



PF-640

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 power switch on.
 - Always wash hands afterwards.
- Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc.
- Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately.



3. Miscellaneous

WARNING

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



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CONTENTS

1-1 Specifications	
1-1-1 Specifications	1-1-1
1-1-2 Parts names	1-1-2
1-1-3 Cross section view	1-1-3
1-1-4 Drive system	1-1-4
1-2 Handling Precautions	
1-2-1 Installation environment	1-2-1
1-3 Installation	
1-3-1 Unpacking and installation	1-3-1
(1) Unpacking	1-3-1
(2) Remove the tapes and spacers	1-3-2
1-3-2 Installing the dehumidifier heater	1-3-4
1-4 Troubleshooting	
1-4-1 Paper misfeed detection	1-4-1
(1) Paper misfeed indication	1-4-1
(2) Paper misfeed detection conditions	1-4-1
(3) Paper misfeeds	1-4-2
1-4-2 Self-diagnosis	1-4-3
(1) Self-diagnostic function	1-4-3
(2) Self diagnostic codes	1-4-4
1-4-3 Electric problems	1-4-6
(1) The paper feeder main motor does not operate	1-4-6
(2) The paper feeder lift motor does not operate	1-4-6
(3) A paper jam in the paper feeder is indicated when the power switch is turned on	1-4-6
(4) The message requesting cover to be closed is displayed when the paper feeder right cover is closed	1-4-6
(5) Others	1-4-6
1-4-4 Mechanical problems	1-4-7
(1) No primary paper feed	1-4-7
(2) Skewed paper feed	1-4-7
(3) Multiple sheets of paper are fed at one time	1-4-7
(4) Paper jams	1-4-7
(5) Abnormal noise is heard	1-4-7
1-5 Assembly and Disassembly	
1-5-1 Precautions for assembly and disassembly	1-5-1
(1) Precautions	1-5-1
1-5-2 Primary paper feed unit	1-5-2
(1) Detaching and refitting the primary paper feed unit	1-5-2
(2) Detaching and refitting the forwarding roller and paper feed roller	1-5-3
(3) Detaching and refitting the lower paper feed pulley	1-5-5
1-6 Requirements on PWB Replacement	
1-6-1 Remarks on paper feeder main PWB replacement	1-6-1
2-1 Mechanical construction	
2-1-1 Mechanical construction	2-1-1
2-2 Electrical Parts Layout	
2-2-1 Electrical parts layout	2-2-1
(1) Paper feeder inside, rear side and primary paper feed unit	2-2-1
2-3 Operation of the PWBs	
2-3-1 Paper feeder main PWB	2-3-1

2-4 Appendixes

Wiring diagram.....2-4-1

1-1-1 Specifications

Type	Block type
Paper feed system.....	Friction retard system
Paper capacity.....	500 sheets (80 g/m ² , 110 μ thick)
Copy paper	Plain paper, recycled paper and colored paper (60 to 105 g/m ²)
Paper sizes	A4 (210 x 297 mm)
	A3 (297 x 420 mm)
	B4 (257 x 364 mm)
	B5 (182 x 257 mm)
	A5 (148 x 210 mm)
	Letter (8 1/2" x 11")
	Legal (8 1/2" x 14")
	Non-standard size (148 to 297 mm x 210 to 420 mm)
Power source	Electrically connected to the machine
Dimensions	679 (W) x 641.6 (D) x 141.6 (H) mm
	26 3/4" (W) x 25 1/4" (D) x 5 9/16" (H)
Weight.....	Approx. 14 kg/30.8 lbs

1-1-2 Parts names

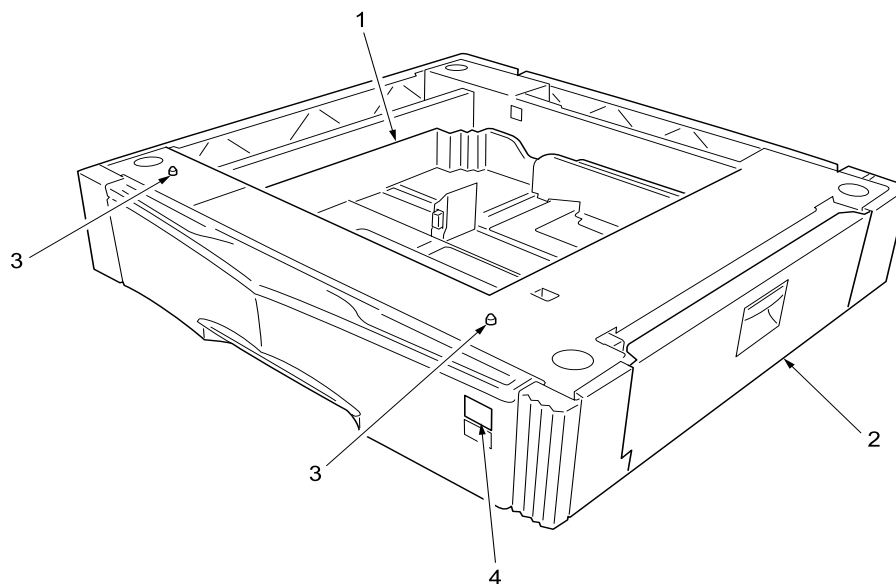


Figure 1-1-1

1. Paper cassette
2. Paper feeder right cover
3. Positioning pins
4. Paper size indication

1-1-3 Cross section view

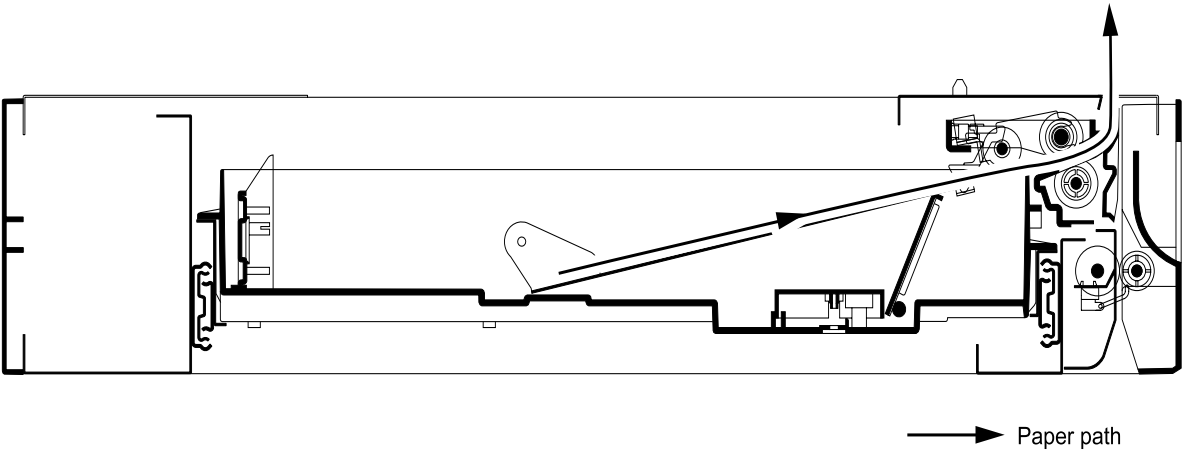


Figure 1-1-2

1-1-4 Drive system

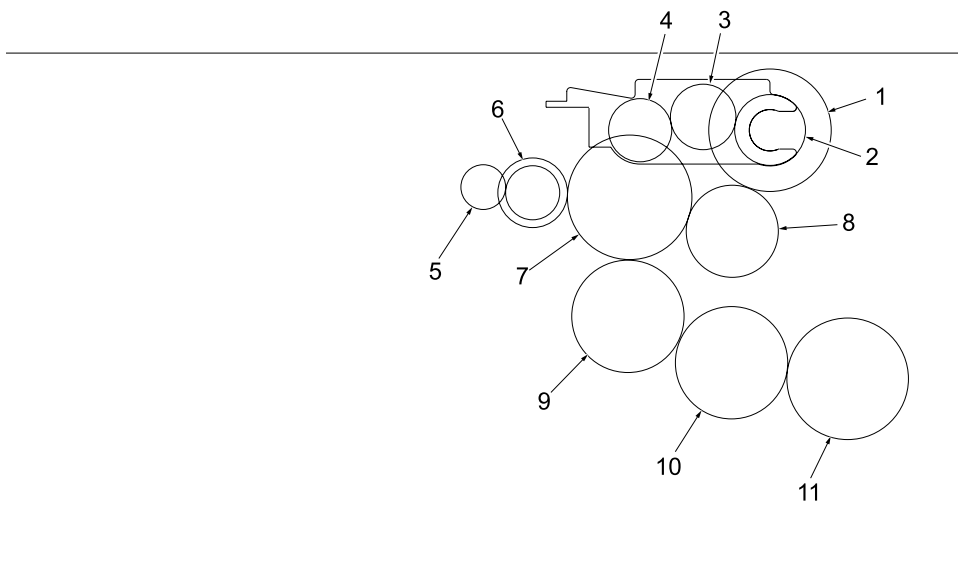


Figure 1-1-3

1. Feed gear Z33S
2. Paper feed gear
3. Retard gear 18
4. Retard gear 18
5. Paper feeder main motor gear
6. Gear 19/46
7. Drive gear
8. Drive gear 25/Feed gear 25
9. Feed gear 31
10. Feed gear 31
11. Feed gear 33S

1-2-1 Installation environment

1. Temperature: 10 - 32.5 °C/50 - 90.5 °F
2. Humidity: 15 - 80%RH
3. Power supply: Electrically connected to the machine
4. Installation location
 - 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 photo-conductor, such as mercury, acidic or alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.
 - Select a room with good ventilation.

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1-3-1 Unpacking and installation

(1) Unpacking

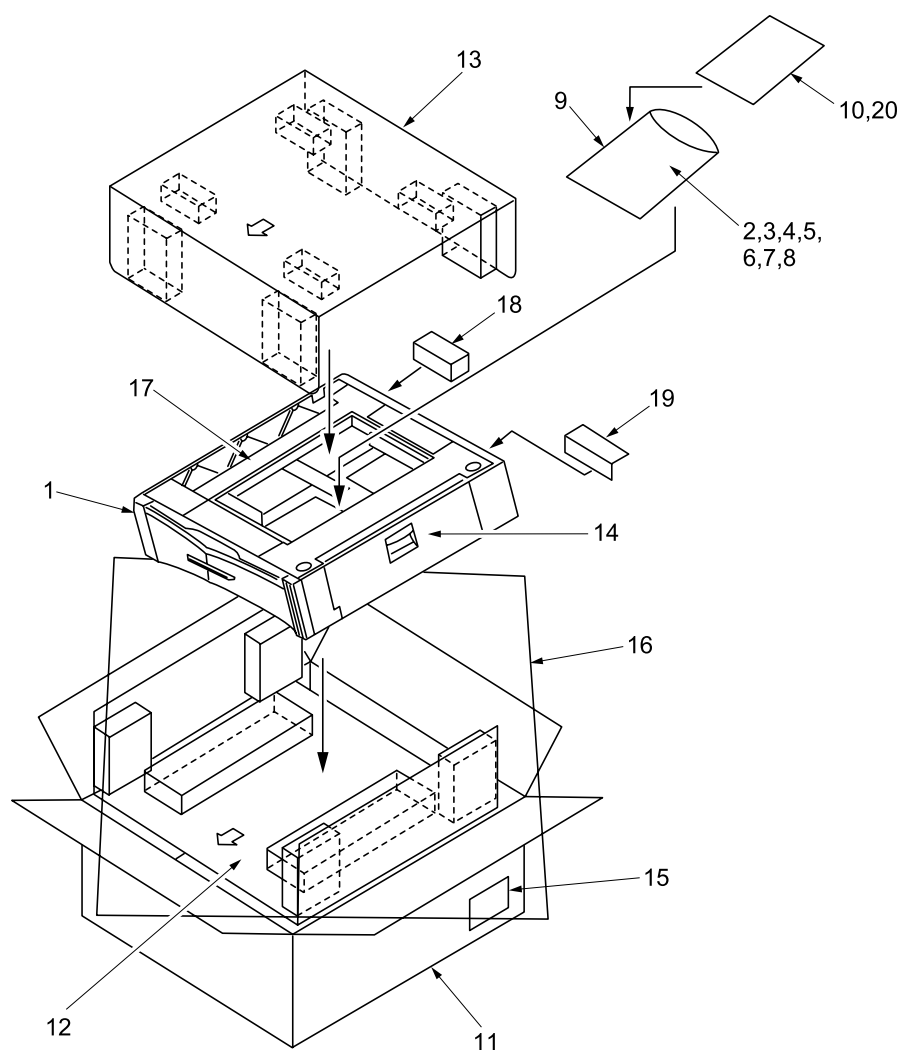


Figure 1-3-1 Unpacking

- | | |
|-------------------------------|-------------------------------|
| 1. Paper feeder | 11. Outer case |
| 2. Size plate | 12. Lower pad |
| 3. Label 2 | 13. Upper pad |
| 4. Label 3 | 14. Cassette spacer |
| 5. Display instruction plates | 15. Bar code labels |
| 6. Screws (M3 x 10) | 16. Plastic sheet |
| 7. Plastic bag | 17. Rear spacer |
| 8. Installation guide | 18. Lower cassette spacer |
| 9. Plastic bag | 19. Right cassette spacer |
| 10. Leaflet for notes | 20. Leaflet for cassette note |

(2) Remove the tapes and spacers

<Procedure>

1. Turn the paper feeder over and remove the one tape and the lower cassette spacer.

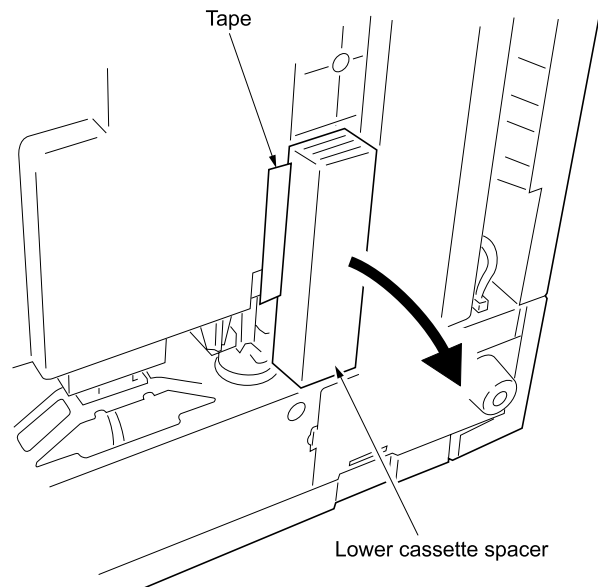


Figure 1-3-2

2. Return the paper feeder to its original state and remove the four tapes.

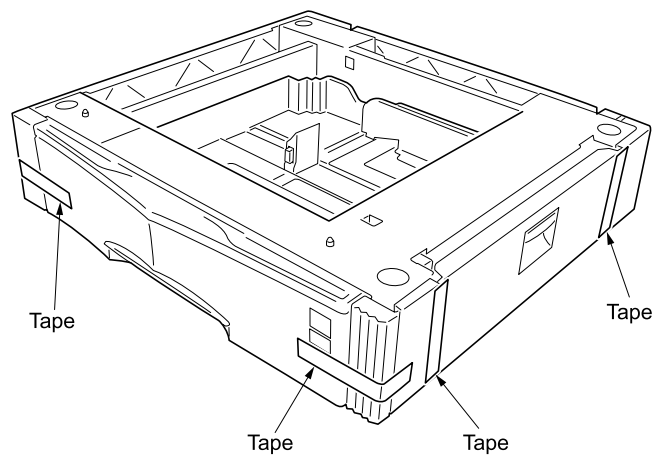
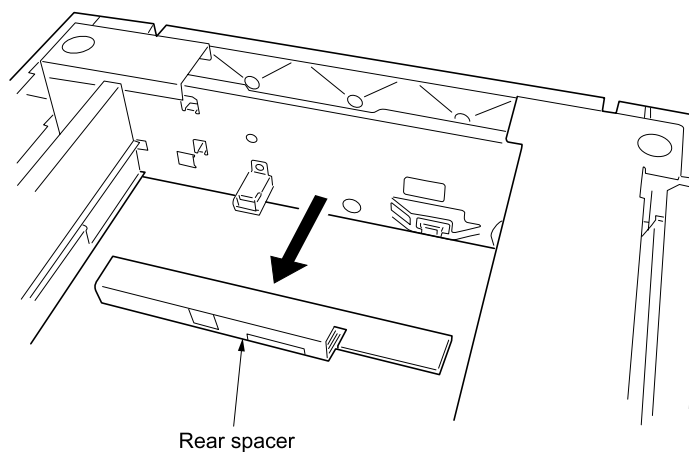
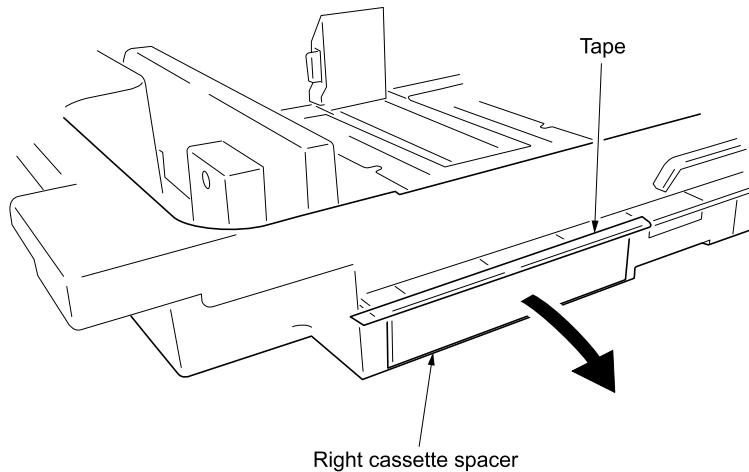


Figure 1-3-3

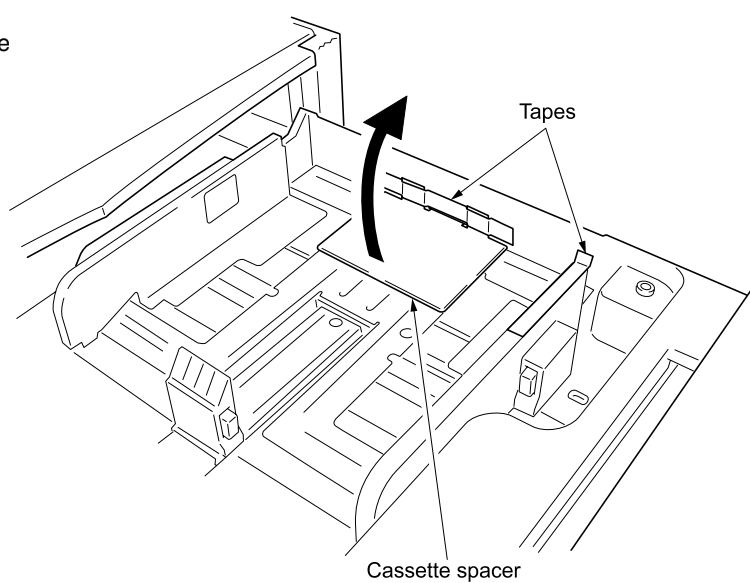
3. Pull out the paper cassette and remove the rear spacer from rear frame of the paper feeder.

**Figure 1-3-4**

4. Remove the paper cassette from the cassette rails and remove the tape holding the right cassette spacer and then the spacer.

**Figure 1-3-5**

5. Set the paper cassette back on cassette rails and remove the two tapes and cassette spacer from the paper cassette.

**Figure 1-3-6**

1-3-2 Installing the dehumidifier heater

Dehumidifier heater installation requires the following parts:

- Set, dehumidifier heater 120 (P/N 3CY68020) for 120 V specifications
- Set, dehumidifier heater 240 (P/N 3CY68030) for 220-240 V specifications

<Procedure>

1. Pull out the paper cassette.
2. Remove the rear cover.
3. Pass the dehumidifier heater cable into the hole (rear plate).
4. Hang the dehumidifier heater on the hook and then secure the heater with the screw.
5. Attach a snap-on band to the dehumidifier heater cable and insert it into the hole.
6. Stick the caution label.

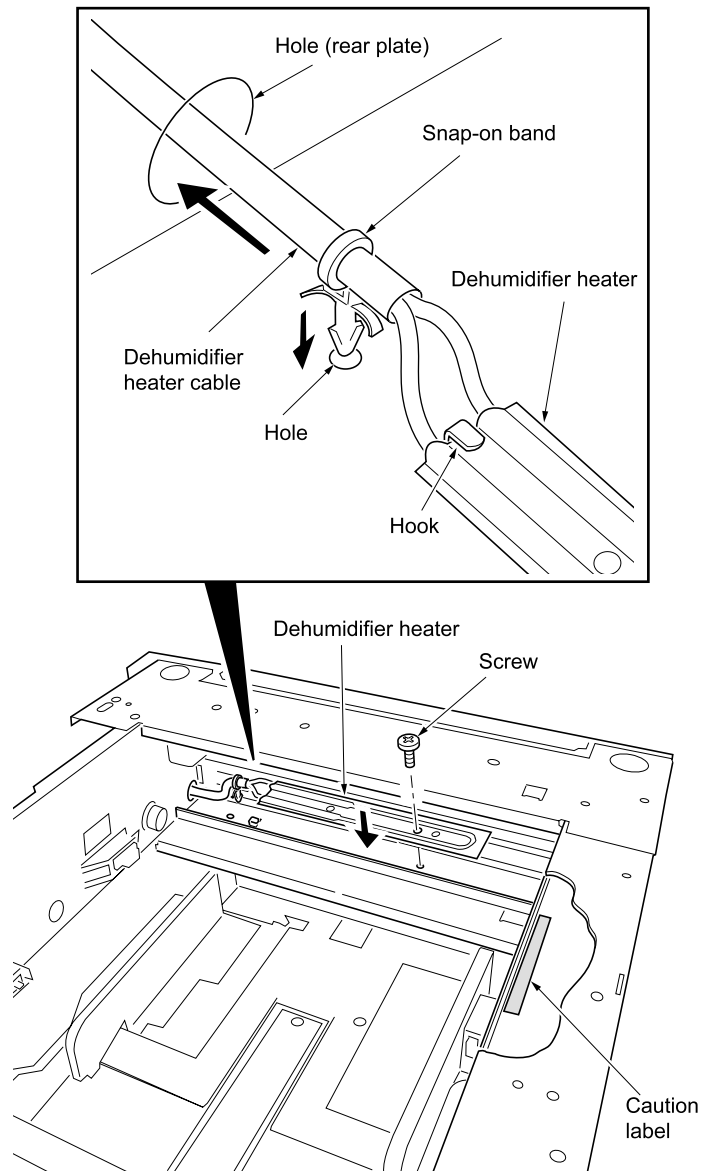


Figure 1-3-7

- 7 Pass the dehumidifier heater cable through the wire saddle.
8. Connect the connector of dehumidifier heater cable to the connector for power supply.
- 9 Refit all the removed parts.

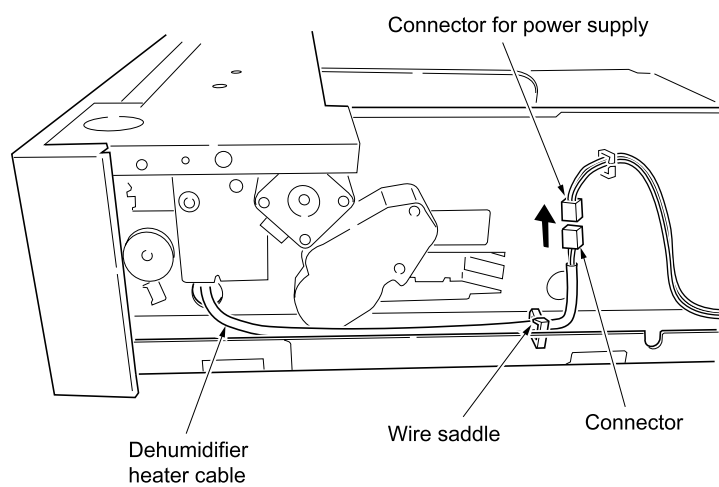


Figure 1-3-8

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1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper jam occurs, the machine stops immediately and paper jam display appears on the operation panel of the machine.

The paper jam can be reset by opening and closing the paper feeder right cover (turning off and on the paper feeder right cover open/close switch).

(2) Paper misfeed detection conditions

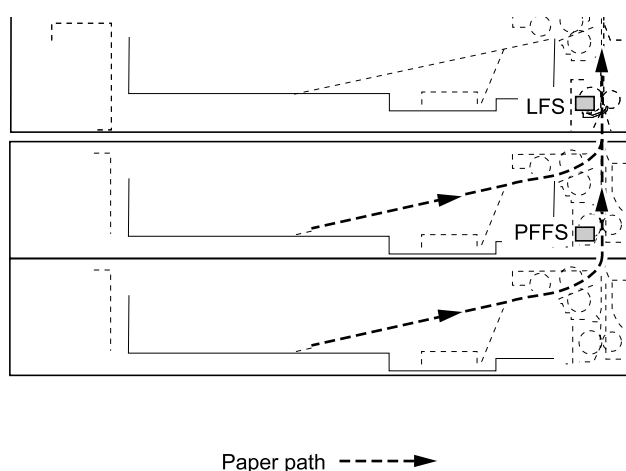


Figure 1-4-1

Section	Jam code	Description	Conditions
Paper feed section	11	No paper feed from cassette 2	Lower feed sensor (LFS) does not turn on within 3358 ms of the paper feeder feed H clutch (PFFHCL) turning on.
	26	Multiple sheets in cassette 2 paper feed section	Lower feed sensor (LFS) does not turn off within 862 ms of the paper feeder feed H clutch (PFFHCL) turning on. Lower feed sensor (LFS) does not turn off within 1033 ms of the paper feeder feed sensor (PFFS) turning on.

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed section is indicated during copying (no paper feed from cassette 2). Jam code 11	Paper in the paper cassette is extremely curled.	Change the paper.
	Check if the lower paper feed pulley, forwarding roller or paper feed roller of the paper cassette are deformed.	Check visually and replace any deformed pulleys.
	Broken lower feed sensor actuator.	Check visually and replace the lower feed sensor if its actuator is broken.
	Defective lower feed sensor.	Run maintenance mode U031, check the operation of the lower feed sensor caused by turning it on and off manually, and replace it if any problem is found.
	Check if the paper feeder feed H clutch malfunctions.	Run maintenance item U032 and select the paper feeder feed H clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feeder feed H clutch.	Check.
(2) A paper jam in the paper feed section is indicated during copying (multiple sheets in cassette 2 paper feed section). Jam code 26	Broken lower feed sensor actuator.	Check visually and replace the lower feed sensor if its actuator is broken.
	Defective lower feed sensor.	Run maintenance mode U031, check the operation of the lower feed sensor caused by turning it on and off manually, and replace it if any problem is found.
	Broken paper feeder feed sensor actuator.	Check visually and replace the paper feeder feed sensor if its actuator is broken.
	Defective paper feeder feed sensor.	Run maintenance mode U031, check the operation of the paper feeder feed sensor caused by turning it on and off manually, and replace it if any problem is found.
	Check if the paper feeder feed H clutch malfunctions.	Run maintenance item U032 and select the paper feeder feed H clutch on the touch panel to be turned on and off. Check the status and remedy if necessary.
	Electrical problem with the paper feeder feed H clutch.	Check.

1-4-2 Self-diagnosis

(1) Self-diagnostic function

If a machine error is detected, the machine disables operation and character "C" and a four-digit number (0420 to 1170) that indicate the result of self-diagnosis are displayed on the operation panel of the machine. A message is also displayed requesting the user to call for service.

The detected status is cleared by opening and closing the paper feeder right cover (turning off and on the paper feeder right cover open/close switch) after taking measures against the cause of the trouble.

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C0420	Paper feeder communication error 1 (upper paper feeder) <ul style="list-style-type: none"> Reception is not normally completed even after 40 times of retry at startup or 5 times of retry in normal operation. 	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB and the connector YC2 on the paper feeder main PWB. Repair or replace if necessary.
		Defective engine controller PWB or paper feeder main PWB.	Replace the engine controller PWB or paper feeder main PWB.
		Defective upper paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair the upper paper feeder.
C0500	Paper feeder communication error 1 (lower paper feeder) <ul style="list-style-type: none"> Reception is not normally completed even after 40 times of retry at startup or 5 times of retry in normal operation. 	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB and the connector YC9 on the paper feeder main PWB of upper paper feeder. Repair or replace if necessary.
		Defective engine controller PWB or paper feeder main PWB.	Replace the engine controller PWB or paper feeder main PWB.
		Defective lower paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair the lower paper feeder.
C0700	Paper feeder EEPROM error 1 (upper paper feeder) <ul style="list-style-type: none"> When power is turned on, an error is detected in memory check for the upper the paper feeder and a backup memory error is received in serial communication data. 	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB and the connector YC2 on the paper feeder main PWB. Repair or replace if necessary.
		Defective engine controller PWB or paper feeder main PWB.	Replace the engine controller PWB or paper feeder main PWB.
		Defective upper paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair the upper paper feeder.
C0710	Paper feeder EEPROM error 2 (lower paper feeder) <ul style="list-style-type: none"> When power is turned on, an error is detected in memory check for the lower paper feeder and a backup memory error is received in serial communication data. 	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB and the connector YC9 on the paper feeder main PWB of upper paper feeder. Repair or replace if necessary.
		Defective engine controller PWB or paper feeder main PWB.	Replace the engine controller PWB or paper feeder main PWB.
		Defective lower paper feeder.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair the lower paper feeder.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C1160	Paper feeder lift motor error (upper paper feeder) <ul style="list-style-type: none"> The paper feeder limit detection sensor is not turned on within 10,000 ms after the cassette is inserted and the sensor is not turned on within 500 ms at the second time and after. 	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective paper feeder lift motor.	Replace the paper feeder lift motor.
		Defective engine controller PWB or paper feeder main PWB.	Replace the engine controller PWB or paper feeder main PWB.
C1170	Paper feeder lift motor error (lower paper feeder) <ul style="list-style-type: none"> The paper feeder limit detection sensor is not turned on within 10,000 ms after the cassette is inserted and the sensor is not turned on within 500 ms at the second time and after. 	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective paper feeder lift motor.	Replace the paper feeder lift motor.
		Defective engine controller PWB or paper feeder main PWB.	Replace the engine controller PWB or paper feeder main PWB.

1-4-3 Electric problems

Problem	Causes	Check procedures/corrective measures
(1) The paper feeder main motor does not operate.	Poor contact in the paper feeder main motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper feeder main motor gear.	Check visually and replace the paper feeder main motor if necessary.
	Defective paper feeder main motor.	Run maintenance item U030 and check if the paper feeder main motor operates when YC3-1, YC3-3, YC3-4 and YC3-6 on the paper feeder main PWB goes low. If not, replace the paper feeder main motor.
	Defective paper feeder main PWB.	Run maintenance item U030 and check if YC3-1, YC3-3, YC3-4 and YC3-6 on the paper feeder main PWB goes low. If not, replace the paper feeder main PWB.
(2) The paper feeder lift motor does not operate.	Poor contact in the paper feeder lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper feeder lift motor gear.	Check visually and replace the paper feeder lift motor if necessary.
(3) A paper jam in the paper feeder is indicated when the power switch is turned on.	A piece of paper torn from paper is caught around paper feeder feed sensor.	Check and remove if any.
	Defective paper feeder feed sensor.	Run maintenance mode U031, check the operation of the paper feeder feed sensor caused by turning it on and off manually, and replace it if any problem is found.
(4) The message requesting cover to be closed is displayed when the paper feeder right cover is closed.	Poor contact in the connector terminals of paper feeder right cover open/close switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective paper feeder right cover open/close switch.	Check for continuity across switch. If there is no continuity when the paper feeder right cover open/close switch is on, replace it.
(5) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

1-4-4 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: lower paper feed pulley, forwarding roller and paper feed roller.	Clean with isopropyl alcohol.
	Check if the lower paper feed pulley is deformed.	Check visually and replace any deformed pulley (see page 1-5-5).
(2) Skewed paper feed.	Width guide in a cassette installed incorrectly.	Check the width guide visually and correct or replace if necessary.
	Deformed width guide in a cassette.	Repair or replace if necessary.
(3) Multiple sheets of paper are fed at one time.	Check if the lower paper feed pulley is worn.	Replace the lower paper feed pulley if it is worn (see page 1-5-5).
	Check if the paper is curled.	Change the paper.
(4) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Deformed guides along the paper conveying path.	Repair or replace if necessary.
(5) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.

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1-5-1 Precautions for assembly and disassembly

(1) Precautions

Be sure to turn the power switch off and disconnect the power plug before starting disassembly.

When handling PWBs (printed wiring boards), do not touch parts with bare hands. The PWBs are susceptible to static charge.

Do not touch any PWB containing ICs with bare hands or any object prone to static charge.

Use the following circuit testers when measuring voltages:

- Hioki 3200
- Sanwa MD-180C
- Sanwa YX-360TR
- Beckman TECH300
- Beckman DM45
- Beckman 330 (Capable of measuring RMS values.)
- Beckman 3030 (Capable of measuring RMS values.)
- Beckman DM850 (Capable of measuring RMS values.)
- Fluke 8060A (Capable of measuring RMS values.)
- Arlec DMM1050
- Arlec YF1030C

1-5-2 Primary paper feed unit

(1) Detaching and refitting the primary paper feed unit

<Procedure>

1. Pull out the paper cassette.
2. Open the paper feeder right cover.
3. Remove the one screw and then the paper feeder front right cover.

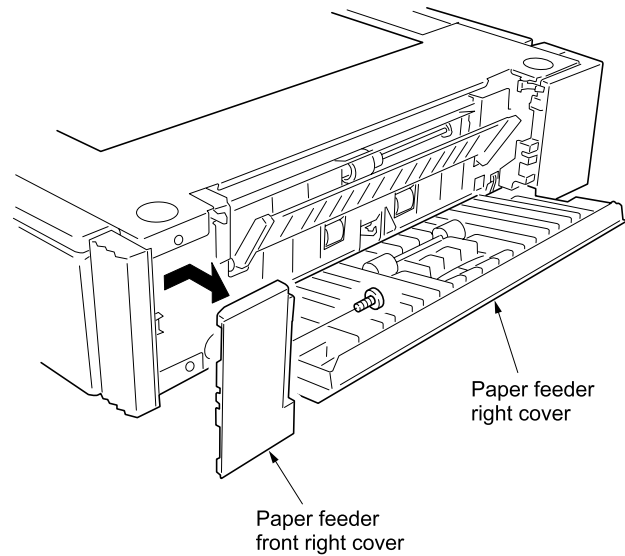


Figure 1-5-1

4. Remove the one connector and then the primary paper feed unit.

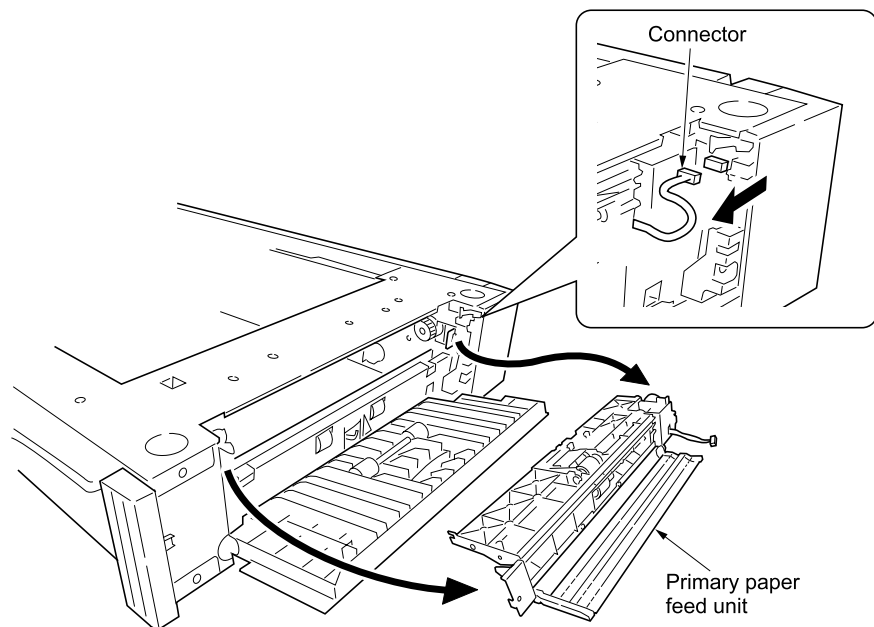
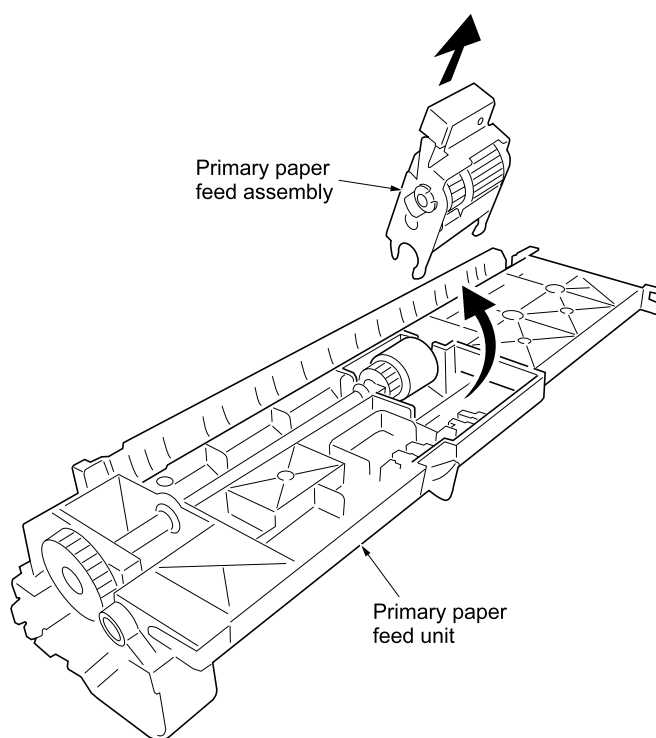


Figure 1-5-2

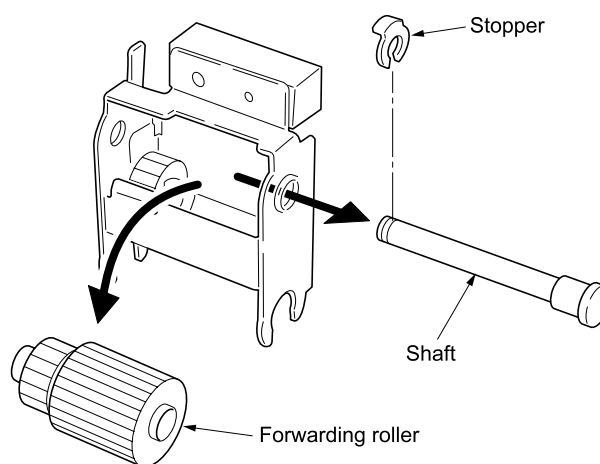
(2) Detaching and refitting the forwarding roller and paper feed roller

<Procedure>

1. Remove the primary paper feed unit (see previous page).
2. Pull up the primary paper feed assembly and remove the assembly from the bearing.

**Figure 1-5-3**

3. Remove one stopper and pull out the shaft, and then remove the forwarding roller.

**Figure 1-5-4**

4. Remove three stoppers and slide the shaft, to remove the bearing and paper feed roller.
5. Check or replace the forwarding roller and paper feed roller, and refit all the removed parts.

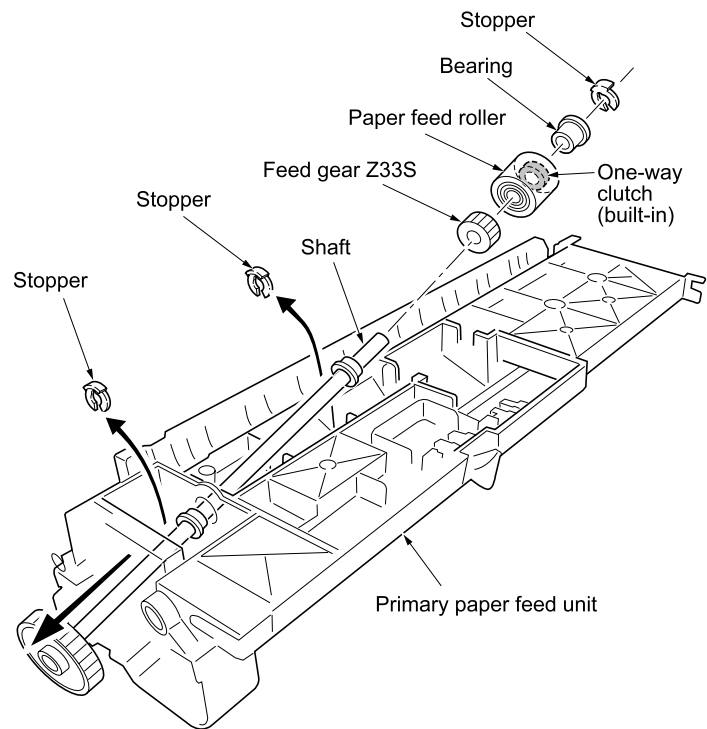


Figure 1-5-5

(3) Detaching and refitting the lower paper feed pulley

<Procedure>

1. Remove the paper feed roller (see page 1-5-3).
2. Remove two stoppers and slide the shaft to remove the bearing, insulator, lower paper feed pulley release lever, spring, lower paper feed pulley, pin and torque limiter.
3. Check or replace the lower paper feed pulley, and refit all the removed parts.

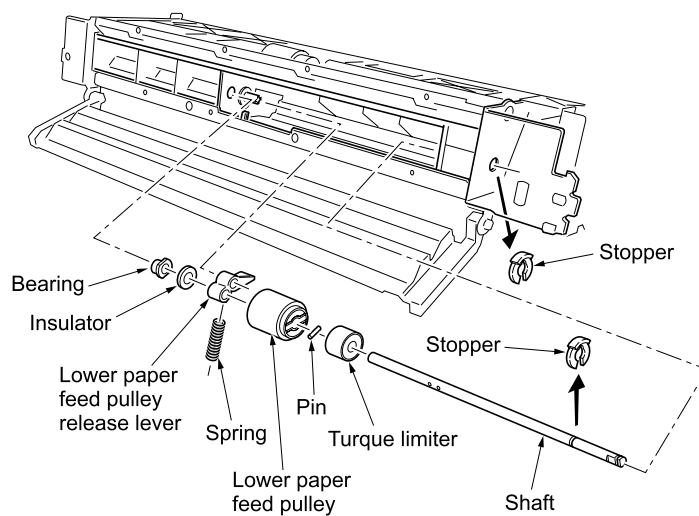


Figure 1-5-6

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1-6-1 Remarks on paper feeder main PWB replacement

When replacing the paper feeder main PWB, remove the EEPROM from the paper feeder main PWB that has been removed and then reattach it to the new paper feeder main PWB.

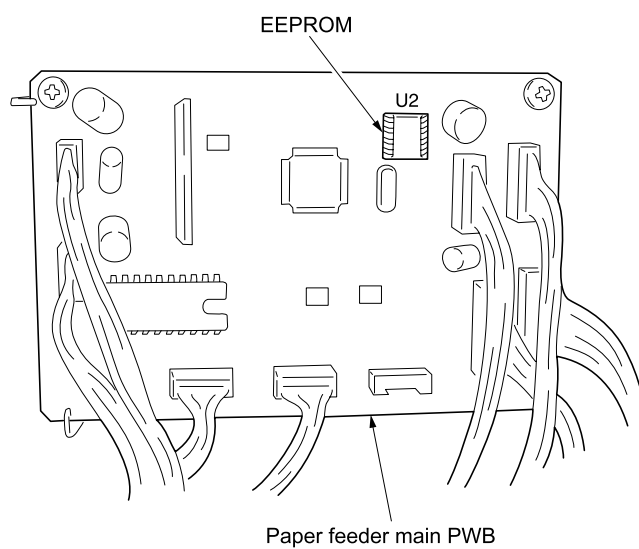


Figure 1-6-1

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2-1-1 Mechanical construction

This paper feeder includes a paper cassette that holds 500 sheets of paper. The paper feeder is installed at the lower part of a copier or a printer and has a mechanism that feeds paper from the paper cassette to the copier or the printer.

The paper cassette is fit underneath the primary paper feed unit. The paper stored in the paper cassette is lifted up so that it is contacted against the forwarding roller as the bottom plate in the paper cassette is raised by the lifter mechanism. The sheet at top is rewound to the forwarding roller and sent to the paper feed roller which forward the paper in the copier or printer. In order to prevent paper misfeed during feeding, the lower paper feed pulley which is positioned face-to-face with the paper feed roller acts to prevent feeding more than one sheet at a turn of the forwarding roller.

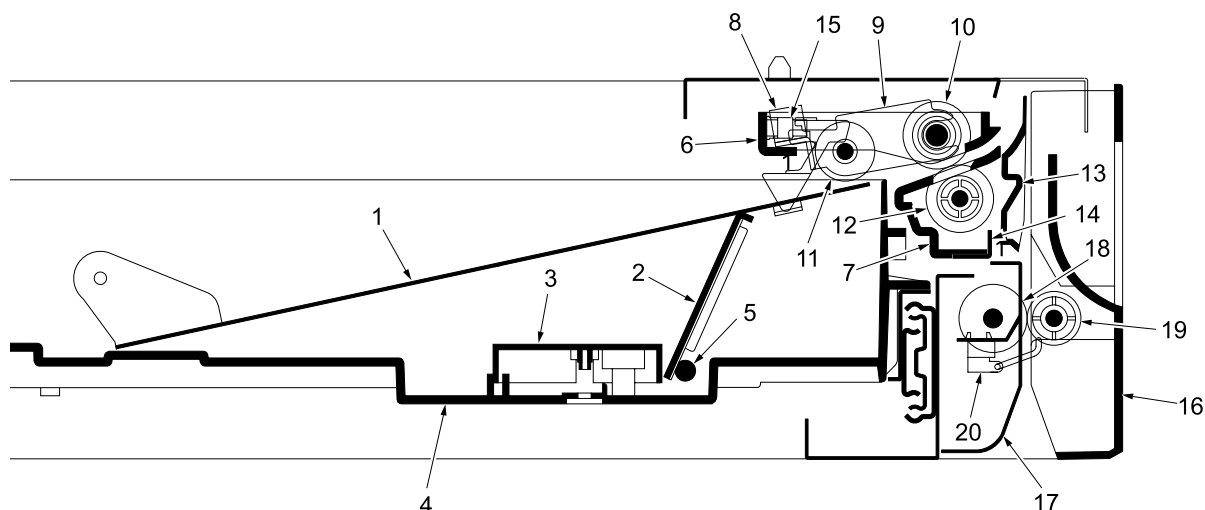


Figure 2-1-1 Paper feeder

- | | |
|---|--|
| (1) Bottom plate | (11) Forwarding roller |
| (2) Lift plate | (12) Lower paper feed pulley |
| (3) Cursor rail A | (13) Junction guide |
| (4) Paper cassette | (14) Housing reinforcing plate |
| (5) Cassette lift shaft | (15) Paper feeder limit detection sensor |
| (6) Upper primary paper feed unit housing | (16) Paper feeder right cover |
| (7) Lower primary paper feed unit housing | (17) Deck vertical conveying guide |
| (8) Forwarding pulley collar | (18) Feed roller |
| (9) Forwarding pulley support plate | (19) Feed pulley |
| (10) Paper feed roller | (20) Paper feeder feed sensor |

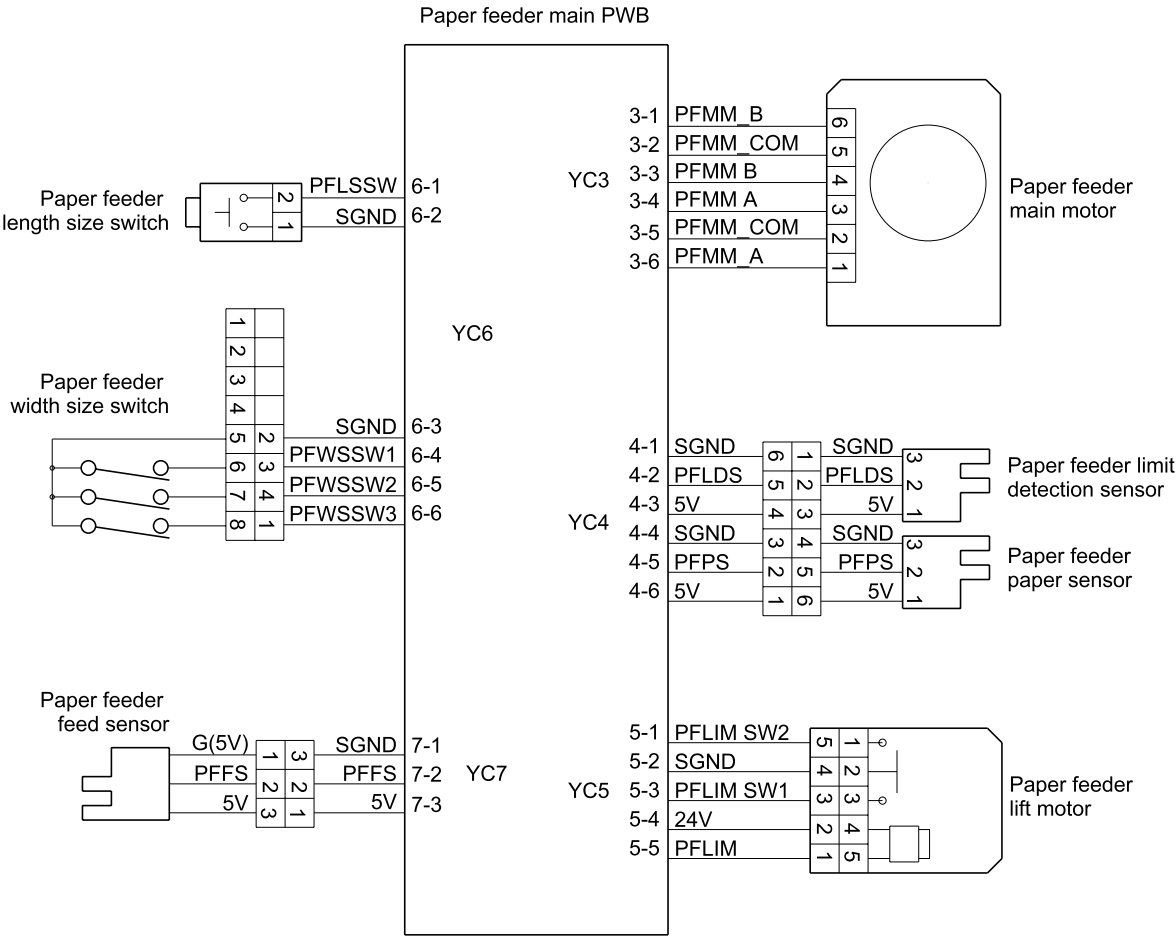


Figure 2-1-2 Paper feeder block diagram

2-2-1 Electrical parts layout

(1) Paper feeder inside, rear side and primary paper feed unit

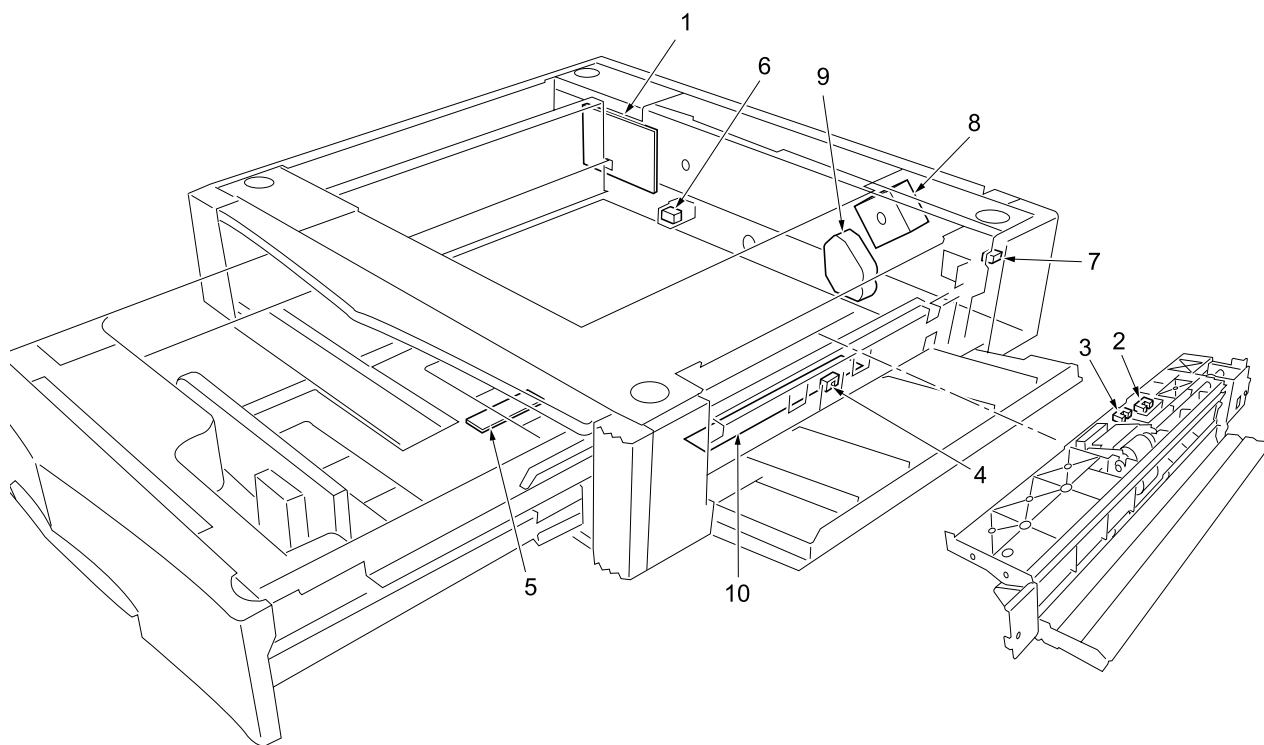
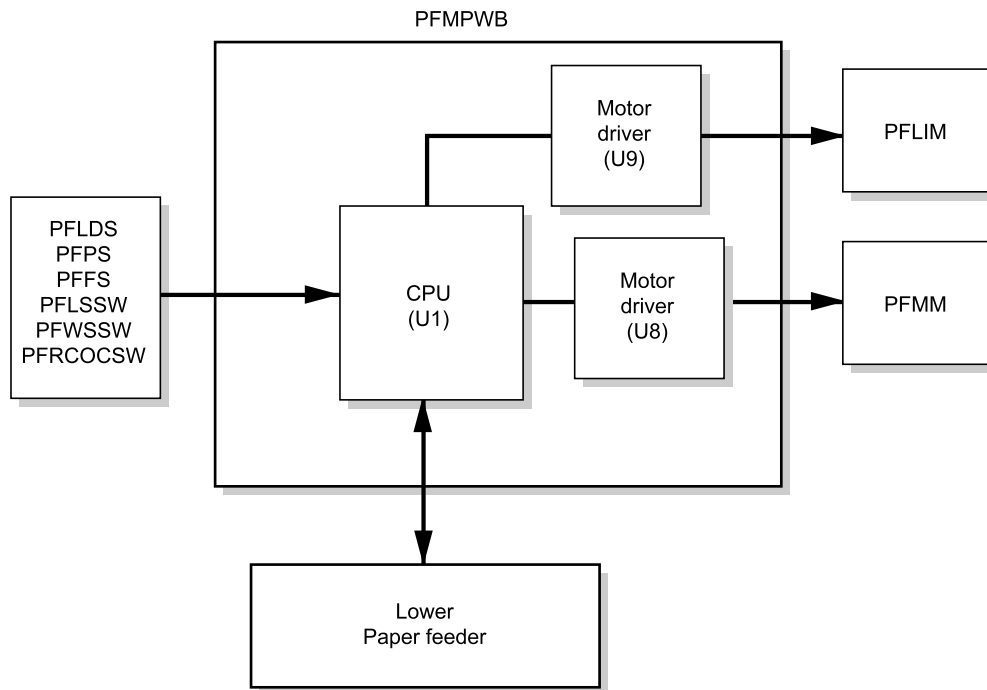


Figure 2-2-1 Paper feeder inside, rear side and primary paper feed unit

- | | | |
|-----|---|--|
| 1. | Paper feeder main PWB (PFMPWB) | Controls electrical components. |
| 2. | Paper feeder paper sensor (PFPS) | Detects paper in the paper cassette. |
| 3. | Paper feeder limit detection sensor (PFLDS) | Detects activation of upper limit of the bottom plate in the paper cassette. |
| 4. | Paper feeder feed sensor (PFFS) | Detects a paper misfeed. |
| 5. | Paper feeder width size switch (PFWSSW) | Detects paper width in the paper cassette. |
| 6. | Paper feeder length size switch (PFLSSW) | Detects paper length in the paper cassette. |
| 7. | Paper feeder right cover open/close switch (PFRCOCSW) | Detects paper feeder right cover is open. |
| 8. | Paper feeder main motor (PFMM) | Drives the paper feed section. |
| 9. | Paper feeder lift motor (PFLIM) | Operates the bottom plate in the paper cassette. |
| 10. | Dehumidify heater (DH)* | Dehumidifies the paper feeder inside. |

*: Optional.

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2-3-1 Paper feeder main PWB**Figure 2-3-1 Paper feeder main PWB**

The paper feeder main PWB (PFMPWB) is controlled by the engine PWB of the copier or printer and performs operation control of each motor in the paper feeder and input/output control of each sensor and switch through the CPU (U1) provided on the paper feeder main PWB (PFMPWB).

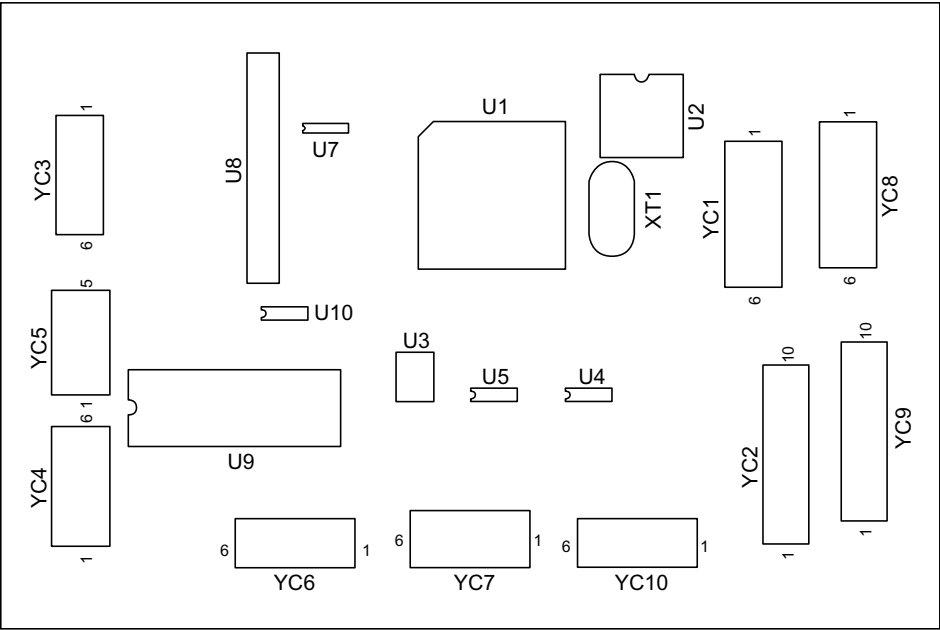
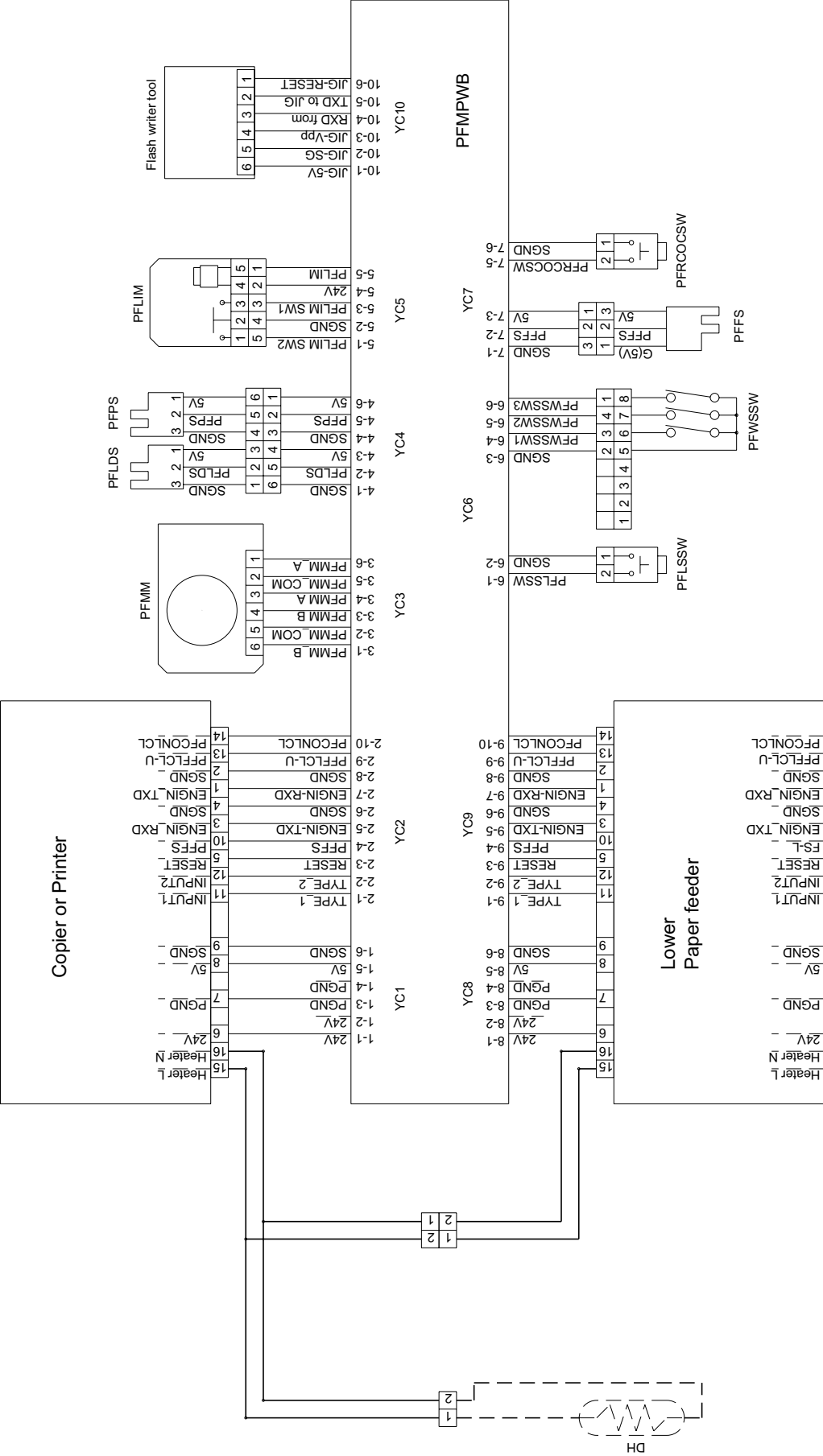


Figure 2-3-2 Paper feeder main PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the copier/ printer or upper paper feeder	1	24V	I	24 V DC	24 V DC power input
	3	PGND	-	-	Ground (power)
	5	5V	I	5 V DC	5 V DC power input
	6	SGND	-	-	Ground (signal)
YC2 Connected to the copier/ printer or upper paper feeder	1	TYPE_1	O	0/5 V DC	Paper feeder identification signal 1
	2	TYPE_2	O	0/5 V DC	Paper feeder identification signal 2
	3	RESET	I	0/5 V DC	Paper feeder reset signal
	4	PFFS-U	I	0/5 V DC	Lower feed sensor: On/Off
	5	ENGINE-TXD	O	0/5 V D (pulse)	Paper feeder serial communication signal (transmit)
	6	SGND	-	-	Ground (signal)
	7	ENGINE-RXD	I	0/5 V D (pulse)	Paper feeder serial communication signal (receive)
	8	SGND	-	-	Ground (signal)
	9	PFFLCL-U	I	0/5 V DC	Paper feeder upper feed L clutch: On/Off
	10	PFFCONLCL	I	0/5 V DC	Paper feeder conveying L clutch: On/Off
YC3 Connected to the paper feeder main motor	1	PFMM_B	O	0/24 V DC (pulse)	Paper feeder main motor drive signal
	2	PFFMM_COM	O	24 V DC	24 V DC power output
	3	PFMM B	O	0/24 V DC (pulse)	Paper feeder main motor drive signal
	4	PFMM A	O	0/24 V DC (pulse)	Paper feeder main motor drive signal
	5	PFMM_COM	O	24 V DC	24 V DC power output
	6	PFMM_A	O	0/24 V DC (pulse)	Paper feeder main motor drive signal
YC4 Connected to the paper feeder limit detection sensor and paper feeder paper sensor	1	SGND	-	-	Ground (signal)
	2	PFLDS	O	0/5 V DC	Paper feeder limit detection sensor: On/Off
	3	5V	O	5 V DC	5 V DC power output
	4	SGND	-	-	Ground (signal)
	5	PFPS	O	0/5 V DC	Paper feeder paper sensor: On/Off
	6	5V	O	5 V DC	5 V DC power output
YC5 Connected to the paper feeder lift motor	1	PFLIM SW2	I	0/5 V DC	Paper feeder lift motor SW2 signal
	2	SGND	-	-	Ground (signal)
	3	PFLIM SW1	I	0/5 V DC	Paper feeder lift motor SW1 signal
	4	24V	O	24 V DC	24 V DC power output
	5	PFLIM	O	0/24 V DC	Paper feeder lift motor: On/Off
YC6 Connected to the paper feeder length size switch and paper feeder width size switch	1	PFLSSW	I	0/5 V DC	Paper feeder length size switch: On/Off
	2	SGND	-	-	Ground (signal)
	3	SGND	-	-	Ground (signal)
	4	PFWSSW1	I	0/5 V DC	Paper feeder width size switch: On/Off
	5	PFWSSW2	I	0/5 V DC	Paper feeder width size switch: On/Off
	6	PFWSSW3	I	0/5 V DC	Paper feeder width size switch: On/Off

Connector	Pin No.	Signal	I/O	Voltage	Description
YC7	1	SGND	-	-	Ground (signal)
Connected to the paper feeder feed sensor and paperfeeder right cover open/close switch	2	PFFS	O	0/5 V DC	Paper feeder feed sensor: On/Off
	3	5V	O	5 V DC	5 V DC power output
	4	PFRCOCSW	I	0/5 V DC	Paper feeder right cover open/close switch: On/Off
	5	SGND	-	-	Ground (signal)
YC8	1	24V	I	24 V DC	24 V DC power input
Connected to the lower paper feeder	3	PGND	-	-	Ground (power)
	5	5V	I	5 V DC	5 V DC power input
	6	SGND	-	-	Ground (signal)
YC9	1	TYPE_1	O	0/5 V DC	Paper feeder identification signal 1
Connected to the lower paper feeder	2	TYPE_2	O	0/5 V DC	Paper feeder identification signal 2
	3	RESET	I	0/5 V DC	Paper feeder reset signal
	4	PFFS-U	O	0/5 V DC	Lower feed sensor: On/Off
	5	ENGINE-TXD	O	0/5 V D (pulse)	Paper feeder serial communication signal (transmit)
	6	SGND	-	-	Ground (signal)
	7	ENGINE-RXD	I	0/5 V D (pulse)	Paper feeder serial communication signal (receive)
	8	SGND	-	-	Ground (signal)
	9	PFFLCL-U	-	-	Not used
	10	PFFCONLCL	-	-	Not used

Wiring diagram



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MEMO

MEMO

KYOCERA MITA EUROPE B.V.

Hoeksteen 40, 2132 MS Hoofddorp,
The Netherlands
Phone: +31.(0)20.654.000
Home page: <http://www.kyoceramita-europe.com>
Email: info@kyoceramita-europe.com

KYOCERA MITA NEDERLAND B.V.

Hoeksteen 40 2132 MS Hoofddorp
The Netherlands
Phone: +31.(0)20.587.7200

KYOCERA MITA (UK) LTD.

8 Beacontree Plaza
Gillette Way,
Reading Berks RG2 0BS, UK
Phone: +44.(0)118.931.1500

KYOCERA MITA ITALIA S.P.A.

Via Verdi 89 / 91 20063 Cernusco sul Naviglio,
Italy
Phone: +39.02.92179.1

S.A. KYOCERA MITA BELGIUM N.V.

Hermesstraat 8A 1930 Zaventem Belgium
Phone: +32.(0)2.720.9270

KYOCERA MITA FRANCE S.A.

Parc Les Algorithmes
Saint Aubin
91194 GIF-SUR-YVETTE
France

Phone: +33.(0)1.6985.2600

KYOCERA MITA ESPAÑA S.A.

Edificio Kyocera, Avda de Manacor N. 2,
Urb. Parque Rozas 28290 Las Rozas,
Madrid, Spain
Phone: +34.(0)91.631.8392

KYOCERA MITA FINLAND OY

Kirvesmiehenkatu 4 00810 Helsinki,
Finland
Phone: +358.(0)9.4780.5200

KYOCERA MITA (SCHWEIZ) AG

Holzliwisen Industriestrasse 28
8604 Volketswil, Switzerland
Phone: +41.(0)1.908.4949

KYOCERA MITA DEUTSCHLAND GMBH

Mollsfeld 12 D-40670 Meerbusch,
Germany
Phone: +49.(0)2159.918.0

KYOCERA MITA GMBH AUSTRIA

Eduard-Kittenberger Gasse 95
1230 Wien, Austria
Phone: +43.(0)1.86338.0

KYOCERA MITA SVENSKA AB

Box 1402 171 27 Solna, Sweden
Phone: +46.(0)8.546.550.00

KYOCERA MITA NORGE

Postboks 150 Oppsal, NO 0619 Oslo
Olaf Helsetsvai 6, NO 0694 Oslo
Phone: +47.(0)22.62.73.00

KYOCERA MITA DANMARK A/S

Hovedkontor: Slotsmarken 11,
DK-2970 Hørsholm, Denmark
Phone: +45.(70)22.3880

KYOCERA MITA PORTUGAL LDA.

Rua do Centro Cultural, no 41 1700-106
Lisbon, Portugal
Phone: +351.(0)21.842.9100

KYOCERA MITA SOUTH AFRICA (PTY) LTD.

527 Kyalami Boulevard,
Kyalami Business Park 1685 Midrand South
Phone: +27.(0)11.466.3290

KYOCERA MITA AMERICA, INC.

Headquarters:

225 Sand Road,
Fairfield, New Jersey 07004-0008,
U.S.A.
Phone: (973) 808-8444

KYOCERA MITA AUSTRALIA PTY. LTD.

Level 3, 6-10 Talavera Road, North Ryde,
N.S.W. 2113 Australia
Phone: (02) 9888-9999

KYOCERA MITA NEW ZEALAND LTD.

1-3 Parkhead Place, Albany
P.O. Box 302 125 NHPC, Auckland,
New Zealand
Phone: (09) 415-4517

KYOCERA MITA (THAILAND) CORP., LTD.

9/209 Ratchada-Prachachem Road,
Bang Sue, Bangkok 10800, Thailand
Phone: (02) 586-0320

KYOCERA MITA SINGAPORE PTE LTD.

121 Genting Lane, 3rd Level,
Singapore 349572
Phone: 67418733

KYOCERA MITA HONG KONG LIMITED

11/F., Mita Centre,
552-566, Castle Peak Road,
Tsuen Wan, New Territories,
Hong Kong
Phone: 24297422

KYOCERA MITA TAIWAN


Corporation.

7F-1~2, No.41, Lane 221, Gangchi Rd.
Neihu District, Taipei, Taiwan, 114. R.O.C.
Phone: (02) 87511560

KYOCERA MITA Corporation

2-28, 1-chome, Tamatsukuri, Chuo-ku
Osaka 540-8585, Japan
Phone: (06) 6764-3555
<http://www.kyoceramita.com>

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