a copy using the DF. Check the copy image and adjust the registration as follows. * For copy example 1, increase the setting value of "LEAD EDGE ADJ". * For copy example 2, decrease the setting value of "LEAD EDGE ADJ". <div style="text-align: center;">  <p>Original Copy example 1 Copy example 2</p> </div> <p>Figure 1-4-2</p> <p>[Completion] Press the stop/clear key when the setting screen is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default 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	Setting	Setting range	Default 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												

Maintenance item No.	Description								
U072	<p>Adjusting the DF center line</p> <p>[Description] Adjusts the scanning position for an original fed from the DF.</p> <p>[Purpose] Used if there is a regular error between the center line of an original and that of the copy image when the optional DF is used.</p> <p>[Caution] Before performing this adjustment, ensure that the following adjustments have been made in maintenance mode.</p> <p>U034 → U067 → U072</p> <p>[Method] Press the start key. The setting screen will be displayed.</p> <p>[Setting] 1. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>DF center line</td> <td>-20 to 20</td> <td>0</td> <td>0.17 mm</td> </tr> </tbody> </table> <p>* Increasing the value moves the image rightward, and decreasing it moves the image leftward.</p> <p>2. Press the start key to activate the selected setting.</p> <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Method] 1. In the 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 value. * For copy example 2, decrease the setting value.</p> <div style="text-align: center;"> <p>Reference</p> <p>Original Copy example 1 Copy example 2</p> </div> <p>Figure 1-4-3</p> <p>[Completion] Press the stop/clear key when the setting screen is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	Change in value per step	DF center line	-20 to 20	0	0.17 mm
Setting item	Setting range	Default setting	Change in value per step						
DF center line	-20 to 20	0	0.17 mm						

Maintenance item No.	Description												
<p>U073</p>	<p>Checking the scanner operation</p> <p>[Description] Simulates the scanner operation under the arbitrary conditions.</p> <p>[Purpose] To check the scanner operation.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the operation that you want to check. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>SCAN(4C)</td> <td>Scanner operation in full-color copying</td> </tr> <tr> <td>SCAN(B/W)</td> <td>Scanner operation in monochrome copying</td> </tr> <tr> <td>SHD</td> <td>Shading operation</td> </tr> <tr> <td>HOME POSITION</td> <td>Home position operation</td> </tr> <tr> <td>DF READ</td> <td>DF scanning position operation</td> </tr> </tbody> </table> <p>[Setting: Scanning size for the full-color or monochrome mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select either "SCAN(4C)" or "SCAN(B/W)" in the screen for selecting an item. 2. Use the cursor left/right keys to select the scanning size, and then press the start key. <p>[Setting: Random travel distance]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the desired position in the screen for selecting an item. 2. Use the cursor left/right keys to change the setting value. <p>[Completion] Press the stop/clear key with the scanning operation stopped. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Operation	SCAN(4C)	Scanner operation in full-color copying	SCAN(B/W)	Scanner operation in monochrome copying	SHD	Shading operation	HOME POSITION	Home position operation	DF READ	DF scanning position operation
Display	Operation												
SCAN(4C)	Scanner operation in full-color copying												
SCAN(B/W)	Scanner operation in monochrome copying												
SHD	Shading operation												
HOME POSITION	Home position operation												
DF READ	DF scanning position operation												

Maintenance item No.	Description												
U080	<p>Setting the economy mode</p> <p>[Description] Sets the level in the economy mode.</p> <p>[Purpose] Set according to the preference of the user.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Select the desired item. * The display for the selected item will be highlighted. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>B/W (0:lo/1:mi/2:hi)</td> <td>For monochrome and single color mode</td> <td>0 to 2</td> <td>0</td> </tr> <tr> <td>4C (0:lo/1:mi/2:hi)</td> <td>For full-color mode</td> <td>0 to 2</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting	B/W (0:lo/1:mi/2:hi)	For monochrome and single color mode	0 to 2	0	4C (0:lo/1:mi/2:hi)	For full-color mode	0 to 2	0
Display	Setting	Setting range	Default setting										
B/W (0:lo/1:mi/2:hi)	For monochrome and single color mode	0 to 2	0										
4C (0:lo/1:mi/2:hi)	For full-color mode	0 to 2	0										
U089	<p>Outputting the MIP-PG pattern</p> <p>[Description] Selects and outputs the MIP-PG pattern created by the copier.</p> <p>[Purpose] To check copier status other than scanner when adjusting image printing, using MIP-PG pattern output (without scanning).</p> <p>[Method]</p> <ol style="list-style-type: none"> Press the start key. Use the cursor up/down keys to select the MIP-PG pattern to be output and then press the start key. <table border="1"> <thead> <tr> <th>Display</th> <th>Output items</th> </tr> </thead> <tbody> <tr> <td>256GRADATION</td> <td>256-gradation PGI</td> </tr> <tr> <td>GRAY</td> <td>Gray PG</td> </tr> <tr> <td>WHITE</td> <td>Blank paper PG</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to output the MIP-PG pattern. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Output items	256GRADATION	256-gradation PGI	GRAY	Gray PG	WHITE	Blank paper PG				
Display	Output items												
256GRADATION	256-gradation PGI												
GRAY	Gray PG												
WHITE	Blank paper PG												

Maintenance item No.	Description																																																
U093	<p>Adjusting the exposure density gradient</p> <p>[Description] Changes the exposure density gradient in the manual density mode, depending on respective image quality modes.</p> <p>[Purpose] To set how the image density is altered by a change of one step in the manual density adjustment for respective image quality modes. Also used to make copy images darker or lighter.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the image quality mode that you want to change the settings for, and then press the start key. * The setting screen for the selected item will be displayed. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Setting</th> </tr> </thead> <tbody> <tr> <td>TEXT</td> <td>Density in the text mode</td> </tr> <tr> <td>MIXED</td> <td>Density in the text and photo mode</td> </tr> <tr> <td>Other</td> <td>Density in modes other than the text mode or the text and photo mode</td> </tr> <tr> <td>FAX TEXT</td> <td>Density in the text in fax mode</td> </tr> <tr> <td>FAX PHOTO</td> <td>Density in the photo in fax mode</td> </tr> </tbody> </table> <p>[Setting: Gradient in the text mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. 2. Use the cursor left/right keys to change the setting value. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Setting</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Default setting</th> </tr> </thead> <tbody> <tr> <td>TEXT mono color</td> <td>Gradient for monochrome copy in the text mode</td> <td>0 to 2</td> <td>0</td> </tr> <tr> <td>TEXT full color</td> <td>Gradient for full-color copy in the text mode</td> <td>0 to 2</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. 4. To return to the screen for selecting an item, press the stop/clear key. <p>[Setting: Gradient in the text and photo mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. 2. Use the cursor left/right keys to change the setting value. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Setting</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Default setting</th> </tr> </thead> <tbody> <tr> <td>MIXED mono color</td> <td>Gradient for monochrome copy in the text and photo mode</td> <td>0 to 2</td> <td>0</td> </tr> <tr> <td>MIXED full color</td> <td>Gradient for full-color copy in the text and photo mode</td> <td>0 to 2</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. 4. To return to the screen for selecting an item, press the stop/clear key. <p>[Setting: Gradient in other modes]</p> <ol style="list-style-type: none"> 1. 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Maintenance item No.	Description																								
U093	<p>[Setting: Gradient in the text in fax mode]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>FAX TEXT DARKER</td> <td>Gradient for darker setting</td> <td>0 to 4</td> <td>2</td> </tr> <tr> <td>FAX TEXT LIGHTER</td> <td>Gradient for lighter setting</td> <td>0 to 9</td> <td>2</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. To return to the screen for selecting an item, press the stop/clear key. <p>[Setting: Gradient in the photo in fax mode]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>FAX PHOTO DARKER</td> <td>Gradient for darker setting</td> <td>0 to 6</td> <td>3</td> </tr> <tr> <td>FAX PHOTO LIGHTER</td> <td>Gradient for lighter setting</td> <td>0 to 6</td> <td>3</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. To return to the screen for selecting an item, press the stop/clear key. <p>[Completion]</p> <p>Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting	FAX TEXT DARKER	Gradient for darker setting	0 to 4	2	FAX TEXT LIGHTER	Gradient for lighter setting	0 to 9	2	Display	Setting	Setting range	Default setting	FAX PHOTO DARKER	Gradient for darker setting	0 to 6	3	FAX PHOTO LIGHTER	Gradient for lighter setting	0 to 6	3
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U099	<p>Adjusting original size detection</p> <p>[Description] Checks the setting value and operation for original width detection by CCD.</p> <p>[Purpose] To change the setting when paper width is not accurately detected.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item and then press the start key. * The screen for executing the selected item will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DATA</td> <td>Displaying the transmitted data</td> </tr> <tr> <td>LEVEL</td> <td>Setting the original size detection threshold</td> </tr> </tbody> </table> <p>[Method: Displaying color data]</p> <ol style="list-style-type: none"> 1. Press the start key. The color data to be transmitted will be displayed. 2. To return to the screen for selecting an item, press the stop/clear key. <p>[Method: Setting and checking the detection threshold]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Data range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>LEV-R</td> <td>Original size threshold (R)</td> <td>0 to 255</td> <td>140</td> </tr> <tr> <td>LEV-G</td> <td>Original size threshold (G)</td> <td>0 to 255</td> <td>140</td> </tr> <tr> <td>LEV-B</td> <td>Original size threshold (B)</td> <td>0 to 255</td> <td>140</td> </tr> <tr> <td>TIME</td> <td>Stand-by time after original size lamp turns on.</td> <td>0 to 100</td> <td>0</td> </tr> <tr> <td>COLOR</td> <td>Original size display color selection</td> <td>0 to 2(0:R,A1:G,A2:B)</td> <td>1</td> </tr> <tr> <td>ORG-A</td> <td>Original width (mm)</td> <td>—</td> <td>—</td> </tr> <tr> <td>SIZE</td> <td>Original width code</td> <td>—</td> <td>—</td> </tr> <tr> <td>W-DAT</td> <td>White data within the original width</td> <td>—</td> <td>—</td> </tr> <tr> <td>B-DAT</td> <td>Black data within the original width</td> <td>—</td> <td>—</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. Use the cursor left/right keys to change the setting value. 3. Press the start key to activate the selected setting. * To return to the screen for selecting an item, press the stop/clear key. <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	DATA	Displaying the transmitted data	LEVEL	Setting the original size detection threshold	Display	Description	Data range	Default setting	LEV-R	Original size threshold (R)	0 to 255	140	LEV-G	Original size threshold (G)	0 to 255	140	LEV-B	Original size threshold (B)	0 to 255	140	TIME	Stand-by time after original size lamp turns on.	0 to 100	0	COLOR	Original size display color selection	0 to 2(0:R,A1:G,A2:B)	1	ORG-A	Original width (mm)	—	—	SIZE	Original width code	—	—	W-DAT	White data within the original width	—	—	B-DAT	Black data within the original width	—	—
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U101	<p>Setting the voltage for the primary transfer</p> <p>[Description] Sets the control voltage for the primary transfer.</p> <p>[Purpose] To change the setting when any density problems, such as too dark or light, occur.</p> <p>[Implementation] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting: Conditions of use offset table]</p> <ol style="list-style-type: none"> 1. Use the cursor left/light key to select "0" (ON) or "1" (OFF). 2. Press the start key to activate the selected setting. <p>[Setting: Adjusting the control voltage for the primary transfer]</p> <ol style="list-style-type: none"> 1. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>the control voltage for the primary transfer</td> <td>0 to 255</td> <td>118</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key to activate the selected setting. <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	the control voltage for the primary transfer	0 to 255	118																																						
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U106	<p>Setting the voltage for the secondary transfer</p> <p>[Description] Sets the control voltage for the secondary transfer depending on each paper type.</p> <p>[Purpose] To change the setting when any density problems, such as too dark or light, occur.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the paper type that you want to make the setting for. 3. Press the start key. <p>* The setting screen for each item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Plain</td> <td>Adjustment of the secondary transfer voltage for plain paper</td> </tr> <tr> <td>Rough</td> <td>Adjustment of the secondary transfer voltage for thick paper</td> </tr> <tr> <td>Transparency</td> <td>Adjustment of the secondary transfer voltage for transparency</td> </tr> </tbody> </table> <p>[Setting: Conditions of use offset table]</p> <ol style="list-style-type: none"> 1. Use the cursor left/light key to select "0" (ON) or "1" (OFF). 2. Press the start key to activate the selected setting. <p>[Setting: Secondary transfer control voltage for plain paper]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Color/1st/L<=200</td> <td>First plane of small-size color plain paper</td> <td>0 to 255</td> <td>66</td> </tr> <tr> <td>Color/1st/L>200</td> <td>First plane of large-size color plain paper</td> <td>0 to 255</td> <td>51</td> </tr> <tr> <td>BW/1st/L<=200</td> <td>Fist plane of small-size monochrome plain paper</td> <td>0 to 255</td> <td>37</td> </tr> <tr> <td>BW/1st/L>200</td> <td>First plane of large-size monochrome plain paper</td> <td>0 to 255</td> <td>25</td> </tr> <tr> <td>Color/2nd/L<=200</td> <td>Second plane of small-size color plain paper</td> <td>0 to 255</td> <td>66</td> </tr> <tr> <td>Color/2nd/L>200</td> <td>Second plane of large-size color plain paper</td> <td>0 to 255</td> <td>51</td> </tr> <tr> <td>BW/2nd/L<=200</td> <td>Second plane of small-size monochrome plain paper</td> <td>0 to 255</td> <td>37</td> </tr> <tr> <td>BW/2nd/L>200</td> <td>Second plane of large-size monochrome plain paper</td> <td>0 to 255</td> <td>25</td> </tr> </tbody> </table>	Display	Description	Plain	Adjustment of the secondary transfer voltage for plain paper	Rough	Adjustment of the secondary transfer voltage for thick paper	Transparency	Adjustment of the secondary transfer voltage for transparency	Display	Description	Setting range	Default setting	Color/1st/L<=200	First plane of small-size color plain paper	0 to 255	66	Color/1st/L>200	First plane of large-size color plain paper	0 to 255	51	BW/1st/L<=200	Fist plane of small-size monochrome plain paper	0 to 255	37	BW/1st/L>200	First plane of large-size monochrome plain paper	0 to 255	25	Color/2nd/L<=200	Second plane of small-size color plain paper	0 to 255	66	Color/2nd/L>200	Second plane of large-size color plain paper	0 to 255	51	BW/2nd/L<=200	Second plane of small-size monochrome plain paper	0 to 255	37	BW/2nd/L>200	Second plane of large-size monochrome plain paper	0 to 255	25
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U106	<p>3. Press the start key to activate the selected setting.</p> <p>[Setting: Secondary transfer control voltage for thick paper]</p> <p>1. Use the cursor up/down keys to select the item that you want to change the setting for.</p> <p>2. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Color/1st/L<=200</td> <td>Small-size thick paper</td> <td>0 to 255</td> <td>159</td> </tr> <tr> <td>Color/1st/L>200</td> <td>Large-size thick paper</td> <td>0 to 255</td> <td>102</td> </tr> <tr> <td>Color/1st/L>200/LOW</td> <td>Large-size thick paper at half speed</td> <td>0 to 255</td> <td>25</td> </tr> <tr> <td>BW/1st/L<=200</td> <td>Small-size thick paper at half speed</td> <td>0 to 255</td> <td>89</td> </tr> <tr> <td>BW/1st/L>200</td> <td>Large-size thick paper</td> <td>0 to 255</td> <td>51</td> </tr> <tr> <td>BW/1st/L>200/LOW</td> <td>Large-size thick paper at half speed</td> <td>0 to 255</td> <td>0</td> </tr> </tbody> </table> <p>3. Press the start key to activate the selected setting.</p> <p>[Setting: Secondary transfer control voltage for transparency]</p> <p>1. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>L>200/LOW</td> <td>Transparency at a quarter speed.</td> <td>0 to 255</td> <td>121</td> </tr> </tbody> </table> <p>2. Press the start key to activate the selected setting.</p> <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	Setting range	Default setting	Color/1st/L<=200	Small-size thick paper	0 to 255	159	Color/1st/L>200	Large-size thick paper	0 to 255	102	Color/1st/L>200/LOW	Large-size thick paper at half speed	0 to 255	25	BW/1st/L<=200	Small-size thick paper at half speed	0 to 255	89	BW/1st/L>200	Large-size thick paper	0 to 255	51	BW/1st/L>200/LOW	Large-size thick paper at half speed	0 to 255	0	Display	Description	Setting range	Default setting	L>200/LOW	Transparency at a quarter speed.	0 to 255	121
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U107	<p>Setting the middle transfer cleaning voltage</p> <p>[Description] Sets the middle transfer cleaning control voltage.</p> <p>[Purpose] To change the setting when any density problems, such as too dark or light, occur.</p> <p>[Implementation] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting: Conditions of use offset table]</p> <p>1. Use the cursor left/right keys to select "0" (ON) or "1" (OFF).</p> <p>2. Press the start key to activate the selected setting.</p> <p>[Setting: Adjusting middle transfer cleaning voltage]</p> <p>1. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Middle transfer cleaning voltage adjustment</td> <td>0 to 255</td> <td>57</td> </tr> </tbody> </table> <p>2. Press the start key to activate the selected setting.</p> <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	Middle transfer cleaning voltage adjustment	0 to 255	57																														
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Middle transfer cleaning voltage adjustment	0 to 255	57																																			

Maintenance item No.	Description																																																				
U108	<p>Setting the separation shift bias voltage</p> <p>[Description] Sets the control voltage of the separation shift bias for each paper type.</p> <p>[Purpose] To change the setting when any separation problems occur.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the paper type that you want to change the setting for. 3. Press the start key. * The setting screen for the selected item will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>Plain</td> <td>Separation shift bias adjustment for plain paper</td> </tr> <tr> <td>Rough</td> <td>Separation shift bias adjustment for thick paper</td> </tr> <tr> <td>Transparency</td> <td>Separation shift bias adjustment for transparency</td> </tr> </tbody> </table> <p>[Setting: Conditions of use offset table]</p> <ol style="list-style-type: none"> 1. Use the cursor left/right keys to select "0" (ON) or "1" (OFF). 2. Press the start key to activate the selected setting. <p>[Setting: Separation shift bias adjustment for plain paper]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Color/1st</td> <td>First plane of color plain paper</td> <td>0 to 255</td> <td>137</td> </tr> <tr> <td>BW/1st</td> <td>Fist plane of monochrome plain paper</td> <td>0 to 255</td> <td>138</td> </tr> <tr> <td>Color/2nd</td> <td>Second plain of color plain paper</td> <td>0 to 255</td> <td>134</td> </tr> <tr> <td>BW/2nd</td> <td>Second plain of monochrome plain paper</td> <td>0 to 255</td> <td>134</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Setting: Separation shift bias adjustment for thick paper]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Color/1st</td> <td>Thick color paper</td> <td>0 to 255</td> <td>137</td> </tr> <tr> <td>BW/1st</td> <td>Thick monochrome paper</td> <td>0 to 255</td> <td>138</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Setting: Separation shift bias adjustment for transparency]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Color/1st</td> <td>Color transparency</td> <td>0 to 255</td> <td>137</td> </tr> <tr> <td>BW/1st</td> <td>Monochrome transparency</td> <td>0 to 255</td> <td>138</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Plain	Separation shift bias adjustment for plain paper	Rough	Separation shift bias adjustment for thick paper	Transparency	Separation shift bias adjustment for transparency	Display	Description	Setting range	Default setting	Color/1st	First plane of color plain paper	0 to 255	137	BW/1st	Fist plane of monochrome plain paper	0 to 255	138	Color/2nd	Second plain of color plain paper	0 to 255	134	BW/2nd	Second plain of monochrome plain paper	0 to 255	134	Display	Description	Setting range	Default setting	Color/1st	Thick color paper	0 to 255	137	BW/1st	Thick monochrome paper	0 to 255	138	Display	Description	Setting range	Default setting	Color/1st	Color transparency	0 to 255	137	BW/1st	Monochrome transparency	0 to 255	138
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BW/1st	Monochrome transparency	0 to 255	138																																																		

Maintenance item No.	Description
U110	<p>Checking/clearing the drum count</p> <p>[Description] Displays the drum counts for checking, clearing or changing.</p> <p>[Purpose] Used to check the drum status.</p> <p>[Method] Press the start key. * The current drum count will be displayed.</p> <p>[Clearing] 1. Press the reset key. 2. Press the start key. The count is cleared. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Setting] 1. Enter a seven-digit count using the numeric keys. 2. Press the start key. The count is set. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] To exit this maintenance item without changing the current setting, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U127	<p>Checking/clearing the transfer count</p> <p>[Description] Displays the counts of the middle transfer counter and the secondary transfer counter.</p> <p>[Purpose] Used to check the count after replacement of the secondary transfer unit.</p> <p>[Method] Press the start key. * The current counts of the middle transfer counter and the secondary transfer counter will be displayed.</p> <p>[Clearing] 1. Press the up/down keys to select the count. 2. Press the reset key. 3. Press the start key. The count is cleared. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Setting] 1. Press the up/down keys to select the count. 2. Enter a seven-digit count using the numeric keys. 3. Press the start key. The count is set. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] To exit this maintenance item without changing the current setting, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description						
<p>U139</p>	<p>Displaying the temperature and humidity inside the machine</p> <p>[Description] Displays the detected temperature and humidity inside the machine.</p> <p>[Purpose] To check the temperature and humidity inside the machine.</p> <p>[Method] Press the start key. * The detected temperature (°C/°F) and humidity (%) inside the machine will be displayed.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>						
<p>U144</p>	<p>Setting the charged toner applying ON/OFF</p> <p>[Description] Turns ON/OFF to use the charged toner in the developing unit.</p> <p>[Purpose] To set to OFF for users who frequently copy graphic images.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select either "ON" or "OFF". * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Charged toner applying ON</td> </tr> <tr> <td>OFF</td> <td>Charged toner applying OFF</td> </tr> </tbody> </table> <p>* The factory default setting is "ON".</p> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	ON	Charged toner applying ON	OFF	Charged toner applying OFF
Display	Description						
ON	Charged toner applying ON						
OFF	Charged toner applying OFF						

Maintenance item No.	Description																				
<p>U155</p>	<p>Displaying the toner sensor output</p> <p>[Description] Displays the toner sensor output value.</p> <p>[Purpose] To check the output value for each color when any image problems occur.</p> <p>[Implementation] Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>MOVE1 ON</td> <td>Agitation operation in the developing unit</td> </tr> <tr> <td>MOVE2 ON</td> <td>Operations to start printing and select color to be applied</td> </tr> <tr> <td>SET DATA</td> <td>Selecting a color when performing MOVE2</td> </tr> </tbody> </table> <p>[Method: Referring to the toner control voltage]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select either "MOVE1 ON" or "MOVE2 ON" in the screen for selecting an item. Press the start key. <p>* The toner control voltage reference value will be displayed for each color.</p> <p>[Method: Selecting a color to be applied when the print start operation is set.]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select "SET DATA" in the screen for selecting an item. Press the start key. Use the cursor up/down keys to select the desired color. Use the cursor left/right keys to select "1" (color to be applied). <ul style="list-style-type: none"> * Multiple colors cannot be selected simultaneously. Press the start key to activate the selected setting. <ul style="list-style-type: none"> * When no color is selected, "BLACK" will be automatically selected. <p>[Completion] Press the stop/clear key.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	MOVE1 ON	Agitation operation in the developing unit	MOVE2 ON	Operations to start printing and select color to be applied	SET DATA	Selecting a color when performing MOVE2												
Display	Setting																				
MOVE1 ON	Agitation operation in the developing unit																				
MOVE2 ON	Operations to start printing and select color to be applied																				
SET DATA	Selecting a color when performing MOVE2																				
<p>U156</p>	<p>Setting the toner replenishment level</p> <p>[Description] Sets the toner replenishment level for each color.</p> <p>[Purpose] Used to change settings according to the original image.</p> <p>[Method]</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item will be displayed. Use the cursor up/down keys to select the item that you want to change the setting for. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>BLACK</td> <td>toner replenishment level (black)</td> <td>300 to 500</td> <td>414</td> </tr> <tr> <td>CYAN</td> <td>toner replenishment level (cyan)</td> <td>300 to 500</td> <td>414</td> </tr> <tr> <td>MAGENTA</td> <td>toner replenishment level (magenta)</td> <td>300 to 500</td> <td>414</td> </tr> <tr> <td>YELLOW</td> <td>toner replenishment level (yellow)</td> <td>300 to 500</td> <td>414</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting	BLACK	toner replenishment level (black)	300 to 500	414	CYAN	toner replenishment level (cyan)	300 to 500	414	MAGENTA	toner replenishment level (magenta)	300 to 500	414	YELLOW	toner replenishment level (yellow)	300 to 500	414
Display	Setting	Setting range	Default setting																		
BLACK	toner replenishment level (black)	300 to 500	414																		
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MAGENTA	toner replenishment level (magenta)	300 to 500	414																		
YELLOW	toner replenishment level (yellow)	300 to 500	414																		

Maintenance item No.	Description																												
U158	<p>Checking/clearing the developing count</p> <p>[Description] Displays the developing count for checking, clearing or changing the figure.</p> <p>[Purpose] Used to check the developing count after replacement of the developing unit.</p> <p>[Method] Press the start key. * The current developing count will be displayed for each color.</p> <p>[Clearing the count] 1. Use the cursor up/down keys to select the item that you want to clear the count for. 2. Press the reset key. 3. Press the start key. The count will be cleared. *The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Setting the count] 1. Use the cursor up/down keys to select the item that you want to set the count. 2. Use the numeric keys to enter the 7-digit count value. 3. Press the start key to set the selected count. *The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>																												
U161	<p>Setting the fixing control temperature</p> <p>[Description] Changes the fixing control temperature.</p> <p>[Purpose] Normally you do not need to change the setting. However, this item can be used to prevent curling or creasing of paper, or solve a fixing problem on thick paper.</p> <p>[Method] 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. 3. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>ON TEMP U</td> <td>Upper fuser heater control temperature while standby</td> <td>130 to 180</td> <td>145</td> </tr> <tr> <td>1ST TEMP U</td> <td>Upper fuser heater primary stabilization temperature</td> <td>90 to 120</td> <td>100</td> </tr> <tr> <td>2ND TEMP U</td> <td>Upper fuser heater secondary stabilization temperature</td> <td>130 to 190</td> <td>150</td> </tr> <tr> <td>ON TEMP L</td> <td>Lower fuser heater stabilization temperature while standby</td> <td>130 to 180</td> <td>165</td> </tr> <tr> <td>1ST TEMP L</td> <td>Lower fuser heater primary stabilization temperature</td> <td>90 to 120</td> <td>115</td> </tr> <tr> <td>2ND TEMP L</td> <td>Lower fuser heater secondary stabilization temperature</td> <td>130 to 190</td> <td>170</td> </tr> </tbody> </table> <p>* The temperatures are set such that 2ND TEMP \geq 1ST TEMP.</p> <p>4. Press the start key to activate the selected setting.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting	ON TEMP U	Upper fuser heater control temperature while standby	130 to 180	145	1ST TEMP U	Upper fuser heater primary stabilization temperature	90 to 120	100	2ND TEMP U	Upper fuser heater secondary stabilization temperature	130 to 190	150	ON TEMP L	Lower fuser heater stabilization temperature while standby	130 to 180	165	1ST TEMP L	Lower fuser heater primary stabilization temperature	90 to 120	115	2ND TEMP L	Lower fuser heater secondary stabilization temperature	130 to 190	170
Display	Setting	Setting range	Default setting																										
ON TEMP U	Upper fuser heater control temperature while standby	130 to 180	145																										
1ST TEMP U	Upper fuser heater primary stabilization temperature	90 to 120	100																										
2ND TEMP U	Upper fuser heater secondary stabilization temperature	130 to 190	150																										
ON TEMP L	Lower fuser heater stabilization temperature while standby	130 to 180	165																										
1ST TEMP L	Lower fuser heater primary stabilization temperature	90 to 120	115																										
2ND TEMP L	Lower fuser heater secondary stabilization temperature	130 to 190	170																										

Maintenance item No.	Description
U162	<p>Forced stabilization of the fixer</p> <p>[Description] Forcibly stops the fixer's stabilization drive regardless of the fixing temperature.</p> <p>[Purpose] To force the machine into a stable state before the fixing section reaches its stabilization temperature.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. Press the start key. <ul style="list-style-type: none"> * A forced stabilization mode will be entered, the fixer's stabilization drive will be stopped regardless of the fixing temperature, and the screen for selecting a maintenance item No. will be displayed again. * A forced stabilization mode will be canceled by turning the power ON and OFF. <p>[Completion] If you want to cancel force-stabilization of the fixer, Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>
U163	<p>Resetting the fixing problem data</p> <p>[Description] Resets the detection of a service call code indicating a problem in the fixing section.</p> <p>[Purpose] To prevent accidents due to an abnormally high fixing temperature.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing is displayed. 2. Use the cursor up/down keys to select EXECUTE. 3. Press the start key. The fixing problem data is initialized. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U167	<p>Checking and setting the fixing count</p> <p>[Description] Displays the fixing count and the count for the fuser oil counter. Also sets the preset count for the fixing oil counter (the number of copies possible after a message to replace the fixing oil roller appears).</p> <p>[Purpose] Used to check the fixing count after replacement of the fixing unit.</p> <p>[Method] Press the start key. * The fixing count, fixing oil count and fixing oil preset value will be displayed.</p> <p>[Setting: Fixing oil counter presetting]</p> <ol style="list-style-type: none"> 1. Use the numeric keys to enter the 4-digit count value. 2. Press the start key to set the selected value. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] To exit this maintenance item without changing the current setting, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U200	<p>Turning all LEDs ON</p> <p>[Description] Turns all of the LEDs on the operation panel ON.</p> <p>[Purpose] To check the operation of all of the LEDs on the operation panel.</p> <p>[Method] Press the start key. * All of the LEDs on the operation panel will light up. * The LEDs will go off after 10 seconds or by pressing the stop/clear key. The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description										
U202	<p>Setting the KMAS host monitoring system</p> <p>[Description] Initializes or operates the KMAS host monitoring system.</p> <p>This is an optional device which is currently supported only by Japanese specifications machines, so no setting is necessary.</p>										
U203	<p>Operating the DF separately</p> <p>[Description] Simulates the original conveying operation separately in the optional DF.</p> <p>[Purpose] Used to check the DF operation.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Place an original in the DF if running this simulation with paper. 3. Use the cursor up/down keys to select the item that you want to check the operation for. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>ADF</td> <td>With paper, single-sided original</td> </tr> <tr> <td>RADF</td> <td>With paper, double-sided original</td> </tr> <tr> <td>ADF (NON P)</td> <td>Without paper, single-sided original (continuous operation)</td> </tr> <tr> <td>RADF (NON P)</td> <td>Without paper, double-sided original (continuous operation)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key. * The machine will begin operation. 5. To stop the continuous operation, press the stop/clear key. <p>[Completion] Press the stop/clear key with the operation stopped. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Operation	ADF	With paper, single-sided original	RADF	With paper, double-sided original	ADF (NON P)	Without paper, single-sided original (continuous operation)	RADF (NON P)	Without paper, double-sided original (continuous operation)
Display	Operation										
ADF	With paper, single-sided original										
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)										
U204	<p>Setting the presence or absence of a key card or key counter</p> <p>[Description] Sets the presence or absence of the optional key card or key counter.</p> <p>[Purpose] Used when the optional key card or key counter is installed.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the optional counter to be installed. * The display for the selected counter will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>KEY-CARD1</td> <td>DC Keycard I installed</td> </tr> <tr> <td>KEY-COUNTER</td> <td>Key counter installed</td> </tr> <tr> <td>KEY-CARD2</td> <td>MK-1 key card installed</td> </tr> <tr> <td>Hilighted</td> <td>No counter is installed</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	KEY-CARD1	DC Keycard I installed	KEY-COUNTER	Key counter installed	KEY-CARD2	MK-1 key card installed	Hilighted	No counter is installed
Display	Description										
KEY-CARD1	DC Keycard I installed										
KEY-COUNTER	Key counter installed										
KEY-CARD2	MK-1 key card installed										
Hilighted	No counter is installed										

Maintenance item No.	Description
U206	<p>Setting the presence or absence of the coin vender</p> <p>[Description] Sets the presence or absence of the optional coin vender. Also sets the details for coin vender operation, such as mode and unit price. This is an optional device which is currently supported only by Japanese specifications machines, so no setting is necessary.</p>
U207	<p>Checking the keys on the operation panel</p> <p>[Description] Checks operations of the keys on the operation panel.</p> <p>[Purpose] Used to check the operations of all the keys and LEDs on the operation panel.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. "1" will be displayed on the message screen and the LEDs in the far left row on the operation panel will turn on. 3. Pressing each key, from top to bottom, in succession with the LEDs turning on increments the value in the message screen by one at a time. When you have pressed all the keys in that row, LEDs in the next (right) row, if there are any, will turn on. 4. When all the keys have been pressed, all the LEDs will turn on for up to 10 seconds. 5. If you press the start key after the LEDs turns off, all LEDs will turn on for another 10 seconds. <p>[Completion] Press the stop/clear key in the screen for executing the maintenance item. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description
U209	<p>Setting the date and time</p> <p>[Description] Sets the time to adjust a time difference.</p> <p>[Purpose] To check the accuracy of the copier clock.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to enter the value in the currently selected time zone, and then press the start key. * The date will be displayed. 2. Enter the current date (year, month and day) and press the start key. * Enter the last two digits of the year. * The time will be displayed. 3. Enter the current time (hour and minutes) and press the start key. 4. "NG" will be displayed when the time difference between the real-time clock and that of the setting exceeds 24 hours. "OK" will be displayed when the difference is within 24 hours. 5. Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U216	<p>Setting the paper feeder type</p> <p>[Description] Set the paper feeder type in the copier.</p> <p>[Purpose] You do not need to change the setting.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down key to select the paper capacity in the paper drawer. (Factory default: 500 sheets). 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description																		
<p>U237</p>	<p>Setting the maximum number of sheets for finisher stacking</p> <p>[Description] Sets the maximum number of sheets to be stacked on the main tray and middle tray of the optional document finisher.</p> <p>[Purpose] Used when any staking problems occur.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The setting screen will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>MAIN TRAY</td> <td>Number of sheets to be stacked on the main tray</td> </tr> <tr> <td>MIDDLE TRAY</td> <td>Number of sheets to be stacked on the middle tray in the sort copy mode or staple copy mode.</td> </tr> </tbody> </table> <p>[Setting: Number of sheets to be stacked on the main tray]</p> <ol style="list-style-type: none"> 1. Use the cursor left/right keys to select the desired number of sheets of paper. <table border="1"> <thead> <tr> <th>Setting value</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>3000 sheets</td> </tr> <tr> <td>1</td> <td>1500 sheets</td> </tr> </tbody> </table> <p>* The factory default setting is "0" (3000 sheets).</p> <ol style="list-style-type: none"> 2. Press the start key to activate the selected setting. <p>[Setting: Number of sheets to be stacked on the middle tray]</p> <ol style="list-style-type: none"> 1. Use the cursor left/right keys to select the desired number of sheets of paper. <table border="1"> <thead> <tr> <th>Setting value</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>In the sort copy mode: 30 sheets In the staple copy mode: 50 sheets</td> </tr> <tr> <td>1</td> <td>In the sort copy mode: 30 sheets In the staple copy mode: 30 sheets</td> </tr> </tbody> </table> <p>* The factory default setting is "0".</p> <ol style="list-style-type: none"> 2. Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	MAIN TRAY	Number of sheets to be stacked on the main tray	MIDDLE TRAY	Number of sheets to be stacked on the middle tray in the sort copy mode or staple copy mode.	Setting value	Setting	0	3000 sheets	1	1500 sheets	Setting value	Setting	0	In the sort copy mode: 30 sheets In the staple copy mode: 50 sheets	1	In the sort copy mode: 30 sheets In the staple copy mode: 30 sheets
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Maintenance item No.	Description																																		
U240	<p>Checking the operation of the finisher</p> <p>[Description] Turns each clutch and solenoid of the optional document finisher ON.</p> <p>[Purpose] Used to check the operation of each clutch and solenoid of the optional document finisher.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the clutch or solenoid that you want to check the operation for. * The display for the selected clutch or solenoid will be highlighted. The selected clutch or solenoid will be turned ON for 0.5 seconds. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr><td>HBCL</td><td>Paper conveying belt clutch (PCBCL)</td></tr> <tr><td>SBSL</td><td>Rotating plate solenoid (RPSOL)</td></tr> <tr><td>PSL 1</td><td>Paddle solenoid 3 (PDSOL3)</td></tr> <tr><td>PSL 2</td><td>Paddle solenoid 2 (PDSOL2)</td></tr> <tr><td>PSL 3</td><td>Paddle solenoid 1 (PDSOL1)</td></tr> <tr><td>BSL 1</td><td>Feedshift solenoid 1 (FSSOL1)</td></tr> <tr><td>BSL 2</td><td>Feedshift solenoid 2 (FSSOL2)</td></tr> <tr><td>PCL</td><td>Paddle clutch (PDCL)</td></tr> <tr><td>PNSL OFF</td><td>Punch pattern solenoid (PPSOL) OFF</td></tr> <tr><td>PNSL ON</td><td>Punch pattern solenoid (PPSOL) ON</td></tr> <tr><td>PNCL</td><td>Punch clutch (PCL)</td></tr> <tr><td>KYSL</td><td>Trailing edge press solenoid (TEPSOL)</td></tr> <tr><td>PCSL</td><td>Pressure switching solenoid (PSWSOL)</td></tr> <tr><td>DCSL</td><td>Drive switching solenoid (DSSOL)</td></tr> <tr><td>OKCL</td><td>Paper conveying clutch (PCCL)</td></tr> <tr><td>B5SL</td><td>Forwarding solenoid (FWSOL)</td></tr> </tbody> </table> <ol style="list-style-type: none"> 3. To turn ON a clutch or solenoid with the motor driving, press the interrupt key before selecting the clutch or solenoid. * The driving motor will start operation, and the selected clutch or the solenoid will remain ON until the interrupt key is pressed again. 4. To stop motor driving, press the interrupt key again. 5. To return to the screen for selecting an item, press the stop/clear key with the motor stopped. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	HBCL	Paper conveying belt clutch (PCBCL)	SBSL	Rotating plate solenoid (RPSOL)	PSL 1	Paddle solenoid 3 (PDSOL3)	PSL 2	Paddle solenoid 2 (PDSOL2)	PSL 3	Paddle solenoid 1 (PDSOL1)	BSL 1	Feedshift solenoid 1 (FSSOL1)	BSL 2	Feedshift solenoid 2 (FSSOL2)	PCL	Paddle clutch (PDCL)	PNSL OFF	Punch pattern solenoid (PPSOL) OFF	PNSL ON	Punch pattern solenoid (PPSOL) ON	PNCL	Punch clutch (PCL)	KYSL	Trailing edge press solenoid (TEPSOL)	PCSL	Pressure switching solenoid (PSWSOL)	DCSL	Drive switching solenoid (DSSOL)	OKCL	Paper conveying clutch (PCCL)	B5SL	Forwarding solenoid (FWSOL)
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U241	<p>Checking the operation of the switches of the finisher</p> <p>[Description] Displays the status of each switch of the optional document finisher.</p> <p>[Purpose] Used to check the operation of each switch of the optional document finisher.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key to run the maintenance item. 2. Turn each switch ON manually. <p>* When a switch is detected to be in the ON position, the display for that switch will be highlighted.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr><td>KOS</td><td>Trailing edge press detection sensor (TEPDS)</td></tr> <tr><td>PS 3</td><td>Eject switch (ESW)</td></tr> <tr><td>FJHS</td><td>Front jogger home position sensor (FJHPS)</td></tr> <tr><td>PS 2</td><td>Internal tray wheel sensor (ITWS)</td></tr> <tr><td>DS</td><td>Front cover switch (FCSW)</td></tr> <tr><td>SS</td><td>Joint switch (JSW)</td></tr> <tr><td>RJHS</td><td>Rear jogger home position sensor (RJHPS)</td></tr> <tr><td>FSES</td><td>Front stapler empty sensor (STES)</td></tr> <tr><td>FSPS</td><td>Front stapler self-priming sensor (STSPS)</td></tr> <tr><td>RSES</td><td>Rear stapler empty sensor (STES)</td></tr> <tr><td>RSPS</td><td>Rear stapler self-priming sensor (STSPS)</td></tr> <tr><td>US</td><td>Upper cover switch (UCSW)</td></tr> <tr><td>FSTHS</td><td>Front stapler home position sensor (STHPS)</td></tr> <tr><td>RSTHS</td><td>Rear stapler home position sensor (STHPS)</td></tr> <tr><td>FS A3</td><td>Paper conveying sensor 1 (PCS1)</td></tr> <tr><td>FS A4</td><td>Paper conveying sensor 2 (PCS2)</td></tr> <tr><td>SKS 1</td><td>Tray stock sensor A (TSSA)</td></tr> <tr><td>PS 1</td><td>Paper entry sensor (PES)</td></tr> <tr><td>HBHS</td><td>Paper conveying belt home position sensor (PCBHPS)</td></tr> <tr><td>SKS 2</td><td>Tray upper limit sensor (TULS)</td></tr> <tr><td>PS 4</td><td>Internal tray sensor (ITS)</td></tr> <tr><td>SKS 4</td><td>Tray lower limit sensor (TLLS)</td></tr> <tr><td>PKS</td><td>Scrap hole-punch sensor (PDTS)</td></tr> <tr><td>SKS 3</td><td>Tray midpoint sensor (TMS)</td></tr> </tbody> </table> <p>[Completion] Press the stop/clear key with all operations completed.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	KOS	Trailing edge press detection sensor (TEPDS)	PS 3	Eject switch (ESW)	FJHS	Front jogger home position sensor (FJHPS)	PS 2	Internal tray wheel sensor (ITWS)	DS	Front cover switch (FCSW)	SS	Joint switch (JSW)	RJHS	Rear jogger home position sensor (RJHPS)	FSES	Front stapler empty sensor (STES)	FSPS	Front stapler self-priming sensor (STSPS)	RSES	Rear stapler empty sensor (STES)	RSPS	Rear stapler self-priming sensor (STSPS)	US	Upper cover switch (UCSW)	FSTHS	Front stapler home position sensor (STHPS)	RSTHS	Rear stapler home position sensor (STHPS)	FS A3	Paper conveying sensor 1 (PCS1)	FS A4	Paper conveying sensor 2 (PCS2)	SKS 1	Tray stock sensor A (TSSA)	PS 1	Paper entry sensor (PES)	HBHS	Paper conveying belt home position sensor (PCBHPS)	SKS 2	Tray upper limit sensor (TULS)	PS 4	Internal tray sensor (ITS)	SKS 4	Tray lower limit sensor (TLLS)	PKS	Scrap hole-punch sensor (PDTS)	SKS 3	Tray midpoint sensor (TMS)
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U243	<p>Checking the operation of the DF motors, clutch and solenoids</p> <p>[Description] Turns ON the motors, clutch and solenoids of the optional DF.</p> <p>[Purpose] Used to check the operation of the motors, clutch and solenoids of the DF.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the motor, clutch or solenoid that you want to check the operation for. * The display for the selected item will be highlighted. 3. Press the start key. * The machine will begin operation. <table border="1"> <thead> <tr> <th>Display</th> <th>motor, clutch or solenoid</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>F MOT</td> <td>Original feed motor (OFM)</td> <td>In operation</td> </tr> <tr> <td>C MOT</td> <td>Original paper conveying motor (OCM)</td> <td>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 → OFF</td> </tr> <tr> <td>RP SL</td> <td>Switchback pressure solenoid (SBPSOL)</td> <td>ON → OFF</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. When you want to stop the operation, press the stop/clear key. <p>[Completion] Press the stop/clear key with the operation stopped. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	motor, clutch or solenoid	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 → OFF	RP SL	Switchback pressure solenoid (SBPSOL)	ON → OFF
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U244	<p>Checking the operation of the DF switches</p> <p>[Description] Display the status of each switch of the optional DF.</p> <p>[Purpose] Used to check the operation of each switch of the optional DF.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the switch that you want to check the operation for. * The screen for executing the maintenance item for the selected switch will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Switch</th> </tr> </thead> <tbody> <tr> <td>SW</td> <td>ON/OFF switch</td> </tr> <tr> <td>VR</td> <td>Volume switch</td> </tr> </tbody> </table> <p>[Method: ON/OFF switch]</p> <ol style="list-style-type: none"> 1. Turn each switch ON and OFF manually to check its status. * When a switch is detected to be in the ON position, the display for that switch will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Switch</th> </tr> </thead> <tbody> <tr> <td>SET SW</td> <td>Original set switch (OSSW)</td> </tr> <tr> <td>FEED SW</td> <td>Original feed switch (OFSW)</td> </tr> <tr> <td>REV SW</td> <td>Original switchback switch (OSBSW)</td> </tr> <tr> <td>TMG SW</td> <td>DF timing switch (DFTSW)</td> </tr> <tr> <td>SZ A SW</td> <td>Original size length switch (OSLSW)</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. To return to the screen for selecting an item, press the stop/clear key. 	Display	Switch	SW	ON/OFF switch	VR	Volume switch	Display	Switch	SET SW	Original set switch (OSSW)	FEED SW	Original feed switch (OFSW)	REV SW	Original switchback switch (OSBSW)	TMG SW	DF timing switch (DFTSW)	SZ A SW	Original size length switch (OSLSW)						
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<p>U244</p>	<p>[Method: Volume switch]</p> <ol style="list-style-type: none"> 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. <table border="1"> <thead> <tr> <th>Numerical value</th> <th colspan="2">Original width to be detected</th> </tr> </thead> <tbody> <tr> <td>000</td> <td rowspan="3">A5R</td> <td>5 1/2" × 8 1/2"</td> </tr> <tr> <td>49.664</td> <td></td> </tr> <tr> <td>50.176</td> <td></td> </tr> <tr> <td>61.440</td> <td rowspan="3">B5R</td> <td></td> </tr> <tr> <td>61.952</td> <td></td> </tr> <tr> <td>103.936</td> <td>8 1/2" × 14"/ 8 1/2" × 11"</td> </tr> <tr> <td>104.448</td> <td rowspan="3">Folio/A4R</td> <td></td> </tr> <tr> <td>139.264</td> <td></td> </tr> <tr> <td>139.776</td> <td></td> </tr> <tr> <td>146.432</td> <td rowspan="3">B4/B5</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="3">CF (11" × 15")</td> <td>11" × 17"/ 11" × 15"/ 11" × 8 1/2"</td> </tr> <tr> <td>197.720</td> <td></td> </tr> <tr> <td>223.232</td> <td></td> </tr> <tr> <td>256</td> <td>A3/A4</td> <td></td> </tr> </tbody> </table> <p>* For example, if any value between 105 and 139 is displayed when the original insertion guides are adjusted for A4R paper, it indicates that the original width is detected correctly.</p> <ol style="list-style-type: none"> 2. To return to the screen for selecting an item, press the stop/clear key. <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Numerical value	Original width to be detected		000	A5R	5 1/2" × 8 1/2"	49.664		50.176		61.440	B5R		61.952		103.936	8 1/2" × 14"/ 8 1/2" × 11"	104.448	Folio/A4R		139.264		139.776		146.432	B4/B5		146.994		197.120		197.632	CF (11" × 15")	11" × 17"/ 11" × 15"/ 11" × 8 1/2"	197.720		223.232		256	A3/A4	
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<p>U245</p>	<p>Checking messages</p> <p>[Description] Displays a list of messages and graphics that appear on the operation panel screen.</p> <p>[Purpose] Used to check all of the messages and graphics in the operation unit ROM.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the desired message or graphic image and then press the start key. 3. Use the cursor up/down keys to select the item that you want to check. <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>																																									

Maintenance item No.	Description																								
<p>U248</p>	<p>Changing the paper ejection device settings</p> <p>[Description] Adjusts the paper flexure level in the punch mode when the optional document finisher is installed in your copier. Also sets the limit for the number of punches that can be made, and displays or clears or changes the waste punch count.</p> <p>[Purpose]</p> <ul style="list-style-type: none"> •Paper flexure level adjustment in the punch mode Used to adjust the paper flexure level in the punch mode if it is too high and frequently causes paper to jam or be folded in a z-pattern, or it is set too low and causes disparity in the punch hole position. • Setting the punch limit Used to set the maximum number of punches possible in order to be informed of the timing for disposing of waste punch. • Displaying (or clearing) the punch count Used to clear the punch count when a message telling you to dispose of the waste punch remains after disposing of waste punch. <p>[Implementation] Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>PUNCH TIMING</td> <td>Paper flexure level adjustment in the punch mode</td> </tr> <tr> <td>PUNCH LIMIT</td> <td>Punch limit/Punch count</td> </tr> </tbody> </table> <p>[Setting: Paper flexure level]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "PUNCH TIMING" in the screen for selecting an item and then press the start key. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Paper flexure level</td> <td>-10 to +10</td> <td>0</td> </tr> </tbody> </table> <p>* If there is disparity in the punch hole position, increase the paper flexure level by raising the setting value. If paper frequently jams or is folded in a z-pattern frequently, decrease the paper flexure level by lowering the value.</p> <p>* Change in value per step: 1.25 mm (paper flexure)</p> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. 4. To return to the screen for selecting an item, press the stop/clear key. <p>[Setting: Punch limit/Punch count]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "PUNCH LIMIT" in the screen for selecting an item and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the numeric keys or the cursor left/right keys to change the setting value. <p>* Press the reset key to clear the punching count.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>PUNCH LIMIT</td> <td>Punch limit (max. number of punches)</td> <td>0 to 999000 times</td> <td>75000</td> </tr> <tr> <td>PUNCH CNT</td> <td>Waste punch count (current number of punches made)</td> <td>0 to 999000 times</td> <td>—</td> </tr> </tbody> </table> <p>* The punch limit can be set to any value in increments of 1000.</p> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting.5. To return to the screen for selecting an item, press the stop/clear key. <p>[Completion] If you want to cancel the operation to change the current settings, Press the stop/clear key when the screen for selecting an item is displayed.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	PUNCH TIMING	Paper flexure level adjustment in the punch mode	PUNCH LIMIT	Punch limit/Punch count	Setting	Setting range	Default setting	Paper flexure level	-10 to +10	0	Display	Setting	Setting range	Default setting	PUNCH LIMIT	Punch limit (max. number of punches)	0 to 999000 times	75000	PUNCH CNT	Waste punch count (current number of punches made)	0 to 999000 times	—
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PUNCH CNT	Waste punch count (current number of punches made)	0 to 999000 times	—																						

Maintenance item No.	Description
U250	<p>Setting the maintenance cycle</p> <p>[Description] Displays and changes the maintenance cycle.</p> <p>[Purpose] To check and change the maintenance cycle.</p> <p>[Method] Press the start key. * The currently set maintenance cycle will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. 2. Use the numeric keys to change the setting value (0 to 9999999). 3. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U251	<p>Checking/Clearing the maintenance count</p> <p>[Description] Displays and clears or changes the maintenance count.</p> <p>[Purpose] To check, as well as to clear or change, the maintenance count during the periodic maintenance service.</p> <p>[Method] Press the start key. * The current maintenance count will be displayed.</p> <p>[Clearing the count] 1. Use the cursor up/down keys to select the item that you want to clear the maintenance count for. * To clear all counts, select "ALL CLEAR" and then press the start key. 2. Press the reset key. 3. Press the start key. The maintenance count will be cleared. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Setting] 1. Use the numeric keys to enter the 7-digit count value. 2. Press the start key to set the selected value. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the count value, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description																																								
U252	<p>Setting the destination</p> <p>[Description] Sets operation procedures and displayed screens according to the destination in which the machine will be used.</p> <p>[Purpose] Used to returns the destination setting to the value before replacement or initialization when the backup RAM on the scanner main PCB has been replaced, or when the backup RAM has been initialize by running maintenance item U020.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the region of use. <ul style="list-style-type: none"> The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>JAPAN METRIC</td> <td>Metric specifications (Japan)</td> </tr> <tr> <td>INCH</td> <td>Inch specifications (North America)</td> </tr> <tr> <td>EUROPE METRIC</td> <td>Metric specifications (Europe)</td> </tr> <tr> <td>ASIA PACIFIC</td> <td>Metric specifications (Asia/Oceania)</td> </tr> </tbody> </table> Press the start key to activate the selected setting. <ul style="list-style-type: none"> The machine will automatically return to the same status as when the power is first turned ON. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Supplement] The specified default settings are provided according to the destinations in the maintenance items below. To change the default settings in those items, be sure to run maintenance item U021 after changing the region of use.</p> <ul style="list-style-type: none"> Default setting according to the destinations <table border="1"> <thead> <tr> <th>Maintenance No.</th> <th>Title</th> <th>Japan spec.</th> <th>Inch spec.</th> <th>Europe/Asia Pacific spec.</th> </tr> </thead> <tbody> <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>264</td> <td>Setting the display order of the date</td> <td>Y/M/D</td> <td>M/D/Y</td> <td>D/M/Y</td> </tr> <tr> <td>276</td> <td>Setting the copy count mode</td> <td>5</td> <td>1</td> <td>1</td> </tr> <tr> <td>333</td> <td>Setting the digit of the department code</td> <td>4 digits</td> <td>7 digits</td> <td>4 digits</td> </tr> <tr> <td>919</td> <td>Setting for toner coverage report output</td> <td>ON</td> <td>ON</td> <td>OFF</td> </tr> </tbody> </table>	Display	Setting	JAPAN METRIC	Metric specifications (Japan)	INCH	Inch specifications (North America)	EUROPE METRIC	Metric specifications (Europe)	ASIA PACIFIC	Metric specifications (Asia/Oceania)	Maintenance No.	Title	Japan spec.	Inch spec.	Europe/Asia Pacific spec.	255	Setting auto clear time	120 s	90 s	90 s	264	Setting the display order of the date	Y/M/D	M/D/Y	D/M/Y	276	Setting the copy count mode	5	1	1	333	Setting the digit of the department code	4 digits	7 digits	4 digits	919	Setting for toner coverage report output	ON	ON	OFF
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Maintenance item No.	Description																													
U253	<p>Switching between double and single counts</p> <p>[Description] Switches the count system for the total counter and other counters.</p> <p>[Purpose] Used to select, according to the preference of the user (copy service provider), if A3/11" × 17" paper is to be counted as one sheet (single count) or two sheets (double count).</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting: Maintenance count/Total count/Fax count]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to change the setting for. Use the cursor left/right keys to select "0" (single count), "1" (double count for A3/11" × 17" paper only) or "2" (double count for A3 and B4/11" × 17" and 8¹/₂" × 14" paper only). <table border="1"> <thead> <tr> <th>Display</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Maintenance count</td> <td>1</td> </tr> <tr> <td>Total count</td> <td>1</td> </tr> <tr> <td>Fax count</td> <td>1</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Setting: Copy count]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the copy count and then press the start key. Use the cursor up/down keys to select the item that you want to change the setting for. Use the cursor left/right keys to select "0" (single count), "1" (double count for A3/11" × 17" paper only) or "2" (double count for A3 and B4/11" × 17" and 8¹/₂" × 14" paper only). <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Full color</td> <td>Full-color copy count</td> <td>1</td> </tr> <tr> <td>Monochrome</td> <td>Monochrome copy count</td> <td>1</td> </tr> <tr> <td>Black/White</td> <td>Black/white copy count</td> <td>1</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Setting: Printer count]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the printer count and then press the start key. Use the cursor up/down keys to select the item that you want to change the setting for. Use the cursor left/right keys to select "0" (single count), "1" (double count for A3/11" × 17" paper only) or "2" (double count for A3 and B4/11" × 17" and 8¹/₂" × 14" paper only). <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Color</td> <td>Color printer count</td> <td>1</td> </tr> <tr> <td>Black/White</td> <td>Black/white printer count</td> <td>1</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. 	Display	Default setting	Maintenance count	1	Total count	1	Fax count	1	Display	Setting	Default setting	Full color	Full-color copy count	1	Monochrome	Monochrome copy count	1	Black/White	Black/white copy count	1	Display	Setting	Default setting	Color	Color printer count	1	Black/White	Black/white printer count	1
Display	Default setting																													
Maintenance count	1																													
Total count	1																													
Fax count	1																													
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Display	Setting	Default setting																												
Color	Color printer count	1																												
Black/White	Black/white printer count	1																												

Maintenance item No.	Description												
U253	<p>[Setting: Key card count]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the key card count and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to select "0" (single count), "1" (double count for A3/11" × 17" paper only) or "2" (double count for A3 and B4/11" × 17" and 8¹/₂" × 14" paper only). <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Full color</td> <td>Full-color key card count</td> <td>1</td> </tr> <tr> <td>RGB color</td> <td>RGB-color key card count</td> <td>1</td> </tr> <tr> <td>Monochrome/Black & White</td> <td>Monochrome/black & white key card count</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Default setting	Full color	Full-color key card count	1	RGB color	RGB-color key card count	1	Monochrome/Black & White	Monochrome/black & white key card count	0
Display	Setting	Default setting											
Full color	Full-color key card count	1											
RGB color	RGB-color key card count	1											
Monochrome/Black & White	Monochrome/black & white key card count	0											
U254	<p>Turning the auto start function ON/OFF</p> <p>[Description] Selects if the auto start function is turned ON.</p> <p>[Purpose] Normally, you do not need to change the setting. If an incorrect operation occurs, turn the function OFF so that the problem can be avoided.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select either "ON" or "OFF". <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Auto start function is turned ON</td> </tr> <tr> <td>OFF</td> <td>Auto start function is turned OFF</td> </tr> </tbody> </table> <ul style="list-style-type: none"> * The factory default setting is "ON". 2. Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	ON	Auto start function is turned ON	OFF	Auto start function is turned OFF						
Display	Setting												
ON	Auto start function is turned ON												
OFF	Auto start function is turned OFF												

Maintenance item No.	Description						
U255	<p>Setting auto clear time</p> <p>[Description] Sets the time to return to default settings after copying is complete.</p> <p>[Purpose] To be set according to the frequency of use. Set to a comparatively long time for continuous copying at the same settings, and comparatively short time for frequent copying at various settings.</p> <p>[Method] Press the start key. * The current setting will be displayed.</p> <p>[Setting] 1. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Auto clear time</td> <td>0 to 270 (seconds)</td> <td>90</td> </tr> </tbody> </table> <p>* When set to 0, the auto clear function will be turned OFF.</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	Auto clear time	0 to 270 (seconds)	90
Setting item	Setting range	Default setting					
Auto clear time	0 to 270 (seconds)	90					
U256	<p>Tuning auto preheat function ON/OFF</p> <p>[Description] Selects if the auto preheat function is turned ON.If you change the setting to "ON", the time to enter auto preheat mode can be changed in copy management mode.</p> <p>[Purpose] Set according to user preference, to prioritize either energy saving in the auto preheat mode or prompt copying without the recovery time from the auto preheat mode.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select either "ON" or "OFF". * The display for the selected item will be highlighted.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Auto preheat function is turned ON</td> </tr> <tr> <td>OFF</td> <td>Auto preheat function is turned OFF</td> </tr> </tbody> </table> <p>* The factory default setting is "ON".</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. * When the setting is changed from "OFF" to "ON", auto preheat time will return to the default of 20 minutes.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	ON	Auto preheat function is turned ON	OFF	Auto preheat function is turned OFF
Display	Setting						
ON	Auto preheat function is turned ON						
OFF	Auto preheat function is turned OFF						

Maintenance item No.	Description						
U259	<p>Displaying the economy mode</p> <p>[Description] Selects whether or not to display the economy mode (that reduces the toner consumption) on the selection screen when selecting an image quality mode.</p> <p>[Purpose] Set according to the user preference.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select either "ON" or "OFF". <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Displays the economy mode</td> </tr> <tr> <td>OFF</td> <td>Does not display the economy mode</td> </tr> </tbody> </table> <ul style="list-style-type: none"> * The factory default setting is "ON". Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	ON	Displays the economy mode	OFF	Does not display the economy mode
Display	Setting						
ON	Displays the economy mode						
OFF	Does not display the economy mode						
U260	<p>Selecting the timing for copy counting</p> <p>[Description] Changes the copy count timing for the total counter and other counters.</p> <p>[Purpose] Set according to user preference (copy service provider). If a paper jam occurs frequently in the finisher when the copy count timing is set at the time of paper ejection, copies are provided without copy counts (and related cost). To prevent this, it is possible to advance the count timing. If a paper jam occurs frequently in the paper conveying or fixing sections when the count timing is set to a point prior to that, the copy count (and related cost) may go up without the corresponding copy being made. In cases such as this, it is possible to delay the count timing.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select timing for counting. <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>FEED</td> <td>When the secondary paper feed starts.</td> </tr> <tr> <td>EJECT</td> <td>When the paper is ejected.</td> </tr> </tbody> </table> <ul style="list-style-type: none"> * The factory default setting is "EJECT". Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	FEED	When the secondary paper feed starts.	EJECT	When the paper is ejected.
Display	Setting						
FEED	When the secondary paper feed starts.						
EJECT	When the paper is ejected.						

Maintenance item No.	Description								
<p>U263</p>	<p>Setting the paper ejection when copying from the DF</p> <p>[Description] Sets whether the copies will be ejected in the same or opposite order as the originals when copying from the DF.</p> <p>[Purpose] Set according to the preference of the user.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select the ejection order.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>TRAY(NORMAL)</td> <td>Opposite order ejection (during side ejection)</td> </tr> <tr> <td>TRAY(MEMORY)</td> <td>Same order ejection using memory copy (during side ejection)</td> </tr> <tr> <td>ALL(MEMORY)</td> <td>Same order ejection using memory copy</td> </tr> </tbody> </table> <p>* The factory default setting is "TRAY(NORMAL)".</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	TRAY(NORMAL)	Opposite order ejection (during side ejection)	TRAY(MEMORY)	Same order ejection using memory copy (during side ejection)	ALL(MEMORY)	Same order ejection using memory copy
Display	Setting								
TRAY(NORMAL)	Opposite order ejection (during side ejection)								
TRAY(MEMORY)	Same order ejection using memory copy (during side ejection)								
ALL(MEMORY)	Same order ejection using memory copy								
<p>U264</p>	<p>Setting the display order of the date</p> <p>[Description] Selects year, month and day as the order of that appears on lists, etc.</p> <p>[Purpose] Set according to the user preference.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select the desired order.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>Y/M/D</td> <td>Year/Month/Day</td> </tr> <tr> <td>M/D/Y</td> <td>Month/Day/Year</td> </tr> <tr> <td>D/M/Y</td> <td>Day/Month/Year</td> </tr> </tbody> </table> <p>* The factory default setting: "M/D/Y" (for the inch specifications) "D/M/Y"(for the metric specifications)</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Y/M/D	Year/Month/Day	M/D/Y	Month/Day/Year	D/M/Y	Day/Month/Year
Display	Setting								
Y/M/D	Year/Month/Day								
M/D/Y	Month/Day/Year								
D/M/Y	Day/Month/Year								

Maintenance item No.	Description																
U265	<p>Setting the code for OEM destination</p> <p>[Description] Sets the code for OEM destination.</p> <p>[Purpose] Used when such component as the scanner main PCB is replaced.</p> <p>[Method] Press the start key.</p> <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the numeric keys or the cursor left/right keys to change the setting value. 2. Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>																
U276	<p>Setting the copy count mode</p> <p>[Description] Changes the unit of counting according to the mode of paper ejection.</p> <p>[Purpose] Used to change the unit of counting depending upon the number of colors used, such as full-color or black.</p> <p>[Method] Press the start key. * The current setting will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the numeric keys or the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>DATA:0</td> <td>1 count rate (one count regardless of whether the copy is color or monochrome)</td> </tr> <tr> <td>DATA:1</td> <td>2 count rate (color copies: 2 counts, monochrome copies: 1 count)</td> </tr> <tr> <td>DATA:2</td> <td>2 count rate (copies with 2 or more colors: 2 counts, monochrome copies: 1 count)</td> </tr> <tr> <td>DATA:3</td> <td>2 count rate (full-color copies: 2 counts, monochrome + single-color copies: 1 count)</td> </tr> <tr> <td>DATA:4</td> <td>3 count rate (copies using 2 or more toner colors: 3 counts, copies using 1 toner color: 2 counts, monochrome copies: 1 count)</td> </tr> <tr> <td>DATA:5</td> <td>3 count rate (full-color copies: 3 counts, single-color copies: 2 counts, monochrome copies: 1 count)</td> </tr> <tr> <td>DATA:6</td> <td>3 count rate (full-color copies: 3 counts, copies using 2 toner colors: 2 counts, monochrome copies: 1 count)</td> </tr> </tbody> </table> <p>* See Table 1-4-1 about the relation of counter, color mode and count mode. * The factory default setting is "2 count rate".</p> <ol style="list-style-type: none"> 2. Press the enter key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	DATA:0	1 count rate (one count regardless of whether the copy is color or monochrome)	DATA:1	2 count rate (color copies: 2 counts, monochrome copies: 1 count)	DATA:2	2 count rate (copies with 2 or more colors: 2 counts, monochrome copies: 1 count)	DATA:3	2 count rate (full-color copies: 2 counts, monochrome + single-color copies: 1 count)	DATA:4	3 count rate (copies using 2 or more toner colors: 3 counts, copies using 1 toner color: 2 counts, monochrome copies: 1 count)	DATA:5	3 count rate (full-color copies: 3 counts, single-color copies: 2 counts, monochrome copies: 1 count)	DATA:6	3 count rate (full-color copies: 3 counts, copies using 2 toner colors: 2 counts, monochrome copies: 1 count)
Display	Setting																
DATA:0	1 count rate (one count regardless of whether the copy is color or monochrome)																
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DATA:6	3 count rate (full-color copies: 3 counts, copies using 2 toner colors: 2 counts, monochrome copies: 1 count)																

Maintenance item No.	Description								
U276									
	Counter mode	Color mode	Counter mode						
			0	1	2	3	4	5	6
	Full color copy counter	Full color copy	1	1	1	1	1	1	1
		Color printer	0	0	0	0	0	0	0
		RGB mono-color copy	1	1	1	0	1	0	0
		CMY mono-color copy	1	1	0	0	0	0	0
		Black & white copy	1	0	0	0	0	0	0
		Black & white printer	0	0	0	0	0	0	0
		Black & white fax	0	0	0	0	0	0	0
	Mono-color copy counter	Full color copy	0	0	0	0	0	0	0
		Color printer	0	0	0	0	0	0	0
		RGB mono-color copy	0	0	0	0	0	1	1
		CMY mono-color copy	0	0	0	0	1	1	0
		Black & white copy	0	0	0	0	0	0	0
		Black & white printer	0	0	0	0	0	0	0
		Black & white fax	0	0	0	0	0	0	0
	Color printer counter	Full color copy	0	0	0	0	0	0	0
		Color printer	1	1	1	1	1	1	1
		RGB mono-color copy	0	0	0	0	0	0	0
		CMY mono-color copy	0	0	0	0	0	0	0
		Black & white copy	0	0	0	0	0	0	0
		Black & white printer	1	0	0	0	0	0	0
		Black & white fax	1	0	0	0	0	0	0
	Black & white copy counter	Full color copy	0	0	0	0	0	0	0
		Color printer	0	0	0	0	0	0	0
		RGB mono-color copy	0	0	0	1	0	0	0
		CMY mono-color copy	0	0	1	1	0	0	1
		Black & white copy	0	1	1	1	1	1	1
		Black & white printer	0	0	0	0	0	0	0
		Black & white fax	0	0	0	0	0	0	0
	Black & white printer counter	Full color copy	0	0	0	0	0	0	0
		Color printer	0	0	0	0	0	0	0
		RGB mono-color copy	0	0	0	0	0	0	0
		CMY mono-color copy	0	0	0	0	0	0	0
		Black & white copy	0	0	0	0	0	0	0
		Black & white printer	0	1	1	1	1	1	1
		Black & white fax	0	0	0	0	0	0	0
	Black & white fax counter	Full color copy	0	0	0	0	0	0	0
		Color printer	0	0	0	0	0	0	0
		RGB mono-color copy	0	0	0	0	0	0	0
		CMY mono-color copy	0	0	0	0	0	0	0
		Black & white copy	0	0	0	0	0	0	0
		Black & white printer	0	0	0	0	0	0	0
		Black & white fax	0	1	1	1	1	1	1
	Total counter	Full color copy	4	4	4	4	4	4	4
		Color printer	4	4	4	4	4	4	4
		RGB mono-color copy	2	2	2	2	2	2	2
		CMY mono-color copy	1	1	1	1	1	1	1
		Black & white copy	1	1	1	1	1	1	1
		Black & white printer	1	1	1	1	1	1	1
		Black & white fax	1	1	1	1	1	1	1

Table 1-4-1

Maintenance item No.	Description																																																																																																						
U330	<p>Setting the number of copies to be handled by the stacking mode during sorting</p> <p>[Description] Sets the number of copies at which copy ejection will be switched from the optional document finisher's sub tray to its main tray when sorting is turned ON in the setting for the output mode under user simulation. (Only applicable when the document finisher is attached to your copier.)</p> <p>[Purpose] Performed as necessary depending upon the number of copy sets being made by the user.</p> <p>[Method] Press the start key. * The current setting value will be displayed.</p> <p>[Setting] 1. Use the numeric keys or the cursor left/right keys to set the desired number of sheets of paper (0 to 100). 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>																																																																																																						
U332	<p>Setting the size coefficient</p> <p>[Description] Sets the size coefficient based on A4 (11" × 8¹/₂") paper sizes. The coefficient settings made here will be used for A4 conversion of the black ratio and will be displayed under user simulation.</p> <p>[Purpose] Enables the setting of the coefficient in order to have A4 (11" × 8¹/₂") conversion performed for the black ratio of each paper size.</p> <p>[Method] 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the desired size. 3. Use the cursor left/right keys to change the setting value. * Copying (COPY), printing (PRI) or fax communication (FAX) can all be selected in the coefficient setting screen and the desired setting made separately for each.</p> <p>Metric specifications</p> <table border="1"> <thead> <tr> <th rowspan="2">Display</th> <th rowspan="2">Setting</th> <th rowspan="2">Setting range</th> <th colspan="3">Default setting</th> </tr> <tr> <th>COPY</th> <th>PRI</th> <th>FAX</th> </tr> </thead> <tbody> <tr> <td>A3</td> <td>Coefficient setting for A3 size paper</td> <td>0.0 to 3.0</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> </tr> <tr> <td>B4</td> <td>Coefficient setting for B4 size paper</td> <td>0.0 to 3.0</td> <td>1.5</td> <td>1.5</td> <td>1.5</td> </tr> <tr> <td>A4</td> <td>Coefficient setting for A4 size paper</td> <td>0.0 to 3.0</td> <td>1.0</td> <td>1.0</td> <td>1.0</td> </tr> <tr> <td>B5</td> <td>Coefficient setting for B5 size paper</td> <td>0.0 to 3.0</td> <td>0.7</td> <td>0.7</td> <td>0.7</td> </tr> <tr> <td>A5</td> <td>Coefficient setting for A5 size paper</td> <td>0.0 to 3.0</td> <td>0.5</td> <td>0.5</td> <td>0.5</td> </tr> <tr> <td>B6</td> <td>Coefficient setting for B6 size paper</td> <td>0.0 to 3.0</td> <td>0.5</td> <td>0.5</td> <td>0.5</td> </tr> <tr> <td>A6</td> <td>Coefficient setting for A6 size paper</td> <td>0.0 to 3.0</td> <td>0.5</td> <td>0.5</td> <td>0.5</td> </tr> <tr> <td>FOL</td> <td>Coefficient setting for Folio size paper</td> <td>0.0 to 3.0</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> </tr> <tr> <td>ETC</td> <td>Coefficient setting for custom size paper</td> <td>0.0 to 3.0</td> <td>1.0</td> <td>1.0</td> <td>1.0</td> </tr> </tbody> </table> <p>Inch specifications</p> <table border="1"> <thead> <tr> <th rowspan="2">Display</th> <th rowspan="2">Setting</th> <th rowspan="2">Setting range</th> <th colspan="3">Default setting</th> </tr> <tr> <th>COPY</th> <th>PRI</th> <th>FAX</th> </tr> </thead> <tbody> <tr> <td>11 × 17</td> <td>Coefficient setting for 11" × 17" size paper</td> <td>0.0 to 3.0</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> </tr> <tr> <td>8.5 × 14</td> <td>Coefficient setting for 8.5" × 14" size paper</td> <td>0.0 to 3.0</td> <td>1.5</td> <td>1.5</td> <td>1.5</td> </tr> <tr> <td>8.5 × 11</td> <td>Coefficient setting for 8.5" × 11" size paper</td> <td>0.0 to 3.0</td> <td>1.0</td> <td>1.0</td> <td>1.0</td> </tr> <tr> <td>5.5 × 8.5</td> <td>Coefficient setting for 5.5" × 8.5" size paper</td> <td>0.0 to 3.0</td> <td>0.5</td> <td>0.5</td> <td>0.5</td> </tr> <tr> <td>ETC</td> <td>Coefficient setting for custom size paper</td> <td>0.0 to 3.0</td> <td>1.0</td> <td>1.0</td> <td>1.0</td> </tr> </tbody> </table> <p>4. Press the start key to activate the selected setting. * The screen for selecting an item will be displayed.</p> <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting			COPY	PRI	FAX	A3	Coefficient setting for A3 size paper	0.0 to 3.0	2.0	2.0	2.0	B4	Coefficient setting for B4 size paper	0.0 to 3.0	1.5	1.5	1.5	A4	Coefficient setting for A4 size paper	0.0 to 3.0	1.0	1.0	1.0	B5	Coefficient setting for B5 size paper	0.0 to 3.0	0.7	0.7	0.7	A5	Coefficient setting for A5 size paper	0.0 to 3.0	0.5	0.5	0.5	B6	Coefficient setting for B6 size paper	0.0 to 3.0	0.5	0.5	0.5	A6	Coefficient setting for A6 size paper	0.0 to 3.0	0.5	0.5	0.5	FOL	Coefficient setting for Folio size paper	0.0 to 3.0	0.15	0.15	0.15	ETC	Coefficient setting for custom size paper	0.0 to 3.0	1.0	1.0	1.0	Display	Setting	Setting range	Default setting			COPY	PRI	FAX	11 × 17	Coefficient setting for 11" × 17" size paper	0.0 to 3.0	2.0	2.0	2.0	8.5 × 14	Coefficient setting for 8.5" × 14" size paper	0.0 to 3.0	1.5	1.5	1.5	8.5 × 11	Coefficient setting for 8.5" × 11" size paper	0.0 to 3.0	1.0	1.0	1.0	5.5 × 8.5	Coefficient setting for 5.5" × 8.5" size paper	0.0 to 3.0	0.5	0.5	0.5	ETC	Coefficient setting for custom size paper	0.0 to 3.0	1.0	1.0	1.0
Display	Setting				Setting range	Default setting																																																																																																	
		COPY	PRI	FAX																																																																																																			
A3	Coefficient setting for A3 size paper	0.0 to 3.0	2.0	2.0	2.0																																																																																																		
B4	Coefficient setting for B4 size paper	0.0 to 3.0	1.5	1.5	1.5																																																																																																		
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B6	Coefficient setting for B6 size paper	0.0 to 3.0	0.5	0.5	0.5																																																																																																		
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5.5 × 8.5	Coefficient setting for 5.5" × 8.5" size paper	0.0 to 3.0	0.5	0.5	0.5																																																																																																		
ETC	Coefficient setting for custom size paper	0.0 to 3.0	1.0	1.0	1.0																																																																																																		

Maintenance item No.	Description						
<p>U333</p>	<p>Setting the digit of the department code</p> <p>[Description] Selects the number of digit of the department code.</p> <p>[Purpose] Set according to the user preference.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the desired number of digit. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>4-DIGIT code</td> <td>4-digit department code</td> </tr> <tr> <td>7-DIGIT code</td> <td>7-digit department code</td> </tr> </tbody> </table> <p>* The factory default setting: "7-DIGIT code" (for inch specifications) "4-DIGIT code" (for the metric specifications)</p> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <p>* The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	4-DIGIT code	4-digit department code	7-DIGIT code	7-digit department code
Display	Setting						
4-DIGIT code	4-digit department code						
7-DIGIT code	7-digit department code						
<p>U339</p>	<p>Setting the thermal heater</p> <p>[Description] Turns the optional internal thermal heater ON or OFF.</p> <p>[Purpose]</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select either "ON" or "OFF". <p>* The display for the selected item will be highlighted.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>The thermal heater is turned ON.</td> </tr> <tr> <td>OFF</td> <td>The thermal heater is turned OFF.</td> </tr> </tbody> </table> <p>* The factory default setting is "ON".</p> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <p>* The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	ON	The thermal heater is turned ON.	OFF	The thermal heater is turned OFF.
Display	Setting						
ON	The thermal heater is turned ON.						
OFF	The thermal heater is turned OFF.						

Maintenance item No.	Description						
U343	<p>Switching between duplex/simplex copy mode</p> <p>[Description] Switches the default setting between duplex and simplex copy.</p> <p>[Purpose] To be set, according to the frequency of use, to the more frequently used mode.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select either "ON" or "OFF". <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>Duplex copy</td> </tr> <tr> <td>OFF</td> <td>Simplex copy</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	ON	Duplex copy	OFF	Simplex copy
Display	Setting						
ON	Duplex copy						
OFF	Simplex copy						
U344	<p>Setting the preheat mode</p> <p>[Description] Selects the control mode for the preheat (energy saving) function.</p> <p>[Purpose] Set according to the preference of the user, and give priority to either the time required to recover from the preheat state or to saving more energy.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the desired control mode. <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <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 temperature, the operation panel will be turned OFF.</td> </tr> <tr> <td>ENERGY STAR TIME SAVE</td> <td>Decreases the fixing temperature to 70°C/158°F. Decreases the fixing temperature to 130°C/266°F and forcibly stabilizes the machine 30 seconds after releasing the preheat state.</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key to activate the selected setting. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Control in preheat mode	INSTANT READY	Without decreasing the fixing temperature, the operation panel will be turned OFF.	ENERGY STAR TIME SAVE	Decreases the fixing temperature to 70°C/158°F. Decreases the fixing temperature to 130°C/266°F and forcibly stabilizes the machine 30 seconds after releasing the preheat state.
Display	Control in preheat mode						
INSTANT READY	Without decreasing the fixing temperature, the operation panel will be turned OFF.						
ENERGY STAR TIME SAVE	Decreases the fixing temperature to 70°C/158°F. Decreases the fixing temperature to 130°C/266°F and forcibly stabilizes the machine 30 seconds after releasing the preheat state.						

Maintenance item No.	Description						
U345	<p>Setting the value for maintenance due indication</p> <p>[Description] Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends. When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message will be displayed.</p> <p>[Purpose] Used to change the time to display the maintenance due indication.</p> <p>[Method] Press the start key. * The current setting value will be displayed.</p> <p>[Setting] 1. Use the numeric keys or the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>Display period for the maintenance due indication (remaining count before the end of the maintenance)</td> <td>0 to 9999</td> </tr> </tbody> </table> <p>* The factory default setting is "0".</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Display period for the maintenance due indication (remaining count before the end of the maintenance)	0 to 9999		
Setting item	Setting range						
Display period for the maintenance due indication (remaining count before the end of the maintenance)	0 to 9999						
U348	<p>Setting the copy density adjustment range</p> <p>[Description] Selects the adjustment range for copy density from "NORMAL" or "SPECIAL AREA" (wider range than "NORMAL").</p> <p>[Purpose] Set according to the preference of the user. When especially dark or light density is requested, select "SPECIAL AREA".</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select the density range.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>SPECIAL AREA</td> <td>13 steps</td> </tr> <tr> <td>NORMAL</td> <td>7 steps</td> </tr> </tbody> </table> <p>* The factory default setting is "NORMAL".</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	SPECIAL AREA	13 steps	NORMAL	7 steps
Display	Setting						
SPECIAL AREA	13 steps						
NORMAL	7 steps						

Maintenance item No.	Description						
U350	<p>Printer setting for duplex printing using the bypass tray</p> <p>[Method]</p> <p>Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting]</p> <p>1. Use the cursor up/down keys to select the desired item.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>1-side mode</td> <td>Simplex print</td> </tr> <tr> <td>2-side mode</td> <td>Duplex print</td> </tr> </tbody> </table> <p>* The factory default setting is "1-side mode".</p> <p>2. Press the start key to activate the selected setting.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion]</p> <p>If you want to cancel the operation to change the current settings, press the stop/clear key.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	1-side mode	Simplex print	2-side mode	Duplex print
Display	Setting						
1-side mode	Simplex print						
2-side mode	Duplex print						

Maintenance item No.	Description																									
<p>U402</p>	<p>Adjusting the margins for the image printing [Adjustment] See page 1-6-15.</p>																									
<p>U403</p>	<p>Adjusting the margins for scanning an original on the contact glass [Adjustment] See page 1-6-36.</p>																									
<p>U404</p>	<p>Adjusting the margins for scanning an original from the DF [Description] Adjusts the margins for scanning an original from the DF [Purpose] Used if correct margins are not obtained when the optional DF is used. [Caution] Before performing this adjustment, ensure that the following adjustments have been made in maintenance mode. U402 → U403 → U404 [Method] Press the start key. The screen for selecting an item will be displayed. [Setting] 1. Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. 2. Use the cursor left/right keys to change the setting value.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>LEFT/mm</td> <td>Left margin</td> <td>0 to 10.0</td> <td>2.0</td> <td>0.1 mm</td> </tr> <tr> <td>RIGHT/mm</td> <td>Right margin</td> <td>0 to 10.0</td> <td>2.0</td> <td>0.1 mm</td> </tr> <tr> <td>TOP/mm</td> <td>Leading edge margin</td> <td>0 to 10.0</td> <td>2.0</td> <td>0.1 mm</td> </tr> <tr> <td>BOTTOM/mm</td> <td>Trailing edge margin</td> <td>0 to 10.0</td> <td>2.0</td> <td>0.1 mm</td> </tr> </tbody> </table> <p>* Increasing the value makes the margin wider, and decreasing it makes the margin narrower.</p> <div> </div> <p>Figure 1-4-4 Correct margin amount</p> <p>3. Press the start key to activate the selected setting.</p> <p>[Interrupt copy mode] While this maintenance item is being executed, copying from an original can be made in interrupt copy mode.</p> <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	Default setting	Change in value per step	LEFT/mm	Left margin	0 to 10.0	2.0	0.1 mm	RIGHT/mm	Right margin	0 to 10.0	2.0	0.1 mm	TOP/mm	Leading edge margin	0 to 10.0	2.0	0.1 mm	BOTTOM/mm	Trailing edge margin	0 to 10.0	2.0	0.1 mm
Display	Setting	Setting range	Default setting	Change in value per step																						
LEFT/mm	Left margin	0 to 10.0	2.0	0.1 mm																						
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TOP/mm	Leading edge margin	0 to 10.0	2.0	0.1 mm																						
BOTTOM/mm	Trailing edge margin	0 to 10.0	2.0	0.1 mm																						

Maintenance item No.	Description														
<p>U410</p>	<p>Adjusting the halftone automatically</p> <p>[Description] Carries out processing for the data acquisition that is required in order to perform either automatic adjustment of the halftone or the ID correction operation.</p> <p>[Purpose] Performed when the quality of reproduced halftones has dropped.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to adjust. <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Adjustment</th> </tr> </thead> <tbody> <tr> <td>Engine adjust</td> <td>Performs the appropriate data acquisition process for either automatic correction or ID correction.</td> </tr> <tr> <td>Continuation adjust</td> <td>Performs continuous automatic adjustment for each mode.</td> </tr> <tr> <td>Separate adjust</td> <td>Performs automatic adjustment for a specific mode.</td> </tr> </tbody> </table> 3. Press the start key. <ul style="list-style-type: none"> * The screen for executing the selected maintenance item will be displayed. <p>[Method: Engine adjust]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to adjust. <ul style="list-style-type: none"> * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Adjustment</th> </tr> </thead> <tbody> <tr> <td>Density adjust</td> <td>Performs automatic correction.</td> </tr> <tr> <td>Acquire a proper data</td> <td>Performs the appropriate data acquisition process for ID correction.</td> </tr> </tbody> </table> 2. Press the start key. <ul style="list-style-type: none"> * The selected item will be adjusted. <p>[Method: Continuation adjust]</p> <ol style="list-style-type: none"> 1. Press the start key to output a test pattern on A4/11" × 8¹/₂" paper. 2. Place the output test pattern as the original and press the start key. 3. Press the stop/clear key and press the start key to output a test pattern. 4. Place the output test pattern as the original and press the start key. 5. Press the stop/clear key and press the start key to output a test pattern. 6. Place the output test pattern as the original and press the start key. <ul style="list-style-type: none"> * Adjustment will be made in the text&photo mode. 7. Press the enter key and press the start key to output a test pattern. 8. Place the output test pattern as the original and press the start key. 9. Press the stop/clear key and press the start key to output a test pattern. 10. Place the output test pattern as the original and press the start key. <ul style="list-style-type: none"> * Adjustment will be made in the photo mode. 11. Press the enter key and press the start key to output a test pattern. 12. Place the output test pattern as the original and press the start key. 13. Press the stop/clear key and press the start key to output a test pattern. 14. Place the output test pattern as the original and press the start key. <ul style="list-style-type: none"> * Adjustment will be made in the printed photo mode. 15. Press the enter key to display the screen for the next adjustment and press the start key. <ul style="list-style-type: none"> * Grayscale data will be backed up. <p>[Method: Separate adjust]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the mode that you want to adjustment. <ul style="list-style-type: none"> * The display for the selected item will be highlighted. 2. Press the start key to output a test pattern on A4/11" × 8¹/₂" paper 3. Place the output test pattern as the original and press the start key. 4. Press the stop/clear key and press the start key to output a test pattern. 5. Place the output test pattern as the original and press the start key. <ul style="list-style-type: none"> * Adjustment will be made in the selected mode. 6. To complete the adjustment, press the enter key. <ul style="list-style-type: none"> * Copying from the original is possible by pressing the interrupt key. 	Display	Adjustment	Engine adjust	Performs the appropriate data acquisition process for either automatic correction or ID correction.	Continuation adjust	Performs continuous automatic adjustment for each mode.	Separate adjust	Performs automatic adjustment for a specific mode.	Display	Adjustment	Density adjust	Performs automatic correction.	Acquire a proper data	Performs the appropriate data acquisition process for ID correction.
Display	Adjustment														
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Separate adjust	Performs automatic adjustment for a specific mode.														
Display	Adjustment														
Density adjust	Performs automatic correction.														
Acquire a proper data	Performs the appropriate data acquisition process for ID correction.														

Maintenance item No.	Description															
U410	<p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>															
U411	<p>Adjusting the scanner automatically</p> <p>[Description] Carries out the automatic adjustment of scanner-related settings (gain adjustment, automatic adjustment of the input start position, shading offset adjustment, γ adjustment, matrix adjustment) as well as the adjustment of the color differential and MTF.</p> <p>[Purpose] To perform automatic adjustment on the scanner after replacing the scanner circuit board. If the LSU is replaced as well, adjustment of the color differential and MTF is performed after running the automatic adjustment of the scanner.</p> <p>[Method]</p> <ol style="list-style-type: none"> Set the original to be used for adjustment (P/N: 2A668010) on the platen. Press the start key. The screen for selecting an item will be displayed. Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Adjustment</th> </tr> </thead> <tbody> <tr> <td>Scan. Characteristic adj.</td> <td>Perform gain adjustment, automatic adjustment of the input start position, shading offset adjustment, γ adjustment, matrix adjustment</td> </tr> <tr> <td>C.A./MTF</td> <td>Perform adjustment of the color differential and MTF in the main and auxiliary directions</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Press the start key. * The selected item will be adjusted. * Do not turn the main switch OFF or open/close the cover (turning the safety switch ON/OFF) before automatic adjustment is complete. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Adjustment	Scan. Characteristic adj.	Perform gain adjustment, automatic adjustment of the input start position, shading offset adjustment, γ adjustment, matrix adjustment	C.A./MTF	Perform adjustment of the color differential and MTF in the main and auxiliary directions									
Display	Adjustment															
Scan. Characteristic adj.	Perform gain adjustment, automatic adjustment of the input start position, shading offset adjustment, γ adjustment, matrix adjustment															
C.A./MTF	Perform adjustment of the color differential and MTF in the main and auxiliary directions															
U416	<p>Changing the base curve for scanner output</p> <p>[Description] Sets the gradient for the density that was adjusted under "U410 Adjusting the halftone automatically".</p> <p>[Purpose] Change the setting according to the user preference.</p> <p>[Method]</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item will be displayed. Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Setting item</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Base curve for cyan</td> <td>-3 to 3</td> <td>-2</td> </tr> <tr> <td>Base curve for magenta</td> <td>-3 to 3</td> <td>0</td> </tr> <tr> <td>Base curve for yellow</td> <td>-3 to 3</td> <td>0</td> </tr> <tr> <td>Base curve for black</td> <td>-3 to 3</td> <td>0</td> </tr> </tbody> </table> <p>* Increasing the value makes the image darker, and decreasing it makes the image lighter.</p> <ol style="list-style-type: none"> Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Setting item	Setting range	Default setting	Base curve for cyan	-3 to 3	-2	Base curve for magenta	-3 to 3	0	Base curve for yellow	-3 to 3	0	Base curve for black	-3 to 3	0
Setting item	Setting range	Default setting														
Base curve for cyan	-3 to 3	-2														
Base curve for magenta	-3 to 3	0														
Base curve for yellow	-3 to 3	0														
Base curve for black	-3 to 3	0														

Maintenance item No.	Description																																																									
U425	<p>Setting the target</p> <p>[Description] Sets the target value for fine-adjustment of the results when performing adjustment of the shading offset, γ, and matrix under "U412 Adjusting the scanner automatically". The value that is indicated on the back of the chart to be used for adjustment should be entered.</p> <p>[Purpose] Performs data input in order to correct for differences in originals during automatic adjustment.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>B/W adjust</td> <td>Target value for shading offset adjustment</td> </tr> <tr> <td>Gamma adjust</td> <td>Target value for γ adjustment</td> </tr> <tr> <td>Matrix adj. C</td> <td>Target value for cyan matrix adjustment</td> </tr> <tr> <td>Matrix adj. M</td> <td>Target value for magenta matrix adjustment</td> </tr> <tr> <td>Matrix adj. Y</td> <td>Target value for yellow matrix adjustment</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. * The setting screen for the selected item will be displayed. <p>[Setting: Monochrome adjustment]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. * Input the value that is indicated on the back of the chart to be used for adjustment. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>White G</td> <td>Offset adjustment: white, Target: GREEN</td> <td>190 to 255</td> </tr> <tr> <td>White B</td> <td>Offset adjustment: white, Target: BLUE</td> <td>190 to 255</td> </tr> <tr> <td>White R</td> <td>Offset adjustment: white, Target: RED</td> <td>190 to 255</td> </tr> <tr> <td>Black G</td> <td>Offset adjustment: black, Target: GREEN</td> <td>0 to 30</td> </tr> <tr> <td>Black B</td> <td>Offset adjustment: black, Target:</td> <td>0 to 30</td> </tr> <tr> <td>Black R</td> <td>Offset adjustment: black, Target: RED</td> <td>0 to 30</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Setting: Gamma adjustment, normal mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "REGULAR" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. * Input the value that is indicated on the back of the chart to be used for adjustment. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>G</td> <td>GREEN target</td> <td>105 to 155</td> </tr> <tr> <td>B</td> <td>BLUE target</td> <td>105 to 155</td> </tr> <tr> <td>R</td> <td>RED target</td> <td>105 to 155</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Setting: Gamma adjustment, network scanner, SRGB mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "NSW-SRGB" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. * Input the value that is indicated on the back of the chart to be used for adjustment. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>G</td> <td>GREEN target</td> <td>105 to 155</td> </tr> <tr> <td>B</td> <td>BLUE target</td> <td>105 to 155</td> </tr> <tr> <td>R</td> <td>RED target</td> <td>105 to 155</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. 	Display	Setting	B/W adjust	Target value for shading offset adjustment	Gamma adjust	Target value for γ adjustment	Matrix adj. C	Target value for cyan matrix adjustment	Matrix adj. M	Target value for magenta matrix adjustment	Matrix adj. Y	Target value for yellow matrix adjustment	Display	Setting	Setting range	White G	Offset adjustment: white, Target: GREEN	190 to 255	White B	Offset adjustment: white, Target: BLUE	190 to 255	White R	Offset adjustment: white, Target: RED	190 to 255	Black G	Offset adjustment: black, Target: GREEN	0 to 30	Black B	Offset adjustment: black, Target:	0 to 30	Black R	Offset adjustment: black, Target: RED	0 to 30	Display	Setting	Setting range	G	GREEN target	105 to 155	B	BLUE target	105 to 155	R	RED target	105 to 155	Display	Setting	Setting range	G	GREEN target	105 to 155	B	BLUE target	105 to 155	R	RED target	105 to 155
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Maintenance item No.	Description																																																																								
U425	<p>[Setting: Cyan matrix adjustment, nomal mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "REGULAR" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. * Input the value that is indicated on the back of the chart to be used for adjustment. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr><td>C-B</td><td>C-B matrix target</td><td>0 to 255</td></tr> <tr><td>C-G</td><td>C-G matrix target</td><td>0 to 255</td></tr> <tr><td>C-R</td><td>C-R matrix target</td><td>0 to 255</td></tr> <tr><td>C-Y</td><td>C-Y matrix target</td><td>0 to 255</td></tr> <tr><td>C-M</td><td>C-M matrix target</td><td>0 to 255</td></tr> <tr><td>C-C</td><td>C-C matrix target</td><td>0 to 255</td></tr> <tr><td>C-K</td><td>C-K matrix target</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Setting: Cyan matrix adjustment, network scanner, SRGB mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "NSW-SRGB" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. * Input the value that is indicated on the back of the chart to be used for adjustment. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr><td>C-B</td><td>C-B matrix target</td><td>0 to 255</td></tr> <tr><td>C-G</td><td>C-G matrix target</td><td>0 to 255</td></tr> <tr><td>C-R</td><td>C-R matrix target</td><td>0 to 255</td></tr> <tr><td>C-Y</td><td>C-Y matrix target</td><td>0 to 255</td></tr> <tr><td>C-M</td><td>C-M matrix target</td><td>0 to 255</td></tr> <tr><td>C-C</td><td>C-C matrix target</td><td>0 to 255</td></tr> <tr><td>C-K</td><td>C-K matrix target</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Setting: Magenta matrix adjustment, nomal mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "REGULAR" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. * Input the value that is indicated on the back of the chart to be used for adjustment. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr><td>M-B</td><td>M-B matrix target</td><td>0 to 255</td></tr> <tr><td>M-G</td><td>M-G matrix target</td><td>0 to 255</td></tr> <tr><td>M-R</td><td>M-R matrix target</td><td>0 to 255</td></tr> <tr><td>M-Y</td><td>M-Y matrix target</td><td>0 to 255</td></tr> <tr><td>M-M</td><td>M-M matrix target</td><td>0 to 255</td></tr> <tr><td>M-C</td><td>M-C matrix target</td><td>0 to 255</td></tr> <tr><td>M-K</td><td>M-K matrix target</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. 	Display	Setting	Setting range	C-B	C-B matrix target	0 to 255	C-G	C-G matrix target	0 to 255	C-R	C-R matrix target	0 to 255	C-Y	C-Y matrix target	0 to 255	C-M	C-M matrix target	0 to 255	C-C	C-C matrix target	0 to 255	C-K	C-K matrix target	0 to 255	Display	Setting	Setting range	C-B	C-B matrix target	0 to 255	C-G	C-G matrix target	0 to 255	C-R	C-R matrix target	0 to 255	C-Y	C-Y matrix target	0 to 255	C-M	C-M matrix target	0 to 255	C-C	C-C matrix target	0 to 255	C-K	C-K matrix target	0 to 255	Display	Setting	Setting range	M-B	M-B matrix target	0 to 255	M-G	M-G matrix target	0 to 255	M-R	M-R matrix target	0 to 255	M-Y	M-Y matrix target	0 to 255	M-M	M-M matrix target	0 to 255	M-C	M-C matrix target	0 to 255	M-K	M-K matrix target	0 to 255
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Maintenance item No.	Description																																																																								
U425	<p>[Setting: Magenta matrix adjustment, network scanner, SRGB mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "NSW-SRGB" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. <p>* Input the value that is indicated on the back of the chart to be used for adjustment.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr><td>M-B</td><td>M-B matrix target</td><td>0 to 255</td></tr> <tr><td>M-G</td><td>M-G matrix target</td><td>0 to 255</td></tr> <tr><td>M-R</td><td>M-R matrix target</td><td>0 to 255</td></tr> <tr><td>M-Y</td><td>M-Y matrix target</td><td>0 to 255</td></tr> <tr><td>M-M</td><td>M-M matrix target</td><td>0 to 255</td></tr> <tr><td>M-C</td><td>M-C matrix target</td><td>0 to 255</td></tr> <tr><td>M-K</td><td>M-K matrix target</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Setting: Yellow matrix adjustment, normal mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "REGULAR" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. <p>* Input the value that is indicated on the back of the chart to be used for adjustment.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr><td>Y-B</td><td>Y-B matrix target</td><td>0 to 255</td></tr> <tr><td>Y-G</td><td>Y-G matrix target</td><td>0 to 255</td></tr> <tr><td>Y-R</td><td>Y-R matrix target</td><td>0 to 255</td></tr> <tr><td>Y-Y</td><td>Y-Y matrix target</td><td>0 to 255</td></tr> <tr><td>Y-M</td><td>Y-M matrix target</td><td>0 to 255</td></tr> <tr><td>Y-C</td><td>Y-C matrix target</td><td>0 to 255</td></tr> <tr><td>Y-K</td><td>Y-K matrix target</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Setting: Yellow matrix adjustment, network scanner, SRGB mode]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select "NSW-SRGB" and then press the start key. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. <p>* Input the value that is indicated on the back of the chart to be used for adjustment.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> </tr> </thead> <tbody> <tr><td>Y-B</td><td>Y-B matrix target</td><td>0 to 255</td></tr> <tr><td>Y-G</td><td>Y-G matrix target</td><td>0 to 255</td></tr> <tr><td>Y-R</td><td>Y-R matrix target</td><td>0 to 255</td></tr> <tr><td>Y-Y</td><td>Y-Y matrix target</td><td>0 to 255</td></tr> <tr><td>Y-M</td><td>Y-M matrix target</td><td>0 to 255</td></tr> <tr><td>Y-C</td><td>Y-C matrix target</td><td>0 to 255</td></tr> <tr><td>Y-K</td><td>Y-K matrix target</td><td>0 to 255</td></tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Completion]</p> <p>Press the stop/clear key when the screen for selecting an item is displayed.</p> <p>* The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Setting range	M-B	M-B matrix target	0 to 255	M-G	M-G matrix target	0 to 255	M-R	M-R matrix target	0 to 255	M-Y	M-Y matrix target	0 to 255	M-M	M-M matrix target	0 to 255	M-C	M-C matrix target	0 to 255	M-K	M-K matrix target	0 to 255	Display	Setting	Setting range	Y-B	Y-B matrix target	0 to 255	Y-G	Y-G matrix target	0 to 255	Y-R	Y-R matrix target	0 to 255	Y-Y	Y-Y matrix target	0 to 255	Y-M	Y-M matrix target	0 to 255	Y-C	Y-C matrix target	0 to 255	Y-K	Y-K matrix target	0 to 255	Display	Setting	Setting range	Y-B	Y-B matrix target	0 to 255	Y-G	Y-G matrix target	0 to 255	Y-R	Y-R matrix target	0 to 255	Y-Y	Y-Y matrix target	0 to 255	Y-M	Y-M matrix target	0 to 255	Y-C	Y-C matrix target	0 to 255	Y-K	Y-K matrix target	0 to 255
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Maintenance item No.	Description																																
U427	<p>Setting the UCR multiplication coefficient for black generation</p> <p>[Description] Displays the UCR multiplication coefficient for black generation (part of the data in the MIP register settings) and performs the related setting.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for. 3. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>multiplication coefficient</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>0 to 15</td> <td>4</td> </tr> <tr> <td>A2</td> <td>0 to 15</td> <td>4</td> </tr> <tr> <td>A3</td> <td>0 to 15</td> <td>4</td> </tr> <tr> <td>A4</td> <td>0 to 15</td> <td>4</td> </tr> <tr> <td>B1</td> <td>0 to 127</td> <td>64</td> </tr> <tr> <td>B2</td> <td>0 to 127</td> <td>64</td> </tr> <tr> <td>B3</td> <td>0 to 127</td> <td>64</td> </tr> <tr> <td>B4</td> <td>0 to 127</td> <td>64</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 4. Press the start key to activate the selected setting. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	multiplication coefficient	Setting range	Default setting	A1	0 to 15	4	A2	0 to 15	4	A3	0 to 15	4	A4	0 to 15	4	B1	0 to 127	64	B2	0 to 127	64	B3	0 to 127	64	B4	0 to 127	64					
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U429	<p>Setting the offset for the color balance</p> <p>[Description] Displays and changes the density for each color during copying in the various image quality modes.</p> <p>[Purpose] To change the balance for each color.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the image quality mode that you want to change the setting for, and then press the start key. * The setting screen for the selected item will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>TEXT+PHOTO(ECO)</td> <td>Density of each color in the text & photo and eco modes.</td> </tr> <tr> <td>PHOTO</td> <td>Density of each color in the photo mode.</td> </tr> <tr> <td>PRINT</td> <td>Density of each color in the printed photo mode.</td> </tr> <tr> <td>TEXT</td> <td>Density of each color in the text mode.</td> </tr> <tr> <td>MAP</td> <td>Density of each color in the map modes.</td> </tr> </tbody> </table> <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to adjust. * The display for the selected item will be highlighted. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>CYAN</td> <td>Value of the cyan setting</td> <td>-5 to +5</td> <td>0</td> </tr> <tr> <td>MAGENTA</td> <td>Value of the magenta setting</td> <td>-5 to +5</td> <td>0</td> </tr> <tr> <td>YELLOW</td> <td>Value of the yellow setting</td> <td>-5 to +5</td> <td>0</td> </tr> <tr> <td>BLACK</td> <td>Value of the black setting</td> <td>-5 to +5</td> <td>0</td> </tr> </tbody> </table> <p>* Increasing the value darkens the density and decreasing it lightens the density.</p> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	TEXT+PHOTO(ECO)	Density of each color in the text & photo and eco modes.	PHOTO	Density of each color in the photo mode.	PRINT	Density of each color in the printed photo mode.	TEXT	Density of each color in the text mode.	MAP	Density of each color in the map modes.	Display	Setting	Setting range	Default setting	CYAN	Value of the cyan setting	-5 to +5	0	MAGENTA	Value of the magenta setting	-5 to +5	0	YELLOW	Value of the yellow setting	-5 to +5	0	BLACK	Value of the black setting	-5 to +5	0
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Maintenance item No.	Description																						
U432	<p>Setting the center offset for the exposure</p> <p>[Description] Sets the offset value for the setting data for exposure centering adjustment under user simulation. For example, if the value for the exposure centering adjustment is set to "-1" and you change the offset value to "+2", image processing will be performed as though the exposure centering adjustment setting is "+1".</p> <p>[Purpose] Set according to the preference of the user.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for, and then press the start key. * The setting screen for the selected item will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>Full color</td> <td>Exposure offset setting for the full-color mode</td> </tr> <tr> <td>Monochrome</td> <td>Exposure offset setting for the monochrome mode</td> </tr> </tbody> </table> <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select image quality mode that you want to adjust. * The display for the selected mode will be highlighted. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Text</td> <td>Offset value for the text mode</td> <td>-4 to +4</td> <td>0</td> </tr> <tr> <td>Text + Photo</td> <td>Offset value for the text & photo mode</td> <td>-4 to +4</td> <td>0</td> </tr> <tr> <td>Other</td> <td>Offset value for other modes</td> <td>-4 to +4</td> <td>0</td> </tr> </tbody> </table> <p>* If the setting value is increased to increase the exposure centering adjustment value, images will be darker. If the setting value is decreased to decrease the exposure centering adjustment value, images will be lighter.</p> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Full color	Exposure offset setting for the full-color mode	Monochrome	Exposure offset setting for the monochrome mode	Display	Setting	Setting range	Default setting	Text	Offset value for the text mode	-4 to +4	0	Text + Photo	Offset value for the text & photo mode	-4 to +4	0	Other	Offset value for other modes	-4 to +4	0
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Maintenance item No.	Description														
U464	<p>Setting the ID correction operation</p> <p>[Description] Turns ID correction ON/OFF. Also sets the number of copies after which ID correction will be initiated.</p> <p>[Purpose] To restrict ID correction when poor image quality is generated.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for, and then press the start key. * The setting screen for the selected item will be displayed. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Setting</th> </tr> </thead> <tbody> <tr> <td>MOVE COUNT</td> <td>Setting to allow ID correction Setting the number of copies after which ID correction will be initiated</td> </tr> </tbody> </table> <p>[Setting: ID correction ON/OFF]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select either "ON" of "OFF". * The display for the selected item will be highlighted. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Setting</th> </tr> </thead> <tbody> <tr> <td>ON OFF</td> <td>Turns ID correction ON Turns ID correction OFF</td> </tr> </tbody> </table> <p>* The factory default setting is "ON".</p> <ol style="list-style-type: none"> 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Setting: Number of copies after which ID correction is initiated]</p> <ol style="list-style-type: none"> 1. Use the cursor left/right keys to change the setting value. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Setting item</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Default setting</th> </tr> </thead> <tbody> <tr> <td>Number of copies after which ID correction is initiated</td> <td>0 to 500 sheets</td> <td>250</td> </tr> </tbody> </table> <p>* The setting can be change to any value in increments of 50 sheets. * If you change the setting to "0", ID correction will not be initiated based on the number of copies made.</p> <ol style="list-style-type: none"> 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to change the current setting, press stop/clear key in the screen for selecting an item. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	MOVE COUNT	Setting to allow ID correction Setting the number of copies after which ID correction will be initiated	Display	Setting	ON OFF	Turns ID correction ON Turns ID correction OFF	Setting item	Setting range	Default setting	Number of copies after which ID correction is initiated	0 to 500 sheets	250
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Maintenance item No.	Description																					
<p>U465</p>	<p>Data reference for ID correction</p> <p>[Description] References the data related to ID correction</p> <p>[Purpose] To check the corresponding data.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the desired color for display. 3. Press the start key. <p>* The data reference display for each color will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>SU_IDA</td> <td>Middle grayscale density (55H), proper patch data</td> </tr> <tr> <td>SU_IDB</td> <td>Middle grayscale density (AAH), proper patch data</td> </tr> <tr> <td>SU_IDC</td> <td>Saturation density, proper patch data</td> </tr> <tr> <td>DB_BAK</td> <td>Value for developing bypass after correction</td> </tr> <tr> <td>LD_BAK</td> <td>Value for the laser after correction</td> </tr> </tbody> </table> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	SU_IDA	Middle grayscale density (55H), proper patch data	SU_IDB	Middle grayscale density (AAH), proper patch data	SU_IDC	Saturation density, proper patch data	DB_BAK	Value for developing bypass after correction	LD_BAK	Value for the laser after correction									
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DB_BAK	Value for developing bypass after correction																					
LD_BAK	Value for the laser after correction																					
<p>U470</p>	<p>Setting the compression ratio</p> <p>[Description] Sets the compression ratio coefficient for each compression level based on the quantum chart for JPEG brightness and color differential.</p> <p>[Purpose] To change the setting in accordance with the image that the user will be copying. For example, in order to soften the coarseness of the image when making copies at over 200% magnification, change the level of compression by raising the value. Lowering the value will increase the compression and thereby lower the image quality; Raising the value will increase image quality but lower the image processing speed.</p> <p>[Implementation]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the item that you want to change the setting for. <p>* The display for the selected item will be highlighted.</p> <ol style="list-style-type: none"> 3. Press the start key. <p>* The setting screen for the selected item will be displayed.</p> <p>[Setting: JPEG compression ratio (brightness)]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>COPY</td> <td>1 to 100</td> <td>40</td> </tr> <tr> <td>NT SCAN (1)</td> <td>1 to 100</td> <td>30</td> </tr> <tr> <td>NT SCAN (2)</td> <td>1 to 100</td> <td>40</td> </tr> <tr> <td>NT SCAN (3)</td> <td>1 to 100</td> <td>50</td> </tr> <tr> <td>NT SCAN (4)</td> <td>1 to 100</td> <td>80</td> </tr> <tr> <td>NT SCAN (5)</td> <td>1 to 100</td> <td>95</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key to activate the selected setting. <p>[Setting: JPEG compression ratio (color differential)]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the setting for. 2. Use the cursor left/right keys to change the setting value. 	Display	Setting range	Default setting	COPY	1 to 100	40	NT SCAN (1)	1 to 100	30	NT SCAN (2)	1 to 100	40	NT SCAN (3)	1 to 100	50	NT SCAN (4)	1 to 100	80	NT SCAN (5)	1 to 100	95
Display	Setting range	Default setting																				
COPY	1 to 100	40																				
NT SCAN (1)	1 to 100	30																				
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NT SCAN (3)	1 to 100	50																				
NT SCAN (4)	1 to 100	80																				
NT SCAN (5)	1 to 100	95																				

Maintenance item No.	Description			
U470	Display	Setting range	Default setting	
	COPY	1 to 100	70	
	NT SCAN (1)	1 to 100	30	
	NT SCAN (2)	1 to 100	40	
	NT SCAN (3)	1 to 100	50	
	NT SCAN (4)	1 to 100	80	
	NT SCAN (5)	1 to 100	95	
	<p>3. Press the start key to activate the selected setting.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>			
U500	Setting the limit on data size for email transmission			
	[Description] Sets the limit on the amount of data (number of originals) sent via email from the network scanner.			
	[Purpose] To change the setting according to the network environment and user's preference.			
	[Method] Press the start key. The screen for selecting an item will be displayed.			
	[Setting] 1. Use the cursor up/down keys to select the desired transmission capacity. * The display for the selected item will be highlighted.			
	Display	Setting		
	LITTLE	Small amount		
	MEDIUM	Medium amount		
	LARGE	Large amount		
	UNLIMITED	No limit		
	<p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>			
U501	Setting image area			
	[Description] Implements the command to cut the area around the image when sending image data to a network scanner.			
	[Purpose] Set according to the preference of the user.			
	[Method] Press the start key. The screen for selecting an item will be displayed.			
	[Setting] 1. Use the cursor up/down keys to select either "ON" or "OFF".			
	Display	Setting		
	ON	Cuts the image area (6.5 mm)		
	OFF	Does NOT cut the image area		
		<p>* The factory default setting is "ON".</p> <p>2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>		

Maintenance item No.	Description																								
<p>U504</p>	<p>Initializing the scanner NIC</p> <p>[Description] Initializing the scanner NIC to its factory default.</p> <p>[Purpose] Used when a scanner NIC malfunction (ex. transmission error) occurs.</p> <p>[Method] <ol style="list-style-type: none"> 1. Press the start key. The screen for executing the maintenance item will be displayed. 2. Use the cursor up/down keys to select "EXECUTE". * "EXECUTE" will be highlighted. 3. Press the start key. * All data in the scanner NIC will be initialized. </p> <p>[Completion] If you want to cancel the initialization, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>																								
<p>U901</p>	<p>Checking/clearing total copy counts by paper feed location</p> <p>[Description] Checks the copy count of each paper feed location or resets the count back to zero.</p> <p>[Purpose] Used to check the timing of the standard replacement of maintenance parts, or to clear all copy counts after replacement of those parts.</p> <p>[Method] Press the start key. * The copy count will be displayed for each paper feed location.</p> <p>Simplex copier</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Paper source</th> </tr> </thead> <tbody> <tr> <td>BYPASS</td> <td>Bypass</td> </tr> <tr> <td>FIRST</td> <td>Drawer 1*</td> </tr> <tr> <td>SECOND</td> <td>Drawer 2*</td> </tr> <tr> <td>THIRD</td> <td>Drawer 3*</td> </tr> <tr> <td>FOURTH</td> <td>Drawer 4*</td> </tr> </tbody> </table> <p>Duplex copier</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Paper source</th> </tr> </thead> <tbody> <tr> <td>BYPASS</td> <td>Bypass</td> </tr> <tr> <td>DUPLEX</td> <td>Duplexer</td> </tr> <tr> <td>SECOND</td> <td>Drawer 2*</td> </tr> <tr> <td>THIRD</td> <td>Drawer 3*</td> </tr> <tr> <td>FOURTH</td> <td>Drawer 4*</td> </tr> </tbody> </table> <p>* Optional</p> <p>[Clearing the count] <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the paper source that you want to clear the count for. * The display for the selected item will be highlighted. * To clear counts for all paper sources, select "ALL CLEAR". 2. Press the reset key. 3. Press the start key to clear the count. * When all of the counts have been cleared, the screen for selecting a maintenance item No. will be displayed again. </p> <p>[Completion] If you want to cancel the operation to change the count value, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Paper source	BYPASS	Bypass	FIRST	Drawer 1*	SECOND	Drawer 2*	THIRD	Drawer 3*	FOURTH	Drawer 4*	Display	Paper source	BYPASS	Bypass	DUPLEX	Duplexer	SECOND	Drawer 2*	THIRD	Drawer 3*	FOURTH	Drawer 4*
Display	Paper source																								
BYPASS	Bypass																								
FIRST	Drawer 1*																								
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THIRD	Drawer 3*																								
FOURTH	Drawer 4*																								
Display	Paper source																								
BYPASS	Bypass																								
DUPLEX	Duplexer																								
SECOND	Drawer 2*																								
THIRD	Drawer 3*																								
FOURTH	Drawer 4*																								

Maintenance item No.	Description						
<p>U903</p>	<p>Checking/clearing the paper jam counts</p> <p>[Description] Displays the total number of paper jams that have occurred by type, or resets all of the counts back to zero.</p> <p>[Purpose] Used to check the occurrence of paper jams, or to clear all counts after replacement of maintenance parts.</p> <p>[Implementation] Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>COUNT</td> <td>Displaying/clearing the paper jam count.</td> </tr> <tr> <td>TOTAL COUNT</td> <td>Displaying the total paper jam count.</td> </tr> </tbody> </table> <p>[Method: Displaying/clearing the paper jam count]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select "COUNT" in the screen for selecting an item. <ul style="list-style-type: none"> * The paper jam count will be displayed for each paper jam code. When you press the start key after selecting "ALL CLEAR" using the cursor up/down keys, the paper jam counts for all types will return to zero. <ul style="list-style-type: none"> * You cannot clear the count for individual types. * To return to the screen for selecting an item, press the stop/clear key. <p>[Method: Displaying the total paper jam count]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select "TOTAL COUNT" in the screen for selecting an item. <ul style="list-style-type: none"> * The total paper jam count will be displayed for each paper jam code. * You cannot clear the total paper jam count. * To return to the screen for selecting an item, press the stop clear key. <p>[Completion] If you want to cancel the operation to clear the count value, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	COUNT	Displaying/clearing the paper jam count.	TOTAL COUNT	Displaying the total paper jam count.
Display	Setting						
COUNT	Displaying/clearing the paper jam count.						
TOTAL COUNT	Displaying the total paper jam count.						
<p>U904</p>	<p>Checking/clearing the call for service counts</p> <p>[Description] Checks the total number of call for service counts that have been generated by type, or resets the count back to zero.</p> <p>[Purpose] Used to check the occurrence of call for service counts, or to clear the count after replacement of maintenance parts.</p> <p>[Implementation] Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>COUNT</td> <td>Displays/clears the call for service counts</td> </tr> <tr> <td>TOTAL COUNT</td> <td>Displays the total call for service counts</td> </tr> </tbody> </table> <p>[Method: Displays/clears the call for service counts]</p> <ol style="list-style-type: none"> Select "COUNT" in the screen for selecting an item. <ul style="list-style-type: none"> * The count for call for service detection by type will be displayed. Use the cursor left/right keys to switch the display. <ul style="list-style-type: none"> * When you press the start key after selecting "ALL CLEAR" using the cursor up/down keys, the call for service counts for all types will return to zero. To clear the count for individual types, press the reset key. * To return to the screen for selecting an item, press the stop clear key. <p>[Method: Displays the total call for service counts]</p> <ol style="list-style-type: none"> Select "TOTAL COUNT" in the screen for selecting an item. <ul style="list-style-type: none"> * The total number of call for service counts by type will be displayed. Use the cursor left/right keys to switch the display. <ul style="list-style-type: none"> * You cannot clear the total number of call for service count. * To return to the screen for selecting an item, press the stop clear key. <p>[Completion] If you want to cancel the operation to change the count value, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	COUNT	Displays/clears the call for service counts	TOTAL COUNT	Displays the total call for service counts
Display	Setting						
COUNT	Displays/clears the call for service counts						
TOTAL COUNT	Displays the total call for service counts						

Maintenance item No.	Description																		
U905	<p>Checking count by optional devices</p> <p>[Description] Displays the counts for the DF and document finisher (both optional).</p> <p>[Purpose] Used to check the use of the DF and document finisher.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the device that you want to check the count for, and then press the start key. <ul style="list-style-type: none"> * The counts for the selected device will be displayed. <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>CHANGE</td> <td>Original replacement count</td> </tr> <tr> <td>ADF</td> <td>Number of single-sided originals that has passed through the DF in ADF mode</td> </tr> <tr> <td>RADF</td> <td>Number of double-sided originals that has passed through the DF in RADF mode</td> </tr> </tbody> </table> <p>• DF</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>CP CNT</td> <td>Number of copies that has passed</td> </tr> <tr> <td>STAPLE</td> <td>Frequency the stapler has been activated</td> </tr> <tr> <td>PUNCH</td> <td>Frequency the punch has been activated</td> </tr> <tr> <td>STACK</td> <td>Frequency the stacker has been activated</td> </tr> </tbody> </table> <p>• FINISHER</p> <p>[Completion] Press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Description	CHANGE	Original replacement count	ADF	Number of single-sided originals that has passed through the DF in ADF mode	RADF	Number of double-sided originals that has passed through the DF in RADF mode	Display	Description	CP CNT	Number of copies that has passed	STAPLE	Frequency the stapler has been activated	PUNCH	Frequency the punch has been activated	STACK	Frequency the stacker has been activated
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STAPLE	Frequency the stapler has been activated																		
PUNCH	Frequency the punch has been activated																		
STACK	Frequency the stacker has been activated																		
U906	<p>Resetting partial operational control</p> <p>[Description] Resets the service call code for partial operation control.</p> <p>[Purpose] Be sure to execute this maintenance item after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. 2. Use the cursor up/down keys to select "EXECUTE". 3. Press the start key to release the partial operational control. <ul style="list-style-type: none"> * The maintenance mode will be exited and the machine will automatically return to the same status as when the power is first turned ON. 																		

Maintenance item No.	Description
U908	<p>Checking/clearing the total count</p> <p>[Description] Display and clear or change the total count value.</p> <p>[Purpose] Used to check the total count value.</p> <p>[Method] Press the start key. * The current total count will be displayed.</p> <p>[Clearing the count] 1. Press the reset key. 2. Press the start key to clear the total count. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Setting] 1. Use the numeric keys to enter the 7-digit count value. 2. Press the start key to set the selected value. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to clear the count, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U910	<p>Clearing the black ratio data</p> <p>[Description] Clears the accumulated black ratio data for each A4 size of paper.</p> <p>[Purpose] Clears the data as necessary during the periodic maintenance.</p> <p>[Method] 1. Press the start key. 2. Use the cursor up/down keys to select "EXECUTE". 3. Press the start key. The black ratio data will be cleared. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to clear the black ratio data, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>
U911	<p>Checking/clearing the paper feed counts by paper size</p> <p>[Description] Checks and clears the paper feed counts by paper size</p> <p>[Purpose] To check, as well as to clear, the paper feed counts by paper size after replacement of maintenance parts.</p> <p>[Method] Press the start key. * The paper feed counts by paper size will be displayed.</p> <p>[Clearing the count] 1. Select the paper size that you want to clear the count for. * The display for the selected item will be highlighted. * To clear the counts of all of the paper sizes, select "ALL CLEAR". 2. Press the start key to clear the count. * When all of the counts have been cleared, the screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to clear the count, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description
U914	<p>Fax/copier preference setting</p> <p>[Description] Selects to prioritize either the optional fax mode (for inch specifications only) or the copy mode.</p> <p>[Purpose] To be set according to the frequency of use, to the more frequently used mode.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select either the copy mode or the fax mode. 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key.</p>
U919	<p>Setting for toner coverage report output</p> <p>[Description] Selects whether or not to include the counts for optional fax printing in the toner count and when printing reports.</p> <p>[Purpose] You do not need to change the setting.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <p>[Setting] 1. Use the cursor up/down keys to select either "ON" or "OFF". * The display for the selected item will be highlighted. * The factory default setting: "ON" (for the inch specifications) "OFF" (for the metric specifications) 2. Press the start key to activate the selected setting. * The screen for selecting a maintenance item No. will be displayed again.</p> <p>[Completion] If you want to cancel the operation to change the current settings, press the stop/clear key when the screen for selecting an item is displayed. * The screen for selecting a maintenance item No. will be displayed again.</p>

Maintenance item No.	Description														
<p>U920</p>	<p>Checking/clearing the copy counts</p> <p>[Description] Checks and clears the copy counts.</p> <p>[Purpose] Used to check the copy count.</p> <p>[Method]</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select that you want to check or clear the count for. * The display for the selected item will be highlighted. <table border="1"> <thead> <tr> <th>Display</th> <th>Setting range</th> </tr> </thead> <tbody> <tr> <td>Copier 4C</td> <td>0 to 9999999</td> </tr> <tr> <td>Copier mono</td> <td>0 to 9999999</td> </tr> <tr> <td>Copier B/W</td> <td>0 to 9999999</td> </tr> <tr> <td>Printer 4C</td> <td>0 to 9999999</td> </tr> <tr> <td>Printer B/W</td> <td>0 to 9999999</td> </tr> <tr> <td>FAX B/W count</td> <td>0 to 9999999</td> </tr> </tbody> </table> <p>[Clearing the count]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to clear the count for. 2. Press the reset key. 3. Press the start key. The count will be cleared. * The screen for selecting a maintenance item No. will be displayed again. <p>[Setting the count]</p> <ol style="list-style-type: none"> 1. Use the numeric keys to enter the 7-digit count value. 2. Press the start key to set the selected count. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to clear the count, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting range	Copier 4C	0 to 9999999	Copier mono	0 to 9999999	Copier B/W	0 to 9999999	Printer 4C	0 to 9999999	Printer B/W	0 to 9999999	FAX B/W count	0 to 9999999
Display	Setting range														
Copier 4C	0 to 9999999														
Copier mono	0 to 9999999														
Copier B/W	0 to 9999999														
Printer 4C	0 to 9999999														
Printer B/W	0 to 9999999														
FAX B/W count	0 to 9999999														
<p>U991</p>	<p>Checking/clearing the scanner operation count</p> <p>[Description] Displays and clears or changes the scanner operation count.</p> <p>[Purpose] To check the use of the scanner.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>Total scanner coun</td> <td>Scanner operation count</td> </tr> <tr> <td>Network scanner co</td> <td>Network scanner operation count</td> </tr> </tbody> </table> <p>[Clearing the count]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to clear the count for. 2. Press the reset key. 3. Press the start key. The count will be cleared. * The screen for selecting a maintenance item No. will be displayed again. <p>[Setting]</p> <ol style="list-style-type: none"> 1. Use the cursor up/down keys to select the item that you want to change the count for. 2. Use the numeric keys to enter the 6-digit count value. 3. Press the start key to set the selected value. * The screen for selecting a maintenance item No. will be displayed again. <p>[Completion] If you want to cancel the operation to clear the count, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	Total scanner coun	Scanner operation count	Network scanner co	Network scanner operation count								
Display	Setting														
Total scanner coun	Scanner operation count														
Network scanner co	Network scanner operation count														

Maintenance item No.	Description														
U992	<p>Checking/clearing the operation count when using the printer or fax kit</p> <p>[Description] Displays and clears or changes printing page counts using the printer kit or fax kit (both optional).</p> <p>[Purpose] To check the operation of the printer or fax function.</p> <p>[Method] Press the start key. The screen for selecting an item will be displayed.</p> <table border="1"> <thead> <tr> <th>Display</th> <th>Setting</th> </tr> </thead> <tbody> <tr> <td>PRINTER COUNT</td> <td>Printing page counts using the printer kit</td> </tr> <tr> <td>FAX COUNT</td> <td>Printing page counts using the fax kit</td> </tr> </tbody> </table> <p>[Clearing the count]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to clear the count for. Press the reset key. Press the start key. The count will be cleared. <ul style="list-style-type: none"> * The screen for selecting a maintenance item No. will be displayed again. <p>[Setting]</p> <ol style="list-style-type: none"> Use the cursor up/down keys to select the item that you want to change the count for. Use the numeric keys to enter the 6-digit count value. <ul style="list-style-type: none"> * To clear the counts for both the printer and the fax functions, press the reset key. Press the start key to set the selected value. <p>[Completion] If you want to cancel the operation to change the count value, press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Display	Setting	PRINTER COUNT	Printing page counts using the printer kit	FAX COUNT	Printing page counts using the fax kit								
Display	Setting														
PRINTER COUNT	Printing page counts using the printer kit														
FAX COUNT	Printing page counts using the fax kit														
U998	<p>Printing from memory</p> <p>[Description] Prints the data stored in memory.</p> <p>[Purpose] Execute as necessary.</p> <p>[Method]</p> <ol style="list-style-type: none"> Press the start key. The screen for selecting an item will be displayed. Use the numeric keys to enter the address (8-digit hexadecimal number). <ul style="list-style-type: none"> * Press the keys indicated below to enter symbols A to F. <table border="1"> <thead> <tr> <th>Key name</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>Auto selection key</td> <td>A</td> </tr> <tr> <td>Book mode key</td> <td>B</td> </tr> <tr> <td>Digital editing key</td> <td>C</td> </tr> <tr> <td>Duplex/Page separation key</td> <td>D</td> </tr> <tr> <td>Transparency film/Card stock key</td> <td>E</td> </tr> <tr> <td>Layout key</td> <td>F</td> </tr> </tbody> </table> Press the interrupt key to output the list. <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>	Key name	Symbol	Auto selection key	A	Book mode key	B	Digital editing key	C	Duplex/Page separation key	D	Transparency film/Card stock key	E	Layout key	F
Key name	Symbol														
Auto selection key	A														
Book mode key	B														
Digital editing key	C														
Duplex/Page separation key	D														
Transparency film/Card stock key	E														
Layout key	F														
U999	<p>Checking the memory</p> <p>[Description] Checks as well as displays the capacity of the bitmap memory used for copying from memory.</p> <p>[Purpose] Used to check if copying from memory is possible.</p> <p>[Method] Press the start key. * The total capacity of the bitmap memory will be displayed. "0" will be displayed when there are no memory installed, and "NG" when there is a problem.</p> <p>[Completion] Press the stop/clear key. * The screen for selecting a maintenance item No. will be displayed again.</p>														

1-5-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the copier immediately stops copying and displays the jam location on the operation panel. Paper misfeed counts sorted by the detection condition can be checked in maintenance item U903.

To remove paper jammed in the copier, open the front cover, conveying cover, side cover or drawer.

Paper misfeed detection can be reset by opening and closing the respective covers to turn interlock switch off and on.

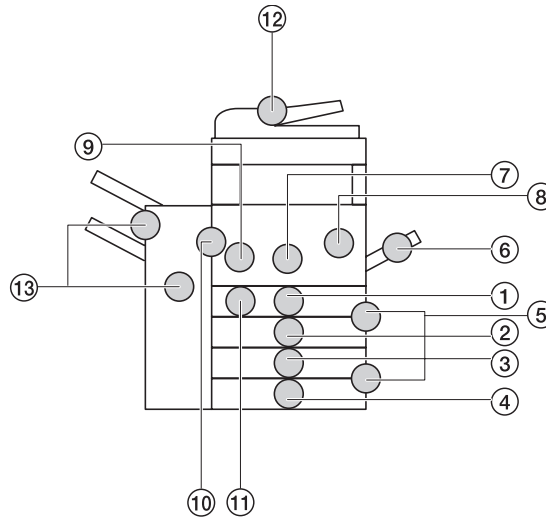


Figure 1-5-1

- ① Misfeed in drawer 1
 - ② Misfeed in drawer 2
 - ③ Misfeed in drawer 3*¹
 - ④ Misfeed in drawer 4*¹
 - ⑤ Misfeed in side cover
 - ⑥ Misfeed in bypass tray
 - ⑦ Misfeed in paper feed unit
 - ⑧ Misfeed in transfer units
 - ⑨ Misfeed in fuser section
 - ⑩ Misfeed in eject section
 - ⑪ Misfeed in duplexer*²
 - ⑫ Misfeed in DF*¹
 - ⑬ Misfeed in document finisher*¹
- *¹: Optional.
*²: Duplex copier only.

Jam code	Contents	See page
10	No paper feed from copier drawer 1	P.1-5-4
11	No paper feed from copier drawer 2	P.1-5-4
12	No paper feed from optional drawer 3	P.1-5-4
13	No paper feed from optional drawer 4	P.1-5-4
14	No paper feed from bypass tray	P.1-5-5
15	No paper feed from duplexer paper refeed section	P.1-5-5
21	Misfeed in copier vertical paper conveying section 1	P.1-5-5
22	Misfeed in copier vertical paper conveying section 2	P.1-5-5
30	Misfeed before registration section	P.1-5-6
31	Misfeed in registration section	P.1-5-6
40	Misfeed in fuser section	P.1-5-6
45	Misfeed in face-up tray	P.1-5-7
46	Misfeed in face-down unit	P.1-5-7
47	Misfeed in duplex entrance	P.1-5-7
50	Misfeed in face-up tray closed	P.1-5-7
51	Misfeed in eject section of face-down unit	P.1-5-7
52	Misfeed in face-down unit ejection	P.1-5-7
60	Misfeed in duplexer entrance section	P.1-5-8
61	Misfeed in duplex vertical paper conveying section 1	P.1-5-8
62	Misfeed in duplex vertical paper conveying section 2	P.1-5-8
63	Misfeed in duplex vertical paper conveying section 3	P.1-5-8
64	Misfeed in duplex vertical paper conveying section 4	P.1-5-8
69	Remaining paper in the duplex unit	P.1-5-8
70	No original feed (DF*)	P.1-5-9
71	An original jam in the original feed/conveying section 1 (DF*)	P.1-5-9
72	An original jam in the original feed/conveying section 2 (DF*)	P.1-5-9
73	An original jam in the original conveying section (DF*)	P.1-5-10
74	An original jam remaining after retries (DF*)	P.1-5-10
75	An original jam in the switchback section 1 (DF*)	P.1-5-10
76	An original jam in the switchback section 2 (DF*)	P.1-5-11
80	(document finisher*)	P.1-5-11
81	Jam in paper entry section (document finisher*)	P.1-5-11
82	Jam in eject section of non-sort tray (document finisher*)	P.1-5-12
83	Jam in paper conveying section of internal tray (document finisher*)	P.1-5-12
84	Jam in eject section of sort tray (document finisher*)	P.1-5-13
84	(document finisher*)	P.1-5-13

*Optional.

(2) Paper misfeed detection conditions

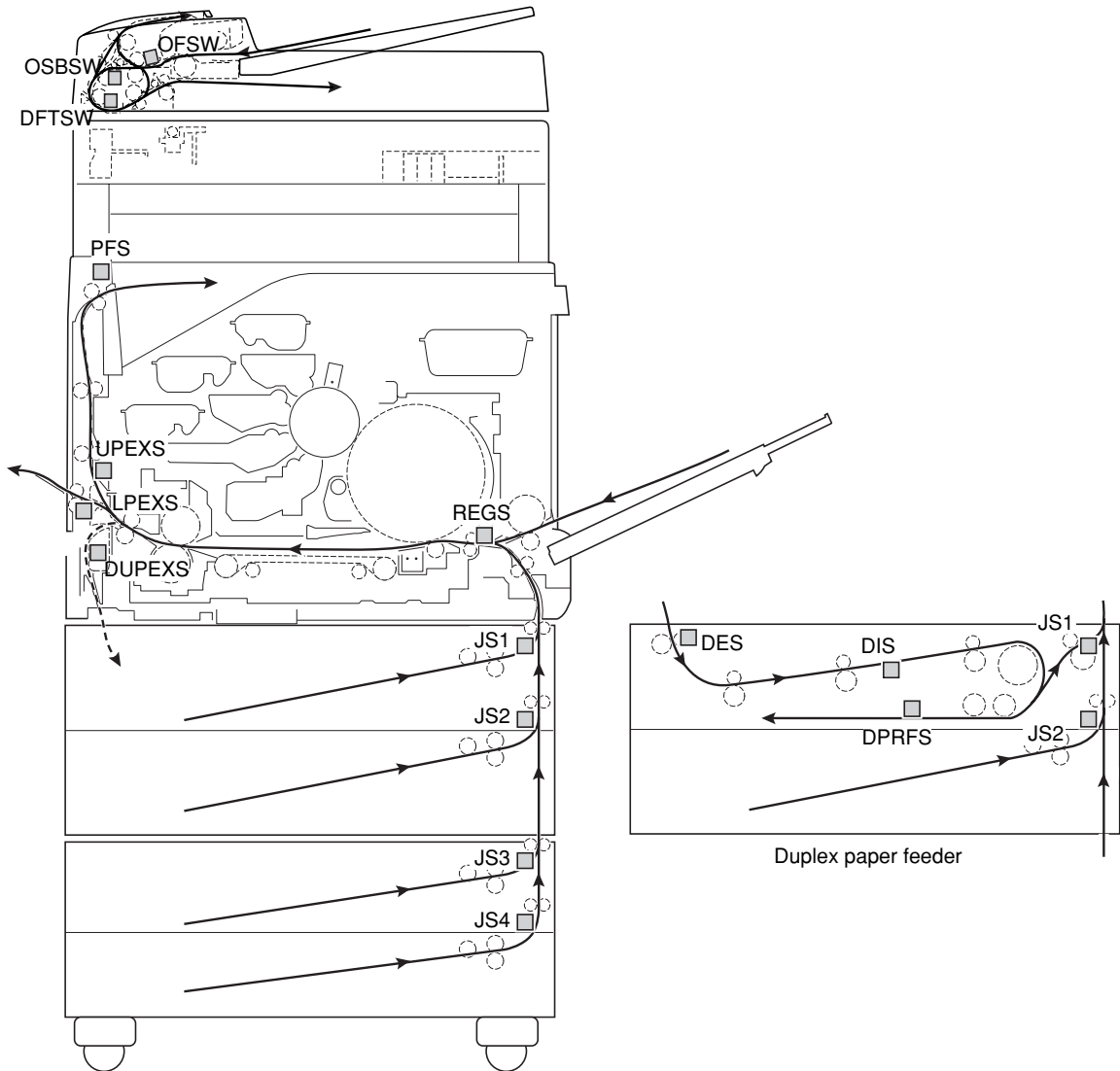


Figure 1-5-2

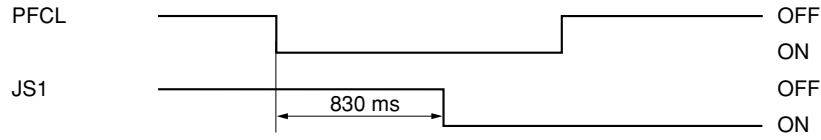
1. Jam at power-on

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

2. Paper feed section

- No paper feed from copier drawer 1 (jam code 10)

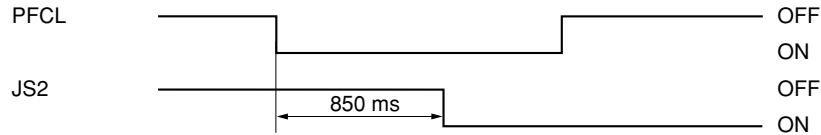
Jam sensor 1 (JS1) does not turned on within 830 ms of the paper feed clutch (PFCL) turning on (when paper is fed from drawer 1).



Timing chart 1-5-1

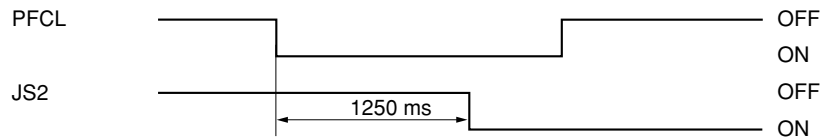
- No paper feed from copier drawer 2 (jam code 11)

Jam sensor 2 (JS2) does not turned on within 850 ms of the paper feed clutch (PFCL) turning on (when paper is fed from drawer 2).



Timing chart 1-5-2

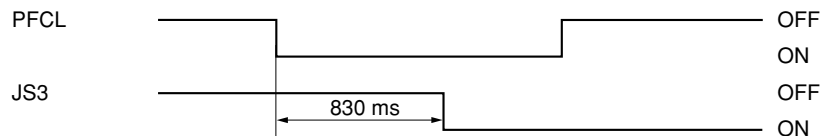
Jam sensor 2 (JS2) does not turned on within 1250 ms of the paper feed clutch (PFCL) turning on (when paper is fed from drawer 2).*1



Timing chart 1-5-3

- No paper feed from optional drawer 3 (jam code 12)

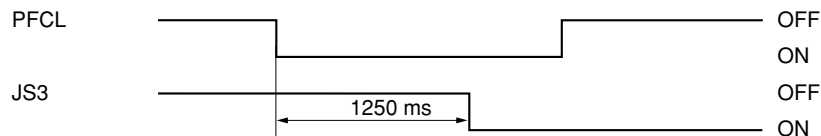
Jam sensor 3 (JS3) does not turned on within 830 ms of the paper feed clutch (PFCL) turning on (when paper is fed from optional drawer 3).



Timing chart 1-5-4

- No paper feed from optional drawer 4 (jam code 13)

Jam sensor 3 (JS3) does not turned on within 1250 ms of the paper feed clutch (PFCL) turning on (when paper is fed from optional drawer 4).

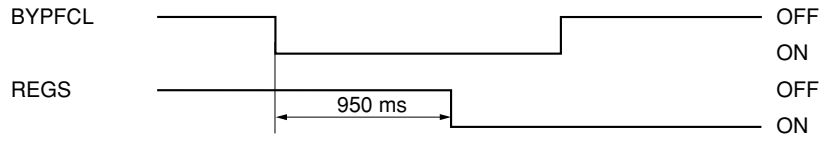


Timing chart 1-5-5

*1: Duplex copier only.

- No paper feed from bypass tray (jam code 14)

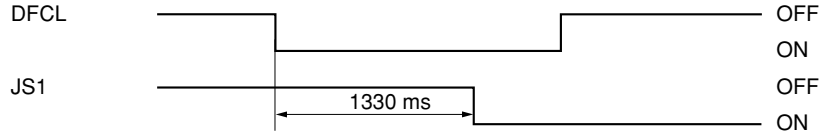
The registration sensor (REGS) does not turned on within 950 ms of the bypass paper feed clutch (BYPFCL) turning on.



Timing chart 1-5-6

- No paper feed from duplexer paper refeed section (jam code 15)*1

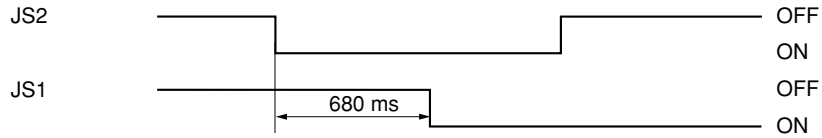
Jam sensor 1 (JS1) does not turned on within 1330 ms of the duplexer feed clutch (DFCL) turning on.



Timing chart 1-5-7

- Misfeed in copier vertical paper conveying section 1 (jam code 21)

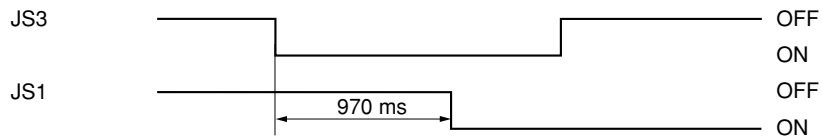
Jam sensor 1 (JS1) does not turned on within 680 ms of jam sensor 2 (JS2) turning on.



Timing chart 1-5-8

- Misfeed in copier vertical paper conveying section 2 (jam code 22)

Jam sensor 1 (JS1) does not turned on within 970 ms of jam sensor 3 (JS3) turning on (when paper is fed from optional third drawer).



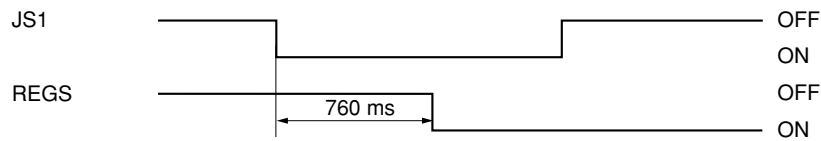
Timing chart 1-5-9

*1: Duplex copier only.

3. Paper conveying section

- Misfeed before registration section (jam code 30)

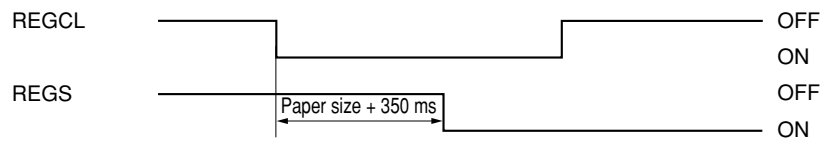
The registration sensor (REGS) does not turned on within 760 ms of jam sensor 1 (JS1) turning on.



Timing chart 1-5-10

- Misfeed in registration section (jam code 31)

The registration sensor (REGS) does not turned off within the time requires to convey the length of the used paper size plus 350 ms of the registration clutch (REGCL) turning on.

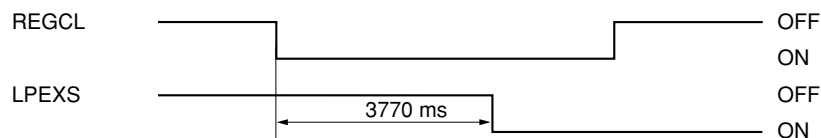


Timing chart 1-5-11

4. Fuser section

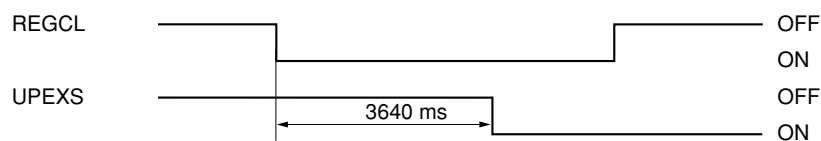
- Misfeed in fuser section (jam code 40)

The lower paper exit sensor (LPEXS) does not turned on within 3770 ms of the registration clutch (REGCL) turning on (when paper is ejected to the face-up tray).



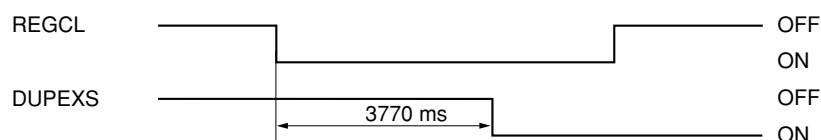
Timing chart 1-5-12

The upper paper exit sensor (UPEXS) does not turned on within 3640 ms of the registration clutch (REGCL) turning on (when paper is ejected to the face-down unit).



Timing chart 1-5-13

The duplex paper exit sensor (DUPEXS) does not turned on within 3770 ms of the registration clutch (REGCL) turning on.*1



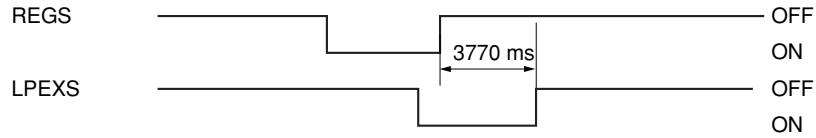
Timing chart 1-5-14

*1: Duplex copier only.

5. Eject section

- Misfeed in face-up tray (jam code 45)

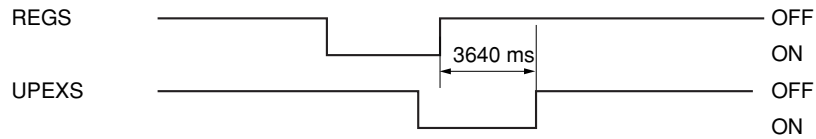
The lower paper exit sensor (LPEXS) does not turned off within 3770 ms of the registration sensor (REGS) turning off.



Timing chart 1-5-15

- Misfeed in face-down unit (jam code 46)

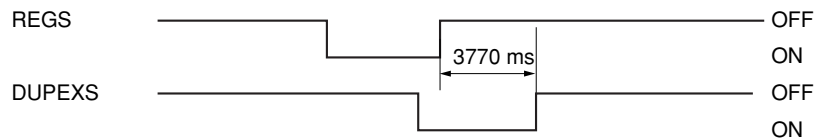
The upper paper exit sensor (UPEXS) does not turned off within 3640 ms of the registration sensor (REGS) turning off.



Timing chart 1-5-16

- Misfeed in duplex entrance (jam code 47)

The duplex paper exit sensor (DUPEXS) does not turned off within 3640 ms of the registration sensor (REGS) turning off.



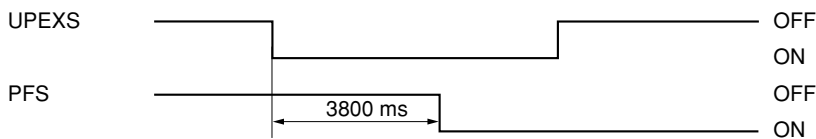
Timing chart 1-5-17

- Misfeed in face-up tray closed (jam code 50)

The face-up tray has been closed while face-up output was being performed.

- Misfeed in eject section of face-down unit (jam code 51)

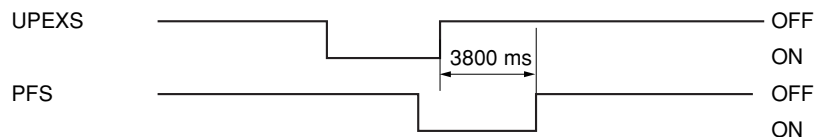
The paper full sensor (PFS) does not turned on within 3800 ms of the upper paper exit sensor (UPEXS) turning on.



Timing chart 1-5-18

- Misfeed in face-down unit ejection (jam code 52)

The paper full sensor (PFS) does not turned off within 3800 ms of the upper paper exit sensor (UPEXS) turning off.



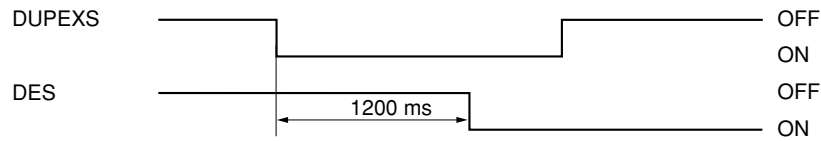
Timing chart 1-5-19

*1: Duplex copier only.

6. Duplex section*1

- Misfeed in duplexer entrance section (jam code 60)

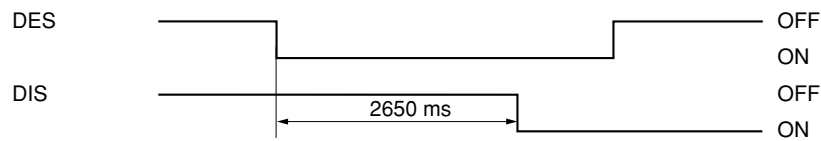
The duplex unit entrance sensor (DES) does not turned on within 1200 ms of the duplex paper exit sensor (DUPEXS) turning on.



Timing chart 1-5-20

- Misfeed in duplex vertical paper conveying section 1 (jam code 61)

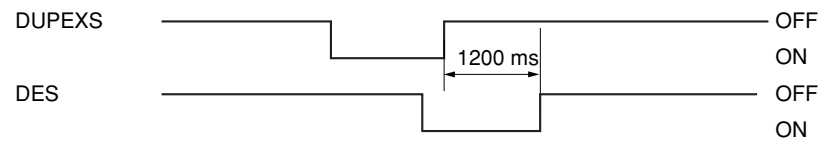
The duplexer intermediate sensor (DIS) does not turned off within 2650 ms of the duplex unit entrance sensor (DUPEXS) turning on.



Timing chart 1-5-21

- Misfeed in duplex vertical paper conveying section 2 (jam code 62)

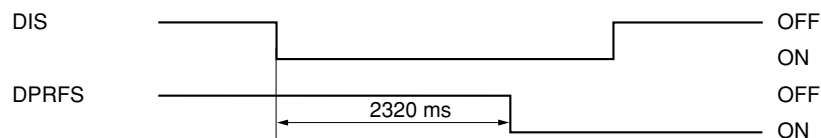
The duplex unit entrance sensor (DUPEXS) does not turned off within 1200 ms of the duplex paper exit sensor (DUPEXS) turning on.



Timing chart 1-5-22

- Misfeed in duplex vertical paper conveying section 3 (jam code 63)

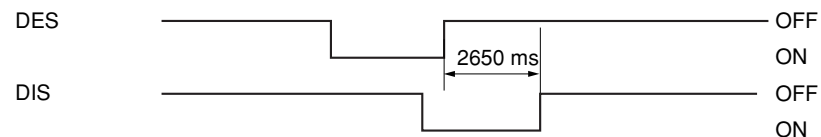
The duplexer paper refeed sensor (DPRFS) does not turned on within 2320 ms of the duplexer intermediate sensor (DIS) turning on.



Timing chart 1-5-23

- Misfeed in duplex vertical paper conveying section 4 (jam code 64)

The duplexer intermediate sensor (DIS) does not turned off within 2320 ms of the duplex unit entrance sensor (DES) turning off.



Timing chart 1-5-24

- Remaining paper in the duplex unit (jam code 69)

Two sheets of paper remained in the duplex unit and the third sheet has been fed.

*1: Duplex copier only.

7. DF*2

- No original feed (jam code 70)

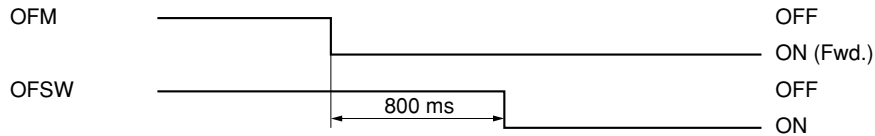
When the DF START signal is received, switches other than the original set switch (OSSW) and original size length switch (OSLSW) on the contact glass are on.

- No original feed (jam code 70)

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

- No original feed (jam code 70)

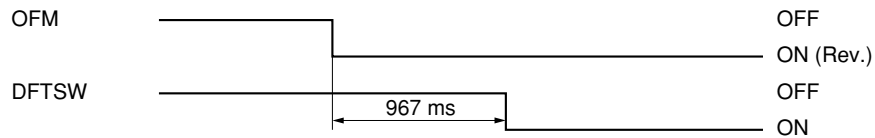
During the primary feed of the second or later original in the single-sided or double-sided original mode, the original feed switch (OFSW) does not turn on within 800 ms of the start of forward rotation of the original feed motor (OFM).



Timing chart 1-5-25

- An original jam in the original feed/conveying section 1 (jam code 71)

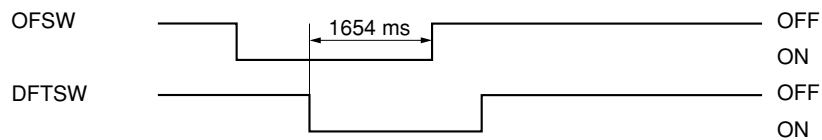
During the secondary original feed in the single-sided original mode, the DF timing switch (DFTSW) does not turn on within 967 ms of the start of reverse rotation of the original feed motor (OFM). Alternatively, during continuous original feed in single-sided original mode, the DF timing switch (DFTSW)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



Timing chart 1-5-26

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

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

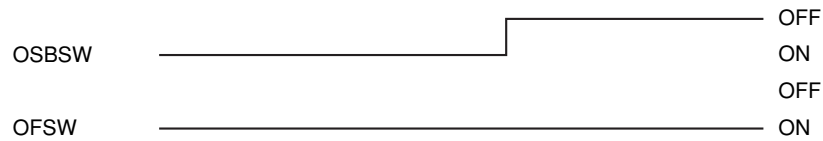


Timing chart 1-5-27

*2: Optional.

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

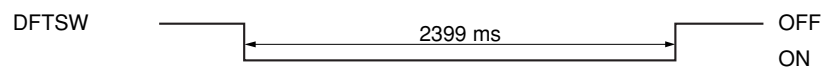
During original switchback operation in the double-sided original mode, the original feed switch (OFSW) remains on when the original switchback switch (OSBSW) turns off.



Timing chart 1-5-28

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

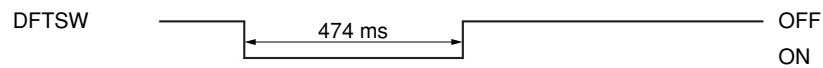
During the secondary original feed in the single-sided or double-sided original mode, the DF timing switch (DFTSW) does not turn off within 2399 ms of turning on.



Timing chart 1-5-29

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

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



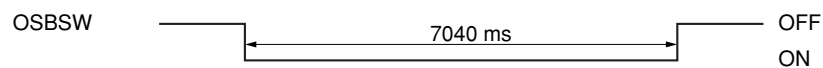
Timing chart 1-5-30

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

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

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

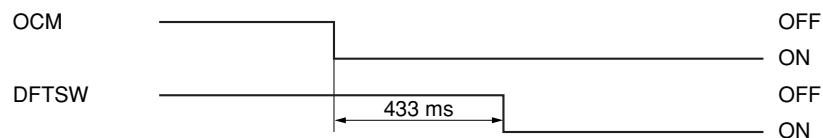
During the switchback operation of an original in the double-sided original mode, the original switchback switch (OSBSW) does not turn off within 7040 ms of turning on.



Timing chart 1-5-31

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

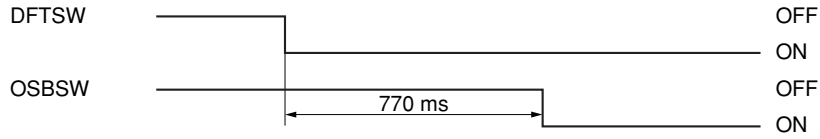
During the secondary original feed in the double-sided original mode, the DF timing switch (DFTSW) does not turn on within 433 ms of the original conveying motor (OCM) turning on.



Timing chart 1-5-32

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

While scanning the first face (reverse face) of the original in the double-sided original mode, the original switchback switch (OSBSW) does not turn on within 770 ms of the DF timing switch (DFTSW) turning on.



Timing chart 1-5-33

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

During the switchback operation of the second or later original in the double-sided original mode, the original switchback switch (OSBSW) remains off when the trailing edge of the preceding original turns the DF timing switch (DFTSW) off.

8. Document finisher*2

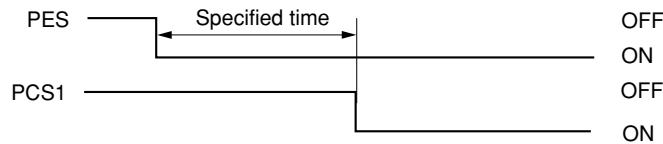
- Jam in paper entry section (jam code 81)

The paper entry sensor (PES) does not turn on within a specified time (varies depending on the paper type; see Table 1-5-1) of paper ejection from the copier.

Paper type	Time (ms)
Plain	2156
Thick	4313
Transparency	8257

Table 1-5-1

Paper conveying sensor 1 (PCS1) does not turn on within a specified time (varies depending on the paper type; see Table 1-5-2) of the paper entry sensor (PES) turning on.



Timing chart 1-5-34

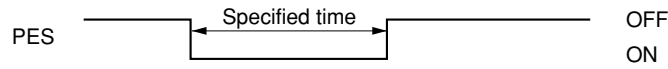
Paper type	Time (ms)
Plain	1771
Thick	3421

Table 1-5-2

*2: Optional.

- Jam in eject section of non-sort tray (jam code 82)

The paper entry sensor (PES) does not turn off within a specified time (varies depending on the paper type; see Table 1-5-3) of its turning on.



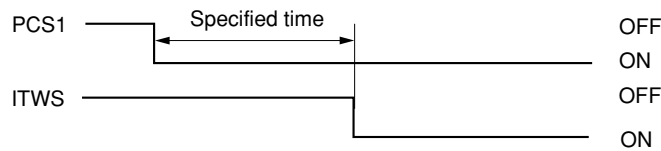
Timing chart 1-5-35

Paper type	Time (ms)
Plain	3389
Thick	5130
Transparency	8610

Table 1-5-3

- Jam in paper conveying section of internal tray (jam code 83)

When large paper (A3/11" × 17, B4/8½" × 14" or A4R/8½" × 11"R) is fed, the internal tray wheel sensor (ITWS) does not turn on within a specified time (varies depending on the paper type; see Table 1-5-4) of paper conveying sensor 1 (PCS1) turning on.

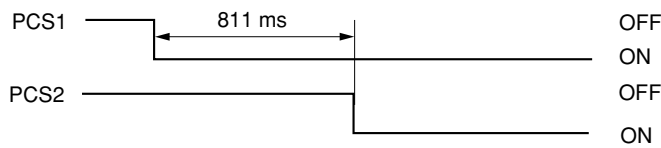


Timing chart 1-5-36

Paper type	Time (ms)
Plain	2038
Thick	3105

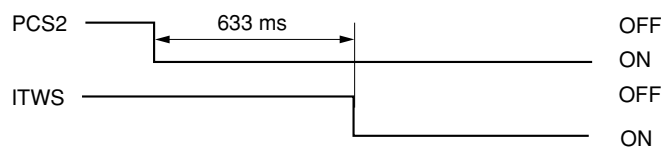
Table 1-5-4

When small paper (A4/11" × 8½" or B5) is fed, paper conveying sensor 2 (PCS2) does not turn on within 811 ms of paper conveying sensor 1 (PCS1) turning on.



Timing chart 1-5-37

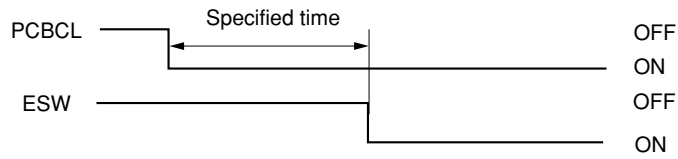
When small paper (A4/11" × 8½" or B5) is fed, the internal tray wheel sensor (ITWS) does not turn on within 633 ms of paper conveying sensor 2 (PCS2) turning on.



Timing chart 1-5-38

- Jam in eject section of sort tray (jam code 84)

The eject switch (ESW) does not turn on within a specified time (varies depending on the paper size; see Table 1-5-5) of the paper conveying belt clutch (PCBCL) turning on.

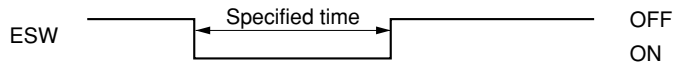


Timing chart 1-5-39

Paper size	Time (ms)
A3	650
B4	850
A4R	1000
A4	1250
B5	1350
11 " × 17 "	650
8 1/2 " × 14 "	850
8 1/2 " × 11"R	1050
11 " × 8 1/2"	1250

Table 1-5-5

The eject switch (ESW) does not turn off within a specified time (varies depending on the paper size; see Table 1-5-6) of its turning on.



Timing chart 1-5-40

Paper size	Time (ms)
A3	1550
B4	1350
A4R	1100
A4	850
B5	750
11 " × 17 "	1550
8 1/2 " × 14 "	1350
8 1/2 " × 11"R	1100
11 " × 8 1/2"	850

Table 1-5-6

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed, conveying or eject section is indicated as soon as the main switch is turned on.	A piece of paper torn from copy paper is caught around jam sensor 1/2/3, registration sensor, upper or lower paper exit sensor.	Check visually and remove it, if any.
	Defective jam sensor 1.	Run maintenance item U031 and turn jam sensor 1 on and off manually. Replace jam sensor 1 if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective jam sensor 2.	Run maintenance item U031 and turn jam sensor 2 on and off manually. Replace jam sensor 2 if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective jam sensor 3.	Run maintenance item U031 and turn jam sensor 3 on and off manually. Replace jam sensor 3 if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective upper paper exit sensor.	Run maintenance item U031 and turn the upper paper exit sensor on and off manually. Replace the upper paper exit sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective lower paper exit sensor.	Run maintenance item U031 and turn the lower paper exit sensor on and off manually. Replace the lower paper exit sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 1). Jam code 10	Paper in the drawer 1 is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the first drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken jam sensor 1 actuator.	Check visually and replace jam sensor 1 if its actuator is broken.
	Defective jam sensor 1.	Run maintenance item U031 and turn jam sensor 1 on and off manually. Replace jam sensor 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the paper feed clutch malfunctions.	Run maintenance item U032 and select the paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch.	Check (see page 1-5-66).

Problem	Causes/check procedures	Corrective measures
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from copier drawer 2). Jam code 11	Paper in the drawer 2 is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the second drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken jam sensor 2 actuator.	Check visually and replace jam sensor 1 if its actuator is broken.
	Defective jam sensor 2.	Run maintenance item U031 and turn jam sensor 2 on and off manually. Replace jam sensor 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the paper feed clutch malfunctions.	Run maintenance item U032 and select the paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch.	Check (see page 1-5-66).
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from optional drawer 3). Jam code 12	Paper in the optional drawer 3 is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the optional third drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken jam sensor 3 actuator.	Check visually and replace jam sensor 1 if its actuator is broken.
	Defective jam sensor 3.	Run maintenance item U031 and turn jam sensor 3 on and off manually. Replace jam sensor 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the paper feed clutch malfunctions.	Run maintenance item U032 and select the paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch.	Check (see page 1-5-66).

Problem	Causes/check procedures	Corrective measures
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from optional drawer 4). Jam code 13	Paper in the optional drawer 4 is extremely curled.	Change the paper.
	Check if the paper feed pulley, separation pulley or forwarding pulley of the optional fourth drawer are deformed.	Check visually and replace any deformed pulleys.
	Broken jam sensor 3 actuator.	Check visually and replace jam sensor 1 if its actuator is broken.
	Defective jam sensor 3.	Run maintenance item U031 and turn jam sensor 3 on and off manually. Replace jam sensor 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the paper feed clutch malfunctions.	Run maintenance item U032 and select the paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feed clutch.	Check (see page 1-5-66).
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from bypass tray). Jam code 14	Paper on the bypass table is extremely curled.	Change the paper.
	Check if the bypass paper feed pulley, separation pulley or forwarding pulley of the bypass are deformed.	Check visually and replace any deformed pulleys.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the bypass paper feed clutch malfunctions.	Run maintenance item U032 and select the bypass paper feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the bypass paper feed clutch.	Check (see page 1-5-66).

Problem	Causes/check procedures	Corrective measures
(7) A paper jam in the paper feed section is indicated during copying (no paper feed from duplexer paper refeed section). Jam code 15	Broken jam sensor 1 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 1.	Run maintenance item U031 and turn the duplex unit entrance sensor on and off manually. Replace the duplex unit entrance sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the duplexer feed clutch malfunctions.	Run maintenance item U032 and select the duplexer feed clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the duplexer feed clutch.	Check (see page 1-5-67).
(8) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section 1). Jam code 21	Broken jam sensor 1 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 1.	Run maintenance item U031 and turn jam sensor 1 on and off manually. Replace jam sensor 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken jam sensor 2 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 2.	Run maintenance item U031 and turn jam sensor 2 on and off manually. Replace jam sensor 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the feed pulleys and feed roller are deformed.	Check and repair it if necessary.

Problem	Causes/check procedures	Corrective measures
(9) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section 2). Jam code 22	Broken jam sensor 1 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 1.	Run maintenance item U031 and turn jam sensor 1 on and off manually. Replace jam sensor 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken jam sensor 2 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 2.	Run maintenance item U031 and turn jam sensor 2 on and off manually. Replace jam sensor 2 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken jam sensor 3 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 3.	Run maintenance item U031 and turn jam sensor 3 on and off manually. Replace jam sensor 3 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the feed pulleys and feed roller are deformed.	Check and repair it if necessary.
(10) A paper jam in the paper feed section is indicated during copying (jam before registration section). Jam code 30	Broken jam sensor 1 actuator.	Check visually and replace any deformed pulleys.
	Defective jam sensor 1.	Run maintenance item U031 and turn jam sensor 1 on and off manually. Replace jam sensor 1 if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(11) A paper jam in the paper feed section is indicated during copying (jam in registration section). Jam code 31	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-66).

Problem	Causes/check procedures	Corrective measures
(12) A paper jam in the fuser section is indicated during copying (jam in fuser section). Jam code 40	Broken upper paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective upper paper exit sensor.	Run maintenance item U031 and turn the upper paper exit sensor on and off manually. Replace the upper paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken lower paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective lower paper exit sensor.	Run maintenance item U031 and turn the lower paper exit sensor on and off manually. Replace the lower paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplex paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex paper exit sensor.	Run maintenance item U031 and turn the duplex paper exit sensor on and off manually. Replace the duplex paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the registration clutch malfunctions.	Run maintenance item U032 and select the registration clutch on the operation panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-66).
(13) A paper jam in the eject section is indicated during copying (jam in eject section of face-up tray). Jam code 45	Broken lower paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective lower paper exit sensor.	Run maintenance item U031 and turn the lower paper exit sensor on and off manually. Replace the lower paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(14) A paper jam in the eject section is indicated during copying (jam in face-down unit). Jam code 46	Broken upper paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective upper paper exit sensor.	Run maintenance item U031 and turn the upper paper exit sensor on and off manually. Replace the upper paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(15) A paper jam in the eject section is indicated during copying (jam in eject section of duplex entrance). Jam code 47	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplex paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex paper exit sensor.	Run maintenance item U031 and turn the duplex paper exit sensor on and off manually. Replace the duplex paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(16) A paper jam in the eject section is indicated during copying (jam in eject section of face-down unit). Jam code 51	Broken upper paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective upper paper exit sensor.	Run maintenance item U031 and turn the upper paper exit sensor on and off manually. Replace the upper paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken paper full sensor actuator.	Check visually and replace any deformed pulleys.
	Defective paper full sensor.	Run maintenance item U031 and turn the paper full sensor on and off manually. Replace the paper full sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(17) A paper jam in the eject section is indicated during copying (jam in face-down unit ejection). Jam code 52	Broken upper paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective upper paper exit sensor.	Run maintenance item U031 and turn the upper paper exit sensor on and off manually. Replace the upper paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken paper full sensor actuator.	Check visually and replace any deformed pulleys.
	Defective paper full sensor.	Run maintenance item U031 and turn the paper full sensor on and off manually. Replace the paper full sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(18) A paper jam in the duplex section is indicated during copying (jam in duplex entrance). Jam code 60	Broken duplex paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex paper exit sensor.	Run maintenance item U031 and turn the duplex paper exit sensor on and off manually. Replace the duplex paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplex unit entrance sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex unit entrance sensor.	Run maintenance item U031 and turn the duplex paper exit sensor on and off manually. Replace the duplex paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(19) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 1). Jam code 61	Broken duplex unit entrance sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex unit entrance sensor.	Run maintenance item U031 and turn the duplex unit entrance sensor on and off manually. Replace the duplex unit entrance sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplexer intermediate sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplexer intermediate sensor.	Run maintenance item U031 and turn the duplexer intermediate sensor on and off manually. Replace the duplexer intermediate sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(20) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 2). Jam code 62	Broken duplex paper exit sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex paper exit sensor.	Run maintenance item U031 and turn the duplex paper exit sensor on and off manually. Replace the duplex paper exit sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplex unit entrance sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex unit entrance sensor.	Run maintenance item U031 and turn the duplex unit entrance sensor on and off manually. Replace the duplex unit entrance sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(21) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 3). Jam code 63	Broken duplexer intermediate sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplexer intermediate sensor.	Run maintenance item U031 and turn the duplexer intermediate sensor on and off manually. Replace the duplexer intermediate sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplexer paper refeed sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplexer paper refeed sensor.	Run maintenance item U031 and turn the duplexer paper refeed sensor on and off manually. Replace the duplexer paper refeed sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(22) A paper jam in the duplex section is indicated during copying (jam in duplex paper conveying section 4). Jam code 64	Broken duplex unit entrance sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplex unit entrance sensor.	Run maintenance item U031 and turn the duplex unit entrance sensor on and off manually. Replace the duplex unit entrance sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Broken duplexer intermediate sensor actuator.	Check visually and replace any deformed pulleys.
	Defective duplexer intermediate sensor.	Run maintenance item U031 and turn the duplexer intermediate sensor on and off manually. Replace the duplexer intermediate sensor if indication of the corresponding switch on the operation panel is not displayed in reverse.
(23) An original jams in the DF* is indicated during copying (no original feed). Jam code 70	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the operation panel to be turned on and off. Check the status and remedy if necessary.
(24) An original jams in the DF* is indicated during copying (jam in the original feed/conveying section 1). Jam code 71	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the original feed motor malfunctions.	Run maintenance item U243 and select the original feed motor on the operation panel to be turned on and off. Check the status and remedy if necessary.
(25) An original jams in the DF* is indicated during copying (jam in the original feed/conveying section 2). Jam code 72	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective original feed switch.	Run maintenance item U244 and turn the original feed switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(26) An original jams in the DF* is indicated during copying (jam in the original conveying section). Jam code 73	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.

*Optional.

Problem	Causes/check procedures	Corrective measures
(27) An original jams in the DF* is indicated during copying (jam in the original switchback section 1). Jam code 75	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Defective DF timing switch.	Run maintenance item U244 and turn the DF timing switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
	Check if the original conveying motor malfunctions.	Run maintenance item U243 and select the original conveying motor on the operation panel to be turned on and off. Check the status and remedy if necessary.
(28) An original jams in the DF* is indicated during copying (jam in the original switchback section 2). Jam code 76	Defective original switchback switch.	Run maintenance item U244 and turn the original switchback switch on and off manually. Replace the switch if indication of the corresponding switch on the operation panel is not displayed in reverse.
(29) A paper jam in the document finisher* is indicated during copying (jam in paper entry section). Jam code 81	Extremely curled paper.	Change the paper.
	Defective paper entry sensor.	With 5 V DC present at CN6-1 on the finisher main PCB, check if CN6-2 on the finisher main PCB remains low or high when the paper entry sensor is turned on and off. If it does, replace the paper entry sensor.
	Check if the upper or lower paper entry guide is deformed.	Check and remedy.
(30) A paper jam in the document finisher* is indicated during copying (jam in the non-sort tray eject section). Jam code 82	Defective paper entry sensor.	With 5 V DC present at CN6-1 on the finisher main PCB, check if CN6-2 on the finisher main PCB remains low or high when the paper entry sensor is turned on and off. If it does, replace the paper entry sensor.
	The paper conveying roller and the upper paper conveying pulley do not make proper contact.	Check and replace if there are any problems.
	Check if the upper or lower paper entry guide is deformed.	Check and remedy.

*Optional.

Problem	Causes/check procedures	Corrective measures
(31) A paper jam in the document finisher* is indicated during copying (jam in the internal tray paper conveying section). Jam code 83	Defective internal tray sensor.	With 5 V DC present at CN5-19 on the finisher main PCB, check if CN5-8 on the finisher main PCB remains low or high when the internal tray wheel sensor is turned on and off. If it does, replace the internal tray wheel sensor.
	The feedshift rollers 1, 2, 3 and 4 and the feedshift pulleys 1, 2, 3 and 4 do not make proper contact.	Check and replace if there are any problems.
(32) A paper jam in the document finisher* is indicated during copying (jam in the sort tray eject section). Jam code 84	Broken eject switch actuator.	Check and replace if there are any problems.
	Defective eject switch.	With 5 V DC present at CN6-3 on the finisher main PCB, check if CN6-4 on the finisher main PCB remains low or high when the eject switch is turned on and off. If it does, replace the eject switch.
	The eject roller and pulley do not make proper contact.	Check and replace if there are any problems.
	Defective paper conveying belt.	Check and replace if there are any problems.

*Optional.

1-5-2 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of "C" followed by a number between 0030 and 8220, indicating the nature of the problem. A message is also displayed requesting the user to call for service.

After removing the problem, the self-diagnostic function can be reset by turning interlock switch off and back on.



Figure 1-5-2 Service call code display

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0030	Fax board* problem • Processing with the fax software was disabled due to a hardware or software problem.	Defective fax board.	Replace the fax board and check for correct operation.
C0070	Abnormal detection of fax board incompatibility • In the initial communication with the fax board, any normal communication command is not transmitted.	Defective fax board.	Replace the fax board and check for correct operation.
C0110	Backup memory data problem • Data in the specified area of the backup memory does not match the specified values.	Problem with the backup memory data.	Turn safety switch 1 off and back on and run maintenance item U020 to set the contents of the backup memory data again.
		Defective backup RAM.	If the C0110 is displayed after re-setting the backup memory contents, replace the backup RAM.
C0120	Drum EEPROM read error • The ASIC of engine controller PCB does not access to the EEPROM of drum PCB normally.	Poor contact in the connector terminals.	Check the connection of connector YC17 on the engine controller PCB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine controller PCB or drum PCB.	Replace the engine controller PCB or drum unit and check for correct operation (see pages 1-6-61 and 38).
C0130	Fax board software switch checksum error • A checksum error occurred with the software switch value of the fax board.	Defective fax board.	Replace the fax board and check for correct operation.
C0220	Engine controller PCB communication problem • There is no reply after 20 retries at communication.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C0240	Printer board* communication problem • There is no reply after 20 retries at communication.	Poor contact in the connector terminals.	Check the connection of connector YC201 on the engine controller-printer board relay PCB and the connector on the printer board. Repair or replace if necessary.
		Defective engine controller-printer board relay PCB or printer board.	Replace the engine controller-printer board relay PCB or printer board and check for correct operation.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0250	Network scanner board* communication problem <ul style="list-style-type: none"> There is no reply after 20 retries at communication. 	Poor contact in the connector terminals.	Check the connection of connector CN20 on the scanner main PCB and the connector on the network scanner board. Repair or replace if necessary.
		Defective scanner main PCB or network scanner board.	Replace the scanner main PCB or network scanner board and check for correct operation.
C0280	Abnormal communication between MMI and fax board <ul style="list-style-type: none"> Any key request command cannot be normally received from the fax board. The READY signal cannot be normally received from the fax board. 	Poor contact in the connector terminals.	Check the connection of connector CN26 on the scanner main PCB and the connector on the fax board. Repair or replace if necessary.
		Defective scanner main PCB or fax board.	Replace the scanner main PCB or fax board and check for correct operation.
C0290	Communication problem between the scanner main PCB and fax board <ul style="list-style-type: none"> The status cannot be normally received even if the fax board has re-tried command transmission 100 times. 	Poor contact in the connector terminals.	Check the connection of connector CN26 on the scanner main PCB and the connector on the fax board. Repair or replace if necessary.
		Defective scanner main PCB or fax board.	Replace the scanner main PCB or fax board and check for correct operation.
C0440	Document finisher* communication problem <ul style="list-style-type: none"> The microcomputer of scanner main PCB does not communicate to the document Document finisher. No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connectors CN42 on the scanner main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C0460	Duplexer communication problem <ul style="list-style-type: none"> The microcomputer of engine controller PCB does not communicate to the document Document finisher. No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact in the connector terminals.	Check the connection of connectors YC29 on the engine controller PCB and on the paper feeder/options relay PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective paper feeder/options relay PCB.	Replace the paper feeder/options relay PCB and check for correct operation (see page 1-6-68).

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0600	DIMM problem • The DIMM on the scanner main PCB does not operate correctly.	DIMM installed incorrectly.	Check if the DIMM is inserted into the socket on the scanner main PCB correctly.
		Defective DIMM.	Replace the DIMM and check for correct operation.
C0610	Bitmap problem • The available memory is judged to be 128 MB or less.	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
C0630	DMA problem • DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time.	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
C0640	Hard disk problem • The hard disk cannot be accessed.	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
		Defective hard disk.	Replace the hard disk device and check for correct operation.
C0700	Backup memory data problem B • The backup data on the scanner main PCB has been initialized.	Broken backup memory.	Run maintenance item U004 and enter the correct machine model number.
C0710	Backup memory data problem C • One slave code among three machine number backup data is judged to be broken.	Broken backup memory.	Run maintenance item U004 and enter the correct machine model number.
C0810	SCC microcomputer status problem • Abnormal SCC microcomputer status has been detected.	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
C0820	Fax board* CG ROM checksum error • A checksum error occurred with the CG ROM data of the fax board.	Defective fax board.	Replace the fax board and check for correct operation.
C0830	Fax board* flash program area checksum error • A checksum error occurred with the program of the fax board.	Defective fax board.	Replace the fax board and check for correct operation.
C0840	RTC PCB problem • The time is judged to go back based on the comparison of the RTC time and the current time or five years or more have passed.	Defective RTC PCB.	Replace the RTC PCB.
C0850	Backup memory problem • Writing or erasing has not completed even after a certain time.	Defective RTC PCB.	Replace the RTC PCB.
C0860	Flash ROM checksum error • Abnormal memory for backup on the engine controller PCB has been detected.	Defective flash ROM.	Replace the flash ROM and check for correct operation.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1010	Overcurrent detection of first drawer base motor <ul style="list-style-type: none"> Excessive current has flowed through the first drawer base motor which elevates the bottom plate in the drawer. 	Defective upper drawer base motor.	Replace the upper drawer base motor.
		Defective bottom plate elevation mechanism of first drawer.	Check whether there is an object that prevents the bottom plate of first drawer from operating normally.
		Defective main board of paper feeder.	Replace the main board of paper feeder.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C1020	Overcurrent detection of second drawer base motor <ul style="list-style-type: none"> Excessive current has flowed through the second drawer base motor which elevates the bottom plate in the drawer. 	Defective lower drawer base motor.	Replace the lower drawer base motor.
		Defective bottom plate elevation mechanism of second drawer.	Check whether there is an object that prevents the bottom plate of second drawer from operating normally.
		Defective main board of paper feeder.	Replace the main board of paper feeder.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C1030	Overcurrent detection of third drawer base motor <ul style="list-style-type: none"> Excessive current has flowed through the third drawer base motor which elevates the bottom plate in the drawer. 	Defective upper drawer base motor.	Replace the upper drawer base motor.
		Defective bottom plate elevation mechanism of third drawer.	Check whether there is an object that prevents the bottom plate of third drawer from operating normally.
		Defective main board of paper feeder.	Replace the main board of paper feeder.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1040	Overcurrent detection of fourth drawer base motor <ul style="list-style-type: none"> Excessive current has flowed through the fourth drawer base motor which elevates the bottom plate in the drawer. 	Defective lower drawer base motor.	Replace the lower drawer base motor.
		Defective bottom plate elevation mechanism of fourth drawer.	Check whether there is an object that prevents the bottom plate of second drawer from operating normally.
		Defective main board of paper feeder.	Replace the main board of paper feeder.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C1200	Side registration motor problem <ul style="list-style-type: none"> The LOCK ALM signal has been gone high for 1 second from the time 1 second after the side registration motor started driving. 	Defective side registration motor.	Replace the side registration motor.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C1210	Side registration home position sensor detection error <ul style="list-style-type: none"> The side registration home position sensor does not detect home position of side registration guides. 	Defective side registration home position sensor.	Replace the side registration home position sensor.
		Defective side registration motor.	Replace the side registration motor.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C2000	Main drive motor lock <ul style="list-style-type: none"> The frequency generation pulse which the main drive motor generates to CPU (U2) on the engine controller PCB in normal operation (after self-diagnostics codes 2010 and 2020 are cleared) is not at the correct frequency. 	Defective main drive motor.	Replace the main drive motor.
		Excessive torque for driving drum unit or primary transfer unit. (Overloaded by a damaged gear.)	Check if the drum unit or primary transfer unit rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and main drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
		Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2010	Main drive motor starting error <ul style="list-style-type: none"> No FG (Frequency generation) pulse is entered within the predetermined period since ASIC (U8) on the engine controller PCB has issued a motor activation signal to the main drive motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective main drive motor.	Replace the main drive motor.
		Excessive torque for driving drum unit or primary transfer unit. (Overloaded by a damaged gear.)	Check if the drum unit or primary transfer unit rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and main drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C2020	Main drive motor starting time-out <ul style="list-style-type: none"> The FG (Frequency generation) pulse does not reach the correct frequency since ASIC (U8) on the engine controller PCB has issued a motor activation signal to the main drive motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective main drive motor.	Replace the main drive motor.
		Excessive torque for driving drum unit or primary transfer unit. (Overloaded by a damaged gear.)	Check if the drum unit or primary transfer unit rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and main drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2101	Black developer drive motor lock <ul style="list-style-type: none"> The FG (Frequency generation) pulse which the black developer drive motor generates is not entered at the correct frequency in CPU (U2) on the engine controller PCB during normal operation (after self-diagnostics codes 2111 and 2121 are cleared). 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective black developer drive motor.	Replace the black developer drive motor.
		Excessive torque for driving black developer. (Overloaded by a damaged gear.)	Check if the black developer rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and black developer drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C2102	Color developers drive motor lock <ul style="list-style-type: none"> The FG (Frequency generation) pulse which the color developers drive motor generates is not entered at the correct frequency in ASIC (U8) on the engine controller PCB during normal operation (after self-diagnostics codes 2112 and 2122 are cleared). 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective color developers drive motor.	Replace the color developers drive motor.
		Excessive torque for driving color developers. (Overloaded by a damaged gear.)	Check if the yellow, magenta, and cyan developers rotate smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and color developers drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2111	Black developer drive motor starting error <ul style="list-style-type: none"> No FG (Frequency generation) pulse is entered when ASIC (U7) on the engine controller PCB has issued a motor activation signal to the black developer drive motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective black developer drive motor.	Replace the black developer drive motor.
		Excessive torque for driving black developer. (Overloaded by a damaged gear.)	Check if the black developer rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and main drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C2112	Color developers drive motor starting error <ul style="list-style-type: none"> No FG (Frequency generation) pulse is entered when ASIC (U7) on the engine controller PCB has issued a motor activation signal to the drive motor for the color developers. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective color developers drive motor.	Replace the color developers drive motor.
		Excessive torque for driving color developers. (Overloaded by a damaged gear.)	Check if the yellow, magenta, and cyan developers rotate smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and color developers drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2121	Black developer drive motor starting time-out <ul style="list-style-type: none"> The FG (Frequency generation) pulse does not reach the correct frequency when ASIC (U7) on the engine controller PCB has issued a motor activation signal to the black developer drive motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective black developer drive motor.	Replace the black developer drive motor.
		Excessive torque for driving black developer. (Overloaded by a damaged gear.)	Check if the black developer rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and main drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C2122	Color developers drive motor starting time-out <ul style="list-style-type: none"> The FG (Frequency generation) pulse does not reach the correct frequency when ASIC (U8) on the engine controller PCB has issued a motor activation signal to the drive motor that drives the color developers. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective color developers drive motor.	Replace the color developers drive motor.
		Excessive torque for driving color developers. (Overloaded by a damaged gear.)	Check if the yellow, magenta, and cyan developers rotate smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and color developers drive motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2340	Fuser drive motor driving clock table error <ul style="list-style-type: none"> An error has occurred in the driving clock table on the engine controller PCB that controls the fuser drive motor (a stepping motor). 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
C2500	Paper feed motor lock <ul style="list-style-type: none"> The FG (Frequency generation) pulse which the paper feed motor generates is not entered at the correct frequency in ASIC (U8) on the engine controller PCB during normal operation. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective paper feed motor.	Replace the paper feed motor.
		Excessive torque for driving paper feed unit. (Overloaded by a damaged gear.)	Check if the paper feed unit rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and paper feed motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C2510	Paper feed motor starting error <ul style="list-style-type: none"> No FG (Frequency generation) pulse is entered within the predetermined period when ASIC (U8) on the engine controller PCB has issued a motor activation signal to the paper feed motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective paper feed motor.	Replace the paper feed motor.
		Excessive torque for driving paper feed unit. (Overloaded by a damaged gear.)	Check if the paper feed unit rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and paper feed motor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C2520	Paper feed motor starting time-out <ul style="list-style-type: none"> The FG (Frequency generation) pulse does not reach the correct frequency within the predetermined period when ASIC (U8) on the engine controller PCB has issued a motor activation signal to the paper feed motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective paper feed motor.	Replace the paper feed motor.
		Excessive torque for driving paper feed unit. (Overloaded by a damaged gear.)	Check if the paper feed unit rotates smoothly. Check for broken gears. Replace if any.
		Defective harness between engine controller PCB and main paper feed, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C3100	Scanner carriage problem <ul style="list-style-type: none"> The home position is not correct when the power is turned on or at the start of copying using the bypass table. 	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective scanner motor.	Replace the scanner motor.
		Poor contact in the connector terminals.	Check the connection of connector CN40 on the scanner main PCB and the continuity across the connector terminals. Repair or replace if necessary.
C3200	Exposure lamp problem <ul style="list-style-type: none"> Check the CCD input value for the lighting status of the exposure lamp 100 ms after the exposure lamp is lit and the carriage is moved to the shading position. If the exposure lamp does not light, turn off the lamp. After 500 ms, light the lamp again and, a further 500 ms later, check the CCD input. The exposure lamp does not light after 5 retries. 	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
		Defective exposure lamp or inverter PCB.	Replace the exposure lamp or inverter PCB.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.
		Poor contact of the connector terminals.	Check the connection of connector CN40 on the scanner main PCB, and the continuity across the connector terminals. Repair or replace if necessary.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C4000	Polygon motor error <ul style="list-style-type: none"> The READY signal is not entered within the predetermined period when CPU (U2) on the engine controller PCB has issued a motor activation signal to the laser scanner unit. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective laser scanner unit (PD PCB).	Replace the laser scanner unit (see page 1-6-30).
		Defective harness between engine controller PCB and laser scanner unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C4200	Horizontal synchronized signal (PD) detection error <ul style="list-style-type: none"> The horizontal synchronization signal (PD) is not entered by the laser scanner unit when ASIC (U7) on the engine controller PCB has issued a laser activation signal. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective laser scanner unit (PD PCB).	Replace the laser scanner unit (see page 1-6-30).
		Defective harness between engine controller PCB and laser scanner unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C5120	Abnormal separation charger high voltage leak current <ul style="list-style-type: none"> ASIC (U8) on the engine controller PCB has detected a excessive leakage current in the separation charger high voltage supply. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective separation charger high voltage unit.	Replace the separation charger high voltage unit (see page 1-6-66).
		Defective harness between engine controller PCB and separation charger high voltage unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C5300	Cleaning lamp broken detection <ul style="list-style-type: none"> The current at the correct level is not detected when ASIC (U8) on the engine controller PCB generates the signal to activate the cleaning lamp. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective drum unit (cleaning lamp or drum PCB).	Replace the drum unit (see page 1-6-38).
		Defective harness between engine controller PCB and drum unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C6000	Heat roller heating time-out 1 <ul style="list-style-type: none"> The temperature on the heat roller does not rise within the predetermined period when ASIC (U8) on the engine controller PCB has turned on the upper heater lamp. This is detected when the upper heater lamp is turned on. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective upper fuser heater.	Replace the fuser unit (upper fuser heater). See page 1-6-53.
		Defective upper thermostat.	Replace the fuser unit (upper thermostat). See page 1-6-52.
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective upper fuser thermistor, or fitting is not proper.	Replace the fuser unit (upper fuser thermistor). See page 1-6-50.
		Defective power supply unit.	Replace the power supply unit (see page 1-6-62).
		Defective harness between engine controller PCB and fuser unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6010	Heat roller heating time-out 2 <ul style="list-style-type: none"> The temperature on the heat roller does not reach the correct temperature within the predetermined period after self-diagnostic code 6000 is cleared. The period for detection is longer than the condition for self-diagnostics code 6000. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective upper fuser heater.	Replace the fuser unit (upper fuser heater). See page 1-6-53.
		Defective upper thermostat.	Replace the fuser unit (upper thermostat). See page 1-6-52.
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective upper fuser thermistor, or fitting is not proper.	Replace the fuser unit (upper fuser thermistor). See page 1-6-50.
		Defective AC power source. (Abnormal low voltage)	Connect to the proper AC power source.
		Defective harness between engine controller PCB and fuser unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C6020	Heat roller abnormal high temperature <ul style="list-style-type: none"> The temperature on the heat roller has risen up to the abnormal temperature. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective upper fuser heater.	Replace the fuser unit (upper fuser heater). See page 1-6-53.
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective upper fuser thermistor.	Replace the fuser unit (upper fuser thermistor). See page 1-6-50.
		Defective power supply unit.	Replace the power supply unit (see page 1-6-62).
		Defective AC power source. (Abnormal high voltage)	Connect to the proper AC power source.
		Defective harness between engine controller PCB and fuser unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6030	Upper fuser thermistor broken detection <ul style="list-style-type: none"> No temperature detection output is obtained from the upper fuser thermistor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective upper fuser thermistor, or improper fitting.	Replace the fuser unit (upper fuser thermistor). See page 1-6-50.
		Defective harness between engine controller PCB and fuser unit (upper fuser thermistor), or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C6040	Upper fuser thermistor abnormal temperature detection <ul style="list-style-type: none"> The temperature detection output from the upper fuser thermistor is abnormal change. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective upper fuser thermistor, or fitting is not proper.	Replace the fuser unit (upper fuser thermistor). See page 1-6-50.
		Defective harness between engine controller PCB and fuser unit (upper fuser thermistor), or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6100	Press/heat roller heating time-out 1 • The temperature on the press/heat roller does not rise within the predetermined period when ASIC (U8) on the engine controller PCB has turned on the lower heater lamp. This is detected when the lower heater lamp is turned on.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective lower fuser heater.	Replace the fuser unit (lower fuser heater). See page 1-6-53.
		Defective lower thermostat.	Replace the fuser unit (lower thermostat). See page 1-6-52.
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective lower fuser thermistor, or fitting is not proper.	Replace the fuser unit (lower fuser thermistor). See page 1-6-50.
		Defective power supply unit.	Replace the power supply unit (see page 1-6-62).
		Defective harness between engine controller PCB and fuser unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C6110	Press/heat roller heating time-out 2 • The temperature on the press/heat roller does not reach the correct temperature within the predetermined period after self-diagnostic code 6100 is cleared. The period for detection is longer than the condition for self-diagnostics code 6100.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective lower fuser heater.	Replace the fuser unit (lower fuser heater). See page 1-6-53.
		Defective lower thermostat.	Replace the fuser unit (lower thermostat). See page 1-6-52.
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective lower fuser thermistor, or fitting is not proper.	Replace the fuser unit (upper fuser thermistor). See page 1-6-50.
		Defective AC power source. (Abnormal low voltage)	Connect to the proper AC power source.
		Defective harness between engine controller PCB and fuser unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6120	Press/heat roller abnormal high temperature <ul style="list-style-type: none"> The temperature on the press/heat roller has risen up to the predetermined abnormal temperature. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective lower fuser heater.	Replace the fuser unit (lower fuser heater). See page 1-6-53.
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective lower fuser thermistor.	Replace the lower fuser thermistor (see page 1-6-50).
		Defective power supply unit.	Replace the power supply unit (see page 1-6-62).
		Defective AC power source (abnormal high voltage).	Connect to the proper AC power source.
		Defective harness between engine controller PCB and fuser unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C6130	Lower fuser thermistor broken detection <ul style="list-style-type: none"> The temperature detection is not obtained from the lower fuser thermistor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective lower fuser thermistor, or improper fitting.	Replace the fuser unit (lower fuser thermistor). See page 1-6-50.
		Defective harness between engine controller PCB and fuser unit (lower fuser thermistor), or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C6140	Lower fuser thermistor abnormal temperature detection <ul style="list-style-type: none"> The temperature detection output from the lower fuser thermistor is out of the normal range. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective fuser PCB.	Replace the fuser unit (fuser PCB).
		Defective lower fuser thermistor, or fitting is not proper.	Replace the fuser unit (lower fuser thermistor). See page 1-6-50.
		Defective harness between engine controller PCB and fuser unit (lower fuser thermistor), or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C6430	Oil roller unit fuse break error <ul style="list-style-type: none"> The engine controller PCB is not able to cut the fuse on the oil roller unit. 	Defective oil roller unit fuse.	Replace the oil roller unit.
		Defective harness between engine controller PCB and oil roller unit detection sensor, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7001	Black toner feed motor lock <ul style="list-style-type: none"> The revolution of the black toner feed motor does not reach the predetermined revolution within the predetermined period when ASIC (U8) on the engine controller PCB activates the black toner feed motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective black developer (Black developer PCB).	Replace the black developer (see page 1-6-40).
		Defective harness between engine controller PCB and black developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7002	Cyan toner feed motor lock <ul style="list-style-type: none"> The revolution of the cyan toner feed motor does not reach the predetermined revolution within the predetermined period when ASIC (U8) on the engine controller PCB activates the cyan toner feed motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective cyan developer (cyan developer PCB).	Replace the cyan developer (see page 1-6-40).
		Defective harness between engine controller PCB and cyan developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7003	Magenta toner feed motor lock <ul style="list-style-type: none"> The revolution of the magenta toner feed motor does not reach the predetermined revolution within the predetermined period when ASIC (U8) on the engine controller PCB activates the magenta toner feed motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective magenta developer (magenta developer PCB).	Replace the magenta developer (see page 1-6-40).
		Defective harness between engine controller PCB and magenta developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7004	Yellow toner feed motor lock <ul style="list-style-type: none"> The revolution of the yellow toner feed motor does not reach the predetermined revolution within the predetermined period when ASIC (U8) on the engine controller PCB activates the yellow toner feed motor. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective yellow developer (yellow developer PCB).	Replace the yellow developer (see page 1-6-40).
		Defective harness between engine controller PCB and yellow developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7101	Black T/C sensor toner density detection error • A normal toner density signal is not entered in the A/D port of CPU (U2) on the engine controller PCB.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective black developer (black developer PCB or black T/C sensor).	Replace the black developer (see page 1-6-40).
		Defective black developer (black toner feed motor does not rotate in the correct revolution) .	Replace the black developer (see page 1-6-40).
		Defective harness between engine controller PCB and black developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7102	Cyan T/C sensor toner density detection error • A normal toner density signal is not entered in the A/D port of CPU (U2) on the engine controller PCB.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective cyan developer (cyan developer PCB or cyan T/C sensor).	Replace the cyan developer (see page 1-6-40).
		Defective cyan developer (cyan toner feed motor does not rotate in the correct revolution) .	Replace the cyan developer (see page 1-6-40).
		Defective harness between engine controller PCB and cyan developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7103	Magenta T/C sensor toner density detection error • A normal toner density signal is not entered in the A/D port of CPU (U2) on the engine controller PCB.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective magenta developer (magenta developer PCB or magenta T/C sensor).	Replace the magenta developer (see page 1-6-40).
		Defective magenta developer (magenta toner feed motor does not rotate in the correct revolution) .	Replace the magenta developer (see page 1-6-40).
		Defective harness between engine controller PCB and magenta developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7104	Yellow T/C sensor toner density detection error • A normal toner density signal is not entered in the A/D port of CPU (U2) on the engine controller PCB.	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective yellow developer (yellow developer PCB or yellow T/C sensor).	Replace the yellow developer (see page 1-6-40).
		Defective yellow developer (yellow toner feed motor does not rotate in the correct revolution) .	Replace the yellow developer (see page 1-6-40).
		Defective harness between engine controller PCB and yellow developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7301	Intermediate toner hopper toner feed error <ul style="list-style-type: none"> Black toner is not fed in the intermediate toner hopper in the black toner developer from the black toner container within the predetermined period. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective black toner empty sensor PCB.	Replace the black toner empty sensor PCB.
		Defective black toner feed clutch.	Replace the black toner feed clutch.
		Poor contact of the black toner feed clutch.	Check the insertion of connectors.
		Defective feed drive PCB.	Replace the feed drive PCB.
		Defective harness between engine controller PCB and black developer, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
		Defective harness between engine controller PCB and feed drive PCB, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7700	Offset drum sensor detection timeout error <ul style="list-style-type: none"> When the drum home position is to be detected, the input level from the offset drum sensor to ASIC (U7) of the engine controller PCB has been gone high for 5 seconds. 	Defective drum PCB.	Replace the drum unit (see page 1-6-38).
		Defective engine controller PCB.	Replace the engine controller PCB (see page 1-6-61).
		Defective harness between engine controller PCB and drum unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C7710	Offset drum sensor detection error <ul style="list-style-type: none"> When the drum home position is to be detected, the input level from the offset drum sensor to ASIC (U7) of the engine controller PCB has been gone low for 4 seconds. 	Defective drum PCB.	Replace the drum unit (see page 1-6-38).
		Defective engine controller PCB.	Replace the engine controller PCB (see page 1-6-61).
		Defective harness between engine controller PCB and drum unit, or poor contact of the connector terminals.	Check the continuity of the harness and the insertion of connectors.
C7800	Broken external temperature thermistor wire <ul style="list-style-type: none"> The thermistor output value is 3.8 V or more for 500 ms continuously. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective humidity/temperature sensor.	Replace the humidity/temperature sensor.
C7810	Short-circuited external temperature thermistor <ul style="list-style-type: none"> The thermistor input value is 0.4 V or less for 500 ms continuously. 	Defective engine controller PCB.	Replace the engine controller PCB and check for correct operation (see page 1-6-61).
		Defective humidity/temperature sensor.	Replace the humidity/temperature sensor.
C8000	Sorter/document finisher* incorrect type problem <ul style="list-style-type: none"> The document finisher of the type other than the finishers supported by this machine is connected. 	Defective scanner main PCB.	Replace the scanner main PCB and check for correct operation (see page 1-6-60).
		The document finisher of the different type is connected.	Install the proper type of the document finisher.
C8010	Document finisher* paper conveying motor problem <ul style="list-style-type: none"> The paper conveying motor lockup signal is detected for 0.5 s or longer. 	Poor contact in the paper conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The paper conveying motor malfunctions.	Replace the paper conveying motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8030	Document finisher* paper conveying belt problem <ul style="list-style-type: none"> An on-to-off or off-to-on state change of the paper conveying belt home position sensor is not detected within 2 s of the paper conveying belt clutch turning on. 	The paper conveying belt is out of phase.	Adjust the paper conveying belt so that it is in phase and check for correct operation.
		The paper conveying belt clutch malfunctions.	Replace the paper conveying belt clutch and check for correct operation.
		The paper conveying belt home position sensor malfunctions.	Replace the paper conveying belt home position sensor and check for correct operation.
		The paper conveying belt home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The internal tray is incorrectly inserted.	Check whether the internal tray unit or front cover catches are damaged.
C8140	Document finisher* tray elevation motor problem <ul style="list-style-type: none"> The sort tray is not detected in the home position within 30 s of the start of the tray elevation motor rotation. 	Poor contact in the tray elevation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The tray elevation motor malfunctions.	Replace the tray elevation motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8170	Document finisher* front side registration motor problem <ul style="list-style-type: none"> If the front side registration home position sensor is on in initialization, the sensor does not turn off within 570 ms of starting initialization. If the front side registration home position sensor is off in initialization, the sensor does not turn on within 3180 ms of starting initialization. 	The front side registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front side registration motor malfunctions.	Replace the front side registration motor and check for correct operation.
		The front side registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front side registration home position sensor malfunctions.	Replace the front side registration home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8180	Document finisher* rear side registration motor problem <ul style="list-style-type: none"> If the rear side registration home position sensor is on in initialization, the sensor does not turn off within 570 ms of starting initialization. If the rear side registration home position sensor is off in initialization, the sensor does not turn on within 2880 ms of starting initialization. 	The rear side registration motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The rear side registration motor malfunctions.	Replace the rear side registration motor and check for correct operation.
		The rear side registration home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The rear side registration home position sensor malfunctions.	Replace the rear side registration home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8210	Document finisher* front stapler problem <ul style="list-style-type: none"> The front stapler home position sensor does not change state from non-detection to detection within 200 ms of the start of front stapler motor counterclockwise (forward) rotation. During initialization, the front stapler home position sensor does not change state from non-detection to detection within 600 ms of the start of front stapler motor clockwise (reverse) rotation. 	The front stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The front stapler malfunctions. <ul style="list-style-type: none"> a) The front stapler is blocked with a staple. b) The front stapler is broken. 	<ul style="list-style-type: none"> a) Remove the front stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the front stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

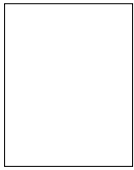
*: Optional

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8220	Document finisher* rear stapler problem <ul style="list-style-type: none"> • The rear stapler home position sensor does not change state from non-detection to detection within 200 ms of the start of rear stapler motor counterclockwise (forward) rotation. • During initialization, the rear stapler home position sensor does not change state from non-detection to detection within 600 ms of the start of rear stapler motor clockwise (reverse) rotation. 	The rear stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		The rear stapler malfunctions. <ul style="list-style-type: none"> a) The rear stapler is blocked with a staple. b) The rear stapler is broken. 	<ul style="list-style-type: none"> a) Remove the front stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the front stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

*: Optional

1-5-3 Image formation problems

(1) No image appears (entirely white).



See page 1-5-53

(2) No image appears (entirely black).



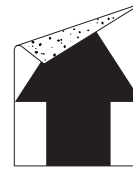
See page 1-5-54

(3) Dirty on the top edge.



See page 1-5-54

(4) Dirty on the back side.



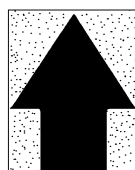
See page 1-5-55

(5) Image is too light.



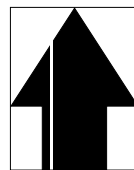
See page 1-5-55

(6) Background is visible.



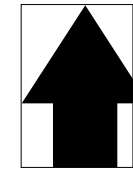
See page 1-5-56

(7) A white line appears longitudinally.



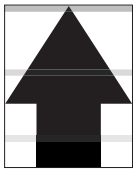
See page 1-5-56

(8) A black line appears longitudinally.



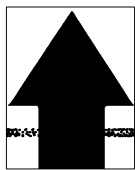
See page 1-5-57

(9) Oily streaks appear at the top of the page longitudinally.



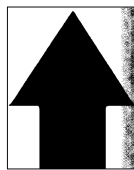
See page 1-5-57

(10) A black line appears laterally.



See page 1-5-57

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



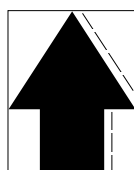
See page 1-5-58

(12) Black dots appear on the image.



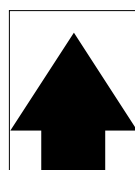
See page 1-5-58

(13) Image is blurred.



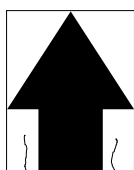
See page 1-5-58

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



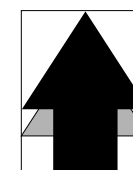
See page 1-5-59

(15) Paper creases.



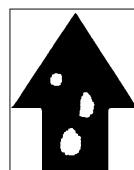
See page 1-5-59

(16) Offset occurs.



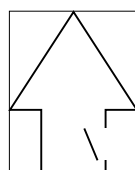
See page 1-5-59

(17) Image is partly missing.



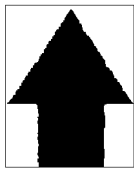
See page 1-5-60

(18) Fixing is poor.



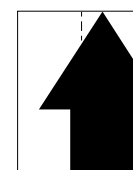
See page 1-5-60

(19) Image is out of focus.



See page 1-5-60

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



See page 1-5-61

(1) No image appears (entirely white).



Causes

1. No transfer charging.
2. No LSU laser beam output.
3. No developing.

Causes	Check procedures/corrective measures
1. No transfer charging.	
A. Defective secondary transfer unit.	Replace the secondary transfer unit (see page 1-6-45).
B. Secondary transfer unit shift clutch installed or operating incorrectly.	Check the installation position and operation of the secondary transfer unit shift clutch. If the either operates incorrectly, replace it.
2. No LSU laser beam output.	
A. Defective laser scanner unit.	Replace the laser scanner unit (see page 1-6-30).
B. Defective scanner main PCB.	Replace the scanner main PCB (see page 1-6-60).
C. Defective harness between scanner main PCB and laser scanner unit.	Replace the harness.
3. No developing.	
A. Yellow, magenta, cyan, and black magnet solenoids are not driven.	Replace the main drive PCB.

(2) No image appears (entirely black).

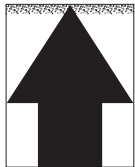


Causes

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

Causes	Check procedures/corrective measures
1. No main charging.	
A. Poor insertion main charger unit.	Reinstall the main charger unit.
B. Broken main charger wire.	Replace the main charger unit.
C. Leaking main charger housing.	Clean the main charger wire, grid and shield.
D. Defective engine controller PCB.	Replace the engine controller PCB (see page 1-6-61).
E. Defective drum unit.	Replace the drum PCB (see page 1-6-38).
2. Exposure lamp fails to light.	
A. Defective exposure lamp.	Replace the exposure lamp (see page 1-6-7).
B. Defective inverter PCB.	Replace the inverter PCB.
C. Defective scanner relay PCB.	Replace the scanner relay PCB.
D. Defective scanner main PCB.	Replace the scanner main PCB (see page 1-6-60).

(3) Dirty on the top edge.

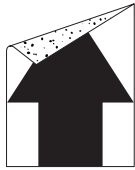


Causes

1. Dirty transfer roller.
2. Defective cleaning brush unit operation.

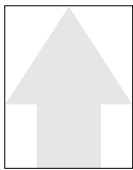
Causes	Check procedures/corrective measures
1. Dirty transfer roller.	Copy several pages.
2. Defective cleaning brush unit operation.	Replace the cleaning brush unit (see page 1-6-39).

- (4) Dirty on the back side. **Causes**
 1. Dirty conveying belts.



Causes	Check procedures/corrective measures
1. Dirty conveying belts.	Clean the conveying belts.

- (5) Image is too light. **Causes**
 1. Defective developing bias output.
 2. Insufficient toner.
 3. Dirty or flawed drum.
 4. Dirty main charger wire.
 5. Defective scanner main PCB.

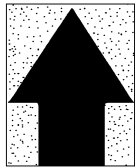


Causes	Check procedures/corrective measures
1. Defective developing bias output.	
A. Defective developer.	Check the image. If any color appears defect, replace the developer of cause.
B. Defective drum unit.	Replace the drum unit (see page 1-6-38).
C. Defective developing/cleaning brush bias high voltage PCB.	Replace developing/cleaning brush bias high voltage PCB (see page 1-6-64).
D. Defective engine controller PCB.	Replace the engine controller PCB (see page 1-6-61).
2. Insufficient toner.	If the display shows the message requesting toner replenishment, replace the container.
3. Dirty or flawed drum.	Perform the drum surface refreshing. If the drum is flawed, replace the drum unit (see page 1-6-38).
4. Dirty main charger wire.	Clean the main charger wire or, if it is extremely dirty, replace it.
5. Defective scanner main PCB.	Replace the scanner main PCB (see page 1-6-60).

(6) Background is visible.

Causes

1. Defective developing bias output.
2. Defective cleaning brush bias.
3. Dirty main charger wire.

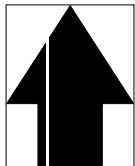


Causes	Check procedures/corrective measures
1. Defective developing bias output.	
A. Defective developer.	Replace the developer (see page 1-6-40).
B. Defective drum unit.	Replace the drum unit (see page 1-6-38).
C. Defective developing/cleaning brush bias high voltage PCB.	Replace developing/cleaning brush bias high voltage PCB (see page 1-6-64).
D. Defective engine controller PCB.	Replace the engine controller PCB (see page 1-6-61).
2. Defective cleaning brush bias.	Replace the cleaning brush unit (see page 1-6-39).
3. Dirty main charger wire.	Clean the main charger wire or, if it is extremely dirty, replace it.

(7) A white line appears longitudinally.

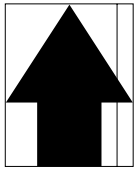
Causes

1. Foreign object in one of the developers.
2. Dirty shading plate.



Causes	Check procedures/corrective measures
1. Foreign object in one of the developers.	Check the image. If the white line appears on a particular page, replace the developer for that color.
2. Dirty shading plate.	Clean the shading plate.

(8) A black line appears longitudinally.

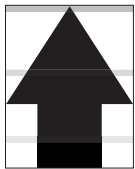


Causes

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

Causes	Check procedures/corrective measures
1. Dirty contact glass.	Clean the contact glass.
2. Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit (see page 1-6-38).
3. Deformed or worn cleaning blade.	Replace the drum unit (see page 1-6-38).
4. Dirty scanner mirror.	Clean the scanner mirror.
5. Dirty main charger wire.	Clean the main charger wire or, if it is extremely dirty, replace it.

(9) Oily streaks appear at the top of the page longitudinally.

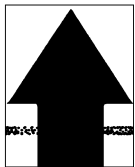


Causes

1. Oil roller unit is new or after the copier has been left unused for a prolonged period of time.

Causes	Check procedures/corrective measures
1. Oil roller unit is new or after the copier has been left unused for a prolonged period of time.	Copy several pages until the streaks disappear.

(10) A black line appears laterally.



Causes

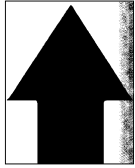
1. Flawed drum.
2. Leaking main charger housing.

Causes	Check procedures/corrective measures
1. Flawed drum.	Replace the drum unit (see page 1-6-38).
2. Leaking main charger housing.	Clean the main charger wire, grid and shield.

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

Causes

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

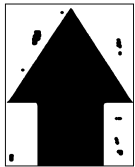


Causes	Check procedures/corrective measures
1. Dirty main charger wire.	Clean the wire or, if it is extremely dirty, replace it.
2. Defective exposure lamp.	Check if the exposure lamp light is distributed evenly. If not, replace the exposure lamp (see page 1-6-17).

(12) Black dots appear on the image.

Causes

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

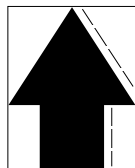


Causes	Check procedures/corrective measures
1. Dirty or flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit (see page 1-6-38).
2. Dirty contact glass.	Clean the contact glass.
3. Deformed or worn cleaning blade.	Replace the drum unit (see page 1-6-38).

(13) Image is blurred.

Causes

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

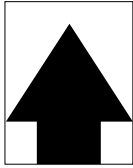


Causes	Check procedures/corrective measures
1. Scanner moves erratically.	Check if there is any foreign matter on the front and rear scanner rails. If any, remove it.
2. Deformed press/heat roller.	Replace the heat/press roller (see page 1-6-54).
3. Paper conveying section drive problem.	Check the gears and belts and, if necessary, grease them.

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

Causes

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

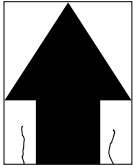


Causes	Check procedures/corrective measures
1. Misadjusted leading edge registration.	Readjust the leading edge registration (see page 1-6-13).
2. Misadjusted scanner leading edge registration.	Readjust the scanner leading edge registration (see page 1-6-34).

(15) Paper creases.

Causes

1. Paper curled.
2. Paper damp.

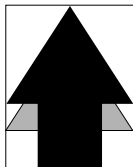


Causes	Check procedures/corrective measures
1. Paper curled.	Check the paper storage conditions. Replace paper.
2. Paper damp.	Check the paper storage conditions. Replace paper.

(16) Offset occurs.

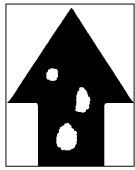
Causes

1. Defective cleaning blade.
2. Defective fuser section.



Causes	Check procedures/corrective measures
1. Defective cleaning blade.	Replace the drum unit (see page 1-6-38).
2. Defective fuser section.	Check the heat and press/heat roller, and replace it if any (see page 1-6-54).

(17) Image is partly missing.

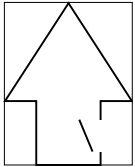


Causes

1. Paper damp.
2. Paper creased.
3. Drum condensation.
4. Flawed drum.

Causes	Check procedures/corrective measures
1. Paper damp.	Check the paper storage conditions.
2. Paper creased.	Replace the paper.
3. Drum condensation.	Perform the drum refresh operation.
4. Flawed drum.	Perform the drum refresh operation. If the drum is flawed, replace the drum unit (see page 1-6-38).

(18) Fixing is poor.

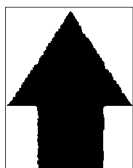


Causes

1. Wrong type of paper.
2. Defective pressure springs for the heat and press/heat rollers.
4. Flawed heat or press/heat roller.

Causes	Check procedures/corrective measures
1. Wrong type of paper.	Check if the paper meets specifications. Replace paper.
2. Defective pressure springs for the heat and press/heat rollers.	Secure the press/heat roller pressure screws (see page 1-3-54).
3. Flawed heat or press/heat roller.	Replace the heat or press/heat roller (see page 1-6-54).

(19) Image is out of focus.



Causes

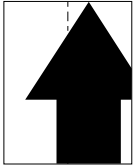
1. Defective image scanner unit.
2. Drum condensation.

Causes	Check procedures/corrective measures
1. Defective image scanner unit.	Replace the image scanning unit (see page 1-6-28).
2. Drum condensation.	Perform the dru refreshment.

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

Causes

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



Causes	Check procedures/corrective measures
1. Misadjusted center line of image printing.	Readjust the center line of image printing (see page 1-6-14).
2. Misadjusted scanner center line.	Readjust the scanner center line (see page 1-6-35).
3. Original placed incorrectly.	Place the original correctly.

1-5-4 Electrical problems

Problem	Causes	Check procedures/corrective measures
(1) The machine does not operate when the main switch is turned on.	No electricity at the power outlet.	Measure the input voltage.
	The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	The front cover is not closed completely.	Check the front 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 interlock switch.	Check for continuity across the contacts of each switch. If none, replace the switch.
	Defective power source PCB.	With AC present, check for 24 V DC at CN12-1 and 5 V DC at CN12-3 on the power source PCB. If none, replace the power source PCB.
(2) The main drive motor does not operate (C2000).	Poor contact in the main drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken main drive motor gear.	Check visually and replace the main drive motor if necessary.
	Defective main drive motor.	Run maintenance item U030 and check if the main drive motor operates when YC7-7, YC7-8 and YC7-9 on the engine controller PCB go low. If not, replace the main drive motor.
	Defective engine controller PCB.	Run maintenance item U030 and check if YC7-7, YC7-8 and YC7-9 on the engine controller PCB go low. If not, replace the engine controller PCB.
(3) The paper feed motor does not operate (C2500).	Poor contact in the paper feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper feed motor gear.	Check visually and replace the paper feed motor if necessary.
	Defective paper feed motor.	Run maintenance item U030 and check if the paper feed motor operates when YC9-7, YC9-8 and YC9-9 on the engine controller PCB go low. If not, replace the paper feed motor.
	Defective engine controller PCB.	Run maintenance item U030 and check if YC9-7, YC9-8 and YC9-9 on the engine controller PCB go low. If not, replace the engine controller PCB.

Problem	Causes	Check procedures/corrective measures
(4) The fuser unit drive motor does not operate.	Poor contact in the fuser unit drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken fuser unit drive motor gear.	Check visually and replace the fuser unit drive motor if necessary.
	Defective fuser unit drive motor.	Run maintenance item U030 and check if the fuser unit drive motor operates when YC852-1, YC852-3, YC852-4 and YC852-6 on the paper feeder/options relay PCB go low. If not, replace the fuser unit drive motor.
	Defective paper feeder/options relay PCB.	Run maintenance item U030 and check if the fuser unit drive motor operates when YC29-12, YC29-14, YC29-21 and YC29-24 on the engine controller PCB go low. If not, replace the fuser unit drive motor.
(5) The black developer drive motor does not operate (C2101).	Poor contact in the black developer drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken black developer drive motor gear.	Check visually and replace the black developer drive motor if necessary.
	Defective black developer drive motor.	Run maintenance item U030 and check if the black developer drive motor operates when YC30-7, YC30-8 and YC30-9 on the engine controller PCB go low. If not, replace the black developer drive motor.
	Defective engine controller PCB.	Run maintenance item U030 and check if YC30-7, YC30-8 and YC30-9 on the engine controller PCB go low. If not, replace the engine controller PCB.
(6) The color developers drive motor does not operate (C2102).	Poor contact in the color developers drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken color developers drive motor gear.	Check visually and replace the color developers drive motor if necessary.
	Defective color developers drive motor.	Run maintenance item U030 and check if the color developers drive motor operates when YC8-7, YC8-8 and YC8-9 on the engine controller PCB go low. If not, replace the color developers drive motor.
	Defective engine controller PCB.	Run maintenance item U030 and check if YC8-7, YC8-8 and YC8-9 on the engine controller PCB go low. If not, replace the engine controller PCB.
(7) The upper intermediate feed motor does not operate.	Poor contact in the upper intermediate feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken upper intermediate feed motor gear.	Check visually and replace the upper intermediate feed motor if necessary.
	Defective upper intermediate feed motor.	Run maintenance item U030 and check if the upper intermediate feed motor operates when YC854-6, YC854-7 and YC854-8 on the paper feeder/options relay PCB go low. If not, replace the upper intermediate feed motor.
	Defective paper feeder/options relay PCB.	Run maintenance item U030 and check if YC854-6, YC854-7 and YC854-8 on the paper feeder/options relay PCB go low. If not, replace the paper feeder/options relay PCB.

Problem	Causes	Check procedures/corrective measures
(8) The lower intermediate feed motor does not operate.	Poor contact in the lower intermediate feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken lower intermediate feed motor gear.	Check visually and replace the lower intermediate feed motor if necessary.
	Defective lower intermediate feed motor.	Run maintenance item U030 and check if the lower intermediate feed motor operates when YC854-6, 7 and 8 on the paper feeder/options relay PCB goes low. If not, replace the lower intermediate feed motor.
	Defective paper feeder/options relay PCB.	Run maintenance item U030 and check if YC854-6, 7 and 8 on the paper feeder/options relay PCB goes low. If not, replace the paper feeder/options relay PCB.
(9) The duplexer drive motor does not operate.	Poor contact in the duplexer drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken duplexer drive motor gear.	Check visually and replace the duplexer drive motor if necessary.
	Defective duplexer drive motor.	Run maintenance item U030 and check if the duplexer drive motor operates when YC854-6, 7 and 8 on the paper feeder/options relay PCB goes low. If not, replace the duplexer drive motor.
	Defective paper feeder/options relay PCB.	Run maintenance item U030 and check if YC854-6, 7 and 8 on the paper feeder/options relay PCB goes low. If not, replace the paper feeder/options relay PCB.
(10) The yellow toner feed motor does not operate.	Broken yellow toner feed motor coil.	Check for continuity across the coil. If none, replace the yellow toner feed motor.
	Poor contact in the yellow toner feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(11) The magenta toner feed motor does not operate.	Broken magenta toner feed motor coil.	Check for continuity across the coil. If none, replace the magenta toner feed motor.
	Poor contact in the magenta toner feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(12) The cyan toner feed motor does not operate.	Broken cyan toner feed motor coil.	Check for continuity across the coil. If none, replace the cyan toner feed motor.
	Poor contact in the cyan toner feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(13) The black toner feed motor does not operate.	Broken black toner feed motor coil.	Check for continuity across the coil. If none, replace the black toner feed motor.
	Poor contact in the black toner feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.

Problem	Causes	Check procedures/corrective measures
(14) The face-down unit fan motor does not operate.	Broken face-down unit fan motor coil.	Check for continuity across the coil. If none, replace the face-down unit fan motor.
	Poor contact in the face-down unit fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(15) The power supply unit fan motor does not operate.	Broken power supply unit fan motor coil.	Check for continuity across the coil. If none, replace the power supply unit fan motor.
	Poor contact in the power supply unit fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(16) The main controller box fan motor does not operate.	Broken main controller box fan motor coil.	Check for continuity across the coil. If none, replace the main controller box fan motor.
	Poor contact in the main controller box fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(17) The fuser unit fan motor does not operate.	Broken fuser unit fan motor coil.	Check for continuity across the coil. If none, replace the fuser unit fan motor.
	Poor contact in the fuser unit fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(18) Paper conveying fan motor 1 does not operate.	Broken paper conveying fan motor 1 coil.	Check for continuity across the coil. If none, replace paper conveying fan motor 1.
	Poor contact in paper conveying fan motor 1 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(19) Paper conveying fan motor 2 does not operate.	Broken paper conveying fan motor 2 coil.	Check for continuity across the coil. If none, replace paper conveying fan motor 2.
	Poor contact in paper conveying fan motor 2 connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(20) The scanner motor does not operate.	Broken scanner motor coil.	Check for continuity across the coil. If none, replace the scanner motor.
	Poor contact in the scanner motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(21) The electric component unit fan motor does not operate.	Broken electric component unit fan motor coil.	Check for continuity across the coil. If none, replace the electric component unit fan motor.
	Poor contact in the electric component unit fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.

Problem	Causes	Check procedures/corrective measures
(22) The paper feed clutch does not operate.	Broken paper feed clutch coil.	Check for continuity across the coil. If none, replace the paper feed clutch.
	Poor contact in the paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC24-6 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective feed drive PCB.	Run maintenance item U032 and check if YC705-2 on the feed drive PCB goes low. If not, replace the feed drive PCB.
(23) The bypass paper feed clutch does not operate.	Broken bypass paper feed clutch coil.	Check for continuity across the coil. If none, replace the bypass paper feed clutch.
	Poor contact in the bypass paper feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC28-8 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective bypass feed PCB.	Run maintenance item U032 and check if YC902-2 on the bypass feed PCB goes low. If not, replace the bypass feed PCB.
(24) The registration clutch does not operate.	Broken registration clutch coil.	Check for continuity across the coil. If none, replace the registration clutch.
	Poor contact in the registration clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC24-8 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective feed drive PCB.	Run maintenance item U032 and check if YC704-2 on the feed drive PCB goes low. If not, replace the feed drive PCB.
(25) The yellow developer drive clutch does not operate.	Broken yellow developer drive clutch coil.	Check for continuity across the coil. If none, replace the yellow developer drive clutch.
	Poor contact in the yellow developer drive clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC23-6 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective yellow developer PCB.	Run maintenance item U032 and check if YC915-2 on the yellow developer PCB goes low. If not, replace the yellow developer PCB.

Problem	Causes	Check procedures/corrective measures
(26) The magenta developer drive clutch does not operate.	Broken magenta developer drive clutch coil.	Check for continuity across the coil. If none, replace the magenta developer drive clutch.
	Poor contact in the magenta developer drive clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC23-13 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective magenta developer PCB.	Run maintenance item U032 and check if YC635-2 on the magenta developer PCB goes low. If not, replace the magenta developer PCB.
(27) The cyan developer drive clutch does not operate.	Broken cyan developer drive clutch coil.	Check for continuity across the coil. If none, replace the cyan developer drive clutch.
	Poor contact in the cyan developer drive clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC22-7 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective cyan developer PCB.	Run maintenance item U032 and check if YC635-2 on the cyan developer PCB goes low. If not, replace the cyan developer PCB.
(28) The black developer drive clutch does not operate.	Broken black developer drive clutch coil.	Check for continuity across the coil. If none, replace the black developer drive clutch.
	Poor contact in the black developer drive clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U032 and check if YC22-12 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective black developer PCB.	Run maintenance item U032 and check if YC655-2 on the cyan developer PCB goes low. If not, replace the black developer PCB.
(29) The duplexer feed clutch does not operate.	Broken duplexer feed clutch coil.	Check for continuity across the coil. If none, replace the duplexer feed clutch.
	Poor contact in the duplexer feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective paper feeder/options relay PCB.	Run maintenance item U030 and check if YC854-6, YC854-7 and YC854-8 on the paper feeder/options relay PCB go low. If not, replace the paper feeder/options relay PCB.

Problem	Causes	Check procedures/corrective measures
(30) The duplexer refeed clutch does not operate.	Broken duplexer refeed clutch coil.	Check for continuity across the coil. If none, replace the duplexer refeed clutch.
	Poor contact in the duplexer refeed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective paper feeder/options relay PCB.	Run maintenance item U030 and check if YC854-6, YC854-7 and YC854-8 on the paper feeder/options relay PCB go low. If not, replace the paper feeder/options relay PCB.
(31) The secondary transfer unit shift clutch does not operate.	Broken secondary transfer unit shift clutch coil.	Check for continuity across the coil. If none, replace the secondary transfer unit shift clutch.
	Poor contact in the secondary transfer unit shift clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC24-16 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective feed drive PCB.	Run maintenance item U033 and check if YC702-14 on the feed drive PCB goes low. If not, replace the feed drive PCB.
	Defective feed PCB.	Run maintenance item U033 and check if YC804-2 on the feed PCB goes low. If not, replace the feed PCB.
(32) The cleaning brush unit drive clutch does not operate.	Broken cleaning brush unit drive clutch coil.	Check for continuity across the coil. If none, replace the cleaning brush unit drive clutch.
	Poor contact in the cleaning brush unit drive clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(33) Transfer charging is not performed.	Broken black toner feed clutch coil.	Check for continuity across the coil. If none, replace the black toner feed clutch.
	Poor contact in the black toner feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(34) The yellow developer magnet solenoid does not operate.	Broken yellow developer magnet solenoid coil.	Check for continuity across the coil. If none, replace the yellow developer magnet solenoid.
	Poor contact in the yellow developer magnet solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC27-3 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective main drive PCB.	Run maintenance item U033 and check if YC751-2 on the main drive PCB goes low. If not, replace the main drive PCB.

Problem	Causes	Check procedures/corrective measures
(35) The magenta developer magnet solenoid does not operate.	Broken magenta developer magnet solenoid coil.	Check for continuity across the coil. If none, replace the magenta developer magnet solenoid.
	Poor contact in the magenta developer magnet solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC27-5 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective main drive PCB.	Run maintenance item U033 and check if YC752-2 on the main drive PCB goes low. If not, replace the main drive PCB.
(36) The cyan developer magnet solenoid does not operate.	Broken cyan developer magnet solenoid coil.	Check for continuity across the coil. If none, replace the cyan developer magnet solenoid.
	Poor contact in the cyan developer magnet solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC27-3 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective main drive PCB.	Run maintenance item U033 and check if YC753-2 on the main drive PCB goes low. If not, replace the main drive PCB.
(37) The black developer magnet solenoid does not operate.	Broken black developer magnet solenoid coil.	Check for continuity across the coil. If none, replace the black developer magnet solenoid.
	Poor contact in the black developer magnet solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC27-9 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective main drive PCB.	Run maintenance item U033 and check if YC754-2 on the main drive PCB goes low. If not, replace the main drive PCB.
(38) The cleaning brush unit shift solenoid does not operate.	Broken cleaning brush unit shift solenoid coil.	Check for continuity across the coil. If none, replace the cleaning brush unit shift solenoid.
	Poor contact in the cleaning brush unit shift solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC27-6 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective main drive PCB.	Run maintenance item U033 and check if YC756-2 on the main drive PCB goes low. If not, replace the main drive PCB.

Problem	Causes	Check procedures/corrective measures
(39) The bypass tray bottom plate solenoid does not operate.	Broken bypass tray bottom plate solenoid coil.	Check for continuity across the coil. If none, replace the bypass tray bottom plate solenoid.
	Poor contact in the bypass tray bottom plate solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC28-7 on the engine controller PCB goes low. If not, replace the engine controller PCB.
	Defective bypass feed PCB.	Run maintenance item U033 and check if YC756-2 on the bypass feed PCB goes low. If not, replace the bypass feed PCB.
(40) The face up/down solenoid does not operate.	Broken face up/down solenoid coil.	Check for continuity across the coil. If none, replace the face up/down solenoid.
	Poor contact in the face up/down solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC18-8 and YC18-9 on the engine controller PCB go low. If not, replace the engine controller PCB.
	Defective face-down PCB.	Run maintenance item U033 and check if YC833-1 and YC833-3 on the face-down PCB go low. If not, replace the face-down PCB.
(41) The oil roller up/down solenoid does not operate.	Broken oil roller up/down solenoid coil.	Check for continuity across the coil. If none, replace the oil roller up/down solenoid.
	Poor contact in the oil roller up/down solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC20-4 and YC20-5 on the engine controller PCB go low. If not, replace the engine controller PCB.
	Defective fuser PCB.	Run maintenance item U033 and check if YC604-1 and YC604-3 on the fuser PCB go low. If not, replace the fuser PCB.
(42) The duplex paper exit selection solenoid does not operate.	Broken duplex paper exit selection solenoid coil.	Check for continuity across the coil. If none, replace the duplex paper exit selection solenoid.
	Poor contact in the duplex paper exit selection solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PCB.	Run maintenance item U033 and check if YC24-18 and YC24-20 on the engine controller PCB go low. If not, replace the engine controller PCB.
	Defective feed drive PCB.	Run maintenance item U033 and check if YC702-11 and YC702-13 on the feed drive PCB go low. If not, replace the feed drive PCB.
	Defective feed PCB.	Run maintenance item U033 and check if YC808-1 and YC808-3 on the feed PCB go low. If not, replace the feed PCB.

Problem	Causes	Check procedures/corrective measures
(43) The cleaning lamp does not turn on.	Poor contact in the cleaning lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective cleaning lamp.	Check for continuity. If none, replace the cleaning lamp.
	Defective drum PCB.	If the cleaning lamp turns on when YC623-2 on the drum PCB is held low, replace the drum PCB.
	Defective engine controller PCB.	If the cleaning lamp turns on when YC17-2 on the engine controller PCB is held low, replace the engine controller PCB.
(44) The exposure lamp does not turn on.	Poor contact in the exposure lamp connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective inverter PCB.	Run maintenance item U061 and check if the exposure lamp turns on with CN1-1 and CN1-2 on the inverter PCB go low. If not, replace the inverter PCB.
	Defective scanner relay PCB.	Run maintenance item U061 and check if the exposure lamp turns on with CN41-B6 on the scanner relay PCB goes low. If not, replace the scanner drive PCB.
	Defective scanner main PCB.	Run maintenance item U061 and check if CN40-B5 on the scanner main PCB goes low. If not, replace the scanner main PCB.
(45) The exposure lamp does not turn off.	Defective inverter PCB.	If the exposure lamp does not turn off with CN1-5 and CN1-6 on the inverter PCB high, replace the inverter PCB.
	Defective scanner relay PCB.	If the exposure lamp does not turn off with CN11-B16 on the scanner relay PCB high, replace the scanner relay PCB.
	Defective scanner main PCB.	If CN10-B5 on the scanner main PCB are always low, replace the scanner main PCB.
(46) The fuser heater does not turn on.	Broken wire in upper or lower fuser heater.	Check for continuity across each heater lamp. If none, replace the upper or lower fuser heater.
	Upper or lower thermostat triggered.	Check for continuity across thermostat. If none, remove the cause and replace the upper or lower thermostat.
(47) The fuser heater does not turn off.	Broken upper or lower fuser thermistor wire.	Measure the resistance. If it is $\infty\Omega$, replace the upper or lower fuser thermistor.
	Dirty sensor part of the upper or lower fuser thermistor.	Check visually and clean the upper or lower fuser thermistor sensor parts.

Problem	Causes	Check procedures/corrective measures
(48) Main charging is not performed.	Poor insertion main charger unit.	See page 1-5-55.
	Broken main charger wire.	
	Leaking main charger housing.	
	Defective engine controller PCB.	
	Defective drum unit.	
(49) Transfer charging is not performed.	Defective secondary transfer unit operation.	See page 1-5-54.
	Secondary transfer unit shift clutch installed or operating incorrectly.	
(50) No developing bias is output.	Defective developer.	See page 1-5-56.
	Defective drum unit.	
	Defective developing/cleaning brush bias high voltage PCB.	
	Defective engine controller PCB.	
(51) The original size is not detected.	Defective original detection switch.	If the level of CN10-A14 on the scanner drive PCB does not go low when the original detection switch is turned on and off, replace the original detection switch.
(52) The original size is not detected correctly.	Original is not placed correctly.	Check the original and correct if necessary.
	Poor contact in the original size detection sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective original size detection sensor.	Check if sensor operates correctly. If not, replace it.
(53) The message requesting paper to be loaded is shown when paper is present on the bypass tray.	Poor contact in the bypass feed PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective bypass feed PCB.	If the level of YC901-7 on the bypass feed PCB always goes high, replace the bypass feed PCB.
(54) The size of paper on the bypass tray is not displayed correctly.	Poor contact in the bypass feed PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective bypass feed PCB.	If the level of YC901-7 on the bypass feed PCB always goes high or low, replace the bypass feed PCB.

Problem	Causes	Check procedures/corrective measures
(55) A paper jam in the paper feed, paper conveying or fuser section is indicated when the main switch is turned on.	A piece of paper torn from copy paper is caught around jam sensor 1/2/3, registration sensor or upper/lower paper exit sensor.	Check and remove if any.
	Defective jam sensor 1.	Run maintenance item U031 and turn jam sensor 1 on and off manually. Replace the sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective jam sensor 2.	Run maintenance item U031 and turn jam sensor 2 on and off manually. Replace the sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective jam sensor 3.	Run maintenance item U031 and turn jam sensor 3 on and off manually. Replace the sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective upper paper exit sensor.	Run maintenance item U031 and turn the upper paper exit sensor on and off manually. Replace the sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
	Defective lower paper exit sensor.	Run maintenance item U031 and turn the lower paper exit sensor on and off manually. Replace the sensor if indication of the corresponding sensor on the operation panel is not displayed in reverse.
(56) The message requesting cover to be closed is displayed when the front cover is closed.	Poor contact in the connector terminals of interlock switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective interlock switch.	Check for continuity across each switch. If there is no continuity when the switch is on, replace it.
(57) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

1-5-5 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers or pulleys are dirty with paper powder: forwarding pulley, paper feed pulley, separation pulley, middle roller, bypass paper feed roller and bypass retard roller.	Clean with isopropyl alcohol.
	Check if the forwarding pulleys, paper feed pulleys or separation pulleys is deformed.	Check visually and replace any deformed pulleys.
	Electrical problem with the following electromagnetic clutches: paper feed clutche and bypass paper feed clutch.	See page 1-5-66.
(2) No secondary paper feed.	Check if the surfaces of the upper and lower registration rollers are dirty with paper powder.	Clean with isopropyl alcohol.
	Electrical problem with the registration clutch.	See page 1-5-66.
(3) Skewed paper feed.	Width guide in a drawer installed incorrectly.	Check the width guide visually and correct or replace if necessary.
	Deformed width guide in a drawer.	Repair or replace if necessary .
	Check if a pressure spring along the paper conveying path is deformed or out of place.	Repair or replace.
(4) The scanner does not travel.	Check if the scanner wire is loose.	Reinstall the scanner wire (see page 1-6-19).
	The scanner motor malfunctions.	See page 1-5-65.
(5) Multiple sheets of paper are fed at one time.	Check if the separation pulley is worn.	Replace the upper or lower separation pulley if it is worn.
	Check if the paper is curled.	Change the paper.
(6) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Deformed guides along the paper conveying path.	Repair or replace if necessary.
	Check if the contact between the upper and lower registration rollers is correct.	Check visually and remedy if necessary.
	Check if the contact between the middle roller and middle pulley is correct.	Check visually and remedy if necessary.
	Check if the press/heat roller is extremely dirty or deformed.	Clean or replace the press/heat roller.
	Check if the contact between the press/heat roller and its lower separation claws is correct.	Check visually and remedy if necessary.
	Check if the contact between the press roller and its upper separation claws is correct.	Check visually and remedy if necessary.
Check if the contact between the FD roller and eject pulley is correct.	Check visually and remedy if necessary.	

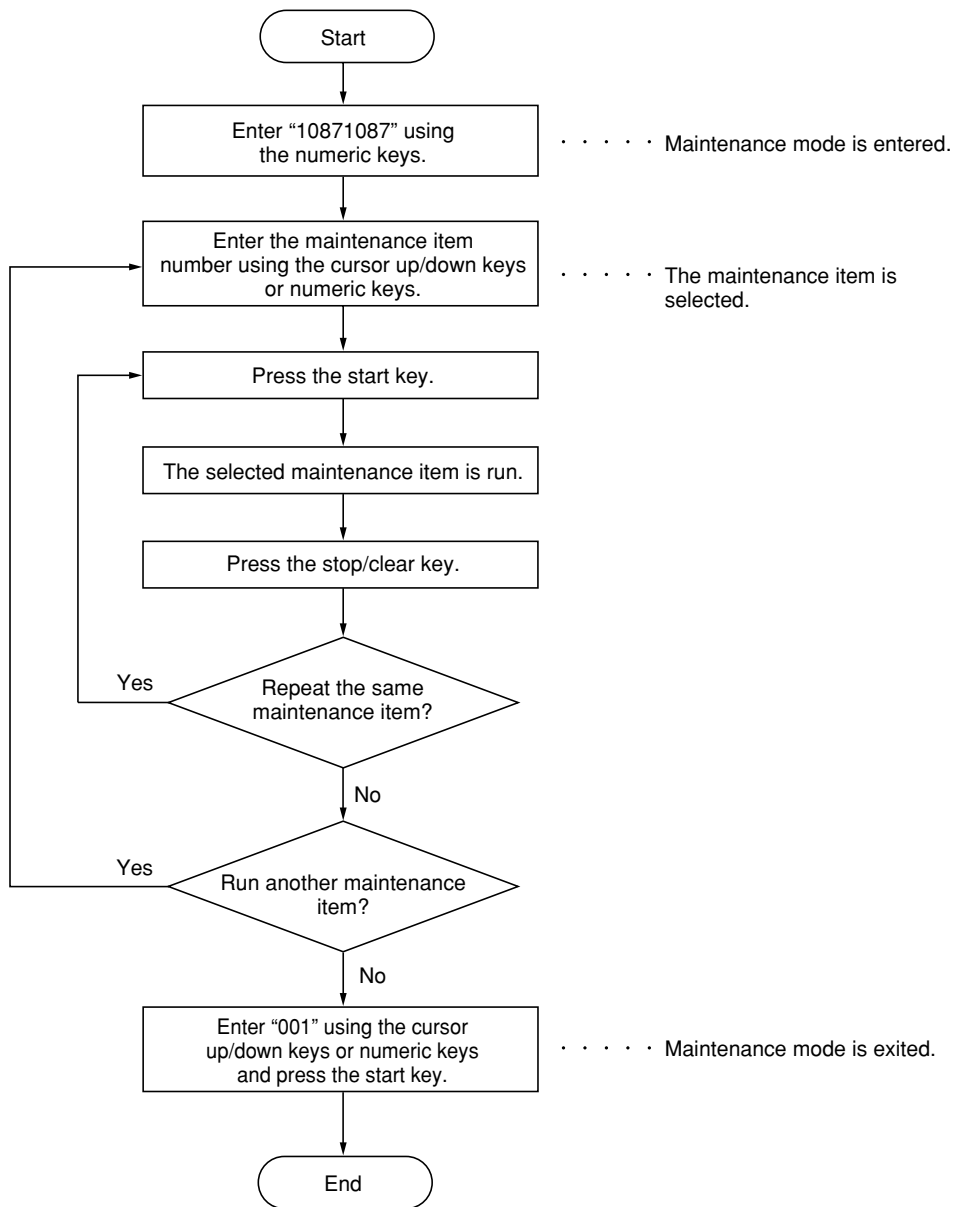
Problem	Causes/check procedures	Corrective measures
(7) Toner drops on the paper conveying path.	Check if the developer is extremely dirty.	Clean the developer.
(8) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.
	Check if the following electromagnetic clutches are installed correctly: paper feed clutch, registration clutch and bypass paper feed clutch.	Correct.

1-6-1 Precautions for assembly and disassembly

(1) Precautions

- Be sure to turn the main switch off and disconnect the power plug before starting disassembly.
- When handling PCBs, do not touch connectors with bare hands or damage the board.
- Do not touch any PCB containing ICs with bare hands or any object prone to static charge.
- Use only the specified parts to replace the fixing unit thermostat. Never substitute electric wires, as the copier may be seriously damaged.
- Use the following testers when measuring voltages:
 - Hioki 3200
 - Sanwa MD-180C
 - Sanwa YX-360TR
 - Beckman TECH300
 - Beckman DM45
 - Beckman 330*
 - Beckman 3030*
 - Beckman DM850*
 - Fluke 8060A*
 - Arlec DMM1050
 - Arlec YF1030C
- * Capable of measuring RMS values.
- Prepare the following as test originals:
 1. NTC (new test chart)
 2. NPTC (newspaper test chart)

(2) Running a maintenance item



1-6-2 Paper feed section

(1) Detaching and refitting the bypass tray unit

Follow the procedure below to replace the bypass tray unit.

Procedure

1. Remove the two screws and then remove the right rear cover.

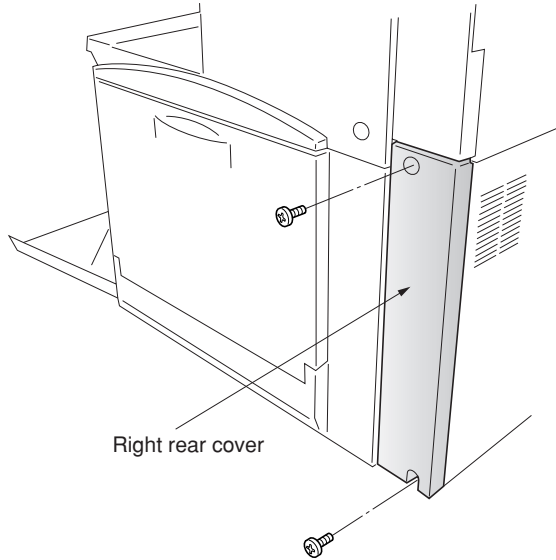


Figure 1-6-1

2. Remove the two screws and then remove the right upper cover.

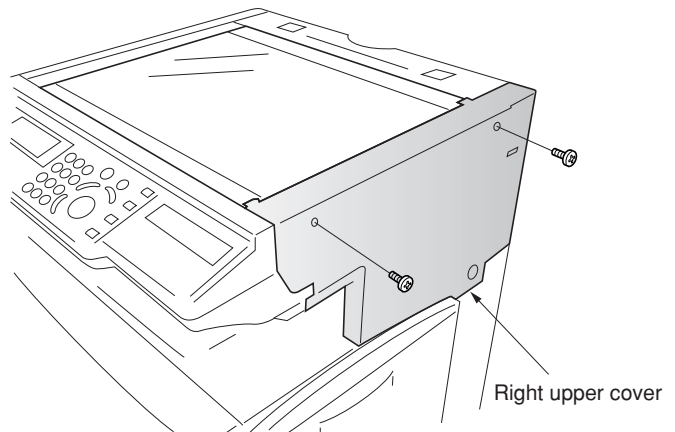


Figure 1-6-2

3. Remove the two screws and then remove the operation unit lower cover.
4. Remove the left middle cover.

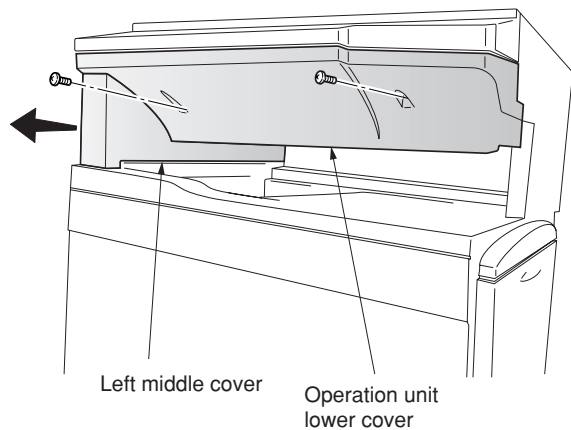


Figure 1-6-3

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5. Open the front cover.
6. Remove the two screws and then remove the eject cover.

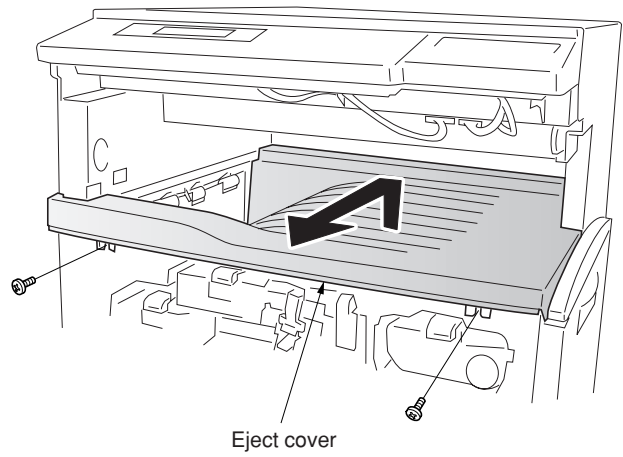


Figure 1-6-4

7. Remove the six screws and then remove the right lower cover.

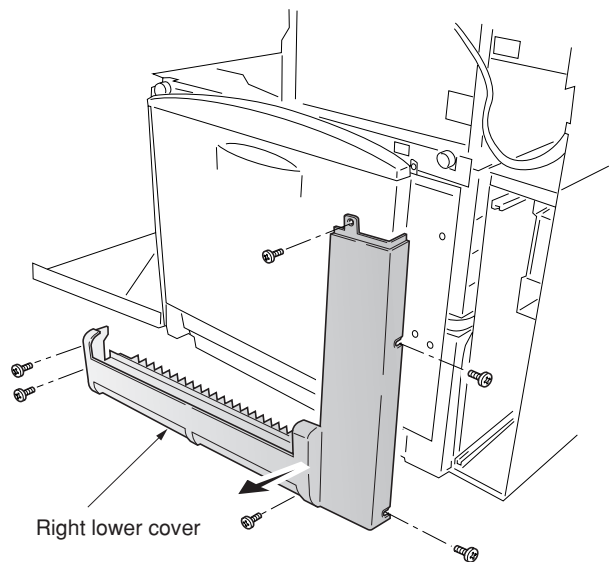


Figure 1-6-5

8. Remove the six screws and the connector, and then remove the bypass tray unit.
9. Replace the bypass tray unit and refit all the removed parts.

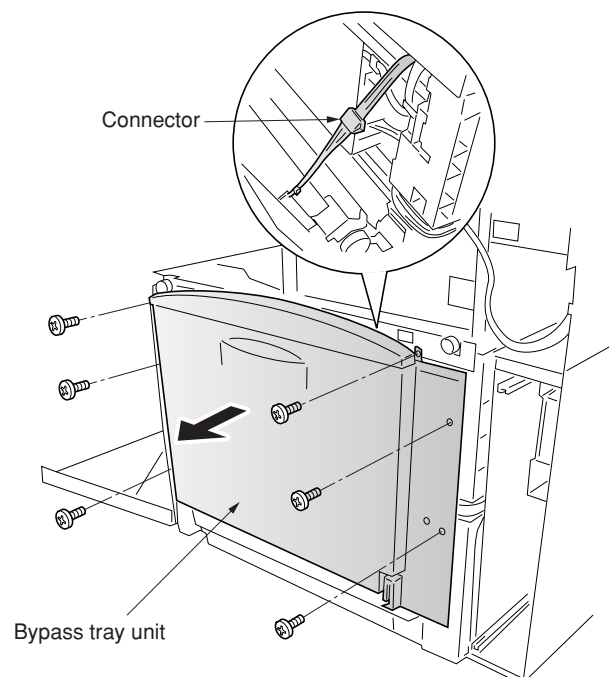


Figure 1-6-6

(2) Detaching and refitting the bypass feed roller and bypass retard roller

Follow the procedure below to replace the bypass feed roller and bypass retard roller.

Procedure

1. Remove the primary transfer unit (see page 1-6-39).
2. Remove the bypass feed roller from the shaft while pressing the lever to the direction of the arrow.
3. Remove the holder from the bypass tray unit.
4. Remove the bypass retard roller from the holder.
5. Replace the bypass feed roller and bypass retard roller and refit all the removed parts.

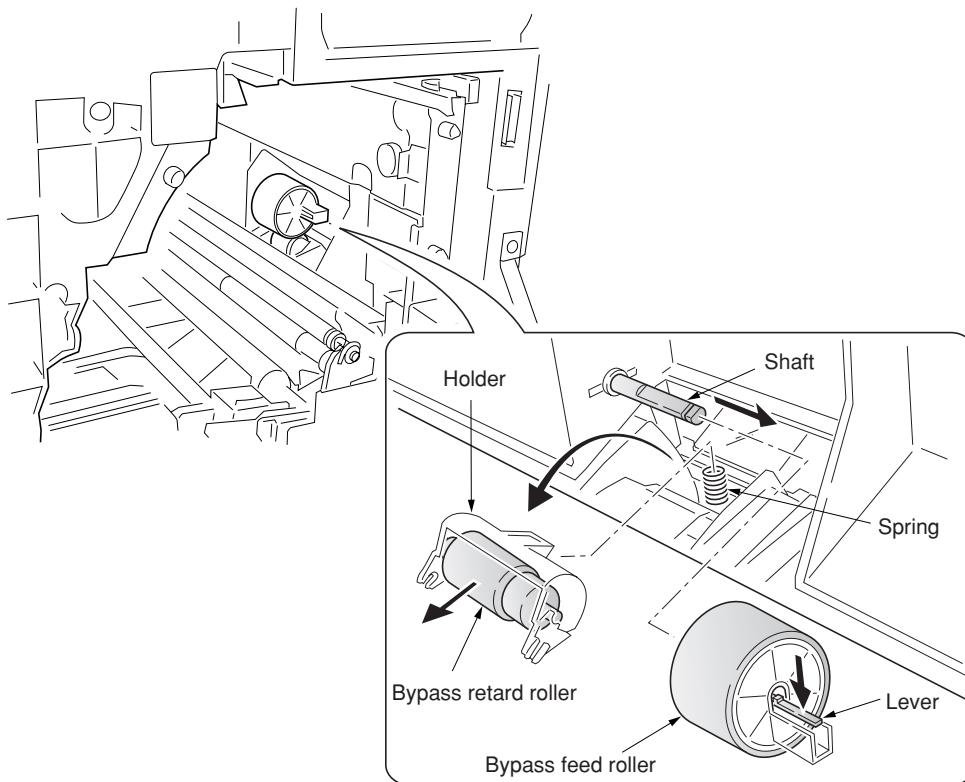


Figure 1-6-7

(3) Detaching and refitting the face-down unit

Follow the procedure below to replace the face-down unit.

Procedure

1. Open the front cover.
2. Remove the two screws and then remove the left upper cover.

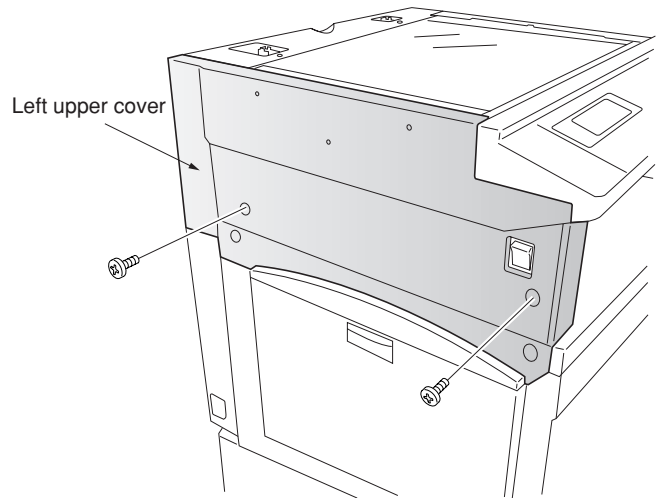


Figure 1-6-8

3. Detach the two belts and then remove the face-up tray and conveying cover.
4. Remove the six screws and then remove the left lower cover while pulling it to upward (hooked inside).

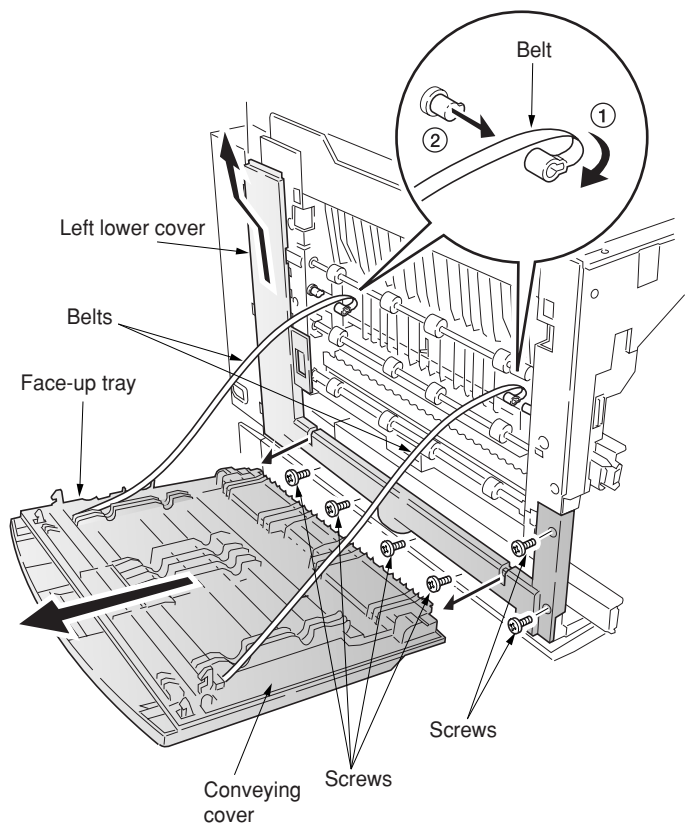


Figure 1-6-9

5. Remove the five screws and two connectors, and then remove the face down unit.
6. Replace the face-down unit and refit all the removed parts.

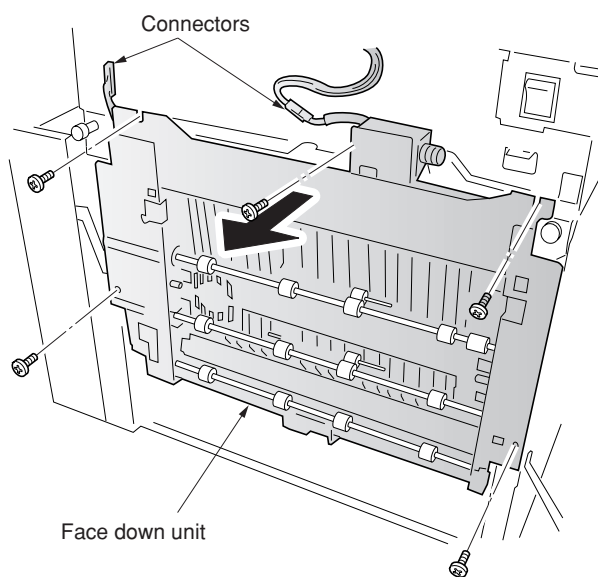


Figure 1-6-10

(4) Detaching and refitting the drive assembly B

Follow the procedure below to replace the drive assembly B.

Procedure

1. Remove the main controller box (see page 1-6-66).
2. Remove the black toner feed drive assembly (see page 1-6-44).
3. Remove the two connectors.
4. Remove the five screws and then remove the drive assembly B.
5. Replace the drive assembly B and refit all the removed parts.

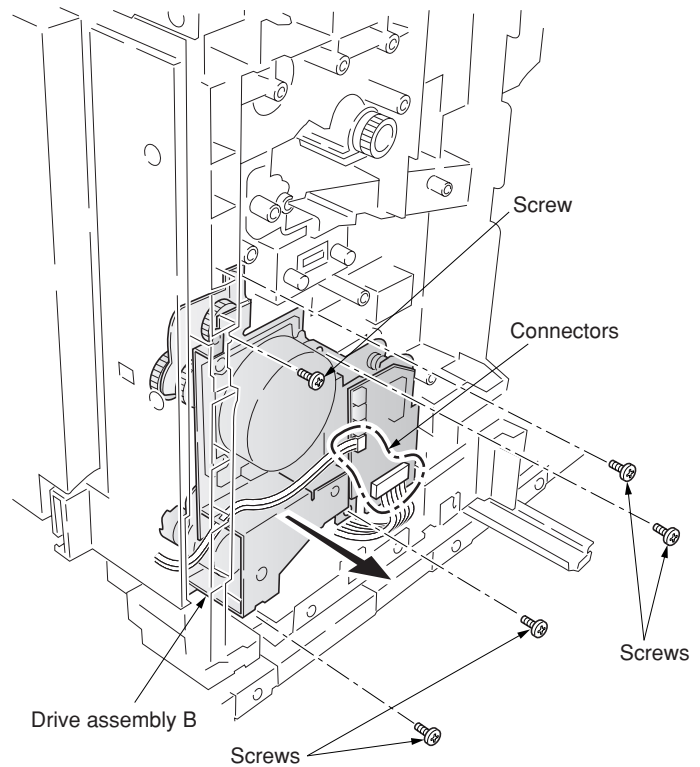


Figure 1-6-11

(5) Detaching and refitting the drive assembly A

Follow the procedure below to replace the drive assembly A.

Procedure

1. Remove the power supply unit (See page 1-6-62).
2. Remove all (six) tabs from the drive assembly A.
3. Remove the six screws and then remove the drive assembly A.
4. Replace the drive assembly A and refit all the removed parts.

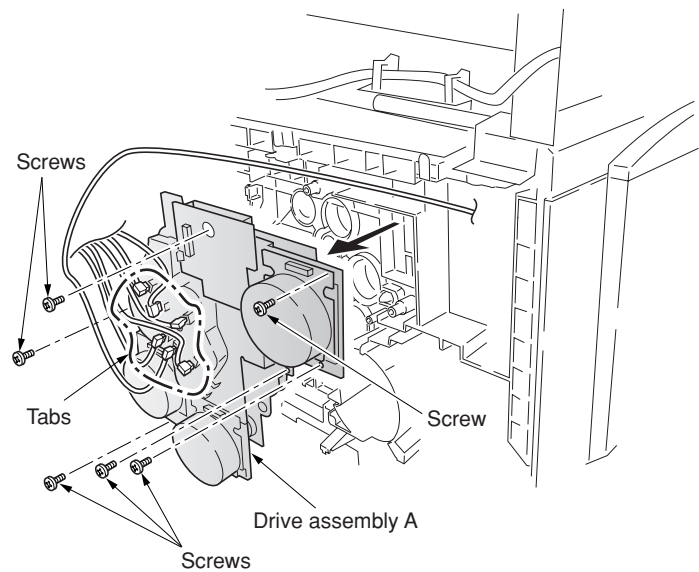


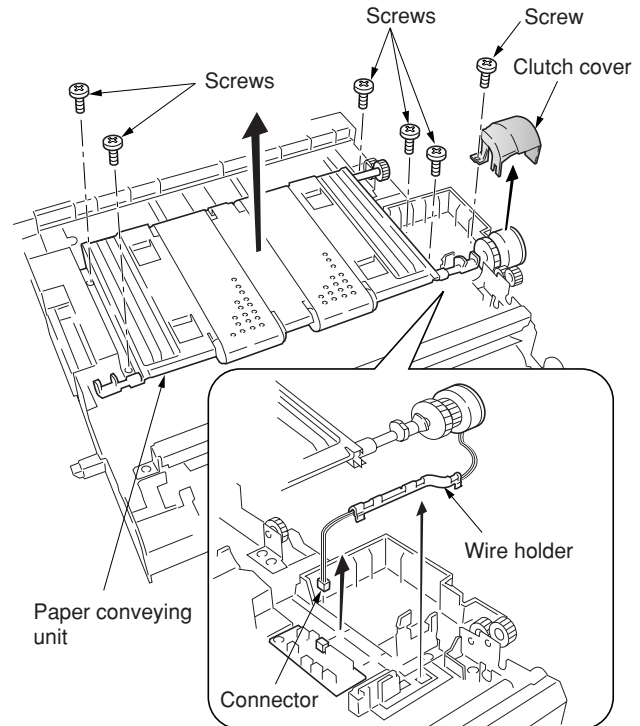
Figure 1-6-12

(6) Detaching and refitting the paper conveying belts

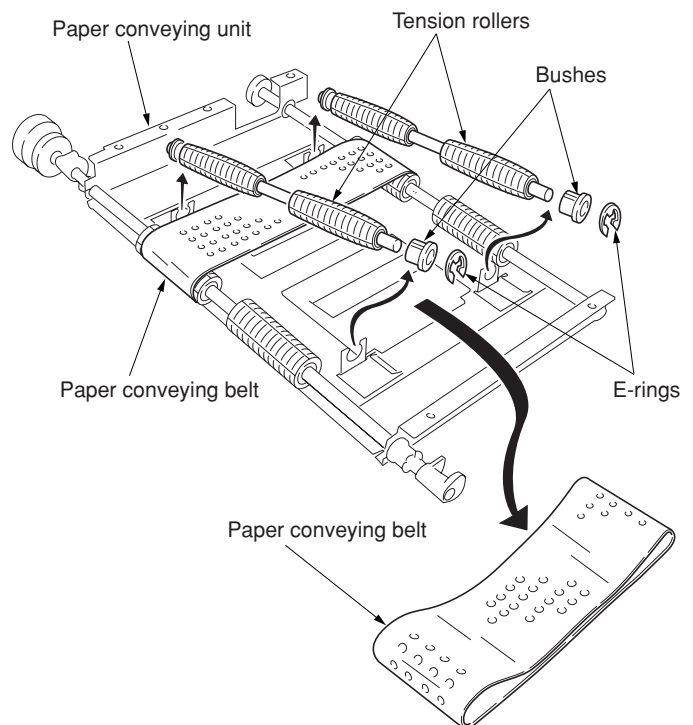
Follow the procedure below to replace the paper conveying belts.

Procedure

1. Open the front cover and draw the paper feed unit.
2. Remove the waste toner tank, and remove the screw and then remove the clutch cover.
3. Remove the five screws.
4. Remove the connector and the wire holder and then remove the paper conveying unit.

**Figure 1-6-13**

5. Remove the E-ring and bush and then remove each tension roller.
6. Remove the two paper conveying belts from the paper conveying unit.
7. Replace the paper conveying belts and refit all the removed parts.

**Figure 1-6-14**

(7) Detaching and refitting the paper conveying fan motors 1 and 2

Follow the procedure below to replace the paper conveying fan motors 1 and 2.

Procedure

1. Remove the paper conveying unit (see page 1-6-9).
2. Remove four screws and then remove the paper conveying fan duct.

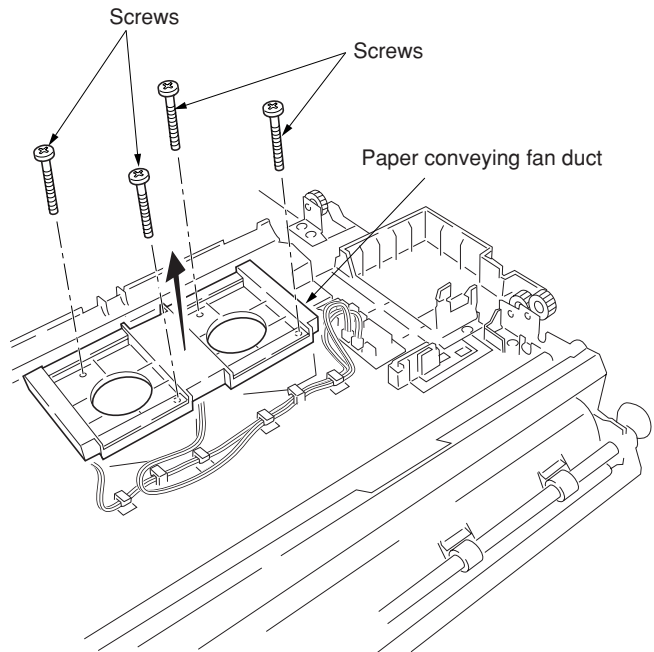


Figure 1-6-15

3. Remove the two connectors and wire hooks and then remove the paper conveying fan motors 1 and 2.
4. Replace the paper conveying fan motors 1 and 2, and refit all the removed parts.

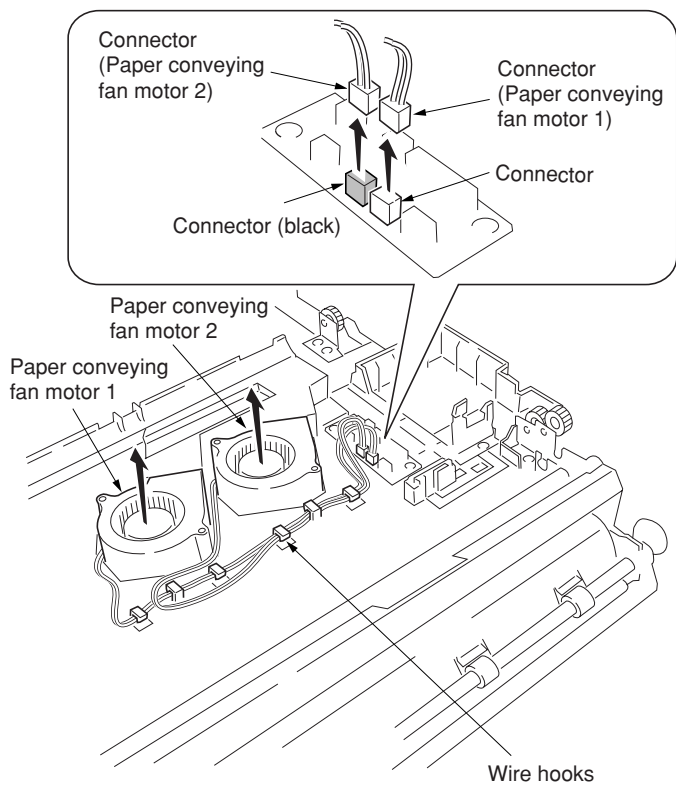


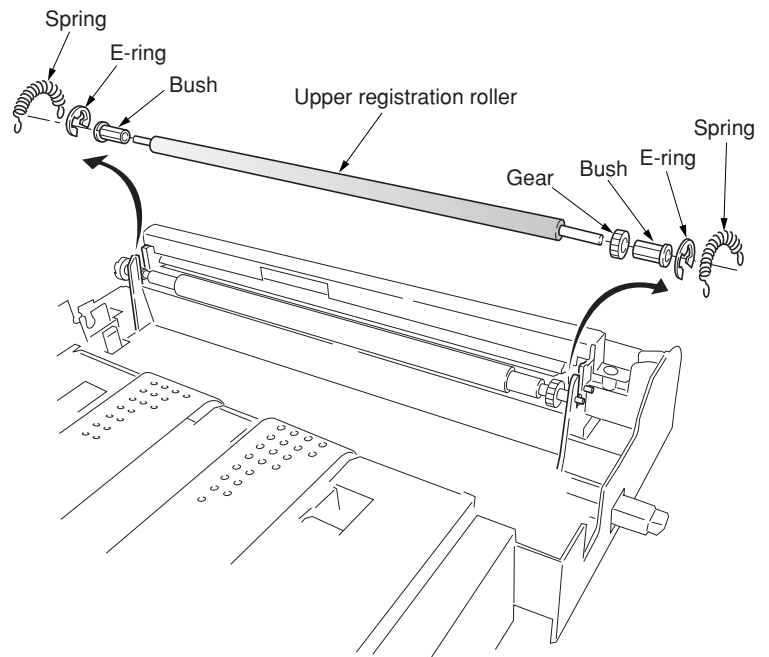
Figure 1-6-16

(8) Detaching and refitting the upper and lower registration rollers

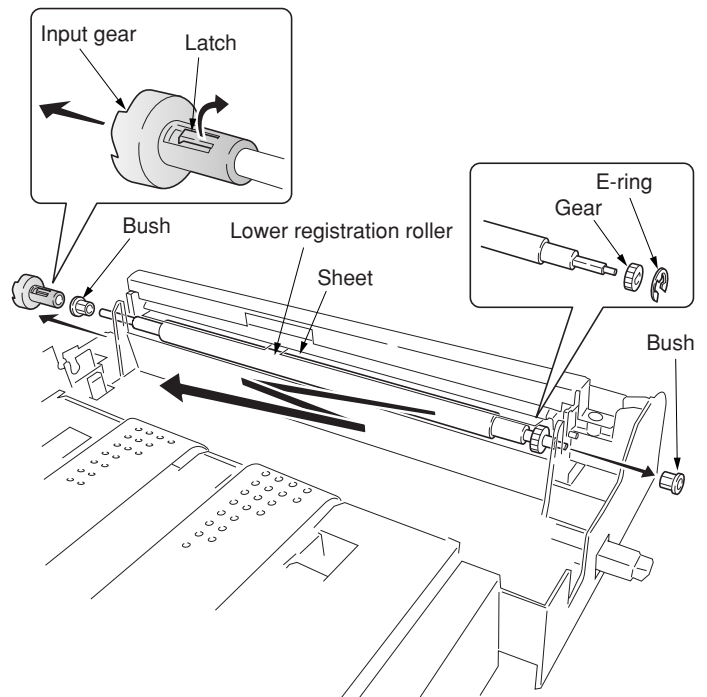
Follow the procedure below to replace the upper and lower registration rollers.

Procedure

1. Remove the secondary transfer unit (see page 1-6-45).
2. Remove the two springs and then remove the upper registration roller assembly.
3. Remove the two E-rings, two bushes, and gear from the upper registration roller.

**Figure 1-6-17**

4. While unlatching the latch, remove the input gear.
5. Remove the two bushes.
6. While sliding the lower registration roller back and forth and then remove it. Do not deform the sheet.
7. Remove the E-ring and gear from the lower registration roller.
8. Replace the lower registration roller and refit all the removed parts.

**Figure 1-6-18**

(9) Detaching and refitting the middle roller

Follow the procedure below to replace the middle roller.

Procedure

1. Open the front cover and draw the paper feed unit out.
2. Remove the two springs and then remove the middle guide assembly.

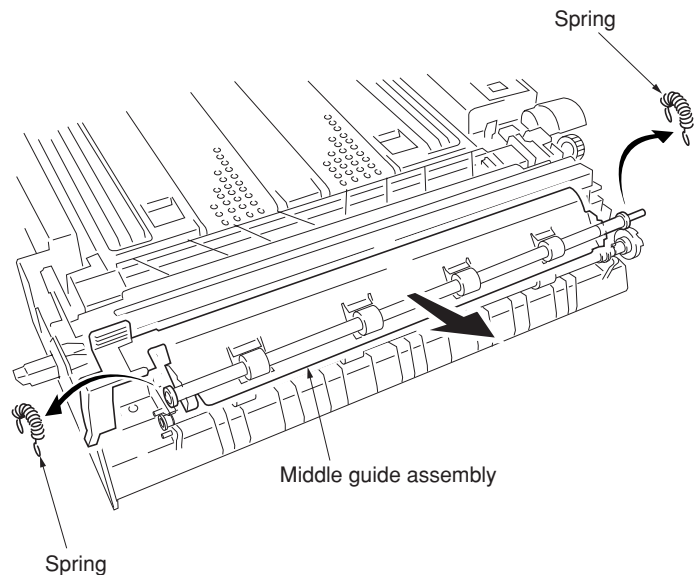


Figure 1-6-19

3. Remove the two springs.
4. Detach the front end of the middle roller and slide the MID R bush and middle roller to the backward.
5. Remove the middle roller assembly from the paper feed unit.
6. While unlatching the latch and then remove the input gear.
7. Remove the two E-rings, bush, and MID R bush from the middle roller.
8. Replace the middle roller and refit all the removed parts.

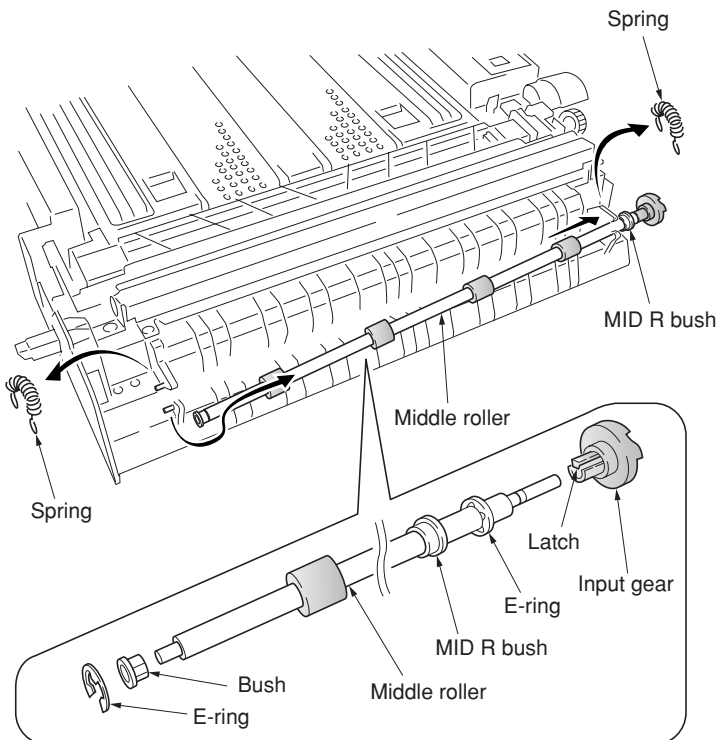


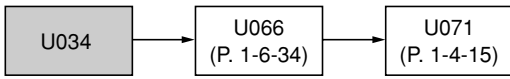
Figure 1-6-20

(10) Adjustment after roller and clutch replacement

Perform the following adjustment after refitting rollers and clutches.

(10-1) Adjusting the leading edge registration of image printing

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



Caution:

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

Procedure

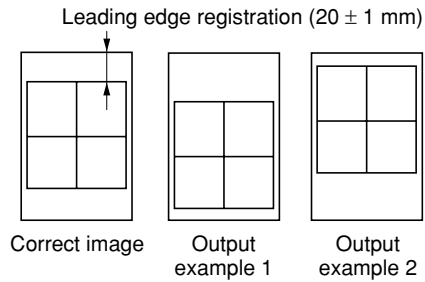
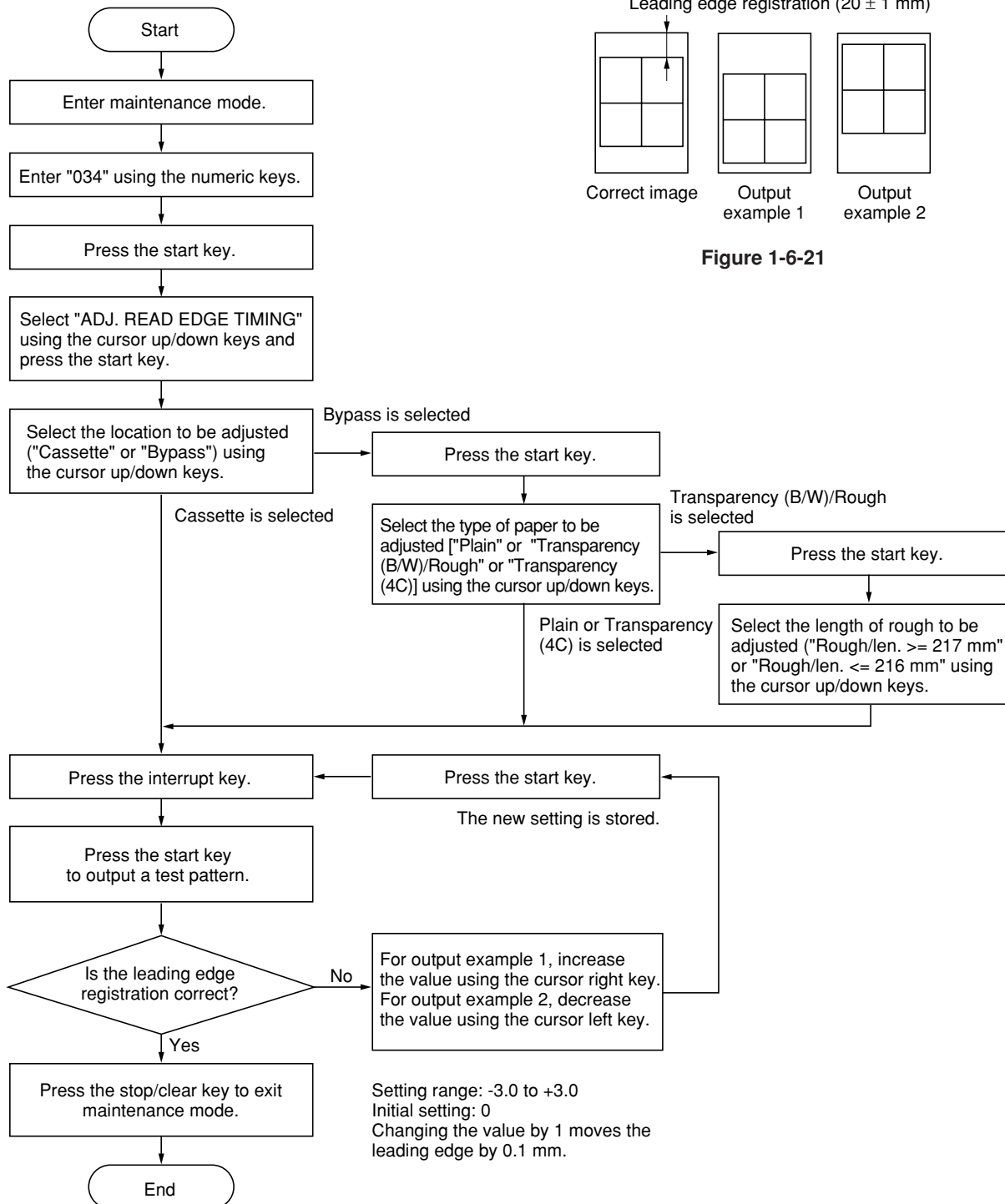
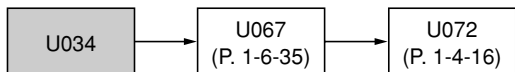


Figure 1-6-21

(10-2) Adjusting the center line of image printing

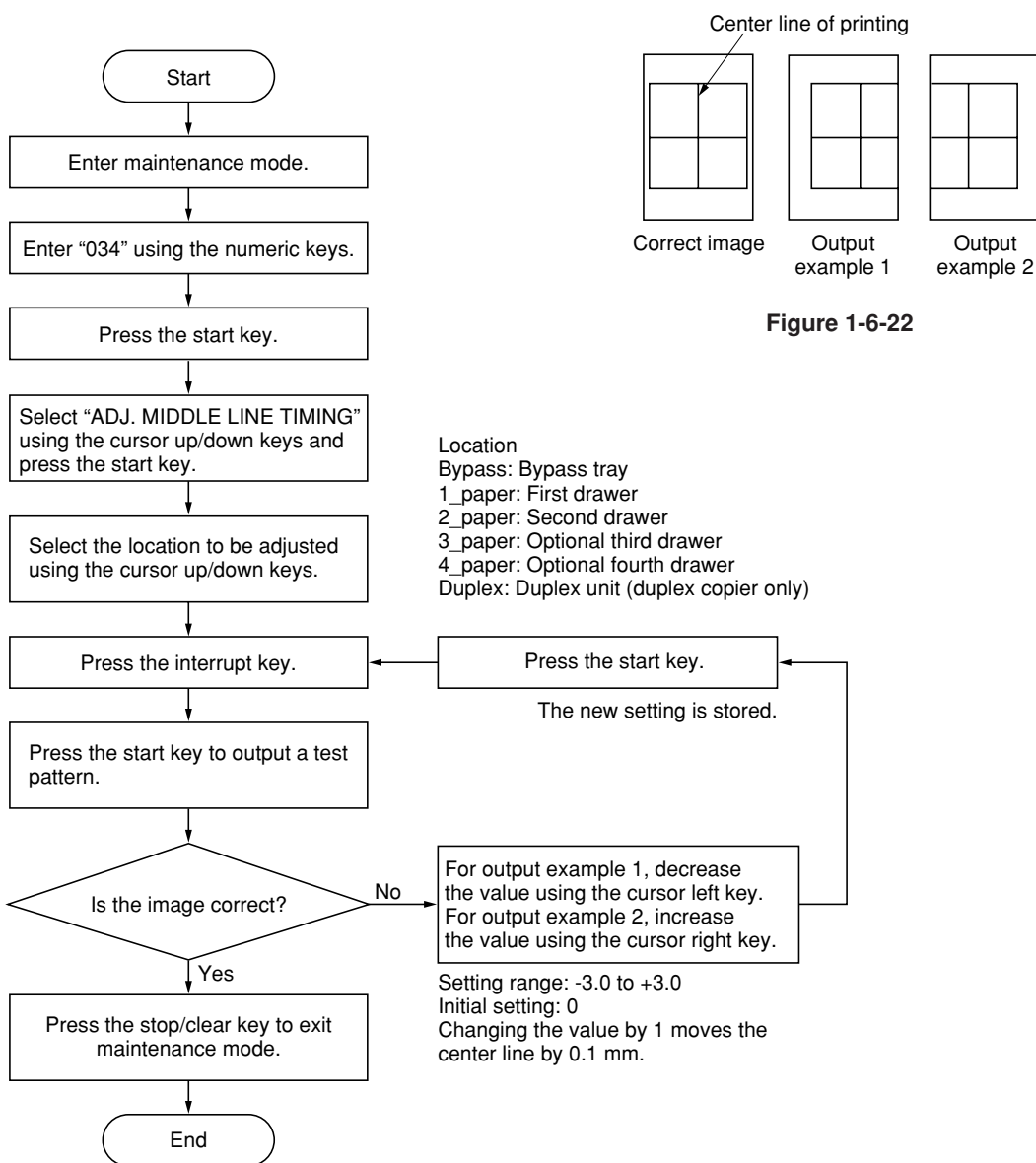
Make the following adjustment if there is a regular error between the center lines of the copy image and original when paper is fed from the drawer.



Caution:

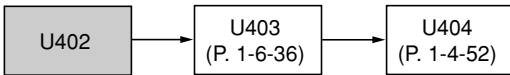
Check the copy image after the adjustment. If the image is still incorrect, perform the above adjustments in maintenance mode.

Procedure



(10-3) Adjusting the margins for printing

Make the following adjustment if the margins are not correct.



Caution:

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

Procedure

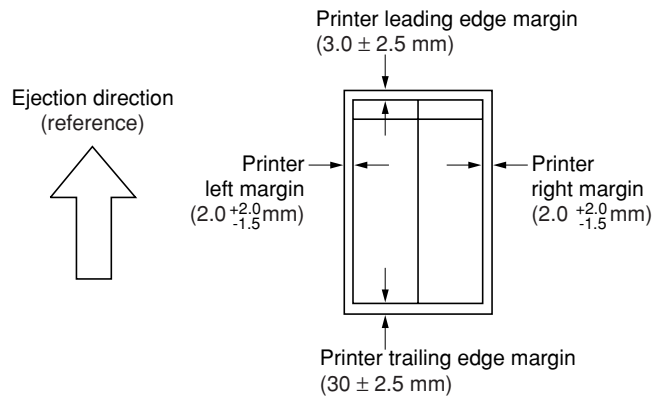
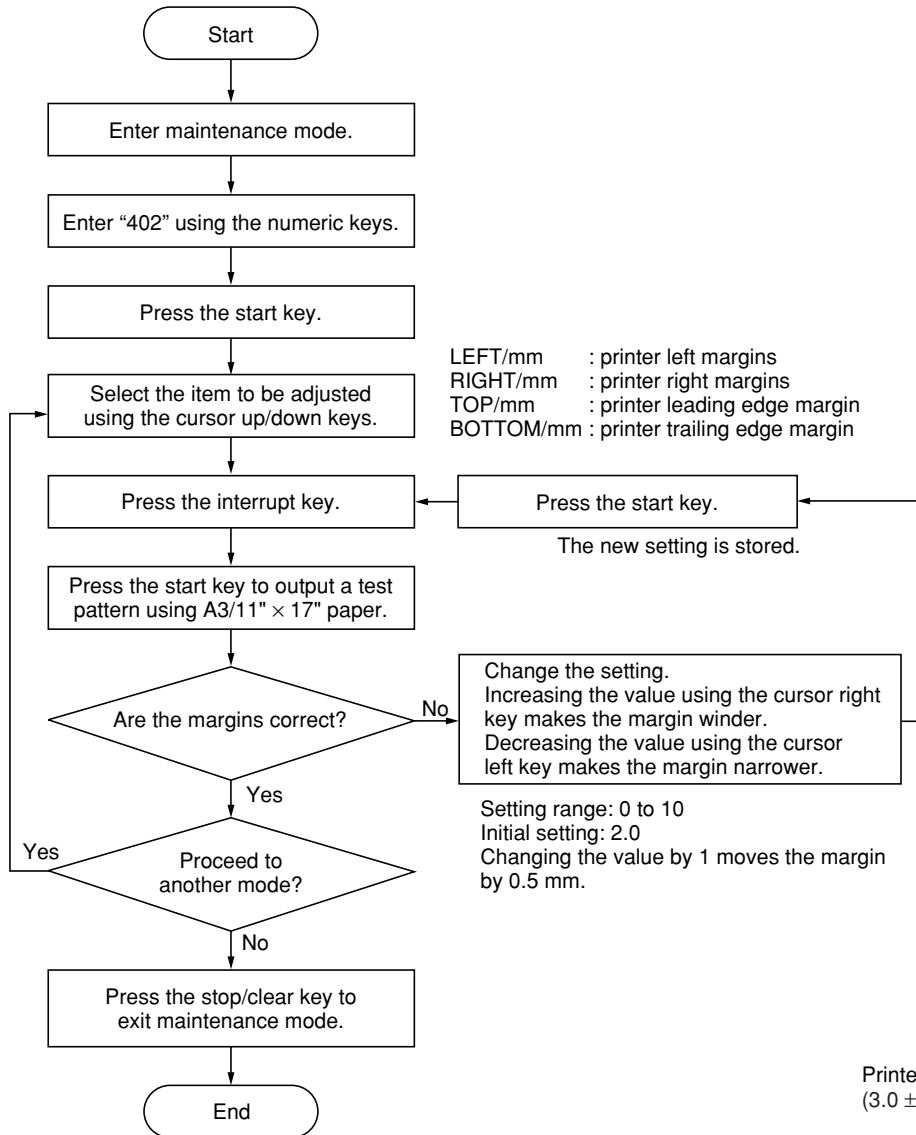


Figure 1-6-23

(10-4) Adjusting the amount of slack in the paper

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

Procedure

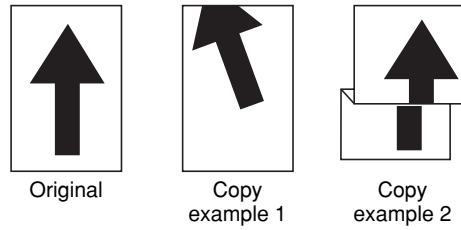
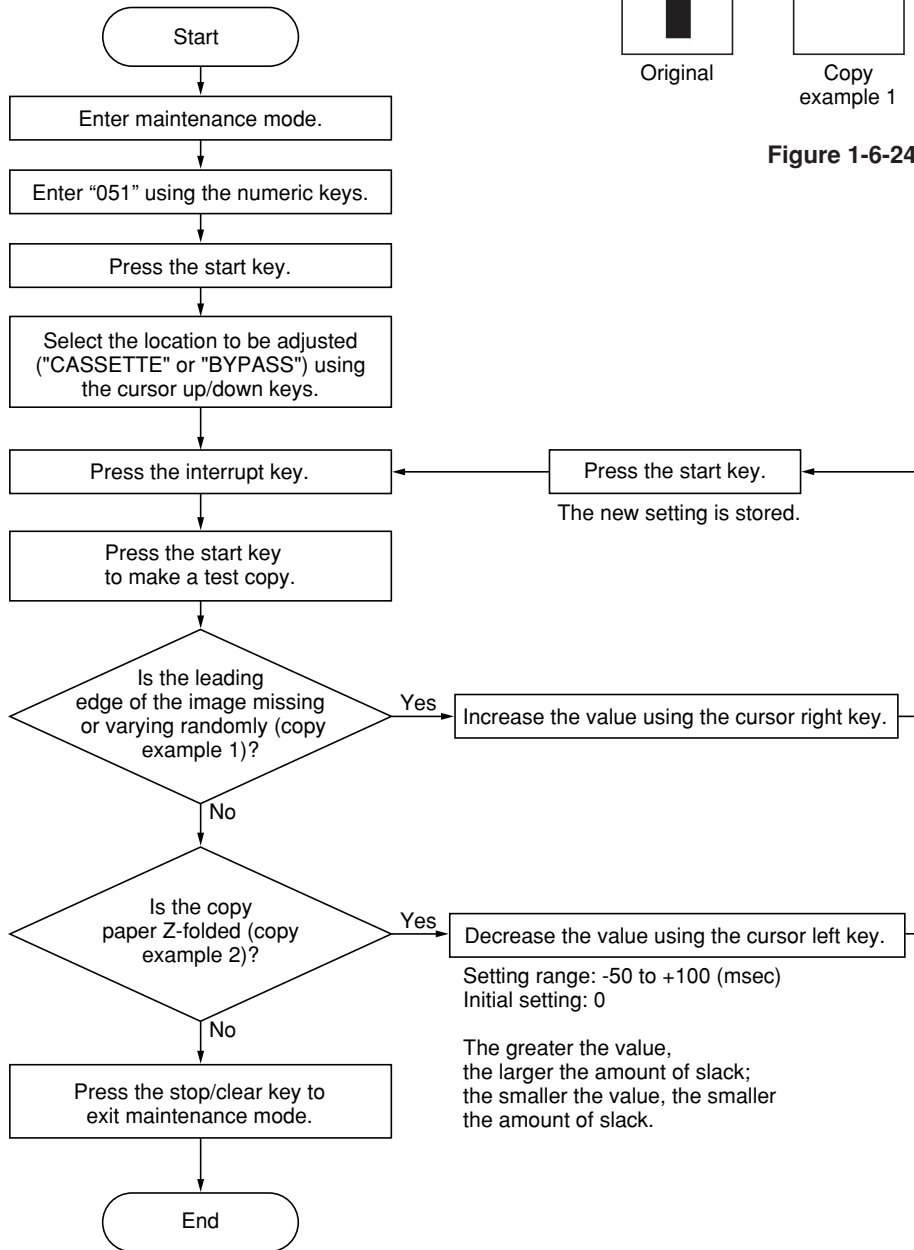


Figure 1-6-24



1-6-3 Optical section

(1) Detaching and refitting the exposure lamp

Replace the exposure lamp as follows.

Procedure

1. Remove the original cover or the DF.
2. Remove the three screws and then remove the rear middle cover.

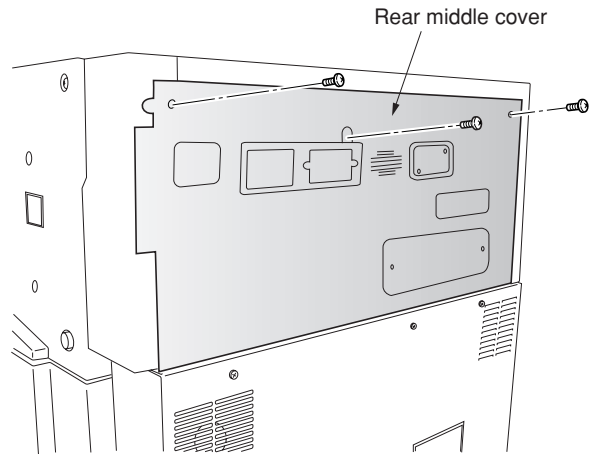


Figure 1-6-25

3. Remove the two screws and then remove the right upper cover.
4. Remove the contact glass.

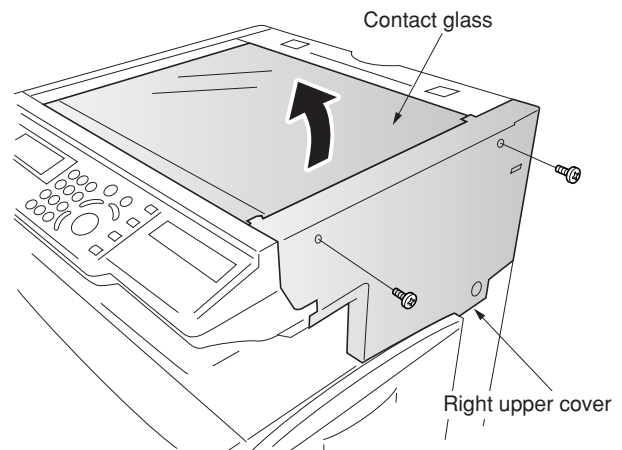


Figure 1-6-26

5. Turn the scanner wire drum to move the mirror 1 frame to the center of the machine.
6. Remove the connector of the exposure lamp from the inverter PCB and remove the wire from the two clamps.

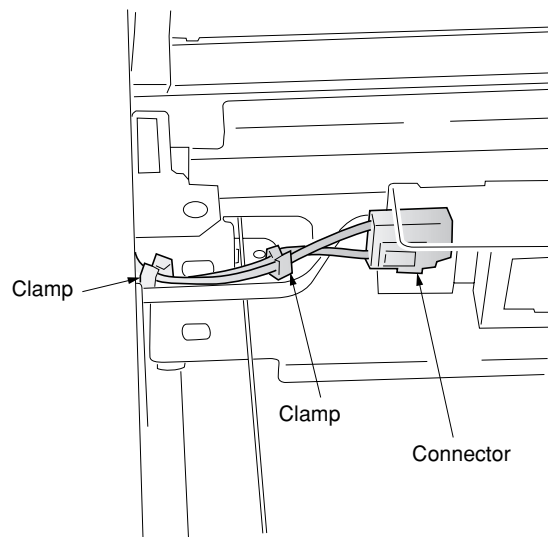


Figure 1-6-27

2A6

7. Remove the two screws holding the exposure lamp and then remove the lamp.
8. Replace the exposure lamp and refit all the removed parts.

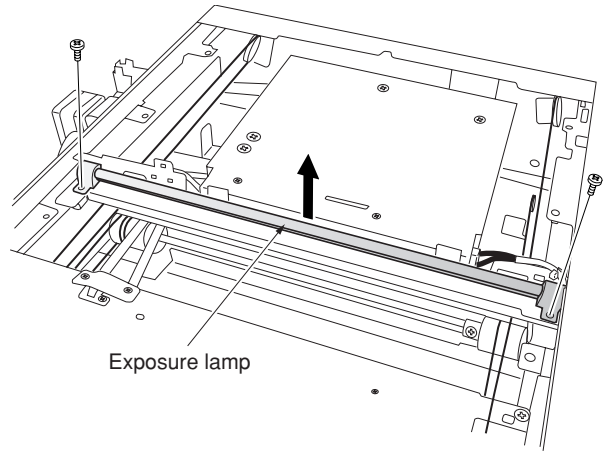


Figure 1-6-28

(2) Detaching and refitting the scanner wires

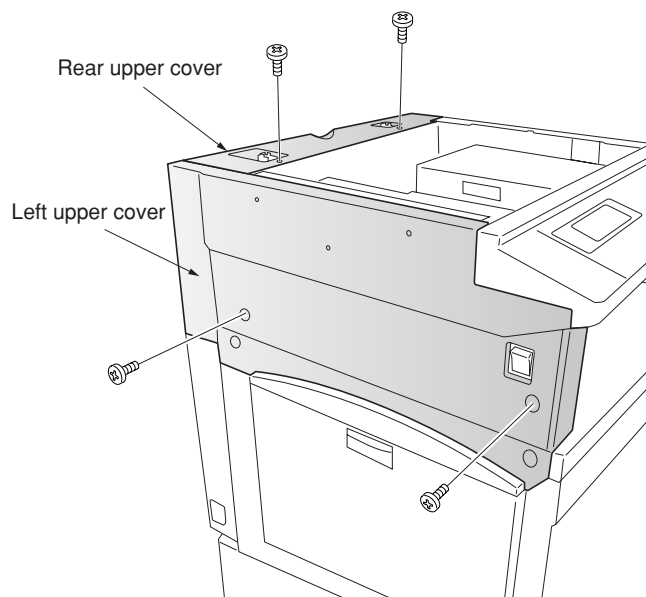
Take the following procedure when the scanner wires are broken or to be replaced.

Caution:

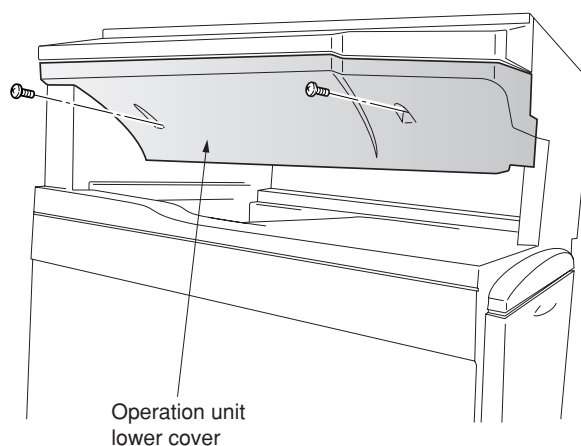
After replacing the scanner wire, make a test copy and check the copy image. If the image is incorrect, perform the adjustments (see pages 1-6-32 to 36).

(2-1) Detaching the scanner wires**Procedure**

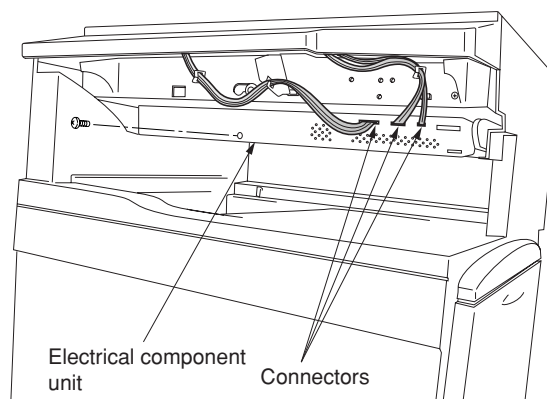
1. Remove the original cover/DF, rear middle cover, right upper cover and then remove the contact glass (see page 1-6-17).
2. Remove the two screws and then remove the left upper cover.
3. Remove the two screws and then remove the rear upper cover.

**Figure 1-6-29**

4. Remove the two screws and then remove the operation unit lower cover.

**Figure 1-6-30**

5. Remove the three connectors and the screws from the electrical component unit.

**Figure 1-6-31**

6. Remove the five connectors and the two screws from the electrical component unit. Remove the connectors when optional device(s) is/are installed.

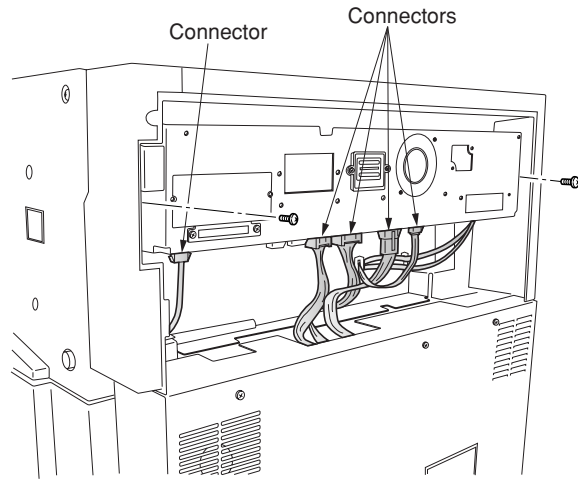


Figure 1-6-32

7. Draw the electrical component unit and remove the seven connectors.
8. Pull the electrical component unit out from the machine.

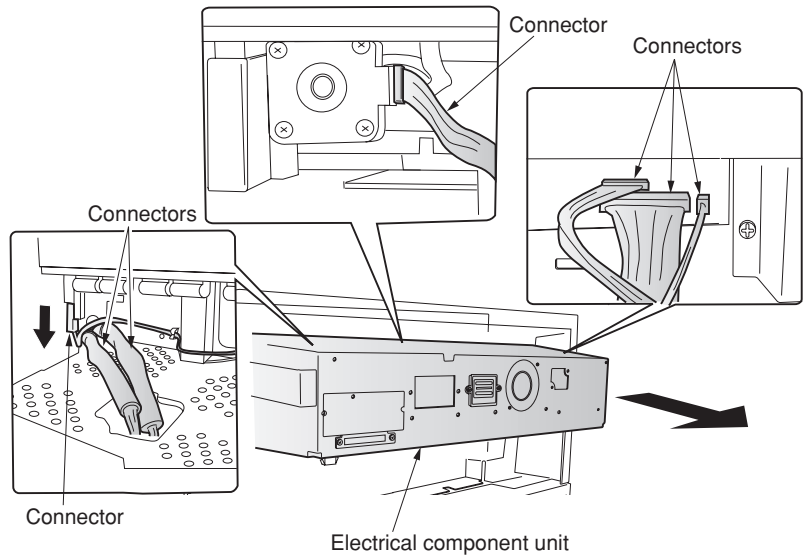


Figure 1-6-33

9. Hold the four claws of the scanner drive cover and then remove the cover.

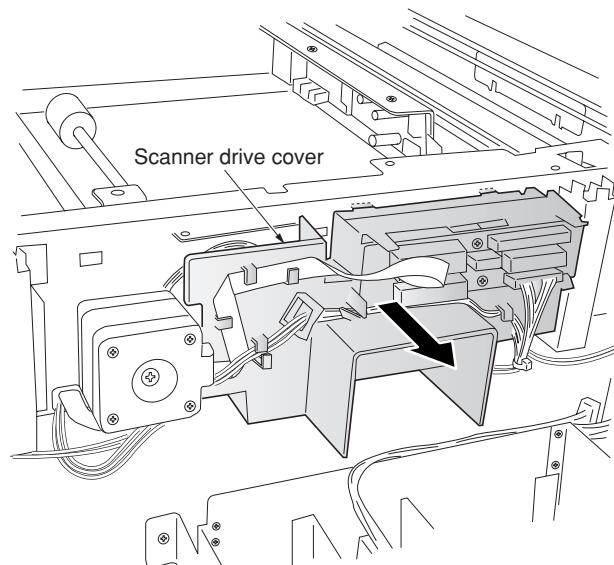


Figure 1-6-34

10. Loosen two screws of the scanner motor mounting plate, and detach the belt.
Mark a fixed position before loosening the screw of the scanner motor mounting plate.
11. Loosen two screws of the pulley adjustment plate, and detach the belt.
Mark a fixed position before loosening the screw of the pulley adjustment plate.

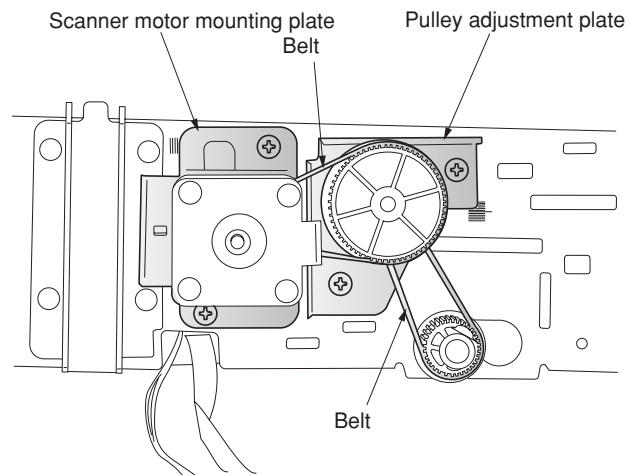


Figure 1-6-35

12. Move the mirror 1 frame to the machine center.
13. Detach the inverter wire guide and remove the inverter wire from the inverter PCB.

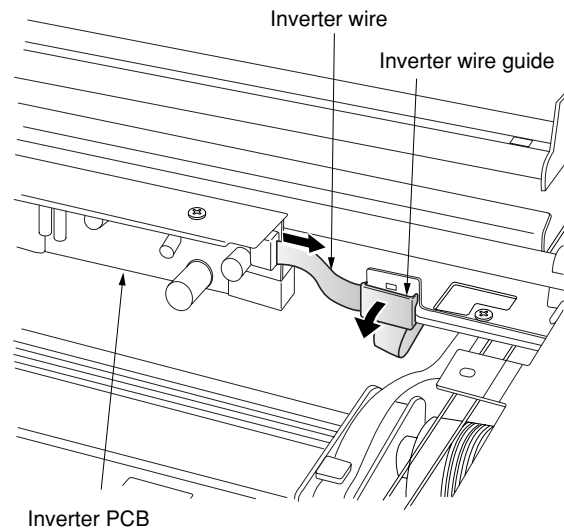


Figure 1-6-36

14. Remove the screw holding each of the front and rear wire retainers and then remove the retainers.
15. Remove the mirror 1 frame.

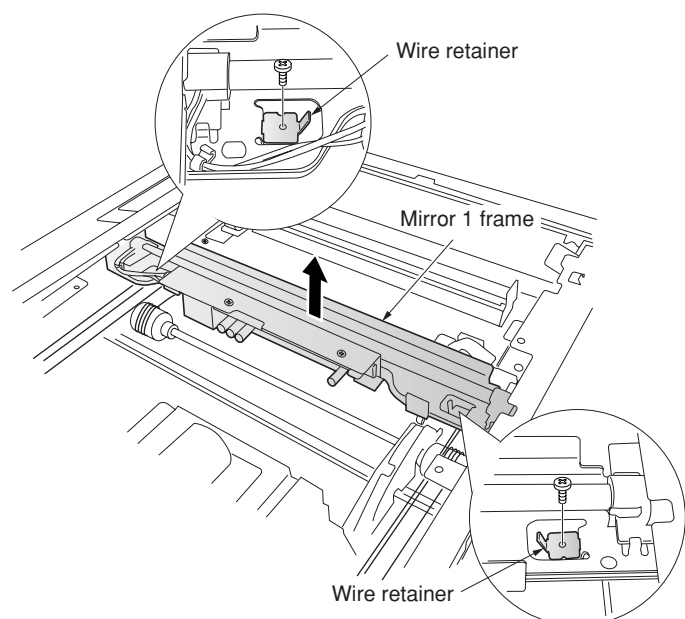


Figure 1-6-37

2A6

16. Remove the ten screws (machine inside: 8, right side:2), and then remove the ISU cover.

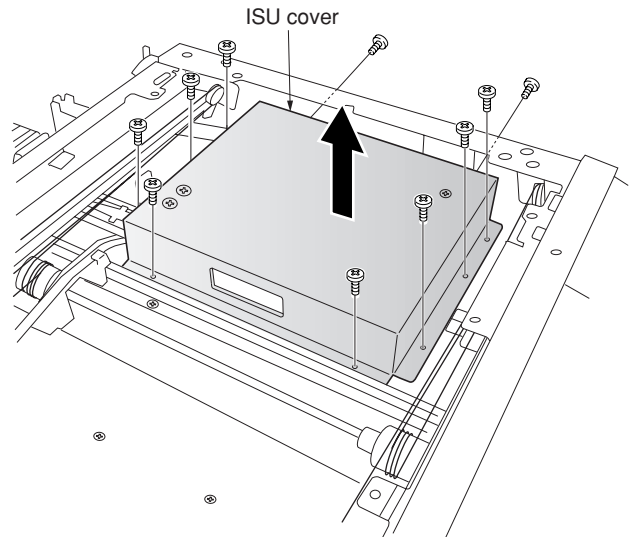


Figure 1-6-38

17. Pull out the inverter wire from the mirror 2 frame.
18. Hold the six claws of the scanner wire guide and then remove the guide.

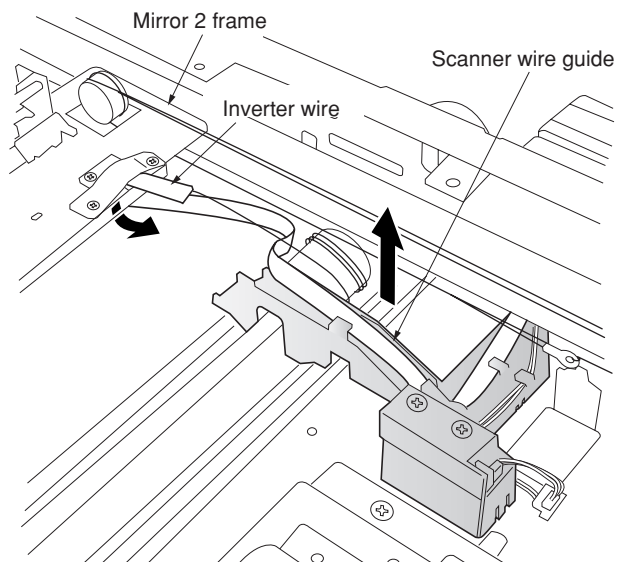


Figure 1-6-39

19. Unhook the round terminal of the scanner wire from the scanner tension spring on the left side of the scanner unit.
20. Remove the scanner wire.

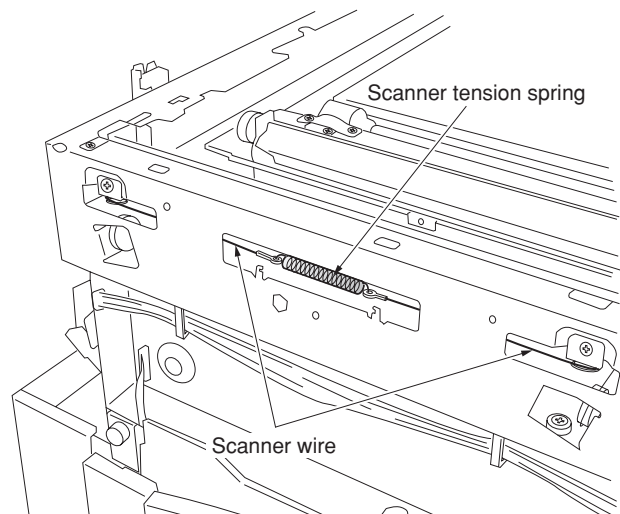


Figure 1-6-40

(2-2) Fitting the scanner wires**Caution:**

When fitting the wires, be sure to use those specified below.
P/N 2A6693070

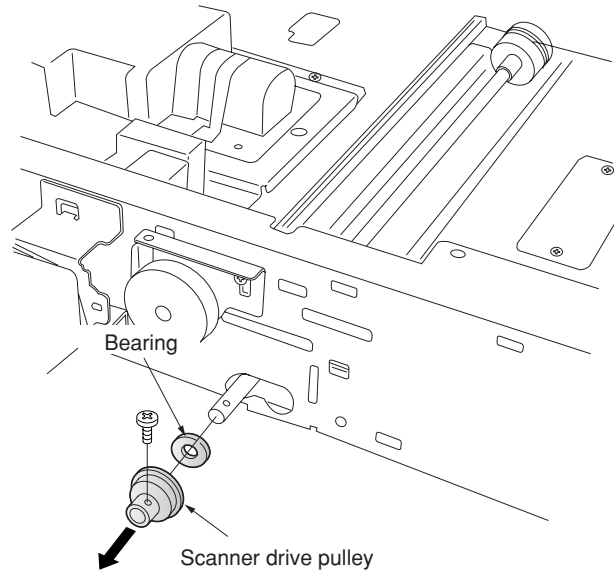
Fitting requires the following tools:

Two frame securing tools (P/N 2A668030)

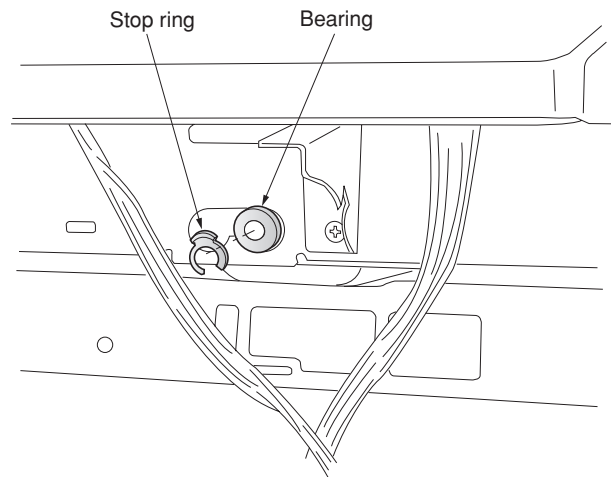
Two scanner wire stoppers (P/N 35968110)

Procedure

1. Remove the screws and then remove the scanner drive pulley.
2. Remove the bearing of the scanner wire drum shaft.

**Figure 1-6-41**

3. Remove the bearing and the stop ring of the scanner wire drum shaft from the machine front.
4. Remove the scanner wire drum shaft.

**Figure 1-6-42**

5. Insert the locating ball on each of the wires into the hole in the respective scanner wire drum and wind the scanner wire four turns inward and six turns outward.
- With the locating ball as the reference point, wind the shorter end of each wires inward.
6. Secure the scanner wires using the scanner wire stoppers.

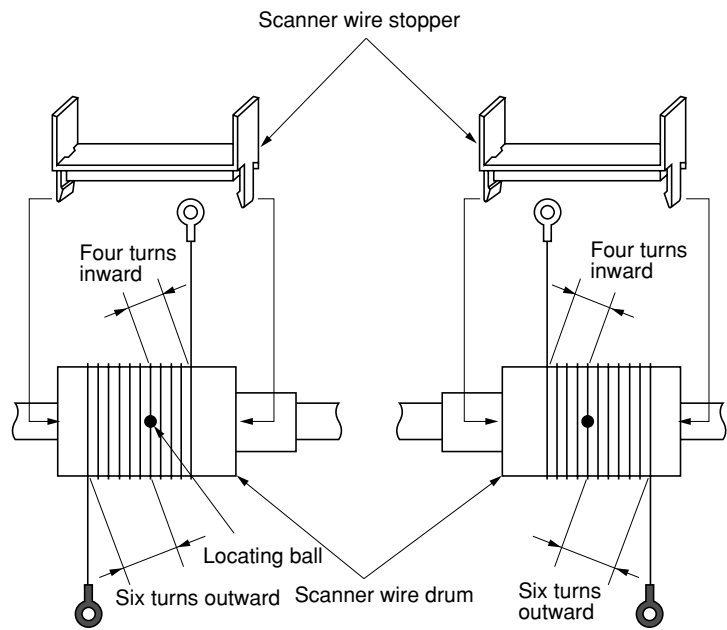


Figure 1-6-43

7. Put back the scanner wire drum shaft and refit the two bearings, the stop ring and the scanner drive pulley.
8. Insert the two frame securing tools into the positioning holes at the front and rear of the machine center to pin the mirror 2 frame in position.

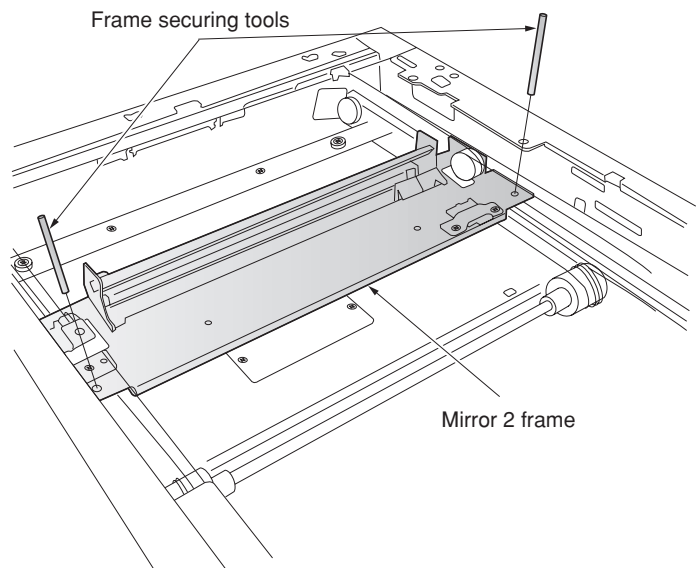


Figure 1-6-44

9. Loop the inner ends of the scanner wires around the grooves in the pulleys at the left of the machine, winding from below to above. ①
10. Loop the scanner wires around the outer grooves in the pulleys on the mirror 2 frame, winding from below to above. ②
11. Wind the scanner wires around the grooves in the scanner wire guides at the left of the machine. ③
12. Hook the round terminals onto the catches at the left of the machine. ④
13. Loop the outer ends of the scanner wires around the grooves in the pulleys at the right of the machine, winding from below to above. ⑤
14. Loop the scanner wires around the grooves in the pulleys on the mirror 2 frame, winding from above to below. ⑥
15. Hook the round terminals onto the catches inside of the machine. ⑦

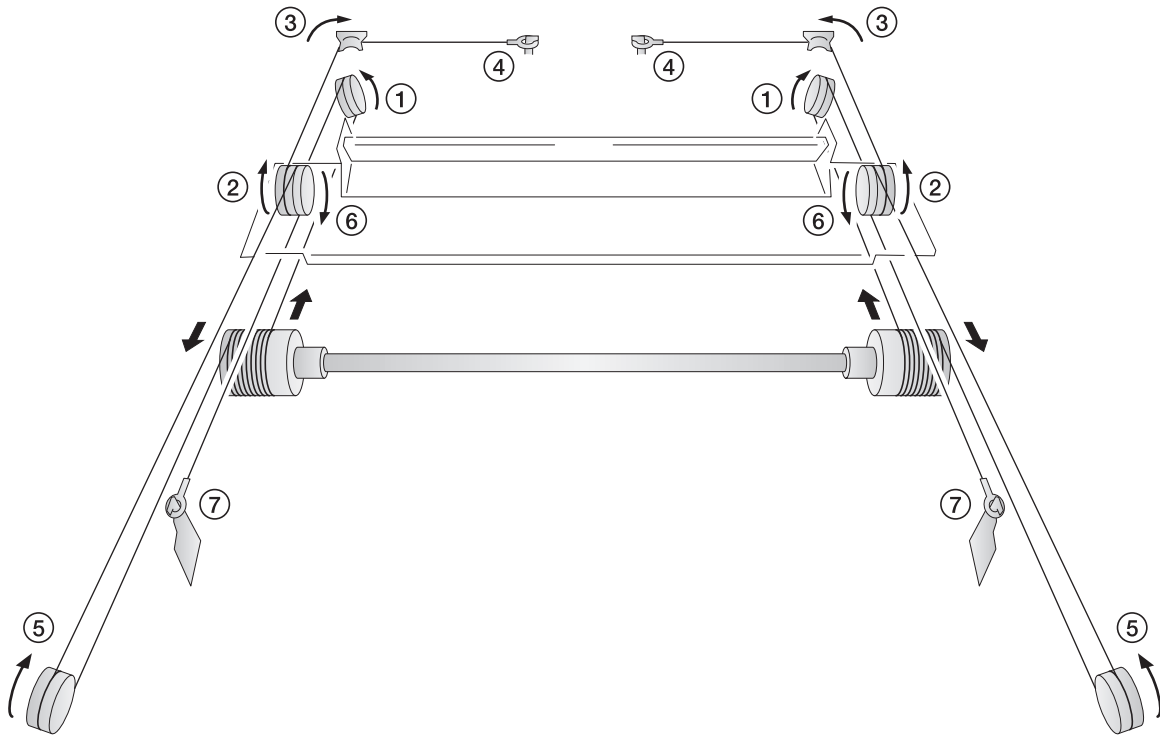


Figure 1-6-45

16. Remove the round terminals of scanner wire at the left and hook the terminals to the scanner tension spring.
17. Remove the scanner wire stoppers from the scanner wire drum.

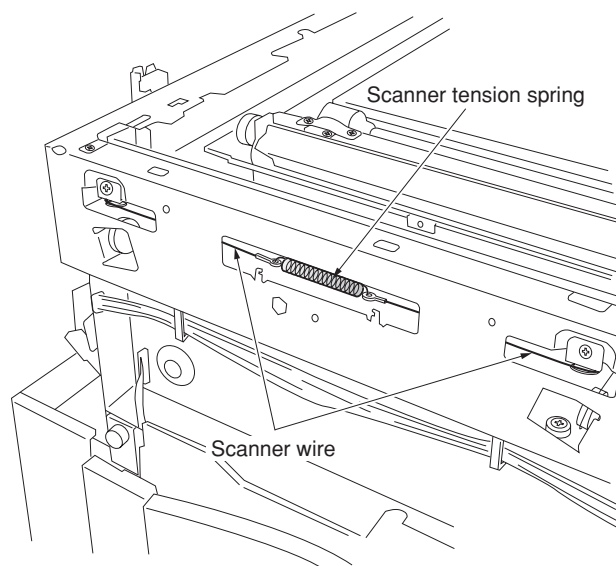


Figure 1-6-46

18. Pass the inverter wire in the mirror 2 frame as it was.
19. Insert the two frame securing tools into the positioning holes at the front and rear of the machine left to pin the mirror 2 frame in position.
20. Loosen the two screws at the front of the mirror 2 frame temporarily and then retighten them while checking that the frame securing tools move smoothly in the vertical direction.

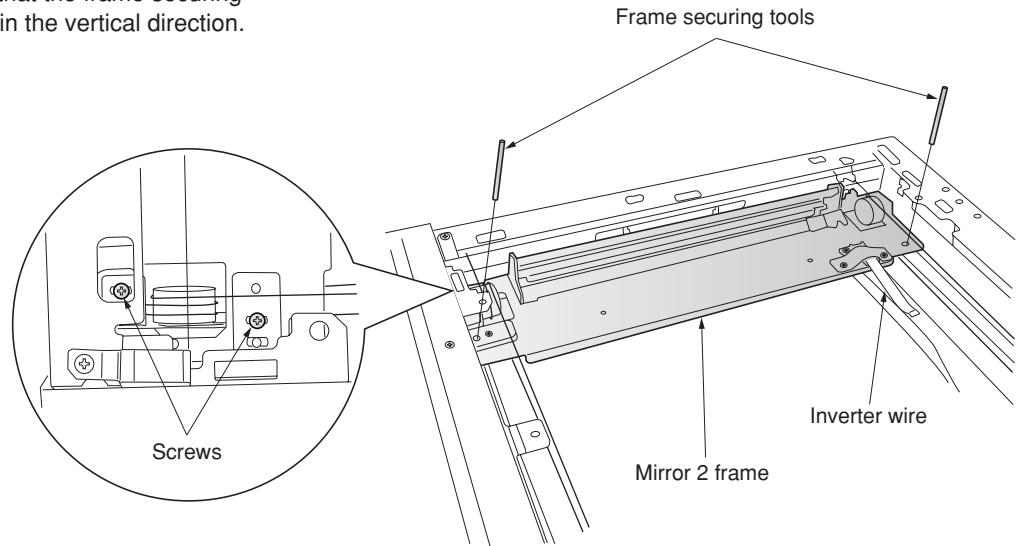


Figure 1-6-47

21. After removing the frame securing tools, return the mirror 1 frame to the main body of the machine and slide it to position to the positioning holes at the front and the rear on the left side of the machine.
22. Insert the frame securing tools into the positioning holes to secure both the mirror 1 frame and the mirror 2 frame.

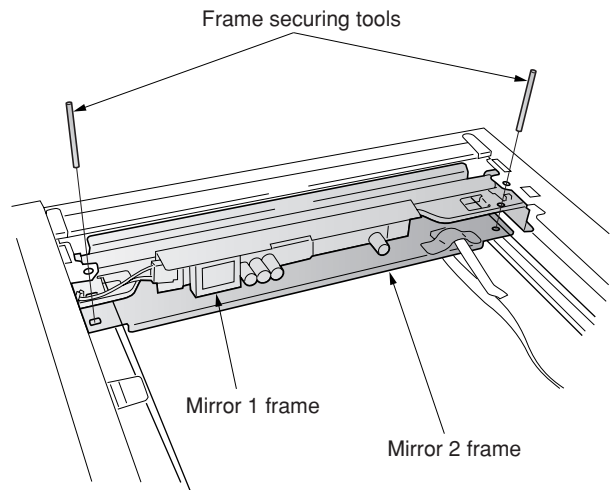


Figure 1-6-48

23. Put the front and rear scanner wires between the wire retainers and fix them with a screw each.
- * Fix them while checking that the frame securing tools move smoothly in the vertical direction.
24. Remove the two frame securing tools.

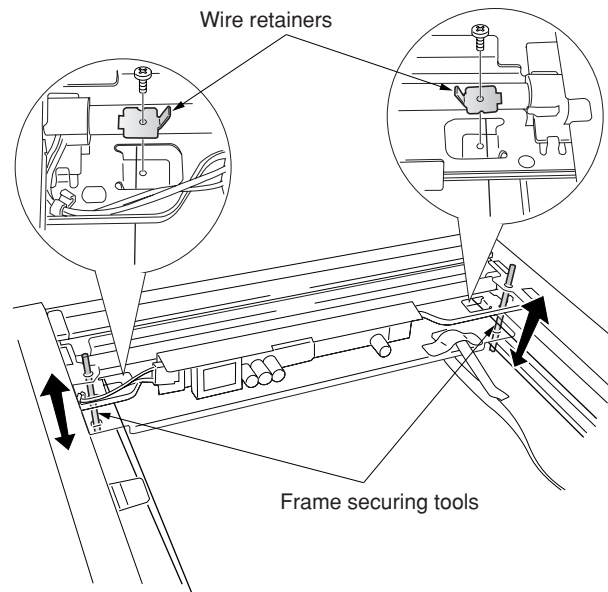


Figure 1-6-49

25. Connect the inverter wire to the inverter PCB and refit the inverter wire guide.
26. Move the mirror frames from side to side to correctly locate the wires in position.
27. Refit all the removed parts.

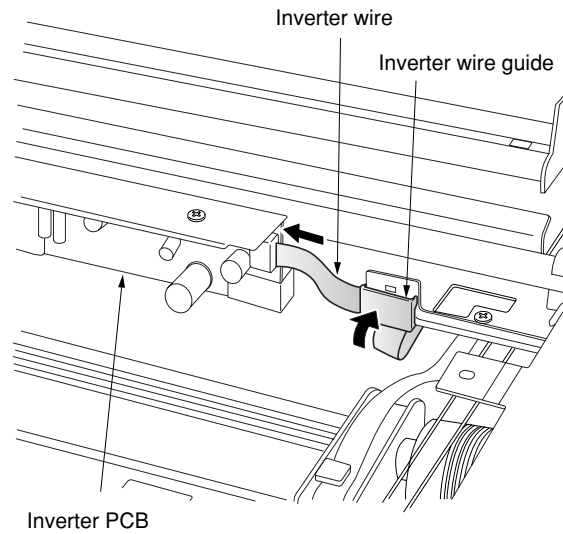


Figure 1-6-50

(3) Detaching and refitting the ISU (reference)

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

Caution:

After replacing the ISU, make a test copy and check the copy image. If the image is incorrect, perform the adjustments (see pages 1-6-32 to 36).

ISU installation requires the following tools:

Two positions pins (P/N 1856810)

Procedure

• Detaching the ISU

1. Remove the original cover/DF, rear middle cover, upper right cover and then remove the contact glass (see page 1-6-17).
2. Remove the ten screws (machine inside: 8, right side:2), and then remove the ISU cover (see page 1-6-22).
3. Remove the screws and two connectors and then remove the ISU.
4. Replace the ISU.

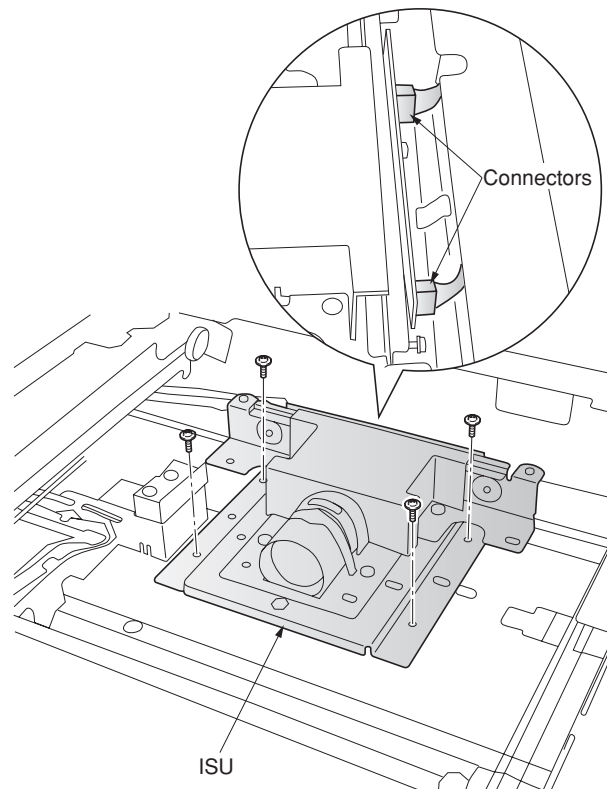


Figure 1-6-51

• Refitting the ISU

5. Fit the ISU using the two positioning pins.
6. Refit the ISU using the screw.
7. Remove the two positioning pins and connect the two connectors.
8. Refit all the removed parts.

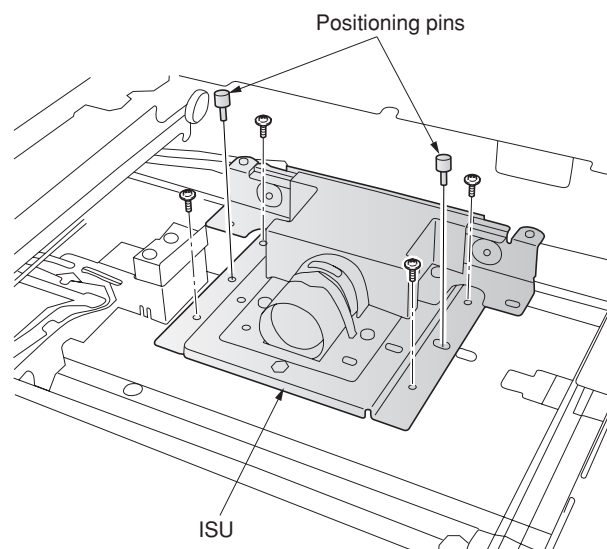


Figure 1-6-52

(4) Detaching and refitting the original size detection switch

Take the following procedure when the original size detection switch is to be replaced.

Procedure

1. Remove the original cover/DF, rear middle cover, upper right cover and then remove the contact glass (see page 1-6-17).
2. Remove the ten screws (machine inside: 8, right side:2), and then remove the ISU cover (see page 1-6-22).
3. Remove the screw and connector and then the original size detection switch.
4. Replace the original size detection switch and refit all the removed parts.

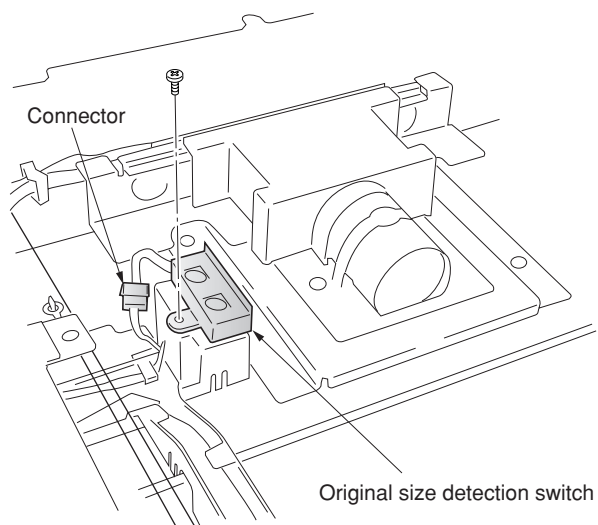


Figure 1-6-53

(5) Detaching and refitting the laser scanner unit

Perform the following procedure when the laser scanner unit is to be replaced.

Procedure

1. Remove the upper right cover and contact glass (see page 1-6-17).
2. Remove the left upper cover.
3. Remove the eject cover (see page 1-6-4).
4. Remove the screw and then remove the scanner unit.

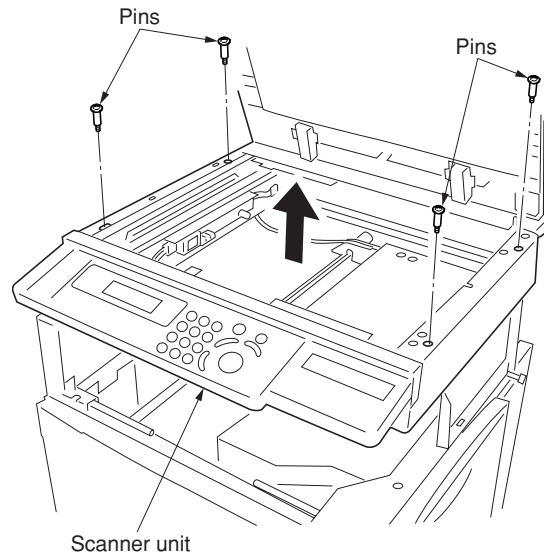


Figure 1-6-54

5. Remove the screw and then remove the handle of the right rear.
6. Remove the nine screws and then remove the electric component frame.

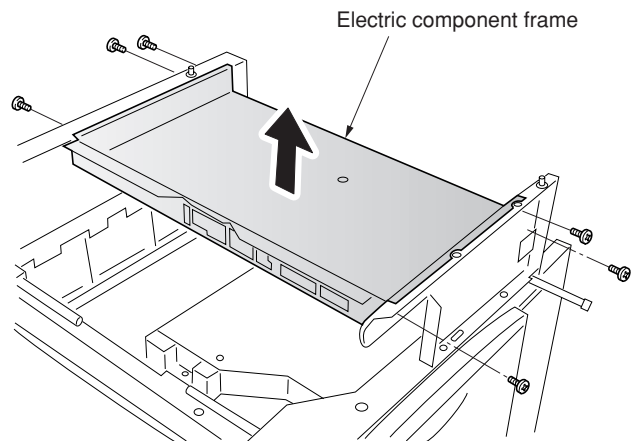
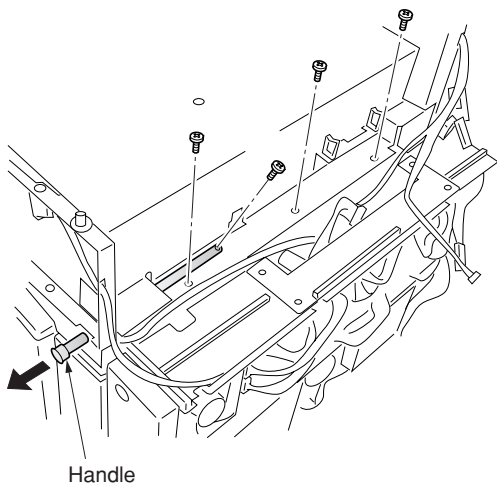


Figure 1-6-55

7. Remove the connector from the laser scanner unit.
8. Remove the four screws and then remove the laser scanner unit.
9. Replace the laser scanner unit and refit all the removed parts.

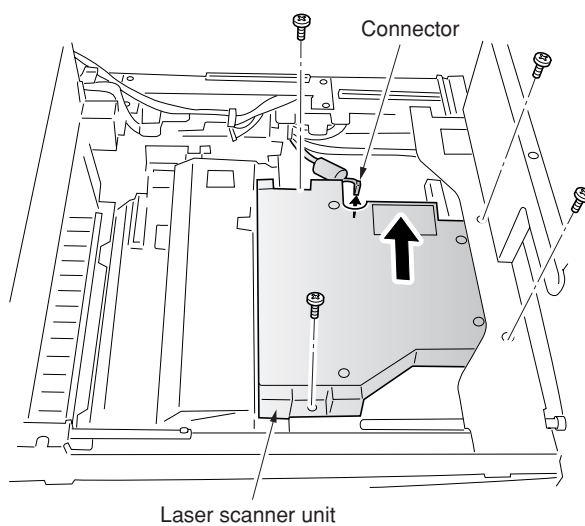
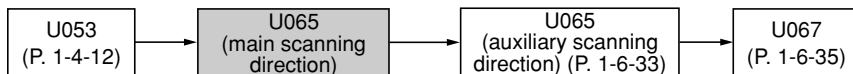


Figure 1-6-56

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

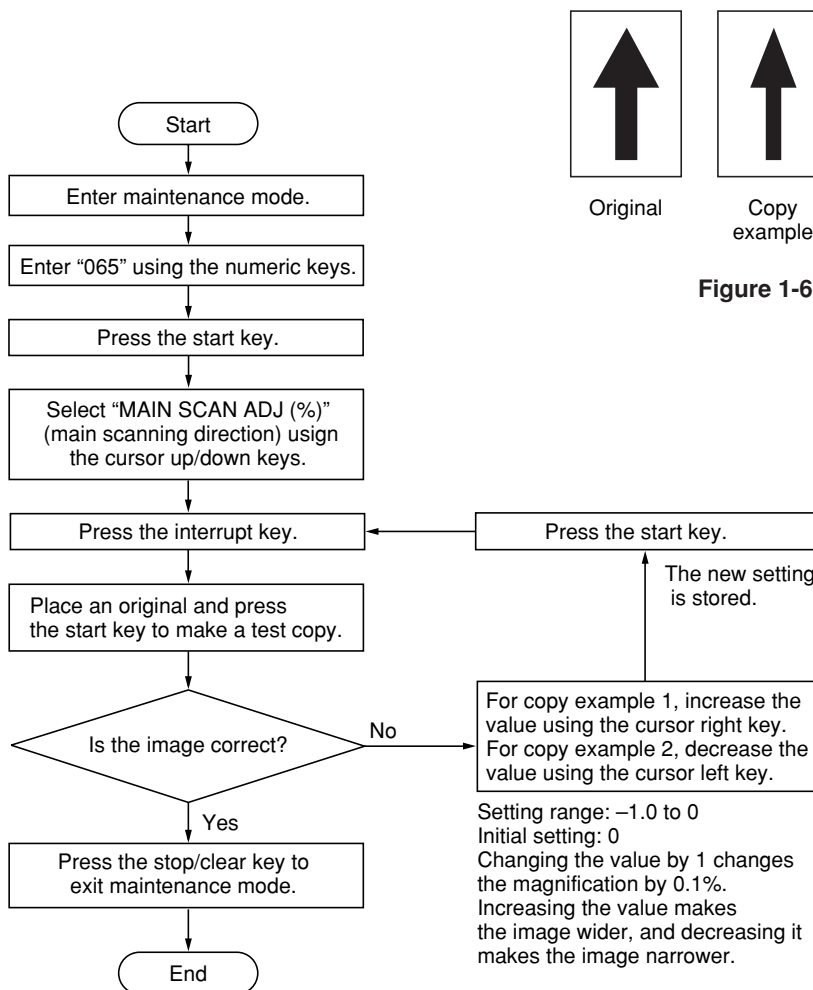
Perform the following adjustment if the magnification in the main scanning direction is not correct.



Caution:

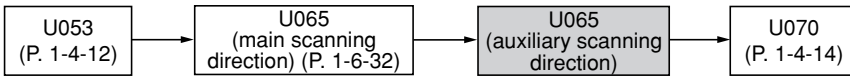
Before making the following adjustment, ensure that the above adjustments have been made in maintenance mode. Also, perform “(7) Adjusting magnification of the scanner in the auxiliary scanning direction” (page 1-6-33) and “(9) Adjusting the scanner center line” (page 1-6-35) after this adjustment.

Procedure



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

Procedure

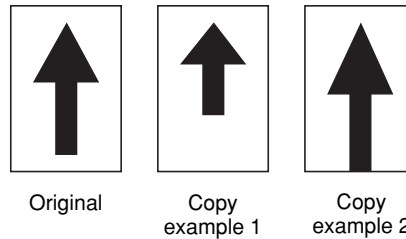
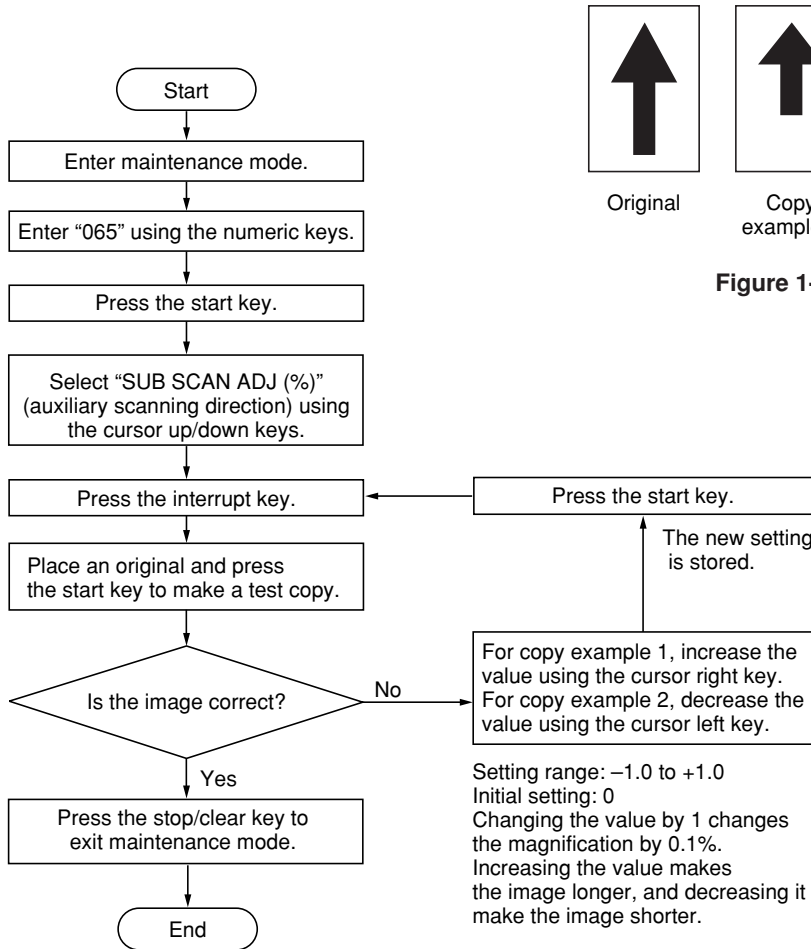
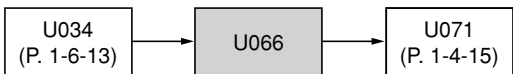


Figure 1-6-58

Setting range: -1.0 to +1.0
 Initial setting: 0
 Changing the value by 1 changes the magnification by 0.1%.
 Increasing the value makes the image longer, and decreasing it make the image shorter.

(8) Adjusting the scanner leading edge registration

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



Caution:

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

Procedure

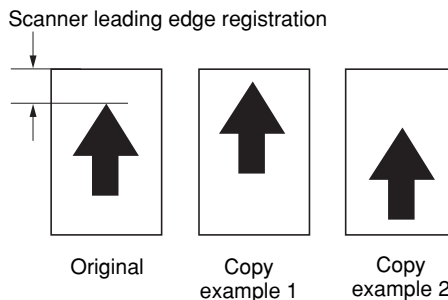
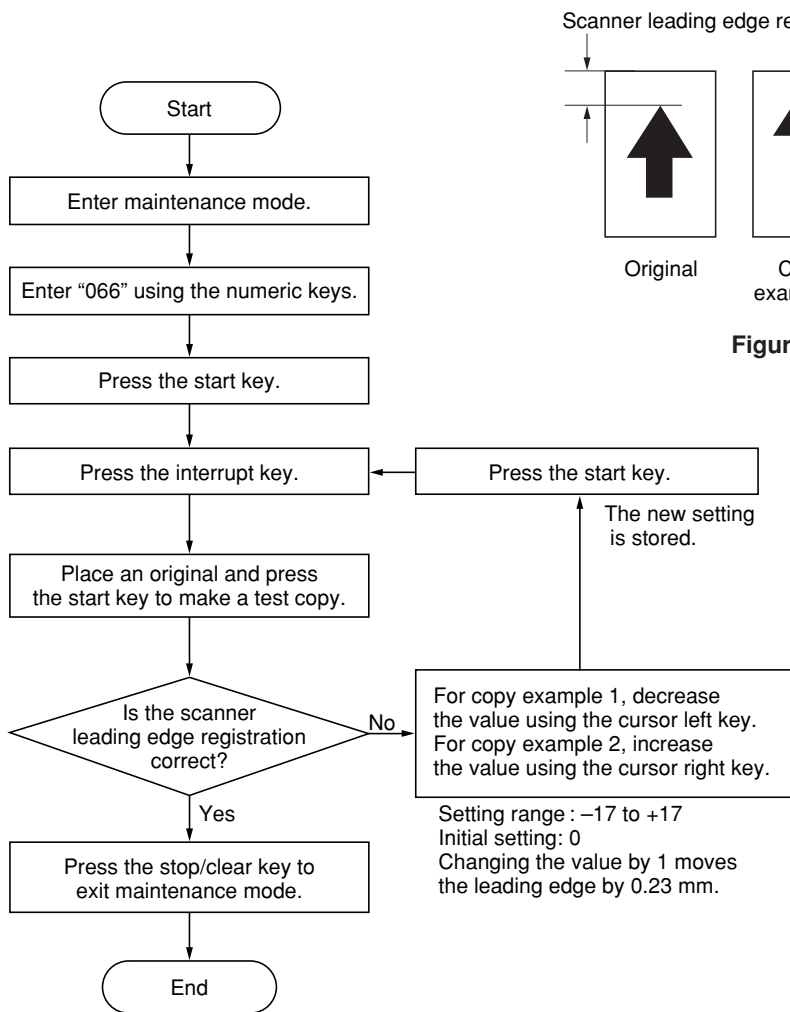
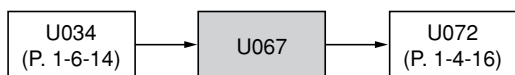


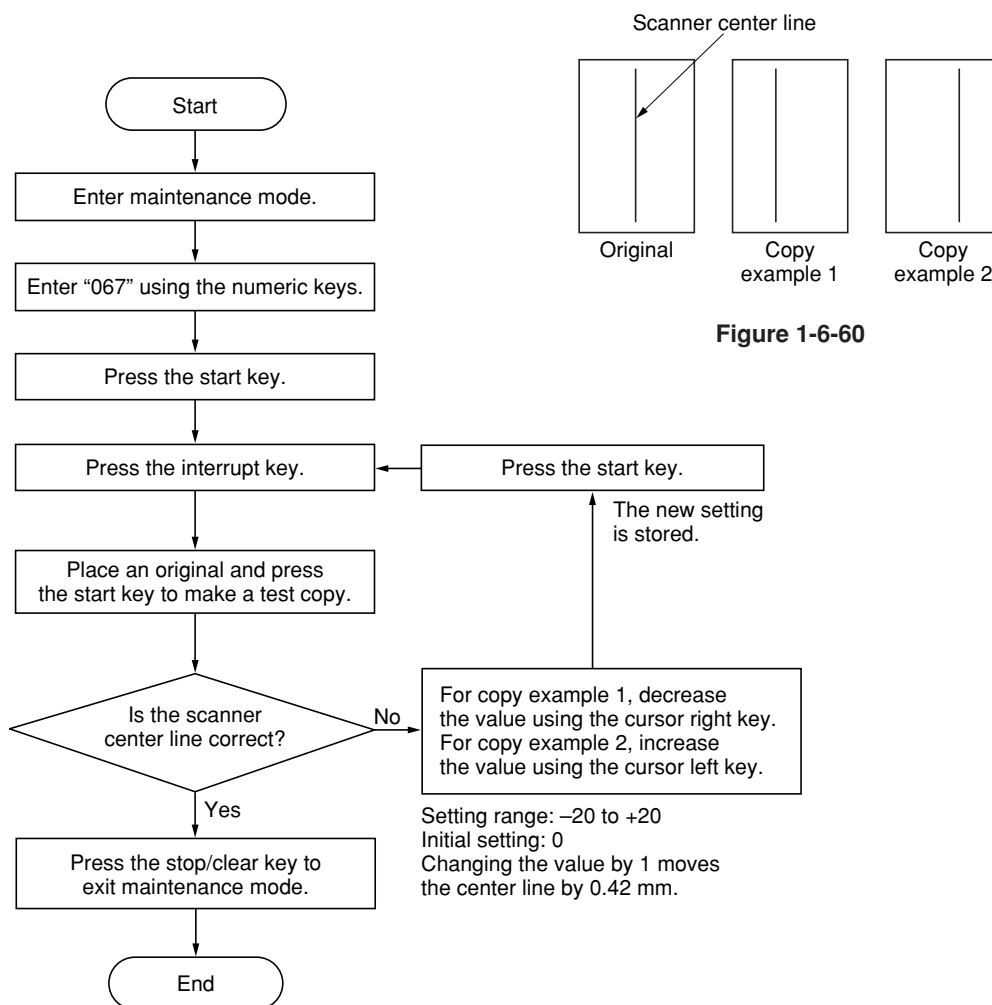
Figure 1-6-59

(9) Adjusting the scanner center line

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

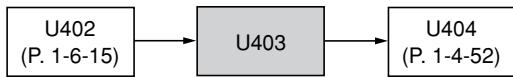
**Caution:**

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

Procedure

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

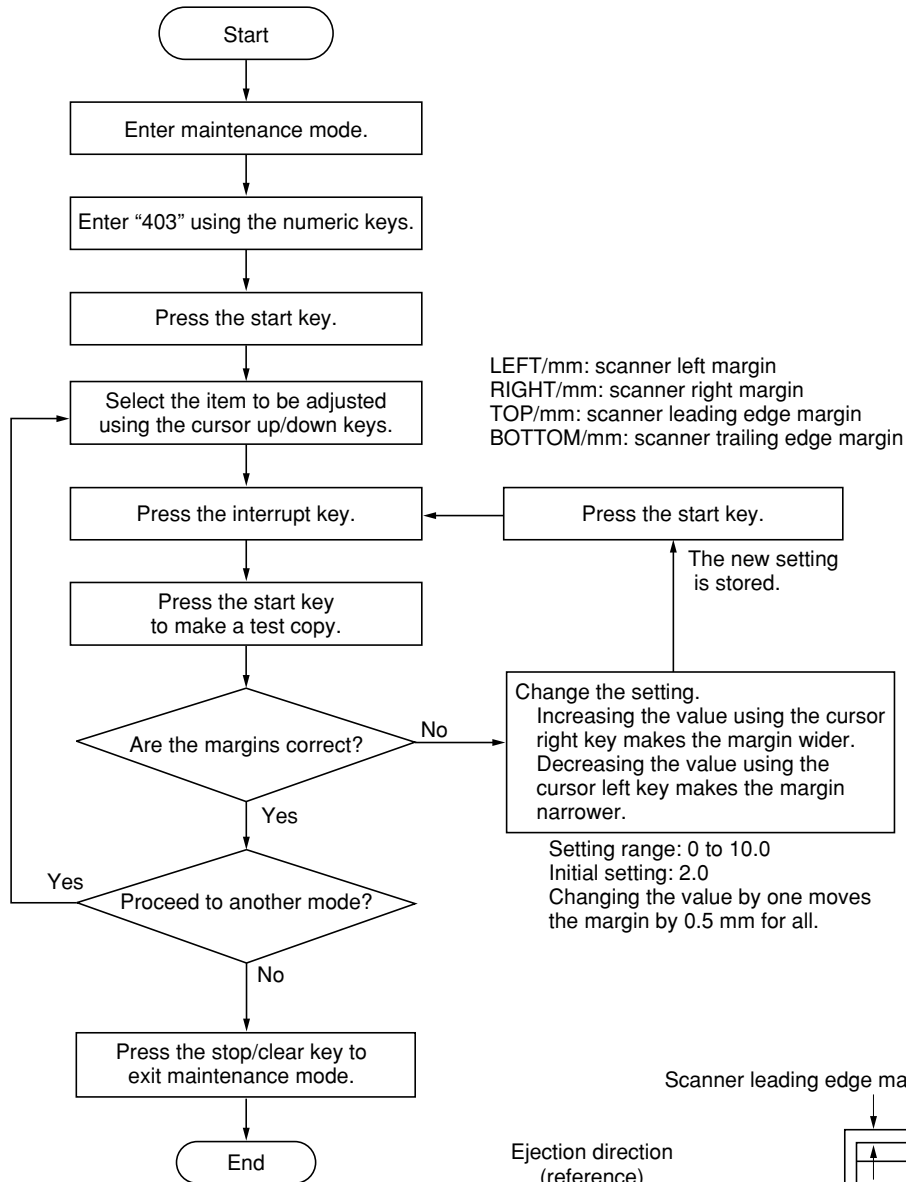
Perform the following adjustment if the margins are not correct.



Caution:

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

Procedure



LEFT/mm: scanner left margin
 RIGHT/mm: scanner right margin
 TOP/mm: scanner leading edge margin
 BOTTOM/mm: scanner trailing edge margin

Change the setting. Increasing the value using the cursor right key makes the margin wider. Decreasing the value using the cursor left key makes the margin narrower.
 Setting range: 0 to 10.0
 Initial setting: 2.0
 Changing the value by one moves the margin by 0.5 mm for all.

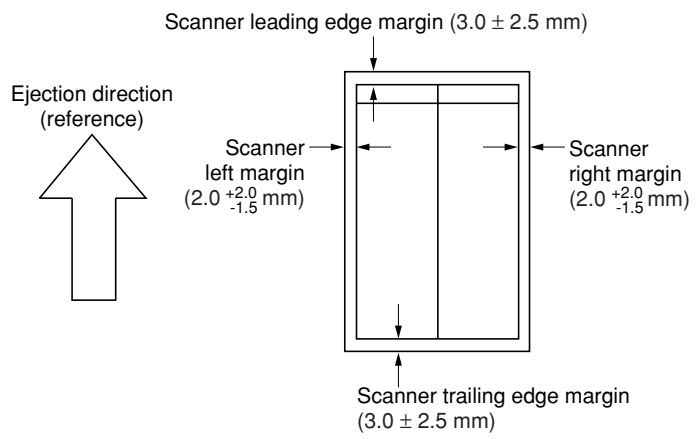


Figure 1-6-61

1-6-4 Main charger unit

(1) Detaching and refitting the main charger unit

Perform the following procedure when the main charger unit is to be checked or replaced.

Procedure

1. Open the front cover.
2. While pushing the main charger unit release lever upward, slightly lift the main charger unit, and then pull it out.

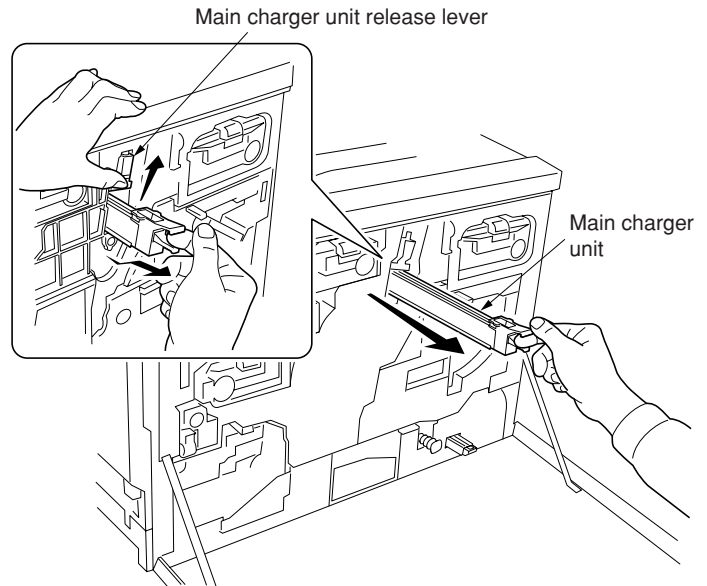


Figure 1-6-62

(2) Detaching and refitting the main charger grid

Perform the following procedure when the main charger grid is to be checked or replaced.

Procedure

1. Remove the main charger unit.
2. Detach the main charger grid from the hooks.
3. Replace the main charger grid and refit all the removed parts.

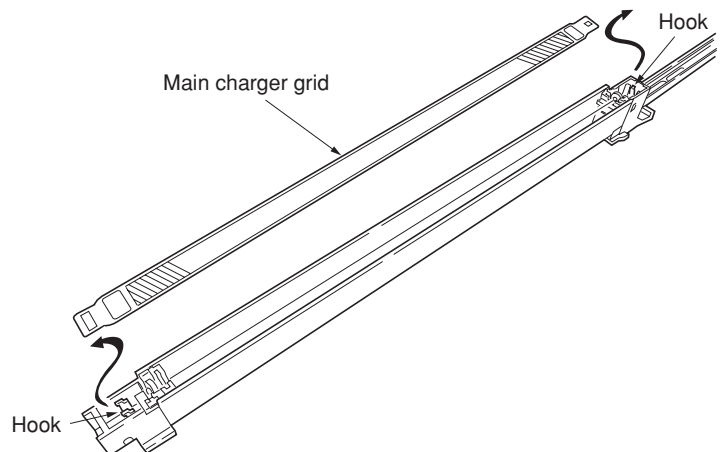


Figure 1-6-63

1-6-5 Drum section

(1) Detaching and refitting the drum unit

Follow the procedure below to replace the drum unit.

Cautions:

- Before removing the drum unit, first remove the main charger unit.
- While the drum unit is removed from the machine, keep the drum unit on a clean, flat surface in a dry place.

Procedure

1. Remove all (four) developers (see page 1-6-40).
2. Remove the main charger unit (see page 1-6-37).
3. Remove the two screws and then remove the drum unit.
4. Replace the drum unit and refit all the removed parts.

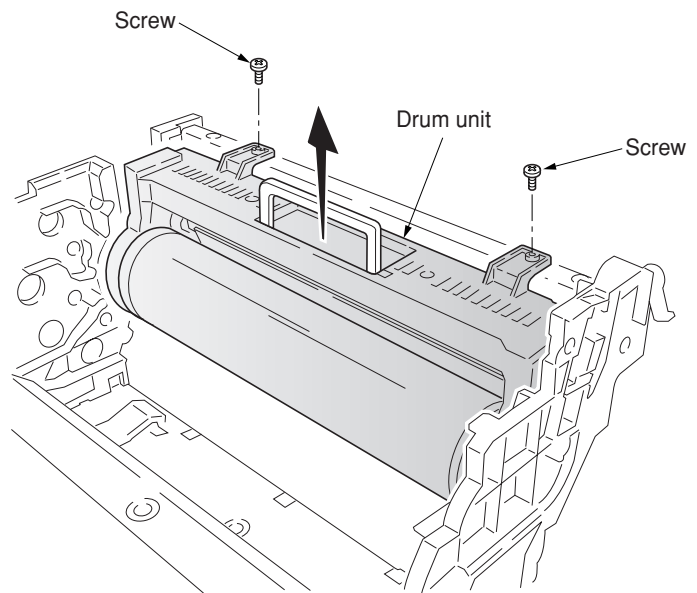


Figure 1-6-64

1-6-6 Primary transfer unit

(1) Detaching and refitting the primary transfer unit

Follow the procedure below to replace the primary transfer unit.

Cautions:

- While the primary transfer unit is removed from the machine, keep the primary transfer unit on a clean, flat surface in a dry place.

Procedure

1. Open the front cover.
2. Draw the paper feed unit.
3. Turn the lock lever to the direction of the arrow.
4. Draw the primary transfer unit until it stops.
5. Remove the screw.
6. While pressing the gray lever, remove the primary transfer unit from the machine.
7. Replace the primary transfer unit and refit all the removed parts.

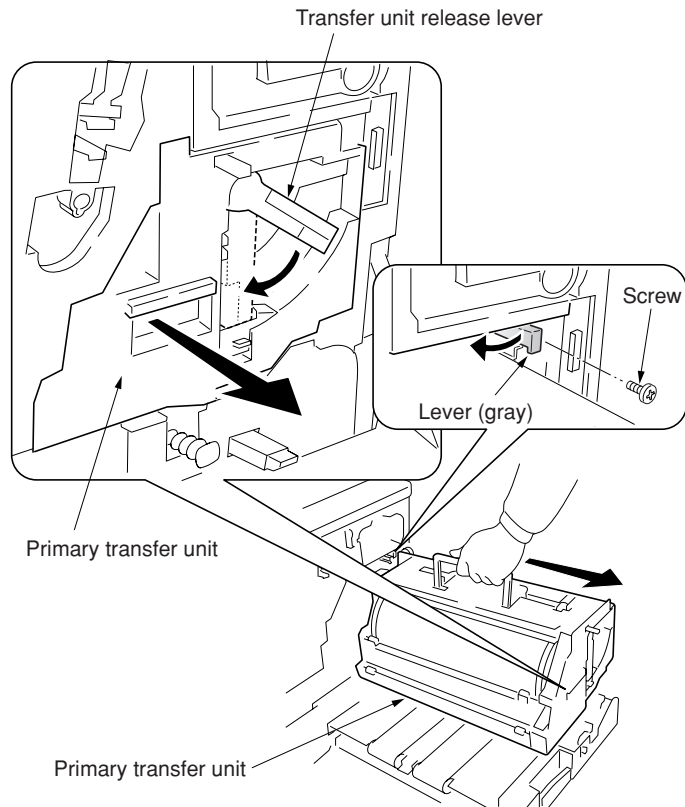


Figure 1-6-65

(2) Detaching and refitting the cleaning brush unit

Follow the procedure below to replace the cleaning brush unit.

Procedure

1. Remove the primary transfer unit.
2. Remove the screw.
3. Pull the release lever up.
4. Pull the levers down and then remove the cleaning brush unit.
5. Replace the cleaning brush unit and refit all the removed parts.

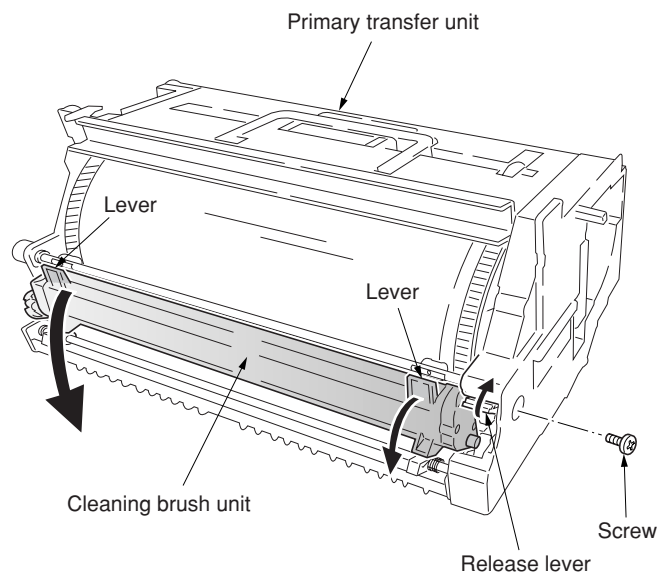


Figure 1-6-66

1-6-7 Developing section

(1) Detaching and refitting the developers

Follow the procedure below to replace the developers.

Cautions:

- When closing the process frame, secure two screws A first, and then secure two screws B.

Procedure

1. Remove the primary transfer unit (see page 1-6-39).
2. Close the paper feed unit.
3. Remove the four screws A and B.
4. Open the two stoppers.
5. Draw the process frame.

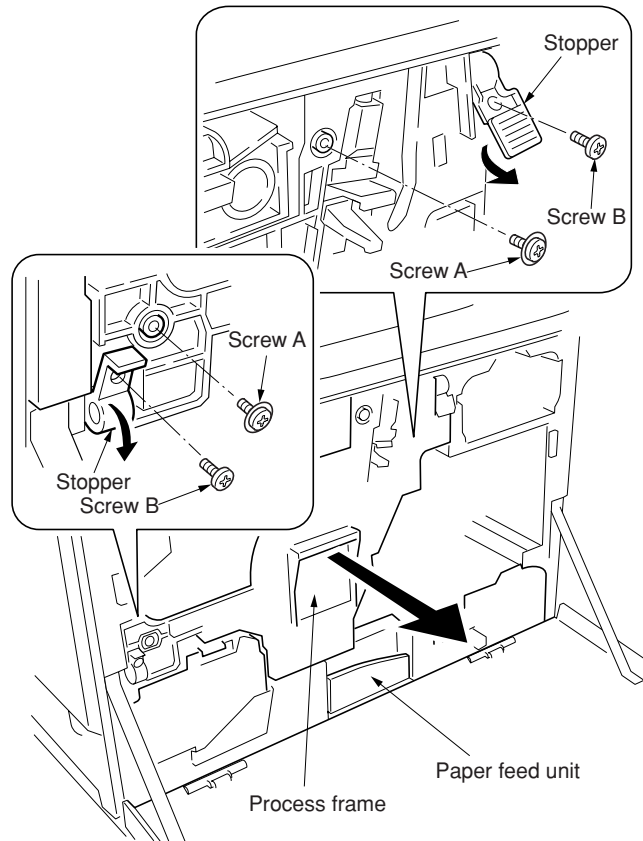


Figure 1-6-67

6. Remove the developers in the order of black, yellow, magenta, and cyan from the process frame.
7. Replace the developers and refit all the removed parts.

Cautions:

- While the developers are removed from the machine, keep them away from any magnetic record media, credit cards, etc.

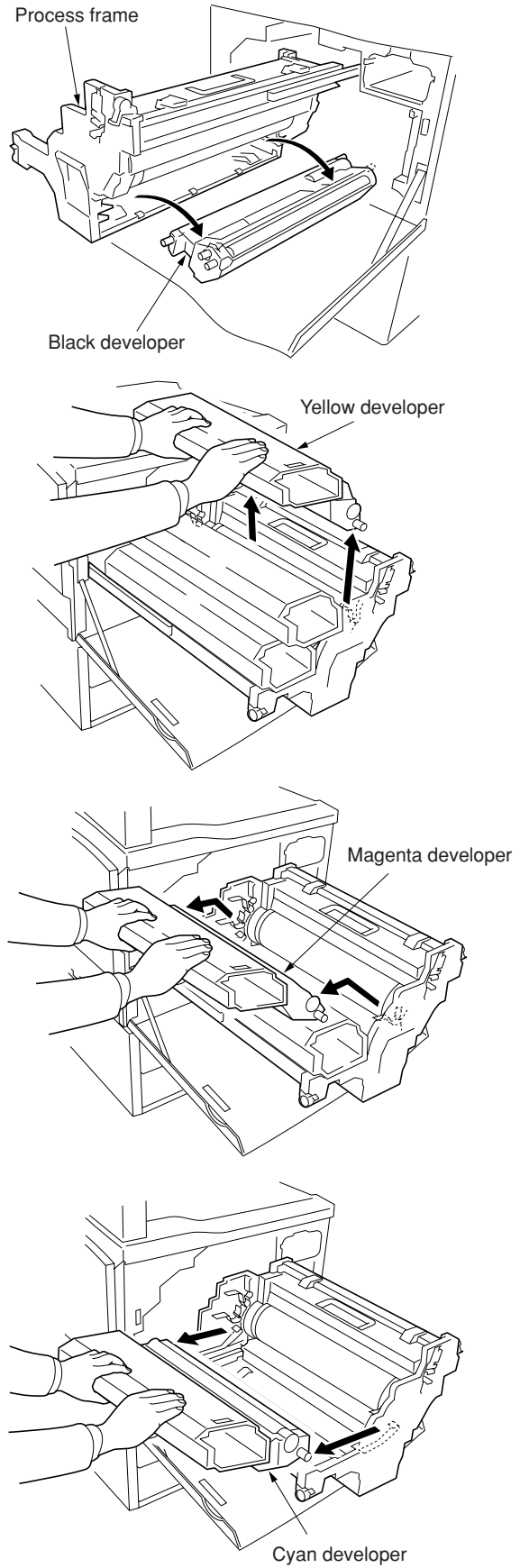


Figure 1-6-68

(2) Detaching and refitting the waste toner duct assembly

Follow the procedure below to replace the waste toner duct assembly.

Procedure

1. Remove the drum unit (see page 1-6-38).
2. Remove the screw and then remove the process frame left cover.
3. Remove the four pins and spring washers and then remove the process frame from the rails.

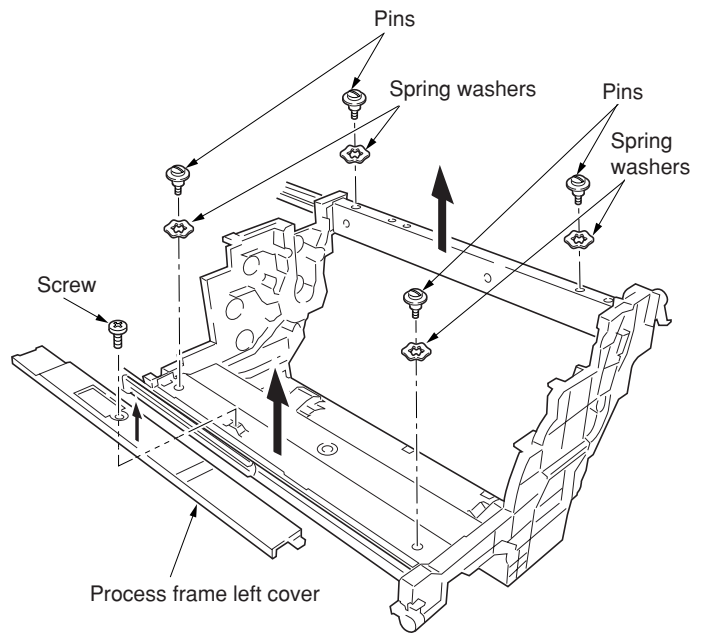


Figure 1-6-69

4. Remove the two screws.
5. Remove the waste toner duct assembly and the steel ball.

Cautions:

- When refitting the waste toner duct, make sure placing the steel ball in the opening of the duct.

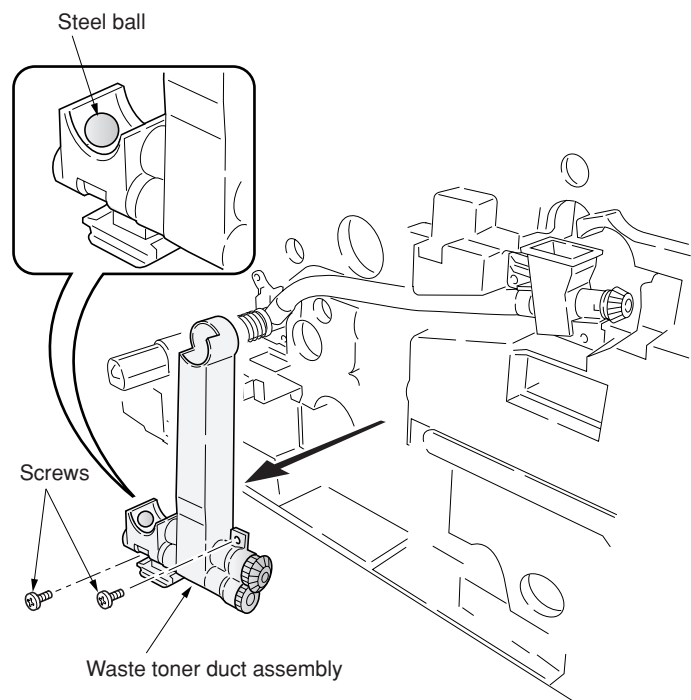


Figure 1-6-70

(3) Detaching and refitting the black toner feed assembly

Follow the procedure below to replace the black toner feed assembly.

Procedure

1. Remove the waste toner duct assembly (see page 1-6-42).
2. Remove the four screws and then remove the black toner feed assembly.
3. Replace the black toner feed assembly and refit all the removed parts.

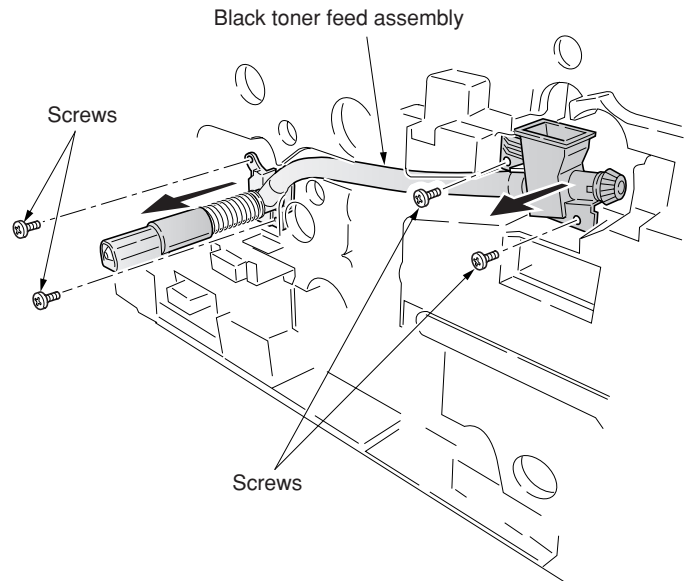


Figure 1-6-71

(4) Detaching and refitting the black toner container feed assembly

Follow the procedure below to replace the black toner container feed assembly.

Procedure

1. Remove the process frame (see page 1-6-42).
2. Remove the black toner container.
3. Remove the screw and then remove the black toner container feed assembly.
4. Replace the black toner container feed assembly and refit all the removed parts.

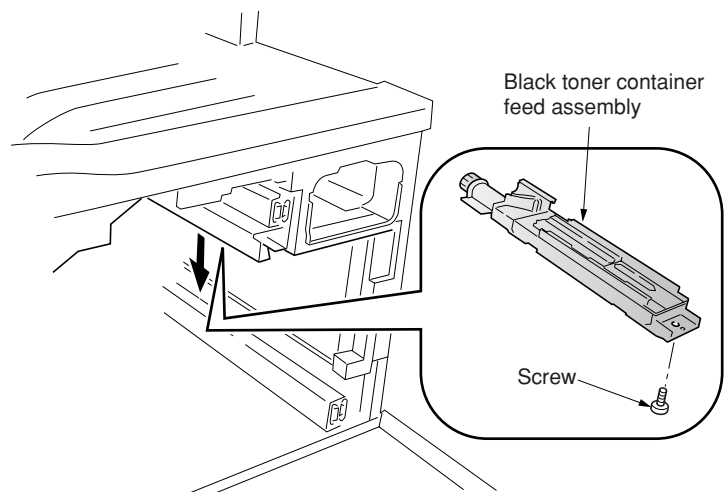


Figure 1-6-72

(5) Detaching and refitting the black toner feed drive assembly

Follow the procedure below to replace the black toner feed drive assembly.

Procedure

1. Draw the process frame (see page 1-6-42).
2. Remove the harness holder (see page 1-6-66).
3. Remove the four screws and then remove the black toner feed drive assembly.
4. Replace the black toner feed drive assembly and black toner feed assembly and refit all the removed parts.

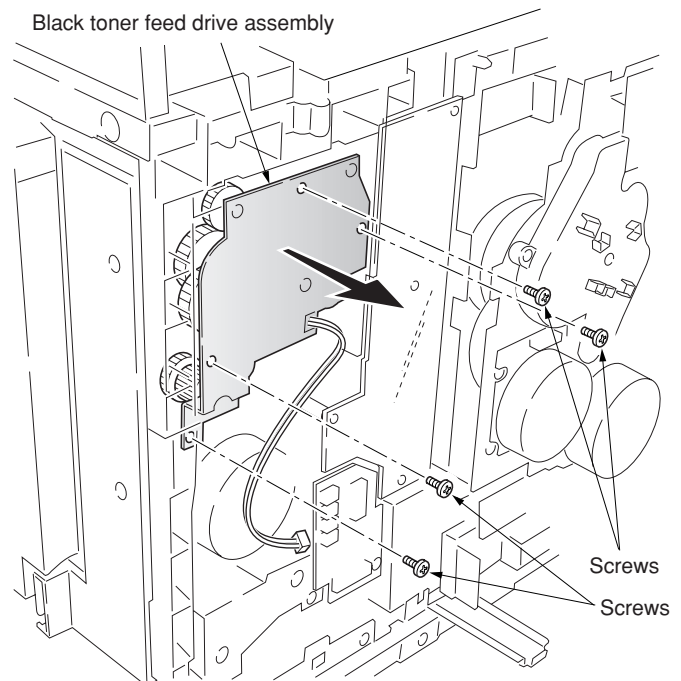


Figure 1-6-73

1-6-8 Secondary transfer unit

(1) Detaching and refitting the transfer roller and the separation charger unit

Follow the procedure below to replace the transfer roller and the separation charger unit.

Procedure

1. Open the front cover.
2. Draw the paper feed unit.
3. Remove the waste toner tank.
4. Detach the secondary transfer unit from the bushes.
5. Remove the tab from the terminal.
6. Remove the secondary transfer unit from the paper feed unit.

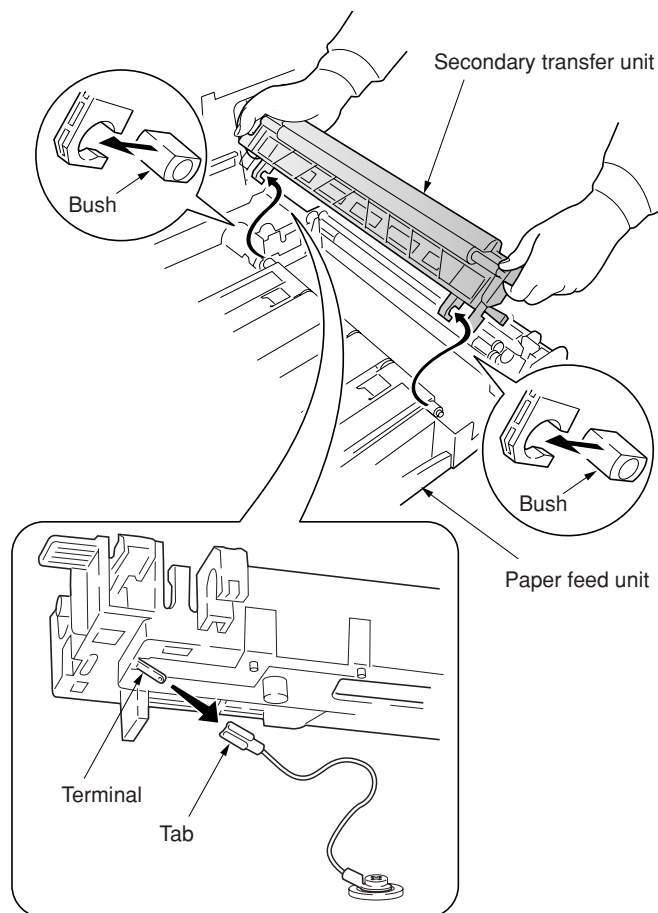


Figure 1-6-74

7. Remove the transfer roller. To remove the transfer roller, pull both ends up.

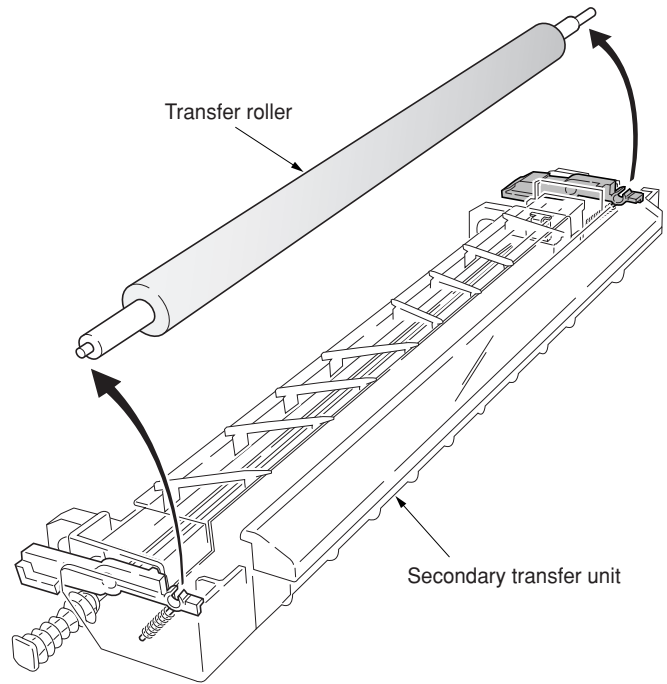


Figure 1-6-75

8. Pull the projection of separation charger unit front side.
9. Remove the separation charger unit from the secondary transfer unit.
10. Replace the transfer roller or the separation charger unit and refit all the removed parts.

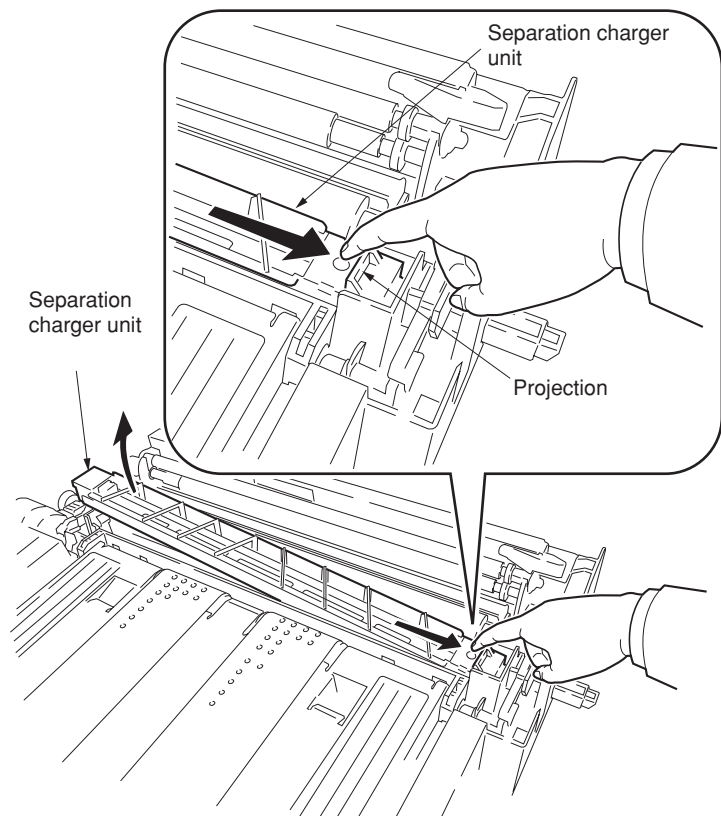


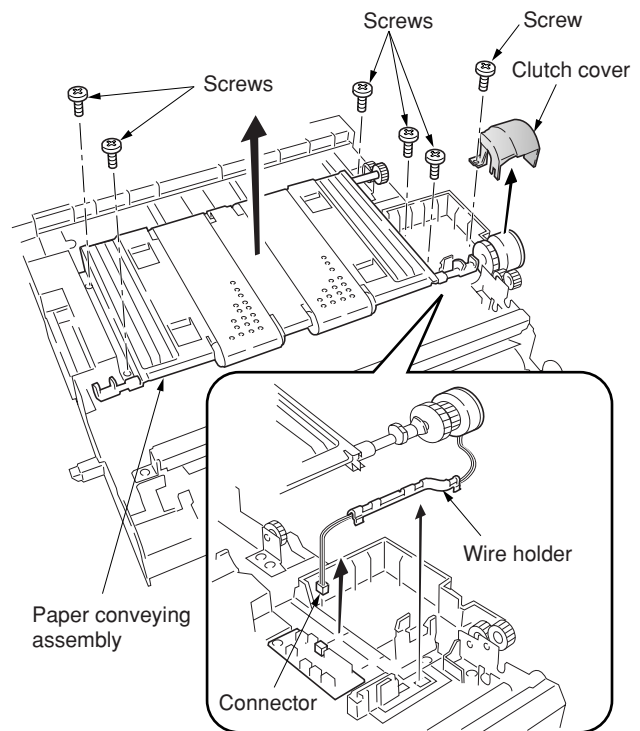
Figure 1-6-76

(2) Detaching and refitting the secondary transfer unit shift clutch

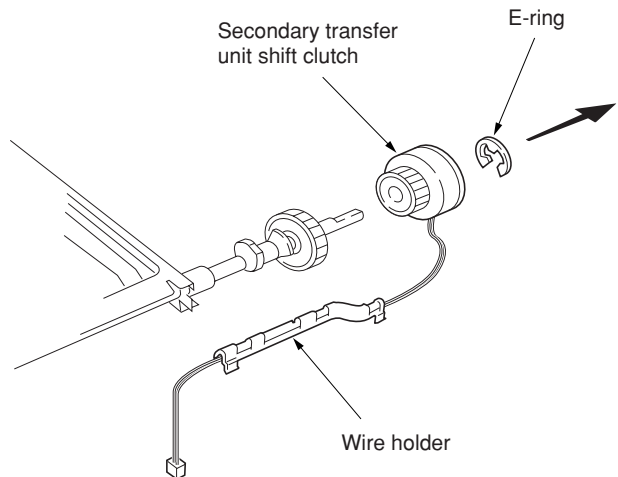
Follow the procedure below to replace the secondary transfer unit shift clutch.

Procedure

1. Open the front cover and draw the paper feed unit.
2. Remove the connector and then remove the clutch cover.
3. Remove the five screws.
4. Remove the connector and the wire holder and then remove the paper conveying unit.

**Figure 1-6-77**

5. Remove the E-ring and then remove the secondary transfer unit shift clutch.
6. Remove the wire holder from the secondary transfer unit shift clutch.
7. Replace the secondary transfer unit shift clutch and refit all the removed parts.

**Figure 1-6-78**

1-6-9 Fuser unit

(1) Detaching and refitting the fuser unit

Follow the procedure below to detach the fuser unit.

Procedure

1. Open the front cover and draw the paper feed unit.
2. Remove the screw.
3. Open the left paper guide down.
4. Remove the fuser unit.

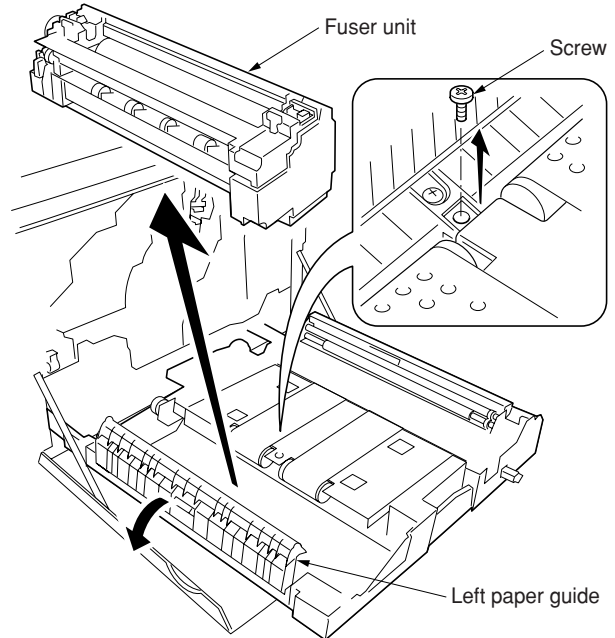


Figure 1-6-79

(2) Detaching and refitting the fuser top cover and upper separator bracket

Follow the procedure below to remove the fuser top cover and upper separator bracket.

Procedure

1. Detaching the fuser unit.
2. Remove the screw and then remove the fuser knob.
3. Remove the three screws and then remove the fuser rear cover.

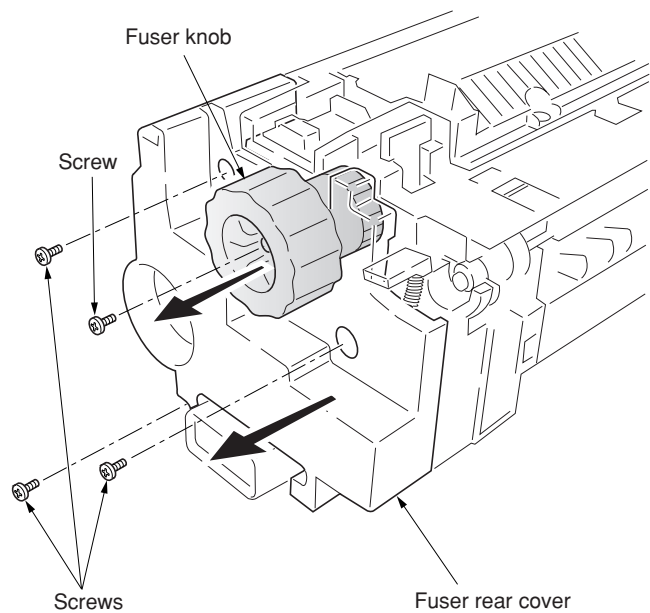


Figure 1-6-80

- Remove the three screws and then remove the fuser front cover.

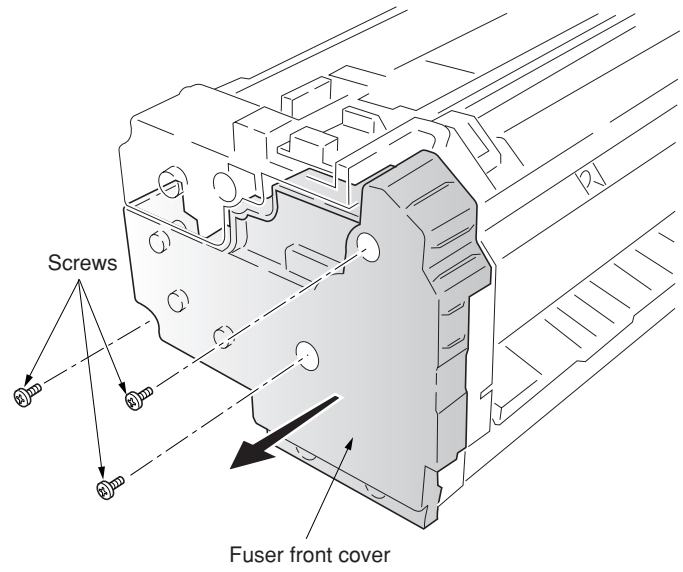


Figure 1-6-81

- Stand upright the fuser top cover and then pull it out.
- Stand upright the upper separator bracket and then pull it out.

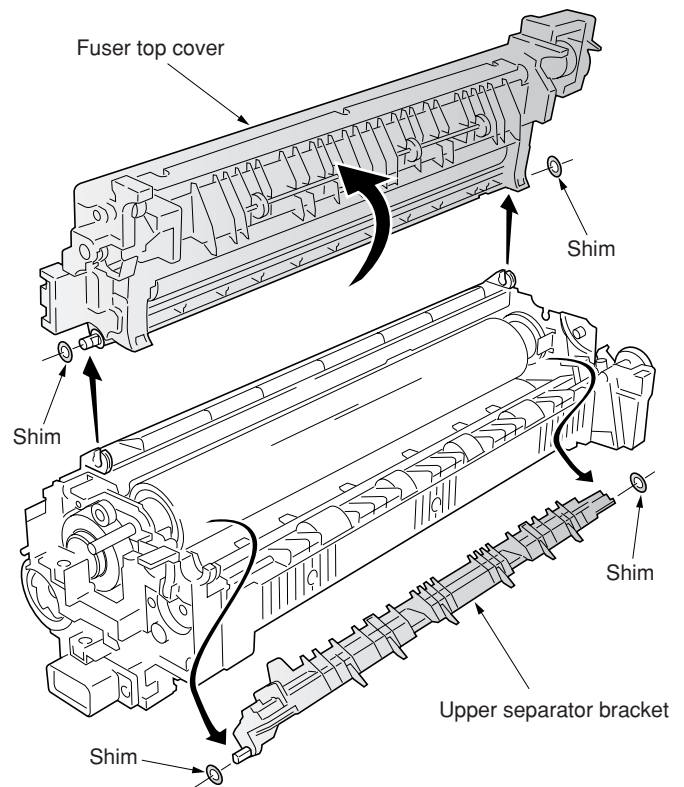


Figure 1-6-82

(3) Detaching and refitting the upper and lower fuser thermistors

Follow the procedure below to replace the upper and lower fuser thermistors.

Procedure

1. Remove the fuser top cover (see page 1-6-48).
2. Remove the two screws and then remove the fuser upper entrance guide.
3. Remove the two screws and then remove the fuser bottom cover.

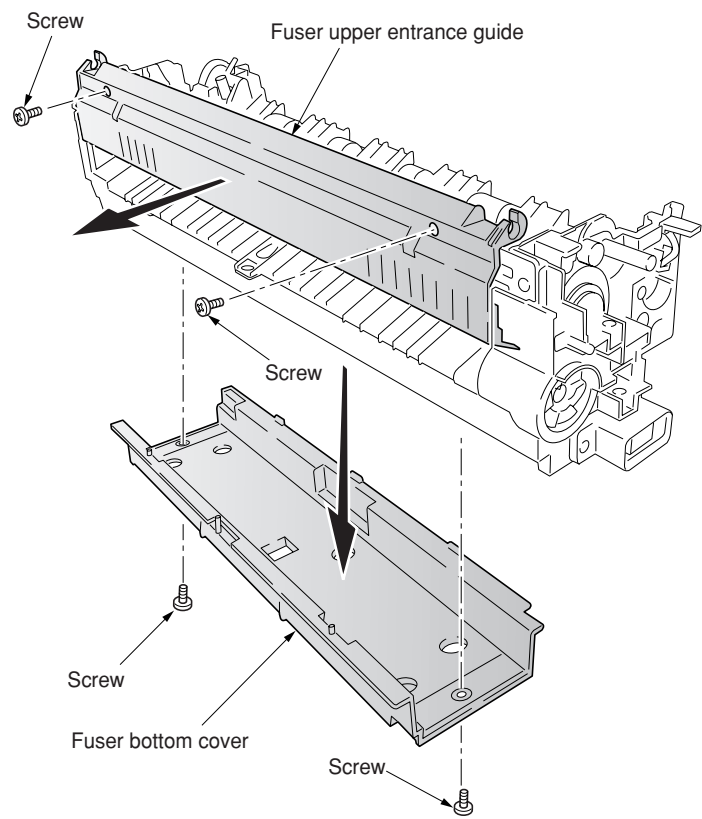


Figure 1-6-83

4. Remove the connector.
5. Remove the two screws and then remove the holder.
6. Remove the screw and then remove the upper fuser thermistor.

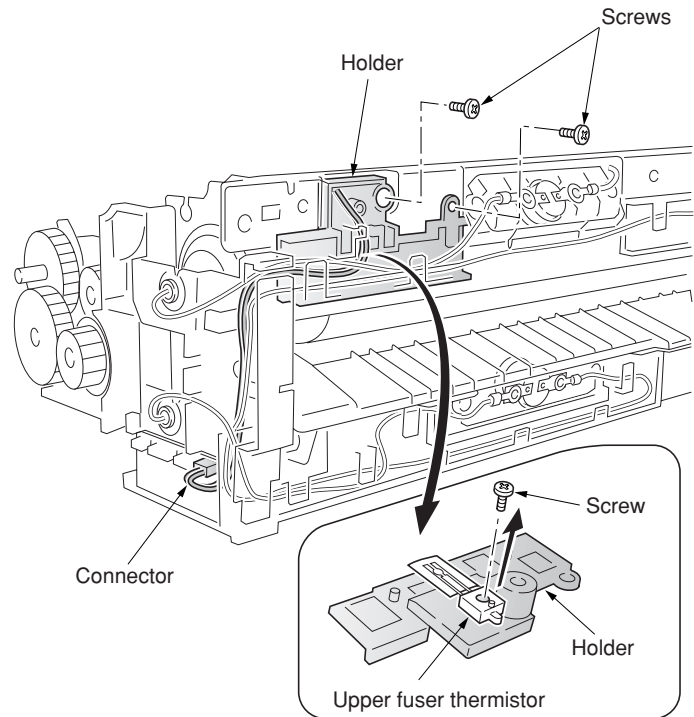


Figure 1-6-84

7. Remove the connector.
8. Remove the screw and then remove the lower fuser thermistor.
9. Replace the upper and lower thermistor and refit all the removed parts.

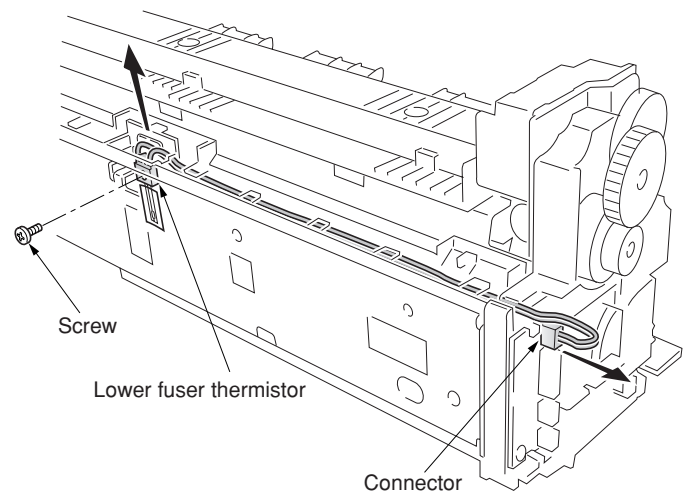


Figure 1-6-85

(4) Detaching and refitting the upper and lower thermostats

Follow the procedure below to replace the upper and lower thermostats.

Procedure

1. Remove the fuser top cover (see page 1-6-53).
2. Remove each two screws and then remove each two terminals.
3. Remove the upper and lower thermostats.
4. Replace the upper and lower thermostats and refit all the removed parts.

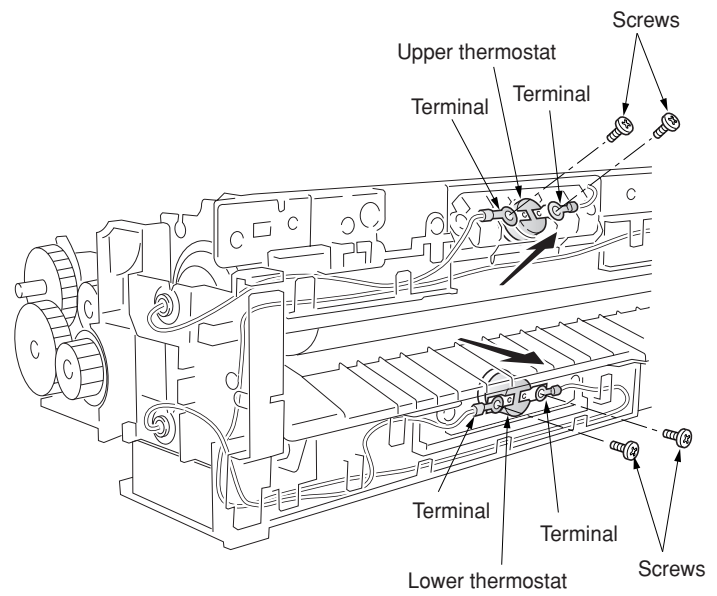


Figure 1-6-86

(5) Detaching and refitting the upper and lower heater lamps

Follow the procedure below to replace the upper and lower heater lamps.

Cautions:

- When refitting the heater lamps, do not mix them. The upper and lower heater lamps are not identical and each has a cable of different length.
- The terminal must be fixed by the screw with the soldered side facing up.

Procedure

1. Remove the fuser top cover.
2. Remove the each one screw and then remove the terminals.
3. Draw the upper and lower heater lamps out from the fuser unit.
4. Replace the upper and lower heater lamps and refit all the removed parts.

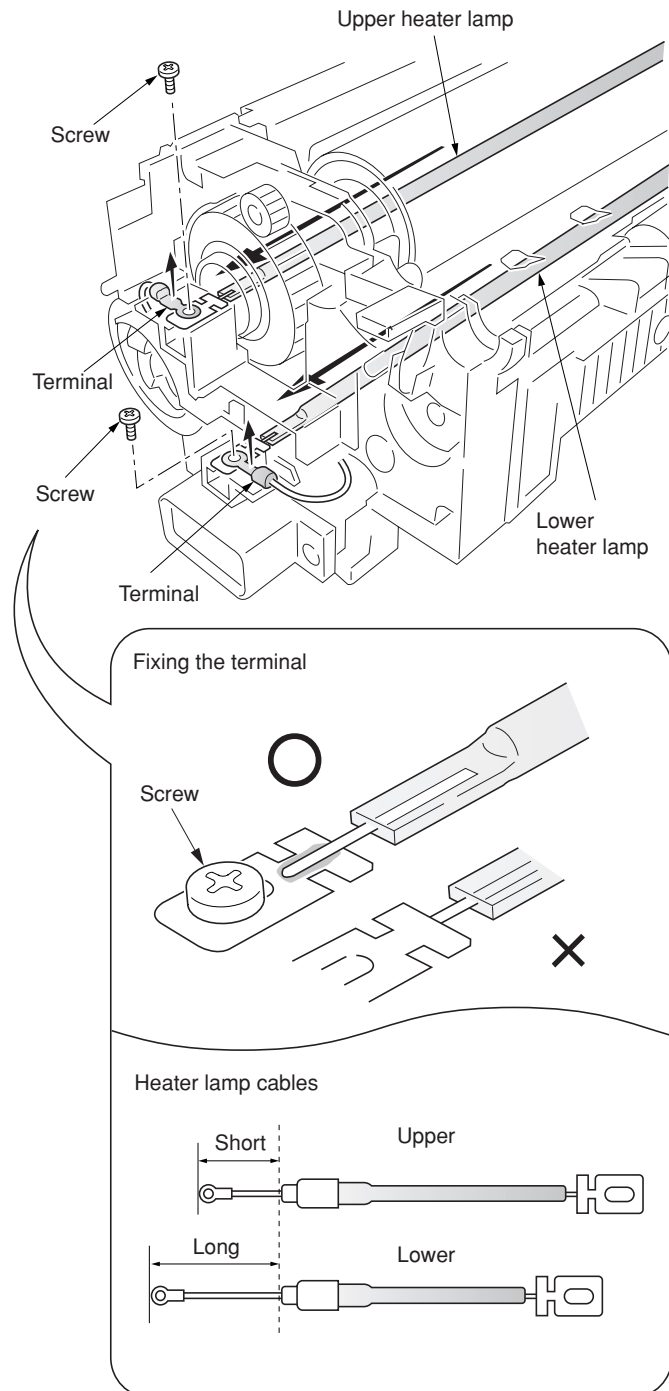


Figure 1-6-87

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

Follow the procedure below to replace the heat roller and the press/heat roller.

Procedure

1. Remove the upper and lower heater lamps (see page 1-6-53).
2. Remove the screw and then remove the terminal.
3. Remove the two gears.
4. Remove the four connectors.
5. Remove the two screws.
6. Remove the front heater lamp bracket.

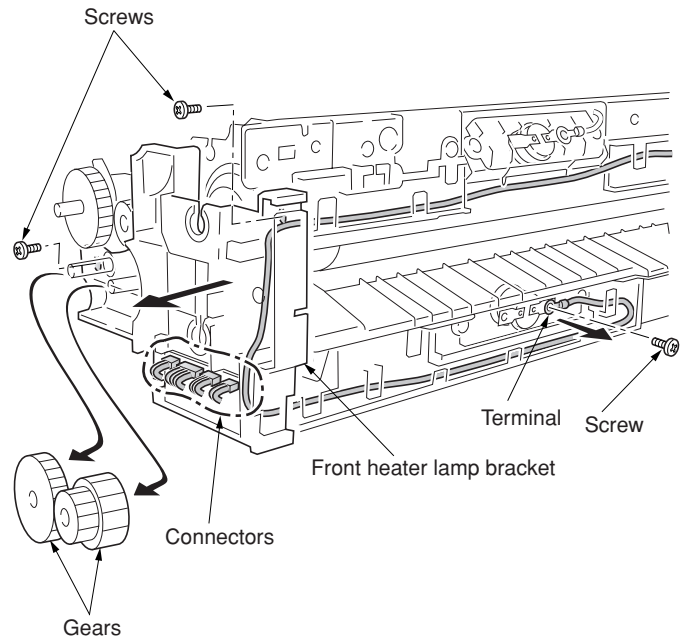


Figure 1-6-88

7. Remove the lever and the spring.
8. Remove the two screws and then detach the connector.
9. Remove the three screws and then remove the rear heater lamp bracket.

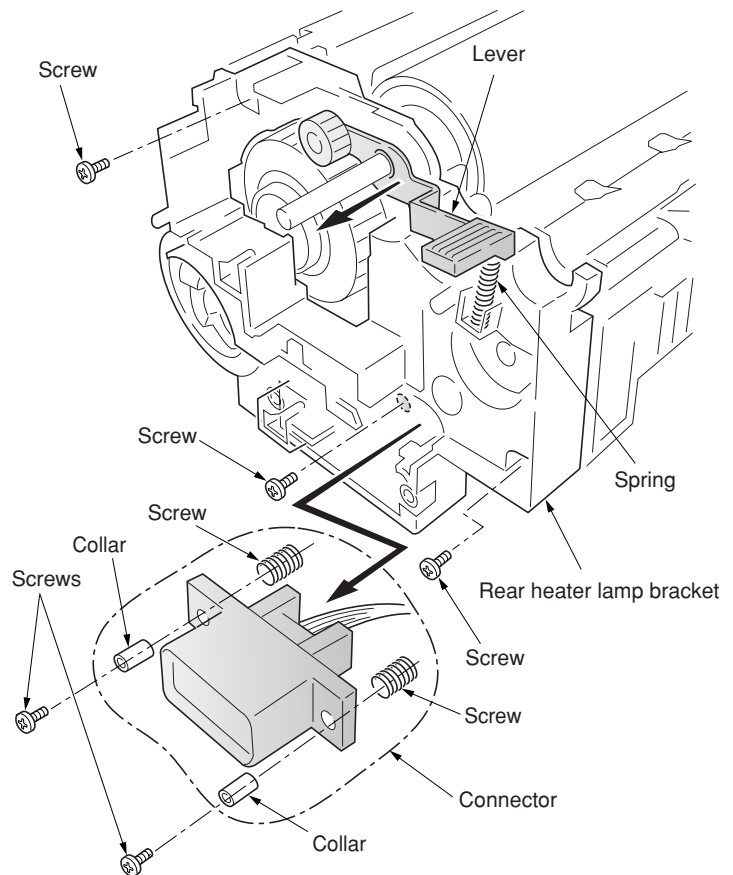


Figure 1-6-89

10. Remove the two screws and then remove the fuser top frame.
11. Remove the gear.

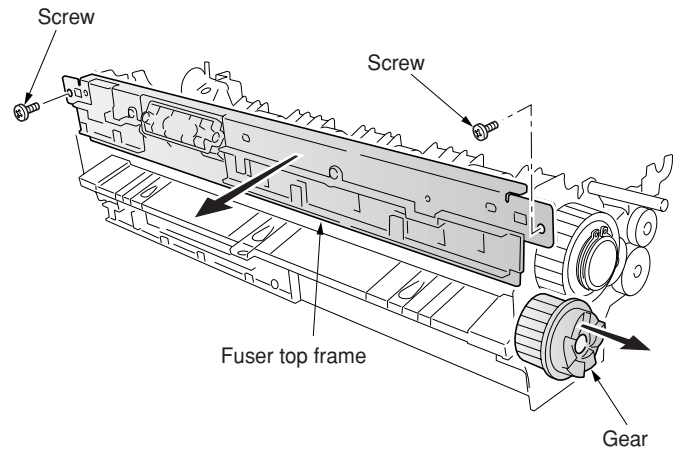


Figure 1-6-90

12. Loosen the two screws to release the press/heat roller pressure.
13. Remove the flange gear.
14. Remove the two C-rings.
15. Remove the two bearings and then remove the heat roller.

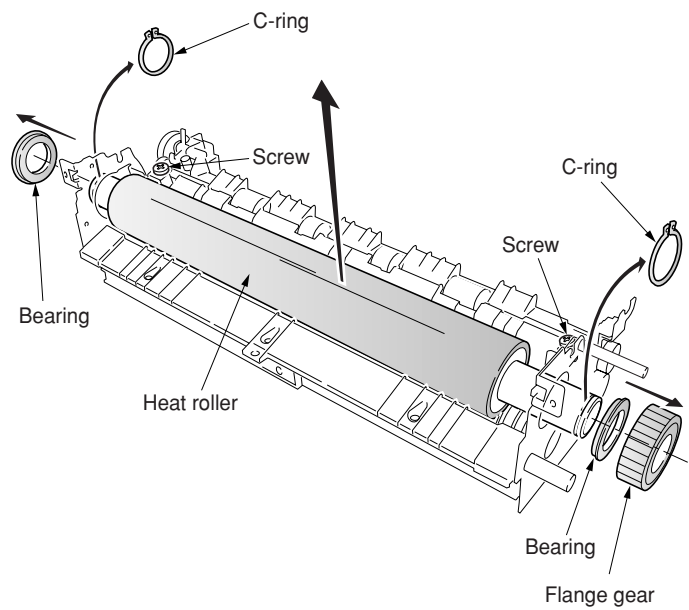


Figure 1-6-91

- 16. Remove the three screws and then remove the fuser right paper guide.
- 17. Remove the three screws and then remove the fuser left lower cover.

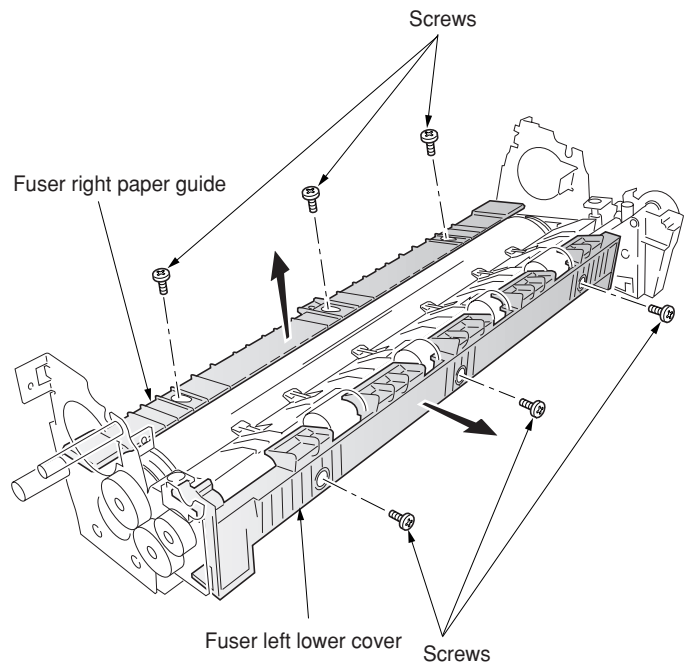


Figure 1-6-92

- 18. Remove the gear.
- 19. Remove the two E-rings and then remove the two bushes and the exit roller gears.
- 20. Remove the fuser exit roller.
- 21. Remove the three screws and then remove the fuser left paper guide.

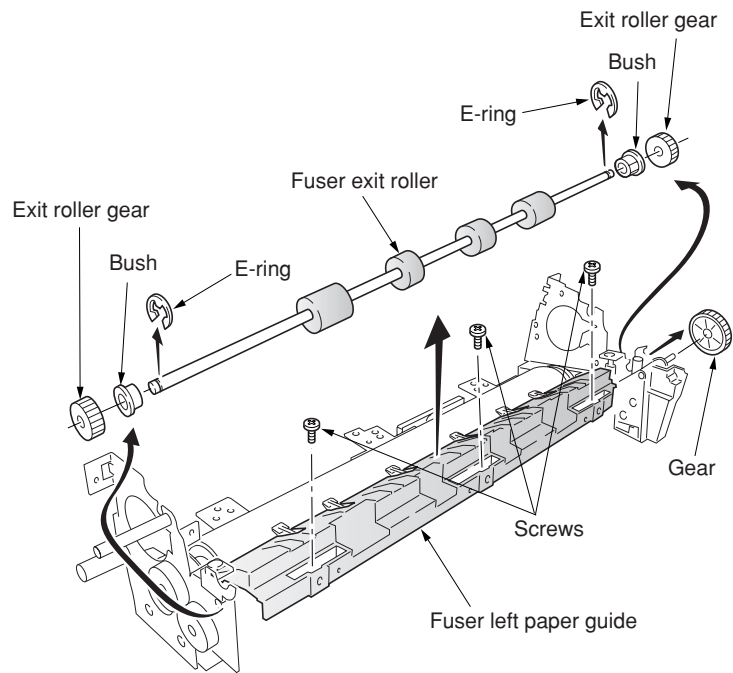


Figure 1-6-93

22. Remove the two screws and then remove the lower separator bracket.

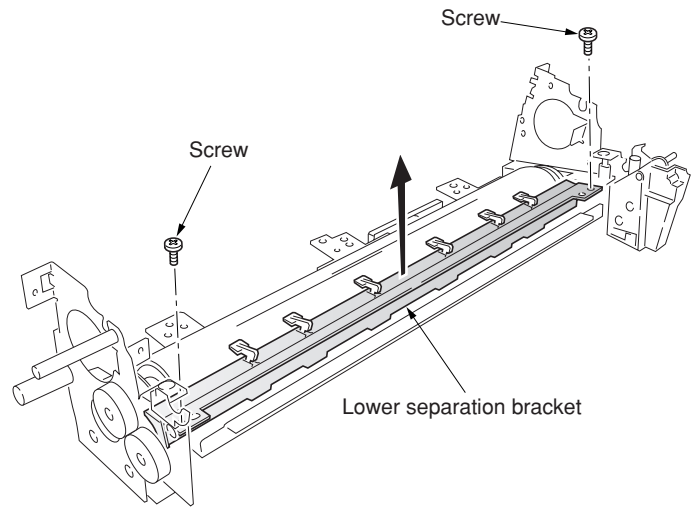


Figure 1-6-94

23. Remove the press/heat roller and then remove two bearings.
 24. Replace the heat roller and the press/heat roller and refit all the removed parts.

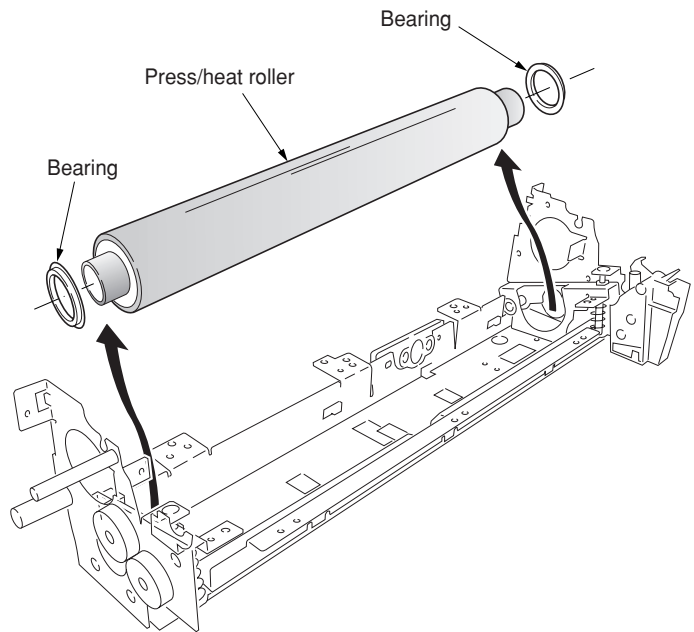


Figure 1-6-95

(7) Detaching and refitting the separators of lower separator bracket

Follow the procedure below to replace the separator of lower separator bracket.

Procedure

1. Remove the lower separator bracket from the fuser unit (see page 1-6-54).
2. Remove the three screws and then remove the stay.
3. Remove the spring.
4. Lay down the separator and then pull out it.
5. Replace the separator and refit all the removed parts.

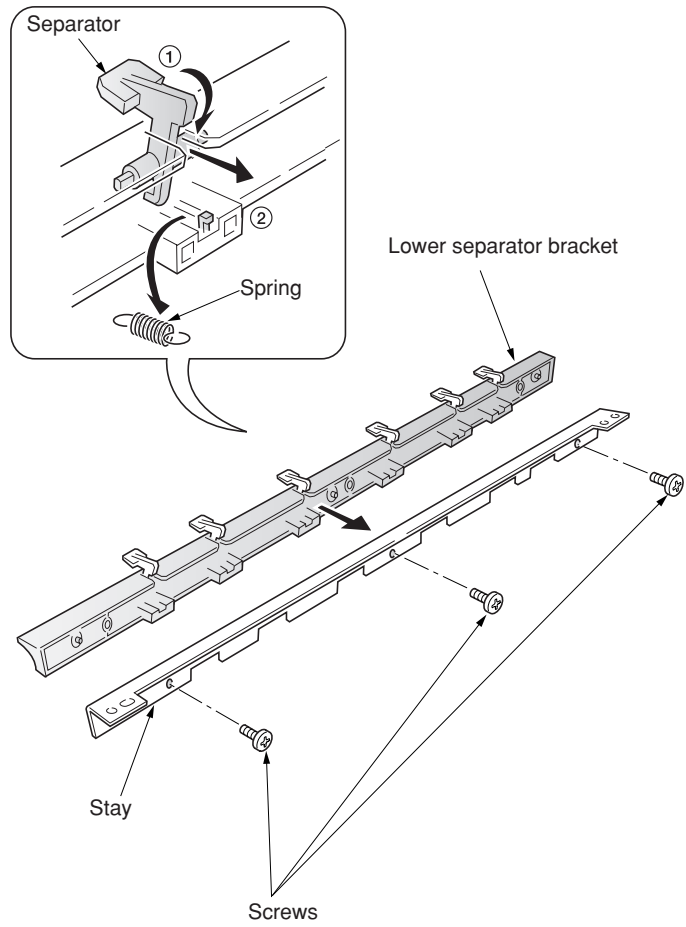


Figure 1-6-96

(8) Detaching and refitting the drive assembly C

Follow the procedure below to replace drive assembly C.

Procedure

1. Remove the power supply unit (see page 1-6-62).
2. Remove the connector.
3. Remove the three screws and then remove the drive assembly C.
4. Replace the drive assembly C and refit all the removed parts.

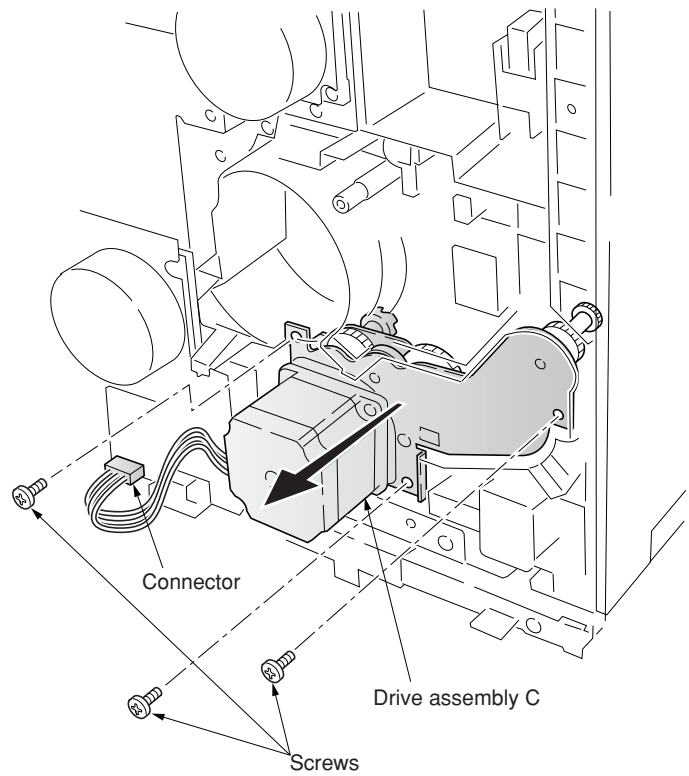


Figure 1-6-97

1-6-10 PCBs

(1) Detaching and refitting the scanner main PCB

Follow the procedure below to detaching and refitting the scanner main PCB.

Procedure

1. Remove the electrical component unit (see page 1-6-19).
2. Remove the fifteen screws and then the electrical component cover.

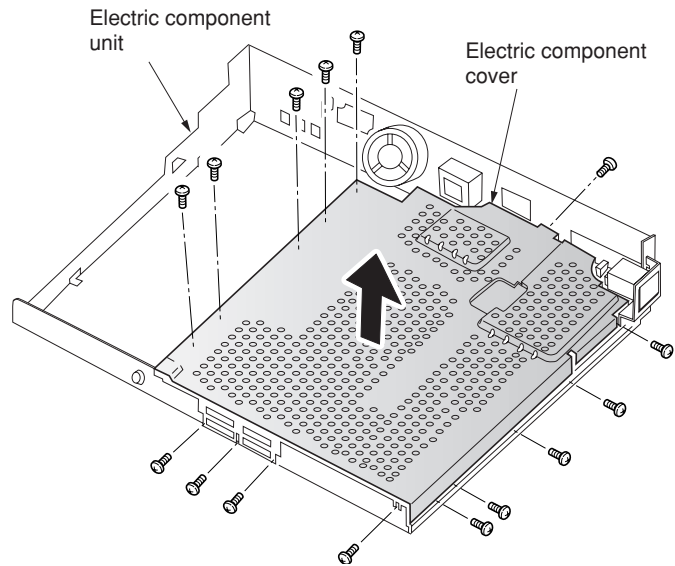


Figure 1-6-98

3. Remove all the connectors of the scanner main PCB.
4. Remove the six screws and then the scanner main PCB.
5. Replace the scanner main PCB and refit all the removed parts.

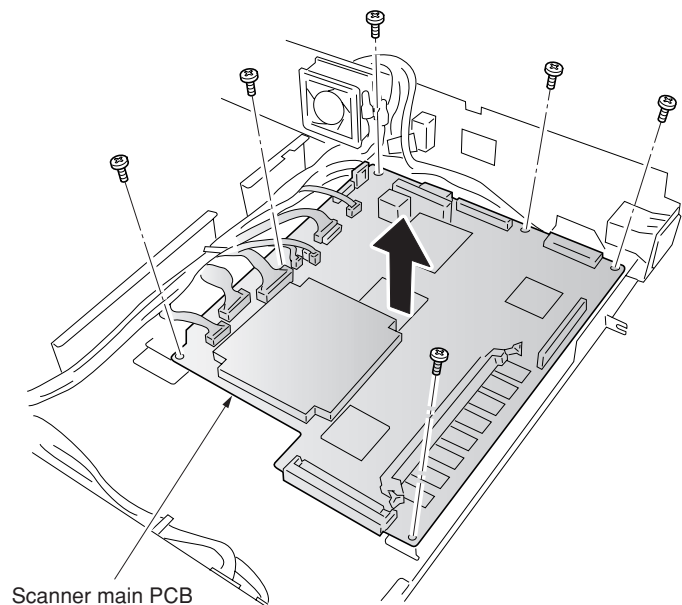


Figure 1-6-99

(2) Detaching and refitting the engine controller PCB

Follow the procedure below to detaching and refitting the engine controller PCB.

Procedure

1. Remove the three screws and then remove the rear middle cover.
2. Remove the fifteen screws and then remove the rear lower cover.

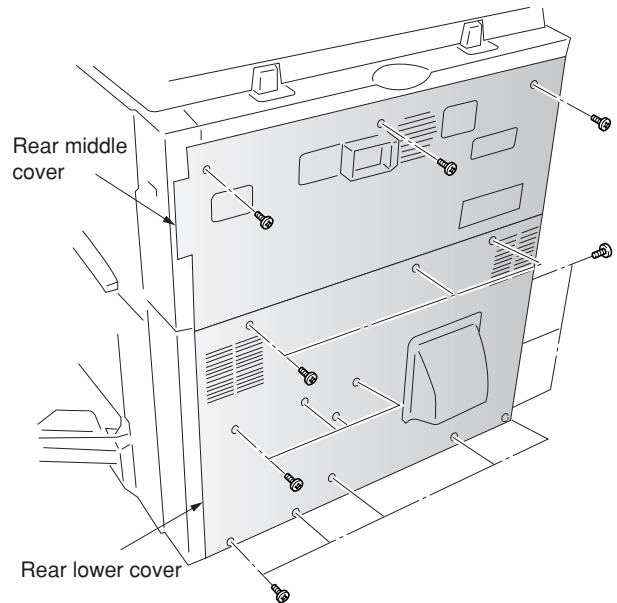


Figure 1-6-100

3. Remove all connectors from the engine controller PCB.
4. Remove six screws and then remove the engine controller PCB.
5. Replace the engine controller PCB and refit all the removed parts.

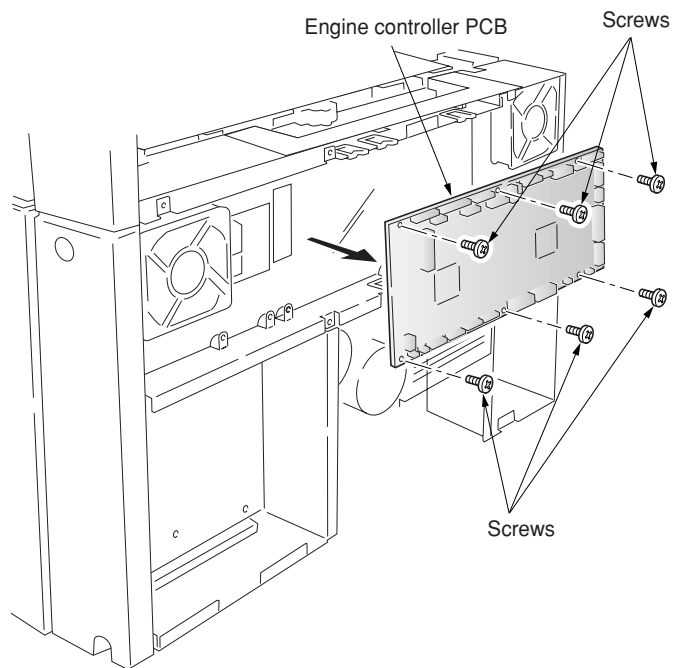


Figure 1-6-101

(3) Detaching and refitting the power supply unit

Follow the procedure below to detaching and refitting the power supply unit.

Procedure

1. Remove the engine controller PCB (see page 1-6-61).
2. Remove the four screws and then remove the controller box support.

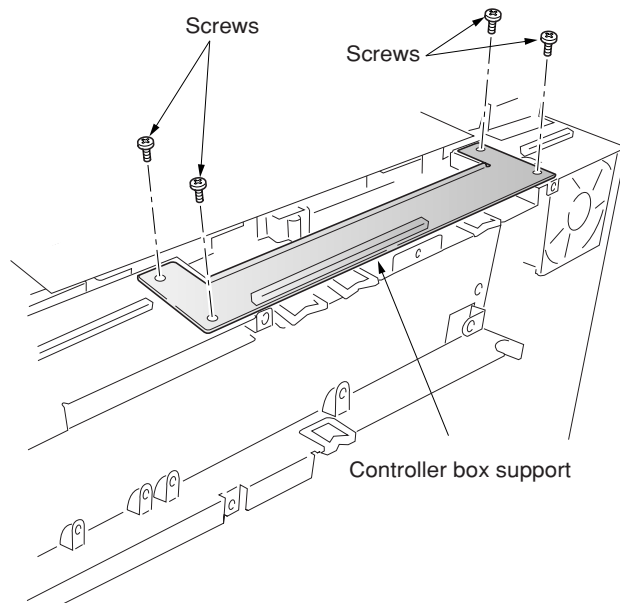


Figure 1-6-102

3. Remove the six screws and then remove the engine controller box.

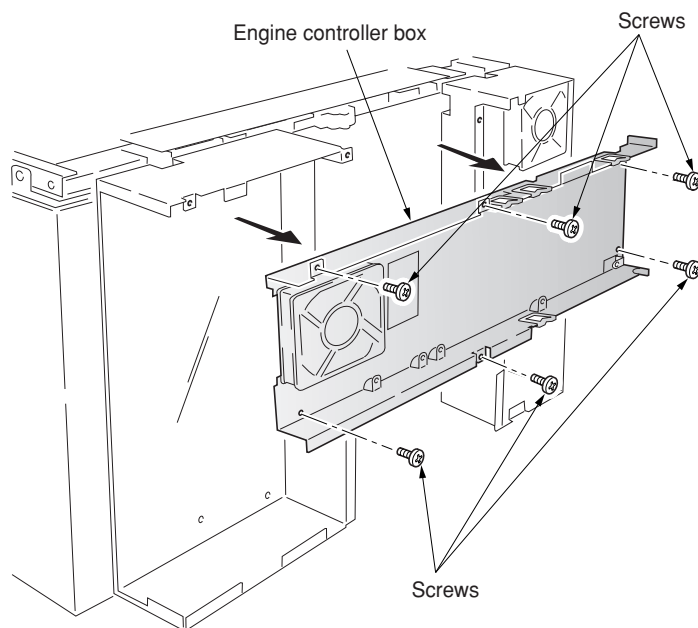


Figure 1-6-103

4. Remove the left lower cover (see page 1-6-6).
5. Remove all the connectors of the power supply PCB.
6. Remove the five screws and then remove the power supply unit.
7. Replace the power supply unit and refit all the removed parts.

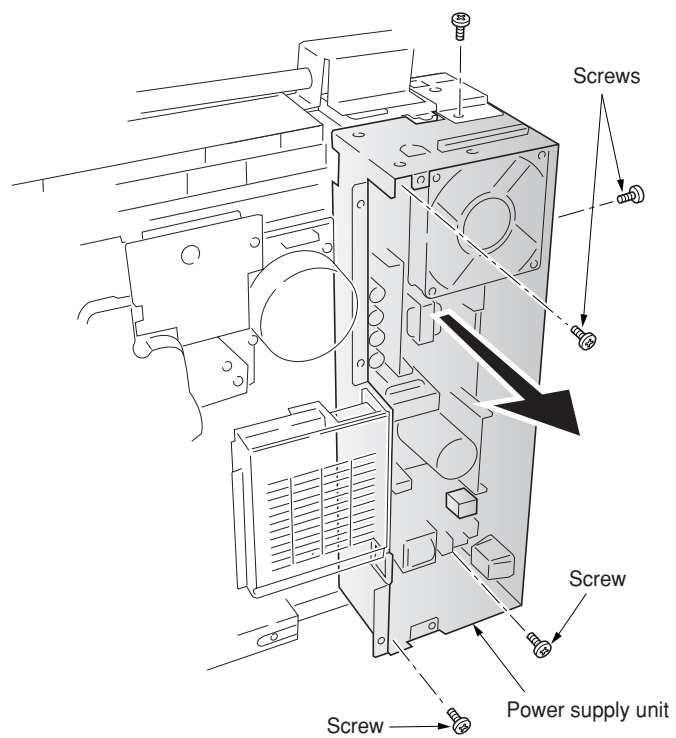


Figure 1-6-104

(4) Detaching and refitting the developing/cleaning brush bias high voltage PCB

Follow the procedure below to detach and refit the developing/cleaning brush bias high voltage PCB.

Procedure

1. Remove the bypass tray unit (see page 1-6-3).
2. Remove the five screws.
3. Remove all (six) tabs and one connector from developing/cleaning brush bias high voltage PCB.
4. Remove the developing/cleaning brush bias high voltage PCB.
5. Replace the developing/cleaning brush bias high voltage PCB and refit all the removed parts.

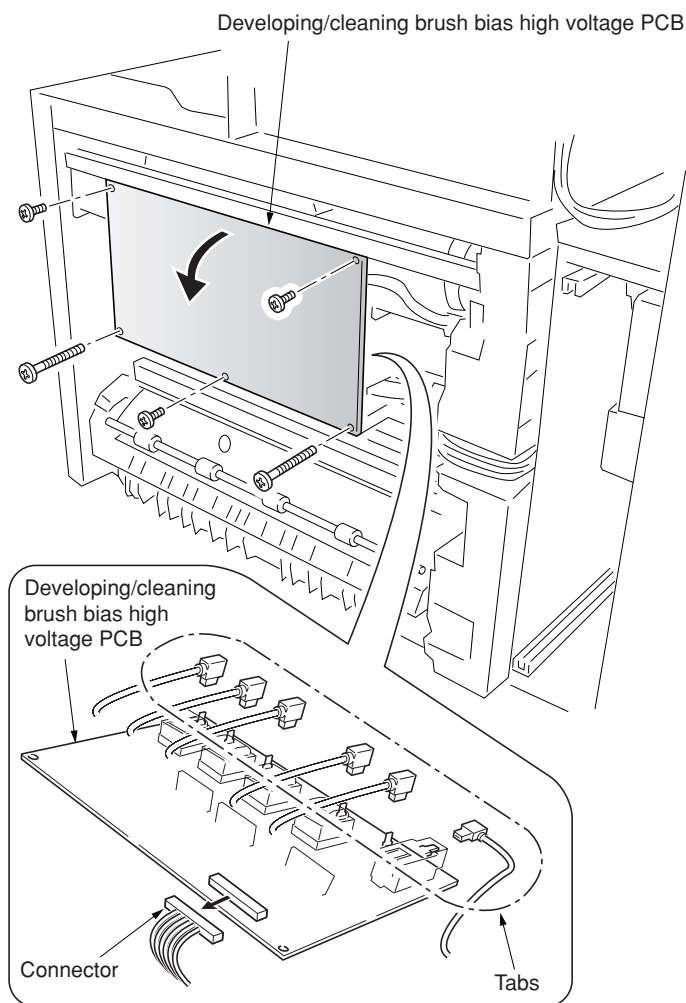


Figure 1-6-105

(5) Detaching and refitting the main charger high voltage unit

Follow the procedure below to detach and refit the main charger high voltage unit.

Procedure

1. Remove the power supply unit (see page 1-6-62).
2. Remove all (three) tabs and one connector from the main charger high voltage PCB.
3. Remove four screws and ground plate then remove the main charger high voltage PCB.
4. Replace the main charger high voltage PCB and refit all the removed parts.

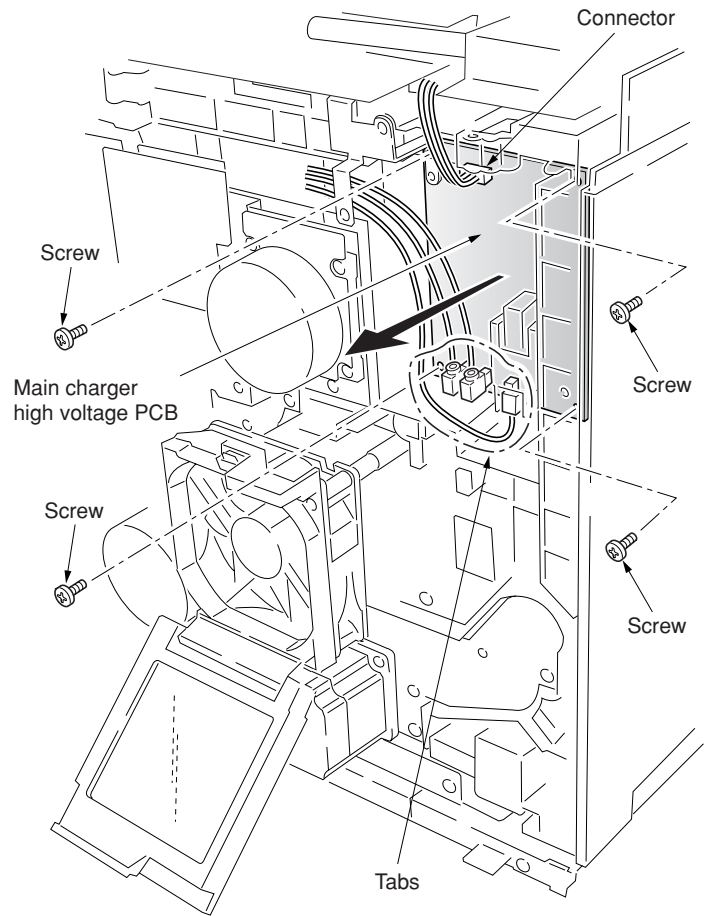


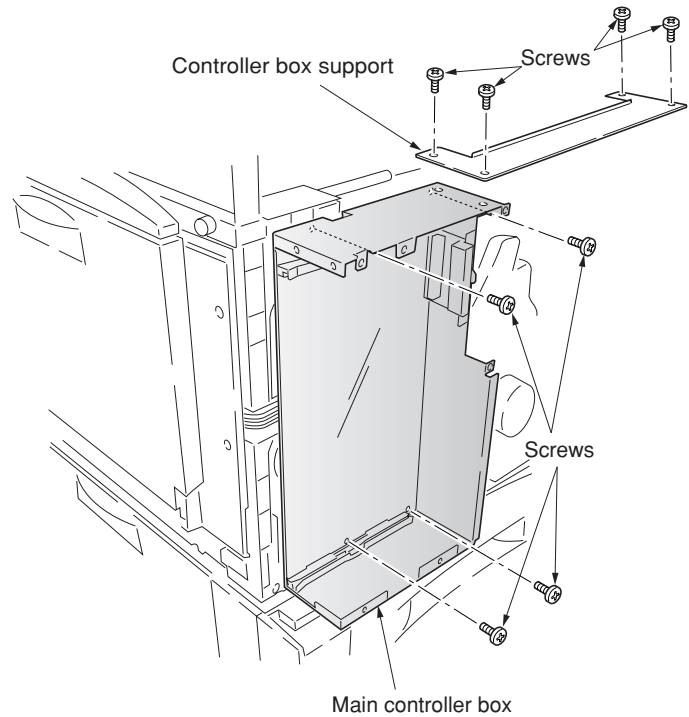
Figure 1-6-106

(6) Detaching and refitting the separation charger high voltage PCB

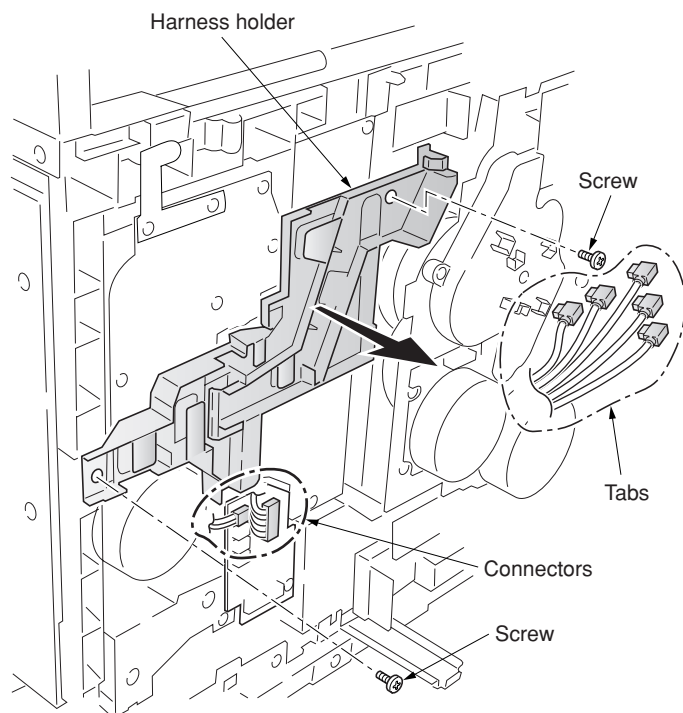
Follow the procedure below to detach and refit the separation charger high voltage PCB.

Procedure

1. Remove the engine controller PCB (see page 1-6-61).
2. Remove the engine controller box (see page 1-6-62).
3. Remove the four screws and then remove the controller box support.
4. Remove the right cover.
5. Remove the four screws and then remove the main controller box.

**Figure 1-6-107**

6. Remove all (five) tabs and two connectors from the harness holder.
7. Remove all harnesses from the harness holder.
8. Remove the two screws and then remove the harness holder.

**Figure 1-6-108**

9. Remove the lower tab.
10. Remove the four screws and then remove the separation charger bias high voltage PCB.
11. Remove the connector from the separation charger high voltage PCB.
12. Replace the separation charger high voltage PCB and refit all the removed parts.

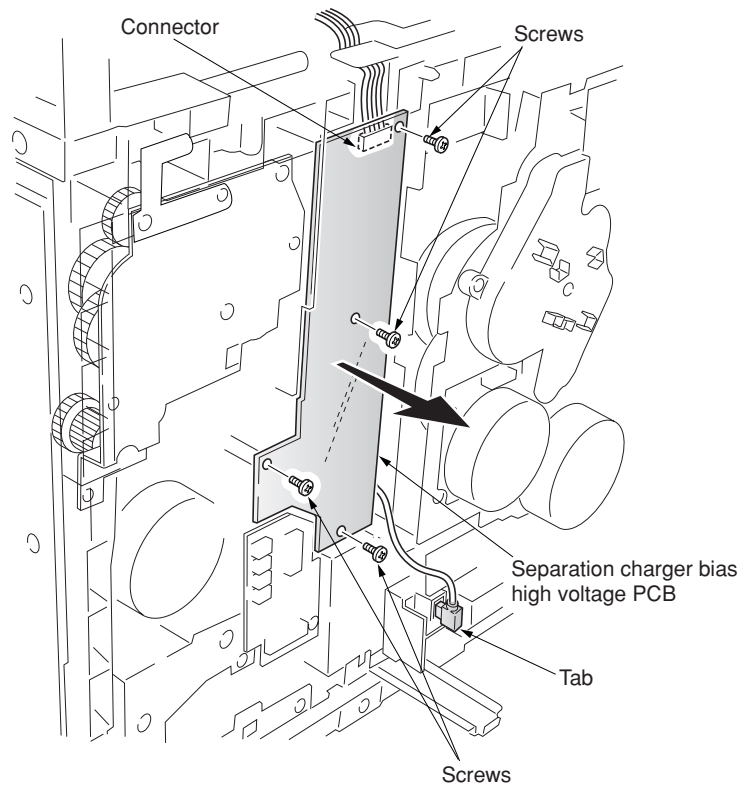


Figure 1-6-109

(7) Detaching and refitting the paper feeder/options relay PCB

Follow the procedure below to detach and refit the paper feeder/options relay PCB.

Procedure

1. Remove the rear cover.
2. Remove the six connectors from the paper feeder/options relay PCB.
3. Remove the two screws and then remove the paper feeder/options relay PCB.
4. Replace the paper feeder/options relay PCB and refit all the removed parts.

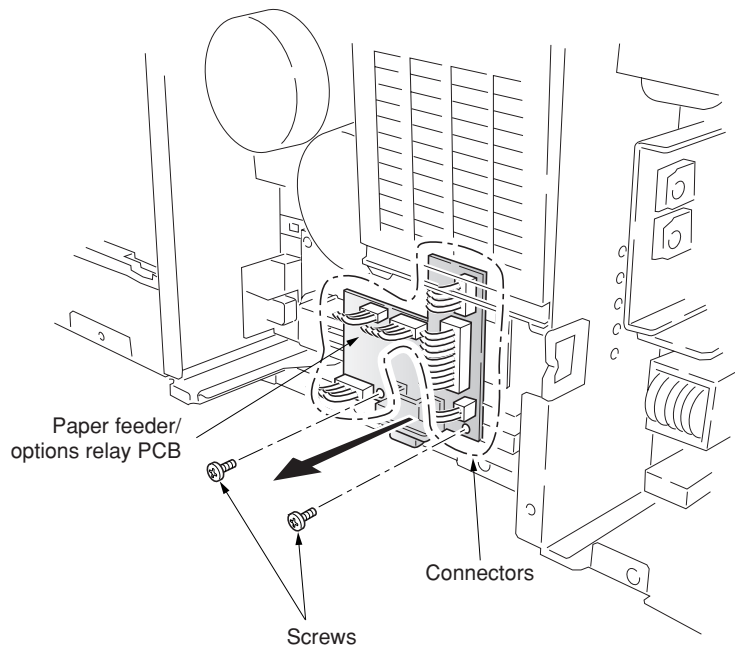


Figure 1-6-110

(8) Detaching and refitting the transfer roller bias high voltage PCB

Follow the procedure below to detach and refit the transfer roller bias high voltage PCB.

Procedure

1. Remove the paper feeder/options relay PCB.
2. Remove one tab from the transfer roller bias high voltage PCB.
3. Remove two screws and then remove the transfer roller bias high voltage PCB.
4. Replace the transfer roller bias high voltage unit and refit all the removed parts.

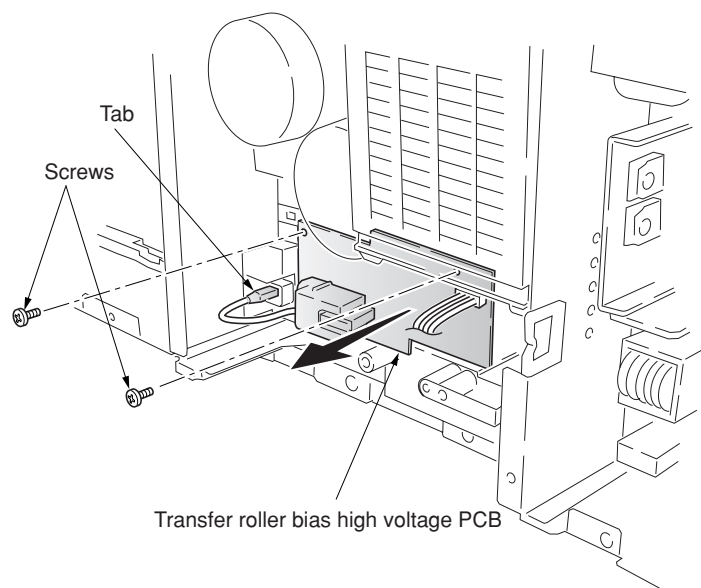


Figure 1-6-111

1-7-1 Upgrading the firmware

Follow the procedure below to upgrade the firmware on the scanner main PCB and engine controller PCB.

Firmware upgrading requires the following tools:

Compact Flash (Products manufactured by SANDISK are recommended.)

NOTE

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

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

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

Procedure

1. Turn the main switch off and disconnect the power plug.
2. Remove the middle rear cover.
3. Insert Compact Flash in a notch hole of the copier (insert the surface of the Compact Flash toward the top).
4. Insert the power plug and turn the main switch on. Upgrading firmware starts for 3 minutes.

Caution:

Never turn the main switch off during upgrading.

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

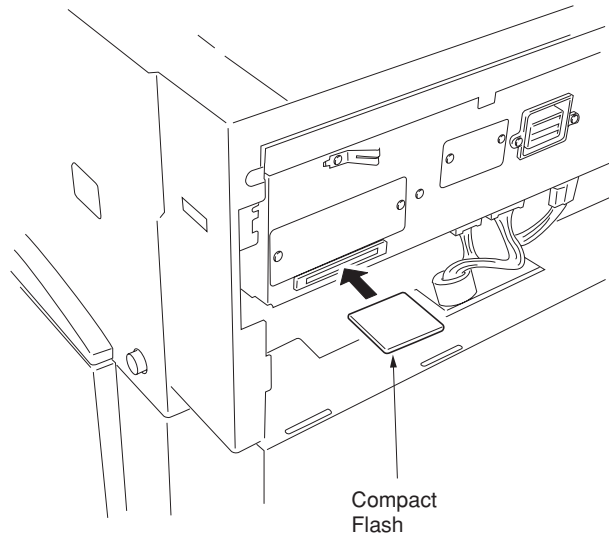


Figure 1-7-1

When rewriting the boot program:

Firmware upgrading requires the following tools:

Flash tool assembly (P/N 35968010)

Master ROM IC, ROM BOOT (P/N 2A668020)

Procedure

1. Turn the main switch off and disconnect the power plug.
2. Remove the electrical component unit (see page 1-6-19).
3. Remove the electrical component cover (see page 1-6-60).
4. Fit the master ROM into the IC1 socket on the flash tool assembly.
5. Connect the flash tool assembly to CN16 on the scanner main PCB and refit the electrical component unit to the machine.
6. Connect the connector of power source PCB to the electrical component unit.
7. Insert the power plug on and turn the main switch on. LED2 (green) on the flash tool assembly flashes and upgrading of the master ROM starts.
8. When flashing LED2 (green) remains lit after approximately 30 to 40 seconds, upgrading of the master ROM is complete.
9. Turn the main switch off and disconnect the power plug.
10. Remove the flash tool assembly.

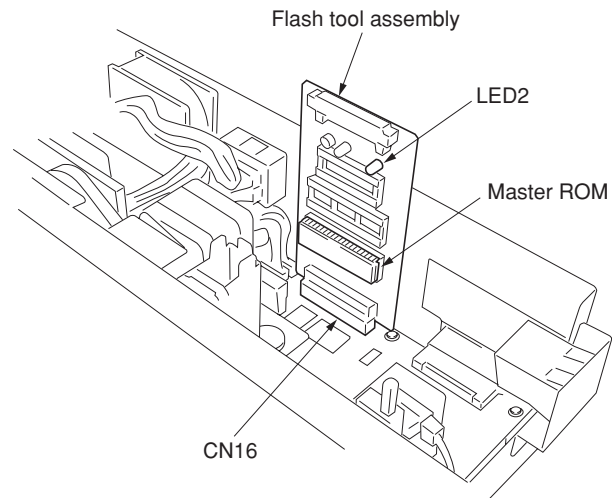


Figure 1-7-2

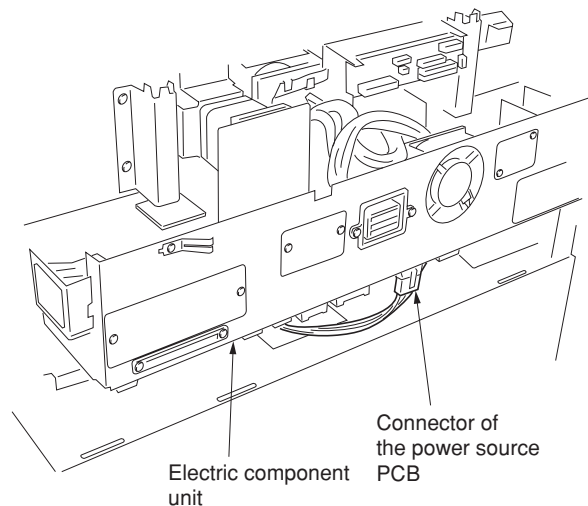


Figure 1-7-3

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

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

- Inverter PCB: VR1

2-1-1 Paper feed unit and secondary transfer unit

(1) Paper feed unit

The paper feed unit includes several portions such as the paper feed section that drives the paper fed from the paper feeder or the duplex unit towards the secondary transfer unit, paper conveying section that moves the paper from the secondary transfer unit to the fuser unit, and the left paper guide that determines the destination of the paper which has passed through the fuser unit. A cam that works to dress the transfer roller on the secondary transfer unit from the primary transfer unit in conjunction with color copying process, and a link that lifts the secondary transfer unit when the paper feed unit is drawn in connection with the front cover.

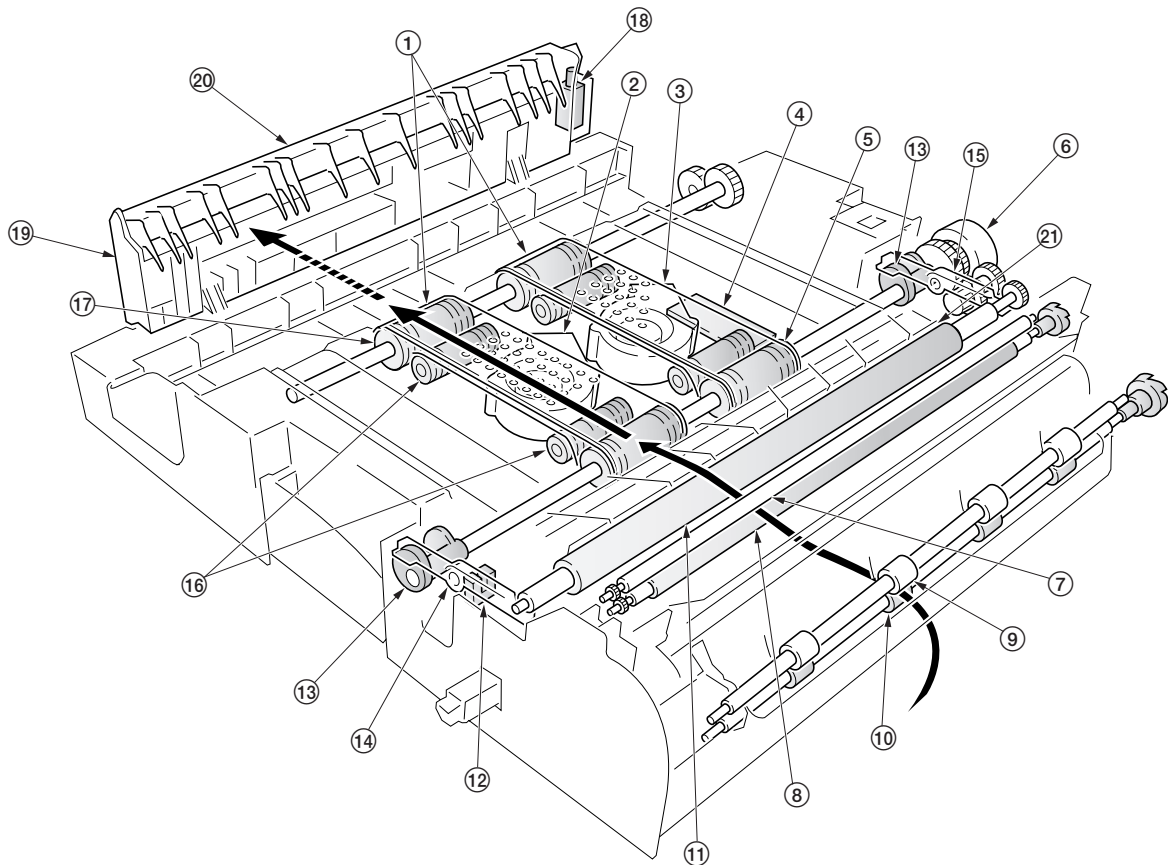


Figure 2-1-1 Paper feeder unit and secondary transfer unit

- | | |
|---|--|
| ① Paper conveying belts | ⑫ Secondary transfer unit position sensor (STRPS) |
| ② Paper conveying fan motor 1 (PCFM1) | ⑬ Cams |
| ③ Paper conveying fan motor 2 (PCFM2) | ⑭ Front transfer lever |
| ④ Feed PCB (FPCB) | ⑮ Rear transfer lever |
| ⑤ Paper conveying belt pulleys | ⑯ Tension rollers |
| ⑥ Secondary transfer unit shift clutch (STRSCL) | ⑰ Paper conveying belt rollers |
| ⑦ Upper registration roller | ⑱ Duplex paper exit selection solenoid (DUPEXSSOL) |
| ⑧ Lower registration roller | ⑲ Left paper guide |
| ⑨ Middle pulleys | ⑳ Change guide |
| ⑩ Middle roller | ㉑ Secondary transfer unit |
| ⑪ Transfer roller | |

The paper feed section of the paper feed unit and for the paper conveying section are driven by separate driving systems: Since the paper conveying section must be driven in synchronization with speeds that paper passes through the fuser unit, it is driven by the fuser unit drive motor (FUDM) that drives the fuser unit; whereas, the paper feed section is driven by the paper feed motor (PFM). The paper feed section has a longer pathway than the length of A4 or Letter size to allow variation of the paper feed speed. An A4 or Letter size sheet whenever it is on the paper conveying belts can be free from both the secondary transfer unit and the fuser unit. To stabilize this situation of the sheet, two fans (PCFM1 and PCFM2) are provided. The suction air flows through the punched holes on the conveying belts.

The left-sided paper guide includes a change guide which is activated in conjunction with a solenoid that selects duplex exit for the paper (DUPEXSSOL) when duplex copying. This guides the paper towards the duplexer underneath the copier.

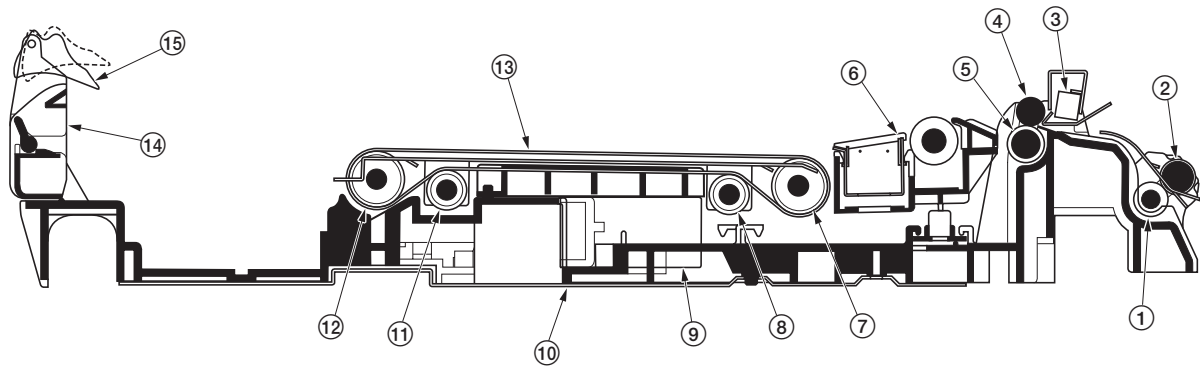


Figure 2-1-2 Paper feed unit

- | | |
|--------------------------------|--|
| ① Middle roller | ⑨ Paper conveying fan motor 1 and 2 (PCFM1, 2) |
| ② Middle pulleys | ⑩ Paper feed unit |
| ③ Registration sensor (REGS) | ⑪ Tension rollers |
| ④ Upper registration roller | ⑫ Paper conveying belt rollers |
| ⑤ Lower registration roller | ⑬ Paper conveying belts |
| ⑥ Secondary transfer unit | ⑭ Left paper guide |
| ⑦ Paper conveying belt pulleys | ⑮ Change guide |
| ⑧ Tension rollers | |

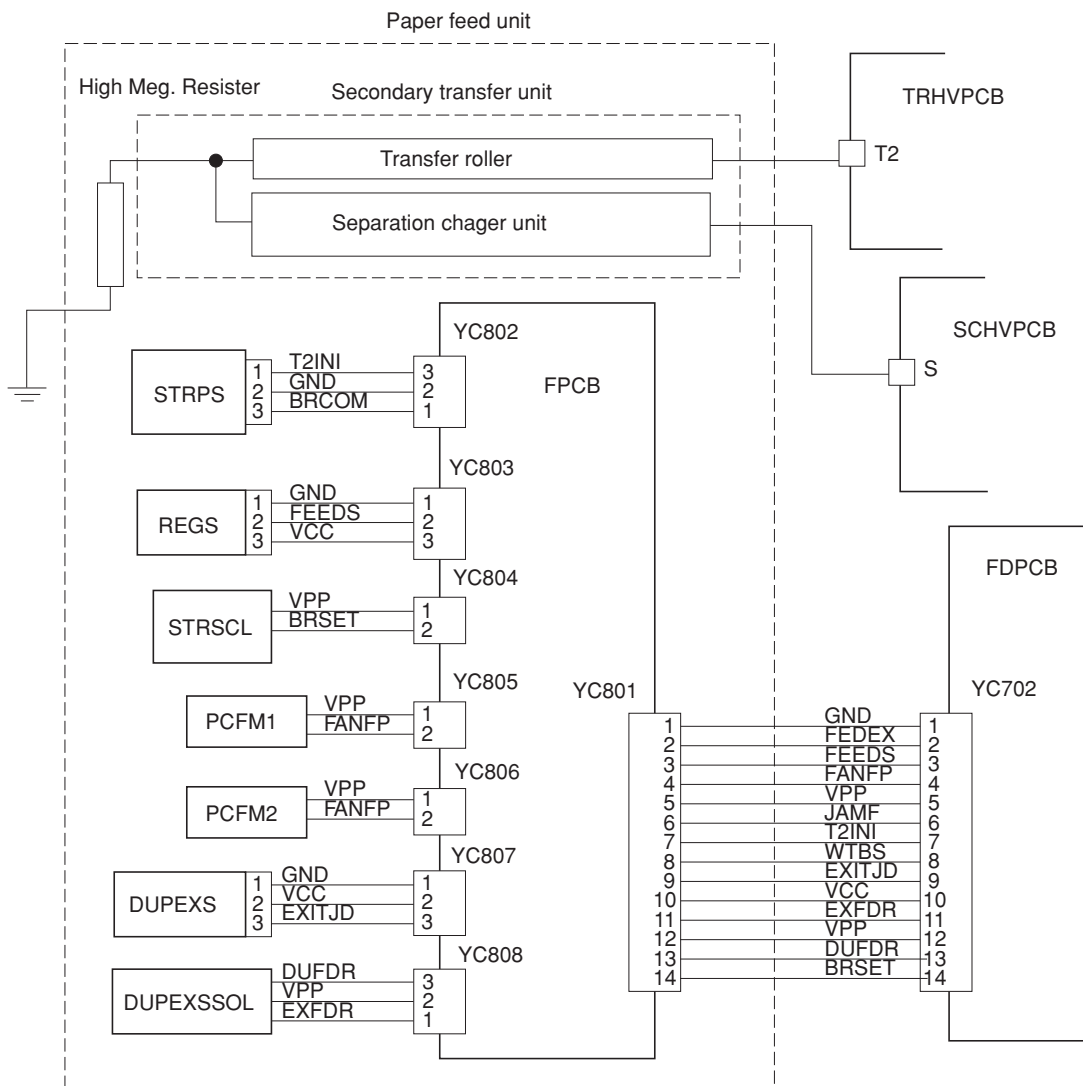


Figure 2-1-3 Paper feed unit block diagram

(2) Secondary transfer unit

The secondary transfer unit includes the transfer roller and the separation charger unit. The transfer roller is used to transfer images of toner constituted by the primary transfer drum towards the paper. The separation charger gives the paper the repelling charge so that the paper is effectively scraped off of the primary transfer drum.

The primary transfer drum is covered with the electroconductive sponge. At the beginning of transferring process, the drum is given a bias of approximately -20 microamperes and -0.5 to -2 kV generated by the high-voltage PCB for the transfer roller (TRHVPCB). This bias is automatically adjusted according to the paper type currently selected.

The separation charger unit has two thin wires which are given high voltage (Typical value: 450 V DC weighted by 12.75 kV AC [p-p], generated by the high-voltage PCB for separation charge (SCHVPCB), for generating attracting charge to the paper. These wires are cleaned manually by the system including a pad.

Since the primary transfer unit has to revolve four turns until four layers of different colored toner have been constituted, the secondary transfer unit should be dressed away from the primary transfer drum until all layers have been done. The secondary transfer unit therefore includes levers and springs for this purpose, which are driven by a cam and a clutch on the paper feed unit.

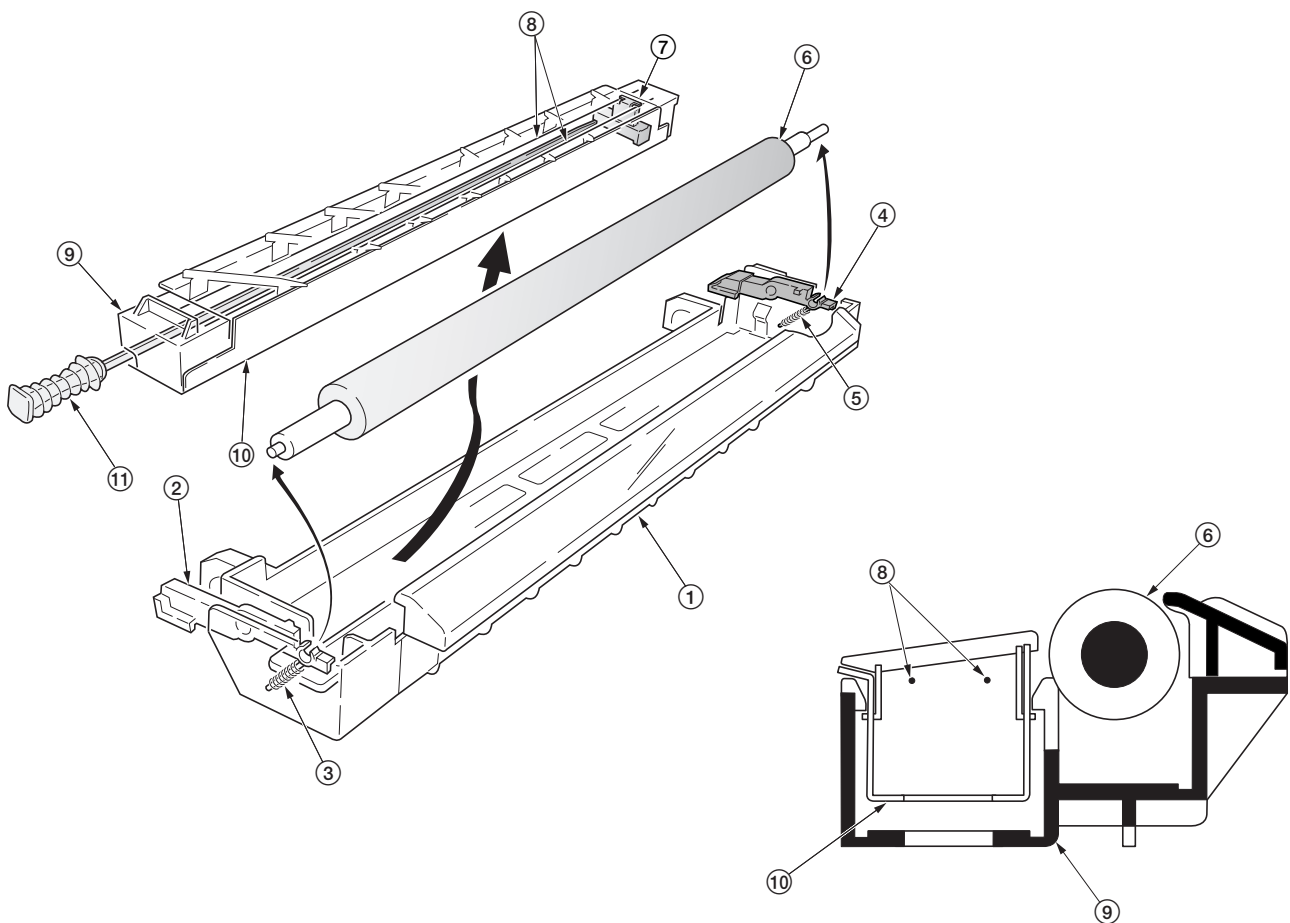


Figure 2-1-4 Secondary transfer unit

- | | |
|-------------------------------|------------------------------------|
| ① Secondary transfer unit | ⑦ Separation charger cleaner |
| ② Transfer roller lever front | ⑧ Separation charger wires |
| ③ Spring front | ⑨ Separation charger unit |
| ④ Transfer roller lever rear | ⑩ Separation charger shield |
| ⑤ Spring rear | ⑪ Separation charger cleaning knob |
| ⑥ Transfer roller | |

2-1-2 Bypass tray unit

The bypass tray unit includes sections of paper stack, paper feed, and paper detection. The paper detection is accomplished by two sensors mounted on the bypass tray feed PCB (BYPFPCB) that measures the width of the paper and detects the presence of paper.

The bypass tray includes a bottom plate and accommodates approximately 150 sheets of paper. When paper feeding is required, the solenoid for the bypass tray bottom plate is activated (BYPBSOL) to rotate the cam for the bypass tray. The actuator for the cam pushes up the bottom plate which in turn pushes up the paper stack about the feed roller. The activation of the bottom plate is detected as the cam revolves, using a reflection plate.

The paper feed section includes a feed roller and a clutch (BYPFCL). When the clutch is activated, the feed roller revolves and the bottom plate is raised to feed paper. The retard roller beneath the feed roller prevents that more than one sheet are fed.

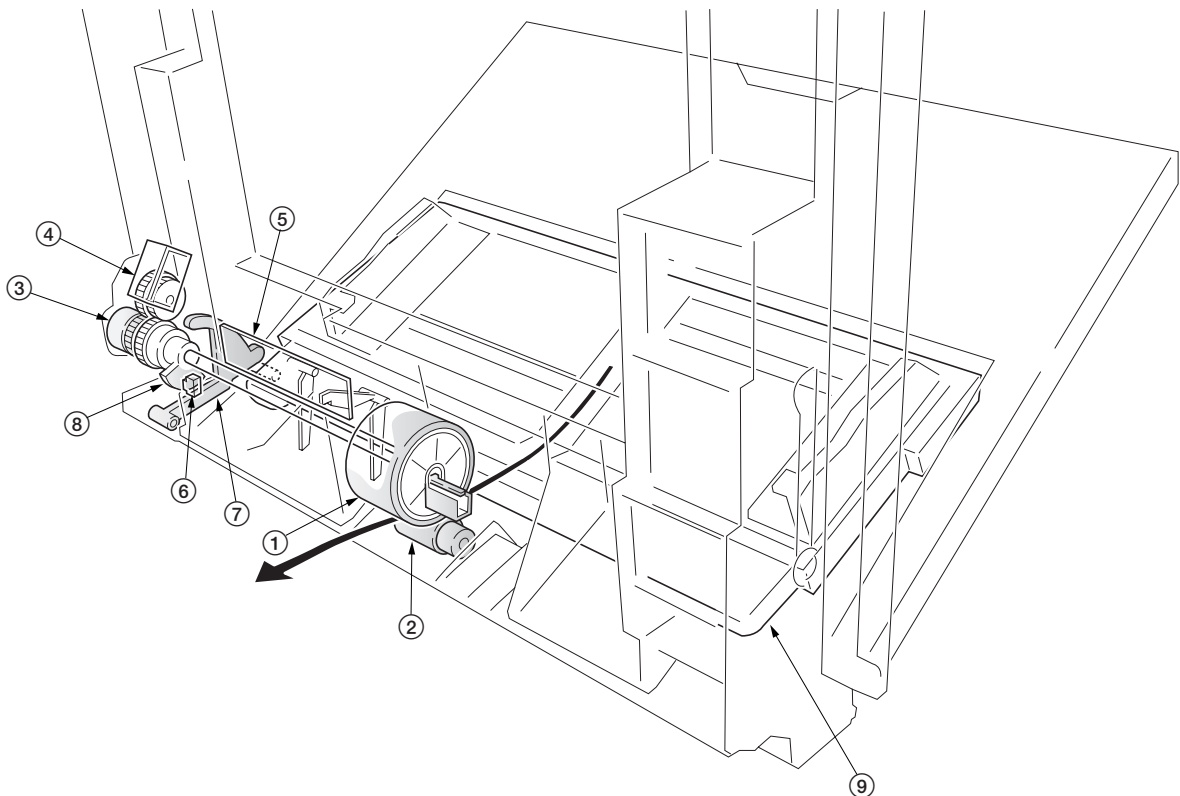


Figure 2-1-5 Bypass tray unit

- ① Bypass feed roller
- ② Bypass retard roller
- ③ Bypass paper feed clutch (BYPFCL)
- ④ Bypass tray bottom plate solenoid (BYPBSOL)
- ⑤ Bypass feed PCB (BYPFPCB)
- ⑥ Bypass tray bottom plate position sensor (BYPBPPS)
- ⑦ Bypass tray cam actuator
- ⑧ Bypass tray cam
- ⑨ Bypass tray bottom plate

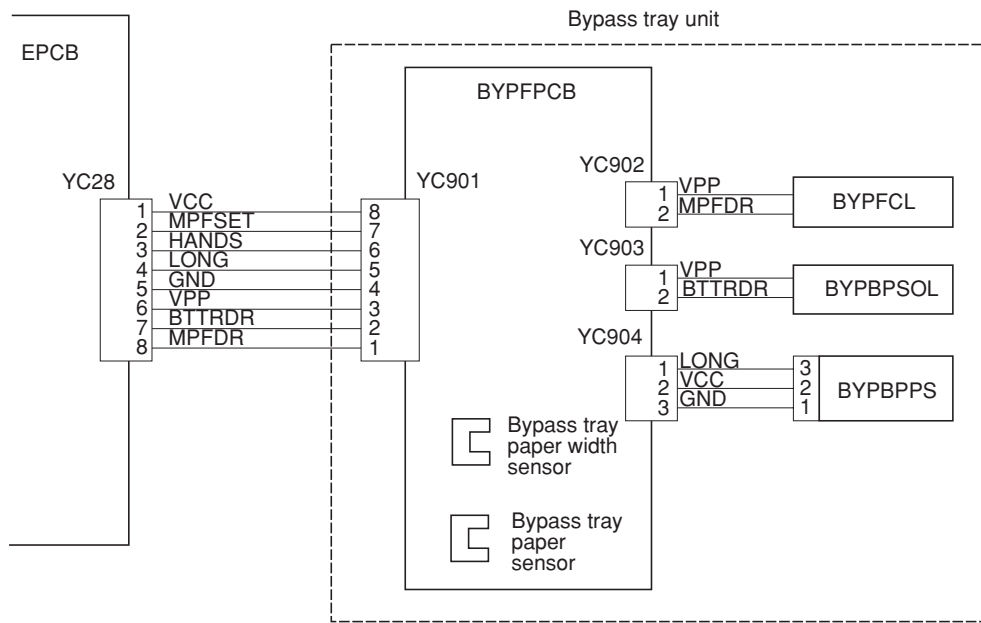


Figure 2-1-6 Bypass tray feed unit block diagram

2-1-3 Scanner unit

The optical section consists of the scanner, mirror frame and image scanning unit for scanning and the laser scanner unit for printing.

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.

The scanner scans original images up to 4 times depending on the copy mode (full color, single color, or black and white).

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 CCD PCB converts to RGB (red, green, and blue) data from scanned original images and sends the data to the scanner main PCB.

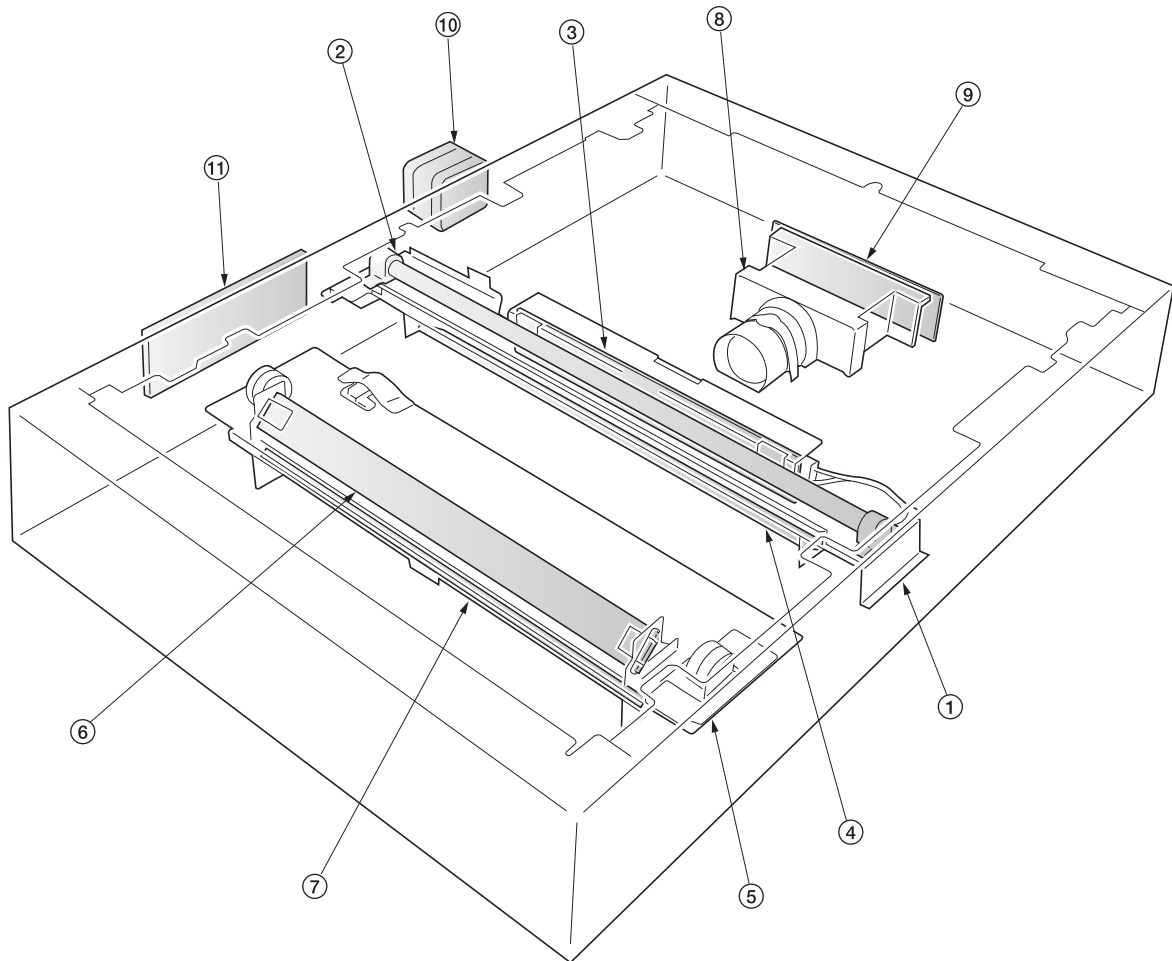


Figure 2-1-7 Scanner unit

- ① Mirror 1 frame
- ② Exposure lamp (EL)
- ③ Inverter PCB (INPCB)
- ④ Mirror 1
- ⑤ Mirror 2 frame
- ⑥ Mirror 2
- ⑦ Mirror 3
- ⑧ Image scanning unit
- ⑨ CCD PCB (CCDPCB)
- ⑩ Scanner motor (SM)
- ⑪ Scanner relay PCB (SRYPCB)

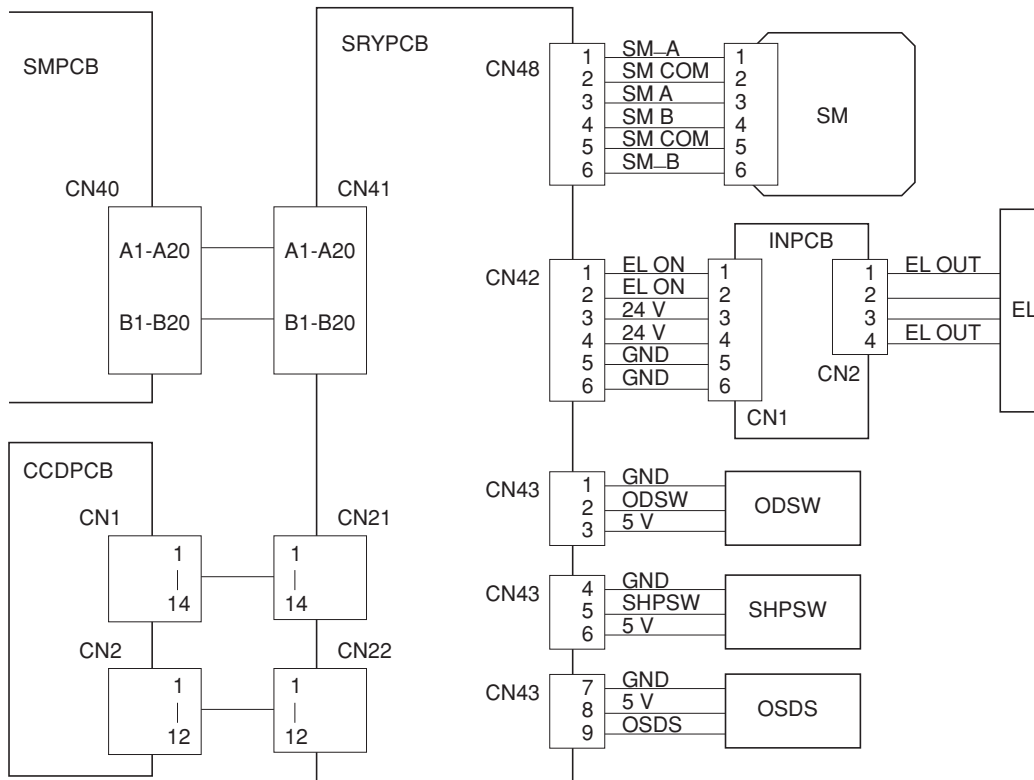


Figure 2-1-8 Scanner unit block diagram

The image data scanned by the CCD PCB (CCDPCB) is processed on the scanner main PCB (SMPCB) and transmitted as image printing data to the laser scanner unit (LSU). By repeatedly turning the laser on and off, the laser scanner unit forms a latent image on the drum surface.

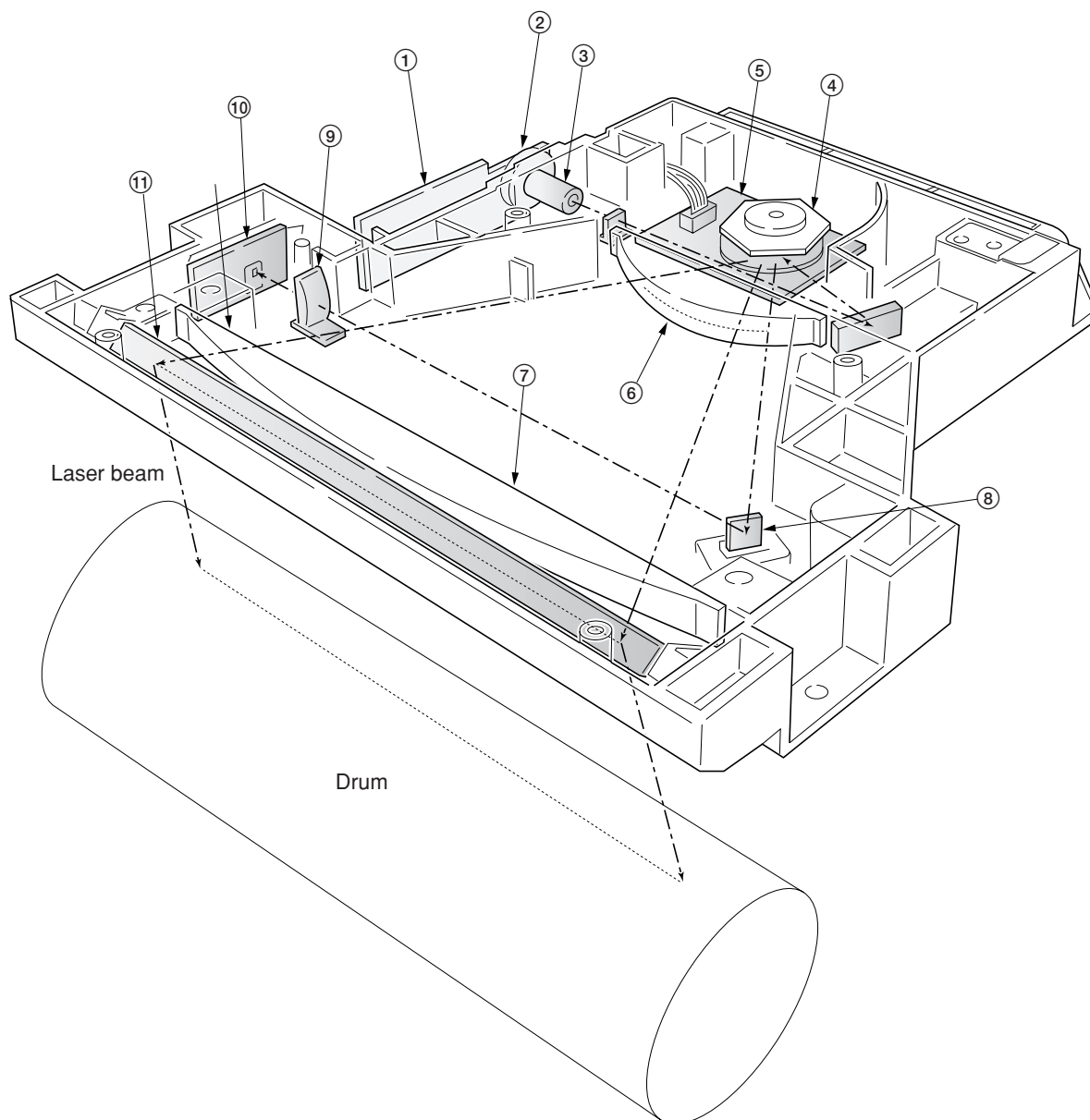


Figure 2-1-9 Laser scanner unit

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

- ① APCPCB: Laser power control.
- ② Laser diode: Generates the laser beam (400 mW±30 %, 670 nm) which forms a latent image on the drum.
- ③ Collimator lens: Collimates the diffused laser beam emitted from the laser diode to convert it into a cylindrical beam.
- ④ Polygon mirror: Six-facet mirror that rotates at approximately 31690.52224 rpm with each face reflecting the laser beam toward the drum for one main-direction scan.
- ⑤ Polygon motor (PM): Rotation polygon mirror.
- ⑥ Fθ lens: Corrects for non-linearity of the laser beam scanning speed on the drum surface, keeps the beam diameter constant and corrects for the vertical alignment of the polygon mirror to ensure that the focal plane of the laser beam is on the drum surface.
- ⑦ Fθ lens: Corrects for non-linearity of the laser beam scanning speed on the drum surface, keeps the beam diameter constant and corrects for the vertical alignment of the polygon mirror to ensure that the focal plane of the laser beam is on the drum surface.
- ⑧ BD sensor mirror: Reflects the laser beam to the BD sensor (PDPCB) to generate the main-direction (horizontal) sync signal.
- ⑨ Cylindrical correcting lens: Corrects for the deviation of the laser beam reflected by the BD sensor mirror to the BD sensor (PDPCB).
- ⑩ BD sensor (PDPCB): Detects the beam reflected by the BD sensor mirror, outputting a signal to the engine controller PCB (EPCB) to provide timing for the main-direction sync signal.
- ⑪ Diversion mirror: Reflects the laser beams onto the drum surface.

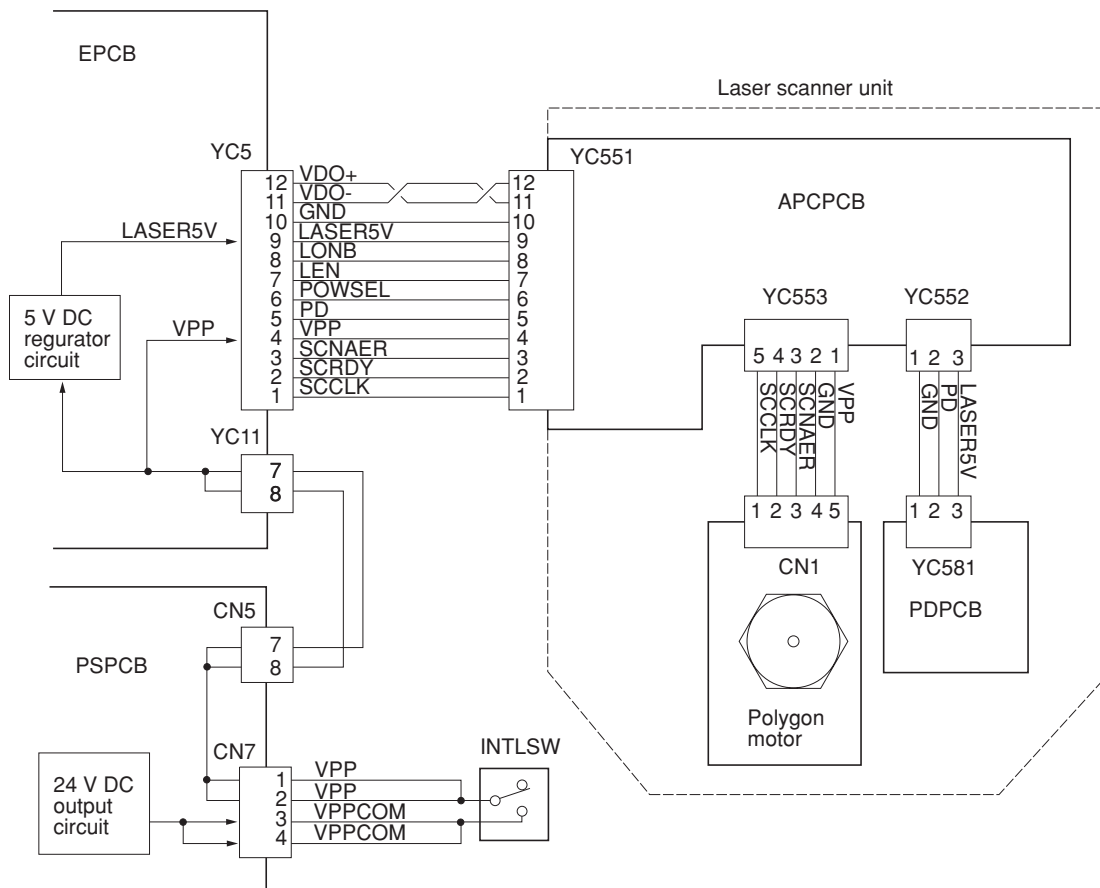


Figure 2-1-10 Laser scanner unit block diagram

2-1-4 Developing section

The copier has developers in four colors - yellow, magenta, cyan, and black. Each of the developers except black has the respective toner container mounted directly, including the toner feed mechanism. Since the black developer has to be seated right underneath the drum unit, which prevents the black toner container directly mounted on the developer, the toner container is separated from the developer.

To accomplish color copy process, each developer implements developing in the specific color as the drum unit rotates a turn. While a color development is in process, the developers for other colors should be disabled. For this purpose, a shutter utilizing magnetism is provided for each developer that effectively close the gateway for the toner to the developing roller. When development for the specific color is not required, the magnet in the sleeve faces towards the developing roller by means of a spring. The magnet behaves as a shutter and prevents toner from being fed outwards as the magnet repels the toner. When development is required for the color, a solenoid is activated to turn the magnet so that the magnet is away 180° from the developing roller. Then the toner is free to proceed over the developing roller towards the drum, forming a magnetic brush.

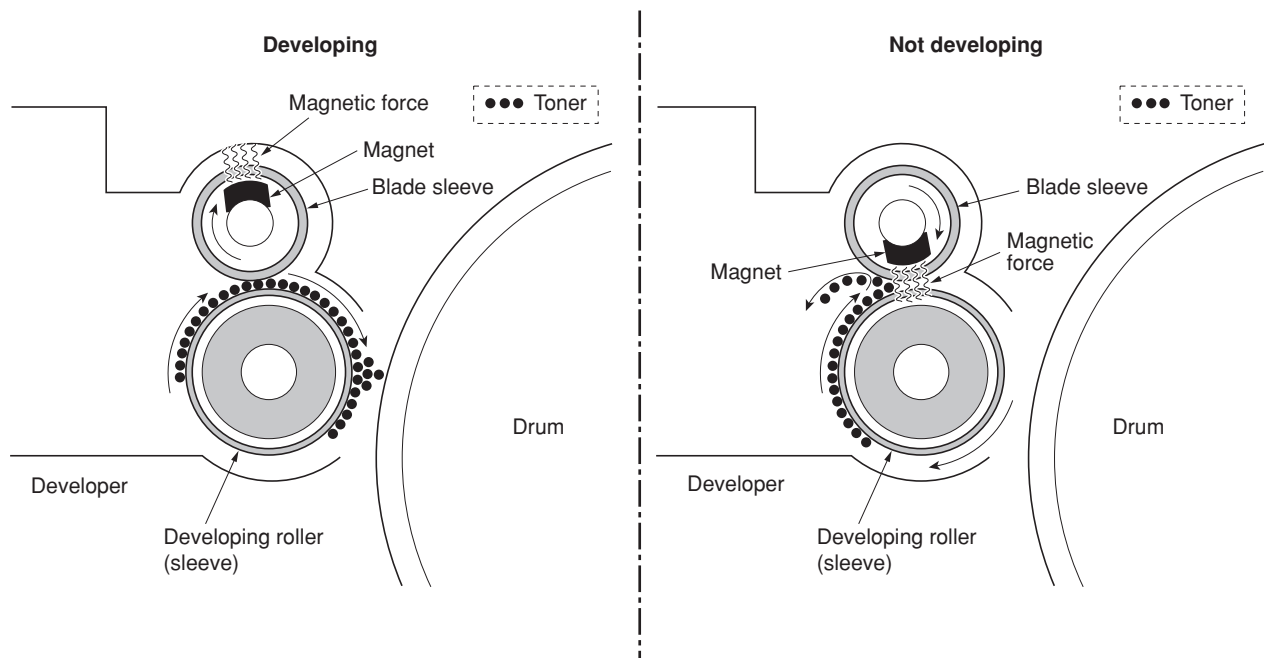


Figure 2-1-11 Magnetic shutter

(1) Yellow developer

The yellow developer is directly mounted atop with the yellow toner container. As the yellow toner feed motor (YTFM) turns on to feed toner, the toner pours down in the toner hopper onto the paddle. The paddle drives toner to the mixing mixer tube. The mixer tube has a mixer screw inside which revolves coaxially with the paddle. The mixer screw and the paddle rotate in the opposite direction to each other, ensuring the effective circulation in the hopper.

The developing roller has a 5-pole magnet and a sleeve located coaxially to the magnet. Toner is carried along the sleeve as it rotates and passed between the blade sleeve and the developing sleeve. The gap between the sleeves is adjusted so that a constant layer of toner is constituted over the developing roller. The magnetic brush is constituted at the opposite area circumferentially to pole N1 and flies over to the drum.

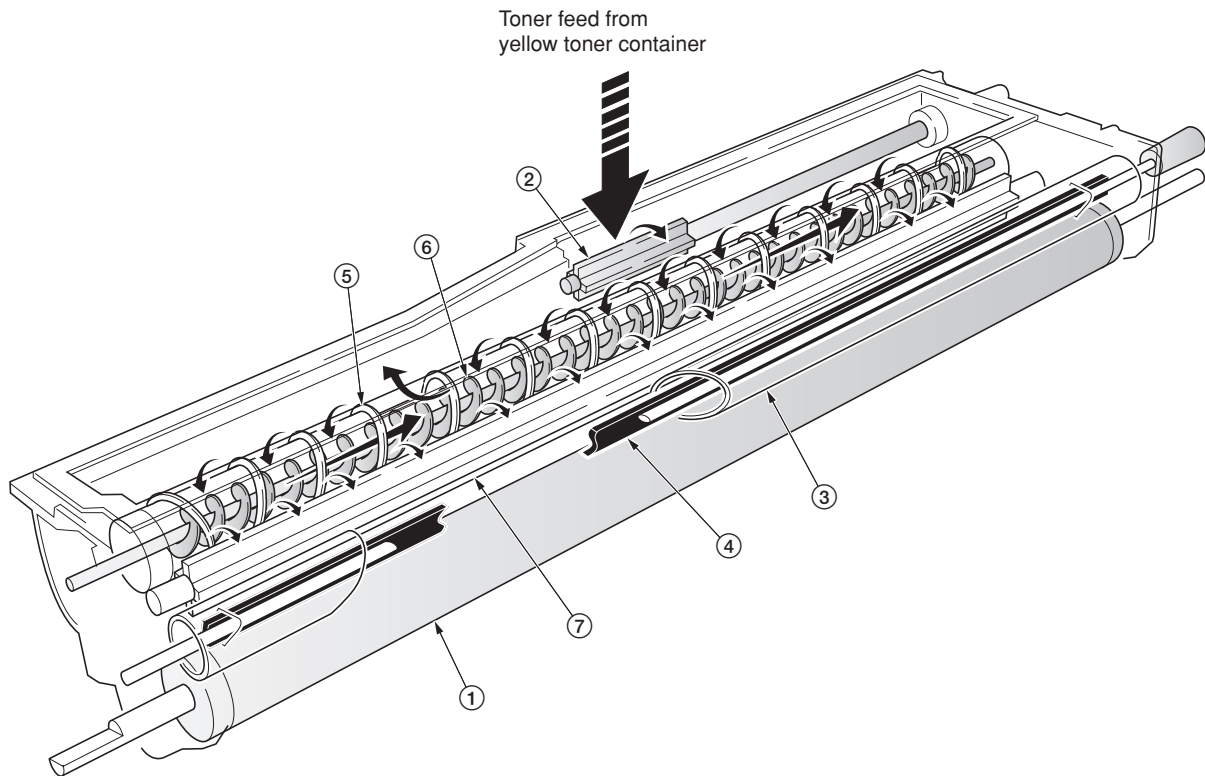


Figure 2-1-12 Yellow developer

- ① Developing roller
- ② Toner feed paddle
- ③ Blade sleeve
- ④ Shutter magnet
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Agitation paddle

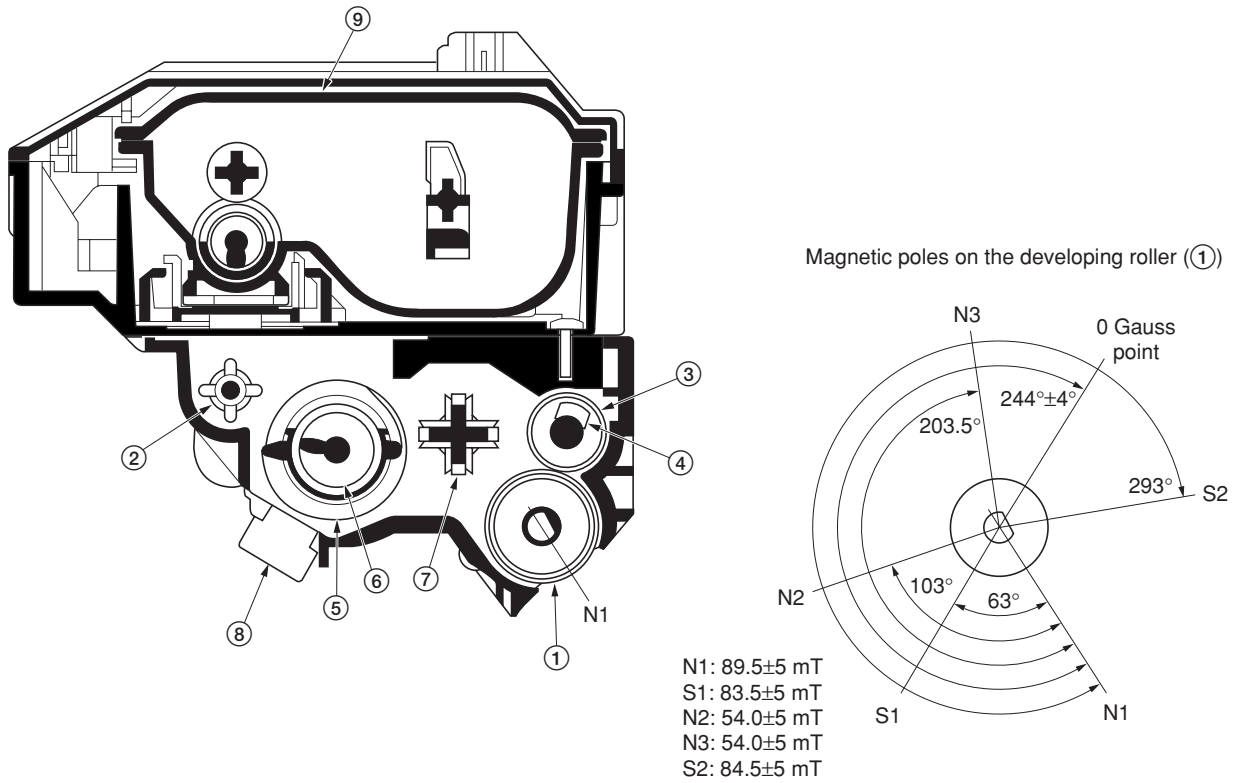


Figure 2-1-13 Yellow developer and magnetic poles on the developing roller

- ① Developing roller
- ② Toner feed paddle
- ③ Blade sleeve
- ④ Shutter magnet
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Agitation paddle
- ⑧ Yellow T/C sensor (YTPCS)
- ⑨ Yellow toner container

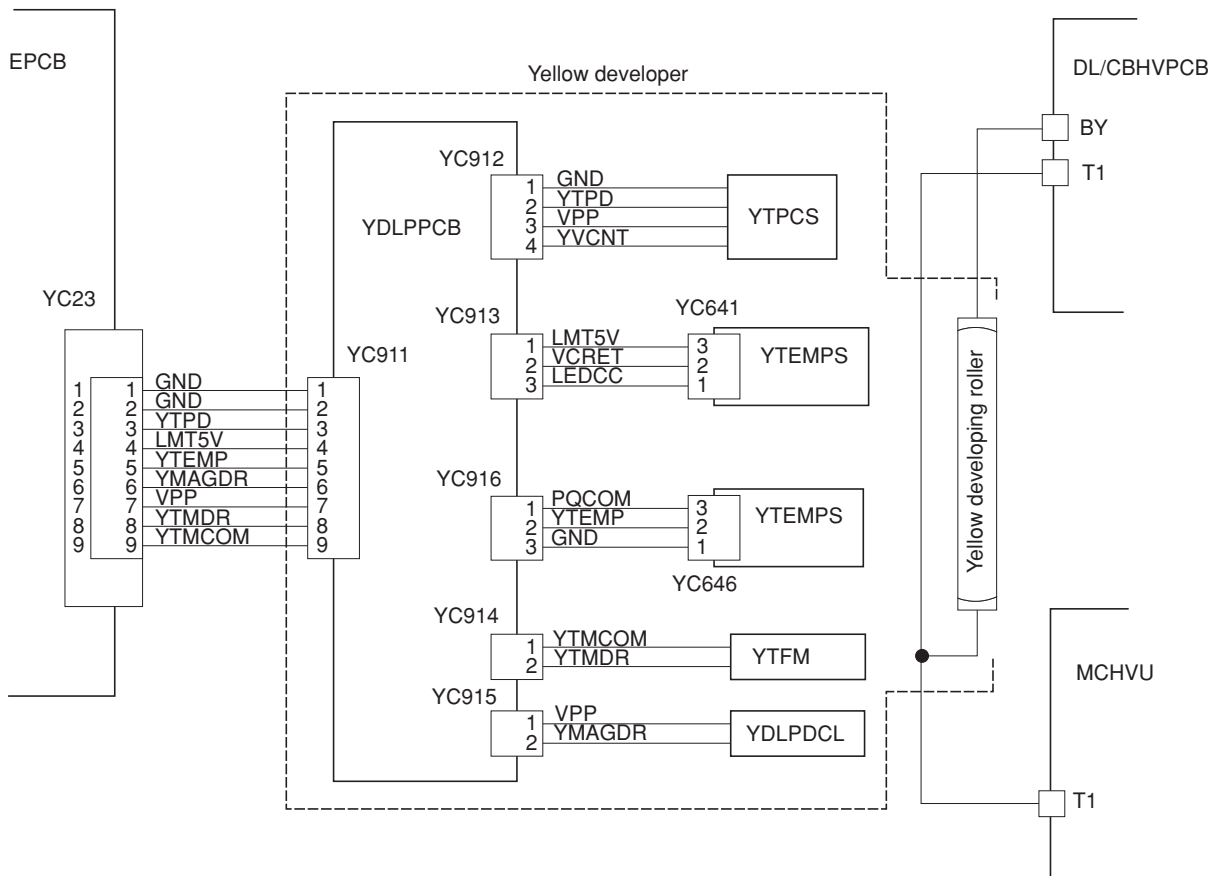


Figure 2-1-14 Yellow developer block diagram

(2) Magenta developer

The magenta developer is directly mounted atop with the magenta toner container. As the magenta toner feed motor (MTFM) turns on to feed toner, the toner pours down in the toner hopper onto the paddle. The paddle drives toner to the mixer tube. The mixer tube has a mixer screw inside which revolves coaxially with the paddle. The mixer screw and the paddle rotate in the opposite direction to each other, ensuring the effective circulation in the hopper.

The developing roller has a 5-pole magnet and a sleeve located coaxially to the magnet. Toner is carried along the sleeve as it rotates and passed between the blade sleeve and the developing sleeve. The gap between the sleeves is adjusted so that a constant layer of toner is constituted over the developing roller. The magnetic brush is constituted at the opposite area circumferentially to pole N1 and flies over to the drum.

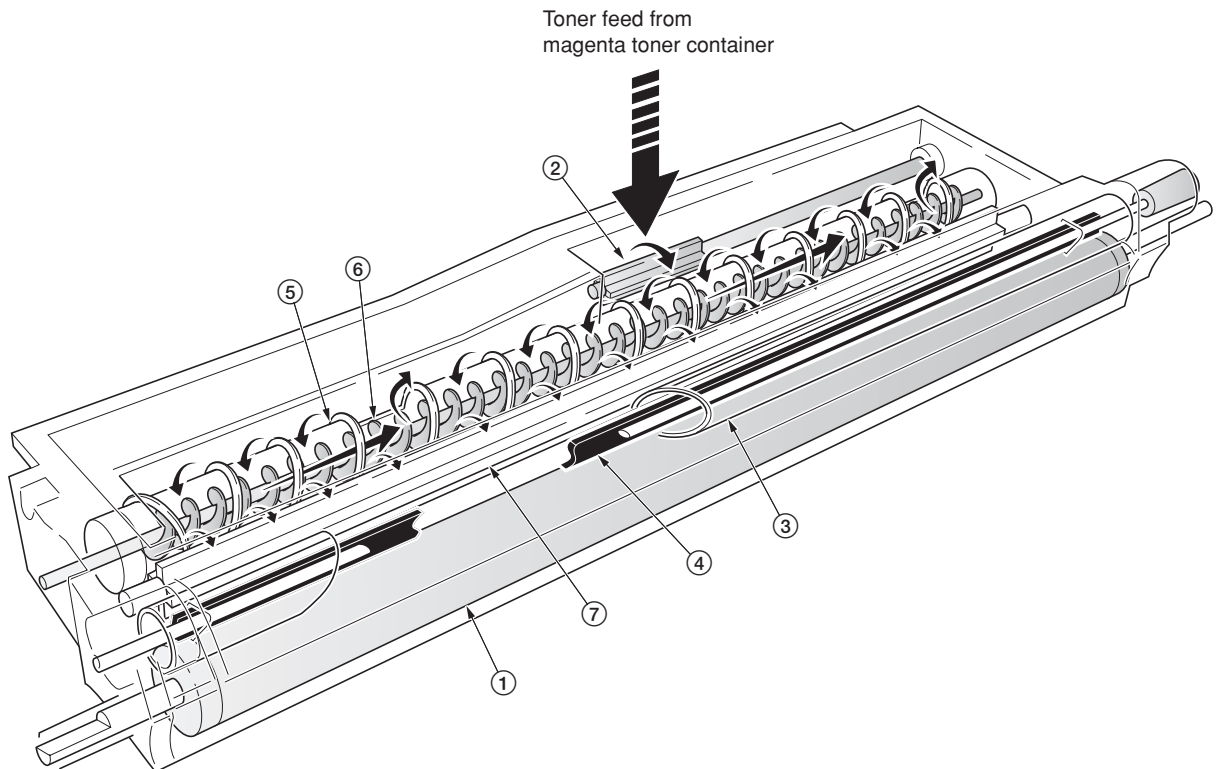


Figure 2-1-15 Magenta developer

- ① Developing roller
- ② Toner feed paddle
- ③ Blade sleeve
- ④ Shutter magnet
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Agitation paddle

Magnetic poles on the developing roller (①)

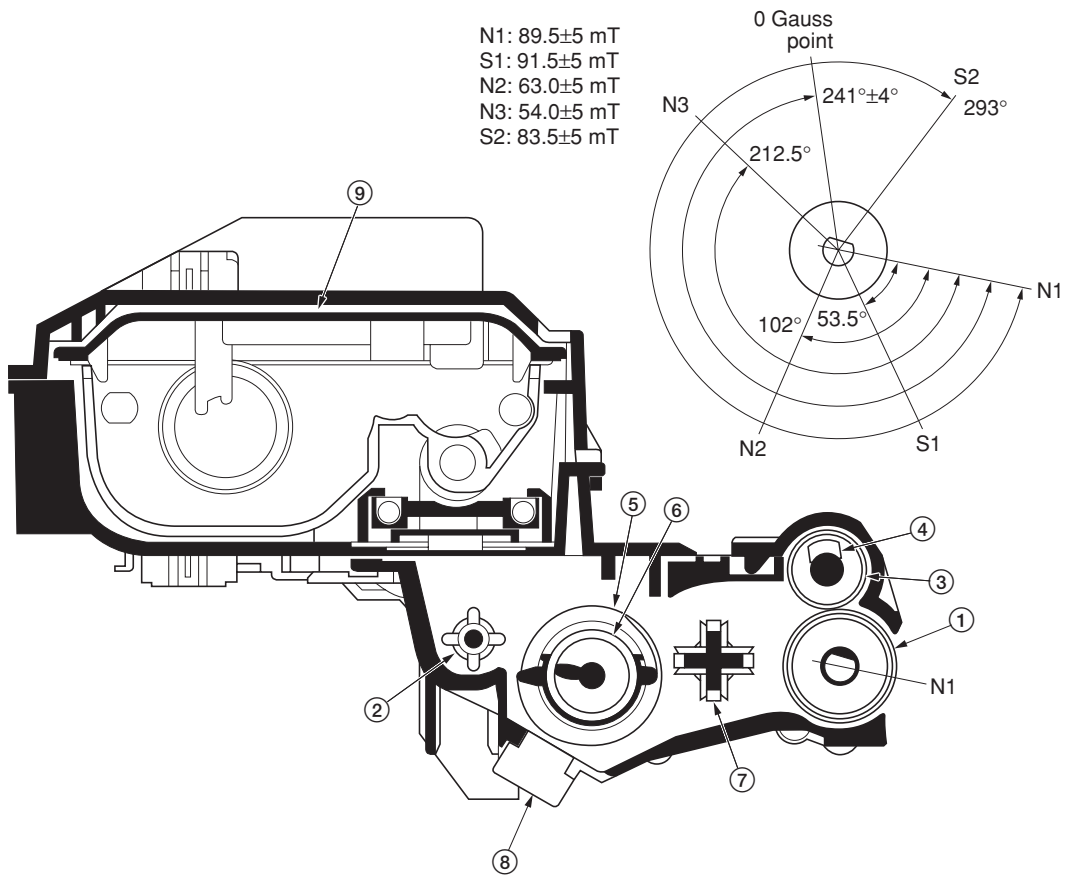


Figure 2-1-16 Magenta developer and magnetic poles on the developing roller

- ① Developing roller
- ② Toner feed paddle
- ③ Blade sleeve
- ④ Shutter magnet
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Agitation paddle
- ⑧ Magenta T/C sensor (MTPCS)
- ⑨ Magenta toner container

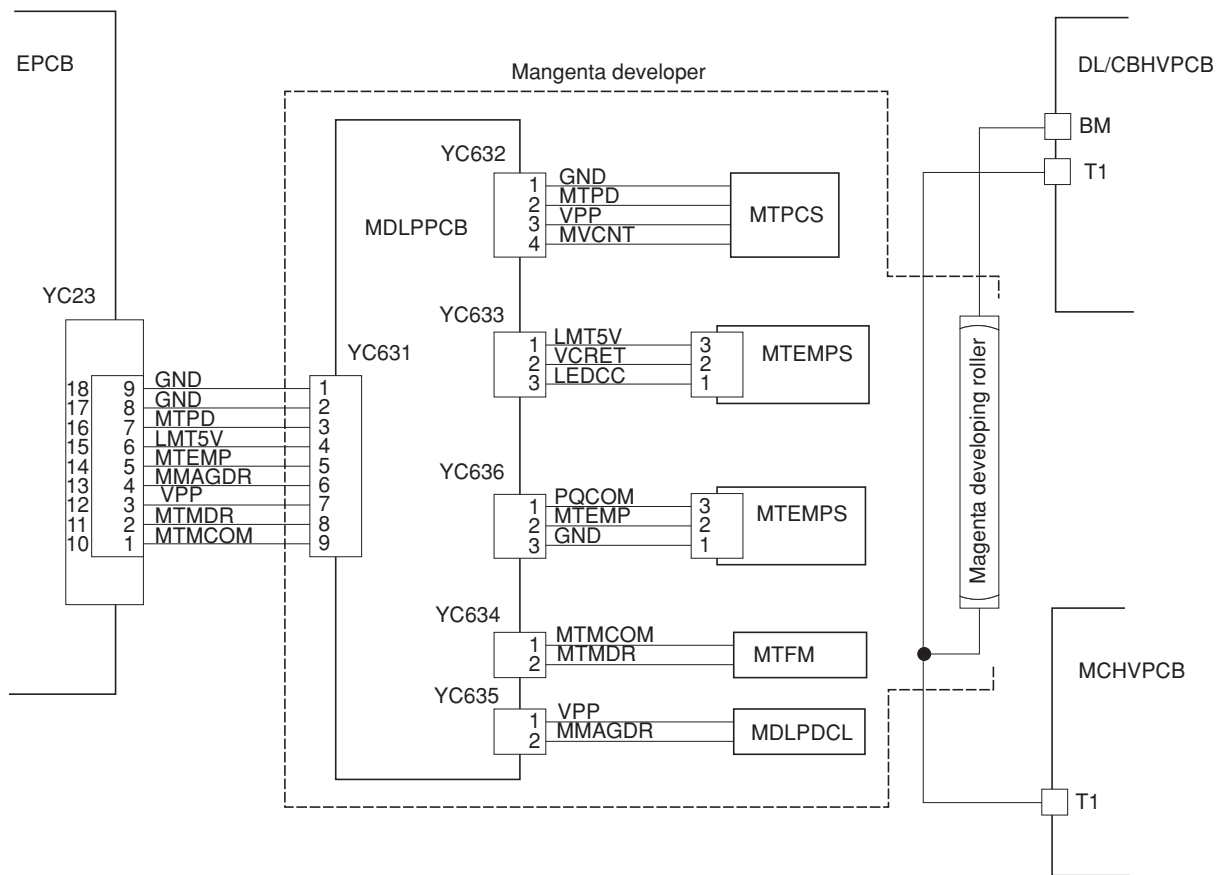


Figure 2-1-17 Magenta developer block diagram

(3) Cyan developer

The cyan developer, unlike the other color developers, has the toner container with a considerable offset in terms of mounting. Toner replenished by the cyan toner container is driven via a horizontal pathway into the hopper in the developer. As the motor for feeding toner turns on, toner begins driven in a free-fall fashion onto the toner supply screw which is jointed with the motor for feeding the cyan toner. The toner supply screw horizontally relays the toner up to the mixer tube. The mixer tube has a mixer screw inside which revolves coaxially with the paddle. The mixer screw and the paddle rotate in the opposite direction to each other, ensuring the effective circulation in the hopper.

The developing roller has a 5-pole magnet and a sleeve located coaxially to the magnet. Toner is carried along the sleeve as it rotates and passed between the blade sleeve and the developing sleeve. The gap between the sleeves is adjusted so that a constant layer of toner is constituted over the developing roller. The magnetic brush is constituted at the opposite area circumferentially to pole N1 and flies over to the drum.

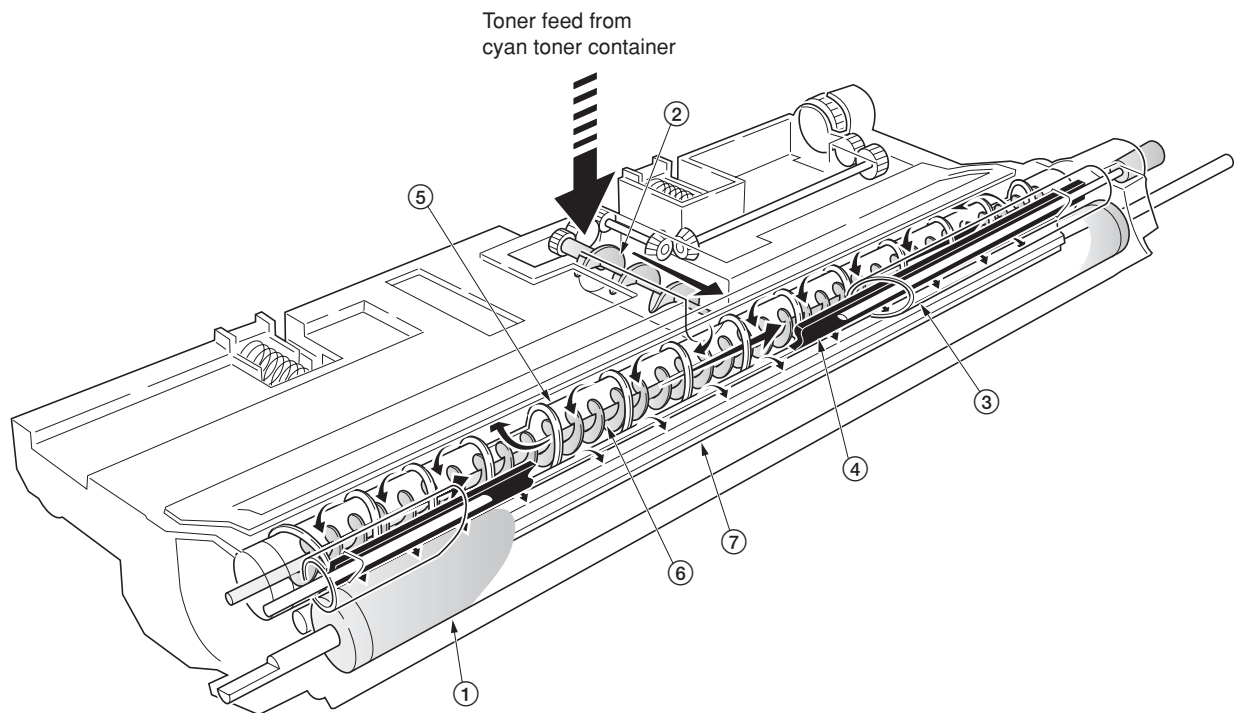


Figure 2-1-18 Cyan developer

- ① Developing roller
- ② Toner supply screw
- ③ Blade sleeve
- ④ Shutter magnet
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Agitation paddle

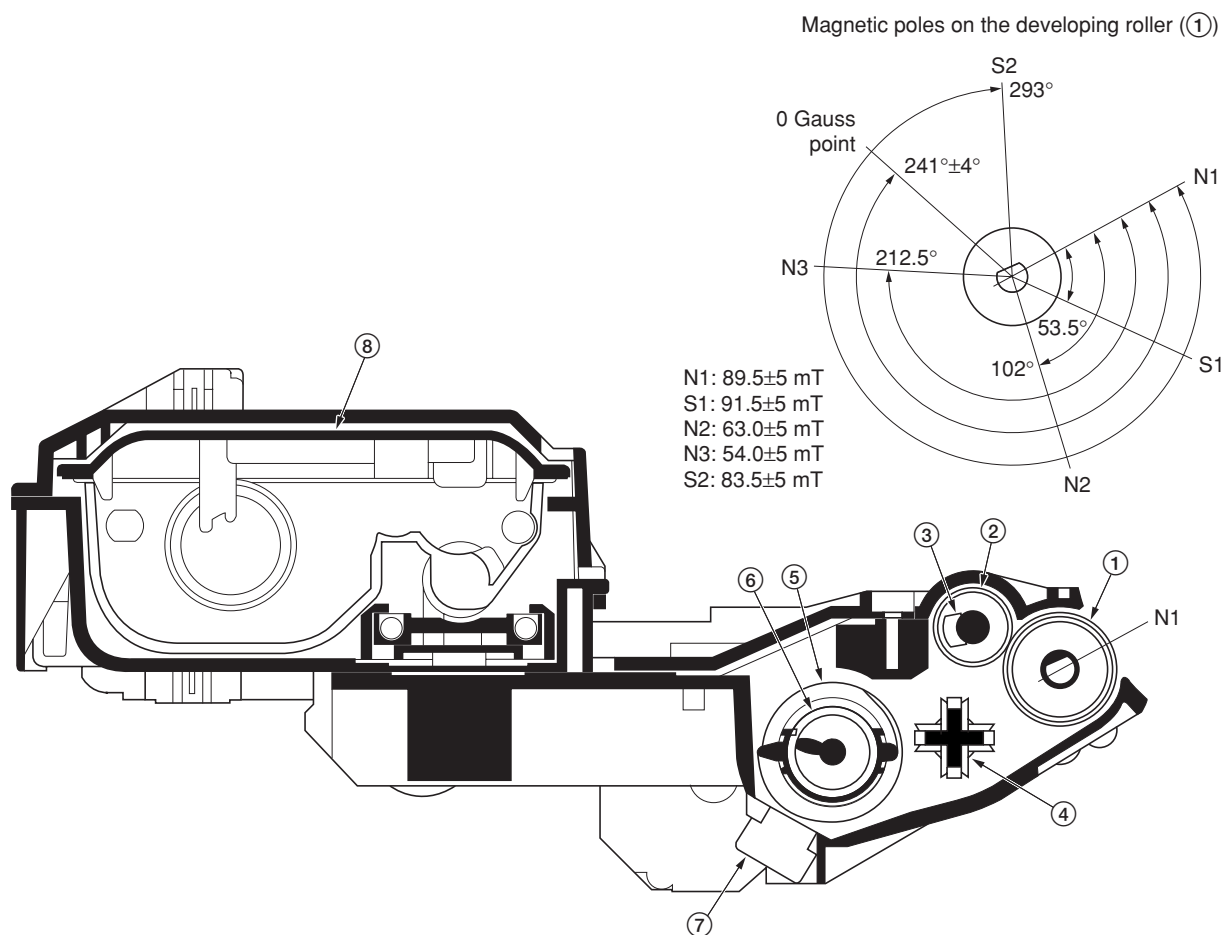


Figure 2-1-19 Cyan developer and magnetic poles on the developing roller

- ① Developing roller
- ② Blade sleeve
- ③ Shutter magnet
- ④ Agitation paddle
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Cyan T/C sensor (CTPCS)
- ⑧ Cyan toner container

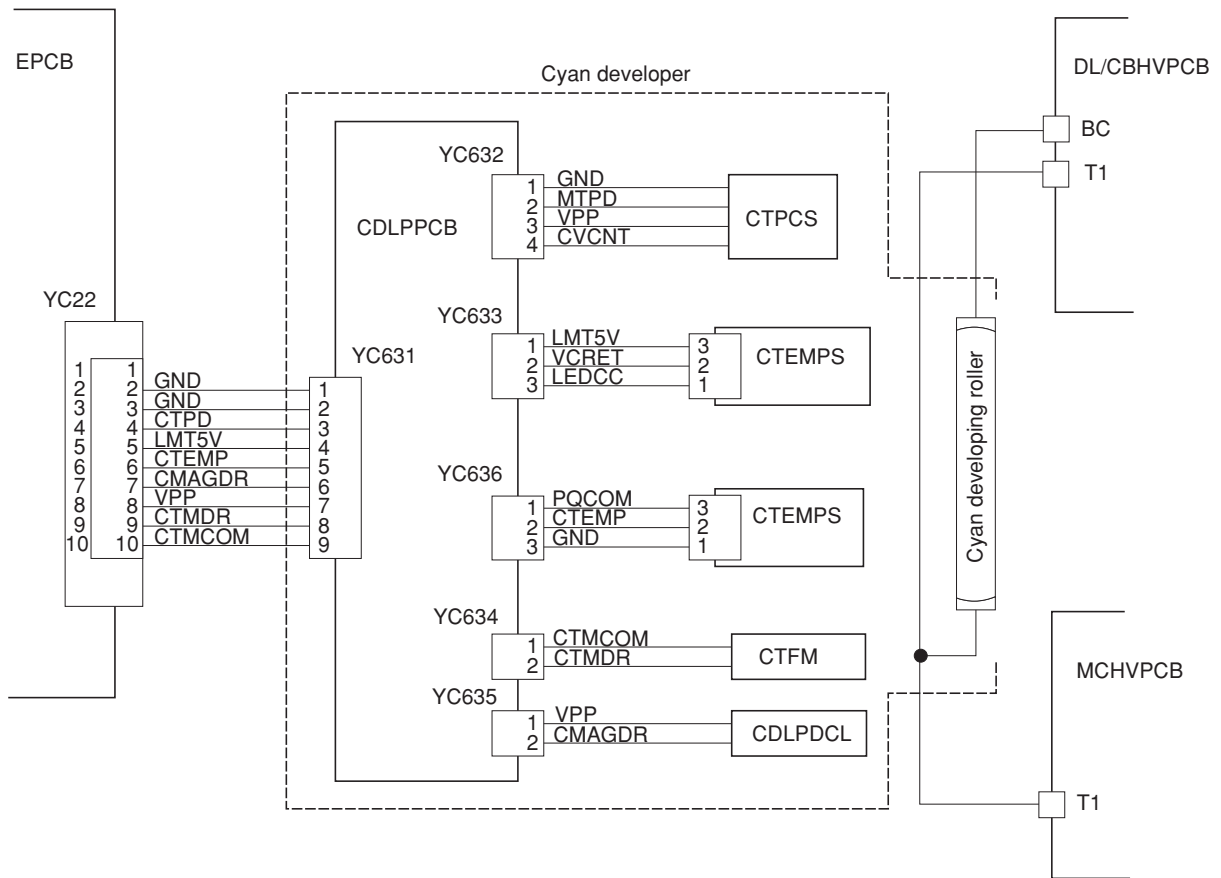


Figure 2-1-20 Cyan developer block diagram

(4) Black developer

Since the black developer has to be seated right underneath the drum unit, which prevents the black toner container directly mounted on the developer. The toner container is located in area above the primary transfer unit. Toner feeding from the toner container to the developer unit is accomplished by the feed assembly which includes a tube through which the toner is conveyed.

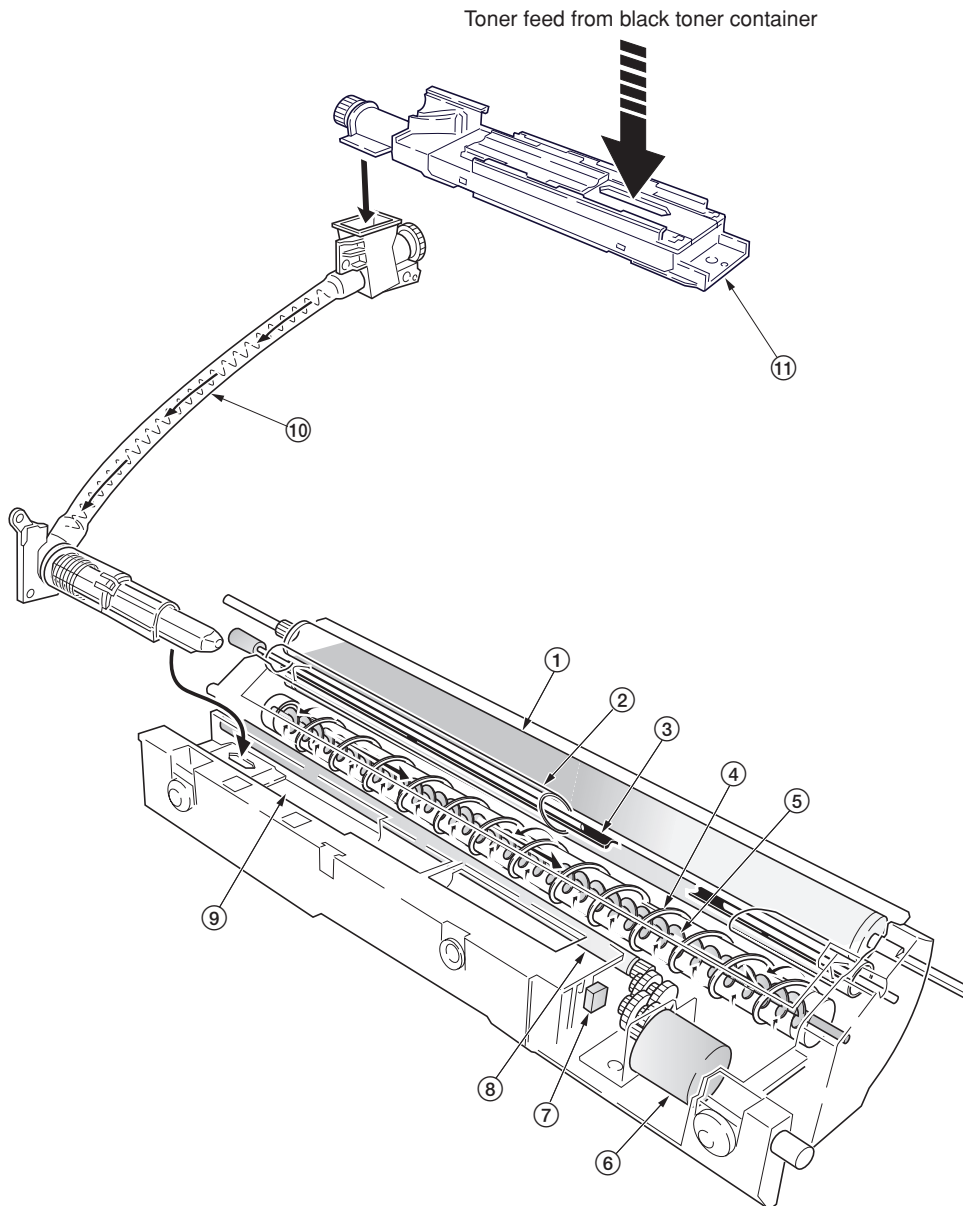


Figure 2-1-21 Black developer

- ① Developing roller
- ② Blade sleeve
- ③ Shutter magnet
- ④ Mixer tube
- ⑤ Mixer screw
- ⑥ Black toner feed motor (KTFM)
- ⑦ Black toner intermediate hopper sensor (KTIHS)
- ⑧ Toner feed magnet roller
- ⑨ Intermediate toner hopper
- ⑩ Black toner feed assembly
- ⑪ Black toner container feed assembly

The black developer has an intermediate toner hopper inside. The toner temporarily stored in the hopper is driven to the mixer tube in the toner hopper by means of the magnet roller. The mixer tube which has a mixer screw inside which revolves coaxially with the mixer tube redistributing toner in the opposite directions. Redistributing toner also positive-charges the toner owing to static electricity. The charged toner is then sent to the developing roller. Since the black developer has its developing roller at its top, toner must be escalated from the hopper to the developing roller. To accomplish this, the black toner is slightly magnetized and an intermediate (3-pole) magnet roller is provided in the middle of the developing chamber. The black toner is attracted by magnetism by this intermediate magnet roller, escalated, and fed to the developing roller.

The developing roller has a 5-pole magnet and a sleeve which rotates coaxially to the magnet. Toner is carried along the sleeve as it rotates and passed between the blade sleeve and the developing sleeve. The gap between the sleeves is adjusted so that a constant layer of toner is constituted over the developing roller. The magnetic brush is constituted at the opposite area circumferentially to pole N1 and flies over to the drum.

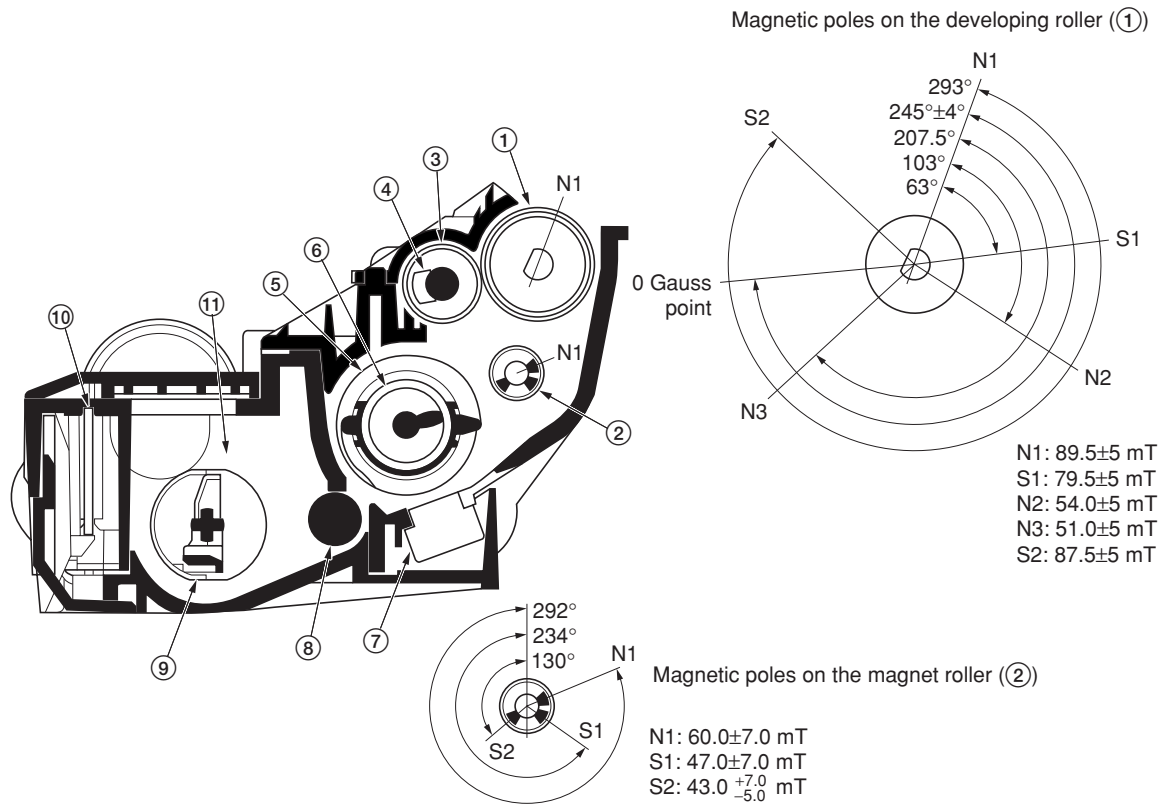


Figure 2-1-22 Black developer and magnetic poles on the developing roller

- ① Developing roller
- ② Magnet roller
- ③ Blade sleeve
- ④ Shutter magnet
- ⑤ Mixer tube
- ⑥ Mixer screw
- ⑦ Black T/C sensor (KTPCS)
- ⑧ Toner feed magnet roller
- ⑨ Agitation paddle
- ⑩ Black developer PCB (KDLPPCB)
- ⑪ Intermediate toner hopper

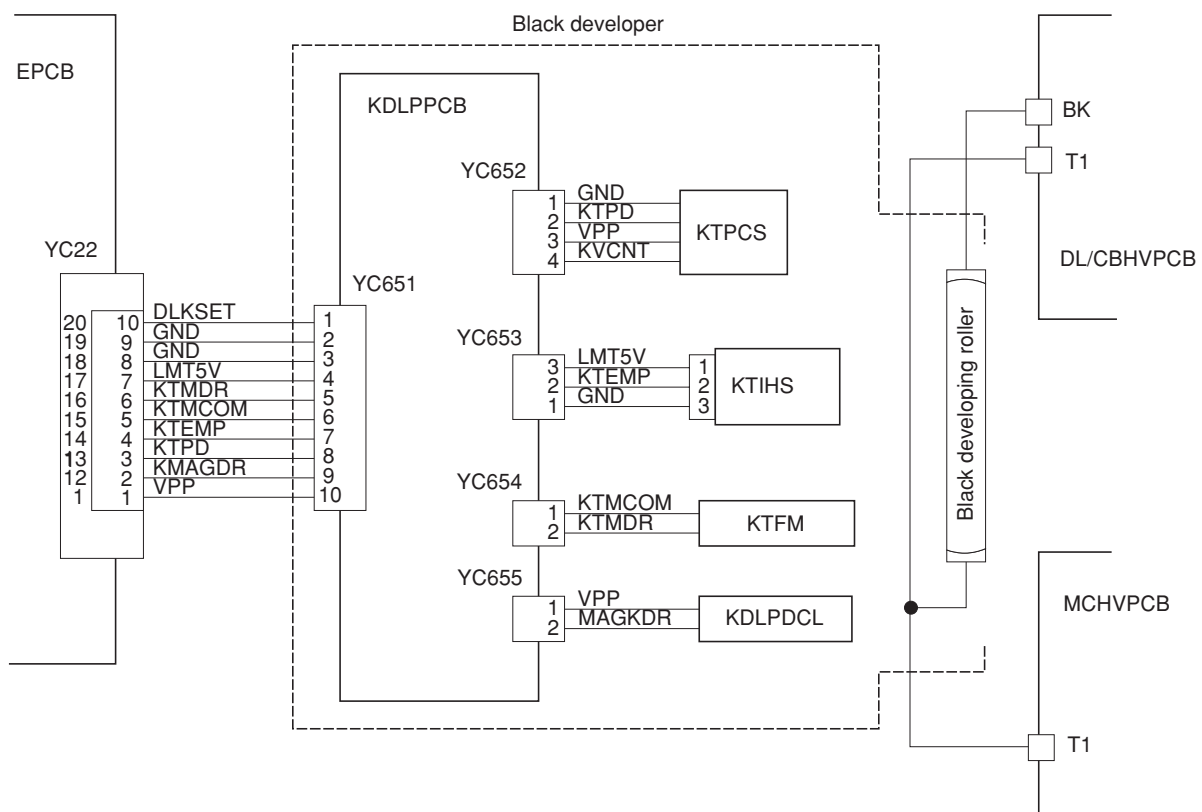


Figure 2-1-23 Black developer block diagram

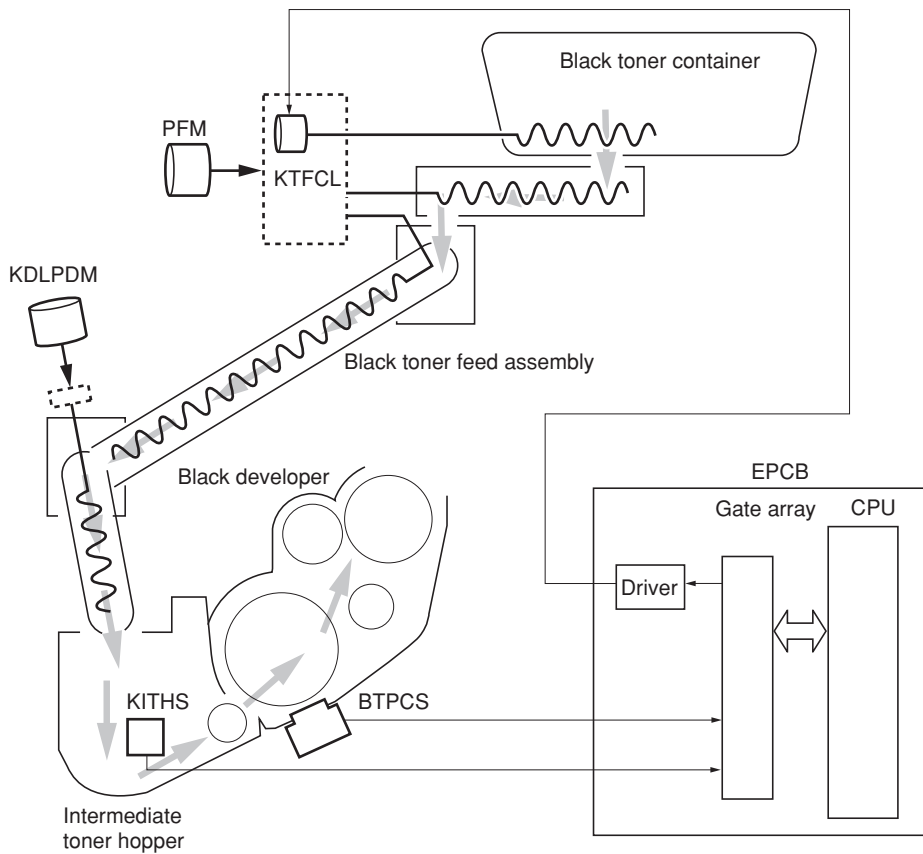
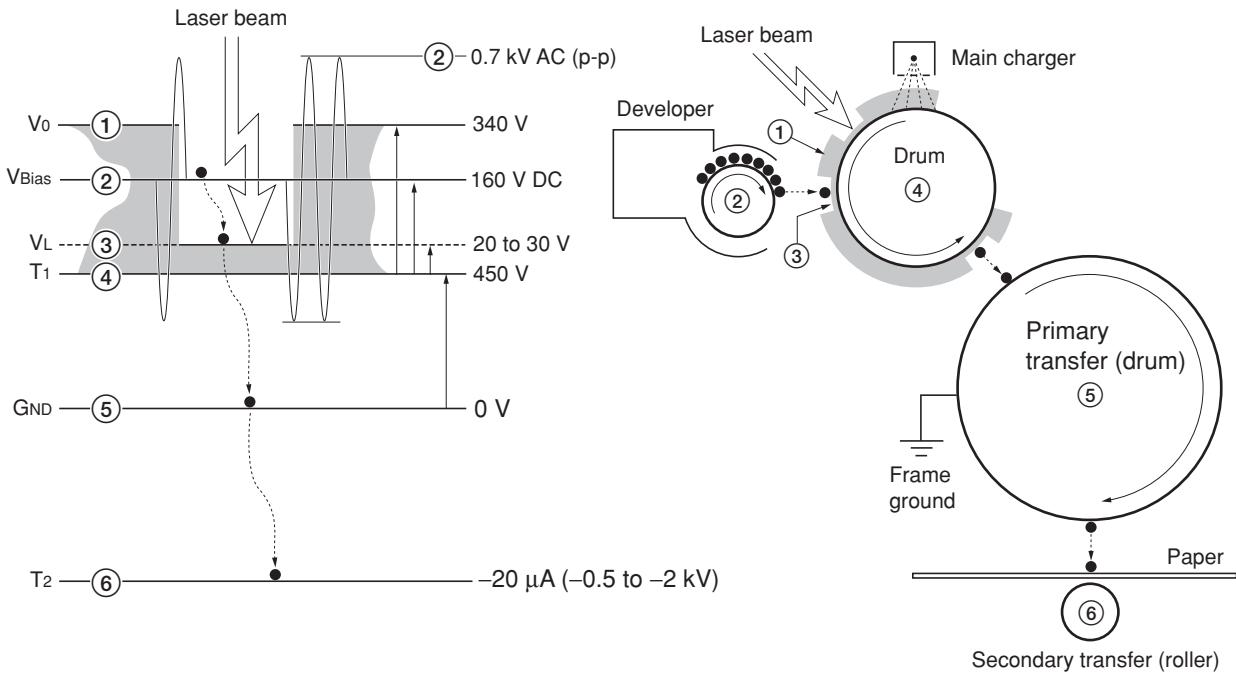


Figure 2-1-24 Black developer block diagram

CPU on the engine controller PCB (EPCB) watches the amount of the black toner by means of a sensor (IMTHS) in the intermediate toner hopper in the black developer. When the black toner dwindles, the clutch (KTFCL) that feeds the black toner is activated to feed toner from the black toner container to the feed assembly for the black toner. Toner is fed by a screw in the feed assembly for the black toner. The feed assembly for the black toner is driven by a motor (KDL PDM) and passed to the intermediate hopper in the black developer.

(5) Transition of toner for development

Toner, basically a charged ink in positive polarity, travels through the developer through the primary transfer unit, and finally transferred on paper, all by means of voltage differences. The diagram below shows how the toner moves from the developer to the paper in a delicate balance among the biases.



- : Toner (positive-charged)
- : Main charge on the drum
- V₀: Drum surface voltage (1)
(Yellow: 330 V, Magenta and Cyan 340 V, Black: 420 V)
- V_L: Exposed drum surface voltage (3)
- V_{Bias}: Developing bias DC + AC (2)
([Yellow: 140 V, Magenta and Cyan: 160 V, Black: 240 V DC] + 0.7 kV AC, f= 3.6 kHz)
- T₁: Drum base voltage (4)
(variable by temperature and humidity)
- GND: Frame ground (5)
- T₂: Secondary transfer bias (6)
(adjusted according to paper type)

Figure 2-1-25 Transition of toner for development

2-1-5 Drum unit and main charger unit

(1) Drum unit

The drum unit includes the photoconductor (ϕ 80 mm), cleaning system, eraser system, etc. Amorphous-silicon material is used for the photoconductor. During the electrophotographic process, the photoconductor is charged with high voltage dispersed by the main charger wire. On the flange located at the back of the drum unit are 18 pins which are used for interrupters to the offset drum sensor (ODS). These pins and the sensor generate the pulse signal which is used as the reference at which the drum begins revolution.

The residual toner on the drum unit is scraped off by the cleaning blade and removed by the cleaning roller. The cleaning roller is directly in contact with the drum and rotates twice faster than the drum unit in the opposite direction, effectively polishing the drum. The waste toner is driven outwards by a screw.

The cleaning lamp (CL) disperses the light over the drum to quench the residual charge when image transfer has finished.

The drum unit includes a PCB on which a EEPROM is held to store data such as the drum sensitivity and maintain the serial number, life count, etc., proprietary to the individual drum unit. The drum sensitivity information is utilized for compensation of the main charging magnitude specifically to the individual drum. The innate image quality is not obtainable in case the photoconductor is replaced in the drum unit.

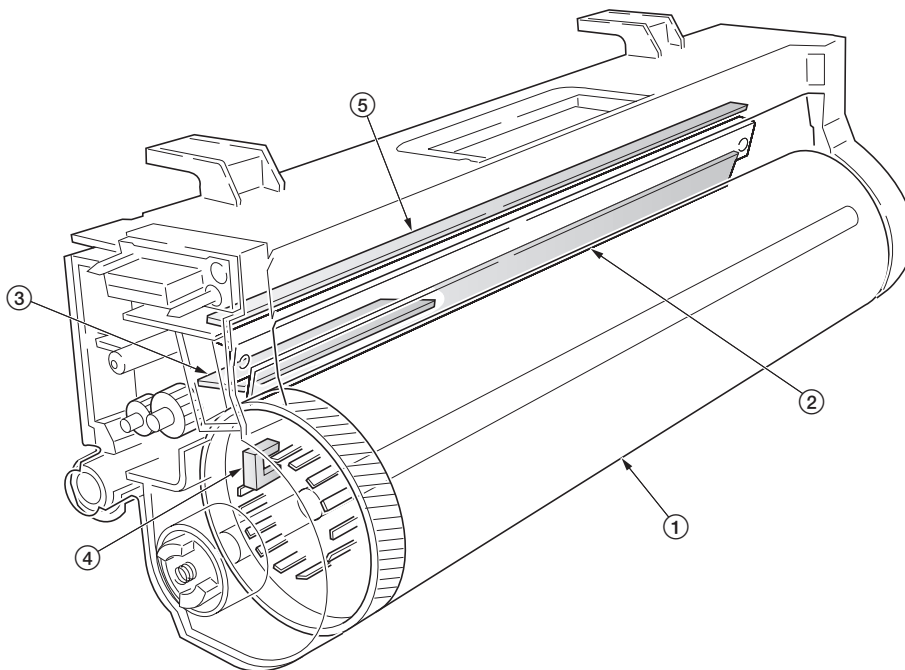


Figure 2-1-26 Drum unit

- ① Drum
- ② Cleaning blade
- ③ Cleaning lamp (CL)
- ④ Drum PCB (DRPCB)
- ⑤ Offset drum sensor (ODS)

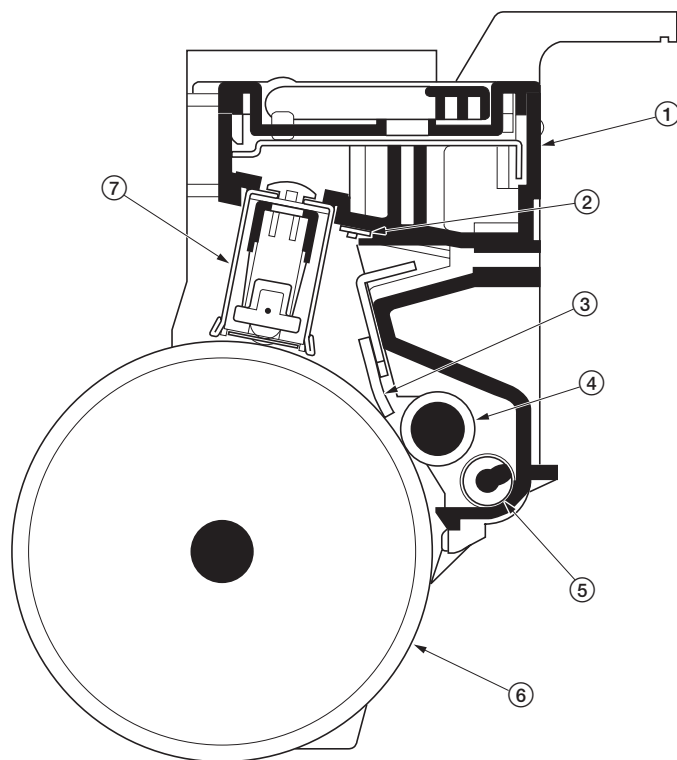


Figure 2-1-27 Drum unit

- ① Drum unit
- ② Cleaning lamp (CL)
- ③ Cleaning blade
- ④ Cleaning roller
- ⑤ Waste toner exit screw
- ⑥ Drum
- ⑦ Main charger unit

The copier use the long lasting amorphous silicon drum. The drum surface is a composite of five substances coated in five layers as shown below.

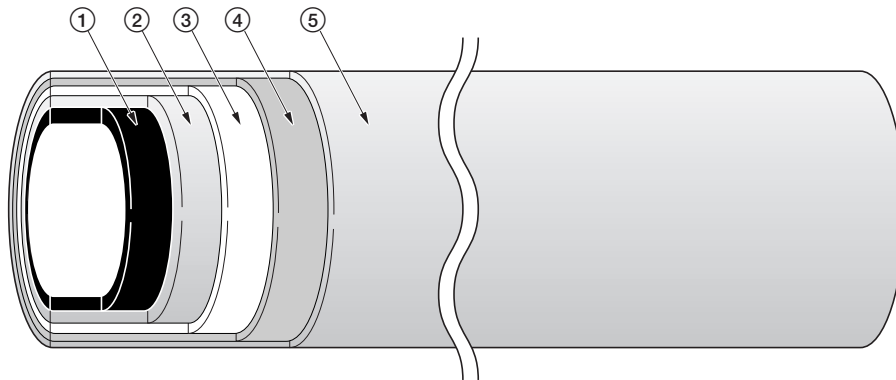


Figure 2-1-28 Amorphous silicon drum layer

- ① Aluminum base
- ② Carrier block (1 to 3 μm thick)
- ③ Photoconductor a-Si
- ④ Primary protection layer (1 μm thick)
- ⑤ Secondary protection layer

The primary and secondary layers are for protecting the amorphous silicon layer underneath. The amorphous silicon layer is of photoconductive, meaning it can be electronically conductive when exposed to a (laser) light source to effectively ground electrons charged on its outer surface to the ground. This layer is approximately 9 μm thick. The carrier block layer lies between the amorphous silicon layer and the aluminum base cylinder and prevents the backward electron flow, from the base cylinder to the drum's outer surface, which might give adverse effect (possibly "ghost") on the print quality.

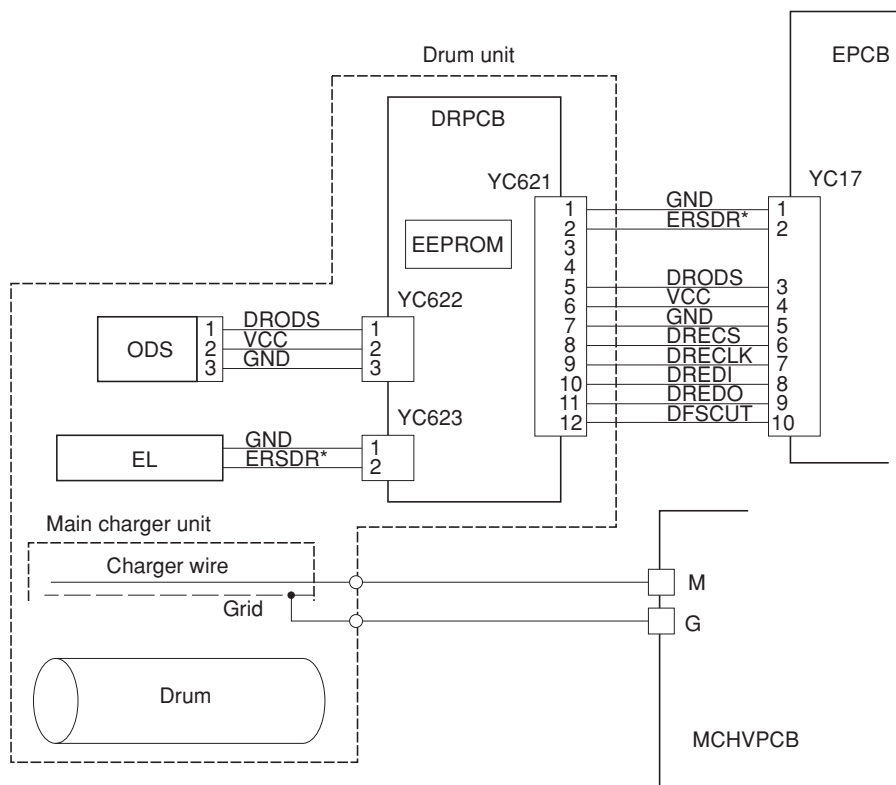


Figure 2-1-29 Drum unit and main charger unit block diagram

Dark decay

The main charge to the drum is delicately controlled by adjusting both the high voltage (+6 to +7 kV) and the potential at the main charger grid. The potential developed at the surface of the drum is also affected by the inherent sensitivity of the drum. The charge on the surface of the drum decreases as time passes by at the rate of approximately 100 V per second, known as the “dark decay”. Since the developer units are located over different distances around the drum’s circumference, to maintain the target surface potential (150 V for yellow, 160 V for magenta and cyan, and 240 V for black) in the area on the drum where development for specific color occurs, the main charging is controlled in compensation with the dark decay for each color.

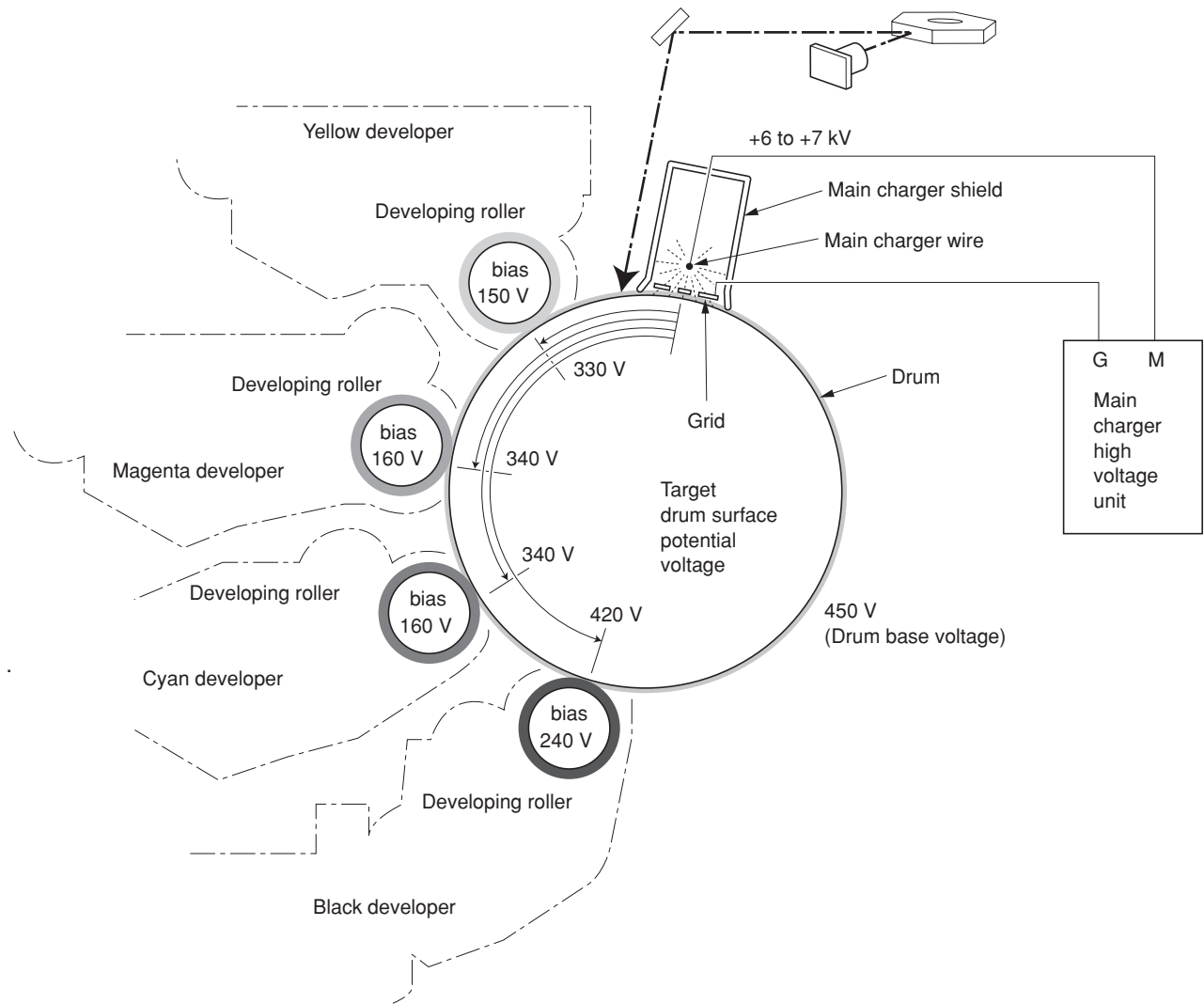


Figure 2-1-30 Dark decay

(2) Main charger unit

The main charger unit is devised at the top of the drum unit, consisting of a wire, grid, and a shield. The main charger disperses +6 kV to +7 kV high voltage over the drum in the beginning of the electrophotographic cycle. To clean the main charger wire of carbon dioxide, a manual cleaning system is provided.

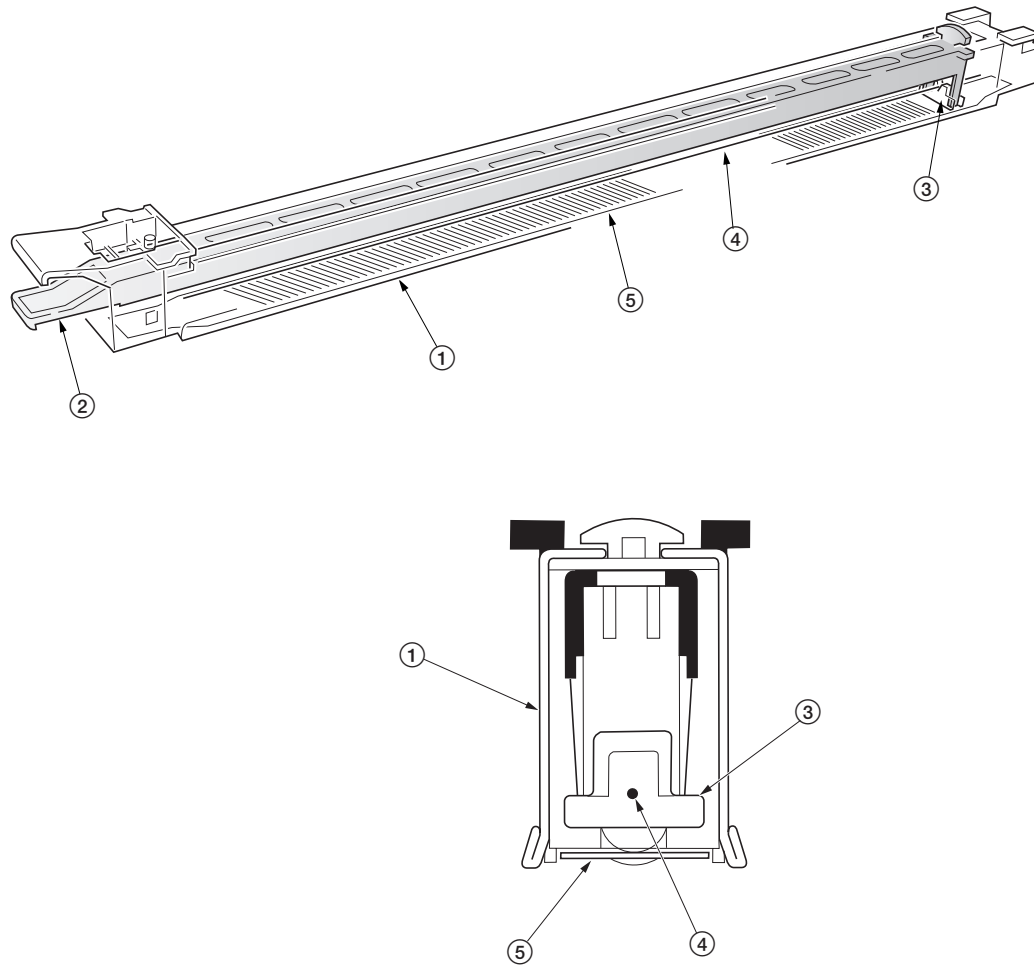


Figure 2-1-31 Main charger unit

- ① Main charger shield
- ② Main charger cleaning knob
- ③ Main charger cleaner
- ④ Main charger wire
- ⑤ Main charger grid

2-1-6 Primary transfer unit

(1) Primary transfer unit

The primary transfer unit has the primary transfer drum, as the main part, and the cleaning brush unit. The primary transfer drum is an aluminum cylinder, covered by the electroconductive sponge, and outermost by the fluorine-coated rubber. The primary transfer drum is 160 mm diametric; whereas the photoconductor drum is 80 mm diametric, having a diameter ratio of 2 to 1. One rotation of the photoconductor drum can produce one page of A4/11" × 8½" image over the half circumference of the primary transfer drum. In other words, the primary transfer drum can have two pages of A4/11" × 8½" size; or one page of A3/11" × 17" size at a time.

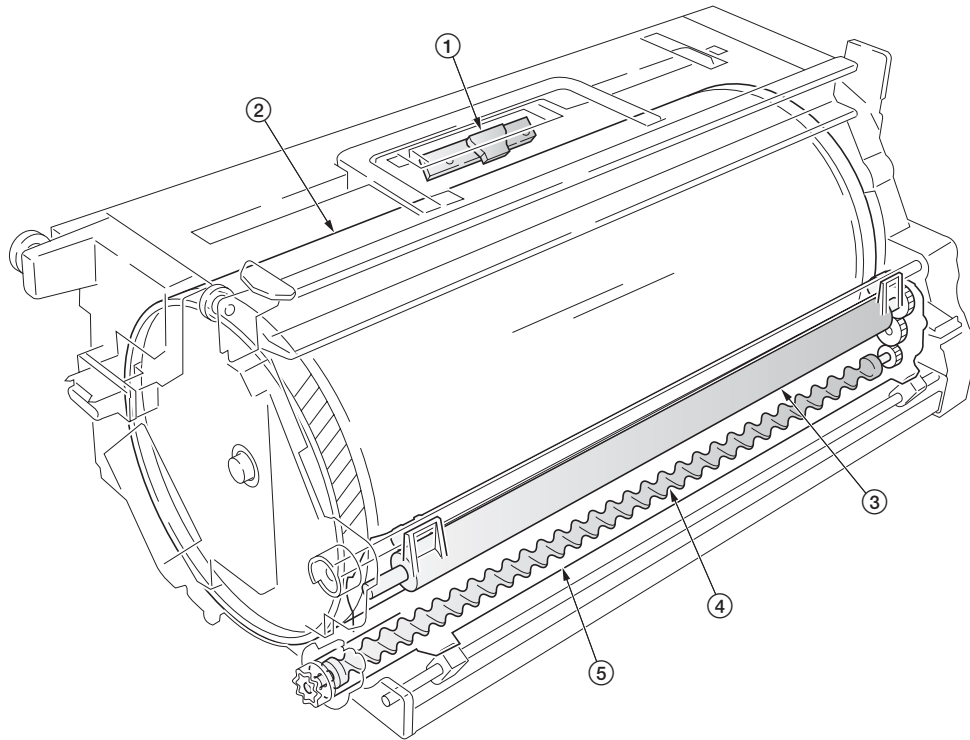


Figure 2-1-32 Primary transfer unit

- ① Primary transfer drum
- ② Image density sensor (IDS)
- ③ Cleaning brush
- ④ Exit screw
- ⑤ Cleaning brush unit

(2) Cleaning brush unit

The cleaning brush unit contains the cleaning brush, cleaning roller, scrapers, and a spiral screw, and acts to remove and recollect the residual toner on the primary transfer drum. Note that the residual toner is removed not by being scraped off but by the electrostatic attraction. The cleaning brush is applied via the cleaning roller with the -600 V bias. Since the toner is positively biased, it is attracted to the cleaning brush. The residual toner attracted onto the cleaning brush is then scraped off by a blade and passed to the exit screw which in turn drives the toner to the waste toner duct.

A color image is constituted by four images of different colors overlapped one by one. The cleaning brush therefore must be dressed away from the primary transfer drum while a color image is being laid over the primary transfer drum before the subsequent transferring process. This is accomplished by a cam which is driven by the cleaning brush unit shift solenoid (CBSSOL) for the cleaning brush.

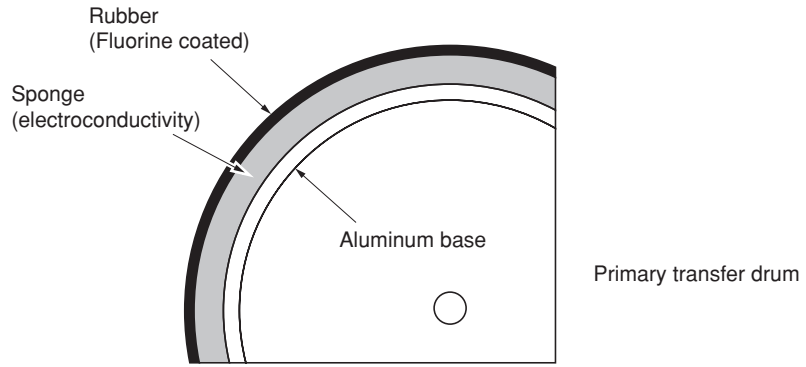


Figure 2-1-33 Primary transfer drum layer

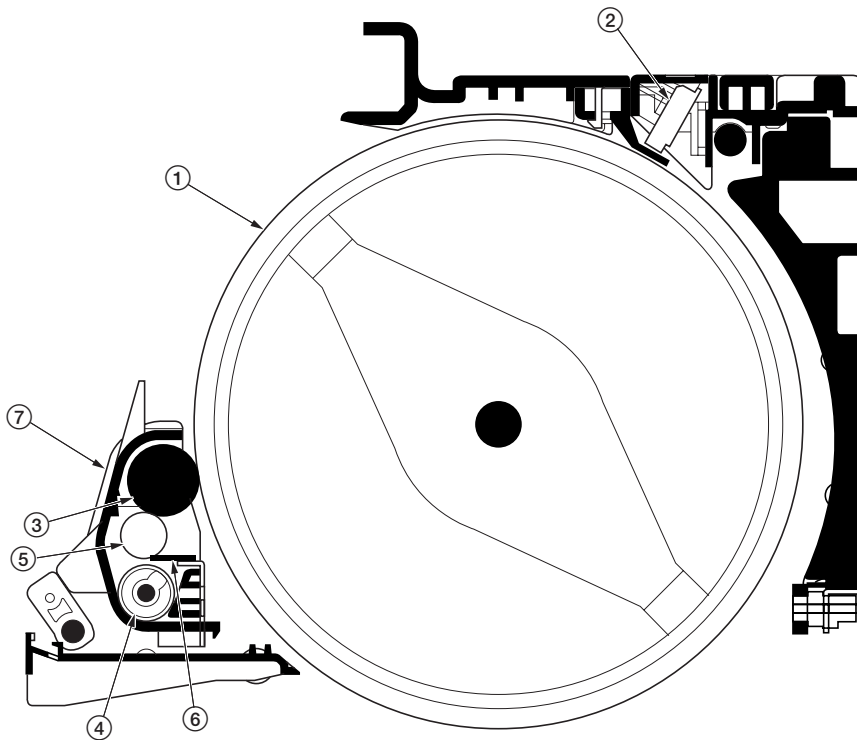


Figure 2-1-34 Primary transfer unit

- ① Primary transfer drum
- ② Image density sensor (IDS)
- ③ Cleaning brush
- ④ Exit screw
- ⑤ Cleaning roller
- ⑥ Cleaning brush blade
- ⑦ Cleaning brush unit

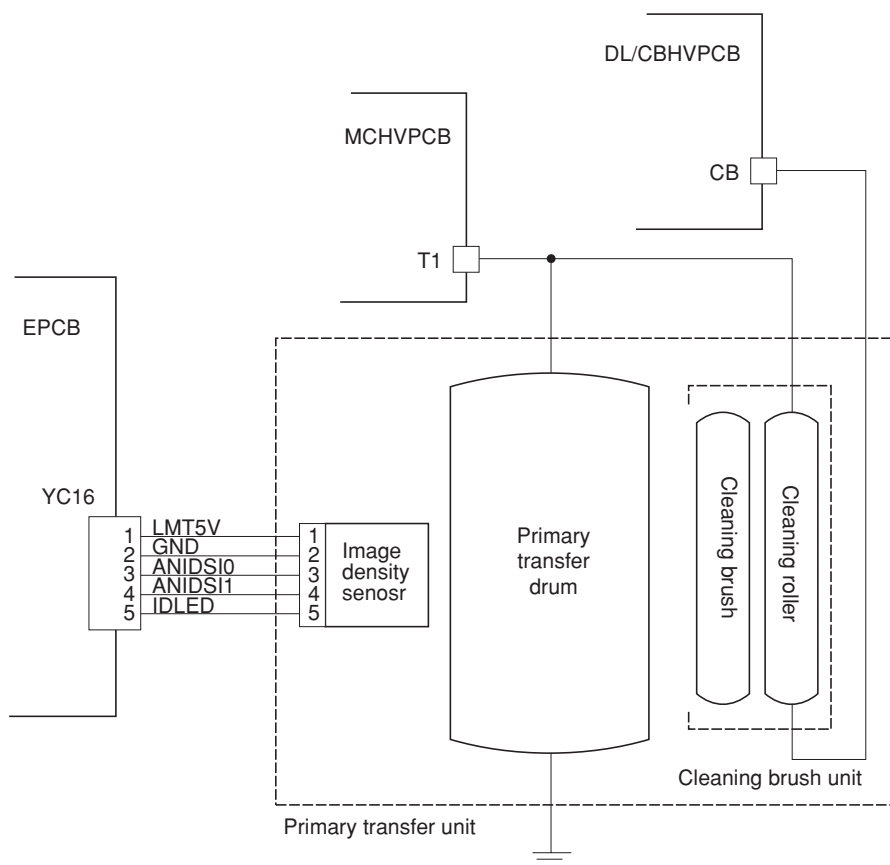


Figure 2-1-35 Primary transfer unit block diagram

Color copy process

In color copying, an image in each color is constituted over the drum unit one after another. Each image is developed by toner and transferred onto the primary transfer drum until four layers of cyan, magenta, yellow, and black are constituted over the primary transfer drum. The color layers are constituted on the primary transfer drum in the order of yellow (bottom-most), magenta, cyan, and black (top-most).

The photoconductor drum can create an A4/11" x 8 1/2" image in two revolutions. (The diametric ratio for the photoconductor drum and the primary transfer drum is 1 to 2.) The primary transfer drum can complete two A4/11" x 8 1/2" size image in one revolution, or one A3/11" x 17" size image in one revolution.

A3/11" x 17" size paper color copying process

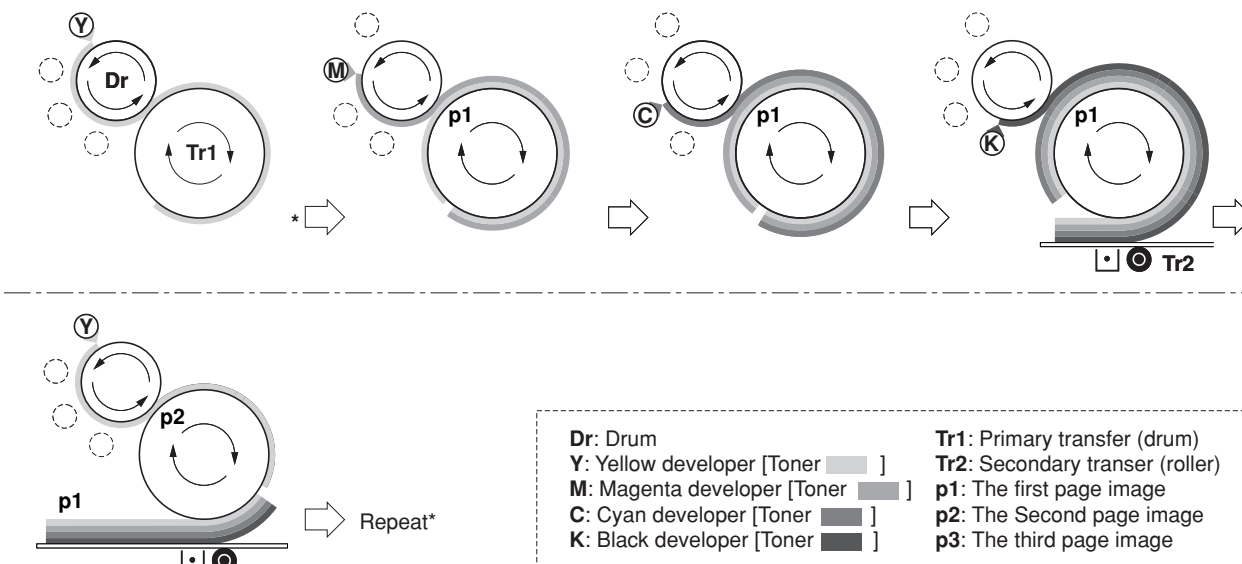


Figure 2-1-36 A3/11" x 17" size paper color printing process

Two-page mode

Two-page mode is the way the machine copys two A4/11" x 8 1/2" size images in a single revolution of the primary transfer drum.

Two pages of A4/11" x 8 1/2" size are laid side by side over the primary transfer drum in the order of yellow, magenta, cyan, and black as explained previously. For the fullest efficiency of printing, the machine copys these two pages in a way explained in Figure 2-1-35.

Table 2-1-1

Drum revolution	Page	Color	Page copyed
1	1	Yellow	-
2	1	Magenta	-
3	1	Cyan	-
4	2	Yellow	-
5	1	Black	-
6	2	Magenta	1
7	3	Yellow	-
8	2	Cyan	-
9	3	Magenta	-
10	2	Black	-
11	3	Cyan	2

A4/11" × 8½" size paper color copying process (Two-page mode)

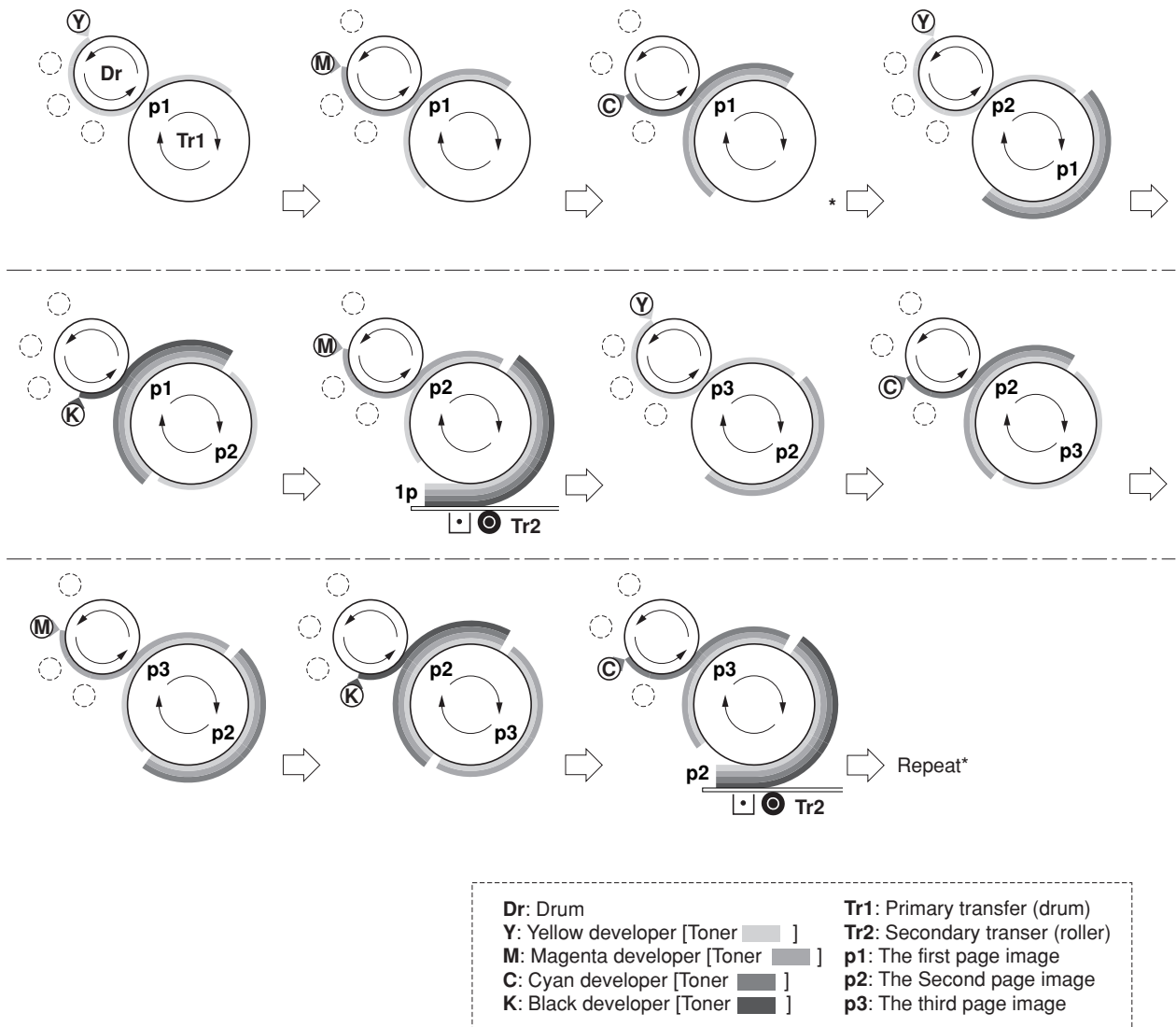


Figure 2-1-37 A4/11" × 8½" size paper color copying process (Two-page mode)

2-1-7 Fuser unit

The fuser unit is detachable and mounted on the left-most end of the paper feed unit. The fuser unit literally fuse toner on the paper by means of heat and pressure, following the transferring process of the electrophotographic cycle.

The fuser has the oil roller unit at the top, which is activated during fusing is in process and lowers the oil roller down onto the top roller so that the oil is applied onto the paper. The oil roller is activated for color copying only.

Both the heat roller and the press/heat roller are of soft type (ϕ 45 mm), in contact with each other with a nip of approximately 10 mm. The nip is required to apply a sufficient heat capacity to the paper in color printing. Both rollers have a 500 W heater inside. Paper is pinched between these rollers for permanently fusing images.

The fusing temperature is controlled as the thermistor for the top roller and the bottom roller signals the engine controller PCB. The heaters are activated in PWM (Pulse-Width Modulation) system depending on the temperature the two thermistor detect and report. The rollers are driven by a dedicated fuser motor. To optimize fusing depending on paper type, the revolution of the rollers are changed accordingly in half the normal speed for thick paper; quadruple the normal speed for transparencies.

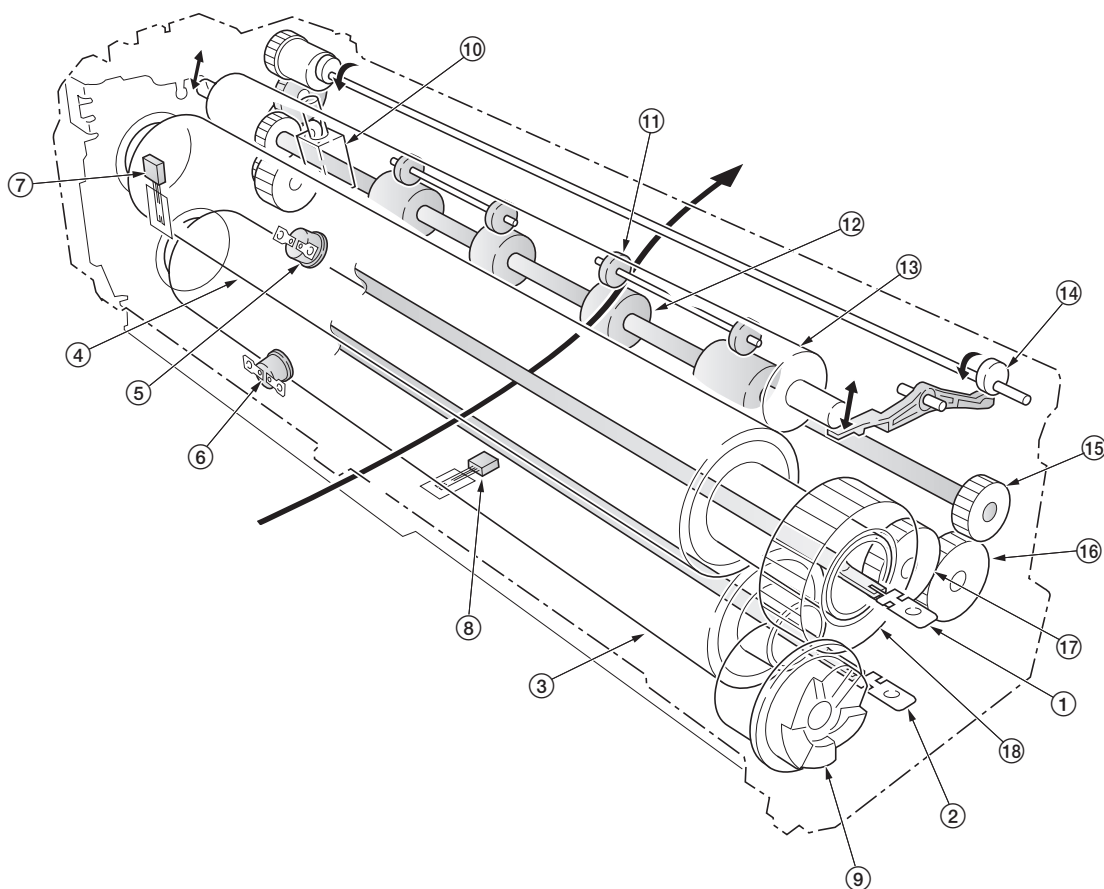


Figure 2-1-38 Fuser unit section

- | | |
|---------------------------------|---|
| ① Upper fuser heater lamp (UFH) | ⑩ Oil roller up/down solenoid (ORUDSOL) |
| ② Lower fuser heater lamp (LFH) | ⑪ Exit pulley |
| ③ Heat roller | ⑫ Exit roller |
| ④ Press/heat roller | ⑬ Oil roller |
| ⑤ Upper thermostat (UTHS) | ⑭ Oil roller cam |
| ⑥ Lower thermostat (LTHS) | ⑮ Exit roller gear |
| ⑦ Upper fuser thermistor (UFTH) | ⑯ Idle gear |
| ⑧ Lower fuser thermistor (LFTH) | ⑰ Idle gear |
| ⑨ Input gear | ⑱ Fuser gear |

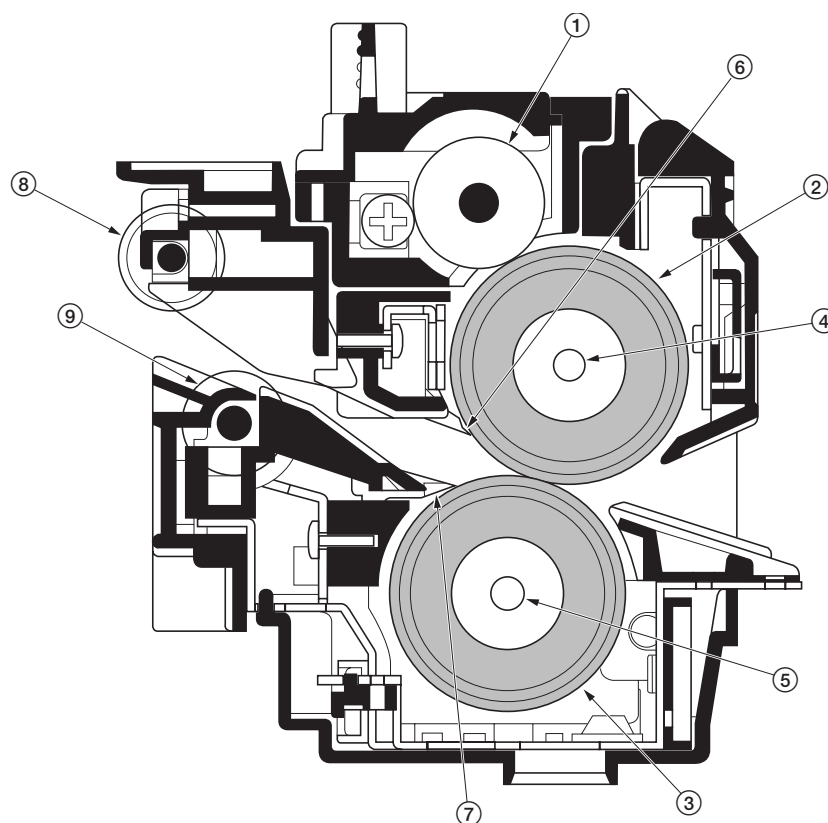


Figure 2-1-39 Fuser unit section

- ① Oil roller
- ② Heat roller
- ③ Press/heat roller
- ④ Upper fuser heater lamp (UFH)
- ⑤ Lower fuser heater lamp (LFH)
- ⑥ Upper separator
- ⑦ Lower separator
- ⑧ Exit pulley
- ⑨ Exit roller

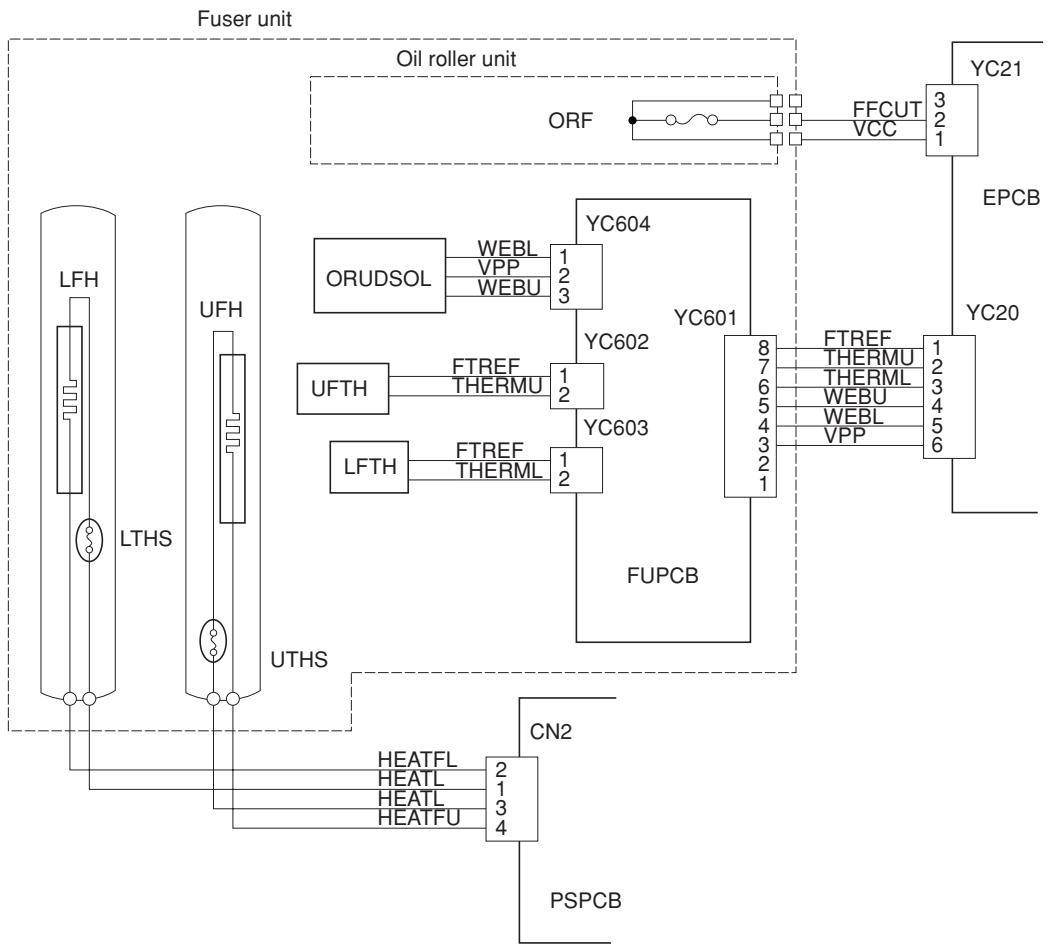


Figure 2-1-40 Fuser unit block diagram

2-1-8 Face-down tray unit

The face-down tray unit changes the destination the printed pages are stuck. For face-down, the paper is guided along the change guide vertically into the face-down tray. In face-up, a solenoid is activated (FUDSOL) to manipulate the change guide so that the paper is sent horizontally in the face-up tray.

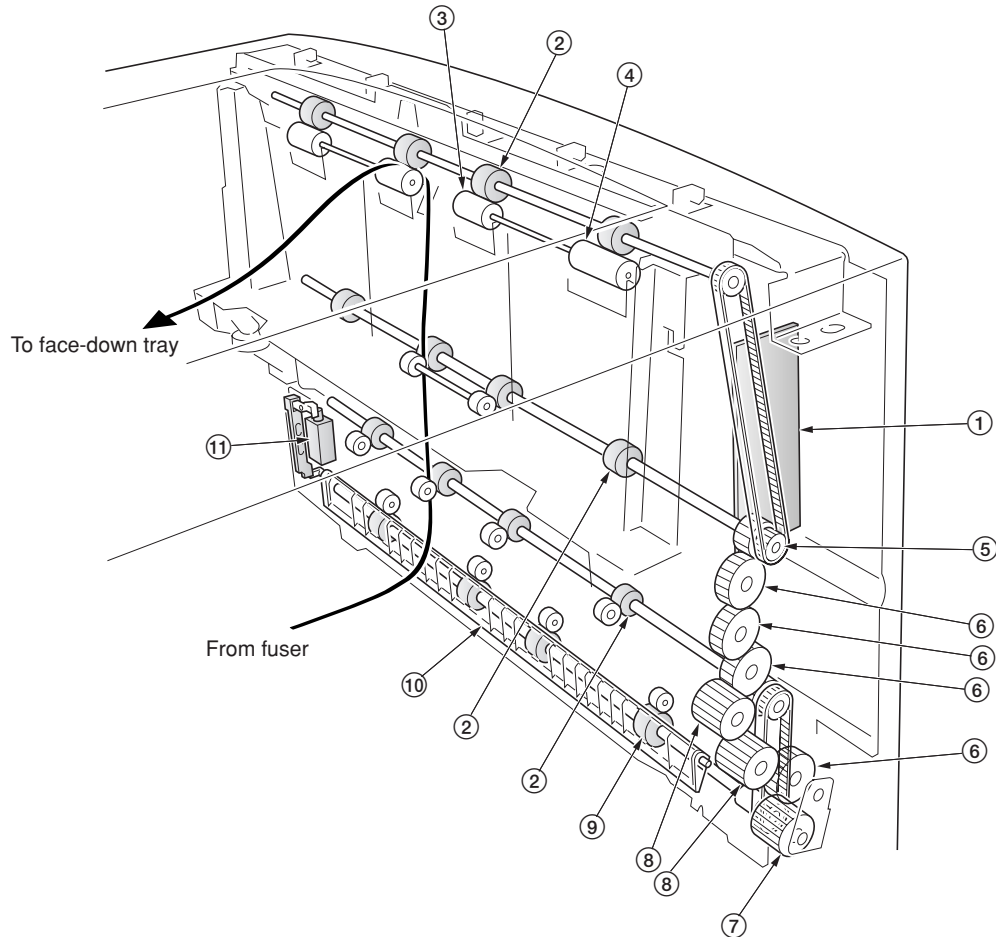


Figure 2-1-41 Face-down tray unit

- ① Face-down PCB (FDPCB)
- ② FD roller
- ③ Exit AL pulley
- ④ Exit BL pulley
- ⑤ FD pulley gear Z18
- ⑥ Gear Z26
- ⑦ Input gear Z24
- ⑧ Gear Z22
- ⑨ FU roller
- ⑩ Change guide
- ⑪ Face up/down solenoid (FUDSOL)

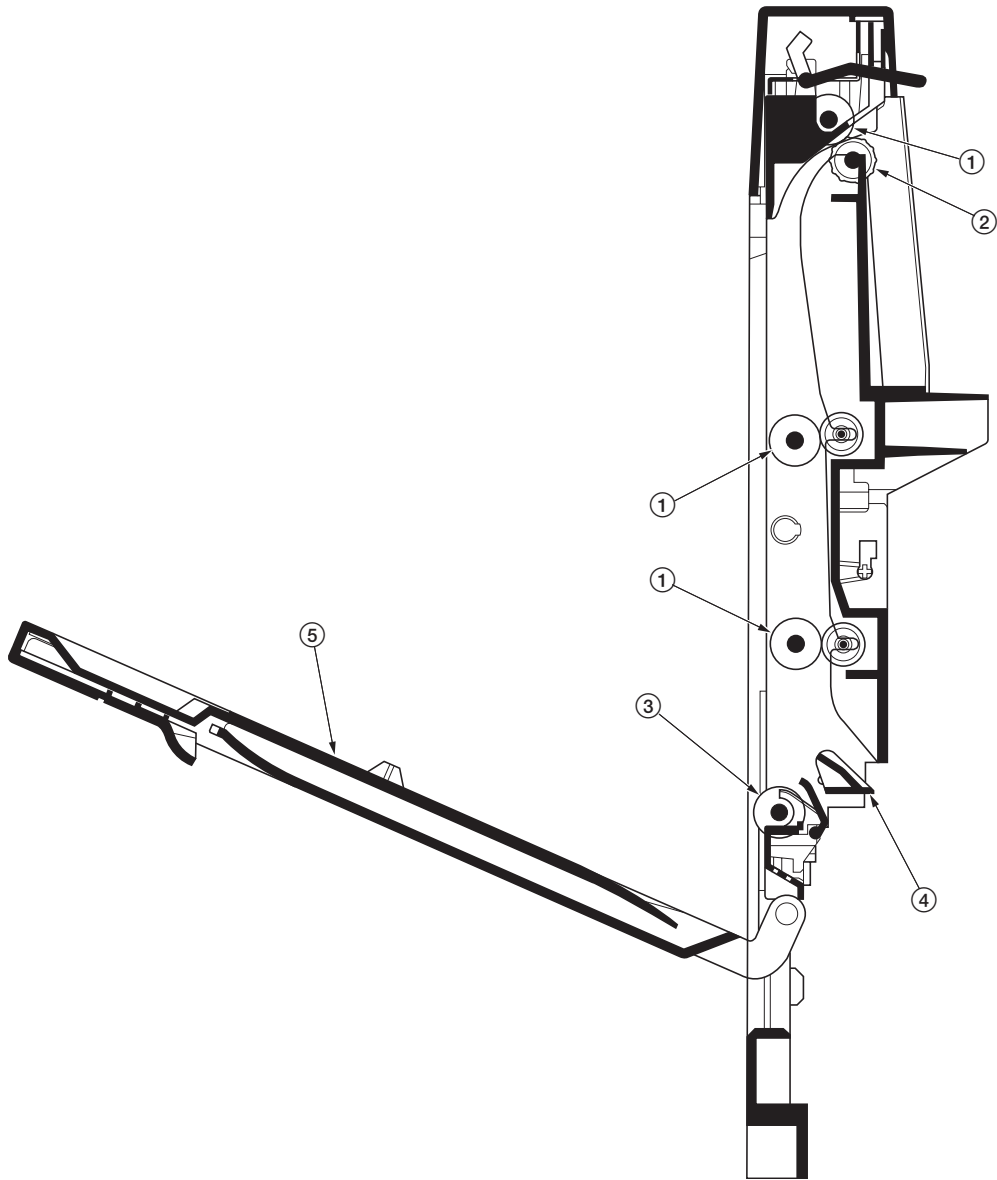


Figure 2-1-42 Face-down tray unit

- ① FD roller
- ② Exit AL pulley
- ② Exit BL pulley
- ③ FU roller
- ④ Change guide
- ⑤ Face-up tray

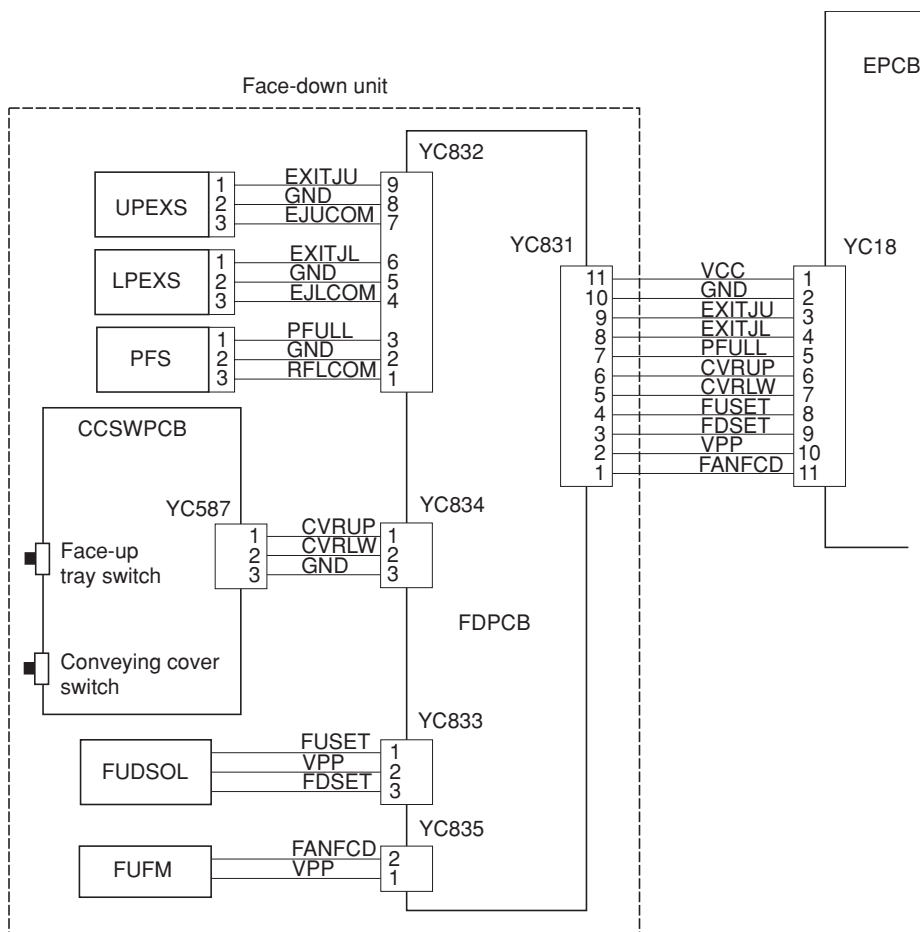


Figure 2-1-43 Face-down unit block diagram

2-2-1 Electrical parts layout

(1) Main frame front, face-down unit and bypass tray unit

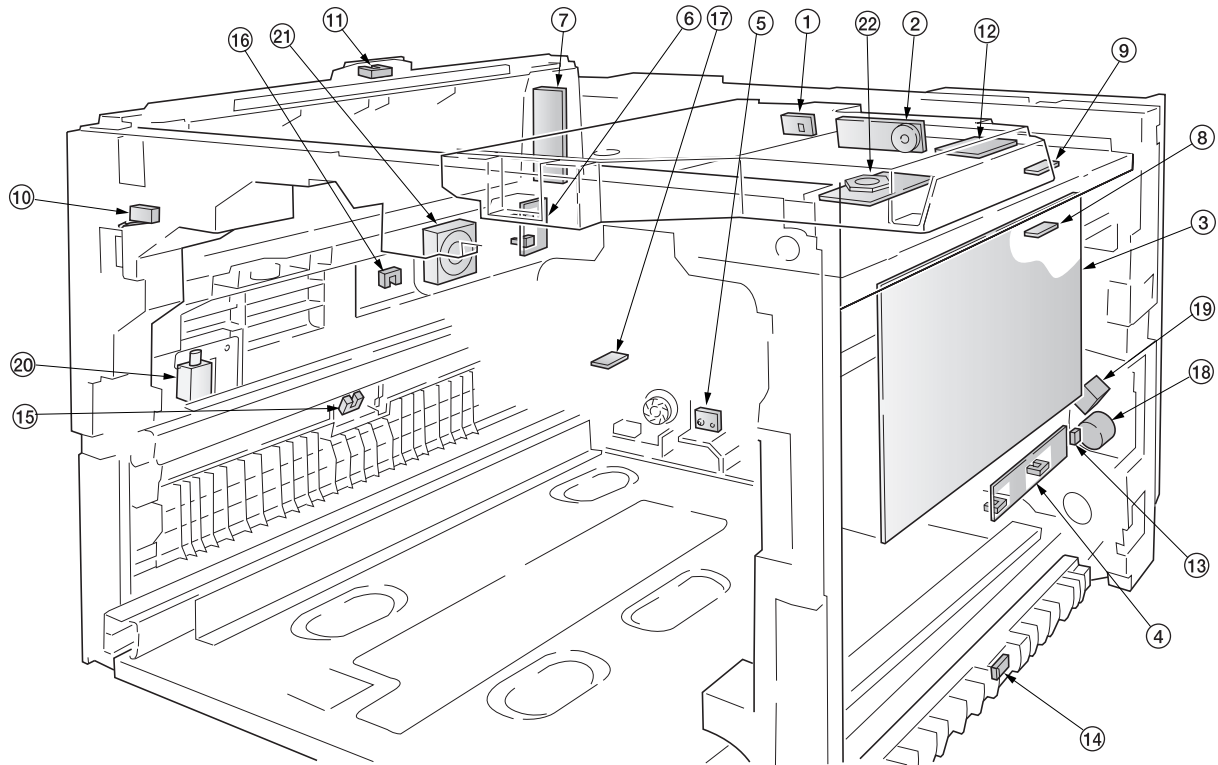


Figure 2-2-1 Main frame front, face-down unit and bypass tray unit

- | | |
|--|--|
| 1. PD PCB (PDPCB) | Detects laser beam. Generates the horizontal sync output. |
| 2. APC PCB (APCPCB) | Controls the laser beam output. |
| 3. Developing/cleaning brush bias
high voltage PCB (DL/CBHVPCB) | Generates the developing bias and the primary transfer cleaning brush bias. |
| 4. Bypass tray feed PCB (BYPFPCB) | Detects the paper and its width in bypass tray. Activates electrical components. |
| 5. Waste toner full sensor PCB (WTFSPCB) ... | Detects the waste toner tank being full. |
| 6. Conveying cover switch PCB
(CCSWPCB) | Monitors whether the face-up tray and the conveying cover is open. |
| 7. Face-down PCB (FDPCB) | Relays wirings for the face-down tray unit electrical components. |
| 8. Black toner empty sensor PCB
(KTESPCB) | Monitors toner in the black toner container (emitter) |
| 9. Black toner empty sensor PCB
(KTESPCB) | Monitors toner in the black toner container (receptor) |
| 10. Interlock switch (INTLSW) | Monitors whether the front cover is open and the 24 V DC power. |
| 11. Paper full sensor (PFS) | Detects whether the face-down tray is full. |
| 12. Humidity/temperature sensor
(HUMTEMPS) | Detects the ambient temperature and humidity. |
| 13. Bypass tray bottom plate position sensor
(BYPBPPS) | Detects bypass tray bottom plate position. |
| 14. Middle paper feed sensor (MPFS) | Detects paper jam at the paper feed unit. |
| 15. Lower paper exit sensor (LPEXS) | Detects paper jam at the face-up tray unit. |
| 16. Upper paper exit sensor (UPEXS) | Detects paper jam at the conveying cover. |
| 17. Oil roller unit detection terminal (ORDT) | Connects the oil roller unit (fuse); and its fuse to blow when a new oil roller unit is installed. |

2A6

- 18. Bypass paper feed clutch (BYPFCL) Controls drive chain to the bypass tray feed roller.
- 19. Bypass tray bottom plate solenoid (BYPBPSOL) Activates the bypass tray bottom plate.
- 20. Face up/down solenoid (FUDSOL) Switches the output stack between face up and face down.
- 21. Face-down unit fan motor (FDFM) Dissipates the heated air in the copier.
- 22. Polygon motor (PM) Revolves the polygon mirror.

(2) Developers, drum unit and main charger unit

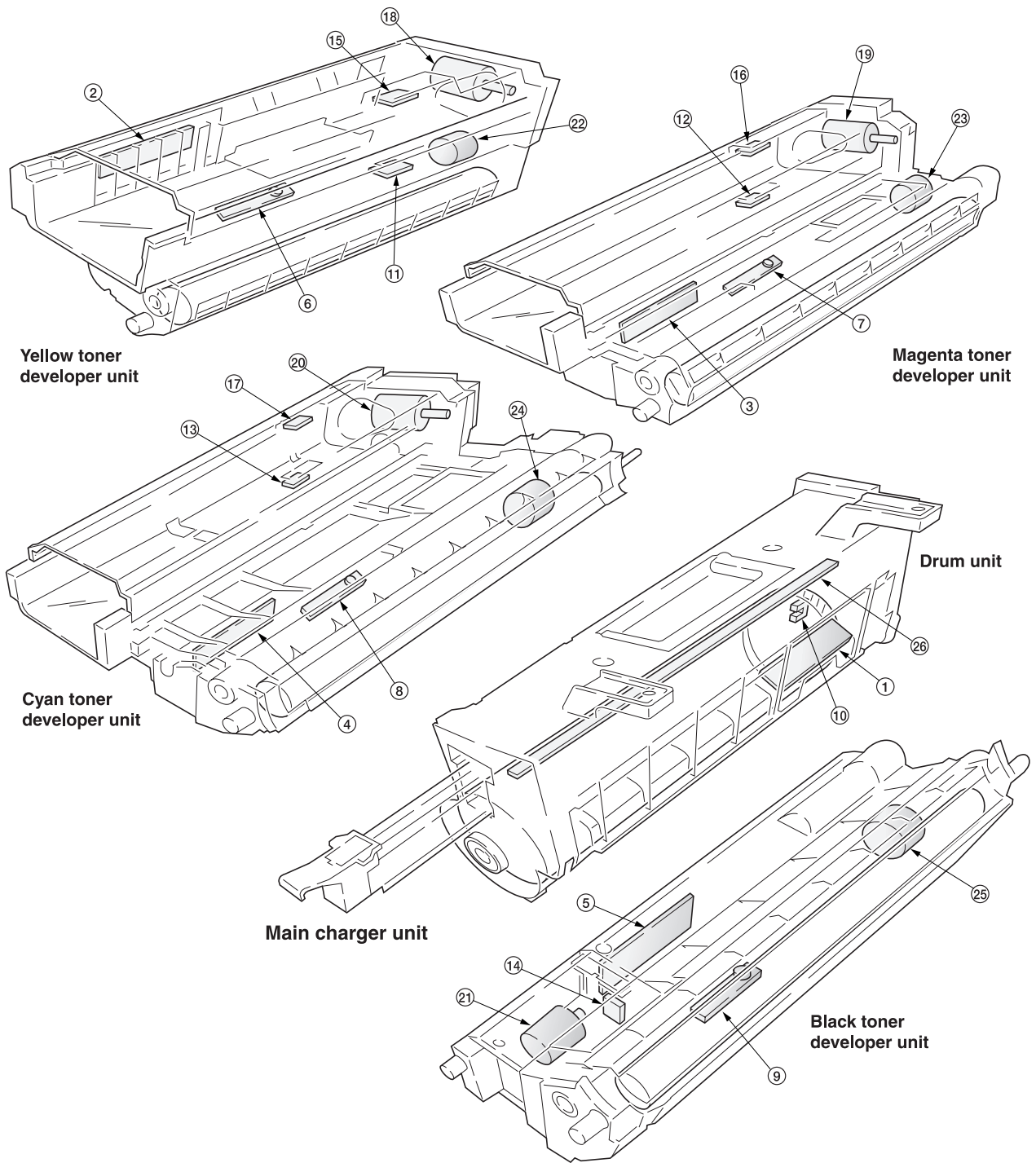
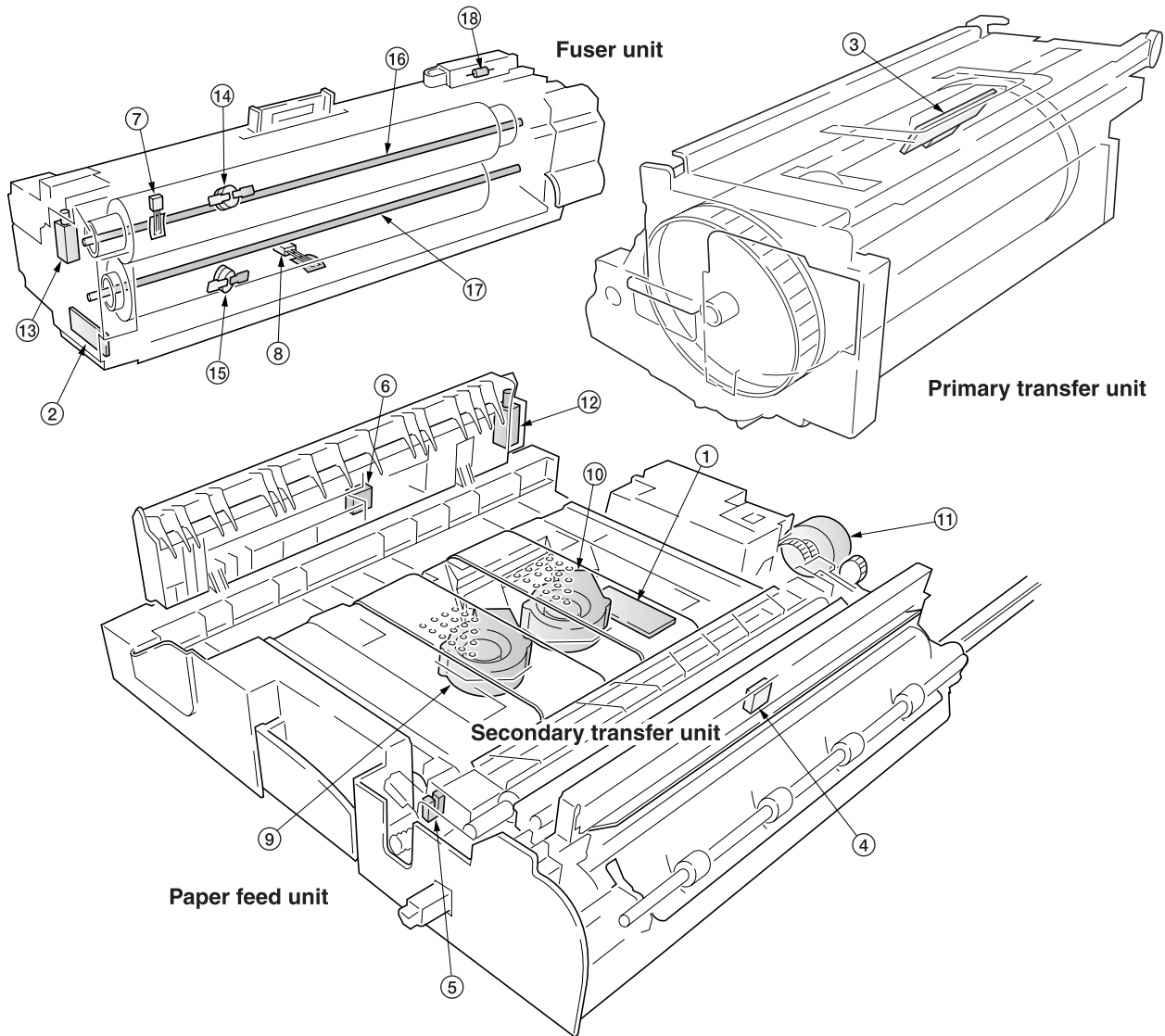


Figure 2-2-2 Developers, drum unit and main charger unit

1. Drum PCB (DRPCB) Accommodates the individual information for the drum including the light sensitivity, serial number, etc.
2. Yellow developer PCB (YDLPPCB) Relays wirings for the electrical component in the yellow developer.
3. Magenta developer PCB (MDLPPCB) Relays wirings for the electrical component in the magenta developer.
4. Cyan developer PCB (CDLPPCB) Relays wirings for the electrical component in the cyan developer.
5. Black developer PCB (KDLPPCB) Relays wirings for the electrical component in the black developer.
6. Yellow T/C sensor (YTPCS) Measures the toner concentration in the hopper for the yellow developer.
7. Magenta T/C sensor (MTPCS) Measures the toner concentration in the hopper for the magenta developer.
8. Cyan T/C sensor (CTPCS) Measures the toner concentration in the hopper for the cyan developer.
9. Black T/C sensor (KTPCS) Measures the toner concentration in the hopper for the black developer.
10. Offset drum sensor (ODRS) Detects the home position for the drum at which revolution begins.
11. Yellow toner empty sensor (YTEMPS) Measures toner in the yellow toner container (emitter).
12. Magenta toner empty sensor (MTEMPS) Measures toner in the magenta toner container (emitter).
13. Cyan toner empty sensor (CTEMPS) Measures toner in the cyan toner container (emitter).
14. Black toner Intermediate hopper sensor (KTIHS) Measure toner in the intermediate hopper for the black developer.
15. Yellow toner empty sensor (YTEMPS) Measures toner in the yellow toner container (receptor).
16. Magenta toner empty sensor (MTEMPS) Measures toner in the magenta toner container (receptor).
17. Cyan toner empty sensor (CTEMPS) Measures toner in the cyan toner container (receptor).
18. Yellow toner feed motor (YTFM) Replenishes the yellow developer with toner.
19. Magenta toner feed motor (MTFM) Replenishes the magenta developer with toner.
20. Cyan toner feed motor (CTFM) Replenishes the cyan developer with toner.
21. Black toner feed motor (KTFM) Replenishes the intermediate toner hopper for the black developer with toner.
22. Yellow developer drive clutch (YDLPDCL) ... Drives the yellow developer.
23. Magenta developer drive clutch (MDLPDCL) Drives the magenta developer.
24. Cyan developer drive clutch (CDLPDCL) Drives the cyan developer.
25. Black developer drive clutch (KDLPDCL) Drives the black developer.
26. Cleaning lamp (CL) Discharges the drum.

(3) Primary transfer, secondary transfer, paper feed and fuser units**Figure 2-2-3 Primary transfer, secondary transfer, paper feed and fuser units**

- | | |
|---|---|
| 1. Feed PCB (FPCB) | Controls electrical components in the paper feed unit. |
| 2. Fuser PCB (FUPCB) | Relays wirings from electrical components on the fuser unit. |
| 3. Image density sensor (IDS) | Measures image density for color calibration. |
| 4. Registration sensor (REGS) | Determines the starting point for registration. |
| 5. Secondary transfer unit position sensor (STRPS) | Determines the starting point for secondary image transferring. |
| 6. Duplex paper exit sensor (DUPEXS) | Detects paper jam at the outlet for the duplex unit. |
| 7. Upper fuser thermistor (UFTH) | Measures the upper heat roller temperature. |
| 8. Lower fuser thermistor (LFTH) | Measures the lower heat roller temperature. |
| 9. Paper conveying fan motor 1 (PCFM1) | Attracts paper towards the conveying belt, 1. |
| 10. Paper conveying fan motor 2 (PCFM2) | Attracts paper towards the conveying belt, 2. |
| 11. Secondary transfer unit shift clutch (STRSCL) | Controls recessing the secondary transfer unit. |
| 12. Duplex paper exit selection solenoid (DUPEXSOL) | Switches the flap for guiding paper to the duplex unit. |
| 13. Oil roller up/down solenoid (ORUDSOL) | Controls recessing the oil roller. |

2A6

- 14. Upper thermostat (UTHS) Disable power for the upper heater lamp in emergency.
- 15. Lower thermostat (LTHS) Disable power for the lower heater lamp in emergency.
- 16. Upper fuser heater (UFH) Energize the upper heat roller.
- 17. Lower fuser heater (LFH) Energize the lower heat roller.
- 18. Oil roller unit fuse (ORF) Blows off when inserted in the fuser unit (counter reset).

(4) Main frame rear and controller box

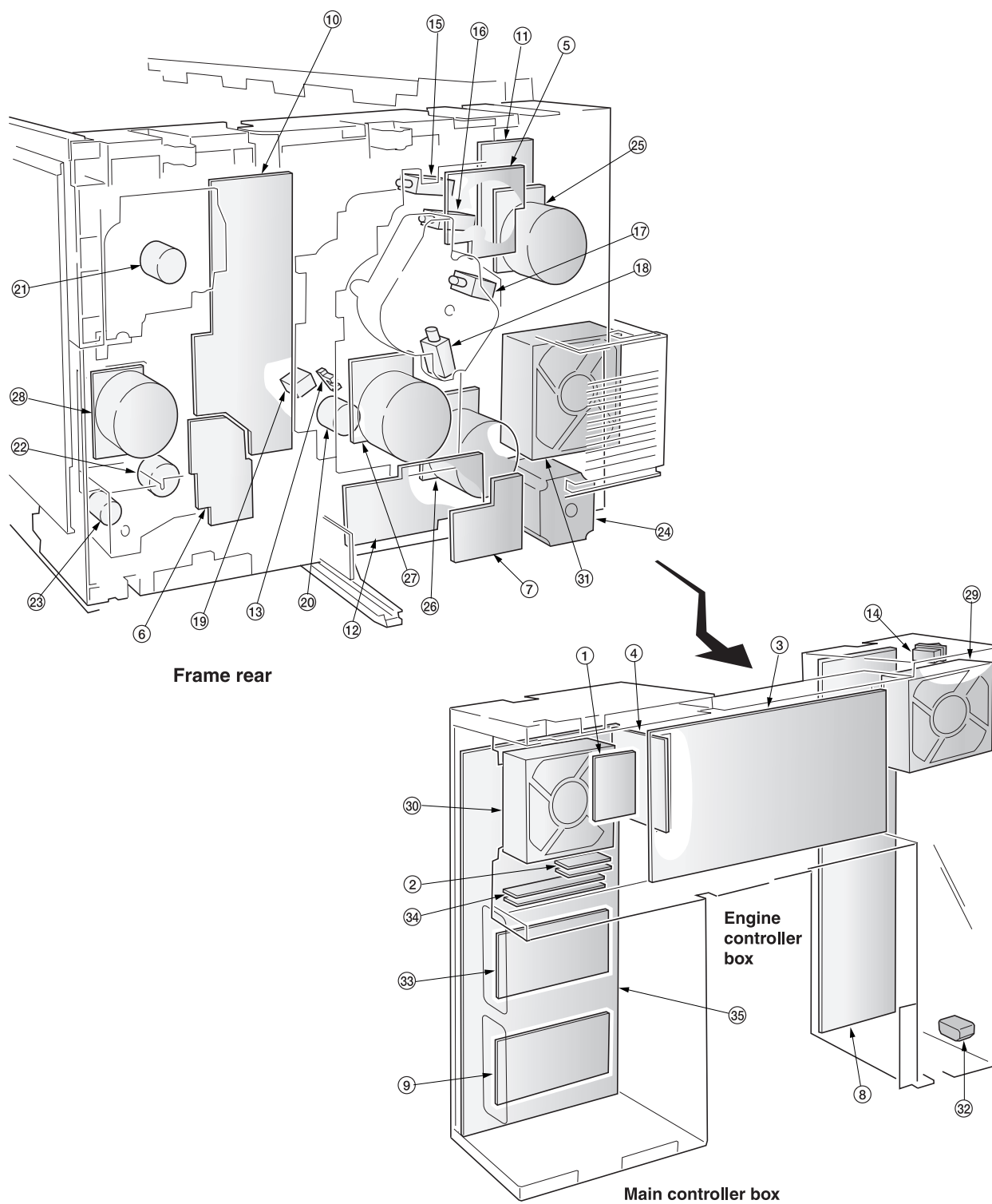
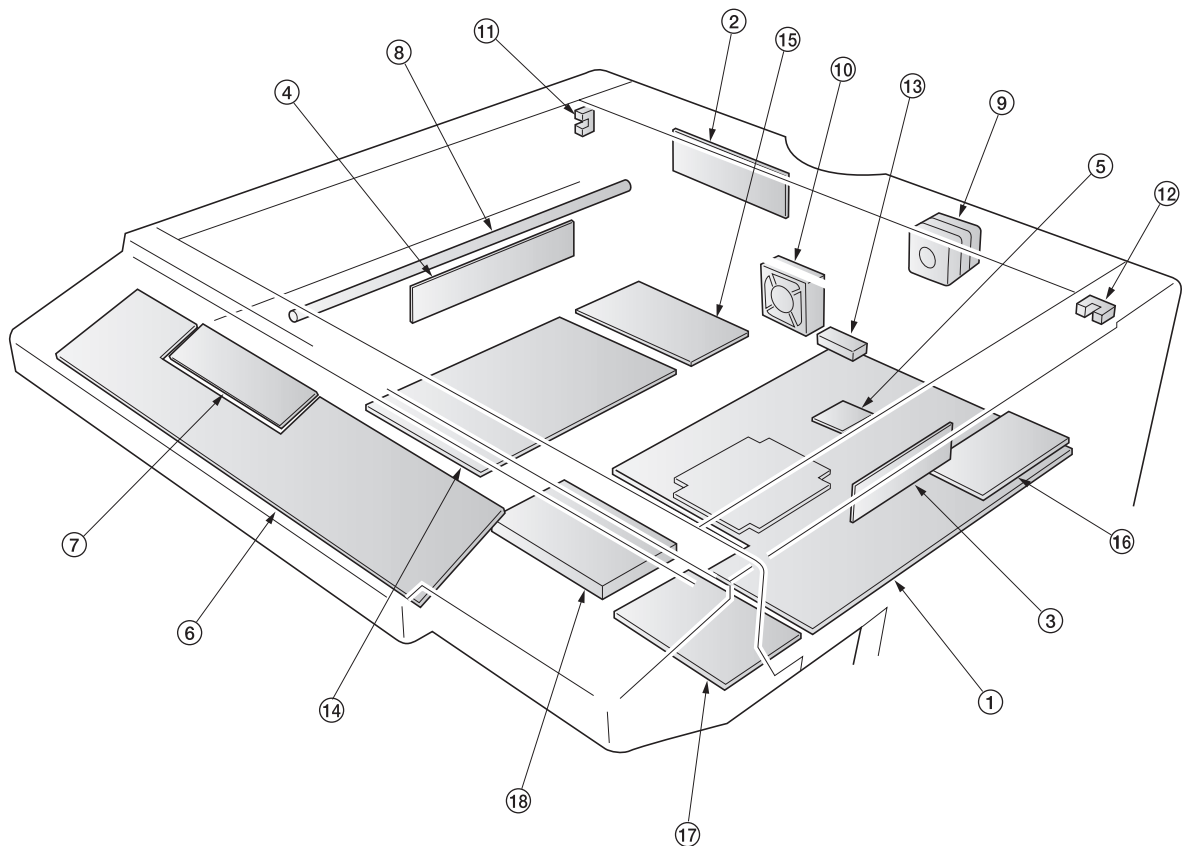


Figure 2-2-4 Main frame rear and controller box

1. Engine I/F PCB (EIFPCB) Interconnects the engine controller PCB and the scanner main PCB.
2. System DIMM PCB (DIMMPCB) System program (firmware).
3. Engine controller PCB (EPCB) Controls copier hardware including electrical components.
4. Engine controller-printer board relay PCB (EPRYP) Interconnects the engine controller PCB and the printer board PCB.
5. Main drive PCB (MDPCB) Controls the developer units, solenoids for the primary transfer unit, and clutches.
6. Feed drive PCB (FDPCB) Interconnects the electrical components paper in the paper feed unit.
7. Paper feeder/options relay PCB (PFRYP) Interconnects the bottom-mounted options and paper exit options.
Drives the fuser unit drive motor.
8. Power supply PCB (PSPCB) Receives AC mains supply and converts into 5 V DC and 24 V DC.
9. Network interface card (NIC)* Interfaces with the network.
10. Separation charger high voltage PCB (SCHVPCB) Generates the separation charger high voltage.
11. Main charger high voltage PCB (MCHVPCB) Generates the main charger high voltage.
12. Transfer roller bias high voltage PCB (TRHVPCB) Generates the transfer roller bias.
13. Cleaning brush unit position sensor (CBPS) Detects the position of the cleaning brush unit.
14. Main switch (MSW) Switches AC power input on and off.
15. Yellow developer magnet solenoid (YDLPMSOL) Activates the magnetic brush for development (by repositioning the magnet), yellow.
16. Magenta developer magnet solenoid (MDLPMSOL) Activates the magnetic brush for development (by repositioning the magnet), magenta.
17. Cyan developer magnet solenoid (CDLPMSOL) Activates the magnetic brush for development (by repositioning the magnet), cyan.
18. Black developer magnet solenoid (KDLPMSOL) Activates the magnetic brush for development (by repositioning the magnet), black.
19. Cleaning brush unit sift solenoid (CBSSOL) Controls recessing the cleaning brush unit.
20. Cleaning brush unit drive clutch (CBDCL) Controls driving the cleaning brush unit.
21. Black toner feed clutch (KTFCL) Controls driving the black toner container and the black toner feed assembly.
22. Registration clutch (REGCL) Controls driving the registration roller.
23. Paper feed clutch (PFCL) Controls driving the paper feed roller.
24. Fuser unit drive motor (FUDM) Controls driving the fuser unit and the conveying belts in the paper feed unit.
25. Color developers drive motor (CDLPDM) Drives the yellow, magenta, and cyan developers.
26. Black developer drive motor (KDLPDM) Drives the black developer.
27. Main drive motor (MDM) Drives the drum unit.
28. Paper feed motor (PFM) Drives the paper feed unit.
29. Power supply unit fan motor (PSFM) Dissipates heat in the power supply unit.
30. Main controller box fan motor (MFM) Dissipates heat from the main controller box.
31. Fuser unit fan motor (FUFM) Dissipates heat from the fuser unit.
32. AC inlet Inputs AC mains supply.
33. Hard disk unit (HDD)* Holds print jobs.
34. Expanding memory (DIMM)* For expanding main RAM.
35. Printer board PCB (PRYP) Implements firmware for managing data processing for printing, interface with PC and the network, etc.

*: Option

(5) Scanner unit, electric component unit and operation unit**Figure 2-2-5 Scanner unit, electric component unit and operation unit**

- | | |
|---|--|
| 1. Scanner main PCB (SMPCB) | Controls the scanning PCBs and electrical parts. |
| 2. Scanner relay PCB (SRYPCB) | Interconnects scanner electrical parts and the scanner main PCB. |
| 3. CCD PCB | Reads the image of original. |
| 4. Inverter PCB (INPCB) | Controls the exposure lamp. |
| 5. RTC PCB (RTCPCB) | Counts the time of the machine inside. |
| 6. Operation unit PCB (OPPCB) | Consists of the operation keys and display LEDs. |
| 7. LCD PCB (LCDPCB) | Controls LCD indication. |
| 8. Exposure lamp (EL) | Exposes originals. |
| 9. Scanner motor (SM) | Drives the optical system. |
| 10. Electric component unit fan motor (ECUFM) | Dissipates the heated air in the electric component unit. |
| 11. Scanner home position switch (SHPSW) | Detects the optical system in the home position. |
| 12. Original detection switch (ODSW) | Operates the original size detection sensor. |
| 13. Original size detection sensor (OSDS) | Detects the size of the original. |
| 14. Fax board PCB (FAXPCB)*1 | Processes the image data and controls overall fax functions. |
| 15. NCU PCB (FAXPCB)*1 | Controls connection to the telephone line. |
| 16. Network scanner PCB (NSPCB)*1 | Controls the network connection. |
| 17. Memory copy board PCB (MCPCB)*2 | Stores the image data. |
| 18. Hard disk unit (HDD)*2 | Holds print jobs. |

*1: Optional.

*2: Optional for simplex copiers.

2-3-1 Power source PCB

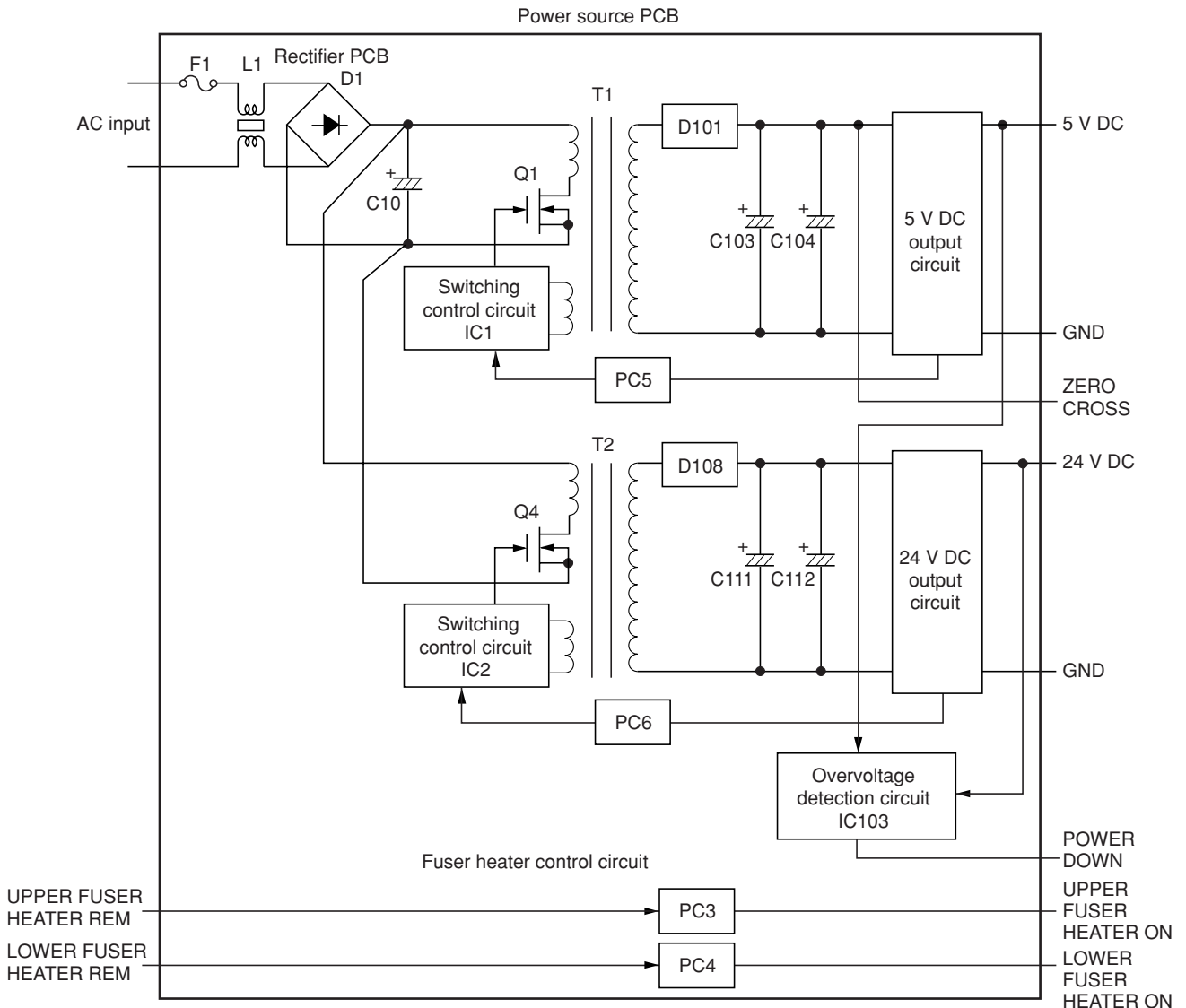


Figure 2-3-1 Power source PCB block diagram

The power source PCB (PSPCB) is a switching regulator that converts an AC input to generate 24 V DC and 5 V DC. It includes a rectifier circuit, a switching regulator circuit, a 24 V DC output circuit, a 5 V DC output circuit, an overvoltage detection circuit and a fuser heater control circuit.

The rectifier circuit full-wave rectifies the AC input using the diode bridge D1. The smoothing capacitor C10 smoothes out the pulsed current from the diode bridge.

In the switching control circuit, PWM controller IC1 and IC2 turn the power MOSFET Q1 and Q4 on and off to switch the current induced in the primary coil of the transformer T1 and T2.

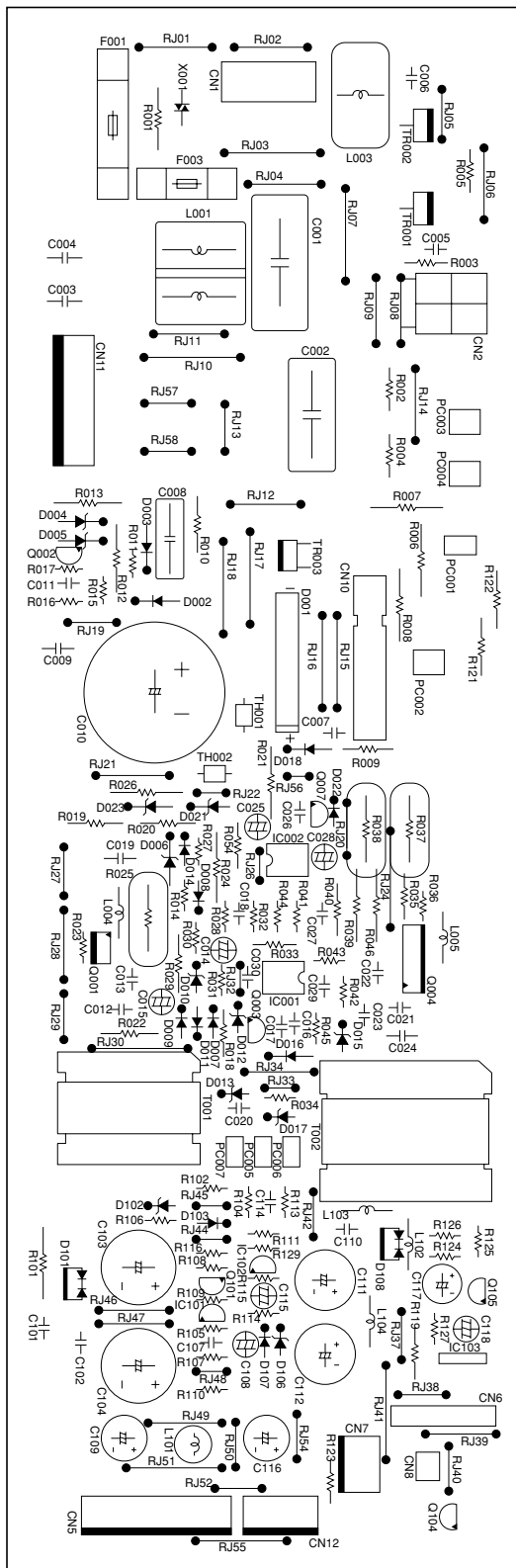
The 5 V DC output circuit smoothes the current induced in the secondary coil of the transformer T1 via diode D101 and smoothing capacitors C103 and C104, and the output is controlled by the overvoltage detection circuit IC103. For 5 V DC output, the PWM controller IC (IC2) of the switching control circuit changes the duty of the switching pulse width of the power MOSFET Q1 via a photo coupler PC5 based on the output voltage status to adjust the 5 V DC output.

The 24 V DC output circuit smoothes the current induced in the secondary coil of the transformer T1 via diode D108 and smoothing capacitors C111 and C112, and the output is controlled by the overvoltage detection circuit IC103. For 24 V DC output, the PWM controller IC (IC1) of the switching control circuit changes the duty of the switching pulse width of the power MOSFET Q1 via a photo coupler PC6 based on the output voltage status to adjust the 24 V DC output.

The overvoltage detection circuit IC103 monitors the overvoltage status of 24 V DC and 5 V DC, and when it detects an abnormal status, it moves the power source to a standby condition.

The fuser heater control circuit sends a waveform of which zero-cross is detected to the engine controller PCB (EPCB), which controls the timing of upper and lower heaters based on it to turn on the phototriacs PC3 and PC4. When the phototriacs PC3 and PC4 turn on, AC current flows to turn the upper and lower heaters on.

100 V



200 V

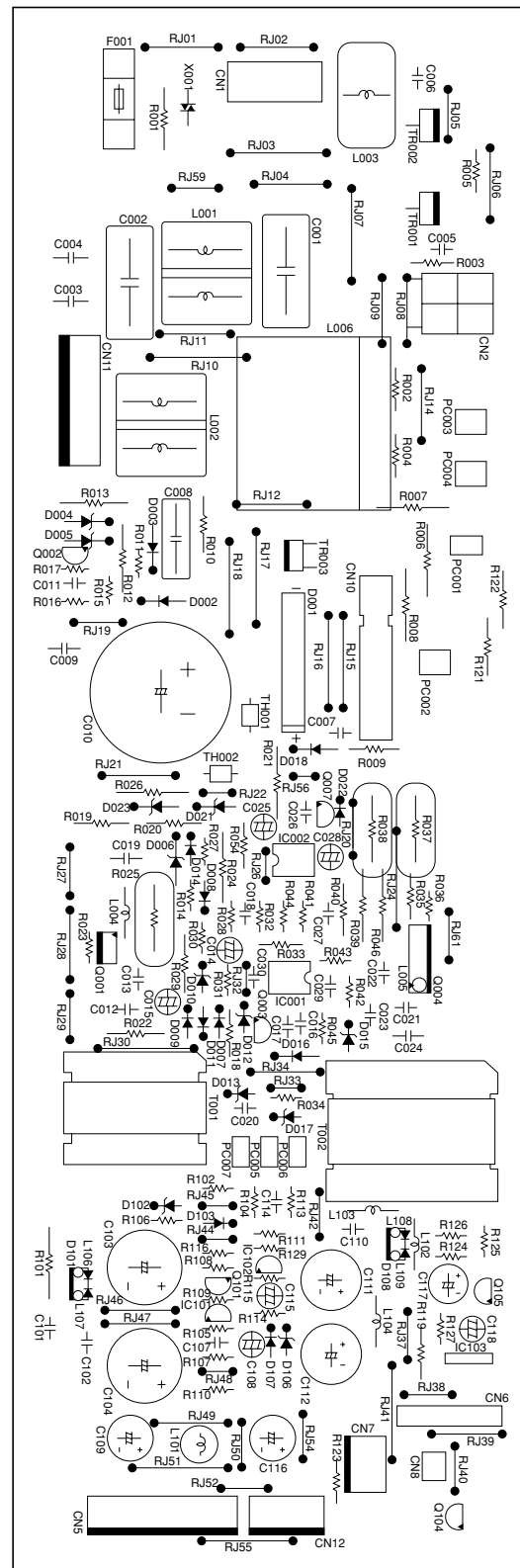


Figure 2-3-2 Power source PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Description
CN1 Connected to the AC power plug	1	AC-L	I	AC supply (LIVE)
	2	NC	-	Not used
	3	AC-N	I	AC supply (NEUTRAL)
CN2 Connected to the fuser unit	1	HEATL	O	Lower fuser heater control, L: On (LIVE)
	2	HEATFL	O	Lower thermostat operate (NEUTRAL)
	3	HEATL	O	Upper fuser heater control, L: On (LIVE)
	4	HEATFU	O	Upper thermostat operate (NEUTRAL)
CN5 Connected to the engine controller PCB	1	+5.1 V	O	5.1 V DC
	2	+5.1 V	O	5.1 V DC
	3	GND	-	Ground
	4	GND	-	Ground
	5	GND	-	Ground
	6	GND	-	Ground
	7	+24 V	O	24 V DC
	8	+24 V	O	24 V DC
CN6 Connected to the engine controller PCB	1	24 VS	O	24 V DC for power supply unit fan motor
	2	GND	-	Ground
	3	PCONT	I	Power supply control, L: Power on
	4	PDOWN	O	Power supply power down reset
	5	FUFM	I	Power supply unit fan motor drive, L: On
	6	HTEN	I	Fuser heater drive enable, L: Enable
	7	ZEROC	O	Zero-cross signal, L: Input pulse
	8	NC	-	Not used
	9	UFH	I	Upper fuser heater control, L: On
	10	LFH	I	Lower fuser heater control, L: On
CN7 Connected to the interlock switch	1	+24 V	I	24 V DC
	2	NC	-	Not used
	3	+24 V COM	O	24 V DC
CN8 Connected to the power supply unit fan motor	1	BFANDR	O	Power supply unit fan motor drive, L: On
	2	+24 VS	O	24 V DC for power supply unit fan motor
CN10 Connected to the main switch	1	PQWRDYM	O	AC supply output
	2	POWERC	O	Power supply control, L: On
	3	PQWRDYM	O	AC supply output
	4	POWERC	O	Power supply control, L: On
CN11 Connected to the optional fax board/ document finisher	1	LIVE	O	AC supply (LIVE)
	2	NC	-	Not used
	3	LIVE	O	AC supply (LIVE)
	4	LIVE	I	AC supply (LIVE)
	5	NC	-	Not used
	6	NEUTRAL	O	AC supply (NEUTRAL)
	7	NEUTRAL	O	AC supply (NEUTRAL)
CN12 Connected to the scanner main PCB	1	24 VS	O	24 V DC
	2	GND	-	Ground
	3	5.1 V	O	5.1 V DC
	4	GND	-	Ground

2-3-2 Engine controller PCB

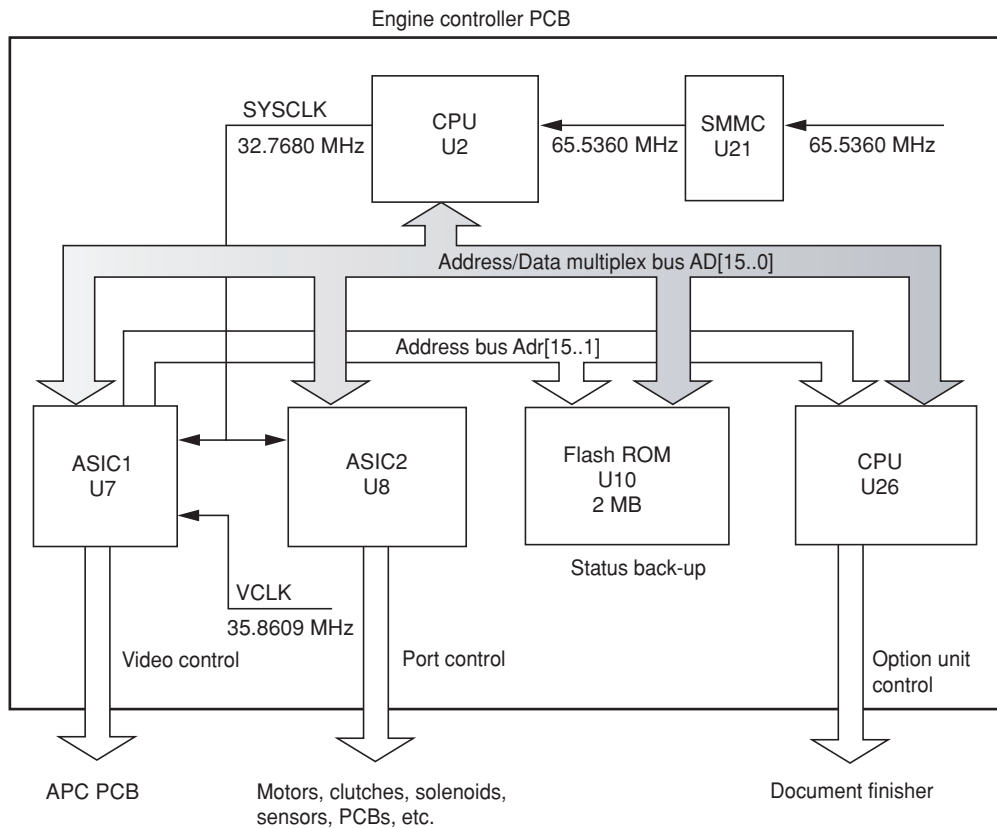


Figure 2-3-3 Engine controller PCB block diagram

The engine controller PCB (EPCB) consists of the CPU U2, communicates with other PCBs and the engine drive system. The CPU U2 operates on an 8-bit bus. It uses the FLASH ROM U10 for status backup memory. The CPU U2 controls the LSU for image output control via ASIC1 U7 and controls driving of each electric part via ASIC2 U8. The CPU U25 controls optional equipment via serial communication.

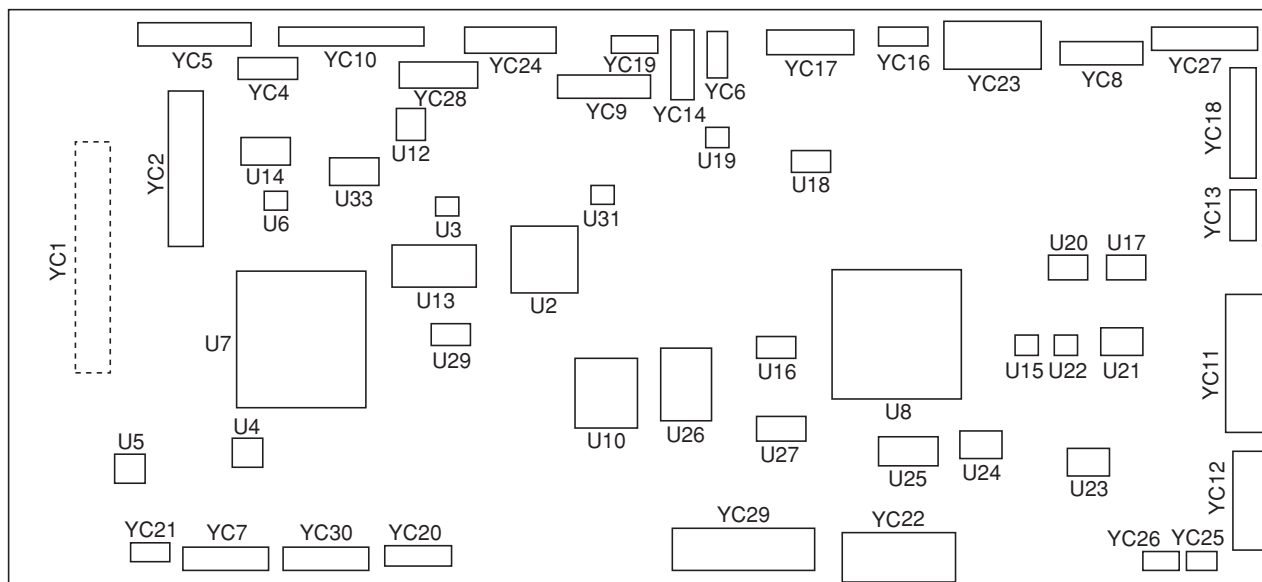


Figure 2-3-4 Engine controller PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Description
YC1	1	SO	O	Serial communication data transmission
Connected to the printer board PCB via engine controller-printer board relay PCB	2	SDIR	O	Serial communication control
	3	SI	I	Serial communication data reception
	4	ENGIRN	O	Serial communication interrupt
	5	VPPSEL	I	Engine program write control
	6	GND	-	Ground
	7	VD0p	I	Image data
	8	VD0n	I	Image data
	9	GND	-	Ground
	10	VD1p	I	Image data
	11	VD1n	I	Image data
	12	VHALF	O	Voltage for differential output
	13	VD2p	I	Image data
	14	VD2n	I	Image data
	15	GND	-	Ground
	16	VD3p	I	Image data
	17	VD3n	I	Image data
	18	GND	-	Ground
	19	MMODESp	I	Gradation control
	20	MMODESn	I	Gradation control
	21	GND	-	Ground
	22	MMODELp	I	Gradation control
	23	MMODESn	I	Gradation control
	24	GND	-	Ground
	25	MODEp	I	Image/text data selection
	26	MODEn	I	Image/text data selection
	27	GND	-	Ground
	28	VENBp	I	Image data output timing
	29	VENBn	I	Image data output timing
	30	GND	-	Ground
	31	SVCLKp	I	Main (horizontal) scanning video clock
	32	SVCLKn	I	Main (horizontal) scanning video clock
	33	GND	-	Ground
	34	LSYNCp	O	Image data output scanning synchronization
	35	LSYNCn	O	Image data output scanning synchronization
	36	GND	-	Ground
	37	PURGE	O	Paper exit completion
	38	FPCLK	I	Serial communication clock, for the operation unit PCB
	39	FPDIR	I	Serial communication control, for the operation unit PCB
	40	PFRESn	I	Reset signal, for the operation unit PCB
	41	SBSY	I	Serial communication control
	42	GND	-	Ground
	43	SCLK	I	Serial communication clock
	44	GND	-	Ground
	45	PRGRESn	I	Engine program writing control
	46	RSTn	O	Reset
	47	GND	-	Ground
	48	VCC	O	5 V DC
	49	GND	-	Ground
	50	VCC	O	5 V DC
	51	GND	-	Ground
	52	VCC	O	5 V DC
	53	GND	-	Ground
	54	VCC	O	5 V DC
	55	GND	-	Ground
	56	VCC	O	5 V DC
	57	GND	-	Ground
	58	VCC	O	5 V DC
	59	GND	-	Ground
	60	VCC	O	5 V DC
	61	GND	-	Ground
	62	VCC	O	5 V DC

Connector	Pin No.	Signal	I/O	Description
YC1	63	GND	-	Ground
Connected to the printer board PCB via engine controller-printer board relay PCB	64	VCC	O	5 V DC
	65	GND	-	Ground
	66	VCC	O	5 V DC
	67	GND	-	Ground
	68	VCC	O	5 V DC
	69	GND	-	Ground
	70	VCC	O	5 V DC
	71	GND	-	Ground
	72	VCC	O	5 V DC
	73	GND	-	Ground
	74	VCC	O	5 V DC
	75	VSYNCO	O	Sub (vertical) scanning video clock
	76	VCC	O	5 V DC
	77	PSEL	O	First/second page selection (Two pages mode), H: First , L: Second
	78	GND	-	Ground
	79	FPDATA	O	Serial communicationdata, for operation unit PCB
	80	EOPO	O	Page ending signal
YC2	A1	EXCVCKp	I	EXCVCKp signal
Connected to the scanner main PCB via engine I/F PCB	A2	GND	-	Ground
	A3	EXLSYNcn	I	EXLSYNcn signal
	A4	EXLSYNcp	I	EXLSYNcp signal
	A5	GND	-	Ground
	A6	3.3V	I	3.3 V DC
	A7	EXMMODES	I	EXMMODES signal
	A8	EXMMODEL	I	EXMMODEL signal
	A9	EXVENB	I	EXVENB signal
	A10	3.3V	I	3.3 V DC
	A11	EXVD7	I	EXVD7 signal
	A12	EXVD6	I	EXVD6 signal
	A13	EXVD5	I	EXVD5 signal
	A14	EXVD4	I	EXVD4 signal
	A15	VHALF	I	VHALF signal
	A16	3.3V	I	3.3 V DC
	A17	EXVD3	I	EXVD3 signal
	A18	EXVD2	I	EXVD2 signal
	A19	EXVD1	I	EXVD1 signal
	A20	EXVD0	I	EXVD0 signal
	B1	EXCVCKn	I	EXCVCKn signal
	B2	GND	-	Ground
	B3	EXTXD	I	EXTXD signal
	B4	GND	-	Ground
	B5	EXRXD	I	EXRXD signal
	B6	GND	-	Ground
	B7	OUT1(RESET)	I	OUT1 signal reset
	B8	EXRSTn	I	EXRSTn signal
	B9	GND	-	Ground
	B10	EXPURGU	I	EXPURGU signal
	B11	EXPSEL	I	EXPSEL signal
	B12	GND	-	Ground
	B13	EXVSYNC	I	EXVSYNC signal
B14	GND	-	Ground	
B15	EXEOP	I	EXEOP signal	
B16	GND	-	Ground	
B17	OUT2	I	OUT2 signal	
B18	OUT3	I	OUT3 signal	
B19	IN1	I	IN1 signal	
B20	GND	-	Ground	

Connector	Pin No.	Signal	I/O	Description
YC4				Not used
YC5	1	SCCLK	O	Polygon motor revolution control clock
Connected to APC PCB	2	SCRDY	I	Polygon motor continuous revolution signal, L: Continuous
	3	SCANNER	O	Polygon motor drive, L: Drive
	4	VPP	O	24 V DC
	5	PD	I	Horizontal synchronization from PD PCB
	6	POWSEL	O	Laser output control
	7	LEN	O	Laser output enable
	8	LONB	O	Laser output drive
	9	LASER5V	O	5 V DC for laser scanner unit (for APC and PD PCB), Interlock switch off: 5 V DC is off
	10	GND	-	Ground
	11	VD0n	O	Image datasignal
	12	VD0p	O	Image datasignal
YC6	1	TEMP	I	Temperature detection data (analog)
Connected to the humidity/temperature sensor	2	GND	-	Ground
	3	HMOU	I	Humidity detection data (analog)
	4	VCC	O	5 V DC
YC7	1	FG	I	FG (Frequency generation) pulse
Connected to the main drive motor	2	VCC	O	5 V DC
	3	MMHU	I	Main drive motor control
	4	MMHV	I	Main drive motor control
	5	MMHW	I	Main drive motor control
	6	GND	-	Ground
	7	MMU	O	Main drive motor control
	8	MMV	O	Main drive motor control
	9	MMW	O	Main drive motor control
YC8	1	FG	I	FG (Frequency generation) pulse
Connected to the color developers drive motor	2	VCC	O	5 V DC
	3	DMCHU	I	Color developers drive motor control
	4	DMCHV	I	Color developers drive motor control
	5	DMCHW	I	Color developers drive motor control
	6	GND	-	Ground
	7	DMCU	O	Color developers drive motor control
	8	DMCV	O	Color developers drive motor control
	9	DMCW	O	Color developers drive motor control
YC9	1	FG	I	FG (Frequency generation) pulse
Connected to the paper feed motor	2	VCC	O	5 V DC
	3	FMHU	I	Paper feed motor control
	4	FMHV	I	Paper feed motor control
	5	FMHW	I	Paper feed motor control
	6	GND	-	Ground
	7	FMU	O	Paper feed motor control
	8	FMV	O	Paper feed motor control
	9	FMW	O	Paper feed motor control

Connector	Pin No.	Signal	I/O	Description
YC10 Connected to the developing/cleaning brush bias high voltage PCB	1	GND	-	Ground
	2	GND	-	Ground
	3	VPP	O	24 V DC
	4	VPP	O	24 V DC
	5	TIREMn	O	Primary transfer bias control (T1), L: On
	6	ANT1	O	Primary transfer bias voltage control PWM
	7	BAYREMn	O	Yellow developing AC bias control, L: On
	8	ANBDY	O	Yellow developing DC voltage control PWM
	9	BDYREMn	O	Yellow developing bias control, L: On
	10	BAMREMn	O	Magenta developing AC bias control, L: On
	11	ANBDM	O	Magenta developing DC voltage control PWM
	12	BDMREMn	O	Magenta developing bias control, L: On
	13	BARCREMn	O	Cyan developing AC bias control, L: On
	14	ANBDC	O	Cyan developing DC voltage control PWM
	15	BDCREMn	O	Cyan developing bias control, L: On
	16	BAKREMn	O	Black developing AC bias control, L: On
	17	ANBDK	O	Black developing DC voltage control PWM
	18	BDKREMn	O	Black developing bias control, L: On
	19	ANCR	O	Cleaning brush bias voltage control PWM
	20	CRREMn	O	Cleaning brush bias control, L: On
YC11 Connected to the power source PCB	1	+5.1 V	I	5.1 V DC
	2	+5.1 V	I	5.1 V DC
	3	GND	-	Ground
	4	GND	-	Ground
	5	GND	-	Ground
	6	GND	-	Ground
	7	+24 V	I	24 V DC
	8	+24 V	I	24 V DC
YC12 Connected to the power source PCB	1	24 VF	I	24 V DC for power supply unit fan motor
	2	GND	-	Ground
	3	PCONT	O	Power supply control, L: Power on
	4	PDOWN	I	Power supply unit power down reset
	5	FUFM	O	Power supply unit fan motor drive, L: On
	6	HTEN	O	Fuser heater drive enable, L: Enable
	7	ZEROC	I	Zero cross signal, L: Input pulse
	8	NC	-	Not used
	9	UFH	O	Upper fuser heater control, L: On
	10	LFH	O	Lower fuser heater control, L: On
YC13 Connected to the main charger high voltage unit	1	GND	-	Ground
	2	VPP	O	24 V DC
	3	MCREMn	O	Main charger grid bias control, L: On
	4	ANMC	O	Main charger grid bias voltage PWM
YC14 Connect to the separation charger high voltage unit	1	GND	-	Ground
	2	VPP	O	24 V DC
	3	ANSP	O	Separation charger bias voltage PWM
	4	SPREM	O	Separation charger DC and AC signal, L: On
	5	SPER	O	Separation charger leak detection
YC15 Connected to the EEPROM PCB	1	VCC	O	5 V DC
	2	-	O	-
	3	-	O	-
	4	GND	O	Ground
	5	-	O	-
	6	-	O	-

Connector	Pin No.	Signal	I/O	Description
YC16	1	LMI5V	O	5 V DC (Fused)
Connected to the image density sensor	2	GND	-	Ground
	3	ANIDSIO	O	Image density sensor detection 0
	4	ANIDSI1	O	Image density sensor detection 1
	5	IDLED	O	5 V DC power supply for Image density sensor emitter (LED)
YC17	1	GND	-	Ground
Connected to the drum PCB	2	ERSDRn	I	Cleaning lamp drive signal, H: On
	3	DRODS	I	Off set drum sensor output pulse (synchronized with the drum rotation)
	4	VCC	O	5 V DC
	5	GND	-	Ground
	6	DRECS	O	Chip select signal for EEPROM on the drum PCB
	7	DRECLK	O	Clock signal for EEPROM on the drum PCB
	8	DREEDI	I	Data input signal for EEPROM
	9	DREDO	O	Data output signal for EEPROM
	10	DFSOUT	O	Not used
YC18	1	VCC	O	5 V DC
Connected to the face-down PCB	2	GND	-	Ground
	3	EXITJU	I	Upper paper exit sensor detection, L: detected
	4	EXITJL	I	Lower paper exit sensor detection, L: detected
	5	PFULL	I	Paper full sensor detection, L: Full
	6	CVRUP	I	Left cover open/close detection, H: Open
	7	CVRLW	I	Face-up tray open/close detection, H: Open
	8	FUSET	O	Face-up/down solenoid drive
	9	FDSET	O	Face-up/down solenoid drive
	10	VPP	O	24 V DC
	11	FANFCD	O	Face-down unit fan motor drive
YC19	1	LMI5V	O	5 V DC (Fused)
Connected to the black toner empty sensor	2	VCRET	I	5 V DC (Fused)
	3	LEDCC	O	Black toner empty sensor emitter [infrared LED] drive
	4	PQCOM	O	5 V DC (Fused, via resister)
	5	TONE	I	Black toner empty sensor receiver [photo transistor] detection (analog)
	6	GND	-	Ground
YC20	1	FTREF	O	Reference voltage for fuser thermistors (approx. 4.2 V DC)
Connected to the fuser PCB	2	THERMU	I	Upper fuser thermistor detection
	3	THERML	I	Lower fuser thermistor detection
	4	WBEU	O	Oil roller up/down solenoid drive
	5	WEBL	O	Oil roller up/down solenoid drive
	6	VPP	O	24 V DC
YC21	1	VCC	O	5 V DC
Connected to the oil roller unit detection terminal	2	FFCUT	I	Oil roller unit new/old detection, H: New
	3	OILEX	I	Oil roller unit fuse blowout execution
				Oil roller unit installation detection, H: Installed

Connector	Pin No.	Signal	I/O	Description
YC22	1	NC	-	Not used
Connected to the cyan developer PCB	2	GND	-	Ground
	3	GND	-	Ground
	4	CTPD	I	Cyan T/C sensor detection (analog)
	5	LMT5V	O	5 V DC (Fused)
	6	CTEMP	I	Cyan toner empty sensor detection, L: Empty
	7	CMAGDR	O	Cyan developing roller drive clutch drive, L: On
	8	VPP	O	24 V DC
	9	CTMDR	O	Cyan toner feed motor drive (PWM)
	10	CTMCOM	I	Cyan toner feed motor back electromotive force
	Connected to the black developer PCB	11	VPP	O
12		KMAGDR	O	Black developing roller drive clutch drive, L: On
13		KTPD	I	Black T/C sensor detection (analog)
14		KTEMP	I	Black toner empty sensor detection, L: Empty
15		KTMCOM	I	Black toner feed motor back electromotive force
16		KTMDR	O	Black toner feed motor drive (PWM)
17		LMT5V	O	5 V DC (Fused)
18		GND	-	Ground
19		GND	-	Ground
20		DLKSET	I	Black developer installation detection, H: Installed
YC23	1	GND	-	Ground
Connected to the yellow developer PCB	2	GND	-	Ground
	3	YTPD	I	Yellow T/C sensor detection (analog)
	4	LMT5V	O	5 V DC (Fused)
	5	YTEMP	I	Yellow toner empty sensor detection, L: Empty
	6	YMAGDR	O	Yellow developer drive clutch drive, L: On
	7	VPP	O	24 V DC
	8	YTMDR	O	Yellow toner feed motor drive (PWM)
	9	YTMCOM	I	Yellow toner feed motor back electromotive force
	Connected to the magenta developer PCB	10	MTMCOM	I
11		MTMDR	O	Magenta toner feed motor drive (PWM)
12		VPP	O	24 V DC
13		MMAGDR	I	Magenta developer drive clutch drive, L: On
14		MTEMP	I	Magenta toner empty sensor detection, L: Empty
15		LMT5V	O	5 V DC(Fused)
16		MTPD	O	Magenta T/C sensor detection (analog)
17		GND	-	Ground
18		GND	-	Ground
YC24	1	GND	-	Ground
Connected to the feed drive PCB	2	GND	-	Ground
	3	FEDEX	I	Paper feed unit installation detection, L: Installed
	4	SUBROL	-	Not used
	5	FDDES	I	Registration sensor detection, L: Detected
	6	FEDDR	O	Paper feed clutch drive
	7	FANFP	O	Paper conveying fan motors 1 and 2 drive
	8	REGDR	O	Registration clutch drive
	9	VPP	O	24 V DC
	10	VPP	O	24 V DC
	11	JAMF	-	Not used
	12	TNRKDR	O	Black toner feed clutch drive
	13	T2INI	I	Secondary transfer unit home position detection, L: Home
	14	GND	-	Ground
	15	NC	-	Not used
	16	BRSET	O	Secondary transfer unit shift clutch drive
	17	EXITJD	I	Duplex paper exit sensor detection, L: Detected
	18	DUFDR	O	Duplex paper exit selection solenoid drive (For duplexer)
	19	VCC	O	5 V DC
	20	EXFDR	O	Duplex paper exit selection solenoid drive (For copier)

Connector	Pin No.	Signal	I/O	Description
YC25 Connected to the main controller box fan motor	1	GND	-	Ground
	2	FANC+	O	Main controller box fan motor drive
YC26 Connected to the fuser unit fan motor	1	GND	-	Ground
	2	FANF+	O	Fuser unit fan motor drive
YC27 Connected to the main drive PCB	1	VPP	O	24 V DC
	2	MIXDRn	-	Not used
	3	YSOL1	O	Yellow developer magnet solenoid drive
	4	BRUSDR	O	Cleaning brush unit drive clutch drive
	5	MSOL1	O	Magenta developer magnet solenoid drive
	6	ROLD R	O	Cleaning brush unit shift solenoid drive
	7	CSOL1	O	Cyan developer magnet solenoid drive
	8	BUINI	O	Cleaning brush unit position sensor detection, H: Home
	9	KSOL1	O	Black developer magnet solenoid drive
	10	VCC	O	5 V DC
	11	GND	-	Ground
YC28 Connected to the bypass feed PCB	1	VCC	O	5 V DC
	2	MPFSET	-	Not used
	3	HADS	I	Bypass tray paper detection, H: Not detected
	4	LONG	I	Bypass bottom plate position sensor detection, H: Home
	5	GND	-	Ground
	6	VPP	O	24 V DC
	7	BTTDRDR	O	Bypass bottom plate solenoid drive
	8	MPFDE	O	Bypass feed clutch drive, L: On
YC29 Connected to the paper feeder/ options relay PCB	1	WTLED	O	Waste toner full sensor PWB emitter (LED) drive
	2	PFSEL2	O	Communication control 2, for paper feeder/duplex unit/optional document finisher
	3	PFSEL1	O	Communication control 1, for paper feeder/duplex unit/ option document finisher
	4	FINRX	I	Communication data, reception for optional document finisher
	5	PFSEL0	O	Communication control 0, for paper feeder/duplex unit/ option document finisher
	6	DUSEN	I	Duplexer paper exit sensor detection, H: Detected
	7	WTONER	I	Waste toner full sensor PCB, toner full detection, L: full
	8	VCC	O	5 V DC
	9	VCC	O	5 V DC
	10	VPP	O	24 V DC
	11	STPEN	O	Option document finisher power-off, H: Off
	12	STOBN	O	Fuser unit drive motor (stepping drive) control
	13	VPP	O	24 V DC
	14	STOAN	O	Fuser unit drive motor (stepping drive) control
	15	GND	-	Ground
	16	T2INV	I	Transfer roller bias (negative) control, H: On
	17	VPP	O	24 V DC
	18	ANT2	O	Transfer roller bias voltage control PWM
	19	T2REM	O	Transfer roller bias (positive) control, H: On
	20	GND	-	Ground
	21	STOBP	O	Fuser unit drive motor (stepping drive) control
	22	VPP	O	24 V DC
	23	GND	-	Ground
	24	STOBP	O	Fuser unit drive motor (stepping drive) control

Connector	Pin No.	Signal	I/O	Description
YC29	25	WTBS	I	Waste toner full sensor PCB, waste toner tank detection, H: Installed
Connected to the paper feeder/ options relay PCB	26	VPP	O	24 V DC
	27	VCC	O	5 V DC
	28	VCC	O	5 V DC
	29	GND	-	Ground
	30	GND	-	Ground
	31	PFSDO	O	Communication data output, for paper feeder/duplex unit/optional document finisher
	32	PDSCLK	O	Communication clock, for paper feeder/duplex unit/optional document finisher
	33	PFSDI	I	Communication data input, for paper feeder/duplex unit/optional document finisher
	34	FINTX	O	Communication control, for optional document finisher
YC30	1	DMFG	I	DMFG ; I ; FG (Frequency generation) pulse
Connected to the black developer drive motor	2	VCC	O	5 V DC
	3	DMKHU	I	Black developer drive motor control
	4	DMKHV	I	Black developer drive motor control
	5	DMKHW	I	Black developer drive motor control
	6	GND	-	Ground
	7	DMKU	O	Black developer drive motor control
	8	DMKV	O	Black developer drive motor control
	9	DMKW	O	Black developer drive motor control

2-3-3 Scanner main PCB

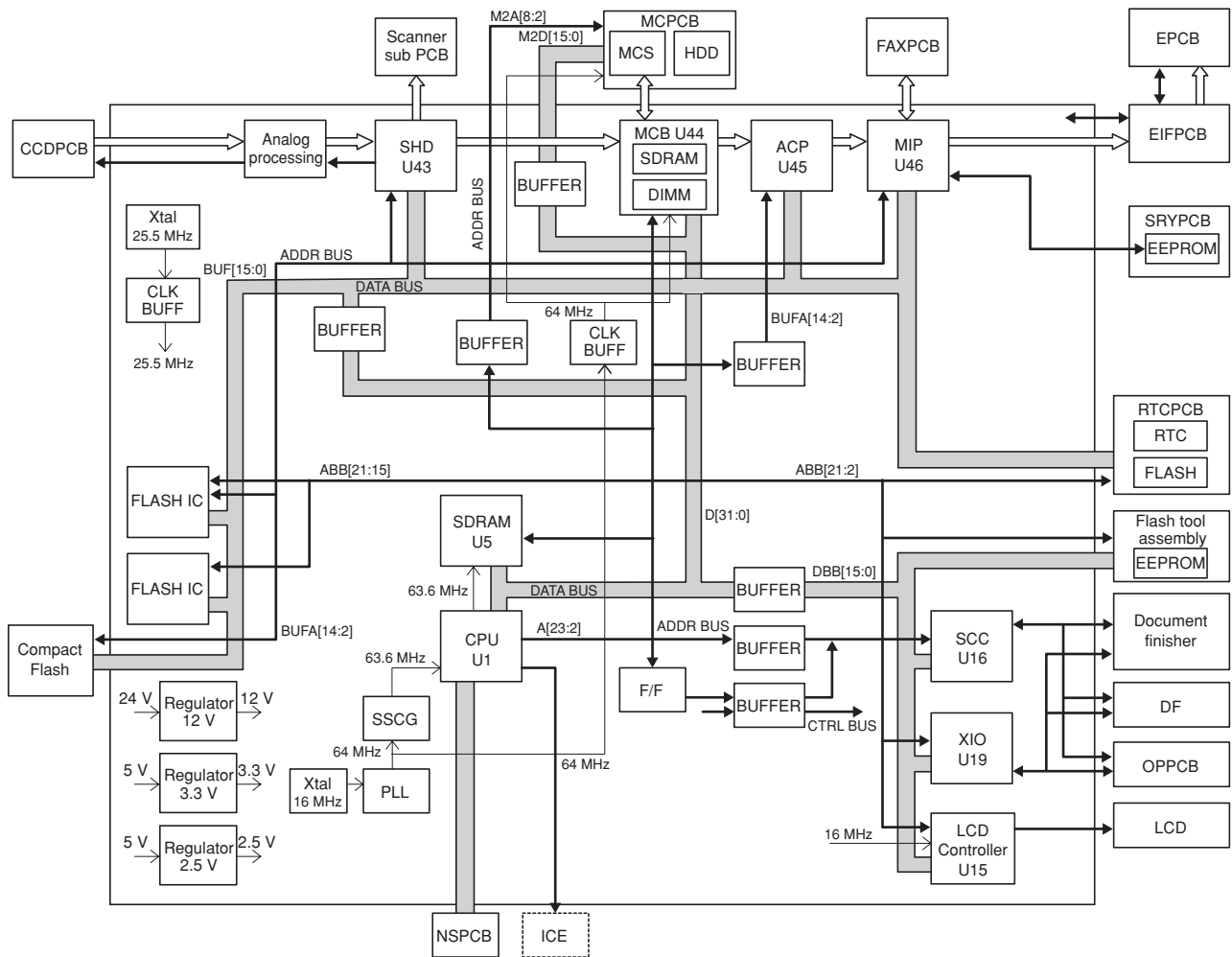


Figure 2-3-5 Scanner main PCB block diagram

The scanner main PCB (SMPCB) consists of mainly the CPU U1 and performs communication with other PCBs, control of the image processing system, and driving control of the optical system.

The CPU U1 operates on an 8-bit bus and SDRAM U5 for work memory is added. The CPU U1 performs communication control with each optional equipment and control of the operation section and the LCD display using the internal serial communication function of X10 U19 and LCD Controller U15 in accordance with the control program. Also the CPU U1 controls driving of electric parts in the optical system based on the input signals from each switch and sensor.

The image processing section converts analog image signals input from the CCD PCB (CCDPCB) to digital image signals and outputs them to the engine controller PCB (EPCB) via the image processing ASIC MIP U46.

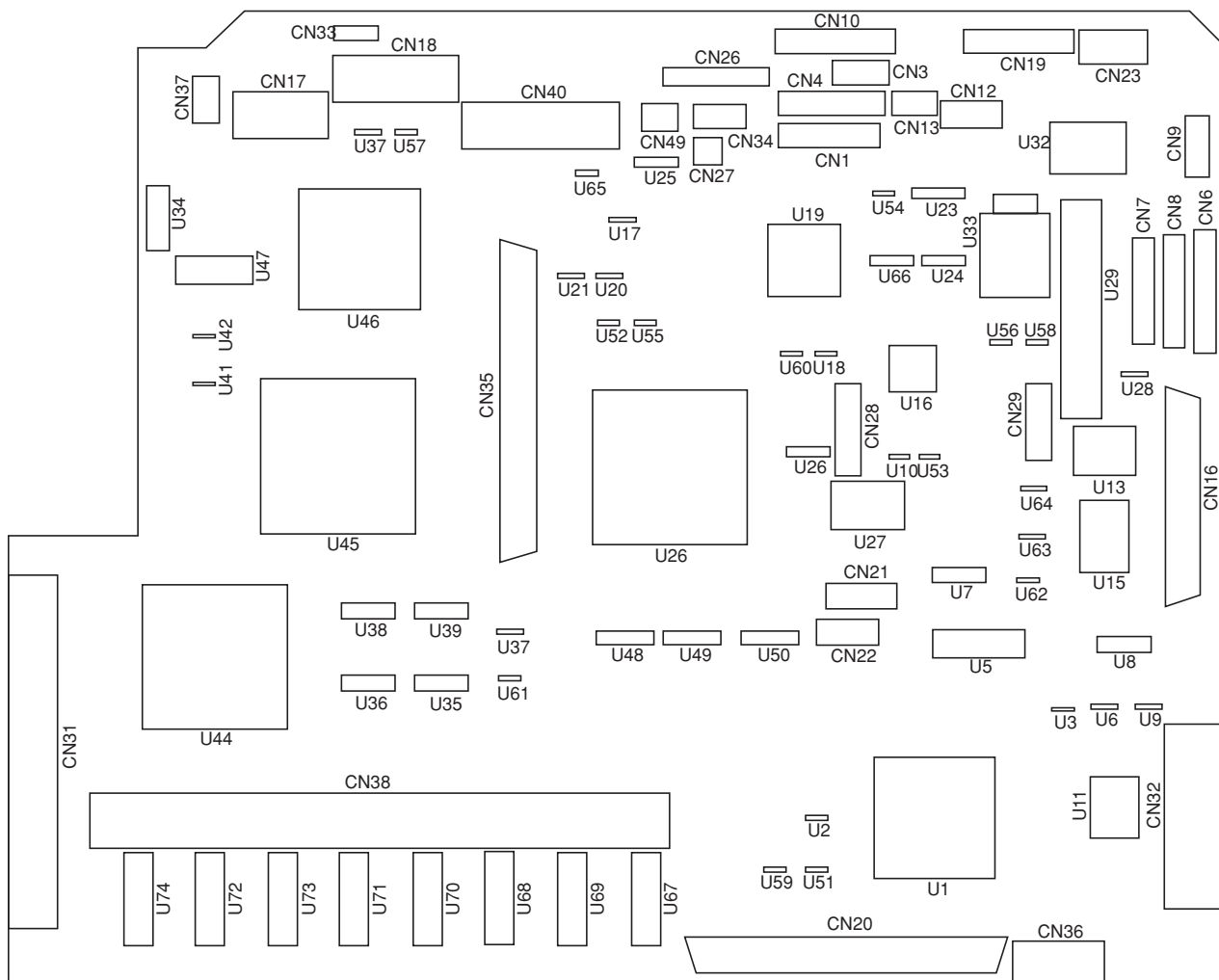


Figure 2-3-6 Scanner main PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Description
CN1 Connected to the optional fax operation unit	1	_LEDON6	O	LED lighting selection signal
	2	_LEDON5	O	LED lighting selection signal
	3	_SCAN7	O	Key switch scan signal
	4	_SCAN6	O	Key switch scan signal
	5	_SCAN5	O	Key switch scan signal
	6	_SCAN4	O	Key switch scan signal
	7	_SCAN3	O	Key switch scan signal
	8	_SCAN2	O	Key switch scan signal
	9	_SCAN1	O	Key switch scan signal
	10	_SCAN0	O	Key switch scan signal
	11	KEY_IN9	I	Key switch return signal
	12	KEY_IN8	I	Key switch return signal
	13	KEY_IN7	I	Key switch return signal
	14	KEY_IN6	I	Key switch return signal
CN3 Connected to the operation unit PCB	1	KEY_IN6	I	Key switch return signal
	2	KEY_IN5	I	Key switch return signal
	3	KEY_IN4	I	Key switch return signal
	4	KEY_IN3	I	Key switch return signal
	5	KEY_IN2	I	Key switch return signal
	6	KEY_IN1	I	Key switch return signal
	7	KEY_IN0	I	Key switch return signal
CN4 Connected to the operation unit PCB	1	_CFLREM	O	CFL drive signal, H: On
	2	24 V	O	24 V DC
	3	_LEDON4	O	LED lighting selection signal
	4	_LEDON3	O	LED lighting selection signal
	5	_LEDON2	O	LED lighting selection signal
	6	_LEDON1	O	LED lighting selection signal
	7	_LEDON0	O	LED lighting selection signal
	8	_SCAN7	O	Key switch scan signal
	9	_SCAN6	O	Key switch scan signal
	10	_SCAN5	O	Key switch scan signal
	11	_SCAN4	O	Key switch scan signal
	12	_SCAN3	O	Key switch scan signal
	13	_SCAN2	O	Key switch scan signal
	14	_SCAN1	O	Key switch scan signal
	15	_SCAN1	O	Key switch scan signal
CN6 Connected to the optional DF	1	NC	-	Not used
	2	OSBSW	I	Original switchback switch detection, L: On
	3	OFSW	I	Original feed switch detection, L: On
	4	OSSW	I	Original set switch detection, L: On
	5	RESERVE	-	Not used
	6	RESERVE	-	Not used
	7	DF SET	I	DF installation detection, L: installed
	8	OSWSW	I	Original size width switch detection, L: On
	9	DFSSW2	I	DF safty switch 2 detection, L: On
	10	DFSSW1	I	DF safty switch 1 detection, L: On
	11	OSLSW	I	Original size length switch detection, L: On
	12	DFTSW	I	DF timing switch detection, L: On
	13	NC	-	Not used

Connector	Pin No.	Signal	I/O	Description
CN7 Connected to the optional DF	1	OFM RET	O	Original feed motor control return signal
	2	OFM CLK	O	Original feed motor control clock signal
	3	OFM CWB	O	Original feed motor CWB return signal
	4	OCM ENABLE	O	Original conveying motor control enable signal
	5	NC	-	Not used
	6	OCM CLK	O	Original conveying motor control clock signal
	7	OCM CWB	O	Original conveying motor control CWB signal
	8	OCM Vref	O	Original conveying motor current control voltage
	9	OCM M3	O	Original conveying motor control M3
	10	OCM M2	O	Original conveying motor control M2
	11	OCM M1	O	Original conveying motor control M1
CN8 Connected to the optional document finisher	1	NC	-	Not used
	2	OSLED	O	LED (red) on/off signal
	3	OSLED	O	LED (green) on/off signal
	4	SBPSOL	O	Switchback press solenoid drive
	5	SBPSOL	O	Switchback press solenoid drive
	6	OFCL	O	Original feed clutch drive
	7	EFSSOL	O	Eject feedshift solenoid drive
	8	NC	-	Not used
	9	SBFSSOL	O	Switchback feedshift solenoid drive
	10	OFSOL	O	Original feed solenoid drive
	11	OFSOL	O	Original feed solenoid drive
	12	OFM ENABLE	O	Original feed motor control enable signal
CN10 Connected to the LCD PCB	1	5 V	O	5 V DC
	2	VEE	O	LCD VEE signal
	3	UD3	O	LCD UD3 data signal
	4	UD2	O	LCD UD2 data signal
	5	UD1	O	LCD UD1 data signal
	6	UD0	O	LCD UD0 data signal
	7	CP	O	LCD CP signal
	8	FLM	O	LCD FRAME signal
	9	DISP-OFF	O	LCD DISPLAY-OFF signal
	10	LP	O	LCD LP signal
	11	VO	O	LCD VO signal
	12	GND	-	Ground
	13	GND	-	Ground
CN12 Connected to the optional document finisher	1	FN RxD	I	Serial communication data reception
	2	GND	-	Ground
	3	FN TxD	O	Serial communication data transmission
	4	GND	-	Ground
	5	RESET	O	Reset signal
	6	FN SET	I	Document finisher installation detection, L: Installed
CN13 Connected to the optional key counter	1	24 V	O	24 V DC
	2	KEY COUNT	O	Key counter count signal
	3	KC SET	I	Key counter installation detection, L: Installed
	4	GND	-	Ground

Connector	Pin No.	Signal	I/O	Description
CN16 Connected to the flash tool assembly	A1	5 V	O	5 V DC
	A2	5 V	O	5 V DC
	A3	GND	-	Ground
	A4	_JCSSEL	I	_JCSSEL signal
	A5	NC	-	Not used
	A6	DBB14	I	Data bus D14
	A7	DBB12	I	Data bus D12
	A8	DBB10	I	Data bus D10
	A9	DBB8	I	Data bus D8
	A10	DBB6	I	Data bus D6
	A11	DBB4	I	Data bus D4
	A12	DBB2	I	Data bus D2
	A13	DBB0	I	Data bus D0
	A14	5 V	O	5 V DC
	A15	GND	-	Ground
	A16	_OEB	O	_OEB signal
	A17	_JCMD1	O	_JCMD1 signal
	A18	_JCSSEL	I	_JCSSEL signal
	A19	NC	-	Not used
	A20	NC	-	Not used
	A21	NC	-	Not used
	A22	ABB19	I	Address bus A19
	A23	ABB17	I	Address bus A17
	A24	ABB15	I	Address bus A15
	A25	ABB13	I	Address bus A13
	A26	ABB11	I	Address bus A11
	A27	ABB9	I	Address bus A9
	A28	ABB7	I	Address bus A7
	A29	ABB5	I	Address bus A5
	A30	ABB3	I	Address bus A3
B1	5 V	O	5 V DC	
B2	GND	-	Ground	
B3	GND	-	Ground	
B4	_END	I	_END signal	
B5	DBB15	I	Data bus D15	
B6	DBB13	I	Data bus D13	
B7	DBB11	I	Data bus D11	
B8	DBB9	I	Data bus D9	
B9	DBB7	I	Data bus D7	
B10	DBB5	I	Data bus D5	
B11	DBB3	I	Data bus D3	
B12	DBB1	I	Data bus D1	
B13	5 V	O	5 V DC	
B14	GND	-	Ground	
B15	GND	-	Ground	
B16	NC	-	Not used	
B17	NC	-	Not used	
B18	_JCMD2	O	_JCMD2 signal	
B19	NC	-	Not used	
B20	NC	-	Not used	
B21	NC	-	Not used	
B22	ABB18	I	Address bus A18	
B23	ABB16	I	Address bus A16	
B24	ABB14	I	Address bus A14	
B25	ABB12	I	Address bus A12	
B26	ABB10	I	Address bus A10	
B27	ABB8	I	Address bus A8	
B28	ABB6	I	Address bus A6	
B29	ABB4	I	Address bus A4	
B30	ABB2	I	Address bus A2	

Connector	Pin No.	Signal	I/O	Description
CN17 Connected to the engine controller PCB via engine I/F PCB	A1	EXPURGE	O	EXPURGE signal
	A2	SIH	O	SIH signal
	A3	EXRSTn	O	EXRSTn signal
	A4	_OUT1	O	_OUT1 signal
	A5	PRGRESN	O	PRGRESN signal
	A6	EXRxD	I	Serial communication data reception
	A7	GND	-	Ground
	A8	EXTxD	O	Serial communication data transmission
	A9	GND	-	Ground
	A10	VPPSEL	O	VPPSEL signal
	B1	MSW	O	MSW signal
	B2	FAX-READY	I	FAX-READY signal
	B3	BSY	O	BSY signal
	B4	REQ	I	REQ signal
	B5	CLK	O	CLK signal
	B6	EXEOP	O	EXEOP signal
	B7	SO	O	SO signal
	B8	EXVSYNC	I	EXVSYNC signal
	B9	CONT	O	CONT signal
	B10	EXPSEL	O	EXPSEL signal
CN18 Connected to the engine controller PCB via engine I/F PCB	A1	EXVD6p	O	EXVD6p signal
	A2	EXVD5n	O	EXVD5n signal
	A3	EXVD5p	O	EXVD5p signal
	A4	EXVD4n	O	EXVD4n signal
	A5	EXVD4p	O	EXVD4p signal
	A6	VDD/2	O	VDD/2 signal
	A7	V3R3	O	V3R3 signal
	A8	EXVD3n	O	EXVD3n signal
	A9	EXVD3p	O	EXVD3p signal
	A10	EXVD2n	O	EXVD2n signal
	A11	EXVD2p	O	EXVD2p signal
	A12	EXVD1n	O	EXVD1n signal
	A13	EXVD1p	O	EXVD1p signal
	A14	EXVD0n	O	EXVD0n signal
	A15	EXVD0p	O	EXVD0p signal
	B1	EXSVCKn	O	EXSVCKn signal
	B2	EXSVCKp	O	EXSVCKp signal
	B3	EXLSYNcn	O	EXLSYNcn signal
	B4	EXLSYNcp	O	EXLSYNcp signal
	B5	GND	-	Ground
	B6	EXMMODESn	O	EXMMODESn signal
	B7	EXMMODESp	O	EXMMODESp signal
	B8	EXMMODELn	O	EXMMODELn signal
	B9	EXMMODELp	O	EXMMODELp signal
	B10	EXVENBn	O	EXVENBn signal
B11	EXVENBp	O	EXVENBp signal	
B12	GND	-	Ground	
B13	EXVD7n	O	EXVD7n signal	
B14	EXVD7p	O	EXVD7p signal	
B15	EXVD6n	O	EXVD6n signal	

Connector	Pin No.	Signal	I/O	Description
CN20	A1	5 V	O	5 V DC
Connected to the optional network scanner board PCB	A2	INTC	I	INTC signal
	A3	NC	-	Not used
	A4	5 V	O	5 V DC
	A5	5 V	O	5 V DC
	A6	GND	-	Ground
	A7	CPU_RST	O	CPU reset signal
	A8	5 V	O	5 V DC
	A9	PCIGNT1	O	PCIGNT1 signal
	A10	GND	-	Ground
	A11	PCIAD30	O	PCIAD30 signal
	A12	NC	-	Not used
	A13	PCIAD28	O	PCIAD28 signal
	A14	PCIAD26	O	PCIAD26 signal
	A15	GND	-	Ground
	A16	PCIAD24	O	PCIAD24 signal
	A17	PCIAD24	O	PCIAD24 signal
	A18	NC	-	Not used
	A19	PCIAD22	O	PCIAD22 signal
	A20	PCIAD20	O	PCIAD20 signal
	A21	GND	-	Ground
	A22	PCIAD18	O	PCIAD18 signal
	A23	PCIAD16	O	PCIAD16 signal
	A24	NC	-	Not used
	A25	FRAME	O	FRAME signal
	A26	GND	-	Ground
	A27	TRDY	O	TRDY signal
	A28	GND	-	Ground
	A29	STOP	O	STOP signal
	A30	NC	-	Not used
	A31	3.3 V	O	3.3 V DC
	A32	3.3 V	O	3.3 V DC
	A33	GND	-	Ground
	A34	PAR	O	PARsignal
	A35	PCIAD15	O	PCIAD15 signal
	A36	NC	-	Not used
	A37	PCIAD13	O	PCIAD13 signal
A38	PCIAD11	O	PCIAD11 signal	
A39	GND	-	Ground	
A40	PCIAD9	O	PCIAD9 signal	
A41	C_BE0	O	C_BE0 signal	
A42	NC	-	Not used	
A43	PCIAD6	O	PCIAD6 signal	
A44	PCIAD4	O	PCIAD4 signal	
A45	GND	-	Ground	
A46	PCIAD2	O	PCIAD2 signal	
A47	PCIAD0	O	PCIAD0 signal	
A48	5 V	O	5 V DC	
A49	5 V	O	5 V DC	
A50	5 V	O	5 V DC	
B1	GND	-	Ground	
B2	5 V	O	5 V DC	
B3	5 V	O	5 V DC	
B4	NC	-	Not used	
B5	NC	-	Not used	
B6	GND	-	Ground	
B7	PCICLK3	O	PCICLK3 signal	
B8	GND	-	Ground	
B9	PCIREQ1	O	PCIREQ1 signal	
B10	5 V	O	5 V DC	
B11	PCIAD31	O	PCIAD31 signal	
B12	PCIAD29	O	PCIAD29 signal	

Connector	Pin No.	Signal	I/O	Description
CN20	B13	GND	-	Ground
Connected to the optional network scanner board PCB	B14	PCIAD27	O	PCIAD27 signal
	B15	PCIAD25	O	PCIAD25 signal
	B16	NC	-	Not used
	B17	C_BE3	O	C_BE3 signal
	B18	PCIAD23	O	PCIAD23 signal
	B19	GND	-	Ground
	B20	PCIAD21	O	PCIAD21 signal
	B21	PCIAD19	O	PCIAD19 signal
	B22	NC	-	Not used
	B23	PCIAD17	O	PCIAD17 signal
	B24	C_BE2	O	C_BE2 signal
	B25	GND	-	Ground
	B26	IRDY	O	IRDY signal
	B27	NC	-	Not used
	B28	DEVSEL	O	DEVSEL signal
	B29	GND	-	Ground
	B30	3.3 V	O	3.3 V DC
	B31	PERR	O	PERR signal
	B32	NC	-	Not used
	B33	SERR	O	SERR signal
	B34	NC	-	Not used
	B35	C_BE1	O	C_BE1 signal
	B36	PCIAD14	O	PCIAD14 signal
	B37	GND	-	Ground
	B38	PCIAD12	O	PCIAD12 signal
	B39	PCIAD10	O	PCIAD10 signal
	B40	GND	-	Ground
	B41	PCIAD8	O	PCIAD8 signal
	B42	PCIAD7	O	PCIAD7 signal
	B43	NC	-	Not used
	B44	PCIAD5	O	PCIAD5 signal
	B45	PCIAD3	O	PCIAD3 signal
	B46	GND	-	Ground
B47	PCIAD1	O	PCIAD1 signal	
B48	5 V	O	5 V DC	
B49	5 V	O	5 V DC	
B50	5 V	O	5 V DC	
CN21	1	+12 V	O	DC 12 V
Connected to the CCD PCB	2	GND	-	Ground
	3	+5 V	O	5 V DC
	4	GND	-	Ground
	5	SHIFT	O	CCD SHIFT signal
	6	CCDSEL	O	CCD control signal
	7	CCLK1	O	Clock signal
	8	GND	-	Ground
	9	CCLK2	O	Clock signal
	10	GND	-	Ground
	11	RS	O	CCD RS signal
	12	GND	-	Ground
	13	CP	O	CCD CP signal
	14	GND	-	Ground

Connector	Pin No.	Signal	I/O	Description
CN22 Connected to the CCD PCB	1	VRE	I	Image data R (red) EVEN signal (analog)
	2	GND	-	Ground
	3	VRO	I	Image data R (red) ODD signal (analog)
	4	GND	-	Ground
	5	VGE	I	Image data G (green) EVEN signal (analog)
	6	GND	-	Ground
	7	VGO	I	Image data G (green) ODD signal (analog)
	8	GND	-	Ground
	9	VBE	I	Image data B (blue) EVEN signal (analog)
	10	GND	-	Ground
	11	VBO	I	Image data B (blue) ODD signal (analog)
	12	GND	-	Ground
CN23 Connected to the power source PCB	1	24 V	I	24 V DC
	2	GND	-	Ground
	3	5.1 V	I	5.1 V DC
	4	GND	-	Ground
CN26 Connected to the optional fax board PCB	1	FAX RxD0	I	Serial communication data reception
	2	GND	-	Ground
	3	FAX TxD0	O	Serial communication data transmission
	4	GND	-	Ground
	5	_MAINSTS	O	_MAINSTS signal
	6	_SETFAX	I	Fax board installation detection, L: Installed
	7	_SREQ	I	_SREQ signal
	8	_PREQ	I	_PREQ signal
	9	_FAXREADY	I	_FAXREADY signal
	10	_FAXRESET	O	_FAXRESET signal
	11	GND	-	Ground
	12	FAX RxD3	I	Serial communication data reception
	13	GND	-	Ground
	14	FAX TxD3	O	Serial communication data transmission
	15	GND	-	Ground
	16	_MMISTS	O	_MMISTS signal
	17	GND	-	Ground
	18	FFOCLK	O	FFOCLK signal
	19	GND	-	Ground
	20	FMREOUT	O	FMREOUT signal
	21	GND	-	Ground
	22	FMIPOUT0	O	FMIPOUT0 signal
	23	GND	-	Ground
	24	_FOHSTHIN	O	_FOHSTHIN signal
	25	GND	-	Ground
	26	FOVSYNC	O	FOVSYNC signal
	27	GND	-	Ground
	28	_FPVSYNC	O	_FPVSYNC signal
	29	GND	-	Ground
	30	_FPHSYNC	O	_FPHSYNC signal
	31	GND	-	Ground
	32	FPVD	I	FPVD signal
	33	GND	-	Ground
	34	FMRE	I	FMRE signal
	35	GND	-	Ground
	36	FVCLK	I	FVCLK signal
	37	GND	-	Ground
	38	FPVCLK	O	FPVCLK signal
	39	GND	-	Ground
	40	M3.3 V	O	3.3 V DC

Connector	Pin No.	Signal	I/O	Description
CN27	1	24 V	O	24 V DC
Connected to the total counter	2	TC	O	Total counter count signal
CN28	1	_CRRTC	O	_CRRTC signal
Connected to the RTC PCB	2	_RSL	-	_RSL signal
	3	_WR	O	_WR signal
	4	_CSROM	-	_CSROM signal
	5	A12	O	Address bus A12
	6	A10	-	Address bus A10
	7	A9	O	Address bus A9
	8	A14	-	Address bus A14
	9	Vpp	O	24 V DC
	10	A15	-	Address bus A15
	11	A13	-	Address bus A13
	12	A8	O	Address bus A8
	13	A7	O	Address bus A7
	14	A6	O	Address bus A6
	15	A5	O	Address bus A5
	16	A4	O	Address bus A4
	17	_RD	O	_RD signal
	18	GND	-	Ground
	19	A16	O	Address bus A16
	20	A17	O	Address bus A17
	CN29	1	A3	O
Connected to the RTC PCB	2	A2	-	Address bus A2
	3	A1	O	Address bus A1
	4	D0	-	Data bus D0
	5	D1	O	Data bus D1
	6	D2	-	Data bus D2
	7	D3	O	Data bus D3
	8	D4	-	Data bus D4
	9	D5	-	Data bus D5
	10	D6	-	Data bus D6
	11	D7	-	Data bus D7
	12	A11	O	Address bus A11
	13	_CS_BACK	O	_CS_BACK signal
	14	3.3 V	O	3.3 V DC
	15	A18	O	Address bus A18
	16	A19	O	Address bus A19

Connector	Pin No.	Signal	I/O	Description	
CN31 Connected to the memory copy board PCB	A1	GND	-	Ground	
	A2	GND	-	Ground	
	A3	M2A[2]	O	Address bus A2	
	A4	M2A[4]	O	Address bus A4	
	A5	M2A[6]	O	Address bus A6	
	A6	M2A[8]	O	Address bus A8	
	A7	GND	-	Ground	
	A8	M2D[1]	O	Data bus D1	
	A9	M2D[3]	O	Data bus D3	
	A10	M2D[5]	O	Data bus D5	
	A11	M2D[7]	O	Data bus D7	
	A12	M2D[9]	O	Data bus D9	
	A13	M2D[11]	O	Data bus D11	
	A14	M2D[13]	O	Data bus D13	
	A15	M2D[15]	O	Data bus D15	
	A16	GND	-	Ground	
	A17	_M2WE	O	_M2WE signal	
	A18	_M2OE	O	_M2OE signal	
	A19	ACK10	O	ACK10 signal	
	A20	_M2INT	O	_M2INT signal	
	A21	_M2REQ	O	_M2REQ signal	
	A22	NC	-	Not used	
	A23	I	GND	-	Ground
	A54				
	A55	3.3 V	O	3.3 V DC	
	A56	3.3 V	O	3.3 V DC	
	A57	GND	-	Ground	
	A58	GND	-	Ground	
	A59	GND	-	Ground	
	A60	GND	-	Ground	
	B1	CPU_RST	O	CPU_RST signal	
B2	GND	-	Ground		
B3	M2A[3]	O	Address bus A3		
B4	M2A[5]	O	Address bus A5		
B5	M2A[7]	O	Address bus A7		
B6	GND	-	Ground		
B7	M2D[0]	O	Data bus D0		
B8	M2D[2]	O	Data bus D2		
B9	M2D[4]	O	Data bus D4		
B10	M2D[6]	O	Data bus D6		
B11	M2D[8]	O	Data bus D8		
B12	M2D[10]	O	Data bus D10		
B13	M2D[12]	O	Data bus D12		
B14	M2D[14]	O	Data bus D14		
B15	GND	-	Ground		
B16	_M2CS	O	_M2CS signal		
B17	_HDCS	O	_HDCS signal		
B18	GND	-	Ground		
B19	_BTE	O	_BTE signal		
B20	_STE	O	_STE signal		
B21	_TOE	O	_TOE signal		
B22	NC	-	Not used		
B23	GND	-	Ground		
B24	M2CPUCLK	O	M2CPUCLK signal		
B25	GND	-	Ground		
B26	_FSYNC	O	_FSYNC signal		
B27	GND	-	Ground		
B28	SD_R0	O	SD_R0 signal		
B29	SD_R1	O	SD_R1 signal		
B30	SD_R2	O	SD_R2 signal		
B31	SD_R3	O	SD_R3 signal		

Connector	Pin No.	Signal	I/O	Description
CN31 Connected to the memory copy board PCB	B32	SD_R4	O	SD_R4 signal
	B33	SD_R5	O	SD_R5 signal
	B34	SD_R6	O	SD_R6 signal
	B35	SD_R7	O	SD_R7 signal
	B36	SD_G0	O	SD_G0 signal
	B37	SD_G1	O	SD_G1 signal
	B38	SD_G2	O	SD_G2 signal
	B39	SD_G3	O	SD_G3 signal
	B40	SD_G4	O	SD_G4 signal
	B41	SD_G5	O	SD_G5 signal
	B42	SD_G6	O	SD_G6 signal
	B43	SD_G7	O	SD_G7 signal
	B44	SD_B0	O	SD_B0 signal
	B45	SD_B1	O	SD_B1 signal
	B46	SD_B2	O	SD_B2 signal
	B47	SD_B3	O	SD_B3 signal
	B48	SD_B4	O	SD_B4 signal
	B49	SD_B5	O	SD_B5 signal
	B50	SD_B6	O	SD_B6 signal
	B51	SD_B7	O	SD_B7 signal
	B52	GND	-	Ground
	B53	MSCLK	O	MSCLK signal
	B54	GND	-	Ground
	B55	5 V	O	5 V DC
	B56	5 V	O	5 V DC
	B57	24 V	O	24 V DC
	B58	24 V	O	24 V DC
	B59	24 V	O	24 V DC
	B60	24 V	O	24 V DC
CN32 Connected to the Compact Flash card	1	GND	-	Ground
	2	BUFD[3]	O	Data bus D3
	3	BUFD[4]	O	Data bus D4
	4	BUFD[5]	O	Data bus D5
	5	BUFD[6]	O	Data bus D6
	6	BUFD[7]	O	Data bus D7
	7	_CE	O	_CE signal
	8	BUFA[11]	O	Address bus A11
	9	_OE	O	_OE signal
	10	BUFA[10]	O	Address bus A10
	11	BUFA[9]	O	Address bus A9
	12	BUFA[8]	O	Address bus A8
	13	VCC	O	3.3 V DC
	14	BUFA[7]	O	Address bus A7
	15	BUFA[6]	O	Address bus A6
	16	BUFA[5]	O	Address bus A5
	17	BUFA[4]	O	Address bus A4
	18	BUFA[3]	O	Address bus A3
	19	BUFA[2]	O	Address bus A2
	20	GND	-	Ground
	21	BUFD[0]	O	Data bus D0
	22	BUFD[1]	O	Data bus D1
	23	BUFD[2]	O	Data bus D2
	24	WP	O	WP signal
	25	_CD1	O	_CD1 signal
	26	_CD2	O	_CD2 signal
	27	BUFD[11]	O	Data bus D11
	28	BUFD[12]	O	Data bus D12
	29	BUFD[13]	O	Data bus D13
	30	BUFD[14]	O	Data bus D14
	31	BUFD[15]	O	Data bus D15
	32	_CE2	O	_CE2 signal

Connector	Pin No.	Signal	I/O	Description
CN32 Connected to the Compact Flash card	33	_VS1	O	_VS1 signal
	34	_IORD	O	_IORD signal
	35	_IOWR	O	_IOWR signal
	36	_WE	O	_WE signal
	37	RDY/_BSY	O	RDY/_BSY signal
	38	VCC	O	3.3 V DC
	39	_CSEL	O	_CSEL signal
	40	_VS2	O	_VS2 signal
	41	RESET	O	RESET signal
	42	_WAIT	O	_WAIT signal
	43	_INPACK	O	_INPACK signal
	44	BUFA[12]	O	Address bus A12
	45	BVD1	O	BVD1 signal
	46	BVD2	O	BVD2 signal
	47	BUFD[8]	O	Data bus D8
	48	BUFD[9]	O	Data bus D9
	49	BUFD[10]	O	Data bus D10
50	GND	-	Ground	
CN33 Connected to the optional fax board and fax power source	1	GND	-	Ground
	2	_MSW	I	FAX power source on/off
	3	MRY	O	MRY
	4	MRYOUT	O	MRYOUT
CN34 Connected to the branch solenoid and main switch	1	MSREM	O	MSREM
	2	24 V	O	24 V DC
	3	BRSOL	O	Branch solenoid drive
	4	24 V	O	24 V DC
	5	BRSOL	O	Branch solenoid drive
CN40 Connected to the scanner relay PCB	A1	3.3 V	O	3.3 V DC for EEPROM
	A2	C_EEP	O	C_EEP signal for EEPROM
	A3	D_EEP	O	D_EEP signal for EEPROM
	A4	PRE_EEP	O	PRE_EEP signal for EEPROM
	A6	GND	-	Ground
	A12	GND	-	Ground
	A14	OSDS	I	Original size detection sensor detection, L: On
	A15	ODSW	I	Original detection switch, L: On
	A16	SHPSW	I	Scanner home position switch, L: Home
	A17	GND	-	Ground
	A18	NC	-	Not used
	A19	SM A	O	Scanner motor (stepping drive) control
	A20	SM_A	O	Scanner motor (stepping drive) control
	B1	SM B	O	Scanner motor (stepping drive) control
	B2	SM_B	O	Scanner motor (stepping drive) control
	B3	NC	-	Not used
	B4	GND	-	Ground
	B5	EL ON REM	O	Exposure lamp on/off signal
	B9	GND	-	Ground
	B15	GND	-	Ground
B17	W_EEP	O	W_EEP signal for EEPROM	
B18	S_EEP	O	S_EEP signal for EEPROM	
B19	Q_EEP	O	Q_EEP signal for EEPROM	
B20	GND	-	Ground	

2-3-4 Operation unit PCB

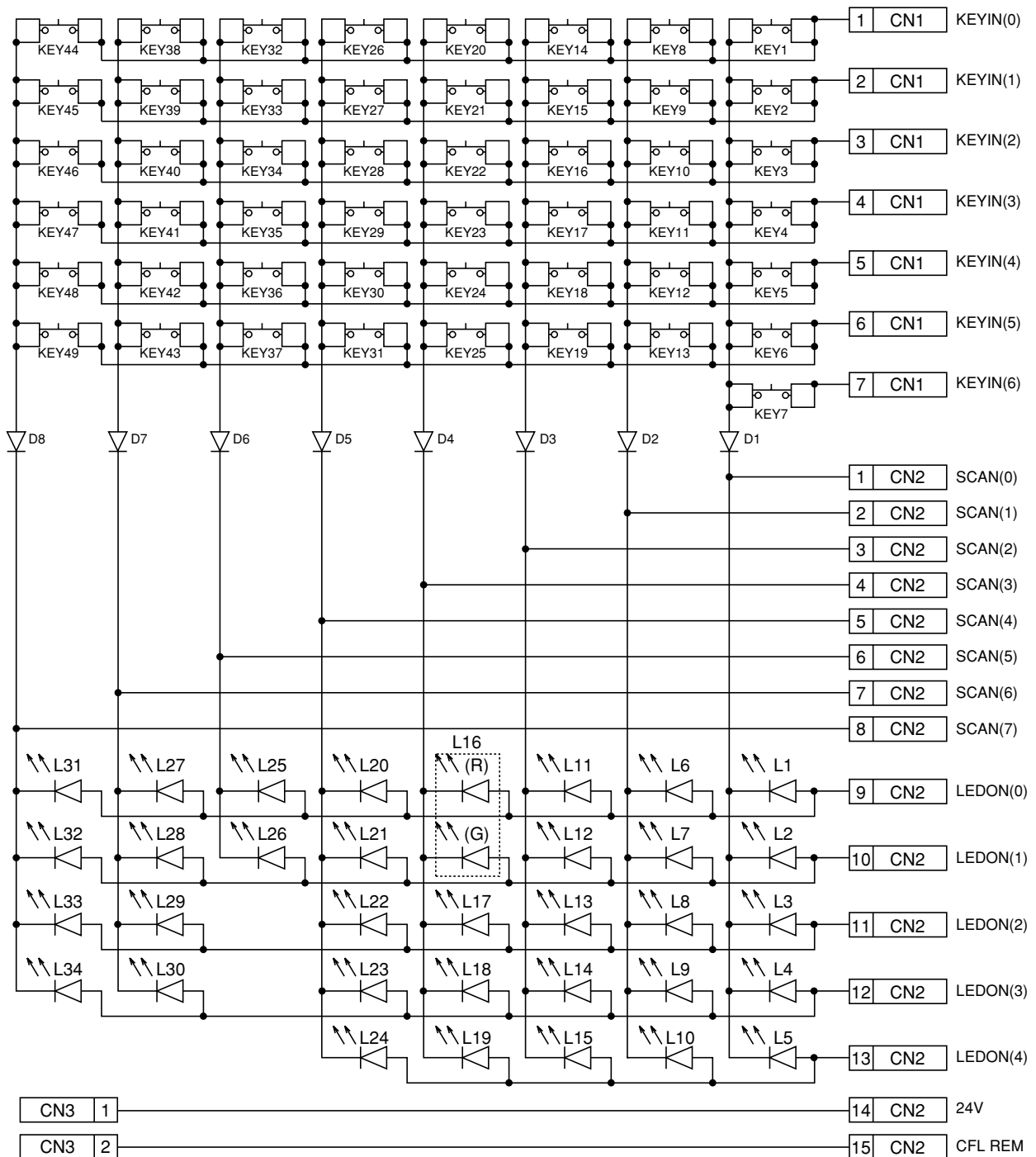


Figure 2-3-7 Operation unit PCB block diagram

The operation unit PCB (OPPCB) consists of key switches and LEDs. The lighting of LEDs is determined by scan signals (SCAN0 to SCAN7) and LED lighting selection signals (LEDON0 to LEDON4) from the scanner main PCB (SMPCB). The key switches operated are identified by the scan signals (SCAN0 to SCAN7) and the return signals (KEYIN0 to KEYIN6). As an example, to light LED 1 (L1), the LED lighting selection signal (LEDON0) should be driven low in synchronization with a low level on the scan signal (SCAN0). LEDs can be lit dynamically by repeating such operations.

As another example, if KEY 1 is pressed, the corresponding key switch is turned on feeding the low level of the scan signal (SCAN0) back to the scanner main PCB (SMPCB) via the return signal (KEYIN0). The scanner main PCB (SMPCB) locates the position where the line outputting the scan signal and the line inputting the return signal cross, and thereby determines which key switch was operated.

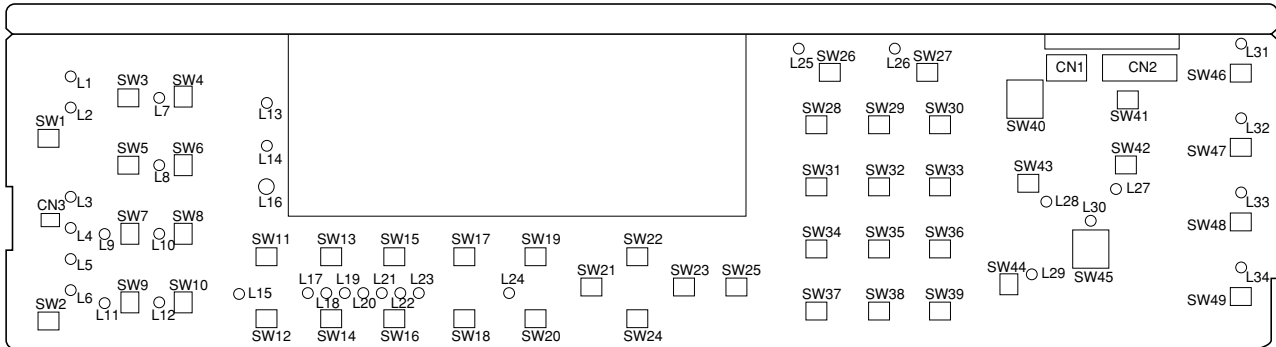


Figure 2-3-8 Operation unit PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Description
CN1 Connected to the scanner main PCB	1	KEY_IN0	O	key switch return signal
	2	KEY_IN1	O	key switch return signal
	3	KEY_IN2	O	key switch return signal
	4	KEY_IN3	O	key switch return signal
	5	KEY_IN4	O	key switch return signal
	6	KEY_IN5	O	key switch return signal
	7	KEY_IN6	O	key switch return signal
CN2 Connected to the scanner main PCB	1	_SCAN7	I	key switch scan signal
	2	_SCAN6	I	key switch scan signal
	3	_SCAN5	I	key switch scan signal
	4	_SCAN4	I	key switch scan signal
	5	_SCAN3	I	key switch scan signal
	6	_SCAN2	I	key switch scan signal
	7	_SCAN1	I	key switch scan signal
	8	_SCAN1	I	key switch scan signal
	9	_LEDON4	I	LED lighting selection signal
	10	_LEDON3	I	LED lighting selection signal
	11	_LEDON2	I	LED lighting selection signal
	12	_LEDON1	I	LED lighting selection signal
	13	_LEDON0	I	LED lighting selection signal
	14	24 V	I	24 V DC
	15	_CFLREM	I	CFL drive signal, L: On

2-3-5 CCD PCB

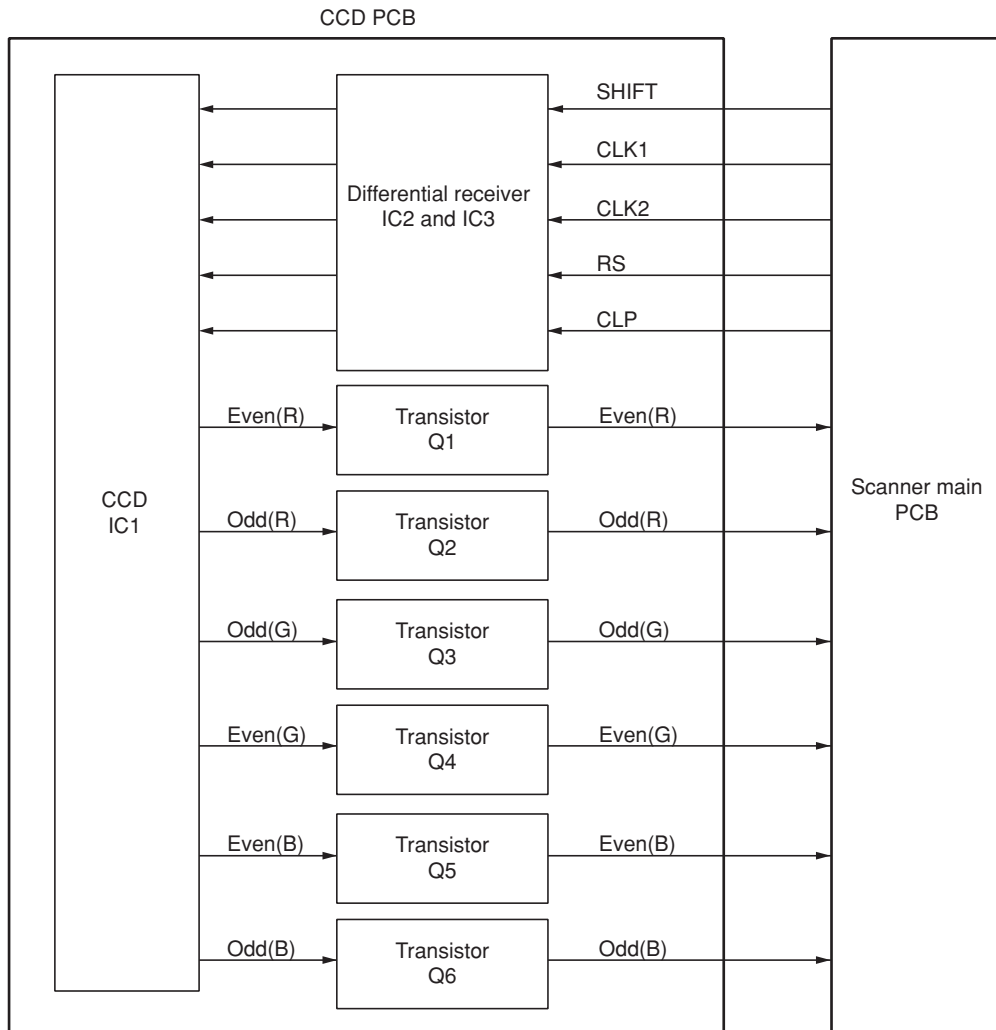


Figure 2-3-9 CCD PCB block diagram

The CCD PCB (CCDPB) is equipped with a CCD sensor IC1 for original scanning.

The clock signals (SHIFT, CLK1, CLK2, RS and CLP) for driving the CCD sensor (IC1) are sent as differential signals from the scanner main PCB (SMPCB), reconstructed to normal signals by the differential receiver (IC2 and IC3), and then input to the CCD sensor (IC1).

Image signals are RGB (red, green, and blue) analog signals. Even- and odd-numbered pixels are output separately. These analog image signals are amplified by emitter followers in the transistors Q1 to Q6 and then transmitted to the analog signal processing circuit in the scanner main PCB (SMPCB).

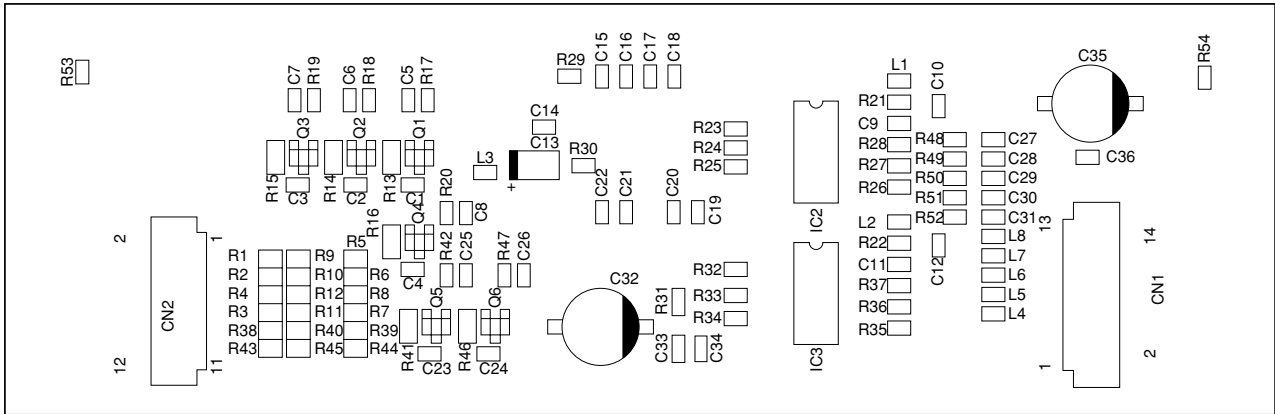
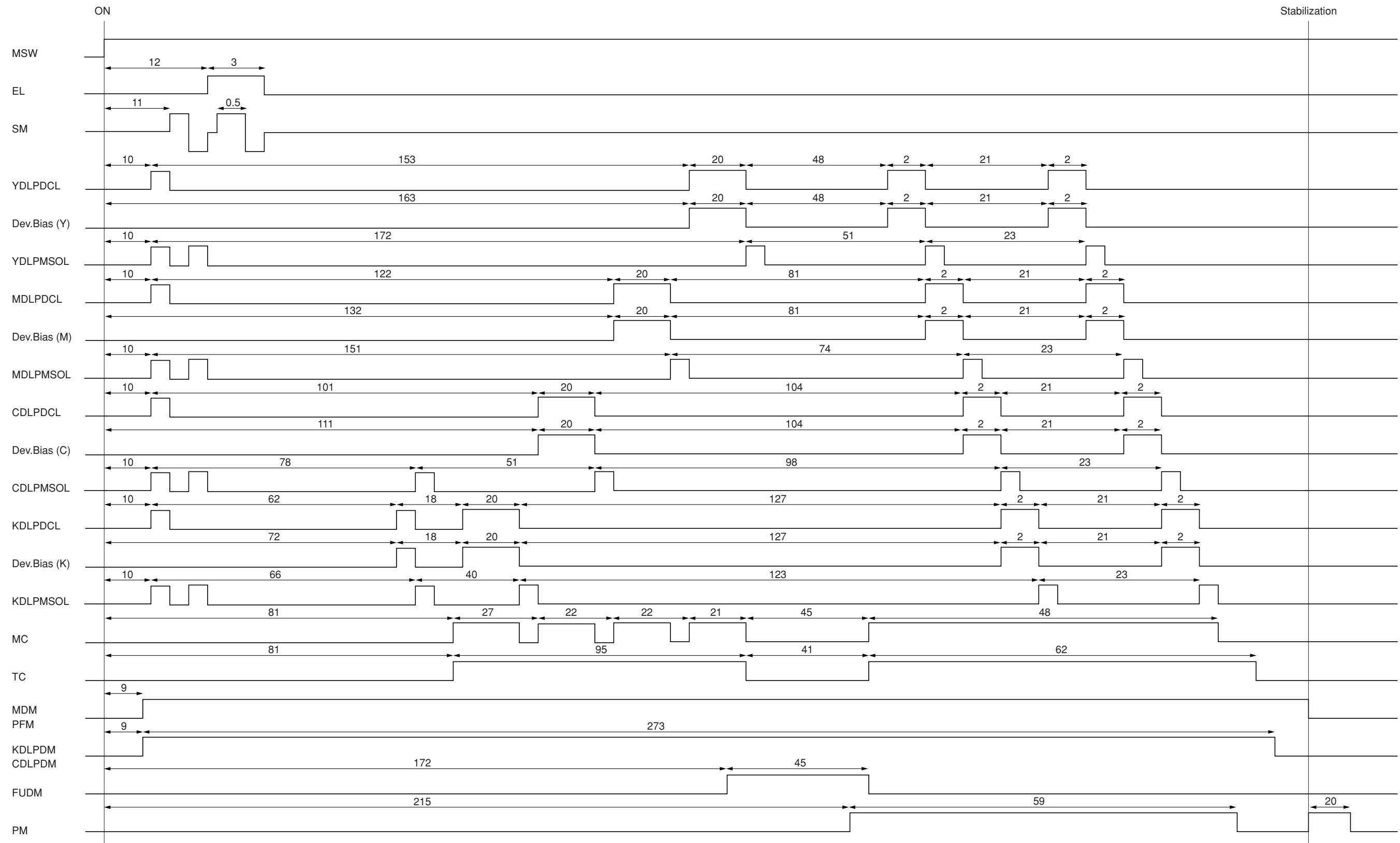


Figure 2-3-10 CCD PCB silk-screen diagram

Connector	Pin No.	Signal	I/O	Description
CN1 Connected to the scanner main PCB	1	+12 V	I	12 V DC
	2	GND	-	Ground
	3	+5 V	I	5 V DC
	4	GND	-	Ground
	5	SHIFT	I	CCD SHIFT signal
	6	CCDSEL	I	CCD control signal
	7	CCLK1	I	Clock signal
	8	GND	-	Ground
	9	CCLK2	I	Clock signal
	10	GND	-	Ground
	11	RS	I	CCD RS signal
	12	GND	-	Ground
	13	CP	I	CCD CP signal
	14	GND	-	Ground
CN2 Connected to the scanner main PCB	1	VRE	O	Image data R (red) EVEN signal (analog)
	2	GND	-	Ground
	3	VRO	O	Image data R (red) ODD signal (analog)
	4	GND	-	Ground
	5	VGE	O	Image data G (green) EVEN signal (analog)
	6	GND	-	Ground
	7	VGO	O	Image data G (green) ODD signal (analog)
	8	GND	-	Ground
	9	VBE	O	Image data B (blue) EVEN signal (analog)
	10	GND	-	Ground
	11	VBO	O	Image data B (blue) ODD signal (analog)
	12	GND	-	Ground

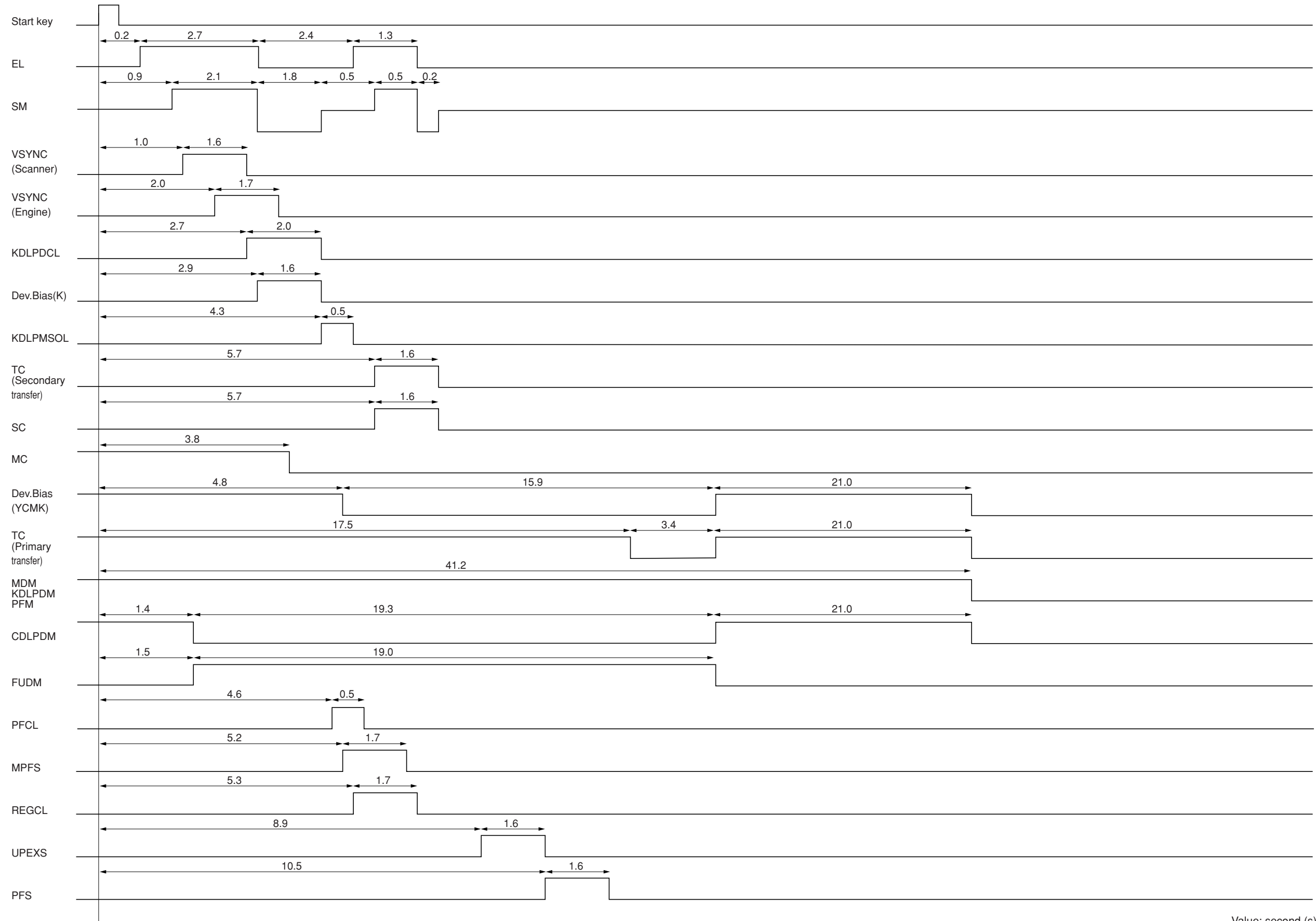
Timing chart No. 1 From the main switch turned on to machine stabilization



• Operation and time vary with the conditions of temperature, humidity, and fuser temperature.
 • Time without time indication means 0.5 second or less.

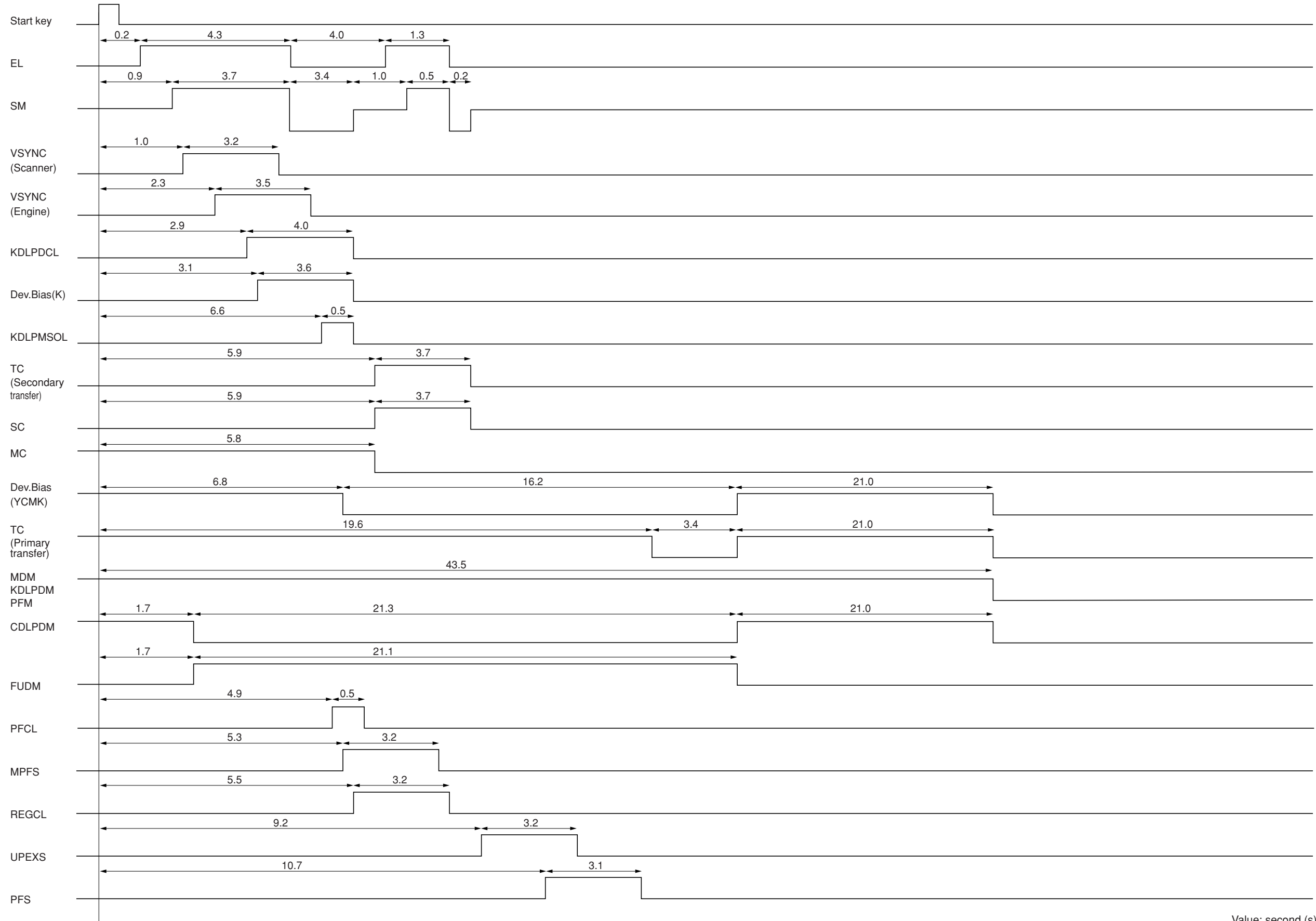
Value: second (s)

Timing chart No. 2 Black and white copying of an A4/11" × 8¹/₂"



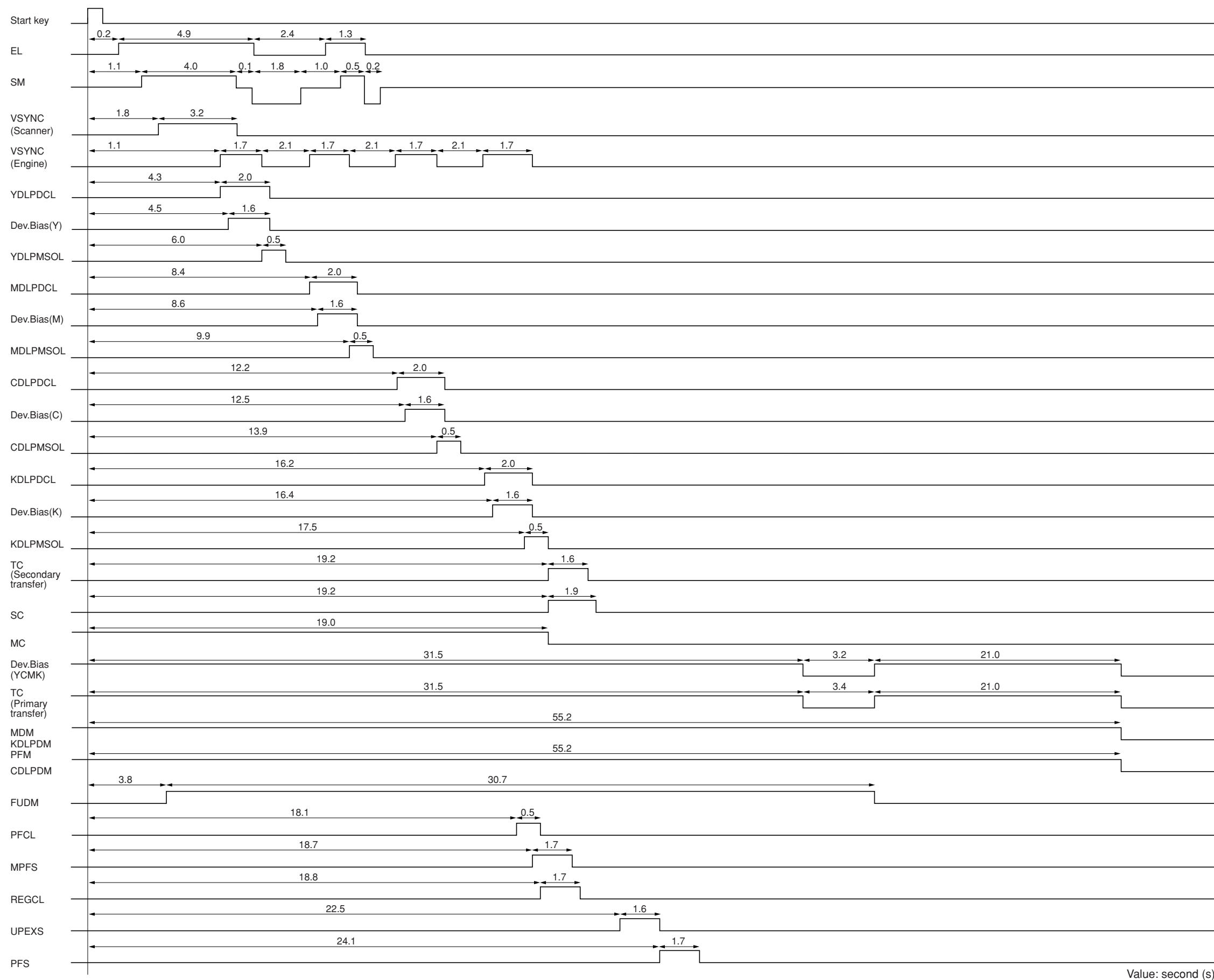
Value: second (s)

Timing chart No. 3 Black and white copying of an A3/11" × 17"

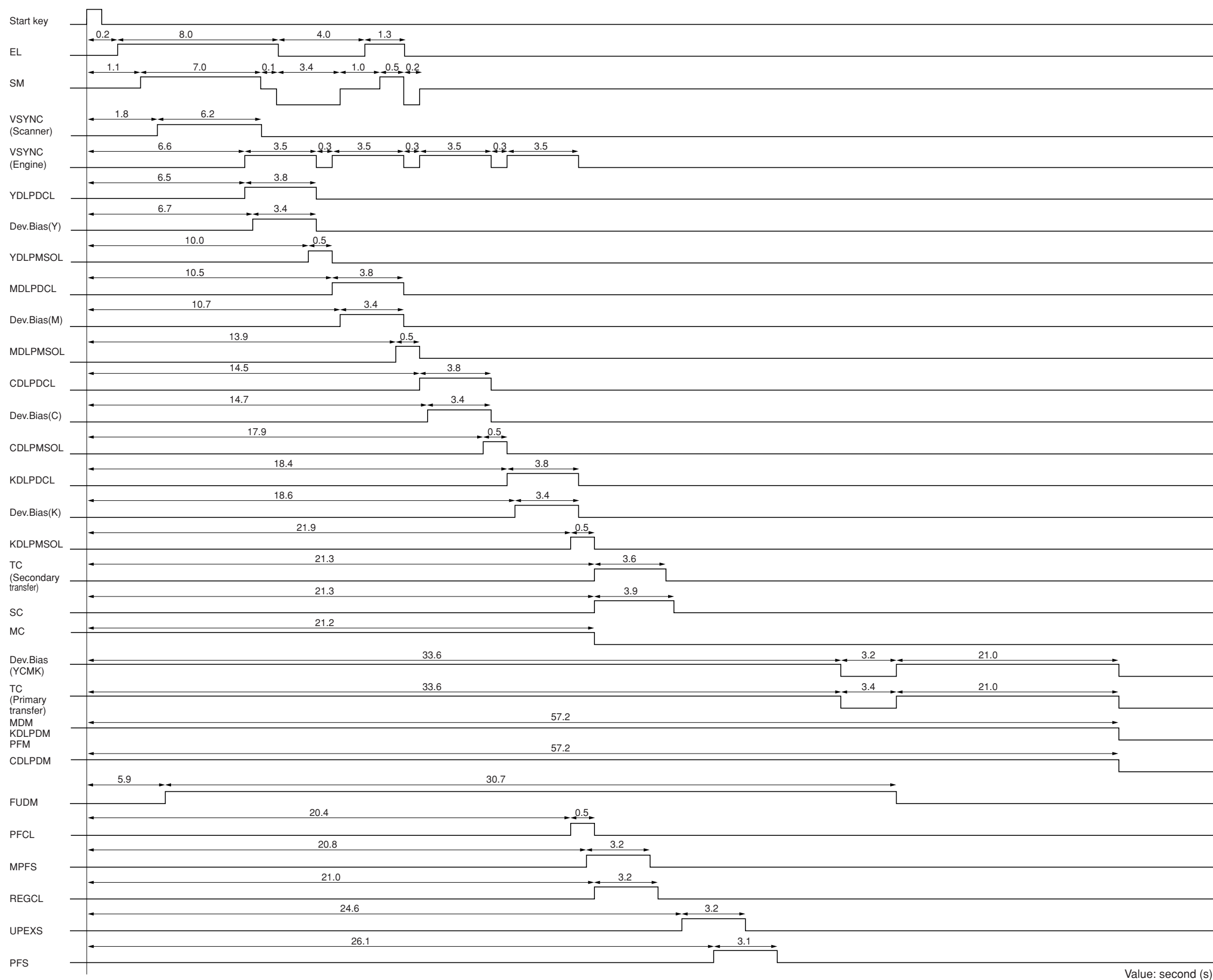


Value: second (s)

Timing chart No. 4 Full color copying of an A4/11" × 8 1/2"



Timing chart No. 5 Full color copying of an A3/11" × 17"



Value: second (s)

Maintenance parts list

Maintenance part name		Part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list			
Upper registration roller	ROLLER REGIST UP	2BM17400	8	107
Low registration roller	LOWER ROLLER, REGISTRATION	2A606010	8	6
Bypass feed roller	ROLL FEED MPF ASSY	2BM07270	17	30
Bypass retard roller	RETARD ROLL ASSY	2BM07340	17	20
Slit glass	CONTACT GLASS, ADF	2A612440	11	61
Contact glass	CONTACT GLASS	35912010	11	67
Mirror 1	MIRROR A, SCANNER	2A612120	11	26
Mirror 2	MIRROR B, SCANNER	2A612140	11	23
Exposure lamp	PARTS, LAMP SCANNER (SP)	2A693020	11	31
Original size detection sensor	SENSOR, ORIGINAL DETECTION	35927290	11	38

Maintenance kits

Maintenance kit part name		Part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list			
Maintenance kit A		2A682020		
Drum unit	PARTS, DRUM UNIT	2A693080	10	1
Primary transfer unit	PARTS, MIDDLE TRANSFER UNIT	2A693190	18	1
Maincharger unit	MC-800 MAIN CHARGER ASSY	5PLPXAQAPKX	10	47
Secondary transfer unit	TR-800S SEC TRANSFER UNIT	5PLPXATAPKX	8	94
Maintenance kit B ^{*1}		2A682040		
Black developer	PARTS, DEVELOPING UNIT (BK)	2A693150	15	-
Fuser unit	PARTS, FIXING UNIT 120	2A693170	9	-
Maintenance kit B ^{*2}		2A682050		
Black developer	PARTS, DEVELOPING UNIT (BK)	2A693150	15	-
Fuser unit	PARTS, FIXING UNIT 230	2A693180	9	-
Maintenance kit C ^{*1}		2A682070		
Yellow developer	PARTS, DEVELOPING UNIT (Y), (USA)	2A693090	12	-
Magenta developer	PARTS, DEVELOPING UNIT (M), (USA)	2A693110	13	-
Cyan developer	PARTS, DEVELOPING UNIT (M), (USA)	2A693130	14	-
Maintenance kit C ^{*2}		2A682060		
Yellow developer	PARTS, DEVELOPING UNIT (Y), (J/E)	2A693100	12	-
Magenta developer	PARTS, DEVELOPING UNIT (M), (J/E)	2A693120	13	-
Cyan developer	PARTS, DEVELOPING UNIT (C), (J/E)	2A693140	14	-
Maintenance kit D				
Separation charger unit	MK-800D (SC-800 SEPARATE CHARGER)	5PLPXBRAPKX	8	106

*1: For 120 V specifications.

*2: For 220-240 V specifications.

Periodic maintenance procedures

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Test copy and test print	Perform at the maximum copy size	Test copy	Every service		



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper feed section	Upper registration roller	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-11
	Lower registration roller	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-11
	Bypass feed roller	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-5
	Bypass retard roller	Clean	Every service	Clean with alcohol or a dry cloth.	1-6-5
	Paper feed roller	Clean Check and replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 350,000 sheets.	
	Paper retard roller	Clean Check and replace	Every service	Clean with alcohol or a dry cloth. Replace after feeding 350,000 sheets.	
	Clutches	Check and replace	Every service	Check the leading edge registration and paper feed conditions in the registration section, bypass and paper feed section.	
	Guides	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Optical section	Slit glass	Clean	Every service	Clean with alcohol and then a dry cloth.	
	Contact glass (face)	Clean	Every service	Clean with alcohol and then a dry cloth.	
	Contact glass (back)	Clean	Every service	Clean with alcohol and then a dry cloth only if vertical black lines or stains appear on the copy image.	
	Mirror 1	Clean	Every service	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Mirror 2	Clean	Every service	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Scanner lens	Clean	Every service	Clean with a dry cloth only if vertical black lines appear on the copy image.	
	Exposure lamp	Check or replace	Every service	Replace if an image problem occurs or after feeding 100,000 sheets.	
	Optical rail	Grease	Every service	Check noise and shifting and then apply scanner rail grease PG-671.	
	Original size detection sensor	Clean	Every service	Clean the sensor emitter and receiver with alcohol or a dry cloth only if there is a problem.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Maintenance kit A	Drum unit	Replace	Every 400,000 counts		1-6-38
	Middle transfer unit	Replace	Every 400,000 counts		1-6-39
	Main charger unit	Replace	Every 400,000 counts		1-6-37
	Secondary transfer unit	Replace	Every 400,000 counts		1-6-45



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Maintenance kit B	Black developer	Replace	Every 200,000 counts		1-6-40
	Fuser unit	Replace	Every 200,000 counts		1-6-48



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Maintenance kit C	Yellow developer	Replace	Every 200,000 counts		1-6-40
	Magenta developer	Replace	Every 200,000 counts		1-6-40
	Cyan developer	Replace	Every 200,000 counts		1-6-40



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Maintenance kit D	Separation charger unit	Replace	Every 100,000/200,000 counts		1-6-45



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



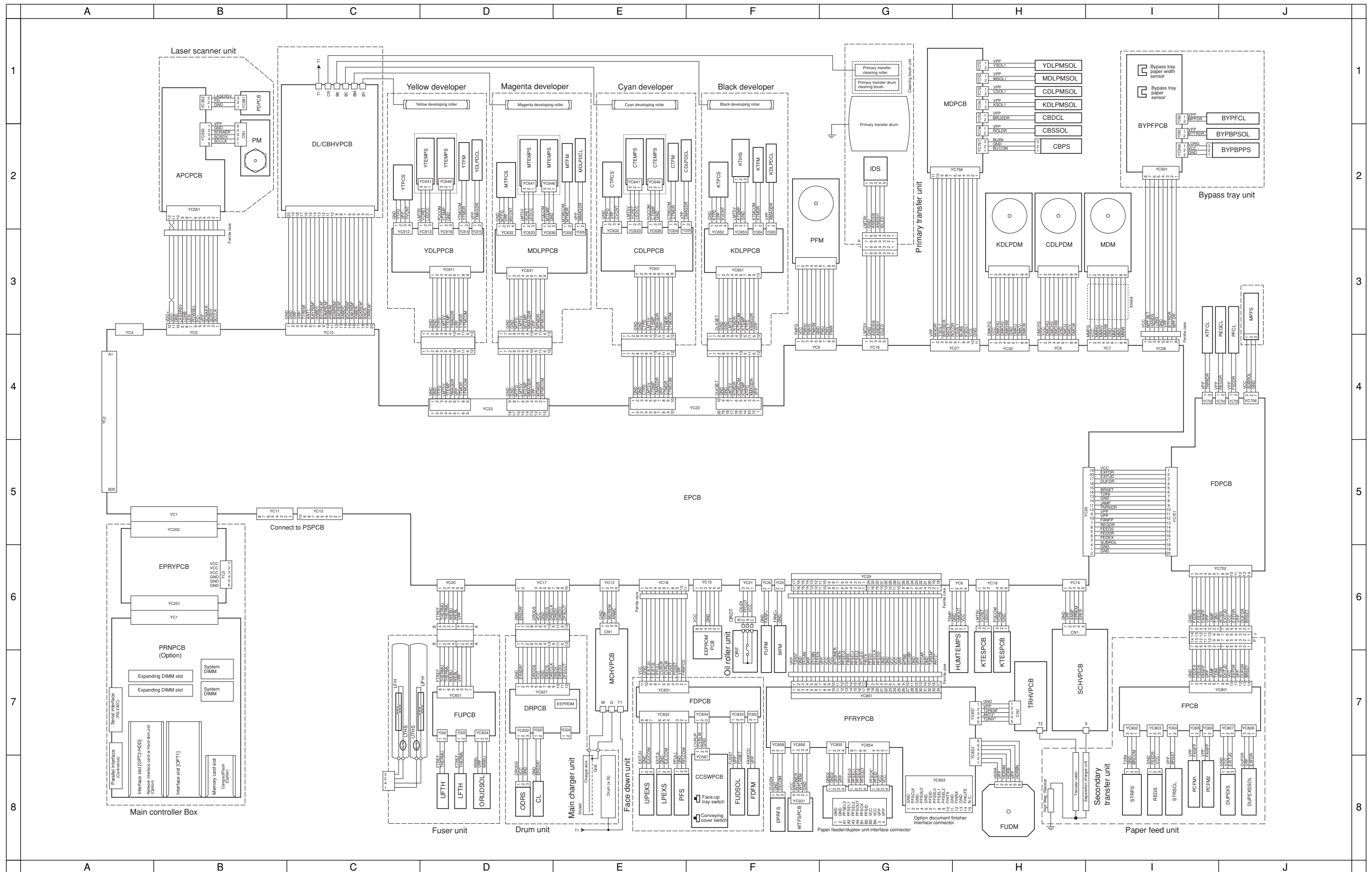
Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Duplex section	Rollers	Clean	Every service	Clean with alcohol or a dry cloth.	
	Guides	Clean	Every service	Clean with alcohol or a dry cloth.	

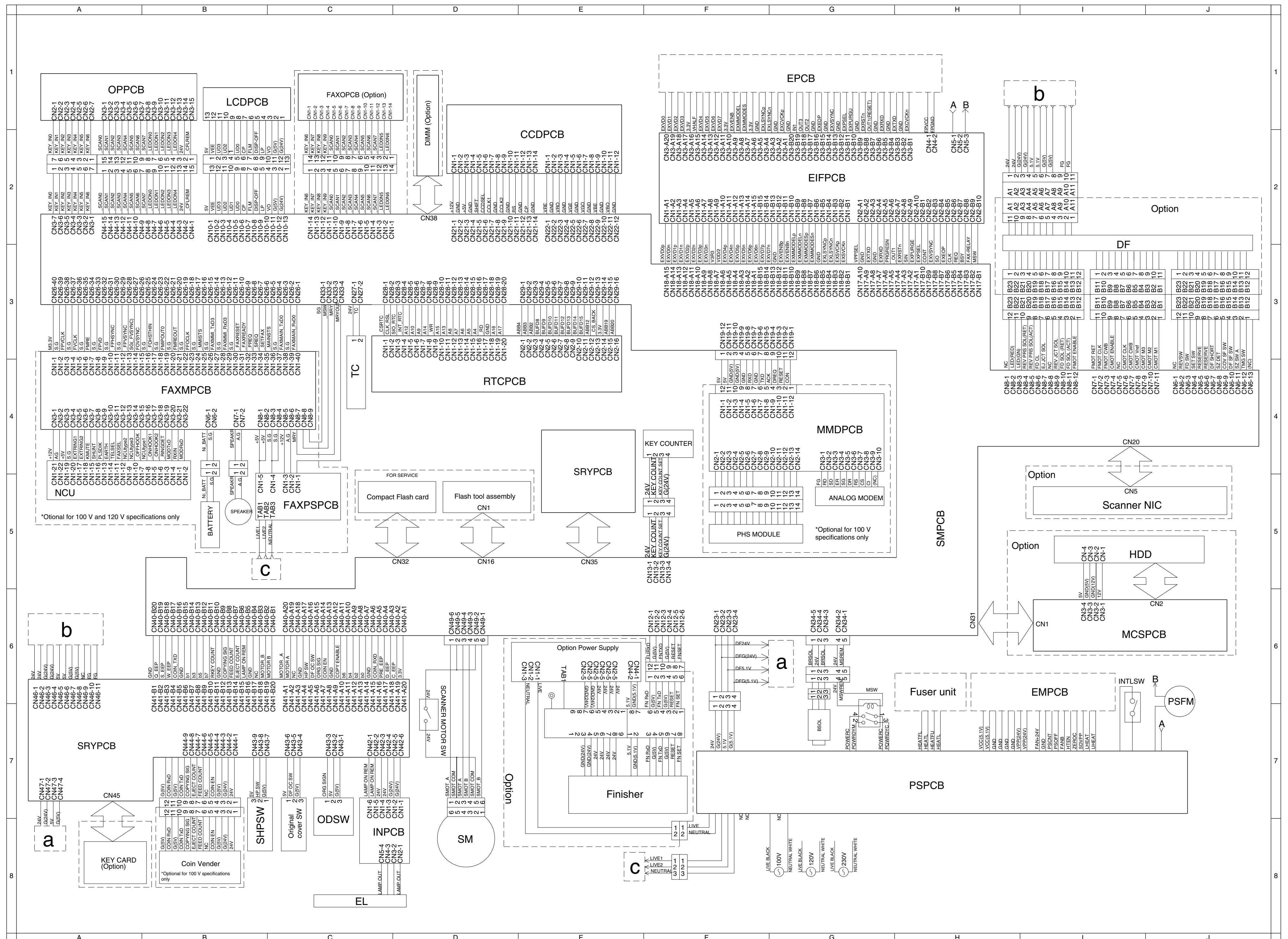


Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Covers	Covers	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Other	Image quality	Check and adjust	Every service		





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